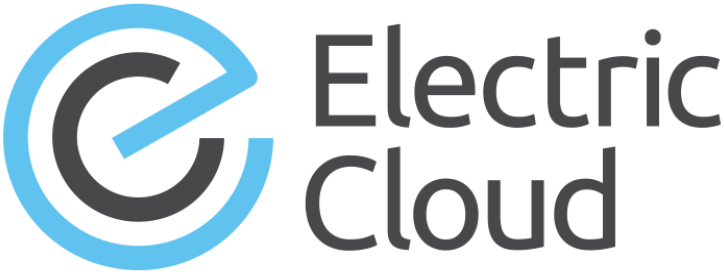

ElectricFlow 6.0.8
API Guide

Electric Cloud, Inc.
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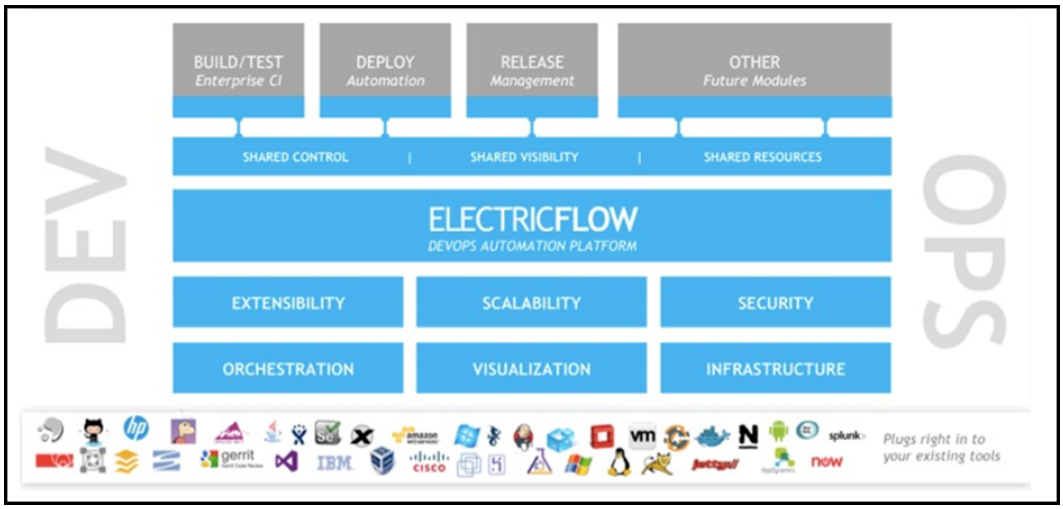
Contents

Introduction to ElectricFlow

ElectricFlow™ (including the ElectricFlow platform, formerly known as ElectricCommander) is an end-to-end Continuous Delivery application suite. It accelerates the continuous delivery of software and makes software delivery processes more repeatable, visible, scalable, and efficient. It provides domain-specific capabilities to automate some or all phases of your software delivery process, including the build, test, integrate, deploy, and release processes.

ElectricFlow gives distributed DevOps teams shared control and visibility into infrastructure, tool chains, and processes. It accelerates and automates the software delivery process and enables agility, availability, predictability, and security across many build-test, deployment, and release pipelines.



Web-Based System

At its core, ElectricFlow automation platform is a web-based system for automating and managing the build, test, deployment, and release process. It provides a scalable solution, solving some of the biggest challenges of managing these "back end" software development tasks, including these challenges:

- Time wasted on script-intensive, manual, home-grown systems that
  - Are error prone
  - Do not scale well
  - Have little or no management visibility or reporting
- Multiple, disconnected build and test systems across locations, resulting in:
  - Redundant work
  - Inability to share or reuse code files across teams
  - Hard to manage build and test data

- Slow overall build and release cycles that directly impact:
  - Release predictability
  - Time-to-market

Automation Platform

The automation platform has a three-tier architecture, AJAX-powered web interface, and first-of-its-kind build and release analytic capabilities for reporting and compliance. With this solution, your developers, release engineers, build managers, QA teams, and managers gain:

- Shared platform for disseminating best practices and reusing common procedures
- Ability to support geographically distributed teams
- Continuous integration and greater agility
- Faster throughput and more efficient hardware utilization
- Visibility and reporting for better project predictability
- Better software quality by integrating and validating against all target platforms and configurations

For examples of ElectricFlow architecture configurations, see ElectricFlow Architecture on page 6.

What Makes ElectricFlow Unique?

ElectricFlow provides enterprise-class speed and scalability for software build and release management. It is easy to install and use on a simple build, yet scales to support the largest and most complex build and test processes. ElectricFlow distributes jobs in parallel across multiple resources for faster overall cycle time.

ElectricFlow supports multiple teams, working in multiple locations, programming in multiple languages in an environment that can be centrally controlled and managed. Shared assets and reuse make individual teams more efficient by eliminating duplicate work, and gives organizations the power to deploy cross-company standards.

ElectricFlow's unique analytics provide visibility into one of the best indicators of project success: compiled, tested, working code. ElectricFlow's analytics database stores all build and test information for real-time and trend reporting giving your organization the power to collect pinpoint statistics and to gain visibility into important productivity metrics such as trends in error rates. Additionally, out-of-the-box reports provide information about cross-project status and build trends by project and resource utilization. ElectricFlow's integration with virtual lab automation (VLA) solutions also allows you to snapshot or reproduce a specific build for auditing or troubleshooting purposes.

ElectricFlow provides unified process automation across the entire build-test-deploy life cycle and across heterogeneous tools via integrations with leading ALM tools. Integrations with SCM tools enable continuous integration, triggering builds whenever code is checked into the specified repository/branch. When used with VMware Lab Manager, ElectricFlow can dynamically provision either physical or virtual resources without manual intervention. This feature delivers efficient, dynamic resource provisioning and reduces development and QA dependence on IT operations.

ElectricFlow Architecture

ElectricFlow was designed to support small, mid-range, or enterprise scale software production. Based on a three-tier architecture, ElectricFlow scales to handle complex environments. The ElectricFlow multi-threaded Java server provides efficient synchronization even under high job volume.

- The ElectricFlow server manages resources, issues commands, and generates reports.
- An underlying database stores commands, metadata, and log files.

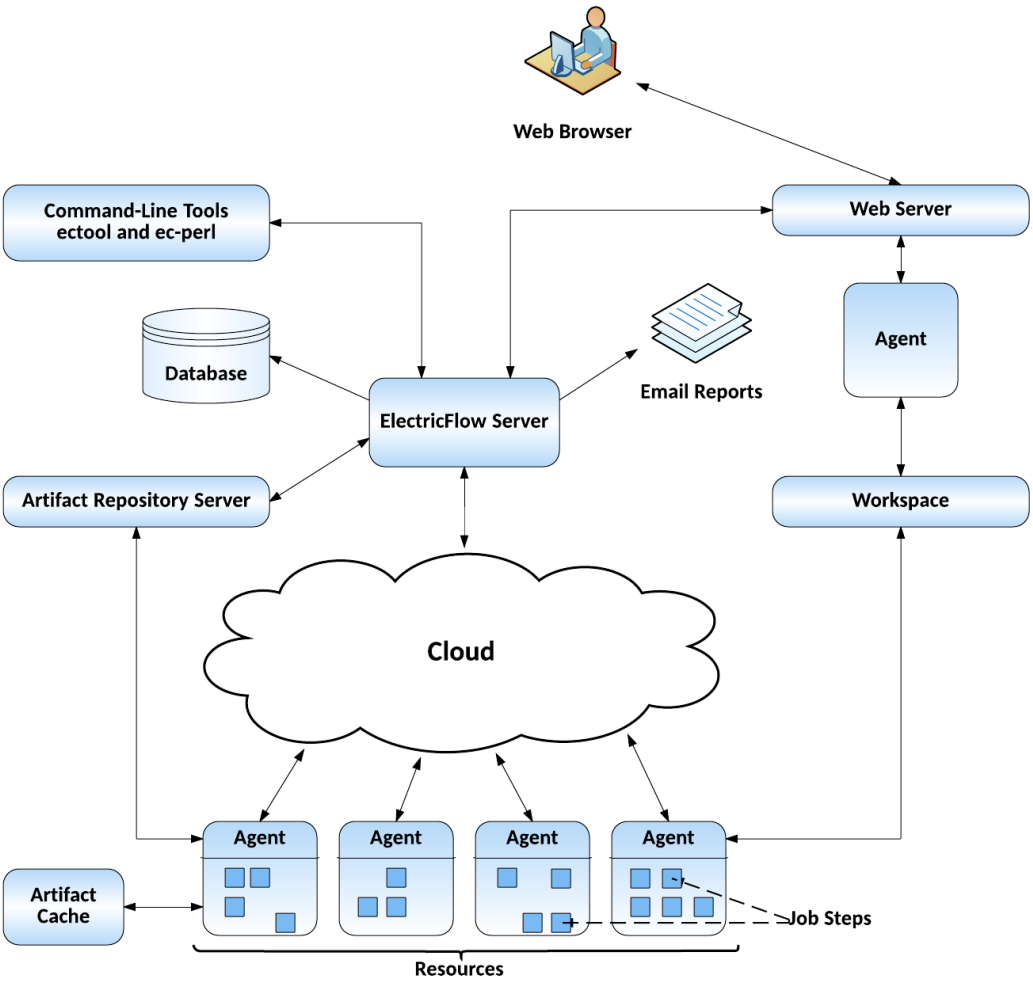
- Agents execute commands, monitor status, and collect results in parallel across a cluster of servers for rapid throughput.

Simple Architectural Overview

This local configuration applies to all the use cases. The ElectricFlow server, web server, artifact cache, Artifact Repository server, workspace, command-line tools, resources, agents, and job steps are all in the automation platform.

In this local configuration:

- The ElectricFlow server manages resources, issues commands, and generates reports.
- Resources,agents, and databases are managed in the automation platform.
- An underlying database stores commands, metadata, and log files.
- Procedures, which include job steps, are defined in the automation platform.
- Job steps are executed on resources in the defined environments.
- Applications (which include procedures), components, and environments are defined for deployment automation.
- Pipelines, stages, and tasks are defined for pipeline automation.



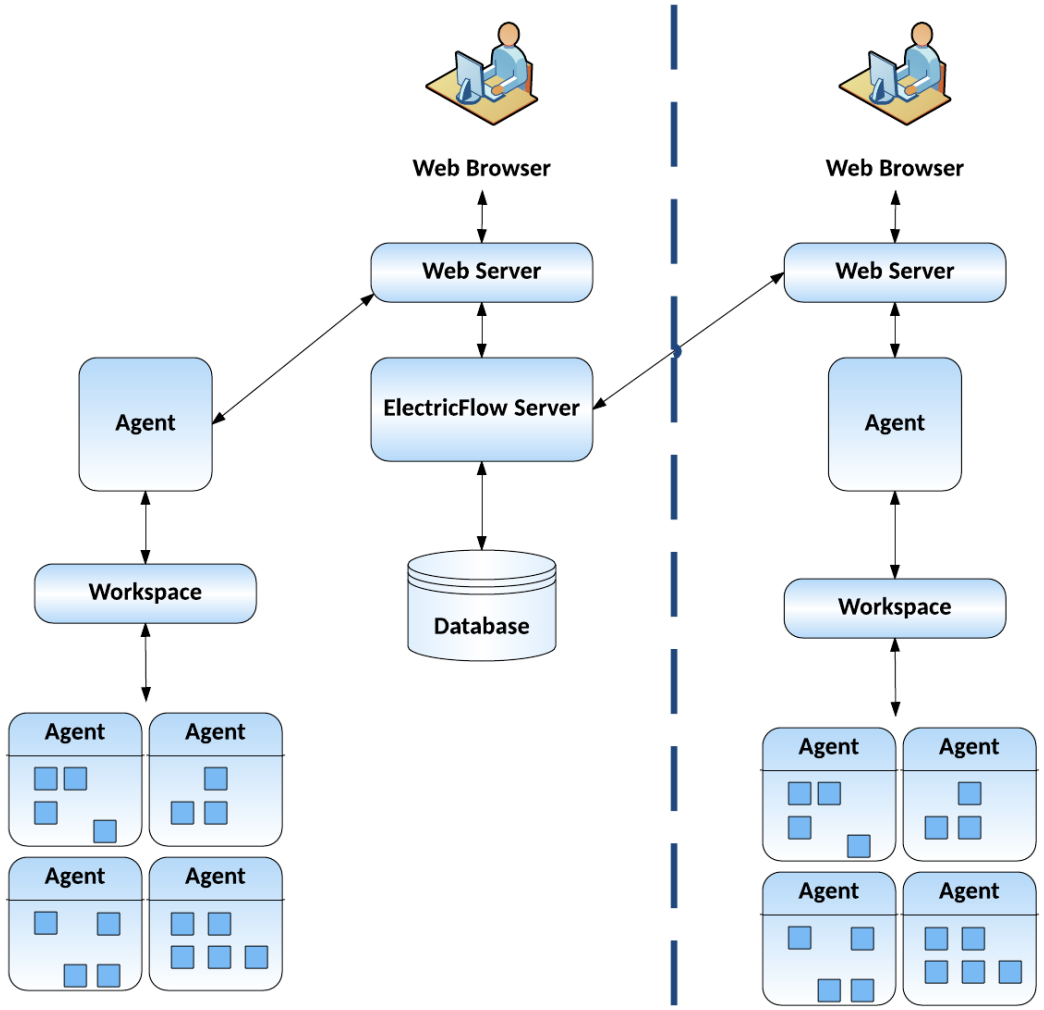
If you are only evaluating ElectricFlow, the ElectricFlow software, the database, the ElectricFlow server, the web server, and the repository server can reside on the same machine.

In a production environment, the database should reside on a separate machine from the ElectricFlow server to prevent performance issues. It is acceptable for the ElectricFlow server, web server, and repository server to reside on the same machine in a local configuration, but not required.

Expanded Remote Configuration

ElectricFlow is not limited by only the components shown in the previous configuration. This configuration applies to all the use cases.

The following shows a remote web server configuration and is an example for how you may set up a remote web server installation.



This type of remote web server configuration helps prevent network latency. If you have multiple sites, ElectricFlow can be configured to help you work more efficiently.

Other Configurations

- Proxy (universal) resources
- Remote database
- Multiple remote web servers
- Multiple remote repository servers
- Configurations designed specifically for *failover*

Build-Test Automation

You create, configure, and manage these objects in the automation platform:

For build-test automation, you must create, configure, and manage these objects in the automation platform:

- Projects

  A *project* is an object used in ElectricFlow to organize information. A project is a container object for procedures, steps, schedules, workflows, and properties. If you use ElectricFlow for different purposes, you can use a separate project for each purpose so different projects do not interfere with each other. When you work in one project, you do not normally see information in other projects. At the same time, a project can use information defined in other projects, which allows you to create shared library projects.

- Resources

  A *resource* is a server machine available to ElectricFlow for running steps. A resource has a logical name and a host name. In some situations, it is convenient to have multiple logical resources associated with the same host. A resource can also be associated with one or more pools. Each resource has a *step limit* that determines the maximum number of steps that can execute simultaneously on the resource. Resources can be grouped into *resource pools*.

- Procedures

  Procedures and *steps* define tasks that you want ElectricFlow to execute. A procedure consists of one or more steps. A step includes a command or script executed on a single resource and is the smallest unit of work that ElectricFlow understands. Each step specifies a resource on which it should run (either the name of a specific machine or the name of a *resource pool* of equivalent machines, in which case ElectricFlow picks a machine from the pool). A step can be given a time limit, and if the step does not complete within the specified time, ElectricFlow automatically aborts it.

  Steps are ordered within a procedure and normally execute sequentially. However, it is possible to mark a consecutive range of steps for parallel execution, so all steps in that range run concurrently.

  You can define *parameters* for procedures. Parameter values are assigned when procedures are scheduled. Parameters can be required, optional, or have default values. Parameters are used for a variety of purposes such as specifying the branch to build or the set of platforms on which to run tests. Parameter values can be used in step commands and many other places.

  Procedures can be nested. A step in one procedure can invoke another procedure instead of running a command. The invoking step provides parameters needed by the nested procedure, also referred to as a subprocedure.

- Schedules

  A schedule is used to execute procedures and determine when specific procedures run. A schedule can trigger at defined times, for example, every 2 hours from 10:00 pm to 6:00 am on Mondays, Wednesdays, and Fridays, or when modifications are checked into a particular branch of your source code control system. It is also possible to create a schedule that runs immediately and disappears after the job runs. When you create a schedule, you must provide the parameters required by the procedure that you want to invoke.

  The Continuous Integration Dashboard works with your source code management (SCM) system and provides visibility into running builds, the ability to add a project to continuous integration quickly, and easily accessed configuration pages to setup or modify a continuous integration schedule.

- Workflows

  Managing a build-test-deploy product life cycle spanning multiple procedures and projects requires a significant amount of "meta-programming" and a heavy use of properties, and the *workflow* feature simplifies this process. Using the workflow object, you can create build-test-deploy life cycles by defining a set of states and transitions. Any ElectricFlow project can contain a workflow.

- When a procedure is executed or run, a *job* is created. A job is an object that is created each time a procedure begins to execute or run. The job keeps track of all data associated with the procedure's execution, such as the running time of each step and any errors that may occur during the step. ElectricFlow retains job information after the job completes so you can examine what occurred.

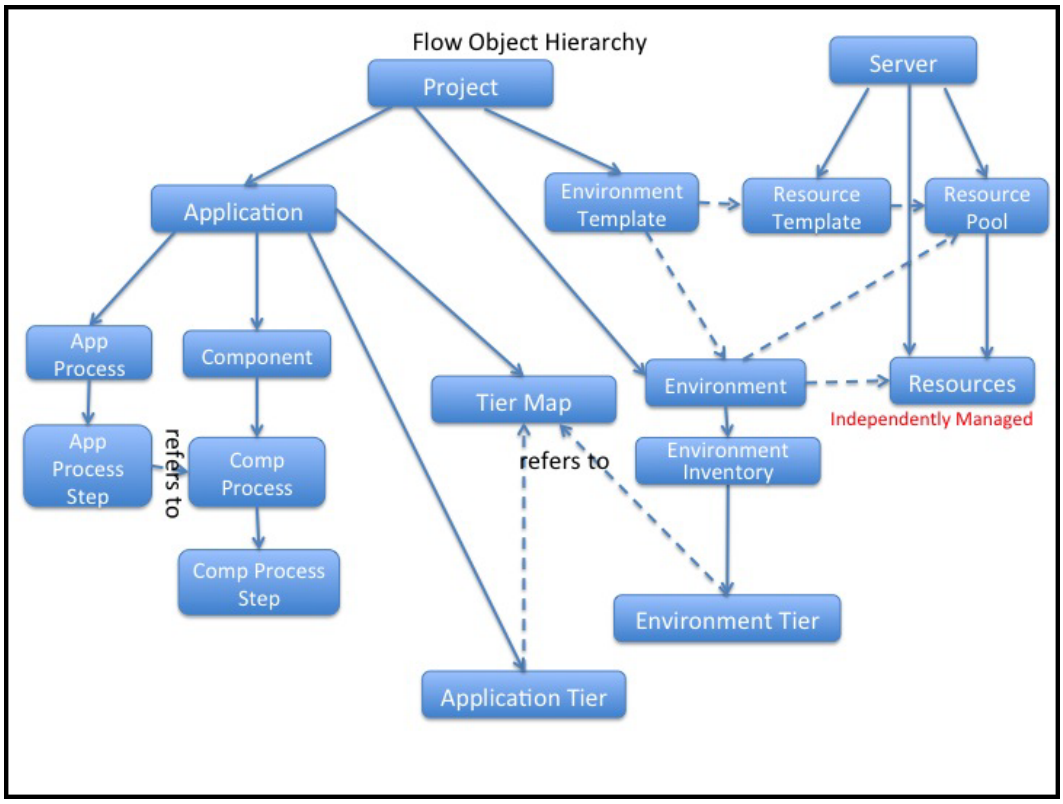
After setting resources, procedures, and schedules, ElectricFlow automatically runs the procedures that you created using these objects and facilities:

- Zones and Gateways–A zone (or top-level network) that you create is a way to partition a collection of agents to secure them from use by other groups. A gateway is a secured connection between two zones when you want to share or transfer information between the zones. For example, you might want a developers zone and a test zone. The ElectricFlow server is a member of the *default* zone, created during ElectricFlow installation.
- *Continuous Integration Builds* and other schedules–Run jobs according to *schedules* that you define. Scheduled jobs can run at specific times or when source code changes are checked in to your source control system. ElectricFlow integrates with major source control systems. The Continuous Integration Dashboard allows you to add more projects easily and create build configurations quickly so you can visually see running builds, build status, and so on.
- *Artifact Management* functionality–Using artifacts can improve performance across builds, provide better reusability of components, and improve cross-team collaboration with greater tractability. For example, instead of developers repeatedly downloading third-party packages from external sources, these components can be published and versioned as an artifact. Developers then simply retrieves a specific artifact version from a local repository, guaranteeing a consistent package from build to build.
- *Preflight build functionality*–Used by developers to build and test code changes in isolation on their local machines before those changes are committed to a production build.
- *Plugin* capability–ElectricFlow is built with an extensible UI, enabling easy development of plugins that include integrations with other tools, custom dashboards, and unique user experiences based on roles. "Bundled" plugins, installed during ElectricFlow installation, provide easy integration with your SCM systems, defect tracking applications, and so on. For a complete list of bundled plugins, see Plugins That are Bundled with ElectricFlow.
- *Workflow* functionality–Use a workflow to design and manage processes at a higher level than individual jobs. You can use workflows to combine procedures into processes to create build-test-deploy life cycles (for example). A workflow contains states and transitions that you define to provide complete control over your workflow process. The ElectricFlow Workflow feature allows you to define an unlimited range of large or small life cycle combinations to meet your needs.
- *Resource* management–If a resource is overcommitted, ElectricFlow delays some jobs until others are finished with the resource. You can define pools of equivalent resources, and ElectricFlow spreads usage across the pool.
- Recording a variety of information about each job, such as the running time and the success or failure of each step. A set of reports is available to provide even more information.

- Powerful and flexible *reporting* facilities–Various statistics such as number of compiles or test errors are collected after each step and recorded in the ElectricFlow database. A variety of reports can be generated from this information.
- Allowing you to observe jobs as they run and to cancel jobs or change their priorities.
- *Workspace* for each job, which is a disk area a job uses for storage–ElectricFlow also provides a facility for reclaiming space occupied by workspaces.
- Powerful data model based on *properties*–Properties are used to store job input data such as the source code branch to use for the build, to collect data during a job (such as number of errors or warnings), and to annotate the job after it completes (for example, a build has passed QA).
- *Access control* for users logged into the system–ElectricFlow uses this information to control their activities and integrates with Active Directory and LDAP repositories.
- *Search, sort, and filter* functions to minimize viewing or "wading" through information that is of no interest to you, allowing you to access to the information you need quickly.
- *Email notifications* to get important information or data to individuals or groups immediately and on a regular basis for a particular job or a specific job aspect.
- All ElectricFlow operations and features are available from a command-line application tool (Perl API), *ectool*, the RESTful API, DSL methods, and a user interface (UI).

This diagram shows the relationships between objects in the automation platform to objects used in deployment automation.

- Resources are assigned to environments.
- Resource pools are also assigned to environments.
- Release pools are assigned to Resource Templates, which are used to define Environment Templates.



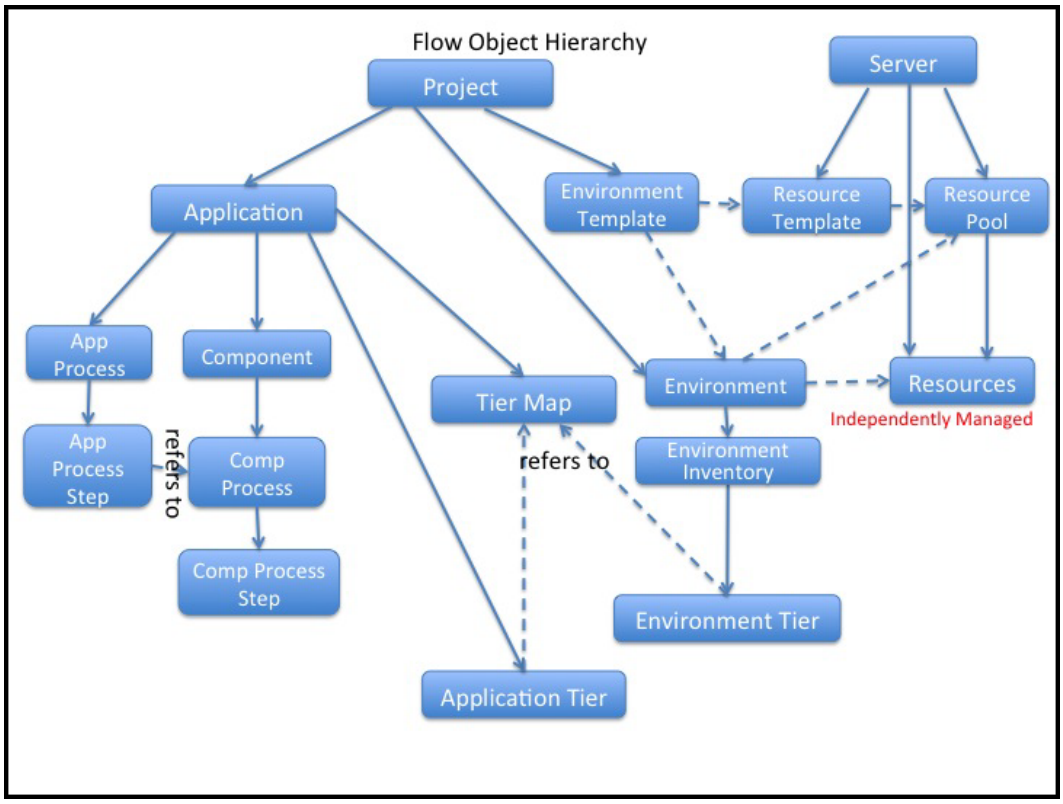
For more information about the ElectricFlow objects, concepts, and features in this topic, go to the ElectricFlow Glossary.

To configure and manage build-test automation, you can use API commands or DSL scripts.

You can also use the ElectricFlow user interface (UI) to configure and manage your automation solution. For information about using the ElectricFlow UI, see the ElectricFlow User Guide.

Deployment Automation

This diagram shows the relationships between the following objects to other objects in deployment automation.



It also shows the relationships to following objects in the automation platform:

- Resources are assigned to environments.
- Resource pools are also assigned to environments.
- Release pools are assigned to Resource Templates, which are used to define Environment Templates.

To automate your deployments for Continuous Delivery, you model and deploy (run) applications in ElectricFlow.

- *Applications* consist of application processes and application tiers.

  You add components to application tiers and model component processes.

  Components are based on artifacts that are defined and managed by the automation platform.

- Before deploying an application, you map an application process to an environment, where the application will be deployed, in a *tier map*.

  A tier map can have one or more mappings of an application tier to an environment tier.

  An environment tier can be mapped to more than one application tier.

- *Environments* can be static or dynamic.

  You can create a *static environment* before deploying an application, or you can create a *dynamic environment* when deploying the application.

  An environment consists of one or more environment tiers to which resources are added.

  In a static environment, you can add only static resources to the environment tiers. These resources are defined and managed in the automation platform.

  You can create dynamic environments with provisioned cloud resources and static resources in ElectricFlow 5.4 or later.

Apply these features in your application:

- Dynamic environments

  A dynamic environment is automatically spun up on an on-demand basis when you deploy an application. It can have provisioned cloud resources and static resources.

  Dynamic environments allow you to optimize how your cloud resources are used, re-use provisioned resource pools, track the status and usage of cloud resources, and verify the credentials of these resources before provisioning them.

- Deploying applications

  You can deploy part or all of the objects one of these ways:

  - Full deploy–All objects in the application are deployed.
  - Smart deploy–Only objects that have not been deployed to specific resources, not deployed with specific artifact versions, or on new resources
  - Partial deploy–Only specific objects and versions
  - Schedule–On a one-time, daily, weekly, or monthly basis.
  - Snapshot–Based on a version of the application with specific artifact versions and the state of the application at any point in time.

    While developing an application, you can save different versions of the application as snapshots and compare them to refine and troubleshoot the application.

- Change Tracking

  ElectricFlow monitors changes to *tracked* objects, such as applications, procedures, workflows, workspaces, resources, and project-owned components (such as libraries). It records a *change history* of the historical states of the system and the state changes.

- Snapshots

  You can design and save a version of your application with specific artifact versions. If you save snapshots of the application during development and test phases, you can ensure that the components that were developed and tested are the same as those in the released version of the application. You can redeploy the snapshot any time.

- Credentials and impersonation

  You apply credentials and impersonation to control who can run applications and where the applications are run.

  - You can attach one or more credentials to component or application process steps.
  - You can attach only one impersonation credential to an application process, component process, or a process step.
  - When you attach an impersonation credential in ElectricFlow, it specifies the user who can deploy the application and the environment in which the application is deployed.
  - When you attach an impersonation credential in the automation platform, it specifies the account (user) that can run the job or job step. If you want to specify another condition, you have to attach another credential to the object.

- Custom parameters in application processes

  You can define and apply custom parameters to application processes in your deployments.

  You define the parameters and apply them while deploying the application or while defining an application process step, which determines when and how the application is deployed.

- Email notifications

  You can easily customize the email notification that the system sends when an application, application process, or process step runs.

  When setting the recipients of email notifications, you can specify users or groups, which are defined and managed in the automation platform, as well as email addresses.

- Tracking, viewing, and troubleshooting the deployment results

  Use the Environment Inventory to track and view details of the objects that were deployed and artifacts in the application. It shows the status of the application deployment at a point in time.

  Use the Application Inventory to track and view the deployment results. It shows more details about the application at a point in time.

  You can also view the change history of the objects in the application and search for specific information.

More about application, deploy, and run:

As you use ElectricFlow, remember that these terms have different meanings within ElectricFlow *and* outside of ElectricFlow when you deploy your software or application:

Term	Within ElectricFlow	Outside of ElectricFlow
Application	The application that you design and run (deploy) to produce your software for continuous delivery across different pipelines.	The software, system or application that you build, test, install, implement, release, and deploy using ElectricFlow. This is the end product of using ElectricFlow.
Deploy	Running the application that you designed in ElectricFlow. The end product is your software, system, or application. Deploy is a synonym of run in ElectricFlow.	All the processes or actions to develop and run your software in its environment, including building, testing, implementing, installing, configuring, making changes, and releasing.
Run	Running the application that you designed. The end product is your software, system, or application. *Run* is a synonym of *deploy* in ElectricFlow.	All the processes or actions to use software in its environment, including implementing, installing, configuring, debugging, troubleshooting, and releasing.

For more information about the ElectricFlow objects, concepts, and features in this topic, go to the ElectricFlow Glossary.

To configure and manage deployment automation, you can use API commands or DSL scripts.

You can also use the ElectricFlow user interface (UI) to configure and manage your automation solution. For information about using the ElectricFlow UI, see the ElectricFlow User Guide.

Pipeline Automation

For end-to-end Continuous Delivery, you model and deploy pipelines in ElectricFlow.

... concepts, features, objects

For more information about the ElectricFlow objects, concepts, and features in this topic, go to the ElectricFlow Glossary.

To configure and manage pipeline automation, you can use API commands or DSL scripts.

You can also use the ElectricFlow user interface (UI) to configure and manage your automation solution. For information about using the ElectricFlow UI, see the ElectricFlow User Guide.

Roadmap to the ElectricFlow APIs

ElectricFlow supports these APIs, ranked from easiest to hardest to use:

- DSL methods

  You create scripts and templates without using API commands.

The ElectricFlow DSL allows you to create scripts or templates for all the operations that you can do on the ElectricFlow UI, using the RESTful API, or the Perl API.

- RESTful APIs

  You do not need detailed knowledge of the API syntax to execute RESTful API requests.

  You navigate to the RESTful API URI and enter the appropriate information in the API UI to execute a request.

- Perl API

  You need to know the correct syntax to execute these commands.

  You can use Perl APIs one of these ways:

  - Access ectool or ec-perl through the command-line interface
  - Put the API commands in Javascript

Go to the following sections to use these APIs:

API Type	Go to
DSL Methods	Using the ElectricFlow DSL on page 750
RESTful APIs	Using the ElectricFlow RESTful API on page 741
Perl APIs	Using ectool on page 20 Using Perl (ec-perl) on page 21 Using API Commands in Javascript on page 29

Using the ElectricFlow Perl API

The Perl API is the most difficult of the ElectricFlow APIs to use because you need to know the command syntax to perform ElectricFlow operations such as

- Create and manage artifacts.
- Create and manage object properties.
- Create and manage resources.
- Create workflows and add resources to them.
- Create and call procedures.
- Model and deploy applications.
- Model and run pipelines.

You can access the Perl API for ElectricFlow features one of these ways:

- Through the user interface (UI)

  The most common way is through the user interface (UI), also referred to as the *web interface* in this document.

  The UI displays windows and dialog boxes from which you can perform the following operations:

  - Create projects, procedures, and steps.
  - Launch jobs.
  - Deploy applications.
  - Manage all administration tasks at the automation-platform level.

- Through ectool or ec-perl

  The Perl APIs can be used from a command-line interface, in a shell script, or in a batch file.

  Any operation you can perform on the web interface, you can perform using the API because they all rely on the same interface to the ElectricFlow server.

  The ElectricFlow API supports ectool and ec-perl (or Perl) commands:

  - *ectool* is a command-line tool developed to script ElectricFlow operations.
  - *ec-perl* is delivered as a Perl package during ElectricFlow installation, or you can use any Perl of your choice.

- Through Javascript

  The Perl APIs can be included in Javascript files.

  Any operation you can perform on the web interface, you can perform using Javascript files containing Perl APIs because they both rely on the same interface to the ElectricFlow server.

This topic describes ectool and ec-perl usage and their differences because ectool and ec-perl can work together. This topic also describe Javascript usage.

- Using ectool
- Using ec-perl

- Common global options
- The Batch API
- Installing ElectricFlow Perl modules into your Perl distribution
- Installing Perl modules into the ElectricFlow Perl distribution
- Using Perl APIs in Javascript

Using ectool

ectool is a command-line application that provides operational control over the ElectricFlow system.

ectool supports a large collection of commands, each of which translates to a message sent to the ElectricFlow server.
For example, `ectool getProjects` returns information about all projects defined in the server.

- `ectool --help` displays a summary of all commands and other command-line options.
- For information about a particular command, use `--help` followed by the command name. For example, `ectool --help modifyStep` returns information about the `modifyStep` command.

Logging In

If you use ectool outside of a job, you *must* invoke the ***ectool login*** command to log in to the server. After logging in, ectool saves information about the login session for use in future ectool invocations. If you run ectool as part of an ElectricFlow job, you do not need to log in—ectool uses the login session (and credentials) for that job.

To log in to a specific server, see the example below, which includes the server name, user name, and password.

Login example:

```
ectool --server bldg1server login "Ellen Ernst" "ee123"
```

General syntax for ectool command usage:

```
ectool [global argument] <command> <positional arguments> [named arguments]
```

Global Arguments (Optional)

See the Common global options section for more information.

Passing Lists as Arguments

Some API commands include arguments that expect a list of values. Two list forms: *value* lists and *name/value* pairs. The syntax to specify a list depends on whether you are using ectool or ec-perl.

For ectool

- **value** list - each value is specified as a separate argument on the command line
  Example:

  ```
  ectool addUsersToGroup group1 --userNames user1 user2 user3
  ```

- **name/value** pairs - each pair is specified as a separate argument in the form *name=value*
  Example:

  ```
  ectool runProcedure proj1 --procedureName proc1 --actualParameter parm1=value1 p
  arm2=value2
  ```

For ec-perl

- **value list** - the argument value is a reference to an array of values
  Example:

```
$cmdr->addUsersToGroup({ groupName => group1,
                         userName => ['user1', 'user2']});
```

- **name/value** pairs - the argument value is a reference to an array of hash references. Each hash contains a pair of entries, one for the name and one for the value. The hash keys depend on the specific API.
  Example:

```
$cmdr->runProcedure({ projectName   => 'proj1',
                      procedureName => 'proc1',
                  actualParameter => [{ actualParameterName => 'parm1',
                                                      value => 'value1'},
                                       { actualParameterName => 'parm2',
                                                      value => 'value2'}]});
```

Using Perl (ec-perl)

When ElectricFlow is installed—Server, Agent, or Tools (using the express or advanced installation type)—a copy of Perl is installed. This Perl is pre-configured with all the packages you need to run the ElectricFlow Perl API. ElectricFlow does not, however, automatically add this version of Perl to your path because:

- We did not want the ElectricFlow installation to interfere with existing scripts you may run, which are dependent on finding another copy of Perl you already use.
- Some special environment variables need to be set before calling Perl.

Both of these issues are addressed with a small wrapper program called `ec-perl`. The wrapper is installed as part of ElectricFlow, and it is in a directory that is added to your path. When the `ec-perl` wrapper runs, it sets up the environment, finds, and calls the ElectricFlow copy of Perl, passing all of its parameters to Perl.

To run `ec-perl` from a command line (or in an ElectricFlow step) enter:

```
ec-perl yourPerlOptions yourPerlScript.pl
```

The Perl script can include API calls to ElectricFlow with no other special handling required.

Another way to write Perl scripts: For an ElectricFlow step, enter the Perl script directly into the "Command" field, and set the "Shell" field to `ec-perl`. The ElectricFlow-installed Perl is used to process the Perl script.

You can develop Perl scripts to access the Perl API directly. Because ectool uses the Perl API to execute its commands, any ectool command you can execute can be executed using the Perl API. If you are writing (or currently using) a script that makes tens or hundreds of calls, the Perl API provides a significant performance improvement over ectool.

The Perl API is delivered as a collection of Perl packages pre-installed in a Perl 5.8 distribution. The main API package is called ElectricCommander.

Perl API Structure

The Perl API has the same four elements as ectool, but the way these elements are specified is quite different.

Specifying global options

To use the ElectricFlow Perl API, you must first create an object. Global arguments are specified at the time the object is created. These arguments are passed as members of an anonymous hash reference, as shown in the following example:

```
use ElectricCommander;
$cmdr = ElectricCommander->new({
 server      =>  "vm-xpsp2",
 port        =>   "8000",
 securePort  =>  "8443",
 debug       => "1",
});
```

In the example above, port options are not really necessary because they specify default values. When you want to specify the server name only, you can use the “shorthand” form:

```
use ElectricCommander;
$cmdr = ElectricCommander->new("vm-xpsp2");
```

An even simpler form can be used if you call the Perl API from a script running as part of an ElectricFlow job step. In this case, the ElectricFlow package sets the server name based on the environment variable, COMMANDER_SERVER, set by the ElectricFlow agent.

```
use ElectricCommander;
$cmdr = ElectricCommander->new();
```

To see a complete list of global commands you can use with Perl, click here.

Note: If your script uses International characters (non-ascii), add the following block to the top of your `ec-perl` command block:

```
use utf8;
ElectricCommander::initEncodings();
```

Specifying Subcommands

For each subcommand, there is a corresponding ElectricFlow object function.

For example, to retrieve a list of jobs, use

```
$cmdr->getJobs();
```

Specifying Arguments

Most subcommands expect one or more arguments. Arguments are specified as key value pairs in a hash ref passed as the final argument to the subcommand. Additionally, as a convenience, some arguments may be specified as positional arguments prior to the options hash ref.

For example, `setProperty` has two positional arguments, `propertyName` and `value`, and an optional `jobId` argument that can be specified in either of the following forms:

```
$cmdr->setProperty("/projects/test/buildNumber", "22",
         {jobId => $jobId});
```

or

```
$cmdr->setProperty({
   propertyName => "/projects/test/buildNumber",
          value => "22",
          jobId => $jobId });
```

Handling Return Values

Every function to the object returns an object of type `XML::XPath`. This is an object that returns a parsed representation of the ElectricFlow returned XML block. See documentation on CPAN for more information.

```
$xPath = $cmdr->setProperty("filename", "temp.xml");
print "Return data from Commander:\n".
       $xPath->findnodes_as_string ("/") . "\n";
```

Error Handling

If a function call to the ElectricFlow object encounters an error, by default, it "dies" inside Perl and prints an error message. If you want to handle errors yourself and continue processing, you must set a flag to disable internal error handling and handle the error in your code.
For example:

```
$cmdr->abortOnError(0);
$xPath = $cmdr->getResource("NonExistent Resource");
if ($xPath) {
     my $code = $xPath->findvalue('//code')->value();
     if ($code ne "") {
          my $mesg = $xPath->findvalue('//message');
          print "Returned code is '$code'\n$mesg\n";
          exit 1;
     }
}
```

An alternative to using the `abortOnError` flag:

```
eval {$cmdr->get...};
if ($@) {
print "bad stuff: $@";
exit 1;
}
```

Specifying a Named Object

Any API argument that refers to a named object (for example, `projectName`, `procedureName`) performs property reference expansion before looking in the database for the object. This process allows constructs like the following to work without making two separate server requests:

```
$cmdr->getProject ('$[/server/defaultProject]')
```

Property reference expansion for names occurs in the global context, so context-relative shortcuts like `"myProject"` are not available.

Common Global Options

Global arguments can be used alone or in conjunction with other commands. These arguments are used to control communication with the server and can be used with the ectool or ec-perl API.

Global Arguments	Description
`--help`	Display an online version of ectool commands with a short description. Displays command information if followed by a command name.
`--version`	Display the ectool version number.

Global Arguments	Description
`--server <hostname>`	ElectricFlow server address. Defaults to the COMMANDER_SERVER environment variable. If this variable does not exist, the default is to the last server contacted through the API. However, if there is no record for which server was contacted, the default is to `localhost`. **Note:** If you are using multiple servers, Electric Cloud recommends using the `server` option to ensure the correct server is specified for your task. For example, if you are using the `import` API, the `server` option may be particularly important. **Do not use in a step context:** Electric Cloud recommends that steps running ectool or Perl scripts should ***never*** provide the `server` option if the intention is to communicate with the server that launched the step. If the intention is to communicate with a different server, this agent must be a registered, enabled resource in the second server. Thus, that server will ping the agent, and the agent will learn how to communicate with that server. In a step context, ectool and the Perl API proxy server requests through the step's agent. If the agent does not recognize the provided server-name, it rejects the request. ectool / Perl API retry the operation because at some point the server should ping the agent, and then the agent will have learned how to communicate with the server. Generally, the issue is that the server publicizes its name as a fully-qualified domain name and ectool / Perl API issue requests with a simple-name for the server. This can happen if the step explicitly states which server it is connecting to. Fix your steps that invoke ectool so they no longer include the server-name, and ectool will default to the server-name that the server provided.
`--port <port>`	HTTP listener port on the ElectricFlow server. Defaults to port 8000.
`--securePort <secureport>`	HTTPS listener port on the ElectricFlow server. Defaults to port 8443.
`--secure <0|1>`	Use HTTPS to communicate with the ElectricFlow server. **Note:** Certain requests (for example, `login`, `createUser`, and `modifyUser`) automatically use HTTPS because passwords are being sent, which means it is not necessary to specify `secure` for those APIs. Defaults to `1`.
`--timeout <s>`	An API call waits for a response from the server for a specified amount of time. Timeout for server communication defaults to 180 seconds (3 minutes) if no other time is specified. After the timeout, the API call stops waiting for a response, but the server continues to process the command.
`--retryTimeout <s>`	This is a separate timer, independent of the retry flag, and used to control ElectricFlow's automatic error recovery. When the API is unable to contact the ElectricFlow server, it will keep trying to contact the server for this length of time. When the API is called from inside a step, it defaults to 24 hours.

Global Arguments	Description
`--retry <0|1>`	Retry the request if it times out based on the "timeout" value. Default is "0" and should rarely be changed.
`--user <username>`	Use the session associated with the user. Defaults to the user who last logged in.
`--service <spn>`	Specify the service principal name to use for Kerberos. Defaults to HTTP@host.domain.
`--setDefault <0|1>`	Use the current session as the default for subsequent invocations. Defaults to `1`.
`encoding <charEncoding>`	Use the specified encoding for input/output. For example, for `charEncoding`, enter UTF-8, cp 437, and so on. Default is autodetected.
`--dryrun`	Displays session information and the request that would be sent, without communicating with the server. If a subcommand is specified, the server request that would be sent is displayed. This option can also be used to change the default user/server value by specifying the `--user` or `--server` options.
`--silent`	Suppresses printing the result. For example: `ectool --silent createResource foo` will not print the resource name, agent state, any modify information, create time, owner, port, or any other information otherwise displayed when you create a resource.
`--valueOf`	This option can return the value of a unique element. Because many ectool APIs return an XML result, it is inconvenient to use ectool in shell scripts and makefiles where you might want a piece of the ectool result to incorporate into some other logic. Using the `--valueOf <path>` option evaluates the XML result and emits the value of that node to satisfy such use cases. For example: `$ ectool --valueOf '//version' getServerStatus` returns only "4.1.0.48418".
`--format <format>`	Specifies the response format. Must be one of 'xml' or 'json'. Defaults to 'xml'. For example, you might specify: `ectool --format json setProperty summary hello`
`--ignoreEnvironment`	Force ectool to ignore COMMANDER_ENV variables.

The Batch API

The Perl API supports a batch operation mode that allows you to send multiple API requests in a single "envelope", which has several advantages over standard, individual API calls in some situations. For example, you could use the batch API when you need to set 10 or even 100 property values.

The batch API reduces "round-trip" transmissions. All `setProperty` requests can be sent in a single envelope. You can choose an option that changes all properties in a single database transaction in the server. This means

changes are made using an "all or none" approach. If one change fails, they all fail, which allows you to keep your data in a consistent state. When you make a large number of requests in one envelope, the single database transaction option provides much better performance.

Using the Batch API

To use the batch API, first create a object as you would for a standard API. From your newly created object, create a batch object using the `newBatch` method. The `newBatch` method takes a single argument, which is the "request processor mode". This argument tells the server how to process multiple requests. There are three "request processor modes":

1. `serial` - each request in the envelope is processed serially, each in its own transaction.
2. `parallel` - each request in the envelope is processed in parallel, each in its own transaction.
3. `single` - each request in the envelope is processed serially, all in the same transaction.

Specifying serial, parallel, or single is optional. If you do not specify an option, the server determines the best mode to use, based on the requests in the envelope.

Example - creating a batch object:

```
use ElectricCommander;
my $cmdr = ElectricCommander;
# Create the batch API object
my $batch = $cmdr->newBatch("parallel");
```

The batch object supports all the same calls as the standard API. The result of each call is a numeric `requestId` that can be used to locate a response from an individual request within the batch.

Example - creating multiple requests in a batch:

```
# Create multiple requests
my @reqIds = (
  $batch->setProperty("/myJob/p1", 99),
  $batch->incrementProperty("/myJob/p2")
);
```

After the batch is created, submit it to the server for processing. The return from the `submit()` call is an XPath object that represents an XML document containing the responses for all of the API requests.

Example - submitting the batch:

```
# Submit all the requests in a single envelope
$batch->submit();
```

Sample response from this example:

```
<responses xmlns:xsi=http://www.w3.org/2001/XMLSchema-instance
    xsi:
   version="2.1" dispatchId=1680
   <response requestId="1">
     <property>
       <propertyId>199827</propertyId>
       <propertyName>p1</propertyName>
       <createTime>2010-07-21T16:41:20.003Z</createTime>
       <expandable>1</expandable>
       <lastModifiedBy>project: EA Articles</lastModifiedBy>
       <modifyTime>2010-07-21T16:41:20.003Z</modifyTime>
       <owner>project: EA Articles</owner>
       <value>99</value>
    </property>
```

```
    </response>
    <response requestId="2">
      <property>
        <propertyId>199828</propertyId>
        <propertyName>p2</propertyName>
        <createTime>2010-07-21T16:41:20.019Z</createTime>
        <expandable>1</expandable>
        <lastModifiedBy>project: EA Articles</lastModifiedBy>
        <modifyTime>2010-07-21T16:41:20.019Z</modifyTime>
        <owner>project: EA Articles</owner>
        <value>1</value>
      </property>
    </response>
  </responses>
```

To extract information from the response to a request, use standard XPath syntax, and enter the `requestId` returned by that specific API call to either the `find` or `findvalue` functions on the batch object.

Example - extracting response information:

```
# Extract the value from the "increment" request
my $value = $batch->findvalue($reqIds[0], 'property/value');
   print "New value is $value\n";
```

Single-transaction batch processing can continue after errors if you enter an `ignoreErrors` attribute in the `request` and/or `requests` elements. The `ignoreErrors` value is evaluated as a regular expression against any error codes from the batch. If the expression matches, an error will not cause the batch to fail.

There are two ways to specify `ignoreErrors` when issuing a single-transaction batch call:

1. Specify the `ignoreErrors` attribute when creating the batch object. In this case, the attribute applies to all requests in the batch:

   ```
   my $batch = $N->newBatch('single', 'DuplicateResourceName');
   ```

2. Specify the `ignoreErrors` attribute as an argument to an individual request. In this case, the attribute applies only to that request and will override any global value specified:

   ```
   my $req2  = $batch->createResource($resource, {ignoreErrors =>
   'DuplicateResourceName'});
   ```

Installing ElectricFlow Perl Modules into Your Perl Distribution

You may want to use your existing Perl distribution. If so, ElectricFlow uses a CPAN style module, located in `<installdir>/src`, that can be installed with the following commands:

```
tar xzvf ElectricCommander-<your version>.tar.gz
cd ElectricCommander-<your version>
perl Makefile.PL
make install;# Use nmake on Windows
```

These commands install the ElectricFlow Perl and all of its submodules. If some prerequisite modules are missing, the `Makefile.PL` script will indicate which modules are needed.

Installing Perl Modules into the ElectricFlow Perl Distribution

You may want expand the ElectricFlow Perl distribution by adding Perl modules from CPAN or third party vendors.

Install Perl modules using CPAN installer. The installer comes with the ElectricFlow Perl distribution in `<ElectricFlow_Dir>/perl/bin`.

During an ElectricFlow upgrade, the installer makes every attempt to preserve Perl packages. However, future ElectricFlow versions may contain an upgraded Perl version, which may then require a reinstall of any added Perl packages.

For Linux

From the command line use: `<ElectricFlow_Dir>/perl/bin/perl -MCPAN -e 'install <module>'`

For Windows

Compatibility with ElectricFlow is important. ElectricCommander 4.1 and later use Perl 5.8 for ec-perl.

If the Perl package is not Perl-only and requires compiling (for example, for C code):

Use Windows Visual Studio VC6 (the same version used by ElectricFlow).

Make sure that `cl` and `nmake` are both in your path. The Visual Studio install has a Command Prompt with these executables already in the path.

Extra steps are needed for Windows because of a problem with Perl and CPAN if you are running from a directory with spaces in the name. (By default, ElectricFlow has spaces in the installed directory.)

- Use a network drive to eliminate references to spaces.

  Use `subst` to mount the Perl directory under a different drive letter:
  ```
  c:\> subst x: "c:\program files\electric cloud\electriccommander"
  ```

  Start CPAN from the new location:
  ```
  c:\> x:\perl\bin\perl -MCPAN -e shell
  ```

  Configure CPAN to install into the new location:
  ```
  cpan> o conf makepl_arg PREFIX=x:/perl
  ```

  Install the module:
  ```
  cpan> install <module>
  ```

  Ending CPAN:
  ```
  cpan> quit
  ```

- Change the `<ElectricFlow_Dir>\perl\lib\config.pm` file to eliminate spaces in references to the ElectricFlow path.
  For example:

  ```
  #archlibexp => 'C:\Program Files\Electric Cloud\ElectricCommander\perl\lib',
    archlibexp => 'X:\perl\lib',
  #privlibexp => 'C:\Program Files\Electric Cloud\ElectricCommander\perl\lib',
    privlibexp => 'X:\perl\lib',
  #scriptdir => 'C:\Program Files\Electric Cloud\ElectricCommander\perl\lib',
    scriptdir => 'X:\perl\lib',
  #sitearchexp => 'C:\Program Files\Electric Cloud\ElectricCommander\perl\site\li
  b',
    sitearchexp => 'X:\perl\lib',
  #sitelibexp => 'C:\Program Files\Electric Cloud\ElectricCommander\perl\site\li
  b',
    sitelibexp => 'X:\perl\lib',
  ```

- Temporarily add `X:\perl\bin` to your Windows path.

Using API Commands in Javascript

These are examples of how to use Perl API commands in Javascript:

- To create a project:

```
ectool evalScript --value "(api.createProject( { 'projectName':'alex34' } )).pro
ject.projectName ; " alex34
```

- To return the object type, use this Javascript API:

```
ectool evalScript --value "api.getResources({})" [object Object]
```

- For a parsed object, use the `"JSON.stringify()"` call:

```
ectool evalScript --value "JSON.stringify(api.getResources({})) "{"resource":{"r
esourceId":"ceecfce5-2d0d-11e4-8888-005056330afe","resourceName":"local","agentS
tate":{"alive":"1","details":"The agent is alive","hostOS":"Linux qa-ub1210-64-2
3.5.0-19-generic #30-Ubuntu SMP Tue Nov 13 17:48:01 UTC 2012 x86_64 x86_64 x86_6
4 GNU/Linux","hostPlatform":"linux","message":"The agent is alive","pingToken":"
1409049660","protocolVersion":"6","state":"alive","time":"2014-08-26T10:43:25.80
2Z","version":"5.0.3.76444"},"createTime":"2014-08-26T10:43:25.617Z","descriptio
n":"Local resource created during installation.","hostName":"qa-ub1210-64-2.elec
tric-cloud.com","hostOS":"Linux qa-ub1210-64-2 3.5.0-19-generic #30-Ubuntu SMP T
ue Nov 13 17:48:01 UTC 2012 x86_64 x86_64 x86_64 GNU/Linux","hostPlatform":"linu
x","lastModifiedBy":"project: zebra","lastRunTime":"2014-08-26T10:50:23.786Z","m
odifyTime":"2014-08-26T10:50:23.786Z","owner":"admin","port":"7800","proxyPor
t":"",
"resourceAgentState":"alive","resourceAgentVersion":"5.0.3.76444",
"resourceDisabled":"0","stepCount":"0","stepLimit":"","trusted":"0",
"useSSL":"1","propertySheetId":"ceee8387-2d0d-11e4-8888-005056330afe","zoneName"
:"default","pools":"default"}}
```

- To get the first `resourceName`:

```
ectool evalScript --value "api.getResources({}).resource[0].resourceName"
```

ElectricFlow Perl API Commands

In this section, you can find Perl API commands this way:

- Perl API Commands Listed by Group

  Commands are grouped into common usage sections for your convenience.
  This view is helpful if you want to see all available commands for a particular object.

Click a API command name to go to a section for that API command containing arguments and their descriptions, command syntax, and usage examples.

Note: The API tables display positional arguments for each command; however, you can use "value pairs" to construct your command scripts instead. For more information, see the "Using the ElectricFlow Perl API on page 19" topic.

Perl API Commands Listed by Group

The ElectricFlow API commands in the following tables are listed in alphabetical order in each group.

Click a command name to go to the section with expanded information for that command, including its arguments (required and optional), descriptions, usage examples, and related commands.

ACL Management (Access Control List)

Commands	Description
`breakAclInheritance`	Breaks ACL (access control list) inheritance at the given object.
`checkAccess`	Checks ACL (access control list) permission information associated with an object (including inherited ACLs) for the current user.
`createAclEntry`	Creates an ACE (access control list entry) on an object for a given principal.
`deleteAclEntry`	Deletes an ACE on an object for a given principal.
`getAccess`	Retrieves ACL information associated with an object, including inherited ACLs.
`getAclEntry`	Retrieves an ACE on an object for a given principal.
`modifyAclEntry`	Modifies an ACE on an object for a given principal.
`restoreAclInheritance`	Restores ACL inheritance at the given object.

Applications

Commands	Description
`createApplication`	Creates a new application for a project.
`deleteApplication`	Deletes an application.
`getApplication`	Retrieves an application by name.
`getApplications`	Retrieves all applications in a project.
`modifyApplication`	Modifies an existing application.

Application Tiers

Commands	Description
`createApplicationTier`	Creates a new application tier in the application.
`deleteApplicationTier`	Deletes a tier from an application.
`getApplicationTier`	Retrieves an application tier by name.
`getApplicationTiers`	Retrieves all application tiers in an application.
`getApplicationTiersInComponent`	Retrieves all application tiers that are used by the given component.
`modifyApplicationTier`	Modifies an existing tier in the application.

Artifact Management

Commands	Description
`addDependentsToArtifactVersion`	Adds an artifact version query to an existing artifact. Dependent artifact versions are retrieved when the parent artifact version is retrieved.
`cleanupArtifactCache`	Deletes stale artifact versions from an artifact cache. A "stale artifact version" is one whose metadata was previously deleted from the ElectricFlow server.
`cleanupRepository`	Deletes stale artifact versions from the repository backing-store. A "stale artifact version" is one whose metadata was previously deleted from the ElectricFlow server.
`createArtifact`	Creates a new artifact.

Commands	Description
`createArtifactVersion`	Creates a new artifact version.
`createRepository`	Creates a repository for one or more artifacts.
`deleteArtifact`	Deletes an existing artifact element and all artifact versions.
`deleteArtifactVersion`	Deletes artifact version metadata from the ElectricFlow database. (This API call does not delete or remove artifacts stored on the repository machine.)
`deleteRepository`	Deletes artifact repository metadata from the ElectricFlow database. (This API call does not delete or remove artifacts stored on the repository machine.)
`findArtifactVersions`	This command returns the most current artifact version that matches the filter criteria and its dependent artifact versions. This API implicitly searches for artifact versions in the "available" state, and if run in a job step, registers the step as a retriever for the returned artifact versions. Use the Perl API for the `findArtifactVersions` command.
`getArtifact`	Retrieves an artifact by its name.
`getArtifacts`	Retrieves all artifacts in the system.
`getArtifactVersion`	Retrieves an artifact version by its name.
`getArtifactVersions`	Retrieves all artifact versions in the system, filtered by artifact name, retriever job ID, and/or retriever job step ID.
`getManifest`	Retrieves the manifest for a specified artifact version, which includes a list of files and directories in the artifact version, plus its checksum file.
`getRepositories`	Retrieves all artifact repository objects known to the ElectricFlow server.
`getRepository`	Retrieves an artifact repository by its name.
`modifyArtifact`	Modifies an existing artifact.
`modifyArtifactVersion`	Modifies an existing artifact version.
`modifyRepository`	Modifies an existing artifact repository.
`moveRepository`	Moves an artifact repository in front of another, specified repository or to the end of the list.
`publishArtifactVersion`	Publishes an artifact version to an artifact repository.

Commands	Description
removeDependentsFromArtifactVersion	Removes a list of dependent artifact versions from an existing artifact version.
resolveRoute	Resolves the network route to an artifact repository.
retrieveArtifactVersions	Retrieves the most recent artifact version, including its dependents, from an artifact repository.

Change History

Commands	Description
getDeploymentHistoryItems	Retrieves all the deployment history items for a specific environment.
getEntityChange	Retrieves entity changes.
getEntityChangeDetails	Retrieves the differences between entities.
pruneChangeHistory	Prunes obsolete-for-days data from the Change History tables.
revert	Reverts the state of the object to a previous state.
searchEntityChange	Searches for entity changes.

Components

Commands	Description
addComponentToApplicationTier	Adds the specified component to the specified application tier
copyComponent	Creates a new component based on an existing one.
createComponent	Creates a new component for a project.
deleteComponent	Deletes a component.
getComponent	Retrieves a component by name.
getComponents	Retrieves all components in a project.

Commands	Description
getComponentsinApplicationTier	Retrieves the list of components in an application tier.
modifyComponent	Modifies an existing component.
removeComponentFromApplicationTier	Removes the given component from the given application tier.

Credential Management

Commands	Description
attachCredential	Attaches a credential to an object.
createCredential	Creates a new credential for a project.
deleteCredential	Deletes a credential.
detachCredential	Detaches a credential from an object.
getCredential	Finds a credential by name.
getCredentials	Retrieves all credentials in a project.
getFullCredential	Finds a credential by name, including password, from within a running step.
modifyCredential	Modifies an existing credential.

Database Configuration

Commands	Description
getDatabaseConfiguration	Retrieves the current database configuration.
setDatabaseConfiguration	Sets the database configuration on the server. If the server is in bootstrap mode, these changes take effect immediately and the server attempts to start. If the server is running, these changes have no effect until the server is restarted.
validateDatabase	Performs consistency checks on the database.

Directory Provider Management

Commands	Description
`createDirectoryProvider`	Creates a new LDAP directory provider.
`deleteDirectoryProvider`	Deletes an LDAP directory provider.
`getDirectoryProvider`	Retrieves an LDAP directory provider by name.
`getDirectoryProviders`	Retrieves all LDAP directory providers.
`modifyDirectoryProvider`	Modifies an existing LDAP directory provider.
`moveDirectoryProvider`	Moves an LDAP directory provider in front of another specified provider or to the end of the list.
`testDirectoryProvider`	Tests an LDAP directory provider.

Dynamic Environments

Commands	Description
`addResourcePoolToEnvironmentTier`	Adds a resource pool to a specific environment tier.
`addResourceTemplateToEnvironmentTemplateTier`	Adds a resource template to the specified environment template tier.
`addResourceToEnvironmentTemplateTier`	Adds a resource to the specified environment template tier.
`createEnvironmentTemplate`	Creates an environment template.
`createEnvironmentTemplateTier`	Creates a tier in an environment template.
`createEnvironmentTemplateTierMap`	Creates a environment-template tier map for an application.
`createHook`	Creates a hook in a resource template, which can have one or more hooks.
`createResourceTemplate`	Creates a resource template.
`deleteEnvironmentTemplate`	Deletes an environment template.
`deleteEnvironmentTemplateTier`	Deletes a tier in an environment template.

Commands	Description
deleteEnvironmentTemplateTierMap	Deletes an environment-template tier map from an application.
deleteEnvironmentTemplateTierMapping	Deletes a tier mapping from an environment-template tier map.
deleteHook	Deletes a hook associated with an entity.
deleteResourceTemplate	Deletes a resource template.
getAvailableResourcesForEnvironment	Retrieves all non-dynamic resources or resource pools.
getEnvironmentTemplate	Retrieves an environment template.
getEnvironmentTemplateTier	Retrieves an environment tier in an environment template.
getEnvironmentTemplateTierMaps	Retrieves all the environment-template tier maps used by the specified application.
getEnvironmentTemplateTiers	Retrieves all the environment template tiers in the specified environment template.
getEnvironmentTemplates	Retrieves all the environment templates in the specified project.
getHook	Retrieves a hook associated in an entity.
getHooks	Retrieves all the hooks associated with an entity.
getResourcePoolsInEnvironmentTier	Retrieves the list of resource pools in the specified environment tier.
getResourceTemplate	Retrieves the specified resource template.
getResourceTemplates	Retrieves all the resource templates.
getResourceTemplatesInEnvironmentTemplateTier	Retrieves all the resource templates in the specified environment template tier.
getResourcesInEnvironmentTemplateTier	Retrieves all the resources in the specified environment template tier.
modifyEnvTempTierResourceTempMapping	Modifies the resource count in an environment template tier.
modifyEnvironmentTemplate	Modifies an environment template.
modifyEnvironmentTemplateTier	Modifies the environment template tiers in the specified environment template.

Commands	Description
modifyEnvironmentTemplateTierMap	Modifies the environment-template tier map used by the specified application.
modifyHook	Modifies an existing hook in a resource template.
modifyResourceTemplate	Modifies the specified resource template.
provisionEnvironment	Provisions an environment.
provisionResourcePool	Provisions a resource pool.
removeResourceFromEnvironmentTemplateTier	Removes a resource from the specified environment template tier.
removeResourcePoolFromEnvironmentTier	Removes a resource pool from the specified environment tier.
removeResourceTemplateFromEnvironmentTemplateTier	Removes a resource template from the specified environment template tier.
tearDown	Removes dynamic environments that are no longer needed.

Email Configuration and Management

Commands	Description
createEmailConfig	Creates a new email configuration.
deleteEmailConfig	Deletes an email configuration.
getEmailConfig	Retrieves an email configuration by name.
getEmailConfigs	Retrieves all email configurations.
modifyEmailConfig	Modifies an existing email configuration.

Email Notifiers Management

Commands	Description
createEmailNotifier	Creates an email notifier on an object specified by an `emailNotifierSelector`.

Commands	Description
`createEventSubscription`	Creates a list of event subscriptions.
`deleteEmailNotifier`	Deletes an email notifier from a property sheet container.
`deleteEventSubscription`	Deletes a list of event subscriptions.
`getEmailNotifier`	Retrieves an email notifier from a property sheet container.
`getEmailNotifiers`	Retrieves all email notifiers defined for the specified property sheet container.
`getEventSubscription`	Retrieves an event subscription for the specified user or group.
`getEventSubscriptions`	Retrieves a list event subscriptions for a specified event.
`modifyEmailNotifier`	Modifies an email notifier in a property sheet container specified by an `emailNotifierSelector`.
`modifyEventSubscription`	Modifies a list of event subscriptions.
`sendEmail`	Facilitates sending an email from the command-line or a Command Step without setting up an Email Notifier. This API is more dynamic than an email notifier because you do not need to setup some kind of a template beforehand. This API also makes sending email attachments easier than using a notifier template.

Gateway and Zone Management

Commands	Description
`createGateway`	Creates a new gateway.
`deleteGateway`	Deletes a gateway.
`getGateway`	Finds a gateway by name.
`getGateways`	Retrieves all gateways.
`modifyGateway`	Modifies an existing gateway.
`createZone`	Creates a new zone.
`deleteZone`	Deletes a zone.

Commands	Description
getZone	Finds a zone by name.
getZones	Retrieves all zones.
modifyZone	Modifies an existing zone.

Job Management

Commands	Description
abortAllJobs	Aborts all running jobs.
abortJob	Aborts a running job.
abortJobStep	Aborts any type of step—command step or subprocedure step.
completeJob	Completes an externally managed job.
completeJobStep	Completes an externally managed job step.
createJob	Creates an externally managed job.
createJobStep	Creates a job step in an existing job.
deleteJob	Deletes a job from the ElectricFlow database.
findJobSteps	Returns a list of job steps from a single job or from a single subprocedure job step. This API is used by the Job Details web page in the ElectricFlow UI.
getJobDetails	Retrieves complete information about a job, including details from each job step.
getJobInfo	Retrieves all information about a job, except job step information.
getJobNotes	Retrieves the notes property sheet from a job.
getJobs	Retrieves summary information for a list of jobs.
getJobsForSchedule	Retrieves jobs started by a specific schedule.
getJobStatus	Retrieves the status of a job.

Commands	Description
getJobStepDetails	Retrieves details for a job step.
getJobStepStatus	Retrieves the status of a job step.
getJobSummaries	Retrieves summary information about job.
getJobSummary	Retrieves a job and its job steps with only the specified job and job step properties.
modifyJob	Modifies the status of an externally managed job.
modifyJobStep	Modifies the status of an externally managed job step.
moveJobs	Moves jobs from one project to another.
runProcedure	Creates and starts a new job using a procedure directly or specified indirectly through a schedule.
setJobName	Sets the name of a running job.
waitForJob	Waits until the specified job reaches a given status or the timeout expires. This command works only with ec-perl.

Parameter Management

Commands	Description
attachParameter	Attaches a formal parameter to a step.
createActualParameter	Creates a new actual parameter for a step that calls a nested procedure. The parameter is passed to the nested procedure when the step runs. At run time, the actual parameter name needs to match the name of a formal parameter in the nested procedure.
createFormalParameter	Creates a new formal parameter for a procedure.
deleteActualParameter	Deletes an actual parameter.
deleteFormalParameter	Deletes a formal parameter.
detachParameter	Detaches a formal parameter from a step.
getActualParameter	Retrieves an actual parameter by its name.
getActualParameters	Retrieves all actual parameters from a job, job step, or step.

Commands	Description
getFormalParameter	Retrieves a formal parameter by its name.
getFormalParameters	Retrieves all formal parameters from a procedure, schedule, or step.
modifyActualParameter	Modifies an existing actual parameter. An actual parameter is a name/value pair that is passed to a subprocedure. This command supports renaming the actual parameter and setting its value.
modifyFormalParameter	Modifies an existing formal parameter.

Pipelines

Commands	Description
createPipeline	Creates a new pipeline for a project.
createStage	Creates a new stage for a project.
createTask	Creates a new task for a task container.
deletePipeline	Deletes a pipeline in a project.
deleteStage	Deletes a stage in a project.
deleteTask	Deletes a task in a task container.
getPipeline	Retrieves a pipeline by its name.
getPipelineRuntimeDetails	Retrieves the pipeline run time details.
getPipelineRuntimes	Retrieves the pipeline run times.
getPipelineStageRuntimeTasks	Retrieves a list of pipeline stage tasks and the details about them that are displayed in the pipeline run view.
getPipelines	Retrieves all the pipelines.
getStage	Retrieves a stage by name.
getStages	Retrieves all the stages for one or more pipelines.
getTask	Retrieves a task by name.
getTasks	Retrieves tasks in the specified project.

Commands	Description
modifyPipeline	Modifies an existing pipeline.
modifyStage	Modifies an existing stage.
modifyTask	Modifies an existing task.
runPipeline	Runs the specified pipeline.

Plugin Management

Commands	Description
createPlugin	Creates a plugin from an existing project.
deletePlugin	Deletes an existing plugin object without deleting the associated project or files.
getPlugin	Retrieves an installed plugin.
getPlugins	Retrieves all installed plugins.
installPlugin	Installs a plugin from a JAR file. Extracts the JAR contents on the server and creates a project and a plugin.
modifyPlugin	Modifies a plugin.
promotePlugin	Sets the promoted flag on a plugin. Only one version of a plugin can be promoted at a time, so setting the promoted flag to `true` on one version sets the flag to `false` on all other plugins with the same key. The promoted version is the one resolved by an indirect reference of the form `$[/plugins/<key>]` or a plugin name argument without a specified version.
uninstallPlugin	Uninstalls a plugin, deleting the associated project and any installed files.

Procedure Management

Commands	Description
createProcedure	Creates a new procedure for an existing project.
createStep	Creates a new procedure step.

Commands	Description
deleteProcedure	Deletes a procedure, including all steps.
deleteStep	Deletes a step from a procedure.
getProcedure	Finds a procedure by its name.
getProcedures	Retrieves all procedures in a project.
getStep	Retrieves a step from a procedure.
getSteps	Retrieves all steps in a procedure.
modifyProcedure	Modifies an existing procedure.
modifyStep	Modifies an existing step.
moveStep	Moves a step within a procedure.

Processes

Commands	Description
createProcess	Creates a new process for an application or component.
deleteProcess	Deletes an application or component process.
getProcess	Retrieves an application or component process.
getProcesses	Retrieves all processes in an application or component.
modifyProcess	Modifies an existing process.
runProcess	Runs the specified process.

Process Dependencies

Commands	Description
createProcessDependency	Creates a dependency between two process steps.
deleteProcessDependency	Deletes a dependency between two process steps.
getProcessDependencies	Retrieves all dependencies for a process.
modifyProcessDependency	Modifies a dependency between two process steps.

Process Steps

Commands	Description
`createProcessStep`	Creates a new process step.
`deleteProcessStep`	Deletes an application or component process step.
`getProcessStep`	Retrieves an application or component process step.
`getProcessSteps`	Retrieves all the process steps in an application or component process.
`modifyProcessStep`	Modifies an existing process step.

Project Management

Commands	Description
`createProject`	Creates a new project.
`deleteProject`	Deletes a project, including all procedures, procedure steps, and jobs.
`getProject`	Finds a project by its name.
`getProjects`	Retrieves all projects.
`modifyProject`	Modifies an existing project.
`reloadSetupScripts`	Runs new, modified, or previously unsuccessful setup scripts.

Property Management

Commands	Description
`createProperty`	Creates a regular string or nested property sheet using a combination of property path and context.
`deleteProperty`	Deletes a property from a property sheet.
`expandString`	Expands property references in a string, in the current context.
`getProperties`	Retrieves all properties associated with an object.

Commands	Description
getProperty	Retrieves the specified property value.
incrementProperty	Atomically increments the specified property value by the incrementBy amount. If the property does not exist, it will be created with an initial value of the incrementBy amount.
modifyProperty	Modifies a regular string or nested property sheet using a combination of property path and context.
setProperty	Sets the value for the specified property.

Resource Management

Commands	Description
addResourcesToPool	Adds resources to a specified resource pool.
createResource	Creates a new resource.
createResourcePool	Creates a pool container for resource.
deleteResource	Deletes a resource.
deleteResourcePool	Deletes a resource pool.
getResource	Retrieves a resource by its name.
getResources	Retrieves all resources.
getResourcesInEnvironmentTier	Retrieves the list of resources in an environment tier.
getResourcesInPool	Retrieves a list of resources in a pool.
getResourcePool	Retrieves a specified resource pool by name.
getResourcePools	Retrieves a list of resource pools.
getResourceUsage	Retrieves resource usage information.
modifyResource	Modifies an existing resource.
modifyResourcePool	Modifies an existing resource pool.
pingAllResources	Pings all resources.

Commands	Description
pingResource	Pings one resources.
removeResourceFromEnvironmentTier	Removes a resource from the specified environment tier.
removeResourcesFromPool	Removes resources from a specified resource pool.
signCertificate	Signs an agent certificate.

Schedule Management

Commands	Description
createSchedule	Creates a new schedule.
deleteSchedule	Deletes a schedule.
getSchedule	Retrieves a schedule by its name.
getSchedules	Retrieves all schedules.
modifySchedule	Modifies an existing schedule.
pauseSchedule	Sets the scheduler to pause.

Server Management

Commands	Description
deleteLicense	Deletes a license.
getAdminLicense	Retrieves the admin license, which can be used when all concurrent user licenses are in use.
getCertificates	Returns the certificates in the trust chain for the server.
getLicense	Retrieves information for one license.
getLicenses	Retrieves all license data.
getLicenseUsage	Retrieves the current license usage.
getServerInfo	Retrieves information about server ports and message delivery.

Commands	Description
getServerStatus	Returns the status of the server.
getVersions	Retrieves server version information.
importLicenseData	Imports one or more licenses.
logMessage	Enters a message in the server log.
setLogLevel	Changes the log level of a logger.
shutdownServer	Shuts down the ElectricFlow server.
tunePerformance	Adjusts how the server is performing.

Snapshots

Commands	Description
createSnapshot	Creates a new snapshot of the specified application.
deleteSnapshot	Deletes a snapshot from an application
getPartialApplicationRevision	Retrieves a partial application when a snapshot is created.
getSnapshot	Retrieves a snapshot by name.
getSnapshotEnvironments	Retrieves a list of the environments deployed in the specified snapshot.
getSnapshots	Retrieves all the snapshots in an application.
modifySnapshot	Modifies a snapshot in the specified application.

Tier Maps

Commands	Description
createTierMap	Creates a tier map for an application.
deleteTierMap	Deletes a tier map from an application.
deleteTierMapping	Deletes a tier mapping from a tier map.

Commands	Description
getTierMaps	Retrieves all tier maps that are used by an application.
modifyTierMap	Modifies an existing tier map.

User/Group Management

Commands	Description
addUsersToGroup	Adds ones or more specified users to a particular group.
createGroup	Creates a new local group of users.
createUser	Creates a new local user.
deleteGroup	Deletes a local group.
deleteUser	Deletes a local user.
getGroup	Retrieves a group by its name.
getGroups	Retrieves all groups.
getUser	Retrieves a user by name.
getUsers	Retrieves all users.
login	Logs into the server and saves the session ID for subsequent ectool use. The user name provided determines the permissions for commands that can be run during the session.
logout	Logs out of the client session.
modifyGroup	Modifies an existing group.
modifyUser	Modifies an existing user.
removeUsersFromGroup	Removes one or more users from a particular group.

Workflow Definition Management

Commands	Description
`createStateDefinition`	Creates a new state definition for a workflow definition.
`createTransitionDefinition`	Creates a new transition definition for a workflow definition.
`createWorkflowDefinition`	Creates a new workflow definition for a project.
`deleteStateDefinition`	Deletes a state definition.
`deleteTransitionDefinition`	Deletes a transition definition.
`deleteWorkflowDefinition`	Deletes a workflow definition, including all state and transition definitions.
`getStateDefinition`	Finds a state definition by name.
`getStateDefinitions`	Retrieves all state definitions in a workflow definition.
`getTransitionDefinition`	Finds a transition definition by name.
`getTransitionDefinitions`	Retrieves all transition definitions in a workflow definition.
`getWorkflowDefinition`	Finds a workflow definition by name.
`getWorkflowDefinitions`	Retrieves all workflow definitions in a project.
`modifyStateDefinition`	Modifies an existing state definition.
`modifyTransitionDefinition`	Modifies an existing transition definition.
`modifyWorkflowDefinition`	Modifies an existing workflow definition.
`moveStateDefinition`	Moves a state definition within a workflow definition.
`moveTransitionDefinition`	Moves a transition definition within a workflow definition.

Workflow Management

Commands	Description
`completeWorkflow`	Marks a workflow as complete, which means transitions are no longer evaluated.
`deleteWorkflow`	Deletes a workflow, including all states and transitions.
`getState`	Finds a state by name.

Commands	Description
getStates	Retrieves all states in a workflow.
getTransition	Finds a transition by name.
getTransitions	Retrieves all transitions in a workflow.
getWorkflow	Finds a workflow by name.
getWorkflows	Retrieves all workflow instances in a project.
runWorkflow	Runs the specified workflow definition, returns the workflow name.
transitionWorkflow	Manually transition from a workflow active state.

Workspace Management

Commands	Description
createWorkspace	Creates a new workspace.
deleteWorkspace	Deletes a workspace.
getWorkspace	Retrieves a workspace by name.
getWorkspaces	Retrieves all workspaces.
modifyWorkspace	Modifies an existing workspace.

Miscellaneous

Commands	Description
acquireNamedLock	Retrieves the named lock.
changeOwner	Changes the owner of an object.
clone	Makes a copy of an existing ElectricFlow project, procedure, step, schedule, resource, directory provider, email configuration, or email notifier.
countObjects	Returns the count of objects specified by the provided filter.

Commands	Description
deleteObjects	This API deletes objects specified by the provided filters. Because of the complexity of specifying filter criteria, this API is not supported by ectool. However, all of its capabilities are supported through the Perl API.
dumpHeap	Captures a Java heap dump.
dumpStatistics	Prints (emits) internal timing statistics.
evalDsl	Evaluates and runs an ElectricFlow domain-specific language (DSL) script.
evalScript	Evaluates a script in a given context.This API is similar to expandString except that it evaluates the value argument as a Javascript block, without performing any property substitution on either the script or the result. The string value of the final expression in the script is returned as the value element of the response.
export	Exports part or all server data to an XML file. The default is to export all data in the system—the specified path is interpreted by the server. If the path is local, it will be created on the server machine. If it is a network path, it must be accessible by the server and the server user. If it is a relative path (NOT RECOMMENDED), it must be relative to the server's working directory.
findObjects	Finds several different types of ElectricFlow objects—it is the underlying mechanism used to implement the ElectricFlow "Search" feature. Because of this command's general nature and the complexity of specifying filter and sort criteria, it is not supported by ectool. Use the Perl API for the findObjects command.
finishCommand	The agent uses this command to indicate that a command has been run.
generateDsl	Generates domain-specific language (DSL) script for an existing object.
getObjects	Used to retrieve the full object based on IDs returned by findObjects. All requested objects must be of the same objectType. See findObjects for a list of object types.
graphStateMachine	Generates a graph element with a stateMachine DOT graph as CDATA content.
import	Imports data from an XML export file.
logStatistic	Prints (emits) a statistics value to StatsD.

Commands	Description
releaseNamedLock	Releases the named lock that synchronizes the name of an object.

API Commands - ACL Management

breakAclInheritance

Breaks ACL (access control list) inheritance at the given object. With inheritance broken, only the access control entries directly on the ACL will be considered.

You must specify locator arguments to find the object where you want to break inheritance.

Arguments	Descriptions
applicationName	(Optional) The name of the application. Argument type: String
applicationTierName	(Optional) The name of the application tier. Argument type: String
artifactName	(Optional) The name of the artifact. Argument type: String
artifactVersionName	(Optional) The name of the artifact version. **Note:** An artifact version name is interpreted by the server as the artifactVersionName attribute for the artifactVersion in question. This name is parsed and interpreted as "groupId:artifactKey:version" and the object is searched either way you specify its name. The ElectricFlow server interprets the name form correctly. Argument type: String

Arguments	Descriptions
`componentName`	(Optional) The name of the component. Argument type: String
`configName`	(Optional) The name of the email configuration. Argument type: String
`credentialName`	(Optional) The name of the credential that can be one of these formats: • **relative** (for example, *"cred1"*)–The credential is assumed to be in the project that contains the request target object. A qualifying project name is **required**. • **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*)–The credential can be from any specified project, regardless of the project where the target object is. Argument type: String
`environmentName`	(Optional) The name of the environment. Argument type: String
`environmentTemplateName`	(Optional) The name of the environment template. Argument type: String
`environmentTemplateTierName`	(Optional) The name of the environment template tier. Argument type: String
`environmentTierName`	(Optional) The name of the environment tier. Argument type: String
`gatewayName`	(Optional) The name of the gateway. Argument type: String
`groupName`	(Optional) The full name of the group. For Active Directory and LDAP, the full name if the full domain name. Argument type: String
`jobId`	(Optional) The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: String

Arguments	Descriptions
`jobStepId`	(Optional) The unique identifier for a job step that is assigned automatically when the job step is created. Argument type: UUID
`notifierName`	(Optional) The name of the email notifier. Argument type: String
`objectId`	(Optional) This is an object identifier returned by `findObjects` and `getObjects`. This value is a "handle" only for passing to API commands. The internal structure of this value is subject to change; do not parse this value. Argument type: String
`path`	(Optional) The property path. Argument type: String
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`pluginName`	(Optional) The plugin key for a promoted plugin or a plugin key and version for an unpromoted plugin. Argument type: String
`procedureName`	(Optional) The name of the procedure or a path to a procedure that includes the name. If you use this argument, you must also use `projectName`. Argument type: String
`processName`	(Optional) The name of the process if the container is a process or process step. Argument type: String
`processStepName`	(Optional) The name of the process step if the container is a process step. Argument type: String
`projectName`	(Optional) The name of the project, which can be a path. The project name is ignored for credentials, procedures, steps, and schedules if they are specified as a path. Argument type: String
`propertySheetId`	(Optional) The unique identifier for a property sheet that is assigned automatically when the property sheet is created. Argument type: UUID

Arguments	Descriptions
`repositoryName`	(Optional) The name of the repository used for artifact management. Argument type: String
`resourceName`	(Optional) The name of a resource. Argument type: String
`resourcePoolName`	(Optional) The name of a pool containing one or more resources. Argument type: String
`resourceTemplateName`	(Optional) The name of the resource template.
`scheduleName`	(Optional) The name of a schedule, which can be a path to the schedule. If you use this argument, you must also use `projectName`. Argument type: String
`snapshotName`	(Optional) The name of the snapshot. Argument type: String
`stageName`	(Optional) The name of the stage definition. Argument type: String
`stateDefinitionName`	(Optional) The name of the state definition. Argument type: String
`stateName`	(Optional) The name of the stage. Argument type: String
`stepName`	(Optional) The name of the step, which can be a path to the step. If you use this argument, you must also use `projectName` and `procedureName`. Argument type: String
`systemObjectName`	(Optional) The name of the system object. System objects names include: `admin|artifactVersions|directory|emailConfigs|log|plugins|server|session|workspaces`. Argument type: SystemObjectName
`transitionDefinitionName`	(Optional) The name of the transition definition. Argument type: String

Arguments	Descriptions
`transitionName`	(Optional) The name of the transition. Argument type: String
`userName`	(Optional) The full name of a user. For Active Directory or LDAP, this may be `user@domain`). Argument type: String
`workflowDefinitionName`	(Optional) The name of the workflow definition. Argument type: String
`workflowName`	(Optional) The name of the workflow. Argument type: String
`workspaceName`	(Optional) The name of a workspace. Argument type: String
`zoneName`	(Optional) The name of the zone. Argument type: String

Positional arguments

Arguments to locate the object, beginning with the top-level object locator.

Response

None or status OK message.

ec-perl

syntax: `$cmdr->breakAclInheritance({<optionals>});`

Example

```
$cmdr->breakAclInheritance ({projectName => "Sample Project"});
```

ectool

syntax: `ectool breakAclInheritance ...`

Example

```
ectool breakAclInheritance --projectName "Sample Project"
```

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checkAccess

Checks access control list (ACL) permission information associated with an object for the current user, including inherited ACLs.

You must specify object locator arguments to define the object where you need to verify access.

Arguments	Descriptions
`applicationName`	(Optional) The name of the application that must be unique among all projects. Argument type: String
`applicationTierName`	(Optional) The name of the application tier. Argument type: String
`artifactName`	(Optional) The name of the artifact. Argument type: String
`artifactVersionName`	(Optional) The name of the artifact version. **Note:** An artifact version name is interpreted by the server as the `artifactVersionName` attribute for the `artifactVersion` in question. This name is parsed and interpreted as `"groupId:artifactKey:version"` and the object is searched when you specify its name one of these ways. The ElectricFlow server interprets the name form correctly. Argument type: String
`componentName`	(Optional) The name of the component. Argument type: String
`configName`	(Optional) The name of the email configuration. Argument type: String
`credentialName`	(Optional) The name of the credential container of the property sheet that owns the property. Specify `credentialName` using one of two forms: • **relative** (for example, *"cred1"*)–The credential is assumed to be in the project that contains the request target object. This form requires a qualifying project name. • **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*)–The credential can be from any specified project, regardless of the project target object project. Argument type: String
`environmentName`	(Optional) The name of the environment that must be unique among all projects. Argument type: String
`environmentTemplateName`	(Optional) The name of the environment template. Argument type: String

Arguments	Descriptions
`environmentTemplateTierName`	(Optional) The name of the environment template tier. Argument type: String
`environmentTierName`	(Optional) The name of the environment tier. Argument type: String
`flowName`	Name of the flow that must be unique within the project. Argument Type: String
`flowStateName`	Name of the flow state that must be unique within the flow. Argument Type: String
`flowTransitionName`	Name of the flow transition that must be unique within the flow state. Argument Type: String
`gatewayName`	(Optional) The name of the gateway. Argument type: String
`groupName`	(Optional) The full name of the group. For Active Directory and LDAP, this is a full domain name. Argument type: String
`jobId`	(Optional) The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: String
`jobStepId`	(Optional) The unique identifier for a job step that is assigned automatically when the job step is created. Argument type: UUID
`notifierName`	(Optional) The name of the email notifier. Argument type: String
`objectId`	(Optional) The object identifier returned by `findObjects` and `getObjects`. This value is a "handle" only for passing to API commands. The internal structure of this value is subject to change. Do not parse this value. Argument type: String

Arguments	Descriptions
`path`	(Optional) Property path string. Argument type: String
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`pluginName`	(Optional) The name of the plugin. This is the plugin key for a promoted plugin or a plugin key and version for an unpromoted plugin. Argument type: String
`procedureName`	(Optional) The name of the procedure. It can be be a path to the procedure. When using this procedure, you must also use `projectName`. Argument type: String
`processName`	(Optional) The name of the process. Argument type: String
`processStepName`	The name of the process step. Argument type: String
`projectName`	(Optional) The name of the project that must be unqiue among all projects. It can be a path to the project. The project name is ignored for credentials, procedure, steps, and schedules when it is specified as a path. Argument type: String
`propertySheetId`	(Optional) The unique identifier for a property sheet that is assigned automatically when the property sheet is created. Argument type: UUID
`repositoryName`	(Optional) The name of the repository for artifact management. Argument type: String
`resourceName`	(Optional) The name of the resource. Argument type: String
`resourcePoolName`	(Optional) The name of a pool containing one or more resources. Argument type: String
`resourceTemplateName`	(Optional) The name of the resource template. Argument type: String

Arguments	Descriptions
`scheduleName`	(Optional) The name of the schedule. It can be path to the schedule. When using this argument, you must also enter `projectName`. Argument type: String
`snapshotName`	(Optional) The name of the snapshot. It can be path to the snapshot. Argument type: String
`stageName`	(Optional) The name of the stage definition. Argument type: String
`stateDefinitionName`	(Optional) The name of the state definition. Argument type: String
`stateName`	(Optional) The name of the state. Argument type: String
`stepName`	(Optional) The name of the step. It can be a path to the step. When using this argument, you must also enter `projectName` and `procedureName`. Argument type: String
`systemObjectName`	(Optional) System object names include: `admin|directory|licensing|log|plugins|priority|projects|`. Argument type: SystemObjectName
`taskName`	(Optional) The name of the task. Argument type: String
`transitionDefinitionName`	(Optional) The name of the transition definition. Argument type: String
`transitionName`	(Optional) The name of the transition. Argument type: String
`userName`	(Optional) The full name of the user. For Active Directory and LDAP, the name can be `user@domain`. Argument type: String
`workflowDefinitionName`	(Optional) The name of the workflow definition. Argument type: String

Arguments	Descriptions
workflowName	(Optional) The name of the workflow. Argument type: String
workspaceName	(Optional) The name of the workspace. Argument type: String
zoneName	(Optional) The name of the zone. Argument type: String

Positional arguments

Arguments to locate the object, beginning with the top-level object locator.

Response

For the specified object, returns the effective permissions for the current user.

ec-perl

syntax: `$cmdr->checkAccess({optionals});`

Example

```
$cmdr->checkAccess ({projectName=>"Sample Project"});
```

ectool

syntax: `ectool checkAccess [optionals]`

Example

```
ectool checkAccess --projectName "Sample Project"
```

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createAclEntry

Creates an ACE (access control list entry) on an object for a given principal.

You must specify the `principalType`, `principalName`, and locator options for the object to modify.

Arguments	Descriptions
principalType	This is either `user` or `group`. Argument type: PrincipalType
principalName	This is either a user or a group name. Argument type: PrincipalName

Arguments	Descriptions
`applicationName`	(Optional) The name of the application that must be unique among all projects. Argument type: String
`applicationTierName`	(Optional) The name of the application tier. Argument type: String
`artifactName`	(Optional) The name of the artifact. Argument type: String
`artifactVersionName`	(Optional) The name of the artifact version. **Note:** An artifact version name is interpreted by the server as the `artifactVersionName` attribute for the `artifactVersion` in question. This name is parsed and interpreted as "`groupId:artifactKey:version`" and the object is searched either way you specify its name. The ElectricFlow server interprets the name form correctly. Argument type: String
`changePermissionsPrivilege`	<`allow|deny`> –Determines whether the principal can modify access control for the object. Argument type: Access
`componentName`	(Optional) The name of the component. Argument type: String
`configName`	(Optional) The name of the email configuration. Argument type: String
`credentialName`	(Optional) The name of the credential specified in one of these formats: • **relative**(for example, *"cred1"*)–The credential is assumed to be in the project that contains the requested target object. • **absolute**(for example, *"/projects/BuildProject/credentials/cred1"*)–The credential can be from any specified project, regardless of the project for the target object. When using this argument, you must also enter `projectName`. Argument type: String

Arguments	Descriptions
`environmentName`	(Optional) The name of the environment that must be unique among all projects. Argument type: String
`environmentTemplateName`	(Optional) The name of the environment template. Argument type: String
`environmentTemplateTierName`	(Optional) The name of the environment template tier. Argument type: String
`environmentTierName`	(Optional) The name of the environment tier. Argument type: String
`executePrivilege`	(Optional) <`allow|deny`> –Determines whether the principal can invoke this object as part of a job. This privilege is only relevant for a few objects such as procedures and procedure steps. Argument type: String
`gatewayName`	(Optional) The name of the gateway. Argument type: String
`groupName`	(Optional) The name of a group. Argument type: String
`jobId`	(Optional) The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID
`jobStepId`	(Optional) The unique identifier for a job step that is assigned automatically when the job step is created. Argument type: UUID
`modifyPrivilege`	(Optional) <`allow|deny`> –Determines whether the principal can change the contents of the object. Argument type: Access
`notifierName`	(Optional) The name of the email notifier. Argument type: String

Arguments	Descriptions
`objectId`	(Optional) The object identifier returned by `findObjects` and `getObjects`. Argument type: String
`path`	(Optional) Path to the property. Argument type: String
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`pluginName`	(Optional) The name of the plugin. It is the plugin key for a promoted plugin or the plugin key and version for an unpromoted plugin. Argument type: String
`procedureName`	(Optional) The name of the procedure. When using this argument, you must also enter `projectName`. Argument type: String
`processName`	(Optional) The name of the process. Argument type: String
`processStepName`	(Optional) The name of the process step. Argument type: String
`projectName`	(Optional) The name of the project. Argument type: String
`propertySheetId`	(Optional) The unique identifier for a property sheet that is assigned automatically when the property sheet is created. Argument type: UUID
`readPrivilege`	(Optional) <`allow|deny`> –Determines whether the principal can examine the contents of the object. Argument type: Access
`repositoryName`	(Optional) The name of the repository for artifact management. Argument type: String
`resourceName`	(Optional) The name of the resource. Argument type: String

Arguments	Descriptions
`resourcePoolName`	(Optional) The name of a pool containing one or more resources. Argument type: String
`resourceTemplateName`	(Optional) The name of the resource template. Argument type: String
`scheduleName`	(Optional) The name of the schedule. When using this argument, you must also enter `projectName`. Argument type: String
`snapshotName`	(Optional) The name of the snapshot. Argument type: String
`stageName`	(Optional) The name of the stage definition. Argument type: String
`stateDefinitionName`	(Optional) The name of the state definition. Argument type: String
`stateName`	(Optional) The name of the state. Argument type: String
`stepName`	(Optional) The name of the step. When using this argument, you must also enter `projectName` and `procedureName`. Argument type: String

`systemObjectName`	(Optional) System object names include:
	`admin|artifacts|directory|emailConfigs|forceAbort|licensing|`
	`log|plugins|priority|projects|repositories|resources|server| session|test|workspaces|zonesAndGateways`
	Argument type: SystemObjectName

`taskName`	(Optional) The name of the task. Argument type: String
`transitionDefinitionName`	(Optional) The name of the transition definition. Argument type: String
`transitionName`	(Optional) The name of the transition. Argument type: String

Arguments	Descriptions
`userName`	(Optional) The full name of the user. Argument type: String
`workflowDefinitionName`	(Optional) The name of the workflow definition. Argument type: String
`workflowName`	(Optional) The name of the workflow. Argument type: String
`workspaceName`	(Optional) The name of the workspace. Argument type: String
`zoneName`	(Optional) The name of the zone. Argument type: String

Positional arguments

`principalType` and `principalName`

Response

None or status OK message.

ec-perl

syntax: `$cmdr->createAclEntry(<principalType> <principalName>, {<optionals>});`

Example

```
$cmdr->createAclEntry("user", "j smith", {projectName=>"Sample Project",
  readPrivilege=>allow, modifyPrivilege=>deny, executePrivilege=>deny,
  changePermissionsPrivilege=>deny});
```

ectool

syntax: `ectool createAclEntry <principalType> <principalName> [optionals}`

Example

```
ectool createAclEntry user "j smith" --projectName "Sample Project" --readPrivilege
allow
  --modifyPrivilege deny --executePrivilege deny --changePermissionsPrivilege deny
```

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deleteAclEntry

Deletes an access control entry (ACE) in an access control list (ACL) on an object for a given principal (user or group).

You must specify `principalType`, `principalName`, and locator arguments.

Arguments	Descriptions
`principalType`	A user or a group: `<user|group>`. The default is to `user`. Argument type: PrincipalType
`principalName`	The name of the user or the group. Argument type: PrincipalName
`applicationName`	(Optional) The name of the application that must be unique among all projects. Argument type: String
`applicationTierName`	(Optional) The name of the application tier. Argument type: String
`artifactName`	(Optional) The name of the artifact. Argument type: String
`artifactVersionName`	(Optional) The name of the artifact version. **Note:** An artifact version name is interpreted by the server as the `artifactVersionName` attribute for the `artifactVersion` in question. This name is parsed and interpreted as `"groupId:artifactKey:version"` and the object is searched either way you specify its name. The ElectricFlow server interprets the name form correctly. Argument type: String
`componentName`	(Optional) The name of the component. Argument type: String
`configName`	(Optional) The name of the email configuration. Argument type: String
`credentialName`	(Optional) The name of the credential specified in one of these formats: • **relative**(for example, *"cred1"*)–The credential is assumed to be in the project that contains the requested target object. • **absolute**(for example, *"/projects/BuildProject/credentials/cred1"*)–The credential can be from any specified project, regardless of the project for the target object. Argument type: String

Arguments	Descriptions
`environmentName`	(Optional) The name of the environment that must be unique among all projects. Argument type: String
`environmentTemplateName`	(Optional) The name of the environment template that must be unique among all projects. Argument type: String
`environmentTemplateTierName`	(Optional) Name of the environment template tier that must be unique among all tiers for the environment template. Argument Type: String
`environmentTierName`	(Optional) The name of the environment tier. Argument type: String
`flowName`	(Optional) The name of the flow. Argument type: String
`flowRuntimeName`	(Optional) Name of the flow runtime. Argument Type: String
`flowRuntimeStateName`	(Optional) Name of the flow state. Argument Type: String
`flowStateName`	(Optional) The name of the flow state. Argument type: String
`flowTransitionName`	(Optional) The name of the flow transition. Argument type: String
`gatewayName`	(Optional) The name of the gateway. Argument type: String
`groupName`	(Optional) The name of a group whose ACL entry you want to delete. Argument type: String
`jobId`	(Optional) The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID

Arguments	Descriptions
`jobStepId`	(Optional) The unique identifier for a job step that is assigned automatically when the job step is created. Argument type: UUID
`notifierName`	(Optional) The name of the email notifier with the ACE that you want to delete. Argument type: String
`objectId`	(Optional) An object identifier returned by `findObjects` and `getObjects`. Argument type: String
`path`	(Optional) Path to the property. Argument type: String
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`pluginName`	(Optional) The name of the plugin with the ACE that you want to delete. Argument type: String
`procedureName`	(Optional) The name of the procedure with the ACE that you want to delete. When you use this argument, you must also enter `projectName` for the project of which this procedure is a member. Argument type: String
`processName`	(Optional) The name of the process. Argument type: String
`processStepName`	(Optional) The name of the process step. Argument type: String
`projectName`	(Optional) The name of the project with the ACE that you want to delete. Argument type: String
`propertySheetId`	(Optional) The unique identifier for a property sheet that is assigned automatically when the property sheet is created. Argument type: UUID
`repositoryName`	(Optional) The name of the repository for artifact management. Argument type: String

Arguments	Descriptions
`resourceName`	(Optional) The name of the resource with the ACE that you want to delete. Argument type: String
`resourcePoolName`	(Optional) The name of a pool containing one or more resources. Argument type: String
`resourceTemplateName`	(Optional) Name of the resource template. Argument Type: String
`scheduleName`	(Optional) The name of the schedule with the ACE that you want to delete. When you use this argument, you must also enter projectName from which this schedule runs procedures. Argument type: String
`snapshotName`	(Optional) The name of the snapshot. Argument type: String
`stageName`	(Optional) The name of the stage definition. Argument type: String
`stateDefinitionName`	(Optional) The name of the state definition. Argument type: String
`stateName`	(Optional) The name of the state. Argument type: String
`stepName`	(Optional) The name of the step with the ACE that you want to delete. When using this argument, you must also enter `projectName` and `procedureName` to indicate where this step resides. Argument type: String
`systemObjectName`	(Optional) System object names include: `admin|directory|licensing|log|plugins|priority|projects|resources|server|session|workspaces` Argument type: SystemObjectName
`taskName`	(Optional) The name of the task. Argument type: String

Arguments	Descriptions
`transitionDefinitionName`	(Optional) The name of the transition definition. Argument type: String
`transitionName`	(Optional) The name of the transition. Argument type: String
`userName`	(Optional) The name of the user with the ACE that you want to delete. Argument type: String
`workflowDefinitionName`	(Optional) The name of the workflow definition. Argument type: String
`workflowName`	(Optional) The name of the workflow. Argument type: String
`workspaceName`	(Optional) The name of the workspace with the ACL entry that you want to delete. Argument type: String
`zoneName`	(Optional) The name of the zone. Argument type: String

Positional arguments

`principalType, principalName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteAclEntry(<principalType>, <principalName>, {<optionals>});`

Example

```
$cmdr->deleteAclEntry('user', 'j smith', {projectName => 'Sample Project'});
```

ectool

syntax: `ectool deleteAclEntry <principalType> <principalName> [optionals]`

Example

```
ectool deleteAclEntry user 'j smith' --projectName 'Sample Project'
```

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getAccess

Retrieves ACL (access control list) information associated with an object, including inherited ACLs.

You must specify object locators to find the object to which you need to verify access.

Arguments	Descriptions
`applicationName`	(Optional) The name of the application that must be unique among all projects. Argument type: String
`applicationTierName`	(Optional) The name of the application tier. Argument type: String
`artifactName`	(Optional) The name of the artifact. Argument type: String
`artifactVersionName`	(Optional) The name of the artifact version. **Note:** An artifact version name is interpreted by the server as the `artifactVersionName` attribute for the `artifactVersion` in question. This name is parsed and interpreted as `"groupId:artifactKey:version"` and the object is searched either way you specify its name. The ElectricFlow server interprets the name form correctly. Argument type: String
`componentName`	(Optional) The name of the component. Argument type: String
`configName`	(Optional) The name of the email configuration. Argument type: String
`credentialName`	(Optional) The name of the credential specified in one of these formats: • **relative**(for example, *"cred1"*)–The credential is assumed to be in the project that contains the requested target object. • **absolute**(for example, *"/projects/BuildProject/credentials/cred1"*)–The credential can be from any specified project, regardless of the project for the target object. Argument type: String

Arguments	Descriptions
`emulateRestoreInheritance`	(Optional) Whether or not to include one level of broken inheritance if it exists. This argument is used for seeing what access would look like if the lowest level of broken inheritance was restored. <*Boolean flag* - `0|1|true|false`> If set to `true` or `1`, this argument returns ACL information to what it would be if inheritance were restored on this object. Argument type: Boolean
`environmentName`	(Optional) The name of the environment that must be unique among all projects. Argument type: String
`environmentTemplateName`	(Optional) Name of the environment template. Argument type: String
`environmentTemplateTierName`	(Optional) Name of the environment template tier. Argument type: String
`environmentTierName`	(Optional) The name of the environment tier. Argument type: String
`flowName`	(Optional) The name of the flow. Argument type: String
`flowRuntimeName`	(Optional) Name of the flow runtime. Argument Type: String
`flowRuntimeStateName`	(Optional) Name of the flow state. Argument Type: String
`flowStateName`	(Optional) The name of the flow state. Argument type: String
`flowTransitionName`	(Optional) The name of the flow transition. Argument type: String
`gatewayName`	(Optional) The name of the gateway. Argument type: String
`groupName`	(Optional) The name of the group. Argument type: String

Arguments	Descriptions
`jobId`	(Optional) The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: String
`jobStepId`	(Optional) The unique identifier for a job step that is assigned automatically when the job step is created. Argument type: String
`notifierName`	(Optional) The name of the email notifier with the ACL. Argument type: String
`objectId`	(Optional) An object identifier returned by `findObjects` and `getObjects`. Argument type: String
`path`	(Optional) Property path. Argument type: String
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`pluginName`	(Optional) The name of the plugin with the ACL. Argument type: String
`procedureName`	(Optional) The name of the procedure with the ACL. When using this argument, you must also enter `projectName`. Argument type: String
`processName`	(Optional) The name of the process. Argument type: String
`processStepName`	(Optional) The name of the process step. Argument type: String
`projectName`	(Optional) The name of the project that contains the ACL that must be unique among all projects. Argument type: String
`propertySheetId`	(Optional) The unique identifier for a property sheet that is assigned automatically when the property sheet is created. Argument type: UUID

Arguments	Descriptions
`repositoryName`	The name of the repository for artifact management. Argument type: String
`resourceName`	The name of the resource with the ACL. Argument type: String
`resourcePoolName`	The name of a pool with one or more resources. Argument type: String
`resourceTemplateName`	(Optional) Name of the resource template. Argument type: String
`scheduleName`	(Optional) The name of the schedule with the ACL. **Also requires** `projectName`
`snapshotName`	(Optional) The name of a snapshot. Argument type: String
`stageName`	(Optional) The name of the stage definition. Argument type: String
`stateDefinitionName`	(Optional) The name of the state definition.
`stateName`	(Optional) The name of the state.
`stepName`	(Optional) The name of the step containing the ACL. When using this argument, you must also enter `projectName` Argument type: String

`systemObjectName`	(Optional) System objects include:
	`admin|artifactVersions|directory|emailConfigs|log|plugins|`
	`server|session|workspaces`
	Argument type: SystemObjectName

`taskName`	(Optional) The name of the task. Argument type: String
`transitionDefinitionName`	(Optional) The name of the transition definition. Argument type: String
`transitionName`	(Optional) The name of the transition. Argument type: String

Arguments	Descriptions
`userName`	(Optional) The name of the user with the ACL. Argument type: String
`workflowDefinitionName`	(Optional) The name of the workflow definition. Argument type: String
`workflowName`	(Optional) The name of the workflow. Argument type: String
`workspaceName`	(Optional) The name of the workspace with the ACL. Argument type: String
`zoneName`	(Optional) The name of the zone. Argument type: String

Positional arguments

Arguments to specify the object, beginning with the top-level object locator.

Response

One or more `object` elements, each consisting of one or more `aclEntry` elements. Each `object` represents
an object in the ACL inheritance chain starting with the most specific object. Each `aclEntry` identifies a user or
group and the privileges granted or denied by the entry, and includes a `breakInheritance` element if applicable.

ec-perl

syntax: `$cmdr->getAccess({<optionals>});`

Example

```
$cmdr->getAccess({projectName => 'Sample Project'});
```

ectool

syntax: `ectool getAccess [optionals]`

Example

```
ectool getAccess --projectName 'Sample Project'
```

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getAclEntry

Retrieves an access control entry (ACE) list on an object for a given principal.

You must specify a `principalType`, `principalName`, and an object locator to specify the ACE.

Arguments	Descriptions
`principalType`	Type of principal for this ACE: `user` or `group`. Argument type: PrincipalType
`principalName`	Name of the user or group for the ACE. Argument type: PrincipalName
`applicationName`	(Optional) The name of the application that must be unique among all projects. Argument type: String
`applicationTierName`	(Optional) The name of the application tier. Argument type: String
`artifactName`	(Optional) The name of the artifact. Argument type: String
`artifactVersionName`	(Optional) The name of the artifact version. **Note:** An artifact version name is interpreted by the server as the `artifactVersionName` attribute for the `artifactVersion` in question. This name is parsed and interpreted as `"groupId:artifactKey:version"` and the object is searched either way you specify its name. The ElectricFlow server interprets the name form correctly. Argument type: String
`componentName`	(Optional) The name of the component. Argument type: String
`configName`	(Optional) The name of the email configuration. Argument type: String
`credentialName`	(Optional) The name of the credential specified in one of these formats: • **relative**(for example, *"cred1"*)–The credential is assumed to be in the project that contains the requested target object. • **absolute**(for example, *"/projects/BuildProject/credentials/cred1"*)–The credential can be from any specified project, regardless of the project for the target object. Argument type: String

Arguments	Descriptions
`environmentName`	(Optional) The name of the environment that must be unique among all projects. Argument type: String
`environmentTemplateName`	(Optional) Name of the environment template. Argument type: String
`environmentTemplateTierName`	(Optional) Name of the environment template tier. Argument type: String
`environmentTierName`	(Optional) Name of the environment tier. Argument type: String
`flowName`	Name of the flow that must be unique within the project. Argument Type: String
`flowRuntimeName`	(Optional) Name of the flow runtime. Argument Type: String
`flowRuntimeStateName`	(Optional) Name of the flow state. Argument Type: String
`flowStateName`	Name of the flow state that must be unique within the flow. Argument Type: String
`flowTransitionName`	Name of the flow transition that must be unique within the flow state. Argument Type: String
`gatewayName`	(Optional) The name of the gateway. Argument type: String
`groupName`	(Optional) The name of the group. Argument type: String
`jobId`	(Optional) The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID

Arguments	Descriptions
`jobStepId`	(Optional) The unique identifier for a job step that is assigned automatically when the job step is created. Argument type: String
`notifierName`	(Optional) The name of the email notifier. Argument type: String
`objectId`	(Optional) This is an object identifier returned by `findObjects` and `getObjects`. Argument type: String
`path`	(Optional) Property path. Argument type: String
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`pluginName`	(Optional) The name of the plugin. The plugin key for a promoted plugin or the plugin key and version for an unpromoted plugin. Argument type: String
`procedureName`	(Optional) The name of the procedure with the ACL. When using this argument, you must also enter `projectName`. Argument type: String
`processName`	(Optional) The name of the process. Argument type: String
`processStepName`	(Optional) The name of the process step. Argument type: String
`projectName`	(Optional) The name of the project. Argument type: String
`propertySheetId`	(Optional) The unique identifier for a property sheet that is assigned automatically when the property sheet is created. Argument type: String
`repositoryName`	(Optional) The name of the repository for artifact management. Argument type: UUID
`resourceName`	(Optional) The name of the resource. Argument type: String

Arguments	Descriptions
`resourcePoolName`	(Optional) The name of a pool containing one or more resources. Argument type: String
`resourceTemplateName`	(Optional) Name of the resource template. Argument type: String
`scheduleName`	(Optional) The name of a schedule. When using this argument, you must also enter `projectName`.
`snapshotName`	(Optional) The name of a snapshot. Argument type: String
`stageName`	(Optional) The name of the stage definition. Argument type: String
`stateDefinitionName`	(Optional) The name of the state definition. Argument type: String
`stateName`	(Optional) The name of the state. Argument type: String
`stepName`	(Optional) The name of the step. When using this argument, you must also enter `projectName` and `procedureName`. Argument type: String

`systemObjectName`	(Optional) System objects include:
	`admin|artifactVersions|directory|emailConfigs|log|plugins|`
	`server|session|workspaces`
	Argument type: SystemObjectName

`taskName`	(Optional) The name of the task. Argument type: String
`transitionDefinitionName`	(Optional) The name of the transition definition. Argument type: String
`transitionName`	(Optional) The name of the transition. Argument type: String
`userName`	(Optional) The full name of the user. Argument type: String

Arguments	Descriptions
workflowDefinitionName	(Optional) The name of the workflow definition. Argument type: String
workflowName	(Optional) The name of the workflow. Argument type: String
workspaceName	(Optional) The name of the workspace. Argument type: String
zoneName	(Optional) The name of the zone. Argument type: String

Positional arguments

`principalType, principalName`

Response

One `aclEntry` element.

ec-perl

syntax: `$cmdr->getAclEntry(<principalType>, < principalName>, {...});`

Example

```
$cmdr->getAclEntry("user", "j smith", {projectName => "Sample Project"});
```

ectool

syntax: `ectool getAclEntry <principalType> <principalName> ...`

Example

```
ectool getAclEntry user "j smith" --projectName "Sample Project"
```

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modifyAclEntry

Modifies an ACE (access control entry) in an access control list (ACL) on an object for a given principal.

Note: If a privilege is not specified, an object inherits it from its parent object ACL.

You must specify `principalType`, `principalName`, and object locator arguments to identify the target ACL.

Arguments	Descriptions
`principalType`	This is either `user` or `group`. Argument type: PrincipalType
`principalName`	This is either a user or a group name. Argument type: PrincipalName
`applicationName`	(Optional) The name of the application that must be unique among all projects. Argument type: String
`applicationTierName`	(Optional) The name of the application tier. Argument type: String
`artifactName`	(Optional) The name of the artifact. Argument type: String
`artifactVersionName`	(Optional) The name of the artifact version. An artifact version name is interpreted by the server as the `artifactVersionName` attribute for the `artifactVersion` in question. This name is parsed and interpreted as `"groupId:artifactKey:version"` and the object is searched either way you specify its name. The ElectricFlow server interprets the name form correctly. Argument type: String
`changePermissionsPrivilege`	(Optional) <`allow|deny`> –Determines whether the principal can modify access control for the object. Argument type: Access
`componentName`	(Optional) The name of the component. Argument type: String
`configName`	(Optional) The name of the email configuration. Argument type: String

Arguments	Descriptions
`credentialName`	(Optional) The name of the credential specified in one of these formats: • **relative**(for example, *"cred1"*)–The credential is assumed to be in the project that contains the requested target object. • **absolute**(for example, *"/projects/BuildProject/credentials/cred1"*)–The credential can be from any specified project, regardless of the project for the target object. Argument type: String
`environmentName`	(Optional) The name of the environment that must be unique among all projects. Argument type: String
`environmentTemplateName`	(Optional) Name of the environment template. Argument type: String
`environmentTemplateTierName`	(Optional) Name of the environment template tier. Argument type: String
`environmentTierName`	(Optional) The name of the environment tier. Argument type: String
`flowName`	Name of the flow that must be unique within the project. Argument Type: String
`flowRuntimeName`	(Optional) Name of the flow runtime. Argument Type: String
`flowRuntimeStateName`	(Optional) Name of the flow state. Argument Type: String
`flowStateName`	Name of the flow state that must be unique within the flow. Argument Type: String
`flowTransitionName`	Name of the flow transition that must be unique within the flow state. Argument Type: String

Arguments	Descriptions
`executePrivilege`	(Optional) <`allow|deny`> –Determines whether the principal can invoke this object as part of a job. This privilege is only relevant for a few objects such as procedures and procedure steps. Argument type: Access
`gatewayName`	(Optional) The name of the gateway. Argument type: String
`groupName`	(Optional) The name of the group with the ACL entry. Argument type: String
`jobId`	(Optional) The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID
`jobStepId`	(Optional) The unique identifier for a job step that is assigned automatically when the job step is created. Argument type: UUID
`modifyPrivilege`	(Optional) <`allow|deny`> –Determines whether the principal can change the contents of the object. Argument type: Access
`notifierName`	(Optional) The name of the email notifier with the ACL entry. Argument type: String
`objectId`	(Optional) The object identifier returned by `findObjects` and `getObjects`. Argument type: String
`path`	(Optional) Property path. Argument type: String
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`pluginName`	(Optional) The name of the plugin with the ACL entry. Argument type: String

Arguments	Descriptions
`procedureName`	(Optional) The name of the procedure with the ACL entry. When using this argument, you must also enter `projectName`. Argument type: String
`processName`	(Optional) The name of the process. Argument type: String
`processStepName`	(Optional) The name of the process step. Argument type: String
`projectName`	(Optional) The name of the project with the ACL entry. Argument type: String
`propertySheetId`	(Optional) The unique identifier for a property sheet that is assigned automatically when the property sheet is created. Argument type: UUID
`readPrivilege`	(Optional) <`allow|deny`> –Determines whether the principal can examine the contents of the object. Argument type: Access
`repositoryName`	(Optional) The name of the repository for artifact management. Argument type: String
`resourceName`	(Optional) The name of the resource containing the ACL entry. Argument type: String
`resourcePoolName`	(Optional) The name of a pool containing one or more resources. Argument type: String
`resourceTemplateName`	(Optional) Name of the resource template. Argument type: String
`scheduleName`	(Optional) The name of the schedule with the ACL entry. When using this argument, you must also enter `projectName`. Argument type: String
`snapshotName`	The name of a snapshot. Argument type: String
`stageName`	(Optional) The name of the stage definition. Argument type: String

Arguments	Descriptions
`stateDefinitionName`	(Optional) The name of the state definition. Argument type: String
`stateName`	(Optional) The name of the state. Argument type: String
`stepName`	(Optional) The name of the step with the ACL entry. . When using this argument, you must also enter `projectName`. Argument type: String
`systemObjectName`	(Optional) System object names include: `admin|artifacts|directory|emailConfigs|forceAbort|licensing|log|plugins|priority|projects|repositories|resources|server|session|test|workspaces|zonesAndGateways` Argument type: SystemObjectName
`taskName`	(Optional) The name of the task. Argument type: String
`transitionDefinitionName`	(Optional) The name of the transition definition. Argument type: String
`transitionName`	(Optional) The name of the transition. Argument type: String
`userName`	(Optional) The name of the user containing the ACL entry. Argument type: String
`workflowDefinitionName`	(Optional) The name of the workflow definition. Argument type: String
`workflowName`	(Optional) The name of the workflow. Argument type: String
`workspaceName`	(Optional) The name of the workspace containing the ACL entry. Argument type: String
`zoneName`	(Optional) The name of the zone. Argument type: String

Positional arguments

`principalType, principalName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->modifyAclEntry(<principalType>, <principalName>, {<optionals>});`

Example

```
$cmdr->modifyAclEntry("user", "j smith", {projectName => "Sample Project",
   snapshotName => "LastGood", });
```

ectool

syntax: `ectool modifyAclEntry <principalType> <principalName> ...`

Example

```
ectool modifyAclEntry "user" "j smith" --projectName "Sample Project"
   --snapshotName "LastGood"
```

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restoreAclInheritance

Restores the ACL (access control list) inheritance for the specified object.

Note: You must use object locators to specify the object where you want to restore ACL inheritance.

