

ElectricFlow 5.4 User Guide

Electric Cloud, Inc.
www.electric-cloud.com

ElectricFlow 5.4

Copyright © 2002 – 2015 Electric Cloud, Inc. All rights reserved.

Published 4/22/2015

Electric Cloud® believes the information in this publication is accurate as of its publication date. The information is subject to change without notice and does not represent a commitment from the vendor.

THE INFORMATION IN THIS PUBLICATION IS PROVIDED “AS IS.” ELECTRIC CLOUD, INCORPORATED MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND WITH RESPECT TO THE INFORMATION IN THIS PUBLICATION, AND SPECIFICALLY DISCLAIMS IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Use, copying, and distribution of any ELECTRIC CLOUD software described in this publication requires an applicable software license.

Copyright protection includes all forms and matters of copyrightable material and information now allowed by statutory or judicial law or hereinafter granted, including without limitation, material generated from software programs displayed on the screen such as icons, screen display appearance, and so on.

The software and/or databases described in this document are furnished under a license agreement or nondisclosure agreement. The software and/or databases may be used or copied only in accordance with terms of the agreement. It is against the law to copy the software on any medium except as specifically allowed in the license or nondisclosure agreement.

Trademarks

Electric Cloud, ElectricAccelerator, ElectricCommander, ElectricInsight, and Electric Make are registered trademarks or trademarks of Electric Cloud, Incorporated.

Electric Cloud products—ElectricAccelerator, ElectricCommander, ElectricInsight, and Electric Make—are commonly referred to by their “short names”—Accelerator, Commander, Insight, and eMake—throughout various types of Electric Cloud product-specific documentation.

Other product names mentioned in this guide may be trademarks or registered trademarks of their respective owners and are hereby acknowledged.

Contents

ElectricFlow Overview	1
Concepts	1
Terminology	2
ElectricFlow Features	6
What You Can Do With ElectricFlow	8
One Application for Multiple Use Cases	9
Keeping Users Up-To-Date	9
Keeping Track of Changes	9
Taking Snapshots	10
Optimizing How Resources are Used	10
Customizing Deployments	10
Getting the Real-Time Status of Application Runs and Troubleshooting	11
Credentials and Impersonation in ElectricFlow	11
Example	11
Email Notifications in ElectricFlow	12
Deploying Applications in ElectricFlow	12
Local ElectricFlow System	13
ElectricFlow User Interfaces	15
ElectricFlow Buttons and Icons	15
Landing Page	29
Home Page	30
Main Menu	31
Applications	31
Environments	32
Automations	32
Admin	33
Settings Menu	35
Applications List	37
Applications Visual Editor	38
Application Tiers	39
Context Menu for the Application Tier and Component	40
Defining Components	43
Component Processes	46
Component Process Visual Editor UI	48
Application Processes	51
Application Process Visual Editor UI	52
Example: Defining Process Steps	54

Component and Application Process Steps	56
Designing a New Process Step	56
Modeling an Existing Process Step	58
Setting Parameters in the Process Step Dialog Boxes	58
Parameters in Application Processes	59
Environments List	62
Environments Visual Editor	65
Environment Tiers	67
Context Menu for the Environment Tier	67
Context Menu for the Resource	68
Adding Resources to an Environment Tier	69
Environment Templates List	70
Resource Templates List	71
Tier Maps	71
Application Notifications Dialog Box	73
Setting Notifications for the First Time	74
Enabling Notifications	75
Adding Notifications	77
Deleting Notifications	79
Disabling Notifications	80
Change History Search Form	82
Change History Page	84
Paths to Objects	86
Detailed Object Changes	87
Snapshot List	87
Snapshot Details Page	89
Snapshot Dialog Boxes	91
New Snapshot Dialog Box	92
Component View in the New/Preview Dialog Box	92
Modifying the Artifact Version	94
App Process View in the New/Preview Dialog Box	95
Inventory Tracking	96
Tracking at the Component Process Level	96
Environment Inventory	97
Application Inventory	100
Viewing Job Details	102
Modeling and Deploying Applications in Static Environments	106
Logging in to ElectricFlow	108
Modeling Applications	109
Creating an Application and Application Tiers	110
Creating a New Application	112
Adding Components to the Application Tiers	113
Adding a Component	115
Adding an Application Tier	115
Modeling Component Processes	115
Modeling More Component Processes	123

Modeling Application Processes	123
Modeling More Application Processes	131
Using the Drag and Drop Method to Add Process Steps	131
Setting Parameters for Application Processes	134
Setting and Modifying the Parameter Label	142
Looking Up Parameters	147
Adding Credentials	148
Using Plugins	149
Setting Email Notifications	150
Selecting and Editing Email Messages	158
Component and Application Process Steps: ectool Example	163
Modeling Environments	166
Adding an Environment	167
Assigning Resources to Environment Tiers	169
Making Tier Maps	171
Deploying (Running) Applications	173
Overview	174
Deploying an Application	175
Deploying Applications with Parameters from Previous Runs	176
Deploying (Running) Applications with Schedules	183
Deploying Snapshots	190
Deploying or Comparing Snapshots	192
Setting Parameters in the Dialog Box	192
Deploying Snapshots	193
Comparing Snapshots	193
Deploying Applications with Parameters	193
Examples: Deploying (Running) Applications	194
Full Run	194
Partial Runs with Specific Artifact Versions	195
Viewing Results and Troubleshooting	197
Viewing the Environment Inventory and Application Inventory	198
Examples: Viewing Deployment Details	200
Running a New Search Through the Change History	203
Modeling and Deploying Applications in Dynamic Environments	210
Logging in to ElectricFlow	212
Modeling Applications	213
Creating an Application and Application Tiers	214
Creating a New Application	216
Adding Components to the Application Tiers	217
Adding a Component	219
Adding an Application Tier	219
Modeling Component Processes	219
Modeling More Component Processes	227
Modeling Application Processes	227
Modeling More Application Processes	235
Using the Drag and Drop Method to Add Process Steps	235

Setting Parameters for Application Processes	238
Setting and Modifying the Parameter Label	246
Looking Up Parameters	251
Adding Credentials	252
Using Plugins	253
Setting Email Notifications	254
Selecting and Editing Email Messages	262
Modeling Dynamic Environments	267
Usage Guidelines and Best Practices	268
Creating AMIs	269
AMIs with Commander Agents	269
AMIs with Commander Agents and Chef Configuration Management	270
Creating Resource Templates	271
Configuring Amazon EC2 as the Cloud Provider	272
Configuring OpenStack as a Cloud Provider	277
Configuring Chef as the Configuration Management Tool	284
Viewing and Editing Resource Templates	288
Accessing the Resource Templates in the ElectricCommander Automation Platform	294
Creating Environment Templates	296
Viewing and Editing Environment Templates	303
Modeling Environments with Resources or Resource Pools	308
Developer Task: Creating Custom Plugins	312
Creating Custom Cloud Provider Plugins	313
How to Create a Custom Cloud Provider Plugin	313
Example: Property Structure for a Cloud Provider Plugin	316
Creating Custom Configuration Management Plugins	317
How to Create a Custom Configuration Management Plugin	317
Example: Property Structure for a Configuration Management Plugin	320
Deploying Applications With Provisioned Cloud Resources	321
Deploying Applications with Parameters	328
Retiring Dynamic Environments	329
Dynamic Environment Example with Amazon and Chef	330
Resource Templates	330
Environment Templates	331
Deploying Applications to Dynamic Environments	332
Retiring Dynamic Environments	333
Process Branching	335
About Process Branching	335
How to Use the Process Branching UI	336
UI Objects	336
Branching Conditions Menu	338
Analysis of a Process With Simple Branching	341
Process Branching States and Conditions	343
State of the Branching Condition Connectors in the UI	343
Examples of Branching Conditions	343
Custom Conditions in Process Branching	344

Configuration Guidelines for Process Branching	348
Simple Process Branching Example	348
Process Branching Example: Deleting Steps	355
Change Tracking	361
Configuring Change Tracking	362
Enabling Change Tracking Globally	362
Enabling Change Tracking on a Per-Project Basis	362
Upgrading to ElectricFlow 5.4	363
Customizing the Change History Page	363
Usage Guidelines	363
Viewing the Change History	363
Viewing the Change History from the Applications List	364
Viewing the Change History From an Application or Environment	365
Application Visual Editor	366
Component Process Visual Editor	368
Environments Visual Editor	370
Environment Tier	371
Viewing the Change History for Artifacts, Jobs, Projects, and Workflows	372
Artifacts	372
Jobs	373
Projects	375
Workflows	375
Change History Page	376
Time Line	378
Number of Changes	383
Paths to Objects	384
Detailed Object Changes	384
Filters	385
Modifying the Change History	386
Change History Time Line	387
Change History Filters	393
Reverting and Exporting Changes to Objects	394
Searching Through the Change History	397
Running a New Search Through the Change History	397
Running a New Search Through the Change History in the ElectricCommander Platform UI	404
Searching Through the Change History From an Existing Change History	411
Snapshots	413
Adding Snapshots	413
Deploying Snapshots	417
Deploying or Comparing Snapshots	418
Setting Parameters in the Dialog Box	419
Deploying Snapshots	420
Comparing Snapshots	420
Managing Snapshots	420
Comparing Snapshots	421
Comparing an Application to Snapshots	421

Comparing Snapshots	423
Comparing an Application to Snapshots	425
Comparing Snapshots in the Snapshot List	428
Deleting Snapshots	431
Selecting Snapshots to Delete	431
Deleting All the Snapshots	432
ElectricFlow Tutorials	433
Running Applications with Deploy Options	433
Before You Begin	433
Tutorial	434

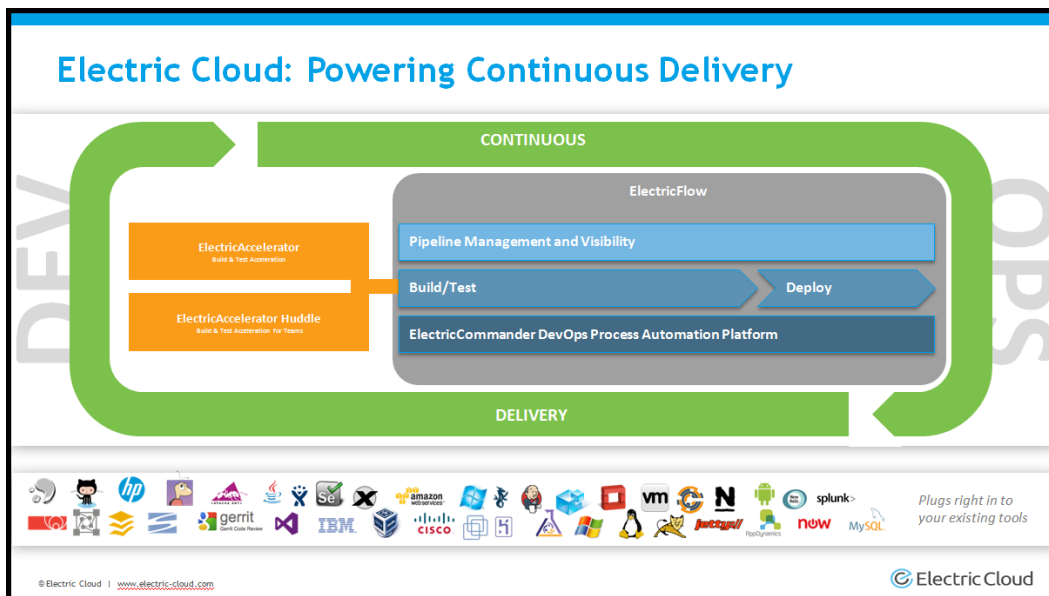
ElectricFlow Overview

ElectricFlow™ accelerates the continuous delivery of software. It provides domain-specific capabilities to orchestrate build, test, deploy, and release processes across many delivery pipelines. ElectricFlow includes ElectricCommander, a powerful platform that natively integrates these domain-specific capabilities to provide Enterprise-level continuous delivery. ElectricFlow makes software delivery processes repeatable, visible, scalable, and efficient.

ElectricCommander® is a powerful automation platform that provides distributed DevOps teams shared control and visibility into infrastructure, tool chains, and processes. ElectricCommander accelerates and automates the software delivery process and enables agility, availability, predictability, and security across many build-test-deploy pipelines.

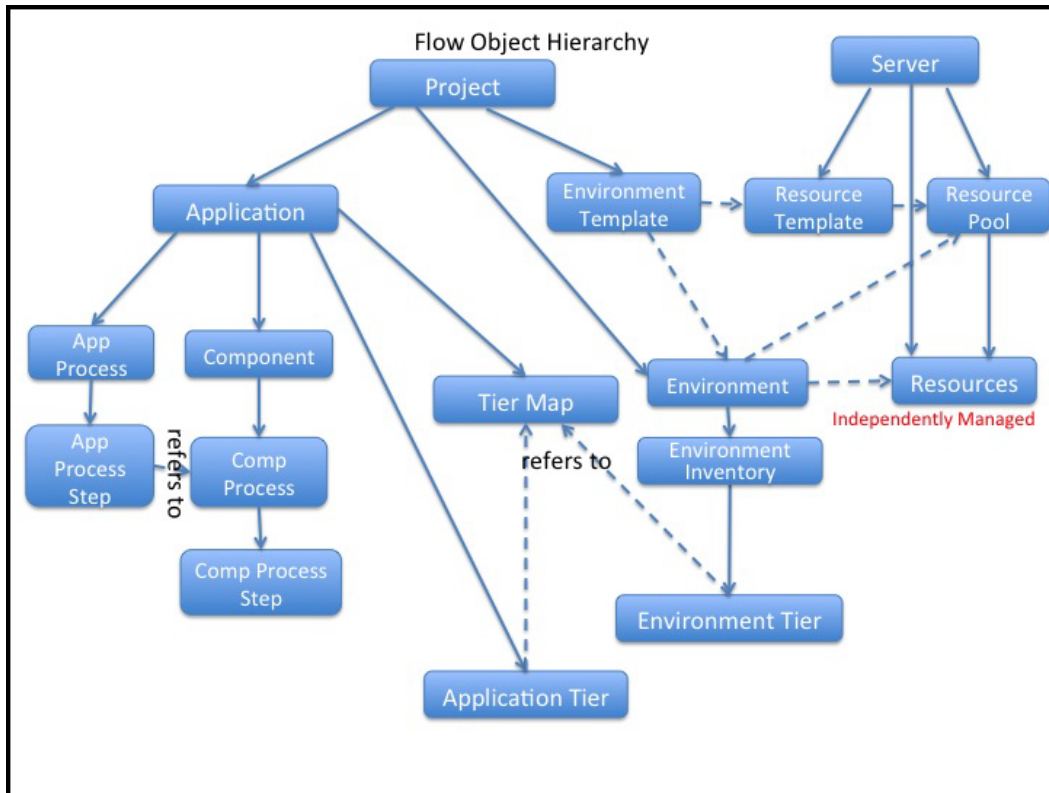
The following diagram shows how ElectricFlow provides continuous delivery.

- ElectricFlow provides management and visibility of the build, test, deploy, and release phases.
It provides tracking and pipelines for continuous delivery using deployment application processes.
- ElectricFlow is built on the proven ElectricCommander platform, which automates the software build and release process using procedures.
- ElectricAccelerator performs the build and test phases of the continuous delivery process using procedures.



Concepts

The following diagram shows the relationships between the objects in ElectricFlow.



This is a typical sequence of steps to model and deploy an application in ElectricFlow:

1. Create the application and application tiers.
2. Create components and component processes.
3. Create application processes.
4. Create resources.
5. Create environments and environment tiers, and assign resources to the tiers.
6. Map application tiers to environment tiers.
7. Deploy (run) the application.

Terminology

In ElectricFlow, you model and deploy applications to automate tasks and to orchestrate processes in the build, test, deploy, and release phases of your application life cycle.

ElectricFlow has these objects and concepts:

- **Application**—*Application* can refer to one of these entities:
 - Within ElectricFlow, you model and deploy (run) an application to build, test, deploy, and release your software for continuous delivery across different pipelines. An application consists of application tiers, components in these tiers, component processes, and application processes. Before running an application in ElectricFlow, you must map its application tiers to

corresponding environment tiers where the application will run.

- Outside of ElectricFlow, application refers to the software or application that you want to deploy, where the deployment includes build, test, installation, implementation, deploy, and release processes.

This is the end product of using ElectricFlow.

- **Application Inventory**—Where ElectricFlow shows the status of an application as it runs and the results of previous runs. It includes when the application ran, how long it took, whether the application ran successfully or not, error messages, and links to more information for troubleshooting.
- **Application process**—A group of steps, actions, or component processes taken when the ElectricFlow application is deployed. You can re-use and rerun the process more than once.
- **Application tier**—A logical grouping of components in an ElectricFlow application, which must have one or more tiers with components. A tier can have one or more components.
- **Automation platform**—A software application that automatically runs tasks and procedures and manages the objects in them. ElectricFlow, a continuous delivery solution, is built on the ElectricCommander automation platform.
- **Change history**—A record of the historical states of the system and the changes between them over time.
- **Change Tracking**—How ElectricFlow monitors the changes to tracked objects, including applications, procedures, workflows, workspaces, resources, and project-owned components (such as libraries), and how it records a *change history*.
- **Component**—An object based on a specific version of an artifact that is defined in an application. Artifacts are defined and managed in the ElectricCommander automation platform. A component is the result of running an ElectricFlow application and has details, properties, and access control settings. It can be used by other ElectricFlow applications, or it can be the part of the continuous delivery solution. You add a component to an application tier.
- **Component process**—A group of steps or actions taken on a component when the ElectricFlow application is deployed. You can re-use and rerun these processes more than once.
- **Deploy**—*Deploy* can refer to one of these activities:
 - Within ElectricFlow—Running the application that you modeled in ElectricFlow. The result is your software, application, or system, such as a WAR file, database, or configuration.

You model an application and an environment, define component and application processes, map application tiers to environment tiers, and run the application in the environment.

Note: Within ElectricFlow, the terms *deploy* and *run* are synonymous. When deploying an application in ElectricFlow, you are actually running it to produce your software or application..
 - Outside of ElectricFlow—Running all the processes, procedures, or actions to develop and deploy your software in the appropriate environment, where the deployment includes build, test, installation, implementation, deploy, and release phases.

- **Deploying (running) applications**

You can deploy applications one of these ways:

- **Full deploy**—The system deploys all the objects (including application processes, components, and artifacts) in the application.
 - **Smart deploy**—The system deploys only the artifacts that have not been deployed to a resource or specific versions of the artifacts or have not been deployed to new resources.
 - **Partial deploy**—The system deploys only objects that you select.
 - **Partial deploy with specific artifact versions**—The system deploys only the artifacts with selected versions.
 - **Schedule**—Create schedules to run applications on a one-time, daily, weekly, or monthly basis.
 - **Snapshot**—Select a snapshot to deploy.
- **Dynamic environment**—An environment that is automatically created on an on-demand basis, when you deploy an application in ElectricFlow.

A dynamic environment is an environment that is provisioned using an environment template. You can add provisioned cloud resources as well as static resources to an environment template. All of the following are considered to be dynamic environments:

- An environment with only provisioned cloud resources
- An environment with only static resources added to an environment template
- An environment with provisioned cloud resources and static resources.

The provisioned cloud resources are spun up when you are ready to deploy the application. The static resources that are part of your system or network (such as servers, databases, and agent machines).

- **Dynamic resource pools**—Resource pools that are created by provisioning a resource or environment template in ElectricFlow or in the ElectricCommander automation platform.
- **Dynamic resources**—Resources in the cloud that you can provision and later spin up when the application is deployed. You can also group these resources into dynamic cloud resource pools. You can define these resources in resource templates.
- **Environment**—Within the ElectricFlow system, the location to which a resource is assigned and where the application runs. See also *dynamic environment* and *static environment*.
Before running an application in ElectricFlow, you must map its application tiers to corresponding environment tiers where the application will run.
- **Environment inventory**—How ElectricFlow represents the status of an application as it runs in a specific environment at any point in time during the life cycle of your software.
It tracks the application processes as they run and the results of previous runs, when the application ran, how long it took, the versions of the deployed software artifacts, the resources used, error messages, and links to more information for troubleshooting.
- **Environment template**—A template defining an environment that can be spun up when the application is deployed. The template details include the environment name, its description, the environment tiers, and the resources assigned to the environment tiers. You can add one or more static resources to an environment tier. When adding resource templates to a tier, you can add only one resource template and then enter the number of dynamic resources to provision.

- **Environment tier**—A logical grouping of resources in an ElectricFlow environment, which must have one or more tiers with resources. A tier can have more than one resource.
- **Inventory Tracking**—How ElectricFlow tracks what is deployed for continuous delivery.

ElectricFlow tracks this information at the application and environment levels. The environment inventory is more comprehensive than the application inventory. For more information, see the application inventory and environment inventory.

- **Launch pad**—A starting point on the Home page from which you can go to the Applications List, Environment List, or ElectricCommander automation platform to model the ElectricFlow application. You deploy this application to build, test, deploy, and release your software for continuous delivery.
- **Plugin**—An add-on program used by ElectricFlow to integrate with third-party tools, custom dashboards, and unique user experiences based on roles.
The ElectricCommander automation platform has an extensible architecture, and you can easily develop plugins with other tools and applications. Many plugins are automatically installed during the ElectricFlow installation, which makes them transparent to the user.
- **Process branching**—How to run job steps in an application or component process on a conditional basis in ElectricFlow.
- **Process type**—Select one of the following parameters to configure how Inventory Tracking works on an application or component process in ElectricFlow:
 - **Deploy**—Select this to enable Inventory Tracking. The ElectricCommander server tracks artifacts deployed to environments. This is the default.
 - **Undeploy**—Select this to configure the ElectricCommander automation platform to remove the environment inventory record after the first job step in a component process runs successfully.
 - **Other**—Select this to disable Inventory Tracking.
- **Resource**—An agent machine configured to communicate with the ElectricCommander automation platform. The application runs on the resource. The ElectricCommander automation platform defines and manages resources. See also *dynamic resource* and *static resource*.
- **Resource template**—A template with the required information to provision and later spin up cloud resources on an on-demand basis. You set the cloud provider and configuration management details in a resource template. In an environment template, you define environment tiers and can assign resource templates to the environment tiers. You can add, edit, or remove resource templates.
- **Run**—*Run* can refer to these activities:

- Within ElectricFlow—Deploying the application that you modeled in ElectricFlow. The result is your software, application, or system, such as a WAR file, database, or configuration.

You model an application and an environment, define component and application processes, map application tiers to environment tiers, and run the application in the environment.

Note: Within ElectricFlow, the terms *deploy* and *run* are synonymous. When deploying an application in ElectricFlow, you are actually running it to produce your software or application..

- Outside of ElectricFlow—Deploying all the processes, procedures, or actions to develop and deploy your software in the appropriate environment, where the deployment includes build, test, installation, implementation, deploy, and release phases.

- **Snapshot**—A version of an application with specific artifact versions and the state of the application at any point in time.
- **Static environment**—An environment with resources that are in your system or network, such as servers, databases, and agent machines. You model this environment and assign static resources to it before deploying the application.
- **Static resource**—A resource located in your system or network, not in the cloud. Servers, databases, and agent machines are examples of static resources.
- **Tier map**—The mapping of the application tiers to the corresponding environment tiers where the application will run. To run an application, you map one application tier to one or more environment tiers and must have at least tier map.

ElectricFlow Features

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 ElectricCommander 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 ElectricCommander 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 ElectricCommander 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 ElectricCommander 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. <i>Run</i> is a synonym of <i>deploy</i> in ElectricFlow.	All the processes or actions to use software in its environment, including implementing, installing, configuring, debugging, troubleshooting, and releasing.

What You Can Do With ElectricFlow

You can model your continuous delivery process to reliably and repeatedly deploy (build, test, implement, and release) your software. The process model connects applications to environments in ElectricFlow. It provides the logical structure on which you model and deploy (run) an application and has these benefits:

- **Repeatability**—You can run the process many times and get consistent and reliable results each time.
- **Flexibility**—You can model and deploy one process with different requirements and inputs, running conditions, and types of output. You can also easily revise your application to quickly respond the changes in the software and its environment.
- **Ability to deploy your software more than once**—You can deploy your process many times, knowing that it will run properly for various inputs, conditions, and output types.

One Application for Multiple Use Cases

In ElectricFlow, you can model an application that works for more than one deployment scenario. For example, you can deploy software releases for Linux, Javascript, and Windows using the same application. You can also specify who can run specific processes in the application and the environment in which the processes are run without modeling and running applications for each scenario.

When modeling the application and the environments in which it runs, you can implement the following:

- **Process branching**

Model an application or component process with more than one path. Decisions about the next step are made while the process runs.

ElectricFlow uses conditions (success, failure, or custom) to determine the path through the application or component process.

- **Credentials and impersonation**

You can control who runs an application or component process step and where that step runs (the environment) using credentials.

You can also attach one impersonation credential to an application process, a component process, or a process step to give a user higher order privileges for the only that part of the process or process step.

Keeping Users Up-To-Date

You can set email notifications, which are sent to users or groups who are interested in or need to know the results. Notifications are sent when the application, application process, or process step succeeds or fails. You can select recipients by specifying the user name, which is defined and managed in the ElectricCommander automation platform, or the user's email address. It is easy to customize the text for the email notification in the ElectricFlow UI.

Keeping Track of Changes

Starting in ElectricFlow 5.3, Change Tracking is available for more reliable and repeatable software deployments. ElectricFlow tracks changes to *tracked* objects including applications, artifacts, components, application and component process steps, jobs, resources, and workflows. It records a *change history* of the historical states of the system and the state changes.

You can use Change Tracking in these scenarios:

- When you are debugging a failed job or want to more information about a component, see the change history for the changes relevant to that object.
- When you search for specific change history records, filter the records by time frame, change type, entity type, or developer.
- Revert changes to an object or to an objects and its children.
- When you want to determine the differences between objects, export them at various levels in the object hierarchy.

Taking Snapshots

Starting in ElectricFlow 5.3, snapshots are available for more reliable and repeatable software deployments.

- You can model and save a version of your application with specific artifact versions and rerun it later, even if the latest version of the application changed.
- 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.
- You can create and save more than one snapshot for different deployment scenarios.
- You can view the snapshots in the Snapshot List. From this list, you can manage all your snapshots, compare two snapshots, or get more information about them.
- Comparing snapshots helps you to deploy applications with reliable and repeatable results during ongoing cycles of software releases. You can build and test applications using snapshots, and do not have to design a new application for each release.
- You can use snapshots to refine and optimize an application that fits your deployment scenario and ensure that this version is properly developed, tested, and released.

Optimizing How Resources are Used

Starting in ElectricFlow 5.4, you can model and create *dynamic environments* that are automatically spun up when an application is deployed. These environments can have cloud and static resources.

You provision cloud resources by using resource templates. When you are ready to deploy the application, use environment templates to dynamically create the environment.

Using dynamic environments allows you to do the following:

- Provide ways to optimize how cloud resources are used.
- Re-use provisioned resource pools.
- Track how provisioned cloud resources are used.
- Provide the status of the provisioning process.
- Verify the credentials of cloud resources before provisioning them.
- Configure the middleware of cloud resources on an on-demand basis.

Customizing Deployments

During the development, testing, and implementation of your application, you can deploy the application several ways, depending on what you want to do and where you are in the continuous delivery cycle.

- Full deploy—Deploy all of the artifacts in the application.
- Partial deploy—Deploy some of the artifacts by specifying the objects of the application to deploy or by specifying the artifact versions of the objects.
- Smart deploy—Deploy only the artifacts that have not been deployed to a resource, specific versions of artifacts, or artifacts that have not been yet deployed to new resources.
- Based on a schedule—Deploy the application a one-time, daily, weekly, or monthly basis.
- Snapshot—Select a snapshot to deploy.

- Based on custom parameters defined in application processes—Set these parameters when you deploy the application or when you define an application process step. They determine how the application should be deployed.

Getting the Real-Time Status of Application Runs and Troubleshooting

Go to the Application Inventory and the Environment Inventory to view the progress of the application as it runs and the results of previous runs. They show detailed results that can be used to troubleshoot the application.

- In the Application Inventory, you can get information about the application, its application processes, components, and job steps and about the status of these objects.
- In the Environment Inventory, you can get more details about the environment, the applications mapped to it, number of deployed artifacts in the applications, where the artifacts are deployed, and the status of these objects.

You can also create and compare snapshots.

Credentials and Impersonation in ElectricFlow

ElectricFlow uses credentials and impersonation to control who can deploy applications and where the applications are deployed (environment). The user settings and credentials are defined and managed in the ElectricCommander automation platform.

When modeling an application, you can attach one or more credentials to component or application process steps. However, you can attach only one impersonation credential to these objects:

- Component process
- Component process step
- Application process
- Application process step

When you deploy (run) the application, the system applies credentials and impersonation based on the ElectricFlow user permissions and deploys the application in one or more environments.

Example

This example describes how you can attach impersonation credentials to an application in ElectricFlow. An application has these credentials:

- Development (dev)
- Quality Engineering (qe)
- Production (prod)

Users have these privileges:

- User A is allowed to deploy the application to build a MySQL database in any environment and has admin privileges.
- User B is allowed to only deploy the application in the development and "quality engineering" environments and is not trusted in the production environment.

The following user permissions determine what users are allowed to do in ElectricFlow.

- When you configure User A's profile in the ElectricCommander automation platform and give User A higher-order privileges than other users, User A has the following credentials, including impersonation:

For each environment in ElectricFlow, set a property using a reference such as

`$[myEnvironment/dbConfigName]` and define a unique value, which can be passed as a credential to a process or process step.

- In the development (dev) environment, set `dbConfigName = dbUser_dev`.
 - In the quality engineering (qe) environment, set `dbConfigName = dbUser_qe`.
 - In the production (prod) environment, set `dbConfigName = dbUser_prod`.
- When you configure User B's profile in the ElectricCommander automation platform, User B is only given the credentials to deploy in the production environment. You do not need to set properties to be passed as credentials when the application is deployed.

You cannot configure these credentials and impersonation settings for User A and User B only using the ElectricCommander automation platform. To use impersonation in the ElectricCommander platform, the credentials are more complicated. You need to create three unique credentials for the environments in addition to credentials for the various user and environment combinations, such as User A and the development environment.

Email Notifications in ElectricFlow

ElectricFlow uses email notifications at the application, application process, and process step levels (application and component). The user settings are defined and managed in the ElectricCommander automation platform.

In ElectricFlow, email notifications work as follows:

- The notifications are triggered based on how the job finishes (the `onCompletion` event) and on the success or failure of the job.
- You set email notifications at the application, application process, and process step levels.
- You specify users, groups, or email addresses as recipients of the notifications.
- You can also target notifications at specific environments.
- You can enable or disable notifications at the application, application process, or process step level.

ElectricFlow provides two default templates for success and failure. You can also create new email templates to meet your needs. The templates have a name, subject, body, and type content that are stored as properties in ElectricFlow.

Deploying Applications in ElectricFlow

How you deploy applications in ElectricFlow depends on what you want to deploy:

- Full deploy—ElectricFlow deploys all the objects (including application processes, components, and artifacts) in the application. When you deploy an application for the first time, you must do a full deploy. Later, you can use this method to verify that the software is ready to be released.
- Smart deploy—The system deploys only the artifacts that have not been deployed to a resource, specific versions of the artifacts, or artifacts that have not yet been deployed to new resources. You can use this method during the development and test phases to verify artifact or resource updates.
- Partial deploy—The system deploys only objects that you select. You can use this method during the development and test phases to verify incremental changes.

- Partial deploy with specific artifact versions—The system deploys only the artifacts with selected versions. You can use this method during the development and test phases to verify incremental changes.
- Schedule—You can create schedules to deploy applications on a one-time, daily, weekly, or monthly basis. You can schedule nightly builds so that the developers always have a new version to continue their work on every day.
- Snapshot—You select a snapshot to deploy. A snapshot is an immutable version of the application with specific artifact versions. When you save snapshots during the build, test, deploy, and release phases, you can compare them to optimize and troubleshoot the application in ElectricFlow.

Note: If you select a snapshot and modify it, it is no longer a snapshot and becomes a different version of the application, which you can save as a new snapshot.

- Based on custom parameters defined in application processes—Set these parameters when you deploy the application or when you define an application process step. They determine how the application should be deployed.

You can run applications by combining methods, such as smart deploy and a partial deploy with specific artifact versions, full deploy with a snapshot, or only smart deploy. This sequence is an example of how you may deploy your software over time.

- When you create an application in ElectricFlow and deploy it for the first time, you must do a full deploy. By default, smart deploy is disabled the first time that you run an application.
- Throughout these deployments, you can schedule the deployments to occur on a daily or weekly basis to provide builds that can be tested and installed on a regular basis.
- You can also save snapshots of the software at regular intervals or milestones. When you need to troubleshoot the software or want to do performance testing, you can use one of these snapshots for comparison.
- If the application does not deploy successfully, you can redeploy parts of it to troubleshoot the application or component processes that failed.

You can do a partial deploy and redeploy the application with only the objects that failed.

You can also do a partial deploy only with specific versions of artifacts to determine if one or more specific versions of artifacts are causing problems.

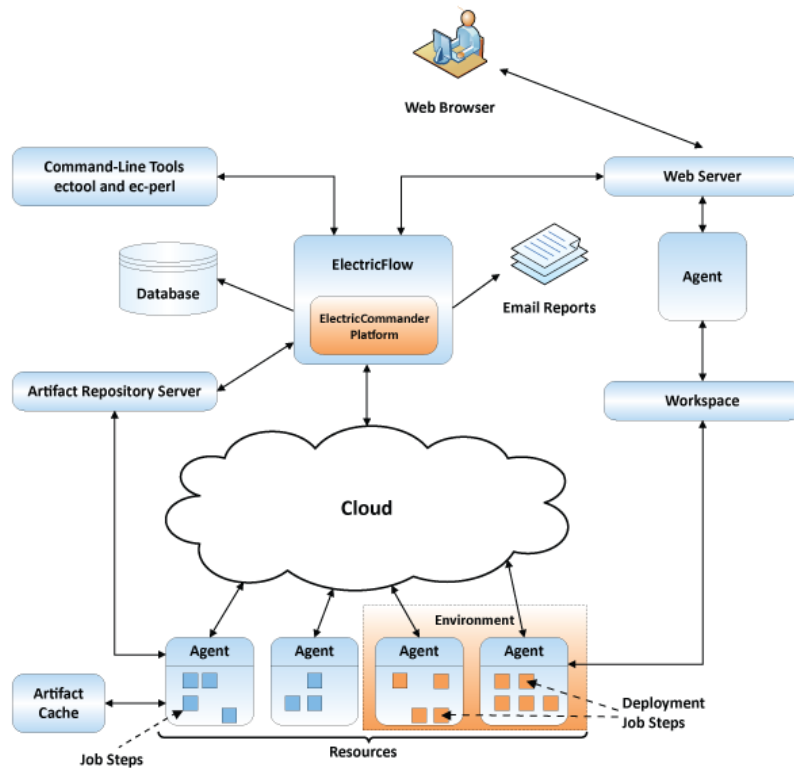
- Later, after successfully deploying the application, you can redeploy parts of the application when new versions of artifacts or new resources are available.
- When a new version of an artifact is released, you can deploy only the artifact by selecting the new version and doing a partial deploy.
- When you add artifacts and resources to the application, you deploy the new artifacts to resources and specific versions of selected artifacts to the new resources, a combination of smart deploy and partial deploy with specific artifact versions.

Local ElectricFlow System

In this local configuration:

- The ElectricCommander server manages resources, issues commands, and generates reports.
- Applications, components, environments, and job steps are defined in ElectricFlow.

- Job steps are executed on resources in the defined environments.
- An underlying database stores commands, metadata, and log files.



If you are only evaluating ElectricFlow, the ElectricFlow software, the database, the ElectricCommander 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 ElectricCommander server to prevent performance issues. It is acceptable for the Commander server, web server, and repository server to reside on the same machine in a local configuration, but not required.

ElectricFlow User Interfaces

The following topics describe how to use the ElectricFlow buttons and user interfaces (UIs) to model and deploy (run) applications in ElectricFlow.

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. <i>Run</i> is a synonym of <i>deploy</i> in ElectricFlow.	All the processes or actions to use software in its environment, including implementing, installing, configuring, debugging, troubleshooting, and releasing.





ElectricFlow Buttons and Icons






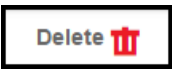
These buttons and icons appear in the ElectricFlow user interface (UI).


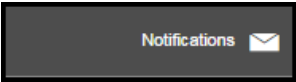


For more information about how they work in the UI, see the [ElectricFlow UI](#) topics.









Button or Icon	Name	Tooltip (Hover over the button to view the tooltip.)	How to Use It
	Add	Depends on where it is in the user interface	<p>Click this button to add an object. It appears in many places in the ElectricFlow UI.</p> <p>Examples:</p> <p>It appears in lower right corner of an application tier. Click it to add a component to the application tier.</p> <p>It also appears in a new resource in an environment tier. Click it to define the resource.</p>
	Add +	<p>Depends on where it is in the user interface.</p> <p>In the Applications List: Add new application</p> <p>In the Environments List: Add new environment</p>	Click this button to add an application or environment to the Applications List or the Environments List.
 	Add process	<p>Depends on where it is in the user interface.</p> <p>In the Applications List: Add application process</p> <p>In a component: Add component process</p>	Click this button to add an application or component process.






Button or Icon	Name	Tooltip (Hover over the button to view the tooltip.)	How to Use It
	Add step	Add step	Click this to add a step to an application or component process. When you click it, an undefined step appears. Drag and drop the step to where you want to add it in the process.
	Add tier	Add tier	Click this button to add a tier in the Applications Visual Editor or the Environments Visual Editor.
	Add tier map	Add tier map	Click this button to add a tier map.
	Application	–	When you see this icon in the ElectricFlow UI, the object is an application.
	Applications	–	Click this launch pad to go to the Applications List.
 	Artifact version	–	This appears in the Environment Inventory. The number next to the icon is the artifact version number.







Button or Icon	Name	Tooltip (Hover over the button to view the tooltip.)	How to Use It
	Automations	–	Click this launch pad to go to the ElectricCommander automation platform for more details about objects.
	Available	–	<p>When you see this button in the ElectricFlow UI, the environment is available. You can deploy an application in this environment.</p> <p>When you click this button, the environment becomes unavailable, and you cannot use this environment to deploy an application.</p>
	Breadcrumb	–	<p>Breadcrumbs show the path to where you are in the ElectricFlow UI in this format:</p> <p><i>object type/object name/...</i></p> <p>In this example, the breadcrumb goes to a component called <i>hc-warfile</i> and is in this format:</p> <p><i>Applications/<application name>/<component name>.</i></p>
		Change Alert	When you compare snapshots, this icon appears next to objects that have changed.

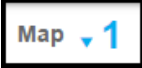






Button or Icon	Name	Tooltip (Hover over the button to view the tooltip.)	How to Use It
	Changes	Changes	<p>The tooltip message varies depending on the object that changed.</p> <p>For example, the tooltip can be "Component property has changed" or "Artifact version has changed."</p>
 	Compare snapshots	Compare snapshots from a list	<p>This is available (enabled) when the Snapshot List has two or more snapshots.</p> <p>Click this to open a full-screen window and view two snapshots next to each other.</p> <p>The default is to have the most recent snapshot on the left and the previous snapshot on the right.</p> <p>Go to Snapshot List on page 87 for more information.</p>
	Component	–	When you see this icon in the ElectricFlow UI, the object is a component.
	Copy		<p>Click this button to copy the information about an object.</p> <p>You can paste it in a text field or area.</p>
	Delete	Delete	<p>Click this button to delete the selected objects.</p> <p>The button is enabled when the objects have been selected.</p>








Button or Icon	Name	Tooltip (Hover over the button to view the tooltip.)	How to Use It
	Edit	Edit	Click this button to edit the name and description of the object.
	Email notifications	Email notifications	Click this to configure email notifications for the selected application.
	Add email notifications	Email notification, add	Click this to add an email notification to the selected application, application process, or process step in the "Application notification / edit" dialog box.
	Delete email notifications	Email notification, delete	Click this to delete an email notification in the selected application, application process, or process step in the "Application notification / edit" dialog box.



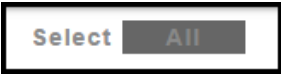



Button or Icon	Name	Tooltip (Hover over the button to view the tooltip.)	How to Use It
	Environment	–	This environment has only static resources and is available.
			This environment has only static resources and is not available.
			This environment has only dynamic resources and is available.
			This environment has only dynamic resources and is not available.
			This environment is a mixed and is available. Some tiers have dynamic resources while others have static resources.
			This environment is a mixed and is not available. Some tiers have dynamic resources while others have static resources.
	Environment s	–	Click this launch pad to go to the Environments List.
	Expand	Expand	Click this button to see all the changes to an object in the Change History.








Button or Icon	Name	Tooltip (Hover over the button to view the tooltip.)	How to Use It
	Export	Export	Click this button to export the object changes and save them as an XML file.
	Help	–	Click this button to see the Help text .
	Hide	Depends on where it is in the user interface. In the Applications List: Hide running process	Click this button to show less details about the object.
	Inventory	Inventory	Click this button to open the environment inventory.
	Lookup	–	Click this button to open the Parameter Lookup dialog box.




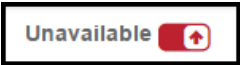

Button or Icon	Name	Tooltip (Hover over the button to view the tooltip.)	How to Use It
	Menu (The tooltip depends on where it is in the user interface.)	In the upper left corner of the page, it is referred to as the <i>Main menu</i> .	When you click this button, a destination list opens that includes the launch pads on the Home page.
		In the upper right corner of a visual editor, it is referred to as the <i>Context menu</i> .	When you click this button, a list of options appears. Click one of these to view more information about the object.
		In the upper right corner of a tier, it is referred to as a <i>Context menu</i> .	When you click this button, a list of options appears. Click one of these to view more information about the Application or Environment tier.
		In the upper left corner of a component or resource, it is referred to as a <i>Context menu</i> .	When you click this button, a list of options appears. Click one of these to view more information about the component or resource.
	Number of processes	–	Click the down arrow next to the number to open the list of existing processes. This also shows the number of application processes for the application.
	Number of process steps	–	In the ElectricFlow UI, this icon shows the number of steps in the process.





Button or Icon	Name	Tooltip (Hover over the button to view the tooltip.)	How to Use It
	Number of tier maps	–	Click the down arrow next to the number to open the list of existing tier maps. This also shows the number of tier maps for the application.
	Number of tiers	–	In the ElectricFlow UI, this icon shows the number of tiers in an application or environment.
	Parameter	–	When you see this icon in the ElectricFlow UI, the object is a parameter.
 	Process	–	When you see this icon in the ElectricFlow UI, the object is an application or component process.
	Process step	–	When you see this icon in the ElectricFlow UI, the object is a step in a component or application process.
	Provision	–	When you click this button, you provision cloud resources in a resource templates.

Button or Icon	Name	Tooltip (Hover over the button to view the tooltip.)	How to Use It
  	Resource	–	<p>When you see this icon in the ElectricFlow UI, the object is a resource.</p> <p>It appears in the Environments List and Environments Visual Editor.</p>
			<p>When you see this icon in the ElectricFlow UI, the object is a resource assigned to an environment tier.</p> <p>It is defined and managed in the ElectricCommander automation platform.</p>
	Resource pool		<p>When you see this icon in the ElectricFlow UI, the object is a resource pool.</p>
	Revert	Revert	<p>Click this button to revert the object to a previous version.</p>
	Run process	Run process	<p>Click this button to deploy (run) the application.</p> <p>The button is enabled when it is green.</p>

Button or Icon	Name	Tooltip (Hover over the button to view the tooltip.)	How to Use It
	Schedule	Schedule	Click this button to add or view schedules for an application.
	Search	Launch Change History Search	Click this button to open the Change History - Search dialog box.
 	Select	–	<p>Click this button to toggle between All and None. Click All to go to None. Click None to go to All.</p> <p>When All appears, all the objects in the list are selected.</p> <p>When None appears, no objects are selected.</p>
	Select All	Select All	Click this button to see all the changes to an object in the Change History.
	Settings	Settings	<p>Click this button to open a list of links to the administration area in the ElectricCommander automation platform.</p> <p>For more information, see the "Settings Menu on page 35" topic.</p>

Button or Icon	Name	Tooltip (Hover over the button to view the tooltip.)	How to Use It
	Snapshot	Deploy snapshot	Click this button to create a snapshot (New Snapshot) or go to the Snapshot List (Snapshot List). When you see this icon in the Snapshot dialog boxes, the object is a snapshot.
	Tear down	–	Click the button to retire a dynamic environment. This button works only on dynamic environments.
	Template	–	Depending on where you click the button, clicking this button results on one of these actions: <ul style="list-style-type: none"> • Display the history of the environment template in the Environments List. • Open a drop-down list of templates that you can use for an email notification setting. • Open the Environment Templates List. • Open the Resource Templates List.
	Email message template		
	Environment template		
	Resource template		
	Tier		
		–	When you see this icon in the ElectricFlow UI, the object is an environment tier.

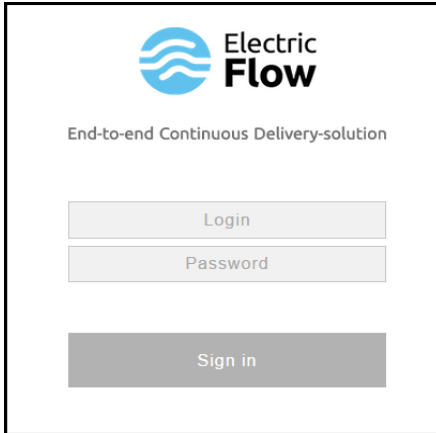
Button or Icon	Name	Tooltip (Hover over the button to view the tooltip.)	How to Use It
	Tier map	–	When you see this icon in the ElectricFlow UI, the object is a tier map.
 	Track Changes	<p>Depends on where it is in the user interface.</p> <ul style="list-style-type: none"> • Launch Change History Search • Track Changes 	<p>Click this button to open the Change History for an object.</p> <p>When you hover over this icon, this tooltip appears: Track Changes.</p>
	Unavailable	–	<p>When you see this button in the ElectricFlow UI, the environment is not available. You cannot deploy an application in this environment.</p> <p>When you click this button, the environment becomes available, and you can deploy an application in it.</p>
	View	<p>Depends on where it is in the user interface.</p> <p>In the Applications List: View running process</p>	Click this button to show more details about the object.

Button or Icon	Name	Tooltip (Hover over the button to view the tooltip.)	How to Use It
	View details	View details	Click this button to view more details about the object. Depending on where you are in the ElectricFlow UI, you may go to a new page or dialog box.
	View details	–	Click this button to open the ElectricCommander automation platform. A page opens where you can view more details about the object in the ElectricCommander automation platform.
	View only information	–	This information is view only. ElectricFlow automatically adjusts the page settings to show all the information on the page. For example, if application tiers do not fit on the page at 100% magnification, ElectricFlow reduces the magnification until they all appear on the page.
	View path	View path	Click this button to see the path to the object in the change history.

Landing Page

How to get to here: Enter **http://<commander-server>/flow** in a browser window, where *<commander-server>* is the ElectricCommander server IP address or host name.

To log in, go to the landing page:

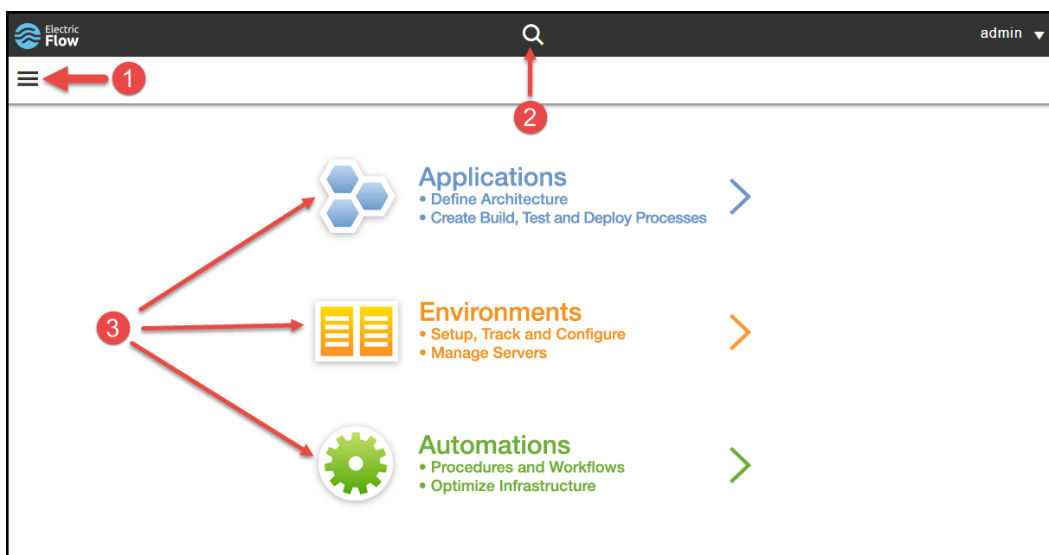


The login page features the ElectricFlow logo at the top, followed by the tagline "End-to-end Continuous Delivery-solution". Below this are three input fields: "Login", "Password", and a "Sign in" button.

Home Page

How to get to here: From the landing page, enter your user name and password and click **Sign in**.

From the Home page, you can model an application for your continuous delivery solution.

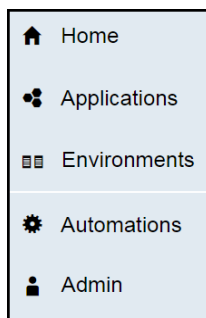


1	Menu button —Click this to open a list of destinations, which includes the list of launch pads on this page.
2	Search button —Click this to open the Change History - Search dialog box.

3	<p>Launch pads—Click one of these buttons to start modeling the ElectricFlow application.</p> <ul style="list-style-type: none"> • Applications—Click this to open the Applications List. From this list, you start to model applications by defining the application architecture and modeling the component and application processes. • Environments—Click this to open the Environments List. From this list, you start to model the environments in which applications are run by assigning and managing resources. • Automations—Click this to open the Home user interface (UI) in the ElectricCommander automation platform. From this page, you start to define procedures and workflows for your software development life cycle in the ElectricCommander automation platform.
---	--

Main Menu

How to get here: Click on the **Main menu** button.



These are the main-menu options:

- **Home**—Click **Home** to close this menu and return to the Home page.
- **Applications**—Click **Applications** to open the Applications List.
- **Environments**—Click **Environments** to open the Environments List, Environment Templates List, or the Resource Templates List.
- **Automations**—Click **Automations** to open the Procedures, Workflows, or .
- **Admin**—Click **Admin** to open the Users or Groups page in the ElectricCommander automation platform.

Applications

When you click **Applications**, the Applications List opens:

4 Applications					Select	All	Delete	Add
1	Heat Clinic Store 1.1	5	Component	2	Application Process	3	Tier Map	
2	HeatClinic	3	Component	2	Application Process	1	Tier Map	
3	jpetstore-aws-beanstalk	1	Component	3	Application Process	3	Tier Map	
4	jpetstore2	2	Component	2	Application Process	1	Tier Map	

Environments

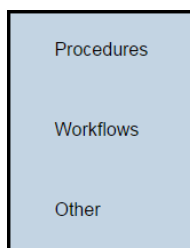
When you click **Environments**, a menu where you select the type of environment to view or create opens.



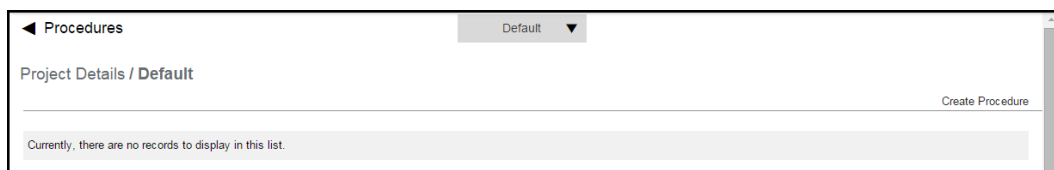
- When you click **Environments** > **All Environments**, the Environments List opens.
- When you click **Environments** > **Environment Templates**, the Environment Templates List opens.
- When you click **Environments** > **Resource Templates**, the Resource Templates List opens.
- When you click **Environment** > **Resources**, you go to the ElectricCommander automation platform where the **Resources** page opens.

Automations

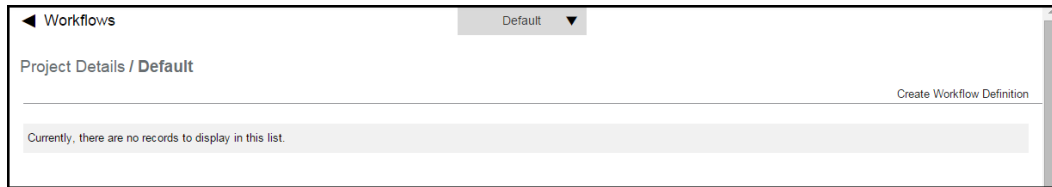
When you click **Automations**, this menu opens:



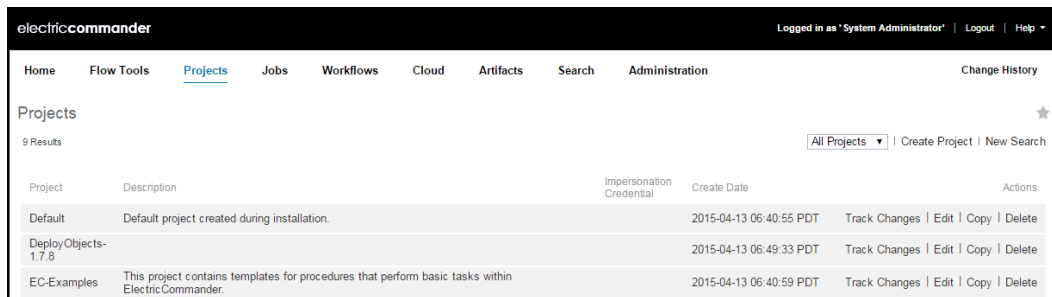
When you click **Automations** > **Procedures**, the **Procedures** page opens.



When you click **Automations > Workflows**, the **Workflows** page opens.

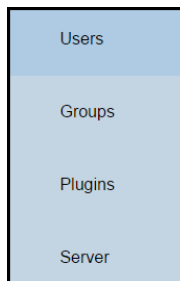


When you click **Automations > Other**, you go to the ElectricCommander automation platform where the **Projects** page opens..

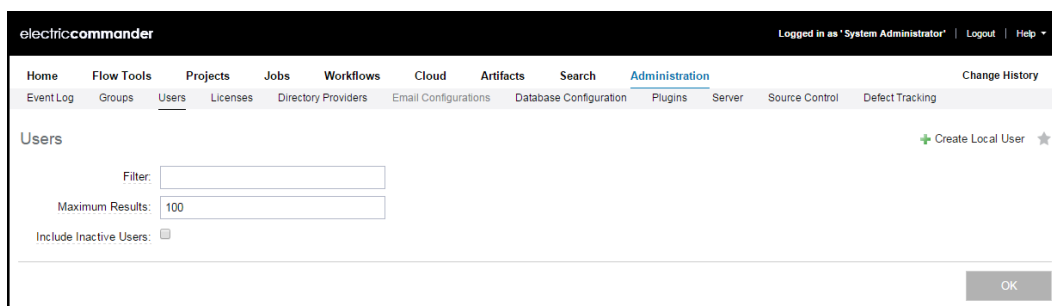


Admin

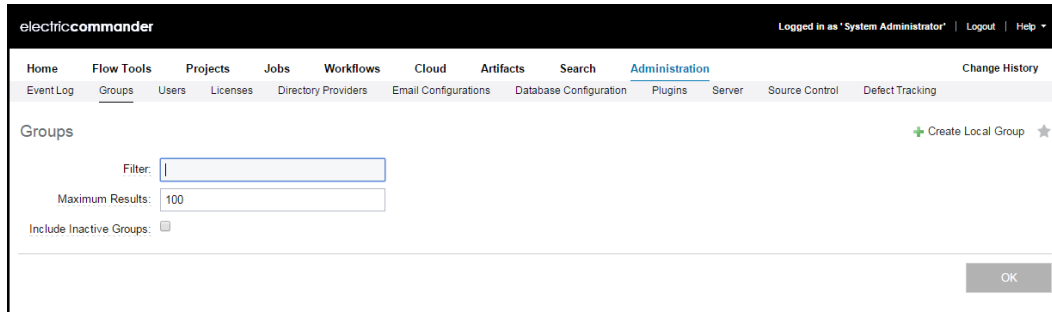
When you click **Admin**, this menu opens:



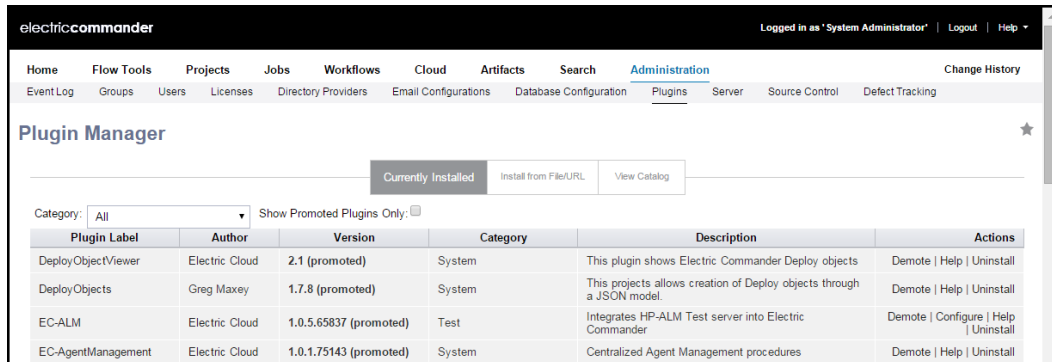
When you click **Admin > Users**, you go to the **Users** page in the ElectricCommander automation platform. You can view and manage the ElectricFlow users from this page. For more information about the **Users** page, go to the **ElectricCommander Help > Web Interface Help > Users and Groups**.



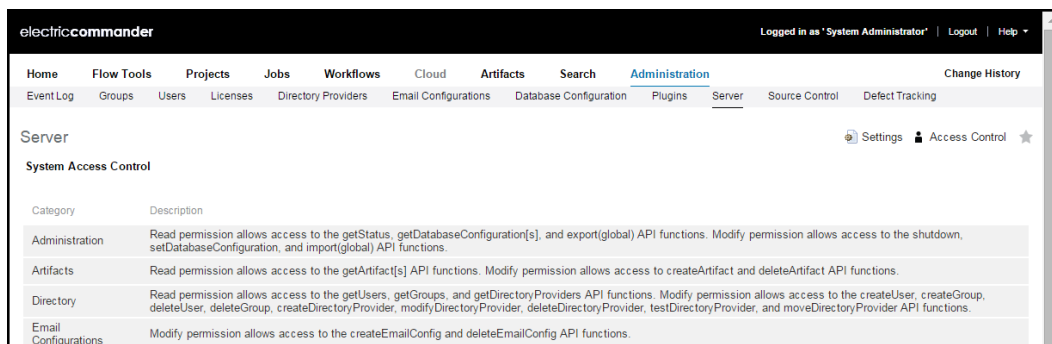
When you click **Admin > Groups**, you go to the **Groups** page in the ElectricCommander automation platform. You can view and manage the ElectricFlow groups from this page. For more information about the **Groups** page, go to the **ElectricCommander Help > Web Interface Help > Users and Groups**.



When you click **Admin > Plugins**, you go to the **Plugins** page in the ElectricCommander automation platform. You can view and manage the ElectricFlow plugins from this page. For more information about the **Plugins** page, go to the **ElectricCommander Help > Web Interface Help > Plugin Manager**.

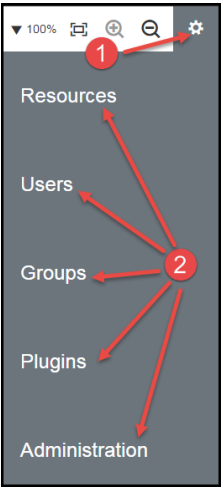


When you click **Admin > Server**, you go to the **Server** page in the ElectricCommander automation platform. You can view and manage the access control settings from this page. For more information about the **Server** page, go to the **ElectricCommander Help > Web Interface Help > Server**.



Settings Menu

How to get here:Click on **Settings** button. A list of links to the administration area in the ElectricCommander automation platform appears.



1	Settings button
2	Settings-menu options with links to the ElectricCommander automation platform: <ul style="list-style-type: none">• Resources• Users• Groups• Plugins• Administration

When you click a link, you go to one of the following areas in the ElectricCommander automation platform:

Resources–View and manage ElectricFlow resources on the Resources page in the ElectricCommander platform. For more information about the Resources page, go to the **ElectricCommander Help > Web Interface Help > Resources**.

electriccommander

Logged in as 'System Administrator' | Logout | Help

Home Flow Tools Projects Jobs Workflows **Cloud** Artifacts Search Administration Change History

Resources Pools Workspaces Zones Gateways

Resources ~ Current License Usage: 0 of 100 Concurrent Hosts; 0 of 100 Proxied Hosts

Filters

Resource Filters

Save Filters Reset

Quick Search

Status

Both Enabled/Disabled

Pools

Hosts

Step Limit

Proxy Agent

Filter

	Name	Template	Type	Time running	Pools	Job Status	Description	Zone	HTTPS & Host	Step Load	Actions
<input type="checkbox"/>	heatclinic-res					✓		default	localhost	0 of unlimited	Track Changes
<input type="checkbox"/>	Installer_Agent					✓		default	192.168.6.194	0 of unlimited	Track Changes
<input type="checkbox"/>	Installer_MySQL					No route to host		default	192.168.4.149	0 of unlimited	Track Changes
<input type="checkbox"/>	ipetstore					✓		default	localhost	0 of unlimited	Track Changes
<input type="checkbox"/>	local				default	✓	Local resource created during installation.	default	flow-demo-ua-electric-cloud.com	0 of unlimited	Track Changes

Users—View and manage ElectricFlow users on the Users page in the ElectricCommander platform. For more information about the Users page, go to the **ElectricCommander Help > Web Interface Help > Users and Groups**.

electriccommander

Logged in as 'System Administrator' | Logout | Help

Home Flow Tools Projects Jobs Workflows Cloud Artifacts Search **Administration** Change History

Event Log Groups **Users** Licenses Directory Providers Email Configurations Database Configuration Plugins Server Source Control Defect Tracking

Users

Filter:

Maximum Results: 100

Include Inactive Users: ☐

Create Local User

OK

Groups—View and manage ElectricFlow groups on the Groups page in the ElectricCommander platform. For more information about the Groups page, go to the **ElectricCommander Help > Web Interface Help > Users and Groups**.

electriccommander

Logged in as 'System Administrator' | Logout | Help

Home Flow Tools Projects Jobs Workflows Cloud Artifacts Search **Administration** Change History

Event Log Groups **Users** Licenses Directory Providers Email Configurations Database Configuration Plugins Server Source Control Defect Tracking

Groups

Filter:

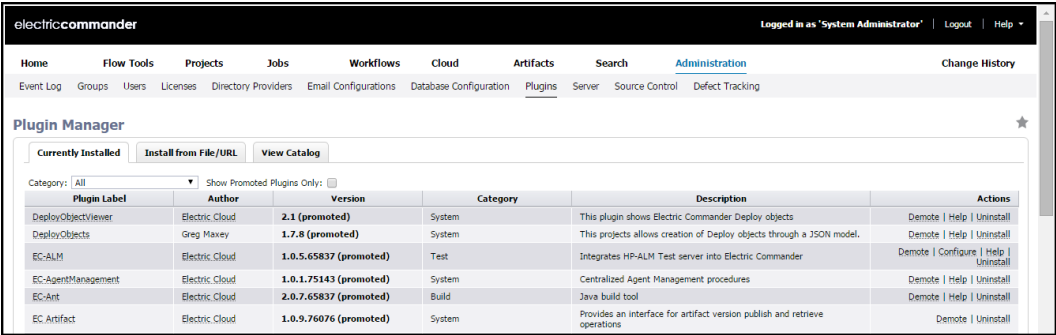
Maximum Results: 100

Include Inactive Groups: ☐

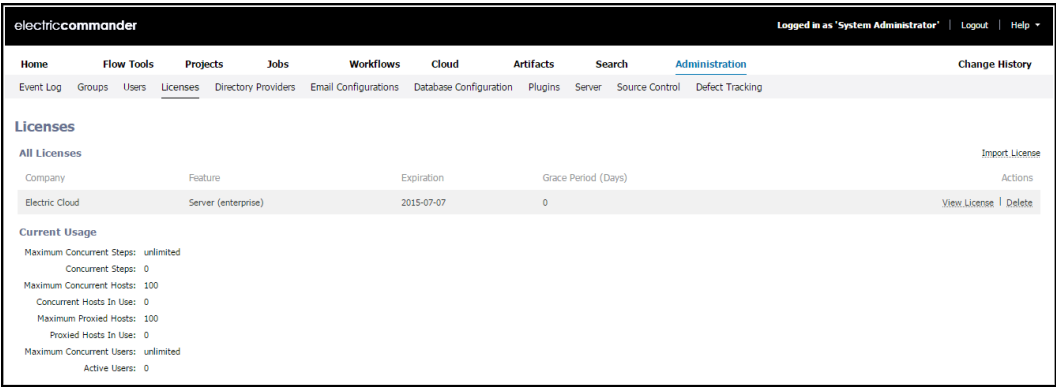
Create Local Group

OK

Plugins—View and manage ElectricFlow plugins in the ElectricCommander platform. For more information about the Plugin Manager, go to the **ElectricCommander Help > Web Interface Help > Plugins Manager**.



Administration–View and manage objects such as groups, users, licenses, and servers in the **Administration** tab in the ElectricCommander platform. The following UI shows the License page in the ElectricCommander platform. For more information, go to the **ElectricCommander Help > Web Interface Help**.

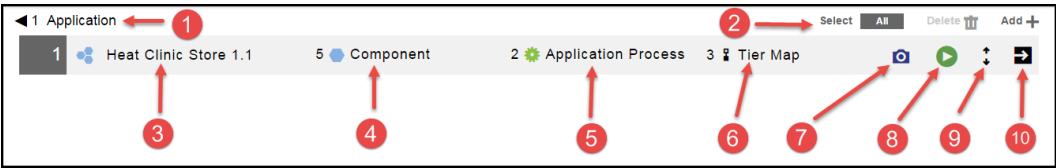


Applications List

How to get here:

One of these ways:

- From the Home page, click the **Applications** launch pad.
- Click the **Main menu** button, and then click **Applications**.



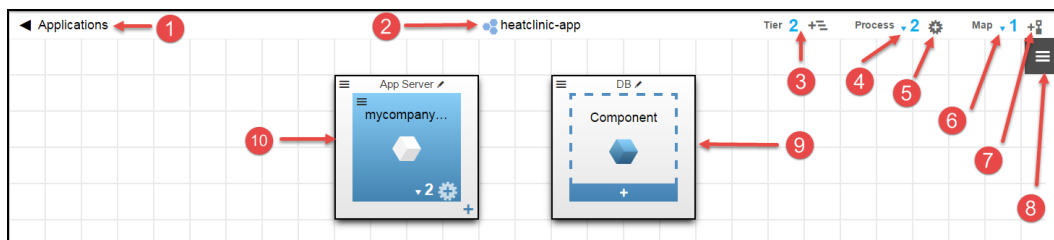
1	Breadcrumb showing the total number of applications in your ElectricFlow system.
---	--

2	Click the Select button to select all or none of the items in the list. Click the Delete button to delete the selected items. Click the Add + button to add an application.
3	Click the application name (in this example, Heat Clinic Store 1.1) to go to the Applications Visual Editor.
4	Number of components in the application. This shows that the application has five components.
5	Number of application processes in the application. This shows that the application has two application processes.
6	Number of tier maps for the application. This shows that the application has three tier maps.
7	Click the Snapshot button to take a new snapshot when you deploy (run) the application or to add a snapshot to the Snapshot List.
8	Click the Run process button to deploy (run) the application when the button is green. This is enabled when the application has one or more application processes.
9	Click the View button to see more details of the running process.
10	Click the View details button to go to the Applications Visual Editor.

Applications Visual Editor

How to get here: From the Applications List, click an application name.

Applications consist of application processes and components grouped into tiers.



1	Breadcrumb to the application
2	Name of the application
3	Number of tiers and the Add tier button Click the Add tier button to add a tier.

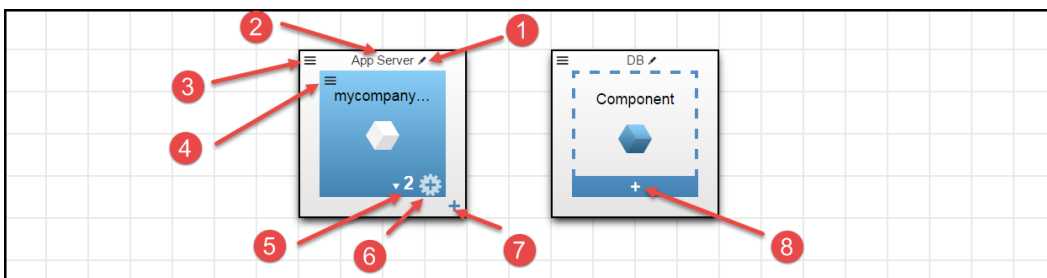
4	Click the number of applications (2) button to view the list of application processes for the application.
5	Click the Add process button to add a process.
6	Click the number of tier maps (1) button to view the list of tier maps for the application.
7	Click the Add tier button to add a tier map.
8	Click the Menu button to open the context menu. You can get more details about the application: <ul style="list-style-type: none"> • Details—The name and description of the object. • Properties—The properties in the object. • Notifications—The email notifications configured for the object. • Access Control—The access control configuration in the ElectricCommander platform for the object. • Track Changes—The change history of the object. • Delete—Delete this object.
9	Application tier with an undefined component
10	Application tier with a defined component

Application Tiers

How to get here: From the Applications Visual Editor, choose an application tier.

These are application tiers.

- The "App Server" tier has a defined component with two component processes.
- The DB tier has an undefined component.

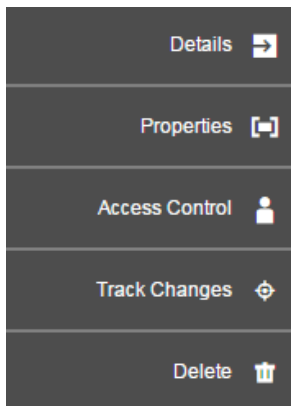


1	Click the Edit button to edit the tier name and description in the Application Tier Details dialog box.
2	Application tier name

3	Click the Menu button to view the application tier details.
4	Click the Menu button to view the component details.
5	Click the 2 (number of component processes) button to view the component processes.
6	Click the Add process button to add a component process.
7	Click the + button to add a component to the application tier.
8	In an undefined component, click the + button to define the component.

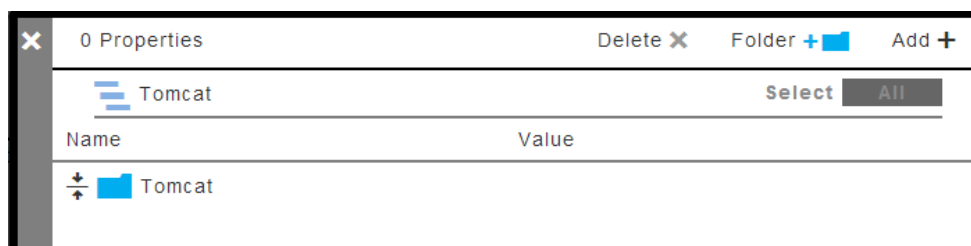
Context Menu for the Application Tier and Component

This menu appears when you click the **Menu** button:



In the Application Tier

- When you click **Details**, the **Application Tier Details** dialog box appears.
You can edit the application name and description.
- When you click **Properties**, the **Properties** dialog box appears, where you can set the properties for the application tier.



- When you click **Access Control**, you go to the Access Control page for the tier in the ElectricCommander platform, where you can set privileges for the objects in your application.
- When you click **Track Changes**, the Change History Search Form opens.

- When you click **Delete**, the **Delete Application Tier** dialog box appears.

Click **OK** to verify that you want to delete this application tier.

In the Component

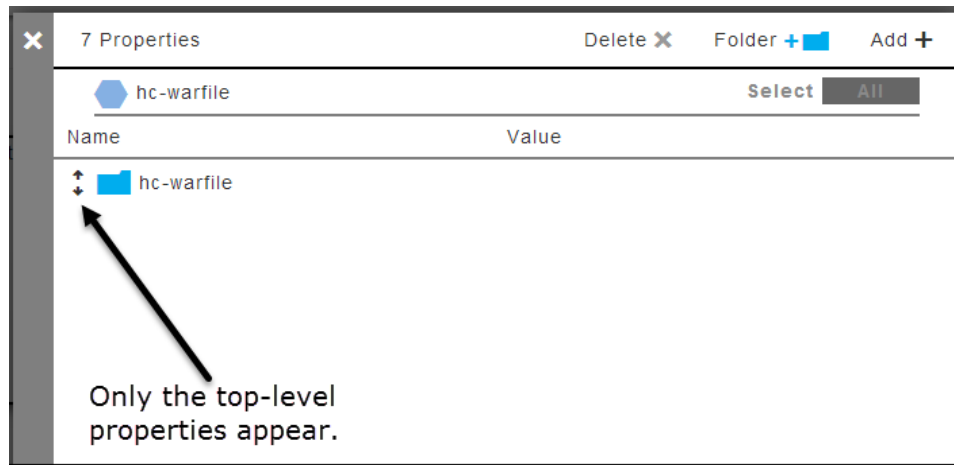
- When you click **Details**, the **Component Details** dialog box appears. The information that appears depends on your system.

In this example, the **Content Location** is EC-Artifact, the default plugin. In the **Artifact** field, *com.mycompany.heatclinic:config* comes from the Artifact Repository in the ElectricCommander platform.