Arguments	Descriptions
`applicationName`	(Optional) The name of the application that must be unique among all projects. Argument type: String
`applicationTierName`	(Optional) The name of the application tier. Argument type: String
`artifactName`	(Optional) The name of the artifact. Argument type: String
`artifactVersionName`	(Optional) The name of the artifact version. **Note:** An artifact version name is interpreted by the server as the `artifactVersionName` attribute for the `artifactVersion` in question. This name is parsed and interpreted as `"groupId:artifactKey:version"` and the object is searched either way you specify its name. The ElectricFlow server interprets the name form correctly. Argument type: String

Arguments	Descriptions
`componentName`	(Optional) The name of the component. Argument type: String
`configName`	(Optional) The name of the email configuration. Argument type: String
`credentialName`	(Optional) The name of the credential specified in one of these formats: • **relative**(for example, *"cred1"*)–The credential is assumed to be in the project that contains the requested target object. • **absolute**(for example, *"/projects/BuildProject/credentials/cred1"*)–The credential can be from any specified project, regardless of the project for the target object. When using this argument, you must also enter `projectName`. Argument type: String
`environmentName`	(Optional) The name of the environment that must be unique among all projects. Argument type: String
`environmentTemplateName`	Name of the environment template. Argument type: String
`environmentTemplateTierName`	(Optional) Name of the environment template tier. Argument type: String
`environmentTierName`	(Optional) The name of the environment tier. Argument type: String
`flowName`	Name of the flow that must be unique within the project. Argument Type: String
`flowRuntimeName`	(Optional) Name of the flow runtime. Argument Type: String
`flowRuntimeStateName`	(Optional) Name of the flow state. Argument Type: String
`flowStateName`	Name of the flow state that must be unique within the flow. Argument Type: String

Arguments	Descriptions
`flowTransitionName`	Name of the flow transition that must be unique within the flow state. Argument Type: String
`gatewayName`	(Optional) The name of the gateway. Argument type: String
`groupName`	(Optional) The name of the group with the ACL inheritance that you want to restore. Argument type: String
`jobId`	The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: String
`jobStepId`	(Optional) The unique identifier for a job step that is assigned automatically when the job step is created. Argument type: String
`notifierName`	(Optional) The name of the email notifier with the ACL inheritance that you want to restore. **Also requires** `projectName` and `procedureName`; `projectName`, `procedureName`, and `stepName`; `jobId` or `jobStepId` Argument type: String
`objectId`	(Optional) This is an object identifier returned by `findObjects` and `getObjects`.
`path`	(Optional) Property path. Argument type: String
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`pluginName`	(Optional) The name of the plugin with the ACL inheritance that you want to restore. Argument type: String
`procedureName`	(Optional) The name of the procedure with the ACL inheritance that you want to restore. When using this argument, you must also enter `projectName`. Argument type: String

Arguments	Descriptions
`processName`	(Optional) The name of the process. Argument type: String
`processStepName`	(Optional) The name of the process step. Argument type: String
`projectName`	(Optional) The name of the project with the ACL inheritance that you want to restore. Argument type: String
`propertySheetId`	(Optional) The unique identifier for a property sheet that is assigned automatically when the property sheet is created. Argument type: UUID
`repositoryName`	(Optional) The name of the repository for artifact management. Argument type: String
`resourceName`	(Optional) The name of the resource whose ACL inheritance you want to restore. Argument type: String
`resourcePoolName`	(Optional) The name of a pool containing one or more resources. Argument type: String
`resourceTemplateName`	(Optional) Name of the resource template. Argument type: String
`scheduleName`	(Optional) The name of the schedule with the ACL inheritance that you want to restore. When using this argument, you must also enter `projectName`. Argument type: String
`snapshotName`	(Optional) The name of a snapshot. Argument type: String
`stageName`	(Optional) The name of the stage definition. Argument type: String
`stateDefinitionName`	The name of the state definition. Argument type: String
`stateName`	(Optional) The name of the state. Argument type: String

Arguments	Descriptions
`stepName`	(Optional) The name of the step with the ACL inheritance that you want to restore. When using this argument, you must also enter `projectName` and `procedureName`. Argument type: String
`systemObjectName`	(Optional) The name of the system object whose ACL inheritance you want to restore. System objects include: `admin|artifactVersions|directory|emailConfigs|log|plugins|server|session|workspaces` Argument type: SystemObjectName
`taskName`	(Optional) The name of the task. Argument type: String
`transitionDefinitionName`	(Optional) The name of the transition definition. Argument type: String
`transitionName`	(Optional) The name of the transition. Argument type: String
`userName`	(Optional) The name of the user with the ACL inheritance that you want to restore. Argument type: String
`workflowDefinitionName`	(Optional) The name of the workflow definition. Argument type: String
`workflowName`	(Optional) The name of the workflow. Argument type: String
`workspaceName`	(Optional) The name of the workspace with the ACL inheritance that you want to restore. Argument type: String
`zoneName`	(Optional) The name of the zone. Argument type: String

Positional arguments

Arguments to locate the object, beginning with the top-level object locator.

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->restoreAclInheritance({<optionals>});`

Example

```
$cmdr->restoreAclInheritance({projectName => "Sample Project"});
```

ectool

syntax: `ectool restoreAclInheritance ...`

Example

```
ectool restoreAclInheritance --projectName "Sample Project"
```

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API Commands - Applications

createApplication

Creates a new application for a project.

You must specify the `projectName` and the `applicationName` arguments.

Arguments	Descriptions
`projectName`	Name for the project that must be unique among all projects. Argument Type: String
`applicationName`	Name of the application that must be unique among all projects. Argument Type: String
`description`	(Optional) Comment text describing this object that is not interpreted at all by ElectricFlow. Argument Type: String

Positional arguments

`projectName`, `applicationName`

Response

Returns an application element.

ec-perl

syntax:`$<object>->createApplication(<projectName>, <applicationName>, {<optionals>});`

Example

```
$ec->createApplication("Default", "app1", {description => "aDescription"});
```

ectool

syntax: `ectool createApplication <projectName> <applicationName> [optionals...]`

Example

```
ectool createApplication default newApp --description aDescription
```

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deleteApplication

Deletes an application.

You must specify the `projectName` and the `applicationName` arguments.

Arguments	Descriptions
`projectName`	Name for the project that must be unique among all projects. Argument Type: String
`applicationName`	Name of the application that must be unique among all projects. Argument Type: String

Positional arguments

`projectName`, `applicationName`

Response

None or a status OK message.

ec-perl

syntax: `$<object>->deleteApplication (<projectName>, <applicationName>);`

Example

```
$ec->deleteApplication ("Default", "appToDelete");
```

ectool

syntax: `ectool deleteApplication <projectName> <applicationName>`

Example

```
ectool deleteApplication default appToDelete
```

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getApplication

Retrieves an application by name.

You must specify the `projectName` and the `applicationName` arguments.

Arguments	Descriptions
`projectName`	Name for the project that must be unique among all projects. Argument Type: String
`applicationName`	Name of the application that must be unique among all projects. Argument Type: String
`applicationEntityRevisionId`	(Optional) The revision ID of the versioned object. Argument type: UUID

Positional arguments

`projectName`, `applicationName`

Response

Returns the specified application element.

ec-perl

syntax: `$<object>->getApplication(<projectName>, <applicationName>, {<optionals>});`

Example

```
$ec->getApplication("Default", "newApp", {applicationEntityRevisionId => "4fa765dd-73f1-11e3-b67e-b0a420524153"});
```

ectool

syntax: `ectool getApplication <projectName> <applicationName> [optionals...]`

Example

```
ectool getApplication default newApp --applicationEntityRevisionId 4fa765dd-73f1-11e3-b67e-b0a420524153
```

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getApplications

Retrieves all applications in a project.

You must specify the `projectName` argument.

Arguments	Descriptions
`projectName`	Name for the project that must be unique among all projects. Argument Type: String
`includeEntityRevisions`	(Optional) <*Boolean flag* - `0|1|true|false`> If set to "true", the search results include the revisions of application. Argument type: Boolean

Positional arguments

`projectName`

Response

Returns zero or more application elements.

ec-perl

syntax: `$<object>->getApplications(<projectName> , {<optionals>});`

Example

```
$ec->getApplications("Default");
```

ectool

syntax: `ectool getApplications <projectName> [optionals...]`

Example

```
ectool getApplications default
```

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modifyApplication

Modifies an existing application.

You must specify the `projectName` and the `applicationName` arguments.

Arguments	Descriptions
`projectName`	Name for the project that must be unique among all projects. Argument Type: String
`applicationName`	Name of the application that must be unique among all projects. Argument Type: String

Arguments	Descriptions
`description`	(Optional) Comment text describing this object; not interpreted at all by ElectricFlow. Argument Type: String
`newName`	(Optional) New name for an existing object that is being renamed. Argument Type: String

Positional arguments

`projectName`, `applicationName`

Response

Returns a modified application element.

ec-perl

syntax:`$<object>->modifyApplication(<projectName>, <applicationName>, {<optionals>});`

Example

```
$ec->modifyApplication("Default", "app1", {newName=> "newAppName", description => "
exampleText"});
```

ectool

syntax:`ectool modifyApplication <projectName> <applicationName> [optionals...]`

Example

```
ectool modifyApplication default newApp --newName modApp --description exampleText
```

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API Commands - Application Tier

`createApplicationTier`

Creates a new application tier in the application.

You must specify the `projectName`, `applicationName`, and `applicationTierName` arguments.

Arguments	Descriptions
projectName	Name for the project that must be unique among all projects. Argument Type: String
applicationName	Name of the application that must be unique among all projects. Argument Type: String
applicationTierName	Name of the tier that must be unique within the application. Argument Type: String
description	(Optional) Comment text describing this object that is not interpreted at all by ElectricFlow. Argument Type: String

Positional arguments

projectName ,applicationName,applicationTierName

Response

Returns an application tier element.

ec-perl

syntax:`$<object>->createApplicationTier(<projectName>, <applicationName>, <applicationTierName>, {<optionals>});`

Example

```
$ec->createApplicationTier("Default", "app1", "appTier2", {description => "example_text"});
```

ectool

syntax: `ectool createApplicationTier <projectName> <applicationName> <applicationTierName> [optionals...]`

Example

```
ectool createApplicationTier default newApp appTier1 --description example_text
```

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deleteApplicationTier

Deletes a tier from an application.

You must specify the `projectName`, `applicationName`, and `applicationTierName` arguments.

Arguments	Descriptions
projectName	Name for the project that must be unique among all projects. Argument Type: String
applicationName	Name of the application that must be unique among all projects. Argument Type: String
applicationTierName	Name of the tier that must be unique within the application. Argument Type: String

Positional arguments

`projectName ,applicationName,applicationTierName`

Response

None or a status OK message.

ec-perl

syntax: `$<object>->deleteApplicationTier(<projectName>, <applicationName>, <applicationTierName>);`

Example

```
$ec->deleteApplicationTier("Default", "app1", "appTierToDelete");
```

ectool

syntax: `ectool deleteApplicationTier <projectName> <applicationName> <applicationTierName>`

Example

```
ectool deleteApplicationTier default newApp appTierToDelete
```

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getApplicationTier

Retrieves an application tier by name.

You must specify the `projectName`, `applicationName`, and `applicationTierName` arguments.

Arguments	Descriptions
projectName	Name for the project that must be unique among all projects. Argument Type: String

Arguments	Descriptions
`applicationName`	Name of the application that must be unique among all projects. Argument Type: String
`applicationTierName`	Name of the tier that must be unique within the application. Argument Type: String
`applicationEntityRevisionId`	(Optional) The revision ID of the versioned object. Argument type: UUID

Positional arguments

`projectName ,applicationName,applicationTierName`

Response

Returns an application tier element.

ec-perl

syntax: `$<object>->getApplicationTier(<projectName>, <applicationName>, <applicationTierName>, {<optionals>});`

Example

```
$ec->getApplicationTier("Default", "app1", "appTier2", {applicationEntityRevisionId
=> "4fa765dd-73f1-11e3-b67e-b0a420524153"});
```

ectool

syntax: `ectool getApplicationTier <projectName> <applicationName> <applicationTierName> [optionals...]`

Example

```
ectool getApplicationTier default newApp appTier1 --applicationEntityRevisionId 4fa
765dd-73f1-11e3-b67e-b0a420524153
```

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getApplicationTiers

Retrieves all application tiers in an application.

You must specify the `projectName` and `applicationName` arguments.

Arguments	Descriptions
`projectName`	Name for the project that must be unique among all projects. Argument Type: String

Arguments	Descriptions
`applicationName`	Name of the application that must be unique among all projects. Argument Type: String
`applicationEntityRevisionId`	(Optional) The revision ID of the versioned object. Argument type: UUID

Positional arguments

`projectName, applicationName`

Response

Returns zero or more application tier elements.

ec-perl

syntax: `$<object>->getApplicationTiers(<projectName>, <applicationName>, {<optionals>});`

Example

```
$ec->getApplicationTiers("Default", "app1" {applicationEntityRevisionId => "4fa765d
d-73f1-11e3-b67e-b0a420524153"});
```

ectool

syntax:`ectool getApplicationTiers <projectName> <applicationName> [optionals...]`

Example

```
ectool getApplicationTiers default newApp --applicationEntityRevisionId 4fa765dd-73
f1-11e3-b67e-b0a420524153
```

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getApplicationTiersInComponent

Retrieves all application tiers that are used by the given component.

You must specify the `projectName` and the `componentName` arguments.

Arguments	Descriptions
`projectName`	Name for the project that must be unique among all projects. Argument Type: String
`componentName`	Name of the component. Argument Type: String

Arguments	Descriptions
applicationName	(Optional) Name of an application to which this component is scoped. Argument Type: String
applicationEntityRevisionId	(Optional) The revision ID of the versioned object. Argument type: UUID

Positional arguments

```
projectName, componentName
```

Response

Retrieves zero or more application tier elements used by the specified component.

ec-perl

syntax:`$<object>->getApplicationTiersInComponent(<projectName>, <componentName>, {<optionals>});`

Example

```
$ec->getApplicationTiersInComponent("default", "newComponent");
```

ectool

syntax:`ectool getApplicationTiersInComponent <projectName> <componentName> [optionals...]`

Example

```
ectool getApplicationTiersInComponent default newComponent
```

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modifyApplicationTier

Modifies an existing tier in the application.

You must specify the `projectName`, `applicationName`, and `applicationTierName` arguments.

Arguments	Descriptions
projectName	Name for the project that must be unique among all projects. Argument Type: String
applicationName	Name of the application that must be unique among all projects. Argument Type: String

Arguments	Descriptions
applicationTierName	Name of the tier that must be unique within the application. Argument Type: String
description	(Optional) Comment text describing this object, which is not interpreted by ElectricFlow. Argument Type: String
newName	(Optional) New name for an existing object that is being renamed. Argument Type: String

Positional arguments

```
projectName, applicationName, applicationTierName
```

Response

Returns a modified application tier element.

ec-perl

syntax:`$<object>->modifyApplicationTier(<projectName>, <applicationName>, <applicationTierName>, {<optionals>});`

Example

```
$ec->modifyApplicationTier("Default", "app1", "appTier2", {newName=> "appTierB", de
scription=> "newText"});
```

ectool

syntax:`ectool modifyApplicationTier <projectName> <applicationName> <applicationTierName> [optionals...]`

Example

```
ectool  modifyApplicationTier default newApp appTier1 --description new_exampleText
--newName appTierA
```

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API Commands - Artifact Management

addDependentsToArtifactVersion

Adds an artifact version query to an existing artifact. Dependent artifact versions are retrieved when the parent artifact version is retrieved.

You must specify an `artifactVersionName`.

Arguments	Descriptions
`artifactVersionName`	The name of the artifact version. An artifact version name is interpreted by the server as the `artifactVersionName` attribute for the `artifactVersion` in question. This name is parsed and interpreted as `"groupId:artifactKey:version"` and the object is searched either way you specify its name. The ElectricFlow server interprets the name form correctly. Argument type: String

Arguments	Descriptions
dependentArtifactVersions	(Optional) One or more artifact version queries. The most current match of each query is retrieved when the primary artifact is retrieved. Dependent artifact version query strings are in this form: <groupId>:<artifactKey>:<versionRange> (versionRange is optional). The version range syntax is standard number interval notation. () marks exclusive ranges and [] marks inclusive ranges. Argument type: Collection

Positional arguments

artifactVersionName

Response

Returns one or more dependent artifact versions.

ec-perl

syntax: `$cmdr->addDependentsToArtifactVersion (<artifactVersionName>, {<optionals>});`

Example

```
# Add a dependency on cmdr:SDK:1.2.0 and the most current version of core:infra tha
t
# is greater than or equal to 2.1.0.

$cmdr->addDependentsToArtifactVersion (artifactVersionName => "myGroup:myAKey:1.0.
0-55",{dependentArtifactVersions => ["cmdr:SDK:1.2.0", "core:infra:[2.1.0,]"]});
```

ectool

syntax: `ectool addDependentsToArtifactVersion <artifactVersionName> [optionals]`

Example

```
ectool addDependentsToArtifactVersion "myGroup:myAKey:1.0.0-55" --dependentArtifact
Versions "cmdr:SDK:1.2.0" "core:infra:[2.1.0,]"
```

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cleanupArtifactCache

Deletes stale artifact versions from an artifact cache. A "stale artifact version" is one whose metadata was previously deleted from the ElectricFlow server.

Note: If you are not logged in as "admin", you cannot use this command. However, using the `force` option overrides admin login privileges.

You must specify a `cacheDirectory`.

Arguments	Descriptions
`cacheDirectory`	The directory where stale artifact versions are stored. Argument type: String
`force`	<*Boolean flag* - `0|1|true|false`> If set to "true", this option can be used so you can cleanup the artifact cache if you are not logged in as "admin". Argument type: Boolean

Positional arguments

`cacheDirectory`

Response

Returns a list of directories that were deleted.

ec-perl

syntax: `$cmdr->cleanupArtifactCache(<cacheDirectory>);`

Example

```
$cmdr->cleanupArtifactCache("/var/artifact-cache");
```

ectool

syntax: `ectool cleanupArtifactCache <cacheDirectory>`

Example

```
ectool cleanupArtifactCache "/var/artifact-cache"
```

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cleanupRepository

Deletes stale artifact versions from the repository backing-store. A "stale artifact version" is one whose metadata was previously deleted from the ElectricFlow server.

Note: If you are not logged in as "admin", you cannot use this command. However, using the `force` option overrides
admin login privileges.

You must specify a `backingStoreDirectory`.

Arguments	Descriptions
`backingStoreDirectory`	The repository directory where artifact versions are stored. Argument type: String

Arguments	Descriptions
`force`	<*Boolean flag* - `0|1|true|false`> If set to "true", this option can be used so you can cleanup the repository even if the g/a/v s in the directory specified do not match up with any artifacts reported by the server. By default, this is false, and helps users avoid deleting arbitrary directory trees if they did not specify the repository backingstore properly. Argument type:Boolean

Positional arguments

`backingStoreDirectory`

Response

Returns a list of directories that were deleted.

ec-perl

syntax: `$cmdr->cleanupRepository(<backingStoreDirectory>);`

Example

```
use strict;
use ElectricCommander;

my $cmdr = ElectricCommander->new({debug => 1});
$cmdr->login("admin", "changeme");
$cmdr->cleanupRepository("/var/repository-data");
```

ectool

syntax: `ectool cleanupRepository <backingStoreDirectory>`

Example

```
ectool cleanupRepository "/var/repository-data"
```

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createArtifact

Creates a new artifact.

You must specify `groupId` and `artifactKey`.

Arguments	Descriptions
`groupId`	A user-generated group name for this artifact. This field is limited to alphanumeric characters, spaces, spaces, underscores, hyphens, and periods. Argument type: String

Arguments	Descriptions
artifactKey	User-specified identifier for this artifact. This field is limited to alphanumeric characters, spaces, underscores, hyphens, and periods. Argument type: String
artifactVersionNameTemplate	A template for the names of artifact versions published to this artifact. This option overrides the value set in the server settings for "artifact name template.". The global setting can be manipulated in the Server Settings page (Administration > Server, select the Settings link). Argument type: String
description	A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument type: String

Positional arguments

`groupId, artifactKey`

Response

Returns an `artifact` element.

ec-perl

syntax: `$cmdr->createArtifact(<groupId>, <artifactKey>, {<optionals>});`

Example

```
$cmdr->createArtifact("thirdPartyTools", "SDK", {description => "3rd party tools SD
K"});
```

ectool

syntax: `ectool createArtifact <groupId> <artifactKey> ...`

Example

```
ectool createArtifact thirdPartyTools SDK --description "3rd party tools SDK"
```

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createArtifactVersion

Creates a new artifact version.

You must specify `version`.

Arguments	Descriptions
`version`	The version component of the GAV (`groupId`/`artifactVersionId`/`version`) coordinates. Argument type: String
`artifactKey`	User-specified identifier for this artifact. This field is limited to alphanumeric characters, spaces, underscores, hyphens, and periods. Argument type: String
`artifactName`	Name of the artifact. Argument type: String
`dependentArtifactVersions`	The set of artifact versions on which this `artifactVersion` depends. Argument type: Collection
`description`	A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument type: String
`groupId`	The `groupId` component of the GAV (`groupId`/`artifactVersionId`/`version`) coordinates. This field is limited to alphanumeric characters, spaces, spaces, underscores, hyphens, and periods. Argument type: String
`jobStepId`	The unique identifier for the job step that is used to make a project association. Argument type: UUID
`repositoryName`	The name of the artifact repository. Argument type: String

Positional arguments

`version`

Response

Returns an artifactVersion on page 692 element.

ec-perl

syntax:`$cmdr->createArtifactVersion(<version>, {<optionals>});`

Example

```
$cmdr->createArtifactVersion(1.1, {artifactName => test:test1});
$cmdr->createArtifactVersion(1.2, {artifactName => test1:test2});
```

ectool

syntax: `ectool createArtifactVersion <version> [optionals]`

Example

```
ectool createArtifactVersion 1.1 --artifactName test:test1
ectool createArtifactVersion 1.2 --artifactName test1:test2
```

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createRepository

Creates a repository for one or more artifacts.

You must specify a `repositoryName`.

Arguments	Descriptions
`repositoryName`	The name of the artifact repository. Argument type: String
`description`	A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument type: String
`repositoryDisabled`	<*Boolean flag* -`0|1|true|false`> Determines whether the repository is disabled. Default is "false". Argument type: Boolean
`url`	The URL to use to communicate with the repository server. Argument type: String
`zoneName`	The name of the zone where this repository resides. Argument type: String

Positional arguments

`repositoryName`

Response

Returns a `repository` element.

ec-perl

syntax: `$cmdr->createRepository(<repositoryName>, {<optionals>});`

Example

```
$cmdr->createRepository("myRepos", {repositoryDisabled => "true", url =>
   "https://test.ecloud.com:8200"});
```

ectool

syntax: `ectool createRepository <repositoryName> ...`

Example

```
ectool createRepository myRepos --repositoryDisabled "true" --url
   "https://test.ecloud.com:8200"
```

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deleteArtifact

Deletes an existing artifact element and all artifact versions.

You must specify an `artifactName`.

Arguments	Descriptions
`artifactName`	The name of the artifact to delete. Argument type: String

Positional arguments

`artifactName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteArtifact(<artifactName>);`

Example

```
$cmdr->deleteArtifact("ElectricFlow:SDK");
```

ectool

syntax: `ectool deleteArtifact <artifactName>`

Example

```
ectool deleteArtifact "ElectricFlow:SDK"
```

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deleteArtifactVersion

Deletes artifact version metadata from the ElectricFlow database.
(This API call does not delete or remove artifacts stored on the repository machine.)

You must specify an `artifactVersionName`.

Arguments	Descriptions
`artifactVersionName`	The name of the artifact version. **Note:** An artifact version name is interpreted by the server as the `artifactVersionName` attribute for the `artifactVersion` in question. This name is parsed and interpreted as `"groupId:artifactKey:version"` and the object is searched either way you specify its name. The ElectricFlow server interprets the name form correctly. Argument type: String

Positional arguments

`artifactVersionName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteArtifactVersion(<artifactVersionName>);`

Example

```
$cmdr->deleteArtifactVersion("myGroup:myKey:1.0.0-55");
```

ectool

syntax: `ectool deleteArtifactVersion <artifactVersionName>`

Example

```
ectool deleteArtifactVersion "myGroup:myKey:1.00.0-55"
```

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deleteRepository

Deletes artifact repository metadata from the ElectricFlow database.
(This API call does not delete or remove artifacts stored on the repository machine.)

You must enter a `repositoryName`.

Arguments	Descriptions
`repositoryName`	The name of the artifact repository to delete. Argument type: String

Positional arguments

`repositoryName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteRepository(<repositoryName>);`

Example

```
$cmdr->deleteRepository ("cmdrReposOne");
```

ectool

syntax: `ectool deleteRepository <repositoryName>`

Example

```
ectool deleteRepository cmdrReposOne
```

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findArtifactVersions

This command returns the most current artifact version that matches the filter criteria and its dependent artifact versions.
This API implicitly searches for artifact versions in the "available" state, and if run in a job step, registers the step as a retriever for the returned artifact versions.

Because of the complexity of specifying filter criteria, this API is not supported by *ectool*. However, all of its capabilities are supported through the Perl API.

Note: The `retrieveArtifactVersions` API uses this API to find the appropriate artifact version in the ElectricFlow server
and then retrieves the artifact version from a repository. You may prefer to use the `retrieveArtifactVersions` API
instead of this API because while this API returns slightly different information, it also has the side-effect of "retriever
step registration" mentioned above.

You must specify an `artifactName` or a `groupId` with an `artifactKey`.

Arguments	Descriptions
`artifactKey`	User-specified identifier for this artifact. This field is limited to alphanumeric characters, spaces, underscores, hyphens, and periods. Argument type: String
`artifactName`	The name of an artifact. Argument type: String
`artifactVersionName`	The name of an artifact version. Argument type: String

Arguments	Descriptions

`filters`	A list of zero or more filter criteria definitions used to define objects to find.
	
	Each element of the filter list is a hash reference containing one filter criterion. You may specify several filter criteria, in which case an object must meet all filter criteria to be included in the result. See the code example below for instructions on forming the list and passing it to the ElectricFlow Perl API.
	
	Two types of filters:
	"property filters" - used to select objects based on the value of the object's intrinsic or custom property
	"boolean filters" ("and", "or", "not") - used to combine one or more filters using boolean logic.
	
	Each "property filter" consists of a property name to test and an operator to use for comparison. The property can be either an intrinsic property defined by ElectricFlow or a custom property added by the user. Each operator takes zero, one, or two operands to compare against the desired property.
	
	Property filter operators are:
	`between (2 operands)`
	`contains (1)`
	`equals (1)`
	`greaterOrEqual (1)`
	`greaterThan (1)`
	`in (1)`
	`lessOrEqual (1)`
	`lessThan (1)`
	`like (1)`
	`notEqual (1)`
	`notLike (1)`
	`isNotNull (0)`
	`isNull (0)`
	
	A boolean filter is a boolean operator and an array of one or more filters that are operands. Each operand can be either a property filter or a boolean filter.
	
	Boolean operators are:
	`not (1 operand)`
	`and (2 or more operands)`
	`or  (2 or more operands)`
	
	Argument type: Collection

`groupId`	A user-generated group name for this artifact. This field may consist of alphanumeric characters, spaces, underscores, hyphens, and periods. Argument type: String

Arguments	Descriptions
`includeDependents`	Options are: • `0/false` – dependent artifacts are not retrieved. • `1/true` – dependent artifacts are retrieved. Argument type: Boolean
`jobStepId`	The unique identifier for the job step that is making the request. This job step is marked as a retriever for the matching artifact versions. Argument type: UUID
`versionRange`	The range of versions to search. Version range syntax is standard number interval notation. `()` marks exclusive ranges and `[]` marks inclusive ranges. Argument type: String

Positional arguments

None

Response

This command returns zero or more `artifactVersion` elements. In addition, this API returns a `searchDetails` element with
text describing how the server evaluated candidate artifact versions and ultimately decided to return the result
`artifactVersion` and its dependents.

ec-perl

syntax: `$cmdr->findArtifactVersions({<optionals>});`

Example 1

```
# Find the most current core:infra artifact version whose version is 1.x.x.
$cmdr->findArtifactVersions({groupId => "core",
                        artifactKey => "infra",
                       versionRange => "[1.0, 2.0)"});

# Or alternatively ...
$cmdr->findArtifactVersions({artifactName => "core:infra",
                             versionRange => "[1.0,2.0)"});
```

Example 2

```
# Find the most current core:infra artifact version with QA approval level 3 or abo
ve.
$cmdr->findArtifactVersions({groupId => "core",
                        artifactKey => "infra",
                             filter => {propertyName => "qaLevel",
                           operator => "greaterOrEqual",
                           operand1 => "3"}});
```

ectool

Not supported.

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getArtifact

Retrieves an artifact by name.

You must specify an `artifactName`.

Arguments	Descriptions
`artifactName`	The name of the artifact. Argument type: String

Positional arguments

`artifactName`

Response

Retrieves an `artifact` element.

ec-perl

syntax: `$cmdr->getArtifact (<artifactName>);`

Example

```
$cmdr-> getArtifact("myGroup:myKey");
```

ectool

syntax: `ectool getArtifact <artifactName>`

Example

```
ectool getArtifact "myGroup:myKey"
```

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getArtifacts

Retrieves all artifacts in the system.

Arguments	Descriptions
None	

Positional arguments

None

Response

Zero or more `artifact` elements.

ec-perl

syntax: `$cmdr->getArtifacts ();`

Example

```
$cmdr->getArtifacts ();
```

ectool

syntax: `ectool getArtifacts`

Example

```
ectool getArtifacts
```

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getArtifactVersion

Retrieves an artifact version by its name.

You must specify an `artifactVersionName`.

Arguments	Descriptions
`artifactVersionName`	The name of the artifact version to retrieve. **Note:** An artifact version name is interpreted by the server as the `artifactVersionName` attribute for the `artifactVersion` in question. This name is parsed and interpreted as "`groupId:artifactKey:version`" and the object is searched either way you specify its name. The ElectricFlowserver interprets either name form correctly. Argument type: String
`includeRetrieverJobs`	<*Boolean flag* - `0|1|true|false`> If set to 1, this argument includes `jobId` and `jobName` in returned information. A retriever job is any job that has retrieved the artifact version. Argument type: Boolean
`includeRetrieverJobSteps`	<*Boolean flag* - `0|1|true|false`> If set to 1, this argument includes `jobId`, `jobName`, and `jobStepId` information. A retriever job is any job that has retrieved the artifact version. Because there is no bound to how many job steps may retrieve a given artifact version, the server limits the response to the most recent 200 job steps. Argument type: Boolean

Arguments	Descriptions
`maxRetrievers`	If one of the `includeRetriever*` options are specified, return at most "this many" of the most recent retrievers. Without this option, the ElectricFlow server will return all retrievers. Argument type: String

Positional arguments

`artifactVersionName`

Response

One `artifactVersion` element. If `includeRetrieverJobs` or `includeRetrieverJobSteps` is set, the `artifactVersion` element will contain zero or more retriever child elements, each containing retriever information for one job or job step.

ec-perl

syntax: `$cmdr->getArtifactVersion(<artifactVersionName>, {<optionals>});`

Example

```
$cmdr->getArtifactVersion("myGroup:myKey:1.0.0-55", {includeRetrieverJobs => "tru
e"});
```

ectool

syntax: `ectool getArtifactVersion <artifactVersionName> ...`

Example

```
ectool getArtifactVersion myGroup:myKey:1.0.0-55 --includeRetrieverJobs "true"
```

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getArtifactVersions

Retrieves all artifact versions in the system, filtered by artifact name, retriever job ID, and/or retriever job step ID.

You must specify search filter criteria to find the artifact versions you need.
If you do not provide any options, all artifact versions in the system are returned.

Arguments	Descriptions
`artifactName`	The name of the artifact for the versions to retrieve. Argument type: String
`retrieverJobId`	The job ID that retrieved an artifact. Argument type: String
`retrieverJobStepId`	The job step ID that retrieved an artifact. Argument type: UUID

Positional arguments

None

Response

Zero or more `artifactVersion` elements.

ec-perl

syntax: `$cmdr->getArtifactVersions({<optionals>});`

Example

```
$cmdr->getArtifactVersions({artifactName => "myGroup:myKey"});
```

ectool

syntax: `ectool getArtifactVersions ...`

Example

```
ectool getArtifactVersions --artifactName "myGroup:myKey"
```

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getManifest

Retrieves the manifest for a specified artifact version. The manifest includes a list of files and directories in the artifact version and its checksum file.

You must specify the `artifactVersionName`.

IMPORTANT: On Windows platforms, check the language for non-Unicode programs. If there are problems with Korean or German in the Windows console, go to the "Region and Language" options in the Control Panel, and select the language to use when displaying text in non-Unicode programs. For example, in Windows 7, go to **Control Panel** > **Clock, Language, and Region** > **Region and Language** > **Administrative**, and click **Check system locale** to select the appropriate locale.

Arguments	Descriptions
`artifactVersionName`	The name of the artifact version whose manifest you want to retrieve. Argument type: String

Positional arguments

None

Response

Manifest information for the specified artifact version: returns an XML stream containing any number of file elements, including the file name, file size, and "sha1" hashes for every file in the `artifactVersionName`.

ec-perl

syntax: `$cmdr->getManifest(<artifactVersionName>);`

Example

```
my ($manifest,$diagnostics) = $cmdr->getManifest("myGroup:myKey:1.0.0-55");
```

ectool

syntax: `ectool getManifest <artifactVersionName>`

Example

```
ectool getManifest myGroup:myKey:1.0.0-55
```

getRepositories

Retrieves all artifact repository objects known to the ElectricFlow server.

Arguments	Descriptions
None	

Positional arguments

None

Response

Zero or more `repository` elements.

ec-perl

syntax: `$cmdr->getRepositories ();`

Example

```
$cmdr->getRepositories ();
```

ectool

syntax: `ectool getRepositories`

Example

```
ectool getRepositories
```

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getRepository

Retrieves an artifact repository by its name.

You must specify a `repositoryName`.

Arguments	Descriptions
repositoryName	The name of the artifact repository to retrieve. Argument type: String

Positional arguments

`repositoryName`

Response

One `repository` element.

ec-perl

syntax: `$cmdr->getRepository(<repositoryName>);`

Example

```
$cmdr->getRepository("myRepository");
```

ectool

syntax: `ectool getRepository <repositoryName>`

Example

```
ectool getRepository myRepository
```

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modifyArtifact

Modifies an existing artifact.

You must specify an `artifactName`.

Arguments	Descriptions
`artifactName`	The name of the artifact to modify. Argument type: String
`artifactVersionNameTemplate`	A template for the names of artifact versions published to this artifact. This option overrides the value set in the server settings for "artifact name template." The global setting can be manipulated in the Server Settings page (Administration > Server, select the Settings link). Argument type: String
`description`	A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument type: String

Positional arguments

`artifactName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->modifyArtifact(<artifactName>, {<optionals>});`

Example

```
$cmdr->modifyArtifact("thirdParty-SDK", {description => "contains artifact versions
for SDK"});
```

ectool

syntax: `ectool modifyArtifact <artifactName> ...`

Example

```
ectool modifyArtifact thirdParty-SDK --description "contains artifact versions for
SDK"
```

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modifyArtifactVersion

Modifies an existing artifact version.

You must specify an `artifactVersionName`.

Arguments	Descriptions
`artifactVersionName`	The name of the artifact version to modify. **Note:** An artifact version name is interpreted by the server as the `artifactVersionName` attribute for the `artifactVersion` in question. This name is parsed and interpreted as `"groupId:artifactKey:version"` and the object is searched either way you specify its name. The ElectricFlow server interprets either name form correctly. Argument type: String
`artifactVersionState`	The state of the artifact version. `<publishing|available|unavailable>`. Argument type: ArtifactVersionState
`dependentArtifactVersions`	One or more artifact version queries. The most current match for each query is retrieved when the primary artifact is retrieved. Dependent artifact version query strings are in this form: `<groupId>:<artifactKey>:<versionRange>` (version range is optional). **Note:** The absence of this argument does not clear or modify the dependent artifact version list for this artifact version. Argument type: Collection

Arguments	Descriptions
description	A plain text or HTML description for this object. If using HTML, you must surround your text with <html> ... </html> tags. The only HTML tags allowed in the text are: <a> <b> <dl> <font> <i> <p> <pre> <style> <table> <tc> <td> <th> <tr> Argument type: String
newName	New name for this artifact version. Argument type: String
removeAllDependentArtifactVersions	<*Boolean flag* - 0|1|true|false> Defaults to "false." Removes all dependent artifacts from this artifact version. Subsequent "retrieves" will no longer retrieve dependent artifacts for this artifact version. Argument type: Boolean
repositoryName	The name of the artifact repository. Argument type: String

Positional arguments

artifactVersionName

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->modifyArtifactVersion(<artifactVersionName>, {<optionals>});`

Example

```
$cmdr->modifyArtifactVersion("myGroup:myKey:1.0.1-42375", {artifactVersionState =>
"unavailable"});
```

ectool

syntax: `ectool modifyArtifactVersion <artifactVersionName> ...`

Example

```
ectool modifyArtifactVersion "myGroup:myKey:1.0.1-57385" --artifactVersionState una
vailable
```

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modifyRepository

Modifies an existing artifact repository.

You must specify a `repositoryName`.

Arguments	Descriptions
`repositoryName`	The name of the artifact repository. Argument type: String
`description`	A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument type: String
`newName`	New name of the repository. Argument type: String
`repositoryDisabled`	<*Boolean flag* - `0|1|true|false`> Marks the repository as enabled or disabled. If you do not enter this option, the state of the repository is unchanged. Argument type: Boolean
`url`	The URL used to communicate with the artifact repository. Argument type: String
`zoneName`	The name of the zone where this repository resides. Argument type: String

Positional arguments

`repositoryName`

Response

Returns a modified `repository` element.

ec-perl

syntax: `$cmdr->modifyRepository (<repositoryName>, {<optionals>});`

Example

```
$cmdr->modifyRepository("myNewRepos", {newName => "cmdrRepository"});
```

ectool

syntax: `ectool modifyRepository <repositoryName> ...`

Example

```
ectool modifyRepository myNewRepos --newName cmdrRepository
```

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moveRepository

Moves an artifact repository in front of another, specified repository or to the end of the list.
This API does not move artifact version data to another repository server machine. Only the repository order in which ElectricFlow searches to retrieve an artifact version is changed.

You must specify a `repositoryName`.

Arguments	Descriptions
`repositoryName`	The name of the artifact repository you need to move. Argument type: String
`beforeRepositoryName`	Moves this repository (`repositoryName`) to a place before the name specified by this option. If omitted `repositoryName` is moved to the end. Argument type: String

Positional arguments

`repositoryName`

Response

Returns a modified `repository` element or an error if the repository does not exist.

ec-perl

syntax: `$cmdr->moveRepository(<repositoryName>, {<optionals>});`

Example

```
$cmdr->moveRepository(reposThree, {beforeRepositoryName => "reposOne"});
```

ectool

syntax: `ectool moveRepository <repositoryName> ...`

Example

```
ectool moveRepository reposThree --beforeRepositoryName reposOne
```

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publishArtifactVersion

Publishes an artifact version to an artifact repository.

Note: This API wraps the "publish" function in the `ElectricCommander::ArtifactManagement` Perl module and hides some additional functionality implemented in that module.

You must specify an `artifactName` or a `groupId` with an `artifactKey`.

Arguments	Descriptions
artifactName	The name of an artifact. Argument type: String
artifactKey	User-specified identifier for this artifact. This field is limited to alphanumeric characters, spaces, underscores, hyphens, and periods. Argument type: String
compress	*<Boolean flag -* 0|1|true|false> Default is "true". Controls whether or not the artifact version is compressed during transport, which improves performance for cases where artifact version files are compressible, saving network bandwidth. Where artifact version files are not compressible, performance is reduced. Another consideration is that the artifact version is stored compressed/uncompressed based on this setting in the repository backing-store. Argument type: Boolean
dependentArtifactVersions	One or more artifact version queries. The most current match of each query is retrieved when the primary artifact is retrieved. Dependent artifact version query strings are in this form: <groupId>:<artifactKey>:<versionRange> (versionRange is optional). The version range syntax is standard number interval notation. () marks exclusive ranges and [] marks inclusive ranges. Argument type: Collection
description	A plain text or HTML description for this object. If using HTML, you must surround your text with <html> ... </html> tags. The only HTML tags allowed in the text are: <a> <b> <dl> <font> <i> <p> <pre> <style> <table> <tc> <td> <th> <tr> Argument type: String
excludePatterns	Semi-colon delimited list of file-path patterns indicating which files/directories under "fromDirectory" to exclude when publishing an artifact version. Defaults to "empty," which means no files are excluded. See more information on "pattern syntax" below. Argument type: Collection

Arguments	Descriptions
followSymlinks	*<Boolean flag -* `0|1|true|false`> Default is "true". If true, follow symbolic links and record the target file contents with the symbolic link name in the artifact. If false, record the symbolic link as a symbolic link. Following symbolic links causes the publish API to remain compatible with previous releases. Argument type: Boolean
fromDirectory	The directory containing files to publish as the artifact version. A subset of files can be published based on `includePatterns` and `excludePatterns`. Argument type: String
groupId	A user-generated group name for this artifact. This field is limited to alphanumeric characters, spaces, underscores, hyphens, and periods. Argument type: String
includePatterns	Semi-colon delimited list of file-path patterns indicating which files/directories under "`fromDirectory`" to publish in the artifact version. Defaults to "empty," which means all files will be included. Conversely, if only two files are "included," no other files except those two will be included. See more information on "pattern syntax" below. Argument type: Collection
repositoryName	The name of the artifact repository where you want to publish. Argument type: String

version	Unique identifier for the artifact version in the form:
	`major.minor.patch-qualifier-buildNumber`
	`major, minor, patch`, and `buildNumber` are integers and qualifier can contain any character ***except*** the following:
	`\:<>|?*/`
	If a version argument is provided, but does not follow the above format, the version will be considered `0.0.0-<user-specified-version-arg>-0` implicitly.
	See examples below.
	
	Argument type: String

Version number examples

User Input	Interpretation		
	Major.Minor.Patch	Qualifier	Build Number
`1`	1.0.0		0
`1.0`	1.0.0		0
`1.0-frank`	1.0.0	`frank`	0
`1.0-36`	1.0.0		36
`1.0-frank-36`	1.0.0	`frank`	36

Pattern syntax

`Include / exclude` patterns are expressed as relative paths under the `fromDirectory`.

Pattern syntax and behavior is the same as Ant and uses the following wildcard specifiers:

`?` - matches a single character

`*` - matches any number of characters, but only at a single directory level

`**` - matches any number of directory levels

Examples:

Use `*.txt` to match any `.txt` file in the top-level directory.

Use `*/*.txt` to match any `.txt` file in any child directory.

Use `**/*.txt` to match any `.txt` file at any level.

Positional arguments

None

Response

One `artifactVersion` element.

ec-perl

syntax: `$cmdr->publishArtifactVersion({<optionals>});`

Example

```
# Add version 1.0.0-55 for artifact myGroup:myKey with a dependency on cmdr:SDK:1.2
.0,
# and the most current version of core:infra that is greater than or equal to 2.1.
0.
# Note: In the Perl API, the argument must be specified as singular even though it
# can take multiple values.

$cmdr->publishArtifactVersion({artifactName => "myGroup:myKey",
                                    version => "1.0.0-55",
                     dependentArtifactVersion => ["cmdr:SDK:1.2.0", "core:infra:{2.
1,]"]});
```

ectool

syntax: `ectool publishArtifactVersion ...`

Example

```
ectool publishArtifactVersion --artifactName "myGroup:myKey" --version "1.0.0-55"
   --dependentArtifactVersion "cmdr:SDK:1.2.0":"core:infra"
```

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removeDependentsFromArtifactVersion

Removes a list of dependent artifact versions from an existing artifact version.

You must specify the `artifactVersionName`.

Arguments	Descriptions
`artifactVersionName`	The name of the artifact version from which you want to remove dependents. **Note:** An artifact version name is interpreted by the server as the `artifactVersionName` attribute for the `artifactVersion` in question. This name is parsed and interpreted as `"groupId:artifactKey:version"` and the object is searched either way you specify its name--the ElectricFlow server interprets either name form correctly. Argument type: String
`dependentArtifactVersions`	One or more artifact version queries. The most current match of each query is retrieved when the primary artifact is retrieved. Dependent artifact version query strings are in this form: `<groupId>:<artifactKey>:<versionRange>` (`versionRange` is optional). The version range syntax is standard number interval notation. `()` marks exclusive ranges and `[]` marks inclusive ranges. Argument type: Collection

Positional arguments

`artifactVersionName`

Response

None or status OK message.

ec-perl

syntax: `$cmdr->removeDependentsFromArtifactVersion(<artifactVersionName>, {<optionals>});`

Example

```
# Note: In the Perl API, the argument must be specified as singular
# even though it can take multiple values.
```

```
$cmdr->removeDependentsFromArtifactVersion(myGroup:myKey:1.0.0-55,
        {dependentArtifactVersion => ["cmdr:onlineHelp:1.0.0"});
```

ectool

syntax: `ectool removeDependentsFromArtifactVersion <artifactVersionName> ...`

Example

```
ectool removeDependentsFromArtifactVersion myGroup:myKey:1.0.0-55
   --dependentArtifactVersions "cmdr"onlineHelp:1.0.0"
```

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resolveRoute

Resolves the network route to an artifact repository.

Arguments	Descriptions
`toRepositoryName`	Name of the artifact repository. Argument type: String
`fromAgentId`	Identifier of the agent requesting the route to a destination agent or artifact repository. Argument type: Long
`fromResourceName`	Name of the resource requesting the route to a destination agent or artifact repository. Argument type: String

Positional arguments

`toRepositoryName`

Response

None or a status OK message.

ec-perl

syntax:`$cmdr->resolveRoute (<toRepositoryName>, {<optionals>});`

Examples

```
$cmdr->resolveRoute("WebServer", {fromResourceName => "admin"});
```

ectool

syntax: `ectool resolveRoute <toRepositoryName> [optionals...]`

Example

```
ectool resolveRoute "WebServer" --fromResourceName "admin"
```

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retrieveArtifactVersions

Retrieves the most recent artifact version, including its dependents, from an artifact repository.

Note: This API wraps the "retrieve" function in the `ElectricCommander::ArtifactManagement` Perl module and hides some additional functionality implemented in that module.

You must specify search criteria options to locate the artifact versions you want to retrieve.

Arguments	Descriptions
`artifactKey`	User-specified identifier for this artifact. This field is limited to alphanumeric characters, spaces, underscores, hyphens, and periods. Argument type: String
`artifactName`	The name of the artifact. Argument type: String
`artifactVersionName`	The name of the artifact version. Argument type: String
`cacheDirectory`	The directory where the artifact version is stored. **Note:** The artifact version files are stored in a subdirectory under this cache directory. Argument type: String

Arguments	Descriptions

`filters`	A list of zero or more filter criteria definitions used to define objects to find.
	
	Each element of the filter list is a hash reference containing one filter criterion. You may specify several filter criteria, in which case an object must meet all filter criteria to be included in the result. See the code example below for instructions on forming the list and passing it to the ElectricFlow Perl API.
	
	Two types of filters:
	"property filters" are used to select objects based on the value of the object's intrinsic or custom property.
	
	"boolean filters" ("and", "or", "not") are used to combine one or more filters using boolean logic.
	
	Each "property filter" consists of a property name to test and an operator to use for comparison. The property can be either an intrinsic property defined by ElectricFlow or a custom property added by the user. Each operator takes zero, one, or two operands to compare against the desired property.
	
	Property filter operators are:
	`between (2 operands)`
	`contains (1)`
	`equals (1)`
	`greaterOrEqual (1)`
	`greaterThan (1)`
	`in (1)`
	`lessOrEqual (1)`
	`lessThan (1)`
	`like (1)`
	`notEqual (1)`
	`notLike (1)`
	`isNotNull (0)`
	`isNull (0)`
	
	A boolean filter is a boolean operator and an array of one or more filters that are operands. Each operand can be either a property filter or a boolean filter.
	
	Boolean operators are:
	`not (1 operand)`
	`and (2 or more operands)`

Arguments	Descriptions
	`or (2 or more operands)` Argument type: Collection
`groupId`	A user-generated group name for this artifact. This field may consist of alphanumeric characters, spaces, underscores, hyphens, and periods. Argument type: String
`includeDependents`	The published artifact version includes the artifact's dependents, such as a list of one or more artifact versions consisting of a list of possible values [(`0` | `1`| `true` | `false`)]. The values are: • `0/false` – dependent artifacts are not retrieved. • `1/true` – dependent artifacts are retrieved. The dependent artifact versions are stored in a subdirectory under the `cacheDirectory` or if `toDirectory` is specified, under the `toDirectory/ec_dependent_artifacts` directory. Argument type: Boolean
`overwrite`	Use *toDirectory* with one of these options: • `true`–Deletes previous content in the directory and replaces the content with your new version. • `false`–(Existing behavior) If the directory does not exist, one will be created and filled with the artifact's content. If the directory exists, a new directory is created with a unique name, and the artifact content is downloaded to it. • `update`–This is similar to a merge operation: two artifact versions can be moved into the same directory, but individual files with the same name will be overwritten. Argument type: String
`repositoryNames`	A space-separated list of artifact repository names. Retrieval is attempted from each specified repository in a specified order until it succeeds or all specified repositories have rejected the retrieval. If not specified, and if this request is made in a job step context, a preferred list of repository names is obtained from the Resource definition in the server. If that list is empty, the global repository list is used. Argument type: String

Arguments	Descriptions
`toDirectory`	Used to retrieve an artifact version to a specific directory without imposing the structure of a cache directory. Specify the full path to the new directory. • If the artifact version is in a local cache directory. it will be copied out of the cache. • If the artifact version is not in a cache directory, it will be downloaded directly to the specified directory, without putting it into a cache. `toDirectory` overrides `cacheDirectory` for downloads. Argument type: String
`versionRange`	The range of versions to search. Version range syntax is standard number interval notation. `()` marks exclusive ranges and `[]` marks inclusive ranges. Argument type: String

Positional arguments

None

Response

Returns one or more `artifactVersion` elements.

ec-perl

syntax: `$cmdr->retrieveArtifactVersions {<optionals>});`

Examples

```
# Retrieve the most current core:infra artifact version whose version is 1.x.x.
$cmdr->retrieveArtifactVersions({groupId => "core",
                             artifactKey => "infra",
                            versionRange => "[1.0,2.0)"});
# Or alternatively...
$cmdr->retrieveArtifactVersions({artifactName => "core:infra",
                                 versionRange => "[1.0,2.0)"});
```

ectool

syntax: `ectool retrieveArtifactVersions ...`

Example

```
ectool retrieveArtifactVersions --artifactName "core:infra" --versionRange "[1.0,2.
0)"
```

Note: The `filter` option does not perform as expected if using ectool. If you need the `filter` option, write your `retrieveArtifactVersions` API call in ec-perl.

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updateArtifactVersion

Updates an artifact version by adding or replacing one or more files in the existing file and publishes the result as a new artifact version to an artifact repository.

Note: This API wraps the "update" function in the `ElectricCommander::ArtifactManagement` Perl module and hides some additional functionality implemented in that module.

You must specify search criteria options to locate the artifact versions you want to update.

Arguments	Descriptions
`artifactKey`	User-specified identifier for this artifact. This field is limited to alphanumeric characters, spaces, underscores, hyphens, and periods. Argument type: String
`artifactName`	The name of the artifact. Argument type: String
`description`	A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument type: String
`excludePatterns`	Semi-colon delimited list of file-path patterns indicating which files/directories under "`fromDirectory`" to exclude when publishing an artifact version. Defaults to "empty," which means no files are excluded. See more information on "pattern syntax" below. Argument type: Collection
`followSymlinks`	*<Boolean flag -* `0|1|true|false`> The default is `1` or `true`. If `1` or `true`, ElectricFlow follows symbolic links and record the target file contents with the symbolic link name in the artifact. If `0` or `false`, ElectricFlow records the symbolic link as a symbolic link. Following symbolic links causes the publish API to remain compatible with previous releases. Argument type: Boolean
`fromDirectory`	The directory containing files to publish as the artifact version. A subset of files can be published based on `includePatterns` and `excludePatterns`. Argument type: String

Arguments	Descriptions
groupId	A user-generated group name for this artifact. This field is limited to alphanumeric characters, spaces, spaces, underscores, hyphens, and periods. Argument type: String
includePatterns	Semi-colon delimited list of file-path patterns indicating which files/directories under "fromDirectory" to publish in the artifact version. Defaults to "empty," which means all files will be included. Conversely, if only two files are "included," no other files except those two will be included. See more information on "pattern syntax" below. Argument type: Collection
newVersion	Unique identifier for the new artifact version in the form: major.minor.patch-qualifier-buildNumber major, minor, patch, and buildNumber are integers and qualifier can contain any character ***except*** the following: \:<>|?*/ If a version argument is provided, but does not follow the above format, the version will be considered 0.0.0-<user-specified-version-arg>-0 implicitly. See examples below. Argument type: String
path	The path of the original artifact under which one or more files will be added or replaced. The default path is the root. Argument type: String
version	Unique identifier for the artifact version in the form: major.minor.patch-qualifier-buildNumber major, minor, patch, and buildNumber are integers and qualifier can contain any character ***except*** the following: \:<>|?*/ If a version argument is provided, but does not follow the above format, the version will be considered 0.0.0-<user-specified-version-arg>-0 implicitly. See examples below. Argument type: String

Positional arguments

None

Response

Publishes a new artifact version to an artifact repository.

ec-perl

syntax:`$cmdr->updateArtifactVersion({<optionals>});`

Examples

```
# Update the current myGroup:myKey artifact version to version 1.0.0-55.
$cmdr->updateArtifactVersion({artifactName => "myGroup:myKey",
                              newVersion => "1.0.0-55"});
```

ectool

syntax: `ectool updateArtifactVersion [optionals]`

Example

```
ectool updateArtifactVersion --artifactName "myGroup:myKey" --newVersion "1.0.0-55"
```

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API Commands – Change History

getDeploymentHistoryItems

Retrieves all the deployment history items for a specific environment.

You must specify `projectName` .

Arguments	Descriptions
`projectName`	The name of the project that must be unique among all projects. Argument type: String
`applicationName`	(Optional) The application that owns the deployment history item. Argument type: String
`environmentName`	(Optional) The name of the environment where the application runs. Argument type: String
`latest`	(Optional) <*Boolean flag* - `0|1|true|false`> If this is set to "true", only the latest deployment information is returned. Argument type: Boolean

Arguments	Descriptions
`processName`	(Optional) The process that owns the deployment history item. Argument type: String
`snapshotName`	(Optional) The snapshot that owns the deployment history item. Argument type: String

Positional arguments

`projectName`

Response

Zero or more deployment history items.

ec-perl

syntax: `$cmdr->getDeploymentHistoryItems (<projectName>, {<optionals>});`

Example

```
$cmdr->getSnapshot ("Demo Project", {applicationName => "Demo App"});
```

ectool

syntax: `ectool getSnapshot <projectName> [optionals...]`

Example

```
ectool getSnapshot "Demo Project" --applicationName "Demo App"
```

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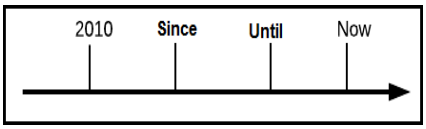
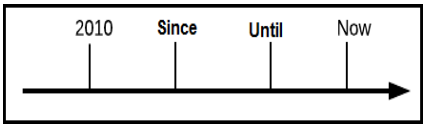
getEntityChange

Retrieves entity changes.

You must specify `entityId`, `entityPath`, or `entityType`.

Arguments	Descriptions
`entityId`	Entity ID. Argument Type: String
`entityPath`	Path to the entity. Argument Type: String
`entityType`	Type of entity. Argument Type: String

Arguments	Descriptions
`modifiedBy`	(Optional) Login ID of the user who modified the object. Argument Type: String
`timeSince`	(Optional) Start of the time interval for changes. This is the time line:  Argument Type: Long
`timeUntil`	(Optional) End of the time interval for changes. If this argument is not specified, the default is *Now*. This is the time line:  Argument Type: Long

Positional arguments

`entityId`, `entityPath`, or `entityType`

Response

Returns entity changes during the time interval between `timeSince` and `timeUntil`.

ec-perl

syntax: `$cmdr->getEntityChange(<entityId>, {<optionals>});`

syntax: `$cmdr->getEntityChange(<entityPath>, {<optionals>});`

syntax: `$cmdr->getEntityChange(<entityType>, {<optionals>});`

Example

If the `entityType` is component:

```
$cmdr->getEntityChange("WAR file", {timeUntil => 1600});
```

ectool

syntax:`ectool getEntityChange <entityId> {<optionals>});`

syntax:`ectool getEntityChange <entityPath> {<optionals>});`

syntax:`ectool getEntityChange <entityType> {<optionals>});`

Example

If the `entityType` is component:

```
ectool getEntityChange "WAR file" --timeUntil 1600
```

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getEntityChangeDetails

Retrieves the differences between entities.

You must specify `entityId`, `entityType`, and `revisionNumber`.

Arguments	Descriptions
`entityId`	The entity ID. Argument type: UUID
`entityType`	The entity type. Argument type: String
`revisionNumber`	The revision number of the entity. Argument type: Integer

Positional arguments

`entityId`, `entityType`, `revisionNumber`

Response

An `entityChange` element.

ec-perl

syntax: `$cmdr->getEntityChangeDetails (<entityId>, <entityType>, <revisionNumber>);`

Example

```
$cmdr->getEntityChangeDetails("4fa914dd-73f1-11e3-b67e-b0a420524153", "Process", "4
");
```

ectool

syntax: `ectool getEntityChangeDetails <entityId> <entityType> <revisionNumber>`

Example

```
ectool getSnapshots "4fa914dd-73f1-11e3-b67e-b0a420524153" "Process" "4"
```

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pruneChangeHistory

Prunes obsolete-for-days data from the Change History tables.

You must enter `daysToKeep`.

Arguments	Descriptions
`daysToKeep`	Number of days of Change History data to keep. The minimum is 7. Argument type: Long
`forcePruneAll`	(Optional) Use this argument with caution. It is used most often for testing. Override the specified `daysToKeep` value and prune the entire Change History, keeping nothing discardable. The `forcePruneAll` value = <*Boolean flag* -`0|1|true|false`>. Defaults to "false". Argument type: Boolean

Positional arguments

`daysToKeep`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->pruneChangeHistory (<daysToKeep>, {<optionals>});`

Example

```
$cmdr->pruneChangeHistory (14);
```

ectool

syntax:`ectool pruneChangeHistory <daysToKeep> <optionals>`

Example

```
ectool pruneChangeHistory 14
```

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revert

Reverts the state of the object to a previous state.

You must enter `objectID`, `objectType`, and `revisionNumber`.

Arguments	Descriptions
`objectId`	Object ID Argument type: UUID
`objectType`	Object type Argument Type: String
`revisionNumber`	Revision number of the object Argument Type: Integer

Positional arguments

`objectID`, `objectType`, `revisionNumber`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->revert (<objectID>, <objectType>, <revisionNumber>);`

Example

```
$cmdr->revert ("4fa914dd-73f1-11e3-b67e-b0a420524153", "property", 3);
```

ectool

syntax:`ectool revert <objectID> <objectType> <revisionNumber>`

Example

```
ectool revert "4fa914dd-73f1-11e3-b67e-b0a420524153" "property" 3
```

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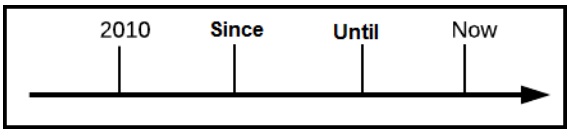
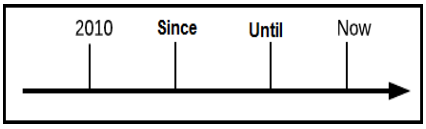
searchEntityChange

Searches for entity changes.

You must enter `entityId`, `entityPath`, or `entityType`.

Arguments	Descriptions
`entityId`	Entity ID. Argument Type: String
`entityPath`	Path to the entity. Argument Type: String

Arguments	Descriptions
`entityType`	Type of entity. Argument Type: String
`modifiedBy`	(Optional) Login ID of the user who modified the object. Argument Type: String
`timeSince`	(Optional) Start of the time interval for changes. ElectricFlow searches for changes since this time. This is the time line:  Argument type: Long
`timeUntil`	(Optional) End of the time interval for changes. ElectricFlow searches for changes up to this time. If this argument is not specified, the default is *Now*. This is the time line:  Argument Type: Long

Positional arguments

`entityId`, `entityPath`, or `entityType`

Response

Returns entity changes during the time interval.

ec-perl

syntax: `$cmdr->searchEntityChange (<entityId>, {<optionals>});`

syntax: `$cmdr->searchEntityChange (<entityPath>, {<optionals>});`

syntax: `$cmdr->searchEntityChange (<entityType>, {<optionals>});`

Example

```
$cmdr->searchEntityChange("component", {timeUntil => 1600});
```

ectool

syntax:`ectool searchEntityChange <entityId> {<optionals>});`

syntax:`ectool searchEntityChange <entityPath> {<optionals>});`

syntax:`ectool searchEntityChange <entityType> {<optionals>});`

Example

```
ectool searchEntityChange "component" --timeUntil 1600
```

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API Commands - Component

addComponentToApplicationTier

Adds the specified component to the specified application tier.

You must specify the `projectName`, `applicationName`, `applicationTierName`, and `componentName` arguments.

Arguments	Descriptions
`projectName`	Name for the project that must be unique among all projects. Argument Type: String
`applicationName`	Name of the application that must be unique among all projects. Argument Type: String
`applicationTierName`	Name of the tier that must be unique within the application. Argument Type: String
`componentName`	Name of the component. Argument Type: String
`componentProjectName`	(Optional) Name of the project that contains the component. Argument Type: String

Positional arguments

`projectName`, `applicationName`, `applicationTierName`, `componentName`

Response

Returns the component and specified application tier elements.

ec-perl

Syntax:

```
$<object>->addComponentToApplicationTier(<projectName>, <applicationName>,
 <applicationTierName>, <componentName>, {<optionals>});
```

Example:

```
$ec->addComponentToApplicationTier("default", "newApp", "appTier1", "component
1");
```

ectool

Syntax:

```
ectool addComponentToApplicationTier <projectName> <applicationName>
 <applicationTierName> <componentName> [optionals...]
```

Example:

```
ectool addComponentToApplicationTier default newApp appTier1 VCScomponent
```

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copyComponent

Creates a new component based on an existing one.

You must specify the `projectName`, `componentName`, and `newComponentName` arguments.

Arguments	Descriptions
`projectName`	Name for the project that must be unique among all projects. Argument Type: String
`componentName`	Name of the component. Argument Type: String
`newComponentName`	Name of the new component. Argument Type: String
`applicationTierName`	(Optional) Name of the tier that must be unique within the application. Argument Type: String

Arguments	Descriptions
`description`	(Optional) Comment text describing this object. It is not interpreted by ElectricFlow. Argument Type: String
`fromApplicationName`	(Optional) Name of source application. Argument Type: String
`toApplicationName`	(Optional) Name of source application. Argument Type: String

Positional arguments

`projectName`, `componentName` , and `newComponentName`

Response

Returns the new component.

ec-perl

Syntax:

```
$<object>->copyComponent(<projectName>, <componentName>, <newComponentName>, {<o
ptionals>});
```

Example:

```
$ec->copyComponent("default", "App1 WAR file", "App2 WAR file", {applicationTier
Name => "Web Server Config"});
```

ectool

Syntax:

```
ectool copyComponent <projectName> <componentName> <newComponentName> [optional
s...]
```

Example:

```
ectool copyComponent default "App1 WAR file" "App2 WAR file" --applicationTierNa
me "Web Server Config"
```

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`createComponent`

Creates a new component for a project.

You must specify the `projectName` and `componentName` arguments.

Arguments	Descriptions
`projectName`	Name for the project that must be unique among all projects. Argument Type: String
`componentName`	Name of the component. Argument Type: String
`actualParameters`	(Optional) The parameters passed as arguments to the application component. Argument Type: Map
`applicationName`	(Optional) Name of the application to which this component is scoped. Argument Type: String
`credentialName`	(Optional) Name of the credential to attach to this component. Argument Type: String
`description`	(Optional) Comment text describing this object. It is not interpreted by ElectricFlow. Argument Type: String
`pluginKey`	(Optional) Key of the plugin. Argument Type: String
`pluginName`	(Optional) Name of the plugin. Argument Type: String
`pluginParameters`	(Optional) List of plugin parameters. Argument Type: Map
`reference`	(Optional) <`Boolean flag - 0|1|true|false`> If `1` or `true`, a reference of the component is created. If `0` or `false`, a copy of the component is created. Argument type: Boolean
`sourceApplicationName`	(Optional) The name of source application. Argument Type: String
`sourceComponentName`	(Optional) The name of new component. Argument Type: String

Arguments	Descriptions
`sourceProjectName`	(Optional) The name of source project. Argument Type: String

Positional arguments

`projectName`, `componentName`

Usage Guidelines:

- To create a new component, use `pluginKey` or `pluginName`.

  ectool example: `--pluginKey` or `--pluginName`

- To create an application component by copying a master component, use `applicationName`, `sourceComponentName`, `sourceProjectName`, and `reference` = `0`.

  ectool example: `--applicationName`, `--sourceComponentName`, `--sourceProjectName`, `--reference 0`

- To create a master component by copying another master component, use `sourceComponentName`, `sourceProjectName`,and `reference` = `0`.

  ectool example: `--sourceComponentName`, `--sourceProjectName`, `--reference 0`

- To create an application component by copying another application component, use `applicationName`, *sourceComponentName*, `sourceApplicationName`, `sourceProjectName`, and `reference` = `0`.

  ectool example: `--applicationName`, `--sourceComponentName`, `--sourceApplicationName`, `--sourceProjectName`, `--reference 0`

- To create a master component from an application component, use `sourceComponentName`, `sourceApplicationName`, `sourceProjectName`, and `reference` = `0`.

  ectool example: `--sourceComponentName`, `--sourceApplicationName`, `--sourceProjectName`, `--reference 0`

- To create a reference of the master component, use `applicationName`, `sourceComponentName`, `sourceProjectName`, and `reference` = `1`.

  ectool example: `--applicationName`, `--sourceComponentName`, `--sourceProjectName`, `--reference 1`

Response

Returns a version-controlled component element.

ec-perl

Syntax:

```
$<object>->createComponent(<projectName>, <componentName>, {<optionals>});
```

Example:

To create a new component:

```
$ec->createComponent("Default", "Cleanup DB", {pluginName => "EC-Maven"});
```

To create an application component by copying a master component:

```
$ec->createComponent("Default", "Cleanup DB", {applicationName => "Deploy",
sourceComponentName => "Backup DB", sourceProjectName => "Archive", reference =>
0});
```

ectool

Syntax:

```
ectool createComponent <projectName> <componentName> [optionals...]
```

Example:

To create a new component:

```
ectool createComponent "Default" "Cleanup DB" --pluginName "EC-Maven"
```

To create an application component by copying a master component:

```
ectool createComponent "Default" "Cleanup DB" --applicationName "Deploy" --sourc
eComponentName "Backup DB" --sourceProjectName "Archive" --reference 0
```

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deleteComponent

Deletes a component.

You must specify the `projectName` and `componentName` arguments.

Arguments	Descriptions
`projectName`	Name for the project that must be unique among all projects. Argument Type: String
`componentName`	Name of the component. Argument Type: String
`applicationName`	(Optional) Name of an application to which this component is scoped. Argument Type: String

Positional arguments

`projectName`, `componentName`

Response

None or a status OK message.

ec-perl

Syntax:

```
$<object>->deleteComponent(<projectName>, <componentName>), {<optionals>};
```

Example:

```
$ec->deleteComponent("default", "VCScomponent");
```

ectool

Syntax:

```
ectool deleteComponent <projectName> <componentName> [optionals...]
```

Example:

```
ectool deleteComponent default VCScomponent
```

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getComponent

Retrieves a component by name.

You must specify the `projectName` and `componentName` arguments.

Arguments	Descriptions
`projectName`	Name for the project that must be unique among all projects. Argument Type: String
`componentName`	Name of the component. Argument Type: String
`applicationEntityRevisionId`	(Optional) The revision ID of the versioned object. Argument type: UUID
`applicationName`	(Optional) Name of an application to which this component is scoped. Argument Type: String

Positional arguments

`projectName, componentName`

Response

Returns the specified component element.

ec-perl

Syntax:

```
$<object>->getComponent(<projectName>, <componentName>, {<optionals>});
```

Example:

```
$ec->getComponent("default", "component1", {applicationEntityRevisionId => "4fa7
65dd-73f1-11e3-b67e-b0a420524153"});
```

ectool

Syntax:

```
ectool getComponent <projectName> <componentName> [optionals...]
```

Example:

```
ectool getComponent default VCScomponent --applicationEntityRevisionId 4fa765dd-
73f1-11e3-b67e-b0a420524153
```

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getComponents

Retrieves all components in a project.

You must specify the `projectName` argument.

Arguments	Descriptions
`projectName`	Name for the project that must be unique among all projects. Argument Type: String
`applicationEntityRevisionId`	(Optional) The revision ID of the versioned object. Argument type: UUID
`applicationName`	(Optional) Name of the application. You can search for components scoped to an application. Argument Type: String

Positional arguments

`projectName`

Response

Returns zero or more component elements.

ec-perl

Syntax:

```
$<object>->getComponents(<projectName>, {<optionals>});
```

Example:

```
$ec->getComponents("default", {applicationEntityRevisionId => "4fa765dd-73f1-11e
3-b67e-b0a420524153"});
```

ectool

Syntax:

```
ectool getComponents <projectName> [optionals...]
```

Example:

```
ectool getComponents default --applicationEntityRevisionId 4fa765dd-73f1-11e3-b6
7e-b0a420524153
```

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getComponentsinApplicationTier

Retrieves the list of components in an application tier.

You must specify the `projectName`, `applicationName`, and `applicationTierName` arguments.

Arguments	Descriptions
`projectName`	Name for the project that must be unique among all projects. Argument Type: String
`applicationName`	Name of the application that must be unique among all projects. Argument Type: String
`applicationTierName`	Name of the tier that must be unique within the application. Argument Type: String
`applicationEntityRevisionId`	(Optional) The revision ID of the versioned object. Argument type: UUID
`includeArtifactDetail`	(Optional) <*Boolean flag* - `0|1|true|false`> If set to "true", the artifact name and version are returned as part of component response. Argument type: Boolean

Positional arguments

`projectName, applicationName, applicationTierName`

Response

Returns zero or more component elements in the specified application tier.

ec-perl

Syntax:

```
$<object>->getComponentsInApplicationTier(<projectName>, <applicationName>,
 <applicationTierName>, {<optionals>});
```

Example:

```
$ec->getComponentsInApplicationTier("default", "newApp",
"appTier1", {applicationEntityRevisionId => "4fa765dd-73f1-11e3-b67e-b0a42052415
3"});
```

ectool

Syntax:

```
ectool getComponentsInApplicationTier <projectName> <applicationName> <applicati
onTierName> [optionals...]
```

Example:

```
ectool getComponentsInApplicationTier default newApp appTier1
--applicationEntityRevisionId 4fa765dd-73f1-11e3-b67e-b0a420524153
```

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modifyComponent

Modifies an existing component.

You must specify the `projectName` and `componentName` arguments.

Arguments	Descriptions
`projectName`	Name for the project that must be unique among all projects. Argument Type: String
`componentName`	Name of the component. Argument Type: String
`applicationName`	(Optional) Name of an application to which this component is scoped. Argument Type: String
`credentialName`	(Optional) Name of the credential to attach to this component. Argument Type: String
`description`	(Optional) Comment text describing this component. It is not interpreted by ElectricFlow. Argument Type: String
`newName`	(Optional) New name of the component. Argument Type: String
`pluginKey`	(Optional) Key for the plugin. Argument Type: String

Arguments	Descriptions
`pluginName`	(Optional) Name of the plugin. Argument Type: String
`pluginParameters`	(Optional) List of the plugin parameters Argument Type: Map

Positional arguments

`projectName`, `componentName`

Response

Returns an updated component element.

ec-perl

Syntax:

```
$<object>->modifyComponent(<projectName>, <componentName>, {<optionals>});
```

Example:

```
$ec->modifyComponent("default", "component1", {credentialName => "cred1", newNam
e => "NewName"});
```

ectool

Syntax:

```
ectool modifyComponent <projectName> <componentName> [optionals...]
```

Example:

```
ectool modifyComponent default component1  --credentialName cred1  --newName New
Name
```

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removeComponentFromApplicationTier

Removes the given component from the given application tier.

You must specify the `projectName`, `applicationName`, `applicationTierName`, and `componentName` arguments.

Arguments	Descriptions
`projectName`	Name for the project that must be unique among all projects. Argument Type: String

Arguments	Descriptions
applicationName	Name of the application that must be unique among all projects. Argument Type: String
applicationTierName	Name of the tier that must be unique within the application. Argument Type: String
componentName	Name of component. Argument Type: String
componentProjectName	(Optional) Name of the project that contains the component. Argument Type: String

Positional arguments

projectName, applicationName, applicationTierName, componentName

Response

None or a status OK message.

ec-perl

Syntax:

```
$<object>->removeComponentFromApplicationTier(<projectName>,
 <applicationName>, <applicationTierName>, <componentName>, {<optionals>});
```

Example:

```
$ec->removeComponentFromApplicationTier("default", "newApp", "appTier1", "compon
ent1");
```

ectool

Syntax:

```
ectool removeComponentFromApplicationTier <projectName> <applicationName> <appli
cationTierName>
<componentName> [optionals...]
```

Example:

```
ectool removeComponentFromApplicationTier default newApp appTier1 VCScomponent
```

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API Commands - Credential Management

getCredentials
getFullCredential
modifyCredential

attachCredential

Attaches a credential to a step or a schedule.

Attaching a credential allows the credential to be passed as an actual argument by a schedule or subprocedure step, or to be used in a `getFullCredential` call by a command step.

You must specify `projectName`, `credentialName`, and locator arguments to identify a step or a schedule.

Arguments	Descriptions
`projectName`	The name of the project that must be must be unique among all projects. Argument type: String
`credentialName`	Name of the credential in one of these forms: • **relative** (for example, *"cred1"*)–The credential is assumed to be in the project that contains the request target object. • **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*)–Tthe credential can be from any specified project, regardless of the target object's project. Argument type: String
`applicationName`	(Optional) The name of the application process to which the credential is attached. Argument type: String
`componentName`	(Optional) The name of the component or component process to which the credential is attached. Argument type: String
`pipelineName`	(Optional) The name of the pipeline when a credential attached to a stage task.
`procedureName`	(Optional) The name of a procedure when a credential is attached to a procedure or procedure step. Argument type: String
`processName`	(Optional) The name of a process when a credential is attached to a process or process step. Argument type: String

Arguments	Descriptions
`processStepName`	(Optional) The name of a process step when a credential is attached to a process step. Argument type: String
`scheduleName`	(Optional) The name of the schedule for running a procedure or process in the "named" project when a credential is attached to the schedule. Argument type: String
`stageName`	(Optional) The name of the stage when a credential is attached to a stage task. Argument type: String
`stateDefinitionName`	(Optional) The name of the workflow state definition when a credential is attached to a state definition. Argument type: String
`stepName`	(Optional) A step name in a procedure or process in the "named" project. Argument type: String
`taskName`	(Optional) The name of the task when a credential is attached to a task. Argument type: String
`workflowDefinitionName`	(Optional) The name of the workflow definition when a credential is attached to a state definition. Argument type: String

Positional arguments

`projectName, credentialName`

Response

None or status OK message.

ec-perl

syntax: `$cmdr->attachCredential(<projectName>, <credentialName>, {...});`

Example

```
$cmdr->attachCredential("Test Proj", "Preflight User", {procedureName =>
   "Run Build", stepName=>"Get Sources"});
```

ectool

syntax: `ectool attachCredential <projectName> <credentialName> ...`

Example

```
ectool attachCredential "Test Proj" "Preflight User"
   --procedureName "Run Build" --stepName "Get Sources"
```

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createCredential

Creates a new credential for a project.

You must specify a `projectName`, `credentialName`, `username`, and `password`.

Arguments	Descriptions
`projectName`	The name of the project where the credential will be stored. The name must be unique within all projects. Argument type: String
`credentialName`	The name of the credential. Argument type: String
`userName`	The user name for the credential. Argument type: String
`password`	The password for the credential. Argument type: String
`description`	A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument type: String
`passwordRecoveryAllowed`	<*Boolean flag* - `0|1|true|false`>–If true, the password can be recovered by running `getFullCredential` from a job step. Argument type: Boolean

Positional arguments

`projectName, credentialName, userName, password`

Response

None or status OK message.

ec-perl

syntax: `$cmdr->createCredential(<projectName>, <credentialName>, <userName>, <password>, {<optionals>});`

Example

```
$cmdr->createCredential("Sample Project", "Build User", "build", "abc123",
{userName => "build", password => "abc123"});
```

ectool

syntax: `ectool createCredential <projectName> <credentialName> <userName> <password> ...`

Example

```
ectool createCredential "Sample Project" "Build User" "build"  "abc123"
```

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deleteCredential

Deletes a credential.

You must specify a `projectName` and a `credentialName`.

Arguments	Descriptions
`projectName`	The name of the project that contains this credential. The project name must be unique among all projects. Argument type: String
`credentialName`	Name of the credential in one of these forms: • **relative** (for example, *"cred1"*)–The credential is assumed to be in the project that contains the request target object. • **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*)–The credential can be from any specified project, regardless of the target object's project. Argument type: String

Positional arguments

`projectName, credentialName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteCredential(<projectName>, <credentialName>);`

Example

```
$cmdr->deleteCredential('Sample Project', 'Build User');
```

ectool

syntax: `ectool deleteCredential <projectName> <credentialName>`

Example

```
ectool deleteCredential "Sample Project" "Build User"
```

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detachCredential

Detaches a credential from an object.

You must specify `projectName` and `credentialName`. Also, depending on where the credential is attached, you must specify a step (using `procedureName` and `stepName`), or define a schedule (using `scheduleName`).

Arguments	Descriptions
`projectName`	The name of the project that must be unique among all projects. Argument type: String
`credentialName`	Name of the credential in one of these forms: • **relative** (for example, *"cred1"*)–The credential is assumed to be in the project that contains the request target object. • **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*)–Tthe credential can be from any specified project, regardless of the target object's project. Argument type: String
`applicationName`	(Optional) The name of the application process with the credential that you want to detach. Argument type: String
`componentName`	(Optional) The name of the component or component process with the credential that you want to detach. Argument type: String
`pipelineName`	(Optional) The name of the pipeline when a credential attached to a stage task.
`procedureName`	(Optional) The name of the procedure with the credential that you want to detach. Argument type: String

Arguments	Descriptions
`processName`	(Optional) The name of the process with the credential that you want to detach. Argument type: String
`processStepName`	(Optional) The name of the process step with the credential that you want to detach. Argument type: String
`scheduleName`	(Optional) The name of the schedule where this credential is attached. Argument type: String
`stageName`	(Optional) The name of the stage when a credential is attached to a stage task. Argument type: String
`stateDefinitionName`	(Optional) The name of the workflow state definition when a credential is attached to a state definition. Argument type: String
`stepName`	(Optional) A step name in a procedure or process in the "named" project. Argument type: String
`taskName`	(Optional) The name of the task when a credential is attached to a task. Argument type: String
`workflowDefinitionName`	(Optional) The name of the workflow definition when a credential is attached to a state definition. Argument type: String

Positional arguments

`projectName, credentialName`

Response

None, or a status OK message on success, or:

`NoSuchCredential` if the specified credential does not exist.

`NoSuchSchedule` if the specified schedule does not exist.

ec-perl

syntax: `$cmdr->detachCredential(<projectName>, <credentialName>, {<optionals>});`

Examples

```
$cmdr->detachCredential("Test Proj", "Preflight User",
                        {procedureName => "Run Build",
                              stepName => "Get Sources"});

$cmdr->detachCredential("Test Proj", "Preflight User",
                         {scheduleName => "Build Schedule"});
```

ectool

syntax: `ectool detachCredential <projectName> <credentialName> ...`

Examples

```
ectool detachCredential "Test Proj" "Preflight User"
  --procedureName "Run Build" --stepName "Get Sources"

ectool detachCredential "Test Proj" "Preflight User"
  --scheduleName "Build Schedule"
```

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getCredential

Retrieves a credential by name.

You must specify `projectName` and `credentialName`.

Arguments	Descriptions
`projectName`	The name of the project that must be unique among all projects. Argument type: String
`credentialName`	Name of the credential in one of these forms: • **relative** (for example, *"cred1"*)–The credential is assumed to be in the project that contains the request target object. • **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*)–The credential can be from any specified project, regardless of the target object's project. Argument type: String

Positional arguments

`projectName, credentialName`

Response

One `credential` element.

ec-perl

syntax: `$cmdr->getCredential(<projectName>, <credentialName> );`

Example

```
$cmdr->getCredential("SampleProject", "Build User");
```

ectool

syntax: `ectool getCredential <projectName> <credentialName>`

Example

```
ectool getCredential "Sample Project" "Build User"
```

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getCredentials

Retrieves all credentials in a project.

You must specify a `projectName`.

Arguments	Descriptions
`projectName`	The name of the project that must be unique among all projects. Argument type: String
`usableOnly`	<*Boolean flag* - `0|1|true|false`> If set to 1, only those credentials that the currently logged-in user has execute privileges for will be returned. Argument type: Boolean

Positional arguments

`projectName`

Response

Zero or more `credential` elements.

ec-perl

syntax: `$cmdr->getCredentials(<projectName>, {...});`

Example

```
$cmdr->getCredentials("Sample Project", {"usableOnly" => 1});
```

ectool

syntax: `ectool getCredentials <projectName> ...`

Example

```
ectool getCredentials "Sample Project" --usableOnly 1
```

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getFullCredential

Retrieves a credential by name, including password, from within a running step.

You must specify the `credentialName` and `jobStepId`.

Arguments	Descriptions
`credentialName`	Name of the credential in one of these forms: • **relative** (for example, *"cred1"*)–The credential is assumed to be in the project that contains the request target object. • **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*)–Tthe credential can be from any specified project, regardless of the target object's project. Argument type: String
`jobStepId`	The unique identifier for the job step that is used to make a project association. Argument type: UUID

Positional arguments

`credentialName`, `jobStepId`

Response

If `value` is supplied, only the name is returned when called by ectool. If no value is supplied, an xPath object is returned.

ec-perl

syntax: `$cmdr->getFullCredential(<credentialName>, <jobStepId>);`

Example

```
# Returns an xPath object containing the password.
my $xpath = $cmdr->getFullCredential("myCred", "4fa765dd-73f1-11e3-b67e-b0a42052415
3");


# Parse password from response.
my $password = $xpath->find("//password");
```

ectool

syntax: `ectool getFullCredential <credentialName> <jobStepId>`

Example

```
ectool getFullCredential "myCred" "4fa765dd-73f1-11e3-b67e-b0a420524153"
```

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modifyCredential

Modifies an existing credential.

You must specify `projectName` and `credentialName`.

Arguments	Descriptions
`projectName`	The name of the project that must be unique among all projects. Argument type: String
`credentialName`	Name of the credential in one of these forms: • **relative** (for example, *"cred1"*)–The credential is assumed to be in the project that contains the request target object. • **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*)–Tthe credential can be from any specified project, regardless of the target object's project. Argument type: String
`description`	A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument type: String
`newName`	New name of the credential. Argument type: String
`password`	The password for the specified user name. Argument type: String
`passwordRecoveryAllowed`	<*Boolean flag* - `0|1|true|false`>–If true, the password can be recovered by running `getFullCredential` from a job step. Argument type: Boolean
`userName`	The name of the user containing this credential. Argument type: String

Positional arguments

`projectName, credentialName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->modifyCredential(<projectName>, <credentialName>, {<optionals>});`

Example

```
$cmdr->modifyCredential("Sample Project", "Build User", {userName => "build"});
```

ectool

syntax: `ectool modifyCredential <projectName> <credentialName> ...`

Example

```
ectool modifyCredential "Sample Project" "Build User" --userName build
```

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API Commands - Database Configuration

getDatabaseConfiguration

Retrieves the current database configuration.

Arguments	Descriptions
None	

Positional arguments

None

Response

Returns a `databaseConfiguration` element, which includes the database name, user name, database dialect, driver, URL, along with the host name and port number.

ec-perl

syntax: `$cmdr->getDatabaseConfiguration();`

Example

```
$cmdr->getDatabaseConfiguration();
```

ectool

syntax: `ectool getDatabaseConfiguration`

Example

```
ectool getDatabaseConfiguration
```

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setDatabaseConfiguration

Sets the database configuration on the server. If the server is in bootstrap mode, these changes take effect immediately and the server attempts to start. If the server is already running, these changes have no effect until the server is restarted.

Note: If you are replacing the database you are currently using, you must restart the ElectricFlow server after configuring the new database you want to use.

ElectricFlow assigns default values to the following three arguments that are derived from information you enter for the arguments below. The values for these arguments can be viewed in the XML Response for `getDatabaseConfiguration`. You should not need to change these values, but "customDatabase" arguments may be used to override ElectricFlow default values. Contact Electric Cloud Customer Support for assistance with using these arguments:

```
customDatabaseDialect
customDatabaseDriver
customDatabaseUrl
```

Arguments	Descriptions
`customDatabaseDialect`	Class name of the Hibernate dialect *(advanced use only*. The server chooses an appropriate dialect based on the `databaseType`). Argument Type: String
`customDatabaseDriver`	Class name of the JDBC driver (*advanced use only*. The server chooses an appropriate driver based on the `databaseType`). Argument Type: String
`customDatabaseUrl`	The JDBC to use (*advanced use only*. The server composes an appropriate URL). Argument Type: String
`databaseName`	The name of the database that you want the ElectricFlow server to use. The default is *commander*. Argument Type: String
`databaseType`	The type of database that you want the ElectricFlow server to use. Supported database types are: `<builtin|mysql|sqlserver|oracle>`. The default is *builtin*. Argument Type: DatabaseType
`hostName`	The domain name or IP address of the host server machine where the database is running. Argument Type: String

Arguments	Descriptions
`ignorePasskeyMismatch`	<*Boolean flag* - `0|1|true|false`> If `true`, ignore a passkey fingerprint mismatch between the current passkey file and the database configuration and discard the stored credentials. **Note:** This action discards all saved passwords. Argument Type: Boolean
`ignoreServerMismatch`	<*Boolean flag* - `0|1|true|false`> If `true`, ignore a host name mismatch between the current server and the database configuration where the server previously started. Argument Type: Boolean
`password`	The password required to access the database. `setDatabaseConfiguration` does not allow a passwordless database user. Make sure the database user has a password. Argument Type: String
`port`	The port number used to access the database. The default is the server port default. Argument Type: String
`preserveSessions`	<*Boolean flag* - `0|1|true|false`> When a host name mismatch between the current server and the database configuration occurs, the default behavior is to invalidate all sessions. If this argument is set to true, all sessions are preserved and the server can reconnect to running jobs. This option is used in combination with `ignoreServerMismatch`. Argument Type: Boolean
`userName`	The name of the user required to access the database. Argument Type: String

Positional arguments

None

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->setDatabaseConfiguration({<optionals>});`

Example

```
$cmdr->setDatabaseConfiguration({hostName => "localhost", port => 3306});

# If the database type is set to the mysql, sqlserver, or oracle and
# you want to use the builtin database
```

```
$cmdr->setDatabaseConfiguration({databaseType => "builtin", databaseName => "builti
n"});
```

ectool

syntax: `ectool setDatabaseConfiguration <specify configuration values> ...>`

Example

```
ectool setDatabaseConfiguration --hostName localhost --port 3306

# If the database type is set to the mysql, sqlserver, or oracle and
# you want to use the builtin database

ectool setDatabaseConfiguration --databaseType builtin --databaseName builtin
```

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validateDatabase

Performs consistency checks on the database.

Arguments	Descriptions
`options`	Comma-separated list of options that specify the aspects of the database to validate. Argument Type: String

Positional arguments

None

Response

None or a status OK message.

ec-perl

syntax:`$cmdr->validateDatabase( {<optionals>});`

Example

```
$cmdr->validateDatabase();
```

ectool

syntax: `ectool validateDatabase [optionals ...]`

Example

```
ectool validateDatabase
```

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API Commands - Directory Provider Management

createDirectoryProvider

Creates a new Active Directory or LDAP directory provider.

You must specify a `providerName`.

Arguments	Descriptions
`providerName`	Name for a LDAP directory provider that must be unique. This human-readable name appears in the user interface to identify users and groups from this provider. Argument type: String
`commonGroupNameAttribute`	The attribute in a group record that contains the common group name. If specified, this name is used only when searching for groups from an external provider. Use this argument if the `groupNameAttribute` or the `uniqueGroupNameAttribute` is set to `distinguishedName`, which is not searchable. Argument type: String
`description`	A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument type: String
`domainName`	(Optional) The domain name from which Active Directory servers are automatically discovered. Argument type: String
`emailAttribute`	(Optional) The attribute in an LDAP user record that contains the user's email address. If the attribute is not specified, the account name and domain name are concatenated to form an email address. Argument type: String

Arguments	Descriptions
`enableGroups`	<*Boolean flag* -`0|1|true|false`> Determines whether or not to enable external groups for the directory provider. This argument defaults to "true". Argument type: Boolean
`fullUserNameAttribute`	The attribute in a user record that contains the user's full name (first and last) to display in the UI. If this attribute is not specified or the resulting value is empty, the user's account name is used instead. Argument type: String
`groupBase`	The string is prepended to the `basedn` to construct the directory domain name (DN) that contains group records. Argument type: String
`groupMemberAttributes`	A comma-separated attribute name list that identifies a group member. Most LDAP configurations only specify a single value, but if there is a mixture of POSIX and LDAP style groups in the directory, multiple attributes may be required. Argument type: String
`groupMemberFilter`	(Optional) This LDAP query is performed in the groups directory context to identify groups containing a specific user as a member. Two common forms of group record in LDAP directories: POSIX style groups where members are identified by account name, and `groupOfNames` or `uniqueGroupOfNames` records where members are identified by the full user DN. Both forms are supported, so the query is passed to parameters: "{0}" is replaced with the full user record DN, and "{1}" is replaced with the user's account name. Argument type: String
`groupNameAttribute`	The attribute in a group record that contains the name of the group. Argument type: String
`groupSearchFilter`	This LDAP query is performed in the context of the groups directory to enumerate group records. Argument type: String
`managerDn`	The domain name (DN) of a user who has read-only access to LDAP user and group directories. If this property is not specified, the server attempts to connect as an unauthenticated user. Not all servers allow anonymous read-only access. **Note:** This user does not need to be an admin user with modify privileges. Argument type: String

Arguments	Descriptions
managerPassword	If the managerDn property is set, this password is used to authenticate the manager user. Argument type: String
providerType	Type string for a directory provider: <ldap|activedirectory> Argument type: ProviderType
realm	This is an identifier (string) used for LDAP directory providers so users and groups (within LDAP) can be uniquely identified in "same name" collisions across multiple directory providers. The realm is appended to the user or group name when stored in the ElectricFlow server. For example, <*user*>@dir (where the realm is set to "dir"). Argument type: String
url	The server URL is in the form protocol://host:port/basedn. Protocol is either ldap or ldaps (for secure LDAP). The port is implied by the protocol, but can be overridden if it is not at the default location (389 for ldap, 636 for ldaps). The basedn is the path to the top-level directory that contains users and groups at this site. This is typically the domain name where each part is listed with a dc= and separated by commas. **Note:** Spaces in the basedn must be URL encoded (%20). Argument type: String
userBase	This string is prepended to the basedn to construct the directory DN that contains user records. Argument type: String
userNameAttribute	The attribute in a user record that contains the user's account name. Argument type: String
userSearchFilter	This LDAP query is performed in the context of the user directory to search for a user by account name. The string “{0}” is replaced with the user's login ID. Typically, the query compares a user record attribute with the substituted user login ID. Argument type: String
userSearchSubtree	<*Boolean flag* - 0|1|true|false> If true, recursively search the subtree below the user base. Argument type: Boolean

Arguments	Descriptions
useSSL	*<Boolean flag* -0|1|true|false> Use this flag to define whether or not SSL is used for server-agent communication, or if you need to use SSL to communicate with your Active Directory servers. The default is "true". **Note:** Transport Layer Security (TLS) has replaced Secure Sockets Layer version 3.0 (SSLv3) on the ElectricFlow web server and the ElectricFlow server. Argument type: Boolean

Positional arguments

`providerName, providerType, url`

Response

None or status OK message.

ec-perl

syntax: `$cmdr->createDirectoryProvider(<providerName>, {<optionals>});`

Example

```
$cmdr->createDirectoryProvider("AD3", {url => "ldaps://pdc/dc=coname3.dc=com",
   providerType => "activedirectory"});
```

ectool

syntax: `ectool createDirectoryProvider <providerName> ...`

Example

```
ectool createDirectoryProvider AD3 --url "ldaps://pdc/dc=coname3.dc=com"
   --providerType activedirectory
```

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deleteDirectoryProvider

Deletes an Active Directory or LDAP directory provider.

You must specify a `providerName`.

Arguments	Descriptions
providerName	The name of the directory provider that you want to delete. Argument Type: String

Positional arguments

`providerName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteDirectoryProvider(<providerName>);`

Example

```
$cmdr->deleteDirectoryProvider('AD3');
```

ectool

syntax: `ectool deleteDirectoryProvider <providerName>`

Example

```
ectool deleteDirectoryProvider AD3
```

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Retrieves a directory provider by name.

You must specify a `providerName`.

Arguments	Descriptions
`providerName`	The name of the directory provider that must be unique. Argument Type: String

Positional arguments

`providerName`

Response

One `directoryProvider` element.

Note: For security reasons, the `managerPassword` field is never returned.

ec-perl

syntax: `$cmdr->getDirectoryProvider(<providerName>);`

Example

```
$cmdr->getDirectoryProvider("AD3");
```

ectool

syntax: `ectool getDirectoryProvider <providerName>`

Example

```
ectool getDirectoryProvider AD3
```

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Retrieves all directory providers.

Arguments	Descriptions
None	

Positional arguments

None

Response

Zero or more `directoryProvider` elements.

ec-perl

syntax: `$cmdr->getDirectoryProviders();`

Example

```
$cmdr->getDirectoryProviders();
```

ectool

syntax: `ectool getDirectoryProviders`

Example

```
ectool getDirectoryProviders
```

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modifyDirectoryProvider

Modifies an existing LDAP directory provider.

You must specify the `providerName`.

Arguments	Descriptions
`providerName`	The name of the directory provider that must be unique. Argument Type: String
`commonGroupNameAttribute`	The attribute in a group record that contains the common group name. If specified, this name is used only when searching for groups from an external provider. Use this argument if the `groupNameAttribute` or the `uniqueGroupNameAttribute` is set to `distinguishedName`, which is not searchable. Argument Type: String

Arguments	Descriptions
`description`	A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>`. Argument Type: String
`domainName`	The domain from which Active Directory servers are automatically discovered. Argument Type: String
`emailAttribute`	The attribute in a user record that contains the user's email address. If the attribute is not specified, the account name and domain name are concatenated to form an email address. Argument Type: String
`enableGroups`	<*Boolean flag* - `0|1|true|false`> Determines whether or not to enable external groups for the directory provider. Defaults to `true`. Argument Type: Boolean
`fullUserNameAttribute`	The attribute in a user record that contains the user's full name (first and last) for display in the UI. If this attribute is not specified or the resulting value is empty, the user's account name is used instead. Argument Type: String
`groupBase`	This string is prepended to the `basedn` to construct the directory DN that contains group records. Argument Type: String
`groupMemberAttributes`	A comma-separated attribute name list that identifies a group member. Most LDAP configurations only specify a single value, but if there is a mixture of POSIX and LDAP style groups in the directory, multiple attributes might be required. Argument Type: String
`groupMemberFilter`	This LDAP query is performed in the group directory context to identify groups containing a specific user as a member. Two common forms of group record in LDAP directories: POSIX style groups where members are identified by account name, and `groupOfNames` or `uniqueGroupOfNames` records where members are identified by the full user DN. Both forms are supported, so the query is passed two parameters: `"{0}"` is replaced with the full user record DN, and `"{1}"` is replaced with the user's account name.

Arguments	Descriptions
`groupNameAttribute`	The group record attribute that contains the name of the group.
`groupSearchFilter`	A filter name: this LDAP query is performed in the context of the groups directory to enumerate group records. Argument Type: String
`managerDn`	The DN of a user who has read access to LDAP user and group directories. If this property is not specified, the server attempts to connect as an unauthenticated user. Not all servers allow anonymous read-only access. **Note:** This user does not need to be an admin user with modify privileges. Argument Type: String
`managerPassword`	If the `managerDn` property is set, this password is used to authenticate the manager user. Argument Type: String
`newName`	New name of the directory provider. Argument Type: String
`providerType`	Type string for a directory provider: <`ldap|activedirectory`> . Argument Type: DirectoryType
`realm`	This is an identifier (string) used for LDAP directory providers so users and groups (within LDAP) can be uniquely identified in "same name" collisions across multiple directory providers. The `realm` is appended to the user or group name when stored in the ElectricFlow server. For example, <*user*>@dir (where the `realm` is set to "dir"). Argument Type: String
`url`	The LDAP server URL is in the form `protocol://host:port/basedn`. Protocol is either `ldap` or `ldaps` (for secure LDAP). The port is implied by the protocol, but can be overridden if it is not at the default location (389 for `ldap`, 636 for `ldaps`). The `basedn` is the path to the top-level directory that contains users and groups at this site. This is typically the domain name where each part is listed with a `dc=` and separated by commas. **Note:** Spaces in the `basedn` must be URL encoded (`%20`). Argument Type: String
`userBase`	This string is prepended to the `basedn` to construct the directory DN that contains user records. Argument Type: String

Arguments	Descriptions
`userNameAttribute`	The attribute in a user record that contains the user's account name. Argument Type: String
`userSearchFilter`	This LDAP query is performed in the context of the user directory to search for a user by account name. The string `"{0}"` is replaced with the user's login ID. Typically, the query compares a user record attribute with the substituted user login ID Argument Type: String .
`userSearchSubtree`	<*Boolean flag* - `0|1|true|false`> If `true`, recursively search the subtree below the user base. Argument Type: Boolean
`useSSL`	<*Boolean flag* - `0|1|true|false` > Use this flag to define whether or not SSL is used for server-agent communication, or if you need to use SSL to communicate with your Active Directory servers. Default is "true". **Note:** Transport Layer Security (TLS) has replaced Secure Sockets Layer version 3.0 (SSLv3) on the ElectricFlow web server and the ElectricFlow server. Argument Type: Boolean

Positional arguments

`providerName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->modifyDirectoryProvider(<providerName>, {<optionals>});`

Example

```
$cmdr->modifyDirectoryProvider("AD3", {emailAttribute => "email"});
```

ectool

syntax: `ectool modifyDirectoryProvider <providerName> ...`

Example

```
ectool modifyDirectoryProvider AD3 --emailAttribute email
```

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moveDirectoryProvider

Moves an Active Directory or LDAP directory provider in front of another specified provider or to the end of the list.

You must specify a `providerName`.

Arguments	Descriptions
`providerName`	The name of the directory provider that must be unique. Argument Type: String
`beforeProviderName`	Moves this directory provider (`providerName`) to a place before the name specified by this option. If omitted, `providerName` is moved to the end. Argument Type: String

Positional arguments

`providerName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->moveDirectoryProvider(<providerName>, {<optionals>});`

Example

```
$cmdr->moveDirectoryProvider("AD3", {beforeProviderName => "AD2"});
```

ectool

syntax: `ectool moveDirectoryProvider <providerName> ...`

Example

```
ectool moveDirectoryProvider AD3 --beforeProviderName AD2
```

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testDirectoryProvider

Tests that a specific user name and password combination work with the specified directory provider settings.

You must specify `userName` and `password` (the command will prompt for the password if it is omitted).

Arguments	Descriptions
`userName`	The name of the user you are testing for this provider. Argument Type: String

Arguments	Descriptions
`password`	The password for the user that you are testing for this provider. The command will prompt for the password if it is omitted. Argument Type: String
`commonGroupNameAttribute`	(Optional) The attribute in a group record that contains the common group name. If specified, this name is used only when searching for groups from an external provider. Use this argument if the `groupNameAttribute` or the `uniqueGroupNameAttribute` is set to `distinguishedName`, which is not searchable. Argument Type: String
`description`	(Optional) A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>`. Argument Type: String
`domainName`	(Optional) The domain from which Active Directory servers are automatically discovered. Argument Type: String
`emailAttribute`	(Optional) The attribute in a user record that contains the user's email address. If the attribute is not specified, the account name and domain name are concatenated to form an email address. Argument Type: String
`enableGroups`	(Optional) <*Boolean flag* - `0|1|true|false`> Determines whether or not to enable external groups for the directory provider. Defaults to "true". Argument Type: Boolean
`fullUserNameAttribute`	(Optional) The attribute in a user record that contains the user's full name (first and last) for display in the UI. If this attribute is not specified or the resulting value is empty, the user's account name is used instead. Argument Type: String
`groupBase`	(Optional) This string is prepended to the `basedn` to construct the directory DN that contains group records. Argument Type: String

Arguments	Descriptions
`groupMemberAttributes`	(Optional) A comma separated attribute name list that identifies a group member. Most LDAP configurations only specify a single value, but if there is a mixture of POSIX and LDAP style groups in the directory, multiple attributes might be required. Argument Type: String
`groupMemberFilter`	(Optional) This LDAP query is performed in the groups directory context to identify groups containing a specific user as a member. Two common forms of group record in LDAP directories: POSIX style groups where members are identified by account name, and `groupOfNames` or `uniqueGroupOfNames` records where members are identified by the full user DN. Both forms are supported, so the query is passed two parameters: "`{0}`" is replaced with the full user record DN, and "`{1}`" is replaced with the user's account name. Argument Type: String
`groupNameAttribute`	(Optional) The group record attribute that contains the name of the group. Argument Type: String
`groupSearchFilter`	(Optional) This LDAP query is performed in the context of the groups directory to enumerate group records. Argument Type: String
`managerDn`	(Optional) The DN of a user who has read-only access to LDAP user and group directories. If this property is not specified, the server attempts to connect as an unauthenticated user. Not all servers allow anonymous read-only access. **Note:** This user does not need to be an admin user with modify privileges. Argument Type: String
`managerPassword`	(Optional) If the `managerDn` property is set, this password is used to authenticate the manager user. Argument Type: String
`providerType`	(Optional) Type string for a directory provider: `<ldap|activedirectory>`. Argument Type: DirectoryType

Arguments	Descriptions
`realm`	(Optional) This is an identifier (string) used for LDAP directory providers so users and groups (within LDAP) can be uniquely identified in "same name" collisions across multiple directory providers. The realm is appended to the user or group name when stored in the ElectricFlow server. For example, <*user*>@dir (where the realm is set to "dir"). Argument Type: String
`url`	(Optional) The LDAP server URL is in the form `protocol://host:port/basedn`. Protocol is either `ldap` or `ldaps` (for secure LDAP). The port is implied by the protocol, but can be overridden if it is not at the default location (389 for ldap, 636 for ldaps). The `basedn` is the path to the top-level directory that contains users and groups at this site. This is typically the domain name where each part is listed with a `dc=` and separated by commas. **Note:** Spaces in the `basedn` must be URL encoded (`%20`). Argument Type: String
`useDefaults`	(Optional) <*Boolean flag* - `0|1|true|false`> If "true", defaults will be used for all fields not specified. Argument Type: Boolean
`userBase`	(Optional) This string is prepended to the base DN to construct the directory DN that contains user records. Argument Type: String
`userNameAttribute`	(Optional) The attribute in a user record that contains the user's account name. Argument Type: String
`userSearchFilter`	(Optional) A filter name. This LDAP query is performed in the context of the user directory to search for a user by account name. The string "`{0}`" is replaced with the user's login ID. Typically, the query compares a user record attribute with the substituted user login ID. Argument Type: String
`userSearchSubtree`	(Optional) <*Boolean flag* - `0|1|true|false`> If "true", recursively search the subtree below the user base. Argument Type: Boolean

Positional arguments

`userName, password`

Response

Three queries are returned: One query authenticates the user `userAuthenticationTest`, one query retrieves information about the user `findUserTest`, and one shows the results of finding groups where the user is a member `findGroupsTest`.

ec-perl

syntax: `$cmdr->testDirectoryProvider(<userName>, <password>, {<optionals>});`

Example

```
$cmdr->testDirectoryProvider("testUser", "testUserPassword",
            {providerType => "activedirectory",
               domainName => "my-company.com",
              useDefaults => 1,
                managerDn => "testManager",
          managerPassword => "testManagerPassword"});
```

ectool

syntax: `ectool testDirectoryProvider <userName> <password> ...`

Example

```
ectool testDirectoryProvider testUser testUserPassword --providerType activeDirecto
ry
   --domainName my-company.com
   --useDefaults 1
   --managerDn testManager
   --managerPassword testManagerPassword
```

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API Commands - Dynamic Enviroment

addResourcePoolToEnvironmentTier

Adds a resource pool to a specific environment tier. A resource pool is a named group of resources.

You must specify the `resourcePoolName`, `projectName`, `environmentName`, and `environmentTierName` arguments.

Arguments	Descriptions
`resourcePoolName`	Name of the resource pool that must be unique among all resource pools. Argument Type: String

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`environmentName`	Name of the environment that must be unique among all environments. Argument Type: String
`environmentTierName`	Name of the environment tier that must be unique among all tiers for the environment. Argument Type: String

Positional arguments

`resourcePoolName, projectName, environmentName, environmentTierName`

Response

None or status OK message.

ec-perl

syntax:`$cmdr->addResourcePoolToEnvironmentTier(<resourcePoolName>, <projectName>, <environmentName>, <environmentTierName>);`

Example:

```
$cmdr->addResourcePoolToEnvironmentTier("pool1", "Default", "Production", "Web Serv
er");
```

ectool

syntax:`ectool addResourcePoolToEnvironmentTier <resourcePoolName> <projectName> <environmentName> <environmentTierName>`

Example:

```
ectool addResourcePoolToEnvironmentTier "pool1" "Default" "Production" "Web Server"
```

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addResourceTemplateToEnvironmentTemplateTier

Adds a resource template to the specified environment template tier.

You must specify the `resourceTemplateName`, `projectName`, `environmentTemplateName`, and `environmentTemplateTierName`arguments.

Arguments	Descriptions
`resourceTemplateName`	Name of the resource template that must be unique among all resource templates. Argument Type: String
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`environmentTemplateName`	Name of the environment template. Argument Type: String
`environmentTemplateTierName`	Name of the environment template tier that must be unique among all tiers for the environment template. Argument Type: String
`resourceCount`	(Optional) Number of resources to be spun from the specified resource template. Argument Type: Integer

Positional arguments

```
resourceTemplateName , projectName, environmentTemplateName,
environmentTemplateTierName
```

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->addResourceTemplateToEnvironmentTemplateTier(<resourceTemplateName>, <projectName>, <environmentTemplateName>, <environmentTemplateTierName>, {<optionals>});`

Example:

```
$ec->addResourceTemplateToEnvironmentTemplateTier("Resource1", "default", "Produ
ction", "WebServer", {resourceCount => 4});
```

ectool

syntax: `addResourceTemplateToEnvironmentTemplateTier <resourceTemplateName> <projectName> <environmentTemplateName> <environmentTemplateTierName> [optionals]`

Example:

```
ectool addResourceTemplateToEnvironmentTemplateTier "Resource1" "default" "Produ
ction" "WebServer" --resourceCount => 4
```

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addResourceToEnvironmentTemplateTier

Adds a resource to the specified environment template tier.

You must specify the `resourceName`, `projectName`, `environmentTemplateName`, and `environmentTemplateTierName`arguments.

Arguments	Descriptions
`resourceName`	Name of the resource that must be unique among all resources. Argument Type: String
`projectName`	Name for the project that must be unique among all projects. Argument Type: String
`environmentTemplateName`	Name of the environment template. Argument Type: String
`environmentTemplateTierName`	Name for the environment template tier that must be unique among all tiers for the environment template. Argument Type: String

Positional arguments

`resourceName, projectName, environmentTemplateName, environmentTemplateTierName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->addResourceToEnvironmentTemplateTier(<resourceName>, <projectName>, <environmentTemplateName>, <environmentTemplateTierName>);`

Example:

```
$ec->addResourceToEnvironmentTemplateTier("Resource1", "default", "Dev1", "Tomca
t");
```

ectool

syntax: `addResourceToEnvironmentTemplateTier <resourceName> <projectName> <environmentTemplateName> <environmentTemplateTierName>`

Example:

```
ectool addResourceToEnvironmentTemplateTier "Resource1" "default" "Dev1" "Tomca
t"
```

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createEnvironmentTemplate

Creates an environment template.

You must specify the `projectName` and `environmentTemplateName` arguments.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`environmentTemplateName`	Name of the environment template. Argument Type: String
`description`	(Optional) A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>`. This text is not interpreted by ElectricFlow. Argument type: String

Positional arguments

`projectName, environmentTemplateName`

Response

Returns a environment template object.

ec-perl

syntax: `$cmdr->createEnvironmentTemplate(<projectName>, <environmentTemplateName>, {<optionals>});`

Example:

```
$ec->createEnvironmentTemplate("default", "Dev1");
```

ectool

syntax: `ectool createEnvironmentTemplate <projectName> <environmentTemplateName> [optionals]`

Example:

```
ectool createEnvironmentTemplate "default" "Dev1"
```

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createEnvironmentTemplateTier

Creates a tier in an environment template.

You must specify the `projectName`, `environmentTemplateName`, and `environmentTemplateTierName` arguments.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`environmentTemplateName`	Name of the environment template. Argument Type: String
`environmentTemplateTierName`	Name of the environment template tier that must be unique among all tiers for the environment template. Argument Type: String
`description`	(Optional) A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>`. This text is not interpreted by the automation platform. Argument type: String

Positional arguments

`projectName, environmentTemplateName, environmentTemplateTierName`

Response

Returns an environment tier in an environment template.

ec-perl

syntax: `$cmdr->createEnvironmentTemplateTier(<projectName>, <environmentTemplateName>, <environmentTemplateTierName>, {<optionals>});`

Example:

```
$ec->createEnvironmentTemplateTier("default", "Dev1", "Repository");
```

ectool

syntax: `ectool createEnvironmentTemplateTier <projectName><environmentTemplateName> <environmentTemplateTierName> [optionals]`

Example:

```
ectool createEnvironmentTemplateTier "default" "Dev1""Repository"
```

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createEnvironmentTemplateTierMap

Creates a environment-template tier map for an application.

You must specify the `projectName`, `applicationName`, `environmentProjectName`, and `environmentTemplateName` arguments.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`applicationName`	Name of the application. Argument Type: String
`environmentProjectName`	Name for the project to which the environment belongs. Argument Type: String
`environmentTemplateName`	Name of the environment template. Argument Type: String
`applicationEntityRevisionId`	(Optional) Revision ID of the versioned object Argument Type: UUID
`tierMapName`	(Optional) Name of the tier map associated with the environment template. If you do not specify an tier map, ElectricFlow uses a tier map with a hyphenated-application-and-environment name. Argument type: String
`tierMappings`	(Optional) List of mappings between the application tiers and the environment template tiers. Argument Type: Map

Positional arguments

`projectName`, `applicationName`, `environmentProjectName`, `environmentTemplateName`

Response

Returns a tier map for an environment template.

ec-perl

syntax: `$cmdr->createEnvironmentTemplateTierMap(<projectName>, <applicationName>, <environmentProjectNam>, <environmentTemplateName>, {<optionals>});`

Example:

```
$ec->createEnvironmentTemplateTierMap("default", "Undeploy", "Dev1", "Repositor
y");
```

ectool

syntax: `ectool createEnvironmentTemplateTierMap <projectName> <applicationName> <environmentProjectName> <environmentTemplateName> [optionals]`

Example:

```
ectool createEnvironmentTemplateTierMap "default" "Undeploy" "Dev1" "Repository"
```

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createHook

Creates a hook in a resource template, which can have one or more hooks. A hook stores a reference to a procedure in an ElectricFlow project or plugin project. When a resource template is used to create a resource pool, these procedures are invoked.

You must specify the `hookName` argument.

Arguments	Descriptions
`hookName`	Name of the hook that must be unique among all hooks in the project. Argument Type: String
`broadcast`	(Optional) Broadcast flag Use this flag to broadcast the hook name in the project. The `broadcast` value = <*Boolean flag* -`0|1|true|false`>. Defaults to `true` or `1`. Argument type: Boolean
`description`	(Optional) A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>`. This text is not interpreted by the automation platform. Argument type: String
`hookParameters`	(Optional) Parameters that are passed to the procedure. Argument type: Map
`hookType`	(Optional) Type of the hook: • PRE_PROVISIONING • POST_PROVISIONING • PRE_CONFIGUARTION • POST_CONFIGUARTION • PRE_TEARDOWN • POST_TEARDOWN Argument Type: String

Arguments	Descriptions
procedureName	(Optional) Name of the procedure that the hook references. Argument Type: String
procedurePluginKey	(Optional) Name of the plugin procedure. Use this argument when the hook references a plugin procedure. The promoted version of the plugin is invoked by default. Argument Type: String
procedureProjectName	(Optional) Name of the project to which the procedure belongs. When you use a specific version of a plugin, this is the name of the plugin project. Argument Type: String
projectName	(Optional) Project name of the entity that owns the hook. Argument Type: String
resourceTemplateName	(Optional) Name of the resource template. Argument Type: String

Positional arguments

hookName

Response

Returns a hook for a resource template.

ec-perl

syntax: `$cmdr->createHook(<hookName>, {<optionals>});`

Example:

```
$ec->createHook("config", {hooktype => PRE_CONFIGUARTION, procedureName => "Serv
er Start", procedureProjectName => "Servers");
```

ectool

syntax: `ectool createHook <hookName> [optionals]`

Example:

```
ectool createHook "config" --hookType PRE_CONFIGUARTION --procedureName "Server
Start" --procedureProjectName "Servers"
```

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createResourceTemplate

Creates a resource template.

You must specify the `projectName` and `resourceTemplateName`.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`resourceTemplateName`	Name for the resource template that must be unique among all resource templates. Argument Type: String
`cfgMgrParameters`	(Optional) Configuration Manager plugin parameters that are passed from the configuration-manager plugin to ElectricFlow. Argument Type: Map
`cfgMgrPluginKey`	(Optional) Configuration Manager plugin key. Argument Type: String
`cfgMgrProcedure`	(Optional) Name of the cloud-provider plugin method. Argument Type: String
`cfgMgrProjectName`	(Optional) Name of the project to which the configuration-manager plugin applies. Argument Type: String
`cloudProviderParameters`	(Optional) Parameters that are passed from the cloud- provider plugin to ElectricFlow. Argument Type: Map
`cloudProviderPluginKey`	(Optional) Cloud-provider plugin key. Argument Type: String
`cloudProviderProcedure`	(Optional) Cloud-provider plugin method name. Argument Type: String
`cloudProviderConfig`	(Optional) Name of the cloud-provider plugin configuration. Argument Type: String
`cloudProviderProjectName`	(Optional) Name of the project to which the cloud-provider plugin applies. Argument Type: String

Arguments	Descriptions
`description`	(Optional) A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>`. This text is not interpreted by the automation platform. Argument type: String

Positional arguments

`resourceTemplateName`, `cloudProviderProcedure`, `cloudProviderConfig`

Response

Returns a resource template.

ec-perl

syntax: `$cmdr->createResourceTemplate(<projectName>, <resourceTemplateName>, {<optionals>});`

Example:

```
$ec->createResourceTemplate("default", "QA test", {cloudProviderProjectName => "
Deploy2"});
```

ectool

syntax: `ectool createResourceTemplate <project Name> <resourceTemplateName> [optionals]`

Example:

```
ectool createResourceTemplate "default" "QA test" --cloudProviderProjectName "De
ploy2"
```

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deleteEnvironmentTemplate

Deletes an environment template.

You must specify the `projectName` and `environmentTemplateName` arguments.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`environmentTemplateName`	Name of the environment template. Argument Type: String

Positional arguments

`projectName, environmentTemplateName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteEnvironmentTemplate(<projectName>, <environmentTemplateName>);`

Example:

```
$ec->deleteEnvironmentTemplate("default", "Dev1");
```

ectool

syntax: `ectool deleteEnvironmentTemplate <projectName> <environmentTemplateName> ...`

Example:

```
ectool deleteEnvironmentTemplate "default" "Dev1"
```

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deleteEnvironmentTemplateTier

Deletes a tier in an environment template.

You must specify the `projectName`, `environmentTemplateName`, and `environmentTemplateTierName` arguments.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`environmentTemplateName`	Name of the environment template. Argument Type: String
`environmentTemplateTierName`	Name of the environment template tier that must be unique among all tiers for the environment template. Argument Type: String

Positional arguments

`projectName, environmentTemplateName, environmentTemplateTierName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteEnvironmentTemplateTier(<projectName>, <environmentTemplateName>, <environmentTemplateTierName>);`

Example:

```
$ec->deleteEnvironmentTemplateTier("default", "Dev1", "Repository");
```

ectool

syntax: `ectool deleteEnvironmentTemplateTier <projectName> <environmentTemplateName> <environmentTemplateTierName> [optionals]`

Example:

```
ectool deleteEnvironmentTemplateTier "default" "Dev1" "Repository"
```

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deleteEnvironmentTemplateTierMap

Deletes an environment-template tier map from an application.

You must specify the `projectName`, `applicationName`, `environmentProjectName`, and `environmentTemplateName` arguments.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`applicationName`	Name of the application. Argument Type: String
`environmentProjectName`	Name for the project to which the environment template belongs. Argument Type: String
`environmentTemplateName`	Name of the environment template. Argument Type: String

Positional arguments

`projectName`, `applicationName`, `environmentProjectName`, `environmentTemplateName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteEnvironmentTemplateTierMap(<projectName>, <applicationName>, <environmentProjectName> <environmentTemplateName>);`

Example:

```
$ec->deleteEnvironmentTemplateTierMap("default", "Undeploy", "Dev1", "Repositor
y");
```

ectool

syntax: `ectool deleteEnvironmentTemplateTierMap <projectName> <applicationName> <environmentProjectName> <environmentTemplateName> ...`

Example:

```
ectool deleteEnvironmentTemplateTierMap "default" "Undeploy" "Dev1" "Repository"
```

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deleteEnvironmentTemplateTierMapping

Deletes a tier mapping from an environment-template tier map. A tier mapping is a mapping of an application tier to an environment template tier. A tier map has one or more mappings.

You must specify the `projectName`, `applicationName`, `environmentProjectName`, `environmentTemplateName`, and `applicationTierName` arguments.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`applicationName`	Name of the application. Argument Type: String
`environmentProjectName`	Name for the project to which the environment belongs. Argument Type: String
`environmentTemplateName`	Name of the environment template. Argument Type: String
`applicationTierName`	Name of the application tier. Argument Type: String

Positional arguments

`projectName`, `applicationName`, `environmentProjectName`, `environmentTemplateName`, `applicationTierName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteEnvironmentTemplateTierMapping(<projectName>, <applicationName>, <environmentProjectName> <environmentTemplateName> <applicationTierName>);`

Example:

```
$ec->deleteEnvironmentTemplateTierMapping("default", "Undeploy", "Dev1", "Reposi
tory", "Database");
```

ectool

syntax: `ectool deleteEnvironmentTemplateTierMapping <projectName> <applicationName> <environmentProjectName> <environmentTemplateName> <applicationTierName>`

Example:

```
ectool deleteEnvironmentTemplateTierMapping "default" "Undeploy" "Dev1" "Reposit
ory" "Database"
```

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deleteHook

Deletes a hook associated with an entity.

You must specify the `hookName` argument.

Arguments	Descriptions
`hookName`	Name of the hook that must be unique among all hooks in the project. Argument Type: String
`projectName`	(Optional) Name of the project that owns the hook. Argument Type: String
`resourceTemplateName`	(Optional) Name of the resource template. Argument Type: String

Positional arguments

`hookName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteHook(<hookName>, {<optionals>});`

Example:

```
$ec->deleteHook("awsconfig", {resourceTemplateName => "AWS backup server"});
```

ectool

syntax: `ectool deleteHook <hookName> [optionals]`

Example:

```
ectool deleteHook "awsconfig" --resourceTemplateName "AWS backup server"
```

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deleteResourceTemplate

Deletes a resource template.

You must specify the `projectName` and `resourceTemplateName`.

Arguments	Descriptions
`projectName`	Name for the project that must be unique among all projects. Argument Type: String
`resourceTemplateName`	Name for the resource template that must be unique among all resource templates. Argument Type: String

Positional arguments

`projectName`, `resourceTemplateName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteResourceTemplate(<projectName>, <resourceTemplateName>);`

Example:

```
$ec->deleteResourceTemplate("default", "QA Test");
```

ectool

syntax: `ectool deleteResourceTemplate <projectName> <resourceTemplateName>`

Example:

```
ectool deleteResourceTemplate "default" "QA Test"
```

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getAvailableResourcesForEnvironment

Retrieves all non-dynamic resources or resource pools.

Arguments	Descriptions
includePoolUsage	(Optional) <*Boolean flag* - 0|1|true|false> If this is set to true or 1, the pool usage is also retrieved. Argument Type: Boolean
objectTypeToReturn	(Optional) Flag to return resources or resource pools. Argument Type: String

Response

Returns the non-dynamic resources or resource pools.

ec-perl

syntax: `$cmdr->getAvailableResourcesForEnvironment({<optionals>});`

Example:

```
$ec->getAvailableResourcesForEnvironment({objectTypeToReturn => "resource"});
```

ectool

syntax: `ectool getAvailableResourcesForEnvironment [optionals]`

Example:

```
ectool getAvailableResourcesForEnvironment --objectTypeToReturn "resource"
```

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getEnvironmentTemplate

Retrieves an environment template.

You must specify the `projectName` and `environmentTemplateName` arguments.

Arguments	Descriptions
projectName	Name of the project that must be unique among all projects. Argument Type: String
environmentTemplateName	Name of the environment template. Argument Type: String

Positional arguments

`projectName, environmentTemplateName`

Response

Returns an `environmentTemplate` element.

ec-p erl

syntax: `$cmdr->getEnvironmentTemplate(<projectName>, <environmentTemplateName>);`

Example:

```
$ec->getEnvironmentTemplate("default", "Dev1");
```

ectool

syntax: `ectool getEnvironmentTemplate <projectName> <environmentTemplateName> ...`

Example:

```
ectool getEnvironmentTemplate "default" "Dev1"
```

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getEnvironmentTemplateTier

Retrieves an environment tier in an environment template.

You must specify the `projectName`, `environmentTemplateName`, and `environmentTemplateTierName` arguments.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`environmentTemplateName`	Name of the environment template. Argument Type: String
`environmentTemplateTierName`	Name of the environment template tier that must be unique among all tiers for the environment template. Argument Type: String

Positional arguments

`projectName, environmentTemplateName, environmentTemplateTierName`

Response

Returns an `environmentTemplateTier` element.

ec-perl

syntax: `$cmdr-getEnvironmentTemplateTier(<projectName>, <environmentTemplateName>, <environmentTemplateTierName>);`

Example:

```
$ec->getEnvironmentTemplateTier("default", "Dev1", "Repository");
```

ectool

syntax: `ectool createEnvironmentTemplateTier <projectName> <environmentTemplateName> <environmentTemplateTierName>`

Example:

```
ectool createEnvironmentTemplateTier "default" "Dev1" "Repository"
```

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getEnvironmentTemplateTierMaps

Retrieves all the environment-template tier maps used by the specified application.

You must specify the `projectName`and `applicationName` arguments.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`applicationName`	Name of the application. Argument Type: String
`applicationEntityRevisionId`	(Optional) Revision ID of the versioned object. Argument type: UUID
`orderByEnvironmentTemplateUsage`	(Optional) <*Boolean flag* - `0|1|true|false`> If this is set to "true", the most recently used environment templates is used. Argument Type: Boolean

Positional arguments

`projectName`, `applicationName`

Response

Returns one or more `environmentTemplateTierMap` elements.

ec-perl

syntax:`$cmdr->getEnvironmentTemplateTierMaps(<projectName>, <applicationName>, {<optionals>});`

Example:

```
$ec-getEnvironmentTemplateTierMaps("default", "Undeploy");
```

ectool

syntax: `ectool getEnvironmentTemplateTierMaps <projectName> <applicationName> [optionals]`

Example:

```
ectool getEnvironmentTemplateTierMaps "default" "Undeploy"
```

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getEnvironmentTemplateTiers

Retrieves all the environment template tiers in the specified environment template.

You must specify the `projectName`and `environmentTemplateName` arguments.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`environmentTemplateName`	Name of the environment template. Argument Type: String
`includeTemplateDetails`	(Optional) <*Boolean flag* - `0|1|true|false`> If this is set to "true", the response includes the template details. Argument Type: Boolean

Positional arguments

`projectName, environmentTemplateName`

Response

Returns one or more `environmentTemplateTier` elements.

ec-perl

syntax:`$cmdr->getEnvironmentTemplateTiers(<projectName>, <environmentTemplateName> {<optionals>});`

Example:

```
$ec->getEnvironmentTemplateTiers("default", "Dev1");
```

ectool

syntax: `ectool getEnvironmentTemplateTiers <projectName> <environmentTemplateName> [optionals]`

Example:

```
ectool getEnvironmentTemplateTiers "default" "Dev1"
```

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getEnvironmentTemplates

Retrieves all the environment templates in the specified project.

You must specify the `projectName` argument.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String

Positional arguments

`projectName`

Response

One or more `environmentTemplate` elements.

ec-perl

syntax: `$cmdr->getEnvironmentTemplates(<projectName>);`

Example:

```
$ec->getEnvironmentTemplates("default");
```

ectool

syntax: `ectool getEnvironmentTemplates <projectName>`

Example:

```
ectool getEnvironmentTemplates "default"
```

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getHook

Retrieves a hook associated in an entity.

You must specify the `hookName` argument.

Arguments	Descriptions
`hookName`	Name of the hook that must be unique among all hooks in the project. Argument Type: String
`projectName`	(Optional) Name of the project to which the procedure belongs. When you use a specific version of a plugin, this is the name of the plugin project. Argument Type: String

Arguments	Descriptions
`resourceTemplateName`	(Optional) Name of the resource template with the hook. Argument Type: String

Positional arguments

`hookName`

Response

Returns a hook for a resource template.

ec-perl

syntax: `$cmdr->getHook(<hookName>, {<optionals>});`

Example:

```
$ec->getHook("config", {resourceTemplateName => "Servers"});
```

ectool

syntax: `ectool getHook <hookName> [optionals]`

Example:

```
ectool getHook "config" -- resourceTemplateName "Servers"
```

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getHooks

Retrieves all the hooks associated with an entity.

Arguments	Descriptions
`projectName`	(Optional) Name of the project to which the procedure belongs. When you use a specific version of a plugin, this is the name of the plugin project. Argument Type: String
`resourceTemplateName`	(Optional) Name of the resource template with the hook. Argument Type: String

Positional arguments

None

Response

Returns the hook for a resource template.

ec-perl

syntax:`$cmdr->getHooks( {<optionals>});`

Example:

```
$ec->getHooks({projectName => "default", resourceTemplateName => "AWS server
s"});
```

ectool

syntax: `ectool getHooks [optionals]`

Example:

```
ectool getHooks --projectName "default" --resourceTemplateName "AWS servers"
```

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getResourcePoolsInEnvironmentTier

Retrieves the list of resource pools in the specified environment tier.

You must specify the `projectName`, `environmentName`, and `environmentTierName` arguments.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`environmentName`	Name of the environment that must be unique among all environments. Argument Type: String
`environmentTierName`	Name of the environment tier that must be unique among all tiers for the environment. Argument Type: String

Positional arguments

`projectName, environmentName, environmentTierName`

Response

Returns one or more `resourcePool` elements.

ec-perl

syntax:`$cmdr->getResourcePoolsInEnvironmentTier(<projectName>, <environmentName>, <environmentTierName>);`

Example

```
$cmdr->getResourcePoolsInEnvironmentTier("Default", "Production", "Web Server");
```

ectool

syntax:`ectool getResourcePoolsInEnvironmentTier <projectName> <environmentName> <environmentTierName>`

Example

```
ectool getResourcePoolsInEnvironmentTier "Default" "Production" "Web Server"
```

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getResourceTemplate

Retrieves the specified resource template.

You must specify the `projectName` and `resourceTemplateName` argument.

Arguments	Descriptions
`projectName`	Name for the project that must be unique among all projects. Argument Type: String
`resourceTemplateName`	Name for the resource template that must be unique among all resource templates. Argument Type: String

Positional arguments

`projectName`, `resourceTemplateName`

Response

Returns a `resourceTemplate` element.

ec-perl

syntax:`$cmdr->getResourceTemplate(<projectName>, <resourceTemplateName>);`

Example:

```
$ec->getResourceTemplate("default", "System Test");
```

ectool

syntax: `ectool getResourceTemplate <projectName> <resourceTemplateName>`

Example:

```
ectool getResourceTemplate "default" "System Test"
```

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getResourceTemplates

Retrieves all the resource templates.

You must enter the `projectName`.

Arguments	Descriptions
`projectName`	Name for the project that must be unique among all projects. Argument Type: String

Positional arguments

`projectName`

Response

One or more `resourceTemplate` elements.

ec-perl

syntax: `$cmdr->getResourceTemplates(<projectName>);`

Example:

```
$ec->getResourceTemplates("default");
```

ectool

syntax: `ectool getResourceTemplates <projectName>`

Example:

```
ectool getResourceTemplates "default"
```

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getResourceTemplatesInEnvironmentTemplateTier

Retrieves all the resource templates in the specified environment template tier.

You must specify the `projectName`, `environmentTemplateName`, and `environmentTemplateTierName`arguments.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`environmentTemplateName`	Name of the environment template. Argument Type: String
`environmentTemplateTierName`	Name of the environment template tier that must be unique among all tiers for the environment template. Argument Type: String

Positional arguments

`projectName, environmentTemplateName, environmentTemplateTierName`

Response

Returns one or more `resourceTemplate` elements.

ec-perl

syntax:`$cmdr->getResourceTemplatesInEnvironmentTemplateTier(<projectName>, <environmentTemplateName>, <environmentTemplateTierName>);`

Example:

```
$ec->getResourceTemplatesInEnvironmentTemplateTier("default", "Production", "Web
Server");
```

ectool

syntax: `getResourceTemplatesInEnvironmentTemplateTier <projectName> <environmentTemplateName> <environmentTemplateTierName>`

Example:

```
ectool getResourceTemplatesInEnvironmentTemplateTier "default" "Production" "Web
Server"
```

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getResourcesInEnvironmentTemplateTier

Retrieves all the resources in the specified environment template tier.

You must specify the `projectName`, `environmentTemplateName`,and `environmentTemplateTierName`arguments.

Arguments	Descriptions
`projectName`	Name for the project that must be unique among all projects. Argument Type: String
`environmentTemplateName`	Name of the environment template. Argument Type: String
`environmentTemplateTierName`	Name for the environment template tier that must be unique among all tiers for the environment template. Argument Type: String

Positional arguments

`projectName, environmentTemplateName, environmentTemplateTierName`

Response

Returns one or more `resource` elements.

ec-perl

syntax:`$cmdr->getResourcesInEnvironmentTemplateTier(<projectName>, <environmentTemplateName>, <environmentTemplateTierName>);`

Example:

```
$ec->getResourcesInEnvironmentTemplateTier("default", "Dev1", "Tomcat");
```

ectool

syntax:`getResourcesInEnvironmentTemplateTier <projectName> <environmentTemplateName> <environmentTemplateTierName>`

Example:

```
ectool getResourcesInEnvironmentTemplateTier "default" "Dev1" "Tomcat"
```

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modifyEnvTempTierResourceTempMapping

Modifies the resource count in an environment template tier.

You must specify the `projectName`, `applicationName`, `environmentProjectName`, `environmentTemplateName`, and `applicationTierName` arguments.

Arguments	Descriptions
`resourceCount`	Number of resources to provision. Argument Type: Integer
`resourceTemplateName`	Name of the resource template that must be unique among all resource templates. Argument Type: String
`projectName`	Name for the project that must be unique among all projects. Argument Type: String
`environmentTemplateName`	Name of the environment template. Argument Type: String
`environmentTemplateTierName`	Name for the environment template tier that must be unique among all tiers for the environment template. Argument Type: String

Positional arguments

`resourceCount`, `resourceTemplateName`, `projectName`, `environmentTemplateName`, `environmentTemplateTierName`

Response

Returns an environment template tier with a modified resource count.

ec-perl

syntax: `$cmdr->modifyEnvTempTierResourceTempMapping(<resourceCount>, <resourceTemplateName>, <projectName> <environmentTemplateName> <environmentTemplateTierName>});`

Example:

```
$ec->modifyEnvTempTierResourceTempMapping(5, "Servers", "default", Dev1", "Datab
ase");
```

ectool

syntax: `ectool modifyEnvTempTierResourceTempMapping <resourceCount> <resourceTemplateName> <projectName> <environmentTemplateName> <environmentTemplateTierName>`

Example:

```
ectool modifyEnvTempTierResourceTempMapping 5 "Servers" "default" Dev1" "Databas
e"
```

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modifyEnvironmentTemplate

Modifies an environment template.

You must specify the `projectName` and `environmentTemplateName` arguments.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`environmentTemplateName`	Name of the environment template. Argument Type: String
`description`	(Optional) A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>`. This text is not interpreted by the automation platform. Argument type: String
`newName`	(Optional) New name for the environment template. Argument Type: String

Positional arguments

`projectName, environmentTemplateName`

Response

Returns a modified environment template element.

ec-perl

syntax: `$cmdr->modifyEnvironmentTemplate(<projectName>, <environmentTemplateName>, {<optionals>});`

Example:

```
$ec->modifyEnvironmentTemplate("default", "Dev1");
```

ectool

syntax: `ectool modifyEnvironmentTemplate <projectName> <environmentTemplateName> [optionals]`

Example:

```
ectool modifyEnvironmentTemplate "default" "Dev1"
```

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modifyEnvironmentTemplateTier

Modifies the environment template tiers in the specified environment template.

You must specify the `projectName`, `environmentTemplateName`, and `environmentTemplateTierName` arguments.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`environmentTemplateName`	Name of the environment template. Argument Type: String
`environmentTemplateTierName`	Name for the environment template tier that must be unique among all tiers for the environment template. Argument Type: String
`description`	(Optional) A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>`. This text is not interpreted by the automation platform. Argument type: String
`newName`	(Optional) New name for the environment template tier. Argument Type: String

Positional arguments

`projectName, environmentTemplateName, environmentTemplateTierName`

Response

Returns a modified tier element for an environment template.

ec-perl

syntax: `$cmdr->modifyEnvironmentTemplateTier(<projectName>, <environmentTemplateName>, <environmentTemplateTierName>,{<optionals>});`

Example:

```
$ec->modifyEnvironmentTemplateTier("default", "Dev1", "Database");
```

ectool

syntax: `ectool modifyEnvironmentTemplateTier <projectName> <environmentTemplateName> <environmentTemplateTierName> [optionals]`

Example:

```
ectool modifyEnvironmentTemplateTier "default" "Dev1" "Database"
```

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modifyEnvironmentTemplateTierMap

Modifies the environment-template tier map used by the specified application.

You must specify the `projectName`, `applicationName`, `environmentProjectName`, and `environmentTemplateName` arguments.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`applicationName`	Name of the application. Argument Type: String
`environmentProjectName`	Name for the project to which the environment belongs. Argument Type: String
`environmentTemplateName`	Name of the environment template. Argument Type: String
`applicationEntityRevisionId`	(Optional) Revision ID of the versioned object. Argument Type: UUID

Arguments	Descriptions
`tierMapName`	(Optional) Name of the tier map associated with the environment template. If you do not specify an tier map, ElectricFlow uses a tier map with a hyphenated-application-and-environment name. Argument type: String
`tierMappings`	(Optional) List of mappings between the application tiers and the environment template tiers. Argument Type: Map

Positional arguments

`projectName`, `applicationName`, `environmentProjectName`, `environmentTemplateName`

Response

Returns a modified tier map element for an environment template.

ec-perl

syntax: `$cmdr->modifyEnvironmentTemplateTierMap(<projectName>, <applicationName>, <environmentProjectName>, <environmentTemplateName>, {<optionals>});`

Example:

```
$ec-modifyEnvironmentTemplateTierMap("default", "Undeploy", "Beta", "Servers");
```

ectool

syntax: `ectool modifyEnvironmentTemplateTierMap <projectName> <applicationName> <environmentProjectName> <environmentTemplateName> [optionals]`

Example:

```
ectool modifyEnvironmentTemplateTierMap "default" "Undeploy" "Beta" "Servers"
```

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modifyHook

Modifies an existing hook in a resource template.

You must specify the `hookName` argument.

Arguments	Descriptions
`hookName`	Name of the hook that must be unique among all hooks in the project. Argument Type: String

Arguments	Descriptions
broadcast	(Optional) Broadcast flag Use this flag to broadcast the hook name in the project. The broadcast value = <*Boolean flag* -0|1|true|false>. Defaults to true or 1. Argument type: Boolean
description	(Optional) A plain text or HTML description for this object. If using HTML, you must surround your text with <html> ... </html> tags. The only HTML tags allowed in the text are: <a> <b> <dl> <font> <i> <p> <pre> <style> <table> <tc> <td> <th> <tr> . This text is not interpreted by the automation platform. Argument type: String
hookParameters	(Optional) Parameters that are passed to the procedure. Argument type: Map
hookType	(Optional)Type of the hook: • PRE_PROVISIONING • POST_PROVISIONING • PRE_CONFIGUARTION • POST_CONFIGUARTION • PRE_TEARDOWN • POST_TEARDOWN Argument Type: String
newName	New name for the hook.
procedureName	Name of the procedure that the hook references. Argument Type: String
procedurePluginKey	(Optional) Name of the plugin procedure. Use this argument when the hook references a plugin procedure. The promoted version of the plugin is invoked by default. Argument Type: String
procedureProjectName	(Optional) Name of the project to which the procedure belongs. When you use a specific version of a plugin, this is the name of the plugin project. Argument Type: String

Arguments	Descriptions
projectName	(Optional) Project name of the entity that owns the hook. Argument Type: String
resourceTemplateName	(Optional) Name of the resource template with the hook. Argument Type: String

Positional arguments

hookName

Response

Returns a modified hook element.

ec-perl

syntax: `$cmdr->modifyHook(<hookName>, {<optionals>});`

Example:

```
$ec->modifyHook("config", {newName => "prod_config"});
```

ectool

syntax: `ectool modifyHook <hookName> [optionals]`

Example:

```
ectool modifyHook "config" --newName  "prod_config"
```

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modifyResourceTemplate

Modifies the specified resource template.

You must specify the `projectName` and `resourceTemplateName` arguments.

Arguments	Descriptions
projectName	Name of the project that must be unique among all projects. Argument Type: String
resourceTemplateName	Name for the resource template that must be unique among all resource templates. Argument Type: String
cfgMgrParameters	(Optional) Parameters that are passed from the configuration-manager plugin to ElectricFlow. Argument type: Map

Arguments	Descriptions
cfgMgrPluginKey	(Optional) Name of the configuration-manager plugin. Argument Type: String
cfgMgrProcedure	(Optional) Name of the configuration-manager plugin method. Argument Type: String
cfgMgrProjectName	(Optional) Name of the project to which the configuration-manager plugin applies. Argument Type: String
cloudProviderParameters	(Optional) Parameters that are passed from the cloud- provider plugin to ElectricFlow. Argument Type: Map
cloudProviderPluginKey	(Optional) Name of the cloud-provider plugin. Parameters that are passed from the cloud-provider plugin to ElectricFlow. Argument Type: String
cloudProviderProcedure	Name of the cloud-provider plugin method. Argument Type: String
cloudProviderProjectName	(Optional) Name of the project to which the cloud-provider plugin applies. Argument Type: String
description	(Optional) A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>`. This text is not interpreted by the automation platform. Argument type: String
newName	New name for the resource template. Argument type: String

Positional arguments

`projectName`, `resourceTemplateName`

Response

Returns a modified resource template.

ec-perl

syntax: `$cmdr->modifyResourceTemplate(<projectName>, <resourceTemplateName>, {<optionals>});`

Example:

```
$ec->modifyResourceTemplate("Default", "System Test", {newName => "System Test 1
"});
```

ectool

syntax: `ectool modifyResourceTemplate <projectName> <resourceTemplateName> [optionals]`

Example:

```
ectool modifyResourceTemplate "Default" "System Test" --newName "System Test 1"
```

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provisionEnvironment

Provisions an environment.

You must specify the `projectName`, `environmentName`, and `environmentTemplateName` arguments.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects Argument Type: String
`environmentName`	Name of the environment. Argument Type: String
`environmentTemplateName`	Name for the environment template that must be unique among all environment templates. Argument Type: String
`keepOnError`	(Optional) Keep on error flag Set this flag to "true" to keep the environment when an error occurs . The `keepOnError` value = <*Boolean flag* -`0|1|true|false`>. Defaults to "false". Argument type: Boolean
`tierResourceCounts`	(Optional) Resource count for each environment template tier. Argument type: Map

Positional arguments

`projectName`, `environmentName`, `environmentTemplateName`

Response

Returns a provisioned environment.

ec-perl

syntax: `$cmdr->provisionEnvironment(<projectName>, <environmentName>, <environmentTemplateName>, {<optionals>});`

Example:

```
$ec->provisionEnvironment("default", "Dev_GroupA", "BuildServer");
```

ectool

syntax: `ectool provisionEnvironment <projectName> <environmentName> <environmentTemplateName> [optionals]`

Example:

```
ectool provisionEnvironment "default" "Dev_GroupA" "BuildServer"
```

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provisionResourcePool

Provisions a resource pool.

You must specify the `resourceCount`, `resourcePoolName`, `projectName`, and `resourceTemplateName` arguments.

Arguments	Descriptions
`resourceCount`	Number of resources to provision. Argument Type: String
`resourcePoolName`	Name of the resource pool. Argument Type: String
`projectName`	Name of the project that must be unique among all projects Argument Type: String
`resourceTemplateName`	Name for the resource template that must be unique among all resource templates. Argument Type: String
`keepOnError`	(Optional) Keep on error flag Set this flag to `true` or `1` to keep the environment when an error occurs . The `keepOnError` value = *<Boolean flag* -`0|1|true|false`>. Defaults to "false". Argument type: Boolean

Positional arguments

`resourceCount`, `resourcePoolName`, `projectName`, `resourceTemplateName`

Response

Returns a provisioned resource pool.

ec-perl

syntax: `$cmdr->provisionResourcePool(<resourceCount>, <resourcePoolName>, <projectName>, <resourceTemplateName>,{<optionals>});`

Example:

```
$ec->provisionResourcePool("12", "QE_build", "default",  "Servers");
```

ectool

syntax: `ectool provisionResourcePool <resourceCount> <resourcePoolName> <projectName> <resourceTemplateName> [optionals]`

Example:

```
ectool provisionResourcePool "12" "QE_build" "default" "Servers"
```

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removeResourceFromEnvironmentTemplateTier

Removes a resource from the specified environment template tier.

You must specify the `resourceName`, `projectName`, `environmentTemplateName`, and `environmentTemplateTierName`arguments.

Arguments	Descriptions
`resourceName`	Name of the resource that must be unique among all resources. Argument Type: String
`projectName`	Name for the project that must be unique among all projects. Argument Type: String
`environmentTemplateName`	Name of the environment template. Argument Type: String
`environmentTemplateTierName`	Name for the environment template tier that must be unique among all tiers for the environment template. Argument Type: String

Positional arguments

`resourceName, projectName, environmentTemplateName, environmentTemplateTierName`

Response

None or a status OK message.

ec-perl

syntax:`$cmdr->removeResourceFromEnvironmentTemplateTier(<resourceName>, <projectName>, <environmentTemplateName>, <environmentTemplateTierName>);`

Example:

```
$ec->removeResourceFromEnvironmentTemplateTier("Resource1", "default", "Dev1", "
Tomcat");
```

ectool

syntax:`removeResourceFromEnvironmentTemplateTier <resourceName> <projectName> <environmentTemplateName> <environmentTemplateTierName>`

Example:

```
ectool removeResourceFromEnvironmentTemplateTier "Resource1" "default" "Dev1" "T
omcat"
```

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removeResourcePoolFromEnvironmentTier

Removes a resource pool from the specified environment tier.

You must specify the `resourcePoolName`, `projectName`, `environmentName`, and `environmentTierName` arguments.

Arguments	Descriptions
`resourcePoolName`	Name of the resource pool that must be unique among all resource pools. Argument Type: String
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`environmentName`	Name of the environment that must be unique among all environments. Argument Type: String
`environmentTierName`	Name of the environment tier that must be unique among all tiers for the environment. Argument Type: String

Positional arguments

`resourcePoolName, projectName, environmentName, environmentTierName`

Response

None or status OK message.

ec-perl

syntax:`$cmdr->removeResourcePoolFromEnvironmentTier (<resourcePoolName>, <projectName>, <environmentName>, <environmentTierName>);`

Example

```
$cmdr->removeResourcePoolFromEnvironmentTier("pool1", "Default", "Production", "Web
Server");
```

ectool

syntax:`ectool removeResourcePoolFromEnvironmentTier <resourcePoolName> <projectName> <environmentName> <environmentTierName>`

Example

```
ectool removeResourcePoolFromEnvironmentTier "pool1" "Default" "Production" "Web Se
rver"
```

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removeResourceTemplateFromEnvironmentTemplateTier

Removes a resource template from the specified environment template tier.

You must specify the `resourceTemplateName`, `projectName`, `environmentTemplateName`, and `environmentTemplateTierName`arguments.

Arguments	Descriptions
`resourceTemplateName`	Name of the resource template that must be unique among all resource templates. Argument Type: String
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`environmentTemplateName`	Name of the environment template. Argument Type: String
`environmentTemplateTierName`	Name of the environment template tier that must be unique among all tiers for the environment template. Argument Type: String

Positional arguments

```
resourceTemplateName , projectName, environmentTemplateName,
environmentTemplateTierName
```

Response

None or a status OK message.

ec-perl

syntax:`$cmdr->removeResourceTemplateFromEnvironmentTemplateTier (<resourceTemplateName>, <projectName>, <environmentTemplateName>, <environmentTemplateTierName>);`

Example:

```
$ec->removeResourceTemplateFromEnvironmentTemplateTier("Resource1", "default", "
Production", "WebServer");
```

ectool

syntax: `removeResourceTemplateFromEnvironmentTemplateTier <resourceTemplateName> <projectName> <environmentTemplateName> <environmentTemplateTierName>`

Example:

```
ectool removeResourceTemplateFromEnvironmentTemplateTier"Resource1" "default" "P
roduction" "WebServer"
```

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tearDown

Removes dynamic environments that are no longer needed.

Arguments	Descriptions
`environmentName`	(Optional) Name of the environment. Argument Type: String
`projectName`	(Optional) Name of the project that must be unique among all projects. You must specify this parameter when tearing down an environment. Argument Type: String
`resourceName`	(Optional) Name of the resource. Argument Type: String
`resourcePoolName`	(Optional) Name of the resource pool. Argument Type: String

Positional arguments

None

Response

Returns a `jobId`.

ec-perl

To tear down an environment:

syntax:`$cmdr->tearDown ({<optionals>});`

Example:

```
$ec->tearDown ({environmentName => "Server backup", projectName => "Default"});
```

ectool

To tear down an environment:

syntax: `ectool tearDown [optionals]`

Example:

```
ectool tearDown --environmentName "Server backup" --projectName "Default"
```

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API Commands - Email Configuration Management

`createEmailConfig`

Creates a new email configuration.

You must specify `configName`, `mailFrom`, and `mailHost`.

Arguments	Descriptions
`configName`	The name of your email configuration. Argument type: String

Arguments	Descriptions
description	A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument type: String
mailFrom	The email address used as the email sender address for notifications. Argument type: String
mailHost	The name of the email server host. Argument type: String
mailPort	The port number for the mail server, but may not need to be specified. The protocol software determines the default value (25 for SMTP and 465 for SSMTP). Specify a value for this argument when a non-default port is used. Argument type: String
mailProtocol	This is either SSMTP or SMTP (not case-sensitive). The default is SMTP.
mailUser	This can be an individual or a generic name like "ElectricFlow" - name of the email user on whose behalf ElectricFlow sends email notifications. Argument type: String
mailUserPassword	Password for the email user who is sending notifications. Argument type: String

Positional arguments

`configName`

Response

None or status OK message.

ec-perl

syntax: `$cmdr->createEmailConfig(<configName>, {<optionals>});`

Example

```
$cmdr->createEmailConfig("testConfiguration",
           {mailHost => "ectest-sol2",
            mailFrom => 'ElectricFlow@electric-cloud.com',
```

```
                mailUser => "build@electric-cloud.com",
        mailUserPassword => "mybuildmail"});
```

ectool

syntax: `ectool createEmailConfig <configName> ...`

Example

```
ectool createEmailConfig EmailConfig_test --mailHost ectest-sol2
  --mailFrom ElectricFlow@electric-cloud.com --mailUser "build@electric-cloud.com"
  --mailUserPassword "mybuildmail" --description "This is a test for the email conf
ig object"
```

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deleteEmailConfig

Deletes an email configuration.

You must specify a `configName`.

Arguments	Descriptions
`configName`	The name of the email configuration you want to delete. Argument Type: String

Positional arguments

`configName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteEmailConfig(<configName>);`

Example

```
$cmdr->deleteEmailConfig("emailA");
```

ectool

syntax: `ectool deleteEmailConfig <configName>`

Example

```
ectool deleteEmailConfig emailA
```

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getEmailConfig

Retrieves an email configuration by name.

You must specify a `configName`.

Arguments	Descriptions
`configName`	The name of the email configuration. Argument Type: String

Positional arguments

`configName`

Response

Returns one `emailConfig` element.

Note: The `mailUserPassword` attribute value is not returned or displayed by the `getEmailConfigs` and `getEmailConfig` commands for security reasons.

ec-perl

syntax: `$cmdr->getEmailConfig(<configName>);`

Example

```
$cmdr->getEmailConfig("EmailConfig_test");
```

ectool

syntax: `ectool getEmailConfig <configName>`

Example

```
ectool getEmailConfig EmailConfig_test
```

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getEmailConfigs

Retrieves all email configurations.

Arguments	Descriptions
None	

Positional arguments

None

Response

Returns one or more `emailConfig` elements.

Notes:

1. The `mailUserPassword` attribute value is not returned or displayed by the `getEmailConfigs` and `getEmailConfig` commands for security reasons.

2. The `configIndex` attribute is managed internally by ElectricFlow and cannot be used in any of the email configuration APIs. It is used internally to identify the order of `emailConfig` objects within the list.

ec-perl

syntax: `$cmdr->getEmailConfigs();`

Example

```
$cmdr->getEmailConfigs();
```

ectool

syntax: `ectool getEmailConfigs`

Example

```
ectool getEmailConfigs
```

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modifyEmailConfig

Modifies an existing email configuration.

You must specify the `configName`.

Arguments	Descriptions
`configName`	The name of your email configuration. Argument Type: String
`description`	A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>`. Argument Type: String
`mailFrom`	The email address used as the email "sender" address for notifications. Argument Type: String

Arguments	Descriptions
`mailHost`	The name of the email server host. Argument Type: String
`mailPort`	The port number for the mail server, but may not need to be specified. The protocol software determines the default value (25 for SMTP and 465 for SSMTP). Specify a value for this argument when a non-default port is used. Argument Type: Integer
`mailProtocol`	This is either SSMTP or SMTP (not case-sensitive). The default is SMTP. Argument Type: String
`mailUser`	The name of the email user, which can be an individual or a generic name such as "ElectricFlow". Argument Type: String
`mailUserPassword`	The password for the email user. Argument Type: String
`newName`	New name of the email configuration. Argument Type: String

Positional arguments

`configName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->modifyEmailConfig(<configName>, {<optionals>});`

Example

```
$cmdr->modifyEmailConfig("testConfiguration",
   {mailFrom => "test@my-company.com"});
```

ectool

syntax: `ectool modifyEmailConfig <configName> ...`

Example

```
ectool modifyEmailConfig testconfiguration --mailFrom test@my-company.com
    --description "This is a Secure SMTP email config object for testing"
```

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API Commands - Email Notifier Management

`createEmailNotifier`

Creates an email notifier attached to the specified object, such as a job, job step, project, procedure, application process or process step, component process or process step, or a workflow.

You must specify a `notifierName` and object locators for a job, job step, procedure, or procedure step.

Arguments	Descriptions
`notifierName`	The name of the email notifier. Argument type: String
`applicationName`	(Optional) The name of the application that is related to the target email container. The email notifier is attached to a process or process step. Argument type: String
`componentName`	(Optional) The name of the component that is related to the target email container. The email notifier is attached to a process or process step. Argument type: String
`condition`	(Optional) Only send mail if the condition evaluates to "true". The condition is a string subject to property expansion. The notification will NOT be sent if the expanded string is "false" or "0". If no condition is specified, the notification is ALWAYS sent. Argument type: String

Arguments	Descriptions
configName	(Optional) If specified, this argument must be the name of an emailConfig object. If it is not specified, the default is the name of the first emailConfig object defined for the ElectricFlow server (emailConfig objects are "ordered" ElectricFlow entities). **Note:** When using this argument, you must also include the formattingTemplate or the formattingTemplateFile argument . Argument type: String
description	(Optional) A plain text or HTML description for this object. If using HTML, you must surround your text with <html> ... </html> tags. The only HTML tags allowed in the text are: <a> <b> <dl> <font> <i> <p> <pre> <style> <table> <tc> <td> <th> <tr> Argument type: String
destinations	(Optional) A mandatory argument for a create operation. A space-separated list of valid email addresses, email aliases, or ElectricFlow user names, or a string subject to property expansion that expands into such a list. Argument type: String
environmentNames	(Optional) Names of the environments. Argument type: Collection
eventType	(Optional) Use one of these values: <onStart|onCompletion>. • onStart–Triggers an event when the job or job step begins. • onCompletion–Triggers an event when the job ends, regardless of the results. The default is onCompletion. Argument type: EventType
flowName	(Optional) The name of the flow. Argument type: String
flowStateName	(Optional) The name of the flow state. Argument type: String
flowTransitionName	(Optional) The name of the flow transition. Argument type: String

Arguments	Descriptions
`formattingTemplate`	(Optional) A template for formatting email messages when an event [notification] is triggered by the `emailNotifier`. Make sure the content is formatted correctly, such as no illegal characters or spacing. Argument type: String
`formattingTemplateFile`	(Optional) **This option is supported only in Perl and ectool bindings - it is not part of the XML protocol.** Contents of the *formatting template file* is read and stored in the "formatting template" field. This is an alternative argument for `--formattingTemplate` and is useful if the "formatting template" field spans multiple lines.
`gateType`	(Optional) Type of the gate. Argument type: GateType
`groupNames`	(Optional) A list of groups that receive the notification. Argument type: Collection
`jobId`	(Optional) The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID
`jobStepId`	(Optional) The unique identifier for a job step that is assigned automatically when the job step is created. Argument type: UUID
`notificationType`	(Optional) The notification type that is stored to the `ec_notificationType` property. Argument type: NotificationType
`pipelineName`	(Optional) The name of the pipeline when a credential attached to a stage task.
`procedureName`	(Optional) The name of the procedure. When using this argument, you must also enter the `projectName`. Argument type: String
`processName`	(Optional) The name of the process that contains of the email notifier. Argument type: String

Arguments	Descriptions
`processStepName`	(Optional) The name of the process step that contains of the email notifier. Argument type: String
`projectName`	(Optional) The name of the project. When using this argument, you must also enter the `procedureName`. Argument type: String
`stageName`	(Optional) The name of the stage when a credential is attached to a stage task. Argument type: String
`stateDefinitionName`	(Optional) The name of the state definition. Argument type: String
`stateName`	(Optional) The name of the state. Argument type: String
`stepName`	(Optional) The name of the step. When using this argument, you must also enter `projectName` and `procedureName`. Argument type: String
`userNames`	(Optional) The names of the users who receive the notification. Argument type: Collection
`workflowDefinitionName`	(Optional) The name of the workflow definition. Argument type: String
`workflowName`	(Optional) The name of the workflow. Argument type: String

Positional arguments

`notifierName`

Response

None or status OK message.

ec-perl

syntax: `$cmdr->createEmailNotifier(<notifierName>, {<optionals>});`

Example

```
$cmdr->createEmailNotifier("testNotifier",
        {eventType => "onStart",
```

```
          condition => "$[/javascript if(myJobStep.outcome == 'warning') 'true'; els
e 'false';]",
       destinations => 'user1@abc.com user2@abc.com emailAlias1@abc.com',
         configName => "testConfiguration",
        projectName => "Project_test",
      procedureName => "Procedure_test",
formattingTemplate => "Subject: Job started Notification: Job: $[/myJob/jobName] $[
/myEvent/type]
  Job: $[/myJob/jobName] $[/myEvent/type] at $[/myEvent/time]",});
```

ectool

syntax: `ectool createEmailNotifier <notifierName> ...`

Example

```
ectool createEmailNotifier testNotifier --condition "$[/javascript if(myJobStep.out
come
== 'warning') 'true'; else 'false';]"
    --destinations "user1@abc.com user2@abc.com emailAlias1@abc.com"
    --configName EmailConfig_test --formattingTemplate "Notification: Job:
$[/myJob/jobName]
    $[/myEvent/type] Job: $[/myJob/jobName] $[/myEvent/type] at $[/myEvent/time]"
    --projectName Project_test
    --procedureName Procedure_test
    --description "This is a test email notifier for Job completion"
```

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createEventSubscription

Creates a list of event subscriptions.

You must specify a `notifierName` .

Arguments	Descriptions
`notifierName`	The name of the email notifier. Argument type: String
`applicationName`	(Optional) The name of the application that is related to the target email container. The email notifier is attached to a process or process step. Argument type: String
`componentName`	The name of the component that is related to the target email container. The email notifier is attached to a process or process step. Argument type: String
`flowName`	(Optional) The name of the flow. Argument type: String

Arguments	Descriptions
`flowStateName`	(Optional) The name of the flow state. Argument type: String
`flowTransitionName`	(Optional) The name of the flow transition. Argument type: String
`gateType`	(Optional) The type of the gate. Argument type: GateType
`groupNames`	A list of groups that receive the notification. Argument type: Collection
`jobId`	The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID
`jobStepId`	The unique identifier for a job step that is assigned automatically when the job step is created. Argument type: UUID
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`procedureName`	The name of the procedure. When using this argument, you must also enter `projectName`. Argument type: String
`processName`	The name of the process. Argument type: String
`processStepName`	The name of the process step. Argument type: String
`projectName`	The name of the project. When using this argument, you must also enter `procedureName`. Argument type: String
`stageName`	(Optional) The name of the stage definition. Argument type: String

Arguments	Descriptions
`stateDefinitionName`	The name of the state definition. Argument type: String
`stateName`	The name of the state. Argument type: String
`stepName`	The name of the step. When using this argument, you must also enter `projectName` and `procedureName`. Argument type: String
`taskName`	(Optional) The name of the task. Argument type: String
`userNames`	The names of the users who receives the notification. Argument type: Collection
`workflowDefinitionName`	The name of the workflow definition. Argument type: String
`workflowName`	The name of the workflow. Argument type: String

Positional arguments

`notifierName`

Response

None or status OK message.

ec-perl

syntax: `$cmdr->createEventSubscription (<notifierName>, {<optionals>});`

Example

```
$cmdr->createEventSubscription ("testNotifier", {applicationName => "myApp"});
```

ectool

syntax:`ectool createEventSubscription <notifierName> ...`

Example

```
ectool createEventSubscription testNotifier --applicationName myApp
```

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deleteEmailNotifier

Deletes an email notifier from an object.

You must specify a `notifierName`, and you must specify locator arguments to find the email notifier you want to delete.

Arguments	Descriptions
`notifierName`	The name of the email notifier that you want to delete. Argument type: String
`applicationName`	The name of the application that is related to the target email container. The email notifier is attached to a process or process step. Argument type: String
`componentName`	The name of the component that is related to the target email container. The email notifier is attached to a process or process step. Argument type: String
`flowName`	(Optional) The name of the flow. Argument type: String
`flowStateName`	(Optional) The name of the flow state. Argument type: String
`gateType`	(Optional) The type of the gate. Argument type: GateType
`jobId`	The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. rgument type: UUID
`jobStepId`	The unique identifier for a job step that is assigned automatically when the job step is created. Argument type: UUID
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`procedureName`	The name of the procedure. When using this argument, you must also enter `projectName`. Argument type: String

Arguments	Descriptions
`processName`	Name of the process. Argument type: String
`processStepName`	Name of the process step. Argument type: String
`projectName`	Name of the project. Argument type: String
`stageName`	(Optional) The name of the stage definition. Argument type: String
`stateDefinitionName`	Name of the state definition. Argument type: String
`stateName`	Name of the state. Argument type: String
`stepName`	Name of the step. When using this argument, you must also enter `projectName` and `procedureName`. Argument type: String
`taskName`	(Optional) The name of the task. Argument type: String
`workflowDefinitionName`	The name of the workflow definition. Argument type: String
`workflowName`	The name of the workflow. Argument type: String

Positional arguments

`notifierName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteEmailNotifier(<notifierName>, { ...});`

Example

```
$cmdr->deleteEmailNotifier(emailNotifier_stepTest, {projectName => "Project_test",
    procedureName => "Procedure_test", stepName => "Step_test2"});
```

ectool

syntax: `ectool deleteEmailNotifier <notifierName> ...`

Example

```
ectool deleteEmailNotifier emailNotifier_stepTest --projectName Project_test
   --procedureName Procedure_test --stepName Step_test2
```

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deleteEventSubscription

Deletes a list of event subscriptions.

You must specify a `notifierName`, and you must specify locator arguments to find the email notifier you want to delete.

Arguments	Descriptions
`notifierName`	The name of the email notifier. Argument type: String
`applicationName`	(Optional) The name of the application that is related to the target email container. The email notifier is attached to a process or process step. Argument type: String
`componentName`	(Optional) The name of the component that is related to the target email container. The email notifier is attached to a process or process step. Argument type: String
`flowName`	(Optional) The name of the flow. Argument type: String
`flowStateName`	(Optional) The name of the flow state. Argument type: String
`gateType`	(Optional) The type of the gate. Argument type: GateType
`groupNames`	(Optional) A list of groups that receive the notification. Argument type: Collection

Arguments	Descriptions
`jobId`	(Optional) The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID
`jobStepId`	(Optional) The unique identifier for a job step that is assigned automatically when the job step is created. Argument type: String
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`procedureName`	(Optional) The name of the procedure. When using this argument, you must also enter `projectName`. Argument type: String
`processName`	(Optional) Name of the process. Argument type: String
`processStepName`	(Optional) Name of the process step. Argument type: String
`projectName`	(Optional) The name of the project. When using this argument, you must also enter `procedureName`. Argument type: String
`stageName`	(Optional) The name of the stage definition. Argument type: String
`stateDefinitionName`	(Optional) The name of the state definition. Argument type: String
`stateName`	(Optional) The name of the state. Argument type: String
`stepName`	(Optional) Name of the step. When using this argument, you must also enter `projectName` and `procedureName`. Argument type: String
`taskName`	(Optional) The name of the task. Argument type: String

Arguments	Descriptions
`userNames`	(Optional) A list of names of the users who receives the notification. Argument type: Collection
`workflowDefinitionName`	(Optional) The name of the workflow definition. Argument type: String
`workflowName`	(Optional) The name of the workflow. Argument type: String

Positional arguments

`notifierName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteEventSubscription (<notifierName>, { ...});`

Example

```
$cmdr->deleteEventSubscription (mySubscription, {applicationName => myAppEvent});
```

ectool

syntax: `ectool deleteEventSubscription<notifierName> ...`

Example

```
ectool deleteEventSubscription mySubscription --applicationName myAppEvent
```

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getEmailNotifier

Retrieves an email notifier from a property sheet container.

You must specify a `notifierName` and object locators to identify the object where the notifier is attached.

Arguments	Descriptions
`notifierName`	The name of the email notifier. Argument type: String

Arguments	Descriptions
`applicationName`	The name of the application that is related to the target email container. The email notifier is attached to a process or process step. Argument type: String
`componentName`	The name of the component that is related to the target email container. The email notifier is attached to a process or process step. Argument type: String
`flowName`	(Optional) The name of the flow. Argument type: String
`flowStateName`	(Optional) The name of the flow state. Argument type: String
`gateType`	(Optional) Type of the gate. Argument type: String
`jobId`	The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID
`jobStepId`	The unique identifier for a job step that is assigned automatically when the job step is created. Argument type: UUID
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`procedureName`	The name of the procedure. When using this argument, you must also enter `projectName`. Argument type: String
`processName`	Name of the process. Argument type: String
`processStepName`	Name of the process step. Argument type: String

Arguments	Descriptions
`projectName`	The name of the project . When using this argument, you must also enter `procedureName`. Argument type: String
`stageName`	(Optional) The name of the stage definition. Argument type: String
`stateDefinitionName`	The name of the state definition. Argument type: String
`stateName`	The name of the state. Argument type: String
`stepName`	Name of the step. When using this argument, you must also enter `projectName` and `procedureName`. Argument type: String
`taskName`	(Optional) The name of the task. Argument type: String
`workflowDefinitionName`	The name of the workflow definition. Argument type: String
`workflowName`	The name of the workflow. Argument type: String

Positional arguments

`notifierName`

Response

Returns one `emailNotifier` element.

ec-perl

syntax: `$cmdr->getEmailNotifier(<notifierName>, {<optionals>});`

Example

```
$cmdr->getEmailNotifier("Error", {projectName => "Test",
                                  procedureName => "Build"});
```

ectool

syntax: `ectool getEmailNotifier <notifierName> ...`

Example

```
ectool getEmailNotifier Error --projectName Test --procedureName Build
   --procedureName Procedure_test
```

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getEmailNotifiers

Retrieves all email notifiers defined for the specified property sheet container.

You must specify one or more object locators.

Arguments	Descriptions
`applicationName`	The name of the application that is related to the target email container. The email notifier is attached to a process or process step. Argument type: String
`componentName`	The name of the component that is related to the target email container. The email notifier is attached to a process or process step. Argument type: String
`flowName`	(Optional) The name of the flow. Argument type: String
`flowStateName`	(Optional) The name of the flow state. Argument type: String
`gateType`	(Optional) Type of the gate. Argument type: String
`jobId`	The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID
`jobStepId`	The unique identifier for a job step that is assigned automatically when the job step is created. Argument type: UUID
`pipelineName`	(Optional) The name of the pipeline. Argument type: String

Arguments	Descriptions
`procedureName`	The name of the procedure. When using this argument, you must also enter `projectName`. Argument type: String
`processName`	Name of the process. Argument type: String
`processStepName`	Name of the process step. Argument type: String
`projectName`	The name of the project . When using this argument, you must also enter `procedureName`. Argument type: String
`stageName`	(Optional) The name of the stage definition. Argument type: String
`stateDefinitionName`	The name of the state definition. Argument type: String
`stateName`	The name of the state. Argument type: String
`stepName`	Name of the step. When using this argument, you must also enter `projectName` and `procedureName`. Argument type: String
`taskName`	(Optional) The name of the task. Argument type: String
`workflowDefinitionName`	The name of the workflow definition. Argument type: String
`workflowName`	The name of the workflow. Argument type: String

Positional arguments

Arguments to locate the notifier, beginning with the top-level object locator.

Response

Returns one or more `emailNotifier` elements.

ec-perl

syntax: `$cmdr->getEmailNotifiers({<optionals>});`

Example

```
$cmdr->getEmailNotifiers({projectName => "Test",
                          procedureName => "Build"});
```

ectool

syntax: `ectool getEmailNotifiers ...`

Example

```
ectool getEmailNotifiers --projectName Project_test
   --procedureName Procedure_test
```

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getEventSubscription

Retrieves an event subscription for the specified user or group.

You must specify a `notifierName`.

Arguments	Descriptions
`notifierName`	The name of the email notifier. Argument type: String
`applicationName`	The name of the application that is related to the target email container. The email notifier is attached to a process or process step. Argument type: String
`componentName`	The name of the component that is related to the target email container. The email notifier is attached to a process or process step. Argument type: String
`flowName`	(Optional) The name of the flow. Argument type: String
`flowStateName`	(Optional) The name of the flow state. Argument type: String
`gateType`	(Optional) Type of the gate. Argument type: String

Arguments	Descriptions
`groupName`	The name of the group that receives the notification. Argument type: String
`jobId`	The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID
`jobStepId`	The unique identifier for a job step that is assigned automatically when the job step is created. Argument type: UUID
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`procedureName`	The name of the procedure. When using this argument, you must also enter `projectName`. Argument type: String
`processName`	Name of the process. Argument type: String
`processStepName`	Name of the process step. Argument type: String
`projectName`	The name of the project . When using this argument, you must also enter `procedureName`. Argument type: String
`stageName`	(Optional) The name of the stage definition. Argument type: String
`stateDefinitionName`	The name of the state definition. Argument type: String
`stateName`	The name of the state. Argument type: String
`stepName`	Name of the step. When using this argument, you must also enter `projectName` and `procedureName`. Argument type: String

Arguments	Descriptions
`taskName`	(Optional) The name of the task. Argument type: String
`userNames`	The names of the users who receives the notification. Argument type: String
`workflowDefinitionName`	The name of the workflow definition. Argument type: String
`workflowName`	The name of the workflow. Argument type: String

Positional arguments

`notifierName`

Response

Returns an event subscription for a user or group.

ec-perl

syntax:`$cmdr->getEventSubscription (<notifierName>, {<optionals>});`

Example

```
$cmdr->getEventSubscription("Error", {groupName => "Dev"});
```

ectool

syntax: `ectool getEventSubscription <notifierName> ...`

Example

```
ectool getEventSubscription Error --groupName "Dev"
```

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getEventSubscriptions

Retrieves a list event subscriptions for a specified event.

You must specify a `notifierName`.

Arguments	Descriptions
`notifierName`	The name of the email notifier. Argument type: String

Arguments	Descriptions
`applicationName`	(Optional) The name of the application that is related to the target email container. The email notifier is attached to a process or process step. Argument type: String
`componentName`	(Optional) The name of the component that is related to the target email container. The email notifier is attached to a process or process step. Argument type: String
`flowName`	(Optional) The name of the flow. Argument type: String
`flowStateName`	(Optional) The name of the flow state. Argument type: String
`gateType`	(Optional) Type of the gate. Argument type: String
`jobId`	(Optional) The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: String
`jobStepId`	(Optional) The unique identifier for a job step that is assigned automatically when the job step is created. Argument type: String
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`procedureName`	(Optional) The name of the procedure. When using this argument, you must also enter `projectName`. Argument type: String
`processName`	(Optional) Name of the process. Argument type: String
`processStepName`	(Optional) Name of the process step. Argument type: String

Arguments	Descriptions
projectName	(Optional) The name of the project . When using this argument, you must also enter procedureName. Argument type: String
stageName	(Optional) The name of the stage definition. Argument type: String
stateDefinitionName	(Optional) The name of the state definition. Argument type: String
stateName	(Optional) The name of the state. Argument type: String
stepName	(Optional) Name of the step. When using this argument, you must also enter projectName and procedureName. Argument type: String
taskName	(Optional) The name of the task. Argument type: String
workflowDefinitionName	(Optional) The name of the workflow definition. Argument type: String
workflowName	(Optional) The name of the workflow. Argument type: String

Positional arguments

notifierName

Response

Returns an event subscription for a specific event.

ec-perl

syntax:`$cmdr->getEventSubscriptions (<notifierName>, {<optionals>});`

Example

```
$cmdr->getEventSubscriptions("Error", {applicationName => "Pet Store"});
```

ectool

syntax: `ectool getEventSubscriptions <notifierName> ...`

Example

```
ectool getEventSubscriptions Error --applicationName "Pet Store"
```

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modifyEmailNotifier

Modifies an email notifier in a property sheet container specified by an `emailNotifierSelector`.

Note: Email notifiers are evaluated and sent based on the privileges of the notifier's owner. "Owner" can be changed to the current user if that user has sufficient privileges to have deleted the notifier object and recreated it.
Modify privilege on the "admin" system ACL is required.

You must specify a `notifierName`.

Arguments	Descriptions
`notifierName`	The name of the email notifier. Argument type: String
`applicationName`	(Optional) The name of the application that is related to the target email container. The email notifier is attached to a process or process step. Argument type: String
`componentName`	(Optional) The name of the component that is related to the target email container. The email notifier is attached to a process or process step. Argument type: String
`condition`	(Optional) Only send mail if the condition evaluates to "true ." The condition is a string subject to property expansion. Notification will not be sent if the expanded string is "false" or "0". If no condition is specified, the notification is *always* sent. Argument type: String
`configName`	(Optional) If specified, this argument must be the name of an `emailConfig` object. If it is not specified, the default is the name of the first `emailConfig` object defined for the ElectricFlow server (`emailConfig` objects are "ordered" ElectricFlow entities). **Note:** When using this argument, you must also include the `formattingTemplate` or the `formattingTemplateFile` argument . Argument type: String

Arguments	Descriptions
`description`	(Optional) A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>`. Argument type: String
`destinations`	(Optional) A space-separated list of valid email addresses, email aliases, or ElectricFlow user names, or a string subject to property expansion that expands into such a list. **Note:** This argument is mandatory for the "create" operation. Argument type: String
`environmentNames`	(Optional) The names of the environments. Argument type: Collection
`eventType`	(Optional) Use one of these values: <`onStart|onCompletion`>. • `onStart`–Triggers an event when the job or job step begins. • `onCompletion`–Triggers an event when the job ends, regardless of the results. The default is `onCompletion`. Argument type: EventType
`flowName`	(Optional) The name of the flow. Argument type: String
`flowStateName`	(Optional) The name of the flow state. Argument type: String
`formattingTemplate`	(Optional) A template for formatting email messages when an event [notification] is triggered by the `emailNotifier`. Make sure the content is formatted correctly, such as no illegal characters or spacing. Argument type: String
`formattingTemplateFile`	(Optional) **This option is supported only in Perl and ectool bindings - it is not part of the XML protocol.** Contents of the *formatting template file* is read and stored in the "formatting template" field. This is an alternative argument for `formattingTemplate` and is useful if the "formatting template" field spans multiple lines.

Arguments	Descriptions
gateType	(Optional) Type of the gate. Argument type: String
groupNames	(Optional) The list of the groups that receives the notification. Argument type: Collection
jobId	(Optional) The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: String
jobStepId	(Optional) The unique identifier for a job step that is assigned automatically when the job step is created. Argument type: String
newName	(Optional) New name of the email notifier. Argument type: String
notificationType	(Optional) The notification type that is stored to the `ec_notificationType` property. Argument type: NotificationType
pipelineName	(Optional) The name of the pipeline. Argument type: String
procedureName	(Optional) The name of the procedure. When using this argument, you must also enter the `projectName`. Argument type: String
processName	(Optional) The name of the process that contains of the email notifier. Argument type: String
processStepName	(Optional) The name of the process step that contains of the email notifier. Argument type: String
projectName	(Optional) The name of the project. When using this argument, you must also enter the `procedureName`. Argument type: String

Arguments	Descriptions
`stageName`	(Optional) The name of the stage definition. Argument type: String
`stateDefinitionName`	(Optional) The name of the state definition. Argument type: String
`stateName`	(Optional) The name of the state. Argument type: String
`stepName`	(Optional) Name of the step. When using this argument, you must also enter `projectName` and `procedureName`. Argument type: String
`taskName`	(Optional) The name of the task. Argument type: String
`userNames`	(Optional) The names of the users who receives the notification. Argument type: Collection
`workflowDefinitionName`	(Optional) The name of the workflow definition. Argument type: String
`workflowName`	(Optional) The name of the workflow. Argument type: String

Positional arguments

`notifierName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->modifyEmailNotifier(<notifierName>, {<optionals>});`

Example

```
$cmdr->modifyEmailNotifier("testNotifier",
        {eventType => "onCompletion",
       projectName => "Project_test",
     procedureName => "Procedure_test",});
```

ectool

syntax: `ectool modifyEmailNotifier <notifierName> ...`

Example

```
ectool modifyEmailNotifier testNotifier --eventType onCompletion
   --projectName Project_test
   --procedureName Procedure_test
```

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modifyEventSubscription

Modifies a list of event subscriptions.

You must specify a `notifierName`.

Arguments	Descriptions
`notifierName`	The name of the email notifier. Argument type: String
`applicationName`	The name of the application that is related to the target email container. The email notifier is attached to a process or process step. Argument type: String
`componentName`	The name of the component that is related to the target email container. The email notifier is attached to a process or process step. Argument type: String
`flowName`	(Optional) The name of the flow. Argument type: String
`flowStateName`	(Optional) The name of the flow state. Argument type: String
`gateType`	(Optional) Type of the gate. Argument type: String
`groupNames`	The list of the groups that receives the notification. Argument type: Collection
`jobId`	The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID

Arguments	Descriptions
`jobStepId`	The unique identifier for a job step that is assigned automatically when the job step is created. Argument type: UUID
`notificationType`	The notification type that is stored to the `ec_notificationType` property. Argument type: NotificationType
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`procedureName`	The name of the procedure. When using this argument, you must also enter the `projectName`. Argument type: String
`processName`	The name of the process that contains of the email notifier. Argument type: String
`processStepName`	The name of the process step that contains of the email notifier. Argument type: String
`projectName`	The name of the project. When using this argument, you must also enter the `procedureName`. Argument type: String
`stageName`	(Optional) The name of the stage definition. Argument type: String
`stateDefinitionName`	The name of the state definition. Argument type: String
`stateName`	The name of the state. Argument type: String
`stepName`	Name of the step. When using this argument, you must also enter `projectName` and `procedureName`. Argument type: String
`taskName`	(Optional) The name of the task. Argument type: String
`userNames`	The names of the users who receives the notification. Argument type: Collection

Arguments	Descriptions
workflowDefinitionName	The name of the workflow definition. Argument type: String
workflowName	The name of the workflow. Argument type: String

Positional arguments

notifierName

Response

Returns an event subscription for a user or group.

ec-perl

syntax:`$cmdr->modifyEventSubscription (<notifierName>, {<optionals>});`

Example

```
$cmdr->modifyEventSubscription("Error", {componentName => "Config files"});
```

ectool

syntax: `ectool modifyEventSubscription <notifierName> ...`

Example

```
ectool getEventSubscription Error --componentName "Config files"
```

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sendEmail

Facilitates sending an email from the command-line or a Command Job Step without setting up an Email Notifier.
This API is more dynamic than an email notifier because you do not need to setup some kind of a template beforehand. This API also makes sending email attachments easier than using a notifier template.

Instead of (or in addition to) specifying a `configName`, any of the configuration options for an email configuration can be specified as options.
These options are: `mailHost`,`mailPort`, `mailFrom`, `mailUser`, and `mailUserPassword`.

Note: If both a `configName` and some or all of the configuration options are specified, the specified options override values stored in the configuration. In this case, the user must have both modify and execute permission on the configuration.

Specify the options you need to create the type of email message you want to send.

Arguments	Descriptions
`attachment`	One or more client-side files to send as attachments. The filename extension is examined to determine the content type. You can enter this argument more than once to specify multiple attachments. Argument type: Collection
`bcc`	A "Bcc" recipient for the email message. The recipient can be a user name, group name or complete email address. You can enter this argument more than once to specify multiple recipients. Argument type: Collection
`cc`	A "Cc" recipient for the email message. The recipient can be a user name, group name or complete email address. You can enter this argument more than once to specify multiple recipients. Argument type: Collection
`configName`	The name of the email configuration. If no configuration is specified, the configuration named "default" is used. **Note:** The user must have *execute* permission on the configuration. Argument type: String
`header`	An RFC822 email header line (for example: "reply-to: user@host.com"). This option can be specified multiple times. Argument type: Collection
`html`	The body of a simple HTML message. Argument type: String
`htmlFile`	Reads the specified client-side file and uses it as the body of a simple HTML message.
`inline`	Inline attachments in this format: `<contentId>=<fileName> [<contentId>=<fileName> ...]`. One or more inline attachments specified as a `contentId` and a client-side filename. The filename extension is examined to determine the content-type. The `contentId` can be referenced in an HTML body using the `cid:protocol`. For example: `<img src=cid:`*`myImage`*`">` could reference `--inline`*`myImage=image.jpg`* You can enter this argument more than once to add multiple attachments. Argument type: Collection

Arguments	Descriptions
`mailFrom`	The email address used in the "From" header to use when sending ElectricFlow notification email. When the email configuration is specified, this value overrides the value in the configuration. Argument type: String
`mailHost`	The name of the email server host to use when the `configName` is not specified. When the email configuration is specified, this value overrides the value in the configuration. Argument type: String
`mailPort`	The mail server port to use when the `configName` is not specified. When the email configuration is specified, this value overrides the value in the configuration. Argument type: Integer
`mailProtocol`	The name of the mail protocol that must be SMTP or SMTPS. When the email configuration is specified, this value overrides the value in the configuration. Argument type: String
`mailUser`	The name of the email user for whom ElectricFlow sends email notifications. ElectricFlow also uses it when authenticating to the mail server. When the email configuration is specified, this value overrides the value in the configuration. Argument type: String
`mailUserPassword`	The password that ElectricFlow uses when when authenticating to the mail server. When the email configuration is specified, this value overrides the value in the configuration. Argument type: String

Arguments	Descriptions
`multipartMode`	The multipart message mode: `<none|mixed|related|mixedRelated>` • `none`– Non-multipart message • `mixed`–Single-root multipart element of type "mixed". Texts, inline elements, and attachments will be added to this root element. • `related`– Multipart message with a single root multipart element of "related" type. Texts, inline elements, and attachments will be added to this root element. It works on most mail clients, except Lotus Notes. • `mixedRelated`–Multipart "mixed" element with a nested multipart "related" element. Texts and inline elements will be added to the nested "related' element, while attachments will be added to the "mixed' root element. It works on most mail clients other than Mac Mail and some situations on Outlook. If you experience problems, use the "related" value. **Note:** `multipartMode` defaults to `none` unless there are multiple parts, in which case it defaults to `mixedRelated`. If both `text` and `html` arguments are specified, both values are sent as alternates in a multipart message. Argument type: MultipartMode
`raw`	A raw RFC 822 email message including headers to use as the basis for the email message. Additional options can be applied to this message. Argument type: String
`rawFile`	Reads the specified client-side file and uses it as the entire mail message, including headers.
`subject`	The subject of the email message. Argument type: String
`text`	The body of a simple text message. Argument type: String
`textFile`	Reads the specified client-side file and uses it as the body of a simple text message.
`to`	A "To" recipient for the email message. The recipient can be a user, group name or complete email address. You can enter this argument more than once to specify multiple recipients. Argument type: Collection

Positional arguments

None

Response

None or status OK message.

ec-perl

syntax: `$cmdr->sendEmail`

Note: The `to`, `cc`, `bcc`, `header`, and `attachment` options can have multiple values specified as an array. The `inline` option can have multiple values specified as an array of hashes with `contentId` and `fileName` values.

Example

```
$cmdr->sendEmail({
    configName => 'config1',
       subject => 'Test message',
            to => ['user1', 'user2'],
          html => '<html><body>Some stuff <img src=cid:image1/body/html',
        inline => [{contentId => 'image1', fileName => 'image1.jpg'},
                   {contentId => 'image2', fileName => 'image2.jpg'}],
    attachment => ['report1.html', 'report2.pdf']
   })
```

ectool

syntax: `ectool sendEmail`

Note: Options that take multiple values may be specified as a single option with each value as a separate argument or as multiple options, each with a single argument.

Examples

```
ectool sendEmail \
     --to user1 \
     --to user2 \
     --subject Test \
     --html '<html><body>Some stuff <img src="cid:image1"></body></html>' \
     --inline image1=image1.jpg \
     --inline image2=image2.jpg \
     --attachment report1.html \
     --attachment report2.pdf


ectool sendEmail \
     --to user1 user2 \
     --subject Test \
     --html '<html><body>Some stuff <img src="cid:image1"></body></html>' \
     --inline image1=image1.jpg image2=image2.jpg \
     --attachment  report1.html report2.pdf
```

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API Commands - Environment

createEnvironment

Creates a new environment.

Required Arguments

`projectName`

Description: Name for the project that must be unique among all projects.

Argument Type: String

`environmentName`

Description: Name of the environment that must be unique among all projects.

Argument Type: String

Optional Arguments

`applicationName`

Description: Create environment from the specified application that must be unique among all projects.

Argument Type: String

`applicationProjectName`

Description: Name of the project that contains the application.

Argument Type: String

`description`

Description: Comment text describing this object; not interpreted by ElectricFlow.

Argument Type: String

`environmentEnabled`

Description: True to enable the environment.

Argument Type: Boolean

Response

Returns an environment element.

ec-perl

Syntax:

```
$<object>->createEnvironment(<projectName>, <environmentName>,
 {<optionals>});
```

Example:

```
$ec->createEnvironment("Default", "aEnv", {environmentEnabled => "true", descrip
tion => "aDescription"});
```

ectool

Syntax:

```
ectool createEnvironment <projectName> <environmentName> [optionals...]
```

Example:

```
ectool createEnvironment default newEnv --environmentEnabled true --description
exampleText
```

createEnvironmentInventoryItem

Creates a new environment inventory item.

Required Arguments

`projectName`

Description: Name for the project that must be unique among all projects.

Argument Type: String

`environmentName`

Description: Name of the environment.

Argument Type: String

`applicationName`

Description: Name of the application that owns the inventory item.

Argument Type: String

`componentName`

Description: Component that owns the inventory item.

Argument Type: String

`resourceName`

Description: Resource where the item is installed.

Argument Type: String

Optional Arguments

`applicationTierName`

Description: Name of the application tier.

Argument Type: String

`artifactName`

Description: Artifact name for the inventory item.

Argument Type: String

`artifactVersion`

Description: Artifact version for the inventory item.

Argument Type: String

`artifactSource`

Description: Source of the artifact.

Argument Type: String

`artifactUrl`

Description: URL of the artifact.

Argument Type: String

`description`

Description: Comment text describing this object; not interpreted by ElectricFlow.

Argument Type: String

`status`

Description: Status of the item.

Argument Type: String

Response

Returns an environment inventory item.

ec-perl

Syntax:

```
$<object>->createEnvironmentInventoryItem(<projectName>, <environmentName>,
 <applicationName>, <componentName>,  <resourceName>, {<optionals>});
```

Example:

```
$ec->createEnvironmentInventoryItem("Default", "aEnv", "App1", "ComponentA",
"ResourceA", {artifactName =>"Artifact1", artifactVersion=>"V3", description =>
"aDescription"});
```

ectool

Syntax:

```
ectool createEnvironmentInventoryItem <projectName> <environmentName>
 <applicationName> <componentName> <resourceName> [optionals...]
```

Example:

```
ectool createEnvironmentInventoryItem Default aEnv App1 ComponentA ResourceA
-- artifactName Artifact1 --artifactVersion V3 --description aDescription
```

deleteEnvironment

Deletes an environment.

Required Arguments

`projectName`

Description: Name for the project; must be unique among all projects.

Argument Type: String

`environmentName`

Description: Name of the environment; must be unique among all projects.

Argument Type: String

Optional Arguments

None

Response

None or a status OK message.

ec-perl

Syntax:

```
$<object>->deleteEnvironment(<projectName>, <environmentName>);
```

Example:

```
$cmdr->deleteEnvironment("Default", "envToDelete");
```

ectool

Syntax:

```
ectool deleteEnvironment <projectName>
 <environmentName>
```

Example:

```
ectool deleteEnvironment default envToDelete
```

deleteEnvironmentInventoryItem

Delete an inventory item.

Required Arguments

`projectName`

Description: Name for the project; must be unique among all projects.

Argument Type: String

`environmentName`

Description: Name of the environment.

Argument Type: String

`applicationName`

Description: Name of the application that owns the inventory item.

Argument Type: String

`componentName`

Description: Name of the component that owns the inventory item.

Argument Type: String

`resourceName`

Description: Name of the resource where the item is installed.

Argument Type: String

Optional Arguments

None

Response

None or a status OK message.

ec-perl

Syntax:

```
$<object>->deleteEnvironmentInventoryItem(<projectName>, <environmentName>,
<applicationName>, <componentName>, <resourceName>);
```

Example:

```
$cmdr->deleteEnvironmentInventoryItem("Default", "Env1A", "AppTest1",
"Component1", "Server1");
```

ectool

Syntax:

```
ectool deleteEnvironmentInventoryItem <projectName> <environmentName>
<applicationName> <componentName> <resourceName>
```

Example:

```
ectool deleteEnvironmentInventoryItem "Default" "Env1A" "AppTest1" "Component1"
"Server1"
```

getEnvironment

Retrieves an environment by name.

Required Arguments

`projectName`

Description: Name for the project; must be unique among all projects.

Argument Type: String

`environmentName`

Description: Name of the environment; must be unique among all projects.

Argument Type: String

Optional Arguments

None

Response

Retrieves an environment element.

ec-perl

Syntax:

```
$<object>->getEnvironment(<projectName>, <environmentName>);
```

Example:

```
$ec->getEnvironment("Default", "aEnv");
```

ectool

Syntax:

```
ectool getEnvironment <projectName> <environmentName>
```

Example:

```
ectool getEnvironment default newEnv
```

getEnvironmentApplications

Retrieves a list of applications installed on the given environment.

`projectName`

Description: Name for the project; must be unique among all projects.

Argument Type: String

`environmentName`

Description: Name of the environment.

Argument Type: String

Optional Arguments

None

Response

Retrieves a list of applications for the specified environment.

ec-perl

Syntax:

```
$<object>->getEnvironmentApplications(<projectName>, <environmentName>);
```

Example:

```
$ec->getEnvironmentApplications("Default", "aEnv");
```

ectool

Syntax:

```
ectool getEnvironmentApplications <projectName> <environmentName>
```

Example:

```
ectool getEnvironmentApplications default newEnv
```

getEnvironmentInventory

Retrieves a per-component grouped list of inventory items.

Required Arguments

`projectName`

Description: Name for the project; must be unique among all projects.

Argument Type: String

`environmentName`

Description: Name of the environment.

Argument Type: String

`applicationName`

Description: Name of the application.

Argument Type: String

Optional Arguments

None

Response

Retrieves a per-component grouped list of inventory items.

ec-perl

Syntax:

```
$<object>->getEnvironmentInventory(<projectName>, <environmentName>,
<applicationName>);
```

Example:

```
$ec->getEnvironmentInventory("Default", "aEnv", "App1");
```

ectool

Syntax:

```
ectool getEnvironmentInventory <projectName> <environmentName> <applicationName>
```

Example:

```
ectool getEnvironmentInventory default newEnv App1
```

getEnvironmentInventoryItem

Retrieves an inventory item.

Required Arguments

`projectName`

Description: Name for the project; must be unique among all projects.

Argument Type: String

`environmentName`

Description: Name of the environment.

Argument Type: String

`applicationName`

Description: Name of the application that owns the inventory item.

Argument Type: String

`componentName`

Description: Name of the component that owns the inventory item.

Argument Type: String

`resourceName`

Description: Name of the resource where the item is installed.

Argument Type: String

Optional Arguments

None

Response

Retrieves an inventory item.

ec-perl

Syntax:

```
$<object>->getEnvironmentInventoryItem(<projectName>,
<environmentName>, <applicationName>, <componentName>,
<resourceName>);
```

Example:

```
$ec->getEnvironmentInventoryItem("Default", "aEnv", "App1", "Component1", "Serve
r1");
```

ectool

Syntax:

```
ectool getEnvironmentInventoryItem <projectName> <environmentName>
<applicationName> <componentName> <resourceName>
```

Example:

```
ectool getEnvironmentInventoryItem default newEnv App1 Component1 Server1
```

getEnvironmentInventoryItems

Retrieves all inventory items for a given environment.

Required Arguments

`projectName`

Description: Name for the project; must be unique among all projects.

Argument Type: String

`environmentName`

Description: Name of the environment.

Argument Type: String

Optional Arguments

None

Response

Retrieves all inventory items for the specified environment.

ec-perl

Syntax:

```
$<object>->getEnvironmentInventoryItems(<projectName>,
<environmentName>);
```

Example:

```
$ec->getEnvironmentInventoryItems("Default", "aEnv");
```

ectool

Syntax:

```
ectool getEnvironmentInventoryItems <projectName> <environmentName>
```

Example:

```
ectool getEnvironmentInventoryItems default newEnv
```

getEnvironments

Retrieves all environments in a project.

Required Arguments

`projectName`

Description: Name for the project; must be unique among all projects.

Argument Type: String

Optional Arguments

None

Response

Retrieves zero or more environment elements.

ec-perl

Syntax:

```
$<object>->getEnvironments(<projectName>);
```

Example:

```
$ec->getEnvironments("Default");
```

ectool

Syntax:

```
ectool getEnvironments <projectName>
```

Example:

```
ectool getEnvironments default
```

modifyEnvironment

Modifies an environment.

Required Arguments

`projectName`

Description: Name for the project; must be unique among all projects.

Argument Type: String

`environmentName`

Description: Name of the environment; must be unique among all projects.

Argument Type: String

Optional Arguments

`description`

Description: Comment text describing this object; not interpreted at all by ElectricFlow.

Argument Type: String

`environmentEnabled`

Description: True to enable the environment.

Argument Type: Boolean

`newName`

Description: New name for an existing object that is being renamed.

Argument Type: String

Response

Retrieves an updated environment element.

ec-perl

Syntax:

```
$<object>->modifyEnvironment(<projectName>, <environmentName>,
 {<optionals>});
```

Example:

```
$ec->modifyEnvironment("Default", "aEnv", {newName => "upDatedName",
 description => "aNewDescription"});
```

ectool

Syntax:

```
ectool modifyEnvironment <projectName> <environmentName>
[optionals...]
```

Example:

```
ectool modifyEnvironment default testEnv --newName modEnv
 --description exampleText
```

modifyEnvironmentInventoryItem

Modifies an existing environment inventory item.

Required Arguments

`projectName`

Description: Name for the project; must be unique among all projects.

Argument Type: String

`environmentName`

Description: Name of the environment.

Argument Type: String

`applicationName`

Description: Name of the application that owns the inventory item.

Argument Type: String

`componentName`

Description: Name of the component that owns the inventory item.

Argument Type: String

`resourceName`

Description: Name of the resource where the item is installed.

Argument Type: String

Optional Arguments

`applicationTierName`

Description: Name of the application tier.

Argument Type: String

`artifactName`

Description: Name of the artifact for the inventory item.

Argument Type: String

`artifactSource`

Description: Source of the artifact.

Argument Type: String

`artifactUrl`

Description: URL of the artifact.

Argument Type: String

`artifactVersion`

Description: Version of the artifact for the inventory item.

Argument Type: String

`description`

Description: Comment text describing this object; not interpreted by ElectricFlow.

Argument Type: String

`status`

Description: Inventory deployment status.

Argument Type: JobOutcome

Response

Retrieves an updated environment inventory item.

ec-perl

Syntax:

```
$<object>->modifyEnvironmentInventoryItem(<projectName>, <environmentName>,
 <applicationName>, <componentName>, <resourceName>, <artifactName>,
<artifactVersion> {<optionals>});
```

Example:

```
$ec->modifyEnvironmentInventoryItem("Default", "aEnv", "App1", "Component1",
"Server1", "Artifact1", "V3");
```

ectool

Syntax:

```
ectool modifyEnvironmentInventoryItem <projectName> <environmentName>
 <applicationName> <componentName> <resourceName> <artifactName>
<artifactVersion> [optionals...]
```

Example:

```
ectool modifyEnvironmentInventoryItem default testEnv App1 Component1 Server1
Artifact1 V3
```

API Commands - Environment Tier

createEnvironmentTier

Creates a new environment tier.

Required Arguments

`projectName`

Description: Name for the project; must be unique among all projects.

Argument Type: String

`environmentName`

Description: Name of the environment which must be unique among all environments for the project; must be unique among all projects.

Argument Type: String

`environmentTierName`

Description: Name of the environment tier; must be unique among all tiers for the environment.

Argument Type: String

Optional Arguments

`description`

Description: Comment text describing this object; not interpreted at all by ElectricFlow.

Argument Type: String

Response

Returns an environment tier element.

ec-perl

Syntax:

```
$<object>->createEnvironmentTier(<projectName>, <environmentName>, <environmentT
ierName>, {<optionals>});
```

Example:

```
$ec->createEnvironmentTier("Default", "newEnv", "envTier2", {description => "Des
cription"});
```

ectool

Syntax:

```
ectool createEnvironmentTier <projectName> <environmentName>
 <environmentTierName> [optionals...]
```

Example:

deleteEnvironmentTier

Deletes an environment tier.

Required Arguments

`projectName`

Description: Name of the project; must be unique among all projects.

Argument Type: String

`environmentName`

Description: Name of the environment that must be unique among all environments for the project; must be unique among all projects.

Argument Type: String

`environmentTierName`

Description: Name of the environment tier; must be unique among all tiers for the environment.

Argument Type: String

Optional Arguments

None

Response

None or a status OK message.

ec-perl

Syntax:

```
$<object>->deleteEnvironmentTier(<projectName>, <environmentName>, <environmentT
ierName>);
```

Example:

```
$ec->deleteEnvironmentTier("Default", "newEnv", "tierToDelete");
```

ectool

Syntax:

```
ectool deleteEnvironmentTier <projectName> <environmentName>
 <environmentTierName>
```

Example:

```
ectool deleteEnvironmentTier default newEnv  tierToDelete
```

getEnvironmentTier

Retrieves an environment tier by name.

Required Arguments

`projectName`

Description: Name of the project; must be unique among all projects.

Argument Type: String

`environmentName`

Description: Name of the environment which must be unique among all environments for the project; must be unique among all projects.

Argument Type: String

`environmentTierName`

Description: Name of the environment tier; must be unique among all tiers for the environment.

Argument Type: String

Optional Arguments

None

Response

Retrieves an environment tier element.

ec-perl

Syntax:

```
$<object>->getEnvironmentTier(<projectName>, <environmentName>, <environmentTier
Name>);
```

Example:

```
$ec->getEnvironmentTier("Default", "newEnv", "envTier2");
```

ectool

Syntax:

```
ectool getEnvironmentTier <projectName> <environmentName> <environmentTierName>
```

Example:

```
ectool getEnvironmentTier default newEnv envTier1
```

getEnvironmentTiers

Retrieves all environment tiers in an environment.

Required Arguments

`projectName`

Description: Name of the project; must be unique among all projects.

Argument Type: String

`environmentName`

Description: Name of the environment that must be unique among all environments for the project; must be unique among all projects.

Argument Type: String

Optional Arguments

None

Response

Retrieves zero or more environment tier elements.

ec-perl

Syntax:

```
$<object>->getEnvironmentTiers(<projectName>, <environmentName>);
```

Example:

```
$ec->getEnvironmentTiers("Default", "newEnv");
```

ectool

Syntax:

```
ectool getEnvironmentTiers <projectName> <environmentName>
```

Example:

```
ectool getEnvironmentTiers default newEnv
```

modifyEnvironmentTier

Modifies an environment tier.

Required Arguments

`projectName`

Description: Name of the project; must be unique among all projects.

Argument Type: String

`environmentName`

Description: Name of the environment which must be unique among all environments for the project; must be unique among all projects.

Argument Type: String

`environmentTierName`

Description: Name of the environment tier; must be unique among all tiers for the environment.

Argument Type: String

Optional Arguments

`description`

Description: Comment text describing this object; not interpreted at all by ElectricFlow.

Argument Type: String

`newName`

Description: New name for an existing object that is being renamed.

Argument Type: String

Response

Retrieves an updated environment tier element.

ec-perl

Syntax:

```
$<object>->modifyEnvironmentTier(<projectName>, <environmentName>, <environmentT
ierName>, {<optionals>});
```

Example:

```
$ec->modifyEnvironmentTier("Default", "newEnv", "envTier2", {newName => "envTier
B", description => "New_Description"});
```

ectool

Syntax:

```
ectool modifyEnvironmentTier <projectName> <environmentName> <environmentTierNam
e> [optionals...]
```

Example:

```
ectool modifyEnvironmentTier default newEnv  envTier1 --description new_exampleT
ext --newName envTierA
```

API Commands - Gateway and Zone Management

createGateway

Creates a new gateway.

Scenario: You have two zones, ZoneA and ZoneB. ResourceA in ZoneA is accessible from ResourceB in ZoneB, and conversely—communication between specified gateway resources is enabled with host/port information recorded in each resource object. Other resources in each zone are restricted to talking to resources within their zone only. Creating a gateway between ResourceA and ResourceB to link the two zones enables resources from one zone to communicate with the other using ResourceA and ResourceB.

You must specify `gatewayName`.

Arguments	Descriptions
`gatewayName`	The name of the gateway that must be unique among all gateway names. Argument type: String
`description`	(Optional) A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>`. Argument type: String

Arguments	Descriptions
`gatewayDisabled`	(Optional) <*Boolean flag* - `0|1|true|false` > If set to **1** or "true", the gateway is disabled. Argument type: Boolean
`hostName1`	(Optional) The domain name or IP of the agent where *Resource1* resides. This host name is used by *Resource2* to communicate with *Resource1*. Do not specify this option is you want to use the host name from the *Resource1* definition. Argument type: String
`hostName2`	(Optional) The domain name or IP of the agent where *Resource2* resides. This host name is used by *Resource1* to communicate with *Resource2*. Do not specify this option is you want to use the host name from the *Resource2* definition. Argument type: String
`port1`	(Optional) The port number used by *Resource1*. The default is the port number used by the resource. Argument type: Integer
`port2`	(Optional) The port number used by *Resource2*. The default is the port number used by the resource. Argument type: Integer
`resourceName1`	(Optional) Name of first resource in the gateway specification. Do not include spaces in the resource name. Other resources in this resource's zone forward messages through this resource to agents in the `resourceName2` zone. Argument type: String
`resourceName2`	(Optional) Name of second resource in the gateway specification. Do not include spaces in the resource name. Other resources in this resource's zone forward messages through this resource to agents in the `resourceName1` zone. Argument type: String

Positional arguments

`gatewayName`

Response

Returns a gateway object.

ec-perl

syntax: `$cmdr->createGateway (<gatewayName>, {optionals>});`

Example

```
$cmdr->createGateway ("AB_Gateway",
      {description => "Gateway linking ZoneA and ZoneB",
     resourceName1 => "ResourceA",
     resourceName2 => "ResourceB"});
```

ectool

syntax: `ectool createGateway <gatewayName> ...`

Example

```
ectool createGateway AB_Gateway --description "Gateway linking ZoneA and ZoneB" --r
esourceName1 "ResourceA" --resourceName2 "ResourceB"
```

```
ectool createGateway AB_Gateway --description "Gateway linking ZoneA and ZoneB"
    --resourceName1 "ResourceA"
    --resourceName2 "ResourceB"
```

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deleteGateway

Deletes a gateway.

You must enter a `gatewayName`.

Arguments	Descriptions
`gatewayName`	The name of the gateway to delete. Argument type: String

Positional arguments

`gatewayName`

Response

None

ec-perl

syntax: `$cmdr->deleteGateway (<gatewayName>);`

Example

```
$cmdr->deleteGateway ("AB_Gateway");
```

ectool

syntax: `ectool deleteGateway <gatewayName>`

Example

```
ectool deleteGateway "AB_Gateway"
```

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getGateway

Finds a gateway by name.

You must specify a `gatewayName`.

Arguments	Descriptions
`gatewayName`	The name of the gateway. Argument type: String

Positional arguments

`gatewayName`

Response

Returns one gateway element.

ec-perl

syntax: `$cmdr->getGateway (<gatewayName>);`

Example

```
$cmdr->getGateway ("AB_Gateway");
```

ectool

syntax: `ectool getGateway <gatewayName>`

Example

```
ectool getGateway AB_Gateway
```

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getGateways

Retrieves all gateways.

Arguments	Descriptions
None	

Positional arguments

None.

Response

Returns one or more gateway elements.

ec-perl

syntax: `$cmdr->getGateways();`

Example

```
$cmdr->getGateways();
```

ectool

syntax: `ectool getGateways`

Example

```
ectool getGateways
```

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modifyGateway

Modifies an existing gateway.

You must specify a `gatewayName`.

Arguments	Descriptions
`gatewayName`	The name of the gateway. Argument type: String
`description`	A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>`. Argument type: String
`gatewayDisabled`	<*Boolean flag* - `0|1|true|false` > If set to 1 or "true," the gateway is disabled. Argument type: Boolean
`hostName1`	The domain name or IP address of the agent where *Resource1* resides. This host name is used by *Resource2* to communicate with *Resource1*. Do not specify this option is you want to use the host name from the *Resource1* definition. Argument type: String

Arguments	Descriptions
`hostName2`	The domain name or IP address of the agent where *Resource2* resides. This host name is used by *Resource1* to communicate with *Resource2*. Do not specify this option is you want to use the host name from the *Resource2* definition. Argument type: String
`newName`	New name of the gateway. Argument type: String
`port1`	The port number used by *Resource1*. The default is the port number used by the resource. Argument type: Integer
`port2`	The port number used by *Resource2*. The default is the port number used by the resource. Argument type: Integer
`resourceName1`	Name of first resource in the gateway specification. Do not include spaces in the resource name. Other resources in this resource's zone forward messages through this resource to agents in the `resourceName2` zone. Argument type: String
`resourceName2`	Name of second resource in the gateway specification. Do not include spaces in the resource name. Other resources in this resource's zone forward messages through this resource to agents in the `resourceName1` zone. Argument type: String

Positional arguments

`gatewayName`

Response

An updated gateway object.

ec-perl

syntax: `$cmdr->modifyGateway (<gatewayName>, {...});`

Example

```
$cmdr->modifyGateway ("AB_Gateway",
    {description=> "Gateway linking zoneA and zoneB",

   resourceName1=> "ResourceA",
   resourceName2=> "ResourceB"});,
```

ectool

syntax: `ectool modifyGateway <gatewayName> ...`

Example

```
ectool modifyGateway AB_Gateway --description "Gateway linking ZoneA and ZoneB"
   --resourceName1 "ResourceA"
   --resourceName2 "ResourceB"
```

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createZone

Creates a new zone.

You must specify a `zoneName`.

Arguments	Descriptions
`zoneName`	The unique name of the zone. Argument type: String
`description`	A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>`. Argument type: String

Positional arguments

`zoneName`

Response

Returns a zone object.

ec-perl

syntax: `$cmdr->createZone (<zoneName>, {...});`

Example

```
$cmdr->createZone("DevZone", {description => "Zone containing resources that the de
v group uses."});
```

ectool

syntax: `ectool createZone <zoneName> ...`

Example

```
ectool createZone DevZone --description "Zone containing resources that the dev gro
up uses."
```

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deleteZone

Deletes an existing zone.

You must specify a `zoneName`.

Arguments	Descriptions
`zoneName`	The name of the zone to delete. Argument type: String

Positional arguments

`zoneName`

Response

None

ec-perl

syntax: `$cmdr->deleteZone (<zoneName>);`

Example

```
$cmdr->deleteZone ("DevZone");
```

ectool

syntax: `ectool deleteZone <zoneName>`

Example

```
ectool deleteZone DevZone
```

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getZone

Finds a zone by name.

You must specify a `zoneName`.

Arguments	Descriptions
`zoneName`	The name of the zone. Argument type: String

Positional arguments

zoneName

Response

Returns a zone element, including a list of resources belonging to the zone.

ec-perl

syntax: `$cmdr->getZone (<zoneName>);`

Example

```
$cmdr->getZone ("DevZone");
```

ectool

syntax: `ectool getZone <zoneName>`

Example

```
ectool getZone DevZone
```

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getZones

Retrieves all zones.

Arguments	Descriptions
None	

Positional arguments

None

Response

Returns a zone object.

ec-perl

syntax: `$cmdr->getZones();`

Example

```
$cmdr->getZones();
```

ectool

syntax: `ectool getZones`

Example

```
ectool getZones
```

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modifyZone

Modifies an existing zone.

You must specify a `zoneName`.

Arguments	Descriptions
`zoneName`	The name of this zone. Argument type: String
`description`	A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>`. Argument type: String
`newName`	New name of the zone. Argument type: String

Positional arguments

`zoneName`

Response

Returns an updated zone element.

ec-perl

syntax: `$cmdr->modifyZone (<zoneName>, {...});`

Example

```
$cmdr->modifyZone ("DevZone", {description => "Zone containing resources that the d
ev group uses."});
```

ectool

syntax: `ectool modifyZone <zoneName> ...`

Example

```
ectool modifyZone DevZone --description "Zone containing resources that the dev gro
up uses."
```

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API Commands - Job Management

External Job APIs

abortAllJobs

Aborts all running jobs.

Arguments	Descriptions
`force`	<*Boolean flag* - `0|1|true|false` > If this is set to 1, the job aborts immediately. A zero value allows jobs to terminate in an orderly way, executing steps marked “always run". Argument type: Boolean
`reason`	A string added to the aborted `job/jobstep` that describes or records the reason for the abort. The server records this value, but places no meaning on the string, which is similar to a text description. Argument type: String

Positional arguments

None

Response

None or status OK message.

ec-perl

syntax: `$cmdr->abortAllJobs({...});`

Example

```
$cmdr->abortAllJobs({force => 1});
```

ectool

syntax: `ectool abortAllJobs ...`

Example

```
ectool abortAllJobs --force 1
```

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abortJob

Aborts a running job.

You must enter a `jobId`.

Arguments	Descriptions
`jobId`	The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID
`force`	<*Boolean flag* - `0|1|true|false`> If this is set to 1, the job aborts immediately. A zero value allows jobs to terminate in an orderly way, executing steps marked "always run". Argument type: Boolean
`reason`	A string added to the aborted `job/jobstep` that describes or records the reason for the abort. The server records this value, but places no meaning on the string, which is similar to a text description. Argument type: String

Positional arguments

`jobId`

Response

None or status OK message.

ec-perl

syntax: `$cmdr->abortJob(<jobId>, {...});`

Example

```
$cmdr->abortJob(4fa765dd-73f1-11e3-b67e-b0a420524153, {force => 1});
```

ectool

syntax: `ectool abortJob <jobId> ...`

Example

```
ectool abortJob 4fa765dd-73f1-11e3-b67e-b0a420524153 --force 1
```

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abortJobStep

Aborts any type of step, including a command step or subprocedure step.

Aborting a subprocedure step also aborts all steps of the subprocedure. Steps marked "always run" will still run to completion unless the "force" flag is specified.

You must enter a `jobStepId`.

Arguments	Descriptions
`jobStepId`	The unique ElectricFlow-generated identifier (a UUID) for a job step that is assigned automatically when the job step is created. The system also accepts a job step name assigned to the job step by its name template. Argument type: UUID
`force`	<*Boolean flag* - `0|1|true|false`> If this is set to 1, the job aborts immediately. A zero value allows jobs to terminate in an orderly way, for example, executing steps marked "always run". Argument type: Boolean
`reason`	A string added to the aborted `job/jobstep` that describes or records the reason for the abort. The server records this value, but places no meaning on the string, which is similar to a text description. Argument type: String

Positional arguments

`jobStepId`

Response

None or status OK message.

ec-perl

syntax: `$cmdr->abortJobStep(<jobStepId>, {...});`

Example

```
$cmdr->abortJobStep(5da765dd-73f1-11e3-b67e-b0a420524153, {force => 1});
```

ectool

syntax: `ectool abortJobStep <jobStepId> ...`

Example

```
ectool abortJobStep 5da765dd-73f1-11e3-b67e-b0a420524153
```

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deleteJob

Deletes a job from the ElectricFlow database.

You must specify a `jobId`.

Arguments	Descriptions
`jobId`	The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID

Positional arguments

`jobId`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteJob(<jobId>);`

Example

```
$cmdr->deleteJob(4fa765dd-73f1-11e3-b67e-b0a420524153);
```

ectool

syntax: `ectool deleteJob <jobId>`

Example

```
ectool deleteJob 4fa765dd-73f1-11e3-b67e-b0a420524153
```

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findJobSteps

Returns a list of job steps from a single job or from a single subprocedure job step. This command is used by the
Job Details web page in the ElectricFlow UI. The elements in the list are returned in their natural *job order*.

You must specify either a `jobId` or a `jobStepId`, but not both.

Arguments	Descriptions
`jobId`	The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID
`jobStepId`	The unique ElectricFlow-generated identifier (a UUID) for a job step that is assigned automatically when the job step is created. The system also accepts a job step name assigned to the job step by its name template. Argument type: UUID
`filter`	A list of zero or more filter criteria definitions used to define objects to find. See the `findObjects` API for complete description for using filters. Argument type: Collection
`numObjects`	`<full object count>` This specifies the number of full job steps (not just the IDs) returned in the response. Returned job steps will be from the beginning of the list. If `numObjects` is not specified, all job steps in the list of object IDs are returned. Any and all job steps can be retrieved using the `getObjects` command. Argument type: Integer
`selects`	This is an unordered list of property names that specify additional top-level properties to return for each object. See the code example for `findObjects` for instructions on forming the list and passing it to the ElectricFlow Perl API. Argument type: Collection

Positional arguments

`jobId` or `jobStepId`

Response

One or more `jobStep` elements.

ec-perl

syntax: `$cmdr->findJobSteps({<optionals>});`

Example 1

```
my $xPath = $cmdr->findJobSteps(
               {jobId   => "4fa765dd-73f1-11e3-b67e-b0a420524153",
                select  => [{propertyName  => 'charEncoding'},
                            {propertyName  => 'abc'}]});
     print "Return data from ElectricFlow:\n" .
               $xPath-> findnodes_as_string("/"). "\n";
```

Example 2

```
my $xPath = $cmdr->findJobSteps({jobStepId  => "5da765dd-73f1-11e3-b67e-b0a42052415
3"});
   print "Return data from ElectricFlow:\n" .
        $xPath-> findnodes_as_string("/"). "\n";
```

ectool

Not supported.

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getJobDetails

Retrieves complete information about a job, including details from each job step.

You must specify a `jobId`.

Arguments	Descriptions
`jobId`	The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID
`structureOnly`	*<Boolean flag -* `0|1|true|false`*>* This reduces the amount of information returned to minimal structural information. Argument type: Boolean

Positional arguments

`jobId`

Response

One `job` element, including one or more `jobStep` elements.

ec-perl

syntax: `$cmdr->getJobDetails(<jobId>, {<optionals>});`

Example

```
$cmdr->getJobDetails(4fa765dd-73f1-11e3-b67e-b0a420524153, {structureOnly => 1});
```

ectool

syntax: `ectool getJobDetails <jobId> ...`

Example

```
ectool getJobDetails 4fa765dd-73f1-11e3-b67e-b0a420524153 --structureOnly 1
```

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getJobInfo

Retrieves all information about a job, *except* for job step information.

You must specify a `jobId`.

Arguments	Descriptions
`jobId`	The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID

Positional arguments

`jobId`

Response

One `job` element.

ec-perl

syntax: `$cmdr->getJobInfo(<jobId>);`

Example

```
$cmdr->getJobInfo(4fa765dd-73f1-11e3-b67e-b0a420524153);
```

ectool

syntax: `ectool getJobInfo <jobId>`

Example

```
ectool getJobInfo 4fa765dd-73f1-11e3-b67e-b0a420524153
```

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getJobNotes

Retrieves the notes property sheet from a job.

You must specify a `jobId`.

Arguments	Descriptions
`jobId`	The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID

Positional arguments

`jobId`

Response

A `propertySheet` element that contains the job.

ec-perl

syntax: `$cmdr->getJobNotes(<jobId>);`

Example

```
$cmdr->getJobNotes(4fa765dd-73f1-11e3-b67e-b0a420524153);
```

ectool

syntax: `ectool getJobNotes <jobId>`

Example

```
ectool getJobNotes 4fa765dd-73f1-11e3-b67e-b0a420524153
```

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getJobs

Retrieves summary information for a list of jobs. By default, all jobs are returned.

Notes:
If you use `sortKey` or `sortOrder`, you must use both arguments together.
You can use `firstResult` and `maxResults` together or separately to select a limited sublist of jobs for the result set.

Arguments	Descriptions
`firstResult`	The first row to return in the results. This is the *<index number>* 0-based index that identifies the first element returned from filtered, sorted result set. Argument type: Integer
`maxResults`	This number, *<result count>*, sets the maximum number of returned jobs. Argument type: Integer
`sortKey`	How to sort the results: `<jobId|jobName|start|finish|procedureName>`. Argument type: String
`sortOrder`	The order in which to sort the results: `<ascending|descending>`. Argument type: String
`status`	Filter jobs by this status: `<running|completed|runnable>`. Argument type: String

Positional arguments

None

Response

One or more `job` elements. A `job` element contains summary information only.

ec-perl

syntax: `$cmdr->getJobs({...});`

Examples

How do I get the first 10 jobs (index 0-9)?

```
$cmdr-> getJobs ({maxResults=>10});
```

How do I get the next 10 jobs (index 10-19)?

```
$cmdr-> getJobs({firstResult=>10, maxResults=>10});
```

How do I get the most recent job by start time?

```
$cmdr-> getJobs({sortKey=>'start', sortOrder=>'descending', maxResults=>1});
```

ectool

syntax: `ectool getJobs ...`

Examples

How do I get the first 10 jobs (index 0-9)?

```
ectool getJobs --maxResults 10
```

How do I get the next 10 jobs (index 10-19)?

```
ectool getJobs --firstResult 10 --maxResults 10
```

How do I get the most recent job by start time?

```
ectool getJobs --sortKey start --sortOrder descending --maxResults 1
```

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getJobsForSchedule

Retrieves jobs started by a specific schedule.

You must specify a `projectName` and `scheduleName`.

Arguments	Descriptions
`projectName`	The name for the project that must be unique among all projects. Argument type: String
`scheduleName`	The name for the schedule that must be unique among all schedules for the project. Argument type: String

Positional arguments

`projectName, scheduleName`

Response

Returns an XML stream containing any number of `job` elements. The `job` elements contain summary information only.

ec-perl

syntax: `$cmdr->getJobsForSchedule(<projectName>, <scheduleName>);`

Example

```
$cmdr->getJobsForSchedule('Test', 'ea1');
```

ectool

syntax: `ectool getJobsForSchedule <projectName> <scheduleName>`

Example

```
ectool getJobsForSchedule Test ea1
```

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getJobStatus

Retrieves the status of a job.

You must specify the `jobId`.

Arguments	Descriptions
`jobId`	The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID

Positional arguments

`jobId`

Response

Values for `status` and `outcome` as follows:

Possible values for `status`:

`pending` - The job is not yet runnable--it is waiting for other steps to complete first. A job should not stay in this state for longer than a few seconds.

`runnable` - The job is ready to run, but it is waiting for a resource to become available.

`running` - The job is assigned to a resource and is executing the step command.

`completed` - The job finished executing.

Possible values for `outcome`: The `outcome` is accurate only if the job status is "completed."

`success` - The job finished successfully.

`warning` - The job completed with no errors, but encountered some suspicious conditions.

`error` - The job has finished execution with errors.

ec-perl

syntax: `$cmdr->getJobStatus(<jobId>);`

Example

```
$cmdr->getJobStatus(4fa765dd-73f1-11e3-b67e-b0a420524153);
```

ectool

syntax: `ectool getJobStatus <jobId>`

Example

```
ectool getJobStatus 4fa765dd-73f1-11e3-b67e-b0a420524153
```

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getJobStepDetails

Retrieves details for a job step.

You may never need to use this command. This information is available for all job steps in a job by using the `getJobDetails` command. The `getJobStepDetails` command can be used to refresh data for a single step if you
need an update in real time.

You must specify `jobStepId`.

Arguments	Descriptions
`jobStepId`	The unique ElectricFlow-generated identifier (a UUID) for a job step that is assigned automatically when the job step is created. The system also accepts a job step name assigned to the job step by its name template. Argument type: UUID
`structureOnly`	*<Boolean flag* - <`0|1|true|false`> This reduces the amount of information returned to minimal structural information. Argument type: Boolean

Positional arguments

`jobStepId`

Response

A `jobStep` element.

ec-perl

syntax: `$cmdr->getJobStepDetails(<jobStepId>, {...});`

Example

```
$cmdr->getJobStepDetails(5da765dd-73f1-11e3-b67e-b0a420524153);
```

ectool

syntax: `ectool getJobStepDetails <jobStepId> ...`

Example

```
ectool getJobStepDetails 5da765dd-73f1-11e3-b67e-b0a420524153
```

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getJobStepStatus

Retrieves the status of a job step.

You must specify the `jobStepId`.

Arguments	Descriptions
`jobStepId`	The unique ElectricFlow-generated identifier (a UUID) for a job step that is assigned automatically when the job step is created. The system also accepts a job step name assigned to the job step by its name template. Argument type: UUID

Positional arguments

`jobStepId`

Response

A `status` tag - for example: `<status>completed</status>`

Possible values for `status`:

`pending` - The job step is not yet runnable--it is waiting for other steps to complete first. A job should not stay in this state for longer than a few seconds.

`runnable` - The job step is ready to run, but it is waiting for a resource to become available.

`running` - The job step is assigned to a resource and is executing the step command.

`completed` - The job step finished executing.

ec-perl

syntax: `$cmdr->getJobStepStatus(<jobStepId>, {...});`

Example

```
$cmdr->getJobStepStatus(5da765dd-73f1-11e3-b67e-b0a420524153);
```

ectool

syntax: `ectool getJobStepStatus <jobStepId>`

Example

```
ectool getJobStepStatus 5da765dd-73f1-11e3-b67e-b0a420524153
```

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getJobSummaries

Retrieves summary information about jobs.

Arguments	Descriptions

`filters`	Specify filters in a space-separated list: `filter1 filter2 ...`
	A list of zero or more filter criteria definitions used to define objects to find.
	
	Each element of the filter list is a hash reference containing one filter criterion. You may specify several filter criteria, in which case an object must meet all filter criteria to be included in the result. See the code example below for instructions on forming the list and passing it to the ElectricFlow Perl API.
	
	Two types of filters:
	"property filters" - used to select objects based on the value of the object's intrinsic or custom property
	"boolean filters" ("and", "or", "not") - used to combine one or more filters using boolean logic.
	
	Each "property filter" consists of a property name to test and an operator to use for comparison. The property can be either an intrinsic property defined by ElectricFlow or a custom property added by the user. Each operator takes zero, one, or two operands to compare against the desired property.
	
	Property filter operators are:
	
	`between (2 operands)`
	`contains (1)`
	`equals (1)`
	`greaterOrEqual (1)`
	`greaterThan (1)`
	`in (1)`
	`lessOrEqual(1)`
	`lessThan (1)`
	`like (1)`
	`notEqual (1)`
	`notLike (1)`
	`isNotNull (0)`
	`isNull (0)`
	
	A boolean filter is a boolean operator and an array of one or more filters that are operands. Each operand can be either a property filter or a boolean filter.
	
	Boolean operators are:
	
	`not (1 operand)`
	`and (2 or more operands)`
	`or (2 or more operands)`
	
	Argument type: Collection

Arguments	Descriptions
`includeLastSuccess`	*<Boolean flag -* `0|1|true|false`*>* When this argument is set to 1, the step will include the last successful job if it was not already included. Argument type: Boolean
`maxFailedSteps`	Maximum number of failed steps to return. Argument type: Integer
`maxJobs`	Maximum number of jobs to return. Argument type: Integer
`maxRunningSteps`	Maximum number of running steps to return. Argument type: Integer

Positional arguments

None

Response

A summary of the job steps with the specified properties.

ec-perl

syntax:`$cmdr->getJobSummaries ( {...});`

Example

```
$cmdr->getJobSummaries ( {maxFailedSteps => 6} );
```

ectool

syntax:`ectool getJobSummaries ...`

Example

```
ectool getJobSummaries --maxFailedSteps 6
```

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getJobSummary

Retrieves a job and its job steps with only the specified job and job step properties.

Arguments	Descriptions
`jobId`	The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID
`jobProperties`	A comma-separated list of intrinsic job properties to include in the output. Argument type: String
`jobStepProperties`	A comma-separated list of intrinsic job step properties to include in the output. Argument type: String

Positional arguments

None.

Response

A summary of the job step with the specified properties.

ec-perl

syntax:`$cmdr->getJobSummary ({<optionals ...>});`

Example

```
$cmdr->getJobSummary ( {jobId => 5da765dd-73f1-11e3-b67e-b0a420524153} );
```

ectool

syntax:`ectool getJobSummary [optionals ...]`

Example

```
ectool getJobSummary --jobId 5da765dd-73f1-11e3-b67e-b0a420524153
```

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moveJobs

Moves jobs from one project to another project.

You must specify `sourceProject` and `destinationProject`.

Arguments	Descriptions
`sourceProject`	Name of the project that contains the jobs you want to move. Argument type: String

Arguments	Descriptions
`destinationProject`	New project that will contain the jobs. Argument type: String

Positional arguments

`sourceProject, destinationProject`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->moveJobs(<sourceProject>, <destinationProject>);`

Example

```
$cmdr->moveJobs("ProjectA", "ProjectB");
```

ectool

syntax: `ectool moveJobs <sourceProject> <destinationProject> ...`

Example

```
ectool moveJobs "ProjectA" "ProjectB"
```

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runProcedure

Creates and starts a new job using a procedure directly or a procedure specified indirectly through a schedule. Returns a new job ID. Wait until the job completes. If the `scheduleName` option is provided, the parameters provided by
that schedule will be used.

`runProcedure credentials` - two types of credentials can be passed to `runProcedure`:

- Impersonation credentials
- Credential parameters

Impersonation credentials

Impersonation credentials are used to set the top level impersonation credential for a job. If specified, the impersonation credential [on the job] is used as the default impersonation credential for all steps in the job.

The impersonation credential can be specified in two ways. If the `credentialName` argument is supplied, the job looks for the named credential specified. If the user has execute permission on the specified credential,
`runProcedure` is allowed to start the job.

If the `userName` and `password` arguments are supplied, the job creates a transient credential to contain the pair. The transient credential is used by the job and then discarded when the job completes.

Only one of `credentialName` or `userName` should be specified. If both are specified, only `userName` is used.
Neither can be specified if the procedure being run already has a credential defined on the procedure or the project.

Credential parameters

If the procedure defines one or more credential parameters, `runProcedure` must specify a credential to use for each parameter. The `actualParameter` argument identifies the credential name to use for the parameter, and the `credential` argument specifies the user name for each defined credential. For each credential specified, ectool prompts for a password.

For example, for a procedure named `'proc1'` with a single credential parameter named `'param1'`. The following command could be used to pass a transient credential where the user name is `'joe'` and the password
is `'plumber'`:

```
$ ectool runProcedure test --procedureName proc1 \
    --actualParameter param1=cred1 --credential cred1=joe
    cred1 password: plumber
```

Multiple parameters or credentials can be specified by having additional *name=value* pairs after the `actualParameter` or `credential` arguments. The same credential can be specified as the value for more than one actual parameter.

You must specify a `projectName` and either a `procedureName` or a `scheduleName`.

Arguments	Descriptions
`projectName`	Name for the project that must be unique among all projects. Argument type: String
`actualParameter`	(Optional) Specifies the values to pass as parameters to the called procedure. Each parameter value is specified with an `actualParameterName` and a `value`. The `actualParameterName` must match the name of a formal parameter on the called procedure. Used in conjunction with `procedureName` to set the value of the actual parameters. Do not use this argument with `scheduleName`. Argument type: Map
`credentials`	(Optional) Use the following syntax to specify a credential: `<credName>=<userName> [<credName>=<userName> ...]]`. Argument type: Collection
`credentialName`	(Optional) `credentialName` can be one of two forms: **relative** (for example, *"cred1"*) - the credential is assumed to be in the project that contains the request target object. **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*) - the credential can be from any specified project, regardless of the target object's project.

Arguments	Descriptions
`destinationProject`	(Optional) This argument is used to specify the name of the destination project. Argument type: String
`password`	(Optional) The password for the user running the procedure. Argument type: String
`priority`	(Optional) Priorities take effect when two or more job steps in different jobs are waiting for the same resource. When the resource is available, it will be used by the job step that belongs to the job with the highest priority. If the priority level is the same, the resource will be used by the job step that belongs to the job with the lowest job ID number. If the job steps are in the same job, the resource will be used first by the step with the lowest job step ID number. Priority values are: `low|normal|high|highest`. Argument type: JobPriority
`procedureName`	(Optional) The name for the procedure; must be unique within the project. Argument type: String
`scheduleName`	(Optional) The name for the schedule; must be unique among all schedules for the project. Use this option if you want to use the parameters from an existing specific schedule. Argument type: String
`userName`	(Optional) The name of the user who is running the procedure. Argument type: String

Positional arguments

`projectName`

Response

The new job ID number.

ec-perl

syntax: `$cmdr->runProcedure(<project name>, {<optionals}});`

Example

```
$cmdr->runProcedure("Sample Project", {procedureName => "Delay",
   actualParameter => {actualParameterName => "Delay Time", value => 10}});
$xpath = $ec->runProcedure("BSHTest",
            {procedureName => "FakeMotoBuild",
           actualParameter => [
      {actualParameterName => "builddir", value => $cwd},
```

```
        {actualParameterName => "board", value => $board},
        {actualParameterName => "myview", value => $cwv},
        {actualParameterName => "resourcetouse",
                       value => $resourcetouse},
]});
```

ectool

syntax: `ectool runProcedure <project name> [optionals]`

Examples

```
ectool runProcedure <project name> --procedureName <procedure name>
   --scheduleName <schedule name>

ectool runProcedure "Sample Project" --procedureName "Delay"
   --actualParameter "Delay Time=10"
```

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setJobName

Sets the name of a running job.

You must specify `jobId` and `newName`.

Notes:

The `jobId` can be omitted if the command is run as part of an ElectricFlow step.

A job cannot be renamed after it has completed.

Arguments	Descriptions
`jobId`	The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID
`newName`	New name of the job. Argument type: String

Positional arguments

`jobId, newName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->setJobName(<jobId>, <newName>);`

Examples

```
$cmdr->setJobName(4fa765dd-73f1-11e3-b67e-b0a420524153, "Delay Test_541"); (from th
e command line)

$cmdr->setJobName("TestJob_252"); (from a step's command)
```

ectool

syntax: `ectool setJobName <jobId> <newName> ...`

Examples

```
ectool setJobName 4fa765dd-73f1-11e3-b67e-b0a420524153 "Delay Test"_541 (from the c
ommand line)

ectool setJobName "TestJob"_252
```

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External Job APIs

What are external job APIs and do you need them?

Overview

ElectricFlow includes a powerful built-in scheduler for both managing execution and real-time reporting for a "running" process. Most ElectricFlow Installations choose to use its built-in scheduler because it is more powerful than most in-house built and other scheduling solutions.

However, there are use cases where an external scheduler may be appropriate, for example, an LSF Grid engine. Often, such systems are quite mature and may have been in use for many years. An organizations reliance on an LSF Grid system can mandate it remain as the driving scheduler. Many schedulers lack the richness in their graphical user interface, which is an area where ElectricFlow excels—especially as it applies to monitoring the status of complex processes and workflows as they progress in real-time through the ElectricFlow system. The ElectricFlow GUI also provides powerful auditing capabilities for reviewing results of complex process runs.

External Job APIs are designed to leverage the ElectricFlow GUI to display results for jobs running on external schedulers. The external scheduler can issue calls through these APIs to provide a representation of this same job within the ElectricFlow Jobs page. ElectricFlow users and the external scheduler can then monitor the complete integrated system through a single interface—the ElectricFlow GUI.

The external system need not be a formal scheduler. In fact, even a simple script might be able to leverage the External Job Step API. For example, a build script could issue API calls at its beginning and end so the build is represented in ElectricFlow as a job.

Using the API does NOT consume agent resources. The API simply allows for graphical representation of external jobs within ElectricFlow.

completeJob

Completes an externally managed job. Marks the job root step so the job is marked "completed" when all child steps are completed, and updates the run time for the root step.

You must specify a `jobId`.

Arguments	Descriptions
`jobId`	The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID
`force`	<*Boolean flag* - `0|1|true|false`> If true, all external steps belonging to the job will be marked "complete". This arguments determines whether all external steps under the job should be recursively marked "complete". **Note:** If this API is called on a job launched with `runProcedure`, there is no effect unless `force` is enabled, in which case only external steps are affected. Argument type: Boolean
`outcome`	Overall outcome for a job or step: `success` - The job finished successfully. `warning` - The job completed with no errors, but encountered some suspicious conditions. `error` - The job has finished execution with errors. If specified, the outcome overrides any previously propagated outcome value. Argument type: JobOutcome

Positional arguments

`jobId`

Response

None or status OK message.

ec-perl

syntax: `$cmdr->completeJob(<jobId>);`

Example

```
$cmdr->completeJob(1234);
```

ectool

syntax: `ectool completeJob <jobId>`

Example

```
ectool completeJob 1234
```

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completeJobStep

Completes an externally managed job step. Marks the job step "completed" when all child steps are completed and updates the step run time.

You must specify a `jobStepId`.

Arguments	Descriptions
`jobStepId`	The unique ElectricFlow-generated identifier (a UUID) for a job step that is assigned automatically when the job step is created. The system also accepts a job step name assigned to the job step by its name template. Argument type: UUID
`exitCode`	The exit code of a job step. Argument type: Integer
`force`	<*Boolean flag* - `0|1|true|false`> If true, all external steps under the job should be recursively marked "complete". **Note:** If this API is called on a job launched with `runProcedure`, there is no effect unless `force` is enabled, in which case only external steps are affected. Argument type: Boolean
`outcome`	Overall outcome for a job or step: `success` - The job step finished successfully. `warning` - The job step completed with no errors, but encountered some suspicious conditions. `error` - The job step has finished execution with errors. `skipped` - The job step was skipped. Argument type: JobOutcome

Positional arguments

`jobStepId`

Response

None or status OK message.

ec-perl

syntax: `$cmdr->completeJobStep(<jobStepId>);`

Example

```
$cmdr->completeJobStep(5da765dd-73f1-11e3-b67e-b0a420524153);
```

ectool

syntax: `ectool completeJobStep <jobStepId>`

Example

```
ectool completeJobStep 5da765dd-73f1-11e3-b67e-b0a420524153
```

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createJob

Creates an externally managed job that will serve as a container for external job steps.