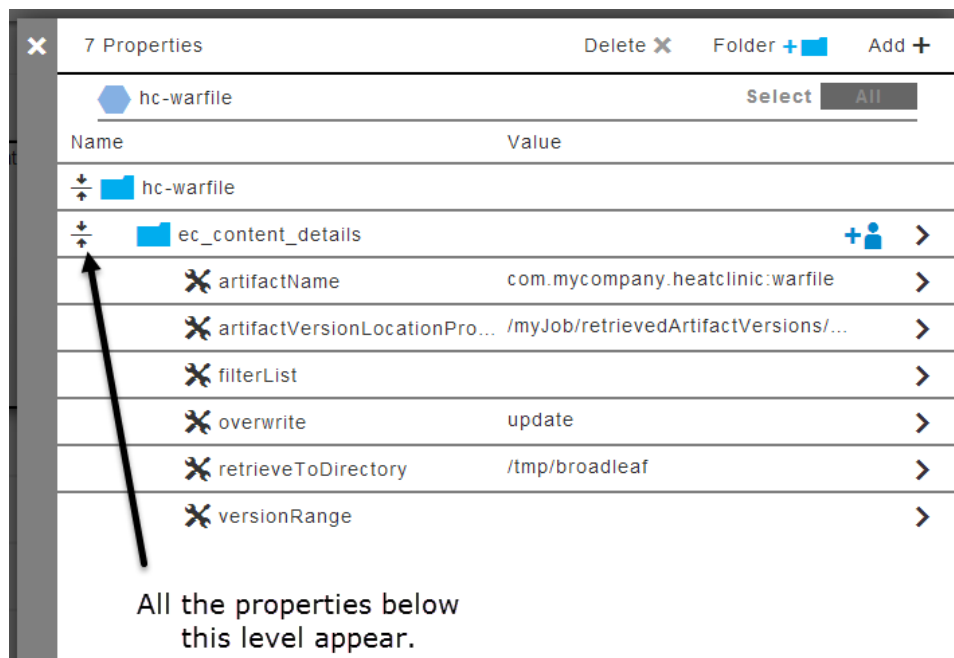
1	Content Location of the component
2	Component details that vary depending on the Content Location

- When you click **Properties**, the component **Properties** dialog box appears. You can set the properties for the component.

In this example, only the top-level component details appear.



When you click the **View** button, all the properties below the current level appear.



You can click the **Hide** button to show less details.

- When you click **Access Control**, the Access Control page for the component in the ElectricCommander platform opens, where you can set privileges for the objects in your application.

For more information, go to the **ElectricCommander Help > Overview > Access Control**.

- When you click **Track Changes**, the Change History Search Form opens.
- When you click **Delete**, the **Component Deletion** dialog box opens.

Click **OK** to verify that you want to delete this component.

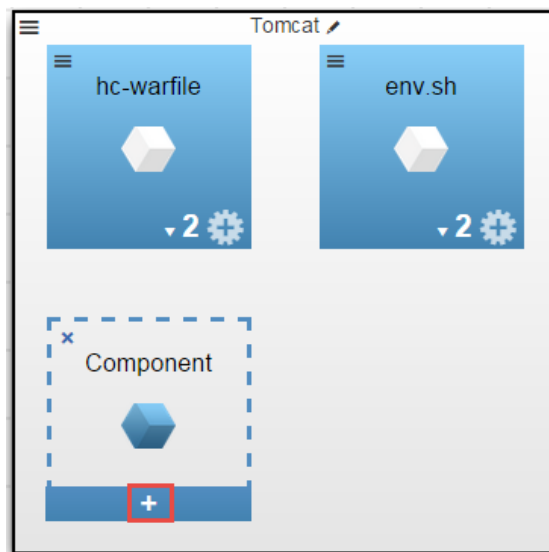
Defining Components

This example shows how to define a component in an application tier.

How to get to here: From the Applications Visual Editor, choose an application tier.

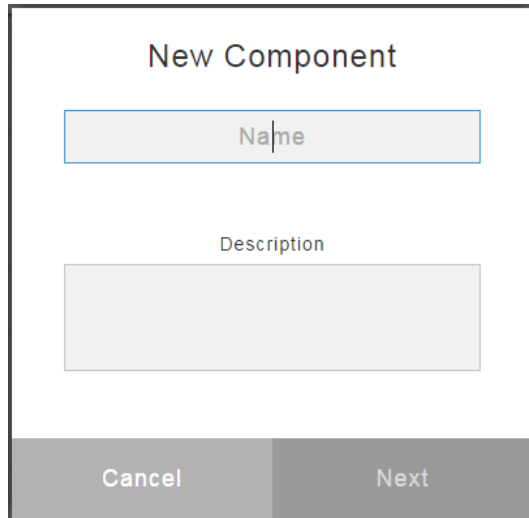
1. Click the **Add component** button to add a component.

A new component appears in the application tier.



2. Click the **+** button to define the component.

The **New Component** dialog box appears.



The image shows a 'New Component' dialog box. It has a title bar at the top with the text 'New Component'. Below the title bar, there is a text input field labeled 'Name' with a cursor inside. Below the 'Name' field, there is a larger text input field labeled 'Description'. At the bottom of the dialog box, there are two buttons: 'Cancel' on the left and 'Next' on the right. The 'Next' button is highlighted with a darker background color.

3. Enter the name and optional description of the component and click **Next**.

The **Component Details** dialog box appears.

4. Select the **Content Location**, enter the component details, and click **OK**.

In the following example:

- The new component is named *database.conf*.
- The Content Location is *EC-Artifact*, the default plugin.
- In the **Artifact** field, *com.mycompany.heatclinic:config* comes from the Artifact Repository in the ElectricCommander platform.

Component Details

database.conf Description

EC-Artifact Browse

Artifact: com.mycompany.heatclinic:config Required

Version: ☒ Latest ☐ Exact: ☐ Range:

Minimum: ☐ Inclusive? Maximum: ☐ Inclusive?

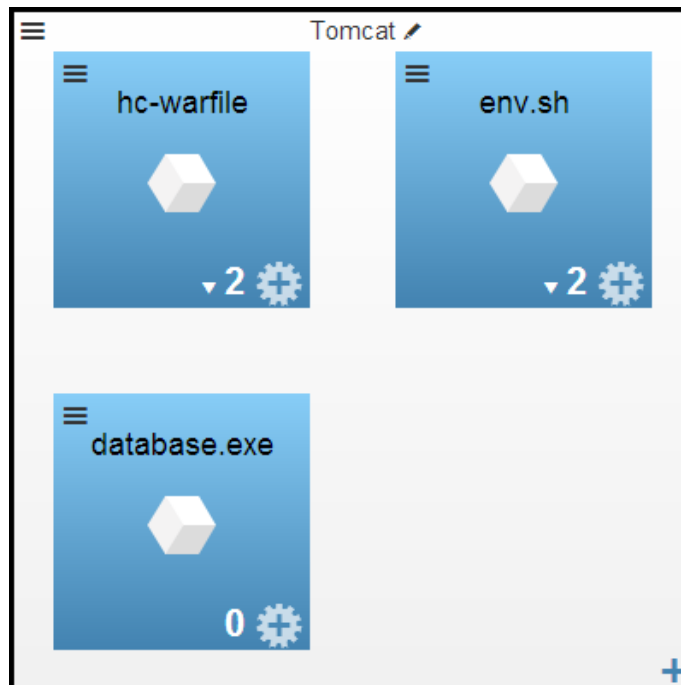
Retrieve to directory: ☒ /tmp/broadleaf Overwrite: update

Retrieved Artifact Location Property: /myJob/retrievedArtifactVersions/\${assignedResourceName}

Cancel OK

1	Content Location of the component
2	Component details that vary depending on the Content Location

The Applications tier now has new defined component.



Component Processes

How to get to the **Component Process Visual Editor** when modeling a new component process:

From the Applications Visual Editor, select a component in an application tier, and click the **Add process** button.

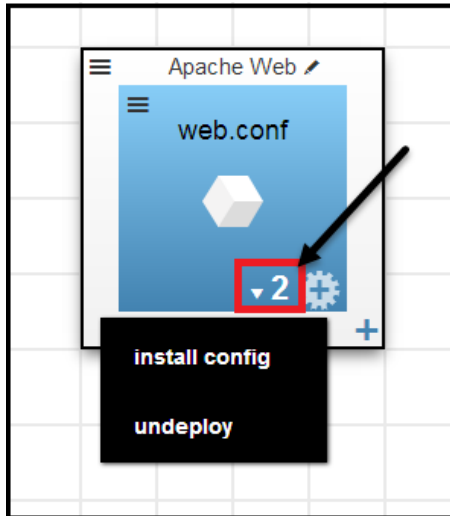
The **New Component Process Details** dialog box appears.

A screenshot of the 'New Component Process Details' dialog box. The dialog has a title bar 'New' and a main title 'Component Process Details'. It contains several fields: 'Name' (text input), 'Description' (text area), 'Deploy' (dropdown menu), 'Credential' (0), 'Workspace' (default), 'Time limit' (0), and 'Units' (Seconds). There are 'Cancel' and 'OK' buttons at the bottom.

Field	Description and How to Set It
Name	Name of the process step
Description	Description of the process step
Process Type	<p>Type of process. The default is Deploy.</p> <p>To set the process type:</p> <ol style="list-style-type: none"> 1. Click the Type field to select the process type. 2. Select one of these options: <p>Deploy—Enables Inventory Tracking. The ElectricCommander server tracks the artifacts deployed to environments.</p> <p>Undeploy—The next time that the process is run, the ElectricCommander server removes information about the artifacts deployed to environments.</p> <p>Other—Disables Inventory Tracking.</p>
Credential	<p>An object consisting of a user name and password that ElectricFlow uses to run a process step.</p> <p>The dialog box displays the number of credentials for the process step, which are the same credentials that you use with procedures, steps, and schedules in the ElectricCommander platform.</p> <p>You can only impersonate one credential. To set the process type, see Adding Credentials.</p>
Workspace	<p>Area in the disk space where the files and results of the job step are stored.</p> <p>To set the workspace, click the Workspace field to open a drop-down list of workspaces in the ElectricCloud platform and select a workspace.</p> <p>For more information about workspaces, go to the ElectricCommander Help > Workspaces and Disk Management. To set the workspace, click Workspace to open a drop-down list of workspaces in the ElectricCloud platform. Select a workspace, and click OK.</p>
Time limit	<p>Maximum length of time that the step is allowed to run. After the time specified, the step is aborted,</p> <p>To set the time limit, enter the time and select the unit of time: seconds, minutes, or hours.</p> <p>For information about time limits for procedure job steps in the ElectricCommander platform, go to the ElectricCommander Help > API Commands.</p>

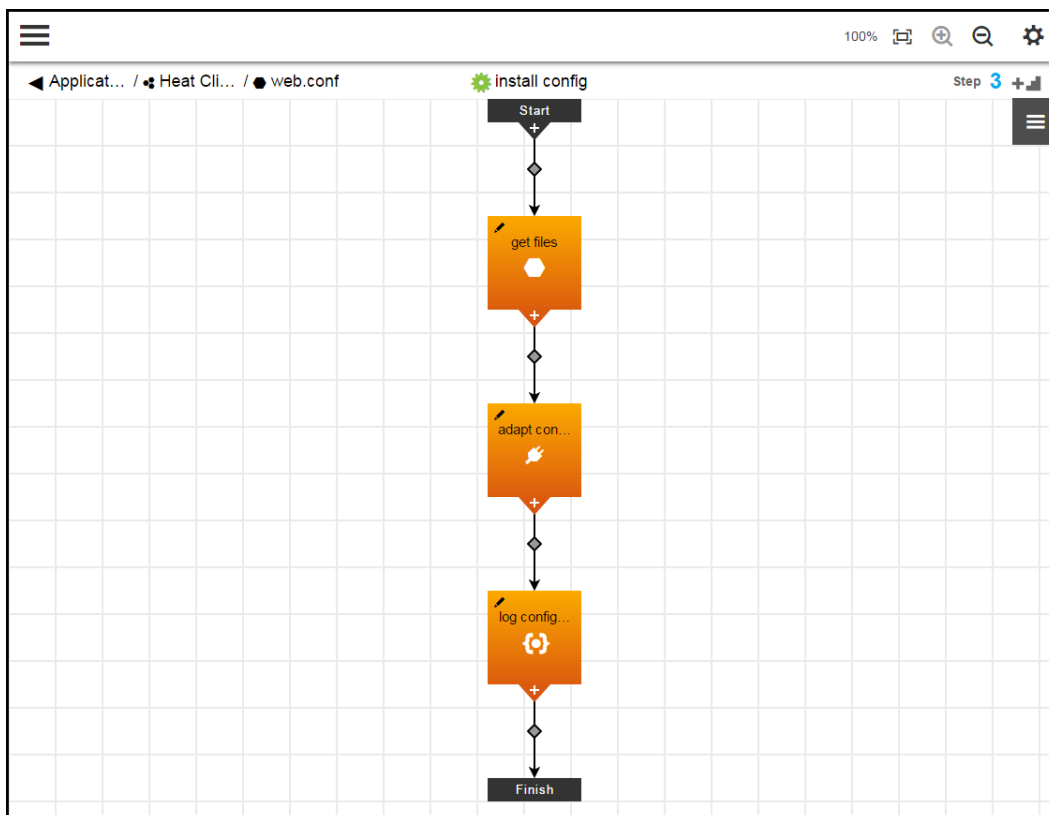
How to get to the Component Process Visual Editor after selecting an existing component process:

From the Applications Visual Editor, select a component in an application tier, click the **2** (number of component processes) button, and then select a component process in the drop-down list.

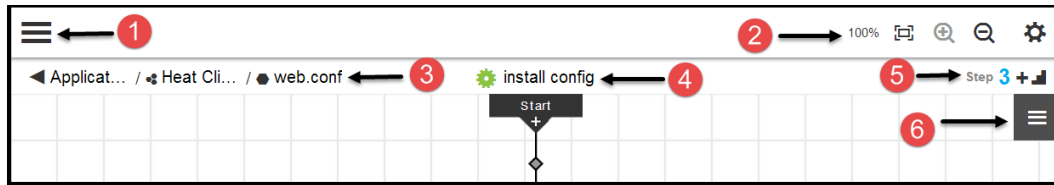


Component Process Visual Editor UI

The steps in the component process called "install config" appear in the Component Process Visual Editor.

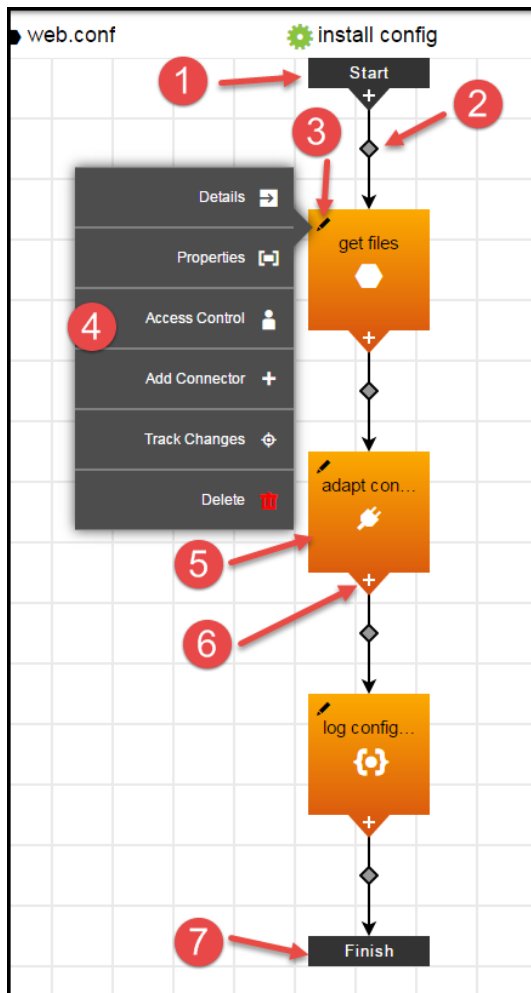


The Component Process Visual Editor has these objects:



1	Main menu
2	<p>This information is view only.</p> <p>ElectricFlow automatically adjusts the page settings to show all the tiers in the application. For example, if all the tiers do not fit on the page at 100% magnification, ElectricFlow reduces the magnification until all the tiers appear on the page.</p>
3	Breadcrumbs specifying the path to the component: <i>object type/application name/component name</i>
4	Name of the component process
5	Number of steps in the process and the Add step button
6	<p>Click the Menu button to view the component process details.</p> <ul style="list-style-type: none"> • Details—The name and description of the object. • Properties—The properties in the object. • Access Control—The access control configuration in the ElectricCommander platform for the object. • Track Changes—The change history of the object. • Delete—Delete this object.

The component process has these objects:



1	Start of the process
2	Click this Connector button to configure the branching conditions between two process steps. The default is Always , which means always go to the next step.
3	Click the Edit button (a pencil) to open the process-step details menu. <ul style="list-style-type: none"> • Details—The name and description of the object. • Properties—The properties in the object. • Access Control—The access control configuration in the ElectricCommander platform for the object. • Add Connector—Add a connector from the selected step. • Track Changes—The change history of the object. • Delete—Delete this object.
4	Process-step details menu

5	Component process step
6	Click the + button to add a step below the current step.
7	End of the process

Application Processes

How to get to the Application Process Visual Editor when modeling a new application process:

From the Applications Visual Editor, click the **Add process** button.

The **New Application Process Details** dialog box appears.

Field	Description and How to Set It
Name	Name of the process step
Description	Description of the process step
Credential	<p>An object consisting of a user name and password that ElectricFlow uses to run a process step.</p> <p>The dialog box displays the number of credentials for the process step, which are the same credentials that you use with procedures, steps, and schedules in the ElectricCommander platform.</p> <p>You can only impersonate one credential.</p>

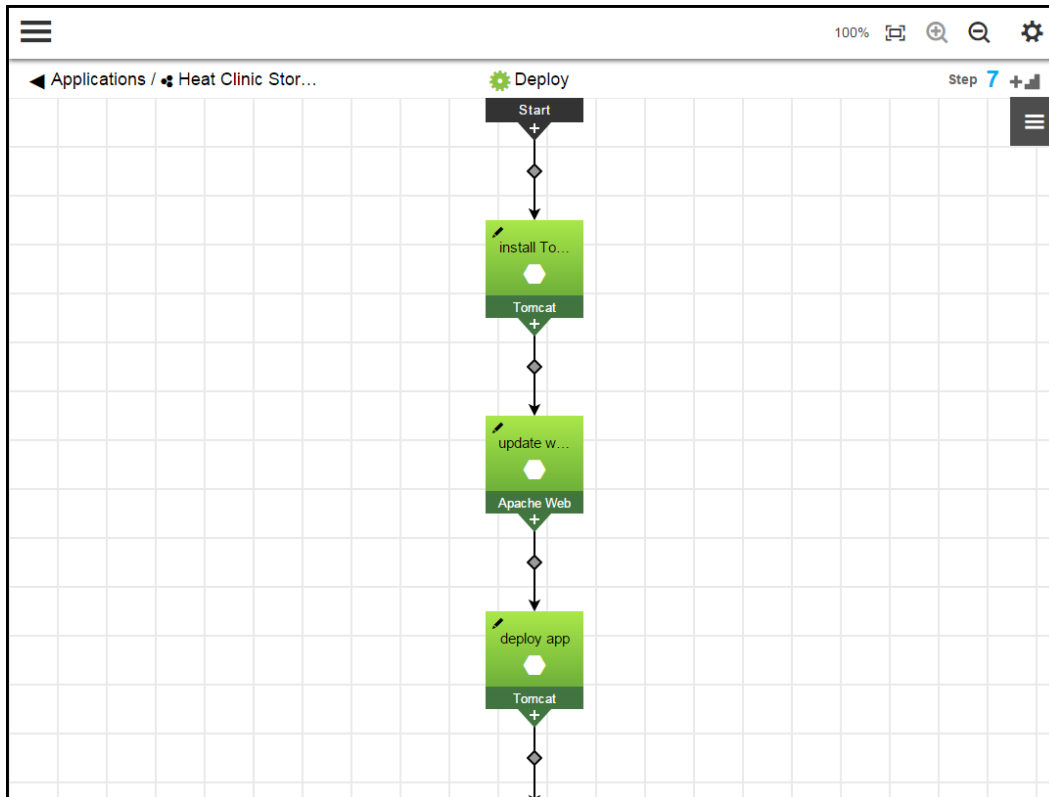
Field	Description and How to Set It
Workspace	<p>Area in the disk space where the files and results of the job step are stored.</p> <p>To set the workspace, click the Workspace field to open a drop-down list of workspaces in the ElectricCommander platform and select a workspace.</p> <p>For more information about workspaces, go to the ElectricCommander Help > Workspaces and Disk Management.</p> <p>To set the workspace, click Workspace to open a drop-down list of workspaces in the ElectricCommander platform. select a workspace, and click OK.</p>
Time limit	<p>Maximum length of time that the step is allowed to run. After the time specified, the step is aborted,</p> <p>To set the time limit, enter the time and select the unit of time: seconds, minutes, or hours.</p> <p>For information about time limits for procedure job steps in the ElectricCommander platform, go to the ElectricCommander Help > API Commands.</p>

How to get to the Application Process Visual Editor when selecting an existing application process:

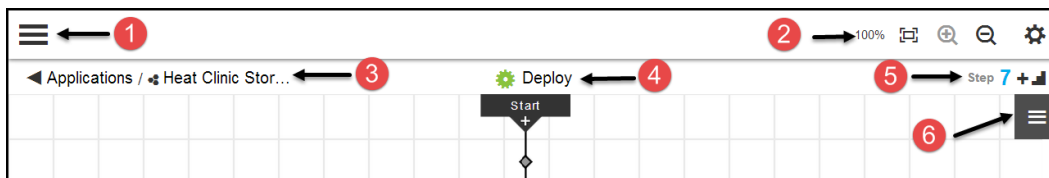
In the Applications Visual Editor, click the down arrow next to the "number of component processes" button, and then select an application process in the drop-down list.

Application Process Visual Editor UI

The steps in the application process called Deploy appear in the Application Process Visual Editor.



The Applications Process Visual Editor has these objects:



1	Main menu
2	<p>This information is view only.</p> <p>ElectricFlow automatically adjusts the page settings to show all the tiers in the application.</p> <p>For example, if all the tiers do not fit on the page at 100% magnification, ElectricFlow reduces the magnification until all the tiers appear on the page.</p>
3	Breadcrumb specifying the path to the application process: <i>object type/application name</i>
4	Name of the application process
5	Number of steps in the process with the Add step button.

6	<p>Click the Menu button to view the application process details.</p> <ul style="list-style-type: none"> • Details—The name and description of the object. • Parameters—Opens the Parameter dialog box where you can view, add, and delete the custom parameters for this application process. • Properties—The properties in the object. • Access Control—The access control configuration in the ElectricCommander platform for the object. • Track Changes—The change history of the object. • Delete—Deletes this object.
---	---

Example: Defining Process Steps

This example describes how to model the process steps in a process visual editor with commands. The procedure to model a component process step in the Component Process Visual Editor is the same as the procedure to model an application process in the Application Process Visual Editor.

- To model steps in an application process, go to the Application Process Visual Editor.

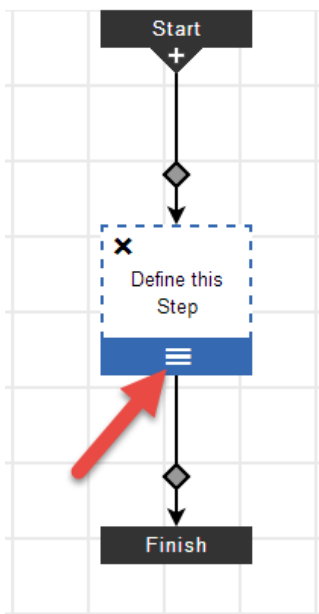
How to get to there: From the Applications Visual Editor, click the **Add process** button, enter the information about the process in the **New Application Process Details** dialog box, and click **OK**.

- To model steps in a component process, go to the Component Process Visual Editor.

How to get to there: From the Applications Visual Editor, select a component, click the **Add process** button, enter information about the process in the **New Component Process Details** dialog box, and click **OK**.

Starting in the appropriate visual editor:

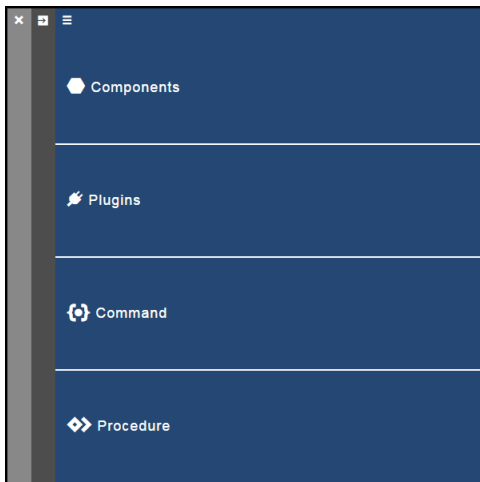
1. Click the button below "Define this Step" to define a process step in the new process.



A dialog box appears.

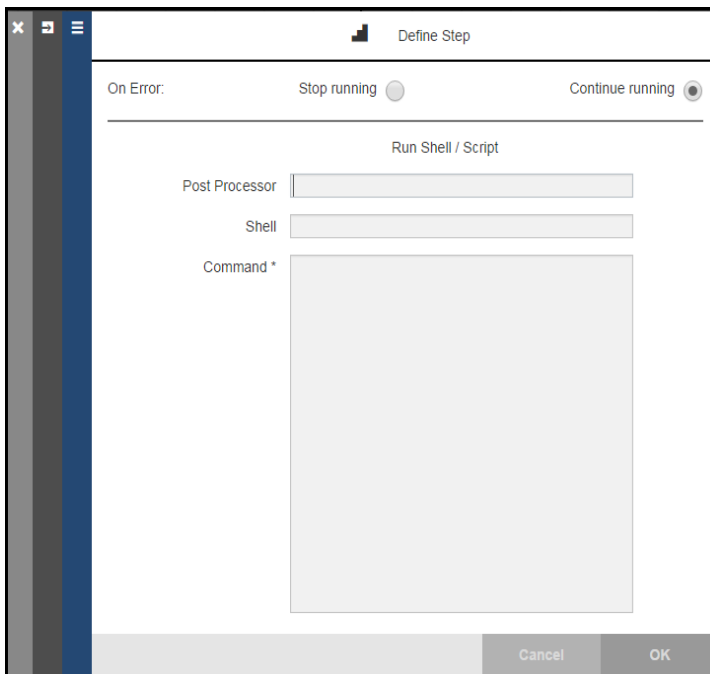
2. Enter information about the process step.
3. Click **Next**.

The process step dialog box appears.



4. Click **Command** to define the process step with a command.

The **Define Step** dialog box appears.



5. Enter the following information:

- Select **Stop running** or **Continue running** in the **On Error** field.
 - When you select **Stop running**, ElectricFlow stops the job if an error occurs.

This step overrides the process branching condition. When an error occurs, the process aborts regardless of the branching condition.
 - When you select **Continue running**, ElectricFlow continues to run the job if an error occurs.

This setting overrides the process branching condition. When an error occurs and the branching condition is Failure, the process continues to the next step.
- Enter the postprocessor command in the **Post Processor** field.
- Enter the shell name in the **Shell** field.
- Enter the command in the **Command** field.

6. Click **OK**.

The step now appears in the process.

7. Click the **+** button below the first step to add another step to the process.

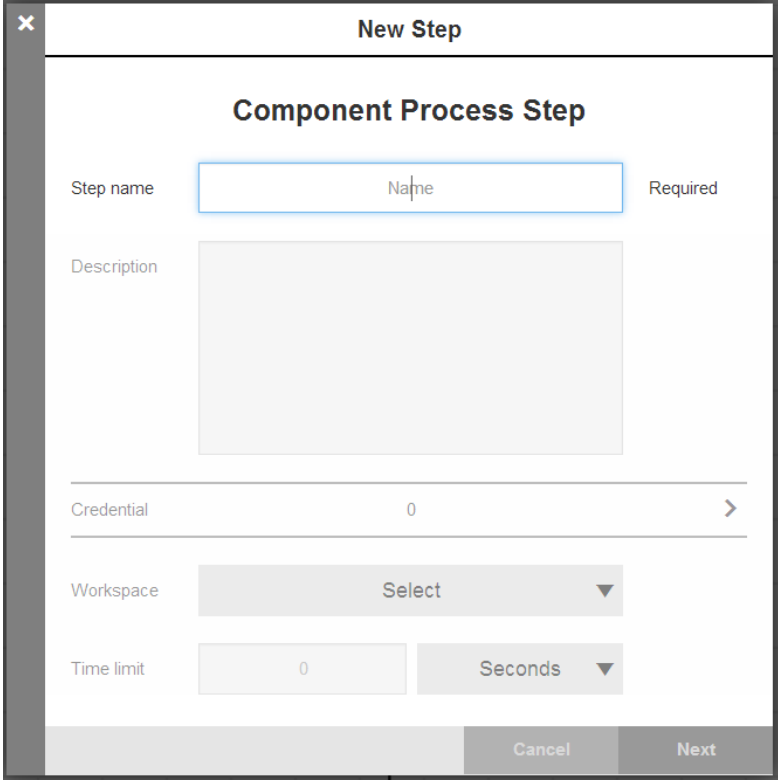
8. Repeat this procedure to define the new step.

Component and Application Process Steps

This topic describes the **Component Process Step** and **Application Process Step** dialog boxes that you use to model component and application process steps.

Designing a New Process Step

How to get to the Component Process Step dialog box: From the Applications Visual Editor, choose an application tier, select a component, and click the **Add process** button.



The image shows a 'New Step' dialog box with a title bar containing a close button (X) and the text 'New Step'. The main content area is titled 'Component Process Step'. It contains several input fields: 'Step name' with a text box containing 'Name' and a 'Required' label; 'Description' with a large text area; 'Credential' with a text box containing '0' and a right-pointing arrow; 'Workspace' with a dropdown menu showing 'Select'; and 'Time limit' with a text box containing '0' and a dropdown menu showing 'Seconds'. At the bottom are 'Cancel' and 'Next' buttons.

New Step

Component Process Step

Step name Required

Description

Credential >

Workspace

Time limit

How to get to the Application Process Step dialog box: From the Applications Visual Editor, click the **Add process** button in the upper right corner.

The screenshot shows a 'New' dialog box titled 'Application Process Details'. It contains the following fields and controls:

- Name:** A text input field.
- Description:** A large text area.
- Credential:** A field with the value '0' and an 'Optional' label with a right-pointing arrow.
- Workspace:** A dropdown menu showing 'default' and an 'Optional' label.
- Time limit:** A field with the value '0' and a unit dropdown menu showing 'Seconds', with an 'Optional' label.
- Buttons:** 'Cancel' and 'OK' buttons at the bottom.

Modeling an Existing Process Step

How to get to the Component Process Step dialog box: From the Applications Visual Editor, choose application tier, select a component, and click the number button (number of component processes).

How to get to the Application Process Step dialog box: On the Applications Visual Editor, click the number button (number of application processes) in the upper right corner.

Setting Parameters in the Process Step Dialog Boxes

IMPORTANT:

When you impersonate a credential, make sure that the impersonated user has the absolute path to the bin directories in the \$PATH environment.

If you define a process step with a command, you must enter the absolute path in the **Post Processor** and **Shell** fields in the Define Step dialog box.

Enter information in the following fields:

- **Name** (required)—Name of the process step.
- **Description**—Description of the process step.
- **Tier** (application process step only)—Application tier in which the process step runs.

- **Credential**—An object consisting of a user name and password that ElectricFlow uses to determine who or what runs a process step.

The field displays the number of credentials for the process step, which are the same credentials that you use with procedures, steps, and schedules in the ElectricCommander platform.

To set the credentials, click > to open the Credentials dialog box.

You can add only one credential for impersonation, and you can attach more than one credential to the process step.

If a credential is set to impersonate, you can also attach that credential to the process step.

For more information about credentials, go to the **ElectricCommander Help > Credentials and User Impersonation**.

- **Workspace**—Area in the disk space where the files and results of the job step are stored.

To set the workspace, click the **Workspace** field to open a drop-down list of workspaces in the ElectricCommander platform and select a workspace.

For more information about workspaces, go to the **ElectricCommander Help > Workspaces and Disk Management** in the *ElectricCommander Help*.

To set the workspace, click **Workspace** to open a drop-down list of workspaces in the ElectricCommander platform, select a workspace, and click **OK**.

- **Time limit**—Maximum length of time that the step is allowed to run. After the time specified, the step is aborted.

To set the time limit, enter the time and select the unit of time: seconds, minutes, or hours.

For information about time limits for procedure job steps in the ElectricCommander platform, go to the **ElectricCommander Help > API Commands**.

Parameters in Application Processes

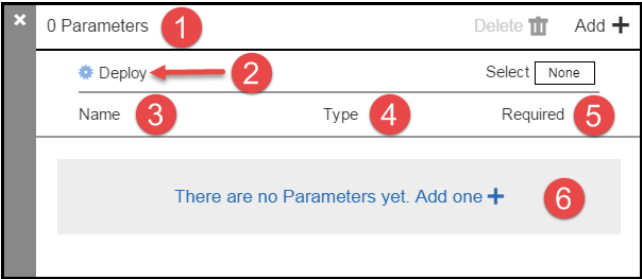
Starting in ElectricFlow 5.4, you can define and apply custom parameters to application processes to automate your deployments. You define the parameters and apply them while deploying the application or while defining an application process step.

When deploying an application, you can specify parameter values that determine how to deploy the application. The parameter value can be a credential that specifies who can deploy the application, a value that represents the specific artifacts and artifact versions to deploy, the name of a specific schedule to apply, or the name of a snapshot to deploy. You can also specify if the deployment type is full deploy, smart deploy, or partial deploy. You can specify parameter values the same way in a process step to determine when or how to execute it.

How to get here: One of these ways:

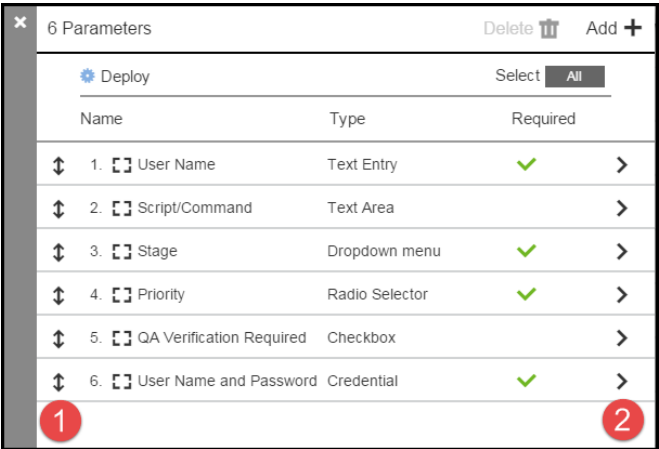
- From the Home page, click the **Applications** launch pad, click the application name, select an application process, click the **Menu** button in the Application Process Visual Editor, and click **Parameters**.
- From the main menu on the Home page, click **Applications**, click the application name, select an application process, click the **Menu** button in the Application Process Visual Editor, and click **Parameters**.



The **Parameters** dialog box opens.



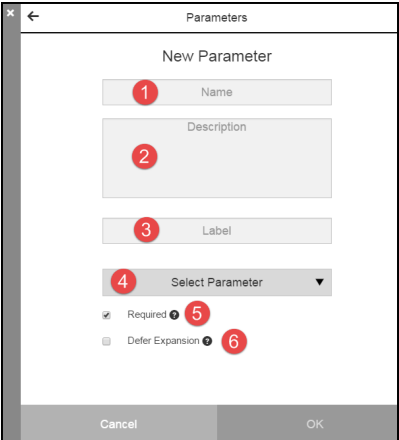
1	Number of parameters.
2	Name of the application process.
3	Name of the parameter.
4	Type of parameter: <ul style="list-style-type: none">• Text Entry• Text Area• Dropdown Menu• Radio Selector• Checkbox• Credentials
5	This parameter is required when there is a check in this column.
6	Click this button to add a parameter.

When parameters are defined for the application process, a parameter list appears in the **Parameters** dialog box.



1	<p>You can change the order in which the parameters appear in the UI form.</p> <p>In desktop mode, mouse over the  button and drag it to the new location.</p> <p>In touch screen mode, touch and hold the  button and drag it to the new location.</p>
2	<p>Select a row and click the arrow at the end of the row to open the New Parameters dialog box.</p>

When you click **There are no Parameters yet. Add one +**, the **New Parameters** dialog box opens.



1	Name of the new parameter.
2	(Optional) Description of the new parameter.
3	<p>(Optional) Label for the parameter.</p> <p>If you enter a Label, it appears in the UI form when you deploy the application.</p> <p>If you do not enter a label, the parameter name appears in the UI form when you deploy the application.</p>

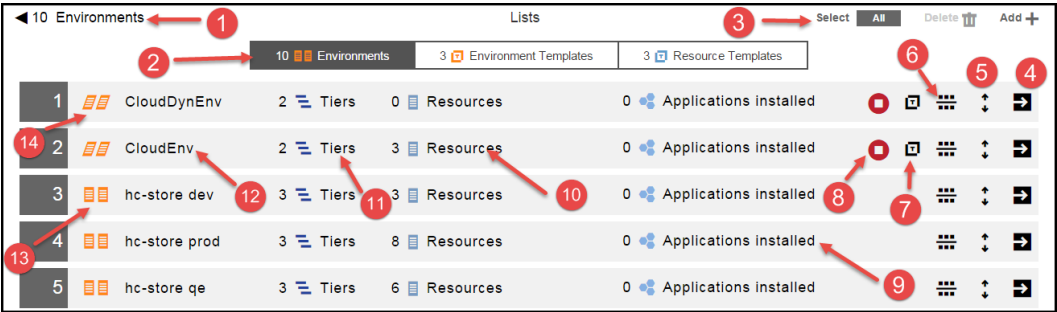
4	<p>Click the down arrow in the Select Parameter field to select the parameter type:</p> <ul style="list-style-type: none">• Text Entry• Text Area• Dropdown Menu• Radio Selector• Checkbox• Credentials <p>Depending on the type that you select, other fields appear in the dialog box.</p> <p>For examples, go to Setting Parameters for Application Processes on page 238.</p>
5	<p>Required check box</p> <p>When you click the Help button, this help text appears:</p> <p>By default, this parameter is required. The application does not run when the parameter does not have a value.</p>
6	<p>Defer Expansion check box</p> <p>When you click the Help button, this help text appears:</p> <p>When the Defer Expansion check box is selected and the parameter value contains \$[], ElectricFlow does not interpret it as a parameter reference and instead interprets it literally.</p>

Environments List

How to get here: One of these ways:

- From the Home page, click the **Environments** launch pad.
- From the main menu on the Home page, click the **Environments** destination.







The Environments List opens.



1	Breadcrumb showing the total number of environments in your ElectricFlow system.
---	--

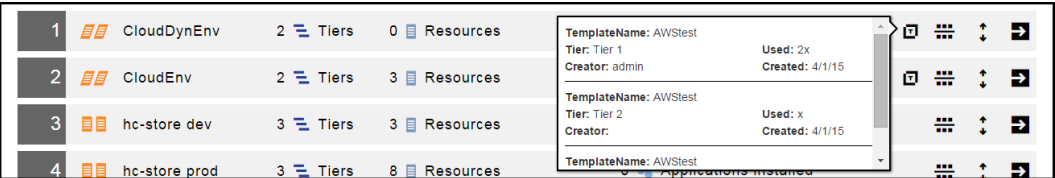
2	<p>You can view the environments, environment templates, or resource templates for all of the environments in your system.</p> <ul style="list-style-type: none"> • Select the Environments tab to view the list of static, dynamic, and mixed environments. You can view details about the environments, environment tiers, and resources in the tiers. • Select the Environment Templates tab to view the list of available environment templates. You can use these templates to create environment when deploying an application. • Select the Resource Templates tab to view the list of available resource templates. Resource templates have the necessary information that ElectricFlow uses to dynamically spin up resources in the cloud when deploying an application. <p>By default, no environments, environment templates, and resource templates are configured. You create the ones you need to deploy applications in ElectricFlow.</p>
3	<p>Click the Select button to select all or none of the items in the list.</p> <p>Click the Delete button to delete the selected items.</p> <p>Click the Add + button to add an environment.</p>
4	Click the View details button to go to the Environments Visual Editor.
5	Click the View button to view more details about the environment.
6	Click the Inventory button to open the environment inventory, where you can see the status of an application as it runs and additional information about the application for troubleshooting.
7	Click the Template button to view the history of the environment template.
8	Click the Tear down button to retire the dynamic environment. This button works only with dynamic environments.
9	Number of applications that run in the environment.
10	Number of resources in the environment.
11	Number of environment tiers in the environment.
12	Click the environment name (in this example, CloudEnv) to go to the Environments Visual Editor.
13	Static environment.
14	Dynamic environment.

You can determine the type of environment and the status of the environment by its icon and color:

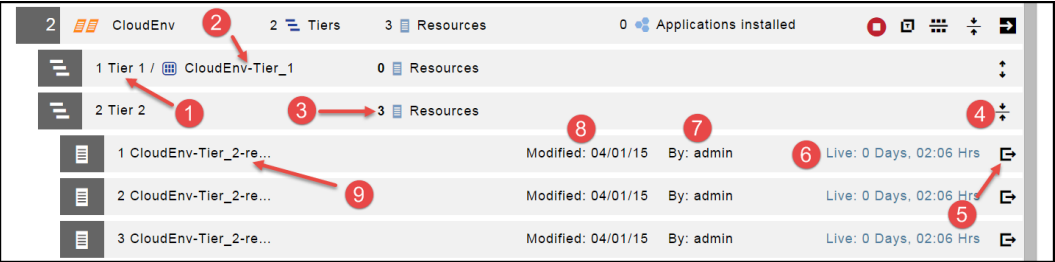
Type of Environment	Available	Not Available
Static (only static resources)		
Dynamic (only dynamic resources)		
Mixed (some tiers with dynamic resources and other tiers with static resources)		

You can set the status of an environment in the Environments Visual Editor.

When you click the **Template** button, you view the history of the template:



When you click the **View** button for a specific environment, details about the environment tiers and resources for the environment appear.



1	Name of the environment tier with the tier row numbering. Tier 1 is the first tier and Tier 2 is the second tier.
---	--

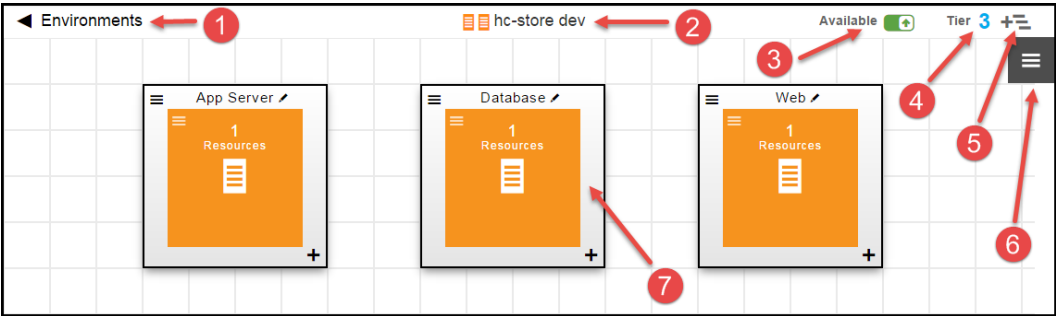
2	Name of the dynamic resource pool consisting of cloud resources.
3	Number of resources in the environment tier.
4	Click the Hide button to show less details. When you click the Hide button for an environment tier, the environment tier details disappear.
5	Click the View button to view more details about the object in the ElectricCommander automation platform.
6	How long the resource has been available since it was created.
7	User who performed that last activity on the resource.
8	Last activity on the resource.
9	Name of the resource with the resource row number.

Environments Visual Editor

How to get to here: From the Environments List page, select an environment.

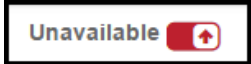
Environments consist of resources that are grouped into tiers. The component and application processes run on resources assigned to environments.

To run applications, you must configure tier maps of application tiers to environment tiers.



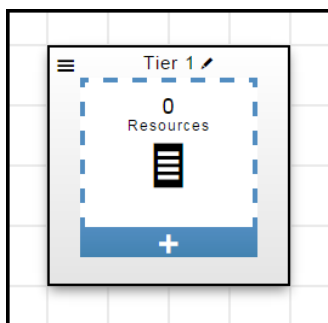
The following information is on this page:

1	Breadcrumb to the environment
2	Name of the environment

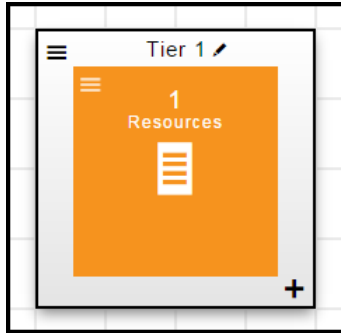
3	<p>Button showing the status of the environment</p> <ul style="list-style-type: none"> • The environment is available when it is green. • It is unavailable when it is red. <p>To change the status from Available to Unavailable, click this button. It becomes</p>  <p>To change the status to Available, click the button again.</p>
4	Number of environment tiers
5	Click the Add tier button to add an environment tier.
6	<p>Click the Menu button to to open the context menu. You can get more details about the environment:</p> <ul style="list-style-type: none"> • Details—The name and description of the object. • Properties—The properties in the object. • Access Control—The access control configuration in the ElectricCommander platform for the object. • Track Changes—The change history of the object. • Delete—Delete this object.

The appearance of the resources in an environment tier changes when you assign a resource that is defined and managed by the ElectricCommander automation platform.

After you add an environment tier:



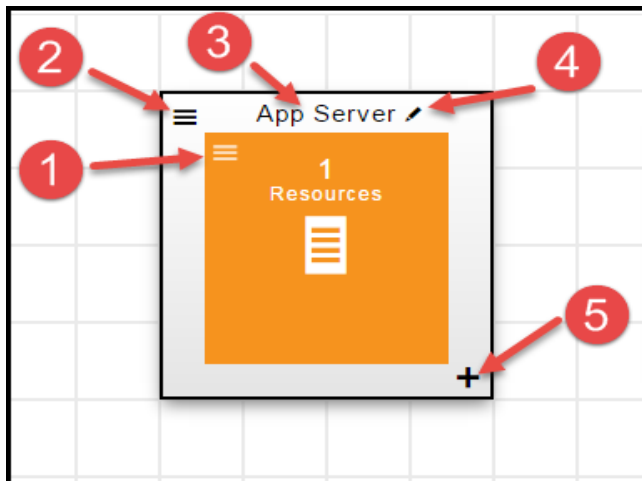
After you assign a resource to the tier:



Environment Tiers

How to get here: From the Environments Visual Editor, choose an environment tier.

Environment tiers consist of resources that can be assigned to applications.

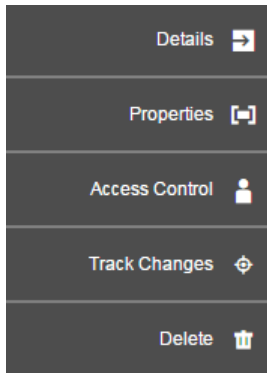


The following information is available about the tier.

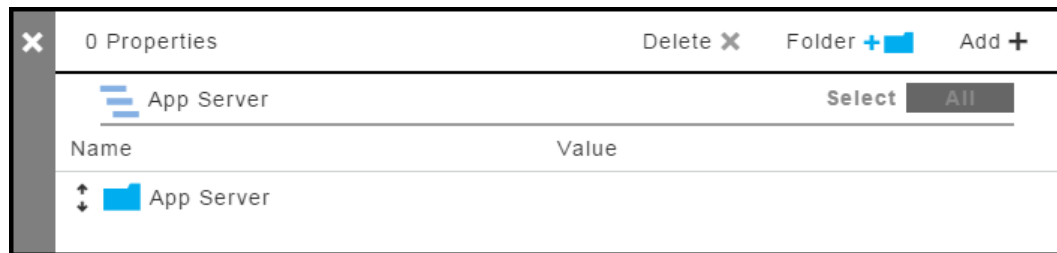
1	Click the Menu button to view the resource details.
2	Click the Menu button to view the tier details.
3	Name of the environment tier
4	Click the Edit button to edit the tier name and description in the Environment Tier Details dialog box.
5	Click the + button to add a resource to the environment tier.

Context Menu for the Environment Tier

This menu appears when you click the **Menu** button:



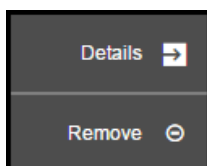
- When you click **Details**, the **Environment Tier Details** dialog box appears.
You can edit the environment name and description.
- When you click **Properties**, the Properties dialog box appears, where you can set the properties for the environment tier.



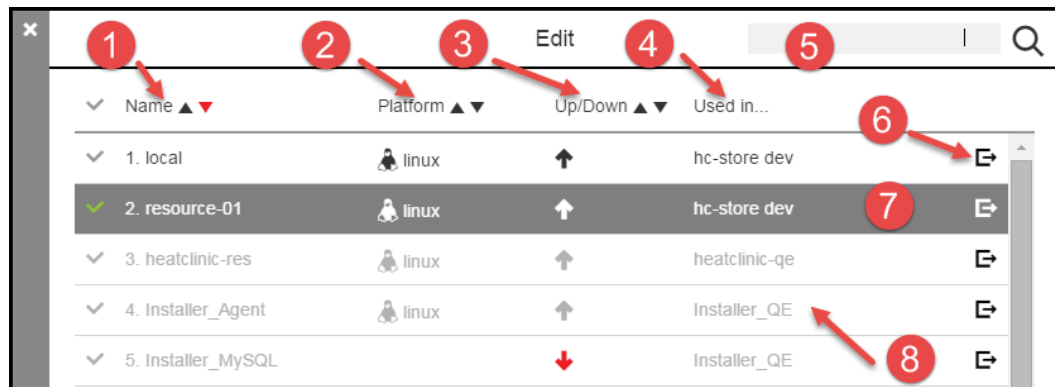
- When you click **Access Control**, you go to the Access Control page for the tier in the ElectricCommander automation platform, where you can set privileges for the objects in your environment.
For more information about the Access Control page, go to the **ElectricCommander Help > Projects > Select a project > Access Control**.
- When you click **Track Changes**, the Change History Search Form opens.
- When you click **Delete**, the **Delete Environment Tier** dialog box appears.
Click **OK** to verify that you want to delete this environment tier.

Context Menu for the Resource

This menu appears when you click the **Menu** button for a resource.



- When you click **Details**, the resource list appears. It shows the resource name, the resource platform, the status (up or down), and where it is used.



1	Name of the resource
2	The resource platform
3	Status of the resource: Up or down.
4	Environment to which the resource is assigned
5	Enter the search criteria in this field to search for specific resources.
6	Click the View details button to go to the Resources page in the ElectricCommander automation platform. For more information about the Resources page, go to the ElectricCommander Help > Web Interface Help > Resources .
7	Details about the resource you selected. If you want to change the resource details, you can replace this resource with an available resource.
8	This resource is not available because it is assigned to an environment other than the <i>hc-store dev</i> environment.

- When you click **Remove**, the resource list appears.

After selecting the resources that you want to delete, click **OK**.

The resources that you selected are deleted from the environment tier but are not deleted from the application or the ElectricCommander automation platform.

Adding Resources to an Environment Tier

In an environment tier, click the **+** button to open the resource list, select one or more available resources in the resource list, and click **OK**.

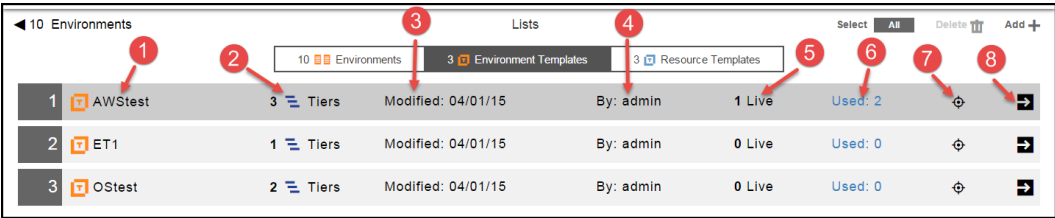
The environment tier in the Environment Visual Editor is updated and now shows that there are more resources in the environment tier.

Environment Templates List

How to get here: One of these ways:

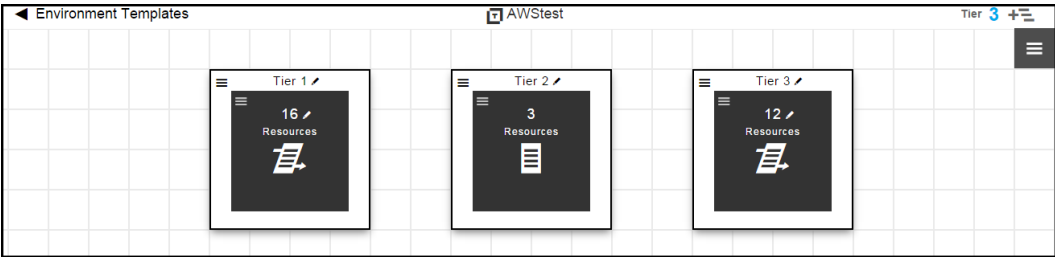
- From the Home page, click the **Environments** launch pad, and then click the **Environment Templates** tab.
- From the main menu on the Home page, click **Environments > Environment Templates**.

The Environment Templates List opens.



1	Name of the environment template.
2	Number of tiers in the template.
3	Last activity on the environment template.
4	User who performed that last activity on the resource.
5	Number of environments currently live from this template.
6	Number of times that this template has been used.
7	Click the Track Changes button to start a change history search.
8	Click the View details button to go to the Environment Templates Visual Editor. It has the same elements as the Environments Visual Editor.

This is the Environment Templates Visual Editor for *AWSTest*.

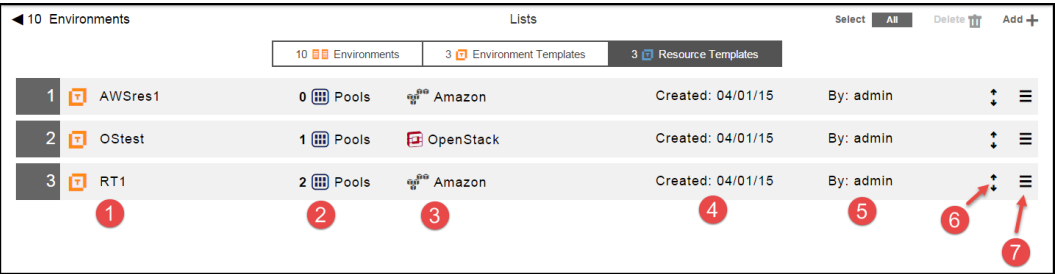


Resource Templates List

How to get here: One of these ways:

- From the Home page, click the **Environments** launch pad, and then click the **Resource Templates** tab.
- From the main menu on the Home page, click **Environments > Resource Templates**.

The Resource Templates List opens.



1	Name of the resource template.
2	Number of resource pools.
3	Third-party plugin for the cloud provider or configuration management.
4	Last activity on the environment template.
5	User who performed that last activity on the resource.
6	Click the View button to view more information about the resource template.
7	Click the Menu button to view details about the resource template.
8	Click the View details button to view more details about the resource pool.
9	How long the resource has been available since it was created.
10	Name of the resource pool.

Tier Maps

How to see a Tier Map: From the Applications Designer, click the down arrow in this button to show a drop-down list of configured tier maps. Then select a tier map to view.

Example:



How to add a Tier Map: Click the **Add tier map** button to add a tier map an application.

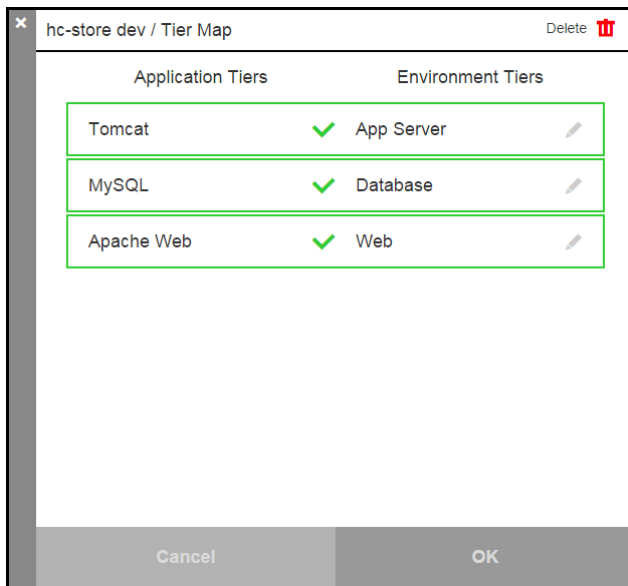
Example:



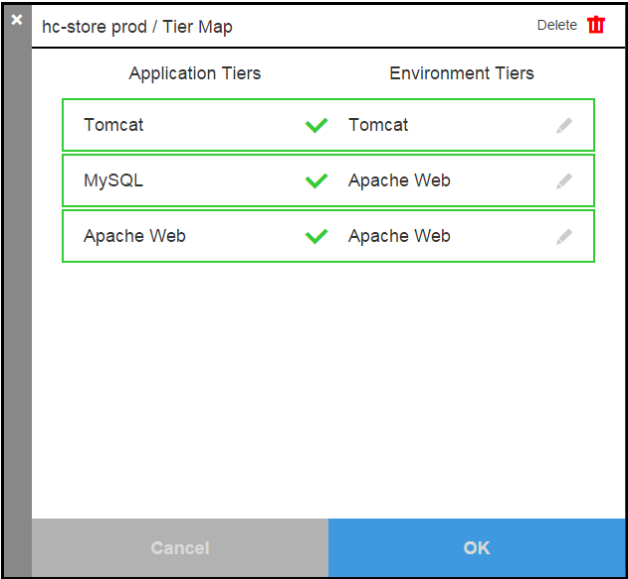
A tier map is a mapping of application tiers to environment tiers for a specific application and environment.

You must configure a tier map if you want to run an application.

This tier map shows the mapping between the Heat Clinic Store 1.1 application and the environment called hc-store dev. Each application tier is mapped to an environment.

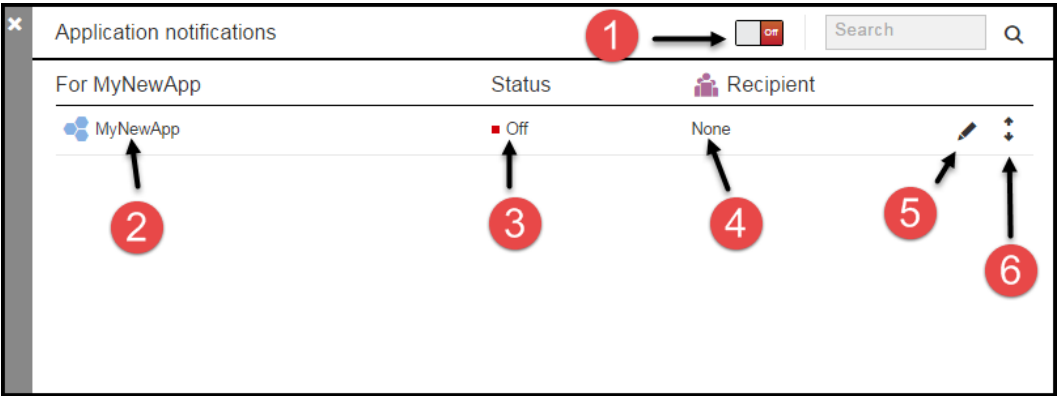


You can map more than one application tier to the same environment tier.



Application Notifications Dialog Box

How to get here: From the Applications Visual Editor, click the **Menu** button, and select **Notifications**.



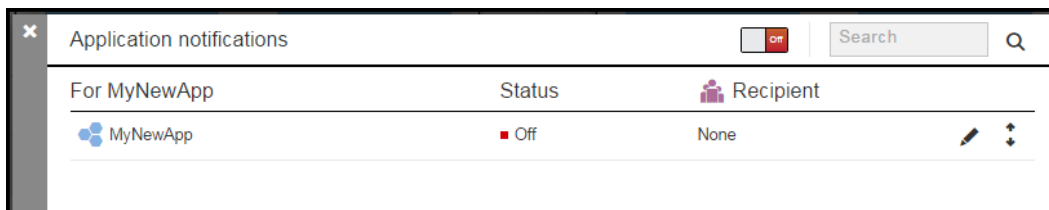
The following information is in this dialog box.

1	<p>Notifications toggle.</p> <p>Click this to enable (On) or disable (Off) email notifications for the application.</p> <ul style="list-style-type: none">• Enable–The system sends email notifications to the specified recipients.• Disable–The system do not send email notifications.
2	<p>Name of the application.</p>

3	<p>Status of the notification for the object at the current level.</p> <ul style="list-style-type: none"> On–The system sends email notifications. Off–The system do not send email notifications.
4	<p>How many recipients receive notifications.</p> <p>The values are None and Some (one or more).</p> <p>When Some is in the Recipient column, click the Edit button to see who the recipients are</p>
5	<p>Edit button.</p> <p>Click this to edit a notification. The "Application notifications / edit" dialog box opens.</p>
6	<p>View button.</p> <p>Click this to view the notifications for the object one level below the current level.</p> <p>In this example, when you click this button in the MyNewApp row, the application processes in the MyCoolApp application appear in the rows below.</p>

Setting Notifications for the First Time

New email notifications are disabled in the application, its application processes, and the process steps before you configure them.



You configure notifications in the "Application notifications / edit" dialog box.

IMPORTANT: The first time that you set notifications in this dialog box, the Notifications toggle changes to **On**. After you enter notification settings and click **OK**, email notifications are enabled at that level.

To see the notification settings for the application processes and process steps, click the **View** button. The settings for the application processes appear.

Example:



Click the **View** button for each application process. The settings for processes steps appear.

Application notifications			
For MyNewApp		Status	Recipient
MyNewApp		Off	None
1	New installation	Off	None
1	install new	Off	None
2	prepare the system	Off	None
2	existing installation	Off	None
1	backup	Off	None
2	set new database	Off	None
3	upgrade	Off	None

Enabling Notifications

You can enable notifications at the application, application process, and process levels.

To enable email notifications at the application level:

- Click the Notifications toggle and change it to **On**.

The status of the application changes to **On**.

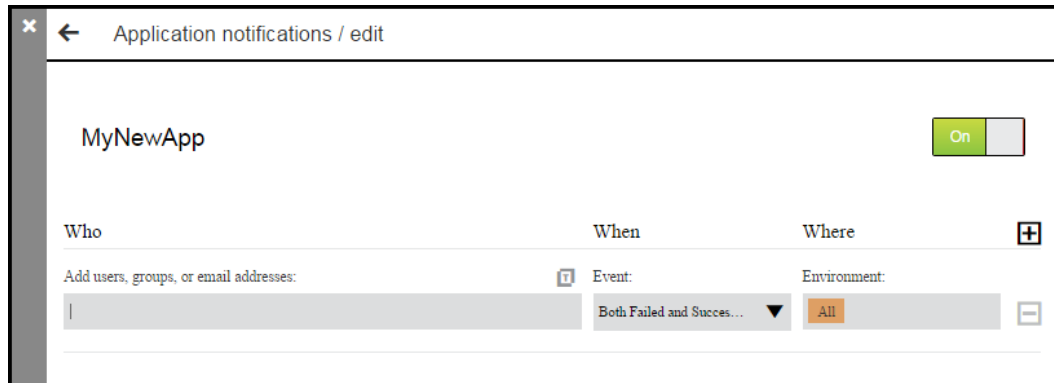
Example:

Application notifications			
For MyNewApp		Status	Recipient
MyNewApp		On	None
1	New installation	Off	None
2	existing installation	Off	None

- Click the **Edit** button to open the **Application notifications / edit** dialog box.

The **Application notifications / edit** dialog box appears. The Notification toggle changes to **On**.

Example:

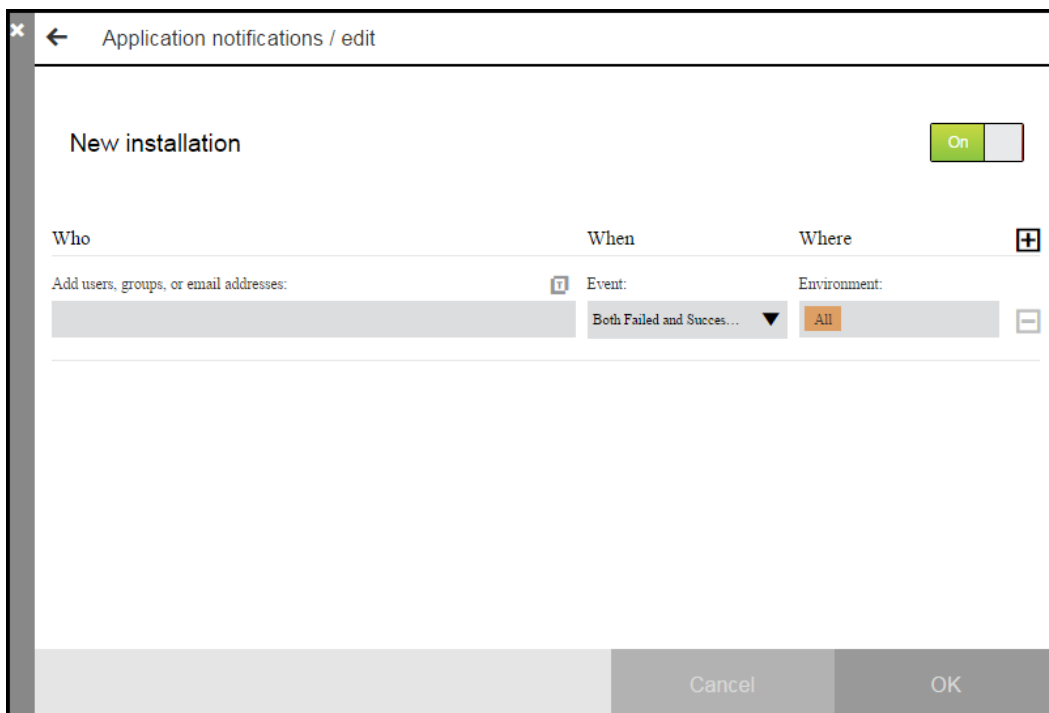


The screenshot shows the 'Application notifications / edit' dialog box for an application named 'MyNewApp'. At the top right, there is a toggle switch labeled 'On'. Below this, the dialog is organized into three columns: 'Who', 'When', and 'Where'. Under 'Who', there is a text input field with the placeholder 'Add users, groups, or email addresses:'. Under 'When', there is a dropdown menu currently showing 'Both Failed and Succes...'. Under 'Where', there is a dropdown menu currently showing 'All'. A plus icon is located to the right of the 'Where' header, and a minus icon is to the right of the 'All' dropdown. The dialog has a close button (X) in the top left corner.

To enable notifications at the application process and process step levels, go to the **Application Notifications / edit** dialog box for the specific process or process step.

The dialog box opens, and the Notifications toggle is now **On**.

Example:



The screenshot shows the 'Application notifications / edit' dialog box for a process named 'New installation'. Similar to the first example, it has a toggle switch labeled 'On' at the top right. The layout includes 'Who', 'When', and 'Where' sections with corresponding input fields and dropdown menus. The 'Who' field is empty. The 'When' dropdown shows 'Both Failed and Succes...'. The 'Where' dropdown shows 'All'. A plus icon is to the right of the 'Where' header, and a minus icon is to the right of the 'All' dropdown. At the bottom of the dialog, there are 'Cancel' and 'OK' buttons. The dialog has a close button (X) in the top left corner.

When you enter notification settings in the dialog box and click **OK**, the settings are saved. The **Application notifications** dialog box appears and now shows that the application process status is **On**.

Application notifications / edit

backup On

Who When Where +

Add users, groups, or email addresses:

admin admin-asia sclaus jadams userX@gmail.com

DevT200@gmail.com

Event: Both Failed and Successful

Environment: All

Configuring the event that triggers the notification

In the **When** field, you select the event that triggers a notification to be sent to the recipients in the **Who** field. The default is **Both Failed and Successful**. Click in the **When** field to select the event for the notification.

Example:

Application notifications / edit

backup On

Who When Where +

Add users, groups, or email addresses:

admin admin-asia sclaus jadams userX@gmail.com

DevT200@gmail.com

Event: Both Failed and Successful

Environment: All

Run Failed

Run Successful

Both Failed and Successful

Configuring the environments where the notification applies

In the **Where** field, you select the environments to which the notifications apply. Click in the **Where** field to select the environments, which are the environments to which the application is mapped in the tier map.

Example:

Application notifications / edit

backup On

Who When Where +

Add users, groups, or email addresses: + Event: Environment:

admin admin-asia sclaus jadams userX@gmail.com Run Successful All

DevT200@gmail.com hc-store dev -

Adding More Notifications

Click the **Add Notifications** button to add a new notification.

Example:



After you have added your email notifications, click **OK** to save the settings and return to the Application notifications dialog box.

Example:

Application notifications / edit

backup On

Who When Where +

Add users, groups, or email addresses: + Event: Environment:

jadams admin-asia sclaus admin userX@gmail.com Run Successful hc-store dev

DevT200@gmail.com

+

admin-uk admin-aus DevLead@electric-cloud.com UserAZ@gmail.com Both Failed and Succes... All

Deleting Notifications

Click the **Delete Notification** button to delete a notification when there are more than two notifications.



The screenshot shows the 'Application notifications / edit' dialog box for an application named 'MyApp'. At the top right, there is a toggle switch labeled 'On'. Below this, the dialog is organized into three main sections: 'Who', 'When', and 'Where'. The 'Who' section has a text input 'Add users, groups, or email addresses:' followed by a list of users: 'ajones', 'haaron@electric-cloud.com', 'admin', 'admin2', 'DevT2000', and 'bbanks@electric-cloud.com'. The 'When' section has a dropdown menu for 'Event:' with the selected option 'Both Failed and Succes...'. The 'Where' section has a dropdown menu for 'Environment:' with the selected option 'hc-store dev'. At the bottom of the dialog are 'Cancel' and 'OK' buttons.

Disabling Notifications

You can disable all email notifications or specific ones in the application.

- When you disable the email notifications for an application, all email notifications, including the ones for application processes and process steps, are disabled.
- You can disable the email notifications for an application process but still keep the notifications enabled for process steps in the application.

Applications

To disable email notifications for the application:

- Click the Notifications toggle in Application notifications dialog box.

The toggle and the status of the application change to **Off**.

- When you use the "Applications notification / edit" dialog box:
 - a. Click the **Edit** button to open the dialog box.
 - b. Click the toggle to change it to **Off**, and then click **OK**. The Application notifications dialog box opens with the updated status.

The screenshot shows the 'Application notifications' dialog box. At the top right, there is a toggle switch labeled 'Off'. Below this is a search bar. The main content area is a table with the following structure:

For MyNewApp	Status	Recipient
MyNewApp	Off	Some

At the bottom right of the table, there are icons for editing and deleting the notification.

Application Processes and Process Steps

To disable notifications, click the Notifications toggle and then click **OK** in "Application notifications / edit" dialog box. The toggle changes to **Off**.

The screenshot shows the 'Application notifications / edit' dialog box for the application 'New installation'. The toggle switch is set to 'Off'. The 'Who' field contains 'admin-aus' and 'admin-asia'. The 'When' field is empty. The 'Where' field contains 'hc-store dev'. The 'Event' dropdown is set to 'Both Failed and Success...'. The 'Environment' dropdown is set to 'hc-store dev'.

The screenshot shows the 'Application notifications / edit' dialog box for the application 'backup'. The toggle switch is set to 'Off'. The 'Who' field contains 'jadams', 'admin-asia', 'sclaus', 'admin', 'userX@gmail.com', and 'DevT200@gmail.com'. The 'When' field is empty. The 'Where' field contains 'hc-store dev'. The 'Event' dropdown is set to 'Run Successful'. The 'Environment' dropdown is set to 'hc-store dev'. The 'Who' field also contains 'admin-uk', 'admin-aus', 'DevLead@electric-cloud.com', and 'UserAZ@gmail.com'. The 'When' field is empty. The 'Where' field contains 'All'. The 'Event' dropdown is set to 'Both Failed and Success...'.

The Application notifications dialog box now shows that email notifications are disabled for the application, its application processes, and process steps.

Application notifications			Off	Search	Q
For MyNewApp	Status	Recipient			
MyNewApp	Off	Some			
1 New installation	Off	Some			
1 install new	Off	None			
2 prepare the system	Off	None			
2 existing installation	Off	None			
1 backup	Off	Some			
2 set new database	Off	None			
3 upgrade	Off	None			

Related Topics:

- [Setting Email Notifications](#) on page 254
- [Selecting and Editing Email Messages](#) on page 262

Change History Search Form

How to get here: From the Home page, click the **Search** button to open the "Change History - Search" form.

Example:



The "Change History - Search" form has the following information:

1

2

Change History - Search

Past 15 Minutes

Multiple-Select

3

How to get here: From the Change History page, click the **Search** button in the upper right corner to open the "Change History - Search" form.

The "Change History - Search" form has the following information:

1

2

Change History - Search

Past 15 Minutes

Multiple-Select

3

Cancel

1

Time range.

Click this to open the drop-down list of start times for the Change History search.

Past 15 Minutes

Past 15 Minutes

Past 30 Minutes

Past 60 Minutes

Past 6 Hours

Past 12 Hours

Past 24 Hours

Past 3 Days

Select Date

The end time is the current time. You can change the end time after you run the search and get the search results.

2	<p>Objects to include in the search.</p> <p>You can select All Objects or specific objects.</p> <p>By default, seven of the most commonly tracked objects are selected.</p> <div><div>Multiple-Select</div><div><div>All Objects</div><div>✓ Access Control List</div><div>✓ Application</div><div>✓ Component</div><div>✓ Process</div><div>✓ Process Dependen...</div><div>✓ Property</div><div>✓ Property Sheet</div><div>Access Control En...</div><div>Agent</div><div>Application Tier</div><div>Artifact</div></div></div>
3	<p>Enter the search criteria in this field.</p> <p>After you type the first character, the system starts searching for objects based on the time range and objects that you selected.</p> <p>The search results are in the Change History.</p>

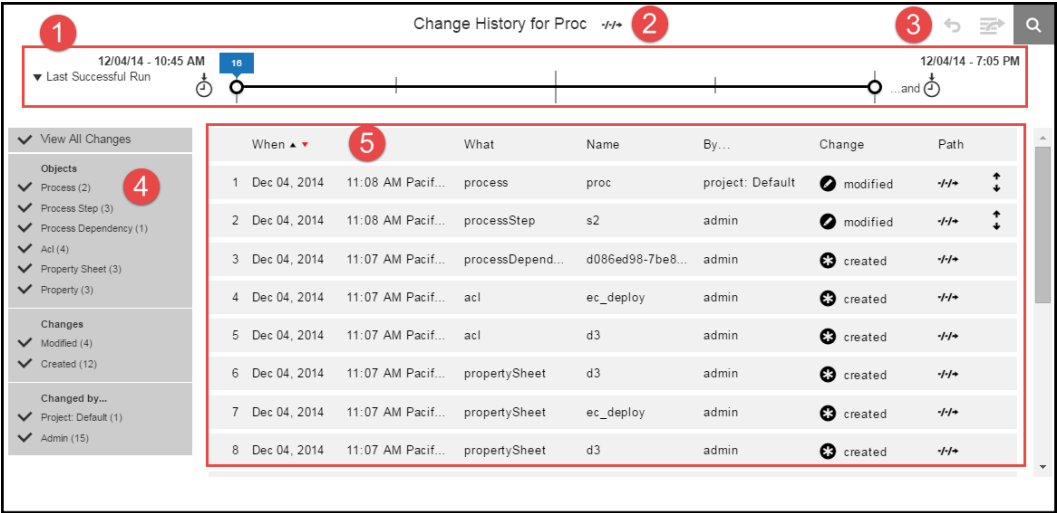
Change History Page

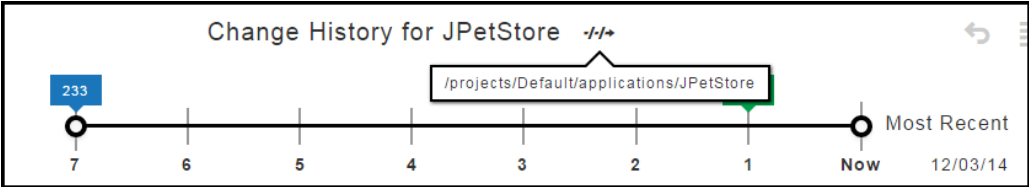


How to get here: Click the **Change History** button for a tracked object.