You must specify `projectName` or `destinationProject`.

Arguments	Descriptions
`destinationProject`	If specified, determines the project where the job will reside. You must have *modify* permission on the destination project. `projectName` or `destinationProject` must be specified to determine the project where the job is created, `destinationProject` is preferred. Argument type: String
`jobNameTemplate`	If specified, the job name will be generated by expanding this argument value. **Note:** The job name is generated by expanding the `jobNameTemplate` argument or the `jobNameTemplate` from the procedure or the system default. Argument type: String
`procedureName`	If specified, `projectName` and `procedureName` are used as a template for the job. You must have *execute* permission on the procedure. **Note:** The job name is generated by expanding the `jobNameTemplate` argument or the `jobNameTemplate` from the specified procedure or the system default. Argument type: String
`projectName`	The name of the project where this job will reside. You must have *modify* permission on the destination project. `projectName` or `destinationProject` must be specified to determine the project where the job is created. If both are specified, `destinationProject` is preferred. Argument type: String

Arguments	Descriptions
status	The starting status for the job:pending|runnable|scheduled|running>. The status argument determines the "starting" job status. This is useful if you want to immediately go into a specific status without having to use modifyJob to update the status. Defaults to pending. Possible values for status: • pending–The job is not yet runnable. • runnable–The job is ready to run. • scheduled–The job is scheduled to run. • running–The job is executing. Argument type: JobStatus

Positional arguments

None

Response

The new job ID number.

ec-perl

syntax: `$cmdr->createJob({<optionals>});`

Example

```
$cmdr->createJob({projectName => "Sample Project"});
```

ectool

syntax: `ectool createJob ...`

Example

```
ectool createJob --projectName "Sample Project"
```

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createJobStep

Use this API to add ElectricFlow managed job steps to a running job or job step and to create externally managed steps (if "external" is set).

You must specify the parent job step using either the jobStepId or parentPath arguments (COMMANDER_JOBSTEPID implicitly sets jobStepId). The parent job step status must not be completed.

Arguments	Descriptions
`actualParameter`	Specifies the values to pass as parameters to the *called* procedure. Each parameter value is specified with an `actualParameterName` and a `value`. The `actualParameterName` must match the name of a formal parameter on the called procedure. For more information about parameters, click here. Argument type: Map
`alwaysRun`	If set to 1, indicates this job step will run even if the job is aborted before the job step completes. A useful argument for running a "cleanup" step that should run whether the job step is successful or not. The value for `alwaysRun` is a <*Boolean flag -* `0|1|true|false`>. Defaults to "false". Argument type: Boolean
`broadcast`	Use this flag to run the same job step on several resources at the same time. The job step is "broadcast" to all resources listed in the `resourceName` argument. The `broadcast` value = <*Boolean flag -*`0|1|true|false`>. This argument is applicable only to command job steps. Defaults to "false". Argument type: Boolean
`command`	The command to run. This argument is applicable to command job steps only. Argument type: String
`condition`	If empty or non-zero, the job step will run. If set to "0", the job step is skipped. A useful setting during procedure development or when re-running a job that has already completed some of the job steps. Also, this argument is useful for conditional execution of steps based on properties set by earlier steps. Argument type: String
`credentialName`	The credential to use for impersonation on the agent. `credentialName` can be one of two forms: **relative** (for example, *"cred1"*) - the credential is assumed to be in the project that contains the request target object. **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*) - the credential can be from any specified project, regardless of the target object's project. Argument type: String

Arguments	Descriptions
`credentials`	Refers to one or more credentials to attach to this job step. These are "dynamic" credentials, captured when a job is created. Dynamic credentials are stored on the server temporarily until the job completes and then discarded. For more information about credentials, see the ":Credentials and User Impersonation"topic in the ElectricFlow User Guide. Argument type: Collection
`errorHandling`	Determines what happens to the procedure if the step fails: • `failProcedure` - The current procedure continues, but the overall status is error (default). • `abortProcedure` - Aborts the current procedure, but allows already-running steps in the current procedure to complete. • `abortProcedureNow` - Aborts the current procedure and terminates running steps in the current procedure. • `abortJob` - Aborts the entire job, terminates running steps, but allows `alwaysRun` steps to run. • `abortJobNow` - Aborts the entire job and terminates all running steps, including alwaysRun steps. • `ignore` - Continues as if the step succeeded. Argument type: ErrorHandling
`exclusive`	If set to 1, indicates this job step should acquire and retain this resource exclusively. The value for `exclusive` is a <*Boolean flag* -`0|1|true|false`>. Defaults to "false". **Note:** Setting `exclusive`, sets `exclusiveMode` to `"job"`. Argument type: Boolean
`exclusiveMode`	Use one of the following options: • `None` - the "default", which does not retain a resource. • `Job` - keeps the resource for the duration of the job step. No other job can use this resource, regardless of its step limit, until this job completes or "Release Exclusive" is used in a job step. Future steps for this job will use this resource in preference to other resources--if this resource meets the needs of the job steps and its step limit is not exceeded. • `Step` - keeps the resource for the duration of the job step. • `Call` - keeps the resource for the duration of the procedure that called this job step, which is equivalent to 'job' for top level steps. Argument type: ExclusiveMode

Arguments	Descriptions
`external`	If set, indicates this job step is an external step. ElectricFlow will not schedule or run agent commands for external steps, but instead, represents a step managed outside of ElectricFlow. The typical usage is with an external Job (see `createJob`). The status of an external job step is set using `modifyJobStep`, and it can be completed using `completeJobStep`. The value for external is a <*Boolean flag* - `0|1|true|false`>. Default is "false". Argument type: Boolean
`jobStepId`	The unique ElectricFlow-generated identifier (UUID) for the parent job step that is assigned automatically when the job step is created. The system also accepts a job step name assigned to the job step by its name template. You can specify `parentPath` or `jobStepId` or both. If you specify both `parentPath` and `jobStepId`, `parentPath` is preferred. Argument type: UUID
`jobStepName`	The name of the new dynamic job step to create. Argument type: String
`logFileName`	A custom log file name produced by running the job step. By default, ElectricFlow assigns a unique name for this file. Argument type: String
`parallel`	If set, indicates this job step should run at the same time as adjacent job steps marked to run as parallel also. The value for `parallel` is a <*Boolean flag* -`0|1|true|false`>. Defaults to "false". Argument type: Boolean
`parentPath`	The path of the parent job step. This argument determines the parent job for the new `jobStep`. The new `jobStep` is executed in context of the parent job step. You can specify `parentPath` or `jobStepId` or both. If you specify both `parentPath` and `jobStepId`, `parentPath` is preferred. Argument type: String
`postProcessor`	The name of a program to run after a job step completes. This program looks at the job step output to find errors and warnings. ElectricFlow includes a customizable program called "postp" for this purpose. The value for `postProcessor` is a command string for invoking a post-processor program in the platform shell for the resource (`cmd` for Windows, `sh` for UNIX). Argument type: String

Arguments	Descriptions
`precondition`	The `precondition` property (if it exists) is copied to the job step when the step is created. When the job step is eligible to transition from pending to runnable, the precondition is evaluated. If the precondition result is empty, `false`, or "`0`", the step remains in the pending state. Any other value allows the step to proceed to the runnable state. **Note:** A precondition property allows steps to be created with "pause", which then pauses the procedure. In a paused state, all currently running steps continue, but no additional steps will start. Set this property to make a step wait until one or more dependent conditions are met. When a job step is eligible to transition from pending to runnable, a *precondition* is evaluated. A *precondition* is a fixed text or text embedding property reference that is evaluated to TRUE or FALSE. An empty string, a \"0\" or \"false\" is interpreted as FALSE. Any other result string is interpreted as TRUE. The step will block until the precondition is TRUE. Argument type: String Precondition example: Assume we defined these 4 steps: 1. Build object files and executables 2. Build installer 3. Run unit tests 4. Install bits on test system Step 1 is an ordinary serial step. Steps 2 and 3 can run in parallel because they depend only on step 1's completion. Step 4 depends on step 2, but not step 3. You can achieve optimal step execution order with preconditions: • Make steps 2-4 run in parallel. • Step 2 needs a job property set at the end of its step to indicate step 2 is completing (`/myJob/buildInstallerCompleted=1`). • Set a precondition in step 4: `$[/myJob/buildInstallerCompleted]`
`procedureName`	The name of the procedure for an existing step definition that will be copied to the new job step. Argument type: String

Arguments	Descriptions
`projectName`	The name of the project for an existing step definition that will be copied to the new job step. Argument type: String
`releaseExclusive`	<*Boolean flag -* `0|1|true|false`> Declares whether or not this job step will release its resource, which is currently held "exclusively". **Note:** Setting this flag to "true" is the same as setting `releaseMode` to `release`. Argument type: Boolean
`releaseMode`	Use one of the following options: • `none` - the "default" - no action if the resource was not previously marked as "retain." • `release` - releases the resource at the end of this job step. If the resource for the job step was previously acquired with "Retain exclusive" (either by this job step or some preceding job step), the resource exclusivity is canceled at the end of this job step. The resource is released in the normal way so it may be acquired by other jobs. • `releaseToJob` - allows a job step to promote a "step exclusive" resource to a Job exclusive resource. Argument type: ReleaseMode
`resourceName`	Name for the resource; must be unique among all resources. Argument type: String
`shell`	Where *shell* is the name of a program used to execute commands contained in the "command" field. The name of a temporary file containing commands will be appended to the end of this invocation line. Normally, this file is a command shell, but it can be any other command line program. The default is to use the standard shell for the platform it runs on (`cmd` for Windows, `sh` for UNIX). Applicable to command steps only. Argument type: String

Arguments	Descriptions
status	<pending|runnable|scheduled|running> The status argument determines the "starting" job status. This is useful if you want to immediately go into a specific status without having to use modifyJobStep to update the status. Defaults to pending. Possible values for status: • pending–The job step is not yet runnable. • runnable–The job step is ready to run. • scheduled–The job step is scheduled to run. • running–The job step is executing. Argument type: JobStatus
stepName	Takes the name of an existing step and creates a job step from this definition. It is used in conjunction with procedureName and projectName and defaults to the current job's procedure if neither are specified. If you use stepName, createJobStep uses the existing step as a template for the new dynamic JobStep. If you use this argument, you cannot use the command argument. You can use any project, procedure, or step as a template. If you do not provide a template, you must set the parameters of the new JobStep (such as command) manually.
subprocedure	The name of the nested procedure to call when this job step runs. If a subprocedure is specified, do not include the command or commandFile options. Argument type: String
subproject	If a subprocedure argument is used, this is the name of the project where that subprocedure is found. By default, the current project is used. Argument type: String
timeLimit	The maximum length of time the job step is allowed to run. After the time specified, the job step will be aborted. The time limit is specified in units that can be hours, minutes, or seconds. Argument type: String
timeLimitUnits	Specify hours|minutes|seconds for time limit units. Argument type: TimeLimitUnits

Arguments	Descriptions
workingDirectory	The ElectricFlow agent sets this directory as the “current working directory,” when running the command contained in the job step. If no working directory is specified in the job step, ElectricFlow uses the directory it created for the job in the ElectricFlow workspace as the working directory. **Note:** If running a job step on a proxy resource, this directory must exist on the proxy target. Argument type: String
workspaceName	The name of the workspace where the job step log files will be stored. Argument type: String **Note:** If no workspace is specified, the created job step may default to its parent job step's workspace. If you want the job step to use the workspace of the resource that it should run on, you must use this argument so that the workspace defaults to the workspace value indicated in the resource. The syntax for this argument is as follows: ec-perl: `'$'."[/myResource/workspaceName]"` ectool: `"$"[/myResource/workspaceName]`

Positional arguments

`jobStepId` or `parentPath`

Response

Returns a `jobStep` object.

ec-perl

syntax: `$cmdr->createJobStep({<optionals>});`

Examples

```
$cmdr->createJobStep ({parentPath => "/jobs/123", external => "1"});

$cmdr->createJobStep ({jobStepId => "5da765dd-73f1-11e3-b67e-b0a420524153", externa
l => "1"});

$cmdr->createJobStep ({jobStepId => "5da765dd-73f1-11e3-b67e-b0a420524153", workspa
ceName => "workspaceA"});

$cmdr->createJobStep ({jobStepId => "5da765dd-73f1-11e3-b67e-b0a420524153", workspa
ceName => "$" . "[/myResource/workspaceName]"});

# Create a job step that calls a subprocedure and passes a parameter credential

# 'coolProcedure' is a procedure within the Default project with one parameter
```

```
# credential named 'sshCredentialParameter'.
$cmdr->createJobStep(
    {
         projectName => 'Default',
        subprocedure => 'coolProcedure',
     actualParameter => [
        {
           actualParameterName => 'sshCredentialParameter',
           value => 'sshCredentialParameter'
        }
    ],
    credential => [
        {
            credentialName => 'sshCredentialParameter',
                  userName => 'sshUser',
                  password => 'super_secure_sshPassword'
        }

    ]
  }
);


# Create two parallel job steps and send them to the ElectricFlow server using the
batch API.

# Create the batch API object
my $batch = $ec->newBatch('parallel');

# Create multiple requests
my @reqIds = (
    $batch->createJobStep(
        {
            parallel        => '1',
            projectName     => 'Default',
            subprocedure    => 'coolProcedure',
            actualParameter => [
                 {
```

```
                        actualParameterName => 'input',
                             value          => 'helloWorld'
                    }
                ],
            }
        ),
        $batch->createJobStep(
            {
                parallel        => '1',
                projectName     => 'Default',
                subprocedure    => 'coolProcedure',
                actualParameter => [
                     {
                         actualParameterName => 'input',
                               value         => 'helloWorld'
                     }
                ],
            }
         ),
    );

    # Send off the requests
    $batch->submit();
```

ectool

syntax: `ectool createJobStep ...`

Examples

```
ectool createJobStep --parentPath /jobs/123 --external 1

ectool createJobStep --jobStepId 5da765dd-73f1-11e3-b67e-b0a420524153 --external 1
ectool createJobStep --parallel 1 --projectName Default --subprocedure
     coolProcedure --actualParameter input=helloWorld

ectool createJobStep --jobStepName "Echo-Middle" --workspaceName "workspaceA"
```

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modifyJob

Modifies the status of an externally managed job.

You must specify a `jobId`.

Arguments	Descriptions
`jobId`	The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID
`status`	`<pending|runnable|scheduled|running>` This argument determines the current status of the job, and also sets related timing values. Possible values for `status`: • `pending`–The job is not yet runnable. • `runnable`–The job is ready to run. • `scheduled`–The job is scheduled to run. • `running`–The job is executing. Argument type: JobStatus

Positional arguments

`jobId`

Response

The `jobId` element.

ec-perl

syntax: `$cmdr->modifyJob (<jobId>, {<optionals>});`

Example

```
$cmdr->modifyJob (4fa765dd-73f1-11e3-b67e-b0a420524153, {status => "running"});
```

ectool

syntax: `ectool modifyJob <jobId> ...`

Example

```
ectool modifyJob 4fa765dd-73f1-11e3-b67e-b0a420524153 --status "running"
```

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modifyJobStep

Modifies the status of an externally managed job step.

You must specify a `jobStepId`.

Arguments	Descriptions
`jobStepId`	The unique ElectricFlow-generated identifier (a UUID) for a job step that is assigned automatically when the job step is created. The system also accepts a job step name assigned to the job step by its name template. Argument type: UUID
`actualParameter`	Specifies the values to pass as parameters to the *called* procedure. Each parameter value is specified with an `actualParameterName` and a `value`. The `actualParameterName` must match the name of a formal parameter on the called procedure. For more information about parameters, click here. Argument type: Map
`alwaysRun`	If set to 1, indicates this job step will run even if the job is aborted before the job step completes. A useful argument for running a "cleanup" step that should run whether the job step is successful or not. The value for `alwaysRun` is a <*Boolean flag* - `0|1|true|false`>. Defaults to "false". Argument type: Boolean
`broadcast`	Use this flag to run the same job step on several resources at the same time. The job step is "broadcast" to all resources listed in the `resourceName` argument. The `broadcast` value = <*Boolean flag* -`0|1|true|false`>. This argument is applicable only to command job steps. Defaults to "false". Argument type: Boolean
`command`	The command to run. This argument is applicable to command job steps only. Argument type: String
`condition`	If empty or non-zero, the job step will run. If set to "0", the job step is skipped. A useful setting during procedure development or when re-running a job that has already completed some of the job steps. Also, this argument is useful for conditional execution of steps based on properties set by earlier steps. Argument type: String

Arguments	Descriptions
`errorHandling`	Determines what happens to the procedure if the step fails: • `failProcedure` - The current procedure continues, but the overall status is error (default). • `abortProcedure` - Aborts the current procedure, but allows already-running steps in the current procedure to complete. • `abortProcedureNow` - Aborts the current procedure and terminates running steps in the current procedure. • `abortJob` - Aborts the entire job, terminates running steps, but allows `alwaysRun` steps to run. • `abortJobNow` - Aborts the entire job and terminates all running steps, including alwaysRun steps. • `ignore` - Continues as if the step succeeded. Argument type: ErrorHandling
`exclusive`	If set to 1, indicates this job step should acquire and retain this resource exclusively. The value for `exclusive` is a <*Boolean flag* -`0|1|true|false`>. Defaults to "false". **Note:** Setting `exclusive`, sets `exclusiveMode` to `"job"`. Argument type: Boolean
`exclusiveMode`	Use one of the following options: • `None` - the "default", which does not retain a resource. • `Job` - keeps the resource for the duration of the job step. No other job can use this resource, regardless of its step limit, until this job completes or "Release Exclusive" is used in a job step. Future steps for this job will use this resource in preference to other resources--if this resource meets the needs of the job steps and its step limit is not exceeded. • `Step` - keeps the resource for the duration of the job step. • `Call` - keeps the resource for the duration of the procedure that called this job step, which is equivalent to 'job' for top level steps. Argument type: ExclsiveMode
`logFileName`	A custom log file name produced by running the job step. By default, ElectricFlow assigns a unique name for this file. Argument type: String

Arguments	Descriptions
`parallel`	If set, indicates this job step should run at the same time as adjacent job steps marked to run as parallel also. The value for `parallel` is a <*Boolean flag* -`0|1|true|false`>. Defaults to "false". Argument type: Boolean
`postProcessor`	The name of a program to run after a job step completes. This program looks at the job step output to find errors and warnings. ElectricFlow includes a customizable program called "postp" for this purpose. The value for `postProcessor` is a command string for invoking a post-processor program in the platform shell for the resource (`cmd` for Windows, `sh` for UNIX). Argument type: String

Arguments	Descriptions
`precondition`	The `precondition` property (if it exists) is copied to the job step when the step is created. When the job step is eligible to transition from pending to runnable, the precondition is evaluated. If the precondition result is empty, `false`, or "`0`", the step remains in the pending state. Any other value allows the step to proceed to the runnable state. **Note:** A precondition property allows steps to be created with "pause", which then pauses the procedure. In a paused state, all currently running steps continue, but no additional steps will start. Set this property to make a step wait until one or more dependent conditions are met. When a job step is eligible to transition from pending to runnable, a *precondition* is evaluated. A *precondition* is a fixed text or text embedding property reference that is evaluated to TRUE or FALSE. An empty string, a \"0\" or \"false\" is interpreted as FALSE. Any other result string is interpreted as TRUE. The step will block until the precondition is TRUE. Argument type: String Precondition example: Assume we defined these 4 steps: 1. Build object files and executables 2. Build installer 3. Run unit tests 4. Install bits on test system Step 1 is an ordinary serial step. Steps 2 and 3 can run in parallel because they depend only on step 1's completion. Step 4 depends on step 2, but not step 3. You can achieve optimal step execution order with preconditions: • Make steps 2-4 run in parallel. • Step 2 needs a job property set at the end of its step to indicate step 2 is completing (`/myJob/buildInstallerCompleted=1`). • Set a precondition in step 4: `$[/myJob/buildInstallerCompleted]`

Arguments	Descriptions
`releaseExclusive`	<*Boolean flag* - `0|1|true|false`> Declares whether or not this job step will release its resource, which is currently held "exclusively". **Note:** Setting this flag to "true" is the same as setting `releaseMode` to `release`. Argument type: Boolean
`releaseMode`	Use one of the following options: • `none` - the "default" - no action if the resource was not previously marked as "retain." • `release` - releases the resource at the end of this job step. If the resource for the job step was previously acquired with "Retain exclusive" (either by this job step or some preceding job step), the resource exclusivity is canceled at the end of this job step. The resource is released in the normal way so it may be acquired by other jobs. • `releaseToJob` - allows a job step to promote a "step exclusive" resource to a Job exclusive resource. Argument type: ReleaseMode
`resourceName`	Name for the resource; must be unique among all resources. Argument type: String
`shell`	Where *shell* is the name of a program used to execute commands contained in the "command" field. The name of a temporary file containing commands will be appended to the end of this invocation line. Normally, this file is a command shell, but it can be any other command line program. The default is to use the standard shell for the platform it runs on (`cmd` for Windows, `sh` for UNIX). Applicable to command steps only. Argument type: String

Arguments	Descriptions
status	<pending|runnable|scheduled|running> The status argument determines the "starting" job status. This is useful if you want to immediately go into a specific status without having to use modifyJobStep to update the status. Defaults to pending. Possible values for status: • pending–The job step is not yet runnable. • runnable–The job step is ready to run. • scheduled–The job step is scheduled to run. • running–The job step is executing. Argument type: JobStatus
subprocedure	The name of the nested procedure to call when this job step runs. If a subprocedure is specified, do not include the command or commandFile options. Argument type: String
subproject	If a subprocedure argument is used, this is the name of the project where that subprocedure is found. By default, the current project is used. Argument type: String
timeLimit	The maximum length of time the job step is allowed to run. After the time specified, the job step will be aborted. The time limit is specified in units that can be hours, minutes, or seconds. Argument type: String
timeLimitUnits	Specify hours|minutes|seconds for time limit units. Argument type: TimeLimitUnits
workingDirectory	The ElectricFlow agent sets this directory as the “current working directory” when running the command contained in the job step. If no working directory is specified in the job step. ElectricFlow uses the directory it created for the job in the ElectricFlow workspace as the working directory. **Note:** If running a job step on a proxy resource, this directory must exist on the proxy target. Argument type: String

Arguments	Descriptions
workspaceName	The name of the workspace where the job step log files will be stored. Argument type: String **Note:** If no workspace is specified, the created job step may default to its parent job step's workspace. If you want the job step to use the workspace of the resource that it should run on, you must use this argument so that the workspace defaults to the workspace value indicated in the resource. The syntax for this argument is as follows: ec-perl: `'$'."[/myResource/workspaceName]"` ectool: `"$"[/myResource/workspaceName]`

Positional arguments

`jobStepId`

Response

Returns a modified `jobStep` object.

ec-perl

syntax: `$cmdr->modifyJobStep (<jobStepId>, {<optional>});`

Example

```
$cmdr->modifyJobStep (4fa765dd-73f1-11e3-b67e-b0a420524153, {status => "running"});
```

```
$cmdr->modifyJobStep (4fa765dd-73f1-11e3-b67e-b0a420524153, {workspaceName => "work
spaceA"});
```

```
$cmdr->modifyJobStep (4fa765dd-73f1-11e3-b67e-b0a420524153, {workspaceName => "$" .
"[/myResource/workspaceName]"});
```

ectool

syntax: `ectool modifyJobStep <jobStepId> ...`

Example

```
ectool modifyJobStep 4fa765dd-73f1-11e3-b67e-b0a420524153 --status "running"
```

```
ectool modifyJobStep 4fa765dd-73f1-11e3-b67e-b0a420524153 --workspaceName "workspac
eA";
```

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waitForJob

Waits until the specified job reaches a given status or the timeout expires.

This command works only with ec-perl.

Arguments	Descriptions
`jobId`	The job to wait for. The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID
`timeout`	(Optional) The number of seconds to wait before giving up on a request. The default is 60 seconds. Argument type: Integer
`finalStatus`	(Optional) The status to wait for. Must be either "running" or "completed" (the default is "completed"). Argument type: String

Positional arguments

`jobId`

Response

Returns the result from the final `getJobStatus` query.

ec-perl

syntax:`$cmdr->waitForJob(<jobStepId>, <timeout>, <finalStatus>);`

Examples

To wait until a job has a status of 'completed' with no timeout:

```
$cmdr->waitForJob("4fa765dd-73f1-11e3-b67e-b0a420524153");
```

To wait until a job has a *completed* status with a timeout of 30 seconds:

```
$cmdr->waitForJob("4fa765dd-73f1-11e3-b67e-b0a420524153", 30);
```

To wait for a job that has a *running* status with no timeout:

```
$cmdr->waitForJob("4fa765dd-73f1-11e3-b67e-b0a420524153", undef, "running");
```

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API Commands - Parameter Management

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attachParameter

Attaches a formal parameter to a step.

Attaching a parameter allows a step to use the credential (passed in a parameter) as an actual parameter to a subprocedure
call or directly in a `getFullCredential` call in a command step. For more information about parameters, click here.

You must specify `projectName`, `procedureName`, `stepName`, and `formalParameterName`.

Arguments	Descriptions
`projectName`	The name of the project that must be unique among all projects. Argument Type: String
`formalParameterName`	The name of the parameter with a credential reference. Argument Type: String
`applicationName`	(Optional) The name of the application to which the parameter is attached. Argument Type: String
`componentApplicationName`	(Optional) The name of the component in the application to which the parameter is attached. Argument Type: String
`componentName`	(Optional) The name of the component to which the parameter is attached. Argument Type: String
`gateType`	(Optional) The type of the gate to which the parameter is attached. Argument Type: GateType
`pipelineName`	(Optional) The name of the pipeline to which the parameter is attached. Argument Type: String
`procedureName`	(Optional) The name of the procedure to which the parameter is attached. Argument Type: String

Arguments	Descriptions
`processName`	(Optional) The name of the process to which the parameter is attached. Argument Type: String
`processStepName`	(Optional) The name of the process step to which the parameter is attached. Argument Type: String
`stageName`	(Optional) The name of the stage task to which the parameter is attached. Argument Type: String
`stateDefinitionName`	(Optional) The name of the workflow state definition to which the parameter is attached. Argument Type: String
`stepName`	The name of the procedure step to which the parameter is attached. Argument Type: String
`taskName`	(Optional) The name of the task to which the parameter is attached. Argument Type: String
`workflowDefinitionName`	(Optional) The name of the workflow definition which the parameter is attached when the parameter is attached to a workflow state definition. Argument Type: String

Positional arguments

`projectName, procedureName, stepName, formalParameterName`

Response

None or status OK message.

ec-perl

syntax: `$cmdr->attachParameter(<projectName>, <procedureName>, <stepName>, <formalParameterName>);`

Example

```
$cmdr->attachParameter("Test Proj", "Run Build", "Get Sources", "SCM Credential"});
```

ectool

syntax: `ectool attachParameter <projectName> <procedureName> <stepName> <formalParameterName>`

Example

```
ectool attachParameter "Test Proj" "Run Build" "Get Sources" "SCM Credential”
```

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createActualParameter

Creates a new actual parameter for a step that calls a nested procedure. The parameter is passed to the nested procedure when the step runs. At run time, the actual parameter name must match the name of a formal parameter in the nested procedure.

Passing Actual Parameters

You can use actual parameters in three types of API calls:

- calling `runProcedure` to start a new job
- setting up a schedule
- creating or modifying a subprocedure step

For example, when you call `runProcedure` using ectool, set the actual parameters to the procedure on the command line using the optional argument `--actualParameter`, followed by a list of *name/value* pairs. The following is an example of calling a procedure named MasterBuild:

```
ectool runProcedure "project A" --procedureName "MasterBuild"
 --actualParameter Branch=main Type=Debug
```

To make this call using the Perl API, define a list. Each element of the list is an anonymous hash reference that specifies one of the actual parameters. Now you can pass a reference to the list as the value of the `actualParameter` argument.

Here is the same example called via the Perl API:

```
# Run the procedure
      $xPath = $cmdr->runProcedure("project A",
                {procedureName => "MasterBuild",
               actualParameter => [
          {actualParameterName => 'Branch',
                         value => 'main'},
           actualParameterName => 'Type',
                         value => 'Debug'},
      ]});
```

Specifying most arguments to the `createStep` API in Perl is fairly intuitive; like any other API, you specify key-value pairs in a hash argument for all optional parameters. However, specifying actual parameters is more involved because actual parameters are not arbitrary key-values characterizing the step. Instead, they are key-values characterizing actual parameters to the step. See the following `createStep` request in XML:

```
<createStep>
   <projectName>MyProject</projectName>
   <procedureName>MyProcedure</procedureName>
   <stepName>Step1</stepName>
   <actualParameter>
      <actualParameterName>parm1</actualParameterName>
      <value>myval</value>
   </actualParameter>
   <actualParameter>
```

```
        <actualParameterName>parm2</actualParameterName>
        <value>val2</value>
    </actualParameter>
</createStep>
```

Each actual parameter key-value is under an `<actualParameter>` element. Code this in the optional arguments hash in
the Perl API like this:

```
{ ..., => ..., actualParameter => [{actualParameterName => 'parm1',
                                                  value => 'myval'},
                                   {actualParameterName => 'parm2',
                                                  value => 'val2'}],
                                                    ... => ...}
```

In other words, the value of the `actualParameter` key in the optional arguments hash is a list of hashes, each representing one actual parameter. If the sub-procedure call takes only one actual parameter, the value of the `actualParameter` key can be specified as just the hash representing the one parameter:

```
actualParameter => {actualParameterName => 'parm1',
                                  value => 'myval'}
```

You must specify `projectName`, `procedureName`, `stepName`, and `actualParameterName`.

Arguments	Descriptions
`projectName`	The name of the project containing the procedure. The project name must be unique among all projects. Argument type: String
`procedureName`	The name of the procedure containing the step. Argument type: String
`stepName`	The name of the step that calls a subprocedure. Argument type: String
`actualParameterName`	The name of the parameter. This name must be unique within the step, and at run time, it must match the name of a formal parameter in the subprocedure. Argument type: String
`applicationName`	(Optional) The name of the application when the actual parameter is on an application process step. Argument type: String
`componentName`	(Optional) The name of the component when the actual parameter is on a component process step. Argument type: String
`flowName`	(Optional) The name of the flow. Argument type: String

Arguments	Descriptions
`flowStateName`	(Optional) The name of the flow state. Argument type: String
`processName`	(Optional) The name of the process when the actual parameter is on a process step. Argument type: String
`processStepName`	(Optional) The name of the process step when if the actual parameter is on a process step. Argument type: String
`scheduleName`	(Optional) The name of the schedule. Argument type: String
`stateDefinitionName`	(Optional) The name of the state definition. Argument type: String
`transitionDefinitionName`	(Optional) The name of the transition definition. Argument type: String
`value`	(Optional) This value is passed to the subprocedure as the value of the matching formal parameter. Argument type: String
`workflowDefinitionName`	(Optional) The name of the workflow definition. Argument type: String

Positional arguments

```
projectName, procedureName, stepName, actualParameterName
```

Response

None or status OK message.

ec-perl

syntax: `$cmdr->createActualParameter(<projectName>, <procedureName>, <stepName>, <actualParameterName>, {<optionals>});`

Example

```
$cmdr->createActualParameter("Sample Project", "CallSub", "Step1", "Extra Parm",
   {value => "abcd efg"});
```

ectool

syntax: `ectool <projectName> <procedureName> <stepName> <actualParameterName>`

Example

```
ectool createActualParameter "Sample Project" "CallSub" "Step1" "Extra Parm"
   --value "abcd efg"
```

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createFormalParameter

Creates a new formal parameter.

You must specify `projectName`, `procedureName`, and `formalParameterName`.

Arguments	Descriptions
`projectName`	The name of the project containing the procedure. The project name must be unique among all projects. Argument type: String
`procedureName`	The name of the procedure containing the parameter. Argument type: String
`formalParameterName`	The name for the formal parameter that is used when the procedure is invoked to specify a value for the parameter. Argument type: String
`applicationName`	(Optional) The name of the application when the actual parameter is on an application process step. Argument type: String
`componentName`	(Optional) The name of the component when the actual parameter is on a component process step. Argument type: String
`defaultValue`	(Optional) This value is used for the formal parameter when a value is not provided and the procedure is invoked. Argument type: String
`description`	(Optional) A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument type: String

Arguments	Descriptions
`expansionDeferred`	(Optional) <*Boolean flag* - `0|1|true|false`> If `1` or `true`, expansion for this parameter is deferred. The parameter value is not expanded when the procedure call is expanded, but it can be expanded from a command step instead. The default is `false`, and the formal parameter is expanded immediately. Argument type: Boolean
`flowName`	(Optional) The name of the flow. Argument type: String
`flowStateName`	(Optional) The name of the flow state. Argument type: String
`label`	(Optional) The display label. Argument type: String
`orderIndex`	(Optional) The display order index starting at 1. Argument type: Integer
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`processName`	(Optional) The name of the process when the formal parameter is on a process. Argument type: String
`required`	(Optional) <*Boolean flag* - `0|1|true|false`> If 1 or true, this parameter is required. The procedure will not execute unless a value is given for it. Argument type: Boolean
`stateDefinitionName`	(Optional) The name of the state definition. Argument type: String
`stateName`	(Optional) The name of a workflow state. Argument type: String
`type`	(Optional) The *type* can be any string value. This argument is used primarily by the web interface to represent custom form elements. When the type is the *credential* string value, the server expect a credential as the parameter value. Argument type: String

Arguments	Descriptions
workflowDefinitionName	(Optional) The name of the workflow definition. Argument type: String
workflowName	(Optional) The name of a workflow. Argument type: String

Positional arguments

In ElectricFlow 5.0 and later, `projectName` and `formalParameterName`.

In releases earlier than ElectricFlow 5.0, `projectName`, `procedureName`, and `formalParameterName`.

For workflow state parameters: `projectName, formalParameterName, workflowDefinitionName` and `stateDefinitionName`

Response

None or status OK message.

ec-perl

syntax: `$cmdr->createFormalParameter(<projectName>, <formalParameterName>, {<optionals>});`

For backward compatibility with releases earlier than ElectricFlow 5.0, you can also enter:

syntax: `$cmdr->createFormalParameter(<projectName>, <procedureName>, <formalParameterName>, {<optionals>});`

Example

```
$cmdr->createFormalParameter("Sample Project", "Branch Name", {required => 1 });
```

Examples using parameters to create a check box, radio button, and drop-down box

Check box example:

```
$ec->createFormalParameter(
$newProjectName,
"$buildprocedurename",
'CheckoutSources',
{
type => "checkbox",
required => 0,
defaultValue => 'true',
description => "If checked, update the sandbox from Subversion (turn
    off for debugging only)."
}
);
$ec->setProperty("/projects/$newProjectName/procedures/$buildprocedurename/
    ec_customEditorData/parameters/CheckoutSources/checkedValue", "true");
$ec->setProperty("/projects/$newProjectName/procedures/$buildprocedurename/
    ec_customEditorData/parameters/CheckoutSources/uncheckedValue", "false");
$ec->setProperty("/projects/$newProjectName/procedures/$buildprocedurename/
    ec_customEditorData/parameters/CheckoutSources/initiallyChecked", "0");
```

Radio button example:

```
$ec->createFormalParameter(
$newProjectName,
"$buildprocedurename",
'BuildType',
{
type =>"radio",
required => 1,
defaultValue => '2',
description => "Select type of build"
}
);
$ec->setProperty("/projects/$newProjectName/procedures/$buildprocedurename/
    ec_customEditorData/parameters/BuildType/options/optionCount", "2");
$ec->setProperty("/projects/$newProjectName/procedures/$buildprocedurename/
    ec_customEditorData/parameters/BuildType/options/type", "list");
$ec->setProperty("/projects/$newProjectName/procedures/$buildprocedurename/
    ec_customEditorData/parameters/BuildType/options/option1/text", "one");
$ec->setProperty("/projects/$newProjectName/procedures/$buildprocedurename/
    ec_customEditorData/parameters/BuildType/options/option1/value", "1");
$ec->setProperty("/projects/$newProjectName/procedures/$buildprocedurename/
    ec_customEditorData/parameters/BuildType/options/option2/text", "two");
$ec->setProperty("/projects/$newProjectName/procedures/$buildprocedurename/
    ec_customEditorData/parameters/BuildType/options/option2/value", "2");
```

Drop-down menu example:

```
$ec->createFormalParameter(
$newProjectName,
"$buildprocedurename",
'BuildType',
{
type =>"select",
required => 1,
defaultValue => 'Continuous',
description => "Select type of build"
}
);
$ec->setProperty("/projects/$newProjectName/procedures/$buildprocedurename/
    ec_customEditorData/parameters/BuildType/options/optionCount", "2");
$ec->setProperty("/projects/$newProjectName/procedures/$buildprocedurename/
    ec_customEditorData/parameters/BuildType/options/type", "list");
$ec->setProperty("/projects/$newProjectName/procedures/$buildprocedurename/
    ec_customEditorData/parameters/BuildType/options/option1/text", "one");
$ec->setProperty("/projects/$newProjectName/procedures/$buildprocedurename/
    ec_customEditorData/parameters/BuildType/options/option1/value", "1");
$ec->setProperty("/projects/$newProjectName/procedures/$buildprocedurename/
    ec_customEditorData/parameters/BuildType/options/option2/text", "two");
$ec->setProperty("/projects/$newProjectName/procedures/$buildprocedurename/
    ec_customEditorData/parameters/BuildType/options/option2/value", "2");
```

ectool

For procedure parameters:

syntax: `ectool createFormalParameter <projectName> <formalParameterName> ...`

For backward compatibility with releases earlier than ElectricFlow 5.0, you can also enter:

syntax:`ectool createFormalParameter <projectName> <procedureName> <formalParameterName> ...`

Example

```
ectool createFormalParameter "Sample Project" "Branch Name" --required 1
```

For workflow state parameters:

syntax: `ectool createFormalParameter --formalParameterName <name> --projectName <name> --workflowDefinitionName <name> --stateDefinitionName <name>`

Example

```
ectool createFormalParameter --formalParameterName "Active users"
--projectName "Usage Report" --workflowDefinitionName "Usage
Workflow" --stateDefinitionName "Active and running"
```

Example using parameters to create a check box

You must create the `ec_customEditorData` property to add other parameters to the check box.

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deleteActualParameter

Deletes an actual parameter.

You must specify a `projectName`, `procedureName`, `stepName`, and `actualParameterName`.

Arguments	Descriptions
`projectName`	The name of the project that contains this actual parameter. The name must be unique among all projects. Argument type: String
`procedureName`	The name of the procedure that contains the step with this parameter. Argument type: String
`stepName`	The name of the step that contains the actual parameter. Argument type: String
`actualParameterName`	The name of the actual parameter to delete. Argument type: String
`applicationName`	The name of the application when the actual parameter is on an application process step. Argument type: String

Arguments	Descriptions
`componentName`	The name of the component when the actual parameter is on a component process step. Argument type: String
`processName`	The name of the process when the actual parameter is on a process step. Argument type: String
`processStepName`	The name of the process step when the actual parameter is on a process step. Argument type: String
`scheduleName`	The name of the schedule containing the actual parameter. Argument type: String
`stateDefinitionName`	The name of the state definition. Argument type: String
`transitionDefinitionName`	The name of the transition definition. Argument type: String
`workflowDefinitionName`	The name of the workflow definition.

Positional arguments

```
projectName, procedureName, stepName, actualParameterName
```

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteActualParameter(<projectName>, <procedureName>, <stepName>, <actualParameterName>);`

Example

```
$cmdr->deleteActualParameter('Sample Project', 'CallSub', 'Step1', 'Different Par
m');
```

ectool

syntax: `ectool deleteActualParameter <projectName> <procedureName> <stepName> <actualParameterName> [optionals...]`

Example

```
ectool deleteActualParameter "Sample Project" "CallSub" "Step1" "Different Parm"
```

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deleteFormalParameter

Deletes a formal parameter.

You must specify `projectName`, `procedureName`, and `formalParameterName`.

Arguments	Descriptions
`projectName`	The name of the project that contains the procedure or parameter to delete. The name must be unique among all projects. Argument type: String
`procedureName`	The name of the procedure that contains this parameter. Argument type: String
`formalParameterName`	The name of the formal parameter to delete. Argument type: String
`applicationName`	The name of the application when the formal parameter is on an application process step. Argument type: String
`componentName`	The name of the component when the formal parameter is on a component process step. Argument type: String
`flowName`	(Optional) The name of the flow. Argument type: String
`flowStateName`	(Optional) The name of the flow state. Argument type: String
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`processName`	The name of the process when the formal parameter is on a process step. Argument type: String
`stateDefinitionName`	The name of the state definition. Argument type: String

Arguments	Descriptions
`stateName`	The name of the workflow state. Argument type: String
`workflowDefinitionName`	The name of the workflow definition. Argument type: String
`workflowName`	The name of a workflow. Argument type: String

Positional arguments

In ElectricFlow 5.0 and later, `projectName` and `formalParameterName`.

In releases earlier than ElectricFlow 5.0, `projectName`, `procedureName`, and `formalParameterName`.

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteFormalParameter(<projectName>, <formalParameterName>);`

For backward compatibility with releases earlier than ElectricFlow 5.0, you can also enter:

syntax:`$cmdr->deleteFormalParameter(<projectName>, <procedureName>, <formalParameterName>);`

Example

```
$cmdr->deleteFormalParameter("Sample Project", "Build Name");
```

ectool

syntax: `ectool deleteFormalParameter <projectName> <formalParameterName> [optionals...]`

For backward compatibility with releases earlier than ElectricFlow 5.0, you can also enter:

syntax:`ectool deleteFormalParameter <projectName> <procedureName> <formalParameterName> [optionals...]`

Example

```
ectool deleteFormalParameter "Sample Project" "Build Name"
```

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detachParameter

Detaches a formal parameter from a step.

You must specify `projectName`, `procedureName`, `stepName`, and `formalParameterName`.

Arguments	Descriptions
`projectName`	The name of the project that contains this parameter. The name must be unique among all projects. Argument type: String
`formalParameterName`	The name of the formal parameter to detach. Argument type: String
`applicationName`	(Optional) The name of the application. Argument type: String
`componentApplicationName`	(Optional) The name of the component in the application. Argument type: String
`componentName`	(Optional) The name of the component. Argument type: String
`gateType`	(Optional) The type of the gate. Argument type: GateType
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`procedureName`	The name of the procedure that contains this parameter. Argument type: String
`processName`	The name of the process that contains this parameter. Argument type: String
`stageName`	(Optional) The name of the stage. Argument type: String
`stateDefinitionName`	The name of the state definition. Argument type: String
`stepName`	The name of the step where this parameter is currently attached. Argument type: String
`taskName`	(Optional) The name of the task. Argument type: String
`workflowDefinitionName`	The name of the workflow definition. Argument type: String

Positional arguments

`projectName, procedureName, stepName, formalParameterName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->detachParameter(<projectName>, <procedureName>, <stepName>, <formalParameterName>);`

Example

```
$cmdr-> detachParameter("Test Proj", "Run Build", "Get Sources", "SCM Credential");
```

ectool

syntax: `ectool detachParameter <projectName> <procedureName> <stepName> <formalParameterName>`

Example

```
ectool detachParameter "Test Proj" "Run Build" "Get Sources" "SCM Credential"
```

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getActualParameter

Retrieves an actual parameter by its name. For more information about parameters, click here.

You must specify an `actualParameterName`. If you need actual parameters on a step, the following 3 arguments
must be used together to specify a step: `projectName`, `procedureName`, and `stepName`.

Arguments	Descriptions
`actualParameterName`	The name of the actual parameter. Argument type: String
`applicationEntityRevisionId`	The revision ID of the versioned object. Argument type: UUID
`applicationName`	The name of the application when the actual parameter is on an application process step. The name must be unique among all projects. Argument type: String
`componentName`	The name of the component when the actual parameter is on a component process step. Argument type: String

Arguments	Descriptions
`flowName`	Name of the flow that must be unique within the project. Argument Type: String
`flowRuntimeName`	(Optional) Name of the flow runtime. Argument Type: String
`flowRuntimeStateName`	(Optional) Name of the flow state. Argument Type: String
`flowStateName`	Name of the flow state that must be unique within the flow. Argument Type: String
`flowTransitionName`	Name of the flow transition that must be unique within the flow state. Argument Type: String
`jobId`	The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID
`jobStepId`	The unique identifier for a job step that is assigned automatically when the job step is created. You enter this argument to query a subprocedure call to the job step's parameter. Argument type: UUID
`procedureName`	The name of the procedure when the actual parameter is on a procedure step. Argument type: String
`processName`	The name of the process when the actual parameter is on a process step. Argument type: String
`processStepName`	The name of the process step when the actual parameter is on a process step. Argument type: String
`projectName`	The name of the project to query for the parameter on a schedule or procedure step. Argument type: String

Arguments	Descriptions
scheduleName	The name of the schedule to query for the parameter on a schedule. Argument type: String
stateDefinitionName	The name of the workflow state definition. Argument type: String
stateName	The name of the workflow state. Argument type: String
stepName	The name of the step to query for the parameter on the step. Argument type: String
transitionDefinitionName	The name of the workflow transition definition. Argument type: String
transitionName	The name of the workflow transition. Argument type: String
workflowDefinitionName	The name of the workflow definition. Argument type: String
workflowName	The name of the workflow. Argument type: String

Positional arguments

`actualParameterName`

Response

One `actualParameter` element.

ec-perl

syntax: `$cmdr->getActualParameter(<actualParameterName>, {...});`

Example

```
$cmdr->getActualParameter("Extra Parm",
    {"projectName" => "Sample Project",
   "procedureName" => "CallSub",
        "stepName" => "Step1"});
```

ectool

syntax: `ectool getActualParameter <actualParameterName> [optionals...]`

Example

```
getActualParameter "Extra Parm" --projectName "Sample Project"
  --procedureName "CallSub" --stepName "Step1"
```

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getActualParameters

Retrieves all actual parameters from a job, step, schedule, state, or transition. For more information about parameters, click here.

You must specify object locators to find the parameter. To find parameters on a step, you must use `projectName`, `procedureName`, and `stepName` to specify the step.

Arguments	Descriptions
`applicationEntityRevisionId`	The revision ID of the versioned object. Argument type: UUID
`applicationName`	The name of the application when the actual parameters are on an application process step. The name must be unique among all projects. Argument type: String
`componentName`	The name of the component when the actual parameters are on a component process step. Argument type: String
`jobId`	The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID
`jobStepId`	The unique identifier for a job step that is assigned automatically when the job step is created. Argument type: UUID
`procedureName`	The name of the procedure containing the parameters. Argument type: String
`processName`	The name of the process when the actual parameters are on a process step. Argument type: String

Arguments	Descriptions
`processStepName`	The name of the process step when the actual parameters are on a process step. Argument type: String
`projectName`	The name of the project containing the parameters. Argument type: String
`scheduleName`	The name of the schedule containing parameters. Argument type: String
`stateDefinitionName`	The name of the workflow state definition. Argument type: String
`stateName`	The name of the workflow state. Argument type: String
`stepName`	The name of the step containing parameters. Argument type: String
`transitionDefinitionName`	The name of the workflow transition definition. Argument type: String
`transitionName`	The name of the workflow transition. Argument type: String
`workflowDefinitionName`	The name of the workflow definition. Argument type: String
`workflowName`	The name of the workflow. Argument type: String

Positional arguments

Arguments to locate the parameter, beginning with the top-level object locator.

Response

Zero or more `actualParameter` elements.

ec-perl

syntax: `$cmdr->getActualParameters({...});`

Example

```
$cmdr-> getActualParameters({"projectName" => "Sample Project",
  "procedureName" => "CallSub",
```

```
        "stepName" => "Step1"});
```

ectool

syntax: `ectool getActualParameters [optionals...]`

Example

```
ectool getActualParameters --projectName "Sample Project"
  --procedureName "CallSub" --stepName "Step1"
```

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getFormalParameter

Retrieves a formal parameter by its name.

You must specify `projectName` and `formalParameterName`.

Arguments	Descriptions
`projectName`	The name of the project containing the procedure. The name must be unique among all projects. Argument type: String
`procedureName`	The name of the procedure containing the formal parameter. Argument type: String
`formalParameterName`	The name for the formal parameter that is used when the procedure is invoked to specify a value for the parameter. Argument type: String
`applicationName`	The name of the application when the formal parameter is on an application process step. Argument type: String
`componentName`	The name of the component when the formal parameter is on a component process step. Argument type: String
`processName`	The name of the process when the formal parameter is on a process step. Argument type: String
`stateDefinitionName`	The name of the workflow state definition. Argument type: String

Arguments	Descriptions
stateName	The name of the workflow state. Argument type: String
workflowDefinitionName	The name of the workflow definition. Argument type: String
workflowName	The name of the workflow. Argument type: String

Positional arguments

In ElectricFlow 5.0 and later, `projectName` and `formalParameterName`.

In releases earlier than ElectricFlow 5.0, `projectName`, `procedureName`, and `formalParameterName`.

Response

One `formalParameter` element.

ec-perl

syntax: `$cmdr->getFormalParameter(<projectName>, <formalParameterName>);`

For backward compatibility with releases earlier than ElectricFlow 5.0, you can also enter:

syntax:`$cmdr->getFormalParameter(<projectName>, <procedureName>, <formalParameterName>);`

Example

```
$cmdr->getFormalParameter("Test", "Get Sources");
```

ectool

syntax: `ectool getFormalParameter <projectName> <formalParameterName> [optionals...]`

For backward compatibility with releases earlier than ElectricFlow 5.0, you can also enter:

syntax:`ectool getFormalParameter <projectName> <procedureName> <formalParameterName>`

Example

```
ectool getFormalParameter Test "Get Sources"
```

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getFormalParameters

Retrieves all formal parameters from a procedure, schedule, step, or state definition.

You must specify locator arguments to identify a procedure, schedule, or subprocedure step. If the locators identify a schedule or step, the formal parameters of the called procedure are returned.

Arguments	Descriptions
`projectName`	The name of the project containing the parameters. The name must be unique among all projects. Argument type: String
`applicationEntityRevisionId`	The revision ID of the versioned object. Argument type: UUID
`applicationName`	The name of the application when the formal parameters are on an application process step. Argument type: String
`componentName`	The name of the component when the formal parameters are on a component process step. Argument type: String
`procedureName`	The name of the procedure when the formal parameters are on a procedure. When using this argument, you must also enter `projectName`. Argument type: String
`processName`	The name of the process when the formal parameters are on a process step. Argument type: String
`scheduleName`	The name of the schedule. When using this argument, you must also enter `projectName`. Argument type: String
`stateDefinitionName`	The name of the workflow state definition. Argument type: String
`stateName`	The name of the workflow state. Argument type: String
`stepName`	The name of the step. When using this argument, you must also enter `projectName` and `procedureName`. Argument type: String
`workflowDefinitionName`	The name of the workflow definition. Argument type: String
`workflowName`	The name of the workflow. Argument type: String

Positional arguments

`projectName` and Arguments to locate the formal parameter, beginning with the top-level object locator.

Response

An XML stream containing zero or more `formalParameter` elements.

ec-perl

syntax: `$cmdr->getFormalParameters(<projectName>, {<optionals>});`

Example

```
$cmdr->getFormalParameters("Test", {procedureName => "Build"});
```

ectool

syntax: `ectool getFormalParameters <projectName> [optionals...]`

Example

```
getFormalParameters Test --procedureName Build
```

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modifyActualParameter

Modifies an existing actual parameter. An actual parameter is a name/value pair passed to a subprocedure. This command supports renaming the actual parameter and setting its value.
For more information about parameters, click here.

In releases earlier than ElectricFlow 5.0, you must enter `projectName`, `procedureName`, and `actualParameterName` to modify procedure parameters.

In ElectricFlow 5.0 and later, you must enter `projectName`, `procedureName`, `stepName`, and `actualParameterName` to modify procedure parameters.

You must enter `projectName`, `actualParameterName`, `workflowDefinitionName` and `stateDefinitionName` for workflow state parameters.

Arguments	Descriptions
`projectName`	The name of the project containing this parameter. The name must be unique among all projects. Argument type: String
`procedureName`	The name of the procedure containing the step with this parameter. Argument type: String
`stepName`	The name of the step containing this parameter. Argument type: String

Arguments	Descriptions
`actualParameterName`	The name of the actual parameter to modify. Argument type: String
`applicationName`	The name of the application when the actual parameters are on an application process step. Argument type: String
`componentName`	The name of the component when the actual parameters are on a component process step. Argument type: String
`newName`	New name of the parameter. Argument type: String
`processName`	The name of the process when the actual parameters are on a process step. Argument type: String
`processStepName`	The name of the process step when the actual parameters are on a process step. Argument type: String
`scheduleName`	The name of the schedule. Argument type: String
`stateDefinitionName`	The name of the workflow state definition. Argument type: String
`transitionDefinitionName`	The name of the workflow transition definition. Argument type: String
`value`	Changes the current value on an actual parameter. This value is passed to the subprocedure as the value of the matching formal parameter. Argument type: String
`workflowDefinitionName`	The name of the workflow definition. Argument type: String

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->modifyActualParameter(<projectName>, <procedureName>, <stepName>, <actualParameterName>, {<optionals>});`

Example

```
$cmdr->modifyActualParameter("Sample Project", "CallSub", "Step1", "Extra Parm",
    {newName => "myParm"});
```

ectool

syntax: `ectool modifyActualParameter <projectName> <procedureName> <stepName> <actualParameterName> [optionals...]`

Example

```
ectool modifyActualParameter "Sample Project" "CallSub" "Step1" "Extra Parm"
   --newName "Different Parm"
```

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modifyFormalParameter

Modifies an existing formal parameter.

In releases earlier than ElectricFlow 5.0, you must enter `projectName`, `procedureName`, and `formalParameterName` to modify procedure parameters.

In ElectricFlow 5.0 and later, you must enter `projectName` and `formalParameterName` to modify procedure parameters.

You must enter `projectName, formalParameterName, workflowDefinitionName` and `stateDefinitionName` for workflow state parameters.

Arguments	Descriptions
`projectName`	The name of the project containing this parameter. The name must be unique among all projects. Argument type: String
`procedureName`	The name of the procedure containing this parameter. Argument type: String
`formalParameterName`	The name for this formal parameter. It is used when the procedure is invoked to specify a value for the parameter. Argument type: String
`applicationName`	(Optional) The name of the application when the formal parameters are on an application process step. Argument type: String

Arguments	Descriptions
`componentName`	The name of the component when the formal parameters are on a component process step. Argument type: String
`defaultValue`	This value is used for the formal parameter if one is not provided when the procedure is invoked. Argument type: String
`description`	A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument type: String
`expansionDeferred`	(Optional) <*Boolean flag* - `0|1|true|false`> If `1` or `true`, expansion for this parameter is deferred. The parameter value is not expanded when the procedure call is expanded, but it can be expanded from a command step instead. The default is `false`, and the formal parameter is expanded immediately. Argument type: Boolean
`label`	The display label. Argument type: String
`newName`	New name for the parameter. Argument type: String
`orderIndex`	The display order index starting at 1. Argument type: Integer
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`processName`	The name of the process when the formal parameter is on a process step. Argument type: String
`required`	<*Boolean flag* - `0|1|true|false`> If 1 or true, this parameter is required. The procedure will not execute unless a value is given for it. Argument type: Boolean

Arguments	Descriptions
`stateDefinitionName`	The name of the state definition. Argument type: String
`stateName`	The name of a workflow state. Argument type: String
`type`	The *type* can be any string value. This argument is used primarily by the web interface to represent custom form elements. When the type is the *credential* string value, the server expect a credential as the parameter value. Argument type: String
`workflowDefinitionName`	The name of the workflow definition. Argument type: String
`workflowName`	The name of a workflow. Argument type: String

Positional arguments

In ElectricFlow 5.0 and later, for procedure parameters: `projectName` and `formalParameterName`.

In releases earlier than ElectricFlow 5.0, for procedure parameters: `projectName`, `procedureName`, and `formalParameterName`.

For workflow state parameters: `projectName, formalParameterName, workflowDefinitionName` and `stateDefinitionName`

Response

None or a status OK message.

ec-perl

For procedural parameters in ElectricFlow 5.0 and later:

syntax: `$cmdr->modifyFormalParameter(<projectName>, <formalParameterName>, {<optionals>});`

For backward compatibility with releases earlier than ElectricFlow 5.0, you can also enter:

syntax:`$cmdr->modifyFormalParameter(<projectName>, <procedureName>, <formalParameterName>, {<optionals>});`

Example

```
$cmdr->modifyFormalParameter("Sample Project", "Branch Name",
   {defaultValue => "main"});
```

ectool

For procedural parameters in ElectricFlow 5.0 and later:

syntax: `ectool modifyFormalParameter <projectName> <formalParameterName> [optionals...]`

For backward compatibility with releases earlier than ElectricFlow 5.0, you can also enter:

syntax: `ectool modifyFormalParameter <projectName> <procedureName> <formalParameterName> ...`

Example

```
ectool modifyFormalParameter "Sample Project" "Branch Name"
   --defaultValue main
```

For workflow state parameters:

syntax: `ectool modifyFormalParameter --formalParameterName <name> --projectName <name> --workflowDefinitionName <name> --stateDefinitionName <name>`

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API Commands - Pipelines

`createPipeline`

Creates a new pipeline for a project.

You must specify the `projectName` and the `pipelineName` arguments.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`pipelineName`	Name of the pipeline that must be unique among all projects. Argument Type: String
`description`	(Optional) Comment text describing this object; not interpreted at all by ElectricFlow. Argument Type: String
`enabled`	(Optional) <*Boolean flag* - `0|1|true|false`> When this argument is set to `true` or `1`, the pipeline is enabled. Argument type: Boolean
`type`	(Optional) Type of pipeline. Argument Type: PipelineType

Positional arguments

`projectName`, `pipelineName`

Response

None or a status OK message.

ec-perl

syntax:`$<object>->createPipeline(<projectName>, <pipelineName>, {<optionals>});`

Example

```
$ec->createPipeline("Default", "Web Server Image", {description => "Amazon"});
```

ectool

syntax:`ectool createPipeline <projectName> <pipelineName> [optionals...]`

Example

```
ectool createPipeline "Default" "Web Server Image" --description "Amazon"
```

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createStage

Creates a new stage for a project.

You must specify the `projectName` and the `stageName` arguments.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`stageName`	Name of the stage. Argument Type: String
`afterStage`	(Optional) The stage that is placed after the new stage. Argument Type: String
`beforeStage`	(Optional) The stage that is placed before the new stage. Argument Type: String
`description`	(Optional) Comment text describing this object; not interpreted at all by ElectricFlow. Argument Type: String
`pipelineName`	(Optional) Name of the pipeline to which the stage belongs. Argument type: String

Positional arguments

`projectName`, `stageName`

Response

None or a status OK message.

ec-perl

syntax:`$<object>->createStage(<projectName>, <stageName>, {<optionals>});`

Example

```
$ec->createStage("Default", "Preflight", {afterStage => "Automated Tests"});
```

ectool

syntax:`ectool createStage <projectName> <stageName> [optionals...]`

Example

```
ectool createStage "Default" "Preflight" --afterStage "Automated Tests"
```

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createTask

Creates a new task for a task container.

You must specify the `projectName` and `taskName` arguments.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`taskName`	Name of the task. Argument Type: String
`actualParameters`	(Optional) Specifies the list of values to pass as parameters to the flow. Each parameter value is specified with an `actualParameterName` and a `value`. The `actualParameterName` must match the name of a formal parameter on the called process. Argument Type: Map
`advancedMode`	(Optional) <*Boolean flag* - `0|1|true|false`> When this argument is set to `true` or `1`, advanced mode is enabled so that all validations for the `applicationName`, `environmentName`, `processName`, or `snapshotName` will be skipped. These objects can be represented using the "$[]" notation and later expanded at the pipeline run time. For example, when advancedMode is enabled, the system does not validate that the environment exists or whether it is mapped to an application. Argument type: Boolean
`afterTask`	(Optional) The task that is placed after the new task. Argument Type: String
`approvers`	(Optional) A list of task approvers who receive the notification. Argument Type: Collection
`beforeTask`	(Optional) The task that is placed before the new task. Argument Type: String
`credentials`	(Optional) The credentials to be used in the task. Argument type: Collection
`description`	(Optional) Comment text describing this object; not interpreted at all by ElectricFlow. Argument Type: String
`enabled`	(Optional) <*Boolean flag* - `0|1|true|false`> When this argument is set to `true` or `1`, the task is enabled. Argument type: Boolean

Arguments	Descriptions
`environmentName`	(Optional) Name of the environment to create from a template. When the `environmentTemplateName` is specified, the `environmentName` can be specified using the "$[]" notation. It is expanded at run time. Argument Type: String
`environmentTemplateName`	(Optional) Name of the environment template to use. When the `environmentTemplateName` is specified, the `environmentName` can be specified using the "$[]" notation. It is expanded at run time. Argument Type: String
`errorHandling`	(Optional) Type of error handling for this task. Argument Type: ErrorHandling
`gateType`	(Optional) The type of the gate. Argument Type: GateType
`keepOnError`	(Optional) <*Boolean flag* - `0|1|true|false`> When this argument is set to `true` or `1`, the system is set to keep environment if an error occurs. The default is `false` or `0`. Argument type: Boolean
`notificationTemplate`	(Optional) String containing email formatting instructions for generating notifications. Argument type: String
`pipelineName`	(Optional) Name of the pipeline to which the stage belongs. Argument type: String
`skippable`	(Optional) <*Boolean flag* - `0|1|true|false`> When this argument is set to `true` or `1`, the task can be skipped in the pipeline. Argument type: Boolean

Arguments	Descriptions
`snapshotName`	(Optional) Name of the snapshot associated with the application. When this argument is set to `true` or `1`, advanced mode is enabled so that all validations for the `applicationName`, `environmentName`, `processName`, or `snapshotName` will be skipped. These objects can be represented using the "$[]" notation and later expanded at the pipeline run time. For example, when advancedMode is enabled, the system does not validate that the environment exists or whether it is mapped to an application. Argument type: String
`stageName`	Name of the stage to which the task belongs. Argument Type: String
`startTime`	The time to begin invoking this task. The time is formatted `hh:mm` using the 24-hours clock (for example, 17:00). Argument Type: String
`subapplication`	(Optional) Name of the application that owns the subprocess. Argument Type: String
`subprocedure`	(Optional) Name of the subprocedure when a procedure is referenced. Argument Type: String
`subprocess`	(Optional) Name of the ElectricFlow process. Argument Type: String
`subproject`	(Optional) Name of the project in which the procedure runs. Argument Type: String
`taskProcessType`	(Optional) The type of the process that the task can invoke. Argument Type: TaskProcessType
`taskType`	(Optional) The type of the task. Argument Type: TaskType
`tierResourceCounts`	(Optional) The resource count per resource template tier. Argument Type: Map
`workspaceName`	(Optional) The name of the workspace. Argument Type: String

Positional arguments

`projectName`, `taskName`

Response

None or a status OK message.

ec-perl

syntax:`$<object>->createTask(<projectName>, <taskName>, {<optionals>});`

Example

```
$ec->createTask("Default", "Save results", {beforeTask => "Save log file"});
```

ectool

syntax:`ectool createTask <projectName> <taskName> [optionals...]`

Example

```
ectool createTask "Default" "Save results" --beforeTask "Save log file"
```

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deletePipeline

Deletes a pipeline in a project.

You must specify the `projectName` and the `pipelineName` arguments.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`pipelineName`	Name of the pipeline that must be unique among all projects. Argument Type: String

Positional arguments

`projectName`, `pipelineName`

Response

None or a status OK message.

ec-perl

syntax:`$<object>->deletePipeline(<projectName>, <pipelineName>);`

Example

```
$ec->createPipeline("Default", "Web Server Image");
```

ectool

syntax:`ectool deletePipeline <projectName> <pipelineName>`

Example

```
ectool createPipeline "Default" "Web Server Image"
```

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deleteStage

Deletes a stage in a project.

You must specify the `projectName` and `stageName` arguments.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`stageName`	Name of the stage. Argument Type: String
`pipelineName`	(Optional) Name of the pipeline to which the stage belongs. Argument Type: String

Positional arguments

`projectName`, `stageName`

Response

None or a status OK message.

ec-perl

syntax:`$<object>->deleteStage(<projectName>, <stageName>, {<optionals>});`

Example

```
$ec->deleteStage("Default", "Preflight");
```

ectool

syntax:`ectool deleteStage <projectName> <stageName> [optionals]`

Example

```
ectool deleteStage "Default" "Preflight"
```

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deleteTask

Deletes a task in a task container.

You must specify the `projectName` and `taskName` arguments.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`taskName`	Name of the task. Argument Type: String
`gateType`	(Optional) The type of the gate. Argument Type: GateType
`pipelineName`	(Optional) Name of the pipeline to which the stage belongs. Argument type: String
`stageName`	Name of the stage to which the task belongs. Argument Type: String

Positional arguments

`projectName`, `taskName`

Response

None or a status OK message.

ec-perl

syntax:`$<object>->deleteTask(<projectName>, <taskName>, {<optionals>});`

Example

```
$ec->deleteTask("Default", "Save image", {pipelineName => "Beta build"});
```

ectool

syntax:`ectool deleteTask <projectName> <taskName> [optionals]`

Example

```
ectool deleteTask "Default" "Save image" --pipelineName "Beta build"
```

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getPipeline

Retrieves a pipeline by its name.

You must specify the `projectName` and `pipelineName` arguments.

Arguments	Descriptions
projectName	Name of the project that must be unique among all projects. Argument Type: String
pipelineName	Name of the pipeline that must be unique among all projects. Argument Type: String

Positional arguments

projectName, pipelineName

Response

Returns the specified pipeline element.

ec-perl

syntax:`$<object>->getPipeline(<projectName>, <pipelineName>);`

Example

```
$ec->getPipeline("Default", "Beta test");
```

ectool

syntax:`ectool getPipeline <projectName> <pipelineName>`

Example

```
ectool getPipeline "Default" "Beta test"
```

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getPipelineRuntimeDetails

Retrieves the pipeline run time details.

Arguments	Descriptions
flowRuntimeIds	(Optional) List of the pipeline flowRunTime IDs. Argument Type: Collection

Positional arguments

None

Response

Returns the run time details of the flow.

ec-perl

syntax:`$<object>->getPipelineRuntimeDetails({<optionals>});`

Example

```
$ec->getPipelineRuntimeDetails({flowRuntimeIds => 'Build1' 'Build2'});
```

ectool

syntax:`ectool getPipelineRuntimeDetails [optionals]`

Example

```
ectool getPipelineRuntimeDetails --flowRuntimeIds 'Build1' 'Build2'
```

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getPipelineRuntimes

Retrieves the pipeline run times.

Arguments	Descriptions
`firstResult`	(Optional) First row of the results to return, based on how the results are paginated. Argument Type: Integer
`flowRuntimeId`	(Optional) ID of the flow run time. Argument Type: UUID
`flowRuntimeName`	(Optional) Name of the flow run time. Argument Type: String
`maxResults`	(Optional) The number of rows to return, based on how the results are paginated. Argument Type: Integer
`pipelineName`	Name of the pipeline. Argument Type: String
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`sortKey`	How to sort the results. Argument Type: String
`sortOrder`	The order in which the results are sorted. Argument Type: SortOrder
`statusExcludes`	List of statuses to exclude from the response. Argument Type: Collection

Positional arguments

None

Response

Returns pipeline run times.

ec-perl

syntax:`$<object>->getPipelineRuntimes({<optionals>});`

Example

```
$ec->getPipelineRuntimes({pipelineName => "Beta test", projectName => "Default"});
```

ectool

syntax:`ectool getPipelineRuntimes [optionals]`

Example

```
ectool getPipelineRuntimes --pipelineName "Beta test" --projectName "Default"
```

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getPipelineStageRuntimeTasks

Retrieves a list of pipeline stage tasks and the details about them that are displayed in the pipeline run view.

You must specify the `flowRuntimeId` argument.

Arguments	Descriptions
`flowRuntimeId`	ID of the flow run time. Argument Type: UUID
`firstResult`	(Optional) First row of the results to return, based on how the results are paginated. Argument Type: Integer
`maxResults`	(Optional) The number of rows to return, based on how the results are paginated. Argument Type: Integer
`sortKey`	How to sort the results. Argument Type: String
`sortOrder`	The order in which the results are sorted. Argument Type: SortOrder
`stageName`	Name of the stage. Argument Type: String

Positional arguments

`flowRuntimeId`

Response

Returns a list of pipeline stage tasks and the details about them in the pipeline run view.

ec-perl

syntax:`$<object>->getPipelineStageRuntimeTasks(<flowRuntimeId>, {<optionals>});`

Example

```
$ec->getPipelineStageRuntimeTasks(4fa765dd-73f1-11e3-b67e-b0a420524165, {firstResul
t => 2, maxResults => 200});
```

ectool

syntax:`ectool getPipelineStageRuntimeTasks <flowRuntimeId> [optionals]`

Example

```
ectool getPipelineStageRuntimeTasks 4fa765dd-73f1-11e3-b67e-b0a420524165 --firstRes
ult 2 --maxResults 200
```

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getPipelines

Retrieves all the pipelines.

You must specify the `projectName` argument.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String

Positional arguments

`projectName`

Response

Returns all of the pipelines in a project.

ec-perl

syntax:`$<object>->getPipelines(<projectName>);`

Example

```
$ec->getPipelines("Default");
```

ectool

syntax:`ectool getPipelines <projectName>`

Example

```
ectool getPipelines "Default"
```

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getStage

Retrieves a stage by name.

You must specify the `projectName` and `stageName` arguments.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`stageName`	Name of the stage. Argument Type: String
`pipelineName`	(Optional) Name of the pipeline to which the stage belongs. Argument type: String

Positional arguments

`projectName`, `stageName`

Response

Returns the specified stage element..

ec-perl

syntax:`$<object>->getStage(<projectName>, <stageName>, {<optionals>});`

Example

```
$ec->getStage("Default", "Preflight", {pipelineName => "Final"});
```

ectool

syntax:`ectool getStage <projectName> <stageName> [optionals...]`

Example

```
ectool getStage "Default" "Preflight" --pipelineName "Final"
```

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getStages

Retrieves all the stages for one or more pipelines.

You must specify the `projectName` argument.

Arguments	Descriptions
projectName	Name of the project that must be unique among all projects. Argument Type: String
pipelineName	(Optional) Name of the pipeline to which the stage belongs. Argument type: String

Positional arguments

projectName

Response

Returns all the stages for one or more pipelines.

ec-perl

syntax:`$<object>->getStages(<projectName>, {<optionals>});`

Example

```
$ec->getStages("Default", {pipelineName => "Final"});
```

ectool

syntax:`ectool getStages <projectName> [optionals...]`

Example

```
ectool getStages "Default"  --pipelineName "Final"
```

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getTask

Retrieves a task by name.

You must specify the `projectName` and `taskName` arguments.

Arguments	Descriptions
projectName	Name of the project that must be unique among all projects. Argument Type: String
taskName	Name of the task. Argument Type: String
gateType	(Optional) Type of the gate. Argument Type: GateType

Arguments	Descriptions
pipelineName	(Optional) Name of the pipeline to which the stage belongs. Argument type: String
stageName	(Optional) Name of the stage to which this task belongs.

Positional arguments

projectName, taskName

Response

Returns the specified stage element.

ec-perl

syntax:$<object>->getStage(<projectName>, <taskName>, {<optionals>});

Example

```
$ec->getStage("Default", "Check out files", {pipelineName => "Final"});
```

ectool

syntax:ectool getStage <projectName> <taskName> [optionals]

Example

```
ectool getStage "Default" "Check out files" --pipelineName "Final"
```

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getTasks

Retrieves tasks in the specified project.

You must specify the projectName argument.

Arguments	Descriptions
projectName	Name of the project that must be unique among all projects. Argument Type: String
gateType	(Optional) Type of the gate. Argument Type: GateType
pipelineName	(Optional) Name of the pipeline to which the stage belongs. Argument type: String
stageName	(Optional) Name of the stage to which this task belongs.

Positional arguments

`projectName`

Response

Returns the specified stage element.

ec-perl

syntax:`$<object>->getStage(<projectName>, <taskName>, {<optionals>});`

Example

```
$ec->getStage("Default", "Check out files", {pipelineName => "Final"});
```

ectool

syntax:`ectool getStage <projectName> <taskName> [optionals...]`

Example

```
ectool getStage "Default" "Check out files" --pipelineName "Final"
```

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modifyPipeline

Modifies an existing pipeline.

You must specify the `projectName` and the `pipelineName` arguments.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`pipelineName`	Name of the pipeline that must be unique among all projects. Argument Type: String
`description`	(Optional) Comment text describing this object; not interpreted at all by ElectricFlow. Argument Type: String
`enabled`	(Optional) <*Boolean flag* - `0|1|true|false`> When this argument is set to `true` or `1`, the pipeline is enabled. Argument type: Boolean
`newName`	(Optional) New name for an existing pipeline. Argument Type: String
`type`	(Optional) Type of pipeline. Argument Type: PipelineType

Positional arguments

`projectName, pipelineName`

Response

None or a status OK message.

ec-perl

syntax:`$<object>->modifyPipeline(<projectName>, <pipelineName>, {<optionals>});`

Example

```
$ec->modifyPipeline("Default", "Web Server Image", {newName => "Web Server"});
```

ectool

syntax:`ectool modifyPipeline <projectName> <pipelineName> [optionals]`

Example

```
ectool modifyPipeline "Default" "Web Server Image" --newName "Web Server"
```

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modifyStage

Modifies an existing stage.

You must specify the `projectName` and the `stageName` arguments.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`stageName`	Name of the stage. Argument Type: String
`afterStage`	(Optional) The stage that is placed after the new stage. Argument Type: String
`beforeStage`	(Optional) The stage that is placed before the new stage. Argument Type: String
`description`	(Optional) Comment text describing this object; not interpreted at all by ElectricFlow. Argument Type: String
`newName`	(Optional) New name for an existing stage. Argument Type: String

Arguments	Descriptions
`pipelineName`	(Optional) Name of the pipeline to which the stage belongs. Argument type: String

Positional arguments

`projectName`, `stageName`

Response

None or a status OK message.

ec-perl

syntax:`$<object>->modifyStage(<projectName>, <stageName>, {<optionals>});`

Example

```
$ec->modifyStage("Default", "Preflight", {pipelineName => "Daily build"});
```

ectool

syntax:`ectool modifyStage <projectName> <stageName> [optionals...]`

Example

```
ectool modifyStage "Default" "Preflight" --pipelineName "Daily build"
```

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modifyTask

Modifies an existing task.

You must specify the `projectName` and `taskName` arguments.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`taskName`	Name of the task. Argument Type: String
`actualParameters`	(Optional) Specifies the list of values to pass as parameters to the flow. Each parameter value is specified with an `actualParameterName` and a `value`. The `actualParameterName` must match the name of a formal parameter on the called process. Argument Type: Map

Arguments	Descriptions
advancedMode	(Optional) <*Boolean flag* - 0|1|true|false> When this argument is set to true or 1, advanced mode is enabled so that all validations for the applicationName, environmentName, processName, or snapshotName will be skipped. These objects can be represented using the "$[]" notation and later expanded at the pipeline run time. For example, when advancedMode is enabled, the system does not validate that the environment exists or whether it is mapped to an application. Argument type: Boolean
afterTask	(Optional) The task that is placed after the new task. Argument Type: String
approvers	(Optional) A list of task approvers who receive the notification. Argument Type: Collection
beforeTask	(Optional) The task that is placed before the new task. Argument Type: String
clearActualParameters	(Optional) <*Boolean flag* - 0|1|true|false> If set to true or 1, all the actual parameters are removed from the flow. Argument type: Boolean
credentials	(Optional) The credentials to be used in the task. Argument type: Collection
description	(Optional) Comment text describing this object; not interpreted at all by ElectricFlow. Argument Type: String
enabled	(Optional) <*Boolean flag* - 0|1|true|false> When this argument is set to true or 1, the task is enabled. Argument type: Boolean
environmentName	(Optional) Name of the environment to create from a template. When the environmentTemplateName is specified, the environmentName can be specified using the "$[]" notation. It is expanded at run time. Argument Type: String

Arguments	Descriptions
`environmentTemplateName`	(Optional) Name of the environment template to use. When the `environmentTemplateName` is specified, the `environmentName` can be specified using the "$[]" notation. It is expanded at run time. Argument Type: String
`errorHandling`	(Optional) Type of error handling for this task. Argument Type: ErrorHandling
`gateType`	(Optional) The type of the gate. Argument Type: GateType
`keepOnError`	(Optional) <*Boolean flag* - `0|1|true|false`> When this argument is set to `true` or `1`, the system is set to keep environment if an error occurs. The default is `false` or `0`. Argument type: Boolean
`newName`	(Optional) New name for an existing task. Argument Type: String
`notificationTemplate`	(Optional) String containing email formatting instructions for generating notifications. Argument type: String
`pipelineName`	(Optional) Name of the pipeline to which the stage belongs. Argument type: String
`skippable`	(Optional) <*Boolean flag* - `0|1|true|false`> When this argument is set to `true` or `1`, the task can be skipped in the pipeline. Argument type: Boolean
`snapshotName`	(Optional) Name of the snapshot associated with the application. When this argument is set to `true` or `1`, advanced mode is enabled so that all validations for the `applicationName`, `environmentName`, `processName`, or `snapshotName` will be skipped. These objects can be represented using the "$[]" notation and later expanded at the pipeline run time. For example, when advancedMode is enabled, the system does not validate that the environment exists or whether it is mapped to an application. Argument type: String

Arguments	Descriptions
stageName	Name of the stage to which the task belongs. Argument Type: String
startTime	The time to begin invoking this task. The time is formatted hh:mm using the 24-hours clock (for example, 17:00). Argument Type: String
subapplication	(Optional) Name of the application that owns the subprocess. Argument Type: String
subprocedure	(Optional) Name of the subprocedure when a procedure is referenced. Argument Type: String
subprocess	(Optional) Name of the ElectricFlow process. Argument Type: String
subproject	(Optional) Name of the project in which the procedure runs. Argument Type: String
taskProcessType	(Optional) The type of the process that the task can invoke. Argument Type: TaskProcessType
taskType	(Optional) The type of the task. Argument Type: TaskType
tierResourceCounts	(Optional) The resource count per resource template tier. Argument Type: Map
workspaceName	(Optional) The name of the workspace. Argument Type: String

Positional arguments

projectName, taskName

Response

None or a status OK message.

ec-perl

syntax:`$<object>->modifyTask(<projectName>, <taskName>, {<optionals>});`

Example

```
$ec->modifyTask("Default", "Save results", {newName => "Save output"});
```

ectool

syntax:`ectool modifyTask <projectName> <taskName> [optionals...]`

Example

```
ectool modifyTask "Default" "Save results" --newName "Save output"
```

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runPipeline

Runs the specified pipeline.

You must specify the `projectName` and `pipelineName` arguments.

Arguments	Descriptions
`projectName`	Name of the project that must be unique among all projects. Argument Type: String
`pipelineName`	Name of the pipeline that must be unique among all projects. Argument Type: String
`actualParameters`	(Optional) Specifies the list of values to pass as parameters to the flow. Each parameter value is specified with an `actualParameterName` and a `value`. The `actualParameterName` must match the name of a formal parameter on the called process. Argument Type: Map
`credentials`	(Optional) The credentials to be used in the task. Argument type: Collection
`priority`	(Optional) Priority of jobs launched by the workflow. Argument Type: JobPriority
`startingState`	(Optional) Name of the starting state. Argument Type: String

Positional arguments

`projectName`, `pipelineName`

Response

None or a status OK message.

ec-perl

syntax:`$<object>->runPipeline(<projectName>, <pipelineName>, {<optionals>});`

Example

```
$ec->runPipeline("Default", "Web Server Image", {startingState => "Green"});
```

ectool

syntax:`ectool runPipeline <projectName> <pipelineName> [optionals...]`

Example

```
ectool runPipeline "Default" "Web Server Image" --startingState "Green"
```

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API Commands - Plugin Management

createPlugin

Creates a plugin from an existing project.

You must specify a `key`, `version`, and `projectName`.

Arguments	Descriptions
`key`	Version independent name for the plugin. Argument type: String
`version`	Version of the plugin. Argument type: String
`projectName`	Name of the project. Argument type: String
`author`	(Optional) Name of the plugin author. Argument type: String

Arguments	Descriptions
`description`	(Optional) A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument type: String
`label`	(Optional) Label that appears in plugin lists. Argument type: String

Positional arguments

`key`, `version`, and `projectName`

Response

Returns a plugin object.

ec-perl

syntax: `$cmdr->createPlugin(<key>, <version>, <projectName>, {<optionals>});`

Example

```
$cmdr->createPlugin("SCM-P4", "2.1.3", "default", {author => "jdoe"});
```

ectool

syntax: `ectool createPlugin <key> <version> <projectName> [optionals...]`

Example

```
ectool createPlugin SCM-P4 2.1.3 default --author jdoe
```

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deletePlugin

Deletes an existing plugin object without deleting the associated project or files.

You must specify a `pluginName`.

Arguments	Descriptions
`pluginName`	The name of the plugin you want to delete. Argument type: String

Positional arguments

`pluginName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deletePlugin(<pluginName>);`

Example

```
$cmdr->deletePlugin("TheWidget-1.0");
```

ectool

syntax: `ectool deletePlugin <pluginName>`

Example

```
ectool deletePlugin TheWidget-1.0
```

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getPlugin

Retrieves an installed plugin.

You must specify the `pluginName`.

Arguments	Descriptions
`pluginName`	The name of the plugin to find. If the name is specified without a version number, the currently promoted version is returned if possible. Argument type: String

Positional arguments

`pluginName`

Response

One `plugin` element, which includes the plugin ID, name, time created, label, owner, key, version, and so on.

ec-perl

syntax: `$cmdr->getPlugin(<pluginName>);`

Example

```
$cmdr->getPlugin("TheWidget");
```

ectool

syntax: `ectool getPlugin <pluginName>`

Example

```
ectool getPlugin TheWidget
```

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getPlugins

Retrieves all installed plugins.

Arguments	Descriptions
None	

Positional arguments

None

Response

Zero or more `plugin` elements.

ec-perl

syntax: `$cmdr->getPlugins();`

Example

```
$cmdr->getPlugins();
```

ectool

syntax: `ectool getPlugins`

Example

```
ectool getPlugins
```

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installPlugin

Installs a plugin from a JAR file. Extracts the JAR contents on the server and creates a project and a plugin.

You must specify the `url`.

Arguments	Descriptions
`url`	The location of the plugin JAR file to install. If the location refers to a file on the client machine, the file will be uploaded to the server. If the location refers to a remote accessible file (for example, via an `http://url`), the server will download it. If the location is a `file:` reference, the file will be read directly from the specified location on the server file system. Argument type: String
`force`	(Option) <*Boolean flag* - `0|1|true|false`> Specifying false causes an existing plugin with the same key and version to be overwritten with the new plugin contents, otherwise an error is returned. Argument type: Boolean

Positional arguments

`url`

Response

One `plugin` element.

ec-perl

syntax: `$cmdr->installPlugin(<url>, {...});`

Example

```
$cmdr->installPlugin("./myPlugin.jar")
```

ectool

syntax: `ectool installPlugin <url> ...`

Example

```
ectool installPlugin ./myPlugin.jar
```

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modifyPlugin

Modifies an existing plugin.

Note: Some plugin attributes available on the Plugins web page are not available in any of the plugin-related APIs.
Because some plugin meta data comes from the `plugin.xml` file, the web server can access this data, but the ElectricFlow
server cannot. Thus, the Plugin Manager, run in the web server context, provides additional information and functionality.

You must specify the `pluginName`.

Arguments	Descriptions
`pluginName`	The name of the plugin to modify. If the name is specified without a version number, the currently promoted version is used if possible. Argument type: String
`author`	The author of the plugin. Argument type: String
`description`	A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument type: String
`label`	The name of the plugin as displayed on the Plugins web page. Argument type: String

Positional arguments

`pluginName`

Response

One `plugin` element.

ec-perl

syntax: `$cmdr->modifyPlugin(<pluginName>, {...});`

Example

```
$cmdr->modifyPlugin('TheWidget', {description => "new description"});
```

ectool

syntax: `ectool modifyPlugin <pluginName> ...`

Example

```
ectool modifyPlugin TheWidget --description "new description"
```

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promotePlugin

Sets the promoted flag on a plugin. Only one version of a plugin can be promoted at a time, so setting the promoted flag to "true" on one version sets the flag to false on all other plugins with the same key. The promoted version is the one resolved by an indirect reference of the form `$[/plugins/<key>]` or a plugin name argument without a specified version.

You must specify the `pluginName`.

Arguments	Descriptions
`pluginName`	The name of the plugin to promote. If the name is specified without a version number, the currently promoted version is used if possible. Argument type: String
`promoted`	<*Boolean flag* - `0|1|true|false`> The new value of the promoted flag for the specified plugin. The default is `true`, which means the plugin will be promoted. If you want to demote the plugin, use the value of `"0"` or `false`. Argument type: Boolean

Positional arguments

`pluginName`

Response

One `plugin` element, which includes the plugin ID, name, time created, label, owner, key, version, project name, and so on.

ec-perl

syntax: `$cmdr->promotePlugin(<pluginName>, {<optionals}});`

Example

```
$cmdr->promotePlugin("TheWidget-1.0");
```

ectool

syntax: `ectool promotePlugin <pluginName> ...`

Example

```
ectool promotePlugin TheWidget-1.0
```

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uninstallPlugin

Uninstalls a plugin, deleting the associated project and any installed files.

You must specify the `pluginName`.

Arguments	Descriptions
`pluginName`	The name of the plugin to uninstall. If the name is specified without a version number, the currently promoted version is used if possible. Argument type: String
`timeout`	The maximum amount of time to spend waiting for this operation to complete. Argument type: Long

Positional arguments

`pluginName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->uninstallPlugin(<pluginName>, {<optionals>});`

Example

```
$cmdr->uninstallPlugin("TheWidget-1.0");
```

ectool

syntax: `ectool uninstallPlugin <pluginName> ...`

Example

```
ectool uninstallPlugin TheWidget-1.0
```

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API Commands - Procedure Management

createProcedure

Creates a new procedure for an existing project.

You must specify `projectName` and `procedureName`.

Arguments	Descriptions
`projectName`	The name of the project that contains this procedure. The name must be unique among all projects. Argument type: String
`procedureName`	The name of the procedure that must be unique within the project. Argument type: String
`credentialName`	The name of the credential specified in one of these formats: • **relative**(for example, *"cred1"*)–The credential is assumed to be in the project that contains the requested target object. • **absolute**(for example, *"/projects/BuildProject/credentials/cred1"*)–The credential can be from any specified project, regardless of the project for the target object. Argument type: String
`description`	A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument type: String
`jobNameTemplate`	Template used to determine the default name of jobs launched from a procedure. Argument type: String
`resourceName`	The name of the default resource or pool used in steps run by this procedure. Argument type: String
`timeLimit`	If no time limit was specified on the calling step, time limits are copied to the calling step from the procedure. If the procedure is called from `runProcedure` (or a schedule), the time limit acts as a global job timeout. The timer for the procedure starts as soon as the calling step or job becomes runnable (all preconditions are satisfied). Argument type: String
`timeLimitUnits`	Time limit units are `hours|minutes|seconds`. Argument type: TimeLimitUnits

Arguments	Descriptions
workspaceName	The name of the default workspace used in steps run by this procedure. Argument type: String

Positional arguments

`projectName, procedureName`

Response

None or status OK message.

ec-perl

syntax: `$cmdr->createProcedure(<projectName>, <procedureName>, {<optionals>});`

Example

```
$cmdr->createProcedure("Test Proj", "Run Build", {resourceName => "Test Resourc
e"});
```

ectool

syntax: `ectool createProcedure <projectName> <procedureName> ...`

Example

```
ectool createProcedure "Test Proj" "Run Build" --resourceName "Test Resource"
```

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createStep

Creates a new procedure step.

Fundamentally, ElectricFlow supports three types of steps:

- Command Step–the step executes a command or script under the control of a shell program.
- Subprocedure Step–the step invokes another ElectricFlow procedure. In this case, the step will not complete
  until all subprocedure steps have completed.
- Custom Step

You must specify a `projectName`, `procedureName`, and `stepName`.

Arguments	Descriptions
projectName	The name of a project that must be unique among all projects. Argument type: String

Arguments	Descriptions
`procedureName`	The name for a procedure that must be unique within the project. Argument type: String
`stepName`	Name of the step that must be unique within the procedure. Argument type: String
`actualParameters`	(Optional) Specifies the values to pass as parameters to the called procedure. Each parameter value is specified with an `actualParameterName` and a `value`. The `actualParameterName` must match the name of a formal parameter on the called procedure. For more information about parameters, click here. Argument type: Map
`alwaysRun`	(Optional) The value for `alwaysRun` is a <*Boolean flag - `0|1|true|false`*>. Defaults to `false`. If this value is set to `1`, this step will run even if the job is aborted before the step completes. This is a useful argument for running a "cleanup" step that should run whether the job is successful or not. Argument type: Boolean
`broadcast`	(Optional) The `broadcast` value is <*Boolean flag - `0|1|true|false`*>. Use this flag to run the same step on several resources at the same time. The step is "broadcast" to all resources listed in the `resourceName` argument. This argument is applicable only to command steps.The default is `false`. Argument type: Boolean
`command`	(Optional) The command to run. This argument is applicable only to command steps. Argument type: String
`commandFile`	(Optional) **This option is supported only in Perl and ectool bindings - it is not a part of the XML protocol.** Contents of the *command file* is read and stored in the "command" field. This is an alternative argument for `command` and is useful if the "command" field spans multiple lines. The `commandFile` value is the actual *command file* text. This argument is applicable to command steps only.

Arguments	Descriptions
`condition`	(Optional) If empty or non-zero, the step will run. If set to "0", the step is skipped. A useful setting during procedure development or when re-running a job that has already completed some of the steps. Also, this argument is useful for conditional execution of steps based on properties set by earlier steps. Argument type: String
`credentialName`	(Optional) The credential to use for impersonation on the agent. Name of the credential in one of these forms: • **relative** (for example, *"cred1"*)–The credential is assumed to be in the project that contains the request target object. • **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*)–Tthe credential can be from any specified project, regardless of the target object's project. Argument type: String
`description`	(Optional) A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument type: String
`errorHandling`	(Optional) Determines what happens to the procedure if the step fails: • `failProcedure` - The current procedure continues, but the overall status is error (default). • `abortProcedure` - Aborts the current procedure, but allows already-running steps in the current procedure to complete. • `abortProcedureNow` - Aborts the current procedure and terminates running steps in the current procedure. • `abortJob` - Aborts the entire job, terminates running steps, but allows `alwaysRun` steps to run. • `abortJobNow` - Aborts the entire job and terminates all running steps, including alwaysRun steps. • `ignore` - Continues as if the step succeeded. Argument type: ErrorHandling

Arguments	Descriptions
`exclusive`	(Optional) The value for `exclusive` is a <*Boolean flag - `0|1|true|false`*>. If set to `1`, this step should acquire and retain this resource exclusively. The defaults to `false`. **Note:** When you set `exclusive`, `exclusiveMode` is set to `"job"`. Argument type: Boolean
`exclusiveMode`	(Optional) Use one of the following options: • `None` - the "default", which does not retain a resource. • `Job` - keeps the resource for the duration of the job. No other job can use this resource, regardless of its step limit, until this job completes or "Release Exclusive" is used in a step. Future steps for this job will use this resource in preference to other resources--if this resource meets the needs of the steps and its step limit is not exceeded. • `Step` - keeps the resource for the duration of the step. • `Call` - keeps the resource for the duration of the procedure that called this step, which is equivalent to 'job' for top level steps. Argument type: ExclusiveMode
`logFileName`	(Optional) A custom log file name produced by running the step. By default, ElectricFlow assigns a unique name for this file. Argument type: String
`parallel`	(Optional) The value for `parallel` is a <*Boolean flag - `0|1|true|false`*>. If set, indicates this step should run at the same time as adjacent steps marked to run as parallel also. The default is to `false`. Argument type: Boolean
`postProcessor`	(Optional) The name of a program to run after a step completes. This program looks at the step output to find errors and warnings. ElectricFlow includes a customizable program called "postp" for this purpose. The value for `postProcessor` is a command string for invoking a post-processor program in the platform shell for the resource (`cmd` for Windows, `sh` for UNIX). Argument type: String

Arguments	Descriptions
`precondition`	(Optional) By default, if the step has no precondition, it will run when scheduled. Set this property to make a step wait until one or more dependent conditions are met. When a job step is eligible to transition from pending to runnable, a *precondition* is evaluated. A *precondition* is a fixed text or text embedding property reference that is evaluated to TRUE or FALSE. An empty string, a \"0\" or \"false\" is interpreted as FALSE. Any other result string is interpreted as TRUE. The step will block until the precondition is TRUE. Precondition example: Assume we defined these 4 steps: 1. Build object files and executables 2. Build installer 3. Run unit tests 4. Install bits on test system Step 1 is an ordinary serial step. Steps 2 and 3 can run in parallel because they depend only on step 1's completion. Step 4 depends on step 2, but not step 3. You can achieve optimal step execution order with preconditions: • Make steps 2-4 run in parallel. • Step 2 needs a job property set at the end of its step to indicate step 2 is completing (`/myJob/buildInstallerCompleted=1`). • Set a precondition in step 4: `$[/myJob/buildInstallerCompleted]` Argument type: String
`releaseExclusive`	(Optional) <*Boolean flag* - `0|1|true|false`> Declares whether or not this step will release its resource, which is currently held exclusively. **Note:** Setting this flag to "true" is the same as setting `releaseMode` to `release`. Argument type: Boolean

Arguments	Descriptions
`releaseMode`	(Optional) Use one of the following options: • `none` - the "default" - no action if the resource was not previously marked as "retain." • `release` - releases the resource at the end of this step. If the resource for the step was previously acquired with "Retain exclusive" (either by this step or some preceding step), the resource exclusivity is canceled at the end of this step. The resource is released in the normal way so it may be acquired by other jobs. • `releaseToJob` - allows a step to promote a "step exclusive" resource to a Job exclusive resource. Argument type: ReleaseMode
`resourceName`	(Optional) Name for the resource that must be unique among all resources. Argument type: String
`shell`	(Optional) Where *shell* is the name of a program used to execute commands contained in the "command" field. The name of a temporary file containing commands will be appended to the end of this invocation line. Normally, this file is a command shell, but it can be any other command line program. The default is to use the standard shell for the platform it runs on (`cmd` for Windows, `sh` for UNIX). This is applicable to command steps only. Argument type: String
`subprocedure`	(Optional) The name of the nested procedure to call when this step runs. If a subprocedure is specified, do not include the `command` or `commandFile` options. Argument type: String
`subproject`	(Optional) If a `subprocedure` argument is used, this is the name of the project where that subprocedure is found. By default, the current project is used. Argument type: String
`timeLimit`	(Optional) The maximum length of time the step is allowed to run. After the time specified, the step will be aborted. The time limit is specified in units that can be hours, minutes, or seconds. Argument type: String
`timeLimitUnits`	(Optional) Specify `hours|minutes|seconds` for time limit units. Argument type: TimeLimitUnits

Arguments	Descriptions
`workingDirectory`	(Optional) The ElectricFlow agent sets this directory as the “current working directory,” when running the command contained in the step. If no working directory is specified in the step, ElectricFlow uses the directory it created for the job in the ElectricFlow workspace as the working directory. **Note:** If running a step on a proxy resource, this directory must exist on the proxy target. Argument type: String
`workspaceName`	(Optional) The name of the workspace where the log files for this step will be stored. Argument type: String

Positional arguments

`projectName, procedureName, stepName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->createStep(<projectName>, <procedureName>, <stepName>, {<optionals>});`

Specifying most arguments to the Perl `createStep` API is fairly intuitive. Similar to any other API, key-value pairs are specified in a hash argument for all optional parameters. However, specifying actual parameters is a little
different because they are not arbitrary key-values characterizing the step. Actual parameters are key-values
characterizing actual parameters to the step. See the following `createStep` request in XML:

```
<createStep>
    <projectName>MyProject</projectName>
    <procedureName>MyProcedure</procedureName>
    <stepName>Step1</stepName>
    <actualParameter>
        <actualParameterName>parm1</actualParameterName>
        <value>myval</value>
    </actualParameter>
    <actualParameter>
        <actualParameterName>parm2</actualParameterName>
        <value>val2</value>
    </actualParameter>
</createStep>
```

Each actual parameter key-value is under an `<actualParameter>` element, which is codified in the optional
arguments hash in the Perl API like this:

```
{... => ..., actualParameter => [{actualParameterName => 'parm1', value =>
'myval'},
   {actualParameterName => 'parm2', value => 'val2'}], ... => ...}
```

In other words, the value of the `actualParameter` key in the optional arguments hash is a list of hashes, each
representing one actual parameter. If the subprocedure call only takes one actual parameter, the value of the
`actualParameter` key can be specified as just the hash representing the one parameter:

```
actualParameter => {actualParameterName => 'parm1', value => 'myval'}
```

Example

```
$cmdr->createStep("Test Proj", "Run Build", "Common Cleanup", {subprocedure => "Del
ay",
   actualParameter => {actualParameterName => 'Delay Time', value => '5'}});
```

ectool

syntax: `ectool createStep <projectName> <procedureName> <stepName> ...`

Specifying actual parameters in an ectool call is also different than specifying other arguments.
Specify each key-value as an equal-sign delimited value:

```
ectool createStep ... --actualParameter "Delay Time=5" "parm2=val2"
```

Note: If the parameter name or value contains spaces, quotes are needed.

Examples

```
ectool createStep "Test Proj" "Run Build" "Compile" --command "make all"

ectool createStep "Test Proj" "Run Build" "Common Cleanup" --subprocedure "Delay"
  --actualParameter "Delay Time=5"
```

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deleteProcedure

Deletes a procedure, including all steps.

You must specify a `projectName` and `procedureName`.

Arguments	Descriptions
`projectName`	The name of the project that contains this procedure. The name must be unique within the project. Argument type: String
`procedureName`	The name of the procedure that must be unique within the project. Argument type: String

Positional arguments

`projectName, procedureName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteProcedure(<projectName>, <procedureName>);`

Example

```
$cmdr->deleteProcedure("Test Proj", "Run Build");
```

ectool

syntax: `ectool deleteProcedure <projectName> <procedureName>`

Example

```
ectool deleteProcedure "Test Proj" "Run Build"
```

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deleteStep

Deletes a step from a procedure.

You must specify `projectName`, `procedureName`, and `stepName`.

Arguments	Descriptions
`projectName`	The name of the project that contains this procedure. The name must be unique within the project. Argument type: String
`procedureName`	The name of the procedure that must be unique within the project. Argument type: String
`stepName`	The name of the step that must be unique within the procedure. Argument type: String

Positional arguments

`projectName, procedureName, stepName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteStep(<projectName>, <procedureName>, <stepName>);`

Example

```
$cmdr->deleteStep("Test Proj", "Run Build", "Compile");
```

ectool

syntax: `ectool deleteStep <projectName> <procedureName> <stepName>`

Example

```
ectool deleteStep "Test Proj" "Run Build" "Compile"
```

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getProcedure

Finds a procedure by its name.

You must specify a `projectName` and a `procedureName`.

Arguments	Descriptions
`projectName`	The name of the project that contains this procedure. The name must be unique within the project. Argument type: String
`procedureName`	The name of the procedure that must be unique within the project. Argument type: String

Positional arguments

`projectName, procedureName`

Response

One `procedure` element, which includes the procedure ID, name, time created, job name template, owner, resource name, workspace name, project name, and so on.

ec-perl

syntax: `$cmdr->getProcedure(<projectName>, <procedureName>);`

Example

```
$cmdr->getProcedure("Test Proj", "Run Build");
```

ectool

syntax: `ectool getProcedure <projectName> <procedureName>`

Example

```
ectool getProcedure "Test Proj" "Run Build"
```

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getProcedures

Retrieves all procedures in one project.

You must specify the `projectName`.

Arguments	Descriptions
`projectName`	The name of the project that contains this procedure. The name must be unique within the project. Argument type: String

Positional arguments

`projectName`

Response

One or more `procedure` elements.

ec-perl

syntax: `$cmdr->getProcedures(<projectName>);`

Example

```
$cmdr->getProcedures("Test Proj");
```

ectool

syntax: `ectool getProcedures <projectName>`

Example

```
ectool getProcedures "Test Proj"
```

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getStep

Retrieves a step from a procedure.

You must specify `projectName`, `procedureName`, and `stepName`.

Arguments	Descriptions
`projectName`	The name of the project that contains this procedure. The name must be unique within the project. Argument type: String
`procedureName`	The name of the procedure that must be unique within the project. Argument type: String
`stepName`	The name of the step that must be unique within the procedure. Argument type: String

Positional arguments

`projectName, procedureName, stepName`

Response

One `step` element.

ec-perl

syntax: `$cmdr->getStep(<projectName>, <procedureName>, <stepName>);`

Example

```
$cmdr->getStep("Test Proj", "Run Build", "Compile");
```

ectool

syntax: `ectool getStep <projectName> <procedureName> <stepName>`

Example

```
ectool getStep "Test Proj" "Run Build" "Compile"
```

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getSteps

Retrieves all steps in a procedure.

You must specify the `projectName` and `procedureName`.

Arguments	Descriptions
`projectName`	The name of the project that contains this procedure. The name must be unique within the project. Argument type: String
`procedureName`	The name of the procedure that must be unique within the project. Argument type: String

Positional arguments

`projectName, procedureName`

Response

Zero or more `step` elements.

ec-perl

syntax: `$cmdr->getSteps(<projectName>, <procedureName>);`

Example

```
$cmdr->getSteps("Test Proj", "Run Build");
```

ectool

syntax: `ectool getSteps <projectName> <procedureName>`

Example

```
ectool getSteps "Test Proj" "Run Build"
```

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modifyProcedure

Modifies an existing procedure.

You must specify `projectName` and `procedureName`.

Arguments	Descriptions
`projectName`	The name of the project that contains this procedure. The name must be unique within the project. You must also enter `procedureName`. Argument type: String
`procedureName`	The name of the procedure that must be unique within the project. You must also enter `projectName`. Argument type: String
`credentialName`	Name of the credential in one of these forms: • **relative** (for example, *"cred1"*)–The credential is assumed to be in the project that contains the request target object. • **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*)–Tthe credential can be from any specified project, regardless of the target object's project. Argument type: String
`description`	A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument type: String
`jobNameTemplate`	Job name format for jobs created by running this procedure. Argument type: String
`newName`	New name of the procedure. Argument type: String

Arguments	Descriptions
`resourceName`	The name of the default resource where steps belonging to this procedure will run. This name can be a resource pool name. Argument type: String
`timeLimit`	If no time limit was specified on the calling step, time limits are copied to the calling step from the procedure. If the procedure is called from `runProcedure` (or a schedule), the time limit acts as a global job timeout. The "timer" for the procedure starts as soon as the calling step/job becomes runnable (all preconditions are satisfied). Argument type: String
`timeLimitUnits`	Time limit units are `hours|minutes|seconds`. Argument type: TimeLimitUnits
`workspaceName`	The name of the default workspace where job output is stored. Argument type: String

Positional arguments

`projectName, procedureName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->modifyProcedure(<projectName>, <procedureName>, {...});`

Example

```
$cmdr->modifyProcedure("Test Proj", "Run Build", {resourceName =>
   "Windows - Bldg. 11"});
```

ectool

syntax: `ectool modifyProcedure <projectName> <procedureName> ...`

Example

```
ectool modifyProcedure "Test Proj" "Run Build"
   --resourceName "Windows - Bldg. 11"
```

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modifyStep

Modifies an existing step.

You must specify `projectName`, `procedureName`, and `stepName`.

Arguments	Descriptions
`projectName`	The name of the project that contains this procedure. The name must be unique within the project. You must also enter `procedureName`. Argument type: String
`procedureName`	The name of the procedure that must be unique within the project. You must also enter `projectName`. Argument type: String
`stepName`	The name of the step that must be unique within the procedure. You must also enter `projectName` and `procedureName`. Argument type: String
`actualParameter`	Specifies the values to pass as parameters to the called procedure. Each parameter value is specified with an `actualParameterName` and a `value`. The `actualParameterName` must match the name of a formal parameter on the called procedure. Argument type: Map
`alwaysRun`	<*Boolean flag* - `0|1|true|false`> If set to `1`, this step will run even if the job is aborted before the step completes. This a useful argument for running a "cleanup" step that should run whether the job is successful or not. Argument type: Boolean
`broadcast`	<*Boolean flag* - `0|1|true|false`> Use this flag to run the same step on several resources at the same time. The step is "broadcast" to all resources listed in the `resourceName`. Argument type: Boolean
`clearActualParameters`	<*Boolean flag* - `0|1|true|false`> If set to `true` or `1`, all the actual parameters will be removed from the step. Argument type: Boolean
`command`	The step command. Argument type: String
`commandFile`	**This option is supported only in Perl and ectool bindings - it is not part of the XML protocol.** The contents of the *command file* is read and stored in the "command" field. This is an alternative argument for `command` and is useful if the "command" field spans multiple lines.

Arguments	Descriptions
`condition`	If empty or non-zero, the step will run. If set to "0", the step is skipped. A useful setting during procedure development or when re-running a job that has already completed some of the steps. Also, this argument is useful for conditional execution of steps based on properties set by earlier steps. Argument type: String
`credentialName`	Name of the credential in one of these forms: • **relative** (for example, *"cred1"*)–The credential is assumed to be in the project that contains the request target object. • **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*)–Tthe credential can be from any specified project, regardless of the target object's project. Argument type: String
`description`	A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument type: String
`errorHandling`	Determines what happens to the procedure if the step fails: `failProcedure` - The current procedure continues, but the overall status is error (default). • `abortProcedure` - Aborts the current procedure, but allows already-running steps in the current procedure to complete. • `abortProcedureNow` - Aborts the current procedure and terminates running steps in the current procedure. • `abortJob` - Aborts the entire job, terminates running steps, but allows `alwaysRun` steps to run. • `abortJobNow` - Aborts the entire job and terminates all running steps, including `alwaysRun` steps. • `ignore` - Continues as if the step succeeded. Argument type: ErrorHandling

Arguments	Descriptions
`exclusive`	The value for `exclusive` is a <*Boolean flag* -`0|1|true|false`>. If set to `1`, this indicates this step should acquire and retain this resource exclusively. The default is `false`. When you set `exclusive`, `exclusiveMode` is set to `job`. Argument type: Boolean
`exclusiveMode`	Use one of the following options: • `None` - the "default", which does not retain a resource. • `Job` - keeps the resource for the duration of the job. No other job can use this resource, regardless of its step limit, until this job completes or "Release Exclusive" is used in a step. Future steps for this job will use this resource in preference to other resources--if this resource meets the needs of the steps and its step limit is not exceeded. • `Step` - keeps the resource for the duration of the step. • `Call` - keeps the resource for the duration of the procedure that called this step, which is equivalent to 'job' for top level steps. Argument type: ExclusiveMode
`logFileName`	A custom log file name produced by running the step. By default, ElectricFlow assigns a unique name to this file. Argument type: String
`newName`	New name of the step. Argument type: String
`parallel`	<*Boolean flag* - `0|1|true|false`> This indicates if this step should run at the same time as adjacent steps also marked to run as parallel. Argument type: String

Arguments	Descriptions
`precondition`	By default, if the step has no precondition, it will run when scheduled. Set this property to make a step wait until one or more dependent conditions are met. When a job step is eligible to transition from pending to runnable, a *precondition* is evaluated. A *precondition* is a fixed text or text embedding property reference that is evaluated to TRUE or FALSE. An empty string, a \"0\" or \"false\" is interpreted as FALSE. Any other result string is interpreted as TRUE. The step will block until the precondition is TRUE. Precondition example: Assume we defined these 4 steps: 1. Build object files and executables 2. Build installer 3. Run unit tests 4. Install bits on test system Step 1 is an ordinary serial step. Steps 2 and 3 can run in parallel because they depend only on step 1's completion. Step 4 depends on step 2, but not step 3. You can achieve optimal step execution order with preconditions: • Make steps 2-4 run in parallel. • Step 2 needs a job property set at the end of its step to indicate step 2 is completing (`/myJob/buildInstallerCompleted=1`). • Set a precondition in step 4: `$[/myJob/buildInstallerCompleted]` Argument type: String
`postProcessor`	The name of a program to run (script) after a step completes. This program looks at the step output to find errors and warnings. ElectricFlow includes a customizable program called "postp" for this purpose. Argument type: String
`releaseExclusive`	<*Boolean flag -* `0|1|true|false`> This declares whether or not this step will release its resource, which is currently held exclusively. **Note:** Setting this flag to "true" is the same as setting `releaseMode` to `"release"`. Argument type: Boolean

Arguments	Descriptions
`releaseMode`	Use one of the following options: • `none` - the "default" - no action if the resource was not previously marked as "retain." • `release` - releases the resource at the end of this step. If the resource for the step was previously acquired with "Retain exclusive" (either by this step or some preceding step), the resource exclusivity is canceled at the end of this step. The resource is released in the normal way so it may be acquired by other jobs. • `releaseToJob` - allows a step to promote a Step exclusive resource to a Job exclusive resource. Argument type: ReleaseMode
`resourceName`	The name of the resource used by this step. The name must be unique among all resources. Argument type: String
`shell`	Where *shell* is the name of a program used to execute commands contained in the "command" field. The name of a temporary file containing commands will be appended to the end of this invocation line. Normally, this file is a command shell, but it could be any other command line program. The default is to use the standard shell for the platform it runs on. Argument type: String
`subprocedure`	The name of the nested procedure to call when this step runs. If a subprocedure is specified, do not include the `command` or `commandField`. Argument type: String
`subproject`	If a `subprocedure` argument is used, this is the name of the project where that subprocedure is found. By default, the current project is used. Argument type: String
`timeLimit`	The maximum length of time the step is allowed to run. After the time specified, the step will be aborted. Argument type: String
`timeLimitUnits`	Units for step time limit: `<hours|minutes|seconds>` Argument type: TimeLimitUnits

Arguments	Descriptions
`workingDirectory`	The ElectricFlow agent sets this directory as the "current working directory," running the command contained in the step. If no working directory is specified in the step, ElectricFlow uses the directory it created for the job in the ElectricFlow workspace. Argument type: String
`workspaceName`	The name of the workspace used by this step. Argument type: String

Positional arguments

`projectName, procedureName, stepName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->modifyStep(<projectName>, <procedureName>, <stepName>, {<optionals>});`

Example

```
$cmdr->modifyStep("Test Proj", "Run Build", "Compile", {commandFile => "tempfile.tx
t"});
```

ectool

syntax: `ectool modifyStep <projectName> <procedureName> <stepName> ...`

Example

```
ectool modifyStep "Test Proj" "Run Build" "Compile" --commandFile tempfile.txt
```

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moveStep

Moves a step within a procedure.

You must specify `projectName`, `procedureName`, and `stepName`.

Arguments	Descriptions
`projectName`	The name of the project that contains this procedure. The name must be unique within the project. You must also enter `procedureName`. Argument type: String

Arguments	Descriptions
`procedureName`	The name of the procedure that must be unique within the project. You must also enter `projectName`. Argument type: String
`stepName`	The name of the step that must be unique within the procedure. You must also enter `projectName` and `procedureName`. Argument type: String
`beforeStep`	Moves the step (`stepName`) to position before the step "named" by this option. If omitted, `stepName` is moved to the end of the list of steps. Argument type: String

Positional arguments

`projectName, procedureName, stepName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->moveStep(<projectName>, <procedureName>, <stepName>, {<optionals>});`

Example

```
$cmdr->moveStep("Test Proj", "Run Build", "Get Sources", {beforeStep => "Compil
e"});
```

ectool

syntax: `ectool moveStep <projectName> <procedureName> <stepName> ...`

Example

```
ectool moveStep "Test Proj" "Run Build" "Get Sources"
   --beforeStep "Compile"
```

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API Commands - Process

createProcess

Creates a new process for an application or component.

Required Arguments

`projectName`

Description: Name of the project; must be unique among all projects.

Argument Type: String

`processName`

Description: Name of the process.

Argument Type: String

Optional Arguments

`applicationName`

Description: Name of the application containing the application process (`processName`).
When you want to create an application process, specify the name of the application (`applicationName`).
The application name must be unique among all projects.

Argument Type: String

`componentApplicationName`

Description: Name of the application where the component (`componentName`) is located.
When you want to create a component process in a specific application, specify the component (`componentName`) and the application (`componentApplicationName`) where the component is located.

Argument Type: String

`componentName`

Description: Name of the component.
When you want to create a component process in a specific application, specify the component (`componentName`) and the application (`componentApplicationName`) where the component is located.

Argument Type: String

`credentialName`

Description: Name of a credential to attach to this process.

Argument Type: String

`description`

Description: Comment text describing this object; not interpreted at all by ElectricFlow.

Argument Type: String

`processType`

Description: Defines the type of action performed by the process. Valid values are `DEPLOY`, `OTHER`, or `UNDEPLOY` for a component process.

Argument Type: ProcessType

`timeLimit`

Description: Maximum amount of time that the step can execute; abort if it exceeds this time.

Argument Type: String

`timeLimitUnits`

Description: Units for the step- time limit: seconds, minutes, or hours.

Argument Type: TimeLimitUnits

`workspaceName`

Description: Name of the default workspace for this process.

Argument Type: String

Response

Returns a process component object.

ec-perl

Syntax:

```
$<object>->createProcess(<projectName>, <processName>, {<optionals>});
```

Example:

To create a component process in a master component:

```
$ec->createProcess('Default', 'Deploy',  {componentName => 'WAR file'});
```

To create a component process in a specific application:

```
$ec->createProcess('Default', 'Deploy',  {componentName => 'WAR file', component
ApplicationName => 'Shopping Cart'});
```

To create an application process:

```
$ec->createProcess('Default', 'Deploy',  {applicationName => 'Shopping Cart'});
```

ectool

Syntax:

```
 ectool createProcess <projectName> <processName> [optionals...]
```

Example:

To create a component process in a master component:

```
ectool createProcess 'Default' 'Deploy'  --componentName 'WAR file'
```

To create a component process in a specific application:

```
ectool createProcess 'Default' 'Deploy' --componentName 'WAR file' --componentAp
plicationName 'Shopping Cart'
```

To create an application process:

```
ectool createProcess  'Default' 'Deploy'  --applicationName 'Shopping Cart'
```

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deleteProcess

Deletes an application or component process.

Required Arguments

`projectName`

Description: Name of the project; must be unique among all projects.

Argument Type: String

`processName`

Description: Name of the process.

Argument Type: String

Optional Arguments

`applicationName`

Description: Name of the application containing the application process (`processName`).
When you want to delete an application process, specify the name of the application (`applicationName`).
The application name must be unique among all projects.

Argument Type: String

`componentApplicationName`

Description: Name of the application where the component (`componentName`) is located.
When you want to delete a component process in a specific application, specify the component (`componentName`) and the application (`componentApplicationName`) where the component is located.

Argument Type: String

`componentName`

Description: Name of the component.
When you want to delete a component process in a specific application, specify the component (`componentName`) and the application (`componentApplicationName`) where the component is located.

Argument Type: String

Response

None or a status OK message.

ec-perl

Syntax:

```
$<object>->deleteProcess(<projectName>, <processName>, {<optionals>});
```

Example:

To create a component process in a master component:

```
$ec->deleteProcess('Default', 'Deploy',  {componentName => 'WAR file'});
```

To create a component process in a specific application:

```
$ec->deleteProcess('Default', 'Deploy',  {componentName => 'WAR file', component
ApplicationName => 'Shopping Cart'});
```

To create an application process:

```
$ec->deleteProcess('Default', 'Deploy',  {applicationName => 'Shopping Cart'});
```

ectool

Syntax:

```
ectool deleteProcess <projectName> <processName> [optionals...]
```

Example:

To create a component process in a master component:

```
ectool deleteProcess 'Default' 'Deploy'  --componentName WAR file'
```

To create a component process in a specific application:

```
ectool deleteProcess 'Default' 'Deploy' --componentName 'WAR file' --componentAp
plicationName 'Shopping Cart'
```

To create an application process:

```
ectool deleteProcess  'Default' 'Deploy'  --applicationName 'Shopping Cart'
```

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getProcess

Retrieves an application or component process.

Required Arguments

`projectName`

Description: Name of the project that must be unique among all projects.

Argument Type: String

`processName`

Description: Name of the process.

Argument Type: String

Optional Arguments

`applicationEntityRevisionId`

Description: The revision ID of the versioned project.

Argument Type: UUID

`applicationName`

Description: Name of the application containing the application process (`processName`).
When you want to retrieve an application process, specify the name of the application (`applicationName`).
The application name must be unique among all projects.