Example:



The Change History has this information about the object called *Proc*:

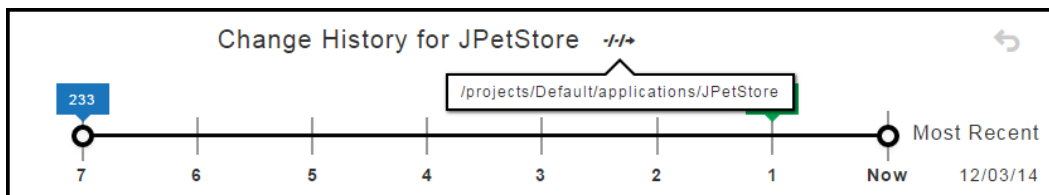


1	<p>Time line</p> <p>You can modify the start and end times.</p> <p>Default:</p> <ul style="list-style-type: none">• The entire time line is selected. All changes appear in the Change History list.• The time increment is from the Last Successful Run to the most current change.• The start time is based when the last successful run occurred.• The end time is when the most recent changed occurred.
2	<p>Path to the tracked object.</p> <p>Example:</p> 
3	<div></div> <p>Click to revert the selected changes.</p> <div></div> <p>Click to export the changes to the object as an XML file.</p>

6	<p>Time line.</p> <p>The start time is based on the time range that you selected.</p> <p>The end time is the current time.</p> <p>You can manually change the start and end times after you run the search and get the search results.</p>																												
4	<p>Filters for the change history.</p> <p>You can view all changes or view only selected changes.</p> <p>The objects in the list are the objects in the change history search results.</p>																												
5	<p>Change history for the selected object.</p> <ul style="list-style-type: none">• When—the date and time that the object changed.• What—The type of object.• Name—The name of the object.• By—The "user" that changed the object, which can be a project or a user.• Change—The type of change.• Path—Click the View Path button to see the path to the object. <div><table><tr><th></th><th>When ▲ ▼</th><th>What</th><th>Name</th><th>By...</th><th>Change</th><th>Path</th></tr><tr><td>1</td><td>Dec 03, 2014 4:34 PM Pacific...</td><td>property</td><td>jobcounter</td><td>project: ...</td><td> modified</td><td> </td></tr><tr><td>2</td><td>Dec 03, 2014 4:34 PM Pacific...</td><td>process</td><td colspan="3"><div>Before path: /projects/Default/applications/JPetStore/jobcounter After path: /projects/Default/applications/JPetStore/jobcounter</div></td><td> </td></tr><tr><td>3</td><td>Dec 03, 2014 12:38 PM Pacif...</td><td>property</td><td>pluginpr...</td><td>admin</td><td> created</td><td></td></tr></table></div> <p>Click the View button to view more information about a specific change in the change history.</p>		When ▲ ▼	What	Name	By...	Change	Path	1	Dec 03, 2014 4:34 PM Pacific...	property	jobcounter	project: ...	modified		2	Dec 03, 2014 4:34 PM Pacific...	process	<div>Before path: /projects/Default/applications/JPetStore/jobcounter After path: /projects/Default/applications/JPetStore/jobcounter</div>				3	Dec 03, 2014 12:38 PM Pacif...	property	pluginpr...	admin	created	
	When ▲ ▼	What	Name	By...	Change	Path																							
1	Dec 03, 2014 4:34 PM Pacific...	property	jobcounter	project: ...	modified																								
2	Dec 03, 2014 4:34 PM Pacific...	process	<div>Before path: /projects/Default/applications/JPetStore/jobcounter After path: /projects/Default/applications/JPetStore/jobcounter</div>																										
3	Dec 03, 2014 12:38 PM Pacif...	property	pluginpr...	admin	created																								

Paths to Objects

Click the **View Path** button next to the "Change History for JPetStore" title to see the path to the application.



Click the **View Path** button to see the change in the path to the object before and after the change.

When ▲ ▼	What	Name	By...	Change	Path
1 Dec 03, 2014 4:34 PM Pacific...	property	jobcounter	project: ...	modified	-/-/+
2 Dec 03, 2014 4:34 PM Pacific...	process	Before path: /projects/Default/applications/JPetStore/jobcounter After path: /projects/Default/applications/JPetStore/jobcounter			
3 Dec 03, 2014 12:38 PM Pacific...	property	pluginpr...	admin	created	-/-/+

Detailed Object Changes

Click the **View** button to see the change in the property called emailNotifier.

Timeline for Test -/-/+						
▼ Past 60 Minutes	60	45	30	15	Now	Most Recent
View All Changes	When ▲ ▼	What	Name	By...	Change	Path
Objects	1 Dec 17, 2014 1:37 PM Pacific...	emailNotifier	notifier for jennifer	admin	modified	-/-/+
Changes	2 Dec 17, 2014 1:37 PM Pacific...	emailNotifier	notifier for jennifer	admin	modified	-/-/+
Modified (3)						
Changed by...	Column Changed	From...	To...	Current state		
Admin (3)	1. destinations	doejane@electric-cloud.com	doejane@electric-cloud.com	john DOE@electric-cloud.com		

Click the **Expand** button to all the changes to the property,

Example:



When you click the **Expand** button in a cell, you can see more details in the current change in the cell.

If you click the **Select All** button, all the changes about the object appear.

X	2 Dec 17, 2014 1:37 PM Pacific Standard Time	emailNotifier	notifier for jennifer	By: admin	modified	-/-/+
Column Changed	From...	To...	Current state			
1. destinations	doejane@electric-cloud.com	doejane@electric-cloud.com	john DOE@electric-cloud.com			

To select an object to revert or import the changes to an XML file, select the row of the object in the expanded view.

✓	2 Dec 17, 2014 1:37 PM Pacific...	emailNotifier	notifier for jennifer	admin	modified		
Column Changed		From...	To...	Current state			
1. destinations		john DOE@electric-cloud.com	doejane@electric-cloud.com	john DOE@electric-cloud.com			

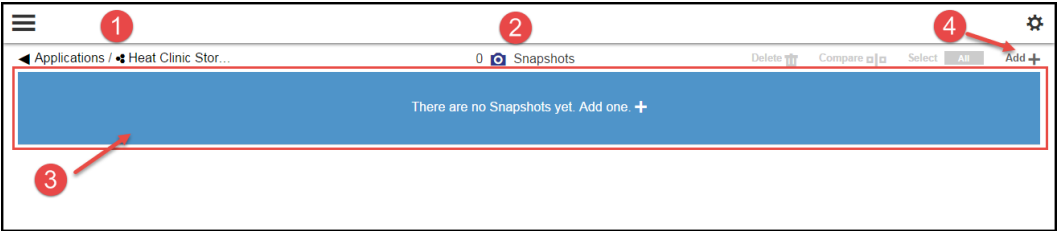
Snapshot List

How to get here: From the Applications List, select an application > click the **Snapshot** button > select **Snapshot List**.

Example:

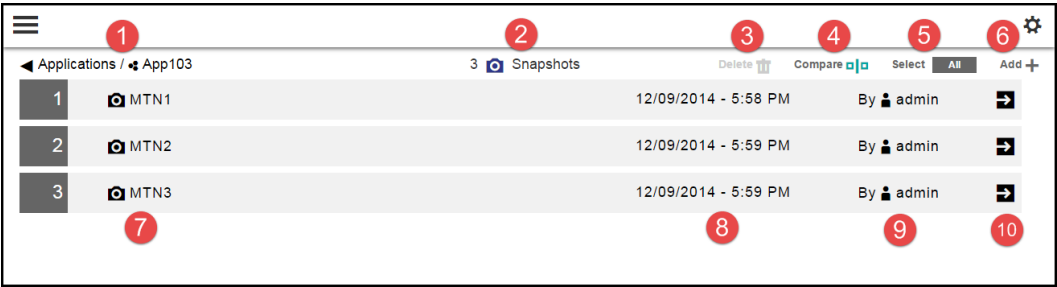


This example shows a Snapshot List with no snapshots:



1	Breadcrumb to the Snapshot List: <i>Applications/<Application name></i>
2	Number of snapshots.
3	Add + pane. Click anywhere in the pane to add a snapshot. The New Snapshot dialog box opens.
4	Click on Add + to add a snapshot. The New Snapshot dialog box opens.

This Snapshot List has three snapshots:



1	Breadcrumb to the Snapshot List: <i>Applications/<Application name></i>
2	Number of snapshots.

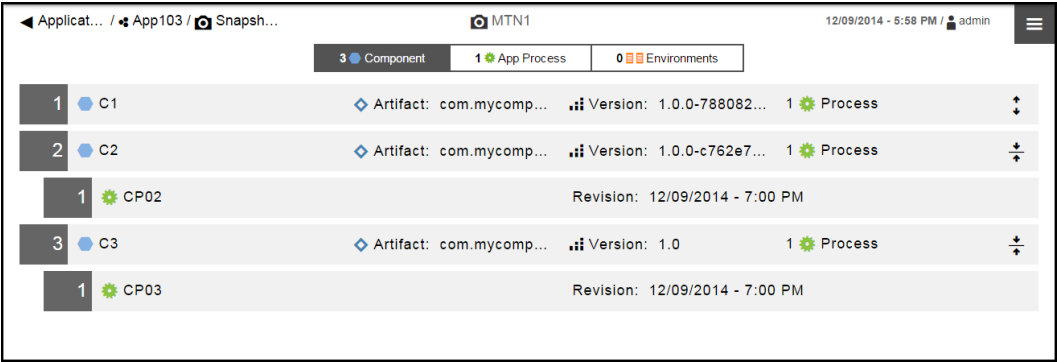
3	<p>Delete button.</p> <p>After you select one or more snapshots in the list, the Delete button is available (enabled). Click this to delete the snapshots that you selected.</p>
4	<p>Compare snapshots from a list.</p> <p>This is available (enabled) when the list has two or more snapshots.</p> <p>Click this to open a full-screen window and view two snapshots next to each other.</p> <p>After the window opens, you can select snapshots on both sides and compare those snapshots.</p> <p>The default is have the most recent snapshot on the left and the previous snapshot on the right.</p> <p>You do not have to select a snapshot to open the full-screen window and view two snapshots.</p>
5	<p>If you click All, all the snapshots are selected.</p> <p>If you click None, none of the snapshots are selected.</p>
6	Add a snapshot.
7	Snapshot name.
8	Time stamp when the snapshot was created.
9	The user who created the snapshot.
10	<p>View details button.</p> <p>Click this to go to the Snapshot Details pages.</p>

Snapshot Details Page

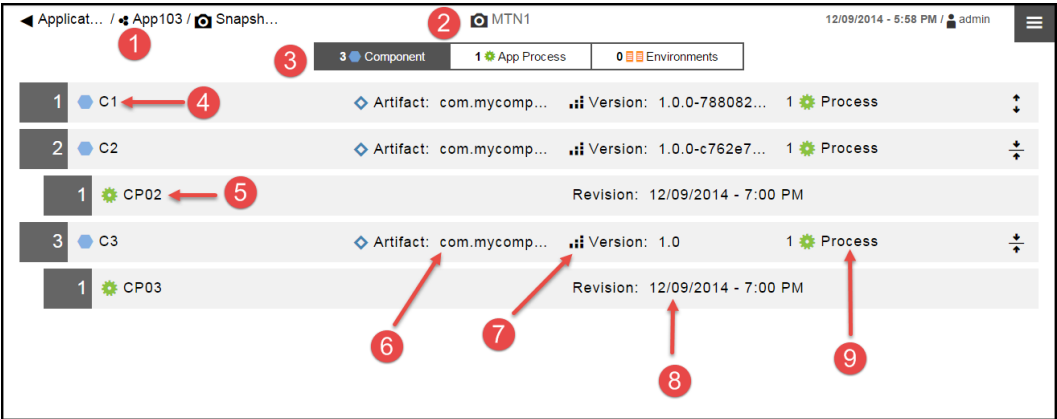
How to get here: From the Snapshot List, click the **View Details** button.

Example:



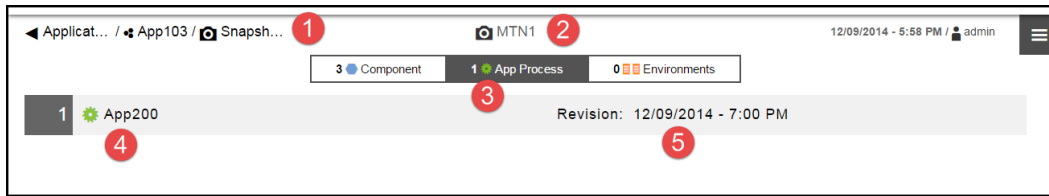


This is the Component view.



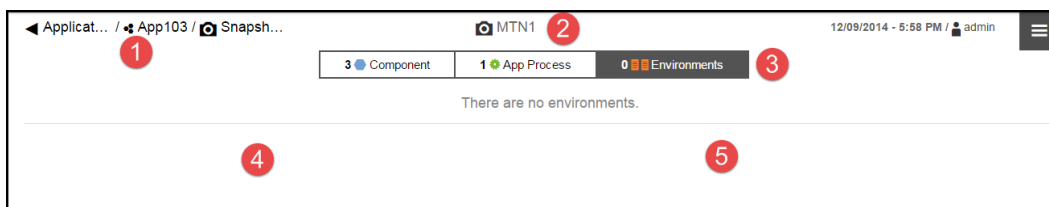
1	Breadcrumb to this Snapshot Details page: <i>Applications/<Application name>/Snapshots</i>
2	Name of the snapshot.
3	Number of components in the snapshot.
4	Component name.
5	Component process name.
6	Artifact name.
7	Artifact version.
8	Time stamp when the component process was last modified.
9	Number of component process for the component.

This is the App Process view.



1	Breadcrumb to this Snapshot Details page: <i>Applications/<Application name>/Snapshots</i>
2	Name of the snapshot.
3	Number of application processes in the snapshot.
4	Application process name.
5	Time stamp when the application process was last modified.

This is the Environment view.



1	Breadcrumb to this Snapshot Details page: <i>Applications/<Application name>/Snapshots</i>
2	Name of the snapshot.
3	Number of environments in the snapshot.
4	Environment name.
5	Time stamp when the environment was last modified.

Snapshot Dialog Boxes

[New Snapshot Dialog Box](#) on page 92

[Component View in the New/Preview Dialog Box](#) on page 92

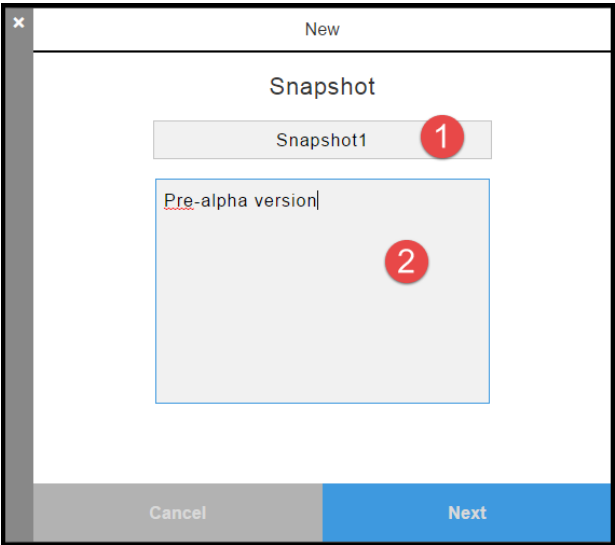
[Modifying the Artifact Version](#) on page 94

[App Process View in the New/Preview Dialog Box](#) on page 95

New Snapshot Dialog Box

How to get here: From the Applications List, click the **Snapshot** button > select **Snapshot List** > click in the **Add one. +** pane or click **Add+** in the Snapshot List.

The New Snapshot dialog box opens.

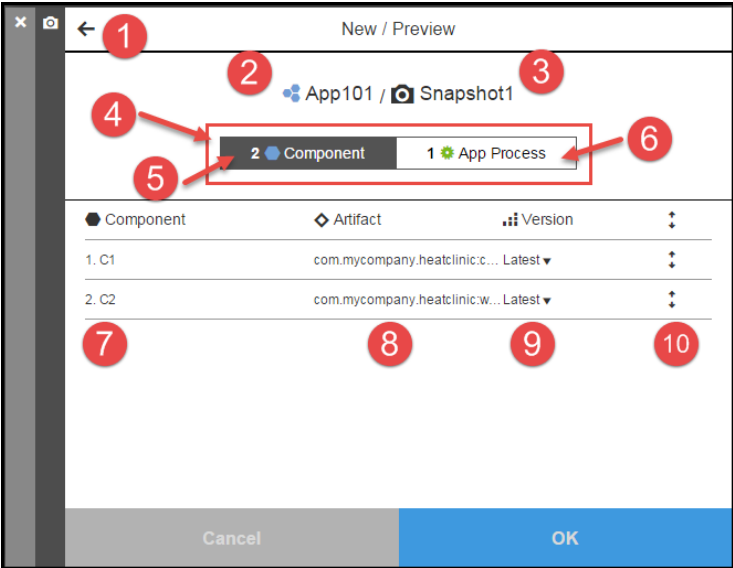


1	Name for the snapshot that must be unique within the application.
2	(Optional) Description of the snapshot.

Component View in the New/Preview Dialog Box

How to get here: In the New Snapshot dialog box, enter the snapshot name and the optional description, and click **Next**.

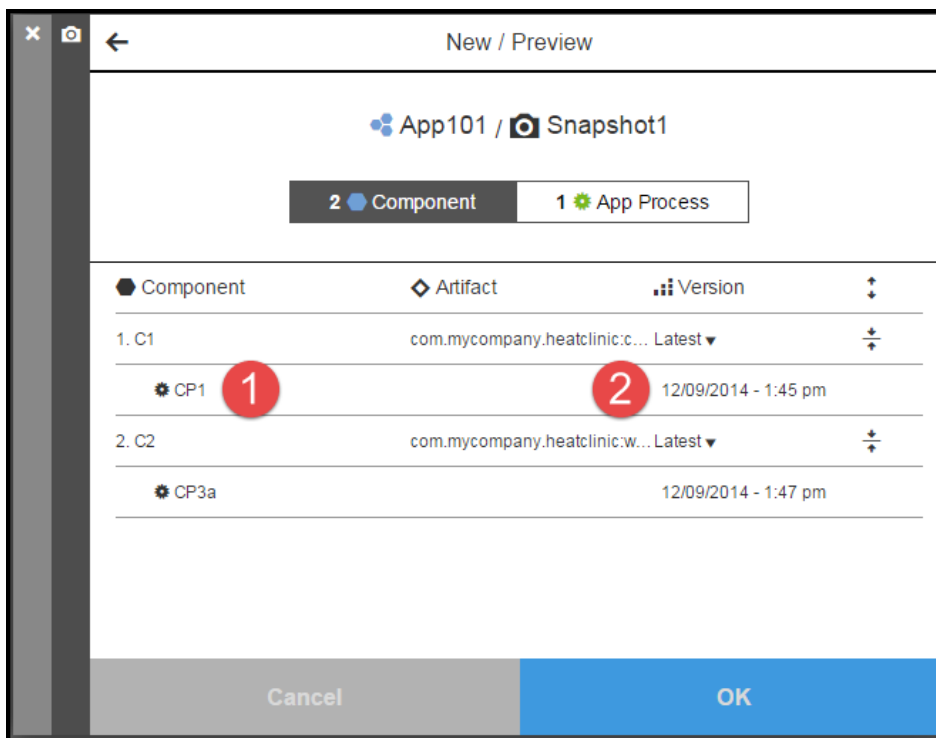
The New/Preview dialog box opens.



1	Go back to the New Snapshot dialog box.
2	Application name.
3	Snapshot name.
4	<p>Toggle between the Component, App Process, and Environment views. Before a snapshot is deployed, only the Component and App Process views are available.</p> <div><div>12 Component</div><div>3 App Process</div></div> <p>After the snapshot is deployed, Component, App Process, and Environment views are available.</p> <div><div>12 Component</div><div>3 App Process</div><div>10 Environment</div></div>

5	Number of components.
6	Number of application processes.
7	Component number (not the row number) and component name. When you click the View icon to show the component details, the component processes rows do not have numbered.
8	Name of the artifact associated with the component.
9	Version of the artifact. Click the down arrow to open the drop-down menu where you can select a different artifact version.
10	Click the View button to show the component details.

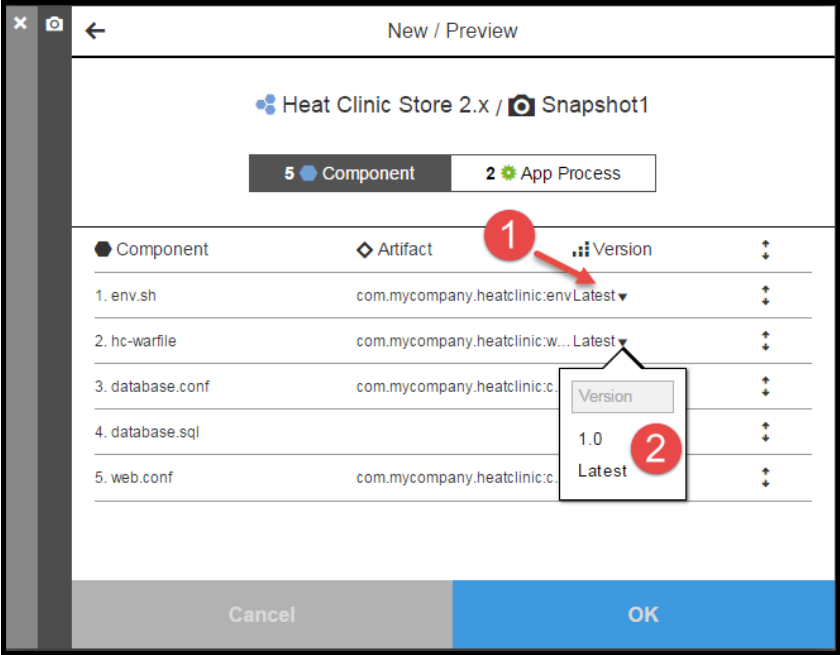
When you choose a component and click the **View** button, the component process information appears.



1	Name of the component process.
2	Time stamp when the component process was last run.

Modifying the Artifact Version

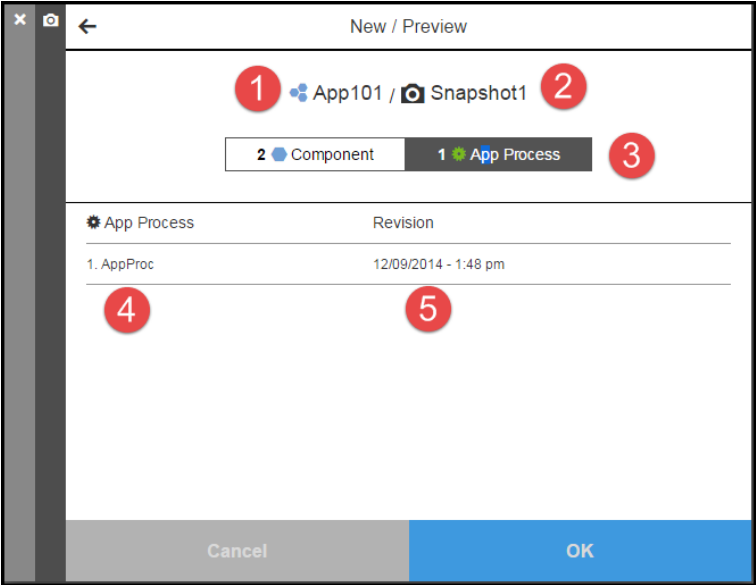
This example shows the current version of each component, which is Latest.



1	Current version of the artifact.
2	Possible artifact versions. To modify the artifact version in the snapshot, click the down arrow in the Version column to open a drop-down menu. You can select a version or enter the one that you want to use.

App Process View in the New/Preview Dialog Box

When you toggle to the App Process view, the following information appears.



1	Application name.
2	Snapshot name.
3	Number of application processes in the application.
4	Name of the application process.
5	Time stamp when the component process was last run.

Inventory Tracking

Electric Flow uses Inventory Tracking to track what is built, tested, and deployed in your continuous delivery solution, including artifacts, the artifact version, resources on which the applications are run, and environments to which the resources are assigned.

If there is an issue in an application in operations, you can find the details about what was deployed with Inventory Tracking.

Tracking at the Component Process Level

Inventory Tracking occurs at the component process level.

You design the component process as one of the following process types in the Component Process Details dialog box:

- **Deploy**—Enables Inventory Tracking. The ElectricCommander server tracks artifacts deployed to environments. This is the default.
- **Undeploy**—After the first successful job step in a component process with this setting, the ElectricCommander platform removes the environment inventory record.
- **Other**—Disables Inventory Tracking.

New

Component Process Details

Name

Description

Deploy

Credential

0

Optional >

Workspace

default

Optional

Time limit

0

Seconds

Optional

Cancel

OK

Environment Inventory

How to get here: From the Environments List, choose an environment and click the **Inventory** button. The Environment Inventory for that environment appears.

The Environment Inventory is the state of the environment at a point in time.

- When an application is running, you can see the progress as it runs.
- After an application runs, you can see the details for the objects in application that ran in the environment.

Click the **View** details button in a row to see more details about a specific object including

- Environment name
- Application mapped to this environment
- Number of deployed artifacts in the application
- When the artifacts were deployed
- Status of the deployment: success or failure

In this example, the Environments List shows that an application was run on the "hc-store dev" environment and has one error.

electricflow					
admin					
4 Environments					
1	Myenv	Enabled	0 Applications installed		
2	hc-store dev	Enabled	1 Applications installed	1	
3	hc-store prod	Enabled	1 Applications installed		
4	hc-store qe	Enabled	0 Applications installed		

The first level of the Environment Inventory appears.

electricflow					
admin					
Environments / Inventory					
hc-store dev					
1	Heat Clinic Store 1.1	6 Artifacts	1		

In the second level, you can view more details. Click the View arrows at the end of the row.

The applications mapped to this environment appear.

electricflow					
admin					
Environments / Inventory					
hc-store dev					
1	Heat Clinic Store 1.1	6 Artifacts	1		
	hc-warfile	com.myc...warfile	1.0	Tomcat	5 minute...
	env.sh	com.myc...nic:env	1.0	Tomcat	2 minute... 1/2
	database.conf	com.myc...:config		MySQL	
	database.conf	com.myc...:config	1.0	MySQL	5 minute...
	database.sql			MySQL	
	web.conf	com.myc...:config	1.0	Apache...	5 minute...

To show more details in the third level, click the **Process** button at the end of the env.sh row.

Applications						
admin Running: Heat Clinic Store 1.1 - Deploy on hc-store dev						
Errors 11						
8_Deploy_Heat Clinic Store 1.1_Default_20140730...	Aborted	Jul 30, 2014	5:19 Pacifi...	00:54	100%	
Install Tomcat env settings	Error	Jul 30, 2014	5:19 Pacifi...	00:53	100%	
get files	Error	Jul 30, 2014	5:19 Pacifi...	00:52	100%	
place file	Error	Jul 30, 2014	5:19 Pacifi...	00:00	100%	
restart Tomcat	Error	Jul 30, 2014	5:19 Pacifi...	00:00	100%	
update web config	Skipped	Jul 30, 2014	5:19 Pacifi...	00:00	100%	
deploy app	Skipped	Jul 30, 2014	5:19 Pacifi...	00:00	100%	
update DB config	Skipped	Jul 30, 2014	5:19 Pacifi...	00:00	100%	
setup database	Skipped	Jul 30, 2014	5:19 Pacifi...	00:00	100%	
start tomcat	Skipped	Jul 30, 2014	5:19 Pacifi...	00:00	100%	
Create Link to application	Skipped	Jul 30, 2014	5:19 Pacifi...	00:00	100%	

In the fourth level, you can get more information for the steps in the Install component process by clicking on the "View details" arrow in the "get files," "place file," and "restart Tomcat" rows.

Applications						
admin Running: Heat Clinic Store 1.1 - Deploy on hc-store dev						
Errors 11						
8_Deploy_Heat Clinic Store 1.1_Default_20140730...	Aborted	Jul 30, 2014	5:19 Pacifi...	00:54	100%	
Install Tomcat env settings	Error	Jul 30, 2014	5:19 Pacifi...	00:53	100%	
get files	Error	Jul 30, 2014	5:19 Pacifi...	00:52	100%	
I1	Aborted	Jul 30, 2014	5:19 Pacifi...	00:00	100%	
resource-01	Success	Jul 30, 2014	5:19 Pacifi...	00:01	100%	
place file	Error	Jul 30, 2014	5:19 Pacifi...	00:00	100%	
I1	Error	Jul 30, 2014	5:20 Pacifi...	00:00	100%	
resource-01	Aborted	Jul 30, 2014	5:20 Pacifi...	00:00	100%	
restart Tomcat	Error	Jul 30, 2014	5:19 Pacifi...	00:00	100%	
I1	Error	Jul 30, 2014	5:20 Pacifi...	00:00	100%	
resource-01	Aborted	Jul 30, 2014	5:20 Pacifi...	00:00	100%	

The Environment Inventory shows this information:

- Environment name: hc-store dev
- Name of the application mapped to this environment: Heat Clinic Store 1.1
- Components in the application: See the second level.
- Number of the artifacts associated with components: Six. For details, see the first and second levels.

- Each component has an artifact with a version number: See the second level.
- Each component is also in an application tier: See the second level.
- Time when the artifact was deployed: See the third and fourth levels.
- Error counts if there are any errors: See the third and fourth levels.
- Number of resources that are successfully assigned to applications on a per-artifact basis: See the third and fourth levels.

Application Inventory

How to get here:

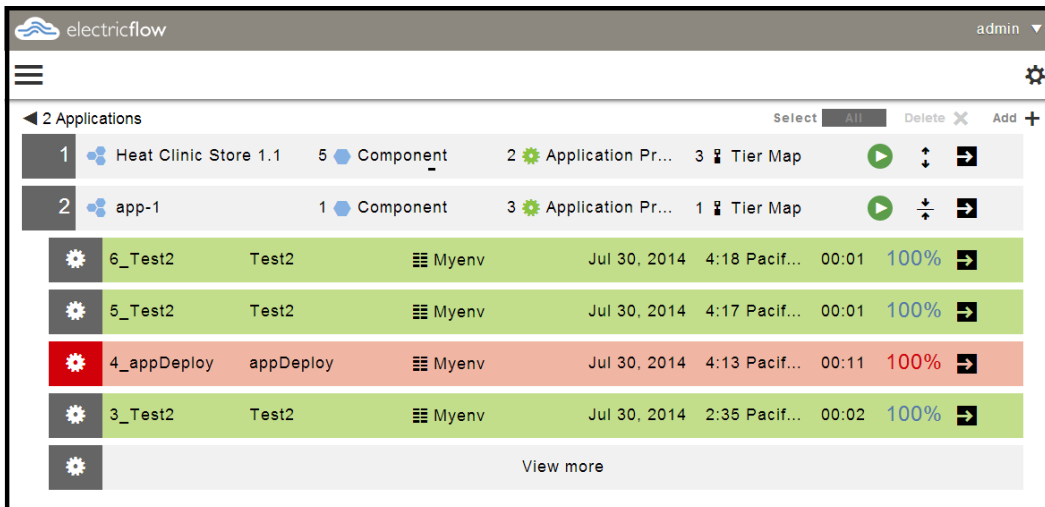
- From the Home page, click the **Applications** launch pad.
- From the main menu on the Home page, click the **Applications** destination.

The Application Inventory is the state of the application at a point in time.

- When an application is running, you can see the progress as it runs.
- After an application runs, you can see the results for any object in application.

Click the **View details** button in a row to see more details about object.

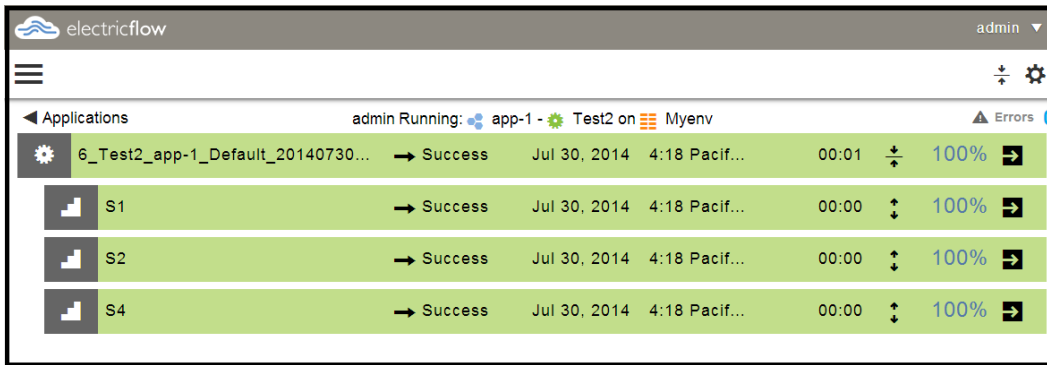
The following example shows that the application called "app-1" ran successfully on July 30, 2014, at 4:18 pm.



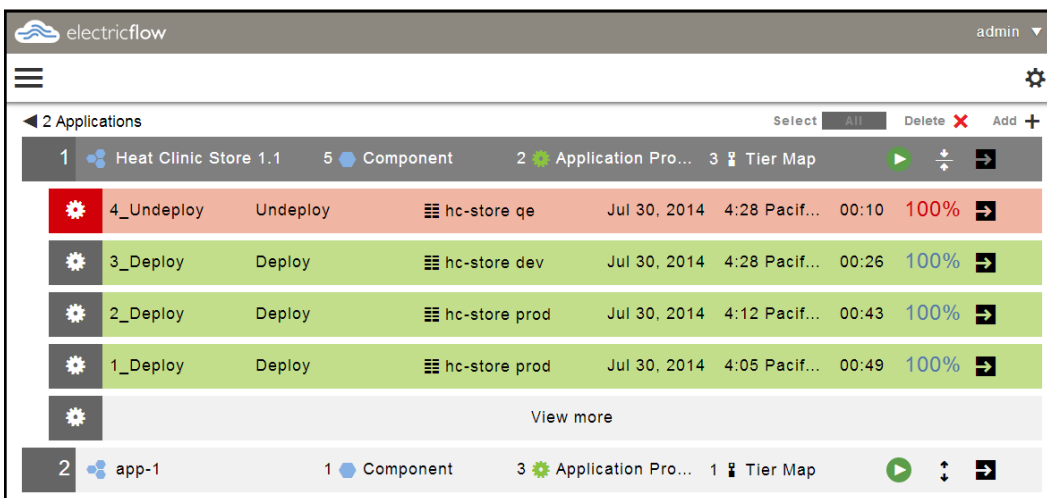
The screenshot shows the ElectricFlow web interface. At the top, there's a header with the ElectricFlow logo and a user dropdown menu showing 'admin'. Below the header, there's a navigation bar with a hamburger menu and a settings gear. The main content area is titled '2 Applications' and contains a table of application components. The table has columns for application ID, application name, component name, environment, date, time, duration, and status. The first two rows are for 'Heat Clinic Store 1.1' and 'app-1'. The 'app-1' row is expanded, showing a list of components: '6_Test2', '5_Test2', '4_appDeploy', '3_Test2', and a 'View more' link. The '4_appDeploy' row is highlighted in red, indicating a failed status, while the others are green, indicating success.

Application ID	Application Name	Component Name	Environment	Date	Time	Duration	Status
1	Heat Clinic Store 1.1	5 Component	Myenv	Jul 30, 2014	4:18 Pacif...	00:01	100%
2	app-1	1 Component	Myenv	Jul 30, 2014	4:17 Pacif...	00:01	100%
6_Test2	Test2	Myenv	Jul 30, 2014	4:18 Pacif...	00:01	100%	Success
5_Test2	Test2	Myenv	Jul 30, 2014	4:17 Pacif...	00:01	100%	Success
4_appDeploy	appDeploy	Myenv	Jul 30, 2014	4:13 Pacif...	00:11	100%	Failed
3_Test2	Test2	Myenv	Jul 30, 2014	2:35 Pacif...	00:02	100%	Success

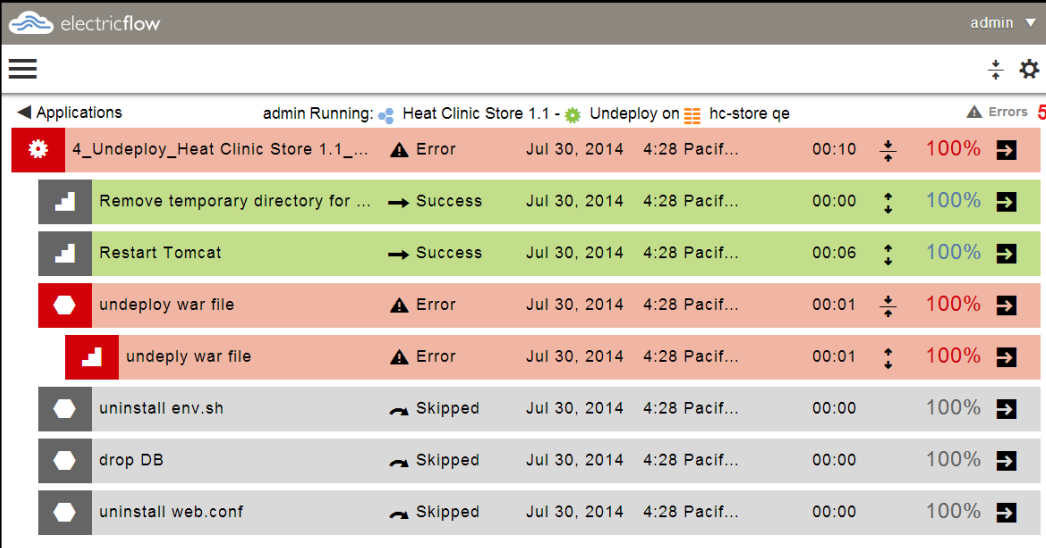
Click the right arrow in the 6_Test2 row to see the detailed results. The process has three steps, which were all successfully run.



The following shows that the application called "Heat Store Clinic 1.1" did not run successfully on July 30, 2014, at 4:28 p.m.



Click the right arrow in the 4_Undeploy row to see the detailed results. The process has two steps that ran successfully, a component called "undeploy war file" with errors, three skipped objects, and five errors.



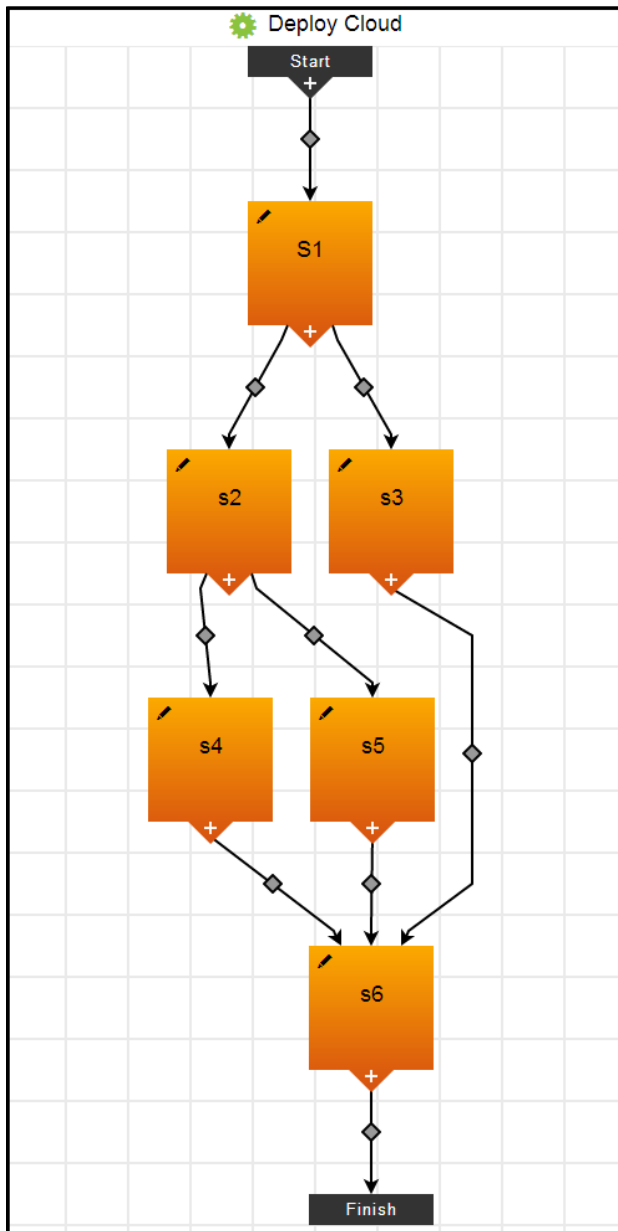
Step Name	Status	Date	Time	Duration	Progress	Actions
4_Undeploy_Heat Clinic Store 1.1_...	Error	Jul 30, 2014	4:28 Pacif...	00:10	100%	[Refresh] [Details]
Remove temporary directory for ...	Success	Jul 30, 2014	4:28 Pacif...	00:00	100%	[Refresh] [Details]
Restart Tomcat	Success	Jul 30, 2014	4:28 Pacif...	00:06	100%	[Refresh] [Details]
undeploy war file	Error	Jul 30, 2014	4:28 Pacif...	00:01	100%	[Refresh] [Details]
undeply war file	Error	Jul 30, 2014	4:28 Pacif...	00:01	100%	[Refresh] [Details]
uninstall env.sh	Skipped	Jul 30, 2014	4:28 Pacif...	00:00	100%	[Refresh] [Details]
drop DB	Skipped	Jul 30, 2014	4:28 Pacif...	00:00	100%	[Refresh] [Details]
uninstall web.conf	Skipped	Jul 30, 2014	4:28 Pacif...	00:00	100%	[Refresh] [Details]

To troubleshoot the errors, you can click the right arrow in one of the "undeploy war file" rows and you go a Job Step Detail page in the ElectricCommander platform.

Viewing Job Details

When you run a process in an application, the system records the results of the process as each step is performed. You can see a summary of the results in the Applications Inventory.

This example shows the results of running the Deploy Web application process, which consists of the Deploy Cloud component process.



When you run the Deploy Web process, you can see the status of the process as it runs in the Application Inventory.

You can also see which application processes were run, with the latest process appearing first.

5 Applications

Select

All

Delete

Add

1

Corvet 3.0

1 Component

0 Application Process

0 Tier Map

2

Crystal's App

1 Component

0 Application Process

0 Tier Map

3

Heat Clinic Store 1.1

5 Component

2 Application Process

3 Tier Map

4

Web Servers

1 Component

1 Application Process

1 Tier Map

2_Deploy Web

Deploy Web

hc-store dev

Jul 28, 2014 5:55 Pacif...

00:04

100%

1_Deploy Web

Deploy Web

hc-store dev

Jul 28, 2014 5:54 Pacif...

00:04

100%

5

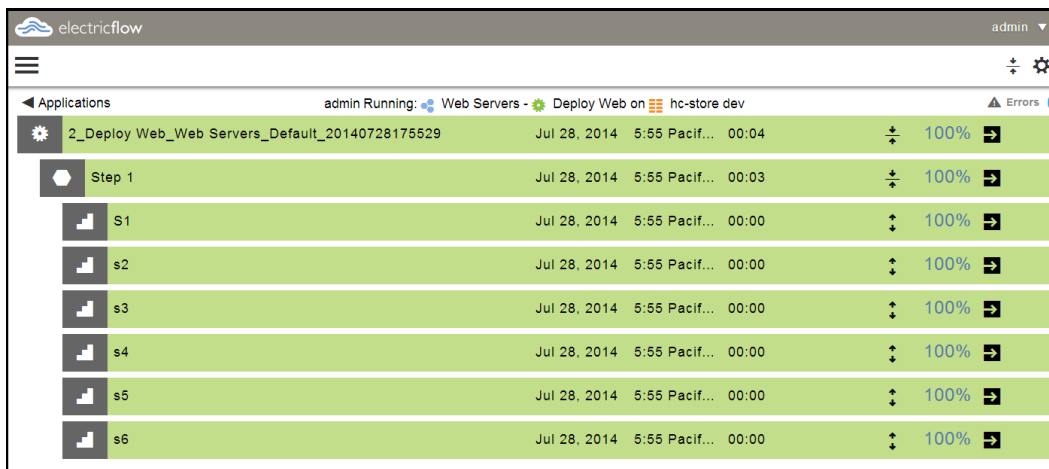
app-1

1 Component

1 Application Process

1 Tier Map

To see more details about the process, click the process about which you want more information. If you want to learn more about the **2_Deploy Web** process, click **2_Deploy Web** in the Applications Inventory. It now shows the details for the process that you selected.



Applications						admin Running: Web Servers - Deploy Web on hc-store dev	Errors 0
	2_Deploy Web_Web Servers_Default_20140728175529		Jul 28, 2014 5:55 Pacif...	00:04	100%		
	Step 1		Jul 28, 2014 5:55 Pacif...	00:03	100%		
	S1		Jul 28, 2014 5:55 Pacif...	00:00	100%		
	s2		Jul 28, 2014 5:55 Pacif...	00:00	100%		
	s3		Jul 28, 2014 5:55 Pacif...	00:00	100%		
	s4		Jul 28, 2014 5:55 Pacif...	00:00	100%		
	s5		Jul 28, 2014 5:55 Pacif...	00:00	100%		
	s6		Jul 28, 2014 5:55 Pacif...	00:00	100%		

Notice the order of the process steps in the Applications Inventory. The order is not based on the branches in the process. Instead, the system lists the steps based on their level in the process.

- Step S1 is the first step in the process and is listed first. There are no other steps at this level so the next step is in the level following S1.
- The next step in the list is s2.
- Step s3 is on the same level as s2. There are no other steps at this level so the next step is in the level after this.
- The next step is s4.
- Step s5 is on the same level as s4. There are no other steps at this level so the next step is in the level after this.
- The last step is s6.

Related Topics:

- [ElectricFlow Buttons and Icons](#) on page 15
- [Home Page](#) on page 30
- [Environments List](#) on page 62

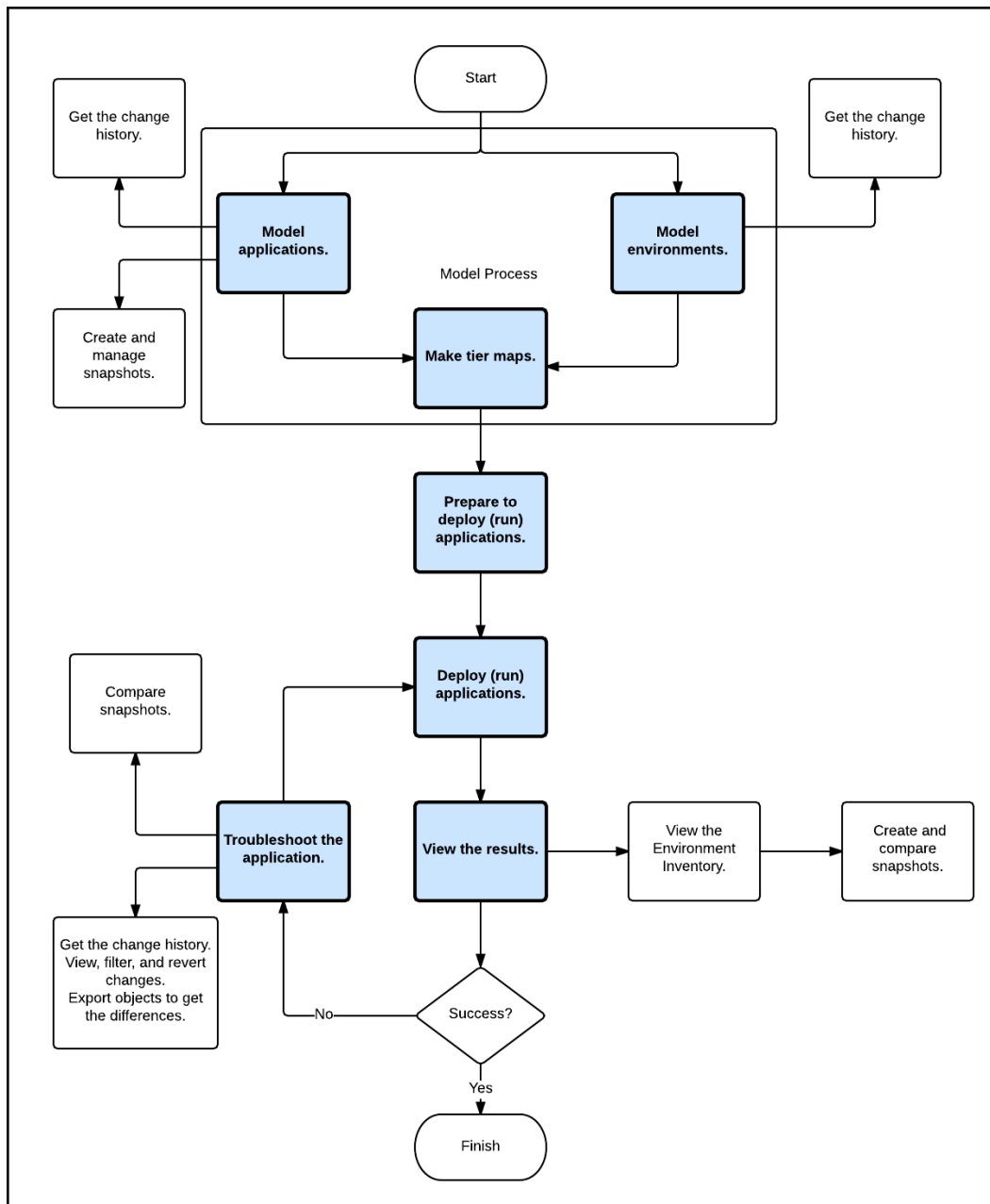
Modeling and Deploying Applications in Static Environments

This topic describes how to model an application, deploy it in a static environment, and view and troubleshoot the results. In this workflow, you create a static environment with resources in your system or network, such as servers, databases, machines, and virtual machines (VMs), before deploying the application. It does not describe how to create dynamic environments with cloud resources that are spun up when you deploy the application. For information about the dynamic environment workflow, go to [Modeling and Deploying Applications in Dynamic Environments](#) on page 210.

The following tasks describe how to model and deploy (run) applications at a high level.

1. [Logging in to ElectricFlow](#) on page 212
2. [Modeling Applications](#) on page 213
3. [Modeling Environments](#) on page 166
4. [Making Tier Maps](#) on page 171
5. [Deploying \(Running\) Applications](#) on page 173
6. [Viewing Results and Troubleshooting](#) on page 197

For information about the UI, see the [ElectricFlow User Interfaces](#) on page 15 topics.



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:

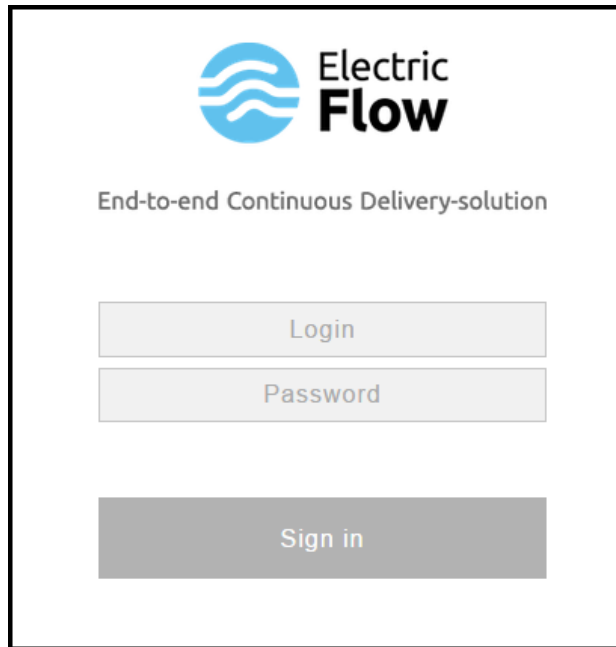
Term	Within ElectricFlow	Outside of ElectricFlow
Application	The application that you design and run (deploy) to produce your software for continuous delivery across different pipelines.	The software, system or application that you build, test, install, implement, release, and deploy using ElectricFlow. 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. <i>Run</i> is a synonym of <i>deploy</i> in ElectricFlow.	All the processes or actions to use software in its environment, including implementing, installing, configuring, debugging, troubleshooting, and releasing.

Logging in to ElectricFlow

1. Enter `http://<commander-server>/flow` in a browser window, where `<commander-server>` is the ElectricCommander server IP address or host name.

For example, when you go to `https://123.123.1.222/flow/`, the landing page opens.

Example:

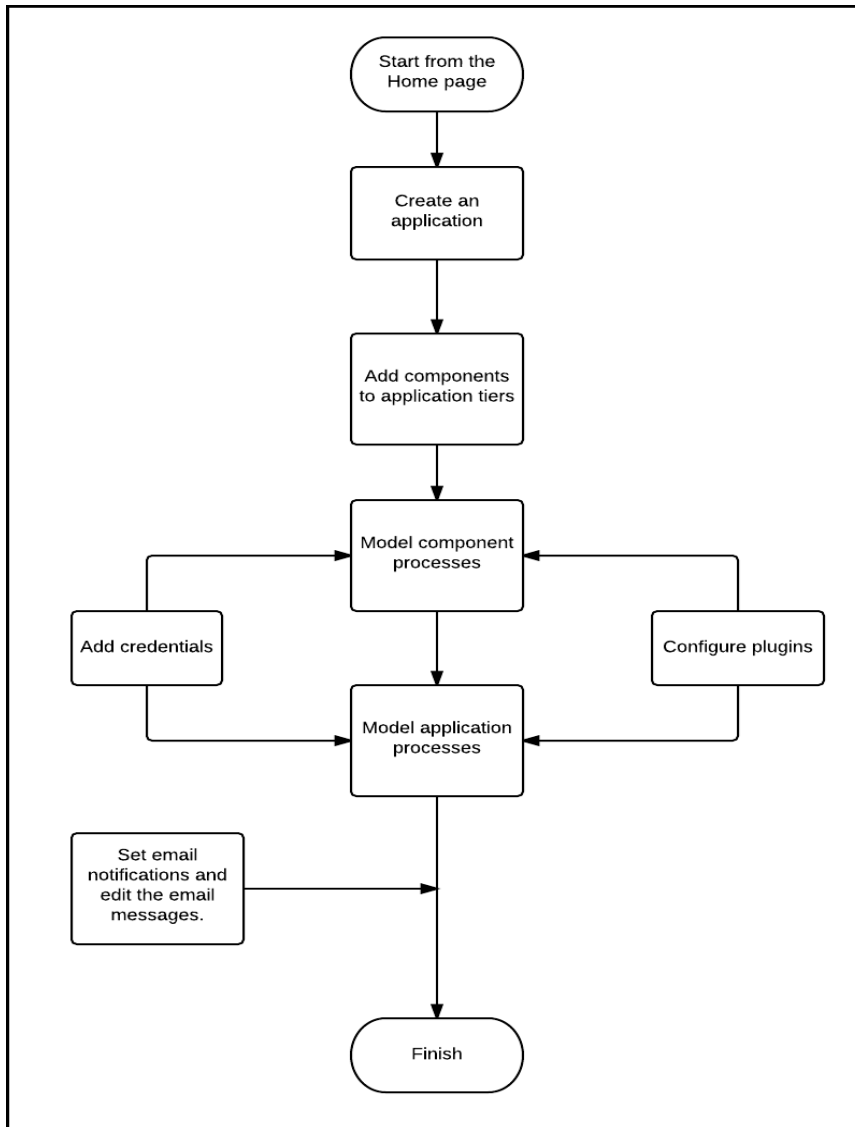
The image shows the ElectricFlow login interface. At the top is the ElectricFlow logo, which consists of a blue circular icon with three white wavy lines and the text "Electric Flow" in a bold, sans-serif font. Below the logo is the tagline "End-to-end Continuous Delivery-solution". Underneath the tagline are three input fields: a "Login" field, a "Password" field, and a "Sign in" button. The "Login" and "Password" fields are light gray, while the "Sign in" button is a darker gray.

IMPORTANT: For a new installation, the default admin account user name is *admin* and the password is *changeme*. You should change the default admin password as soon as possible.

2. Enter a user name and password.
3. Click **Sign in**.

The ElectricFlow Home page opens.

Modeling Applications



1. Create an application and application tiers.
2. Add components to the application tiers.
3. Model component processes.
4. Model application processes.
5. (Optional) Set email notifications and edit the email messages.

Creating an Application and Application Tiers

Starting from the Home page:

1. Go to the Applications List by either
 - Clicking the **Applications** launch pad.
 - Clicking the **Menu** button > **Applications**.

The Applications List opens.

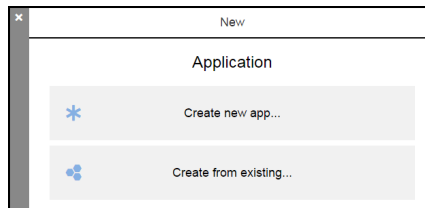
2. Click the **Add +** button in the upper right corner.

Example:



The New Application dialog box appears.

Example:



There are two ways to create an application:

- Click **Create new app** to create a new application.
 - Click **Create from existing** to create an application based on an existing application.
3. Create the application by going to appropriate next step.
 - To create a new application, go to [Creating a New Application](#) on page 216.
 - To create an application based on an existing application, go to the next step.

4. Click **Create from existing** to create an application based on an existing one.

The new application will have the same objects (components, artifacts, and application processes) as the existing application. However, it is not an exact copy of it because you need to configure new tier maps for it.

The **New Application from Existing** dialog box opens.

- a. Select an application.

The **New Application Name** dialog box opens with the name of the application you selected in the **Name** field.

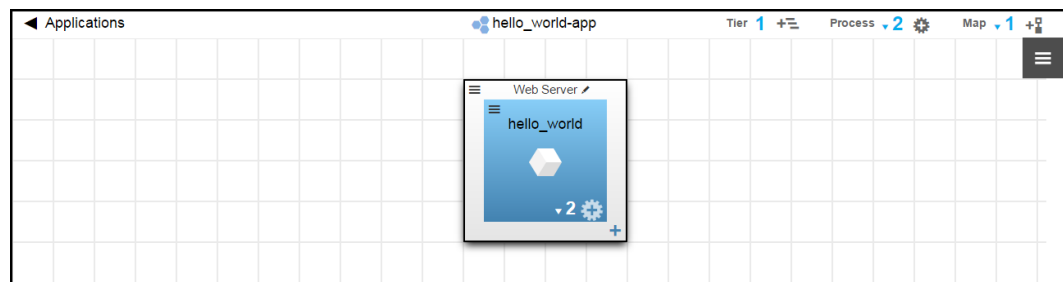
- b. Enter a name in the **Name** field.

It must not match the name of another application in the project.

- c. (Optional) Enter a description of the application in the **Description** field.

- d. Click **OK**.

If you are modeling an application based on an existing application, the Applications Visual Editor displays the same application tiers and components as the existing application with the name that you entered.

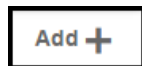


Creating a New Application

Starting in the Applications List:

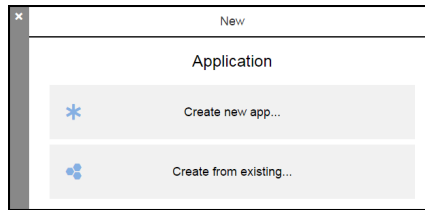
1. Click the **Add +** button in the upper right corner.

Example:



The New Application dialog box appears.

Example:



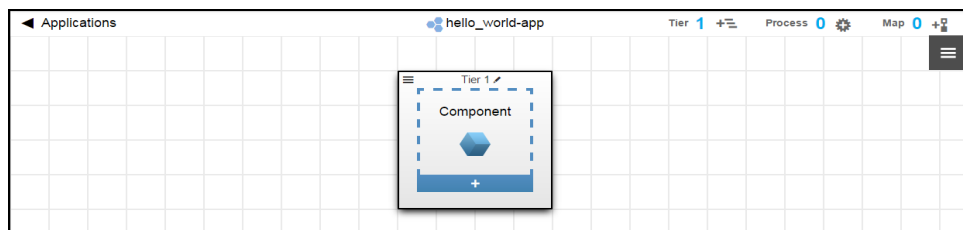
2. Click **Create new app** to create an application.

The **New Application Name** dialog box opens.

- a. Enter a name in the **Name** field.
- b. (Optional) Enter a description of the application in the **Description** field.
- c. Click **OK** to save the settings.

If you are modeling a new application, the Applications Visual Editor displays an application tier called Tier 1 with one component called Component.

Example:



3. Go to [Defining Components](#) on page 43 to set the component details.

Adding Components to the Application Tiers

Starting in the Applications Visual Editor:

1. Click the **Edit** button.

The **Application Tier Details** dialog box opens.

2. Change the name of the tier and click OK.

Example:

Change the name to **Web Server** and click **OK**.

The Applications Visual Editor now has an application tier called Web Server.

3. Click the **+** button in the component.

The **New Component** dialog box opens.

4. Enter a name in the **Name** field.
5. (Optional) Enter a description of the component in the **Description** field.

6. Click **Next** to save the settings.

The Component Details dialog box opens.

7. Click the **Current Location** field.

A list of available artifact locations appears.

8. Select a location and click **Browse**.

The information needed to define the artifact appears below.

9. Enter the appropriate information in the fields.

Example:

Component Details

hello_world Description

EC-FileSysRepo [Browse](#)

Source: /home/eccloud/sample_dsl/hello_ Required

Artifact: hello_world.html Required

Version: ☐ Latest ☒ Exact 1

Retrieve to Directory:

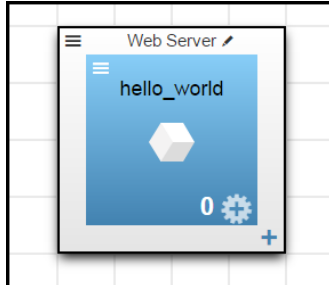
Cancel OK

1	Content Location of the component
2	Component details that vary depending on the Content Location

10. Click **OK**.

The Applications Visual Editor now shows an application tier called Web Server with a component called hello_world.

Example:



11. To add a component to the same tier, click the **+** button in the lower right corner of the tier.

A new undefined component appears in the tier.

12. Configure this component the same way you did the first one.

Adding a Component

To add component to the same application tier:

1. Click the **+** button in the lower right corner of the tier.

A new undefined component appears in the tier.

2. Click the **+** button in the new component to set the component details, following the steps previously described.

Adding an Application Tier

To add an application tier, click the **Add tier** button.

Modeling Component Processes

Starting in the Applications Visual Editor:

1. Click the **Add Process** button in a component to a component process to it.

Example:



The **New Component Process Details** dialog box opens.

2. Enter information about the component process in the Component Process Details dialog box.

Example:

The screenshot shows a 'New Component Process Details' dialog box. It features a title bar labeled 'New' and a main heading 'Component Process Details'. The form includes a 'Name' text field, a 'Description' text area, a 'Deploy' dropdown menu, a 'Credential' field with the value '0' and an 'Optional' link, a 'Workspace' dropdown menu with 'default' and an 'Optional' link, and a 'Time limit' field with '0' and a 'Seconds' dropdown menu with an 'Optional' link. The bottom of the dialog contains 'Cancel' and 'OK' buttons.

Field	Description and How to Set It
Name	Name of the process step
Description	Description of the process step
Process Type	<p>Type of process. The default is Deploy.</p> <p>To set the process type:</p> <ol style="list-style-type: none"> 1. Click the Type field to select the process type. 2. Select one of these options: <ul style="list-style-type: none"> Deploy—Enables Inventory Tracking. The ElectricCommander server tracks the artifacts deployed to environments. Undeploy—The next time that the process is run, the ElectricCommander server removes information about the artifacts deployed to environments. Other—Disables Inventory Tracking.

Field	Description and How to Set It
Credential	<p>An object consisting of a user name and password that ElectricFlow uses to run a process step.</p> <p>The dialog box displays the number of credentials for the process step, which are the same credentials that you use with procedures, steps, and schedules in the ElectricCommander platform.</p> <p>You can only impersonate one credential. To set the process type, see Adding Credentials.</p>
Workspace	<p>Area in the disk space where the files and results of the job step are stored.</p> <p>To set the workspace, click the Workspace field to open a drop-down list of workspaces in the ElectricCloud platform and select a workspace.</p> <p>For more information about workspaces, go to the ElectricCommander Help > Workspaces and Disk Management. To set the workspace, click Workspace to open a drop-down list of workspaces in the ElectricCloud platform. Select a workspace, and click OK.</p>
Time limit	<p>Maximum length of time that the step is allowed to run. After the time specified, the step is aborted,</p> <p>To set the time limit, enter the time and select the unit of time: seconds, minutes, or hours.</p> <p>For information about time limits for procedure job steps in the ElectricCommander platform, go to the ElectricCommander Help > API Commands.</p>

Example:

New

Component Process Details

Deploy

Description

Deploy

Credential

0

Optional >

Workspace

Optional

Time limit

0

Seconds

Optional

Cancel

OK

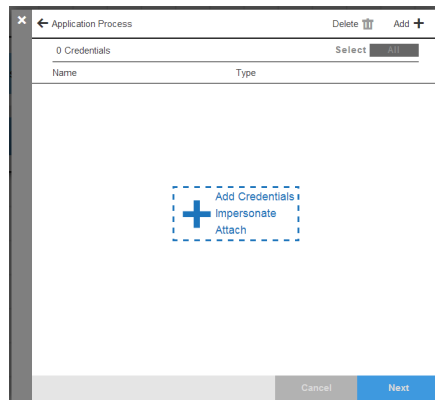
- (Optional) To add credentials, do the following:

IMPORTANT:

When you impersonate a credential, make sure that the impersonated user has the absolute path to the bin directories in the \$PATH environment.

If you define a process step with a command, you must enter the absolute path in the **Post Processor** and **Shell** fields in the Define Step dialog box.

- Click in the **Add Credentials** field.

Example:

- To impersonate one credential, select **Impersonate** in the **Type** field.
- Click the **Select Credential** field to open a drop-down list of credentials for the process step.
- Select a credential.
- Click **OK**.

The **Credentials** dialog box now shows the one credential for impersonation.

- To attach one or more credential to the process step, select **Attach** in the **Type** field.
- Click the **Select Credential** field to open a drop-down list of credentials for the process step.
- Select a credential.
- Click **OK**.

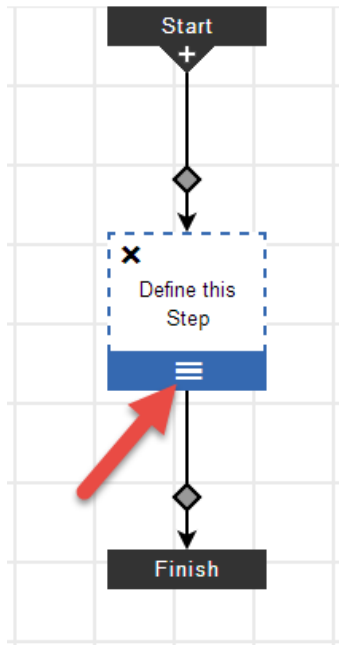
The **Credentials** dialog box now shows the attached credentials.

- Click **OK**.

The Component Process Visual Editor opens.

5. In the new process step, click the button below "Define this Step" to define it.

Example:



The Component Process Step dialog box opens.

6. Enter information about the step in the dialog box.

Example:

New Step

Component Process Step

Step name: Required

Description:

Credential: >

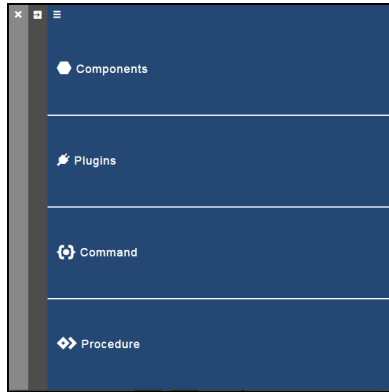
Workspace: ▼

Time limit: Seconds ▼

7. Click **Next**.

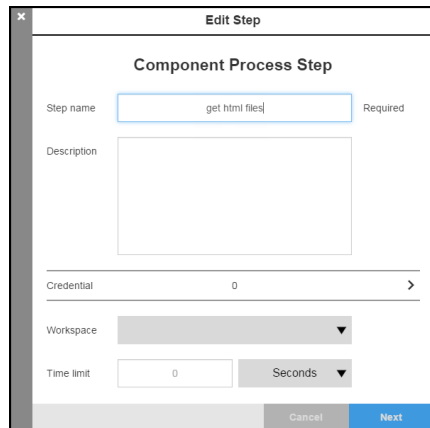
The Process Step dialog box opens.

Example:



8. To define the step, enter information in the dialog boxes that follow.

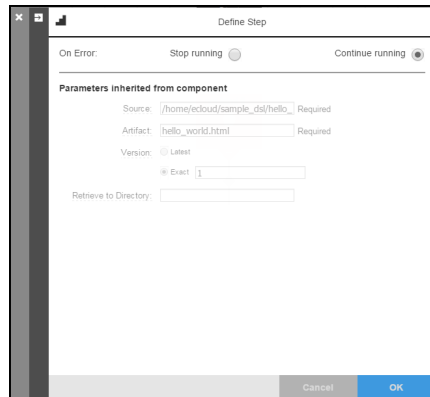
Examples:



The 'Edit Step' dialog box is titled 'Component Process Step'. It contains the following fields:

- Step name:** A text box containing 'get.html.files' with a 'Required' label to its right.
- Description:** A large empty text area.
- Credential:** A dropdown menu showing '0' with a right-pointing arrow.
- Workspace:** A dropdown menu.
- Time limit:** A text box containing '0' and a dropdown menu set to 'Seconds'.

At the bottom are 'Cancel' and 'Next' buttons.



The 'Define Step' dialog box is titled 'Define Step'. It contains the following fields:

- On Error:** Two radio buttons: 'Stop running' (unselected) and 'Continue running' (selected).
- Parameters inherited from component:**
 - Source:** A text box containing '/home/ec2cloud/sample_ds/hello_' with a 'Required' label.
 - Artifact:** A text box containing 'hello_world.html' with a 'Required' label.
 - Version:** A radio button for 'Latest' (selected) and a radio button for 'Exact' (unselected) followed by a text box containing '1'.
 - Retrieve to Directory:** An empty text box.

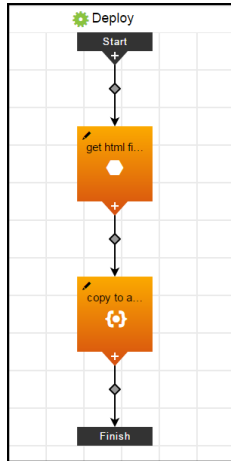
At the bottom are 'Cancel' and 'OK' buttons.

When you are done, the defined step now appears in the process in the Component Process Visual Editor.

9. Define more steps in the process.

You can also drag and drop a step into the process.

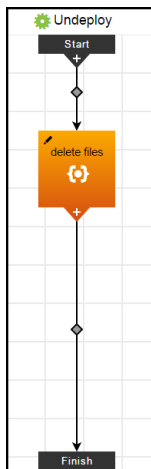
Example:



Modeling More Component Processes

Repeat the steps in the previous section to add additional component processes.

Example:



Modeling Application Processes

Starting in the Applications Visual Editor:

1. Click the **Add process** button in the upper right corner to add an application process.

Example:



The **New Application Process Details** dialog box opens.

2. Enter information in the New Application Process Details dialog box, and click **OK**.

Example:

The screenshot shows a dialog box titled "New" with the subtitle "Application Process Details". It contains the following fields:

- Name:** A text input field.
- Description:** A text area.
- Credential:** A text input field containing "0", with an "Optional" link to its right.
- Workspace:** A dropdown menu showing "default", with an "Optional" link to its right.
- Time limit:** A text input field containing "0", a unit dropdown menu showing "Seconds", and an "Optional" link to its right.

At the bottom of the dialog are "Cancel" and "OK" buttons.

Field	Description and How to Set It
Name	Name of the process step
Description	Description of the process step
Credential	<p>An object consisting of a user name and password that ElectricFlow uses to run a process step.</p> <p>The dialog box displays the number of credentials for the process step, which are the same credentials that you use with procedures, steps, and schedules in the ElectricCommander platform.</p> <p>You can only impersonate one credential.</p>

Field	Description and How to Set It
Workspace	<p>Area in the disk space where the files and results of the job step are stored.</p> <p>To set the workspace, click the Workspace field to open a drop-down list of workspaces in the ElectricCommander platform and select a workspace.</p> <p>For more information about workspaces, go to the ElectricCommander Help > Workspaces and Disk Management.</p> <p>To set the workspace, click Workspace to open a drop-down list of workspaces in the ElectricCommander platform. select a workspace, and click OK.</p>
Time limit	<p>Maximum length of time that the step is allowed to run. After the time specified, the step is aborted,</p> <p>To set the time limit, enter the time and select the unit of time: seconds, minutes, or hours.</p> <p>For information about time limits for procedure job steps in the ElectricCommander platform, go to the ElectricCommander Help > API Commands.</p>

- (Optional) To add credentials, do the following:

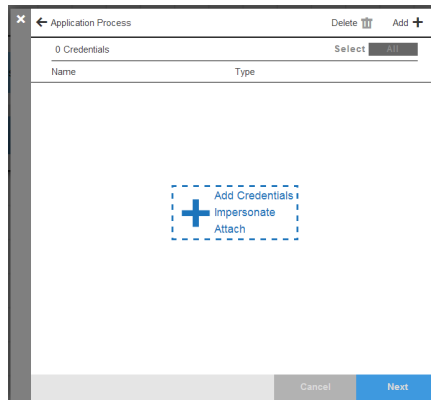
Note:

When you impersonate a credential, make sure that the impersonated user has the absolute path to the bin directories in the \$PATH environment.