Argument Type: String

`componentApplicationName`

Description: Name of the application where the component (`componentName`) is located.
When you want to retrieve a component process in a specific application, specify the component (`componentName`) and the application (`componentApplicationName`) where the component is located.

Argument Type: String

`componentName`

Description: Name of the component.
When you want to retrieve a component process in a specific application, specify the component (`componentName`) and the application (`componentApplicationName`) where the component is located.

Argument Type: String

Response

Returns the specified process object.

ec-perl

Syntax:

```
$<object>->getProcess(<projectName>, <processName>, {<optionals>});
```

Example:

To retrieve a component process in a master component:

```
$ec->getProcess('Default', 'Deploy',  {componentName => 'WAR file'});
```

To retrieve a component process in a specific application:

```
$ec->getProcess('Default', 'Deploy',  {componentName => 'WAR file', componentApp
licationName => 'Shopping Cart'});
```

To retrieve an application process:

```
$ec->getProcess('Default', 'Deploy',  {applicationName => 'Shopping Cart'});
```

ectool

Syntax:

```
ectool getProcess <projectName> <processName> [optionals...]
```

Example:

To retrieve a component process in a master component:

```
ectool getProcess 'Default' 'Deploy'  --componentName 'WAR file'
```

To retrieve a component process in a specific application:

```
ectool getProcess 'Default' 'Deploy' --componentName 'WAR file' --componentAppli
cationName 'Shopping Cart'
```

To retrieve an application process:

```
ectool getProcess  'Default' 'Deploy'  --applicationName 'Shopping Cart'
```

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getProcesses

Retrieves all processes in an application or component.

Required Arguments

`projectName`

Description: Name of the project that must be unique among all projects.

Argument Type: String

Optional Arguments

`applicationEntityRevisionId`

Description: The revision ID of the versioned project.

Argument Type: UUID

`applicationName`

Description: Name of the application containing the application processes (`processName`).
When you want to retrieve all the application processes, specify the name of the application (`applicationName`). The application name must be unique among all projects.

Argument Type: String

`componentApplicationName`

Description: Name of the application where the component (`componentName`) is located.
When you want to retrieve all the component processes in a specific application, specify the component (`componentName`) and the application (`componentApplicationName`) where the component is located.

Argument Type: String

`componentName`

Description: Name of the component.
When you want to retrieve all the component processes in a specific application, specify the component (`componentName`) and the application (`componentApplicationName`) where the component is located.

Argument Type: String

Response

Returns the process objects for the application or component.

ec-perl

Syntax:

```
$<object>->getProcesses(<projectName>, {<optionals>});
```

Example:

To retrieve all the component process in a master component:

```
$ec->getProcesses('Default', {componentName => 'WAR file'});
```

To retrieve all the component processes in a specific application:

```
$ec->getProcesses('Default', {componentName => 'WAR file', componentApplicationN
ame => 'Shopping Cart'});
```

To retrieve all the application processes in the specified application:

```
$ec->getProcesses('Default', {applicationName => 'Shopping Cart'});
```

ectool

Syntax:

```
ectool getProcesses <projectName> [optionals...]
```

Example:

To retrieve a component process in a master component:

```
ectool getProcesses 'Default' --componentName 'WAR file'
```

To retrieve a component process in a specific application:

```
ectool getProcesses 'Default' --componentName 'WAR file' --componentApplicationN
ame 'Shopping Cart'
```

To retrieve an application process in a specific application:

```
ectool getProcesses  'Default' --applicationName 'Shopping Cart'
```

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modifyProcess

Modifies an existing process.

Required Arguments

`projectName`

Description: Name of the project that must be unique among all projects.

Argument Type: String

`processName`

Description: Name of the process.

Argument Type: String

Optional Arguments

`applicationName`

Description: Name of the application containing the application process (`processName`).
When you want to modify an application process, specify the name of the application (`applicationName`).
The application name must be unique among all projects.

Argument Type: String

`componentApplicationName`

Description: Name of the application where the component (`componentName`) is located.
When you want to modify a component process in a specific application, specify the component (`componentName`) and the application (`componentApplicationName`) where the component is located.

Argument Type: String

`componentName`

Description: Name of the component.
When you want to modify a component process in a specific application, specify the component (`componentName`) and the application (`componentApplicationName`) where the component is located.

Argument Type: String

`credentialName`

Description: Name of a credential to attach to this process.

Argument Type: String

`description`

Description: Comment text describing this object; not interpreted at all by ElectricFlow.

Argument Type: String

`newName`

Description: New name for an existing object that is being renamed.

Argument Type: String

`processType`

Description: Defines the type of action performed by the process. Valid values are `DEPLOY`, `OTHER`, or `UNDEPLOY` for a component process.

Argument Type: ProcessType

`timeLimit`

Description: Maximum amount of time that the step can execute; abort if it exceeds this time.

Argument Type: String

`timeLimitUnits`

Description: Units for step time limit: seconds, minutes, or hours.

Argument Type: TimeLimitUnits

`workspaceName`

Description: Name of the default workspace for this process.

Argument Type: String

Response

Retrieves an updated process element.

ec-perl

Syntax:

```
$<object>->modifyProcess (<projectName>, <processName>, {<optionals>});
```

Example:

To modify a component process in a master component:

```
$ec->modifyProcess('Default', 'Deploy',  {componentName => 'WAR file', newName =
> 'Daily Update'});
```

To modify a component process in a specific application:

```
$ec->modifyProcess('Default', 'Deploy',  {componentName => 'WAR file', component
ApplicationName => 'Shopping Cart', newName => 'Daily Update'});
```

To modify an application process:

```
$ec->modifyProcess('Default', 'Deploy',  {applicationName => 'Shopping Cart', ne
wName => 'Daily Update'});
```

ectool

Syntax:

```
ectool modifyProcess <projectName> <processName> [optionals...]
```

Example:

To modify a component process in a master component:

```
ectool modifyProcess 'Default' 'Deploy'  --componentName 'WAR file' --newName 'D
aily Update'
```

To modify a component process in a specific application:

```
ectool modifyProcess 'Default' 'Deploy' --componentName 'WAR file' --componentAp
plicationName 'Shopping Cart' --newName 'Daily Update'
```

To modify an application process:

```
ectool modifyProcess  'Default' 'Deploy'  --applicationName 'Shopping Cart' --ne
wName 'Daily Update'
```

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runProcess

Runs the specified process.

Required Arguments

`projectName`

Description: Name for the project that must be unique among all projects.

Argument Type: String

`applicationName`

Description: Name of the application that owns the process; it must be unique among all applications in the project.

Argument Type: String

`processName`

Description: Name of the application process.

Argument Type: String

Optional Arguments

`actualParameter`

Description: Parameters passed as arguments to the process.

Argument Type: Map

`credentials`

Description: Credentials to use in the job.

Argument Type: Collection

`destinationProject`

Description: Project that will own the job.

Argument Type: String

`environmentName`

Description: Name of the environment.

Argument Type: String

`environmentTemplateName`

Description: Name of the environment template.

Argument Type: String

`environmentTemplateTierMapName`

Description: Environment template tier map name.

Argument Type: String

`keepOnError`

Description: Set this flag to "true" to keep the environment when an error occurs .
The `keepOnError` value = <*Boolean flag* -`0|1|true|false`>.
Defaults to `false` or `0`.

Argument Type: Boolean

`environmentTemplateTierMapName`

Description: Name of the environment template tier.

Argument Type: String

`priority`

Description: Priority of the job.

Argument Type: JobPriority

`scheduleName`

Description: Name for the schedule that must be unique among all schedules for the project.

Argument Type: String

`snapshotName`

Description: Name for the snapshot that must be unique among all snapshots for the project.

Argument Type: String

`tierMapName`

Description: Name of the tier map used to determine where to run the process.

Argument Type: String

`tierResourceCounts`

Description: Resource count for each resource template tier.

Argument Type: Map

`validate`

Description: Validates that the application process, tier map, and environment are well-defined and valid before the running the application process. <*Boolean flag* -`0|1|true|false`>. The default is `true`.

Argument Type: Boolean

Response

Returns new job ID.

ec-perl

Syntax:

```
$<object>->runProcess(<projectName>, <applicationName>, <processName>, <tierMapN
ame>, {<optionals>});
```

Example:

```
$ec->runProcess("default", "NewApp", "newProcess", "TierMap2", {destinationProje
ct => "deploy1"});
```

ectool

Syntax:

```
ectool runProcess <projectName> <applicationName> <processName> <tierMapName> [o
ptionals...]
```

Example:

```
ectool runProcess default NewApp newProcess TierMap2 --destinationProject deploy
1
```

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API Commands - Process Dependency

createProcessDependency

Creates a dependency between two process steps.

Required Arguments

`projectName`

Description: Name of the project; must be unique among all projects.

Argument Type: String

`processName`

Description: Name of the process.

Argument Type: String

`processStepName`

Description: Name of the process step.

Argument Type: String

`targetProcessStepName`

Description: Name of the target process step.

Argument Type: String

Optional Arguments

`applicationName`

Description: Name of the application containing the specified application process (`processName`).
When you want to create a dependency between two application process steps, specify the name of the application (`applicationName`) containing the process. The application name must be unique among all projects.

Argument Type: String

`branchCondition`

Description: Condition of the branch.

Argument Type: String

`branchConditionName`

Description: Name of the branch condition.

Argument Type: String

`branchConditionType`

Description: Type of the branch condition.

Argument Type: BranchConditionType

`branchType`

Description: Type of the branch.

Argument Type: BranchType

`componentApplicationName`

Description: Name of the application where the component (`componentName`) is located.
When you want to create a dependency between two component process steps in a specific application, specify the component (`componentName`) and the application (`componentApplicationName`) where the component is located.

Argument Type: String

`componentName`

Description: Name of the component containing the process steps.
When you want to create a dependency between two component process steps in a specific application, specify the component (`componentName`) and application (`componentApplicationName`) where the component is located.

Argument Type: String

Response

Returns a process dependency element.

ec-perl

Syntax:

```
$<object>->createProcessDependency(<projectName>, <processName>, <processStepNam
e>, <targetProcessStepName>, {<optionals>});
```

Example:

To create a dependency between two component process steps in a master component:

```
$ec->createProcessDependency('Default', 'Deploy', 'Get WAR file', 'Copy WAR fil
e', {componentName => 'WAR file'});
```

To create a dependency between two component process steps in a specific application:

```
$ec->createProcessDependency'Default', 'Deploy', 'Get WAR file', 'Copy WAR fil
e',  {componentName => 'WAR file', componentApplicationName => 'Shopping Car
t'});
```

To create a dependency between two application process steps:

```
$ec->createProcessDependency('Default', 'Deploy', 'Get WAR file', 'Copy WAR fil
e',  {applicationName => 'Shopping Cart'});
```

ectool

Syntax:

```
ectool createProcessDependency <projectName> <processName> <processStepName>
 <targetProcessStepName> [optionals...]
```

Example:

To create a dependency between two component process steps in a master component:

```
ectool createProcessDependency 'Default' 'Deploy' 'Get WAR file', 'Copy WAR fil
e' --componentName 'WAR file'
```

To create a dependency between two component process steps in a specific application:

```
ectool createProcessDependency 'Default' 'Deploy' 'Get WAR file', 'Copy WAR fil
e' --componentName 'WAR file' --componentApplicationName 'Shopping Cart'
```

To create a dependency between two application process steps:

```
ectool createProcessDependency  'Default' 'Deploy' 'Get WAR file', 'Copy WAR fil
e' --applicationName 'Shopping Cart'
```

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deleteProcessDependency

Deletes a dependency between two process steps.

Required Arguments

`projectName`

Description: Name of the project; must be unique among all projects.

Argument Type: String

`processName`

Description: Name of the process.

Argument Type: String

`processStepName`

Description: Name of the process step.

Argument Type: String

`targetProcessStepName`

Description: Name of the target process step.

Argument Type: String

Optional Arguments

`applicationName`

Description: Name of the application containing the specified application process (`processName`).
When you want to delete a dependency between two application process steps, specify the name of the application (`applicationName`) containing the process. The application name must be unique among all projects.

Argument Type: String

`componentApplicationName`

Description: Name of the application where the component (`componentName`) is located.
When you want to delete a dependency between two component process steps in a specific application, specify the component (`componentName`) and the application (`componentApplicationName`) where the component is located.

Argument Type: String

`componentName`

Description: Name of the component containing the process steps.
When you want to delete a dependency between two component process steps in a specific application, specify the component (`componentName`) and application (`componentApplicationName`) where the component is located.

Argument Type: String

Response

None or a status OK message.

ec-perl

Syntax:

```
$<object>->deleteProcessDependency(<projectName>, <processName>, <processStepNam
e>, <targetProcessStepName>, {<optionals>});
```

Example:

To delete a dependency between two component process steps in a master component:

```
$ec->deleteProcessDependency('Default', 'Deploy', 'Get WAR file', 'Copy WAR fil
e', {componentName => 'WAR file'});
```

To create a dependency between two component process steps in a specific application:

```
$ec->deleteProcessDependency'Default', 'Deploy', 'Get WAR file', 'Copy WAR fil
e',  {componentName => 'WAR file', componentApplicationName => 'Shopping Car
t'});
```

To create a dependency between two application process steps:

```
$ec->deleteProcessDependency('Default', 'Deploy', 'Get WAR file', 'Copy WAR fil
e',  {applicationName => 'Shopping Cart'});
```

ectool

Syntax:

```
ectool deleteProcessDependency <projectName> <processName> <processStepName> <ta
rgetProcessStepName> [optionals...]
```

Example:

To delete a dependency between two component process steps in a master component:

```
ectool deleteProcessDependency 'Default' 'Deploy' 'Get WAR file', 'Copy WAR fil
e' --componentName 'WAR file'
```

To create a dependency between two component process steps in a specific application:

```
ectool deleteProcessDependency 'Default' 'Deploy' 'Get WAR file', 'Copy WAR fil
e' --componentName 'WAR file' --componentApplicationName 'Shopping Cart'
```

To create a dependency between two application process steps:

```
ectool deleteeProcessDependency  'Default' 'Deploy' 'Get WAR file', 'Copy WAR fi
le' --applicationName 'Shopping Cart'
```

```
ectool deleteProcessDependency default newProcess "Step B" "Step C" --componentN
ame VCScomponent
```

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getProcessDependencies

Retrieves all dependencies for a process.

Required Arguments

`projectName`

Description: Name of the project that must be unique among all projects.

Argument Type: String

`processName`

Description: Name of the process.

Argument Type: String

Optional Arguments

`applicationEntityRevisionId`

Description: The revision ID of the versioned project.

Argument Type: UUID

`applicationName`

Description: Name of the application containing the specified application process (`processName`). When you want to retrieve the dependencies between process steps, specify the name of the application (`applicationName`) containing the process. The application name must be unique among all projects.

Argument Type: String

`componentApplicationName`

Description: Name of the application where the component (`componentName`) is located. When you want to retrieve the dependencies between component process steps in a specific application, specify the component (`componentName`) and the application (`componentApplicationName`) where the component is located.

Argument Type: String

`componentName`

Description: Name of the component containing the process steps. When you want to retrieve the dependencies between component process steps in a specific application, specify the component (`componentName`) and the application (`componentApplicationName`) where the component is located.

Argument Type: String

Response

Returns zero or more process dependency elements.

ec-perl

Syntax:

```
$<object>->getProcessDependencies(<projectName>, <processName>, {<optionals>});
```

Example:

To retrieve the dependencies between two component process steps in a master component:

```
$ec->getProcessDependencies('Default', 'Deploy', {componentName => 'WAR file'});
```

To retrieve the dependencies between two component process steps in a specific application:

```
$ec->getProcessDependencies('Default', 'Deploy', {componentName => 'WAR file', c
omponentApplicationName => 'Shopping Cart'});
```

To retrieve the dependencies between two application process steps:

```
$ec->getProcessDependencies('Default', 'Deploy', {applicationName => 'Shopping C
art'});
```

ectool

Syntax:

```
ectool getProcessDependencies <projectName> <processName> [optionals...]
```

Example:

To retrieve the dependencies between two component process steps in a master component:

```
ectool getProcessDependencies 'Default' 'Deploy' --componentName 'WAR file'
```

To retrieve the dependencies between two component process steps in a specific application:

```
ectool getProcessDependencies 'Default' 'Deploy' --componentName 'WAR file' --co
mponentApplicationName 'Shopping Cart'
```

To retrieve the dependencies between two application process steps:

```
ectool getProcessDependencies  'Default' 'Deploy' --applicationName 'Shopping Ca
rt'
```

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modifyProcessDependency

Modifies a dependency between two process steps.

Required Arguments

`projectName`

Description: Name of the project; must be unique among all projects.

Argument Type: String

`processName`

Description: Name of the process.

Argument Type: String

`processStepName`

Description: Name of the process step.

Argument Type: String

`targetProcessStepName`

Description: Name of the target process step.

Argument Type: String

Optional Arguments

`applicationName`

Description: Name of the application containing the specified application process (`processName`). When you want to modify a dependency between two application process steps, specify the name of the application (`applicationName`) containing the process. The application name must be unique among all projects.

Argument Type: String

`branchCondition`

Description: Condition of the branch.

Argument Type: String

`branchConditionName`

Description: Name of the branch condition.

Argument Type: String

`branchConditionType`

Description: Type of the branch condition.

Argument Type: BranchConditionType

`branchType`

Description: Type of the branch.

Argument Type: BranchType

`componentApplicationName`

Description: Name of the application where the component (`componentName`) is located.
When you want to modify a dependency between two component process steps in a specific application, specify the component (`componentName`) and the application (`componentApplicationName`) where the component is located.

Argument Type: String

`componentName`

Description: Name of the component containing the process steps.
When you want to modify a dependency between two component process steps in a specific application, specify the component (`componentName`) and application (`componentApplicationName`) where the component is located.

Argument Type: String

Response

Returns an updated process dependency element.

ec-perl

Syntax:

```
$<object>->modifyProcessDependency(<projectName>, <processName>, <processStepNam
e>, <targetProcessStepName>, {<optionals>});
```

Example:

To modify a dependency between two component process steps in a master component:

```
$ec->modifyProcessDependency('Default', 'Deploy', 'Get WAR file', 'Copy WAR fil
e', {componentName => 'WAR file', branchConditionName => 'Create new WAR fil
e'});
```

To modify a dependency between two component process steps in a specific application:

```
$ec->modifyProcessDependency('Default', 'Deploy', 'Get WAR file', 'Copy WAR fil
e', {componentName => 'WAR file', componentApplicationName => 'Shopping Cart', b
ranchConditionName => 'Create new WAR file'});
```

To modify a dependency between two application process steps:

```
$ec->modifyProcessDependency('Default', 'Deploy', 'Get WAR file', 'Copy WAR fil
e',  {applicationName => 'Shopping Cart', branchConditionName => 'Create new WAR
file'});
```

ectool

Syntax:

```
ectool modifyProcessDependency <projectName> <processName> <processStepName> <ta
rgetProcessStepName> [optionals...]
```

Example:

To modify a dependency between two component process steps in a master component:

```
ectool modifyProcessDependency 'Default' 'Deploy' 'Get WAR file', 'Copy WAR fil
e' --componentName 'WAR file' --branchConditionName  'Create new WAR file'
```

To modify a dependency between two component process steps in a specific application:

```
ectool modifyProcessDependency 'Default' 'Deploy' 'Get WAR file', 'Copy WAR fil
e' --componentName 'WAR file' --componentApplicationName 'Shopping Cart' --branc
hConditionName  'Create new WAR file'
```

To modify a dependency between two application process steps:

```
ectool modifyProcessDependency  'Default' 'Deploy' 'Get WAR file', 'Copy WAR fil
e' --applicationName 'Shopping Cart' --branchConditionName  'Create new WAR fil
e'
```

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API Commands - Process Step

Note: Several of the following API commands have context type optional arguments. For example, a step command may reference either a procedure or component.

createProcessStep

Creates a new process step.

Required Arguments

`projectName`

Description: Name for the project that must be unique among all projects.

Argument Type: String

`processName`

Description: Name of the process.

Argument Type: String

`processStepName`

Description: Name of the process step.

Argument Type: String

Optional Arguments

`actualParameter`

Description: Actual parameters (<var1>=<val1> [<var2>=<val2> ...) passed to an invoked subprocedure or process.

Argument Type: Map

`afterProcessStep`

Description: If specified, the process step will be placed after the named process step.

Argument Type: String

`applicationName`

Description: Name of the application containing the specified application process step (`processStepName`).
When you want to create an application process step, specify the name of the application (`applicationName`) containing this process step. The application name must be unique among all projects.

Argument Type: String

`applicationTierName`

Description: Application tier on which to run the step.

Argument Type: String

`beforeProcessStep`

Description: If specified, the process step will be placed before the named process step.

Argument Type: String

`componentApplicationName`

Description: Name of the application where the component (`componentName`) is located.
When you want to create a component process step in a specific application, specify the component (`componentName`) and the application (`componentApplicationName`) where the component is located

Argument Type: String

`componentName`

Description: Name of the component containing the process step.
When you want to create a component process step in a specific application, specify the component (`componentName`) and the application (`componentApplicationName`) where the component is located

Argument Type: String

`credentialName`

Description: Name of the credential object.

Argument Type: String

`description`

Description: Comment text describing this object; not interpreted at all by ElectricFlow.

Argument Type: String

`errorHandling`

Description: Specifies error handling for this step.

Argument Type: ErrorHandling

`includeCompParameterRef`

Description: True if the actual parameters should be generated from component properties. Works for artifact components only.

Argument Type: Boolean

`processStepType`

Description: Defines type of the process step.

Argument Type: ProcessStepType

`subcomponent`

Description: If referencing a component process, the name of the component.

Argument Type: String

`subcomponentProcess`

Description: If referencing a component process, the name of the component process.

Argument Type: String

`subprocedure`

Description: If referencing a procedure, the name of the procedure.

Argument Type: String

`subproject`

Description: If referencing a procedure, the name of the procedure's project.

Argument Type: String

`timeLimit`

Description: Maximum amount of time that the step can execute; abort if it exceeds this time.

Argument Type: String

`timeLimitUnits`

Description: Units for the step time limit: seconds, minutes, or hours.

Argument Type: TimeLimitUnits

`workspaceName`

Description: Name of the workspace.

Argument Type: String

Response

Returns a process step element.

ec-perl

Syntax:

```
$<object>->createProcessStep(<projectName>, <processName>, <processStepName>, {<
optionals>});
```

Example:

To create a component process step in a master component:

```
$ec->createProcessStep('Default', 'Deploy', 'Check out', {componentName => 'WAR
file'});
```

To create a component process step in a specific application:

```
$ec->createProcessStep('Default', 'Deploy', 'Check out', {componentName => 'WAR
file', componentApplicationName => 'Shopping Cart'});
```

To create an application process step:

```
$ec->createProcessStep('Default', 'Deploy', 'Check out', {applicationName => 'Sh
opping Cart'});
```

ectool

Syntax:

```
ectool createProcessStep <projectName> <processName> <processStepName> [optional
s...]
```

Example:

To create a component process step in a master component:

```
ectool createProcessStep 'Default' 'Deploy' 'Check out' --componentName 'WAR fil
e'
```

To create a component process step in a specific application:

```
ectool createProcessStep 'Default' 'Deploy' 'Check out' --componentName 'WAR fil
e' --componentApplicationName 'Shopping Cart'
```

To create an application process step:

```
ectool createProcessStep  'Default' 'Deploy' 'Check out' --applicationName 'Shop
ping Cart'
```

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deleteProcessStep

Deletes an application or component process step.

Required Arguments

`projectName`

Description: Name for the project; must be unique among all projects.

Argument Type: String

`processName`

Description: Name of the process.

Argument Type: String

`processStepName`

Description: Name of the process step.

Argument Type: String

Optional Arguments

`applicationName`

Description: Name of the application containing the specified application process step (`processStepName`).

When you want to create an application process step, specify the name of the application (`applicationName`) containing this process step. The application name must be unique among all projects.

Argument Type: String

`componentApplicationName`

Description: Name of the application where the component (`componentName`) is located.
When you want to create a component process step in a specific application, specify the component (`componentName`) and the application (`componentApplicationName`) where the component is located

Argument Type: String

`componentName`

Description: Name of the component containing the process step.
When you want to create a component process step in a specific application, specify the component (`componentName`) and the application (`componentApplicationName`) where the component is located

Argument Type: String

Response

None or a status OK message.

ec-perl

Syntax:

```
$<object>->deleteProcessStep   (<projectName>, <processName>, <processStepName>,
{<optionals>});
```

Example:

To delete a component process step in a master component:

```
$ec->deleteProcessStep('Default', 'Deploy', 'Check out', {componentName => 'WAR
file'});
```

To delete a component process step in a specific application:

```
$ec->deleteProcessStep('Default', 'Deploy', 'Check out', {componentName => 'WAR
file', componentApplicationName => 'Shopping Cart'});
```

```
To delete an application process step:
```

```
$ec->deleteProcessStep('Default', 'Deploy', 'Check out', {applicationName => 'Sh
opping Cart'});
```

```
$ec->deleteProcessStep ("Default", "Deploy", "Take Snapshot", {componentName=> "
VCS component"});
```

ectool

Syntax:

```
ectool deleteProcessStep <projectName> <processName> <processStepName> [optional
s...]
```

Example:

```
ectool deleteProcessStep "Default" "Deploy" "Take Snapshot" --componentName "VCS
component"
```

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getProcessStep

Retrieves an application or component process step.

Required Arguments

`projectName`

Description: Name for the project that must be unique among all projects.

Argument Type: String

`processName`

Description: Name of the process containing the process step.

Argument Type: String

`processStepName`

Description: Name of the application or component process step that you want to retrieve.

Argument Type: String

Optional Arguments

`applicationEntityRevisionId`

Description: Revision ID of the versioned project.

Argument Type: UUID

`applicationName`

Description: Name of the application containing the specified application process step (`processStepName`).
When you want to retrieve an application process step, specify the name of the application (`applicationName`) containing this process step. The application name must be unique among all projects.

Argument Type: String

`componentApplicationName`

Description: Name of the application where the component (`componentName`) is located.
When you want to retrieve a component process step in a specific application, specify the component (`componentName`) and the application (`componentApplicationName`) where the component is located

Argument Type: String

`componentName`

Description: Name of the component containing the process step.
When you want to retrieve a component process step in a specific application, specify the component (`componentName`) and the application (`componentApplicationName`) where the component is located

Argument Type: String

Response

Returns a process step element.

ec-perl

Syntax:

```
$<object>->getProcessStep(<projectName>, <processName>, <processStepName>, {<opt
ionals>});
```

Example:

To retrieve a component process step in a master component:

```
$ec->getProcessStep('Default', 'Deploy', 'Check out', {componentName => 'WAR fil
e'});
```

To retrieve a component process step in a specific application:

```
$ec->getProcessStep('Default', 'Deploy', 'Check out', {componentName => 'WAR fil
e', componentApplicationName => 'Shopping Cart'});
```

To retrieve an application process step:

```
$ec->getProcessStep('Default', 'Deploy', 'Check out', {applicationName => 'Shopp
ing Cart'});
```

ectool

Syntax:

```
ectool getProcessStep <projectName> <processName> <processStepName> [optional
s...]
```

Example:

To retrieve a component process step in a master component:

```
ectool getProcessStep 'Default' 'Deploy' 'Check out' --componentName 'WAR file'
```

To retrieve a component process step in a specific application:

```
ectool getProcessStep 'Default' 'Deploy' 'Check out' --componentName 'WAR file'
--componentApplicationName 'Shopping Cart'
```

To retrieve an application process step:

```
ectool getProcessStep  'Default' 'Deploy' 'Check out' --applicationName 'Shoppin
g Cart'
```

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getProcessSteps

Retrieves all the process steps in an application or component process.

Required Arguments

`projectName`

Description: Name for the project; must be unique among all projects.

Argument Type: String

`processName`

Description: Name of the process.

Argument Type: String

Optional Arguments

`applicationEntityRevisionId`

Description: The revision ID of the versioned project.

Argument Type: UUID

`applicationName`

Description: Name of the application containing the application process steps.
When you want to retrieve all the application process steps, specify the name of the application (`applicationName`) containing them. The application name must be unique among all projects.

Argument Type: String

`componentApplicationName`

Description: Name of the application where the component (`componentName`) is located.
When you want to retrieve all the component process steps in a specific application, specify the component (`componentName`) and application (`componentApplicationName`) where the component is located

Argument Type: String

`componentName`

Description: Name of the component containing the process step.
When you want to retrieve all component process steps in a specific application, specify the component (`componentName`) and application (`componentApplicationName`) where the component is located.

Argument Type: String

Response

Returns zero or more process step elements.

ec-perl

Syntax:

```
$<object>->getProcessSteps(<projectName>, <processName>, {<optionals>});
```

Example:

To retrieve all the component process steps in a master component:

```
$ec->getProcessSteps('Default', 'Deploy',  {componentName => 'WAR file'});
```

To retrieve all the component process steps in a specific application:

```
$ec->getProcessSteps('Default', 'Deploy',  {componentName => 'WAR file', compone
ntApplicationName => 'Shopping Cart'});
```

To retrieve all the application process steps:

```
$ec->getProcessSteps('Default', 'Deploy',  {applicationName => 'Shopping Car
t'});
```

ectool

Syntax:

```
ectool getProcessSteps  <projectName> <processName> [optionals...]
```

Example:

To retrieve all the component process steps in a master component:

```
ectool getProcessStep 'Default' 'Deploy' --componentName 'WAR file'
```

To retrieve all the component process steps in a specific application:

```
ectool getProcessStep 'Default' 'Deploy'  --componentName 'WAR file' --component
ApplicationName 'Shopping Cart'
```

To retrieve all the application process steps in an application:

```
ectool getProcessStep  'Default' 'Deploy' --applicationName 'Shopping Cart'
```

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modifyProcessStep

Modifies an existing process step.

Required Arguments

`projectName`

Description: Name of the project; must be unique among all projects.

Argument Type: String

`processName`

Description: Name of the process.

Argument Type: String

`processStepName`

Description: Name of the process step.

Argument Type: String

Optional Arguments

`actualParameter`

Description: Actual parameters passed to an invoked subprocedure or process.

Argument Type: Map

`afterProcessStep`

Description: If specified, the process step will be placed after the named process step.

Argument Type: String

`applicationName`

Description: Name of the application containing the specified application process step (`processStepName`).
When you want to modify an application process step, specify the name of the application (`applicationName`) containing this process step. The application name must be unique among all projects.

Argument Type: String

`applicationTierName`

Description: Name of the application tier on which to run the step.

Argument Type: String

`beforeProcessStep`

Description: If specified, the process step will be placed before the named process step.

Argument Type: String

`clearActualParameters`

Description: True if the step should remove all actual parameters.

Argument Type: Boolean

`componentApplicationName`

Description: Name of the application where the component (`componentName`) is located.
When you want to modify a component process step in a specific application, specify the component (`componentName`) and the application (`componentApplicationName`) where the component is located

Argument Type: String

`componentName`

Description: Name of the component containing the process step.
When you want to modify a component process step in a specific application, specify the component (`componentName`) and the application (`componentApplicationName`) where the component is located

Argument Type: String

`credentialName`

Description: Name of the credential object.

Argument Type: String

`description`

Description: Comment text describing this object; not interpreted at all by ElectricFlow.

Argument Type: String

`errorHandling`

Description: Specifies error handling for this step.

Argument Type: ErrorHandling

`includeCompParameterRef`

Description: True if the actual parameters should be generated from component properties. Works for artifact components only.

Argument Type: Boolean

`newName`

Description: New name for an existing object that is being renamed.

Argument Type: String

`processStepType`

Description: Defines type of the process step.

Argument Type: ProcessStepType

`subcomponent`

Description: If referencing a component process, the name of the component.

Argument Type: String

`subcomponentApplicationName`

Description: If referencing a component process, the name of the component application (if it has not been scoped to a project).

Argument Type: String

`subcomponentProcess`

Description: If referencing a component process, the name of the component process.

Argument Type: String

`subprocedure`

Description: If referencing a procedure, the name of the procedure.

Argument Type: String

`subproject`

Description: If referencing a procedure, the name of the procedure's project.

Argument Type: String

`timeLimit`

Description: Maximum amount of time that the step can execute; abort if it exceeds this time.

Argument Type: String

`timeLimitUnits`

Description: Units for the step time limit: seconds, minutes, or hours.

Argument Type: TimeLimitUnits

`workspaceName`

Description: Name of the workspace.

Argument Type: String

Response

Returns an updated process step element.

ec-perl

Syntax:

```
$<object>->modifyProcessStep(<projectName>, <processName>, <processStepName>, {<
optionals>});
```

Example:

To modify a component process step in a master component:

```
$ec->modifyProcessStep('Default', 'Deploy', 'Check out', {componentName => 'WAR
file', newName => 'Backup files'});
```

To modify a component process step in a specific application:

```
$ec->modifyProcessStep('Default', 'Deploy', 'Check out', {componentName => 'WAR
file', componentApplicationName => 'Shopping Cart', newName => 'Backup files'});
```

To modify an application process step:

```
$ec->modifyProcessStep('Default', 'Deploy', 'Check out', {applicationName => 'Sh
opping Cart', newName => 'Backup files'});
```

ectool

Syntax:

```
ectool modifyProcessStep <projectName> <processName> <processStepName> [optional
s...]
```

Example:

To modify a component process step in a master component:

```
ectool modifyProcessStep 'Default' 'Deploy' 'Check out' --componentName 'WAR fil
e' --newName 'Backup files'
```

To modify a component process step in a specific application:

```
ectool modifyProcessStep 'Default' 'Deploy' 'Check out' --componentName 'WAR fil
e' --componentApplicationName 'Shopping Cart' --newName 'Backup files'
```

To modify an application process step:

```
ectool modifyProcessStep  'Default' 'Deploy' 'Check out' --applicationName 'Shop
ping Cart' --newName 'Backup files'
```

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API Commands - Project Management

`createProject`

Creates a new project.

You must specify a `projectName`.

Arguments	Descriptions
`projectName`	The name of the project that must be unique within the project. Argument type: String

Arguments	Descriptions
`credentialName`	Name of the credential in one of these forms: • **relative** (for example, *"cred1"*)–The credential is assumed to be in the project that contains the request target object. • **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*)–Tthe credential can be from any specified project, regardless of the target object's project. Argument type: String
`description`	A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument type: String
`resourceName`	The name of the resource to use as the default for steps run by procedures in this project. Argument type: String
`tracked`	<*Boolean flag* - `0|1|true|false`> If set to `1` or `true`, Change Tracking is enabled for the project. Argument type: Boolean
`workspaceName`	The name of a workspace to use as the default for steps run by procedures in this project. Argument type: String

Positional arguments

`projectName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->createProject(<projectName>, {<optionals>});`

Example

```
$cmdr->createProject("Test Proj", {workspaceName => "Test_WS"});
```

ectool

syntax: `ectool createProject <projectName> ...`

Example

```
ectool createProject "Test Proj" --workspaceName "Test WS"
```

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deleteProject

Deletes a project, including all procedures, procedure steps, and jobs within that project.

You must specify a `projectName`.

Arguments	Descriptions
`projectName`	The name of the project that must be unique within the project. Argument type: String
`foreground`	(Optional) <*Boolean flag* - `0|1|true|false`> If set to `1` or `true`, the object in the foreground is deleted. The default is to delete the object in the background. Argument type: Boolean

Positional arguments

`projectName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteProject(<projectName>, {<optionals>});`

Example

```
$cmdr->deleteProject("Test Proj");
```

ectool

syntax: `ectool deleteProject <projectName> ...`

Example

```
ectool deleteProject "Test Proj"
```

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getProject

Finds a project by its name.

You must specify a `projectName`.

Arguments	Descriptions
projectName	The name of the project that must be unique within the project. Argument type: String

Positional arguments

projectName

Response

One project element.

ec-perl

syntax: `$cmdr->getProject(<projectName>);`

Example

```
$cmdr->getProject("Test Proj");
```

ectool

syntax: `ectool getProject <projectName>`

Example

```
ectool getProject "Test Proj"
```

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getProjects

Retrieves all projects.

Arguments	Descriptions
None	

Positional arguments

None

Response

Zero or more project elements.

Note: This response includes all projects in the system, including plugin projects, which are not displayed on the Projects page in the web UI.

ec-perl

syntax: `$cmdr->getProjects();`

Example

```
$cmdr->getProjects();
```

ectool

syntax: `ectool getProjects`

Example

```
ectool getProjects
```

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modifyProject

Modifies an existing project.

You must specify a `projectName`.

Arguments	Descriptions
`projectName`	The name of the project that must be unique within the project. Argument type: String
`credentialName`	Name of the credential in one of these forms: • **relative** (for example, *"cred1"*)–The credential is assumed to be in the project that contains the request target object. • **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*)–Tthe credential can be from any specified project, regardless of the target object's project. Argument type: String
`description`	A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument type: String
`newName`	New name of the project. Argument type: String
`resourceName`	The name of the resource used as the default for steps run by procedures in this project. Argument type: String
`tracked`	<*Boolean flag* - `0|1|true|false`> If set to `1` or `true`, Change Tracking is enabled for the project. Argument type: Boolean

Arguments	Descriptions
workspaceName	The name of the default workspace where job output is stored. Argument type: String

Positional arguments

projectName

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->modifyProject(<projectName>, {...});`

Example

```
$cmdr->modifyProject("Test Proj", {description => "A very simple project"});
```

To enable Change Tracking for the Default project:

```
$cmdr->modifyProject("Default", {tracked => true});
```

ectool

syntax: `ectool modifyProject <projectName> [optionals]`

Example

```
ectool modifyProject "Test Proj" --description "A very simple project"
```

To enable Change Tracking for the Default project:

```
ectool modifyProject "Default" --tracked true
```

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reloadSetupScripts

Runs new, modified, or previously unsuccessful setup scripts.

Arguments	Descriptions
None	–

Positional arguments

None

Response

None or a status OK message.

ec-perl

syntax:`$cmdr->reloadSetupScripts ();`

Example

```
$cmdr->reloadSetupScripts ();
```

ectool

syntax: `ectool reloadSetupScripts`

Example

```
ectool reloadSetupScripts
```

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API Commands - Property Management

`createProperty`

Creates a regular string or nested property sheet using a combination of property path and context.

You must specify a `propertyName` and locator arguments to define where (or on which object) you are creating this property.

Note: The name "`properties`" is NOT a valid property name.

Arguments	Descriptions
`propertyName`	The name of the property that must be unique within the property sheet. It can be a relative or absolute property path, including "my" paths such as `"/myProject/prop1"`. Argument type: String
`applicationName`	(Optional) The name of the application container of the property sheet which owns the property. The name must be unique among all projects. Argument type: String
`applicationTierName`	(Optional) The name of the application tier container of the property sheet which owns the property. Argument type: String

Arguments	Descriptions
artifactName	(Optional) The name of the artifact container of the property sheet which owns the property. Argument type: String
artifactVersionName	(Optional) The name of the artifact version. **Note:** An artifact version name is interpreted by the server as the artifactVersionName attribute for the artifactVersion in question. This name is parsed and interpreted as "groupId:artifactKey:version" and the object is searched either way you specify its name. The ElectricFlow server interprets either name form correctly. Argument type: String
componentName	(Optional) The name of the component container of the property sheet which owns the property. Argument type: String
configName	(Optional) The name of the email configuration container that owns the property. Argument type: String
counter	(Optional) <*Boolean flag -* 0|1|true|false> If 1 or true, the property is used as a counter. Argument type: Boolean
credentialName	(Optional) The name of the credential container of the property sheet which owns the property. Name of the credential in one of these forms: • **relative** (for example, *"cred1"*)–The credential is assumed to be in the project that contains the request target object. • **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*)–Tthe credential can be from any specified project, regardless of the target object's project. Argument type: String
description	(Optional) A plain text or HTML description for this object. If using HTML, you must surround your text with <html> ... </html> tags. The only HTML tags allowed in the text are: <a> <b> <dl> <font> <i> <p> <pre> <style> <table> <tc> <td> <th> <tr> Argument type: String

Arguments	Descriptions
`environmentName`	(Optional) The name of the environment container of the property sheet that owns the property. The name must be unique among all projects. Argument type: String
`environmentTemplateName`	(Optional) The name of the environment template container of the property sheet that owns the property. Argument type: String
`environmentTemplateTierName`	(Optional) The name of the environment template tier container of the property sheet that owns the property.
`environmentTierName`	(Optional) The name of the environment tier container of the property sheet that owns the property. Argument type: String
`expandable`	(Optional) Whether or not the property is recursively expandable. <*Boolean flag* - `0|1|true|false`> This determines whether the property value will undergo property expansion when it is fetched. The default is `true`. Argument type: Boolean
`extendedContextSearch`	(Optional) For simple property names, whether or not to search objects in the hierarchy to find the desired property. Argument type: Boolean
`flowName`	(Optional) The name of the flow. Argument type: String
`flowRuntimeName`	(Optional) Name of the flow runtime. Argument Type: String
`flowRuntimeStateName`	(Optional) Name of the flow state. Argument Type: String
`flowStateName`	(Optional) The name of the flow state. Argument type: String
`flowTransitionName`	(Optional) The name of the flow transition. Argument type: String

Arguments	Descriptions
`gatewayName`	(Optional) The name of the gateway container of the property sheet. Argument type: String
`groupName`	(Optional) The name of the group group container of the property sheet which owns the property. Argument type: String
`jobId`	(Optional) The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID
`jobStepId`	(Optional) The unique identifier for a job step that is assigned automatically when the job step is created.
`notifierName`	(Optional) The name of the email notifier. Argument type: UUID
`objectId`	(Optional) The object identifier returned by `findObjects` and `getObjects`. Argument type: String
`path`	(Optional) Property path string. Argument type: String
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`pluginName`	The name of the plugin container of the property sheet which owns the property. Argument type: String
`procedureName`	The name of the procedure container of the property sheet which owns the property. When using this argument, you must also enter `projectName`. Argument type: String
`processName`	(Optional) The name of the process when the container is a process or process step. Argument type: String

Arguments	Descriptions
`processStepName`	(Optional) The name of the process step when the container is a process step. Argument type: String
`projectName`	(Optional) The name of the project container of the property sheet which owns the property. The name must be unique among all projects. Argument type: String
`propertySheetId`	(Optional) The unique identifier for a property sheet that is assigned automatically when the property sheet is created. Argument type: UUID
`propertyType`	(Optional) Type of property: <`string|sheet`> This indicates whether to create a string property or a sub-sheet. The default is `string`. Argument type: PropertyType
`repositoryName`	(Optional) The name of the repository container of the property sheet which owns the property. Use the repository for artifact management. Argument type: String
`resourceName`	(Optional) The name of the resource container of the property sheet which owns the property. You define the new property in this resource. Argument type: String
`resourcePoolName`	(Optional) The name of the resource pool (with one or more resources) container of the property sheet that owns the property. Argument type: String
`resourceTemplateName`	(Optional) The name of the resource template container of the property sheet that owns the property. Argument type: String
`scheduleName`	(Optional) The name of the schedule container of the property sheet. If you use a schedule name to define the location for the new property, you must also enter `projectName`. Argument type: String

Arguments	Descriptions
`snapshotName`	(Optional) The name of the snapshot container of the property sheet which owns the property. Argument type: String
`stageName`	(Optional) The name of the stage definition. Argument type: String
`stateDefinitionName`	(Optional) The name of the state definition container of the property sheet which owns the property.
`stateName`	(Optional) The name of the state container of the property sheet which owns the property Argument type: String
`stepName`	(Optional) The name of the step container of the property sheet which owns the property. If you use a step name to define the location for the new property, you must also enter `projectName` and `procedureName`. Argument type: String
`systemObjectName`	(Optional) The name of the special system object. In this context, only `server` is legal. Argument type: SystemObjectName
`taskName`	(Optional) The name of the task. Argument type: String
`transitionDefinitionName`	(Optional) The name of the transition definition container of the property sheet which owns the property. Argument type: String
`transitionName`	(Optional) The name of the transition container of the property sheet which owns the property. Argument type: String
`userName`	(Optional) The name of the user container of the property sheet which owns the property. Argument type: String
`value`	(Optional) For a string property (see `propertyType`), this is the value of the property. For a sheet property, this argument is invalid. Argument type: String

Arguments	Descriptions
`valueFile`	(Optional) **This option is supported only in Perl and ectool bindings - it is not a part of the XML protocol.** The contents of the *valuefile* is read and stored in the "value" field for a string property. This is an alternative argument for value and is useful if the “value” field spans multiple lines.
`workflowDefinitionName`	(Optional) The name of the workflow definition container of the property sheet which owns the property. Argument type: String
`workflowName`	(Optional) The name of the workflow container of the property sheet which owns the property. Argument type: String
`workspaceName`	(Optional) The name of the workspace container of the property sheet Argument type: String
`zoneName`	(Optional) The name of the zone container of the property sheet. Argument type: String

Positional arguments

`propertyName`

Response

An XML stream that echoes the new property, including its ID, which is assigned by the ElectricFlow server.

ec-perl

syntax: `$cmdr->createProperty(<propertyName>, {<optionals>});`

Examples

```
$cmdr->createProperty('/myJob/Runtime Env/PATH', {value => 'c:\bin'});

$cmdr->createProperty('Runtime Env/PATH', {value => 'c:\bin', …});
```

ectool

syntax: `ectool createProperty <propertyName> ...`

Examples

```
ectool createProperty "/myJob/Runtime Env/PATH" --value "c:\bin"

ectool createProperty "Runtime Env/PATH" --value "c:\bin" --jobId 4fa765dd-73f1-11e
3-b67e-b0a420524153

ectool createProperty "Saved Variables" --propertyType sheet --jobId 4fa765dd-73f1-
11e3-b67e-b0a420524153
```

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deleteProperty

Deletes a property from a property sheet.

You must specify a `propertyName` and you must specify locator arguments to find the property you want to delete.

Arguments	Descriptions
`propertyName`	The name of the property that must be unique within the property sheet. Argument type: String
`applicationName`	(Optional) The name of the application that must be unique among all projects. Argument type: String
`applicationTierName`	(Optional) The name of the application tier. Argument type: String
`artifactName`	(Optional) The name of the artifact. Argument type: String
`artifactVersionName`	(Optional) The name of the artifact version. **Note:** An artifact version name is interpreted by the server as the `artifactVersionName` attribute for the `artifactVersion` in question. This name is parsed and interpreted as `"groupId:artifactKey:version"` and the object is searched either way you specify its name. The ElectricFlow server interprets either name form correctly. Argument type: String
`componentName`	(Optional) The name of the component. Argument type: String
`configName`	(Optional) The name of the email configuration. Argument type: String

Arguments	Descriptions
`credentialName`	(Optional) Whether or not the property is recursively expandable. Name of the credential in one of these forms: • **relative** (for example, *"cred1"*)–The credential is assumed to be in the project that contains the request target object. • **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*)–Tthe credential can be from any specified project, regardless of the target object's project. Argument type: String
`environmentName`	(Optional) The name of the environment that must be unique among all projects. Argument type: String
`environmentTemplateName`	(Optional) The name of the environment template. Argument type: String
`environmentTemplateTierName`	(Optional) The name of the environment template tier. Argument type: String
`environmentTierName`	(Optional) The name of the environment tier. Argument type: String
`extendedContextSearch`	(Optional) For simple property names, whether or not to search objects in the hierarchy to find the desired property. <*Boolean flag* -`0|1|true|false`> If set, and there is an object specifier in the command, ElectricFlow first looks for the property in that object specifier, but also searches in other locations if not found, according to the following rules: 1. If the object specifier is a procedure, ElectricFlow looks for the property in the project where the procedure resides. 2. If the object specifier is a job step, ElectricFlow looks in the actual parameters of the procedure to which it belongs, and then looks at the job properties. The d efault setting is `true`. Argument type: Boolean
`flowName`	(Optional) The name of the flow. Argument type: String
`flowRuntimeName`	(Optional) Name of the flow runtime. Argument Type: String

Arguments	Descriptions
`flowRuntimeStateName`	(Optional) Name of the flow state. Argument Type: String
`flowStateName`	(Optional) The name of the flow state. Argument type: String
`flowTransitionName`	(Optional) The name of the flow transition. Argument type: String
`gatewayName`	(Optional) The name of the gateway. Argument type: String
`groupName`	(Optional) The name of a group that contains this property. Argument type: String
`jobId`	(Optional) The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID
`jobStepId`	(Optional) The unique identifier for a job step that is assigned automatically when the job step is created. Argument type: UUID
`notifierName`	(Optional) The name of the email notifier. Argument type: String
`objectId`	(Optional) This is an object identifier returned by `findObjects` and `getObjects`. Argument type: String
`path`	(Optional) Property path. Argument type: String
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`pluginName`	(Optional) The name of a plugin that may contain a property you want to delete. Argument type: String

Arguments	Descriptions
`procedureName`	(Optional) The name of the procedure containing the property you want to delete. **Also requires** `projectName` Argument type: String
`processName`	(Optional) The name of the process when he container is a process or process step. Argument type: String
`processStepName`	(Optional) The name of the process step when the container is a process step. Argument type: String
`projectName`	(Optional) The name of the project that contains the property you want to delete. Argument type: String
`propertySheetId`	(Optional) The unique identifier for a property sheet, assigned automatically when the property sheet is created. Argument type: UUID
`repositoryName`	(Optional) The name of the repository for artifact management. Argument type: String
`resourceName`	(Optional) The name of the resource that contains the property you want to delete. Argument type: String
`resourcePoolName`	(Optional) The name of a pool containing one or more resources. Argument type: String
`resourceTemplateName`	(Optional) The name of the resource template. Argument type: String
`scheduleName`	(Optional) The name of the schedule containing the property you want to delete. **Also requires** `projectName`. Argument type: String
`snapshotName`	(Optional) The name of the snapshot. Argument type: String

Arguments	Descriptions
`stageName`	(Optional) The name of the stage definition. Argument type: String
`stateDefinitionName`	(Optional) The name of the state definition. Argument type: String
`stateName`	(Optional) The name of the state. Argument type: String
`stepName`	(Optional) The name of the step containing the property you want to delete. **Also requires** `projectName` and `procedureName`. Argument type: String
`systemObjectName`	(Optional) The name of a special system object. Only "server" is valid in this context. Argument type: SystemObjectName
`taskName`	(Optional) The name of the task. Argument type: String
`transitionDefinitionName`	(Optional) The name of the transition definition. Argument type: String
`transitionName`	(Optional) The name of the transition. Argument type: String
`userName`	(Optional) The user name that contains this property. Argument type: String
`workflowDefinitionName`	(Optional) The name of the workflow definition. Argument type: String
`workflowName`	(Optional) The name of the workflow. Argument type: String
`zoneName`	(Optional) The name of the zone. Argument type: String

Positional arguments

`propertyName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteProperty(<propertyName>, { ... });`

Example

```
$cmdr->deleteProperty("/projects/Sample project/Changeset ID");
```

ectool

syntax: `ectool deleteProperty <propertyName> ...`

Example

```
ectool deleteProperty "/projects/Sample project/Changeset ID"
```

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expandString

Expands property references in a string, in the current context.

You must specify a `value` and a context in which to perform the expansion or a `valueFile` option.

Arguments	Descriptions
`value`	The string value to expand in the given context. Argument type: String
`applicationName`	(Optional) The name of the application that must be unique among all projects. Argument type: String
`applicationTierName`	(Optional) The name of the application tier. Argument type: String
`artifactName`	(Optional) The name of the artifact. Argument type: String
`artifactVersionName`	(Optional) The name of the artifact version. **Note:** An artifact version name is interpreted by the server as the `artifactVersionName` attribute for the `artifactVersion` in question. This name is parsed and interpreted as `"groupId:artifactKey:version"` and the object is searched either way you specify its name. The ElectricFlow server interprets either name form correctly. Argument type: String

Arguments	Descriptions
`componentName`	(Optional) The name of the component. Argument type: String
`configName`	(Optional) The name of the email configuration. Argument type: String
`credentialName`	(Optional) The name of the credential container of the property sheet which owns the property. Name of the credential in one of these forms: • **relative** (for example, *"cred1"*)–The credential is assumed to be in the project that contains the request target object. • **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*)–Tthe credential can be from any specified project, regardless of the target object's project. Argument type: String
`environmentName`	(Optional) The name of the environment that must be unique among all projects. Argument type: String
`environmentTemplateName`	(Optional) Name of the environment template. Argument type: String
`environmentTemplateTierName`	(Optional) Name of the environment template tier. Argument type: String
`environmentTierName`	(Optional) The name of the environment tier. Argument type: String
`flowName`	(Optional) The name of the flow. Argument type: String
`flowRuntimeName`	(Optional) Name of the flow runtime. Argument Type: String
`flowRuntimeStateName`	(Optional) Name of the flow state. Argument Type: String
`flowStateName`	(Optional) The name of the flow state. Argument type: String

Arguments	Descriptions
`flowTransitionName`	(Optional) The name of the flow transition. Argument type: String
`gatewayName`	(Optional) The name of the gateway. Argument type: String
`groupName`	(Optional) The name of a group where you might expand a string. Argument type: String
`jobId`	(Optional) The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID
`jobStepId`	(Optional) The unique identifier for a job step that is assigned automatically when the job step is created. Argument type: UUID
`notifierName`	(Optional) The name of the email notifier. Argument type: String
`objectId`	(Optional) This is an object identifier returned by `findObjects` and `getObjects`. Argument type: String
`path`	(Optional) Property path string. Argument type: String
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`pluginName`	(Optional) The name of a plugin where you might expand a string. Argument type: String
`procedureName`	(Optional) The name of a procedure where you might need to expand a string. **Also requires** `projectName`. Argument type: String
`processName`	(Optional) The name of the process when the container is a process or process step. Argument type: String

Arguments	Descriptions
`processStepName`	(Optional) The name of the process step when the container is a process step. Argument type: String
`projectName`	(Optional) The name of the project that contains the string to expand. Argument type: String
`propertySheetId`	(Optional) The unique identifier for a property sheet that assigned automatically when the property sheet is created. Argument type: UUID
`repositoryName`	(Optional) The name of the repository for artifact management. Argument type: String
`resourceName`	(Optional) The name of a resource where you might expand a string. Argument type: String
`resourcePoolName`	(Optional) The name of a pool containing one or more resource Argument type: String
`resourceTemplateName`	(Optional) Name of the resource template. Argument type: String
`scheduleName`	(Optional) The name of a schedule within this project. **Also requires** `projectName`. Argument type: String
`snapshotName`	(Optional) The name of the snapshot. Argument type: String
`stageName`	(Optional) The name of the stage definition. Argument type: String
`stateDefinitionName`	(Optional) The name of the state definition. Argument type: String
`stateName`	(Optional) The name of the state. Argument type: String

Arguments	Descriptions
`stepName`	(Optional) The name of the step whose string you might be expanding. **Also requires** `projectName` and `procedureName`. Argument type: String
`systemObjectName`	(Optional) System object names include: `admin|directory|log|priority|projects|resources|server|session|workspaces`. Argument type: SystemObjectName
`taskName`	(Optional) The name of the task. Argument type: String
`transitionDefinitionName`	(Optional) The name of the transition definition. Argument type: String
`transitionName`	(Optional) The name of the transition. Argument type: String
`userName`	(Optional) The name of the user where you may need to expand the string. Argument type: String
`valueFile`	(Optional) **This option is supported only in Perl and ectool bindings - it is not part of the XML protocol.** Contents of the *valuefile* is read and stored in the "value" field. This is an alternative argument for `value` and is useful if the value field spans multiple lines.
`workflowDefinitionName`	(Optional) The name of the workflow definition. Argument type: String
`workflowName`	(Optional) The name of the workflow. Argument type: String
`workspaceName`	(Optional) The name of a workspace where you may need to expand the string. Argument type: String
`zoneName`	(Optional) The name of the zone. Argument type: String

Positional arguments

`value`

Response

The expanded string value.

ec-perl

syntax: `$cmdr->expandString(<value>, {<optionals>});`

Examples

```
$cmdr->expandString('$[fullUserName]', {userName => "admin"})->findvalue('//value')
->value();

$cmdr->expandString('$[/myWorkspace/agentUncPath]/$[logFileName]',
   {jobStepId => 5da765dd-73f1-11e3-b67e-b0a420524153})->findvalue('//value')->valu
e();
```

ectool

syntax: `ectool expandString <value> ...`

Examples

```
ectool expandString '$[fullUserName]' --userName admin

ectool expandString '$[/myWorkspace/agentUncPath]/$[logFileName]'
   --jobStepId 5da765dd-73f1-11e3-b67e-b0a420524153
```

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getProperties

Retrieves all properties associated with an object, along with the property sheet identifier for the object's property sheet.

You must specify object locators for the properties you want to retrieve.

Arguments	Descriptions
`applicationName`	(Optional) The name of the application that must be unique among all projects. Argument type: String
`applicationTierName`	(Optional) The name of the application tier. Argument type: String
`artifactName`	(Optional) The name of the artifact. Argument type: String

Arguments	Descriptions
`artifactVersionName`	(Optional) The name of the artifact version. **Note:** An artifact version name is interpreted by the server as the `artifactVersionName` attribute for the `artifactVersion` in question. This name is parsed and interpreted as `"groupId:artifactKey:version"` and the object is searched either way you specify its name. The ElectricFlow server interprets either name form correctly. Argument type: String
`componentName`	(Optional) The name of the component. Argument type: String
`configName`	(Optional) The name of the email configuration. Argument type: String
`credentialName`	(Optional) The name of the credential containing the properties to retrieve. Name of the credential in one of these forms: • **relative** (for example, *"cred1"*)–The credential is assumed to be in the project that contains the request target object. • **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*)–The credential can be from any specified project, regardless of the target object's project. Argument type: String
`environmentName`	(Optional) The name of the environment that must be unique among all projects. Argument type: String
`environmentTemplateName`	(Optional) Name of the environment template. Argument type: String
`environmentTemplateTierName`	(Optional) Name of the environment template tier. Argument type: String
`environmentTierName`	(Optional) The name of the environment tier. Argument type: String

Arguments	Descriptions
`expand`	(Optional) <*Boolean flag -* `0|1|true|false`> The default value is `1` (`true`), and the value of each property will be expanded. A value of `0` (`false`) will cause the unexpanded value of each property to be returned. Argument type: Boolean
`flowName`	(Optional) The name of the flow. Argument type: String
`flowRuntimeName`	(Optional) Name of the flow runtime. Argument Type: String
`flowRuntimeStateName`	(Optional) Name of the flow state. Argument Type: String
`flowStateName`	(Optional) The name of the flow state. Argument type: String
`flowTransitionName`	(Optional) The name of the flow transition. Argument type: String
`gatewayName`	(Optional) The name of the gateway. Argument type: String
`groupName`	(Optional) The name of the group containing the properties to retrieve. Argument type: String
`jobId`	(Optional) The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID
`jobStepId`	(Optional) The unique identifier for a job step that is assigned automatically when the job step is created. Argument type: UUID
`notifierName`	(Optional) The name of the email notifier. Argument type: String

Arguments	Descriptions
`objectId`	(Optional) This is an object identifier returned by `findObjects` and `getObjects`. Argument type: String
`path`	(Optional) The path to the property sheet containing the properties to retrieve. If the full path to the property sheet is specified, no additional object locators are needed. Argument type: String
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`pluginName`	(Optional) The name of the plugin containing the properties to retrieve. Argument type: String
`procedureName`	The name of the procedure containing the properties to retrieve. **Also requires** `projectName`. Argument type: String
`processName`	(Optional) The name of the process when the container is a process or process step. Argument type: String
`processStepName`	(Optional) The name of the process step when the container is a process step. Argument type: String
`projectName`	(Optional) The name of the project containing the properties to retrieve. Argument type: String
`propertySheetId`	(Optional) The unique identifier for a property sheet that is assigned automatically when the property sheet is created. Argument type: UUID
`recurse`	(Optional) <*Boolean flag -* `0|1|true|false`> The default value is `0` (`false`), and properties of nested sheets will not be included in the response. If you want the properties from all nested sheets to be retrieved, use the value of `1` for `true`. Argument type: Boolean

Arguments	Descriptions
`repositoryName`	(Optional) The name of the repository for artifact management. Argument type: String
`resourceName`	(Optional) The name of the resource containing the properties to retrieve. Argument type: String
`resourcePoolName`	(Optional) The name of a pool containing one or more resources. Argument type: String
`resourceTemplateName`	(Optional) Name of the resource template. Argument type: String
`scheduleName`	(Optional) The name of the schedule containing the properties to retrieve. **Also requires** `projectName`. Argument type: String
`snapshotName`	(Optional) The name of the snapshot. Argument type: String
`stageName`	(Optional) The name of the stage definition. Argument type: String
`stateDefinitionName`	(Optional) The name of the state definition. Argument type: String
`stateName`	(Optional) The name of the state. Argument type: String
`stepName`	(Optional) The name of the step containing the properties to retrieve. **Also requires** `projectName` and `procedureName`. Argument type: String
`systemObjectName`	(Optional) The name of the system object containing the properties to retrieve. Only "server" is supported. Argument type: SystemObjectName
`taskName`	(Optional) The name of the task. Argument type: String

Arguments	Descriptions
`transitionDefinitionName`	(Optional) The name of the transition definition. Argument type: String
`transitionName`	(Optional) The name of the transition. Argument type: String
`userName`	(Optional) The name of the user containing the properties to retrieve. Argument type: String
`workflowDefinitionName`	(Optional) The name of the workflow definition.
`workflowName`	(Optional) The name of the workflow. **Also requires** `projectName`. Argument type: String
`workspaceName`	(Optional) The name of the workspace containing the properties to retrieve. Argument type: String
`zoneName`	(Optional) The name of the zone. Argument type: String

Positional arguments

Arguments to locate the property, beginning with the top-level object.

Response

A `propertySheet` element, which contains zero or more `property` elements and nested `propertySheet` elements.

ec-perl

syntax: `$cmdr->getProperties({<optionals>});`

Examples

```
$cmdr->getProperties({resourceName => "r2"});
```

ectool

syntax: `ectool getProperties ...`

Examples

```
ectool getProperties --resourceName "r2"
```

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getProperty

Retrieves the specified property value.

You must specify a `propertyName`.

Note: This specification can be the full path to the property or it can be relative to an object, which then requires appropriate object locators.

Arguments	Descriptions
`propertyName`	The name or path for the property to retrieve. Argument type: String
`applicationName`	(Optional) The name of the application that must be unique among all projects. Argument type: String
`applicationTierName`	(Optional) The name of the application tier. Argument type: String
`artifactName`	(Optional) The name of the artifact. Argument type: String
`artifactVersionName`	(Optional) The name of the artifact version. **Note:** An artifact version name is interpreted by the server as the `artifactVersionName` attribute for the `artifactVersion` in question. This name is parsed and interpreted as `"groupId:artifactKey:version"` and the object is searched either way you specify its name. The ElectricFlow server interprets either name form correctly. Argument type: String
`componentName`	(Optional) The name of the component. Argument type: String
`configName`	(Optional) The name of the email configuration. Argument type: String

Arguments	Descriptions
`credentialName`	(Optional) The name of the credential containing the property to retrieve. Name of the credential in one of these forms: • **relative** (for example, *"cred1"*)–The credential is assumed to be in the project that contains the request target object. • **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*)–The credential can be from any specified project, regardless of the target object's project. Argument type: String
`environmentName`	(Optional) The name of the environment container that must be unique among all projects. Argument type: String
`environmentTemplateName`	(Optional) Name of the environment template. Argument type: String
`environmentTemplateTierName`	(Optional) Name of the environment template tier. Argument type: String
`environmentTierName`	(Optional) The name of the environment tier. Argument type: String
`expand`	(Optional) <*Boolean flag -* `0|1|true|false`> The default value is `1` (`true`), and the value of each property will be expanded. A value of `0` (`false`) will cause the unexpanded value of each property to be returned. Argument type: Boolean

Arguments	Descriptions
`extendedContextSearch`	(Optional) For simple property names, whether or not to search objects in the hierarchy to find the desired property. <*Boolean flag* - `0|1|true|false`> If set, and there is an object locator in the command, ElectricFlow first looks for the property in that object locator, but also searches in other locations if not found, according to the following rules: • If the object locator is a procedure, ElectricFlow looks for the property in the project where the procedure resides. • If the object locator is a job step, ElectricFlow looks in the actual parameters of the procedure to which it belongs, and then looks at the job properties. Default setting is `true`. Argument type: Boolean
`flowName`	(Optional) The name of the flow. Argument type: String
`flowRuntimeName`	(Optional) Name of the flow runtime. Argument Type: String
`flowRuntimeStateName`	(Optional) Name of the flow state. Argument Type: String
`flowStateName`	(Optional) The name of the flow state. Argument type: String
`flowTransitionName`	(Optional) The name of the flow transition. Argument type: String
`gatewayName`	(Optional) The name of the gateway. Argument type: String
`groupName`	(Optional) The name of the group containing the property to retrieve. Argument type: String
`jobId`	(Optional) The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID

Arguments	Descriptions
`jobStepId`	(Optional) The unique identifier for a job step that is assigned automatically when the job step is created. Argument type: String
`notifierName`	(Optional) The name of the email notifier. Argument type: String
`objectId`	(Optional) This is an object identifier returned by `findObjects` and `getObjects`. Argument type: String
`path`	(Optional) The path to the property sheet containing the properties to retrieve. If the full path to the property sheet is specified, no additional object locators are needed. Argument type: String
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`pluginName`	(Optional) The name of the plugin containing the property to retrieve. Argument type: String
`procedureName`	(Optional) The name of the procedure containing the property to retrieve. **Also requires** `projectName`. Argument type: String
`processName`	(Optional) The name of the process when the container is a process or process step. Argument type: String
`processStepName`	(Optional) The name of the process step when the container is a process step. Argument type: String
`projectName`	(Optional) The name of the project containing the property to retrieve. Argument type: String
`propertySheetId`	(Optional) The unique identifier for a property sheet that is assigned automatically when the property sheet is created. Argument type: UUID

Arguments	Descriptions
`repositoryName`	(Optional) The name of the repository for artifact management. Argument type: String
`resourceName`	(Optional) The name of the resource containing the property to retrieve. Argument type: String
`resourcePoolName`	(Optional) The name of a pool containing one or more resources. Argument type: String
`resourceTemplateName`	(Optional) Name of the resource template. Argument type: String
`scheduleName`	(Optional) The name of the schedule containing the property to retrieve. **Also requires** `projectName`. Argument type: String
`snapshotName`	(Optional) The name of the snapshot. Argument type: String
`stageName`	(Optional) The name of the stage definition. Argument type: String
`stateDefinitionName`	(Optional) The name of the state definition.
`stateName`	(Optional) The name of the state.
`stepName`	(Optional) The name of the step containing the property to retrieve. **Also requires** `projectName` and `procedureName`
`systemObjectName`	(Optional) The name of the system object containing the property to retrieve. Only "server" is supported. Argument type: SystemObjectName
`taskName`	(Optional) The name of the task. Argument type: String
`transitionDefinitionName`	(Optional) The name of the transition definition. Argument type: String
`transitionName`	(Optional) The name of the transition. Argument type: String

Arguments	Descriptions
`userName`	(Optional) The name of the user containing the property to retrieve. Argument type: String
`workflowDefinitionName`	(Optional) The name of the workflow definition. Argument type: String
`workflowName`	(Optional) The name of the workflow. Argument type: String
`workspaceName`	(Optional) The name of the workspace containing the property to retrieve. Argument type: String
`zoneName`	(Optional) The name of the zone. Argument type: String

Positional arguments

`propertyName`

Response

A property sheet or a text string containing the value of the property.
Property value example: `35491`

ec-perl

syntax: `$cmdr->getProperty(<propertyName>, {<optionals>});`

Examples

```
use XML::XPath;
$cmdr->getProperty("/myProject/changeset ID")->findvalue('//value')->value();

$cmdr->getProperty("Changeset ID", {projectName => "Sample Project"})->findvalue('/
/value')->value();
```

ectool

syntax: `ectool getProperty <propertyName> ...`

Examples

```
ectool getProperty "/myProject/changeset ID"

ectool getProperty "Changeset ID" --projectName "Sample Project"

# Retrieve the /users/<userName>/providerName property.

ectool getProperty --objectID <ID> --propertyName "/users/<userName>/providerName"
```

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incrementProperty

Automatically increments the specified property value by the `incrementBy` amount. If the property does not exist, it will be created with an initial value of the `incrementBy` amount.

You must specify a `propertyName` and `incrementBy`.

Arguments	Descriptions
`propertyName`	Name for the property that must be unique within the property sheet. Argument type: String
`incrementBy`	This is positive or negative integer. Argument type: Integer
`applicationName`	(Optional) The name of the application that must be unique among all projects. Argument type: String
`applicationTierName`	(Optional) The name of the application tier. Argument type: String
`artifactName`	(Optional) The name of the artifact. Argument type: String
`artifactVersionName`	(Optional) The name of the artifact version. **Note:** An artifact version name is interpreted by the server as the `artifactVersionName` attribute for the `artifactVersion` in question. This name is parsed and interpreted as `"groupId:artifactKey:version"` and the object is searched either way you specify its name. The ElectricFlow server interprets either name form correctly. Argument type: String
`componentName`	(Optional) The name of the component. Argument type: String
`configName`	(Optional) The name of the email configuration. Argument type: String

Arguments	Descriptions
`credentialName`	(Optional) Name of the credential in one of these forms: • **relative** (for example, *"cred1"*)–The credential is assumed to be in the project that contains the request target object. • **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*)–Tthe credential can be from any specified project, regardless of the target object's project. Argument type: String
`environmentName`	(Optional) The name of the environment that must be unique among all projects. Argument type: String
`environmentTemplateName`	(Optional) Name of the environment template. Argument type: String
`environmentTemplateTierName`	(Optional) Name of the environment template tier. Argument type: String
`environmentTierName`	(Optional) The name of the environment tier. Argument type: String
`extendedContextSearch`	(Optional) For simple property names, whether or not to search objects in the hierarchy to find the desired property. <*Boolean flag* - `0|1|true|false`> If set, and there is an object specified in the command, ElectricFlow first looks for the property in that object specifier, but also searches in other locations if not found, according to the following rules: • If the object specifier is a procedure, ElectricFlow looks for the property in the project where the procedure resides. • If the object specifier is a job step, ElectricFlow looks in the actual parameters of the procedure to which it belongs, and then looks at the job properties. The default setting is `true`. Argument type: Boolean
`flowName`	(Optional) The name of the flow. Argument type: String
`flowRuntimeName`	(Optional) Name of the flow runtime. Argument Type: String

Arguments	Descriptions
`flowRuntimeStateName`	(Optional) Name of the flow state. Argument Type: String
`flowStateName`	(Optional) The name of the flow state. Argument type: String
`flowTransitionName`	(Optional) The name of the flow transition. Argument type: String
`gatewayName`	(Optional) The name of the gateway. Argument type: String
`groupName`	(Optional) The name of the group containing the property to increment. Argument type: String
`jobId`	(Optional) The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID
`jobStepId`	(Optional) The unique identifier for a job step that is assigned automatically when the job step is created. Argument type: UUID
`notifierName`	(Optional) The name of the email notifier. Argument type: String
`objectId`	(Optional) This is an object identifier returned by `findObjects` and `getObjects`. Argument type: String
`path`	(Optional) Path to the property. Argument type: String
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`pluginName`	(Optional) The name of the plugin containing a property to increment.

Arguments	Descriptions
`procedureName`	(Optional) The name of the procedure containing this property. **Also requires** `projectName`. Argument type: String
`processName`	(Optional) The name of the process when the container is a process or process step. Argument type: String
`processStepName`	(Optional) The name of the process step when the container is a process step. Argument type: String
`projectName`	The name of the project containing this property. **Also requires** `procedureName`. Argument type: String
`propertySheetId`	(Optional) The unique identifier for a property sheet that is assigned automatically when the property sheet is created. Argument type: UUID
`repositoryName`	(Optional) The name of the repository for artifact management. Argument type: String
`resourceName`	(Optional) The name of the resource containing this property. Argument type: String
`resourcePoolName`	The name of a pool containing one or more resources. Argument type: String
`resourceTemplateName`	Name of the resource template. Argument type: String
`scheduleName`	(Optional) The name of the schedule containing this property. **Also requires** `projectName`. Argument type: String
`snapshotName`	(Optional) The name of the snapshot. Argument type: String
`stageName`	(Optional) The name of the stage definition. Argument type: String

Arguments	Descriptions
`stateDefinitionName`	(Optional) The name of the state definition. Argument type: String
`stateName`	(Optional) The name of the state. Argument type: String
`stepName`	(Optional) The name of the step containing this property. **Also requires** `projectName` and `procedureName`. Argument type: String
`systemObjectName`	(Optional) Only `server` is a valid system object for this API. Argument type: SystemObjectName
`taskName`	(Optional) The name of the task. Argument type: String
`transitionDefinitionName`	(Optional) The name of the transition definition. Argument type: String
`transitionName`	(Optional) The name of the transition. Argument type: String
`userName`	(Optional) The name of the user containing this property. Argument type: String
`workflowDefinitionName`	(Optional) The name of the workflow definition. Argument type: String
`workflowName`	(Optional) The name of the workflow. Argument type: String
`workspaceName`	(Optional) The name of the workspace containing this property. Argument type: String
`zoneName`	(Optional) The name of the zone. Argument type: String

Positional arguments

`propertyName, incrementBy`

Response

A text string containing the updated numeric property value.

ec-perl

syntax: `$cmdr->incrementProperty(<propertyName> <incrementBy> ...);`

Examples

```
$cmdr->incrementProperty("Build Number", 1, {procedureName => "Delay", projectName
=> "Sample Project");

$cmdr->incrementProperty("/projects/Sample Project/procedures/Delay/Build Number",
1);

$cmdr->incrementProperty("procedures/Delay/Build Number", 1,{projectName => "Sample
Project"});
```

ectool

syntax: `ectool incrementProperty <propertyName> <incrementBy> ...`

Examples

```
ectool incrementProperty "Build Number" 1 --procedureName "Delay" --projectName "Sa
mple Project"

ectool incrementProperty "/projects/Sample Project/procedures/Delay/Build Number" 1

ectool incrementProperty "procedures/Delay/Build Number" 1 --projectName "Sample Pr
oject"
```

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modifyProperty

Modifies a regular string or nested property sheet using a combination of property path and context.

You must specify a `propertyName`.

Note: The name "`properties`" is NOT a valid property name.

Arguments	Descriptions
`propertyName`	The name of the property that must be unique within the property sheet. This argument can be a path. Argument type: String
`applicationName`	(Optional) The name of the application that must be unique among all projects. Argument type: String
`applicationTierName`	(Optional) The name of the application. Argument type: String

Arguments	Descriptions
artifactName	(Optional) The name of the artifact. Argument type: String
artifactVersionName	(Optional) The name of the artifact version. **Note:** An artifact version name is interpreted by the server as the artifactVersionName attribute for the artifactVersion in question. This name is parsed and interpreted as "groupId:artifactKey:version" and the object is searched either way you specify its name--the ElectricFlow server interprets either name form correctly. Argument type: String
componentName	(Optional) The name of the component. Argument type: String
configName	(Optional) The name of the email configuration. Argument type: String
counter	(Optional) <*Boolean flag* -0|1|true|false> If set to true or 1, this property is used as a counter. Argument type: Boolean
credentialName	(Optional) credentialName can be one of two forms: **relative** (for example, *"cred1"*) - the credential is assumed to be in the project that contains the request target object. **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*) - the credential can be from any specified project, regardless of the target object's project. Argument type: String
description	(Optional) A plain text or HTML description for this object. If using HTML, you must surround your text with <html> ... </html> tags. The only HTML tags allowed in the text are: <a> <b> <dl> <font> <i> <p> <pre> <style> <table> <tc> <td> <th> <tr> Argument type: String
environmentName	(Optional) The name of the environment that must be unique among all projects. Argument type: String

Arguments	Descriptions
`environmentTemplateName`	(Optional) Name of the environment template. Argument type: String
`environmentTemplateTierName`	(Optional) Name of the environment template tier. Argument type: String
`environmentTierName`	(Optional) The name of the environment tier. Argument type: String
`expandable`	(Optional) <*Boolean flag* -`0|1|true|false`>–Determines whether the property will undergo property expansion when it is retrieved. The default is `true`. Argument type: Boolean
`extendedContextSearch`	(Optional) For simple property names, whether or not to search objects in the hierarchy to find the desired property. <*Boolean flag* - `0|1|true|false`>– If set, and there is an object specified in the command, ElectricFlow first looks for the property in that object specifier, but also searches in other locations if not found, according to the following rules: 1. If the object specifier is a procedure, ElectricFlow looks for the property in the project where the procedure resides. 2. If the object specifier is a job step, ElectricFlow looks in the actual parameters of the procedure to which it belongs, and then looks at the job properties. The default setting is `true`. Argument type: Boolean
`flowName`	(Optional) The name of the flow. Argument type: String
`flowRuntimeName`	(Optional) Name of the flow runtime. Argument Type: String
`flowRuntimeStateName`	(Optional) Name of the flow state. Argument Type: String
`flowStateName`	(Optional) The name of the flow state. Argument type: String
`flowTransitionName`	(Optional) The name of the flow transition. Argument type: String

Arguments	Descriptions
`gatewayName`	(Optional) The name of the gateway. Argument type: String
`groupName`	(Optional) The name of the group. Argument type: String
`jobId`	(Optional) The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID
`jobStepId`	(Optional) The unique identifier for a job step, which is assigned automatically when the job step is created. Argument type: UUID
`newName`	(Optional) New name of the property. Argument type: String
`notifierName`	(Optional) Name of the email notifier. Argument type: String
`objectId`	(Optional) An object identifier returned by `findObjects` and `getObjects`. Argument type: String
`path`	(Optional) Path to the property. Argument type: String
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`pluginName`	(Optional) Name of the plugin. Argument type: String
`procedureName`	(Optional) Name of the procedure. **Also requires** `projectName`. Argument type: String
`projectName`	(Optional) Name of the project. The property may be on the project itself or on the object, which is indicated by other arguments. Argument type: String

Arguments	Descriptions
`processName`	(Optional) Name of the process when the container is a process or process step. Argument type: String
`processStepName`	(Optional) Name of the process step when the container is a process step. Argument type: String
`propertySheetId`	(Optional) The unique identifier for a property sheet, which is assigned automatically when the property sheet is created. Argument type: UUID
`propertyType`	(Optional) `<string|sheet>`– Indicates whether to create a string property or a sub-sheet. The default is `string`. Argument type: PropertyType
`repositoryName`	(Optional) Name of the repository for artifact management. Argument type: String
`resourceName`	(Optional) Name of the resource. Argument type: String
`resourcePoolName`	(Optional) Name of a pool containing one or more resources. Argument type: String
`resourceTemplateName`	(Optional) Name of the resource template. Argument type: String
`scheduleName`	(Optional) Name of the schedule. **Also requires** `projectName`. Argument type: String
`snapshotName`	(Optional) The name of the snapshot. Argument type: String
`stageName`	(Optional) The name of the stage definition. Argument type: String
`stateDefinitionName`	(Optional) Name of the state definition. Argument type: String
`stateName`	(Optional) Name of the state. Argument type: String

Arguments	Descriptions
`stepName`	Name of the step containing the property to be modified. **Also requires** `projectName` and `procedureName`. Argument type: String
`systemObjectName`	System objects include: `admin|artifactVersions|directory|emailConfigs|log|plugins|server|session|workspaces`. Argument type: SystemObjectName
`taskName`	(Optional) The name of the task. Argument type: String
`transitionDefinitionName`	(Optional) The name of the transition definition. Argument type: String
`transitionName`	(Optional) The name of the transition. Argument type: String
`userName`	(Optional) The name of the user.(Optional) Argument type: String
`value`	(Optional) Value of the property. Argument type: String
`valueFile`	(Optional) **This option is supported only in Perl and ectool bindings - it is not part of the XML protocol.** The contents of the *valuefile* is read and stored in the "value" field. This is an alternative argument for `value` and is useful if the "value" field spans multiple lines.
`workflowDefinitionName`	(Optional) The name of the workflow definition. Argument type: String
`workflowName`	(Optional) The name of the workflow. Argument type: String
`workspaceName`	(Optional) The name of the workspace. Argument type: String
`zoneName`	(Optional) The name of the zone. Argument type: String

Positional arguments

`propertyName`

Response

An XML stream that echoes the modified property.

ec-perl

syntax: `$cmdr->modifyProperty(<propertyName>, {...});`

Example

```
$cmdr->modifyProperty("Saved Variables", {description =>
     "Starting configuration of name/value pairs", jobId => 4fa765dd-73f1-11e3-b67
e-b0a420524153});
```

ectool

syntax: `ectool modifyProperty <propertyName> ...`

Example

```
ectool modifyProperty "Saved Variables" --description "Starting configuration
    of name/value pairs" --jobId 4fa765dd-73f1-11e3-b67e-b0a420524153
```

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setProperty

Sets the value for the specified property.

You must specify the `propertyName` and `value` arguments. The property name can be the full path to the property or it can be relative to an object, which then means you must use object locators to specify the property.

Arguments	Descriptions
`propertyName`	The name or path of the property that must be unique within the property sheet. This argument can be a path. Argument type: String
`value`	The value of the property. Argument type: String
`valueFile`	**This option is supported only in Perl and ectool bindings - it is not part of the XML protocol.** Contents of the *valuefile* is read and stored in the "value" field. This is an alternative argument for `value` and is useful if the value field spans multiple lines.
`applicationName`	(Optional) The name of the application that must be unique among all projects. Argument type: String

Arguments	Descriptions
`applicationTierName`	(Optional) The name of the application tier. Argument type: String
`artifactName`	(Optional) The name of the artifact. Argument type: String
`artifactVersionName`	(Optional) The name of the artifact version. **Note:** An artifact version name is interpreted by the server as the `artifactVersionName` attribute for the `artifactVersion` in question. This name is parsed and interpreted as `"groupId:artifactKey:version"` and the object is searched either way you specify its name. The ElectricFlow server interprets either name form correctly. Argument type: String
`componentName`	(Optional) The name of the component. Argument type: String
`configName`	(Optional) The name of the email configuration. Argument type: String
`credentialName`	(Optional) The name of the credential containing the property you want to set. Name of the credential in one of these forms: • **relative** (for example, *"cred1"*)–The credential is assumed to be in the project that contains the request target object. • **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*)–Tthe credential can be from any specified project, regardless of the target object's project. **Also requires** `projectName`. Argument type: String
`description`	(Optional) A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument type: String

Arguments	Descriptions
`environmentName`	(Optional) The name of the environment that must be unique among all projects. Argument type: String
`environmentTemplateName`	(Optional) Name of the environment template. Argument type: String
`environmentTemplateTierName`	(Optional) Name of the environment template tier. Argument type: String
`environmentTierName`	(Optional) The name of the environment tier. Argument type: String
`expandable`	(Optional) <*Boolean flag -* `0|1|true|false`> The default is `1` (`true`),and the property value will be expanded when referenced. If you do not want the property to expand, use the value of `0` (`false`). Argument type: Boolean
`extendedContextSearch`	(Optional) <*Boolean flag -* `0|1|true|false`> If set, and there is an object specified in the command, ElectricFlow first looks for the property in the object specified, but also searches in other locations if not found, according to the following rules: If the object specified is a procedure, ElectricFlow looks for the property in the project where the procedure resides. If the object specified is a job step, ElectricFlow looks in the actual parameters of the procedure to which it belongs, and then looks at the job properties. The default setting is `false`. Argument type: Boolean
`flowName`	(Optional) The name of the flow. Argument type: String
`flowRuntimeName`	(Optional) Name of the flow runtime. Argument Type: String
`flowRuntimeStateName`	(Optional) Name of the flow state. Argument Type: String

Arguments	Descriptions
`flowStateName`	(Optional) The name of the flow state. Argument type: String
`flowTransitionName`	(Optional) The name of the flow transition. Argument type: String
`gatewayName`	(Optional)The name of the gateway containing the property that you want to set. Argument type: String
`groupName`	(Optional) The name of the group containing the property you want to set. Argument type: String
`jobId`	(Optional) The name of the job containing the property you want to set. The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID
`jobStepId`	(Optional)The name of the job step containing the property that you want to set. The unique identifier for a job step, assigned automatically when the job step is created. Argument type: UUID
`objectId`	(Optional) This is an object identifier returned by `findObjects` and `getObjects`. Argument type: String
`notifierName`	(Optional) The name of the email notifier. Argument type: String
`path`	(Optional) The path to the property. Argument type: String
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`pluginName`	(Optional) The name of the plugin containing the property you want to set. Argument type: String

Arguments	Descriptions
`procedureName`	The name of the procedure containing the property that you want to set. **Also requires** `projectName`.(Optional) Argument type: String
`processName`	(Optional) The name of the process when the container is a process or process step. Argument type: String
`processStepName`	(Optional) The name of the process step when the container is a process step. Argument type: String
`projectName`	(Optional) The name of the project containing the property that you want to set. Argument type: String
`propertySheetId`	(Optional) The unique identifier for a property sheet that is assigned automatically when the property sheet is created. Argument type: String
`repositoryName`	(Optional) The name of the repository for artifact management. Argument type: String
`resourceName`	(Optional) The name of the resource containing the property that you want to set. Argument type: String
`resourcePoolName`	(Optional) The name of a pool containing one or more resources. Argument type: String
`resourceTemplateName`	(Optional) Name of the resource template. Argument type: String
`scheduleName`	(Optional) The name of the schedule containing the property you want to set. **Also requires** `projectName`. Argument type: String
`snapshotName`	(Optional) The name of the snapshot. Argument type: String

Arguments	Descriptions
`stageName`	(Optional) The name of the stage definition. Argument type: String
`stateDefinitionName`	(Optional) The name of the state definition. Argument type: String
`stateName`	(Optional) The name of the state. Argument type: String
`stepName`	(Optional) The name of the step containing the property you want to set. **Also requires** `projectName` and `procedureName`. Argument type: String
`systemObjectName`	(Optional) The name of the system object containing the property you want to set. System objects include: `admin|artifactVersions|directory|emailConfigs|log|plugins|server|session|workspaces` Argument type: SystemObjectName
`taskName`	(Optional) The name of the task. Argument type: String
`transitionDefinitionName`	(Optional) The name of the transition definition. Argument type: String
`transitionName`	(Optional) The name of the transition. Argument type: String
`userName`	(Optional) The name of the user containing the property you want to set. Argument type: String
`workflowDefinitionName`	(Optional) The name of the workflow definition. Argument type: String
`workflowName`	(Optional) The name of the workflow. Argument type: String
`workspaceName`	(Optional) The name of the workspace containing the property that you want to set. Argument type: String

Arguments	Descriptions
zoneName	(Optional) The name of the zone. Argument type: String

Positional arguments

propertyName

Response

An XML stream that echoes the property.

ec-perl

syntax: `$cmdr->setProperty(<propertyName>, {<optionals>});`

Examples

```
$cmdr->setProperty("Changeset ID", {value => "14992", projectName => "Sample Projec
t"});

$cmdr->setProperty("/myResource/Application Path", "c:\Program Files\Application");

$cmdr->setProperty("Application Path", "c:\Program Files\Application",
   {resourceName => "r2"});
```

ectool

syntax: `ectool setProperty <propertyName> ...`

Examples

```
ectool setProperty "Changeset ID" --value "14992" --projectName "Sample Project"

ectool setProperty "/myResource/Application Path" "c:\Program Files\Application"

ectool setProperty "Application Path" "c:\Program Files\Application"
   --resourceName "r2"
```

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API Commands - Resource Management

addResourcesToPool

Adds resources to a specific resource pool. A resource pool is a named group of resources.

You must specify a `resourcePoolName` and one or more resource names.

Arguments	Descriptions
`resourcePoolName`	Name for the resource pool that must be unique among all resource pools. The resource pool has one or more resources. Argument Type: String
`resourceNames`	List of resources to add to the resource pool. Argument Type: Collection

Positional arguments

`resourcePoolName, resourceNames`

Response

None or status OK message.

ec-perl

syntax:`$cmdr->addResourcesToPool(<resourcePoolName>, {resourceName => [...]});`

Example

```
$cmdr->addResourcesToPool("pool1", { resourceName => ["resource1", "resource2", "re
source3"]});
```

ectool

syntax:`ectool addResourcesToPool <resourcePoolName> --resourceNames <resourceName1> ...`

Example

```
ectool addResourcesToPool "Test Pool" --resourceNames Test1 Test2 Test3
```

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addResourceToEnvironmentTier

Adds a resource to the specified environment tier.

You must specify the `resourceName`, `projectName`, `environmentName`. and `environmentTierName`arguments.

Arguments	Descriptions
`resourceName`	Name for the resource that must be unique among all resources. Argument Type: String
`projectName`	Name for the project that must be unique among all projects. Argument Type: String
`environmentName`	Name of the environment that must be unique among all projects. Argument Type: String
`environmentTierName`	Name for the environment tier that must be unique among all tiers for the environment. Argument Type: String

Positional arguments

`resourceName, projectName, environmentName, environmentTierName`

Response

None or a status OK message.

ec-perl

Syntax:

```
$<object>->addResourceToEnvironmentTier(<resourceName>, <projectName>,
 <environmentName>, <environmentTierName>);
```

Example:

```
$ec->addResourceToEnvironmentTier("Resource1", "default", "newEnv", "envTier1");
```

ectool

Syntax:

```
addResourceToEnvironmentTier <resourceName> <projectName> <environmentName> <environmentTierName>
```

Example:

```
ectool addResourceToEnvironmentTier Resource1 default newEnv envTier1
```

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createResource

Creates a new resource.

IMPORTANT: For a proxy resource, the `proxyHostName` and `proxyPort` arguments refer to the proxying ElectricFlow agent. The `hostName` and `port` arguments refer to the proxy target.

You must specify a `resourceName`.

Arguments	Descriptions
`resourceName`	Name of the new resource that must be unique among all resources. Argument Type: String
`artifactCacheDirectory`	(Optional) Directory on the agent host where retrieved artifacts are stored. Argument Type: String
`block`	(Optional) <*Boolean flag* - `0|1|true|false`> A newly created resource will be pinged. This argument makes the `createResource` call block until the result of the ping is known. The default is *false*. Argument Type: Boolean
`description`	(Optional) A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument Type: String

Arguments	Descriptions
`hostName`	(Optional) If it is an ordinary resource, the name or IP address of the machine containing the ElectricFlow agent for this resource . If this is a proxy resource, the name or IP address of the proxy target. Argument Type: String
`hostType`	(Optional) Type of the host. Argument Type: String
`pools`	(Optional) A space-separated list of one or more pool names where this resource is a member. Steps defined to run on a resource pool will run on any available member (resource) in the pool. Argument Type: String **Note:** This argument is deprecated and is replaced by the `resourcePools` argument.
`port`	(Optional) The ElectricFlow agent port number for an ordinary resource. If a port number is not specified, the default agent port is used. The default agent port can be configured on the "Server Settings" page in the automation platform UI. For a proxy resource, this is the port number for the service running on the proxy target that will run commands on behalf of the ElectricFlow agent. For `ssh`, the default is 22. Argument Type: Integer
`proxyCustomization`	(Optional) Customized Perl code specifying how the proxy resource communicates with the proxy target. This argument is applicable only for proxy resources. Argument Type: String
`proxyHostName`	(Optional) The name or IP address of the computer containing the ElectricFlow Agent used for a proxy resource. Argument Type: String
`proxyPort`	(Optional) The ElectricFlow agent port number for a proxy resource. See the `port` argument description for more details. Argument Type: Integer
`proxyProtocol`	(Optional) Protocol for communicating with the proxy target. Defaults to `ssh`. (This argument is not exposed in the ElectricFlow UI at this time.) Argument Type: String

Arguments	Descriptions
`repositoryNames`	(Optional) A list of one or more repository names. Each repository name is listed on a "new line." Argument Type: String
`resourceDisabled`	(Optional) <*Boolean flag* - `0|1|true|false`> If this is set to **1**, ElectricFlow will not start new steps on this resource. The default is *false*. Argument Type: Boolean

`resourcePools`	(Optional) A comma-separated list of one or more pool names where this resource is a member. Spaces and commas in pool names are allowed. Steps defined to run on a resource pool will run on any available member (resource) in the pool.
	
	Argument Type: String
	
	Note: This argument replaces the `pools` argument.
	
	To create one pool with a space in its name:
	
	`--resourcePools "Test Pool"`
	
	To create multiple pools with spaces in their names:
	
	`--resourcePools "Test Pool One, Test Pool Two"`
	
	To create a pool with a comma in its name:
	
	`--resourcePools "[Test Pool, One]"`

`shell`	(Optional) This sets a default shell for running step commands on this resource. The default is `"cmd /q /c"` for a Windows agent and `"sh -e"` for a UNIX agent. Argument Type: String
`stepLimit`	(Optional) Limits the number of steps that can run on the resource at one time. Setting the limit to **1** enforces serial access to the resource. Argument Type: Integer

Arguments	Descriptions
`trusted`	(Optional) <*Boolean flag* - `0|1|true|false`> If this is set to *true*, the resource is *trusted*. Agents can be either *trusted* or *untrusted*: • **trusted**–The ElectricFlow server verifies the agent's identity using SSL certificate verification. • **untrusted**–The ElectricFlow server does not verify agent identity. An untrusted agent could be a security risk. Argument Type: Boolean
`useSSL`	(Optional) <*Boolean flag* - `0|1|true|false`> Use this flag to define whether SSL is used for server-agent communication, or if you need to use SSL to communicate with your Active Directory servers. The default is *true*. **Note:** Transport Layer Security (TLS) has replaced Secure Sockets Layer version 3.0 (SSLv3) on the ElectricFlow web server and the ElectricFlow server. Argument Type: Boolean
`workspaceName`	(Optional) Name of the workspace that the resource uses. Argument Type: String
`zoneName`	(Optional) The name of the zone where this resource resides. Argument Type: String

Positional arguments

`resourceName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->createResource(<resourceName>, {<optionals>});`

Example

```
$cmdr->createResource("Test Resource 1", {hostName => "localhost", pools => "P1 P
2"});
```

ectool

syntax: `ectool createResource <resourceName> ...`

Example

```
ectool createResource "Test Resource 1" --hostName localhost --pools "P1 P2"
```

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createResourcePool

Creates a new pool for resources.

You must specify a `resourcePoolName`.

Arguments	Descriptions
`resourcePoolName`	Name for the resource pool that must be unique among all resource pools. Argument Type: String
`autoDelete`	<*Boolean flag* - `0|1|true|false`> - If this is set to *true*, the resource pool is deleted automatically when the last resource is removed from the pool. Argument Type: Boolean
`description`	A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument Type: String
`orderingFilter`	A Javascript block invoked when scheduling resources for a pool. **Note:** A Javascript block is not required unless you need to override the default resource ordering behavior. Argument Type: String
`resourceNames`	A list of resource names to add to the pool. This value does not need to refer to an existing resource. Any names that do not resolve to an existing resource will be skipped when assigning resources to steps. Argument Type: Collection
`resourcePoolDisabled`	<*Boolean flag* - `0|1|true|false`> - If this is set to *true*, any runnable steps that refer to the pool will block until the pool is enabled again. Argument Type: Boolean

Positional arguments

`resourcePoolName`

Response

Returns a `resourcePool` object.

ec-perl

syntax: `$cmdr->createResourcePool(<resourcePoolName>, {<optionals>});`

Example

```
$cmdr->createResourcePool ("aPool", {resourceName => ["resource1", "resource2"]});
```

ectool

syntax: `ectool createResourcePool <resourcePoolName> ...`

Example

```
ectool createResourcePool aPool --resourceNames resource1 resource2
```

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deleteResource

Deletes a resource.

You must enter a `resourceName`.

Arguments	Descriptions
`resourceName`	Name of the resource that must be unique among all resources. Argument Type: String

Positional arguments

`resourceName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteResource(<resourceName>);`

Example

```
$cmdr->deleteResource("Test Resource 1");
```

ectool

syntax: `ectool deleteResource <resourceName>`

Example

```
ectool deleteResource "Test Resource 1"
```

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deleteResourcePool

Deletes a resource pool.

You must enter a `resourcePoolName`.

Arguments	Descriptions
`resourcePoolName`	Name for the resource pool that must be unique among all resource pools. A resource pool contains one or more resources. Argument Type: String

Positional arguments

`resourcePoolName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteResourcePool(<resourcePoolName>);`

Example

```
$cmdr->deleteResourcePool("Test Resource 1");
```

ectool

syntax: `ectool deleteResourcePool <resourcePoolName>`

Example

```
ectool deleteResourcePool "Test Resource 1"
```

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getResource

Retrieves a resource by its name.

You must specify `resourceName`.

Arguments	Descriptions
`resourceName`	Name for the resource that must be unique among all resources. Argument Type: String

Positional arguments

`resourceName`

Response

One `resource` element, which includes the resource ID, name, agent state, time created, host name, owner, port, disabled flag, shell, step limit, workspace name, and so on. If using zones and gateways, `getResource` returns a list of gateways where this resource participates.

ec-perl

syntax: `$cmdr->getResource(<resourceName>);`

Example

```
$cmdr->getResource("Test Resource 1");
```

ectool

syntax: `ectool getResource <resourceName>`

Example

```
ectool getResource "Test Resource 1"
```

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getResources

Retrieves all resources.

Arguments	Descriptions
None	–

Positional arguments

None

Response

Zero or more `resource` elements.

ec-perl

syntax: `$cmdr->getResources();`

Example

```
$cmdr->getResources();
```

ectool

syntax: `ectool getResources`

Example

```
ectool getResources
```

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getResourcesInEnvironmentTier

Returns the list of resources in an environment tier.

You must specify the `projectName`, `environmentName` and `environmentTierName`arguments.

Arguments	Descriptions
`projectName`	Name for the project that must be unique among all projects. Argument Type: String
`environmentName`	Name of the environment that must be unique among all projects. Argument Type: String
`environmentTierName`	Name for the environment tier that must be unique among all tiers for the environment. Argument Type: String

Positional arguments

`environmentName, environmentTierName`

Response

Retrieves zero or more resource elements in the specified environment tier.

ec-perl

Syntax:

```
$<object>->getResourcesInEnvironmentTier(<projectName>, <environmentName>, <envi
ronmentTierName>);
```

Example:

```
$ec->getResourcesInEnvironmentTier("default", "newEnv", "envTier1");
```

ectool

Syntax:

```
getResourcesInEnvironmentTier <projectName> <environmentName> <environmentTierNa
me>
```

Example:

```
ectool getResourcesInEnvironmentTier default newEnv envTier1
```

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getResourcesInPool

Retrieves a list of resources in a pool.

You must specify a `resourcePoolName`.

Arguments	Descriptions
`resourcePoolName`	The name of a pool containing one or more resources. Argument Type: String
`jobStepId`	(Optional) The unique ElectricFlow-generated identifier (a UUID) for a job step that is assigned automatically when the job step is created. This is UUID of the job step related to this pool. Argument type: UUID

Positional arguments

`resourcePoolName`

Response

An XML stream containing zero or more `resource` elements.

ec-perl

syntax: `$cmdr->getResourcesInPool(<resourcePoolName>, {<optionals>});`

Example

```
$cmdr->getResourcesInPool("WindowsPool");
```

ectool

syntax: `ectool getResourcesInPool <pool> ...`

Example

```
ectool getResourcesInPool WindowsPool
```

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getResourcePool

Retrieves a specified resource pool by name.

You must specify a `resourcePoolName`.

Arguments	Descriptions
`resourcePoolName`	Name for the resource pool that must be unique among all resource pools. Argument Type: String

Positional arguments

`resourcePoolName`

Response

An XML stream containing one `resourcePool` element.

ec-perl

syntax: `$cmdr->getResourcePool(<resourcePoolName>);`

Example

```
$cmdr->getResourcePool("WindowsPool");
```

ectool

syntax: `ectool getResourcePool <resourcePoolName>`

Example

```
ectool getResourcePool WindowsPool
```

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getResourcePools

Retrieves a list of resource pools.

Arguments	Descriptions
None	–

Positional arguments

None

Response

An XML stream containing zero or more `resourcePool`elements.

ec-perl

syntax: `$cmdr->getResourcePools;`

Example

```
$cmdr->getResourcePools;
```

ectool

syntax: `ectool getResourcePools`

Example

```
ectool getResourcePools
```

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getResourceUsage

Retrieves resource usage information.

Arguments	Descriptions
`None`	–

Positional arguments

None

Response

An XML stream containing zero or more `resourceUsage` elements.

ec-perl

syntax: `$cmdr->getResourceUsage;`

Example

```
$cmdr->getResourceUsage;
```

ectool

syntax: `ectool getResourceUsage`

Example

```
ectool getResourceUsage
```

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modifyResource

Modifies an existing resource.

You must specify a `resourceName`.

IMPORTANT: For a proxy resource, the `proxyHostName` and `proxyPort` arguments refer to the proxying ElectricFlow agent. The `hostName` and `port` arguments refer to the proxy target.

Arguments	Descriptions
`resourceName`	Name for the resource that must be unique among all resources. Argument Type: String
`artifactCacheDirectory`	The directory on the agent host where retrieved artifacts are stored. Argument Type: String
`block`	<*Boolean flag* - `0|1|true|false`> A newly modified resource will be pinged. This argument makes the `modifyResource` call "block" until the result of the ping is known. The default is "false". Argument Type: Boolean

Arguments	Descriptions
description	A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument Type: String
hostName	The name or IP address for the ElectricFlow machine containing the agent for this resource. Argument Type: String
newName	Enter any name of your choice to rename the resource. Argument Type: String
pools	A space-separated list of one or more pool names where this resource is a member. The pool name can be used in place of a single resource name. ElectricFlow chooses a resource from the pool when it executes the job step. Argument Type: String **Note:** This argument is deprecated and is replaced by the `resourcePools` argument.
port	The port number for the ElectricFlow agent. Default is to the default agent port, but you can change this port number because of port conflicts or multiple agents running on the same machine. Argument Type: Integer
proxyCustomization	Customized Perl code specifying how the proxy resource communicates with the proxy target. This applies only to proxy resources. Argument Type: String
proxyHostName	The IP address of the computer containing the ElectricFlow Agent used for a proxy resource. Argument Type: String
proxyPort	The ElectricFlow agent port number for a proxy resource. See the `port` argument for more details. Argument Type: Integer
proxyProtocol	Protocol for communicating with the proxy target. Defaults to `ssh`. This argument is not exposed in the ElectricFlow UI at this time. Argument Type: String

Arguments	Descriptions
`repositoryNames`	A list of repository names with each repository name listed on a "new line". Argument Type: String
`resourceDisabled`	<*Boolean flag* - `0|1|true|false`> If this is set to **1**, ElectricFlow will not start new steps on this resource. Argument Type: String

`resourcePools`	(Optional) A comma-separated list of one or more pool names where this resource is a member. Spaces and commas in pool names are allowed. Steps defined to run on a resource pool will run on any available member (resource) in the pool.
	
	Argument Type: String
	
	Note: This argument replaces the `pools` argument.
	
	To create one pool with a space in its name:
	
	`--resourcePools "Test Pool"`
	
	To create multiple pools with spaces in their names:
	
	`--resourcePools "Test Pool One, Test Pool Two"`
	
	To create a pool with a comma in its name:
	
	`--resourcePools "[Test Pool, One]"`

`shell`	This sets a default shell for running step commands on this resource. The default is `"cmd /q /c"` for a Windows agent and `"sh -e"` for a UNIX agent. Argument Type: String
`stepLimit`	This limits the number of steps that can be running on the resource at one time. Setting this value to **1** is a good way to enforce serial access to the resource. Argument Type: String
`trusted`	<*Boolean flag* - `0|1|true|false`> If this is set to **true**, the resource is *trusted*. Agents can be either *trusted* or *untrusted*: • trusted–The ElectricFlow server verifies the agent's identity using SSL certificate verification. • untrusted–The ElectricFlow server does not verify agent identity. An untrusted agent could be a security risk. Argument Type: Boolean

Arguments	Descriptions
`useSSL`	<*Boolean flag* - `0|1|true|false`> Use this flag to define whether or not SSL is used for server-agent communication, or if you need to use SSL to communicate with your Active Directory servers. The default is **true**. **Note:** Transport Layer Security (TLS) has replaced Secure Sockets Layer version 3.0 (SSLv3) on the ElectricFlow web server and the ElectricFlow server. Argument Type: Boolean
`workspaceName`	Name of the default workspace where job output is stored. Argument Type: String
`zoneName`	Name of the zone where this resource resides, which must be unique among all zones. Argument Type: String

Positional arguments

`resourceName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->modifyResource(<resourceName>, {...});`

Example

```
$cmdr->modifyResource("Test Resource 1", {stepLimit => 5, shell => "bash"});
```

ectool

syntax: `ectool modifyResource <resourceName> ...`

Example

```
ectool modifyResource "Test Resource 1" --stepLimit 5 --shell "bash"
```

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modifyResourcePool

Modifies an existing resource pool.

You must specify a `resourcePoolName`.

Arguments	Descriptions
`resourcePoolName`	Name for the resource pool that must be unique among all resource pools. A resource pook contains one or more resources. Argument Type: String
`autoDelete`	<*Boolean flag* - `0|1|true|false`> - If this is set to *true*, the resource pool will be deleted automatically when the last resource is removed form the pool. Argument Type: Boolean
`description`	A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument Type: String
`newName`	Any new unique name for this resource pool. Argument Type: String
`resourceNames`	A list of resource names to add to the pool. This value does not need to refer to an existing resource. Any names that do not resolve to an existing resource will be skipped when assigning resources to steps. Argument Type: Collection
`orderingFilter`	A Javascript block invoked when scheduling resources for a pool. **Note:** A Javascript block is not required unless you need to override the default resource ordering behavior. Argument Type: String
`resourcePoolDisabled`	<*Boolean flag* - `0|1|true|false`> - If this is set to *true*, any runnable steps that refer to the pool will block until the pool is enabled again. Argument Type: Boolean

Positional arguments

`resourcePoolName`

Response

The modified `resourcePool` object.

ec-perl

syntax: `$cmdr->modifyResourcePool(<resourcePoolName>, {<optionals>});`

Example

```
$cmdr->modifyResourcePool("WindowsPool", { resourcePoolDisabled => 1});
```

ectool

syntax: `ectool modifyResourcePool <resourcePoolName> ...`

Example

```
ectool modifyResourcePool WindowsPool --resourcePoolDisabled 1
```

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pingAllResources

Pings all resources.

Arguments	Description
`block`	<*Boolean flag* - `0|1|true|false`> Default value=`"0"` (false), which means the call will return immediately. If you want the call to wait for responses from every resource before returning, use the value of `"1"`(true). Argument Type: Boolean

Positional arguments

None

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->pingAllResources({<optionals>});`

Example

```
$cmdr->pingAllResources();
```

ectool

syntax: `ectool pingAllResources...`

Example

```
ectool pingAllResources
```

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pingResource

Pings the specified resource.

You must specify the `resourceName`.

Arguments	Descriptions
`resourceName`	Name for the resource that must be unique among all resources. Argument Type: String

Positional arguments

`resourceName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->pingResource(<resourceName>);`

Example

```
$cmdr->pingResource("Test Resource 1");
```

ectool

syntax: `ectool pingResource <resourceName> ...`

Example

```
ectool pingResource "Test Resource 1"
```

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removeResourceFromEnvironmentTier

Removes a resource from the specified environment tier.

You must specify the `resourceName`, `projectName`, `environmentName`. and `environmentTierName`arguments.

Arguments	Descriptions
`resourceName`	Name for the resource that must be unique among all resources. Argument Type: String
`projectName`	Name for the project that must be unique among all projects. Argument Type: String
`environmentName`	Name of the environment that must be unique among all projects. Argument Type: String

Arguments	Descriptions
`environmentTierName`	Name for the environment tier that must be unique among all tiers for the environment. Argument Type: String

Response

None or a status OK message.

ec-perl

Syntax:

```
$<object>->removeResourceFromEnvironmentTier(<resourceName>, <projectName>,
 <environmentName>, <environmentTierName>);
```

Example:

```
$ec->removeResourceFromEnvironmentTier("Resource"1, "default", "newEnv",
 "envTier1");
```

ectool

Syntax:

```
removeResourceFromEnvironmentTier <resourceName> <projectName>
 <environmentName> <environmentTierName>
```

Example:

```
ectool removeResourceFromEnvironmentTier Resource1 default newEnv envTier1
```

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removeResourcesFromPool

Removes resources from a specified resource pool.

You must specify a `resourcePoolName`.

Arguments	Descriptions
`resourcePoolName`	Name for the resource pool that must be unique among all resource pools. Argument Type: String
`resourceNames`	The list of resources to remove from this pool. Argument Type: Collection

Positional arguments

`resourcePoolName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->removeResourcesFromPool(<resourcePoolName>, {<optionals>});`

Example

```
$cmdr->removeResourcesFromPool("Test Pool", {resourceNames => ["Test1", "Test2", "T
est3"]});
```

ectool

syntax: `ectool removeResourcesFromPool <resourcePoolName> ...`

Example

```
ectool removeResourcesFromPool "Test Pool" --resourceNames Test1 Test2 Test3
```

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signCertificate

Signs an agent certificate.

Arguments	Descriptions
`certificateData`	A Privacy Enhanced Mail (PEM) encoded certificate signing request. Argument Type: String

Positional arguments

`certificateData`

Response

None or a status OK message.

ec-perl

syntax:`$cmdr->signCertificate (<certificateData>);`

Example

```
$cmdr->signCertificate ("MIIEczCCA1ugAwIBAgIBADANBgkqhkiG9w0BAQQFAD");
```

ectool

syntax:`ectool signCertificate <certificateData>`

Example

```
ectool signCertificate "MIIEczCCA1ugAwIBAgIBADANBgkqhkiG9w0BAQQFAD"
```

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API Commands - Schedule Management

createSchedule

Creates a new schedule.

Note: If both `startTime` and `stopTime` are specified, `intervalUnits` and `interval` are used to specify an interval time to repeat running the procedure.

You must specify a `projectName` and `scheduleName`.

Arguments	Descriptions
`projectName`	Name for the project that must be unique among all projects. Argument type: String
`scheduleName`	Name for the schedule that must be unique among all schedules for the project. Argument type: String
`actualParameters`	(Optional) Specifies the values to pass as parameters to the called procedure. Each parameter value is specified with an `actualParameterName` and a `value`. The `actualParameterName` must match the name of a formal parameter on the called procedure. Argument type: Map
`applicationName`	(Optional) The name of the application that owns the process. Argument type: String
`beginDate`	(Optional) <*yyyy-mm-dd*> The date you want the schedule to begin. Argument type: String

Arguments	Descriptions
`credentialName`	(Optional) The name of the credential to use for user impersonation when running the procedure. `credentialName` can be one of two forms: **relative** (for example, *"cred1"*) - the credential is assumed to be in the project that contains the request target object. **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*) - the credential can be from any specified project, regardless of the target object's project. Argument type: String
`description`	(Optional) A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument type: String
`endDate`	(Optional) <*yyyy-mm-dd*> The date you want this schedule to end. Argument type: String
`environmentName`	(Optional) The name of the environment where the application runs. Argument type: String
`environmentTemplateName`	(Optional) The name of the environment template used to create the dynamic environment. Argument type: String
`environmentTemplateTierMapName`	(Optional) The name of the environment template tier map used to create the dynamic environment where the application runs. Argument type: String
`interval`	(Optional) Determines the repeat interval for starting new jobs. If specified, the procedure, process, or workflow will be rescheduled continuously at intervals of this length. "Continuous" means that the procedure, process, or workflow is rescheduled as soon as the previous job finishes. Argument type: String

Arguments	Descriptions
intervalUnits	(Optional) Specifies the units for the interval argument <hours|minutes|seconds|continuous> If set to continuous, ElectricFlow creates a new job as soon as the previous job completes. Argument type: String
misfirePolicy	(Optional) <ignore|runOnce> Specifies the misfire policy. A schedule may not fire at the allotted time because a prior job is still running, the server is running low on resources and there is a delay, or the server is down. When the underlying issue is resolved, the server will schedule the next job at the next regularly scheduled time slot if the policy is 'ignore', otherwise it will run the job immediately. Defaults to "ignore". Argument type: MisfirePolicy
monthDays	(Optional) Restricts the schedule to specified days of the month. Specify numbers from 1-31, separating multiple numbers with a space. Argument type: String
priority	(Optional) <low|normal|high|highest> Priorities take effect when two or more job steps in different jobs are waiting for the same resource. When the resource is available, it will be used by the job step that belongs to the job with the highest priority. If the priority level is the same, the resource will be used by the job step that belongs to the job with the lowest job ID number. If the job steps are in the same job, the resource will be used first by the step with the lowest job step ID number. Argument type: JobPriority
procedureName	(Optional) Name of the procedure to run when the schedule is invoked. Argument type: String
processName	(Optional) Name of the application process to run when the schedule is invoked. Argument type: String
scheduleDisabled	(Optional) <*Boolean flag* - 0|1|true|false> If set to 1, ElectricFlow will not start any new jobs from the schedule. Defaults to "false". Argument type: Boolean
snapshotName	(Optional) Name of the snapshot used to invoke the application process. Argument type: String

Arguments	Descriptions
`startTime`	(Optional) The time of day to run the procedure, process, or workflow when the schedule is invoked. Using this schedule, ElectricFlow starts creating jobs at this time on the specified days. Enter hours and minutes, formatted `hh:mm`, using the 24-hour clock (for example, 17:00). Argument type: String
`startingStateName`	(Optional) Name of the starting state of the workflow. Argument type: String
`stopTime`	(Optional) The time of day to stop invoking the schedule. ElectricFlow stops creating new jobs at this time, but a job in progress continues to run. If `stopTime` is not specified, ElectricFlow creates one job only on each specified day. Enter hours and minutes, formatted `hh:mm`, using the 24-hour clock (for example, 17:00). Argument type: String
`tierMapName`	(Optional) Name of the tier map that determines in which environment the application runs. Argument type: String
`tierResourceCounts`	Resource count for each resource template tier. Argument type: Map
`timeZone`	(Optional) Enter the time zone (string) you want to use for this schedule. Argument type: String
`weekDays`	(Optional) Restricts the schedule to specified days of the week. Specify days of the week separated by spaces. Use English names "Monday", "Tuesday", and so on. Argument type: String
`workflowName`	(Optional) Name of the workflow to run when the schedule is invoked. Argument type: String

Positional arguments

`projectName, scheduleName`

Response

None or status OK message.

ec-perl

syntax: `$cmdr->createSchedule(<projectName>, <scheduleName>, {<optionals>});`

Example

```
$cmdr->createSchedule('Sample Project', 'Weekend', {startTime => '00:00',
        stopTime => '23:59',
        weekDays => 'Saturday Sunday',
        interval => 1,
   intervalUnits => 'hours',
 actualParameter => [{actualParameterName => 'param1', value => 'value1'}] });
```

ectool

syntax: `ectool createSchedule <projectName> <scheduleName> ...`

Example

```
ectool createSchedule "Sample Project" "Weekend" --startTime 00:00
  --stopTime 23:59 --weekDays "Saturday Sunday" --interval 1 --intervalUnits hours
```

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deleteSchedule

Deletes a schedule.

You must specify a `projectName` and `scheduleName`.

Arguments	Descriptions
`projectName`	The schedule you want to delete belongs to this project. Argument type: String
`scheduleName`	The name of the schedule you want to delete. Argument type: String

Positional arguments

`projectName, scheduleName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteSchedule(<projectName>, <scheduleName>);`

Example

```
$cmdr->deleteSchedule("Sample Project","Weekend");
```

ectool

syntax: `ectool deleteSchedule <projectName> <scheduleName>`

Example

```
ectool deleteSchedule "Sample Project" "Weekend"
```

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getSchedule

Retrieves a schedule by its name.

You must specify a `projectName` and `scheduleName`.

Arguments	Descriptions
`projectName`	Name for the project that must be unique among all projects. Argument type: String
`scheduleName`	Name for the schedule that must be unique among all schedules for the project. Argument type: String

Positional arguments

`projectName, scheduleName`

Response

One `schedule` element.

ec-perl

syntax: `$cmdr->getSchedule(<projectName>, <scheduleName>);`

Example

```
$cmdr->getSchedule("Sample Project", "Build Schedule");
```

ectool

syntax: `ectool getSchedule <projectName> <scheduleName>`

Example

```
ectool getSchedule "Sample Project" "Build Schedule"
```

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getSchedules

Retrieves all schedules.

You must specify a `projectName`.

Arguments	Descriptions
projectName	Name for the project that must be unique among all projects. Argument type: String
applicationName	The name of the application that owns the process. Argument type: String
includeWorkflows	To include workflow related schedules. Argument type: String
processName	The name of the application process. Argument type: String
tierMapName	The name of the tier map that determines the environment in which run the process. Argument type: String

Positional arguments

projectName

Response

Zero or more schedule elements for all schedules within the named project.

ec-perl

syntax: `$cmdr->getSchedules(<projectName> {...});`

Example

```
$cmdr->getSchedules("Sample Project" {applicationName => "DeployApp"});
```

ectool

syntax: `ectool getSchedules <projectName> ...`

Example

```
ectool getSchedules "Sample Project" --applicationName "DeployApp"
```

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modifySchedule

Modifies an existing schedule.

You must specify a projectName and a scheduleName.

Note: If both startTime and stopTime are specified, intervalUnits and interval are used to specify an interval to repeat running the procedure.