If you define a process step with a command, you must enter the absolute path in the **Post Processor** and **Shell** fields in the Define Step dialog box.

- Click in the **Add Credentials** field.

Example:



- To impersonate one credential, select **Impersonate** in the **Type** field.
- Click the **Select Credential** field to open a drop-down list of credentials for the process step.
- Select a credential.
- Click **OK**.

The **Credentials** dialog box now shows the one credential for impersonation.

- To attach one or more credential to the process step, select **Attach** in the **Type** field.
- Click the **Select Credential** field to open a drop-down list of credentials for the process step.
- Select a credential.
- Click **OK**.

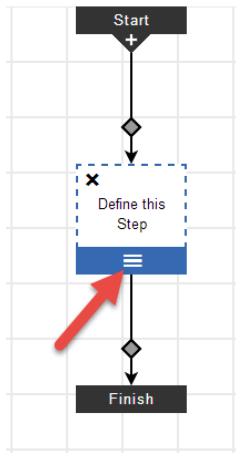
The **Credentials** dialog box now shows the attached credentials.

- Click **OK**.

The Applications Process Visual Editor opens.

5. In the new process step, click the button below "Define this Step" to define it.

Example:



The Application Process Step dialog box opens.

6. Enter information about the step in the dialog box.

Example

New

Application Process Details

Deploy

Description

Credential

0

Optional >

Workspace

Optional

Time limit

0

Seconds

Optional

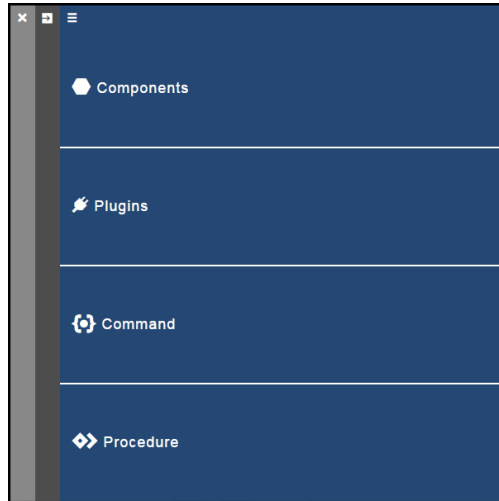
Cancel

OK

7. Click **Next**.

The Process Step dialog box opens.

Example:



8. To define the step, enter information in the dialog boxes that follow.

Example:

The 'Edit Step' dialog box is titled 'Edit Step' and contains the following fields:

- Step name:** A text input field containing 'put.html.files'. To its right is the label 'Required'.
- Description:** A large empty text area.
- Tier:** A dropdown menu showing 'Web Server'. To its right is the label 'Required'.
- Credential:** A text input field containing '0'. To its right is a right-pointing arrow icon.
- Workspace:** A dropdown menu.
- Time limit:** A text input field containing '0' and a dropdown menu showing 'Seconds'.

At the bottom right are 'Cancel' and 'Next' buttons.

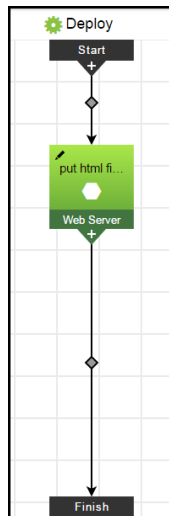
The 'Define Step' dialog box is titled 'Define Step' and contains the following elements:

- On Error:** Two radio buttons: 'Stop running' (unselected) and 'Continue running' (selected).
- Step Name:** A text input field containing 'hello_world / Deploy'.

At the bottom right are 'Cancel' and 'OK' buttons.

9. When you are done, the defined step now appears in the process in the Applications Process Visual Editor.

Example:



10. Define more steps in the process.

You can also drag and drop a step into the process.

Modeling More Application Processes

Repeat the steps in the previous section to add additional application processes.

Using the Drag and Drop Method to Add Process Steps

How to get to the Application Process Visual Editor:

- In an existing application process:

From the Applications Visual Editor, click the down arrow next to the number-of-application-processes button and select an application.

The Application Process Visual Editor for that application process appears.

- In a new application process:

From the Applications Visual Editor, click the **Add process** button, set the parameters in the **Application Process Details** dialog box, and click **OK**.

The Application Process Visual Editor for the application appears.

How to get to the Component Process Visual Editor:

- In an existing component process:

From the Applications Visual Editor, click the down arrow next to the number-of-component-processes button in a component, and select a component process in the drop-down list.

The Component Process Visual Editor for that component process appears.

- In a new component process:

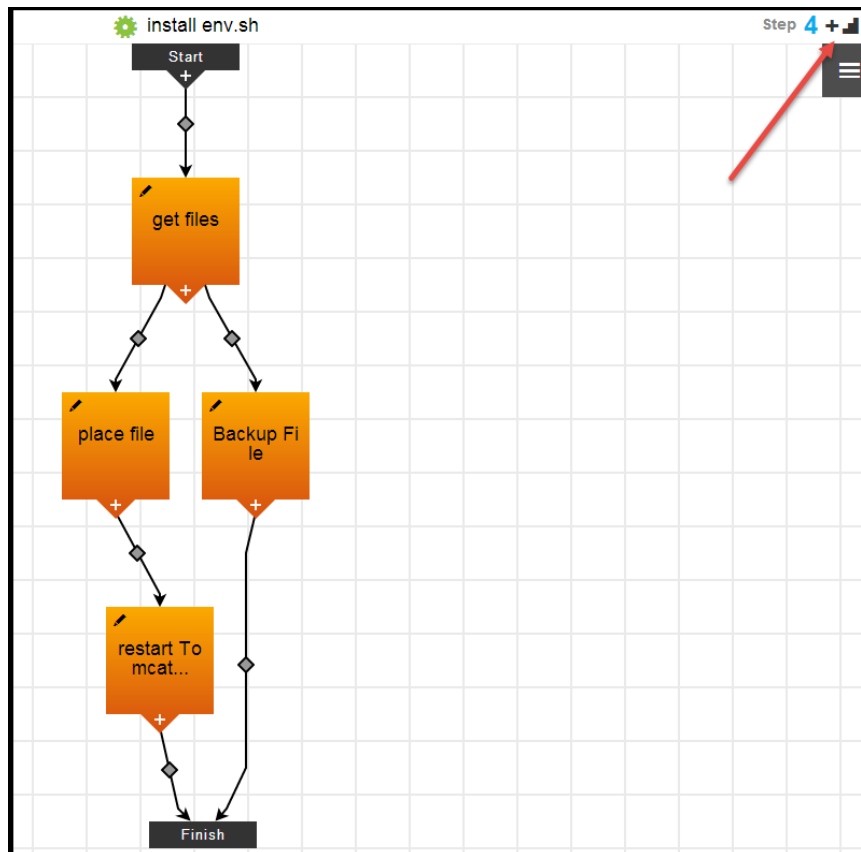
From the Applications Visual Editor, click the **Add process** button in a component, set the parameters in the **Component Process Details** dialog box, and click **OK**.

The Component Process Visual Editor for the component process appears.

To drag and drop a new step in a component or application process:

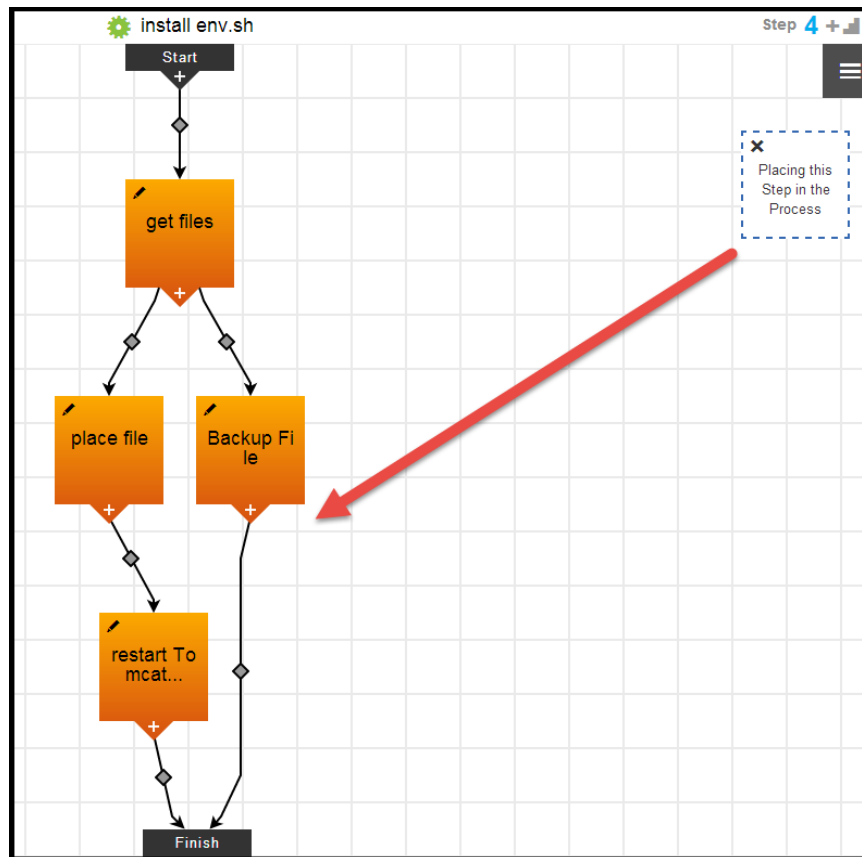
1. Click the **Add step** button in the upper right corner of the Component Process Visual Editor or Application Process Visual Editor.

.A new undefined step appears.



2. Select the new step.

3. Drag the step to where you want to add it in the process.



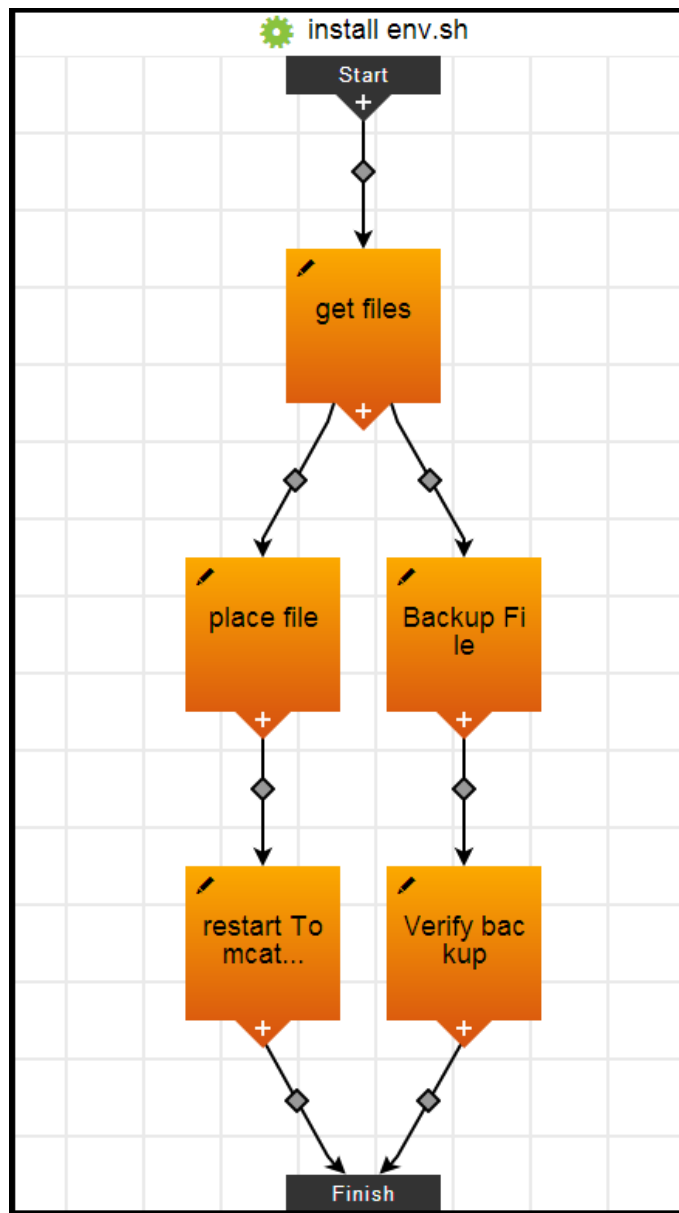
When you are near where you want to add the step in the process, notice that the icon changes shape and the text in it changes to "Dropping this Step in the Process."

4. Drop the step in the process.

The **Component Process Step** dialog box appears.

5. Enter information about the step.

The new step is in the process.

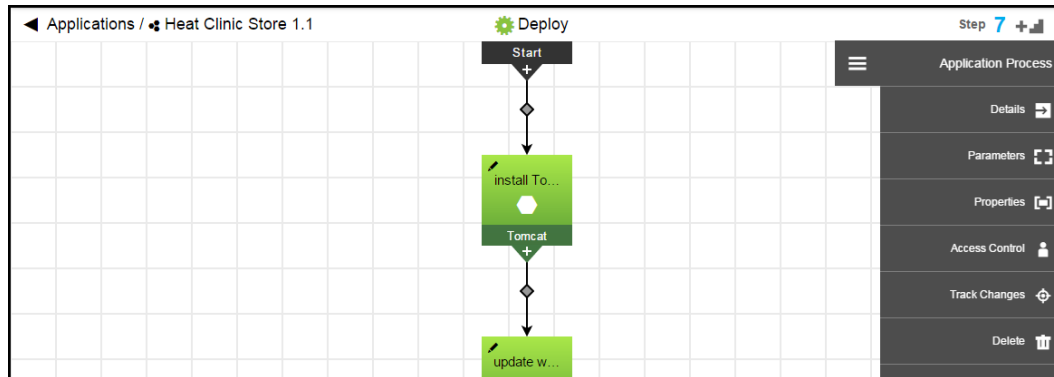


Setting Parameters for Application Processes

Starting in the Application Process Visual Editor:

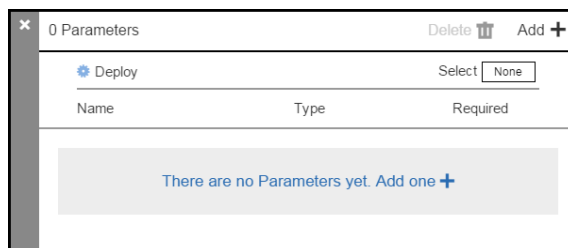
1. Click the **Menu** button.
2. Click **Parameters**.

Example:



The **Parameters** dialog box opens.

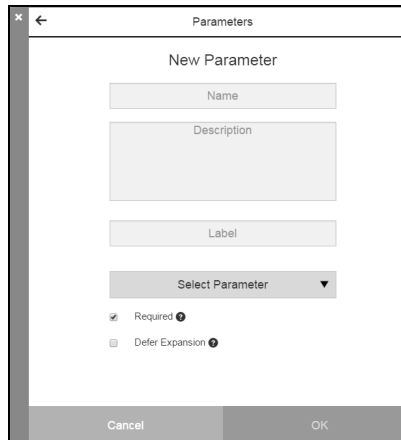
Example:



3. Click **There are no Parameters yet. Add one +**.

The **New Parameter** dialog box opens.

Example:



The screenshot shows a 'Parameters' window with a 'New Parameter' dialog box open. The dialog box has a title bar with a close button and a back arrow. Inside, the title 'New Parameter' is centered. Below the title are four input fields: 'Name', 'Description', 'Label', and 'Select Parameter' (a dropdown menu). At the bottom of the dialog are two checkboxes: 'Required' (checked) and 'Defer Expansion' (unchecked). The dialog box has 'Cancel' and 'OK' buttons at the bottom.

4. Enter the following information:

- **Parameter Name**—Name of the parameter.
- **Description**—This is optional.
- **Parameter Label**—This is optional.
- **Select Parameter**—Parameter type
- If the parameter is required, select the **Required** check box.
- If the parameter value contains `$[]` and you want ElectricFlow to interpret it literally (not as a parameter reference), select the **Defer Expansion** check box.

Depending on the parameter type that you select, other fields appear in the **New Parameters** dialog box.

5. Enter information in the fields in Step 4.

If you select **Text Entry** as the parameter type, the **Default Value** field appears.

- a. (Optional) Enter a value in the **Default Value** field.

You do not have to enter a value in this field.

Example:

The screenshot shows a 'Parameters' dialog box with a 'New Parameter' section. It contains the following fields: 'User Name' (text input), 'Text entry example' (text input), 'Label' (text input), 'Text Entry' (dropdown menu), and 'Default Value' (text input). There are 'Cancel' and 'OK' buttons at the bottom. The 'Required' checkbox is checked, and the 'Defer Expansion' checkbox is unchecked.

- b. Click **OK**.

The **Parameters** dialog box opens and shows the new parameter in the list.

Example:

The screenshot shows the 'Parameters' dialog box with a list of parameters. The list has columns for 'Name', 'Type', and 'Required'. The first parameter is 'User Name' with type 'Text Entry' and is required (indicated by a green checkmark).

Name	Type	Required
1. User Name	Text Entry	✓

6. Click **Add +** to add a parameter.

7. Enter information in the fields in Step 4.

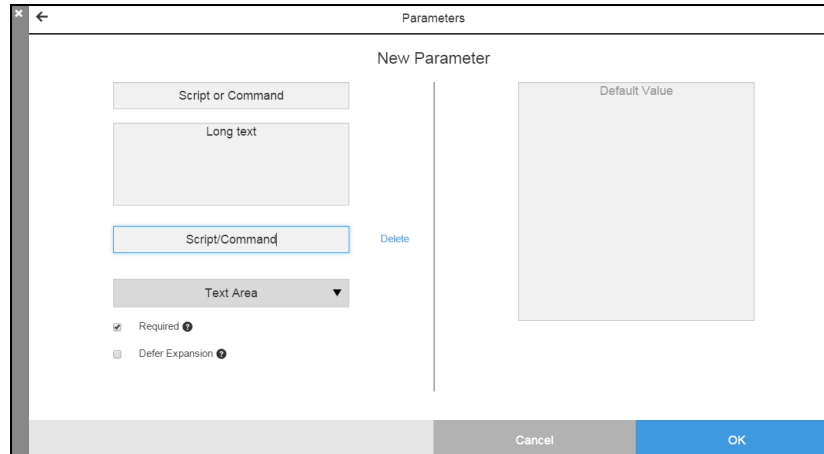
If you select **Text Area** as the parameter type, the **Default Value** field appears.

- a. (Optional) Enter a value in the **Default Value** field.

You do not have to enter a value in this field.

- b. Enter the Click **OK**.

Example:



The screenshot shows the 'Parameters' dialog box with a 'New Parameter' section. On the left, there are input fields for 'Script or Command' (containing 'Long text'), 'Script/Command' (containing 'Script/Command'), and a 'Text Area' dropdown menu. Below these are checkboxes for 'Required' (checked) and 'Defer Expansion' (unchecked). On the right, there is a large 'Default Value' text area. A 'Delete' link is positioned between the input fields and the 'Default Value' area. At the bottom, there are 'Cancel' and 'OK' buttons.

The **Parameters** dialog box opens and shows the new parameter in the list.

8. Enter information in the fields in Step 4. If you select **Dropdown Menu** as the parameter type, the **Default Value** field and ways to add the menu options appear.

- a. (Optional) Enter a value in the **Default Value** field.

You do not have to enter a value in this field.

- b. On the right side of the dialog box, enter the menu options.

- c. Click **OK**.

The **Parameters** dialog box opens and shows the new parameter in the list.

Example:

The screenshot shows the 'Parameters' dialog box with the 'New Parameter' form. The form is divided into two main sections. The left section contains fields for 'Stage', 'Stage of the deployment process', 'Label', 'Dropdown Menu' (set to 'Dropdown Menu'), and 'Default Value'. Below these fields are checkboxes for 'Required' (checked) and 'Defer Expansion' (unchecked). The right section shows three radio buttons for 'Enter options' (selected), 'Load options from list', and 'Load options from property sheet'. Below these is an 'Add option +' button. A list of three options is shown: 1. 'Development' / 'Dev', 2. 'Quality' / 'QA', and 3. 'Release' / 'Prod'. The 'Prod' option is highlighted. At the bottom are 'Cancel' and 'OK' buttons.

The **Parameters** dialog box opens and shows the new parameter in the list.

9. Enter information in the fields in Step 4.

If you select **Radio Selector** as the parameter type, the **Default Value** field and ways to add the menu options appear.

- (Optional) Enter a value in the **Default Value** field.
You do not have to enter a value in this field.
- On the right side of the dialog box, enter the menu options.
- Click **OK**.

Example:

The screenshot shows the 'Parameters' dialog box with the 'New Parameter' tab active. On the left, a list of parameters includes 'Ranking', 'Ranking in the queue', 'Priority', 'Radio Selector' (selected), and 'Normal'. A 'Delete' button is next to the 'Radio Selector' entry. Below the list, there are checkboxes for 'Required' (checked) and 'Defer Expansion' (unchecked). On the right, the 'Enter options' radio button is selected. Below it, there are three rows of options: 1. 'High' and 'High' with a delete 'x' button; 2. 'Normal' and 'Normal' with a delete 'x' button; 3. 'Low' and 'Low' with a delete 'x' button. An 'Add option +' button is at the top right of the options section. At the bottom of the dialog are 'Cancel' and 'OK' buttons.

The **Parameters** dialog box opens and shows the new parameter in the list.

10. Enter information in the fields in Step 4.

If you select **Checkbox** as the parameter type, the **Default Value** field and values for the check box appear.

- (Optional) Enter a value in the **Default Value** field.
You do not have to enter a value in this field.
- On the right side of the dialog box, enter the values.
- Click **OK**.

Example:

The screenshot shows the 'Parameters' dialog box with a 'New Parameter' section. On the left, there is a list of parameters: 'Ranking', 'Ranking in the queue', 'Priority', 'Radio Selector', and 'Normal'. The 'Radio Selector' is currently selected. Below this list are two checkboxes: 'Required' (checked) and 'Defer Expansion' (unchecked). On the right, there are three radio buttons for 'Enter options', 'Load options from list', and 'Load options from property sheet'. Below these is an 'Add option +' button. A list of three options is shown: 1. 'High', 2. 'Normal', and 3. 'Low'. The 'Low' option is currently selected. At the bottom of the dialog are 'Cancel' and 'OK' buttons.

The **Parameters** dialog box opens and shows the new parameter in the list.

11. Enter information in the fields in Step 4. If you select **Credentials** as the parameter type, the **Default Value** field appears.
 - a. (Optional) Enter a value in the **Default Value** field.
You do not have to enter a value in this field.
 - b. Click **OK**.

Example:

The screenshot shows a 'New Parameter' dialog box with the following fields and options:

- Identity**: A text input field.
- Description**: A large text area.
- User Name and Password**: A text input field with a 'Delete' link to its right.
- Credentials**: A dropdown menu currently showing 'Credentials'.
- Default Value**: A text input field.
- Required**: A checked checkbox.
- Defer Expansion**: An unchecked checkbox.
- Buttons**: 'Cancel' and 'OK' at the bottom.

The **Parameters** dialog box opens and shows the new parameter in the list.

Example:

The screenshot shows the 'Parameters' dialog box with a list of 6 parameters. The table below represents the data shown in the list:

Name	Type	Required
1. User Name	Text Entry	✓
2. Script/Command	Text Area	
3. Stage	Dropdown menu	✓
4. Priority	Radio Selector	✓
5. QA Verification Required	Checkbox	
6. User Name and Password	Credential	✓

Setting and Modifying the Parameter Label

Starting in the **New Parameter** dialog box:

Example:

Parameters

New Parameter

QA Verification Required

Description

Label

Checkbox

Default Value

☐ Required

☐ Defer Expansion

Value when unchecked

No

Value when checked

Yes

☐ Initially checked

Cancel OK

1. Add a label in the **Label** .

Example:

New Parameter

QA Verification Required

Description

QA Verify Delete

Checkbox

Default Value

☐ Required

☐ Defer Expansion

Value when unchecked

No

Value when checked

Yes

☐ Initially checked

This is an optional task when you set parameters.

If you enter a label, it appears in the UI form when you deploy the application. If you do not enter a label, the parameter name appears in the UI form when you deploy the application.

2. Click **OK**.

3. To modify the label:
 - a. Open the **New Parameter** dialog box.
 - b. Clear the **Label** field.
 - c. Enter a new label.

Example:

The screenshot shows the 'New Parameter' dialog box. The left pane contains the following fields and controls:

- QA Verification Required**: A text field with the value 'QA Verification Required'.
- Description**: A large text area.
- Verify by QA**: A text field containing 'Verify by QA', which is highlighted with a red rectangular box. To its right is a blue 'Delete' link.
- Checkbox**: A dropdown menu showing 'Checkbox'.
- Default Value**: A text field.
- Required**: A checkbox with a question mark icon.
- Defer Expansion**: A checkbox with a question mark icon.

The right pane contains the following controls:

- Value when unchecked**: A text field with the value 'No'.
- Value when checked**: A text field with the value 'Yes'.
- Initially checked**: A checkbox.

- d. Click **OK** to save the change.

4. To delete the label:
 - a. Click **Delete** next to the **Label** field.

Example:

Parameters

New Parameter

QA Verification Required

Description

Verify by QA

Checkbox

Default Value

☐ Required

☐ Defer Expansion

Value when unchecked

No

Value when checked

Yes

☐ Initially checked

Delete

Cancel

OK

The text in the Label field changes.

Example:

Parameters

New Parameter

QA Verification Required

Description

Yes, delete this Label

Cancel

Checkbox

Default Value

☐ Required

☐ Defer Expansion

Value when unchecked

No

Value when checked

Yes

☐ Initially checked

Cancel

OK

- b. Click in the **Label** field.

The label disappears.

Example:

The screenshot shows a 'Parameters' dialog box with a 'New Parameter' section. The form includes fields for 'QA Verification Required', 'Description', 'Label' (highlighted with a red rectangle), 'Checkbox', and 'Default Value'. There are also checkboxes for 'Required' and 'Defer Expansion'. On the right, there are fields for 'Value when unchecked' (set to 'No') and 'Value when checked' (set to 'Yes'), along with an 'Initially checked' checkbox. At the bottom, there are 'Cancel' and 'OK' buttons.

- c. Click **OK**.

The **Parameters** dialog box opens. The parameter name now appears in the name column.

Example:

6 Parameters				Delete	Add
Deploy				Select	All
Name	Type	Required			
1. User Name	Text Entry				
2. Script/Command	Text Area				
3. Stage	Dropdown menu				
4. Priority	Radio Selector				
5. QA Verification Required	Checkbox				
6. User Name and Password	Credential				

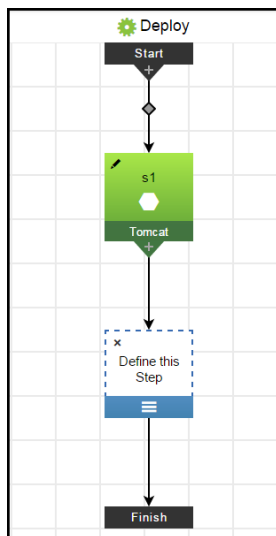
Delete this text and replace it with your own content.

Looking Up Parameters

To apply parameters to an application or component process step, starting in the Application Process Visual Editor:

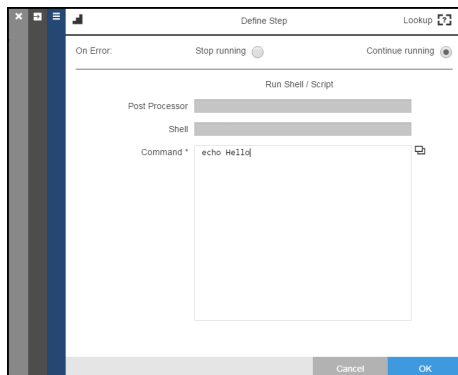
1. Add a new step to the process.

Example:



2. Define the process step in the **Define Step** dialog box.

Example:

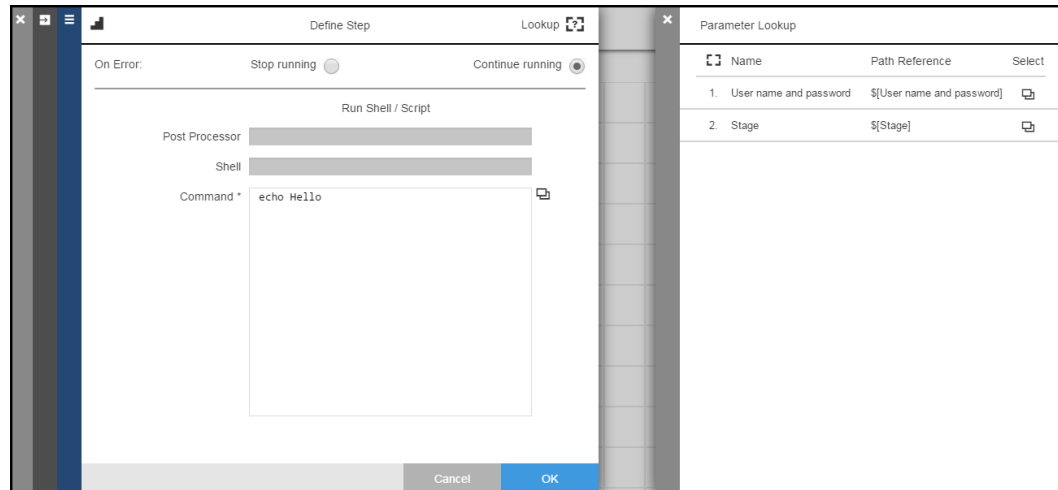


- When you define the process step with a plugin (**Plugins**), command or script (**Command**), or project (**Procedure**), click the **Lookup** button to open the **Parameter Lookup** dialog box.

Example:



The **Parameter Lookup** dialog box opens.



- Choose a parameter and click the **Copy** button to copy the path reference.

A message appears in the row : *<Parameter Name>* has been copied.

The **Define Step** dialog box now has a **Parameter** field.

- Click in the **Parameter** field and paste the path reference that you copied in it.
- Repeat the previous two steps to apply another parameter to the process step.
- Click **OK**.

Adding Credentials

How to get here: From the **Component Process Step** or the **Application Process Step** dialog box, click **>**. The **Credentials** dialog box opens.

You can attach one or more credentials to component process steps and application process steps.

You attach only one credential for impersonation on the following:

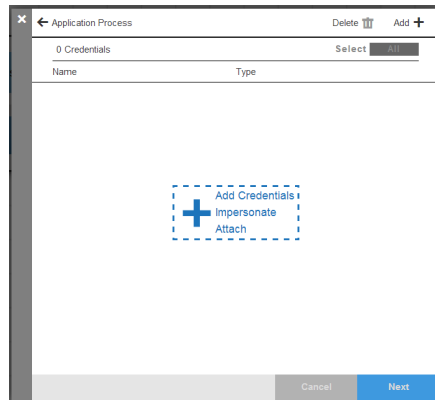
- Component process
- Component process step
- Application process
- Application process step

IMPORTANT:

When you impersonate a credential, make sure that the impersonated user has the absolute path to the bin directories in the \$PATH environment.

If you define a process step with a command, you must enter the absolute path in the **Post Processor** and **Shell** fields in the Define Step dialog box.

1. Click in the **Add Credentials** field.

Example:

2. To impersonate one credential, select **Impersonate** in the **Type** field.
3. Click the **Select Credential** field to open a drop-down list of credentials for the process step.
4. Select a credential.
5. Click **OK**.

The **Credentials** dialog box now shows the one credential for impersonation.

6. To attach one or more credential to the process step, select **Attach** in the **Type** field.
7. Click the **Select Credential** field to open a drop-down list of credentials for the process step.
8. Select a credential.
9. Click **OK**.

The **Credentials** dialog box now shows the attached credentials.

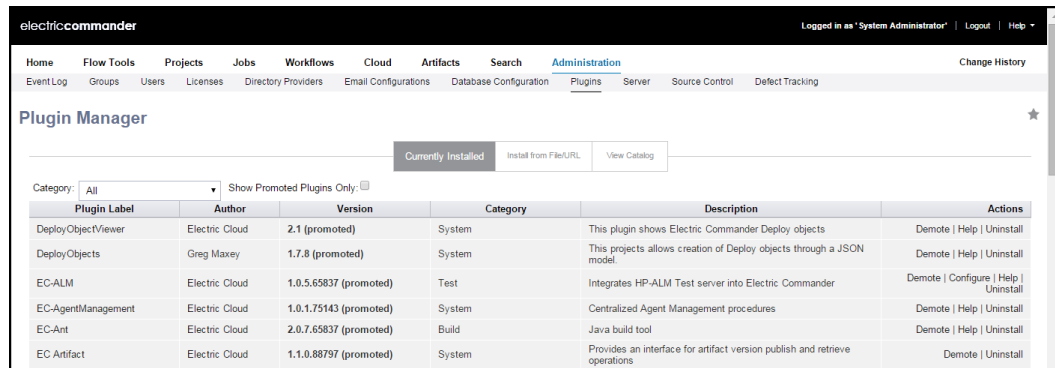
Using Plugins

When you want to use a plugin to define your application or component process step, all of the supported plugins appear in the Plugin Manager in the **Currently Installed** tab in the ElectricCommander automation platform. However, you may want to see only the list of plugins that apply to your group or organization, such as Apache Subversion (SVN) and Git plugins. You can remove any plugins that you are not using from the **Currently Installed** tab. You can re-install them later if you need them.

To remove plugins from the **Currently Installed** tab:

1. In the Home page, click the **Main menu** button and then click **Admin > Plugins**.

The Plugin Manager opens.



2. In the **Currently Installed** tab, select a plugin in the list.
3. In the Actions column for the selected plugin, click **Demote**.

The page refreshes.

The plugin is now inactive but is still in the list. If you want to use this plugin, click **Promote** to make it active.

4. If you want to remove the plugin from this list, click **Uninstall** to remove it from your system.

For more details, go to the **ElectricCommander Help > Web Interface Help > Plugin Manager**. This page describes what you can do in the Plugin Manager, including how to install a new version of a plugin or add a new plugin.

You can see all of the plugins available from Electric Cloud in the **View Catalog** tab on the **Administration > Plugins** page. To show a list of plugins that you can install directly from Electric Cloud, do the following:

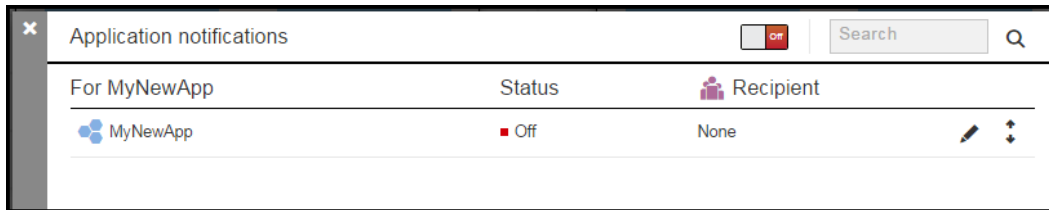
1. Click **Install** in the **Action** column.
2. Go to the **Currently Installed** tab.
3. Choose a plugin and click **Promote**.

The new plugin is now available for use in your system.

Setting Email Notifications

Review these guidelines before setting notifications:

New email notifications are disabled in the application, its application processes, and the process steps before you configure them.



You configure notifications in the "Application notifications / edit" dialog box.

IMPORTANT: The first time that you set notifications in this dialog box, the Notifications toggle changes to **On**. After you enter notification settings and click **OK**, email notifications are enabled at that level.

Go to [Application Notifications Dialog Box](#) on page 73 for information about how to use the "Application notifications" and "Application notifications /edit" dialog boxes.

By default, the application expects that the user creates an email configuration called "default." The email configuration defaults to the server property `/server/ec_deploy/ec_defaultEmailConfiguration`, which is set to 'default'.

If you want to use a different name for the email configuration, change the value of `/server/ec_deploy/ec_defaultEmailConfiguration` to the new email configuration name.

Starting from the Home page, to set email notifications:

1. Go to the Applications List.

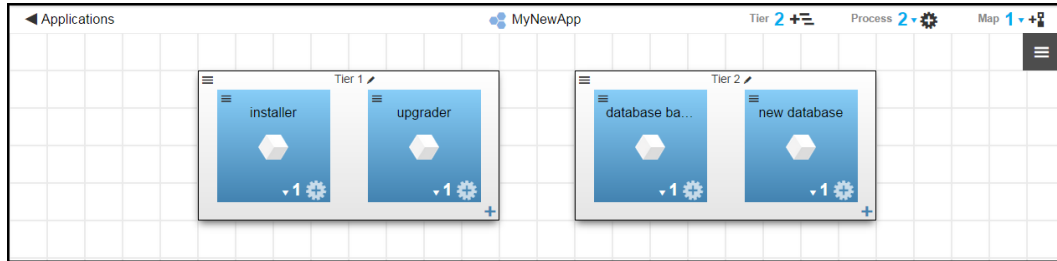
Example:

4 Applications					Select	Delete	Add
1	Arthur 23	1 Component	1 Application Process	1 Tier Map			
2	Heat Clinic Store 1.1	5 Component	2 Application Process	3 Tier Map			
3	MyNewApp	4 Component	2 Application Process	1 Tier Map			
4	Test	1 Component	1 Application Process	1 Tier Map			

2. Select an application.

The Applications Visual Editor opens.