Arguments	Descriptions
`projectName`	The name of the project containing the schedule to modify. Argument type: String
`scheduleName`	The name of the schedule to modify. Argument type: String
`actualParameter`	(Optional) Specifies the values to pass as parameters to the called procedure. Each parameter value is specified with an `actualParameterName` and a `value`. The `actualParameterName` must match the name of a formal parameter on the called procedure. Argument type: Map
`beginDate`	(Optional) <*yyyy-mm-dd*> The date you want the schedule to begin. Argument type: String
`clearActualParameters`	(Optional) <*Boolean flag* - `0|1|true|false`> If set to `true` or `1`, all the actual parameters are removed from the schedule. Argument type: Boolean
`credentialName`	(Optional) The name of the credential to use for user impersonation when running the procedure. `credentialName` can be one of two forms: **relative** (for example, *"cred1"*) - the credential is assumed to be in the project that contains the request target object. **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*) - the credential can be from any specified project, regardless of the target object's project. Argument type: String
`description`	(Optional) A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument type: String
`endDate`	(Optional) <*yyyy-mm-dd*> The date you want this schedule to end. Argument type: String

Arguments	Descriptions
interval	(Optional) Determines the repeat interval for starting new jobs. Argument type: String
intervalUnits	(Optional) Specifies the units for the interval argument <hours|minutes|seconds|continuous>. If set to continuous, ElectricFlow creates a new job as soon as the previous job completes. Argument type: IntervalUnits
misfirePolicy	(Optional) <ignore|runOnce>–Specifies the misfire policy. A schedule may not fire at the allotted time because a prior job is still running, the server is running low on resources and there is a delay, or the server is down. When the underlying issue is resolved, the server will schedule the next job at the next regularly scheduled time slot if the policy is 'ignore', otherwise it will run the job immediately. The default is ignore. Argument type: IntervalUnits
monthDays	(Optional) Restricts the schedule to specified days of the month. Specify numbers from 1 to 31, separating multiple numbers with a space. Argument type: String
newName	(Optional) New name of the schedule. Argument type: String
priority	(Optional) <low|normal|high|highest> Priorities take effect when two or more job steps in different jobs are waiting for the same resource. When the resource is available, it will be used by the job step that belongs to the job with the highest priority. If the priority level is the same, the resource will be used by the job step that belongs to the job with the lowest job ID number. If the job steps are in the same job, the resource will be used first by the step with the lowest job step ID number. Argument type: JobPriority
procedureName	(Optional) The name of the procedure to run when the schedule is invoked. Argument type: String
processName	(Optional) The name of the process to run when the schedule is invoked. Argument type: String

Arguments	Descriptions
`scheduleDisabled`	(Optional) <*Boolean flag* - `0|1|true|false`> If set to `1`, ElectricFlow does not start any new jobs from the schedule. Argument type: Boolean
`snapshotName`	(Optional) The name of the snapshot to use when the application process is invoked. Argument type: String
`startingStateName`	(Optional) The name of the starting state of the workflow. Argument type: String
`startTime`	(Optional) The time of day to begin running the procedure, process, or workflow when the schedule is invoked. Enter hours and minutes, formatted `hh:mm`, using the 24-hour clock (for example, 17:00). ElectricFlow starts creating jobs at this time on the days specified. Argument type: String
`stopTime`	(Optional) The time of day to stop invoking the schedule. ElectricFlow stops creating new jobs at this time, but a job in progress continues to run. If `stopTime` is not specified, ElectricFlow creates one job only on each specified day. Enter hours and minutes, formatted `hh:mm`, using the 24-hour clock (for example, 17:00). Argument type: String
`tierMapName`	(Optional) The name of the tier map that maps application processes to environments. Argument type: String
`timeZone`	(Optional) Enter the time zone you want to use for this schedule. Argument type: String
`weekDays`	(Optional) Restricts the schedule to specified days of the week. Specify days of the week separated by spaces. Use English names "Monday", "Tuesday", and so on. Argument type: String
`workflowName`	(Optional) The name of the workflow to run when the schedule is invoked. Argument type: String

Positional arguments

`projectName, scheduleName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->modifySchedule(<projectName>, <scheduleName>, {...});`

Example

```
$cmdr->modifySchedule("Sample Project", "Weekend",
      {procedureName => "Delay",
     actualParameter => {actualParameterName => "Delay Time",
                                      value => "5"}});
```

ectool

syntax: `ectool modifySchedule <projectName> <scheduleName> ...`

Example

```
ectool modifySchedule "Sample Project" "Weekend" --procedureName "Delay"
   --actualParameter "Delay Time=5"
```

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pauseScheduler

Sets the scheduler to pause.

Arguments	Descriptions
`paused`	<*Boolean flag* - `0|1|true|false`> If this argument set to `1` or `true`, set the scheduler to pause. If this argument is set to `0` or `false`, set the scheduler to not pause.

Positional arguments

`paused`

Response

None or a status OK message.

ec-perl

syntax:`$cmdr->pauseScheduler (<paused>);`

Example

```
$cmdr->pauseScheduler (true);
```

ectool

syntax: `ectool pauseScheduler <paused>`

Example

```
ectool pauseScheduler true
```

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API Commands - Server Management

deleteLicense

Deletes a license.

You must specify a `productName` and `featureName`.

Arguments	Descriptions
`featureName`	The name of the licensed feature. Possible features include: `Server`
`productName`	The name of the product with the licensed feature. Possible products include: `ElectricFlow`

Positional arguments

`productName, featureName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteLicense(<productName>, <featureName>);`

Example

```
$cmdr->deleteLicense("ElectricFlow", "Server");
```

ectool

syntax: `ectool deleteLicense <productName> <featureName>`

Example

```
ectool deleteLicense ElectricFlow Server
```

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getAdminLicense

Retrieves the admin license, which can be used when all concurrent user licenses are in use.

Arguments	Descriptions
None	–

Positional arguments

None.

Response

You can receive one or more responses, depending on how you are licensed and actual license usage at the time of your query.

Response examples:

When the user does not have the necessary permission to use the Administrator license:

```
<error requestId="1">
    <code>AccessDenied</code>
    <where></where>
    <message>Principal 'bob@company.com' does not have execute privileges on
          systemObject[name=licensing,id=10]</message>
    <details></details>
</error>
```

When the user has permission to get/use the Administrator license, but already has a User license:

```
 <result>User 'bob@company.com@192.168.17.217' already has an active
license.</result>
```

When the user has permission to use/get the Administrator license, has no
other license, and the Administrator license is not currently assigned:

```
 <result>User 'bob@company.com@192.168.17.217' was given the admin
license.</result>
```

When the user has permission to get/use the Administrator license, has no license, and the Administrator
license is currently assigned to someone else:

```
  <result>User 'joedoe@company.com@192.168.17.217' was given the admin license
that
     previously belonged to 'bob@company.com@192.168.17.217'. </result>
```

ec-perl

syntax:`$cmdr->getAdminLicense();`

Example

```
$cmdr->getAdminLicense();
```

ectool

syntax:`ectool getAdminLicense`

Example

```
ectool getAdminLicense
```

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getCertificates

Retrieves the certificates in the trust chain for the server.

Arguments	Descriptions
None	–

Positional arguments

None.

Response

None or a status OK message.

ec-perl

syntax:`$cmdr->getCertificates ();`

Examples

```
$cmdr->getCertificates ();
```

ectool

syntax:`ectool getCertificates`

Examples

```
ectool getCertificates
```

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getLicense

Retrieves information for one license.

You must specify the `productName` and `featureName`.

Arguments	Descriptions
`featureName`	The name of the licensed feature. Possible features include: `Server`
`productName`	The name of the product with the licensed feature. Possible products include: `ElectricFlow`

Positional arguments

`productName, featureName`

Response

One `license` element.

ec-perl

syntax:`$cmdr->getLicense(<productName>, <featureName>);`

Example

```
$cmdr->getLicense('ElectricFlow', 'Server');
```

ectool

syntax:`ectool getLicense <productName> <featureName>`

Example

```
ectool getLicense ElectricFlow Server
```

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getLicenses

Retrieves all license data.

Arguments	Descriptions
`None`	

Positional arguments

None.

Response

Zero or more `license` elements.

ec-perl

syntax:`$cmdr->getLicenses();`

Example

```
$cmdr->getLicenses();
```

ectool

syntax:`ectool getLicenses`

Example

```
ectool getLicenses
```

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getLicenseUsage

Retrieves the current license usage.

Arguments	Descriptions
None	–

Positional arguments

None.

Response

You may receive one or more responses for `licenseUsage`, depending on how you are licensed and actual license usage at the time of your query.

ec-perl

syntax:`$cmdr->getLicenseUsage();`

Example

```
$cmdr->getLicenseUsage();
```

ectool

syntax:`ectool getLicenseUsage`

Example

```
ectool getLicenseUsage
```

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getServerInfo

Retrieves information about server ports and message delivery.

Arguments	Descriptions
`None`	–

Positional arguments

None.

Response

Returns the information about the server.

ec-perl

syntax:`$cmdr->getServerInfo;`

Examples

```
$cmdr->getServerInfo();
```

ectool

syntax:`ectool getServerInfo`

Examples

```
ectool getServerInfo
```

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getServerStatus

Retrieves the current status of the ElectricFlow server.

Arguments	Descriptions
`block`	<*Boolean flag* - `0|1|true|false`> If the argument is set to `1`, the system waits until the server reaches a *terminal state*. Terminal states include `running`, `failed`, `stopping`, and `importFailed`.

Arguments	Descriptions
diagnostics	*<Boolean flag* - 0|1|true|false> Select the diagnostic information that you want in your output: • threadDump–stack dumps of all threads in the server • statistics–output from all system timers • systemProperties–values of all java system properties • environmentVariables–values of all environment variables • settings–values of all server settings • serverInfo–output from getServerInfo call.
serverStateOnly	*<Boolean flag* - 0|1|true|false> If the argument is set to 1, the system limits the response to the short form and causes ectool to return only the value of the serverStatus element as a simple string value.
timeout	This argument specifies the timeout for the element flag. The default value is 120 seconds.

Positional arguments

None.

Response

Returns the current status of the server, including the log message generated during the startup sequence.

This command returns different information depending on when and how it is called.

Note: You will get a lengthy response if you connect with a session that has admin privileges or if the server is still in a bootstrap state. After the server enters the "running" state, it is able to perform access checks but displays only the short form until you log in.

A simple response:

```
<serverState>running</serverState>
```

For more detailed server status response information, click here.

ec-perl

syntax:`$cmdr->getServerStatus({<optionals>});`

Examples

```
$cmdr->getServerStatus();

$cmdr->getServerStatus({diagnostics=>1});
```

ectool

syntax:`ectool getServerStatus`

Examples

```
ectool getServerStatus
```

```
ectool getServerStatus --diagnostics 1
```

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getVersions

Retrieves server version information.

Arguments	Descriptions
None	

Positional arguments

None

Response

A `serverVersion` element.

ec-perl

syntax: `$cmdr->getVersions();`

Example

```
$cmdr->getVersions();
```

ectool

syntax: `ectool getVersions`

Example

```
ectool getVersions
```

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importLicenseData

Imports one or more licenses.

You must specify `licenseData`.

Arguments	Descriptions
`licenseData`	The content of a license file (`perl|XML API`).
`licenseFile`	<*localFileName*> The license fie to import. This is a local file that will be read by ectool. The contents is sent as the `licenseData` argument (ectool only).

Positional arguments

`licenseData`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->importLicenseData(<licenseData>)`

Example

```
my $data = 'cat license.xml';
 $cmdr->importLicenseData ($data);
```

ectool

syntax: `ectool importLicenseData <licenseData>`

Example

```
ectool importLicenseData license.xml
```

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logMessage

Enters a message in the server log.

Arguments	Descriptions
`message`	Message to add to the server log.
`level`	Select a message level: `TRACE`, `DEBUG`, `INFO`, `WARN`, `ERROR`, or `OFF`.
`logger`	Name of the object that logged the message.

Positional arguments

`message`

Response

None or a status OK message.

ec-perl

syntax:`$cmdr->logMessage (<message>, <optionals>});`

Examples

```
$cmdr->logMessage ("abort job step" {level => INFO});
```

ectool

syntax:`ectool logMessage <message> [optionals...]`

Examples

```
ectool logMessage "abort job step" --level INFO
```

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setLogLevel

Changes log level of a logger.

Arguments	Descriptions
`logger`	Name of the user or resource that logged the message.
`level`	Select a message level: `TRACE`, `DEBUG`, `INFO`, `WARN`, `ERROR`, or `OFF`.

Positional arguments

```
logger, level
```

Response

None or a status OK message.

ec-perl

syntax:`$cmdr->setLogLevel(<logger>, <level>);`

Examples

```
$cmdr->setLogLevel ("Test Lab 1", INFO);
```

ectool

syntax:`ectool setLogLevel <logger> <level>`

Examples

```
ectool setLogLevel "Test Lab 1" INFO
```

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shutdownServer

Shuts down the ElectricFlow server. Shutting down the server can take as long as a couple of minutes, depending on the server activity level at the time the shutdown command is issued.

The ElectricFlow server is composed of two processes. The main process is a Java Virtual Machine (JVM). The second process, called the "wrapper", is responsible for interacting with the native operating system as a service. This wrapper process is responsible for starting and stopping the main JVM process.

Arguments	Descriptions
`force`	<*Boolean flag* - `0|1|true|false`> The "1" flag tells the ElectricFlow server to exit immediately, without performing any of the usual associated cleanup activities. This action "kills" all running jobs.
`restart`	<*Boolean flag* - `0|1|true|false`> The "1" flag tells the ElectricFlow server to shut down normally and immediately start again.

Positional arguments

None

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->shutdownServer({<optionals>});`

Example

```
$cmdr->shutdownServer({restart => 1});
```

ectool

syntax: `ectool shutdownServer [optionals]`

Example

```
ectool shutdownServer --restart 1
```

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tunePerformance

Adjusts how the server is performing.

Arguments	Descriptions
`apiQueueSize`	Maximum number of threads that will be created in the API thread pool.
`dbConnectionPoolSize`	Maximum number of database connections that the server will use.
`dbThreadPoolSize`	Number of worker threads in the database connection manager.
`dispatchQueueSize`	Maximum number of threads that will be created in the Dispatch thread pool.
`quartzQueueSize`	Maximum number of threads that will be created in the Quartz thread pool.

Arguments	Descriptions
`stateMachineQueueSize`	Maximum number of threads that will be created in the `stateMachine` thread pool.

Positional arguments

None

Response

None or a status OK message.

ec-perl

syntax:`$cmdr->tunePerformance ({<optionals>});`

Examples

```
$cmdr->tunePerformance ({apiQueueSize => 4, dbConnectionPoolSize => 2});
```

ectool

syntax:`ectool tunePerformance [optionals]`

Examples

```
ectool tunePerformance --apiQueueSize 4 --dbConnectionPoolSize 2
```

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API Commands - Snapshots

`createSnapshot`

Creates a new snapshot of the specified application.

You must specify `projectName`, `applicationName`, and `snapshotName`.

Arguments	Descriptions
`projectName`	The name of the project that must be unique among all projects. Argument type: String

Arguments	Descriptions
`applicationName`	The name of the application that must be unique among all projects. Argument type: String
`snapshotName`	The name of the snapshot that must be unique withing the application. Argument type: String
`componentVersions`	(Optional) The name and version of the component for the snapshot. Argument type: Map
`description`	(Optional) Comment text describing this object, which is not interpreted by ElectricFlow. A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument type: String
`environmentName`	(Optional) Name of environment from which the snapshot is created. Argument type: String

Positional arguments

`projectName, applicationName, snapshotName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->createSnapshot (<projectName>, <applicationName>, <snapshotName>, {<optionals>});`

Example

```
$cmdr->createSnapshot ("Build and Run", "Deploy", "Test Run" {description => "Beta only"});
```

ectool

syntax:]`ectool createSnapshot <projectName> <applicationName> <snapshotName> [optionals]`

Example

```
ectool createSnapshot "Build and Run" "Deploy" "Test Run" --description "Beta only"
```

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deleteSnapshot

Deletes a snapshot from an application.

You must specify `projectName` , `applicationName`, and `snapshotName`.

Arguments	Descriptions
`projectName`	The name of the project that must be unique among all projects. Argument type: String
`applicationName`	The name of the application that must be unique among all projects. Argument type: String
`snapshotName`	The name of the snapshot that must be unique withing the application. Argument type: String

Positional arguments

`projectName, applicationName, snapshotName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteSnapshot (<projectName>, <applicationName>, <snapshotName>);`

Example

```
$cmdr->deleteSnapshot ("Build and Run", "Undeploy", "Alpha");
```

ectool

syntax: `ectool deleteSnapshot <projectName> <applicationName> <snapshotName>`

Example

```
ectool deleteSnapshot "Build and Run" "Undeploy" "Alpha"
```

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getPartialApplicationRevision

Retrieves a partial application when a snapshot is created.

You must specify `projectName` , `applicationName`, and `revisionNumber`.

Arguments	Descriptions
`projectName`	The name of the project that must be unique among all projects. Argument type: String
`applicationName`	The name of the application that must be unique among all projects. Argument type: String
`revisionNumber`	The revision number of the application. Argument type: Integer

Positional arguments

`projectName, applicationName, revisionNumber`

Response

A list of environments deployed in the snapshot.

ec-perl

syntax: `$cmdr->getPartialApplicationRevision (<projectName>, <applicationName>, <revisionNumber>);`

Example

```
$cmdr->getPartialApplicationRevision ("Demo Project", "Deploy", 2);
```

ectool

syntax: `ectool getPartialApplicationRevision <projectName> <applicationName> <revisionNumber>`

Example

```
ectool getPartialApplicationRevision "Demo Project" "Deploy" 2
```

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getSnapshot

Retrieves a snapshot by name.

You must specify `projectName` , `applicationName`, and `snapshotName`.

Arguments	Descriptions
`projectName`	The name of the project that must be unique among all projects. Argument type: String

Arguments	Descriptions
`applicationName`	The application that owns the deployment history item. Argument type: String
`snapshotName`	The name of the snapshot that must be unique within the application. Argument type: String

Positional arguments

`projectName, applicationName, snapshotName`

Response

One snapshot element.

ec-perl

syntax: `$cmdr->getSnapshot (<projectName>, <applicationName>, <snapshotName>);`

Example

```
$cmdr->getSnapshot ("Demo Project", "Deploy", "Production");
```

ectool

syntax: `ectool getSnapshot <projectName> <applicationName> <snapshotName>`

Example

```
ectool getSnapshot "Demo Project" "Deploy" "Production"
```

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getSnapshotEnvironments

Retrieves a list of the environments deployed in the specified snapshot.

You must specify `projectName` , `applicationName`, and `snapshotName`.

Arguments	Descriptions
`projectName`	The name of the project that must be unique among all projects. Argument type: String
`applicationName`	The name of the application that must be unique among all projects. Argument type: String
`snapshotName`	The name of the snapshot that must be unique within the application. Argument type: String

Positional arguments

`projectName, applicationName, snapshotName`

Response

A list of environments deployed in the snapshot.

ec-perl

syntax: `$cmdr->getSnapshotEnvironments (<projectName>, <applicationName>, <snapshotName>);`

Example

```
$cmdr->getSnapshotEnvironments ("Demo Project", "Deploy", "Production Run");
```

ectool

syntax: `ectool getSnapshotEnvironments <projectName> <applicationName> <snapshotName>`

Example

```
ectool getSnapshotEnvironments "Demo Project" "Deploy" "Production Run"
```

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getSnapshots

Retrieves all the snapshots in an application.

You must specify `projectName` and `applicationName`.

Arguments	Descriptions
`projectName`	The name of the project that must be unique among all projects. Argument type: String
`applicationName`	The name of the application that must be unique among all projects. Argument type: String

Positional arguments

`projectName, applicationName`

Response

Zero or more snapshot elements.

ec-perl

syntax: `$cmdr->getSnapshots (<projectName>, <applicationName>);`

Example

```
$cmdr->getSnapshots ("Demo Project", "Deploy");
```

ectool

syntax: `ectool getSnapshots <projectName> <applicationName>`

Example

```
ectool getSnapshots "Demo Project" "Deploy"
```

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modifySnapshot

Modifies a snapshot in the specified application.

You must specify `projectNam` , `applicationName`, and `snapshotName`.

Arguments	Descriptions
`projectName`	The name of the project that must be unique among all projects. Argument type: String
`applicationName`	The name of the application that must be unique among all projects. Argument type: String
`snapshotName`	The name of the snapshot that must be unique within the application. Argument type: String
`componentVersions`	(Optional) Name and version of the component for the snapshot. Argument type: Map
`description`	(Optional) Comment text describing this object, which is not interpreted by ElectricFlow. A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument type: String
`environmentName`	(Optional) Name of environment from which snapshot is created. Argument type: String
`newName`	(Optional) New name of the snapshot. Argument type: String

Positional arguments

`projectName, applicationName, snapshotName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->createSnapshot (<projectName>, <applicationName>, <snapshotName>, {<optionals>});`

Example

```
$cmdr->createSnapshot ("Build and Run", "Deploy", "Full app v2", {description => "I
nternal use only", newName => "Trial Run"} );
```

ectool

syntax: `ectool createSnapshot <projectName> <applicationName> <snapshotName> [optionals]`

Example

```
ectool createSnapshot "Build and Run" "Deploy" "Full app v2" --description "Beta on
ly" --newName "Trial Run"
```

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API Commands - Tier Map

`createTierMap`

Creates a new tier map for an application.

Required Arguments

`projectName`

Description: Name for the project; must be unique among all projects.

Argument Type: String

`applicationName`

Description: Name of the application; must be unique among all applications in the project.

Argument Type: String

`environmentProjectName`

Description: Name of the environment's project; must be unique among all projects.

Argument Type: String

`environmentName`

Description: Name of the environment; must be unique among all applications in the project.

Argument Type: String

Optional Arguments

`applicationEntityRevisionId`

Description: Revision ID of the versioned object.

Argument Type: UUID

`tierMapName`

Description: The name of the tier map. If not specified, the operation will generate a name of the form as follows: <applicationName>-<environmentName>.

Argument Type: String

`tierMappings`

Description: List of mappings between the application tiers and the environment tiers. The list shows the mappings as <applicationTier>=<environmentTier>.

Argument Type: Map

Response

Returns a tier-map element.

ec-perl

Syntax:

```
$<object>->createTierMap(<projectName>, <applicationName>,
 <environmentProjectName>, <environmentName>), {<optionals>});
```

Example:

```
$ec->createTierMap("default", "newApp", "defaultEnv", "Env1",
{tierMapping => [{applicationTier => "AppTier1",
environmentTier => "EnvTier1"}, {applicationTier => "AppTier2",
environmentTier => "EnvTier2"}], tierMapName => "TierMap1"});
```

ectool

Syntax:

```
ectool createTierMap <projectName> <applicationName>
 <environmentProjectName> <environmentName> [optionals...]
```

Example:

```
ectool createTierMap default newApp defaultEnv Env1 --tierMapName TierMap1
--tierMapping AppTier1=EnvTier1 AppTier2=EnvTier2
```

```
ectool createTierMap default newApp defaultEnv Env1 --tierMapName TierMap1
--tierMapping AppTier1=EnvTier1 AppTier2=EnvTier2
```

deleteTierMap

Deletes a tier map from an application.

Required Arguments

`projectName`

Description: Name for the project; must be unique among all projects.

Argument Type: String

`applicationName`

Description: Name of the application; must be unique among all applications in the project.

Argument Type: String

`environmentProjectName`

Description: Name of the environment's project; must be unique among all projects.

Argument Type: String

`environmentName`

Description: Name of the environment; must be unique among all applications in the project.

Argument Type: String

Optional Arguments

None

Response

None or a status OK message.

ec-perl

Syntax:

```
$<object>->deleteTierMap(<projectName>, <applicationName>, <environmentProjectNa
me>, <environmentName>);
```

Example:

```
$ec->deleteTierMap("default", "App1", "MyProj", "Env1");
```

ectool

Syntax:

```
ectool deleteTierMap <projectName> <applicationName> <environmentProjectName> <e
nvironmentName>
```

Example:

```
ectool deleteTierMap default TierMapToDelete defaultEnv Env1
```

deleteTierMapping

Deletes a tier mapping from a tier map.

Required Arguments

`projectName`

Description: Name for the project; must be unique among all projects.

Argument Type: String

`applicationName`

Description: Name of the application; must be unique among all applications in the project.

Argument Type: String

`environmentProjectName`

Description: Name of the environment's project; must be unique among all projects.

Argument Type: String

`environmentName`

Description: Name of the environment; must be unique among all applications in the project.

Argument Type: String

`applicationTierName`

Description: Name of the application tier.

Argument Type: String

Optional Arguments

None

Response

Deletes the specified tier mapping.

ec-perl

Syntax:

```
$<object>->deleteTierMapping(<projectName>, <applicationName>, <environmentProje
ctName>, <environmentName>, <applicationTierName>);
```

Example:

```
$ec->deleteTierMap("default", "App1", "MyProj", "Env1", "InstallTier");
```

ectool

Syntax:

```
ectool deleteTierMapping <projectName> <applicationName> <environmentProjectNam
e> <environmentName> <applicationTierName>
```

Example:

```
ectool deleteTierMapping default TierMapToDelete defaultEnv Env1 InstallTier
```

getTierMaps

Retrieves all tier maps that are used by the given application.

Required Arguments

`projectName`

Description: Name for the project; must be unique among all projects.

Argument Type: String

`applicationName`

Description: Name of the application; must be unique among all projects.

Argument Type: String

Optional Arguments

`applicationEntityRevisionId`

Description: The revision ID of the versioned project.

Argument Type: UUID

`orderByEnvironmentUsage`

Description: <*Boolean flag* - `0|1|true|false`>– If this is set to 1 or true, the response has the most recently used environment in the tier maps.

Argument Type: Boolean

Response

Returns a list of tier maps.

ec-perl

Syntax:

```
$<object>->getTierMaps(<projectName>, <applicationtName>, {<optionals>});
```

Example:

```
$ec->getTierMaps("default", "NewApp", {applicationEntityRevisionId => "4fa765dd-
73f1-11e3-b67e-b0a420524153"});
```

ectool

Syntax:

```
ectool getTierMaps <projectName> <applicationtName> [optionals...]
```

Example:

```
ectool getTierMaps default NewApp --applicationEntityRevisionId 4fa765dd-73f1-11
e3-b67e-b0a420524153
```

modifyTierMap

Modifies an existing tier map.

Required Arguments

`projectName`

Description: Name for the project; must be unique among all projects.

Argument Type: String

`applicationName`

Description: Name of the application; must be unique among all applications in the project.

Argument Type: String

`environmentProjectName`

Description: Name of the environment's project; must be unique among all projects.

Argument Type: String

`environmentName`

Description: Name of the environment; must be unique among all applications in the project.

Argument Type: String

Optional Arguments

`tierMapName`

Description: New name of the tier map, if specified.

Argument Type: String

`tierMapping`

Description: List of mappings between the application tiers and the environment tiers. The list shows the mappings as <applicationTier>=<environmentTier>.

If you use this argument, new tier mappings are added or existing mappings are updated for the specified application tiers. This argument does *not* replace all the mappings and thus does *not* remove the mappings that were not specified in the API call. To remove mappings, use the ***deleteTierMapping*** command.

Argument Type: Map

Response

Retrieves the updated tier map.

ec-perl

Syntax:

```
$<object>->modifyTierMap(<projectName>, <applicationName>, <environmentProjectNa
me>, <environmentName>), {<optionals>});
```

Example:

```
$ec->modifyTierMap("default", "newApp", "defaultEnv", "Env1", tierMapping => [{a
pplicationTier => "AppTier1", environmentTier => "EnvTier1"}, {applicationTier =
> "AppTier2", environmentTier => "EnvTier2"}], tierMapName => "TierMap1"});
```

ectool

Syntax:

```
ectool modifyTierMap <projectName> <applicationName> <environmentProjectName> <e
nvironmentName> [optionals...]
```

Example:

```
ectool modifyTierMap default newApp defaultEnv Env1 --tierMapName TierMap1 --tie
rMapping AppTier1=EnvTier1 AppTier2=EnvTier2
```

API Commands - User and Group Management

addUsersToGroup

Adds ones or more specified users to a particular group.

You must specify a `groupName` and one or more user names.

Arguments	Descriptions
`groupName`	The name of the group you are modifying.
`userName`	Using ec-perl, enter one or more user names to add to the group.
`userName`	Using ectool, enter one user name to add to the group.
`userNames`	Using ectool, enter two or more user names to add to the group.

Positional arguments

ec-perl: `groupName, userName`

ectool: `groupName, userName` or `groupName, userNames`, depending on the number of user names.

Response

None or status OK message.

ec-perl

syntax: `$cmdr->addUsersToGroup(<groupName>, {userName=>[<userName1>, ...]});`

Example

```
$cmdr->addUsersToGroup("Developers", {userName => ["John", "Jim", "Joey"]});
```

ectool

syntax: `ectool addUsersToGroup <groupName> --userNames <userName1> ...`

Examples

This example uses the singular `userName` argument to add one user to the group.

```
ectool addUsersToGroup Developers --userName John
```

This example uses the plural `userNames` argument to add two or more users to the group.

```
ectool addUsersToGroup Developers --userNames John Jim Joey
```

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createGroup

Creates a new local group of users.

You must specify a `groupName`.

Arguments	Descriptions
`groupName`	Name for the new group that you are creating.
`userName`	(Optional) Using ec-perl, enter one or more user names to add to the group.
`userName`	(Optional) Using ectool, enter one user name to add to the group.
`userNames`	(Optional) Using ectool, enter two or more user names to add to the group.

Positional arguments

`groupName`

Response

None or status OK message.

ec-perl

syntax: `$cmdr->createGroup(<groupName>, {<optionals>});`

Example

```
$cmdr->createGroup("Build Users", {userName => ["aallen", "Betty Barker", "cclar
k"]});
```

ectool

syntax: `ectool createGroup <groupName> --userNames <user1> ...`

Examples

This example uses the singular `userName` argument to add one user name to the group.

```
ectool createGroup "Build Users" --userName "Betty Barker"
```

This example uses the plural `userNames` argument to add two or more user names to the group.

```
ectool createGroup "Build Users" --userNames "aallen" "Betty Barker" "cclark"
```

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createUser

Creates a new *local* user.

Note: This API does not apply to non-local users.

User or Group Lists

The commands `createUser` and `modifyUser` can have an optional argument called `groupNames`. The commands
`createGroup` and `modifyGroup` can have an optional argument named `userNames`. In each case, the optional
argument is followed by a list of groups or names.

Using ectool, your command string would be:

```
ectool createGroup "New Group Name" --userNames "A Adams" "B Barker"
```

To make this call via the Perl API, create a list of names and then pass a reference to the list as an optional parameter.
Note: The name of the optional parameter is singular, "userName" or "userGroup," not the plural form used by ectool.

Here is an example using the Perl API:

```
# Run the procedure - pass a reference to the list of names
$xPath = $cmdr->createGroup("New Group Name", {
  "userName" => ['A Adams', 'B Burns'] });
```

You must specify a `userName`.

Arguments	Descriptions
`email`	The email address of the user.
`fullUserName`	Full name of the user, not a nickname.
`groupNames`	List of groups of which this user is a member. *<group1 group2>* Any group name containing spaces must be enclosed in double-quotes.
`password`	The password of the user.
`userName`	This could be the user's full name, but more commonly it is the shortened name, first initial and last name, or nickname used for email.

Positional arguments

`userName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->createUser(<userName>, {<optionals>});`

Example

```
$cmdr->createUser("aallen", {fullUserName => "Albert Allen"});
```

ectool

syntax: `ectool createUser <userName> ...`

Examples

```
ectool createUser "aallen" --fullUserName "Albert Allen"
```

```
ectool createUser "Betty Barker"
```

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deleteGroup

Deletes a local group.

You must specify a `groupName`.

Arguments	Descriptions
`groupName`	The name of the group you want to delete.

Positional arguments

`groupName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteGroup(<groupName>);`

Example

```
$cmdr->deleteGroup("Build Users");
```

ectool

syntax: `ectool deleteGroup <groupName>`

Example

```
ectool deleteGroup "Build Users"
```

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deleteUser

Deletes a local user.

You must specify the `userName`.

Arguments	Descriptions
`userName`	The name of the user you want to delete.

Positional arguments

`userName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteUser(<userName>);`

Example

```
$cmdr->deleteUser("Betty Barker");
```

ectool

syntax: `ectool deleteUser <userName>`

Example

```
ectool deleteUser "Betty Barker"
```

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getGroup

Retrieves a group by its name.

You must specify the `groupName`.

Arguments	Descriptions
`groupName`	The name of the group to retrieve.
`providerName`	Using this option allows you to search only the specified provider for group information. (LDAP or Active Directory)

Positional arguments

`groupName`

Response

One `group` element.

ec-perl

syntax: `$cmdr->getGroup(<groupName>, {<optionals>});`

Example

```
$cmdr->getGroup("myGroup", {providerName => "LDAP"});
```

ectool

syntax: `ectool getGroup <groupName> ...`

Example

```
ectool getGroup myGroup --providerName LDAP
```

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getGroups

Retrieves all groups.

Arguments	Descriptions
`filter`	A string used to filter the returned groups by their names.
`includeAll`	<*Boolean flag* - `0|1|true|false`> When enabled, this argument returns ALL matching groups, including LDAP or non-LDAP groups that may or may not be in the ElectricFlow database already. A group is added to the ElectricFlow database when a user [who is a member of that group] logs in to ElectricFlow for the first time.
`maximum`	Specifies the maximum number of groups you want to see.

Positional arguments

None

Response

Zero or more `group` elements, each containing summary information only.

ec-perl

syntax: `$cmdr->getGroups({ <optionals>});`

Example

```
$cmdr->getGroups({filter => " dev*", maximum => 3,});
```

ectool

syntax: `ectool getGroups ...`

Example

```
ectool getGroups --filter dev* --maximum 3
```

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getUser

Retrieves a user by name.

You must specify the `userName`.

Arguments	Descriptions
`providerName`	The name of the directory provider. If specified, this option limits the search to the specified directory provider.
`userName`	The name of the user.

Positional arguments

`userName`

Response

One `user` element.

ec-perl

syntax: `$cmdr->getUser(<userName>, {<optionals>});`

Example

```
$cmdr->getUser("Betty Barker");
```

ectool

syntax: `ectool getUser <userName> ...`

Example

```
ectool getUser "Betty Barker"
```

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getUsers

Retrieves users. By default, this command returns users who have been added to the ElectricFlow database, which means they have logged in previously.

Note: When calling `getUsers`, the default limit is 100 user records. Use the `maximum` option to specify a larger number, but this may inhibit performance, or you could define a search pattern to filter your search and conduct multiple queries.

Arguments	Descriptions
`filter`	*<filter pattern>* Enter a filter pattern to match user names. The filter is not case sensitive and can include the `"*"` wildcard character. Argument type: String

Arguments	Descriptions
`includeAll`	<*Boolean flag* - `0|1|true|false`> When enabled, this argument returns ALL matching groups, including LDAP or non-LDAP groups that may or may not be in the ElectricFlow database. A group is added to the ElectricFlow database when a user who is a member of that group logs in to ElectricFlow for the first time. Argument type: Boolean
`maximum`	<*number of users*> Specify a larger number of user records to retrieve. The default limit is 100 user records. Argument type: Integer
`searchFields`	Filter search fields that include the user's full name and email address. Argument type: Collection

Positional arguments

None

Response

Zero or more `user` elements with summary information only.

ec-perl

syntax: `$cmdr->getUsers({<optionals>});`

Examples

```
$cmdr->getUsers();

$cmdr->getUsers({filter => '*Betty*', maximum => 25});
```

ectool

syntax: `ectool getUsers ...`

Examples

```
ectool getUsers

ectool getUsers --filter *Betty* --maximum 25
```

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login

Logs into the server and saves the session ID for subsequent ectool use. The user name provided determines the permissions for commands that can be run during the session.

You must specify the `userName` and `password`.

Arguments	Descriptions
`password`	The password for the user who is "logging in".
`userName`	The name of a user who has login privileges.

Positional arguments

`userName, password`

Response

One `session` element containing the session ID.

ec-perl

syntax:`$cmdr->login(<userName>,<password>);`

Example

```
$cmdr->login("Ellen Ernst", "ee123");
```

ectool

syntax:`ectool login <userName> <password>`

Note: ectool will prompt for the password if not supplied.

Example

```
ectool --server EAVMXP login "Ellen Ernst" "ee123"
```

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logout

Logs out of the client session.

Arguments	Descriptions
`None`	

Positional arguments

None

Response

None or a status OK message.

ec-perl

Example

```
$cmdr->logout();
```

ectool

Example

```
ectool logout
```

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modifyGroup

Modifies an existing group.

You must specify `groupName`.

Arguments	Descriptions
`groupName`	Name of the group that must be unique among local groups.
`migrateSettings`	(Optional) <*targetGroupName*> Use this argument to specify the new name to which the settings need to be moved.
`newName`	(Optional)Enter any name of your choice to rename the group.
`removeAllUsers`	(Optional) <*Boolean flag* `- 0|1|true|false`> If the value is `true` or `1`, the system removes all the users from this group.
`userName`	(Optional) Using ec-perl, enter one or more user names to add to the group. `user1 [user2...]` Provide a complete list of names for the group. These names will replace existing names in the group. Any name with spaces must be enclosed in double-quotes.
`userName`	(Optional) Using ectool, enter one user name to add to the group. `user1` Provide one user name for the group such as an alias. This name will replace existing names in the group. Any name with spaces must be enclosed in double-quotes.
`userNames`	(Optional) Using ectool, enter two or more user names to add to the group. `user1 [user2...]` Provide a complete list of names for the group. These names will replace existing names in the group. Any name with spaces must be enclosed in double-quotes.

Positional arguments

`groupName`

Response

None or a status OK message.

ec-perl

syntax:`$cmdr->modifyGroup(<groupName>, {<optionals>});`

Examples

```
$cmdr->modifyGroup("Build Users", {userName => "dduncan"});
```

```
$cmdr->modifyGroup("Build Users", {userName => ["dduncan", "jack"]});
```

ectool

syntax:`ectool modifyGroup <groupName> [<optionals>]`

Examples

This example has the singular `userName` argument to add one user name to the group.

```
ectool modifyGroup "Build Users" --userName dduncan
```

This example has the plural `userNames` argument to add two or more user names to the group.

```
ectool modifyGroup "Build Users" --userNames dduncan jack tthomas
```

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modifyUser

Modifies an existing *local* user.
Note: This API does ***not*** apply to non-local users.

User or Group Lists

The commands `createUser` and `modifyUser` can have an optional argument called `groupNames`.
The commands `createGroup` and `modifyGroup` can have an optional argument named `userNames`.
In each case, the optional argument is followed by a list of groups or names.

Using ectool, your command string would be:

```
ectool createGroup "New Group Name" --userNames "A Adams" "B Barker"
```

To make this call via the Perl API, create a list of names and then pass a reference to the list as an optional parameter.
Note: The name of the optional parameter is singular, "userName" or "userGroup," not the plural form used by ectool.

Here is an example using the Perl API:

```
# Run the procedure - pass a reference to the list of names
$xPath = $cmdr->createGroup("New Group Name", {
    "userName" => ['A Adams', 'B Burns'] });
```

You must specify a `userName`.

Arguments	Descriptions
`email`	The user's email address.
`fullUserName`	The user's full name. For example, "John Smith".

Arguments	Descriptions
`groupNames`	*group1* [*group2* ...] Assigns the user to one or more groups and removes the user from any groups not included in the list.
`migrateSettings`	<*targetUserName*> Use this option to specify the new name to which the settings need to be moved.
`newName`	The user's new name (for example, if changing an existing user's surname).
`password`	Enter a new password to set for the user.
`removeFromAllGroups`	<*Boolean flag* - `0|1|true|false`> If set to 1, this user will be removed from all groups.
`sessionPassword`	If changing the user's password, you must enter the password used in the "login" command also.
`userName`	The name used by the user to login and/or receive email. For example, "jsmith".

Positional arguments

`userName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->modifyUser(<userName>, {<optionals>});`

Example

```
$cmdr->modifyUser("Betty Barker", {email => "bbarker@abc.com"});
```

ectool

syntax: `ectool modifyUser <userName> ...`

Example

```
ectool modifyUser "Betty Barker" --email "bbarker@abc.com"
```

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removeUsersFromGroup

Removes one or more users from a particular group.

You must specify a `groupName` and one or more user names.

Arguments	Descriptions
`groupName`	The name of the group from which to remove users.
`userNames`	The list of users to remove from the group.

Positional arguments

`groupName, userNames`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->removeUsersFromGroup(<groupName>, {<optionals>});`

Example

```
$cmdr->removeUsersFromGroup("Developers", {userName => ["John", "Jim", "Joey"]});
```

ectool

syntax: `ectool removeUsersFromGroup <groupName> <userNames> ...`

Example

```
ectool removeUsersFromGroup Developers --userNames John Jim Joey
```

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API Commands - Workflow Management

completeWorkflow

Marks a workflow as completed. When completed, transitions are no longer evaluated.

You must specify `projectName` and `workflowName`.

Arguments	Descriptions
projectName	Name for the project that must be unique among all projects. Argument type: String
workflowName	The name of the workflow. Argument type: String

Positional arguments

`projectName, workflowName`

Response

None or status OK message.

ec-perl

syntax: `$cmdr->completeWorkflow (<projectName>, <workflowName>{...});`

Example

```
$cmdr->completeWorkflow ("projectA", "workflow_26_201010121647");
```

ectool

syntax: `ectool completeWorkflow <projectName> <workflowName>`

Example

```
ectool completeWorkflow projectA workflow_26_201010121647
```

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deleteWorkflow

Deletes a workflow, including all states and transitions.

You must specify a `projectName` and a `workflowName`.

Arguments	Descriptions
deleteProcesses	*<Boolean flag -* `0|1|true|false`*>*
projectName	The name of the project containing the workflow to delete.
workflowName	The name of the workflow.

Positional arguments

`projectName, workflowName`

Response

None or status OK message.

ec-perl

syntax: `$cmdr->deleteWorkflow (<projectName>, <workflowName>);`

Example

```
$cmdr->deleteWorkflow ("projectA", "workflow_26_201010121647");
```

ectool

syntax: `ectool deleteWorkflow <projectName> <workflowName> ...`

Example

```
ectool deleteWorkflow projectA workflow_26_201010121647
```

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getState

Finds a state by name.

You must specify `projectName`, `workflowName`, and `stateName`.

Arguments	Descriptions
`projectName`	Name for the project; must be unique among all projects.
`stateName`	Name of the state.
`workflowName`	Name of the workflow.

Positional arguments

`projectName, workflowName, stateName`

Response

One `state` element.

ec-perl

syntax: `$cmdr->getState (<projectName>, <workflowName>, <stateName>);`

Example

```
$cmdr->getState ("projectA", "workflow_26_201010121647", "build");
```

ectool

syntax: `ectool getState <projectName> <workflowName> <stateName>`

Example

```
ectool getState projectA workflow_26_201010121647 build
```

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getStates

Retrieves all states in a workflow.

You must specify `projectName` and `workflowName`.

Arguments	Descriptions
`projectName`	Name for the project; must be unique among all projects.
`workflowName N`	Name of the workflow.

Positional arguments

`projectName, workflowName`

Response

One or more `state` elements.

ec-perl

syntax: `$cmdr->getStates (projectName>, <workflowName>);`

Example

```
$cmdr->getStates ("projectA", "workflow_26_201010121647");
```

ectool

syntax: `ectool getStates <projectName> <workflowName>`

Example

```
ectool getStates projectA  workflow_26_201010121647
```

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getTransition

Finds a transition by name.

You must specify `projectName`, `workflowName`, `stateName`, and `transitionName`.

Arguments	Descriptions
`projectName`	Name for the project; must be unique among all projects.
`stateName`	Name of the state.
`transitionName`	Name of the transition.

Arguments	Descriptions
workflowName	Name of the workflow.

Positional arguments

projectName, workflowName, stateName, transitionName

Response

One transition element.

ec-perl

syntax: $cmdr->getTransition (projectName>, <workflowName>, <stateName>, <transitionName>);

Example

```
$cmdr->getTransition ("projectA", "workflow_26_201010121647", "build", "build2tes
t");
```

ectool

syntax: ectool getTransition <projectName> <workflowName> <stateName> <transitionName>

Example

```
ectool getTransition projectA workflow_26_201010121647 build build2test
```

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getTransitions

Retrieves all transitions in a workflow.

You must specify projectName, workflowName, and stateName.

Arguments	Descriptions
projectName	The name of the project containing the transition.
stateName	The name of the state.
targetState	The target state for the transition definition.
workflowName	The name of the workflow.

Positional arguments

projectName, workflowName, stateName

Response

One or more `transition` elements.

ec-perl

syntax: `$cmdr->getTransitions (<projectName>, <workflowName>, <stateName>);`

Example

```
$cmdr->getTransitions ("projectA", "workflow_26_201010121647", "build");
```

ectool

syntax: `ectool getTransitions <projectName> <workflowName> <stateName>`

Example

```
ectool getTransitions projectA workflow_26_201010121647 build
```

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getWorkflow

Finds a workflow by name.

You must specify a `projectName` and `workflowName`.

Arguments	Descriptions
`projectName`	Name for the project; must be unique among all projects.
`workflowName`	Name of the workflow.

Positional arguments

`projectName, workflowName`

Response

One `workflow` element.

ec-perl

syntax: `$cmdr->getWorkflow (<projectName>, <workflowName>);`

Example

```
$cmdr->getWorkflow ("projectA", "BTD");
```

ectool

syntax: `ectool getWorkflow <projectName> <workflowName>`

Example

```
ectool getWorkflow projectA BTD
```

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getWorkflows

Retrieves all workflow instances in a project.

You must specify a `projectName`.

Arguments	Descriptions
`projectName`	Name for the project; must be unique among all projects.

Positional arguments

`projectName`

Response

Zero or more `workflow` elements.

ec-perl

syntax: `$cmdr->getWorkflows (<projectName>);`

Example

```
$cmdr->getWorkflows ("projectA");
```

ectool

syntax: `ectool getWorkflows <projectName>`

Example

```
ectool getWorkflows projectA
```

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runWorkflow

Runs the specified workflow definition and returns the workflow name.

You must specify the `projectName` and `workflowDefinitionName`.

Arguments	Descriptions
`projectName`	Name for the project that must be unique among all projects. Argument type: String
`workflowDefinitionName`	Name of the workflow definition. Argument type: String

Arguments	Descriptions
actualParameter	(Optional) Specifies the values to pass as parameters to the workflow starting state. Each parameter value is specified with an actualParameterName and a value. The actualParameterName must match the name of a formal parameter on the starting state. Argument type: Map
credentials	(Optional) Credentials to use with the workflow state. Argument type: Collection
priority	(Optional) Priority of the jobs launched by the workflow. Argument type: JobPriority
startingState	(Optional) The initial state of the workflow. Argument type: String

Positional arguments

projectName, workflowDefinitionName

Response

The workflow name is returned.

ec-perl

syntax: `$cmdr->runWorkflow (<projectName>, <workflowDefinitionName>, {<optionals>});`

Example

```
$cmdr->runWorkflow ("projectA", "BTD", {startingState => "build"});
```

ectool

syntax: `ectool runWorkflow <projectName> <workflowDefinitionName> ...`

Example

```
ectool runWorkflow projectA BTD --startingState build
```

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transitionWorkflow

Manually transition from the active workflow state.

You must specify projectName, workflowName, stateName, and transitionName.

Arguments	Descriptions
`projectName`	Name for the project that must be unique among all projects. Argument type: String
`workflowName`	The name of the workflow to transition. Argument type: String
`stateName`	The name of the state. Argument type: String
`transitionName`	The name of the transition. Argument type: String
`actualParameters`	(Optional) Specifies the values to pass as parameters to the transition's target state. Each parameter value is specified with an `actualParameterName` and a `value`. The `actualParameterName` must match the name of a formal parameter on the target state. Argument type: Map
`credentials`	(Optional) Credentials to use with the workflow state. Argument type: Collection

Positional arguments

`projectName`, `workflowName`, `stateName`, `transitionName`

Response

None or status OK message.

ec-perl

syntax: `$cmdr->transitionWorkflow (<projectName>, <workflowName>, <stateName, <transitionName>,{<optionals>});`

Example

```
$cmdr->transitionWorkflow ("projectA", "workflow_26_201010121647", "build", "build2
test");
```

ectool

syntax: `ectool transitionWorkflow <projectName> <workflowName> <stateName> <transitionName> ...`

Example

```
ectool transitionWorkflow projectA workflow_26_201010121647 build build2test
```

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API Commands - Workflow Definition Management

createStateDefinition

Creates a new state definition for a workflow definition. Optionally, a state may launch either a procedure or a sub-workflow as its "process" when the state is entered.

You must specify `projectName`, `workflowDefinitionName`, and `stateDefinitionName`.

Arguments	Descriptions
projectName	The name of the project. Argument type: String
workflowDefinitionName	The name of the workflow definition. Argument type: String
stateDefinitionName	Choose any unique name of your choice for the state definition. This name must be unique within the workflow definition. Argument type: String
actualParameter	(Optional) Specifies the values to pass as parameters to the process. Each parameter value is specified with an `actualParameterName` and a `value`. The `actualParameterName` must match the name of a formal parameter on the process. For more information about parameters, click here. Argument type: Map
description	(Optional) A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument type: String

Arguments	Descriptions
startable	(Optional) <*Boolean flag* - 0|1|true|false> "True" means this state definition can be the initial state of an instantiated workflow. Argument type: Boolean
subprocedure	(Optional) Name of the procedure launched when the state is entered. **Also requires** subproject. Argument type: String
subproject	(Optional) Name of the project containing the procedure or workflow launched when the state is entered. Argument type: String
substartingState	(Optional) Name of the starting state for the workflow launched when the state is entered. **Also requires** subproject and subworkflowDefinition. Argument type: String
subworkflowDefinition	(Optional) Name of the workflow definition launched when the state is entered. **Also requires** subproject. Argument type: String

Positional arguments

projectName, workflowDefinitionName, stateDefinitionName

Response

One stateDefinition element.

ec-perl

syntax: `$cmdr->createStateDefinition (<projectName>, <workflowDefinitionName>, <stateDefinitionName>, {<optionals>});`

Example

```
$cmdr->createStateDefinition ("ProjectA", "BTD", "build", {startable => 1,
      subproject => "product",
    subprocedure => "Master",
     description => "free text"});
```

ectool

syntax: `ectool createStateDefinition <projectName> <workflowDefinitionName> <stateDefinitionName> ...`

Example

```
ectool createStateDefinition ProjectA BTD build  --startable 1 --subproject product
    --subprocedure Master --description "free text"
```

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createTransitionDefinition

Creates a new transition definition for workflow definition.

You must specify `projectName`, `workflowDefinitionName`, `stateDefinitionName`, `transitionDefinitionName`, and `targetState`.

Arguments	Descriptions
`projectName`	Name for the project that must be unique among all projects. Argument type: String
`workflowDefinitionName`	The name of the workflow definition. Argument type: String
`stateDefinitionName`	The name of the state definition. Argument type: String
`transitionDefinitionName`	The name of the transition that must be unique among all state definitions. Argument type: String
`targetState`	Target state for the transition definition. Argument type: String
`actualParameter`	(Optional) Specifies the values to pass as parameters to the target state. Each parameter value is specified with an `actualParameterName` and a `value`. The `actualParameterName` must match the name of a formal parameter on the target state. For more information about parameters, click here. Argument type: Map
`condition`	(Optional)A fixed text or text embedding property references that are evaluated into a logical TRUE or FALSE. An empty string, a "0" or "false" is interpreted as FALSE. Any other result string is interpreted as TRUE. This field is ignored by the server if `trigger` is set to manual. Argument type: String

Arguments	Descriptions
`description`	A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>` Argument type: String
`trigger`	(Optional) Type of trigger for this transaction. Possible values are: `onEnter|onStart|onCompletion|manual` Argument type: TransitionTrigger

Positional arguments

`projectName`, `workflowDefinitionName`, `stateDefinitionName`, `transitionDefinitionName`, `targetState`

Response

One `transitionDefinition` element.

ec-perl

syntax:
```
$cmdr->createTransitionDefinition (<projectName>, <workflowDefinitionName>,
        <stateDefinitionName>, <transitionDefinitionName>, <targetState>,
        {<optionals>});
```

Example

```
$cmdr->createTransitionDefinition ("ProjectA", "BTD", "build", "build2test", "tes
t",
    {trigger => "manual", description => "free text"});
```

ectool

syntax:
```
ectool createTransitionDefinition <projectName> <workflowDefinitionName>
        <stateDefinitionName> <transitionDefinitionName> <targetState> ...
```

Example

```
ectool createTransitionDefinition ProjectA BTD build build2test test --trigger manu
al
   --description "free text"
```

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`createWorkflowDefinition`

Creates a new workflow definition for a project.

You must enter a `projectName` and a `workflowDefinitionName`.

Arguments	Descriptions
description	A plain text or HTML description for this object. If using HTML, you must surround your text with <html> ... </html> tags. The only HTML tags allowed in the text are: <a> <b> <dl> <font> <i> <p> <pre> <style> <table> <tc> <td> <th> <tr>
projectName	Name for the project; must be unique among all projects.
workflowDefinitionName	Name of the workflow definition; must be unique within the project.
workflowNameTemplate	The name of the workflow template that the system uses to name instances of this workflow definition.

Positional arguments

projectName, workflowDefinitionName

Response

One workflowDefinition element.

ec-perl

syntax: `$cmdr->createWorkflowDefinition (projectName>, <workflowDefinitionName>, {<optionals>});`

Example

```
$cmdr->createWorkflowDefinition ("projectA", "BTD", {description => "free text"});
```

ectool

syntax: `ectool createWorkflowDefinition <projectName> <workflowDefinitionName> [<optionals>]`

Example

```
ectool createWorkflowDefinition projectA BTD --description "free text"
```

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deleteStateDefinition

Deletes a state definition.

You must specify a projectName, workflowDefinitionName, and stateDefinitionName.

Arguments	Descriptions
projectName	The name of the project containing the state definition.
workflowDefinitionName	The name of the workflow definition.

Arguments	Descriptions
stateDefinitionName	The name of the state definition.

Positional arguments

projectName, workflowDefinitionName, stateDefinitionName

Response

None or status OK message.

ec-perl

syntax: `$cmdr->deleteStateDefinition (<projectName>, <workflowDefinitionName>, <stateDefinitionName>);`

Example

```
$cmdr->deleteStateDefinition ("projectA", "BTD", "build");
```

ectool

syntax: `ectool deleteStateDefinition <projectName> <workflowDefinitionName> <stateDefinitionName>`

Example

```
ectool deleteStateDefinition projectA BTD build
```

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deleteTransitionDefinition

Deletes a transition definition.

You must specify a projectName, workflowDefinitionName, stateDefinitionName, and transitionDefinitionName.

Arguments	Descriptions
projectName	The name of the project containing the transition definition.
stateDefinitionName	The name of the state definition.
transitionDefinitionName	The name of the transition definition.
workflowDefinitionName	The name of the workflow definition.

Positional arguments

projectName, workflowDefinitionName, stateDefinitionName, transitionDefinitionName

Response

None or status OK message.

ec-perl

syntax: `$cmdr->deleteTransitionDefinition (<projectName>, <workflowDefinitionName>, <stateDefinitionName>, <transitionDefinitionName>);`

Example

```
$cmdr->deleteTransitionDefinition ("projectA", "BTD", "build", "build2test");
```

ectool

syntax: `ectool deleteTransitionDefinition <projectName> <workflowDefinitionName> <stateDefinitionName> <transitionDefinitionName>`

Example

```
ectool deleteTransitionDefinition projectA BTD build build2test
```

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deleteWorkflowDefinition

Deletes a workflow definition, including all state and transition definitions.

You must specify a `projectName` and a `workflowDefinitionName`

Arguments	Descriptions
`projectName`	The name of the project containing the workflow definition to delete.
`workflowDefinitionName`	The name of the workflow definition.

Positional arguments

`projectName`, `workflowDefinitionName`

Response

None or status OK message.

ec-perl

syntax: `$cmdr->deleteWorkflowDefinition (<projectName>, <workflowDefinitionName>);`

Example

```
$cmdr->deleteWorkflowDefinition ("projectA", "BTD");
```

ectool

syntax: `ectool deleteWorkflowDefinition <projectName> <workflowDefinitionName>`

Example

```
ectool deleteWorkflowDefinition projectA BTD
```

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getStateDefinition

Finds a state definition by name.

You must specify `projectName`, `workflowDefinitionName`, and `stateDefinitionName`.

Arguments	Descriptions
`projectName`	Name for the project; must be unique among all projects.
`stateDefinitionName`	Name of the state definition.
`workflowDefinitionName`	Name of the workflow definition.

Positional arguments

```
projectName, workflowDefinitionName, stateDefinitionName
```

Response

One `stateDefinition` element.

ec-perl

syntax: `$cmdr->getStateDefinition (<projectName>, <workflowDefinitionName>, <stateDefinitionName>);`

Example

```
$cmdr->getStateDefinition ("projectA", "BTD", "build");
```

ectool

syntax: `ectool getStateDefinition <projectName> <workflowDefinitionName> <stateDefinitionName>`

Example

```
ectool getStateDefinition projectA BTD build
```

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getStateDefinitions

Retrieves all state definitions in a workflow definition.

You must specify `projectName` and `workflowDefinitionName`.

Arguments	Descriptions
`includeFormalParameters`	*<Boolean flag* - `0|1|true|false`>
`projectName`	Name for the project; must be unique among all projects.
`startableOnly`	*<Boolean flag* - `0|1|true|false`>
`workflowDefinitionName`	The name of the workflow definition.

Positional arguments

`projectName, workflowDefinitionName`

Response

One or more `stateDefinition` elements.

ec-perl

syntax: `$cmdr->getStateDefinitions (<projectName>, <workflowDefinitionName>, {<optionals>});`

Example

```
$cmdr->getStateDefinitions ("projectA", "BTD", {startableOnly => 1});
```

ectool

syntax: `ectool getStateDefinitions <projectName> <workflowDefinitionName> ...`

Example

```
ectool getStateDefinitions projectA BTD --startableOnly 1
```

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getTransitionDefinition

Finds a transition definition by name.

You must specify `projectName`, `workflowDefinitionName`, `stateDefinitionName`, `transitionDefinitionName`.

Arguments	Descriptions
`projectName`	Name for the project; must be unique among all projects.
`stateDefinitionName`	Name of the state definition.
`transitionDefinitionName`	Name of the transition definition.
`workflowDefinitionName`	Name of the workflow definition.

Positional arguments

`projectName, workflowDefinitionName, stateDefinitionName, transitionDefinitionName`

Response

One `transitionDefinition` element.

ec-perl

syntax: `$cmdr->getTransitionDefinition (<projectName>, <workflowDefinitionName>, <stateDefinitionName>, <transitionDefinitionName>);`

Example

```
$cmdr->getTransitionDefinition ("projectA", "BTD", "build", "build2test");
```

ectool

syntax: `ectool getTransitionDefinition <projectName> <workflowDefinitionName> <stateDefinitionName> <transitionDefinitionName>`

Example

```
ectool getTransitionDefinition projectA BTD build build2test
```

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getTransitionDefinitions

Retrieves all transition definitions in a workflow definition.

You must specify `projectName`, `stateDefinitionName`, `workflowDefinitionName`.

Arguments	Descriptions
`projectName`	Name for the project; must be unique among all projects.
`stateDefinitionName`	The name of the state definition.
`targetState`	The name of the target state.
`workflowDefinitionName`	The name of the workflow definition.

Positional arguments

`projectName, stateDefinitionName, workflowDefinitionName`

Response

Zero or more `transitionDefinition` elements.

ec-perl

syntax: `$cmdr->getTransitionDefinitions (<projectName>, <stateDefinitionName>, <workflowDefinitionName>, {<optionals>});`

Example

```
$cmdr->getTransitionDefinitions ("projectA", "build", "BTD");
```

ectool

syntax: `ectool getTransitionDefinitions <projectName> <stateDefinitionName> <workflowDefinitionName> ...`

Example

```
ectool getTransitionDefinitions projectA build BTD
```

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getWorkflowDefinition

Finds a workflow definition by name.

You must specify a `projectName` and a `workflowDefinitionName`.

Arguments	Descriptions
`projectName`	Name for the project; must be unique among all projects.
`workflowDefinitionName`	Name of the workflow definition.

Positional arguments

`projectName, workflowDefinitionName`

Response

One `workflowDefinition` element.

ec-perl

syntax: `$cmdr->getWorkflowDefinition (<projectName>, <workflowDefinitionName>);`

Example

```
$cmdr->getWorkflowDefinition ("projectA", "BTD");
```

ectool

syntax: `ectool getWorkflowDefinition <projectName> <workflowDefinitionName>`

Example

```
ectool getWorkflowDefinition projectA BTD
```

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getWorkflowDefinitions

Retrieves all workflow definitions in a project.

You must specify a `projectName`.

Arguments	Descriptions
`projectName`	Name for the project; must be unique among all projects.

Positional arguments

`projectName`

Response

Zero or more `workflowDefinition` elements.

ec-perl

syntax: `$cmdr->getWorkflowDefinitions (<projectName>);`

Example

```
$cmdr->getWorkflowDefinitions ("projectA");
```

ectool

syntax: `ectool getWorkflowDefinitions <projectName>`

Example

```
ectool getWorkflowDefinitions projectA
```

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modifyStateDefinition

Modifies an existing state definition.

You must specify `projectName`, `workflowDefinitionName`, and `stateDefinitionName`.

Arguments	Descriptions
`actualParameter`	Specifies the values to pass as parameters to the process. Each parameter value is specified with an `actualParameterName` and a `value`. The `actualParameterName` must match the name of a formal parameter on the called process.
`clearActualParameters`	<*Boolean flag* - `0|1|true|false`> If set to `true` or `1`, all the actual parameters are removed from the definition. Argument type: Boolean

Arguments	Descriptions
description	A plain text or HTML description for this object. If using HTML, you must surround your text with <html> ... </html> tags. The only HTML tags allowed in the text are: <a> <b> <dl> <font> <i> <p> <pre> <style> <table> <tc> <td> <th> <tr>
newName	The new name of your choice for the state definition.
projectName	Name for the project; must be unique among all projects.
startable	<*Boolean flag* - 0|1|true|false>
stateDefinitionName	The name of the state definition to modify.
subprocedure	The name of the procedure launched when the state is entered. **Also requires** subproject
subproject	The name of the project containing the procedure or workflow launched when the state is entered.
substartingState	The name of the workflow starting state that is launched when the state is entered. **Also requires** subproject and subworkflowDefinition
subworkflowDefinition	The name of the workflow definition launched when the state is entered. **Also requires** subproject
workflowDefinitionName	The name of the workflow definition.

Positional arguments

projectName, workflowDefinitionName, stateDefinitionName

Response

One stateDefinition element.

ec-perl

syntax: $cmdr->modifyStateDefinition (<projectName>, <workflowDefinitionName>, <stateDefinitionName>);

Example

```
$cmdr->modifyStateDefinition ("projectA", "BTD", "build",
       {startable => 1,
       subproject => "factory",
     subprocedure => "Master",
      description => "sample text"});
```

ectool

syntax: `ectool modifyStateDefinition <projectName> <workflowDefinitionName> <stateDefinitionName> ...`

Example

```
ectool modifyStateDefinition projectA BTD build --startable 1 --subproject factory
   --subprocedure Master --description "sample text"
```

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modifyTransitionDefinition

Modifies an existing transition definition.

You must specify `projectName`, `workflowDefinitionName`, `stateDefinitionName`, and `transitionDefinitionName`.

Arguments	Descriptions
`actualParameter`	Specifies the values to pass as parameters to the target state. Each parameter value is specified with an `actualParameterName` and a `value`. The `actualParameterName` must match the name of a formal parameter on the target state.
`clearActualParameters`	<*Boolean flag* - `0|1|true|false`> If set to `true` or `1`, all the actual parameters are removed from the definition. Argument type: Boolean
`condition`	A fixed text or text embedded property references that are evaluated into a logical "true" or "false". An empty string, a "0" or "false" is interpreted as "false". Any other result string is interpreted as "true". This field is ignored by the server if `trigger` is set to manual.
`description`	A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>`
`newName`	A new name of your choice for the transition definition--must be a unique name within the workflow.
`projectName`	Name for the project; must be unique among all projects.
`stateDefinitionName`	The name of the state definition.

Arguments	Descriptions
`targetState`	The target state for the transition definition.
`transitionDefinitionName`	The name of the transition definition to modify.
`trigger`	Possible values are: `onEnter|onStart|onCompletion|manual`
`workflowDefinitionName`	The name of the workflow definition.

Positional arguments

```
projectName, workflowDefinitionName, stateDefinitionName,
transitionDefinitionName
```

Response

One `transitionDefinition` element.

ec-perl

syntax: `$cmdr->modifyTransitionDefinition (<projectName>, <workflowDefinitionName>, <stateDefinitionName>, <transitionDefinitionName>, {<optionals>});`

Example

```
$cmdr->modifyTransitionDefinition ("projectA", "BTD", "build", "build2test",
        {targetState => "deploy",
             trigger => "onCompletion",
         description => "bypass all tests"});
```

ectool

syntax: `ectool modifyTransitionDefinition <projectName> <workflowDefinitionName> <stateDefinitionName> <transitionDefinitionName> ...`

Example

```
ectool modifyTransitionDefinition projectA BTD build build2test
    --targetState deploy
    --trigger onCompletion
    --description "bypass all tests"
```

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modifyWorkflowDefinition

Modifies an existing workflow definition.

You must specify `projectName` and `workflowDefinitionName`.

Arguments	Descriptions
description	A plain text or HTML description for this object. If using HTML, you must surround your text with <html> ... </html> tags. The only HTML tags allowed in the text are: <a> <b> <dl> <font> <i> <p> <pre> <style> <table> <tc> <td> <th> <tr>
newName	The new name of your choice for the workflow definition--must be a unique name within the workflow.
projectName	Name for the project; must be unique among all projects.
workflowDefinitionName	The name of the workflow definition to modify.
workflowNameTemplate	The template used to determine default names for workflows launched from a workflow definition.

Positional arguments

projectName, workflowDefinitionName

Response

One workflowDefinition element.

ec-perl

syntax: `$cmdr->modifyWorkflowDefinition (<projectName>, <workflowDefinitionName>, {<optionals>});`

Example

```
$cmdr->modifyWorkflowDefinition ("projectA", "BTD",
        {newName => "BuildTestDeploy",
     description => "changed name"});
```

ectool

syntax: `ectool modifyWorkflowDefinition <projectName> <workflowDefinitionName> ...`

Example

```
ectool modifyWorkflowDefinition projectA BTD
   --newName "BuildTestDeploy"
   --description "changed name"
```

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moveStateDefinition

Moves a state definition within a workflow definition.

You must specify projectName, workflowDefinitionName, and stateDefinitionName.

Arguments	Descriptions
`beforeStateDefinition`	Use this option to reorder state definitions in a workflow definition. The state definition (`stateDefinitionName`) will be moved to a position just before the state definition "named" by this option. If omitted, the state definition is moved to the end of the workflow definition.
`projectName`	The name of the project containing the state definition.
`stateDefinitionName`	The name of the state definition to move.
`workflowDefinitionName`	The name of the workflow definition.

Positional arguments

`projectName, workflowDefinitionName, stateDefinitionName`

Response

None or status OK message.

ec-perl

syntax: `$cmdr->moveStateDefinition (<projectName>, <workflowDefinitionName>, <stateDefinitionName>, {<optionals>});`

Example

```
$cmdr->moveStateDefinition ("projectA", "BTD", "deploy",
     {beforeStateDefinition => "test"});
```

ectool

syntax: `ectool moveStateDefinition <projectName> <workflowDefinitionName> <stateDefinitionName> ...`

Example

```
ectool moveStateDefinition projectA BTD deploy --beforeStateDefinition test
```

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moveTransitionDefinition

Moves a transition definition within a workflow definition.

You must specify `projectName`, `workflowDefinitionName`, `stateDefinitionName`, and `transitionDefinitionName`.

Arguments	Descriptions
`beforeTransitionDefinition`	Use this option to move a transition definition in a workflow definition. The transition definition is moved to a position just before the transition definition named by this option. If omitted, the transition definition is moved to the end of the workflow definition.
`projectName`	The name of the project containing the transition definition.
`stateDefinitionName`	The name of the state definition.
`transitionDefinitionName`	The name of the transition definition to move.
`workflowDefinitionName`	The name of the workflow definition.

Positional arguments

```
projectName, workflowDefinitionName, stateDefinitionName,
transitionDefinitionName
```

Response

None or status OK message.

ec-perl

syntax: `$cmdr->moveTransitionDefinition (<projectName>, <workflowDefinitionName>, <stateDefinitionName>, <transitionDefinitionName>, {<optionals>});`

Example

```
$cmdr->moveTransitionDefinition ("projectA", "BTD", "Build", "in",
    {beforeTransitionDefinition => "out"});
```

ectool

syntax: `ectool moveTransitionDefinition <projectName> <workflowDefinitionName> <stateDefinitionName> <transitionDefinitionName> ...`

Example

```
ectool moveTransitionDefinition projectA BTD Build in--beforeTransitionDefinition o
ut
```

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API Commands - Workspace Management

createWorkspace

Creates a new workspace.

A workspace definition consists of three paths to access the workspace in various ways:

`agentDrivePath`

`agentUncPath` - The agent uses `agentUncPath` and `agentDrivePath` to compute the drive mapping needed to make `agentDrivePath` valid in the step (see examples below).

`agentUnixPath`

Examples for **`agentDrivePath`** and **`agentUncPath`**:

agentDrivePath	agentUncPath	Result from running a step in "job123" that uses this workspace
`N:\`	`\\server\share`	The agent maps `\\server\share to drive n:` and runs the step in `n:\job123.`
`N:\sub1`	`\\server\share\dir1\sub1`	The agent maps `\\server\share\dir1` to drive `n:` and runs the step in `n:\sub1\job123.`
`N:\sub1`	`\\server\share\dir1`	Invalid! No mapping can be deduced from this pair of values.
`C:\ws`	`C:\ws`	A local workspace on the agent. No drive mapping is needed. The job step runs in `c:\ws\job123.`
`C:\ws`		Same as if `agentUncPath` were set identical to `agentDrivePath.`

You must specify a `workspaceName`.

Arguments	Descriptions
`agentDrivePath`	Drive-letter-based path used by Windows agents to access the workspace in steps.
`agentUncPath`	UNC path used by Windows ElectricFlow web servers to access the workspace. The agent uses `agentUncPath` and `agentDrivePath` to compute the drive mapping needed for making `agentDrivePath` valid in the step.
`agentUnixPath`	UNIX path used by UNIX agents and Linux ElectricFlow web servers to access the workspace.

Arguments	Descriptions
`credentialName`	Credential to use when connecting to a network location. `credentialName` can be one of two forms: **relative** (for example, *"cred1"*) - the credential is assumed to be in the project that contains the request target object **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*) - the credential can be from any specified project, regardless of the target object's project.
`description`	A plain text or HTML description for this object. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>`
`local`	<*Boolean flag* - `0|1|true|false`> Set to "true", the workspace is local.
`workspaceDisabled`	<*Boolean flag* - `0|1|true|false`> Set to "true", the workspace is disabled.
`workspaceName`	The workspace name.
`zoneName`	The name of the zone where this workspace resides.

Positional arguments

`workspaceName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->createWorkspace(<workspaceName>, {<optionals>});`

Example

```
$cmdr->createWorkspace('test', {agentDrivePath => 'c:/workspace',
      agentUncPath => 'c:/workspace',
     agentUnixPath => '/mnt/server/workspace'});
```

ectool

syntax: `ectool createWorkspace <workspaceName> ...`

Example

```
ectool createWorkspace test --agentDrivePath c:/workspace --agentUncPath
   c:/workspace --agentUnixPath '/mnt/server/workspace'
```

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deleteWorkspace

Deletes a workspace.

You must specify the `workspaceName`.

Arguments	Descriptions
`workspaceName`	The name of the workspace to delete.

Positional arguments

`workspaceName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->deleteWorkspace(<workspaceName>);`

Example

```
$cmdr->deleteWorkspace("test");
```

ectool

syntax: `ectool deleteWorkspace <workspaceName>`

Example

```
ectool deleteWorkspace test
```

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getWorkspace

Retrieves a workspace by name.

You must specify the `workspaceName`.

Arguments	Descriptions
`workspaceName`	The name of the workspace to retrieve.

Positional arguments

`workspaceName`

Response

One `workspace` element.

ec-perl

syntax: `$cmdr->getWorkspace(<workspaceName>);`

Example

```
$cmdr->getWorkspace("test");
```

ectool

syntax: `ectool getWorkspace <workspaceName>`

Example

```
ectool getWorkspace test
```

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getWorkspaces

Retrieves all workspaces.

Arguments	Descriptions
None	

Positional arguments

None

Response

Zero or more `workspace` elements.

ec-perl

syntax: `$cmdr->getWorkspaces();`

Example

```
$cmdr->getWorkspaces();
```

ectool

syntax: `ectool getWorkspaces`

Example

```
ectool getWorkspaces
```

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modifyWorkspace

Modifies an existing workspace.

A workspace definition consists of three paths to access the workspace in various ways:

`agentDrivePath`

`agentUncPath` - The agent uses `agentUncPath` and `agentDrivePath` to compute the drive mapping needed to make `agentDrivePath` valid in the step (see examples below).

`agentUnixPath`

Examples for `agentDrivePath` and `agentUncPath`:

agentDrivePath	agentUncPath	Result from running a step in "job123" that uses this workspace
`N:\`	`\\server\share`	The agent maps `\\server\share` to drive `n:` and runs the step in `n:\job123`.
`N:\sub1`	`\\server\share\dir1\sub1`	The agent maps `\\server\share\dir1` to drive `n:` and runs the step in `n:\sub1\job123`.
`N:\sub1`	`\\server\share\dir1`	Invalid! No mapping can be deduced from this pair of values.
`C:\ws`	`C:\ws`	A local workspace on the agent. No drive mapping is needed. The job step runs in `c:\ws\job123`.
`C:\ws`		Same as if `agentUncPath` were set identical to `agentDrivePath`.

You must specify a `workspaceName`.

Arguments	Descriptions
`agentDrivePath`	Drive-letter-based path used by Windows agents to access the workspace in steps.
`agentUncPath`	UNC path used by Windows ElectricFlow web servers to access the workspace. The agent uses `agentUncPath` and `agentDrivePath` to compute the drive mapping needed for making `agentDrivePath` valid in the step.
`agentUnixPath`	UNIX path used by UNIX agents and Linux ElectricFlow web servers to access the workspace.
`credentialName`	`credentialName` can be one of two forms: **relative** (for example, *"cred1"*) - the credential is assumed to be in the project that contains the request target object. **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*) - the credential can be from any specified project, regardless of the target object's project.

Arguments	Descriptions
description	A plain text or HTML description for this object. If using HTML, you must surround your text with <html> ... </html> tags. The only HTML tags allowed in the text are: <a> <b> <dl> <font> <i> <p> <pre> <style> <table> <tc> <td> <th> <tr>
local	<*Boolean flag* - 0|1|true|false> Set to "true", the workspace is local.
newName	Enter any name of your choice to rename the workspace.
workspaceName	The name of the workspace to modify.
workspaceDisabled	<*Boolean flag* - 0|1|true|false> Set to "true", the workspace is disabled.
zoneName	The name of the zone where this workspace resides.

Positional arguments

workspaceName

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->modifyWorkspace(<workspaceName>, {<optionals>});`

Example

```
$cmdr->modifyWorkspace("test", {description => "my test workspace"});
```

ectool

syntax: `ectool modifyWorkspace <workspaceName> ...`

Example

```
ectool modifyWorkspace test --description "my test workspace"
```

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resolveFile

Resolves the path to a log file or artifact in a workspace.

You must specify `fromAgentId` and `workspaceName`.

Arguments	Descriptions
`fromAgentId`	Identifier of the agent requesting the route to a destination agent or artifact repository.
`workspaceName`	Name of the workspace.
`jobId`	The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template.
`jobStepId`	The unique identifier for a job step, assigned automatically when the job is created. Also accepts a job name assigned to the job by its name template.
`resourceName`	Name of the resource.

Positional arguments

`fromAgentId, workspaceName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->resolveFile ( <fromAgentId>, <workspaceName>, {<optionals>});`

Example

```
$cmdr->resolveFile ("Machine2", "Dev_WS", {resourceName=> Server1});
```

ectool

syntax: `ectool resolveFile <fromAgentId> <workspaceName> [optionals ...]`

Example

```
ectool resolveFile "Machine2" "Dev_WS" --resourceName Server1
```

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API Commands - Miscellaneous Management

acquireNamedLock

Retrieves the named lock.

Arguments	Descriptions
lockName	Name of the lock. Argument type: String
create	<*Boolean flag* - 0|1|true|false> When this argument is set to true or 1, the system will create a lock if it does not exist. Argument type: Boolean

Positional arguments

lockName, create

Response

None or a status OK message.

ec-perl

syntax:$cmdr->acquireNamedLock(<lockName>, <create>);

Example

```
$cmdr->acquireNamedLock ("Group2", true);
```

ectool

syntax:ectool acquireNamedLock <lockName> <create>

Example

```
ectool acquireNamedLock "Group 2" true
```

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changeOwner

Changes the owner of an object.

You must specify an object name.

Note: The modify privilege on the "admin" system ACL is required to change the owner of an object. For email notifiers, the owner can be changed if the current user has sufficient privileges to delete and recreate the object.

Arguments	Descriptions
`applicationName`	(Optional) The name of the application. Argument type: String
`applicationTierName`	(Optional) The name of the application tier. Argument type: String
`componentName`	(Optional) The name of the component. Argument type: String
`configName`	(Optional) The name of the email configuration. Argument type: String
`credentialName`	(Optional) `credentialName` can be in one of these formats: • **relative** (for example, *"cred1"*) - the credential is assumed to be in the project that contains the request target object. Requires a qualifying project name. • **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*) - the credential can be from any specified project, regardless of the target object's project. Argument type: String
`environmentName`	(Optional) The name of an environment. Argument type: String
`environmentTemplateName`	(Optional) The name of an environment template. Argument type: String
`environmentTierName`	(Optional) The name of an environment tier. Argument type: String
`groupName`	(Optional) The full name of a group. For Active Directory and LDAP, this is a full domain name. Argument type: String
`newOwnerName`	(Optional) The name of the new owner for this object. This defaults to the current user. Argument type: String

Arguments	Descriptions
`notifierName`	(Optional) The name of the email notifier. Argument type: String
`pluginName`	(Optional) The name of the plugin. This is the plugin key for a promoted plugin or a plugin key and version for an unpromoted plugin. Argument type: String
`procedureName`	(Optional) The name of the procedure. It can be a path to the procedure. When using this argument, you must also enter the `projectName`. Argument type: String
`processName`	(Optional) The name of a process. It can be a path to the process. Argument type: String
`processStepName`	(Optional) The name of a process step. It can be a path to the process step. Argument type: String
`projectName`	(Optional) The name of the project. It can be a path to the project. The project name is ignored for credentials, procedure, steps, and schedules when it is specified as a path. Argument type: String
`propertySheetId`	(Optional) The unique identifier for a property sheet that is assigned automatically when the property sheet is created. Argument type: UUID
`resourceName`	(Optional) The name of the resource. Argument type: String
`scheduleName`	(Optional) The name of the schedule. It can be be a path to the schedule. When using this argument, you must also use `projectName`. Argument type: String
`stateDefinitionName`	(Optional) The name of the state definition. Argument type: String
`stepName`	(Optional) The name of the step. It can be a path to the step. When using this argument, you must also enter `projectName` and `procedureName`. Argument type: String

Arguments	Descriptions
`transitionDefinitionName`	(Optional) The name of the transition definition. Argument type: String
`userName`	(Optional) The full name of the user. For Active Directory and LDAP, the name can be `user@domain`. Argument type: String
`workflowDefinitionName`	(Optional) The name of the workflow definition. Argument type: String
`workspaceName`	(Optional) The name of the workspace. Argument type: String

Positional arguments

None

Response

Returns the modified object.

ec-perl

syntax: `$cmdr->changeOwner({optionals});`

Example

```
$cmdr->changeOwner ({projectName => "Sample Project"});
```

ectool

syntax: `ectool changeOwner [optionals]`

Example

```
ectool changeOwner --projectName "Sample Project"
```

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clone

Makes a copy of an existing ElectricFlow object. These objects can be cloned:

- Applications
- Components
- Credential
- Directory providers
- Email configurations

- Email notifiers
- Environment templates
- Flows
- Flow states
- Flow transitions
- Pipelines
- Procedures
- Procedure steps
- Processes
- Process Steps
- Projects
- Property sheets
- Resources
- Resource pools
- Schedules
- Stages
- State definitions
- Transition definitions
- Workflow definitions
- Workspaces

IMPORTANT: You cannot clone parameters, artifacts, or artifact versions.

IMPORTANT:
To find the entity you want to clone, you must specify the following arguments:
- A new name for the cloned object (cloneName)
- Locator arguments

For example, if you want to clone a project, you must specify the name of the project that you want to clone.

Arguments	Descriptions
`Naming`	
`cloneName`	(Optional) The `cloneName` specifies the path to the new object, possibly in an alternate location. If no container path is specified, the new object is created inside the same container as the original. If no name is specified, the server will generate a name.

Arguments	Descriptions
Optional	
disableProjectTracking	(Optional) <*Boolean flag* - 0|1|true|false> If set to true, when copying a project, even if Change Tracking is enabled for the original project, Change Tracking is disabled for the new copy of the project from its creation. If you do not need to track changes for the new copy, this avoids the Change Tracking overhead that would otherwise slow down the copying operation, and also saves having to subsequently disable Change Tracking for the new copy of the project. Argument type: Boolean
reducedDetailChangeHistory	(Optional) <*Boolean flag* - 0|1|true|false> Use this argument for large projects containing over 20,000 audited objects with Change Tracking enabled. When this argument is set to true or 1, ElectricFlow automatically decreases the amount of Change History indexing information that it saves in a large project, reducing the level of detail for Change Tracking-intensive operations in the Change History. This can make it harder to revert an object to a specific state and to find information in the Change History when you are troubleshooting or debugging an issue. Set this argument to false or 0 to suppress to this behavior so that ElectricFlow does not change the amount of indexing information for a large project. This will cause the operation to take longer and put more load on the database, but the Change History will have the full details of the entities owned by objects in the project. Argument type: Boolean
Locators	
applicationName	(Optional) The name of the application that is unique among all projects. Argument type: String
applicationTierName	(Optional) The name of the application tier. Argument type: String
artifactName	(Optional) The name of the artifact. Argument type: String
artifactVersionName	(Optional) The name of the artifact version. Argument type: String

Arguments	Descriptions
`cloneName`	(Optional) The new name of the cloned copy of an object. Argument type: String
`componentName`	(Optional) The name of the component. Argument type: String
`configName`	(Optional) The name of the email configuration. Argument type: String
`credentialName`	(Optional) The name of the credential that can be specified in one of these formats: **relative** (for example, *"cred1"*)–The credential is assumed to be in the project that contains the target object. **absolute**(for example, *"/projects/BuildProject/credentials/cred1"*)–Tthe credential can be from any specified project, regardless of the project with the target object. Argument type: String
`environmentName`	(Optional) The name of the environment that must be unique among all projects. Argument type: String
`environmentTemplateName`	(Optional) The name of the environment template. Argument type: String
`environmentTemplateTierName`	(Optional) The name of the environment template tier. Argument type: String
`environmentTierName`	(Optional) The name of the environment tier. Argument type: String
`flowName`	(Optional) Name of the flow that must be unique within the project. Argument Type: String
`flowRuntimeName`	(Optional) Name of the flow runtime. Argument Type: String
`flowRuntimeStateName`	(Optional) Name of the flow state. Argument Type: String

Arguments	Descriptions
`flowStateName`	(Optional) Name of the flow state that must be unique within the flow. Argument Type: String
`flowTransitionName`	Name of the flow transition that must be unique within the flow state. Argument Type: String
`gatewayName`	(Optional) The name of the gateway. Argument type: String
`groupName`	(Optional) The name of the group. Argument type: String
`jobId`	(Optional) The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID
`jobStepId`	(Optional) The unique identifier for a job step that is assigned automatically when the job step is created. Argument type: UUID
`notifierName`	(Optional) The name of the email notifier. Argument type: String
`objectId`	(Optional) The object id as returned by `findObjects`. Argument type: String
`path`	(Optional) The property path for the object. Argument type: String
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`pluginName`	(Optional) The name of the plugin. Argument type: String
`procedureName`	(Optional) The name of the procedure that you want to clone. When using this argument, you must also enter the `projectName`. Argument type: String

Arguments	Descriptions
`processName`	(Optional) The name of the process. Argument type: String
`processStepName`	(Optional) The name of the process step. Argument type: String
`projectName`	(Optional) The name of the project that you want to clone. Argument type: String
`propertySheetId`	(Optional) The unique identifier for a property sheet that is assigned automatically when the property sheet is created.
`providerName`	(Optional) The unique name of the directory provider, such as the LDAP or Active Directory provider name. Argument type: String
`repositoryName`	(Optional) The name of the repository used for artifact management. Argument type: String
`resourceName`	(Optional) The name of the resource that you want to clone. Argument type: String
`resourcePoolName`	(Optional) The name of a pool containing one or more resources. Argument type: String
`resourceTemplateName`	(Optional) The name of the resource template. Argument type: String
`scheduleName`	(Optional) The name of the schedule that you want to clone. When using this argument, you must also enter `projectName`. Argument type: String
`snapshotName`	(Optional) The name of the snapshot that you want to clone. Argument type: String
`stageName`	(Optional) The name of the stage definition. Argument type: String
`stateDefinitionName`	(Optional) The name of the state definition. Argument type: String

Arguments	Descriptions
`stateName`	(Optional) The name of the state. Argument type: String
`stepName`	(Optional) The name of the step that you want to clone. When using this argument, you must also enter `projectName` and `procedureName`. Argument type: String
`systemObjectName`	(Optional) System object names include: `admin|artifacts|directory|emailConfigs|forceAbort|licensing|log|plugins|priority|projects|repositories|resources|server|session|workspaces|zonesAndGateways` Argument type: SystemObjectName
`taskName`	(Optional) The name of the task. Argument type: String
`transitionDefinitionName`	(Optional) The name of the transition definition. Argument type: String
`transitionName`	(Optional) The name of the transition. Argument type: String
`userName`	(Optional) The name of the user where you may need to expand the string. Argument type: String
`workflowDefinitionName`	(Optional) The name of the workflow definition. Argument type: String
`workflowName`	(Optional) The name of the workflow. Argument type: String
`workspaceName`	(Optional) The name of the workspace that you want to clone. Argument type: String
`zoneName`	(Optional) The name of the zone. Argument type: String

Positional arguments

None.

Response

Returns the name of the new cloned object.

Using the `clone` command successfully depends on the context of the locator arguments in your system. The command works when the arguments are specified correctly.

ec-perl

syntax: `$cmdr->clone ...;`

Examples

```
# Create a copy of a procedure, as though you clicked the "Copy"
# button in the UI.

$xPath = $cmdr->clone(
    {
        projectName => "EC-Examples",
        procedureName => "set Property"
    }
);


# Create a copy of a procedure providing a name for the copy.

$xPath = $cmdr->clone(
    {
        projectName   => "EC-Examples",
        procedureName => "set Property",
        cloneName     => "set Property 2"
    }
);


# Create a copy of a procedure step.

$xPath = $cmdr->clone(
    {
        projectName   => "EC-Examples",
        procedureName => "set Property",
        cloneName     => "set Property 2",
        stepName      => 'setProperty'
    }
);
```

```
# Copy a step using the path.

$xPath = $cmdr->clone(
    {
        path =>
          '/projects/EC-Examples/procedures/set Property/steps/setProperty'
    }
);
```

ectool

syntax: `ectool clone ...`

Examples

```
# Create a copy of a procedure, as though you clicked the "Copy"
# button in the UI.

$ ectool clone --projectName 'EC-Examples' --procedureName 'set Property'
<response requestId="1" nodeId="192.168.16.238">
    <cloneName>Set Property copy</cloneName>
</response>
```

```
# Create a copy of a procedure providing a name for the copy.

$ ectool clone --projectName 'EC-Examples' --procedureName 'set Property'
--cloneName 'set Property 2'
<response requestId="1" nodeId="192.168.16.238">
    <cloneName>set Property 2</cloneName>
</response>
```

```
# Create a copy of a procedure step.

$ ectool clone --projectName 'EC-Examples' --procedureName 'set Property'
--stepName 'setProperty
<response requestId="1" nodeId="192.168.16.238">
    <cloneName>setProperty copy</cloneName>
</response>
```

```
# Create a copy of a procedure step using the full path.

$ ectool clone --path '/projects/EC-Examples/procedures/set Property/steps/setPrope
rty'
<response requestId="1" nodeId="192.168.16.238">
    <cloneName>setProperty copy</cloneName>
</response>
```

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countObjects

Returns the count of objects specified by the provided filter.

You must enter `objectType`.

Arguments	Descriptions

`objectType`	The type of object to count.
	Values include:
	`application`
	`application tier`
	`artifact`
	`artifactVersion`
	`component`
	`credential`
	`directoryProvider`
	`emailConfig`
	`emailNotifier`
	`environment`
	`environmentTemplate`
	`environmentTemplateTier`
	`environmentTier`
	`formalParameter`
	`job`
	`jobStep`
	`logEntry`
	`pipeline`
	`plugin`
	`procedure`
	`procedureStep`
	`process`
	`processDependency`
	`processStep`
	`project`
	`property`
	`repository`
	`resource`
	`resourcePool`
	`schedule`
	`snapshot`
	`stage`
	`state`
	`stateDefinition`
	`task`
	`tierMap`
	`transition`
	`transitionDefinition`
	`workflow`
	`workflowDefinition`
	`workspace`
	Argument type: String

Arguments	Descriptions

`filter`	(Optional) A list of zero or more filter criteria definitions used to define objects to find.
	
	Each element of the filter list is a hash reference containing one filter criterion. You can specify several filter criteria, in which case an object must meet all filter criteria to be included in the result. See the code example below for instructions on forming the list and passing it to the ElectricFlow Perl API.
	
	Two types of filters:
	"property filters" - used to select objects based on the value of the object's intrinsic or custom property
	
	"boolean filters" ("and", "or", "not") - used to combine one or more filters using boolean logic.
	
	Each "property filter" consists of a property name to test and an operator to use for comparison. The property can be either an intrinsic property defined by ElectricFlow or a custom property added by the user. Each operator takes zero, one, or two operands to compare against the desired property.
	
	Property filter operators are:
	`between (2 operands)`
	`contains (1)`
	`equals (1)`
	`greaterOrEqual (1)`
	`greaterThan (1)`
	`in (1)`
	`lessOrEqual (1)`
	`lessThan (1)`
	`like (1)`
	`notEqual (1)`
	`notLike (1)`
	`isNotNull (0)`
	`isNull (0)`
	
	A boolean filter is a boolean operator and an array of one or more filters that are operands. Each operand can be either a property filter or a boolean filter.
	
	Boolean operators are:
	`not (1 operand)`
	`and (2 or more operands)`
	`or (2 or more operands)`
	
	Argument type: Collection

Positional arguments

`objectType`

Response

Returns the number of filtered objects.

ec-perl

syntax: `$cmdr->countObjects(<objectType>, {<optionals>});`

Example

```
use ElectricCommander();
my @artifactNameFilters;
# Create the filter list for filtering on artifact name
    push (@artifactNameFilters,
           {"propertyName"=>"artifactName",
                "operator"=>"contains",
                "operand1"=>"groupId:installer-windows",
           );
    my $cmdr = new ElectricCommander();
    # Perform the countObjects query
    my $reference=$cmdr->countObjects("artifactVersion",
         { filter=>
              {operator=>"and",
               filter=>[
                   { propertyName=>"modifyTime" ,
                     operator=>"greaterOrEqual",# Give me all dates after or equal
arbinary date
                     "operand1"=>"2014-03-25T14:48:55.286Z",
                    }
                    ,
                    {
                     operator => 'or', # apply 'or' for the filters in the list
                     filter => \@artifactNameFilter


                    }
                   ]
          }
           });


my $jobs=$reference->find('//response/count');
print $jobs;
```

ectool

Not supported.

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deleteObjects

Deletes objects specified by the provided filters.

Because of the complexity of specifying filter criteria, this API is not supported by ectool. However, all of its capabilities
are supported through the Perl API.

You must specify an `objectType` and at least one filter.

Note: Currently, this API supports deleting `artifact`, `artifactVersion`, `job`, `logEntry`, `project`, `repository`,
and `workflow`.

Arguments	Descriptions
`objectType`	This argument specifies the type of object to find. Values include: `artifact|artifactVersion|job|logEntry|project|repository|workflow` Argument type: String

Arguments	Descriptions

`filters`	(Optional) Specify filters in a space-separated list: `filter1 filter2 ...`
	A list of zero or more filter criteria definitions used to define objects to find.
	
	Each element of the filter list is a hash reference containing one filter criterion. You may specify several filter criteria, in which case an object must meet all filter criteria to be included in the result. See the code example below for instructions on forming the list and passing it to the ElectricFlow Perl API.
	
	Two types of filters:
	"property filters" - used to select objects based on the value of the object's intrinsic or custom property
	"boolean filters" ("and", "or", "not") - used to combine one or more filters using boolean logic.
	
	Each "property filter" consists of a property name to test and an operator to use for comparison. The property can be either an intrinsic property defined by ElectricFlow or a custom property added by the user. Each operator takes zero, one, or two operands to compare against the desired property.
	
	Property filter operators are:
	`between (2 operands)`
	`contains (1)`
	`equals (1)`
	`greaterOrEqual (1)`
	`greaterThan (1)`
	`in (1)`
	`lessOrEqual(1)`
	`lessThan (1)`
	`like (1)`
	`notEqual (1)`
	`notLike (1)`
	`isNotNull (0)`
	`isNull (0)`
	
	A boolean filter is a boolean operator and an array of one or more filters that are operands. Each operand can be either a property filter or a boolean filter.
	
	Boolean operators are:
	`not (1 operand)`
	`and (2 or more operands)`
	`or (2 or more operands)`
	
	Argument type: Collection

Arguments	Descriptions
maxIds	(Optional) <id count> The maximum number of objects that will be deleted. The default is all objects that match the filter. Argument type: Integer
sorts	(Optional) Specify "sorts" in a space-separated list: sort1 sort2 ... An ordered list of sort criteria. Each list entry consists of a property name and a sort order--either an ascending or descending sort order. If you specify more than one sort criterion, the sorts are applied according to the order they appear in the list. The first item in the list is the primary sort key. Each item in the list is a hash reference. See the code example below for instructions about forming the list and passing it to the ElectricFlow Perl API. The sort order affects which objects are deleted if a maxIds value limits the number of objects returned by the filter. Argument type: Collection

Positional arguments

objectType

Response

Returns a list of object references.

ec-perl

syntax: `$cmdr->deleteObjects(<objectType>, {<optionals>});`

Example

This code example illustrates using a Boolean filter for the `deleteObjects` command to find jobs matching either of two patterns for the job name.

```
my @filterList;
push (@filterList, {"propertyName" => "jobName",
                        "operator" => "like",
                        "operand1" => "%-branch-%"});
push (@filterList, {"propertyName" => "jobName",
                        "operator" => "like",
                        "operand1" => "branch-%"});
my $result = $cmdr->deleteObjects('job',
      {filter => [
   { operator => 'or',
       filter => \@filterList,
   }
```

```
    ]}
);
print "result = " . $result-> findnodes_as_string("n"). "\n";
```

ectool

Not supported.

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dumpHeap

Captures a Java heap dump.

Arguments	Descriptions
`fileName`	Name of the file to which the heap dump is written. Argument type: String

Positional arguments

`fileName`

Response

None or a status OK message.

ec-perl

syntax:`$cmdr->dumpHeap (<fileName>);`

Example

```
$cmdr->dumpHeap ('$[/myWorkspace/data]/$[JavaFileName]');
```

ectool

syntax:`ectool dumpHeap <fileName>`

Example

```
ectool dumpHeap '$[/myWorkspace/data]/$[JavaFileName]'
```

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dumpStatistics

Prints (emits) internal timing statistics.

Arguments	Descriptions
`clearStatistics`	(Optional) <*Boolean flag* - `0|1|true|false`> If this argument is set to `true`, the system clears the statistics after logging them. Argument type: Boolean
`dumpLapTimes`	(Optional) <*Boolean flag* - `0|1|true|false`> If this argument is set to `true`, the system dumps lap times. If this argument is set to `false`, the system dumps global times. Argument type: Boolean
`fileName`	(Optional) If you specify a file name with a path, the output is redirected to this file. When the path is relative, the file is written relative to the working directory of the server. Argument type: String
`format`	Format of the output. Valid values are `text` or `xml`. The default is `text`. Argument type: String

Positional arguments

None

Response

None or a status OK message.

ec-perl

syntax:`$cmdr->dumpStatistics ({<optionals>});`

Example

```
$cmdr->dumpStatistics ({clearStatistics=>true, format=>xml});
```

ectool

syntax:`ectool dumpStatistics [<optionals> ... ]`

Example

```
ectool dumpStatistics --clearStatistics true --format xml
```

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evalDsl

Evaluates and runs an ElectricFlow domain-specific language (DSL) script.

You must enter either the `dsl` or `dslFile` argument.

Arguments	Descriptions
`dsl`	The DSL text. Specify either `dsl` or `dslFile`. Argument type: String
`dslFile`	Path to the file on the client containing the DSL text. Specify either `dsl` or `dslFile`. Argument type: String
`debug`	(Optional) <*Boolean flag* - `0|1|true|false`> If this argument is set to `true` or `1`, ElectricFlow generates debug output as the DSL script is evaluated. Argument type: Boolean
`describe`	(Optional) <*Boolean flag* - `0|1|true|false`> If this argument is set to `true` or `1`,ElectricFlow prints a description of the DSL text. Argument type: Boolean
`parameters`	(Optional) Parameters are passed to the script by ElectricFlow as JSON text. Argument type: String
`parametersFile`	(Optional) Path to the file on the client containing parameters as JSON text that should be passed to the DSL script by ElectricFlow. Argument type: String
`serverLibraryPath`	(Optional) Absolute path to the directory containing `.jar` files and class files needed by the DSL script. This path should be accessible from the ElectricFlow server.

Positional arguments

`dsl` or `dslFile`

Response

None or a status OK message.

ec-perl

syntax:`$cmdr->evalDsl(<dsl>, {<optionals>});`

Example

```
$cmdr->evalDsl ("Run the sample application", {dslFile => run_deploy_application.groovy});
```

ectool

syntax:`ectool evalDsl <dsl> [optionals]`

Example

```
ectool evalDsl "Run the sample application" --dslFile run_deploy_application.groovy
```

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evalScript

Evaluates a script in the specified context.This API is similar to `expandString` except that it evaluates the `value`
argument as a Javascript block, without performing any property substitution on either the script or the result. The string value of the final expression in the script is returned as the `value` element of the response.

You must specify a `value` to evaluate.

Arguments	Descriptions
`value`	Script to evaluate in the specified context. Argument type: String
`applicationName`	(Optional) Name of the application that must be unique among all projects. Argument type: String
`applicationTierName`	(Optional) Name of the application tier. Argument type: String
`artifactName`	(Optional) Name of the artifact. Argument type: String
`artifactVersionName`	(Optional) Name of the artifact version. **Note:** An artifact version name is interpreted by the server as the `artifactVersionName` attribute for the `artifactVersion` in question. This name is parsed and interpreted as `"groupId:artifactKey:version"` and the object is searched either way you specify its name. The ElectricFlow server interprets either name form correctly. Argument type: String

Arguments	Descriptions
`componentName`	(Optional) Name of the component. Argument type: String
`configName`	(Optional) Name of the email configuration. Argument type: String
`credentialName`	(Optional) Name of the credential in one of these forms: • **relative** (for example, *"cred1"*)–The credential is assumed to be in the project that contains the request target object. • **absolute** (for example, *"/projects/BuildProject/credentials/cred1"*)–Tthe credential can be from any specified project, regardless of the target object's project. Argument type: String
`environmentName`	(Optional) Name of the environment that must be unique among all projects. Argument type: String
`environmentTemplateName`	(Optional) Name of the environment template. Argument type: String
`environmentTemplateTierName`	(Optional) Name of the environment template tier. Argument type: String
`environmentTierName`	(Optional) Name of the environment tier. Argument type: String
`flowName`	(Optional) The name of the flow. Argument type: String
`flowRuntimeName`	(Optional) Name of the flow runtime. Argument Type: String
`flowRuntimeStateName`	(Optional) Name of the flow state. Argument Type: String
`flowStateName`	(Optional) The name of the flow state. Argument type: String
`flowTransitionName`	(Optional) The name of the flow transition. Argument type: String

Arguments	Descriptions
`gatewayName`	(Optional) Name of the gateway. Argument type: String
`groupName`	(Optional) Name of a group where you might evaluate a script. Argument type: String
`jobId`	(Optional) The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID
`jobStepId`	(Optional) The unique identifier for a job step that is assigned automatically when the job step is created. Argument type: UUID
`notifierName`	(Optional) Name of the email notifier. Argument type: String
`objectId`	(Optional) This is an object identifier returned by `findObjects` and `getObjects`. Argument type: String
`path`	(Optional) Property path string. Argument type: String
`pipelineName`	(Optional) The name of the pipeline. Argument type: String
`pluginName`	(Optional) Name of a plugin where you might evaluate a script. Argument type: String
`procedureName`	(Optional) Name of a procedure where you might need to evaluate a script. **Also requires** `projectName`. Argument type: String
`processName`	(Optional) Name of the process when the container is a process or process step. Argument type: String

Arguments	Descriptions
`processStepName`	(Optional) Name of the process step when the container is a process step. Argument type: String
`projectName`	(Optional) Name of the project that contains the script to evaluate. Argument type: String
`propertySheetId`	(Optional) The unique identifier for a property sheet that is assigned automatically when the property sheet is created. Argument type: UUID
`repositoryName`	(Optional) Name of the repository for artifact management. Argument type: String
`resourceName`	(Optional) Name of a resource where you might evaluate a script. Argument type: String
`resourcePoolName`	(Optional) Name of a pool containing one or more resources. Argument type: String
`resourceTemplateName`	(Optional) Name of the resource template. Argument type: String
`scheduleName`	(Optional) Name of a schedule within this project. **Also requires** `projectName`. Argument type: String
`snapshotName`	(Optional) Name of the snapshot. Argument type: String
`stageName`	(Optional) The name of the stage definition. Argument type: String
`stateDefinitionName`	(Optional) Name of the state definition. Argument type: String
`stateName`	(Optional) Name of the state. Argument type: String
`stepName`	(Optional) Name of the step whose script you might evaluate. **Also requires** `projectName` and `procedureName`. Argument type: String

Arguments	Descriptions
`systemObjectName`	(Optional) System object names include: `admin|directory|log|priority|projects|resources|server|session|workspaces`. Argument type: SystemObjectName
`taskName`	(Optional) The name of the task. Argument type: String
`transitionDefinitionName`	(Optional) Name of the transition definition. Argument type: String
`transitionName`	(Optional) Name of the transition. Argument type: String
`userName`	(Optional) Name of the user where you may need to evaluate a script. Argument type: String
`workflowDefinitionName`	(Optional) Name of the workflow definition. Argument type: String
`workflowName`	(Optional) Name of the workflow. Argument type: String
`workspaceName`	(Optional) Name of a workspace where you may need to evaluate a script. Argument type: String
`zoneName`	(Optional) Name of the zone. Argument type: String

Positional arguments

`value`

Response

The string value of the final expression in the Javascript block inside a `value` element.

ec-perl

syntax: `$cmdr->evalScript (<value>);`

Examples

```
my $result = $ec->evalScript (q{"ip=" + server.hostIP+", name=" + server.hostName})
->findvalue("//value");
```

```
my $result = $ec->evalScript (q{myProject.projectName}, {jobId => '4fa765dd-73f1-11
e3-b67e-b0a420524153'});
```

ectool

syntax:`ectool evalScript <value>`

Examples

```
ectool evalScript '"ip=" + server.hostIP+", name=" + server.hostName'

ectool evalScript 'myProject.projectName' --jobId 4fa765dd-73f1-11e3-b67e-b0a420524
153
   --jobStepId 5da765dd-73f1-11e3-b67e-b0a420524153
```

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export

Exports part or all server data to an XML file. By default, all data in the system is exported, although the "path" option can be used to limit the output to a single tree of objects.

The export operation is run by the server process, not through ectool. The command is not run by the agent, but by the server itself. Therefore, it has some impact if the server agent service user and the server service user are different. For example, the following commands in the same step are executed by two different users:

```
mkdir ("/path/foo");
$ec->export("/path/foo/project.xml",
{path=>"/projects/MYPROJ"}
);
```

The /path/foo directory creation is executed by the agent service, which means that the agent user needs permission to create the directory. The export is executed by the ElectricFlow service user.

Note: Before you perform an export, ensure that the ElectricFlow server is inactive (meaning that it cannot accept jobs) by completing the following steps on the server:

1. Disable ElectricSentries.
2. Disable project schedules.
3. Check that no jobs are running on any resources.
4. Disable all resources so that no new job steps can run.

This ensures a complete XML file by preventing changes to the Flow DB during the export.

> **IMPORTANT:** The export operation is run by the server process, not through ectool. When you specify the path, this is the path relative to the server process on the server host. The export operation is run using the server's process ID that must have write permission to this path.

If a relative file name is specified, the file is created relative to the ElectricFlow server's data directory, which by default is located:

- For Windows: `C:\Documents and Settings\All Users\Application Data\Electric Cloud\ElectricCommander`
- For Linux: `/opt/electriccloud/electriccommander`

You must specify a `fileName`.

The default timeout is 10800 seconds (180 minutes or 3 hours).

Note: A full export/import preserves job IDs, but a partial import preserves names only, not IDs.

Arguments	Descriptions
`fileName`	<*remoteFileName*> The specified directory for the file must already exist in the system. If the path is local, it will be created on the server. If it is a network path, it must be accessible by the server and the server user. Argument type: String
`compress`	(Optional) <*Boolean flag* - `0|1|true|false`> Use this argument to compress XML output. If set to 1, the file will be compressed using the “gzip” format and a “.gz” file extension will be added to the filename. The default behavior is to compress the output. **Note:** This is true for full exports only, not a partial export. Argument type: Boolean
`download`	(Optional) <*Boolean flag* - `0|1|true|false`> If set to `1` or `true`, the exported file can be downloaded. Argument type: Boolean
`excludeJobs`	(Optional) <*Boolean flag* - `0|1|true|false`> If set to 1, no job information will be exported. This argument can be used to reduce the size of the export file. Argument type: Boolean
`objectId`	(Optional) ID of the object ID. Argument type: UUID
`path`	(Optional) <*property path*> Specifies the path for an object to be exported. Any single object can be exported if it is specified using property path syntax. The object and its sub-objects are exported. Argument type: String

Arguments	Descriptions
`reducedDetailChangeHistory`	(Optional) <*Boolean flag -* `0|1|true|false`> Use this argument for large projects containing over 20,000 audited objects with Change Tracking enabled. When this argument is set to `true` or `1`, ElectricFlow automatically decreases the amount of Change History indexing information that it saves in a large project, reducing the level of detail for Change Tracking-intensive operations in the Change History. This can make it harder to revert an object to a specific state and to find information in the Change History when you are troubleshooting or debugging an issue. Set this argument to `false` or `0` to suppress to this behavior so that ElectricFlow does not change the amount of indexing information for a large project. This will cause the operation to take longer and put more load on the database, but the Change History will have the full details of the entities owned by objects in the project. Argument type: Boolean
`relocatable`	(Optional) <*Boolean flag -* `0|1|true|false`> If the `--relocatable` flag is set to `true`, a partial export (for example, with `--path`) will not include object IDs, ACLs, system property sheets, create/modify times, owners, email notifiers or `lastModifiedBy` information, and the export file result will be much smaller than a normal export. When this file is imported, the result should show one or more objects owned by the importing user as if they were newly created. **Note:** The relocatable argument only works with a partial export. This argument is silently ignored during a full export. Argument type: Boolean
`revisionNumber`	(Optional) Revision number of the file. Argument type: Integer
`safeMode`	(Optional) The `safeMode` argument determines whether the server will be quiesced before a full export begins and if yes, whether or not the server will shutdown and restarted after the export completes. Values are: • none (default) - Do not quiesce the server during export. • shutdown - Quiesce the server and shutdown when complete. • restart - Quiesce the server and restart when complete. **Note:** The `safeMode` argument has no effect on partial exports. Argument type: SafeMode

Arguments	Descriptions
`withAcls`	(Optional) This argument modifies `relocatable`. *<Boolean flag* - `0|1|true|false`> If the `withAcls` flag is set to "true", a relocatable partial export will include ACLs. Argument type: Boolean
`withNotifiers`	(Optional) This argument modifies `relocatable`. *<Boolean flag* - `0|1|true|false`> If the `withNotifiers` flag is set to "true", a relocatable partial export will include email notifiers. Argument type: Boolean

Positional arguments

`fileName`

Response

None or a status OK message.

ec-perl

syntax: `$cmdr->export(<fileName>, {<optionals>});`

Examples

```
$cmdr->export("c:\ElectricCommander\Aug 15 2015.xml");

$cmdr->export("c:\ElectricCommanderBackup\Test Proj.xml",
                     {path => "/projects[Test Proj]",
               relocatable => "true",
             withNotifiers => "true"});
```

ectool

syntax: `ectool export <fileName> ...`

Examples

```
ectool export "c:\ElectricCommanderBackup\Aug 15 2015.xml"

ectool export "c:\ElectricCommanderBackup\Test Proj.xml" --path "/projects[Test Pro
j]"
   --relocatable true --withNotifiers true
```

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findObjects

This command returns a sorted list of ElectricFlow objects based on an object type and a set of filter criteria. This API can be used to find many, but not all, types of ElectricFlow objects and is used by the ElectricFlow web interface to implement the ElectricFlow "Search" feature.

Because of the complexity of specifying filter criteria, this API is not supported by ectool. However, all of its capabilities are supported through the Perl API.

You must specify an `objectType`.

Arguments	Descriptions

`objectType`	The type of object to find.
	Values include:
	`application`
	`artifact`
	`artifactVersion`
	`component`
	`credential`
	`directoryProvider`
	`emailconfig`
	`emailNotifier`
	`environment`
	`environmentTemplate`
	`environmentTemplateTier`
	`environmentTier`
	`formalParameter`
	`job`
	`jobStep`
	`logEntry`
	`pipelines`
	`plugin`
	`procedure`
	`procedureStep`
	`process`
	`processStep`
	`project`
	`property`
	`repository`
	`resource`
	`resourcePool`
	`schedule`
	`snapshot`
	`stage`
	`state`
	`stateDefinition`
	`task`
	`transition`
	`transitionDefinition`
	`workflow`
	`workflowDefinition`
	`workspace`
	
	Argument type: String

Arguments	Descriptions

`filters`	(Optional) A list of zero or more filter criteria definitions used to define objects to find.
	
	Each element of the filter list is a hash reference containing one filter criterion. You can specify several filter criteria, in which case an object must meet all filter criteria to be included in the result. See the code example below for instructions on forming the list and passing it to the ElectricFlow Perl API.
	
	Two types of filters:
	"property filters" - used to select objects based on the value of the object's intrinsic or custom property
	
	"boolean filters" ("and", "or", "not") - used to combine one or more filters using boolean logic.
	
	Each "property filter" consists of a property name to test and an operator to use for comparison. The property can be either an intrinsic property defined by ElectricFlow or a custom property added by the user. Each operator takes zero, one, or two operands to compare against the desired property.
	
	Property filter operators are:
	`between (2 operands)`
	`contains (1)`
	`equals (1)`
	`greaterOrEqual (1)`
	`greaterThan (1)`
	`in (1)`
	`lessOrEqual (1)`
	`lessThan (1)`
	`like (1)`
	`notEqual (1)`
	`notLike (1)`
	`isNotNull (0)`
	`isNull (0)`
	
	A boolean filter is a boolean operator and an array of one or more filters that are operands. Each operand can be either a property filter or a boolean filter.
	
	Boolean operators are:
	`not (1 operand)`
	`and (2 or more operands)`
	`or (2 or more operands)`
	
	Argument type: Collection

`firstResult`	(Optional) The first result to be retrieved, starting from 0 (zero). Argument type: Integer

Arguments	Descriptions
`includeAccess`	(Optional) <*Boolean flag -* `0|1|true|false`> If set to `true`, this command also returns access maps for the objects. Argument type: Boolean
`includeLatestRevision`	(Optional) <*Boolean flag -* `0|1|true|false`> If set to `true`, this command also returns the latest revision data for versioned objects. Argument type: Boolean
`maxIds`	(Optional) `<id count>` The maximum number of object IDs that will be returned. If omitted, default behavior returns IDs for the first 1000 objects matching the query. If "0" is specified, the ID of every matching object is returned. Argument type: Integer
`numObjects`	(Optional) `<full object count>` Specifies the number of full objects (not just the IDs) returned from the `findObjects` request. This option allows selecting a limited number of full objects to be returned in the initial request. The returned "full objects" correspond to the objects from the beginning of the list of object IDs. If `numObjects` is not specified, all full objects in the list of object IDs are returned. Any and all objects can be retrieved using the `getObjects` command. Argument type: Integer
`selects`	(Optional) This is an unordered list of property names that specify additional top-level properties to return for each object. See the code example below for instructions on forming the list and passing it to the ElectricFlow Perl API. Argument type: Collection
`sorts`	(Optional) This is an ordered list of sort criteria. This option works only when you specify a property name. Each list entry consists of a property name and a sort order—either an ascending or descending sort order. If you specify more than one sort criterion, the sorts are applied according to the order they appear in the list. The first item in the list is the primary sort key. Each item in the list is a hash reference. See the code example below for instructions on forming the list and passing it to the ElectricFlow Perl API. Argument type: Collection

Positional arguments

`objectType`

Response

This command returns a list of object references. These references can be used in a subsequent call to the `getObjects` command. The command can also return full objects from the result list.

ec-perl

syntax: `$cmdr->findObjects(<objectType>, {<optionals>});`

Example 1

This example shows how to use a Boolean filter for the `findObjects` command to find jobs matching either of two patterns for the job name.

```
my @filterList;
push (@filterList, {"propertyName" => "jobName",
                        "operator" => "like",
                        "operand1" => "%-branch-%"});
push (@filterList, {"propertyName" => "jobName",
                        "operator" => "like",
                        "operand1" => "branch-%"});
my $result = $cmdr->findObjects('job',
        {filter => [
     { operator => 'or',
         filter => \@filterList,
    }
  ]}
);
print "result = " . $result->findnodes_as_string("/"). "\n";
```

Example 2

This example uses `findObjects` and `getObjects` to manage large result sets, and also uses `select` to return the values of two properties in the returned objects.

```
# Search for the first 10 matching objects and retrieve the first 2
my $xPath = $cmdr->findObjects("schedule",
        {maxIds    => "10",
        numObjects => "2",
           filter  => [{propertyName => "createTime",
                        operator => "greaterOrEqual",
                        operand1 => "2007-01-20T00:00:00.000Z"},
                    {propertyName => "lastModifiedBy",
                        operator => "like",
                        operand1 => "adm%"}],
          sort => [{propertyName => "projectName",
                          order => "ascending"},
                    {propertyName => "createTime",
                          order => "descending"}],
        select => [{propertyName => 'prop1'},
                      {propertyName => 'prop2'}]
        });
print "Return data from ElectricFlow:\n" . $xPath-> findnodes_as_string("/"). "\n";
# Build a list of all the object id's
my @allObjectsList;
my $nodeset = $xPath->find('//response/objectId');
foreach my $node ($nodeset->get_nodelist)
        {
        my $objectId = $node-> string_value();
```

```
        push (@allObjectsList, $objectId);
        }
# Retrieve the second 2 objects
my @objectList = @allObjectsList[2..3];
$xPath = $cmdr->getObjects(
        {objectId => \@objectList});
print "Return data from ElectricFlow:\n" . $xPath->findnodes_as_string("/"). "\n";
```

Example 3

This example shows how to make filters with `or` and `and` for finding artifacts matching either of two patterns for the artifact name and `modifyTime` before a specified date.

```
# Create the filter list for filtering on artifact name.
my @artifactNameFilters;
    push (@artifactNameFilters,
           {"propertyName" => "artifactName",
                "operator" => "equals",
                "operand1" => "groupId:installer-windows"},
             {propertyName => "artifactName",
                  operator => "equals",
                  operand1 => "groupId:installer-linux"
           });
    # Perform the findObjects query
    my $result = $cmdr->findObjects('artifactVersion',
         {filter =>
              {operator => "and", # 'and' the different filters below
                 filter => [
                   #filter 1
                   {
                       propertyName => "modifyTime",
                           operator => "lessOrEqual", # Give me all dates before
                           operand1 => "2011-11-10T00:00:00.000Z" # Arbitrary date
                   },
                   #filter 2
                   {
                       operator => 'or', # apply 'or' for the filters in the list
                         filter => \@artifactNameFilters
                   }
                ]
              }
         }
     );
    print "result = " . $result-> findnodes_as_string("/") . "\n";
    # Top-level filters are implicitly 'and'ed, so the above findObjects query
    # could also be written like this:
    $result = $cmdr->findObjects('artifactVersion',
           {filter => [
              #filter 1
              {
                  propertyName => "modifyTime",
                      operator => "lessOrEqual", # Give me all dates before
                      operand1 => "2011-11-10T00:00:00.000Z" # Arbitrary date
              },
              #filter 2
              {
                  operator => 'or', # apply 'or' for the filters in the list
```

```
                        filter => \@artifactNameFilters
                    }
                ]
            }
        );
```

Example 4

This example shows how to find a project with a name containing "foo" and with the description "bar".

```
$cmdr->findObjects('project', {
    filter => {operator => 'and',
       filter => [{propertyName => 'projectName',
           operator     => 'contains',
           operand1     => 'foo'},
          {propertyName => 'description',
           operator     => 'equals',
           operand1     => 'bar'}]}});
```

Example 5

This example shows how to find a procedure with the project name "foo" and with the procedure name "bar" or not "bat". (The top level filters are implicitly combined with "and".)

```
$cmdr->findObjects('procedure', {
    filter => [{propertyName => 'projectName',
       operator     => 'equals',
       operand1     => 'foo'},
      {operator => 'or',
       filter   => [{propertyName => 'procedureName',
               operator     => 'equals',
               operand1     => 'bar'},
              {operator     => 'not',
               filter       => {propertyName => 'procedureName',
                       operator     => 'equals',
                       operand1     => 'bat'}}]}]});
```

Example 6

This example shows how to find a project with certain property values.

```
$cmdr->findObjects("project", {
    filter => {operator => 'or',
       filter => [{propertyName => 'prop1',
               operator     => 'equals',
               operand1     => 'value1'},
           {propertyName => 'prop2',
               operator     => 'equals',
               operand1     => 'value2'},
           {propertyName => 'prop3',
               operator     => 'isNull'}]}
```

ectool

Not supported.

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finishCommand

The agent uses this command to indicate that a command has been run.

Arguments	Descriptions
`agentRequestId`	Request ID of the command. Argument type: String
`status`	Status of the command. Argument type: Integer
`deletedLogFile`	(Optional) <*Boolean flag* - `0|1|true|false`> If this argument is set to `1` or `true`, the agent is deleted or the step log file is not created. Argument type: Boolean
`deletedPostpLogFile`	(Optional) <*Boolean flag* - `0|1|true|false`> If this argument is set to `1` or `true`, the agent is deleted or the postp log file is not created. Argument type: Boolean
`elapsedTime`	(Optional) Elapsed time that the command runs. Argument type: Double
`errorMessage`	(Optional) Error message from the agent. Argument type: String
`exit`	(Optional) Exit code of the command. Argument type: Integer
`maxProtocolVersion`	(Optional) Maximum protocol version that the agent supports. Argument type: Integer
`minProtocolVersion`	(Optional) Minimum protocol version that the agent supports. Argument type: Integer
`pingToken`	(Optional) Current ping token. Argument type: Long
`postpExit`	(Optional) Exit code of postp. Argument type: Integer

Arguments	Descriptions
protocolVersion	(Optional) Current agent protocol version. Argument type: Integer
version	(Optional) Current agent version. Argument type: String

Positional arguments

agentRequestId, status

Response

None or a status OK message.

ec-perl

syntax examples: `$cmdr->finishCommand (<agentRequestId>, <status>, {<optionals>});`

Examples

```
$cmdr->finishCommand ("30f14c6c1fc85cba12bfd093aa8f90e3", 1);
```

ectool

syntax examples: `ectool finishCommand <agentRequestId> <status> [optionals]`

Examples

```
ectool finishCommand "30f14c6c1fc85cba12bfd093aa8f90e3", 1
```

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generateDsl

Generates domain-specific language (DSL) script for an existing object.

You must enter the `path` argument.

Arguments	Descriptions
path	A property path indicating a single object for which DSL will be generated Argument type: String
withAcls	(Optional) <Boolean flag - 0|1|true|false> If set to true, the generated DSL will include ACLs for the object and the nested objects. Argument type: Boolean

Positional arguments

`path`

Response

Content for the DSL script. For an example, go to Getting Started with DSL on page 750.

ec-perl

syntax:`$cmdr->generateDsl(<path>, {<optionals>});`

Example

```
$cmdr->generateDsl("/resources/local", {withAcls => true});
```

ectool

syntax:`ectool generateDsl <path> [optionals]`

Example

```
ectool generateDsl "/resources/local" --withAcls true
```

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getObjects

The `getObjects` command retrieves a list of full objects based on object IDs returned by `findJobSteps` or `findObjects`. All requested objects must be of the same `objectType`. See `findObjects` for a list of object types.

You must specify `objectIds`.

Arguments	Descriptions
`objectIds`	A list of one or more object IDs that were returned by a prior call to `findObjects`. Each list element is a string containing the ID. See the code example below for instructions on forming the list and passing it to the ElectricFlow Perl API. Argument Type: Collection
`includeAccess`	(Optional) <*Boolean flag* - `0|1|true|false`> If set to `true`, this command also returns access maps for the objects. Argument type: Boolean
`includeLatestRevision`	(Optional) <*Boolean flag* - `0|1|true|false`> If set to `true`, this command also returns the latest revision data for versioned objects. Argument type: Boolean

Arguments	Descriptions
selects	(Optional) This is an unordered list of projection definitions. Each list entry consists of a property name identifying a top-level custom property to return in addition to the rest of the object elements. See the code example below for instructions on forming the list and passing it to the ElectricFlow Perl API. Argument type: Collection

Positional arguments

objectIds

Response

A list of full objects for the requested type.

ec-perl

syntax: `$cmdr->getObjects({<optionals>});`

Example 1

Code example for `findObjects` and `getObjects`:

```
# This example runs within an ElectricFlow step, so a "login" is not needed.
use strict;
use ElectricCommander;
my $cmdr = ElectricCommander->new();

# Search for the first 10 matching objects and retrieve the first 2
my $xPath = $cmdr->findObjects("schedule",
        {maxIds    => "10",
        numObjects => "2",
        filter => [{propertyName => "createTime",
                        operator => "greaterOrEqual",
                        operand1 => "2010-01-20T00:00:00.000Z"},
                    {propertyName => "lastModifiedBy",
                        operator => "like",
                        operand1 => "adm%"}],
          sort => [{propertyName => "projectName",
                          order => "ascending"},
                    {propertyName => "createTime",
                          order => "descending"}],
        select => [{propertyName => 'prop1'},
                    {propertyName => 'prop2'}]
        });
print "Return data from ElectricFlow:\n" . $xPath-> findnodes_as_string("/"). "\n";
# Build a list of all the object id's
my @allObjectsList;
my $nodeset = $xPath->find('//response/objectId');
foreach my $node ($nodeset->get_nodelist)
        {
        my $objectId = $node-> string_value();
        push (@allObjectsList, $objectId);
        }
# Retrieve the second 2 objects
```

```
my @objectList = @allObjectsList[2..3];
$xPath = $cmdr->getObjects(
        {objectId => \@objectList});
print "Return data from ElectricFlow:\n" . $xPath-> findnodes_as_string("/") . "\
n";
```

Example 2

Code example using a Boolean filter:

```
my $xpath = $N->findObjects('project', {
        filter => {operator => 'and',
               filter => [{propertyName => 'projectName',
                                operator => 'contains',
                                operand1 => $projectBase},
                           {propertyName => 'description',
                                operator => 'equals',
                                operand1 => 'foo'}]}});
```

ectool

Not supported.

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graphStateMachine

Generates a `graph` element with a state machine DOT graph as CDATA content.

You must specify a `jobId` .

Arguments	Descriptions
`jobId`	The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template. Argument type: UUID
`cluster`	(Optional) <*Boolean flag* - `0|1|true|false`> If this argument is set to `1` or `true`, the graphs are clustered. Argument type: Boolean

Positional arguments

`jobId`

Response

CDATA content.

ec-perl

syntax examples: `$cmdr->graphStateMachine (<jobId>, ({<optionals>});`

Examples

```
$cmdr->graphStateMachine (jobId => 5da765dd-73f1-11e3-b67e-b0a420524153);
```

ectool

syntax examples: `ectool graphStateMachine <jobId> ...`

Examples

```
ectool graphStateMachine 5da765dd-73f1-11e3-b67e-b0a420524153
```

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import

Imports data from an XML export file.

You must specify either `file` or `fileName`.

The default timeout is 10800 seconds (180 minutes or 3 hours).

Note: A full export/import preserves job IDs, but a partial import preserves names only, not IDs.
Use the `preserveId` option for a partial import if you need to retain the same (existing) job or workflow ID number.

Arguments	Descriptions
`fileName`	Name of the file to import: <*remoteFileName*> This is the name of a file on the server to import. The file path name must be accessible to the server process on the server host. <*localFileName*> This is the path to a file on the client to import. The file is uploaded from the client to the server. The specified <`file`> value is sent as an attachment to the `import` API request. The server detects the presence of the attachment and reads the attached file instead of looking for a file on the server. The maximum file size specified by `file` is determined by the maximum upload-size server setting. By default the limit is 50MB, so this option should be used only for individually exported objects, not a full system export. Argument type: String
`batchSize`	(Optional) <*batch size*> The number of objects imported before committing a transaction in the database. This argument limits the object batch size during import. Default value is 50 objects. If your objects are unusually large, you can throttle this number down to 1, depending on your available memory. **Note:** The `batchSize` argument applies only to full import operations. Argument type: Integer

Arguments	Descriptions
`disableProjectTracking`	(Optional) <*Boolean flag* - `0|1|true|false`> If set to `true`, when importing a project, even if Change Tracking is enabled for the exported project, Change Tracking is disabled for the newly imported project from its creation. If you do not need to track changes for the new project, this avoids the Change Tracking overhead that would otherwise slow down the import operation, and also saves having to subsequently disable Change Tracking for the imported project. Argument type: Boolean
`disableSchedules`	(Optional) <*Boolean flag* - `0|1|true|false`> If set to 1, imported schedules will be disabled. This argument can modify imported schedules after import and before they are used to start a job. Argument type: Boolean
`force`	(Optional) <*Boolean flag* - `0|1|true|false`> If set to `true`, an existing object is replaced during a single-object import. This argument can be used to replace a single object if it already exists at the specified property path. Argument type: Boolean
`path`	(Optional) <*property path*> Use this argument to import a single object to a new location. For example, if a procedure was exported from "project A", this argument allows you to import it into "project B", but only if the export also used the `path` option. Argument type: String
`preserveId`	(Optional) <*Boolean flag* - `0|1|true|false`> If set to `true`, this command tries to preserve the `objectID` during a single-object import. If you are doing a *partial* import, using this option preserves the original job ID or workflow ID. Argument type: Boolean

Arguments	Descriptions
`reducedDetailChangeHistory`	(Optional) <*Boolean flag* - `0|1|true|false`> Use this argument for large projects containing over 20,000 audited objects with Change Tracking enabled. When this argument is set to `true` or `1`, ElectricFlow automatically decreases the amount of Change History indexing information that it saves in a large project, reducing the level of detail for Change Tracking-intensive operations in the Change History. This can make it harder to revert an object to a specific state and to find information in the Change History when you are troubleshooting or debugging an issue. Set this argument to `false` or `0` to suppress to this behavior so that ElectricFlow does not change the amount of indexing information for a large project. This will cause the operation to take longer and put more load on the database, but the Change History will have the full details of the entities owned by objects in the project. Argument type: Boolean

Positional arguments

`fileName`

Response

None or a status OK message.

ec-perl

syntax examples: `$cmdr->import(<fileName>, {...});`

```
$cmdr->import({file => <localFileName>, ...);
```

Examples

```
$cmdr->import("/opt/TestProg.xml");

$cmdr->import({file => "c:\r.xml", path => "/projects[Test]");
```

ectool

syntax examples: `ectool import <remoteFileName> ...`

```
ectool import <localFileName>
```

Examples

```
ectool import /mnt/backups/fullBackkup.xml

ectool "c:\project.xml" --path "/projects[Test]"
```

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logStatistic

Prints (emits) a statistics value to StatsD.

Arguments	Descriptions
`name`	The name of the statistic. Argument type: String
`type`	The type of statistic. Argument type: StatisticType
`value`	The value of the statistic. Argument type: Long

Positional arguments

```
name, type, value
```

Response

None or a status OK message.

ec-perl

syntax:`$cmdr->logStatistic (<name>, <type>, <value>);`

Example

```
$cmdr->logStatistic("Interoperability performance test cases", "counters", 7);
```

ectool

syntax:`ectool logStatistic <name> <type> <value>`

Example

```
ectool logStatistic "Interoperability performance test cases" "counters" 7
```

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releaseNamedLock

Releases the named lock that synchronizes the name of an object.

Arguments	Descriptions
`lockName`	Name of the lock. Argument type: String
`delay`	Number of seconds to delay releasing the lock. Argument type: Integer

Positional arguments

```
lockName
```

Response

None or a status OK message.

ec-perl

syntax examples: `$cmdr->releaseNamedLock (<lockName>, {<optionals>});`

Examples

```
$cmdr->releaseNamedLock ("group1", {delay => 5});
```

ectool

syntax examples: `ectool releaseNamedLock <lockName> [optionals...]`

Examples

```
ectool releaseNamedLock "group1" --delay 5
```

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API Response and Element Glossary

The first part of this topic lists returned response container elements in alphabetical order. The contents for each container element lists all or most of the possible returned response elements—both simple and subcontainer elements. Depending on your request, you may not see all elements in your response. If the value of an element is "empty," typically that element is omitted from the response.

Note: Elements annotated with an * (asterik) may appear multiple times in a response.

The second part of this Help topic is an element glossary for all single or "leaf" elements and subcontainer elements. Click here to go to the glossary or notice that each response element is a link—each response element is linked directly to its glossary entry.

access

Contains the set of effective permissions for a user or a group.

Contents:

`changePermissionsPrivilege`

`executePrivilege`

`modifyPrivilege`

`readPrivilege`

aclEntry

Contains an ACE (access control list entry) on an object for a given principal.

Contents:

`aclEntryId`

`changePermissionsPrivilege`

`executePrivilege`

`modifyPrivilege`

`readPrivilege`

`principalName`

`principalType`

actualParameter

An `actualParameter` object provides the value for a parameter, which is passed to a procedure when it is invoked.
Actual parameters can be provided for jobs and nested subprocedures within a job. Actual parameters are different
from "formal parameters"- formal parameters define the parameters a procedure is expecting, and actual parameters
provide values to use at run-time.

Contents:

actualParameterId

actualParameterName

createTime

modifyTime

value

artifact

Contains elements to define the artifact. An artifact is specified by `groupId` and `artifactKey`. The name of an artifact is in this form `"groupId:artifactKey"`. An artifact contains a collection of `artifactVersions`.

Contents:

artifactId

artifactKey

artifactName

artifactVersionNameTemplate

createTime

description

groupId

lastModifiedBy

modifyTime

owner

propertySheetId

artifactVersion

A "concrete" version of an artifact that contains a collection of files stored in the artifact repository.

Contents:

artifactKey

artifactName

artifactVersionId

artifactVersionName

artifactVersionState

buildNumber

createTime

majorMinorPatch

modifyTime

owner

propertySheetId

publisherJobId

publisherJobName

publisherJobStepId

dependentArtifacts

description

groupId

lastModifiedBy

qualifier

repositoryName

retrievers

version

credential

Contains a stored credential. The password is returned for the `getFullCredential` API only.

Contents:

credentialId

credentialName

createTime

description

lastModifiedBy

modifyTime

owner

password

projectName

propertySheetId

userName

databaseConfiguration

Contain configuration information about communicating with the database used to store server data.

Contents:

batchRequests

batchSize

completeUserName

customDatabaseDialect

customDatabaseDriver

customDatabaseUrl

databaseDialect

databaseDriver

databaseName

databaseType

databaseUrl

hostName

port

statementCacheSize

userName

directoryProvider

Contains information about the configuration used to communicate with an external directory service (LDAP or ActiveDirectory).

Contents:

commonGroupNameAttribute

createTime

description

directoryProviderId

domainName

emailAttribute

enableGroups

fullUserNameAttribute

groupBase

groupMemberAttributes

groupMemberFilter

groupNameAttribute

groupSearchFilter

lastModifiedBy

managerDn

modifyTime

name

owner

position

propertySheetId

providerIndex

providerName

providerType

realm

url

useSSL

userBase

userNameAttribute

userSearchFilter

userSearchSubtree

testDirectoryProvider

Contains the results of testing a directory provider configuration as a list of test result blocks.

Each block contains a result with details about any failures. The `findGroupsTest` block also includes a list of groups for the test user.

The `findUserTest` block includes information about the user or users that matched the test user name.

Contents:

findGroupsTest

- testResult
- details

```
      groupList
         group*
   findUserTest
      testResult
      details
      userList
         userInfo*
         email
         fullUserName
         mutable
         providerName
   userAuthenticationTest
      testResult
      details
```

emailConfig

Contains information about the configuration used to communicate with an email server.

Contents:

```
configName
createTime
description
emailConfigId
emailConfigName
lastModifiedBy
mailFrom
mailHost
mailPort
mailProtocol
mailUser
modifyTime
owner
propertySheetId
```

emailNotifier

Contains information about an email notifier.

Contents:

condition

configName

container

createTime

description

destinations

emailNotifierId

eventType

formattingTemplate

lastModifiedBy

modifyTime

notifierName

owner

propertySheetId

formalParameter

Contains information about a formal parameter.

Contents:

container

createTime

defaultValue

description

expansionDeferred

formalParameterId

formalParameterName

lastModifiedBy

modifyTime

owner

required

type

gateway

Contains information about a gateway.

Contents:

`createTime`

`description`

`gatewayDisabled`

`gatewayId`

`gatewayName`

`hostName1`

`hostName2`

`lastModifiedBy`

`modifyTime`

`owner`

`port1`

`port2`

`propertySheetId`

`resourceName1`

`resourceName2`

group

Contains information about a defined group of users.

Contents:

`createTime`

`groupId`

`groupName`

`lastModifiedBy`

`modifyTime`

`mutable`

`owner`

`propertySheet`

`propertySheetId`

`providerName`

`users`

job

Contains information about a running or completed job. Different API calls will result in different subsets of possible properties on the job. Refer to the specific API for details.

Contents:

abortedBy
abortStatus
actualParameters*
callingState
combinedStatus
createTime
credentialName
deleted
directoryName
elapsedTime
errorCode
errorMessage
external
finish
jobId
jobName
jobStep*
lastModifiedBy
launchedByUser
licenseWaitTime
liveProcedure
liveSchedule
modifyTime
outcome
owner
priority
procedureName
projectName
propertySheet
propertySheetId
resourceWaitTime
runAsUser
scheduleName
start
status
steps
totalWaitTime
workspaceWaitTime

jobStep

Contains information to define or locate a job step. Notice that the `calledProcedure` element (subcontainer element) can contain multiple `jobStep` elements.

Contents:

abortedBy
abortStatus
actualParameters
alwaysRun
assignedResourceName
broadcast
calledProcedure
    jobStep*
outcome
owner
parallel
postExitCode
postLogFileName
postProcessor
precondition
procedureName

combinedStatus
command
condition
createTime
delayUntil
elapsedTime
errorCode
errorHandling
errorMessage
exclusive
exclusiveMode
exitCode
external
finish
hostName
jobId
jobName
jobStepId
lastModifiedBy
licenseWaitTime
liveProcedure
liveProcedureStep
logFileName
modifyTime
projectName
propertySheetId
releaseExclusive
releaseMode
resourceName
resourceWaitTime
retries
runAsUser
runnable
runTime
shell
start
status
stepName
subprocedure
subproject
timeLimit
timeout
totalWaitTime
waitTime
workingDirectory
workspaceName
workspaceWaitTime

license

Contains information to specify the ElectricFlow license.

Contents:

createTime
customerName
evaluation
expirationDate
featureName

gracePeriod

lastModifiedBy

licenseId

modifyTime

owner

productName

property*

propertySheet*

signature

licenseUsage

Contains information about ElectricFlow license usage.

Note: Your response will be different depending on how you are licensed for ElectricFlow currently.

Contents:

concurrentResources

- inUseHosts
- inUseProxiedHosts
- maxHosts
- maxProxiedHosts

concurrentUsers*

- adminLicenseLastUse
- adminLicenseUser
- inUseLicenses
- maxLicenses
- license*
  - admin
  - expiration
  - lastUse
  - user

concurrentSteps

- maxConcurrentSteps
- runningSteps

logEntry

Contains information about log events generated anywhere in the system.

Contents:

`category`

`container`

`containerName`

`deleted`

`logEntryId`

`message`

`principal`

`severity`

`subject`

`subjectName`

`time`

object

Primarily, the object element is returned from a `getAccess` API request. If multiple objects are returned, they are presented in an order beginning with the API requested object to the top-level object in the ACL hierarchy. Your object-query response can contain one or more `aclEntry` containers.

Contents:

`objectId`

`objectName`

`objectType`

`aclEntry`*

plugin

Contains elements to define the plugin.

Contents:

`author`

`createTime`

`description`

`label`

`lastModifiedBy`

`modifyTime`

`owner`

`pluginId`

`pluginKey`

`pluginName`

pluginVersion

project

projectName

promoted

propertySheetId

procedure

Contains elements to define the procedure.

Contents:

attachedCredentials

createTime

credentialName

description

jobNameTemplate

lastModifiedBy

modifyTime

owner

procedureId

procedureName

projectName

propertySheetId

resourceName

workspaceName

project

Contains all elements to define a project.

Contents:

attachedCredentials

createTime

credentialName

deleted

description

lastModifiedBy

modifyTime

owner

pluginName

projectId

projectName

propertySheetId

resourceName

workspaceName

property

Contains property sheets and various elements, depending on your query.

Contents:

createTime

description

expandable

lastModifiedBy

modifyTime

owner

path

propertyId

propertyName

propertySheet*

propertySheetId

value

propertySheet

Contains one or more property elements.

Contents:

createTime

lastModifiedBy

modifyTime

owner

property*

propertySheetId

repository

Contains elements to define the artifact repository. The most useful elements in this object are "repositoryName" and "url". Clients publishing/retrieving artifact versions search repositories by name to obtain connection information.

Contents:

- createTime
- description
- lastModifiedBy
- modifyTime
- owner
- propertySheetId
- repositoryDisabled
- repositoryId
- repositoryIndex
- repositoryName
- url
- zoneName

resource

Contains elements to define a resource.

Contents:

- agentState
  - alive
  - code
  - details
  - message
  - pingToken
  - protocolVersion
  - state
  - time
  - version
- artifactCacheDirectory
- createTime
- description
- lastRunTime
- modifyTime
- owner
- pools
- port
- propertySheetId
- proxyCustomization
- proxyHostName
- proxyPort
- proxyProtocol
- repositoryNames
- resourceDisabled
- resourceId

exclusiveJobId

exclusiveJobName

exclusiveJobStepId

exclusiveJobStepName

gateways

hostName

hostOS

hostPlatform

lastModifiedBy

resourceName

shell

stepCount

stepLimit

trusted

useSSL

workspaceName

zoneName

resourcePool

Contains elements to define a resource pool.

Contents:

autoDelete

createTime

description

lastModifiedBy

lastResourceUsed

modifyTime

orderingFilter

owner

propertySheetId

resourceNames

resourcePoolDisabled

resosurcePoolId

resourcePoolName

resourceUsage

Contains information about resource usage. For any step running on a resource, there is a resource usage record containing the ID and name of the job, job step, and resource.

Contents:

jobId

jobName

jobStepId

jobStepName

licenceWaitTime

resourceId

resourceName

resourcePoolId

resourcePoolName

resourceUsageId

resourceWaitTime

waitReason

workspaceWaitTime

schedule

Contains all elements to define a schedule.

Contents:

actualParameters

attachedCredentials

beginDate

createTime

credentialName

description

endDate

interval

intervalUnits

lastModifiedBy

lastRunTime

misfirePolicy

modifyTime

monthDays

owner

priority

procedureName

projectName

propertySheetId

scheduleDisabled

scheduleId

scheduleName

startTime

stopTime

timeZone

weekDays

serverStatus

Contains elements to determine the status of the server.

Contents:

apiMonitor

longestCall

```
            api
            callId
            description
            elapsedTime
            label
            remoteAddress
            start
            userName
         mostActiveCalls
         totalCallCount
         activeCalls
            call*
               api
               callId
               description
               elapsedTime
               label
               remoteAddress
               start
               userName
            recentCalls
            call*
               api
               callId
               description
               elapsedTime
               label
               remoteAddress
               start
               userName
      lastMessage
      messages
         message*
      serverState
      startTime
```

serverVersion

Contains elements to specify the ElectricFlow server version.

Contents:

label

protocolVersion

schemaVersion

version

state

Contains elements for a state in a running or completed workflow.

Contents:

active

createTime

description

errorMessage

index

lastModifiedBy

modifyTime

owner

projectName

propertySheetId

stateId

stateName

subjob

subprocedure

subproject

substartingState

subworkflow

subworkflowDefinition

workflowName

stateDefinition

Contains elements for the state definition within a workflow definition.

Contents:

- createTime
- description
- formalParameters
- index
- lastModifiedBy
- modifyTime
- owner
- projectName
- propertySheetId
- startable
- stateDefinitionId
- stateDefinitionName
- subprocedure
- subproject
- substartingState
- subworkflowDefinition
- workflowDefinitionName

step

Contains elements to specify or define a step.

Contents:

- actualParameters
- alwaysRun
- attachedCredentials
- attachedParameters
- broadcast
- command
- condition
- createTime
- credentialName*
- description
- errorHandling
- exclusive
- exclusiveMode
- postLogFileName
- postProcessor
- precondition
- procedureName
- projectName
- propertySheetId
- releaseExclusive
- releaseMode
- resourceName
- shell
- stepId
- stepName
- subprocedure

lastModifiedBy
logFileName
modifyTime
owner
parallel
subproject
timeLimit
timeLimitUnits
workingDirectory
workspaceName

transition

Contains elements about a transition in a running or completed workflow.

Contents:

actualParameters
condition
createTime
description
index
lastModifiedBy
modifyTime
owner
projectName
propertySheetId
stateName
targetState
transitionId
transitionName
trigger
workflowName

transitionDefinition

Contains elements about a transition definition within a workflow definition.

Contents:

actualParameters
condition
createTime
description
index

lastModifiedBy

modifyTime

owner

projectName

propertySheetId

stateDefinitionName

targetState

transitionDefinitionId

transitionDefinitionName

trigger

workflowDefinitionName

user

Contains information about the current user.

Contents:

createTime

email

fullUserName

groups

lastModifiedBy

modifyTime

mutable

owner

propertySheetId

providerName

userId

userName

workflow

Contains elements about a running or completed workflow.

Contents:

activeState

callingState

completed

createTime

deleted

elapsedTime

finish

lastModifiedBy

launchedByUser

liveWorkflowDefinition

modifyTime

owner

projectName

propertySheetId

start

startingState

workflowDefinitionName

workflowId

workflowName

workflowDefinition

Contains elements about a workflow definition.

Contents:

createTime

description

lastModifiedBy

modifyTime

owner

projectName

propertySheetId

workflowDefinitionId

workflowDefinitionName

workflowNameTemplate

workspace

Contains elements about a workspace.

Contents:

agentDrivePath

agentUncPath

agentUnixPath

createTime

credentialName

description

lastModifiedBy

local

modifyTime

owner

propertySheet

propertySheetId

workspaceDisabled

workspaceId

workspaceName

zoneName

zone

Contains elements about a zone.

Contents:

createTime

description

lastModifiedBy

modifyTime

owner

propertySheetId

resources

zoneId

zoneName

Element Glossary

The following table lists all simple returned elements, including the element type and its description.

Returned element	Type	Description/Value
abortStatus	enum	Possible values are: abort|force_abort
abortedBy	string	The name of the user who aborted the job.

Returned element	Type	Description/Value
`aclEntryId`	number	The unique ElectricFlow-generated ID for this `aclEntry` object.
`active`	boolean	<*Boolean flag* - `0|1|true|false`>—If set to "true", the state of the workflow is active.
`activeCalls`	subcontainer	A container element within the `serverStatus` element. `activeCall` describes an API currently running on the server.
`activeState`	string	The name of the `activeState` on the workflow object.
`actualParameters`	propertySheet	An `actualParameter` object provides the value for a parameter, which is passed to a procedure when it is invoked. Actual parameters can be provided for jobs and nested subprocedures within a job. Actual parameters are different from "formal parameters"- formal parameters define the parameters a procedure is expecting, and actual parameters provide values to use at run-time. For the workflow feature, these are the parameters that were passed when the workflow was started.
`actualParameterId`	number	The unique ElectricFlow-generated ID for this actual parameter object.
`actualParameterName`	string	The name of the parameter. This name is unique within the step, and at run time it matches the name of a formal parameter in the subprocedure.
`admin`	boolean	<*Boolean flag* - `0|1|true|false`>—If set to "true", the this is an "admin" license.
`adminLicenseLastUse`	date	The time at which the admin license was last used.
`adminLicenseUser`	string	The name of the user who is currently licensed as the "admin" user.
`agentDrivePath`	string	Drive-letter-based path used by Windows agents to access the workspace in steps.
`agentUncPath`	string	UNC path used by Windows ElectricFlow Web servers to access the workspace. The agent uses agentUncPath and agentDrivePath to compute the drive mapping needed for making agentDrivePath valid in the step.
`agentUnixPath`	string	UNIX path used by UNIX agents and Linux ElectricFlow Web servers to access the workspace.

Returned element	Type	Description/Value
`agentState`	subcontainer	A subcontainer element returned from certain `resource` queries. `agentState` returns specific information about an agent, including the `state` of the agent. Possible values are: `unknown|alive|down`
`alive`	boolean	Refers to the agent state or status.
`alwaysRun`	boolean	<*Boolean flag* - `0|1|true|false`> - If set to 1, indicates this step will run even if the job is aborted before the step completes. Defaults to "false".
`api`	string	An element returned on `longestCall`, `activeCall`, and `recentCall` subcontainers of the `serverStatus` element. `api` returns the API call (command) that is running or ran on the server.
`apiMonitor`		A server object that tracks API active, recent calls, and the total number of calls since server startup.
`artifactCacheDirectory`	string	The directory on the agent host where retrieved artifacts are stored.
`artifactId`	number	The unique ElectricFlow-generated ID for this artifact object.
`artifactKey`	string	User-specified identifier for this artifact. This field is limited to alphanumeric characters, spaces, underscores, hyphens, and periods.
`artifactName`	string	The name of the artifact.
`artifactsDirectory`	string	The directory in the workspace where you can put files to view, using a report link.
`artifactVersionId`	string	The unique ElectricFlow-generated ID for this artifact version object.
`artifactVersionName`	name	The name of the artifact version. An artifact version name is interpreted by the server as the `artifactVersionName` attribute for the `artifactVersion` in question. This name is parsed and interpreted as `"groupId:artifactKey:version"` and the object is searched either way you specify its name—the ElectricFlow server interprets either name form correctly.

Returned element	Type	Description/Value
artifactVersionNameTemplate	string	A template for the names of artifact versions published to this artifact. Over-rides the ***global***artifactVersionNameTemplate. The global setting can be manipulated in the Server Settings page (Administration > Server, select the Settings link).
artifactVersionState	enum	Possible values are: available|publishing|unavailable
assignedResourceName	string	The name of the resource assigned to the step by the step scheduler.
attachedCredentials	list	The names of the credentials attached to the specified object.
attachedParameters	string	These are credential parameters that were attached to a step.
author	string	The author of the plugin.
autoDelete	boolean	<*Boolean flag* - 0|1|true|false> - If "true", the resource pool is deleted when the last resource is removed or deleted.
batchRequests	string	A setting in the database configuration that determines whether or not to batch SQL queries when making a request to the database.
batchSize	string	The number of objects imported before being committed to the database.
beginDate	string	<*yyyy-mm-dd*> The date the schedule is set to begin.
broadcast	boolean	<*Boolean flag* - 0|1|true|false> - Used for command steps, this flag is used to run the same step on several resources at the same time. The step is “broadcast” to all resources listed in the resourceName argument. Defaults to "false".
buildNumber	string	User-defined build number component of the version attribute for the artifact version.
call	subcontainer	A subcontainer returned on activeCall and recentCall elements returned by the serverStatus API. call contains information specific to each API call on the server.
callId	number	A unique ElectricFlow-generated identifier for this particular call.

Returned element	Type	Description/Value
`callingState`	string	The full property path to the "calling state", which can appear on `subjobs` and `subworkflows` of a workflow.
`calledProcedure`	list	A subcontainer element within the `jobStep` element. The `calledProcedure` element can contain multiple `jobStep` elements.
`category`		(currently not used)
`changePermissionsPrivilege`	enum	Possible values are: `allow|deny|inherit`
`code`	enum	Script to execute the functions for a step—passed to the step's shell for execution.
`combinedStatus`	enum	More inclusive step status output - this value may combine up to three sub-elements: `status|message|properties`
`command`	string	The command to run steps - for command steps.
`commonGroupNameAttribute`	string	The attribute in a group record that contains the common group name. If specified, this name is used only when searching for groups from an external provider.
`completed`	boolean	<*Boolean flag* - `0|1|true|false`> - If "true", the workflow is completed and no additional transactions will be evaluated.
`completeUserName`	string	A SQL server-specific tag that includes the user's name and the user's domain name.
`concurrentResources`	object	A subcontainer element that includes information about "in use" and "maximum licensed" hosts and proxied hosts for the `licenseUsage` API command.
`concurrentSteps`	number	The total number of steps running at the same time in the ElectricFlow system. This means all steps from all procedures, regardless of how many or how few projects you have created.)
`concurrentUsers`	object	A subcontainer element that includes information about the admin license, "in use" licenses, and the maximum number of licenses for the `licenseUsage` API command.

Returned element	Type	Description/Value
`condition`	string	**For steps:** If empty or non-zero, the step will run. If set to "0", the step is skipped. A useful setting during procedure development or when re-running a job that has already completed some of the steps. Also, this argument is useful for conditional execution of steps based on properties set by earlier steps. **For email notifiers:** Mail sent if the condition evaluates to "true". The `condition` is a string subject to property expansion. The notification will NOT be sent if the expanded string is "false" or "0". If no `condition` is specified, the notification is ALWAYS sent.
`configName`	string	The name of the configuration.
`container`	string	An object ID for a "container" that contains formal parameters. In another context, this is typically the type and name of the workflow or job with a corresponding ID.
`containerName`	string	The name of the container.
`createTime`	date	The time when this object was created.
`credentialId`	number	The unique ElectricFlow-generated ID for this credential object.
`credentialName`	string	`credentialName` can be one of two forms: **relative** (for example, `"cred1"`) - the credential is assumed to be in the project that contains the request target object. Requires a qualifying project name. **absolute** (for example, `"/projects/BuildProject/credentials/cred1"`) - the credential can be from any specified project, regardless of the target object's project.
`customDatabaseDialect`	string	Class name for the Hibernate dialect. The server chooses an appropriate dialect based on `databaseType` or this can be part of the custom specification.
`customDatabaseDriver`	string	Class name of the JDBC driver. The server will choose an appropriate driver based on `databaseType` or this can be part of the custom specification.
`customDatabaseUrl`	string	The JDBC URL to use. The server will compose an appropriate URL or this can be part of the custom specification.

Returned element	Type	Description/Value
customerName	string	The name of a company and/or group name with a company that is using ElectricFlow.
databaseDialect	string	Class name for the Hibernate dialect (the server chooses an appropriate dialect based on databaseType).
databaseDriver	string	Class name of the JDBC driver (the server will choose an appropriate driver based on databaseType).
databaseName	string	The name of the database the ElectricFlow server is using.
databaseType	enum	Possible values are: builtin|mysql|oracle|postgresql|sqlserver
databaseUrl	string	The JDBC URL to use (the server will compose an appropriate URL).
defaultValue	string	This value is used for the formal parameter if a value is not supplied by the caller.
delayUntil	date	For a step that was rescheduled due to a resource or workspace problem, this is the next time when the step will be eligible to run.
deleted	byte	The object was marked for background deletion. Possible values are "0" or "1". Default is "0" (not set).
dependentArtifactVersion	list	A list of one or more artifact versions.
description	string	A plain text or HTML description for this object. If using HTML, you must surround your text with <html> ... </html> tags. The only HTML tags allowed in the text are: <a> <b> <dl> <font> <i> <p> <pre> <style> <table> <tc> <td> <th> <tr>
destinations	string	A space-separated list of valid email addresses, email aliases, or ElectricFlow user names, or a string subject to property expansion that expands into such a list.
details	string	A string containing details about agent status.
directoryName	string	The name of the job's directory within each workspace for a job.
directoryProviderId	number	The unique ElectricFlow-generated ID for this directory provider object.

Returned element	Type	Description/Value
`domainName`	string	The name of the domain from which the Active Directory servers are automatically discovered.
`elapsedTime`	number	The number of milliseconds between the start and end times for the job or job step - or a workflow.
`email`	string	The user's email address.
`emailAttribute`	string	The attribute in a user record that contains the user's email address. If the attribute is not specified, the account name and domain name are concatenated to form an email address.
`emailConfigId`	number	The unique ElectricFlow-generated ID for this email configuration object.
`emailConfigName`	string	The name of the email configuration.
`emailNotifierId`	number	The unique ElectricFlow-generated ID for this email notifier object.
`enableGroups`	boolean	Determines whether or not to enable external groups for the directory provider.
`endDate`	string	<*yyyy-mm-dd*> The date this schedule is set to end.
`errorCode`	enum	Displays the error code, identifying which error occurred.

Returned element	Type	Description/Value
`errorHandling`	enum	Determines what happens to the procedure if the step fails: • `failProcedure` - The current procedure continues, but the overall status is error (default). • `abortProcedure` - Aborts the current procedure, but allows already-running steps in the current procedure to complete. • `abortProcedureNow` - Aborts the current procedure and terminates running steps in the current procedure. • `abortJob` - Aborts the entire job, terminates running steps, but allows `alwaysRun` steps to run. • `abortJobNow` - Aborts the entire job and terminates all running steps, including `alwaysRun` steps. • `ignore` - Continues as if the step succeeded.
`errorMessage`	string	A description of the error.
`evaluation`	boolean	Determines whether or not this license is an evaluation copy only.
`eventType`	enum	Possible values are: `onCompletion|onStart` "onStart" triggers an event when the job or job step begins. "onCompletion" triggers an event when the job finishes, no matter how it finishes. Default is "onCompletion".
`exclusive`	boolean	<*Boolean flag* - `0|1|true|false`> - If set to 1, indicates this step should acquire and retain this resource exclusively. Defaults to "false".
`exclusiveJobId`	number	The ID number of the job that owns this resource, which occurs when one of the job's steps requests exclusive use of the resource for the duration of the job.
`exclusiveJobName`	string	The name of the job that owns this resource, which occurs when one of the job's steps requests exclusive use of the resource for the duration of the job.
`exclusiveJobStepId`	number	The ID number of the job step that owns this resource, which occurs when one of the steps request exclusive use of the resource for the duration of the job.

Returned element	Type	Description/Value
`exclusiveJobStepName`	name	The name of the job step that owns this resource, which occurs when one of the steps request exclusive use of the resource for the duration of the job.
`exclusiveMode`	enum	Possible values are: `none|job|step|call` See `exclusive`
`executePrivilege`	enum	Possible values are: `allow|deny|inherit`
`exitCode`	number	The step's exit code.
`expandable`	boolean	<*Boolean flag* - `0|1|true|false`> Determines whether the property value will undergo property expansion when it is fetched. Default is "true".
`expansionDeferred`	boolean	<*Boolean flag* -`0|1|true|false`> Default is "false," which means the formal parameter is expanded immediately.
`expiration`	date	The date when a user license expires.
`expirationDate`	date	The date when a license expires.
`external`	boolean	<*Boolean flag* -`0|1|true|false`> If "true," this job is external. For more information about external jobs, see the API Commands - Job Management Help topic.
`featureName`	string	The name of the licensed feature. Possible features include: `Server`
`findGroupsTest`	subcontainer	For the `testDirectoryProvider` API, this element provides information on which groups the user is a member.
`findUserTest`	subcontainer	For the `testDirectoryProvider` API, this element contains specific information about the user.
`finish`	date	The time the job or workflow completed.
`formalParameterId`	number	The formal parameter's ID.
`formalParameterName`	string	The name of the procedure's parameter, containing a credential reference.
`formalParameters`	string	The parameters that must be supplied when entering the state (similar to formal parameters on a procedure).

Returned element	Type	Description/Value
`formattingTemplate`	string	Specifies a template for formatting email messages when an event [notification] is triggered by the `emailNotifier`.
`fullUserName`	string	The user's full name - not his or her nickname.
`fullUserNameAttribute`	string	The attribute in a user record that contains the user's full name (first and last) for display in the UI. If this attribute is not specified or the resulting value is empty, the user's account name is used instead.
`gatewayDisabled`	boolean	<*Boolean flag* -`0|1|true|false`> If "true", the gateway is disabled.
`gatewayId`	number	The ElectricFlow-generated ID number for this gateway.
`gatewayName`	string	The name of the gateway.
`gateways`	list	A space-separated list of gateway names.
`gracePeriod`	number	The number of days available after the ElectricFlow license expires.
`groupBase`	string	This string is prepended to the `basedn` to construct the directory DN that contains group records.
`groupId`	number	The unique ElectricFlow-generated group ID. **For Artifact Management:** A user-generated group name for this artifact. This field is limited to alphanumeric characters, spaces, underscores, hyphens, and periods.
`groupList`	list	For the `testDirectoryProvider` API, this element contains zero or more groups returned after querying existing groups known to the directory provider.
`groupMemberAttributes`	string	A comma-separated attribute name list that identifies a group member. Most LDAP configurations only specify a single value, but if there is a mixture of POSIX and LDAP style groups in the directory, multiple attributes might be required.

Returned element	Type	Description/Value
`groupMemberFilter`	string	This LDAP query is performed in the groups directory context to identify groups containing a specific user as a member. Two common forms of group record in LDAP directories: POSIX style groups where members are identified by account name, and `groupOfNames` or `uniqueGroupOfNames` records where members are identified by the full user DN. Both forms are supported, so the query is passed to parameters: "`{0}`" is replaced with the full user record DN, and "`{1}`" is replaced with the user's account name.
`groupName`	string	The full name of a group. For Active Directory and LDAP, this is a full DN.
`groupNameAttribute`	string	The group record attribute that contains the name of the group.
`groups`	list	A space-separated list of group names.
`groupSearchFilter`	string	The LDAP query performed in the context of the groups directory to enumerate group records.
`groupSettingsId`	number	The unique ElectricFlow-generated ID for this group settings object.
`hostName`	string	The computer name or IP address for the machine containing the ElectricFlow server or agent.
`hostName1`	string	For gateways: The name Resource 2 uses to communicate with Resource 1. If "blank", the *Agent Host Name* attribute in Resource 1's definition is used at runtime.
`hostName2`	string	For gateways: The name Resource 1 uses to communicate with Resource 2. If "blank", the *Agent Host Name* attribute in Resource 2's definition is used at runtime.
`hostOS`	string	The full name of the host operating system, plus its version. However, if this host is a proxy, the value is "proxied".
`hostPlatform`	string	Examples for "platform" are: Windows, Linux, HPUX, and so on. However, if this host is a proxy, the value is "proxied".
`index`	number	The numeric index of the transition that indicates its order in the list of transitions in a state definition.

Returned element	Type	Description/Value
`interval`	string	The repeat interval for starting new jobs.
`intervalUnits`	enum	Possible values are: `hours|minutes|seconds|continuous` If set to `continuous`, ElectricFlow creates a new job as soon as the previous job completes.
`inUseHosts`	number	The number of hosts (agents) currently in use.
`inUseLicenses`	number	The number of user licenses currently in use.
`inUseProxiedHosts`	number	The number of proxy target hosts currently in use.
`jobId`	number	The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template.
`jobName`	string	The name of the job.
`jobNameTemplate`	string	Template used to determine the default name of jobs launched from a procedure.
`jobStepId`	number	The unique identifier for a job step, assigned automatically when the job step is created.
`jobStepName`	string	The name of the job step.
`label`	string	A name used by a plugin for display in a list, or this may represent context-specific info about an API call—not all API calls return a "label" tag.
`lastMessage`	string	Element returned by the `serverStatus` API showing the last message the server received.
`lastModifiedBy`	string	Shows who (generally a user name) last modified the object.
`lastResourceUsed`	string	The name of the most recently used resource from the pool.
`lastRunTime`	date	The last time a job was launched by a schedule. -or- In a `resource` response, this is the most recent time that a job step ran on the resource.
`lastUse`		Returned element in the `concurrentUsers` subcontainer (for the `licenseUsage` API), providing the last time a specific user accessed ElectricFlow.

Returned element	Type	Description/Value
`launchedByUser`	string	The name of the user or project principal that explicitly launched the job. This property is blank when the job is launched by a schedule.
`licenseId`	number	The unique ElectricFlow-generated ID for this license.
`licenseWaitTime`		The amount of time a job step was stalled waiting for an available license. On a job, this is the sum of license wait for all job steps.
`liveProcedure`	string	Shows the current procedure name for the procedure step from which the job or job step was created – if the procedure step was renamed since the job or job step was launched, this is the procedure step's new name, and if the procedure step was deleted, this will be null.
`liveProcedureStep`	string	Shows the current procedure step name for the procedure step from which the job step was created – if the procedure step was renamed since the job was launched, this is the procedure step's new name, and if the procedure step was deleted, this will be null.
`liveSchedule`	string	Shows the current schedule name for the procedure step from which the job was created – if the schedule was renamed since the job was launched, this is the schedule's new name, and if the schedule was deleted, this will be null.
`liveWorkflowDefinition`	string	Shows the current workflow definition name for the workflow definition from which the workflow was created – if the workflow definition was renamed since the workflow was launched, this is the workflow definition's new name, and if the workflow definition was deleted, this will be null.
`local`	boolean	<*Boolean flag* -`0|1|true|false`> If "true", this object is local.
`logEntryId`	number	The ElectricFlow-generated ID number for the log entry record.
`logFileName`	string	A custom log file name produced by running the step. By default, ElectricFlow assigns a unique name for this file.
`longestCall`	string	Provides the API call that took the longest time.
`mailFrom`	string	The email address used as the email sender address for notifications.

Returned element	Type	Description/Value
`mailHost`	string	The name of the email server host.
`mailPort`	number	The port number for the mail server, but may not need to be specified. The protocol software determines the default value (25 for SMTP and 465 for SSMTP). Specify a value for this argument when a non-default port is used.
`mailProtocol`	string	This is either SSMTP or SMTP (not case-sensitive). The default is SMTP.
`mailUser`	string	This can be an individual or a generic name like "ElectricFlow" - name of the email user on whose behalf ElectricFlow sends email notifications.
`majorMinorPatch`	string	`major.minor.patch` component of the version attribute for the artifact.
`managerDn`	string	The name of a user who has read-only access to the LDAP or Active Directory server. Typically a DN (distinguished name). A simple name may be used when the Active Directory server's URL is being auto-discovered via DNS. **Note**: This user does not need to be an admin user with modify privileges.
`maxConcurrentSteps`	number	The maximum number of steps that can run at the same time per the provisions of your ElectricFlow license.
`maxHosts`	number	The maximum number of hosts licensed for resource use.
`maxLicenses`	number	The maximum number of licenses available for users.
`maxProxiedHosts`	number	The maximum number of available licenses for proxy hosts.
`message`	string	A user-readable diagnostic message associated with an error.
`messages`	list	Multiple error or diagnostic messages.

Returned element	Type	Description/Value
`misfirePolicy`	enum	Possible values are: `ignore | run once` A schedule may not fire at the allotted time because a prior job is still running, the server is running low on resources and there is a delay, or the server is down. When the underlying issue is resolved, the server will schedule the next job at the next regularly scheduled time slot if the policy is `'ignore'`, otherwise it will run the job immediately. Defaults to `"ignore"`.
`modifyPrivilege`	enum	Possible values are: `allow|deny|inherit`
`modifyTime`	date	The time when the object was last modified.
`monthDays`	string	Restricts the schedule to specified days of the month. Specify numbers from 1-31, separating multiple numbers with a space.
`mostActiveCalls`	number	The number of most active API calls since server startup.
`mutable`	boolean	If "true," the member list of this group is editable within ElectricFlow via the web UI or the `modifyGroup` API.
`name`	string	The name of the directory provider.
`notifierName`	string	The name of the email notifier.
`objectId`	number	An object identifier returned by `findObjects` and `getObjects`. This value is a "handle" only for passing to API commands. The internal structure of this value is subject to change - do not parse this value.
`objectName`	string	The name of the object.
`objectType`	enum	The type of object being described, for example: project, procedure, step, and so on.
`orderingFilter`	string	A Javascript block invoked when scheduling resources for a pool. **Note:** A Javascript block is not required unless you need to override the default resource ordering behavior.

Returned element	Type	Description/Value
`outcome`	enum	Possible values for `outcome`: **Note:** The `outcome` is accurate only if the job status is "completed." `success` - The job finished successfully. `warning` - The job completed with no errors, but encountered some suspicious conditions. `error` - The job has finished execution with errors.
`owner`	string	The person (user name) who created the object.
`parallel`	boolean	<*Boolean flag* - `0|1|true|false`> - If set, indicates this step should run at the same time as adjacent steps marked to run as parallel also. Defaults to "false".
`password`	string	The password matching the specified user name.
`path`	string	The property path that specifies the object to use.
`pingToken`	number	Every time an agent starts, a unique `pingToken` value is generated. The server uses the `pingToken` value to determine agent restarts by noticing the values before and after a restart.
`pluginId`	number	The unique ElectricFlow-generated ID for the plugin object.
`pluginKey`	string	The name of the plugin as displayed on the ElectricFlow Plugin Manager web page.
`pluginName`	string	The name of the plugin - the plugin key for a promoted plugin or a plugin key and version for an unpromoted plugin.
`pluginVersion`	string	The version of the plugin being described.
`pools`	list	A space-separated list of one or more pool names where this resource is a member. Steps defined to run on a resource pool will run on any available member (resource) in the pool.
`port`	number	If a port number is not specified, the default ElectricFlow port is used. For a proxy resource, this is the port number for the service running on the proxy target that will run commands on behalf of the ElectricFlow agent. For `ssh`, the default is 22.
`port1`	number	The port number used by *Gateway Resource1* - default is to the port number used by the resource.

Returned element	Type	Description/Value
`port2`	number	The port number used by *Gateway Resource2* - default is to the port number used by the resource.
`position`	number	Used to reorder a ElectricFlow object. For example, if reordering directory providers: the provider name is moved to a position just before this provider. "Blank" means move the provider to the end of the provider list.
`postExitCode`	number	The step's post processor exit code.
`postLogFileName`	string	The log file name produced by this step's post processor.
`postProcessor`	string	This program looks at the step output to find errors and warnings. ElectricFlow includes a customizable program called "postp" for this purpose. The value for `postProcessor` is a command string for invoking a post-processor program in the platform shell for the resource (`cmd` for Windows, `sh` for UNIX).
`precondition`	string	Set this property to make a step wait until one or more dependent conditions are met. When a job step is eligible to transition from pending to runnable, a *precondition* is evaluated. A *precondition* is a fixed text or text embedding property reference that is evaluated to TRUE or FALSE. An empty string, a \"0\" or \"false\" is interpreted as FALSE. Any other result string is interpreted as TRUE. The step will block until the precondition is TRUE.
`principal`	string	The user or project principal from the session that was active when the event occurred.
`principalName`	string	This is either a user or a group name.
`principalType`	enum	Possible values are: `group|user`
`priority`	enum	Possible values are: `low|normal|high|highest` Priorities take effect when two or more job steps in different jobs are waiting for the same resource. When the resource is available, it will be used by the job step that belongs to the job with the highest priority. If the priority level is the same, the resource will be used by the job step that belongs to the job with the lowest job ID number. If the job steps are in the same job, the resource will be used first by the step with the lowest job step ID number.

Returned element	Type	Description/Value
`procedureId`	number	The unique ElectricFlow-generated procedure ID.
`procedureName`	string	The name of the procedure - may be a path to the procedure.
`productName`	string	The name of the product with the licensed feature. Possible products include: ElectricFlow
`project`	name	The name of the project associated with the plugin.
`projectId`	number	The unique ElectricFlow-generated project ID.
`projectName`	string	The name of the project - may be a path. The project name is ignored for credentials, procedure, steps, and schedules if it is specified as a path.
`promoted`	boolean	<*Boolean flag* - `0|1|true|false`> The new value of the promoted flag for the specified plugin. Default is "true", which means the plugin will be promoted. If you want to demote the plugin, use the value of “0” or false.
`propertyId`	number	The unique ElectricFlow-generated property ID.
`propertyName`	string	The name of the property. It may be a relative or absolute property path, including "my" paths such as `"/myProject/prop1"`.
`propertySheetId`	number	The unique identifier for a property sheet, assigned automatically when the property sheet is created.
`protocolVersion`	sting	The server API protocol version. For example, the server accepts messages from ectool and ec-perl.
`providerIndex`	number	The index that specifies the search order across multiple directory providers. For example: 2 LDAP providers, one with index "0" and one with index "1" means the providers will be searched in that numerical order.
`providerName`	string	The LDAP or Active Directory provider name.
`providerType`	enum	Possible values are: `ldap|activedirectory`
`proxyCustomization`	string	Perl code customizing how the proxy resource communicates with the proxy target. This argument is applicable only for proxy resources.
`proxyHostName`	string	The name or IP address of the computer containing the ElectricFlow Agent used for a proxy resource.

Returned element	Type	Description/Value
`proxyPort`	number	The ElectricFlow agent port number for a proxy resource.
`proxyProtocol`	string	Protocol for communicating with the proxy target. Defaults to `ssh`. (This argument is not exposed in the ElectricFlow Web Interface at this time.)
`publisherJobId`	number	The ElectricFlow-generated ID for the job that published the artifact version.
`publisherJobName`	name	The name of the job that published the artifact version.
`publisherJobStepId`	number	The ElectricFlow-generated ID for the job step that published the artifact version.
`qualifier`	string	User-defined qualifier component of the version attribute for the artifact.
`readPrivilege`	enum	Possible values are: `allow|deny|inherit`
`realm`	string	The realm of the LDAP directory provider—used to create unique user names when there are multiple providers.
`recentCall`	subcontainer	A subcontainer element on the `serverStatus` API - a call no longer active (completed). The API monitor keeps track of the 10 most recent calls.
`releaseExclusive`	boolean	<*Boolean flag* - `0|1|true|false`> Declares whether or not this step will release its resource, which is currently held exclusively.
`releaseMode`	string	Possible values are: `none|release|releaseToJob`
`remoteAddress`	string	Generally a combined IP address plus a port specification - used when the agent is talking to the server or to show where the request to the server originated.
`repositoryDisabled`	boolean	<*Boolean flag* - `0|1|true|false`> Determines whether the repository is disabled. Default is "false".
`repositoryId`	number	The ElectricFlow-generated ID for the artifact repository.
`repositoryIndex`	integer	The order of the repository within a list of repositories.
`repositoryName`	string	The name of the artifact repository.

Returned element	Type	Description/Value
`repositoryNames`	list	A list of one or more repository server names—each repository name listed on a "new line".
`required`	boolean	<*Boolean flag* - `0|1|true|false`> If set to 1, this value indicates whether a non-blank value must be supplied when calling the procedure.
`resourceDisabled`	boolean	<*Boolean flag* - `0|1|true|false`> If set to 1, ElectricFlow will not start new steps on this resource. Defaults to "false".
`resourceId`	number	The unique ElectricFlow-generated ID for this resource.
`resourceName1`	string	The name for the first of two resources required to create a gateway. "Spaces" are NOT allowed in a resource name.
`resourceName2`	string	The name for the second of two resources required to create a gateway. "Spaces" are NOT allowed in a resource name.
`resourceName`	string	The name of a resource.
`resourceNames`	string	A list of strings that refer to resources that belong to the pool. Names that do not refer to existing resources are ignored.
`resourcePoolDisabled`	boolean	<*Boolean flag* - `0|1|true|false`> If set to 1, ElectricFlow will not use resources in this pool. Defaults to "false".
`resourcePoolId`	number	The unique ID number for a resource pool.
`resourcePoolName`	name	The name of the resource pool.
`resources`	string	A space-separated list of resource names.
`resourceUsageId`	number	The unique ID number of the resource usage record.
`resourceWaitTime`		The amount of time a job step waited for a resource to become available. On a job, this is the sum of time all job steps waited for resource availability. This could indicate that eligible resources for the step have reached their step limit, are in-use but the step requires a resource exclusively, or resources are down.

Returned element	Type	Description/Value
`retries`	number	The number of attempts to write to the step log in the workspace. In a running step, this is the number of retries attempted up to this point. The most common reason for step retries is the workspace for the step was unavailable.
`retrievers`	list	A collection of retrieve elements that can contain a `jobName`, `jobId`, and/or a `jobStepId` elements.
`runAsUser`	string	The name of the user being impersonated in this job.
`runnable`	date	The time when the step became runnable.
`runningSteps`		The number of steps running at the same time.
`runtime`	number	The number of milliseconds the step command spent running on a resource.
`scheduleDisabled`	boolean	<*Boolean flag* - `0|1|true|false`> If set to 1, ElectricFlow does not start any new jobs from the schedule. Defaults to "false".
`scheduleId`	number	The unique ElectricFlow-generated ID for the schedule.
`scheduleName`	string	The name of the schedule - may be a path to the schedule.
`schemaVersion`	number	The ElectricFlow server's database schema version.
`serverState`	enum	Possible values are: `bootstrap, databaseConfiguration, databaseConnection, databaseSchema, running, failed, stopping, importFailed`
`severity`	enum	Possible values are: `INFO|WARN|ERROR`
`shell`	string	Where shell is the name of a program used to execute commands contained in the “command” field. Normally, this file is a command shell, but it could be any other command line program. The default is `"cmd /q /c"` for a Windows agent and `"sh -e"` for a UNIX agent. This is applicable to command steps only.
`signature`	string	The digital signature on this license.
`start`	date	The time this job or workflow began executing.
`startable`	boolean	"True" means this state definition can be the initial state of an instantiated workflow.

Returned element	Type	Description/Value
`startingState`	string	The initial state of the workflow.
`startTime`	string	Formatted `hh:mm`, using the 24-hour clock. Using this schedule, ElectricFlow starts creating jobs at this time on the specified days.
`stateDefinitionId`	number	The unique ElectricFlow-generated ID for this state definition object.
`stateDefinitionName`	string	The name of the state definition.
`stateId`	number	The unique ElectricFlow-generated ID for this state object.
`statementCacheSize`	string	The number of MS SQL statements cached in the database.
`stateName`	string	The name of the state.
`status`	enum	Possible values for `status`: `pending` - The job is not yet runnable—it is waiting for other steps to complete first. `runnable` - The job is ready to run, but it is waiting for a resource to become available. `running` - The job is assigned to a resource and is executing the step command. `completed` - The job finished executing.
`stepCount`	number	The number of executing steps on this resource.
`stepErrorCode`	enum	Agent error messages.
`stepId`	number	The unique ElectricFlow-generated ID for the step.
`stepLimit`	number	The number of steps that can run on the resource at one time. (Previously setting the limit to 1 enforces serial access to the resource.)
`stepName`	string	The name of the step - may be a path to the step.
`steps`		The list or number of steps in a job.
`stopTime`	string	Formatted `hh:mm`, using the 24-hour clock. ElectricFlow stops creating new jobs at this time, but a job in progress will continue to run. If `stopTime` is not specified, ElectricFlow creates one job only on each specified day.
`subject`	string	Refers to the object the event concerns (similar to `container`).

Returned element	Type	Description/Value
subjectName	string	The name of the subject/object.
subjob	string	The name of the subjob.
subprocedure	string	The name of the nested procedure called when a step runs. If a subprocedure is specified, command or commandFile options are not necessary.
subproject	string	If a subprocedure argument was used, this is the name of the project where that subprocedure is found. By default, the current project is used.
substartingState	sting	Name of the starting state for the workflow launched when the state is entered.
subworkflow	string	The name of the subworkflow.
subworkflowDefinition	string	The name of the subworkflow definition.
targetState	string	The target state for the transition definition.
testResult	enum	Possible values are: success|skipped|failure
time	date	The time of day to invoke this schedule's procedure (24-hour clock, for example, 17:00). For a logEntry response, time indicates the time at which data was written to the log.
timeLimit	number	The maximum length of time the step is allowed to run. After the time specified, the step will be aborted. The time limit is specified in units that can be hours, minutes, or seconds.
timeLimitUnits	enum	Possible values are: hours|minutes|seconds
timeout	number	Specifies the timeout for the element flag. The default value is 120 seconds.
timeZone	string	The time zone specified to use for this schedule (Java-compatible string).
totalCallCount	number	The total number of API calls to the server since startup.
totalWaitTime		On a job, this is the sum of total time all job steps waited for license, resource, and/or workspace availability.

Returned element	Type	Description/Value
`transitionDefinitionId`	number	The unique ElectricFlow-generated ID for this transition definition.
`transitionDefinitionName`	string	The name of the transition definition.
`transitionId`	number	The unique ElectricFlow-generated ID for this transition object.
`transitionName`	string	The name of the transition.
`trigger`	enum	Possible values are: `onEnter|onStart|onCompletion|manual`
`trusted`	boolean	<*Boolean flag* - `0|1|true|false`> If "true", the resource is *trusted*. A trusted agent is one that has been "certificate verified." Agents can be either *trusted* or *untrusted*: • trusted - the ElectricFlow server verifies the agent's identity using SSL certificate verification. • untrusted - the ElectricFlow server does not verify agent identity. Potentially, an untrusted agent is a security risk.
`type`	string	The "type" is any string value. Used primarily by the web interface to represent custom form elements. However, if "credential" is the string value, the server will expect a credential as the parameter value.
`url`	string	For directory providers: The server URL is in the form `protocol://host:port/basedn`. Protocol is either `ldap` or `ldaps` (for secure LDAP). The port is implied by the protocol, but can be overridden if it is not at the default location (389 for ldap, 636 for ldaps). The `basedn` is the path to the top-level directory that contains users and groups at this site. This is typically the domain name where each part is listed with a `dc=` and separated by commas. **Note:** Spaces in the basedn must be URL encoded (%20). **For artifact repositories:** The server URL is in the form `protocol://host:port/`. Typically, the repository server is configured to listen on port 8200 for `https` requests, so a typical URL looks like `https://host:8200/`.

Returned element	Type	Description/Value
`userAuthenticationTest`	subcontainer	For the `testDirectoryProvider` API, this element authenticates the user.
`userBase`	string	The string prepended to the `basedn` to construct the directory DN that contains user records.
`userId`	number	The unique ElectricFlow-generated ID for the user.
`userInfo`		`findUserTest` container element includes a `userList` subcontainer that may include multiple `userInfo` tags, each of which describes a user (including full name, email address, and provider name).
`userList`	list	`findUserTest` container element includes a `userList` subcontainer that may include one or more `userInfo` tags.
`userName`	string	The full name of the user. For Active Directory and LDAP, the name may be `user@domain`.
`userNameAttribute`	string	The attribute in a user record that contains the user's account name.
`userSearchFilter`	string	The LDAP query performed in the context of the user directory to search for a user by account name. The string `"{0}"` is replaced with the user's login ID. Typically, the query compares a user record attribute with the substituted user login ID.
`userSearchSubtree`	boolean	<*Boolean flag* - `0|1|true|false`> If true, the subtree below the user base was recursively searched.
`userSettingsId`	number	The unique ElectricFlow-generated ID for the user settings.
`useSSL`	boolean	<*Boolean flag* - `0|1|true|false`> This flag is used to specify using SSL to communicate with your Active Directory servers. Transport Layer Security (TLS) has replaced Secure Sockets Layer version 3.0 (SSLv3) on the ElectricFlow web server and the ElectricFlow server.
`value`	string	For a string property, this is the value of the property. For a sheet property, this argument is invalid.

Returned element	Type	Description/Value
`version`	string	For plugin versions, the value is represented in the form: `major.minor.` For artifact versions, the value is represented in the form: `major.minor.patch-qualifier-buildNumber`
`waitReason`	string	Possible values are: `license`, `resource`, or `workspace` Generally, this objects are unavailable, causing a longer wait time for availability.
`waitTime`	number	The number of milliseconds the step spent between runnable and running (for example, waiting for a resource).
`weekDays`	string	Restricts the schedule to specified days of the week. Days of the week are separated by spaces. English names "Monday", "Tuesday", and so on.
`workflowDefinitionId`	number	The unique ElectricFlow-generated ID for this workflow definition.
`workflowDefinitionName`	string	The name of the workflow definition.
`workflowId`	number	The unique ElectricFlow-generated ID for this workflow object.
`workflowName`	string	The name of this workflow.
`workflowNameTemplate`	string	Template used to determine the default names for workflows launched from a workflow definition.
`workingDirectory`	string	The ElectricFlow agent sets this directory as the “current working directory,” when running the command contained in the step. If no working directory is specified in the step, ElectricFlow uses the directory it created for the job in the ElectricFlow workspace as the working directory. **Note:** If running a step on a proxy resource, this directory must exist on the proxy target.
`workspaceDisabled`	boolean	<*Boolean flag* - `0|1|true|false`> - If "true," the workspace is disabled.
`workspaceId`	number	The unique ElectricFlow-generated ID for the workspace.
`workspaceName`	string	The name of the workspace.

Returned element	Type	Description/Value
workspaceWaitTime		The total time a job step waited for workspace availability. On a job, this is the sum of time all job steps waited for workspace availability.
zoneId	number	The ElectricFlow-generated ID for this zone.
zoneName	string	The name of the zone.

API Response and Element Glossary

The first part of this topic lists returned response container elements in alphabetical order. The contents for each container element lists all or most of the possible returned response elements—both simple and subcontainer elements. Depending on your request, you may not see all elements in your response. If the value of an element is "empty," typically that element is omitted from the response.

Note: Elements annotated with an * (asterik) may appear multiple times in a response.

The second part of this Help topic is an element glossary for all single or "leaf" elements and subcontainer elements. Click here to go to the glossary or notice that each response element is a link—each response element is linked directly to its glossary entry.

access

Contains the set of effective permissions for a user or a group.

Contents:

changePermissionsPrivilege

executePrivilege

modifyPrivilege

readPrivilege

aclEntry

Contains an ACE (access control list entry) on an object for a given principal.

Contents:

aclEntryId

changePermissionsPrivilege

executePrivilege

modifyPrivilege

readPrivilege

principalName

principalType

actualParameter

An `actualParameter` object provides the value for a parameter, which is passed to a procedure when it is invoked.
Actual parameters can be provided for jobs and nested subprocedures within a job. Actual parameters are different
from "formal parameters"- formal parameters define the parameters a procedure is expecting, and actual parameters
provide values to use at run-time.

Contents:

`actualParameterId`

`actualParameterName`

`createTime`

`modifyTime`

`value`

artifact

Contains elements to define the artifact. An artifact is specified by `groupId` and `artifactKey`.
The name of an artifact is in this form `"groupId:artifactKey"`. An artifact contains a collection of `artifactVersions`.

Contents:

`artifactId`

`artifactKey`

`artifactName`

`artifactVersionNameTemplate`

`createTime`

`description`

`groupId`

`lastModifiedBy`

`modifyTime`

`owner`

`propertySheetId`

artifactVersion

A "concrete" version of an artifact that contains a collection of files stored in the artifact repository.

Contents:

`artifactKey`

`majorMinorPatch`

artifactName
artifactVersionId
artifactVersionName
artifactVersionState
buildNumber
createTime
dependentArtifacts
description
groupId
lastModifiedBy
modifyTime
owner
propertySheetId
publisherJobId
publisherJobName
publisherJobStepId
qualifier
repositoryName
retrievers
version

credential

Contains a stored credential. The password is returned for the `getFullCredential` API only.

Contents:

credentialId
credentialName
createTime
description
lastModifiedBy
modifyTime
owner
password
projectName
propertySheetId
userName

databaseConfiguration

Contain configuration information about communicating with the database used to store server data.

Contents:

batchRequests
batchSize
completeUserName
customDatabaseDialect
customDatabaseDriver

customDatabaseUrl

databaseDialect

databaseDriver

databaseName

databaseType

databaseUrl

hostName

port

statementCacheSize

userName

directoryProvider

Contains information about the configuration used to communicate with an external directory service (LDAP or ActiveDirectory).

Contents:

commonGroupNameAttribute

createTime

description

directoryProviderId

domainName

emailAttribute

enableGroups

fullUserNameAttribute

groupBase

groupMemberAttributes

groupMemberFilter

groupNameAttribute

groupSearchFilter

lastModifiedBy

managerDn

modifyTime

name

owner

position

propertySheetId

providerIndex

providerName

providerType

realm

url

useSSL

userBase

userNameAttribute

userSearchFilter

userSearchSubtree

testDirectoryProvider

Contains the results of testing a directory provider configuration as a list of test result blocks.

Each block contains a result with details about any failures. The `findGroupsTest` block also includes a list of groups for the test user.

The `findUserTest` block includes information about the user or users that matched the test user name.

Contents:

- `findGroupsTest`
  - `testResult`
  - `details`
  - `groupList`
    - `group*`
- `findUserTest`
  - `testResult`
  - `details`
  - `userList`
    - `userInfo*`
    - `email`
    - `fullUserName`
    - `mutable`
    - `providerName`
- `userAuthenticationTest`
  - `testResult`
  - `details`

emailConfig

Contains information about the configuration used to communicate with an email server.

Contents:

- `configName`
- `createTime`
- `description`
- `emailConfigId`
- `emailConfigName`
- `lastModifiedBy`
- `mailFrom`
- `mailHost`
- `mailPort`
- `mailProtocol`
- `mailUser`

modifyTime

owner

propertySheetId

emailNotifier

Contains information about an email notifier.

Contents:

condition

configName

container

createTime

description

destinations

emailNotifierId

eventType

formattingTemplate

lastModifiedBy

modifyTime

notifierName

owner

propertySheetId

formalParameter

Contains information about a formal parameter.

Contents:

container

createTime

defaultValue

description

expansionDeferred

formalParameterId

formalParameterName

lastModifiedBy

modifyTime

owner

required

type

gateway

Contains information about a gateway.

Contents:

createTime

description

gatewayDisabled

gatewayId

gatewayName

hostName1

hostName2

lastModifiedBy

modifyTime

owner

port1

port2

propertySheetId

resourceName1

resourceName2

group

Contains information about a defined group of users.

Contents:

createTime

groupId

groupName

lastModifiedBy

modifyTime

mutable

owner

propertySheet

propertySheetId

providerName

users

job

Contains information about a running or completed job. Different API calls will result in different subsets of possible properties on the job. Refer to the specific API for details.

Contents:

abortedBy
abortStatus
actualParameters*
callingState
combinedStatus
createTime
credentialName
deleted
directoryName
elapsedTime
errorCode
errorMessage
external
finish
jobId
jobName
jobStep*
lastModifiedBy
launchedByUser
licenseWaitTime
liveProcedure
liveSchedule
modifyTime
outcome
owner
priority
procedureName
projectName
propertySheet
propertySheetId
resourceWaitTime
runAsUser
scheduleName
start
status
steps
totalWaitTime
workspaceWaitTime

jobStep

Contains information to define or locate a job step. Notice that the `calledProcedure` element (subcontainer element) can contain multiple `jobStep` elements.

Contents:

abortedBy
abortStatus
actualParameters
outcome
owner
parallel

alwaysRun
assignedResourceName
broadcast
calledProcedure
    jobStep*
combinedStatus
command
condition
createTime
delayUntil
elapsedTime
errorCode
errorHandling
errorMessage
exclusive
exclusiveMode
exitCode
external
finish
hostName
jobId
jobName
jobStepId
lastModifiedBy
licenseWaitTime
liveProcedure
liveProcedureStep
logFileName
modifyTime
postExitCode
postLogFileName
postProcessor
precondition
procedureName
projectName
propertySheetId
releaseExclusive
releaseMode
resourceName
resourceWaitTime
retries
runAsUser
runnable
runTime
shell
start
status
stepName
subprocedure
subproject
timeLimit
timeout
totalWaitTime
waitTime
workingDirectory
workspaceName
workspaceWaitTime

license

Contains information to specify the ElectricFlow license.

Contents:

- `createTime`
- `customerName`
- `evaluation`
- `expirationDate`
- `featureName`
- `gracePeriod`
- `lastModifiedBy`
- `licenseId`
- `modifyTime`
- `owner`
- `productName`
- `property*`
- `propertySheet*`
- `signature`

licenseUsage

Contains information about ElectricFlow license usage.

Note: Your response will be different depending on how you are licensed for ElectricFlow currently.

Contents:

- `concurrentResources`
  - `inUseHosts`
  - `inUseProxiedHosts`
  - `maxHosts`
  - `maxProxiedHosts`
- `concurrentUsers*`
  - `adminLicenseLastUse`
  - `adminLicenseUser`
  - `inUseLicenses`
  - `maxLicenses`
  - `license*`
    - `admin`
    - `expiration`
    - `lastUse`
    - `user`
- `concurrentSteps`

maxConcurrentSteps

runningSteps

logEntry

Contains information about log events generated anywhere in the system.

Contents:

category

container

containerName

deleted

logEntryId

message

principal

severity

subject

subjectName

time

object

Primarily, the object element is returned from a `getAccess` API request. If multiple objects are returned, they are presented in an order beginning with the API requested object to the top-level object in the ACL hierarchy. Your object-query response can contain one or more `aclEntry` containers.

Contents:

objectId

objectName

objectType

aclEntry*

plugin

Contains elements to define the plugin.

Contents:

author

createTime

description

label

lastModifiedBy

modifyTime

owner

pluginId

pluginKey

pluginName

pluginVersion

project

projectName

promoted

propertySheetId

procedure

Contains elements to define the procedure.

Contents:

attachedCredentials

createTime

credentialName

description

jobNameTemplate

lastModifiedBy

modifyTime

owner

procedureId

procedureName

projectName

propertySheetId

resourceName

workspaceName

project

Contains all elements to define a project.

Contents:

attachedCredentials

createTime

`credentialName`

`deleted`

`description`

`lastModifiedBy`

`modifyTime`

`owner`

`pluginName`

`projectId`

`projectName`

`propertySheetId`

`resourceName`

`workspaceName`

property

Contains property sheets and various elements, depending on your query.

Contents:

`createTime`

`description`

`expandable`

`lastModifiedBy`

`modifyTime`

`owner`

`path`

`propertyId`

`propertyName`

`propertySheet*`

`propertySheetId`

`value`

propertySheet

Contains one or more property elements.

Contents:

`createTime`

`lastModifiedBy`

`modifyTime`

owner

property*

propertySheetId

repository

Contains elements to define the artifact repository. The most useful elements in this object are "repositoryName" and "url". Clients publishing/retrieving artifact versions search repositories by name to obtain connection information.

Contents:

createTime

description

lastModifiedBy

modifyTime

owner

propertySheetId

repositoryDisabled

repositoryId

repositoryIndex

repositoryName

url

zoneName

resource

Contains elements to define a resource.

Contents:

agentState

- alive
- code
- details
- message
- pingToken
- protocolVersion
- state
- time

lastRunTime

modifyTime

owner

pools

port

propertySheetId

proxyCustomization

proxyHostName

proxyPort

version
artifactCacheDirectory
createTime
description
exclusiveJobId
exclusiveJobName
exclusiveJobStepId
exclusiveJobStepName
gateways
hostName
hostOS
hostPlatform
lastModifiedBy
proxyProtocol
repositoryNames
resourceDisabled
resourceId
resourceName
shell
stepCount
stepLimit
trusted
useSSL
workspaceName
zoneName

resourcePool

Contains elements to define a resource pool.

Contents:

autoDelete
createTime
description
lastModifiedBy
lastResourceUsed
modifyTime
orderingFilter
owner
propertySheetId
resourceNames
resourcePoolDisabled
resosurcePoolId
resourcePoolName

resourceUsage

Contains information about resource usage. For any step running on a resource, there is a resource usage record containing the ID and name of the job, job step,

and resource.

Contents:

jobId

jobName

jobStepId

jobStepName

licenceWaitTime

resourceId

resourceName

resourcePoolId

resourcePoolName

resourceUsageId

resourceWaitTime

waitReason

workspaceWaitTime

schedule

Contains all elements to define a schedule.

Contents:

actualParameters

attachedCredentials

beginDate

createTime

credentialName

description

endDate

interval

intervalUnits

lastModifiedBy

lastRunTime

misfirePolicy

modifyTime

monthDays

owner

priority

procedureName

projectName

propertySheetId

scheduleDisabled

scheduleId

scheduleName

startTime

stopTime

timeZone

weekDays

serverStatus

Contains elements to determine the status of the server.

Contents:

```
apiMonitor
   longestCall
      api
      callId
      description
      elapsedTime
      label
      remoteAddress
      start
      userName
   mostActiveCalls
   totalCallCount
   activeCalls
      call*
         api
         callId
         description
         elapsedTime
         label
         remoteAddress
         start
         userName
      recentCalls
      call*
         api
         callId
         description
         elapsedTime
         label
         remoteAddress
         start
         userName
```

lastMessage

messages

  message*

serverState

startTime

serverVersion

Contains elements to specify the ElectricFlow server version.

Contents:

label

protocolVersion

schemaVersion

version

state

Contains elements for a state in a running or completed workflow.

Contents:

active

createTime

description

errorMessage

index

lastModifiedBy

modifyTime

owner

projectName

propertySheetId

stateId

stateName

subjob

subprocedure

subproject

substartingState

subworkflow

subworkflowDefinition

workflowName

stateDefinition

Contains elements for the state definition within a workflow definition.

Contents:

createTime

description

formalParameters

index

lastModifiedBy

modifyTime

owner

projectName

propertySheetId

startable

stateDefinitionId

stateDefinitionName

subprocedure

subproject

substartingState

subworkflowDefinition

workflowDefinitionName

step

Contains elements to specify or define a step.

Contents:

actualParameters

alwaysRun

attachedCredentials

attachedParameters

broadcast

command

condition

postLogFileName

postProcessor

precondition

procedureName

projectName

propertySheetId

releaseExclusive

- createTime
- credentialName*
- description
- errorHandling
- exclusive
- exclusiveMode
- lastModifiedBy
- logFileName
- modifyTime
- owner
- parallel
- releaseMode
- resourceName
- shell
- stepId
- stepName
- subprocedure
- subproject
- timeLimit
- timeLimitUnits
- workingDirectory
- workspaceName

transition

Contains elements about a transition in a running or completed workflow.

Contents:

- actualParameters
- condition
- createTime
- description
- index
- lastModifiedBy
- modifyTime
- owner
- projectName
- propertySheetId
- stateName
- targetState
- transitionId
- transitionName
- trigger
- workflowName

transitionDefinition

Contains elements about a transition definition within a workflow definition.

Contents:

actualParameters

condition

createTime

description

index

lastModifiedBy

modifyTime

owner

projectName

propertySheetId

stateDefinitionName

targetState

transitionDefinitionId

transitionDefinitionName

trigger

workflowDefinitionName

user

Contains information about the current user.

Contents:

createTime

email

fullUserName

groups

lastModifiedBy

modifyTime

mutable

owner

propertySheetId

providerName

userId

userName

workflow

Contains elements about a running or completed workflow.

Contents:

activeState

callingState

completed

createTime

deleted

elapsedTime

finish

lastModifiedBy

launchedByUser

liveWorkflowDefinition

modifyTime

owner

projectName

propertySheetId

start

startingState

workflowDefinitionName

workflowId

workflowName

workflowDefinition

Contains elements about a workflow definition.

Contents:

createTime

description

lastModifiedBy

modifyTime

owner

projectName

propertySheetId

workflowDefinitionId

workflowDefinitionName

workflowNameTemplate

workspace

Contains elements about a workspace.

Contents:

agentDrivePath

agentUncPath

agentUnixPath

createTime

credentialName

description

lastModifiedBy

local

modifyTime

owner

propertySheet

propertySheetId

workspaceDisabled

workspaceId

workspaceName

zoneName

zone

Contains elements about a zone.

Contents:

createTime

description

lastModifiedBy

modifyTime

owner

propertySheetId

resources

zoneId

zoneName

Element Glossary

The following table lists all simple returned elements, including the element type and its description.

Returned element	Type	Description/Value
`abortStatus`	enum	Possible values are: `abort|force_abort`
`abortedBy`	string	The name of the user who aborted the job.
`aclEntryId`	number	The unique ElectricFlow-generated ID for this `aclEntry` object.
`active`	boolean	<*Boolean flag* - `0|1|true|false`>—If set to "true", the state of the workflow is active.
`activeCalls`	subcontainer	A container element within the `serverStatus` element. `activeCall` describes an API currently running on the server.
`activeState`	string	The name of the `activeState` on the workflow object.
`actualParameters`	propertySheet	An `actualParameter` object provides the value for a parameter, which is passed to a procedure when it is invoked. Actual parameters can be provided for jobs and nested subprocedures within a job. Actual parameters are different from "formal parameters"- formal parameters define the parameters a procedure is expecting, and actual parameters provide values to use at run-time. For the workflow feature, these are the parameters that were passed when the workflow was started.
`actualParameterId`	number	The unique ElectricFlow-generated ID for this actual parameter object.
`actualParameterName`	string	The name of the parameter. This name is unique within the step, and at run time it matches the name of a formal parameter in the subprocedure.
`admin`	boolean	<*Boolean flag* - `0|1|true|false`>—If set to "true", the this is an "admin" license.
`adminLicenseLastUse`	date	The time at which the admin license was last used.
`adminLicenseUser`	string	The name of the user who is currently licensed as the "admin" user.
`agentDrivePath`	string	Drive-letter-based path used by Windows agents to access the workspace in steps.

Returned element	Type	Description/Value
`agentUncPath`	string	UNC path used by Windows ElectricFlow Web servers to access the workspace. The agent uses agentUncPath and agentDrivePath to compute the drive mapping needed for making agentDrivePath valid in the step.
`agentUnixPath`	string	UNIX path used by UNIX agents and Linux ElectricFlow Web servers to access the workspace.
`agentState`	subcontainer	A subcontainer element returned from certain `resource` queries. `agentState` returns specific information about an agent, including the `state` of the agent. Possible values are: `unknown|alive|down`
`alive`	boolean	Refers to the agent state or status.
`alwaysRun`	boolean	<*Boolean flag* - `0|1|true|false`> - If set to 1, indicates this step will run even if the job is aborted before the step completes. Defaults to "false".
`api`	string	An element returned on `longestCall`, `activeCall`, and `recentCall` subcontainers of the `serverStatus` element. `api` returns the API call (command) that is running or ran on the server.
`apiMonitor`		A server object that tracks API active, recent calls, and the total number of calls since server startup.
`artifactCacheDirectory`	string	The directory on the agent host where retrieved artifacts are stored.
`artifactId`	number	The unique ElectricFlow-generated ID for this artifact object.
`artifactKey`	string	User-specified identifier for this artifact. This field is limited to alphanumeric characters, spaces, underscores, hyphens, and periods.
`artifactName`	string	The name of the artifact.
`artifactsDirectory`	string	The directory in the workspace where you can put files to view, using a report link.
`artifactVersionId`	string	The unique ElectricFlow-generated ID for this artifact version object.

Returned element	Type	Description/Value
artifactVersionName	name	The name of the artifact version. An artifact version name is interpreted by the server as the artifactVersionName attribute for the artifactVersion in question. This name is parsed and interpreted as "groupId:artifactKey:version" and the object is searched either way you specify its name—the ElectricFlow server interprets either name form correctly.
artifactVersionNameTemplate	string	A template for the names of artifact versions published to this artifact. Over-rides the ***global***artifactVersionNameTemplate. The global setting can be manipulated in the Server Settings page (Administration > Server, select the Settings link).
artifactVersionState	enum	Possible values are: available|publishing|unavailable
assignedResourceName	string	The name of the resource assigned to the step by the step scheduler.
attachedCredentials	list	The names of the credentials attached to the specified object.
attachedParameters	string	These are credential parameters that were attached to a step.
author	string	The author of the plugin.
autoDelete	boolean	<*Boolean flag* - 0|1|true|false> - If "true", the resource pool is deleted when the last resource is removed or deleted.
batchRequests	string	A setting in the database configuration that determines whether or not to batch SQL queries when making a request to the database.
batchSize	string	The number of objects imported before being committed to the database.
beginDate	string	<*yyyy-mm-dd*> The date the schedule is set to begin.
broadcast	boolean	<*Boolean flag* - 0|1|true|false> - Used for command steps, this flag is used to run the same step on several resources at the same time. The step is “broadcast” to all resources listed in the resourceName argument. Defaults to "false".

Returned element	Type	Description/Value
`buildNumber`	string	User-defined build number component of the version attribute for the artifact version.
`call`	subcontainer	A subcontainer returned on `activeCall` and `recentCall` elements returned by the `serverStatus` API. `call` contains information specific to each API call on the server.
`callId`	number	A unique ElectricFlow-generated identifier for this particular call.
`callingState`	string	The full property path to the "calling state", which can appear on `subjobs` and `subworkflows` of a workflow.
`calledProcedure`	list	A subcontainer element within the `jobStep` element. The `calledProcedure` element can contain multiple `jobStep` elements.
`category`		(currently not used)
`changePermissionsPrivilege`	enum	Possible values are: `allow|deny|inherit`
`code`	enum	Script to execute the functions for a step—passed to the step's shell for execution.
`combinedStatus`	enum	More inclusive step status output - this value may combine up to three sub-elements: `status|message|properties`
`command`	string	The command to run steps - for command steps.
`commonGroupNameAttribute`	string	The attribute in a group record that contains the common group name. If specified, this name is used only when searching for groups from an external provider.
`completed`	boolean	<*Boolean flag* - `0|1|true|false`> - If "true", the workflow is completed and no additional transactions will be evaluated.
`completeUserName`	string	A SQL server-specific tag that includes the user's name and the user's domain name.
`concurrentResources`	object	A subcontainer element that includes information about "in use" and "maximum licensed" hosts and proxied hosts for the `licenseUsage` API command.

Returned element	Type	Description/Value
`concurrentSteps`	number	The total number of steps running at the same time in the ElectricFlow system. This means all steps from all procedures, regardless of how many or how few projects you have created.)
`concurrentUsers`	object	A subcontainer element that includes information about the admin license, "in use" licenses, and the maximum number of licenses for the `licenseUsage` API command.
`condition`	string	**For steps:** If empty or non-zero, the step will run. If set to "0", the step is skipped. A useful setting during procedure development or when re-running a job that has already completed some of the steps. Also, this argument is useful for conditional execution of steps based on properties set by earlier steps. **For email notifiers:** Mail sent if the condition evaluates to "true". The `condition` is a string subject to property expansion. The notification will NOT be sent if the expanded string is "false" or "0". If no `condition` is specified, the notification is ALWAYS sent.
`configName`	string	The name of the configuration.
`container`	string	An object ID for a "container" that contains formal parameters. In another context, this is typically the type and name of the workflow or job with a corresponding ID.
`containerName`	string	The name of the container.
`createTime`	date	The time when this object was created.
`credentialId`	number	The unique ElectricFlow-generated ID for this credential object.
`credentialName`	string	`credentialName` can be one of two forms: **relative** (for example, `"cred1"`) - the credential is assumed to be in the project that contains the request target object. Requires a qualifying project name. **absolute** (for example, `"/projects/BuildProject/credentials/cred1"`) - the credential can be from any specified project, regardless of the target object's project.
`customDatabaseDialect`	string	Class name for the Hibernate dialect. The server chooses an appropriate dialect based on `databaseType` or this can be part of the custom specification.

Returned element	Type	Description/Value
customDatabaseDriver	string	Class name of the JDBC driver. The server will choose an appropriate driver based on databaseType or this can be part of the custom specification.
customDatabaseUrl	string	The JDBC URL to use. The server will compose an appropriate URL or this can be part of the custom specification.
customerName	string	The name of a company and/or group name with a company that is using ElectricFlow.
databaseDialect	string	Class name for the Hibernate dialect (the server chooses an appropriate dialect based on databaseType).
databaseDriver	string	Class name of the JDBC driver (the server will choose an appropriate driver based on databaseType).
databaseName	string	The name of the database the ElectricFlow server is using.
databaseType	enum	Possible values are: builtin|mysql|oracle|postgresql|sqlserver
databaseUrl	string	The JDBC URL to use (the server will compose an appropriate URL).
defaultValue	string	This value is used for the formal parameter if a value is not supplied by the caller.
delayUntil	date	For a step that was rescheduled due to a resource or workspace problem, this is the next time when the step will be eligible to run.
deleted	byte	The object was marked for background deletion. Possible values are "0" or "1". Default is "0" (not set).
dependentArtifactVersion	list	A list of one or more artifact versions.
description	string	A plain text or HTML description for this object. If using HTML, you must surround your text with <html> ... </html> tags. The only HTML tags allowed in the text are: <a> <b> <dl> <font> <i> <p> <pre> <style> <table> <tc> <td> <th> <tr>

Returned element	Type	Description/Value
`destinations`	string	A space-separated list of valid email addresses, email aliases, or ElectricFlow user names, or a string subject to property expansion that expands into such a list.
`details`	string	A string containing details about agent status.
`directoryName`	string	The name of the job's directory within each workspace for a job.
`directoryProviderId`	number	The unique ElectricFlow-generated ID for this directory provider object.
`domainName`	string	The name of the domain from which the Active Directory servers are automatically discovered.
`elapsedTime`	number	The number of milliseconds between the start and end times for the job or job step - or a workflow.
`email`	string	The user's email address.
`emailAttribute`	string	The attribute in a user record that contains the user's email address. If the attribute is not specified, the account name and domain name are concatenated to form an email address.
`emailConfigId`	number	The unique ElectricFlow-generated ID for this email configuration object.
`emailConfigName`	string	The name of the email configuration.
`emailNotifierId`	number	The unique ElectricFlow-generated ID for this email notifier object.
`enableGroups`	boolean	Determines whether or not to enable external groups for the directory provider.
`endDate`	string	<*yyyy-mm-dd*> The date this schedule is set to end.
`errorCode`	enum	Displays the error code, identifying which error occurred.

Returned element	Type	Description/Value
`errorHandling`	enum	Determines what happens to the procedure if the step fails: • `failProcedure` - The current procedure continues, but the overall status is error (default). • `abortProcedure` - Aborts the current procedure, but allows already-running steps in the current procedure to complete. • `abortProcedureNow` - Aborts the current procedure and terminates running steps in the current procedure. • `abortJob` - Aborts the entire job, terminates running steps, but allows `alwaysRun` steps to run. • `abortJobNow` - Aborts the entire job and terminates all running steps, including `alwaysRun` steps. • `ignore` - Continues as if the step succeeded.
`errorMessage`	string	A description of the error.
`evaluation`	boolean	Determines whether or not this license is an evaluation copy only.
`eventType`	enum	Possible values are: `onCompletion|onStart` "onStart" triggers an event when the job or job step begins. "onCompletion" triggers an event when the job finishes, no matter how it finishes. Default is "onCompletion".
`exclusive`	boolean	<*Boolean flag* - `0|1|true|false`> - If set to 1, indicates this step should acquire and retain this resource exclusively. Defaults to "false".
`exclusiveJobId`	number	The ID number of the job that owns this resource, which occurs when one of the job's steps requests exclusive use of the resource for the duration of the job.
`exclusiveJobName`	string	The name of the job that owns this resource, which occurs when one of the job's steps requests exclusive use of the resource for the duration of the job.
`exclusiveJobStepId`	number	The ID number of the job step that owns this resource, which occurs when one of the steps request exclusive use of the resource for the duration of the job.

Returned element	Type	Description/Value
exclusiveJobStepName	name	The name of the job step that owns this resource, which occurs when one of the steps request exclusive use of the resource for the duration of the job.
exclusiveMode	enum	Possible values are: none|job|step|call See exclusive
executePrivilege	enum	Possible values are: allow|deny|inherit
exitCode	number	The step's exit code.
expandable	boolean	<*Boolean flag* - 0|1|true|false> Determines whether the property value will undergo property expansion when it is fetched. Default is "true".
expansionDeferred	boolean	<*Boolean flag* -0|1|true|false> Default is "false," which means the formal parameter is expanded immediately.
expiration	date	The date when a user license expires.
expirationDate	date	The date when a license expires.
external	boolean	<*Boolean flag* -0|1|true|false> If "true," this job is external. For more information about external jobs, see the API Commands - Job Management Help topic.
featureName	string	The name of the licensed feature. Possible features include: Server
findGroupsTest	subcontainer	For the testDirectoryProvider API, this element provides information on which groups the user is a member.
findUserTest	subcontainer	For the testDirectoryProvider API, this element contains specific information about the user.
finish	date	The time the job or workflow completed.
formalParameterId	number	The formal parameter's ID.
formalParameterName	string	The name of the procedure's parameter, containing a credential reference.
formalParameters	string	The parameters that must be supplied when entering the state (similar to formal parameters on a procedure).

Returned element	Type	Description/Value
`formattingTemplate`	string	Specifies a template for formatting email messages when an event [notification] is triggered by the `emailNotifier`.
`fullUserName`	string	The user's full name - not his or her nickname.
`fullUserNameAttribute`	string	The attribute in a user record that contains the user's full name (first and last) for display in the UI. If this attribute is not specified or the resulting value is empty, the user's account name is used instead.
`gatewayDisabled`	boolean	<*Boolean flag* -`0|1|true|false`> If "true", the gateway is disabled.
`gatewayId`	number	The ElectricFlow-generated ID number for this gateway.
`gatewayName`	string	The name of the gateway.
`gateways`	list	A space-separated list of gateway names.
`gracePeriod`	number	The number of days available after the ElectricFlow license expires.
`groupBase`	string	This string is prepended to the `basedn` to construct the directory DN that contains group records.
`groupId`	number	The unique ElectricFlow-generated group ID. **For Artifact Management:** A user-generated group name for this artifact. This field is limited to alphanumeric characters, spaces, underscores, hyphens, and periods.
`groupList`	list	For the `testDirectoryProvider` API, this element contains zero or more groups returned after querying existing groups known to the directory provider.
`groupMemberAttributes`	string	A comma-separated attribute name list that identifies a group member. Most LDAP configurations only specify a single value, but if there is a mixture of POSIX and LDAP style groups in the directory, multiple attributes might be required.

Returned element	Type	Description/Value
`groupMemberFilter`	string	This LDAP query is performed in the groups directory context to identify groups containing a specific user as a member. Two common forms of group record in LDAP directories: POSIX style groups where members are identified by account name, and `groupOfNames` or `uniqueGroupOfNames` records where members are identified by the full user DN. Both forms are supported, so the query is passed to parameters: "`{0}`" is replaced with the full user record DN, and "`{1}`" is replaced with the user's account name.
`groupName`	string	The full name of a group. For Active Directory and LDAP, this is a full DN.
`groupNameAttribute`	string	The group record attribute that contains the name of the group.
`groups`	list	A space-separated list of group names.
`groupSearchFilter`	string	The LDAP query performed in the context of the groups directory to enumerate group records.
`groupSettingsId`	number	The unique ElectricFlow-generated ID for this group settings object.
`hostName`	string	The computer name or IP address for the machine containing the ElectricFlow server or agent.
`hostName1`	string	For gateways: The name Resource 2 uses to communicate with Resource 1. If "blank", the *Agent Host Name* attribute in Resource 1's definition is used at runtime.
`hostName2`	string	For gateways: The name Resource 1 uses to communicate with Resource 2. If "blank", the *Agent Host Name* attribute in Resource 2's definition is used at runtime.
`hostOS`	string	The full name of the host operating system, plus its version. However, if this host is a proxy, the value is "proxied".
`hostPlatform`	string	Examples for "platform" are: Windows, Linux, HPUX, and so on. However, if this host is a proxy, the value is "proxied".
`index`	number	The numeric index of the transition that indicates its order in the list of transitions in a state definition.

Returned element	Type	Description/Value
`interval`	string	The repeat interval for starting new jobs.
`intervalUnits`	enum	Possible values are: `hours|minutes|seconds|continuous` If set to `continuous`, ElectricFlow creates a new job as soon as the previous job completes.
`inUseHosts`	number	The number of hosts (agents) currently in use.
`inUseLicenses`	number	The number of user licenses currently in use.
`inUseProxiedHosts`	number	The number of proxy target hosts currently in use.
`jobId`	number	The unique ElectricFlow-generated identifier (a UUID) for a job that is assigned automatically when the job is created. The system also accepts a job name assigned to the job by its name template.
`jobName`	string	The name of the job.
`jobNameTemplate`	string	Template used to determine the default name of jobs launched from a procedure.
`jobStepId`	number	The unique identifier for a job step, assigned automatically when the job step is created.
`jobStepName`	string	The name of the job step.
`label`	string	A name used by a plugin for display in a list, or this may represent context-specific info about an API call—not all API calls return a "label" tag.
`lastMessage`	string	Element returned by the `serverStatus` API showing the last message the server received.
`lastModifiedBy`	string	Shows who (generally a user name) last modified the object.
`lastResourceUsed`	string	The name of the most recently used resource from the pool.
`lastRunTime`	date	The last time a job was launched by a schedule. -or- In a `resource` response, this is the most recent time that a job step ran on the resource.
`lastUse`		Returned element in the `concurrentUsers` subcontainer (for the `licenseUsage` API), providing the last time a specific user accessed ElectricFlow.

Returned element	Type	Description/Value
`launchedByUser`	string	The name of the user or project principal that explicitly launched the job. This property is blank when the job is launched by a schedule.
`licenseId`	number	The unique ElectricFlow-generated ID for this license.
`licenseWaitTime`		The amount of time a job step was stalled waiting for an available license. On a job, this is the sum of license wait for all job steps.
`liveProcedure`	string	Shows the current procedure name for the procedure step from which the job or job step was created – if the procedure step was renamed since the job or job step was launched, this is the procedure step's new name, and if the procedure step was deleted, this will be null.
`liveProcedureStep`	string	Shows the current procedure step name for the procedure step from which the job step was created – if the procedure step was renamed since the job was launched, this is the procedure step's new name, and if the procedure step was deleted, this will be null.
`liveSchedule`	string	Shows the current schedule name for the procedure step from which the job was created – if the schedule was renamed since the job was launched, this is the schedule's new name, and if the schedule was deleted, this will be null.
`liveWorkflowDefinition`	string	Shows the current workflow definition name for the workflow definition from which the workflow was created – if the workflow definition was renamed since the workflow was launched, this is the workflow definition's new name, and if the workflow definition was deleted, this will be null.
`local`	boolean	<*Boolean flag* -`0|1|true|false`> If "true", this object is local.
`logEntryId`	number	The ElectricFlow-generated ID number for the log entry record.
`logFileName`	string	A custom log file name produced by running the step. By default, ElectricFlow assigns a unique name for this file.
`longestCall`	string	Provides the API call that took the longest time.
`mailFrom`	string	The email address used as the email sender address for notifications.

Returned element	Type	Description/Value
`mailHost`	string	The name of the email server host.
`mailPort`	number	The port number for the mail server, but may not need to be specified. The protocol software determines the default value (25 for SMTP and 465 for SSMTP). Specify a value for this argument when a non-default port is used.
`mailProtocol`	string	This is either SSMTP or SMTP (not case-sensitive). The default is SMTP.
`mailUser`	string	This can be an individual or a generic name like "ElectricFlow" - name of the email user on whose behalf ElectricFlow sends email notifications.
`majorMinorPatch`	string	`major.minor.patch` component of the version attribute for the artifact.
`managerDn`	string	The name of a user who has read-only access to the LDAP or Active Directory server. Typically a DN (distinguished name). A simple name may be used when the Active Directory server's URL is being auto-discovered via DNS. **Note**: This user does not need to be an admin user with modify privileges.
`maxConcurrentSteps`	number	The maximum number of steps that can run at the same time per the provisions of your ElectricFlow license.
`maxHosts`	number	The maximum number of hosts licensed for resource use.
`maxLicenses`	number	The maximum number of licenses available for users.
`maxProxiedHosts`	number	The maximum number of available licenses for proxy hosts.
`message`	string	A user-readable diagnostic message associated with an error.
`messages`	list	Multiple error or diagnostic messages.

Returned element	Type	Description/Value
`misfirePolicy`	enum	Possible values are: `ignore | run once` A schedule may not fire at the allotted time because a prior job is still running, the server is running low on resources and there is a delay, or the server is down. When the underlying issue is resolved, the server will schedule the next job at the next regularly scheduled time slot if the policy is `'ignore'`, otherwise it will run the job immediately. Defaults to `"ignore"`.
`modifyPrivilege`	enum	Possible values are: `allow|deny|inherit`
`modifyTime`	date	The time when the object was last modified.
`monthDays`	string	Restricts the schedule to specified days of the month. Specify numbers from 1-31, separating multiple numbers with a space.
`mostActiveCalls`	number	The number of most active API calls since server startup.
`mutable`	boolean	If "true," the member list of this group is editable within ElectricFlow via the web UI or the `modifyGroup` API.
`name`	string	The name of the directory provider.
`notifierName`	string	The name of the email notifier.
`objectId`	number	An object identifier returned by `findObjects` and `getObjects`. This value is a "handle" only for passing to API commands. The internal structure of this value is subject to change - do not parse this value.
`objectName`	string	The name of the object.
`objectType`	enum	The type of object being described, for example: project, procedure, step, and so on.
`orderingFilter`	string	A Javascript block invoked when scheduling resources for a pool. **Note:** A Javascript block is not required unless you need to override the default resource ordering behavior.

Returned element	Type	Description/Value
`outcome`	enum	Possible values for `outcome`: **Note:** The `outcome` is accurate only if the job status is "completed." `success` - The job finished successfully. `warning` - The job completed with no errors, but encountered some suspicious conditions. `error` - The job has finished execution with errors.
`owner`	string	The person (user name) who created the object.
`parallel`	boolean	<*Boolean flag* - `0|1|true|false`> - If set, indicates this step should run at the same time as adjacent steps marked to run as parallel also. Defaults to "false".
`password`	string	The password matching the specified user name.
`path`	string	The property path that specifies the object to use.
`pingToken`	number	Every time an agent starts, a unique `pingToken` value is generated. The server uses the `pingToken` value to determine agent restarts by noticing the values before and after a restart.
`pluginId`	number	The unique ElectricFlow-generated ID for the plugin object.
`pluginKey`	string	The name of the plugin as displayed on the ElectricFlow Plugin Manager web page.
`pluginName`	string	The name of the plugin - the plugin key for a promoted plugin or a plugin key and version for an unpromoted plugin.
`pluginVersion`	string	The version of the plugin being described.
`pools`	list	A space-separated list of one or more pool names where this resource is a member. Steps defined to run on a resource pool will run on any available member (resource) in the pool.
`port`	number	If a port number is not specified, the default ElectricFlow port is used. For a proxy resource, this is the port number for the service running on the proxy target that will run commands on behalf of the ElectricFlow agent. For `ssh`, the default is 22.
`port1`	number	The port number used by *Gateway Resource1* - default is to the port number used by the resource.

Returned element	Type	Description/Value
`port2`	number	The port number used by *Gateway Resource2* - default is to the port number used by the resource.
`position`	number	Used to reorder a ElectricFlow object. For example, if reordering directory providers: the provider name is moved to a position just before this provider. "Blank" means move the provider to the end of the provider list.
`postExitCode`	number	The step's post processor exit code.
`postLogFileName`	string	The log file name produced by this step's post processor.
`postProcessor`	string	This program looks at the step output to find errors and warnings. ElectricFlow includes a customizable program called "postp" for this purpose. The value for `postProcessor` is a command string for invoking a post-processor program in the platform shell for the resource (`cmd` for Windows, `sh` for UNIX).
`precondition`	string	Set this property to make a step wait until one or more dependent conditions are met. When a job step is eligible to transition from pending to runnable, a *precondition* is evaluated. A *precondition* is a fixed text or text embedding property reference that is evaluated to TRUE or FALSE. An empty string, a \"0\" or \"false\" is interpreted as FALSE. Any other result string is interpreted as TRUE. The step will block until the precondition is TRUE.
`principal`	string	The user or project principal from the session that was active when the event occurred.
`principalName`	string	This is either a user or a group name.
`principalType`	enum	Possible values are: `group|user`
`priority`	enum	Possible values are: `low|normal|high|highest` Priorities take effect when two or more job steps in different jobs are waiting for the same resource. When the resource is available, it will be used by the job step that belongs to the job with the highest priority. If the priority level is the same, the resource will be used by the job step that belongs to the job with the lowest job ID number. If the job steps are in the same job, the resource will be used first by the step with the lowest job step ID number.

Returned element	Type	Description/Value
`procedureId`	number	The unique ElectricFlow-generated procedure ID.
`procedureName`	string	The name of the procedure - may be a path to the procedure.
`productName`	string	The name of the product with the licensed feature. Possible products include: ElectricFlow
`project`	name	The name of the project associated with the plugin.
`projectId`	number	The unique ElectricFlow-generated project ID.
`projectName`	string	The name of the project - may be a path. The project name is ignored for credentials, procedure, steps, and schedules if it is specified as a path.
`promoted`	boolean	<*Boolean flag* - `0|1|true|false`> The new value of the promoted flag for the specified plugin. Default is "true", which means the plugin will be promoted. If you want to demote the plugin, use the value of “0” or false.
`propertyId`	number	The unique ElectricFlow-generated property ID.
`propertyName`	string	The name of the property. It may be a relative or absolute property path, including "my" paths such as `"/myProject/prop1"`.
`propertySheetId`	number	The unique identifier for a property sheet, assigned automatically when the property sheet is created.
`protocolVersion`	sting	The server API protocol version. For example, the server accepts messages from ectool and ec-perl.
`providerIndex`	number	The index that specifies the search order across multiple directory providers. For example: 2 LDAP providers, one with index "0" and one with index "1" means the providers will be searched in that numerical order.
`providerName`	string	The LDAP or Active Directory provider name.
`providerType`	enum	Possible values are: `ldap|activedirectory`
`proxyCustomization`	string	Perl code customizing how the proxy resource communicates with the proxy target. This argument is applicable only for proxy resources.
`proxyHostName`	string	The name or IP address of the computer containing the ElectricFlow Agent used for a proxy resource.

Returned element	Type	Description/Value
`proxyPort`	number	The ElectricFlow agent port number for a proxy resource.
`proxyProtocol`	string	Protocol for communicating with the proxy target. Defaults to `ssh`. (This argument is not exposed in the ElectricFlow Web Interface at this time.)
`publisherJobId`	number	The ElectricFlow-generated ID for the job that published the artifact version.
`publisherJobName`	name	The name of the job that published the artifact version.
`publisherJobStepId`	number	The ElectricFlow-generated ID for the job step that published the artifact version.
`qualifier`	string	User-defined qualifier component of the version attribute for the artifact.
`readPrivilege`	enum	Possible values are: `allow|deny|inherit`
`realm`	string	The realm of the LDAP directory provider—used to create unique user names when there are multiple providers.
`recentCall`	subcontainer	A subcontainer element on the `serverStatus` API - a call no longer active (completed). The API monitor keeps track of the 10 most recent calls.
`releaseExclusive`	boolean	<*Boolean flag* - `0|1|true|false`> Declares whether or not this step will release its resource, which is currently held exclusively.
`releaseMode`	string	Possible values are: `none|release|releaseToJob`
`remoteAddress`	string	Generally a combined IP address plus a port specification - used when the agent is talking to the server or to show where the request to the server originated.
`repositoryDisabled`	boolean	<*Boolean flag* - `0|1|true|false`> Determines whether the repository is disabled. Default is "false".
`repositoryId`	number	The ElectricFlow-generated ID for the artifact repository.
`repositoryIndex`	integer	The order of the repository within a list of repositories.
`repositoryName`	string	The name of the artifact repository.

Returned element	Type	Description/Value
`repositoryNames`	list	A list of one or more repository server names—each repository name listed on a "new line".
`required`	boolean	<*Boolean flag* - `0|1|true|false`> If set to 1, this value indicates whether a non-blank value must be supplied when calling the procedure.
`resourceDisabled`	boolean	<*Boolean flag* - `0|1|true|false`> If set to 1, ElectricFlow will not start new steps on this resource. Defaults to "false".
`resourceId`	number	The unique ElectricFlow-generated ID for this resource.
`resourceName1`	string	The name for the first of two resources required to create a gateway. "Spaces" are NOT allowed in a resource name.
`resourceName2`	string	The name for the second of two resources required to create a gateway. "Spaces" are NOT allowed in a resource name.
`resourceName`	string	The name of a resource.
`resourceNames`	string	A list of strings that refer to resources that belong to the pool. Names that do not refer to existing resources are ignored.
`resourcePoolDisabled`	boolean	<*Boolean flag* - `0|1|true|false`> If set to 1, ElectricFlow will not use resources in this pool. Defaults to "false".
`resourcePoolId`	number	The unique ID number for a resource pool.
`resourcePoolName`	name	The name of the resource pool.
`resources`	string	A space-separated list of resource names.
`resourceUsageId`	number	The unique ID number of the resource usage record.
`resourceWaitTime`		The amount of time a job step waited for a resource to become available. On a job, this is the sum of time all job steps waited for resource availability. This could indicate that eligible resources for the step have reached their step limit, are in-use but the step requires a resource exclusively, or resources are down.

Returned element	Type	Description/Value
`retries`	number	The number of attempts to write to the step log in the workspace. In a running step, this is the number of retries attempted up to this point. The most common reason for step retries is the workspace for the step was unavailable.
`retrievers`	list	A collection of retrieve elements that can contain a `jobName`, `jobId`, and/or a `jobStepId` elements.
`runAsUser`	string	The name of the user being impersonated in this job.
`runnable`	date	The time when the step became runnable.
`runningSteps`		The number of steps running at the same time.
`runtime`	number	The number of milliseconds the step command spent running on a resource.
`scheduleDisabled`	boolean	<*Boolean flag* - `0|1|true|false`> If set to 1, ElectricFlow does not start any new jobs from the schedule. Defaults to "false".
`scheduleId`	number	The unique ElectricFlow-generated ID for the schedule.
`scheduleName`	string	The name of the schedule - may be a path to the schedule.
`schemaVersion`	number	The ElectricFlow server's database schema version.
`serverState`	enum	Possible values are: `bootstrap, databaseConfiguration, databaseConnection, databaseSchema, running, failed, stopping, importFailed`
`severity`	enum	Possible values are: `INFO|WARN|ERROR`
`shell`	string	Where shell is the name of a program used to execute commands contained in the “command” field. Normally, this file is a command shell, but it could be any other command line program. The default is `"cmd /q /c"` for a Windows agent and `"sh -e"` for a UNIX agent. This is applicable to command steps only.
`signature`	string	The digital signature on this license.
`start`	date	The time this job or workflow began executing.
`startable`	boolean	"True" means this state definition can be the initial state of an instantiated workflow.

Returned element	Type	Description/Value
`startingState`	string	The initial state of the workflow.
`startTime`	string	Formatted `hh:mm`, using the 24-hour clock. Using this schedule, ElectricFlow starts creating jobs at this time on the specified days.
`stateDefinitionId`	number	The unique ElectricFlow-generated ID for this state definition object.
`stateDefinitionName`	string	The name of the state definition.
`stateId`	number	The unique ElectricFlow-generated ID for this state object.
`statementCacheSize`	string	The number of MS SQL statements cached in the database.
`stateName`	string	The name of the state.
`status`	enum	Possible values for `status`: `pending` - The job is not yet runnable—it is waiting for other steps to complete first. `runnable` - The job is ready to run, but it is waiting for a resource to become available. `running` - The job is assigned to a resource and is executing the step command. `completed` - The job finished executing.
`stepCount`	number	The number of executing steps on this resource.
`stepErrorCode`	enum	Agent error messages.
`stepId`	number	The unique ElectricFlow-generated ID for the step.
`stepLimit`	number	The number of steps that can run on the resource at one time. (Previously setting the limit to 1 enforces serial access to the resource.)
`stepName`	string	The name of the step - may be a path to the step.
`steps`		The list or number of steps in a job.
`stopTime`	string	Formatted `hh:mm`, using the 24-hour clock. ElectricFlow stops creating new jobs at this time, but a job in progress will continue to run. If `stopTime` is not specified, ElectricFlow creates one job only on each specified day.
`subject`	string	Refers to the object the event concerns (similar to `container`).

Returned element	Type	Description/Value
subjectName	string	The name of the subject/object.
subjob	string	The name of the subjob.
subprocedure	string	The name of the nested procedure called when a step runs. If a subprocedure is specified, command or commandFile options are not necessary.
subproject	string	If a subprocedure argument was used, this is the name of the project where that subprocedure is found. By default, the current project is used.
substartingState	sting	Name of the starting state for the workflow launched when the state is entered.
subworkflow	string	The name of the subworkflow.
subworkflowDefinition	string	The name of the subworkflow definition.
targetState	string	The target state for the transition definition.
testResult	enum	Possible values are: success|skipped|failure
time	date	The time of day to invoke this schedule's procedure (24-hour clock, for example, 17:00). For a logEntry response, time indicates the time at which data was written to the log.
timeLimit	number	The maximum length of time the step is allowed to run. After the time specified, the step will be aborted. The time limit is specified in units that can be hours, minutes, or seconds.
timeLimitUnits	enum	Possible values are: hours|minutes|seconds
timeout	number	Specifies the timeout for the element flag. The default value is 120 seconds.
timeZone	string	The time zone specified to use for this schedule (Java-compatible string).
totalCallCount	number	The total number of API calls to the server since startup.
totalWaitTime		On a job, this is the sum of total time all job steps waited for license, resource, and/or workspace availability.

Returned element	Type	Description/Value
`transitionDefinitionId`	number	The unique ElectricFlow-generated ID for this transition definition.
`transitionDefinitionName`	string	The name of the transition definition.
`transitionId`	number	The unique ElectricFlow-generated ID for this transition object.
`transitionName`	string	The name of the transition.
`trigger`	enum	Possible values are: `onEnter|onStart|onCompletion|manual`
`trusted`	boolean	<*Boolean flag* - `0|1|true|false`> If "true", the resource is *trusted*. A trusted agent is one that has been "certificate verified." Agents can be either *trusted* or *untrusted*: • trusted - the ElectricFlow server verifies the agent's identity using SSL certificate verification. • untrusted - the ElectricFlow server does not verify agent identity. Potentially, an untrusted agent is a security risk.
`type`	string	The "type" is any string value. Used primarily by the web interface to represent custom form elements. However, if "credential" is the string value, the server will expect a credential as the parameter value.
`url`	string	For directory providers: The server URL is in the form `protocol://host:port/basedn`. Protocol is either `ldap` or `ldaps` (for secure LDAP). The port is implied by the protocol, but can be overridden if it is not at the default location (389 for ldap, 636 for ldaps). The `basedn` is the path to the top-level directory that contains users and groups at this site. This is typically the domain name where each part is listed with a `dc=` and separated by commas. **Note:** Spaces in the basedn must be URL encoded (%20). **For artifact repositories:** The server URL is in the form `protocol://host:port/`. Typically, the repository server is configured to listen on port 8200 for `https` requests, so a typical URL looks like `https://host:8200/`.

Returned element	Type	Description/Value
`userAuthenticationTest`	subcontainer	For the `testDirectoryProvider` API, this element authenticates the user.
`userBase`	string	The string prepended to the `basedn` to construct the directory DN that contains user records.
`userId`	number	The unique ElectricFlow-generated ID for the user.
`userInfo`		`findUserTest` container element includes a `userList` subcontainer that may include multiple `userInfo` tags, each of which describes a user (including full name, email address, and provider name).
`userList`	list	`findUserTest` container element includes a `userList` subcontainer that may include one or more `userInfo` tags.
`userName`	string	The full name of the user. For Active Directory and LDAP, the name may be `user@domain`.
`userNameAttribute`	string	The attribute in a user record that contains the user's account name.
`userSearchFilter`	string	The LDAP query performed in the context of the user directory to search for a user by account name. The string `"{0}"` is replaced with the user's login ID. Typically, the query compares a user record attribute with the substituted user login ID.
`userSearchSubtree`	boolean	<*Boolean flag* - `0|1|true|false`> If true, the subtree below the user base was recursively searched.
`userSettingsId`	number	The unique ElectricFlow-generated ID for the user settings.
`useSSL`	boolean	<*Boolean flag* - `0|1|true|false`> This flag is used to specify using SSL to communicate with your Active Directory servers. Transport Layer Security (TLS) has replaced Secure Sockets Layer version 3.0 (SSLv3) on the ElectricFlow web server and the ElectricFlow server.
`value`	string	For a string property, this is the value of the property. For a sheet property, this argument is invalid.

Returned element	Type	Description/Value
`version`	string	For plugin versions, the value is represented in the form: `major.minor`. For artifact versions, the value is represented in the form: `major.minor.patch-qualifier-buildNumber`
`waitReason`	string	Possible values are: `license`, `resource`, or `workspace` Generally, this objects are unavailable, causing a longer wait time for availability.
`waitTime`	number	The number of milliseconds the step spent between runnable and running (for example, waiting for a resource).
`weekDays`	string	Restricts the schedule to specified days of the week. Days of the week are separated by spaces. English names "Monday", "Tuesday", and so on.
`workflowDefinitionId`	number	The unique ElectricFlow-generated ID for this workflow definition.
`workflowDefinitionName`	string	The name of the workflow definition.
`workflowId`	number	The unique ElectricFlow-generated ID for this workflow object.
`workflowName`	string	The name of this workflow.
`workflowNameTemplate`	string	Template used to determine the default names for workflows launched from a workflow definition.
`workingDirectory`	string	The ElectricFlow agent sets this directory as the “current working directory,” when running the command contained in the step. If no working directory is specified in the step, ElectricFlow uses the directory it created for the job in the ElectricFlow workspace as the working directory. **Note:** If running a step on a proxy resource, this directory must exist on the proxy target.
`workspaceDisabled`	boolean	<*Boolean flag* - `0|1|true|false`> - If "true," the workspace is disabled.
`workspaceId`	number	The unique ElectricFlow-generated ID for the workspace.
`workspaceName`	string	The name of the workspace.

Returned element	Type	Description/Value
`workspaceWaitTime`		The total time a job step waited for workspace availability. On a job, this is the sum of time all job steps waited for workspace availability.
`zoneId`	number	The ElectricFlow-generated ID for this zone.
`zoneName`	string	The name of the zone.

Using the ElectricFlow RESTful API

The RESTful API is easier to use than the Perl API but more difficult to use than DSL methods to perform ElectricFlow operations such as:

- Create and manage artifacts.
- Create and manage object properties.
- Create and manage resources.
- Create workflows and add resources to them.
- Create and call procedures.
- Model and deploy applications.
- Model and run pipelines.

To access the RESTful API resources and operations and execute a request, you navigate to the RESTful API URI and enter the appropriate information in the Electric Cloud API UI.

Review these guidelines before using the RESTful API:

- For most RESTful APIs, you enter only the information in the parameters fields to get a response. When you enter information about a resource and its operations in the Electric Cloud API UI, the UI generates a response consisting of
    - **Request URL**–Response in a browser. Go to the URL to see the results.
    - **Response Body**–Response in a standard format with the application level status, the results, and any errors. This is also referred to as the *Response Payload*.
    - **Response Code**–Status of the response at the protocol level.
    - **Response Headers**–Information about the response format.
- However, some APIs have special arguments, such as *key-value pairs*, that are not included in the Request URL response.

  To ensure the special arguments are included in the response, put the code for these arguments in the **body** parameter field. The parameter content type is application/json.
- Batch API is not supported in the RESTful API.
- You can use any web development language that you want with the RESTful APIs.
- When you use a language binding, the response is JSON content that you can use as a hash map. You can use any language binding, such as RubyGems or Python.
- PUT operations
    - ElectricFlow uses the PUT operation to update a specific object.

      In a PUT API call, you specify the values that you want to change.

      The response is that only the values that you specify will change.
    - In ElectricFlow, the PUT operation works like the PATCH API call in the current version of HTTP/REST.

- GET operations

  ElectricFlow uses the GET operation to get basic information about the project, not everything.

  - To get all the projects, the Electric Cloud API UI generates this URL:

    ```
    http://chronic3:8000/rest/v1.0/projects
    ```

  - To get a specific project, the Electric Cloud API UI generates this URL:

    ```
    http://chronic3:8000/rest/v1.0/projects/myPlayground
    ```

  - If the API has a fully qualified property, put an extra slash in the URL:

    ```
    /rest/v1.0/server//foo
    ```

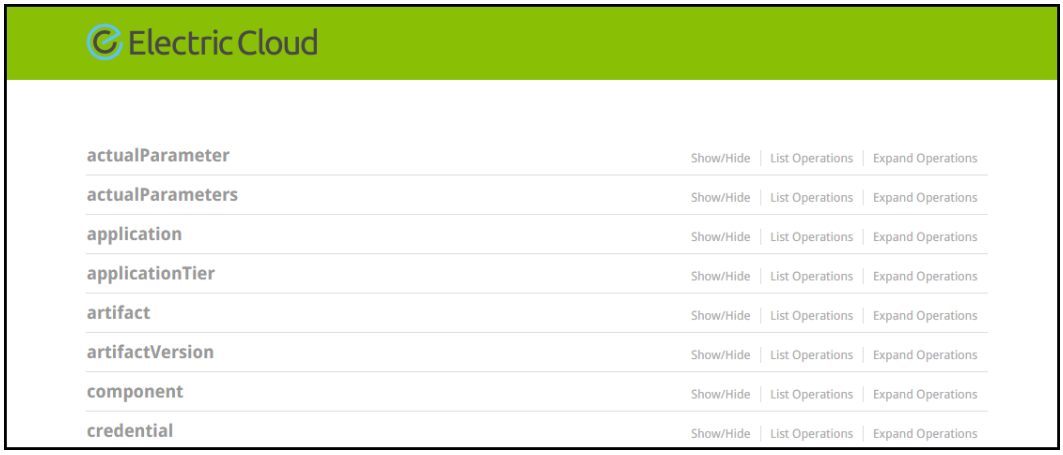
Accessing the RESTful API

To access the ElectricFlow RESTful API, go to
https://<*ElectricFlow_server_server_hostname*>/rest/doc/v1.0/
where <*ElectricFlow_server_server_hostname*> is the hostname or IP address of the ElectricFlow server.

IMPORTANT: The hostname must be the fully qualified domain name (FQDN).

When you enter https://<*ElectricFlow_server_server_hostname*>rest/doc/v1.0/, you may not be able to log in directly because of a browser issue, which occurs on browsers such as Internet Explorer, Google Chrome, Mozilla Firefox, and Safari. An error message appears stating that the connection is not private or is untrusted or that there is a problem with the website's security certificate. Click the appropriate links to continue to the website.

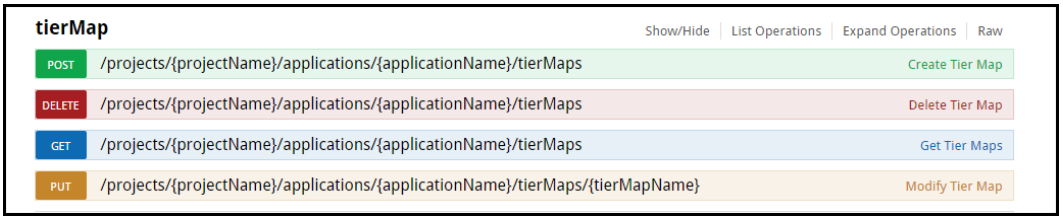
The RESTful API web page opens:



Using the RESTful API

In the Electric Cloud API UI page:

1. Select a resource and click on the resource name.

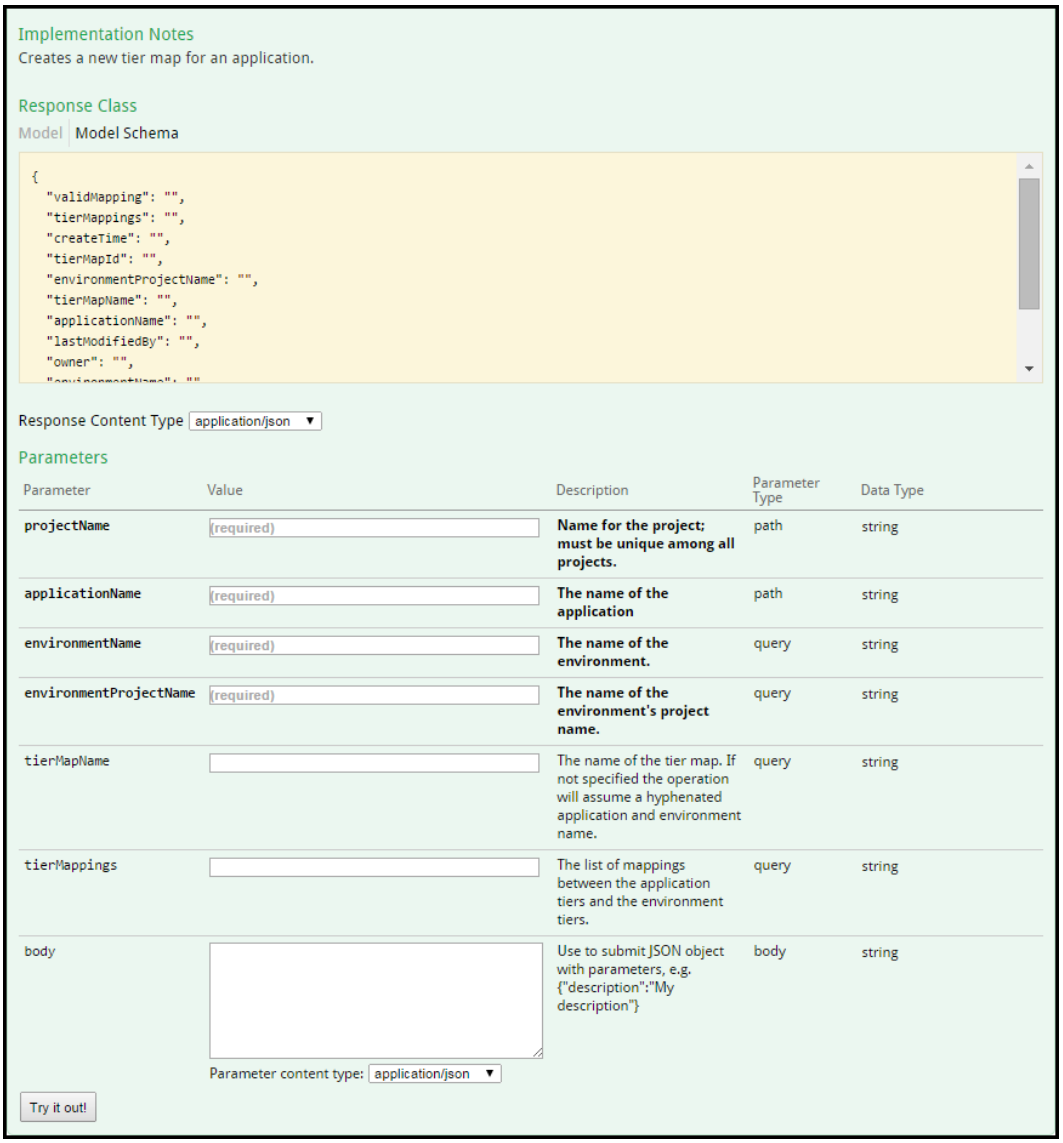


The operations for the resource appear below it.

2. Select an operation and click on the operation name.

   Parameters (referred to as arguments in the ElectricFlow API), for the operation appears.

   When you select POST, response information appears.



Implementation Notes

Creates a new tier map for an application.

Response Class

Model | Model Schema

```
{
  "validMapping": "",
  "tierMappings": "",
  "createTime": "",
  "tierMapId": "",
  "environmentProjectName": "",
  "tierMapName": "",
  "applicationName": "",
  "lastModifiedBy": "",
  "owner": "",
```

Response Content Type application/json

Parameters

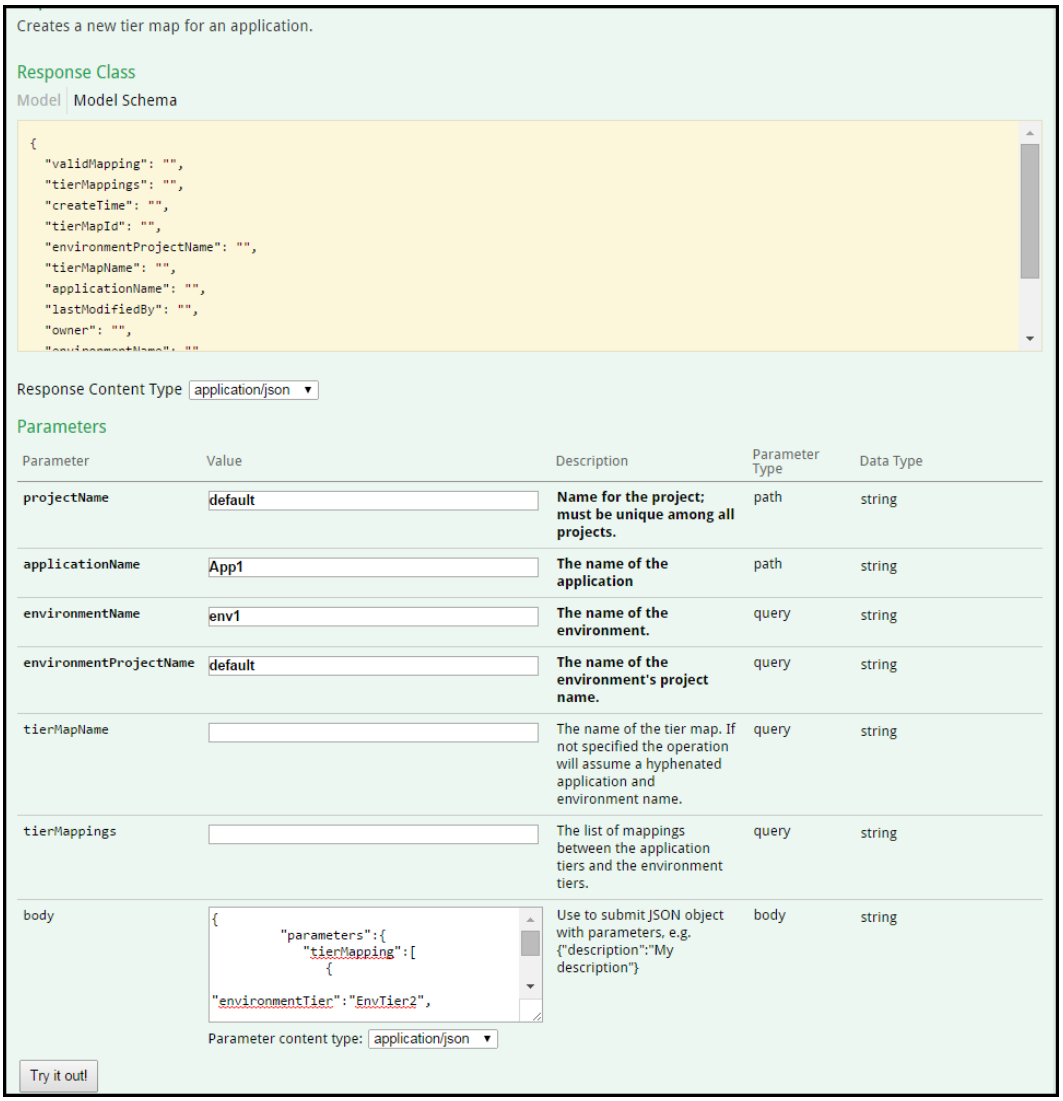
Parameter	Value	Description	Parameter Type	Data Type
projectName	(required)	**Name for the project; must be unique among all projects.**	path	string
applicationName	(required)	**The name of the application**	path	string
environmentName	(required)	**The name of the environment.**	query	string
environmentProjectName	(required)	**The name of the environment's project name.**	query	string
tierMapName		The name of the tier map. If not specified the operation will assume a hyphenated application and environment name.	query	string
tierMappings		The list of mappings between the application tiers and the environment tiers.	query	string
body	Parameter content type: application/json	Use to submit JSON object with parameters, e.g. {"description":"My description"}	body	string

Try it out!

3. Enter the appropriate information in the fields.

   If the operation has special arguments that the Electric Cloud API UI does not include in the Request URL, you also enter code in the **body** field to ensure that the arguments are in the RESTful API response.

   In this example, the POST operation for tierMap, which is the same as the **createTierMap** API command, includes key-value pairs that the Electric Cloud API UI does not include in the Request URL.



4. Click **Try it out!** to run the resource.

The response has this information:

- **Request URL**–Response in a browser. Go to the URL to see the results.
- **Response Body**–Response in a standard format with the application level status, the results, and any errors. This is also referred to as the *Response Payload*.
- **Response Code**–Status of the response at the protocol level.
- **Response Headers**–Information about the response format.

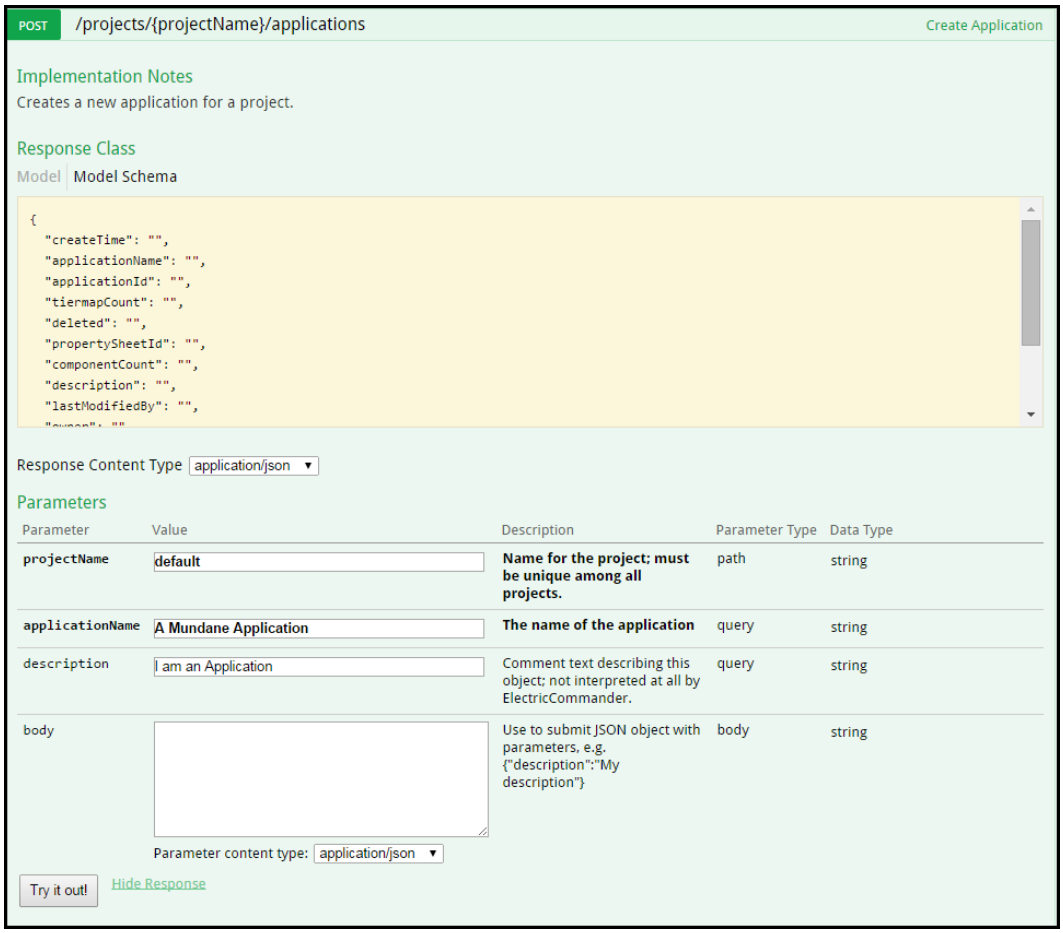
RESTful API Examples

In the ElectricFlow implementation of RESTful APIs, POST APIs are used to create new objects and are not independent.

The following examples show how to create objects without submitting a JSON object with parameters.

POST Operations Without Special Arguments

To design a new application, enter the values in the parameter section as follows:



After clicking **Try it out!**, the response is a Request URL:

```
https://localhost-100.electric-cloud.com/rest/v1.0/projects/default/applications?applicationName=A%20Mundane%20Application&description=I%20am%20an%20Application
```

To create an application process in an application, enter values for the following parameters:

- **projectName**: default
- **applicationName** : A Mundane Application
- **processName**: AppProc1
- **timeLimit**: 30
- **timeLimitUnits**: seconds

The response is this Request URL:

```
https://flow-demo-uat.electric-cloud.com/rest/v1.0/projects/default/applications/A%20Mundane%20Application/processes?processName=AppProc1&timeLimit=30&timeLimitUnits=seconds
```

POST Operations with Special Arguments

When APIs have special arguments, such as key-value pairs, you have to put code for them in the **body** parameter field.

To make a schedule with actual parameters, enter the values in the parameter section as shown below:

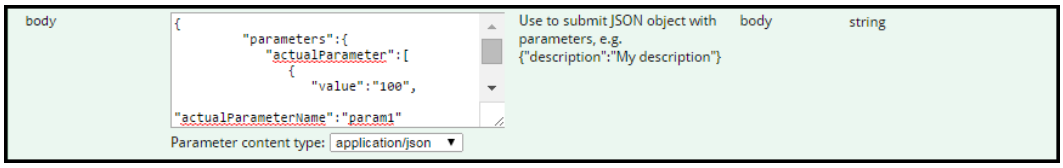
Parameters

Parameter	Value	Description	Parameter Type	Data Type
projectName	default	**Name for the project; must be unique among all projects.**	path	string
scheduleName	mySched	**Name for the schedule; must be unique among all schedules for the project.**	query	string
actualParameters		Parameters passed to the invoked procedure/process/workflow.	query	string
applicationName		The name of the application that owns the process.	query	string
beginDate		The date when this schedule will begin (for example, 2006-05-15).	query	string
credentialName		The name of the credential to use for impersonation.	query	string
description		Comment text describing this object; not interpreted at all by ElectricCommander.	query	string
endDate		The date when this schedule will end (for example, 2006-05-15). The end date is not included in the range of dates.	query	string
interval		If specified, the procedure/process/workflow will be rescheduled over and over again at intervals of this length. "Continuous" means reschedule the procedure/process/workflow as soon as the previous job finishes.	query	string
intervalUnits		Units for the interval of rescheduling.	query	string
misfirePolicy		Specifies the misfire policy for a schedule.	query	string
monthDays		A list of numbers from 1-31 separated by spaces, indicating zero or more days of the month.	query	string
priority		The priority of the job.	query	string
procedureName	Procedure1	The name of the procedure to invoke.	query	string
processName		The name of the application process to invoke.	query	string
scheduleDisabled		True means this schedule will not run. regardless of its settings.	query	boolean
startTime		The time of day to begin invoking this schedule's procedure/process/workflow (24-hour clock, for example, 17:00).	query	string

You also enter the following in the body parameter field:

```
{
        "parameters":{
           "actualParameter":[
              {
                 "value":"100",
```

```
                    "actualParameterName":"param1"
                }
            ]
        }
}
```



The response is this Request URL:

`https://localhost-100.electric-cloud.com/rest/v1.0/projects/default/schedules?scheduleName=mySched&procedureName=Procedure1`

To make a tier map with tier mappings, the `tierMapping` argument in the `createTierMap` API requires a key-value pair.

Using the ElectricFlow DSL

The ElectricFlow DSL is an easy to use domain specific language that allows you to perform the same ElectricFlow operations that can be performed using the RESTful or Perl API.

- Create and manage artifacts.
- Create and manage object properties.
- Create and manage resources.
- Create workflows and add resources to them.
- Create and call procedures.
- Model and deploy applications.
- Model and run pipelines.

The ElectricFlow DSL is the easiest of the ElectricFlow programming constructs to use. You create scripts (templates) to represent the ElectricFlow objects using the DSL methods and let the ElectricFlow DSL engine take care of invoking the correct API to create or update the object if it already exists. The ElectricFlow DSL is based on Groovy scripting language; however, you do not need to know Groovy in detail to use the DSL.

These are the benefits of using DSL scripts:

- You can create one master script (template) and run it one or more times for different scenarios to build, test, and deploy your software or application by passing different parameter values for evaluating the script.
- You can automate software delivery processes to produce repeatable, scalable, and efficient results.
- You can quickly and easily create and deploy applications using DSL scripts. Using these scripts enables a higher-order command-line interface (CLI) with richer syntax than the CLI on your system.
- Users with little to no programming experience levels can create and run DSL to perform specific operations. They do not need know how to use the ElectricFlow API or UI to create and deploy an application.
- Using DSL scripts make Continuous Delivery and Continuous Integration possible.

The following sections describe how to create DSL scripts (templates) and run them in background without using any API commands or requests.

Getting Started with DSL

Creating and Running DSL Scripts

Using ectool

To create and run a DSL script using ectool:

1. Use any text editor or Groovy IDE to create a script using ElectricFlow DSL methods, and save it.
2. Log into `ectool`.
3. Enter evalDsl on page 616 to run the DSL script.

   You can use these arguments with `evalDsl`.

   - `debug`–ElectricFlow generates debug output as the DSL script is evaluated when the `debug` argument is set to `1` or `true`.
   - `describe`–ElectricFlow prints a description of the DSL text when the `describe` argument is set to `1` or `true`.
   - `parameters`–Parameters are passed to the script by ElectricFlow as JSON text.

Using ec-perl

To create and run a DSL script using ec-perl:

1. Use any text editor or Groovy IDE to create a script using ElectricFlow DSL methods, and save it.
2. Start `ec-perl`.

   If you used `ec-perl` in for the previous step, skip this step.
3. Enter evalDsl on page 616 to run the DSL script.

   You can use these arguments to get more information about results as the script runs.

   - `debug`–ElectricFlow generates debug output as the DSL script is evaluated when the `debug` argument is set to `1` or `true`.
   - `describe`–ElectricFlow prints a description of the DSL text when the `describe` argument is set to `1` or `true`.
   - `parameters`–Parameters passed to the script by ElectricFlow as JSON text.

Common Use Cases

Getting Help on DSL Methods

You can get information on the supported DSL methods by using `evalDsl` for help while creating your DSL script.

These options are available to describe DSL methods:

- Obtaining the complete list of DSL methods for ElectricFlow objects.

  ```
  ectool evalDsl dsl --describe 1
  ```

- Obtaining DSL method details for a specific ElectricFlow object, such as an application.

  ```
  ectool evalDsl application --describe 1
  ```

- Obtaining details for a specific API, such as `getProcedure`.

  ```
  ectool evalDsl getProcedure --describe 1
  ```

Generating a DSL Script for an Existing ElectricFlow Object

To generate a DSL script for an existing ElectricFlow object, which was created through a Perl API, RESTful API, or the UI, enter

```
ectool generateDsl <path>
```

where `<path>` is the path to the ElectricFlow object for which you want to generate the DSL script. `generateDsl` will create a DSL script in a more concise form and follow a more idiomatic groovy coding style that a DSL script author might use.

For example, if you have a resource named *local* in your ElectricFlow instance:

1. Run the following command to redirect the output to a file (for example, myScript.dsl):

   ```
   ectool generateDsl /resources/local> myScript.dsl
   ```

   This command generates output redirected to the specified file, which looks similar to the following:

   ```
   resource 'local', {

      description = 'Local resource created during installation.'

      artifactCacheDirectory = null

      hostName = '192.168.10.10'

      hostType = 'CONCURRENT'

      port = '7800'

      proxyCustomization = null

      proxyHostName = null

      proxyProtocol = null

      repositoryNames = null

      resourceDisabled = '0'

      shell = null

      trusted = '0'

      useSSL = '1'

      workspaceName = null

      zoneName = 'default'

   }
   ```

2. Use the script file created in the previous steps with the `evalDsl` command to create or update the resource in ElectricFlow.

   You can also edit the file to add or update resource attributes before using the script with `evalDsl`.

   ```
   ectool evalDsl --dslFile myScript.dsl
   ```

Passing Parameters or Arguments to Your DSL Script

ElectricFlow DSL allows you can create a template script using script parameters instead of hard-coding all the values in the script. You can then invoke the same script with different parameter values each time to create different instances of ElectricFlow objects. For example, you have the following script to create a resource that uses SSL in the *secure* zone:

```
zone 'secure'
resource() {
   resourceName = args.resourceName
   hostName = args.resourceIP
   hostType = 'CONCURRENT'
   resourceDisabled = '0'
   trusted = '1'
   useSSL = '1'
   zoneName = 'secure'
}
```

The script has the values `args.resourceName` and `args.resourceIP` for the `resourceName` and `hostName` resource attributes, respectively. These argument or parameter values can be passed from the command line to the DSL script in JSON form using the following commands:

- For Linux, enter:

  ```
  ectool evalDsl --dslFile myScript.dsl --parameters '{"resourceName":"MyFirstResourc
  e", "resourceIP":"192.168.10.12"}'
  ```

- For Windows, enter:

  ```
  ectool evalDsl --dslFile myScript.dsl --parameters "{\"resourceName\":\"MyFirstReso
  urce\", \"resourceIP\":\"192.168.10.12\"}"
  ```

Note the special handling required on Windows for passing command-line arguments that contain double-quotes and spaces. To allow spaces and other special characters in a command-line argument, Windows requires wrapping the value in quotes. In addition, if the value itself contains quotes, you need to escape those quotes using a backslash `'\'`. An alternate method for passing parameter values for DSL is described in Passing Parameters or Arguments to Your DSL Script using a File on page 753.

Passing Parameters or Arguments to Your DSL Script using a File

Parameters to a DSL script can be passed using a file that contains the parameters in JSON format as follows:

```
ectool evalDsl --dslFile myScript.dsl --parametersFile myParams.json
```

Where the file `myParams.json` may contain:

```
{
   "resourceName" : "MyFirstResource",
   "resourceIP" : "192.168.10.12"
}
```

Go to Passing Parameters or Arguments to Your DSL Script on page 753 for details about using parameters in a DSL script.

```
ectool evalDsl --dslFile myScript.dsl --parameters '{"resourceName":"MyFirstResource",
"resourceIP":"192.168.10.12"}'
```

Evaluating Your DSL Script in a Specific Application Context

ElectricFlow DSL supports a simple and intuitive nested structure to represent the logical structure of ElectricFlow objects. This allows the DSL methods to be evaluated in a specific context, such as with respect to

an ElectricFlow project, application, or pipeline.

For example, the following is a very simple script that can create an application with an application tier in a project.

```
// ElectricFlow DSL engine will create project 'Default' unless it already exists

project ('Default')  {

   //'Deploy world' application will be created within 'Default' project unless it alr
   eady exists

   application('Deploy world') {

      //'Web Tier' application tier will be created within 'Deploy world' application
      unless it already exists

      applicationTier('Web Tier')

   }

}
```

Using ElectricFlow APIs in DSL

All ElectricFlow APIs available through ec-perl are available for use in your DSL script with the exception of `publishArtifactVersion` and `retrieveArtifactVersions`.

The syntax for invoking an ElectricFlow API in DSL is as follows:

```
<methodName> (argumentName1: value1, argumentName2:value2, ... )
```

For example, the `getProcedure` API can be invoked as:

```
def proc = getProcedure (procedureName: 'RunInstances', projectName: 'DeployUtiliti
es')
```

See ElectricFlow Perl API Commands on page 30 for the complete list of API commands.

Adding Support for Augmenting the Groovy Runtime classpath for evalDsl

Using External .jar Files With DSL

ElectricFlow DSL is based on Groovy so that you can take advantage of all the Groovy and Java capabilities. You can use any Groovy or Java libraries in your DSL script. The libraries can be made available to the ElectricFlow DSL runtime engine when the DSL script is executed using the `serverLibraryPath` parameter.

This example from *HttpBuilder - Easy HTTP client for Groovy's* wiki shows how to use the HTTPBuilder classes in a DSL script.

1. Create a file named `httputil.groovy` with the following content. The script uses the `groovyx.net.http.HTTPBuilder` class to make an HTTP GET request.

   ```
   import groovyx.net.http.HTTPBuilder

   import static groovyx.net.http.Method.GET

   import static groovyx.net.http.ContentType.JSON


   def result = [:]
   ```

```
def http = new HTTPBuilder( 'http://ajax.googleapis.com' )
http.request( GET, JSON ) {
      uri.path = '/ajax/services/search/web'
      uri.query = [ v:'1.0', q: 'Calvin and Hobbes' ]

      response.success = { resp, json ->
            assert json.size() == 3
            json.responseData.results.each {
                  result.put(it.titleNoFormatting, it.visibleUrl)
            }
      }
}
result
```

2. Create a directory, `/opt/dslSamples/lib`, that should be accessible from the ElectricFlow server with the following `.jar` files:

   ```
   http-builder-0.6
   ```

   ```
   json-lib-2.3-jdk15.jar
   ```

   ```
   xml-resolver-1.2.jar
   ```

3. Evaluate script using the following command:

   ```
   ectool evalDsl --dslFile httputil.groovy --serverLibraryPath /opt/dslSamples/lib
   ```

   When the DSL is evaluated on the ElectricFlow server, any `.jar` files contained in the directory specified for `serverLibraryPath` will be available to the ElectricFlow DSL runtime engine.

Any Groovy files and Java class files contained in the directory specified for `serverLibraryPath` will also be available to the script evaluated by `evalDsl`. For example, if the directory contains a Groovy class `my.sample.dsl.DslUtil` in the directory structure `my/sample/dsl/DslUtil.groovy`, the script can use the Groovy class by importing the class in the script like any other class.

Debugging Your DSL Script

You can use the `debug` argument to generate debug output for your script as it is being evaluated by ElectricFlow DSL engine. The generated output is useful when debugging your DSL scripts.

```
ectool evalDsl --dslFile myScript.dsl --debug 1
```

or

```
ectool evalDsl <dsl text> --debug 1
```

DSL Methods

ElectricFlow supports these DSL methods:

Name	Description
aclEntry	An individual access control list entry (ACE) that allows or denies a privilege on a domain object.
actualParameter	A name/value pair that is passed to a procedure when it is invoked.
application	An ElectricFlow object that you model and deploy to build, test , deploy, and release your software for continuous delivery.
applicationTier	A logical grouping of a components that are part of an application and the resources on which they should be deployed.
artifact	An artifact is a top-level object containing artifact versions, a name template for published artifact versions, artifact specific properties, and access control entries to specify privileges.
artifactVersion	An artifact version is a collection of `0` to `N` files that were published to an artifact repository.
component	An object that is based on a specific version of an artifact and is defined in an application.
credential	A credential is an object that stores a user name and password for later use. You can use credentials for user impersonation and saving passwords for use inside steps. It is usually used in an agent context to authenticate with a third-party system. The password value is not available in the web context for security reasons, so this object has no `getPassword` method.
directoryProvider	Contains information about the configuration used to communicate with an external directory service (LDAP or ActiveDirectory).
emailConfig	Encapsulates all of the mail server configuration information necessary for the ElectricFlow server to send an e-mail message.
emailNotifier	E-mail notification to be sent when a particular event occurs.
environment	The environment to which an application is deployed.
environmentTemplate	A template defining an environment that can be spun up when the application is deployed.
environmentTemplateTier	A logical grouping of resources in an environment template.
environmentTemplateTierMap	A map that contains the mapping of application tiers to the corresponding environment template tiers.
environmentTier	A logical grouping of resources in an environment.

Name	Description
formalParameter	An unbound parameter defined on a procedure, workflow definition, and so on.
gateway	A secure connection between two zones for sharing or transferring information between the zones.
group	A group of users.
hook	A resource template hook that stores a reference to a procedure in an ElectricFlow project or plugin project. When a resource template is used to create a resource pool, these procedures are invoked.
job	An instance of a procedure run.
jobStep	A step in a job.
license	License data in XML format that describes the usage to which you are entitled.
pipeline	An ElectricFlow object that orchestrates a deployment or automation. ElectricFlow supports these types of pipelines: • Release pipeline–Only for an application release. • Generic pipeline-For any deployment or automation.
plugin	An add-on program used by ElectricFlow to integrate with third-party tools, custom dashboards, and unique user experiences based on roles.
procedure	A container for steps that execute a task.
process	An application or component process.
processDependency	A dependency between process steps.
processStep	A step in an application or component process.
project	A project is a top-level container for related procedures, workflows, schedules, jobs, and properties, which is used to isolate different user groups or functions, and also encapsulate shared facilities.
property	A `name-value` pair associated with ElectricFlow objects to provide additional information beyond what is already built into the system. Built-in data is also accessible through the property mechanism. ElectricFlow supports intrinsic and custom properties.

Name	Description
repository	An object that stores artifact versions. It primarily contains information about how to connect to a particular artifact repository.
resource	An agent machine that is configured to communicate with ElectricFlow and where job steps can be executed.
resourcePool	A collection of resources with an ordering policy.
resourceTemplate	A template with the required information to provision and later spin up cloud resources on an on-demand basis.
schedule	An object that launches a procedure at a specified time in the future, possibly on a regular interval.
snapshot	A version of an application with specific artifact versions and at a specific state at any point in time.
stage	A logical grouping of pipeline tasks.
stateDefinition	A state definition in a workflow definition. Each workflow can contain one or more states.
step	A unit of logic that will execute on an agent.
task	A representation of task in a stage or gate.
tierMap	A map that contains the mapping of application tiers to the corresponding environment tiers.
transitionDefinition	How a workflow transitions from one state to another.
user	A user defines an account used to log into the system and control access to ElectricFlow objects.
workflowDefinition	Workflow objects are split into two types: *Definition* objects and *Instance* objects. Definition objects provide the template for a running workflow instance.
workspace	A workspace is a subtree of files and directories where job file data is stored. The term "workspace" typically refers to the top-level directory in this subtree.
zone	A zone or top-level network created as a way to partition a collection of agents to secure them from use by other groups.

aclEntry

An individual access control list entry (ACE) that allows or denies a privilege on a domain object.

Required Arguments

Name	Description
`principalName`	Name of the user or group for this access control entry.
`principalType`	Type of principal for this access control entry (user or group).

Optional Arguments

Name	Description
`applicationName`	The name of the application container of the property sheet that owns the property.
`applicationTierName`	The name of the application tier container of the property sheet that owns the property.
`artifactName`	The name of the artifact container of the property sheet that owns the property.
`artifactVersionName`	The name of the `artifactVersion` container of the property sheet that owns the property.
`changePermissionsPrivilege`	Determines whether the principal can modify access control for the object.
`componentName`	The name of the component container of the property sheet that owns the property.
`configName`	The name of the emailConfig container that owns the property.
`credentialName`	The name of the credential container of the property sheet that owns the property.
`environmentName`	The name of the environment container of the property sheet that owns the property.
`environmentTemplateName`	The name of the environment template container of the property sheet that owns the property.
`environmentTemplateTierName`	The name of the environment template tier container of the property sheet that owns the property.

Name	Description
`environmentTierName`	The name of the environment tier container of the property sheet that owns the property.
`executePrivilege`	Determines whether the principal can invoke this object as part of a job; this privilege is only relevant for a few objects such as procedures and procedure steps.
`flowName`	The name of the flow container of the property sheet that owns the property.
`flowStateName`	The name of the flow state container of the property sheet that owns the property.
`flowTransitionName`	The name of the flow transition container of the property sheet that owns the property.
`gatewayName`	The name of the gateway container of the property sheet.
`groupName`	The name of the group container of the property sheet that owns the property.
`jobId`	The primary key or name of the job container of the property sheet that owns the property.
`jobStepId`	The primary key of the job-step container of the property sheet that owns the property.
`modifyPrivilege`	Determines whether the principal can change the contents of the object.
`notifierName`	The name of the notifier container of the property sheet that owns the property.
`objectId`	The object id as returned by `findObjects`.
`path`	Property path string.
`pipelineName`	The name of the pipeline container of the property sheet that owns the property.
`pluginName`	The name of the plugin container of the property sheet that owns the property.
`procedureName`	The name of the procedure container of the property sheet that owns the property.
`processName`	The name of the process, if the container is a process or process step.

Name	Description
processStepName	The name of the process step, if the container is a process step.
projectName	The name of the project container of the property sheet that owns the property.
propertySheetId	The primary key of the property sheet that owns the property.
readPrivilege	Determines whether the principal can examine the contents of the object
repositoryName	The name of the repository container of the property sheet that owns the property.
resourceName	The name of the resource container of the property sheet that owns the property.
resourcePoolName	The name of the resource pool container of the property sheet that owns the property.
resourceTemplateName	The name of the resource template container of the property sheet that owns the property.
scheduleName	The name of the schedule container of the property sheet.
snapshotName	The name of the snapshot container of the property sheet that owns the property.
stageName	The name of the stage container of the property sheet that owns the property.
stateDefinitionName	The name of the state definition container of the property sheet that owns the property.
stateName	The name of the state container of the property sheet that owns the property.
stepName	The name of the step container of the property sheet that owns the property.
systemObjectName	The system object.
taskName	The name of the task that owns property sheet.
transitionDefinitionName	The name of the transition definition container of the property sheet that owns the property.
transitionName	The name of the transition container of the property sheet that owns the property.

Name	Description
`userName`	The name of the user container of the property sheet that owns the property.
`workflowDefinitionName`	The name of the workflow definition container of the property sheet that owns the property.
`workflowName`	The name of the workflow container of the property sheet that owns the property.
`workspaceName`	The name of the workspace container of the property sheet.
`zoneName`	The name of the zone container of the property sheet.

actualParameter

A name/value pair that is passed to a procedure when it is invoked.

Required Arguments

Name	Description
`actualParameterName`	The name of the parameter to create, modify, or delete.
`projectName`	Name for the project that must be unique among all projects.

Optional Arguments

Name	Description
`applicationName`	The name of the application, if the actual parameter is on an application process step.
`componentName`	The name of the component, if the actual parameter is on a component process step.
`newName`	New name for an existing object that is being renamed.
`procedureName`	The name of the procedure.
`processName`	The name of the process, if the actual parameter is on a process step.
`processStepName`	The name of the process step, if the actual parameter is on a process step.

Name	Description
scheduleName	The name of the schedule.
stateDefinitionName	The name of the state definition.
stepName	The name of the step.
transitionDefinitionName	The name of the state definition.
value	The value of the actual parameter, if creating or modifying.
workflowDefinitionName	The name of the workflow definition.

application

An ElectricFlow object that you model and deploy to build, test , deploy, and release your software for continuous delivery.

Required Arguments

Name	Description
applicationName	The name of the application.
projectName	Name for the project that must be unique among all projects.

Optional Arguments

Name	Description
description	Comment text describing this object that is not interpreted at all by ElectricFlow.
newName	New name for an existing object that is being renamed.

DSL Methods for ElectricFlow Objects That Can be Nested Inside

- component
- applicationTier
- emailNotifier
- environmentTemplateTierMap
- property

- tierMap
- snapshot
- process

applicationTier

A logical grouping of a components that are part of an application and the resources on which they should be deployed.

When `applicationTier` has a nested `component`, DSL automatically calls the `addComponentToApplicationTier` API.

Required Arguments

Name	Description
`applicationName`	The name of the application
`applicationTierName`	Name of the tier that must be unique within the application.
`projectName`	Name for the project that must be unique among all projects.

Optional Arguments

Name	Description
`description`	Comment text describing this object that is not interpreted at all by ElectricFlow.
`newName`	New name for an existing object.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- property

artifact

A top-level object containing artifact versions, a name template for published artifact versions, artifact specific properties, and access control entries to specify privileges.

Required Arguments

None.

Optional Arguments

Name	Description
artifactKey	The artifactKey component of the GroupId/ArtifactKey/Version (GAV) coordinates.
artifactName	The name of the artifact.
artifactVersionNameTemplate	The artifactVersion name template.
description	Comment text describing this object that is not interpreted at all by ElectricFlow.
groupId	The groupId component of the GroupId/ArtifactKey/Version (GAV) coordinates.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- artifactVersion
- property

artifactVersion

A collection of 0 to N files that were published to an artifact repository.

Required Arguments

None.

Optional Arguments

Name	Description
artifactKey	The artifactKey component of the GroupId/ArtifactKey/Version (GAV) coordinates.
artifactName	The name of the artifact containing the artifactVersion.
artifactVersionName	The name of the artifactVersion.
artifactVersionState	The state of the artifactVersion.
dependentArtifactVersions	The set of artifactVersions on which this artifactVersion depends. An alternate name for this argument is dependentArtifactVersion.
description	Comment text describing this object that is not interpreted at all by ElectricFlow.

Name	Description
groupId	The groupId component of the GAV (GroupId/ArtifactVersionId/Version) coordinates.
jobStepId	The id of the job step; used to make a project association.
newName	New name for an existing object that is being renamed.
removeAllDependentArtifactVersions	If this is set to `true` or `1`, all dependencies will be removed.
repositoryName	The name of the artifact repository.
version	The version component of the GAV (GroupId/ArtifactVersionId/Version) coordinates.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- property

component

An object that is based on a specific version of an artifact and is defined in an application.

Required Arguments

Name	Description
componentName	The name of the component
projectName	Name for the project that must be unique among all projects.

Optional Arguments

Name	Description
applicationName	The name of an application in which the component is defined.
credentialName	The name of a credential to attach to this component.
description	Comment text describing this object that is not interpreted at all by ElectricFlow.
newName	New name for an existing object that is being renamed.

Name	Description
`pluginKey`	The key of the plugin.
`pluginName`	The name of the plugin.
`pluginParameters`	List of plugin parameters. An alternate name is `pluginParameter`.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- property
- process

credential

A credential is an object that stores a user name and password for later use. You can use credentials for user impersonation and saving passwords for use inside steps.

Required Arguments

Name	Description
`credentialName`	The name of the credential.
`projectName`	Name for the project that must be unique among all projects.

Optional Arguments

Name	Description
`description`	Comment text describing this object that is not interpreted at all by ElectricFlow.
`newName`	New name for an existing object that is being renamed.
`password`	The password for the credential. It can also be a certificate or a chunk of data.
`passwordRecoveryAllowed`	If set to `true` or `1`, ElectricFlow recovers the password by invoking `getFullCredential` from a job step.
`userName`	The user name for the credential.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- property

directoryProvider

Contains information about the configuration used to communicate with an external directory service (LDAP or ActiveDirectory).

Required Arguments

Name	Description
providerName	Name for a LDAP directory provider that must be unique.

Optional Arguments

Name	Description
commonGroupNameAttribute	The attribute in a group record that contains the common name of the group. If specified, it is only used when searching for groups from an external provider. It is usually used when the group name attribute is set to distinguishedName, because this field is not searchable.
description	Comment text describing this object that is not interpreted at all by ElectricFlow.
domainName	The domain from which the Active Directory servers are automatically discovered.
emailAttribute	The attribute in a LDAP user record that contains the user's email.
enableGroups	Determines whether or not to enable external groups for the directory provider.
fullUserNameAttribute	The attribute in a user record that contains the user's full name (first and last).
groupBase	String prepended to the base distinguished name (DN) to construct the DN of the directory that contains group records.
groupMemberAttributes	Comma separated list of attribute names that can identify a member of a group.

Name	Description
`groupMemberFilter`	LDAP query string for the groups directory to find groups that contain a given user as a member.
`groupNameAttribute`	The attribute in a group record that contains the name of the group.
`groupSearchFilter`	LDAP query string used in group directory to enumerate group records.
`managerDn`	The name of a user who has read-only access to the LDAP or Active Directory server. It is usually a distinguished name (DN). A simple name may be used when the Active Directory server URL is being auto-discovered via DNS.
`managerPassword`	Secret value used to identify the account for the query user.
`newName`	New name for an existing object that is being renamed.
`providerType`	Type string for a directory provider: **ldap** or **activedirectory**.
`realm`	The realm of the LDAP directory provider. This is used to create unique user names when there are multiple providers.
`url`	The URL of the LDAP Directory Provider server.
`useSSL`	If this argument is set to `true` or `1`, SSL is used for communication.
`userBase`	Used to construct the distinguished name (DN) of the directory that contain user records.
`userNameAttribute`	The attribute in a user record that contains the user's account name.
`userSearchFilter`	RFC 2254 LDAP query to search for a user by name.
`userSearchSubtree`	If this argument is set to `true` or `1`, ElectricFlow recursively searches the subtree below the user base.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- property

emailConfig

Encapsulates all of the mail server configuration information necessary for the ElectricFlow server to send an email message.

Required Arguments

Name	Description
`configName`	The email configuration name.

Optional Arguments

Name	Description
`description`	Comment text describing this object that is not interpreted at all by ElectricFlow.
`mailFrom`	The email address used as the email sender address for ElectricFlow notifications.
`mailHost`	Name of the email server host.
`mailPort`	The port number for the email service on the server.
`mailProtocol`	Name of the email transport protocol. Supported protocol names are **SMTP** and **SMTPS**.
`mailUser`	Name of the email user on behalf of which ElectricFlow sends email notifications.
`mailUserPassword`	Password of the email user on behalf of which ElectricFlow sends email notifications.
`newName`	New name for an existing object that is being renamed.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- property

emailNotifier

Email notification to be sent when a particular event occurs.

Required Arguments

Name	Description
`notifierName`	The name of the email notifier.

Optional Arguments

Name	Description
`applicationName`	The name of the application that is related to the target email container, a process or process step.
`componentName`	The name of the component which is related to the target email container, a process or process step.
`condition`	A fixed text or text embedding property references that is evaluated into a logical TRUE or FALSE. An empty string, a \"0\" or \"false\" is interpreted as FALSE. Any other result string is interpreted as TRUE.
`configName`	Name for an email configuration, or text that through property expansion results in such an email configuration name.
`description`	Comment text describing this object that is not interpreted at all by ElectricFlow.
`destinations`	A list of space-separated user names, email addresses, or email aliases or text that through property expansion results in such a list.
`environmentNames`	Name of the environments. An alternate argument name is `environmentName`.
`eventType`	An enumeration of valid event categories recognized by the email notifiers.
`flowName`	The name of the flow container of the email notifier.
`flowStateName`	The name of the flow container of the email notifier.
`formattingTemplate`	String containing the email formatting instructions for generating notifications.
`gateType`	The type of the gate.
`groupNames`	A list of names of the groups which receives the notification. An alternate argument name is `groupName`.
`jobId`	The primary key or name of the job container of the email notifier.
`jobStepId`	The primary key of the job-step container of the email notifier.
`newName`	New name for an existing object that is being renamed.

Name	Description
notificationType	The notification type that will be stored in the ec_notificationType property.
pipelineName	The name of the pipeline container of the email notifier.
procedureName	The name of the procedure container of the email notifier.
processName	The name of the process container of the email notifier.
processStepName	The name of the process step container of the email notifier.
projectName	The name of the project container of the email notifier.
stageName	The name of the stage container of the email notifier.
stateDefinitionName	The name of the state definition container of the email notifier.
stateName	The name of the state container of the email notifier.
stepName	The name of the step container of the email notifier.
taskName	The name of the task container of the email notifier.
userNames	A list of names of the users who receives the notification. An alternate argument name is userName.
workflowDefinitionName	The name of the workflow definition container of the email notifier.
workflowName	The name of the workflow container of the email notifier.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- property

environment

The environment to which an application is deployed.

Required Arguments

Name	Description
environmentName	The name of the environment.
projectName	Name for the project that must be unique among all projects.

Optional Arguments

Name	Description
`applicationName`	Create an environment from the specified application.
`applicationProjectName`	The application project name.
`description`	Comment text describing this object that is not interpreted at all by ElectricFlow.
`environmentEnabled`	If this argument is set to `true` or `1`, the environment is enabled.
`newName`	New name for an object that is being renamed.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- environmentTier
- property

environmentTemplate

A template defining an environment that can be spun up when the application is deployed.

Required Arguments

Name	Description
`environmentTemplateName`	The name of the environment template.
`projectName`	Name for the project that must be unique among all projects.

Optional Arguments

Name	Description
`description`	Comment text describing this object that is not interpreted at all by ElectricFlow.
`newName`	New name for an object that is being renamed.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- property
- environmentTemplateTier

environmentTemplateTier

A logical grouping of resources in an environment template.

When `environmentTemplateTier` has a nested `resource`, DSL automatically calls the `addResourceToEnvironmentTemplateTier` API.

When `environmentTemplateTier` has a nested `resourceTemplate`, DSL automatically calls the `addResourceTemplateToEnvironmentTemplateTier` API.

Required Arguments

Name	Description
`environmentTemplateName`	The name of the environment template.
`environmentTemplateTierName`	Name for the environment template tier that must be unique among all tiers for the environment template.
`projectName`	Name for the project that must be unique among all projects.

Optional Arguments

Name	Description
`description`	Comment text describing this object that is not interpreted at all by ElectricFlow.
`newName`	New name for an object that is being renamed.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- property

environmentTemplateTierMap

A map that contains the mapping of application tiers to the corresponding environment template tiers.

Required Arguments

Name	Description
`applicationName`	The name of the application to which the environment template tiers are mapped.
`environmentProjectName`	The name of the environment project name.
`environmentTemplateName`	The name of the environment template.
`projectName`	Name for the project that must be unique among all projects.

Optional Arguments

Name	Description
`applicationEntityRevisionId`	Revision ID of the versioned object.
`tierMapName`	The name of the environment template tier map. If this is not specified, ElectricFlow uses a hyphenated name consisting of the application and environment names.
`tierMappings`	The list of mappings between the application tiers and the environment template tiers. An alternate argument name is `'tierMapping`.

environmentTier

A logical grouping of resources in an environment.

When `environmentTier` has a nested `resource`, DSL automatically calls the `addResourceToEnvironmentTier` API.

Required Arguments

Name	Description
`environmentName`	The name of the environment.
`environmentTierName`	Name for the environment tier that must be unique among all tiers for the environment.
`projectName`	Name for the project that must be unique among all projects.

Optional Arguments

Name	Description
description	Comment text describing this object that is not interpreted at all by ElectricFlow.
newName	New name for an object that is being renamed.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- property

formalParameter

An unbound parameter defined on a procedure, workflow definition, and so on.

Required Arguments

Name	Description
formalParameterName	Name for this parameter; used when the procedure is invoked to specify a value for the parameter.
projectName	Name for the project that must be unique among all projects.

Optional Arguments

Name	Description
applicationName	The name of the application, if the formal parameter is on an application process.
componentName	The name of the component, if the formal parameter is on a component process.
defaultValue	If no value is provided for the parameter when the procedure is invoked, this value will be used.
description	Comment text describing this object that is not interpreted at all by ElectricFlow.
expansionDeferred	True means expansion for this parameter should be deferred: the parameter value will not be expanded when the procedure call is expanded, but can be expanded from a command step instead.
flowName	The name of the flow to which the flow state belongs to.

Name	Description
flowStateName	The name of the flow state, if the formal parameter is on a flow state.
label	Specifies the display label.
newName	New name for an existing object that is being renamed.
orderIndex	Specifies the display order index (starts from 1).
pipelineName	The name of the pipeline, if the formal parameter is on a pipeline.
procedureName	The name of the procedure.
processName	The name of the process, if the formal parameter is on a process.
required	True means this parameter is required: the procedure will not execute unless a value is given for the parameter.
stateDefinitionName	The name of the state definition.
stateName	The name of a workflow state.
type	The type of a formal parameter.
workflowDefinitionName	The name of the workflow definition.
workflowName	The name of a workflow.

gateway

A secure connection between two zones for sharing or transferring information between the zones.

Required Arguments

Name	Description
gatewayName	The gateway name.

Optional Arguments

Name	Description
description	Comment text describing this object that is not interpreted at all by ElectricFlow.

Name	Description
gatewayDisabled	True means this artifact repository is disabled.
hostName1	The domain name or IP address resourceName2 uses to send messages to resourceName1.
hostName2	The domain name or IP address resourceName1 uses to send messages to resourceName2.
newName	New name for an existing object that is being renamed.
port1	Port number resourceName2 uses to send messages to resourceName1.
port2	Port number resourceName1 uses to send messages to resourceName2.
resourceName1	The name of the first resource in a gateway specification. Other resources in this resource's zone forward messages through this resource to agents in resourceName2's zone.
resourceName2	The name of the second resource in a gateway specification. Other resources in this resource's zone forward messages through this resource to agents in resourceName1's zone.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- property

group

A group of users.

Required Arguments

Name	Description
groupName	Name of the group that must be unique among local groups.

Optional Arguments

Name	Description
migrateSettings	New group name to which settings will be migrated.

Name	Description
newName	New name for an existing object that is being renamed.
removeAllUsers	True to remove all users from this group.
userNames	List of users in the group. (Alternate argument name 'userName')

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- property

hook

A resource template hook that stores a reference to a procedure in an ElectricFlow project or plugin project. When a resource template is used to create a resource pool, these procedures are invoked.

Required Arguments

Name	Description
hookName	Name for the hook that must be unique among all hookd.

Optional Arguments

Name	Description
broadcast	broadcast flag
description	Comment text describing this object that is not interpreted at all by ElectricFlow.
hookParameters	hook parameters (Alternate argument name 'hookParameter')
hookType	hook type
newName	New name for an existing object that is being renamed.
procedureName	hook procedure name
procedurePluginKey	procedure plugin key
procedureProjectName	procedure project name
projectName	projectName of the entity that owns the hook
resourceTemplateName	Name of the resource template.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- property

job

An instance of a procedure run.

Required Arguments

None.

Optional Arguments

Name	Description
`destinationProject`	The project that will own the job.
`jobId`	The primary key of the job, or the name of the job.
`jobNameTemplate`	Template used to determine the default name of jobs launched from a procedure.
`procedureName`	The name of the procedure that should 'own' the job step. If not specified, myStep.procedure is used.
`projectName`	The name of the project is destinationProject is not specified.
`status`	The starting status for the job.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- jobStep
- emailNotifier
- property

jobStep

A step in a job.

Required Arguments

None.

Optional Arguments

Name	Description
actualParameters	Actual parameters passed to an invoked subprocedure (Alternate argument name 'actualParameter')
alwaysRun	True means this step will run even if preceding steps fail in a way that aborts the job
broadcast	True means replicate this step to execute (in parallel) on each of the specified resources (that is, for a pool, run the step on each of the resources in the pool).
command	Script to execute the functions of this step; passed to the step's shell for execution.
condition	A fixed text or text embedding property references that is evaluated into a logical TRUE or FALSE. An empty string, a \"0\" or \"false\" is interpreted as FALSE. Any other result string is interpreted as TRUE.
credentialName	The name of the credential to be used for impersonation.
credentials	The list of runtime credentials attached to the job step. (Alternate argument name 'credential')
errorHandling	Specifies error handling for this step.
exclusive	True means the resource acquired for this step will be retained for the exclusive use of this job. This means 2 things: first, no other job will be able to use that resource, regardless of its step limit, until this job completes; second, future steps for this job will use the resource in preference to other resources, if this resource meets the needs of the steps and its step limit is not exceeded.
exclusiveMode	Determines the mode to use when the step acquires a resource. If set to 'none', then the default behavior for the step applies. If set to 'job', then the resource will be retained for the exclusive use of this job. If set to 'step', then the resource will be retained for the exclusive use of this step and procedure it may call. If set to 'call', then the resource will be retained for the exclusive use of all steps within the current procedure call.
external	True if the step is externally managed (no state machine).
jobStepId	The primary key of the job step
jobStepName	The name for the new step. If omitted, a default name will be generated.
logFileName	Name of the log file for a step; specified relative to the root directory in the job's workspace.

Name	Description
`parallel`	True means this step and all adjacent steps with the flag set will run in parallel.
`parentPath`	Path to the parent job step. If a parent step is not specified, the current job step is used.
`postProcessor`	This command runs in parallel with the main command for the step; it analyzes the log for the step and collects diagnostic information.
`precondition`	A fixed text or text embedding property references that is evaluated into a logical TRUE or FALSE. An empty string, a \"0\" or \"false\" is interpreted as FALSE. Any other result string is interpreted as TRUE.
`procedureName`	The name of the procedure that should 'own' the job step. If not specified, myStep.procedure is used.
`projectName`	The name of the project for procedureName.
`releaseExclusive`	True means the resource acquired for this step will be no longer be retained for the exclusive use of this job when this step completes.
`releaseMode`	Determines the mode to use when the step releases its resource. If set to 'none', the default behavior applies. If set to 'release', then the resource will be available for use by any job. If set to 'releaseToJob', then the resource will be available for use by any step in this job.
`resourceName`	Name for the resource that must be unique among all resources.
`shell`	Name of the shell program that will execute the command and postprocessor for the step.
`status`	The starting status for the step.
`stepName`	The name of the procedure step that should 'own' the job step. If not specified, myStep is used.
`subprocedure`	Name of a procedure to invoke during this step.
`subproject`	Name of the project containing the procedure to invoke during this step.
`timeLimit`	Maximum amount of time the step can execute; abort if it exceeds this time.
`timeLimitUnits`	Units for step time limit: seconds, minutes, or hours.

Name	Description
workingDirectory	Working directory in which to execute the command for this step. A relative name is interpreted relative to the root directory for the job's workspace.
workspaceName	The name of the workspace.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- jobStep
- emailNotifier
- property

license

License data in XML format that describes the usage to which you are entitled.

Required Arguments

Name	Description
licenseData	Container elements for license data, which expects embedded XML as CDATA.

Optional Arguments

None.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- property

pipeline

An ElectricFlow object that orchestrates a deployment or automation.

ElectricFlow supports these types of pipelines:

- Release pipeline–Only for an application release.
- Generic pipeline-For any deployment or automation.

Required Arguments

Name	Description
pipelineName	The name of the pipeline
projectName	Name for the project that must be unique among all projects.

Optional Arguments

Name	Description
description	Comment text describing this object that is not interpreted at all by ElectricFlow.
enabled	True to enable the pipeline.
newName	New name for an existing object that is being renamed.
type	Type of pipeline

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- formalParameter
- stage
- property

plugin

An add-on program used by ElectricFlow to integrate with third-party tools, custom dashboards, and unique user experiences based on roles.

Required Arguments

None.

Optional Arguments

Name	Description
author	The name of the plugin author.
description	Comment text describing this object that is not interpreted at all by ElectricFlow.
key	Version independent name for the plugin.
label	Label to display in lists for the plugin.

Name	Description
pluginName	The name of the plugin
projectName	The name of the project
version	The version of the plugin.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- property

procedure

Container for steps that execute some task.

Required Arguments

Name	Description
procedureName	Name for the procedure that must be unique within the project.
projectName	Name for the project that must be unique among all projects.

Optional Arguments

Name	Description
credentialName	The name of a credential to attach to this procedure.
description	Comment text describing this object that is not interpreted at all by ElectricFlow.
jobNameTemplate	Template used to determine the default name of jobs launched from a procedure.
newName	New name for an existing object that is being renamed.
resourceName	The name of the default resource for this procedure.
timeLimit	Maximum amount of time the step can execute; abort if it exceeds this time.
timeLimitUnits	Units for step time limit: seconds, minutes, or hours.
workspaceName	The name of the default workspace for this procedure.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- formalParameter
- emailNotifier
- property

process

An application or component process.

Required Arguments

Name	Description
processName	The name of the process.
projectName	Name for the project that must be unique among all projects.

Optional Arguments

Name	Description
applicationName	The name of the application, if the process is owned by an application.
componentApplicationName	If specified, the component is scoped to this application not the project.
componentName	The name of the component, if the process is owned by a component.
credentialName	The name of a credential to attach to this process.
description	Comment text describing this object that is not interpreted at all by ElectricFlow.
newName	New name for an existing object that is being renamed.
processType	Defines type of action performed by the process
timeLimit	Maximum amount of time the step can execute; abort if it exceeds this time.
timeLimitUnits	Units for step time limit: seconds, minutes, or hours.
workspaceName	The name of the default workspace for this process.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- processStep
- formalParameter
- emailNotifier
- property
- processDependency

processDependency

Represents a dependency between process steps.

Required Arguments

Name	Description
processName	The name of the process.
processStepName	The name of the process step.
projectName	Name for the project that must be unique among all projects.
targetProcessStepName	The name of the target process step.

Optional Arguments

Name	Description
applicationName	The name of the application, if the process is owned by an application.
branchCondition	Branch Condition.
branchConditionName	Branch Condition Name.
branchConditionType	Branch Condition Type.
branchType	Branch Type.
componentApplicationName	If specified, the component is scoped to this application not the project.
componentName	The name of the component, if the process is owned by a component.

processStep

A step in an application or component process.

Required Arguments

Name	Description
processName	The name of the process.
processStepName	The name of the process step.
projectName	Name for the project that must be unique among all projects.

Optional Arguments

Name	Description
actualParameters	Actual parameters passed to an invoked subprocedure or process. (Alternate argument name 'actualParameter')
afterProcessStep	If specified, the process step will be placed after the named process step.
applicationName	The name of the application, if the process is owned by an application.
applicationTierName	If references an application tier, the name of the application tier
beforeProcessStep	If specified, the process step will be placed before the named process step.
clearActualParameters	True if the step should remove all actual parameters.
componentApplicationName	If specified, the component is scoped to this application not the project.
componentName	The name of the component, if the process is owned by a component.
credentialName	The name of the credential object.
description	Comment text describing this object that is not interpreted at all by ElectricFlow.
errorHandling	Specifies error handling for this step.

Name	Description
includeCompParameterRef	True if the actual parameters should be generated from component properties. Works for artifact components only.
newName	New name for an existing object that is being renamed.
processStepType	Defines type of the process step
subcomponent	If referencing a component process, the name of the component.
subcomponentApplicationName	If referencing a component process, the name of the component application (if not project scoped).
subcomponentProcess	If referencing a component process, the name of the component process.
subprocedure	If referencing a procedure, the name of the procedure.
subproject	If referencing a procedure, the name of the procedure's project.
timeLimit	Maximum amount of time the step can execute; abort if it exceeds this time.
timeLimitUnits	Units for step time limit: seconds, minutes, or hours.
workspaceName	The name of the workspace.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- emailNotifier
- property

project

Container for a group of related procedures and schedules.

Required Arguments

Name	Description
projectName	Name for the project that must be unique among all projects.

Optional Arguments

Name	Description
`credentialName`	The name of the credential object.
`description`	Comment text describing this object that is not interpreted at all by ElectricFlow.
`newName`	New name for an existing object that is being renamed.
`resourceName`	Name for the resource that must be unique among all resources.
`tracked`	True to enable change tracking for this project.
`workspaceName`	The name of the workspace.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- component
- application
- flow
- pipeline
- schedule
- credential
- process
- workflowDefinition
- environment
- stage
- property
- resourceTemplate
- procedure
- environmentTemplate

property

A custom attribute attached to any ElectricFlow object. This may be a key, string-value pair or a complex structure, where the value is a reference to a property sheet containing nested properties.

Required Arguments

Name	Description
propertyName	Name for the property that must be unique within the property sheet.

Optional Arguments

Name	Description
applicationName	The name of the application container of the property sheet which owns the property.
applicationTierName	The name of the application tier container of the property sheet which owns the property.
artifactName	The name of the artifact container of the property sheet which owns the property.
artifactVersionName	The name of the artifactVersion container of the property sheet which owns the property.
componentName	The name of the component container of the property sheet which owns the property.
configName	The name of the emailConfig container that owns the property.
counter	Whether or not the property is used as a counter.
credentialName	The name of the credential container of the property sheet which owns the property.
description	Comment text describing this object that is not interpreted at all by ElectricFlow.
environmentName	The name of the environment container of the property sheet which owns the property.
environmentTemplateName	The name of the environment template container of the property sheet which owns the property.
environmentTemplateTierName	The name of the environment template tier container of the property sheet which owns the property.
environmentTierName	The name of the environment tier container of the property sheet which owns the property.
expandable	Whether or not the property is recursively expandable.

Name	Description
extendedContextSearch	For simple property names, whether or not to search objects in the hierarchy to find the desired property.
flowName	The name of the flow container of the property sheet which owns the property.
flowStateName	The name of the flow state container of the property sheet which owns the property.
flowTransitionName	The name of the flow transition container of the property sheet which owns the property.
gatewayName	The name of the gateway container of the property sheet.
groupName	The name of the group container of the property sheet which owns the property.
jobId	The primary key or name of the job container of the property sheet which owns the property.
jobStepId	The primary key of the job-step container of the property sheet which owns the property.
newName	New name for an existing object that is being renamed.
notifierName	The name of the notifier container of the property sheet which owns the property.
objectId	The object id as returned by FindObjects.
path	Property path string.
pipelineName	The name of the pipeline container of the property sheet which owns the property.
pluginName	The name of the plugin container of the property sheet which owns the property.
procedureName	The name of the procedure container of the property sheet which owns the property.
processName	The name of the process, if the container is a process or process step.
processStepName	The name of the process step, if the container is a process step.
projectName	The name of the project container of the property sheet which owns the property.

Name	Description
propertySheetId	The primary key of the property sheet which owns the property.
propertyType	Type of property.
repositoryName	The name of the repository container of the property sheet which owns the property.
resourceName	The name of the resource container of the property sheet which owns the property.
resourcePoolName	The name of the resource pool container of the property sheet which owns the property.
resourceTemplateName	The name of the resource template container of the property sheet which owns the property.
scheduleName	The name of the schedule container of the property sheet.
snapshotName	The name of the snapshot container of the property sheet which owns the property.
stageName	The name of the stage container of the property sheet which owns the property.
stateDefinitionName	The name of the state definition container of the property sheet which owns the property.
stateName	The name of the state container of the property sheet which owns the property.
stepName	The name of the step container of the property sheet which owns the property.
systemObjectName	The system object.
taskName	The name of the task which owns property sheet.
transitionDefinitionName	The name of the transition definition container of the property sheet which owns the property.
transitionName	The name of the transition container of the property sheet which owns the property.
userName	The name of the user container of the property sheet which owns the property.
value	The value of the property.

Name	Description
workflowDefinitionName	The name of the workflow definition container of the property sheet which owns the property.
workflowName	The name of the workflow container of the property sheet which owns the property.
workspaceName	The name of the workspace container of the property sheet.
zoneName	The name of the zone container of the property sheet.

repository

An object that stores artifact versions.

It primarily contains information about how to connect to a particular artifact repository.

Required Arguments

Name	Description
repositoryName	The repository name.

Optional Arguments

Name	Description
description	Comment text describing this object that is not interpreted at all by ElectricFlow.
newName	New name for an existing object that is being renamed.
repositoryDisabled	Whether or not to disable the repository.
url	The url for contacting the repository.
zoneName	The zone name.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- property

resource

An agent machine that is configured to communicate with ElectricFlow and where job steps can be executed.

Required Arguments

Name	Description
`resourceName`	Name for the resource that must be unique among all resources.

Optional Arguments

Name	Description
`artifactCacheDirectory`	Artifact cache directory for this resource.
`block`	True to block on the agent ping before returning.
`description`	Comment text describing this object that is not interpreted at all by ElectricFlow.
`hostName`	The domain name or IP address of the server machine corresponding to this resource.
`hostType`	The type of the host.
`newName`	New name for an existing object that is being renamed.
`pools`	A list of arbitrary names separated by spaces, indicating the pools with which this resource is associated.
`port`	Port number to use when connecting to the agent for this resource; defaults to server default.
`proxyCustomization`	Proxy specific customization data; defaults to none.
`proxyHostName`	The domain name or IP address of the proxy agent machine corresponding to this resource.
`proxyPort`	Port number to use when connecting to the proxy agent for this resource; defaults to server default.
`proxyProtocol`	The protocol to use when proxying to this resource; defaults to none.
`repositoryNames`	A newline delimited list of repositories to retrieve artifacts from.
`resourceDisabled`	True means this resource will not be allocated to job steps, regardless of its step limit.
`shell`	Name of the shell program that will execute the command and postprocessor for the step.

Name	Description
stepLimit	The maximum number of steps that may execute simultaneously using this resource.
trusted	True means the agent can speak to all other trusted agents in its zone. An untrusted agent can only speak to gateway agents.
useSSL	True means SSL is used for communication.
workspaceName	The name of the workspace.
zoneName	Name for the zone that must be unique among all zones.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- property

resourcePool

A collection of resources with a ordering policy.

Required Arguments

Name	Description
resourcePoolName	Name for the resource pool that must be unique among all resource pools.

Optional Arguments

Name	Description
autoDelete	If true, the pool is deleted when the last resource is deleted.
description	Comment text describing this object that is not interpreted at all by ElectricFlow.
newName	New name for an existing object that is being renamed.
orderingFilter	JavaScript fragment that returns custom ordering of resources in a pool.
resourceNames	List of resources to add/remove from the pool. (Alternate argument name 'resourceName')
resourcePoolDisabled	True means the resourcePool will not be allocated to job steps.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- property

resourceTemplate

A template with the required information to provision and later spin up cloud resources on an on-demand basis.

Required Arguments

Name	Description
projectName	Name for the project that must be unique among all projects.
resourceTemplateName	Name for the resource template that must be unique among all resource templates.

Optional Arguments

Name	Description
cfgMgrParameters	Configuration manager plugin parameters. (The alternate argument name 'cfgMgrParameter'.)
cfgMgrPluginKey	Configuration manager plugin key.
cfgMgrProcedure	Configuration manager plugin method name.
cfgMgrProjectName	Configuration manager plugin project name.
cloudProviderParameters	Cloud provider plugin parameters. (The alternate argument name 'cloudProviderParameter'.)
cloudProviderPluginKey	Cloud provider plugin key.
cloudProviderProcedure	Cloud provider plugin method name.
cloudProviderProjectName	Cloud provider plugin project name.
description	Comment text describing this object that is not interpreted at all by ElectricFlow.
newName	New name for an existing object that is being renamed.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- hook
- property

schedule

This object is responsible for launching a procedure at some time in the future, possibly on a regular interval.

Required Arguments

Name	Description
projectName	Name for the project that must be unique among all projects.
scheduleName	Name for the schedule that must be unique among all schedules for the project.

Optional Arguments

Name	Description
actualParameters	Parameters passed to the invoked procedure/process/workflow. (Alternate argument name 'actualParameter')
applicationName	The name of the application that owns the process.
beginDate	The date when this schedule will begin (for example, 2006-05-15).
clearActualParameters	Whether or not to clear actual parameters for this object.
credentialName	The name of the credential to use for impersonation.
description	Comment text describing this object that is not interpreted at all by ElectricFlow.
endDate	The date when this schedule will end (for example, 2006-05-15). The end date is not included in the range of dates.
environmentName	The name of the environment used to determine where to run the process.
environmentTemplateName	The name of the environment template used to determine the environment where to run the process.
environmentTemplateTierMapName	The name of the environment template tier map used to determine how to spin up the environment which will be used to run the process.

Name	Description
`interval`	If specified, the procedure/process/workflow will be rescheduled over and over again at intervals of this length. \"Continuous\" means reschedule the procedure/process/workflow as soon as the previous job finishes.
`intervalUnits`	Units for the interval of rescheduling.
`misfirePolicy`	Specifies the misfire policy for a schedule.
`monthDays`	A list of numbers from 1-31 separated by spaces, indicating zero or more days of the month.
`newName`	New name for an existing object that is being renamed.
`priority`	The priority of the job.
`procedureName`	The name of the procedure to invoke.
`processName`	The name of the application process to invoke.
`scheduleDisabled`	If this box is \"checked\", the schedule will run. You can disable this schedule whenever necessary.
`snapshotName`	The name of the snapshot to be used to invoke the application process.
`startTime`	The time of day to begin invoking this schedule's procedure/process/workflow (24-hour clock, for example, 17:00).
`startingStateName`	The name of the starting state of the workflow.
`stopTime`	The time of day to stop invoking this schedule's procedure/process/workflow (don't start a new job after this time); time values use a 24-hour clock, for example, 17:00.
`tierMapName`	The name of the tier map used to determine where to run the process.
`tierResourceCounts`	Resource count per resource template tier. (The alternate argument name 'tierResourceCount'.)
`timeZone`	The time zone to use when interpreting times.
`weekDays`	Days of the week: any number of names such as Monday or Tuesday, separated by spaces
`workflowName`	The name of the workflow to invoke.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- property

snapshot

A version of an application with specific artifact versions and the state of the application at any point in time.

Required Arguments

Name	Description
applicationName	The name of the application.
projectName	Name for the project that must be unique among all projects.
snapshotName	Name of the snapshot that must be unique within the application.

Optional Arguments

Name	Description
componentVersions	Component names and version used for snapshot. Use keyword 'LATEST' to indicate latest version. (The alternate argument name is 'componentVersion'.)
description	Comment text describing this object that is not interpreted at all by ElectricFlow.
environmentName	The name of environment from which snapshot be created.
newName	New name for an object that is being renamed.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- property

stage

A logical grouping of pipeline tasks

Required Arguments

Name	Description
projectName	Name for the project that must be unique among all projects.
stageName	The name of the stage.

Optional Arguments

Name	Description
afterStage	If specified, the stage will be placed after the named stage.
beforeStage	If specified, the stage will be placed before the named stage.
description	Comment text describing this object that is not interpreted at all by ElectricFlow.
newName	New name for an object that is being renamed.
pipelineName	The name of the pipeline.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- task
- property

stateDefinition

A state definition in a workflow definition. Each workflow can contain one or more states.

Required Arguments

Name	Description
projectName	Name for the project that must be unique among all projects.
stateDefinitionName	The name used for the state definition
workflowDefinitionName	The name of the workflow definition.

Optional Arguments

Name	Description
actualParameters	The actual parameters to the state definition's process. (Alternate argument name 'actualParameter')
clearActualParameters	True if the state definition should remove all actual parameters to the process.
description	Comment text describing this object that is not interpreted at all by ElectricFlow.
newName	New name for an existing object that is being renamed.
startable	True if the workflow can begin in this state.
subprocedure	The name of the sub procedure.
subproject	The name of the project that contains the sub procedure.
substartingState	The name of the starting state to use in the subworkflowDefinition.
subworkflowDefinition	The name of the subworkflowDefinition.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- formalParameter
- emailNotifier
- property
- transitionDefinition

step

A unit of logic that will execute on an agent.

Required Arguments

Name	Description
procedureName	Name for the procedure that must be unique within the project.
projectName	Name for the project that must be unique among all projects.
stepName	Name of the step that must be unique within the procedure.

Optional Arguments

Name	Description
actualParameters	Actual parameters passed to an invoked subprocedure (Alternate argument name 'actualParameter')
alwaysRun	True means this step will run even if preceding steps fail in a way that aborts the job
broadcast	True means replicate this step to execute (in parallel) on each of the specified resources (that is, for a pool, run the step on each of the resources in the pool).
clearActualParameters	True if the step should remove all actual parameters.
command	Script to execute the functions of this step; passed to the step's shell for execution.
condition	A fixed text or text embedding property references that is evaluated into a logical TRUE or FALSE. An empty string, a \"0\" or \"false\" is interpreted as FALSE. Any other result string is interpreted as TRUE.
credentialName	The name of the credential object.
description	Comment text describing this object that is not interpreted at all by ElectricFlow.
errorHandling	Specifies error handling for this step.
exclusive	True means the resource acquired for this step will be retained for the exclusive use of this job. This means 2 things: first, no other job will be able to use that resource, regardless of its step limit, until this job completes; second, future steps for this job will use the resource in preference to other resources, if this resource meets the needs of the steps and its step limit is not exceeded.
exclusiveMode	Determines the mode to use when the step acquires a resource. If set to 'none', then the default behavior for the step applies. If set to 'job', then the resource will be retained for the exclusive use of this job. If set to 'step', then the resource will be retained for the exclusive use of this step and procedure it may call. If set to 'call', then the resource will be retained for the exclusive use of all steps within the current procedure call.
logFileName	Name of the log file for a step; specified relative to the root directory in the job's workspace.
newName	New name for an existing object that is being renamed.
parallel	True means this step and all adjacent steps with the flag set will run in parallel.

Name	Description
postProcessor	This command runs in parallel with the main command for the step; it analyzes the log for the step and collects diagnostic information.
precondition	A fixed text or text embedding property references that is evaluated into a logical TRUE or FALSE. An empty string, a \"0\" or \"false\" is interpreted as FALSE. Any other result string is interpreted as TRUE.
releaseExclusive	True means the resource acquired for this step will be no longer be retained for the exclusive use of this job when this step completes.
releaseMode	Determines the mode to use when the step releases its resource. If set to 'none', the default behavior applies. If set to 'release', then the resource will be available for use by any job. If set to 'releaseToJob', then the resource will be available for use by any step in this job.
resourceName	Name for the resource that must be unique among all resources.
shell	Name of the shell program that will execute the command and postprocessor for the step.
subprocedure	Name of a procedure to invoke during this step.
subproject	Name of the project containing the procedure to invoke during this step.
timeLimit	Maximum amount of time the step can execute; abort if it exceeds this time.
timeLimitUnits	Units for step time limit: seconds, minutes, or hours.
workingDirectory	Working directory in which to execute the command for this step. A relative name is interpreted relative to the root directory for the job's workspace.
workspaceName	The name of the workspace.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- emailNotifier
- property
- property

task

A representation of task within a stage or gate.

Required Arguments

Name	Description
projectName	Name for the project that must be unique among all projects.
taskName	The name of the task

Optional Arguments

Name	Description
actualParameters	Actual parameters passed to an invoked subprocedure (Alternate argument name 'actualParameter')
afterTask	If specified, the task will be placed after the named task.
approvers	A list of task approvers who receive the notification. (Alternate argument name 'approver')
beforeTask	If specified, the task will be placed before the named task.
clearActualParameters	True if the task should remove all actual parameters.
credentials	Credentials to be used in the task. (Alternate argument name 'credential')
description	Comment text describing this object that is not interpreted at all by ElectricFlow.
enabled	True to enable the task.
environmentName	Environment name to create from template.
environmentTemplateName	Environment template name.
errorHandling	Specifies error handling for this task.
gateType	The type of the gate.
keepOnError	True to keep environment on error (default is false)
newName	New name for an existing object that is being renamed.

Name	Description
notificationTemplate	String containing email formatting instructions for generating notifications.
pipelineName	The name of the pipeline
skippable	True if a task is skippable.
snapshotName	Name of the snapshot associated with the application.
stageName	Name of the stage to which this task belongs to.
startTime	The time of day to begin invoking this task (24-hour clock, for example, 17:00).
subapplication	The name of the application that owns the subprocess.
subprocedure	If referencing a procedure, the name of the procedure.
subprocess	The name of the process.
subproject	If referencing a procedure, the name of the procedure's project.
taskProcessType	The type of the process a task can invoke.
taskType	The type of the task.
tierResourceCounts	Resource count per resource template tier (Alternate argument name 'tierResourceCount')
workspaceName	The name of the workspace.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- emailNotifier
- property
- property

tierMap

A map to hold mappings between application and an environment tiers.

Required Arguments

Name	Description
`applicationName`	The name of the application
`environmentName`	The name of the environment.
`environmentProjectName`	The name of the environment's project name.
`projectName`	Name for the project that must be unique among all projects.

Optional Arguments

Name	Description
`applicationEntityRevisionId`	Revision ID of the versioned object
`tierMapName`	The name of the tier map. If not specified, ElectricFlow uses a hyphenated name consisting of the application and environment names.
`tierMappings`	The list of mappings between the application tiers and the environment tiers. An alternate name is `tierMapping`.

transitionDefinition

Defines how a workflow must transition from one state to another.

Required Arguments

Name	Description
`projectName`	Name for the project that must be unique among all projects.
`stateDefinitionName`	The name used for the state definition.
`transitionDefinitionName`	The name used for the transition definition.
`workflowDefinitionName`	The name of the workflow definition.

Optional Arguments

Name	Description
`actualParameters`	The actual parameters to the transition's target state. An alternate name is `actualParameter`.
`clearActualParameters`	If this is set to `true` or `1`, the transition should remove all actual parameters from the target state.
`condition`	A fixed text or text embedding property references that is evaluated into a logical TRUE or FALSE. If the string is empty or this is set to `false` or `0`,the text is interpreted as `FALSE`. If the string is not empty or this is set to `true` or `1`,the text is interpreted as `TRUE`.
`description`	Comment text describing this object that is not interpreted at all by ElectricFlow.
`newName`	New name for an existing object that is being renamed.
`targetState`	Target state for the transition definition.
`trigger`	Specifies the type of trigger for this transaction.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- property

user

A user defines an account used to log into the system and control access to ElectricFlow objects.

Required Arguments

Name	Description
`userName`	The user name.

Optional Arguments

Name	Description
`email`	Email address of the user.
`fullUserName`	Full name of the user.

Name	Description
groupNames	List of groups that this user is in. An alternate name is groupName.
migrateSettings	Migrate the user or group settings to this user name.
newName	New name for an object that is being renamed.
password	The user's password.
removeFromAllGroups	If this is set to true or 1, ElectricFlow removes this user from all groups.
sessionPassword	Session user's password.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- property

workflowDefinition

A top-level workflow object, which is a container for states, and transitions, and other information defining your workflow.

Required Arguments

Name	Description
projectName	Name for the project that must be unique among all projects.
workflowDefinitionName	The name of the workflow definition.

Optional Arguments

Name	Description
description	Comment text describing this object that is not interpreted at all by ElectricFlow.
newName	New name for an object that is being renamed.
workflowNameTemplate	The template used to name instances of this workflow definition.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- property
- stateDefinition

workspace

A workspace is a subtree of files and directories where job file data is stored. The term "workspace" typically refers to the top-level directory in this subtree.

Required Arguments

Name	Description
workspaceName	The workspace name.

Optional Arguments

Name	Description
agentDrivePath	On Windows, the path name to the root directory of a workspace, specified with a drive letter.
agentUncPath	On Windows, the path name to the root directory of a workspace, specified with a UNC path.
agentUnixPath	On UNIX, the path name to the root directory of a workspace.
credentialName	The name of the impersonation credential to attach to this workspace.
description	Comment text describing this object that is not interpreted at all by ElectricFlow.
local	True if the workspace is 'local'.
newName	New name for an existing object that is being renamed.
workspaceDisabled	True means this workspace is disabled.
zoneName	The zone name.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- property

zone

A zone or top-level network created as a way to partition a collection of agents to secure them from use by other groups.

Required Arguments

Name	Description
`zoneName`	The zone name.

Optional Arguments

Name	Description
`description`	Comment text describing this object that is not interpreted at all by ElectricFlow.
`newName`	New name for an object that is being renamed.

DSL Methods for ElectricFlow Objects That Can Be Nested Inside

- property

Troubleshooting and FAQs

Troubleshooting

Issue	What to Do	Links to Related Topics

Get help on the DSL methods	To get the complete list of supported DSL methods, enter the following command:
	`ectool evalDsl --describe 1`
	
	To get help on a particular DSL method, enter the following command:
	`ectool evalDsl <dsl_method_name> --describe 1`
	Example: `ectool evalDsl procedure --describe 1`
		Getting Started with DSL on page 750
		
		Using the ElectricFlow Perl API on page 19.

The DSL script completes successfully using the `evalDsl` command; however, the ElectricFlow objects are not created or updated as expected.	Use the `debug` option to trace and debug the script processing using the following command: `ectool evalDsl <dsl> --debug 1` The `debug` option will allow `evalDsl` to generate debug output that you can use to follow the DSL script processing by `evalDsl` and identify any possible issue with the DSL script.	evalDsl on page 616 Creating and Running DSL Scripts on page 751

FAQs

1. I am comfortable with Perl and am already using the ElectricFlow Perl API for my scripting purposes. Do I need to switch to ElectricFlow DSL?

   Answer: ElectricFlow DSL being a dynamic scripting language provides a cleaner and much easier syntax for non-technical users to understand. However, ElectricFlow Perl API and the RESTful API are both supported as well, and you can continue to use them both if they suit your scripting needs.

2. ElectricFlow DSL is based on Groovy. So, are all Groovy constructs available for use in a DSL script?

   Answer: Yes, most Groovy constructs such as closures, named arguments, and so on can be used in your DSL script.

3. Is there a way to create a DSL script for the ElectricFlow objects that I have created through the UI or using the ElectricFlow Perl API?

   Answer: Yes, you can use the `generateDsl` command to create a DSL script for any ElectricFlow object.

   Command: `ectool generateDsl [path]`

   Example: `ectool generateDsl /projects/Default/applications/MyApp`

Using Groovy and JRuby

When ElectricFlow is installed on Windows or UNIX (using the agent or tools installation), copies of Groovy (ec-groovy) and JRuby (ec-jruby) are installed.The installation package includes Groovy 2.4.3 and JRuby 1.7.18.

The default UNIX directories are:

- `/opt/electriccloud/electriccommander/bin/ec-jruby`
- `/opt/electriccloud/electriccommander/bin/ec-groovy`

The default Windows directories are:

- `C:\Program Files\Electric Cloud\ElectricCommander\bin\ec-groovy`
- `C:\Program Files\Electric Cloud\ElectricCommander\bin\ec-jruby`

ElectricFlow does not automatically add these to your path because:

- We do not want the ElectricFlow installation to interfere with existing scripts you may run, which are dependent on finding another copy of Groovy or JRuby you already use.
- Some special environment variables need to be set before calling Groovy or JRuby.

Both of these issues are addressed with small wrapper programs called *ec-groovy* and *ec-jruby*. They are installed as part of ElectricFlow, and are in directories added to your path. When ec-groovy or ec-jruby runs, it sets the environment variables, finds the ElectricFlow copy of Groovy or JRuby, and calls it, passing all of its parameters to Java.

ec-groovy

To run ec-groovy:

1. Set `COMMANDER_HOME` and `COMMANDER_DATA` as environment variables.
2. Enter `ec-groovy <yourGroovyOptions> <GroovyScriptName>.groovy` on the command line.

There is no language-specific binding for Groovy. Use the RESTful API to communicate with the ElectricFlow server.

This is an example of a Groovy script:

```
import groovyx.net.http.RESTClient

@Grab(group = 'org.codehaus.groovy.modules.http-builder', module = 'http-builder',
version = '0.7.1')

def commanderServer = 'https://' + System.getenv('COMMANDER_SERVER')
def commanderPort = System.getenv('COMMANDER_HTTPS_PORT')

def sessionId = System.getenv('COMMANDER_SESSIONID')

def client = new RESTClient(commanderServer + ":" + commanderPort)
client.ignoreSSLIssues()

def resp = client.get( path : '/rest/v1.0/projects/' ,headers:
['Cookie': "sessionId=" + sessionId, 'Accept': 'application/json'] )

println resp.getData()
```

Groovy also allows for run-time resolution of artifacts that can download artifacts across the internet. To disable this ability or to allow only trusted repositories to download (whitelist trusted repositories), write a `grapeConfig.xml` file and put it in the `$DATADIR/grape` directory.

This is an example of a `grapeConfig.xml` file without internet repositories:

```
<!--
      Licensed to the Apache Software Foundation (ASF) under one
      or more contributor license agreements.  See the NOTICE file
      distributed with this work for additional information
      regarding copyright ownership.  The ASF licenses this file
      to you under the Apache License, Version 2.0 (the
      "License"); you may not use this file except in compliance
      with the License.  You may obtain a copy of the License at
      http://www.apache.org/licenses/LICENSE-2.0
      Unless required by applicable law or agreed to in writing,
      software distributed under the License is distributed on an
      "AS IS" BASIS, WITHOUT WARRANTIES OR CONDITIONS OF ANY
      KIND, either express or implied.  See the License for the
      specific language governing permissions and limitations
      under the License.
-->
   <ivysettings>
      <settings defaultResolver="downloadGrapes"/>
      <resolvers>
         <chain name="downloadGrapes" returnFirst="true">
            <filesystem name="cachedGrapes">
               <ivy pattern="${user.home}/.groovy/grapes/[organisation]/
               [module]/ivy-[revision].xml"/>

               <artifact pattern="${user.home}/.groovy/grapes/[organisation]/[module]/
               [type]s/[artifact]-[revision](-[classifier]).[ext]"/>
            </filesystem>
            <ibiblio name="localm2" root="file:${user.home}/.m2/repository/"
            checkmodified="true" changingPattern=".*" changingMatcher="regexp" m2compa
            tible="true"/>
         </chain>
      </resolvers>
   </ivysettings>
```

ec-jruby

To run ec-jruby:

1. Set `COMMANDER_HOME` and `COMMANDER_DATA` as environment variables.
2. Enter `ec-jruby <yourJRubyOptions> <JRubyScriptName>.rb` on the command line.

There is no language-specific binding for JRuby. Use the RESTful API to communicate with the ElectricFlow server.

Example of a JRuby script:

```
require 'net/https'
require 'cgi'

uri = URI.parse("https://" + ENV["COMMANDER_SERVER"] + ":" +
ENV["COMMANDER_HTTPS_PORT"] + "/rest/v1.0/projects")

http = Net::HTTP.new(uri.host, uri.port)
http.use_ssl = true
http.verify_mode = OpenSSL::SSL::VERIFY_NONE

request = Net::HTTP::Get.new(uri.request_uri)

cookie = CGI::Cookie.new('sessionId',ENV["COMMANDER_SESSIONID"])
request['Cookie'] = cookie.to_s

response = http.request(request)

puts response.body
```

Glossary

This glossary is a reference topic containing short descriptions for ElectricFlow objects, terms, and concepts.

Term	Description
access control	An access control list (ACL) determines if a particular user can perform a particular operation on a specified object. The list contains *access control entries* (ACE), each of which specifies a user or group and indicates whether certain operations are allowed or denied for that user or group. Using access control provides security for ElectricFlow system use. See the **Access Control** topic for more information.
ACE (Access Control Entry)	An ACL determines if a particular user can perform a particular operation on a specified object. The list contains *access control entries* (ACE), each of which specifies a user or group and indicates whether certain operations are allowed or denied for that user or group. Using access control provides security for ElectricFlow system use. See the **Access Control** topic for more information.
ACL (Access Control List)	An ACL determines if a particular user can perform a particular operation on a specified object. The list contains *access control entries* (ACE), each of which specifies a user or group and indicates whether certain operations are allowed or denied for that user or group. Using access control provides security for ElectricFlow system use. See the **Access Control** topic for more information.
actual parameter	An actual parameter is an object that provides the value for a parameter, which is passed to a procedure when it is invoked. Actual parameters can be provided for jobs and nested subprocedures within a job. Actual parameters are different from "formal parameters": formal parameters define parameters a procedure is expecting, and actual parameters provide values to use at run-time.
admin	"admin" is a special built-in user that has universal ElectricFlow access. If you log in as admin, you can perform any operation in the system, regardless of access control limitations.
agent	An agent is an ElectricFlow component that runs on each machine where job steps can execute. The agent works under the ElectricFlow server's control to execute job steps, monitor their progress, and record information about their completion. A single agent process can manage multiple job steps executing concurrently on a single machine. See the **Web Interface Help** > **Resources** topic for more information.

Term	Description
artifact	An artifact is a top-level object containing artifact versions, a name template for published artifact versions, artifact specific properties, and access control entries to specify privileges.
artifact key	An artifact key is an identifier for an artifact and the "key" component of the artifact name.
artifact repository	See the **Artifact Management** > **Artifact objects** > **Repository** topic for more information.
artifact version	An artifact version is a collection of `0` to `N` files that were published to an artifact repository.
backingstore	The backingstore is the directory on the repository server where artifact versions are stored. By default, the backingstore is the <datadir>/repository-data directory in the repository installation—this default setting can be changed.
compression	Compression reduces transfer time when publishing an artifact. However, compression also adds overhead when computing the compressed data. If files included in the artifact version are primarily text files or are another highly compressible file format, the benefit of reduced transfer time outweighs the cost of computing compressed data.
continuous integration	Using continuous integration means a build is launched every time code changes are checked into a Source Control Management (SCM) system. The ElectricFlow ElectricSentry component is the engine for continuous integration, while the CI Continuous Integration Dashboard is the front-end user interface for ElectricSentry.
credential	A credential is an object that stores a user name and password for later use. You can use credentials for user impersonation and saving passwords for use inside steps. Two credential types are available: *stored* or *dynamic*.
custom property	Custom properties are identical to intrinsic properties and when placed on the same object, are referenced in the same manner and behave in every way like an intrinsic object-level property with one exception: they are not created automatically when the object is created. Instead, custom properties can be added to objects already in the database before a job is started, or created dynamically by procedure steps during step execution. Custom properties in a property sheet can be one of two types: *string* property or a *property sheet* property. String properties hold simple text values. Property sheet properties hold nested properties. Nested properties are accessed by way of the property sheet property of their containing sheet.

Term	Description
description	A description is an optional plain text or HTML description for an object. Description text is for your use, ElectricFlow does not use this information. If using HTML, you must surround your text with `<html> ... </html>` tags. The only HTML tags allowed in the text are: `<a> <b>   <div> <dl> <font> <i> <li> <ol> <p> <pre> <span> <style> <table> <tc> <td> <th> <tr> <ul>`
diagnostic extract	A diagnostic extract is a log file portion from a job step, typically describing an error or interesting condition, extracted by a postprocessor and saved for reporting. The postprocessor usually places this information in an XML file in the top-level job workspace directory, and then sets a property that contains the filename. The ElectricFlow *postp* postprocessor uses filenames like `diag-2770.xml`, where "2770" is the unique identifier for the step. Other postprocessors you may use can have a different filename configuration.
dynamic credential	Dynamic credentials are captured when a job is created. Dynamic credentials are stored on the server temporarily until the job completes and then discarded.
ec-perl	*ec-perl* is a small wrapper program installed as part of ElectricFlow. When the ec-perl wrapper runs, it sets up the environment, finds, and calls ElectricFlow's copy of Perl, passing all of its parameters to Perl.
ectool	*ectool* is the ElectricFlow command-line application that provides control over the ElectricFlow system if you prefer using a command-line interface rather than the ElectricFlow web interface. Most functions that can be invoked through the ElectricFlow web interface can be invoked using ectool.
ElectricAccelerator	ElectricAccelerator is a software build accelerator that dramatically reduces software build times by distributing the build over a large cluster of inexpensive servers. Using a patented dependency management system, ElectricAccelerator identifies and fixes problems in real time that would break traditional parallel builds. ElectricAccelerator plugs into existing Make-based infrastructures seamlessly and includes web-based management and reporting tools.
ElectricSentry	ElectricSentry is the ElectricFlow engine for continuous integration, integrating with numerous Source Control Management (SCM) systems. ElectricSentry is installed automatically with ElectricFlow and is contained in a plugin named ECSCM and in the Electric Cloud project. **Note:** The CI Continuous Integration Dashboard is the front-end user interface for ElectricSentry.
email configuration	Before you can send an email notifier, you must set up and email configuration, which establishes communication between the ElectricFlow server and your mail server.
email notifier	After setting up the ElectricFlow server and your mail server to communicate, you can send email notifications (notifiers). You can attach email notifiers to procedures, procedure steps, and state definitions.

Term	Description
Event log	See log.
Everyone	A special intrinsic access control on page 4-1group that includes **all** users.
filter	Two filter categories: • Intrinsic filters - these filters provide a convenient way to access certain well-defined fields for jobs. • Custom filters - these filters allow you to access a much broader range of values, including custom properties. Any values accessible through an intrinsic filter can be checked using a custom filter also (though not as conveniently).
formal parameter	A formal parameter is an object that defines a parameter expected by a procedure, including its name, a default value, and an indication of whether the parameter is required. Formal parameters are different from "actual parameters": formal parameters define the kinds of parameters a procedure is expecting, and actual parameters provide values to use at run-time.
gateway	To communicate with a resource, workspace, or artifact repository server in another zone, a "gateway" must be created. A gateway object contains two resource (agent) machines. For example, GatewayResource1 and GatewayResource2 are each configured to communicate with the other. One gateway resource resides in the *source* zone and the other in the *target* zone. A gateway is bidirectional and informs the ElectricFlow server that each gateway machine is configured to communicate with its other gateway machine (in another zone).
group	A group defines a collection of users for access control purposes. A group can be defined externally in an LDAP or Active Directory repository, or *locally* in the ElectricFlow server. See the **ElectricFlow Help** > **Web Interface Help** > **Users and Groups** > **Groups** topic for more information.
impersonation	Impersonation is a mechanism that allows a job step to execute under a particular login account (the ElectricFlow agent "impersonates" a particular user during the execution of that step).Impersonation is implemented using credentials. See the *ElectricFlow User Guide* for more information.
inheritance	A feature of the ElectricFlow access control mechanism where access to a particular object is determined by the access control list for that object, and also by the access control lists of the object's parent and other ancestors. Each object can be configured to enable or disable inheritance from its ancestors.

Term	Description
intrinsic property	Intrinsic properties represent attributes that describe the object to which they are attached. ElectricFlow automatically provides intrinsic properties for each similar type object within ElectricFlow. For example: Every project has a `description` property that can be referenced with a non-local property path such as `/projects/Examples/description`.
job	A job is the output associated with invoking a ElectricFlow procedure. A new job is created each time you **run** (execute) a procedure.
job configuration	A job configuration is an object containing all parameter and credential information needed to run a procedure. A Job Configuration section is provided as part of the ElectricFlow Home page to make it easy for you to invoke your favorite configurations with a single mouse click. You can create job configurations in three ways: • From the Job Details page for a previously invoked job, click the **Save Configuration** link at the top of the page. Your saved job configuration will be displayed on your Home page. • Create a job configuration from "scratch" by clicking the **Create** link in the Job Configurations section (on the Home page). In the Create Configuration pop-up menu, select the project and procedure you want to use for creating this configuration. • On the page for editing a schedule, click the **Save Configuration** link at the top of the page. Your saved configuration will be displayed on your Home page.

job name template	This is the template used to determine the default name for jobs launched from the procedure. You can create a Job Name Template when you create a procedure.
	For example:
	In the Job Name Template field, you might enter:
	`$[projectName]_$[/increment /myproject/jobCounter]_$[timestamp]`
	which produces a name like:
	`projectFoo_1234_20140102130321`
	You can enter any combination of elements to create procedure names more meaningful to you. For example, you could choose to include the build number and procedure name.

jobs quick view	A Jobs Quick View section is one of the facilities provided on the ElectricFlow Home page. This section allows you to define a category of jobs interesting to you (such as all running jobs or all jobs for a particular product version). Your Home page can display the last several jobs in each category you define.

Term	Description
job step	After a procedure is executed, the resulting job contains one job step for each step in the original procedure. The job step records information about the procedure step execution, such as the command executed, the resource where it executed, execution time, and error information.
job workspace	A directory (containing all files and subdirectories) allocated by ElectricFlow for a particular job. Each job workspace is allocated as the child of a workspace root directory. See workspace.
local group	A group defined *inside* ElectricFlow, as opposed to a group defined in an external repository. A local group can refer to both local and remote users, whereas a group in an external repository refers to users in that repository only. See group.
local user	A user defined *inside* ElectricFlow, as opposed to a user defined in an external repository. If a user defined in an external repository has the same name as a local user, the external user is not accessible. Local users are not visible outside ElectricFlow. Electric Cloud recommends using external accounts whenever available, but you may need to create local users if you do not have a shared directory service or if you need special accounts to use for ElectricFlow only. See user.
log	ElectricFlow provides a log for events generated anywhere in the system, including jobs and workflows. **Note:** From the Administration tab, the default view for the Event Log page is the warning (WARN) level. For workflow and job event logs, the default view from their respective pages is the information (INFO) level. • To see *only* events for a single workflow, select the Workflows tab, then a workflow Name to go to the Workflow Details page and click the View Log link at the top of the page. • To see *only* events for a single job, select the Jobs tab, then the Job name to go to the Job Details page and click the View Log link at the top of the page. • To see *only* events for a specific object, select the Search tab to go to the Define Search page. For example: You can select the Object Type, "Log Entry", then click the **Add Intrinsic Filter** link. Select the down-arrow where you see "Container" auto-populated and select "Container Type. Use the "equals" operator, then select the next down-arrow to choose an object. Click **OK** to start the search. See the **ElectricFlow Help** > **Web Interface Help** > **Event Log** topic for more information.

Term	Description
matcher	A *matcher* controls the postp postprocessor. Use matchers to extend postp with additional patterns if you find useful patterns in your log files undetected by postp. A matcher contains a pattern that matches lines in a step's log and actions to carry out if/when the pattern matches.
misfire policy	A misfire policy allows you to manage how a schedule resumes in cases where the normal scheduled time is interrupted. Available options are: `skip` (all misfires are ignored and the job runs at the next scheduled time) and `run once` (after one or more misfires, the job runs at the soonest time that occurs within an active region). See schedule.
parameter	A property value passed into a procedure when it is invoked (at *run* time), and used by the procedure to change its behavior. Two types of parameters: actual and formal.
plugin	A plugin is a collection of one or more features, or a third-party integration or tool that can be added to ElectricFlow. Plugins are delivered as a JAR file containing the functional implementation. When a plugin is installed, the ElectricFlow server extracts the JAR contents to disk into a configurable plugins directory. A plugin has an associated project that can contain procedures and properties required by the implementation. A plugin can provide one or more new pages for the web interface and may also provide a configuration page so you can provide additional information that may be necessary to implement the plugin. For a complete list of plugins that are bundled with ElectricFlow, see Plugins That are Bundled with ElectricFlow.
polling frequency	The *polling frequency* is how often the ElectricSentry continuous integration engine is set to look for new code check-ins. The default is set to every 5 minutes, but this number can be adjusted.
pool	Also known as "resource pool". A pool is a collection of resources. If a step specifies a pool name as its resource, ElectricFlow can choose any available resource within that pool.
postp	*postp* is a postprocessor included with ElectricFlow. postp uses regular expression patterns to detect interesting lines in a step log. *postp* is already configured with patterns to handle many common cases such as error messages and warnings from *gcc*, *gmake*, *cl*, *junit*, and *cppunit*, or any error message containing the string "error." *postp* also supports several useful command-line options, and it can be extended using "matchers" to handle environment-specific errors. See matcher.

Term	Description
postprocessor	A postprocessor is a command associated with a particular procedure step. After a step executes, the postprocessor runs to analyze its results. Typically, a postprocessor scans the step log file to check for errors and warnings. Also, it records useful metrics such as the number of errors in properties on the job step, and extracts step log portions that provide useful information for reporting. ElectricFlow includes a standard postprocessor called *postp* for your use and you can "extend" postp. See matcher.
preflight build	A preflight build provides a way to build and test a developer's changes before those changes are committed. A "post-commit" source tree is simulated by creating a clean source snapshot and overlaying the developer's changes on top of it. These sources are then passed through the production build procedure to validate the changes work successfully. Developers are allowed to commit their changes only if the preflight build is successful. Because developer changes are built and tested in isolation, many common reasons for broken production builds are eliminated.
privileges	ElectricFlow supports four privilege types (for access control and security) for each object: • Read - Allows object contents to be viewed. • Modify - Allows object contents (but not its permissions) to be changed. • Execute - If an object is a procedure or it contains procedures (for example, a *project*), this privilege allows object procedures to be invoked as part of a job. For resource objects, this privilege determines who can use this resource in job steps. • Change Permissions - Allows object permissions to be modified.
procedure	A procedure defines a process to automate one or more steps. A procedure is the ElectricFlow unit you execute (*run*) to carry out a process. A step in one procedure can call another procedure (in the same or different project), and this procedure then becomes known as a "subprocedure" (also known as a "nested" procedure). The step can pass arguments to the subprocedure.

Term	Description
project	A project is a top-level container for related procedures, workflows, schedules, jobs, and properties, which is used to isolate different user groups or functions, and also encapsulate shared facilities. Projects have two purposes: • Projects allow you to create separate work areas for different purposes or groups of people so they do not interfere with each other. In a small organization, you might choose to keep all work within a single project, but in a large organization, you may want to use projects to organize information and simplify management. • Projects simplify sharing. You can create library projects containing shared procedures and invoke these procedures from other projects. After creating a library project, you can easily copy it to other ElectricFlow servers to create uniform processes across your organization.
project principal	*Project principal* is a special user ID associated with each project. If a project name is "xyz," the project principal for that project is `"project: xyz"` (with an embedded space). This principal is used when procedures within the project are run, so you can create access control entries for this principal to control runtime behavior.
property	A property is a `name-value` pair associated with ElectricFlow objects to provide additional information beyond what is already built into the system. Built-in data is accessible through the property mechanism also. Two types of properties: *intrinsic* and *custom*. ***ElectricFlow provides Intrinsic properties and allows you to create Custom properties.*** **Note:** Intrinsic properties are case-sensitive. Custom properties, like all other object names in the ElectricFlow system, are case-preserving, but not case-sensitive. • **Intrinsic properties** These properties represent attributes that describe the object to which they are attached, and are automatically by ElectricFlow for each similar type object. For example, every project has a`Description` property that can be referenced with a non-local property path such as `/projects/Examples/description`. • **Custom properties** Custom properties are identical to intrinsic properties and when placed on the same object, are referenced in the same manner, and behave in every way like an intrinsic object-level property with one exception: they are not created automatically when the object is created. Instead, custom properties can be added to objects already in the database before a job is started, or created dynamically by procedure steps during step execution.

Term	Description
property sheet	A property sheet is a collection of properties that can be nested to any depth. The property value can be a string or a nested property sheet. Most objects have an associated "property sheet" that contains custom properties created by user scripts.
proxy agent	A proxy agent is an agent on a supported Linux or Windows platform, used to proxy commands to an otherwise unsupported agent platform. Proxy agents have limitations, such as the inability to work with plugins or communicate with ectool commands.
proxy resource	This resource type requires SSH keys for authentication. You can create proxy resources (agents and targets) for ElectricFlow to use on numerous other remote platforms/hosts that exist in your environment.
proxy target	A proxy target is an agent machine on an unsupported platform that can run commands via an SSH server.
publisher	A publisher is the job that completes the *publish* operation for an artifact version.
quiet time	An inactivity period before starting a build within a continuous integration system. This time period allows developers to make multiple, coordinated check-ins to ensure a build does not start with some of the changes only—assuming all changes are checked-in within the specified inactivity time period. This time period also gives developers an opportunity to "back-out" a change if they realize it is not correct. Using ElectricSentry, the inactivity time period can be configured globally for all projects or individually for a single project.

reports	ElectricFlow provides multiple reports and custom report capabilities to help you manage your build environment.
	• Real-time reports - filtered view of your workload in real-time
	• Build reports - summary reports produced at the end of a build and attached to the job
	• Batch reports - summaries of your build environment with trends over time, two types:
	  • Default Batch reports - automatically installed during ElectricFlow installation and scheduled to run daily (Cross Project Summary, Variant Trend, Daily Summary, Resource Summary, Resource Detail)
	  • Optional Batch reports - you can configure, rename, and schedule these reports to fit your requirements (Category Report, Procedure Usage Report, Count Over Time Report, Multiple Series Reports)
	• Custom reports - your choice to create and add at any time

Term	Description
repository or repository server	The artifact repository is a machine where artifact versions are stored in either uncompressed `tar` archives or compressed `tar-gzip` archives. The repository server is configured to store artifact versions in a directory referred to as the repository *backingstore*. By default, the backingstore is the `<datadir>/repository-data` directory in the repository installation—this default setting can be changed. A *repository* is an object that stores artifact versions. This object primarily contains information about how to connect to a particular artifact repository. Similar to steps in a procedure, repository objects are in a user-specified order. When retrieving artifact versions, repositories are queried in this order until one containing the desired artifact version is found. Connection information is stored in the repository object on the ElectricFlow server.
resource	A resource specifies an agent machine where job steps can be executed. Resources can be grouped into a "pool", also know as a "resource pool." ElectricFlow supports two types of resources: • **Standard** - specifies a machine running the ElectricFlow agent on one of the supported agent platforms • **Proxy** - requires SSH keys for authentication. You can create proxy resources (agents and targets) for ElectricFlow to use on numerous other remote platforms/hosts that exist in your environment.
schedule	A schedule is an object used to execute procedures automatically in response to system events. For example, a schedule can specify executing a procedure at specific times on specific days. Three types of schedules are available: Standard, Continuous Integration, and Custom (custom schedules are typically continuous integration schedules that do not use the ECSCM plugin).
Sentry schedule	A continuous integration schedule created using the ElectricSentry engine for continuous integration or the CI Continuous Integration Dashboard, which is an easy- to-use front-end user interface for the ElectricSentry engine.
shortcut	One type of shortcut is part of the ElectricFlow Home page facility and records the location of a page you visit frequently (either inside or outside of ElectricFlow), so you can return to that page with a single click from the Home page. Another type of shortcut is a context-relative shortcut to property paths. This shortcut can be used to reference a property without knowing the exact name of the object that contains the property. You might think of a shortcut as another part of the property hierarchy. These shortcuts resolve to the correct property path even though its path elements may have changed because a project or procedure was renamed. Shortcuts are particularly useful if you do not know your exact location in the property hierarchical tree.

Term	Description
state	Workflows always have a single active *state*. Each state in a workflow, when it becomes active, can perform an action. A state can run a procedure to create a subjob or run a workflow definition to create a subworkflow—in the same way that procedures can call other procedures. One or more states can be designated as "starting" states to provide multiple entry points into the workflow. See state definition.
state definition	Workflow objects are split into two types: *Definition* objects and *Instance* objects. Definition objects provide the template for a running workflow instance. You create a new workflow by defining a Workflow Definition along with its State Definition and Transition Definition objects. When you run the workflow definition, the system creates a new Workflow object with an equivalent set of State and Transition objects that represent the run-time instances of the workflow definition. **Note:** We omit the "Instance" qualifier for brevity in the API and the UI. Each workflow can contain one or more state objects. Defining states for a workflow is analogous to defining steps for a procedure.

step	A step is a procedure component. Each step specifies a command to execute on a particular resource or a subprocedure (nested procedure) to invoke. Commonly created steps include:
	• Command - This step invokes a `bat`, `cmd`, `shell`, `perl` script, or similar.
	• Subprocedure - This step invokes another ElectricFlow procedure.
	• Plugin step - These include task-specific steps. Depending on which step-type you choose, the information you need to enter is somewhat different. Some of the step types bundled with ElectricFlow include:
	  • Publish or retrieve artifact version
	  • Send Email
	  • Various SCM step types
	  • Build tools

stored credential	*Stored credentials* are given a name and stored in encrypted form in the database. Each project contains a list of stored credentials it owns. These credentials are managed from the Project Details page.
subprocedure	Creating subprocedures is a way of "nesting" procedures. A step (from any procedure) can call a procedure from another project or the same project. The procedure called by the step then becomes a subprocedure.
substitution	A mechanism used to include property values in step commands and elsewhere. For example, if a step command is specified as `"echo $[status]"`, and when the step executes there is a property named `"status"` with value `"success"`, the actual command executed will be `"echo success"`.

Term	Description
system object	This is a special object whose access control lists are used to control access to some ElectricFlow internals. System objects are: `admin`, `artifactVersions`, `directory`, `emailConfigs`, `forceAbort`, `licensing`, `log`, `plugins`, `priority`, `projects`, `repositories`, `resources`, `server`, `session`, and `workspaces`.
tag	A way to categorize a project to identify its relationship to one or more other projects or groups. You can edit a project to add a tag. Enter a tag if you want to categorize or "mark" a project to identify its relationship to one or more other projects or groups. For example, you might want to tag a group of projects as "production" or "workflow", or you might want to use your name so you can quickly sort the project list to see only those projects that are useful to you.
transition	Transitions are used to move workflow progress from one state to another state. Four types of transitions are available to move a workflow to the next state: • On Enter - transitions before sending notifiers or starting the sub-action • On Start - transitions immediately after starting the sub-action. These transitions are ignored if no sub-action is specified for the source state. • On Completion - transitions when the sub-action completes. These transitions are ignored if no sub-action is specified for the source state. **Note:** On Completion transitions are taken only if the state is still active when the sub-action completes, and are ignored if the workflow has transitioned to another state—this can occur if an On Start or Manual transition occurred before the sub-action completed. • Manual - transitions when a user selects the transition in the UI and specifies parameters. The same action can occur using ectool or the Perl API by calling transitionWorkflow. Only users who have "execute" permission on the transition are allowed to use the Manual transition. See transition definition.

Term	Description
transition definition	Workflow objects are split into two types: *Definition* objects and *Instance* objects. Definition objects provide the template for a running workflow instance. You create a new workflow by defining a Workflow Definition along with its State Definition and Transition Definition objects. When you run the workflow definition, the system creates a new Workflow object with an equivalent set of State and Transition objects that represent the run-time instances of the workflow definition. **Note:** We omit the "Instance" qualifier for brevity in the API and the UI. Each state can contain one or more transition objects. The transition definition object requires a name for the transition. This transition name will appear on the Workflow Definition Details page for quick reference and also on the State Definition Details page when you select the Transition Definitions tab. You can define one or more transitions for each state, depending on which transition options you want to apply to a particular state.
user	A user defines an account used to log into the system and control access to ElectricFlow objects. A user can be defined externally in an LDAP or Active Directory repository, or locally in ElectricFlow. See local user.
workflow	You can use a workflow to design and manage processes at a higher level than individual jobs. For example, workflows allow you to combine procedures into processes to create build-test-deploy lifecycles. A workflow contains *states* and *transitions* you define to provide complete control over your workflow process. The ElectricFlow Workflow feature allows you to define an unlimited range of large or small lifecycle combinations to meet your needs. See workflow definition.
workflow definition	Workflow objects are split into two types: *Definition* objects and *Instance* objects. Definition objects provide the template for a running workflow instance. You create a new workflow by defining a Workflow Definition along with its State Definition and Transition Definition objects. When you run the workflow definition, the system creates a new Workflow object with an equivalent set of State and Transition objects that represent the run-time instances of the workflow definition. **Note:** We omit the "Instance" qualifier for brevity in the API and the UI.

Term	Description

workflow name template	This is the template used to determine the default name of jobs launched from the workflow definition.
	For example:
	`$[projectName]_$[/increment /myproject/workflowCounter]_ $[timestamp]`
	(substitute your values for the names above)
	Produces a workflow name like:
	`projectName_123_20140102130321`

workspace	A workspace is a subtree of files and directories where job file data is stored. The term "workspace" typically refers to the top-level directory in this subtree.
workspace root	A workspace root is a directory in which ElectricFlow allocates job workspace directories. Each workspace root has a logical name used to refer to it in steps and procedures.
zone	A zone is a way to partition a collection of agents to secure them from use by other groups—similar to creating multiple top-level networks. For example, you might choose to create a developers zone, a production zone, and a test zone—agents in one zone cannot directly communicate with agents in another zone. A *default* zone is created during ElectricFlow installation. The server implicitly belongs to the default zone, which means all agents in this zone can communicate with the server directly (without the use of a gateway).