Example:



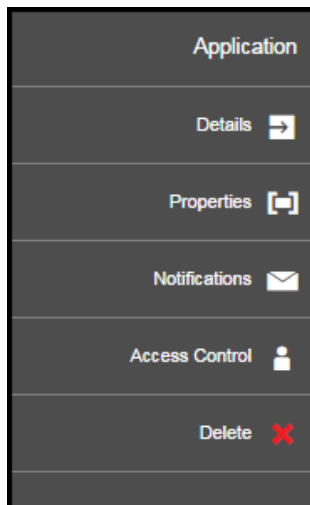
3. Click the **Menu** button.

Example:



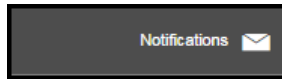
The Applications menu opens.

Example:



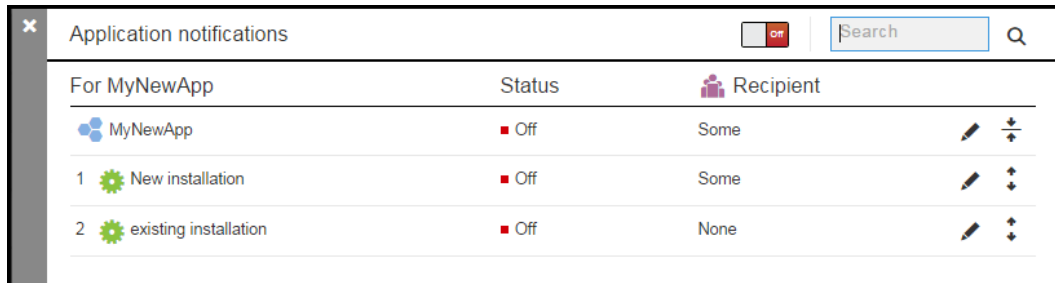
- Click **Notifications** to add a new application.

Example:



The Application notification dialog box opens.

Example:



5. Configure email notifications for the application, an application process, or a process step.

You can configure one or more notifications in an application process or other object.

Configuring recipients

In the **Who** field, you add users or groups who are configured and managed in the ElectricCommander platform or email addresses.

When you start typing a user name, group name, or email addresses, a list of names or email addresses appear that match what you are typing.

Example:

Application notifications / edit

backup On

Who	When	Where
Add users, groups, or email addresses:	Event:	Environment:
a	Both Failed and Success...	All
admin (?) admin-asia (?) admin-aus (?) admin-uk (?) admin-us (?) jadams (?) sclaus (?)		

If one of the suggestions matches the name or email address, select it, or continue typing. You can add more than one name or email address.

Example:

Application notifications / edit

backup On

Who	When	Where
Add users, groups, or email addresses:	Event:	Environment:
admin admin-asia sclaus jadams userX@gmail.com	Both Failed and Success...	All
DevT200@gmail.com		

Configuring the event that triggers the notification

In the **When** field, you select the event that triggers a notification to be sent to the recipients in the **Who** field. The default is **Both Failed and Successful**. Click in the **When** field to select the event for the notification.

Example:

The screenshot shows the 'Application notifications / edit' interface. At the top, there's a title bar with a close button and a back arrow. Below it, the notification name 'backup' is displayed next to an 'On' toggle switch. The main configuration area is divided into three sections: 'Who', 'When', and 'Where'. The 'Who' section has a text input 'Add users, groups, or email addresses:' followed by a list of selected items: 'admin', 'admin-asia', 'sclaus', 'jadams', 'userX@gmail.com', and 'DevT200@gmail.com'. The 'When' section has a dropdown menu open, showing the selected event 'Both Failed and Successful' and two other options: 'Run Failed' and 'Run Successful'. The 'Where' section has a dropdown menu with 'All' selected. There are also icons for adding (+) and removing (-) items in the 'When' and 'Where' sections.

Configuring the environments where the notification applies

In the **Where** field, you select the environments to which the notifications apply. Click in the **Where** field to select the environments, which are the environments to which the application is mapped in the tier map.

Example:

This screenshot is similar to the previous one, showing the 'Application notifications / edit' interface for the 'backup' notification. In this example, the 'When' field is set to 'Run Successful'. The 'Where' field dropdown menu is open, showing 'All' as the selected environment and 'hc-store dev' as another available option. The 'Who' field remains the same with the same list of users and email addresses.

6. Select and edit the email notification message.

7. Add another notification for the the application, an application process, or a process step.

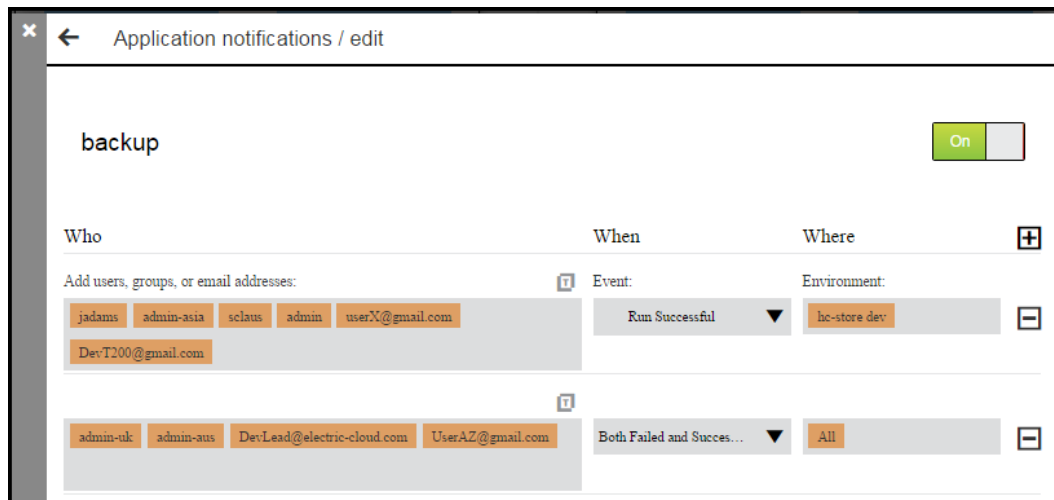
Click the **Add Notifications** button to add a new notification.

Example:



After you have added your email notifications, click **OK** to save the settings and return to the Application notifications dialog box.

Example:



The screenshot shows a dialog box titled "Application notifications / edit". Inside, the notification name "backup" is displayed with a toggle switch set to "On". Below this, there are three columns: "Who", "When", and "Where". The "Who" column has a text input "Add users, groups, or email addresses:" followed by a list of email addresses: jadamis, admin-asia, sclaus, admin, userX@gmail.com, and DevT200@gmail.com. The "When" column has a dropdown menu with "Run Successful" selected. The "Where" column has a dropdown menu with "bc-store dev" selected. There are plus and minus icons for adding and removing items. Below the first row, there is another row with email addresses: admin-uk, admin-aus, DevLead@electric-cloud.com, and UserAZ@gmail.com. The "When" dropdown for this row is set to "Both Failed and Succes..." and the "Where" dropdown is set to "All".

8. (Optional) Enable email notifications for the application, application processes, or process steps that are not already enabled.

To enable email notifications at the application level:

- Click the Notifications toggle and change it to **On**.

The status of the application changes to **On**.

Example:

For MyNewApp	Status	Recipient
MyNewApp	On	None
1 New installation	Off	None
2 existing installation	Off	None

- Click the **Edit** button to open the **Application notifications / edit** dialog box.

The **Application notifications / edit** dialog box appears. The Notification toggle changes to **On**.

Example:

MyNewApp On

Who: Add users, groups, or email addresses:

When: Event: Both Failed and Success... ▼

Where: Environment: All [-]

To enable notifications at the application process and process step levels, go to the **Application Notifications / edit** dialog box for the specific process or process step.

The dialog box opens, and the Notifications toggle is now **On**.

Example:

When you enter notification settings in the dialog box and click **OK**, the settings are saved. The **Application notifications** dialog box appears and now shows that the application process status is **On**.

Example:

For MyNewApp	Status	Recipient
MyNewApp	On	Some
1 New installation	On	Some
2 existing installation	Off	None

Selecting and Editing Email Messages

Starting in the "Application notifications / edit" dialog box:

1. Click the **Template** button .

A drop-down box opens.

Example:

Application notifications / edit

backup On

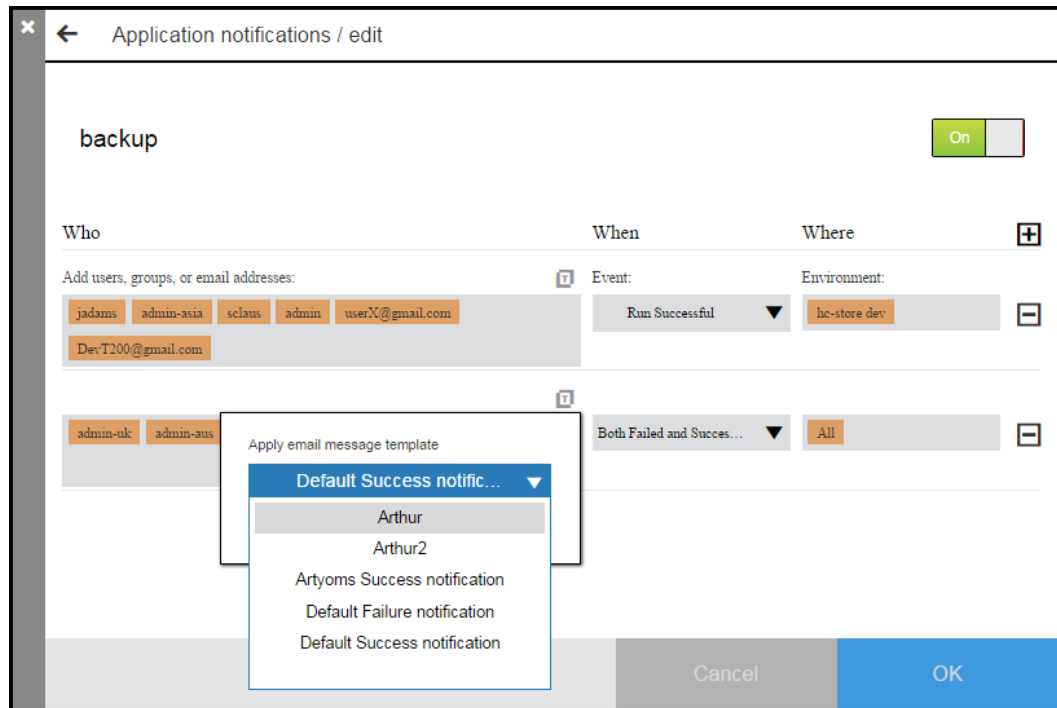
Who	When	Where
Add users, groups, or email addresses:		
jadams admin-asia sclaus admin userX@gmail.com	Event: Run Successful	Environment: hc-store dev
DevT200@gmail.com		
Apply email message template		
admin-uk admin-aus	Both Failed and Succes...	All
Default Success notific...		

Cancel OK

2. Click the down arrow to open the list of email message templates that can apply to the application.

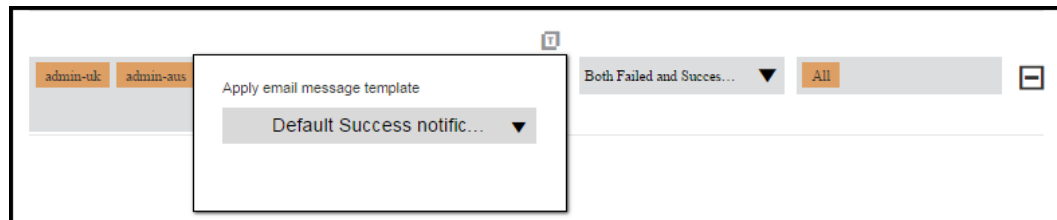
3. Select a template.

Example:



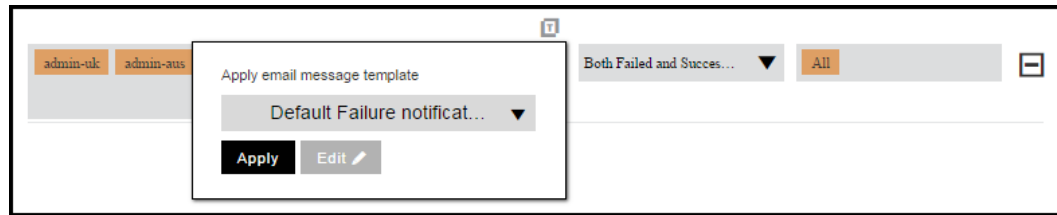
If the template is the current template applied to notification, the name of the template appears in dialog box.

Example:



If the template is not the current template applied to notification, the **Apply** and **Edit** buttons appear in the dialog box.

Example:



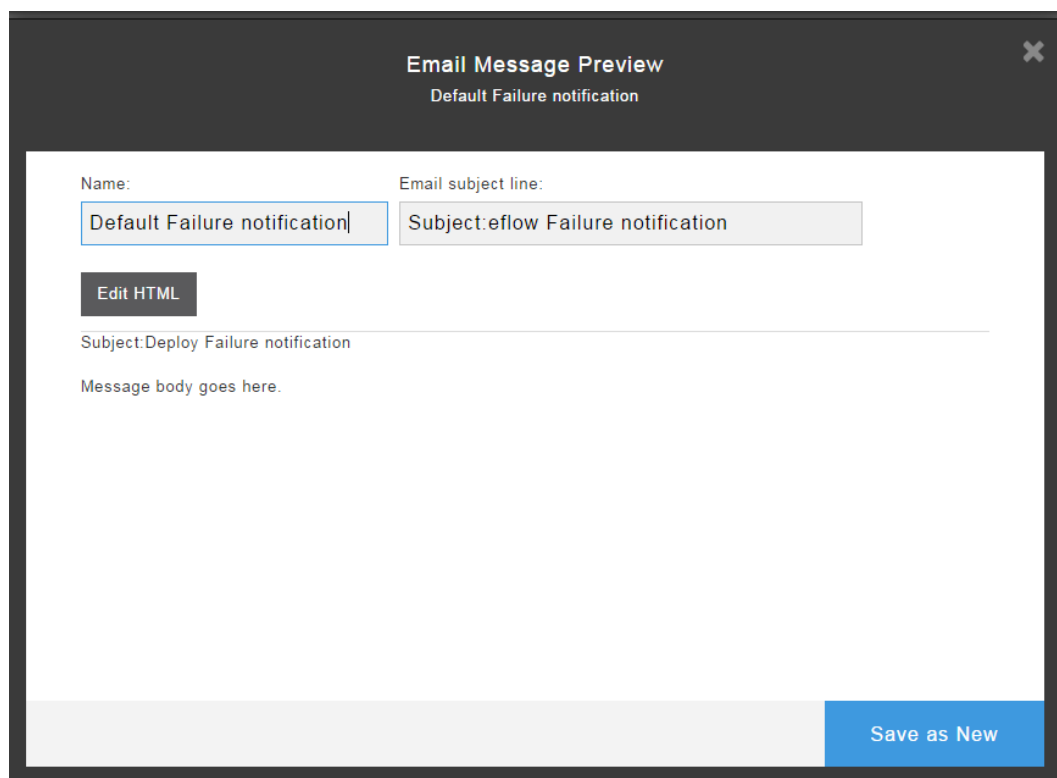
4. If you want to use the template that you selected instead of the current one and do not want to change it, skip the remaining steps in this task.
5. If you want to apply a different template or edit the template that you selected, do the remaining steps in this task.

If you click **Apply** to use the template as is, skip the remaining steps.

If you click **Edit** to modify the template to fit your needs, go to the next step.

The Email Message Preview dialog box appears.

Example:



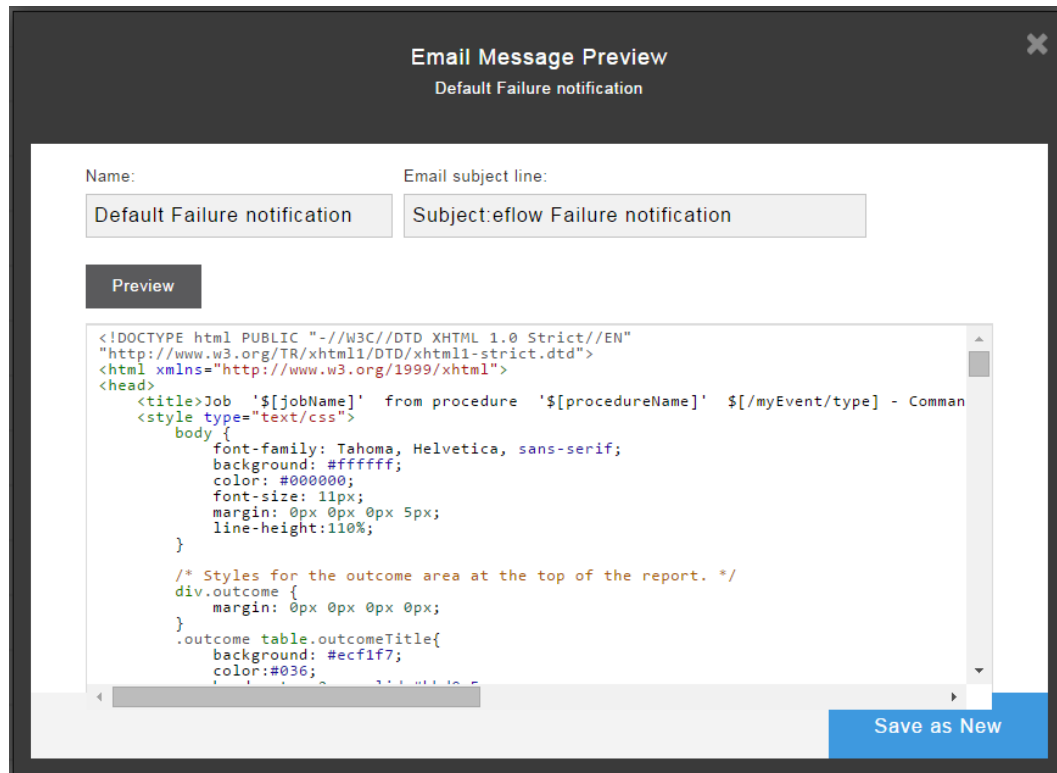
6. To edit the template:

Change the name of the template in the **Name** field.

Change the subject of the email in the **Email subject line**.

To modify the body of the email message, click **Edit HTML** and edit the HTML code.

Example:



7. Click **Preview**.

8. To save your changes:

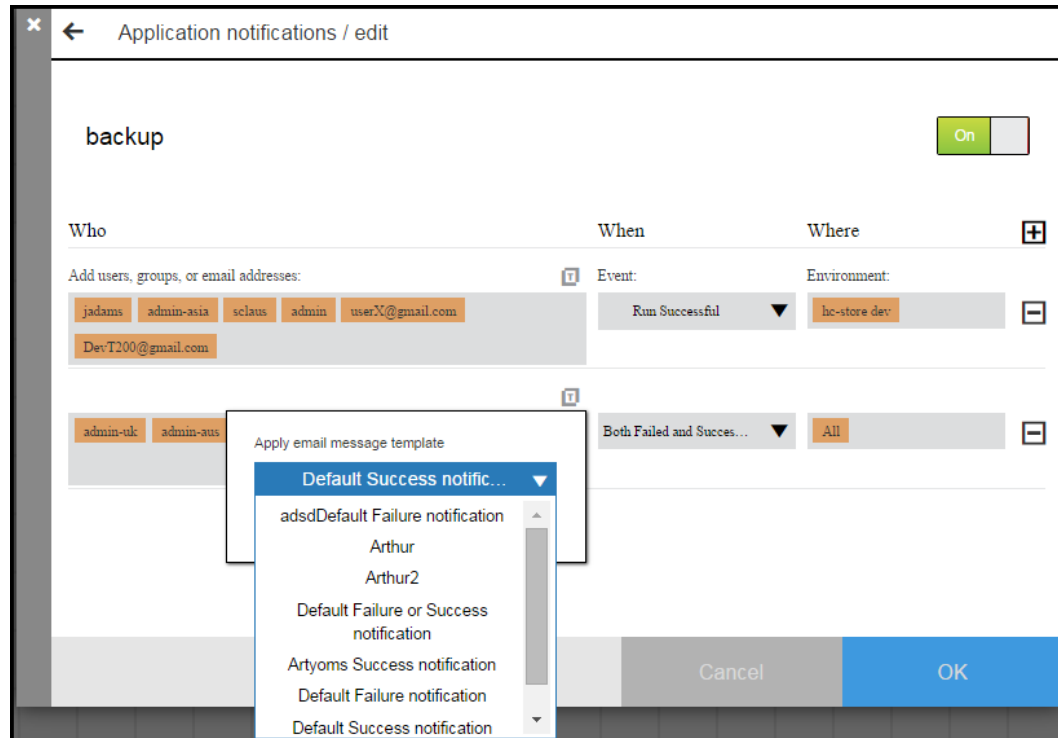
- Click **Save Changes** to save the change in an existing template
- Click **Save as New** to save the template as a new template.

The "Application notifications / edit" dialog box re-appears.

- Click the down arrow to open the list of email message templates that can apply to the application.

The new email message template is in the list.

Example:



- Click **OK** to save the settings.

Component and Application Process Steps: ectool Example

This sample code shows how to design component and application process steps using the ectool API.

```
#!/bin/bash
```

```
# set all names
```

```
hostname='localhost'
```

```
projectName='default'
```

```
appName='myApp'
```

```
envName='myEnv'
```

```
appTierName='myAppTier'
```

```
componentName='myComponent'
```

```
artifactName='DEV:MyArt001'
```

```
envTierName='myEnvTier'
artifactProjectName='EC-Artifact-1.0.9.76076'
subProject_artifact='/plugins/EC-Artifact/project'
appProcessName='myApp_process'
appProcessStepName='myApp_process_step'
compProcessName='myComp_process'
compProcessStepName='myComp_process_step'
resource1='res_1'
resource2='res_2'
resource3='res_3'
resource4='res_4'

# login
ectool --server $hostname login admin changeme

# make sure same application, artifacts, resources don't already exist
echo 'make sure same application, artifacts, resources do not already exist'
ectool deleteApplication --projectName $projectName --applicationName $appName
ectool deleteEnvironment --projectName $projectName --environmentName $envName
ectool deleteArtifact --artifactName $artifactName
ectool deleteResource --resourceName $resource1
ectool deleteResource --resourceName $resource2
ectool deleteResource --resourceName $resource3
ectool deleteResource --resourceName $resource4

# create application
echo 'creating application'
ectool createApplication --projectName $projectName --applicationName $appName

#create application tier
echo 'creating application tier'
ectool createApplicationTier --projectName $projectName --applicationName $appName --applicationTierName $appTierName
```



```
#create and publish artifact versions

ectool createArtifact --groupId 'DEV' --artifactKey 'MyArt001'

ectool publishArtifactVersion --artifactName $artifactName --version '1.0' --fromDirectory 'tmp/partial_deployment' --includePatterns "abc1.war"

ectool publishArtifactVersion --artifactName $artifactName --version '2.0' --fromDirectory 'tmp/partial_deployment' --includePatterns "abc2.war"


#create component and add it to app tier

ectool createComponent --projectName $projectName --applicationName $appName --componentName $componentName --pluginName $artifactProjectName

ectool addComponentToApplicationTier --projectName $projectName --applicationName $appName --applicationTierName $appTierName --componentName $componentName


#Set component properties

ectool createProperty --projectName $projectName --applicationName $appName --componentName $componentName --propertyName 'ec_content_details' --propertyType 'sheet'

ectool createProperty --projectName $projectName --applicationName $appName --componentName $componentName --propertyName 'ec_content_details/artifactName' --value $artifactName

ectool createProperty --projectName $projectName --applicationName $appName --componentName $componentName --propertyName 'ec_content_details/versionRange' --value '1.0'

ectool createProperty --projectName $projectName --applicationName $appName --componentName $componentName --propertyName 'ec_content_details/artifactVersionLocationProperty' --value '/myJob/retrievedArtifactVersions/${assignedResourceName}'

ectool createProperty --projectName $projectName --applicationName $appName --componentName $componentName --propertyName 'ec_content_details/overwrite' --value 'update'

ectool createProperty --projectName $projectName --applicationName $appName --componentName $componentName --propertyName 'ec_content_details/filterList' --value ''

ectool createProperty --projectName $projectName --applicationName $appName --componentName $componentName --propertyName 'ec_content_details/pluginProcedure' --value 'Retrieve'

ectool createProperty --projectName $projectName --applicationName $appName --componentName $componentName --propertyName 'ec_content_details/pluginProjectName' --value 'EC-Artifact'

ectool createProperty --projectName $projectName --applicationName $appName --componentName $componentName --propertyName 'ec_ui' --propertyType 'sheet'

ectool createProperty --projectName $projectName --applicationName $appName --componentName $componentName --propertyName 'ec_ui/stepType' --value 'operation'


#create component process and step

ectool createProcess --projectName $projectName --processName $compProcessName --componentApplicationName $appName --processType 'DEPLOY' --componentName $componentName

ectool createProcessStep --projectName $projectName --processName $compProcessName --processStepName $compProcessStepName --componentName $componentName --componentApplicationName $appName
```

```

e $appName --subprocedure 'Retrieve' --subproject $subProject_artifact --processStepType
'component' --includeCompParameterRef 1

#create environment, tiers and add resources

ectool createEnvironment --projectName $projectName --environmentName $envName --environm
entEnabled 'true'

ectool createEnvironmentTier --projectName $projectName --environmentName $envName --envi
ronmentTierName $envTierName

ectool createResource --resourceName $resource1 --hostName $hostname --pools $projectName
ectool createResource --resourceName $resource2 --hostName $hostname --pools $projectName
ectool createResource --resourceName $resource3 --hostName $hostname --pools $projectName
ectool createResource --resourceName $resource4 --hostName $hostname --pools $projectName

ectool addResourceToEnvironmentTier --resourceName $resource1 --projectName $projectName
--environmentName $envName --environmentTierName $envTierName

ectool addResourceToEnvironmentTier --resourceName $resource2 --projectName $projectName
--environmentName $envName --environmentTierName $envTierName

ectool addResourceToEnvironmentTier --resourceName $resource3 --projectName $projectName
--environmentName $envName --environmentTierName $envTierName

ectool addResourceToEnvironmentTier --resourceName $resource4 --projectName $projectName
--environmentName $envName --environmentTierName $envTierName

# create application process and steps

ectool createProcess --projectName $projectName --processName $appProcessName --applicati
onName $appName

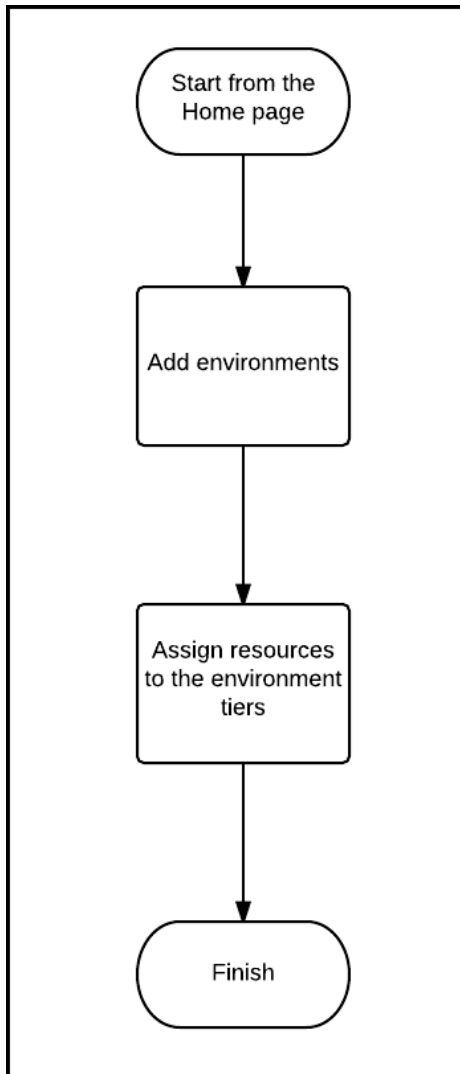
ectool createProcessStep --projectName $projectName --processName $appProcessName --proce
ssStepName $appProcessStepName --errorHandling 'abortJob' --subcomponent $componentName
--subcomponentApplicationName $appName --subcomponentProcess $compProcessName --applicati
onName $appName --applicationTierName $appTierName --processStepType 'process'

# create tier mapping

ectool createTierMap --projectName $projectName --applicationName $appName --environmentP
rojectName $projectName --environmentName $envName --tierMapName 'map1' --tierMapping "$a
ppTierName=$envTierName"

```

Modeling Environments



1. Add an environment and environment tiers.
2. Assign resources to environment tiers.

Adding an Environment

Starting from the Home page:

1. Go to the Environments List by either
 - Clicking the **Environments** launch pad.
 - Clicking the **Menu** button > **Environments**.

The Environments List opens.

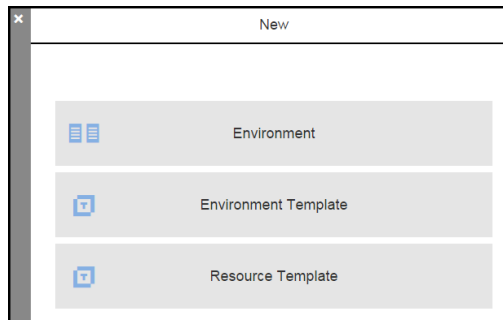
2. Click the **Add +** button in the upper right corner.

Example:



The **New** dialog box appears.

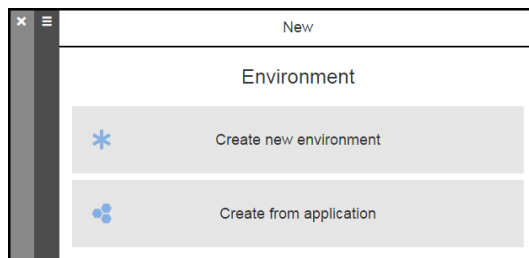
Example:



3. Click **Environment** to create a static environment.

The **New Environment** dialog box appears.

Example:



There are two ways to add an environment:

- Click **Create new environment** to create a environment. Go to the next step.
- Click **Create from application** to create an environment based on an application.

ElectricFlow adds an environment that has the tiers with the same names as the application you select.

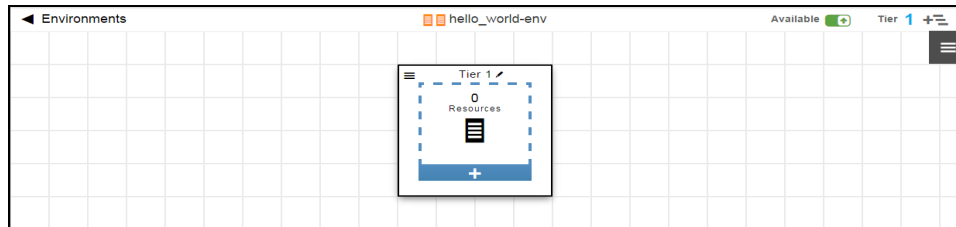
4. Click **Create new environment**. The New dialog box opens..
5. Enter a name in the **Name** field.
6. (Optional) Enter a description of the environment in the **Description** field.

7. Click **OK**.

The Environments Visual Editor opens.

If you are modeling a new environment, the Environments Visual Editor displays an environment tier called Tier 1 with no assigned resources.

Example:



Assigning Resources to Environment Tiers

Starting in the Environments Visual Editor:

1. Click the **Edit** button.

The **Environment Tier Details** dialog box opens.

2. Change the name of the tier and click **OK**.

Example:

Change the name to **Apache** and click **OK**.

The Applications Visual Editor now has an application tier called hello_world-env.

3. Click the **+** button in the new environment tier to add a resource.

The **New** dialog box opens.

Example:

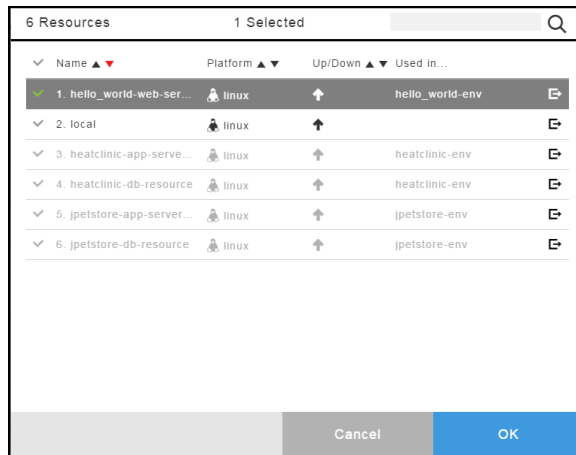


4. Click **Add resources**.

The resource list appears.

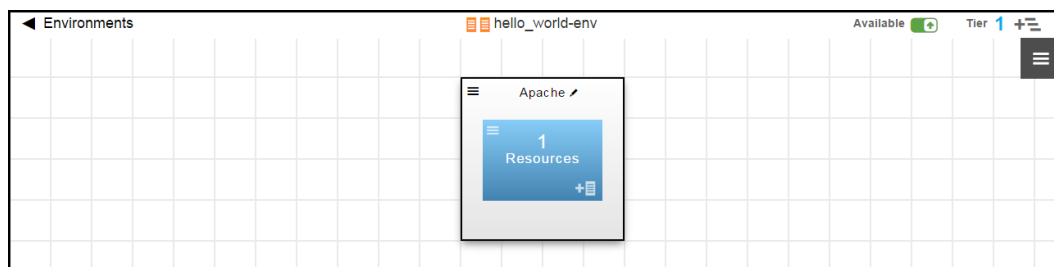
5. Select an available resource and click **OK**.

Example:



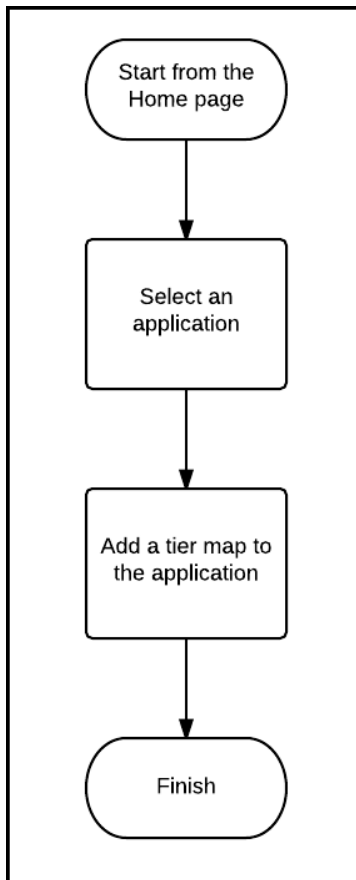
The Environments Visual Editor now shows an environment tier called Apache with one resource.

Example:



6. To add another resource to the same tier, click the **Add resource** button and repeat the previous steps starting with Step 3.

Making Tier Maps



Starting in the Home page:

1. Go to the Applications List.
2. Select the application that you want to run.

The Applications Visual Editor opens.

3. Click the **Add tier map** button.

Example:

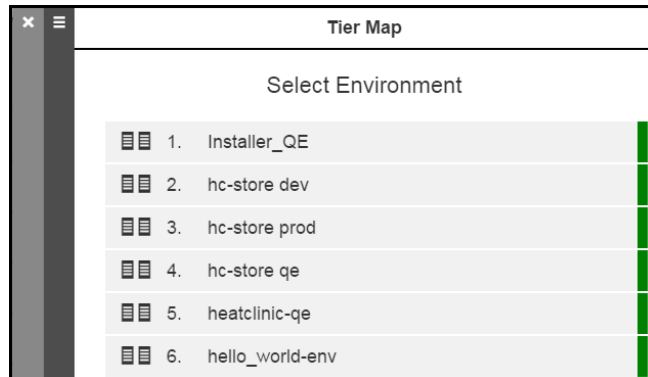


The **Tier Map** dialog box opens.

4. Select an environment to which you want to map the application.

Example:

Select **hello_world-env**.

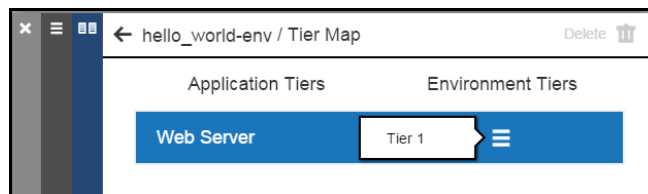


The **<Environment Name>/Tier Map** dialog box opens.

5. Choose an application tier, and click on the button in the Environment Tiers column.

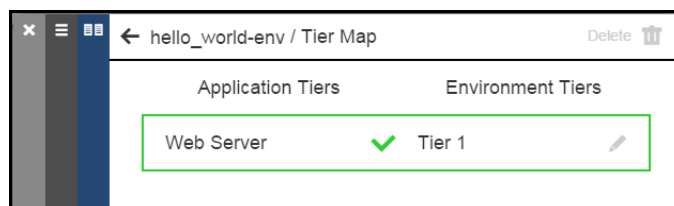
A list of environment tiers in the environment that you selected appears.

Example:



6. Select a tier.
7. If an application has more than one application tier, repeat the previous steps to map the application tiers to environment tiers
8. After you map all the application tiers to environment tiers, click **OK**.

Example:

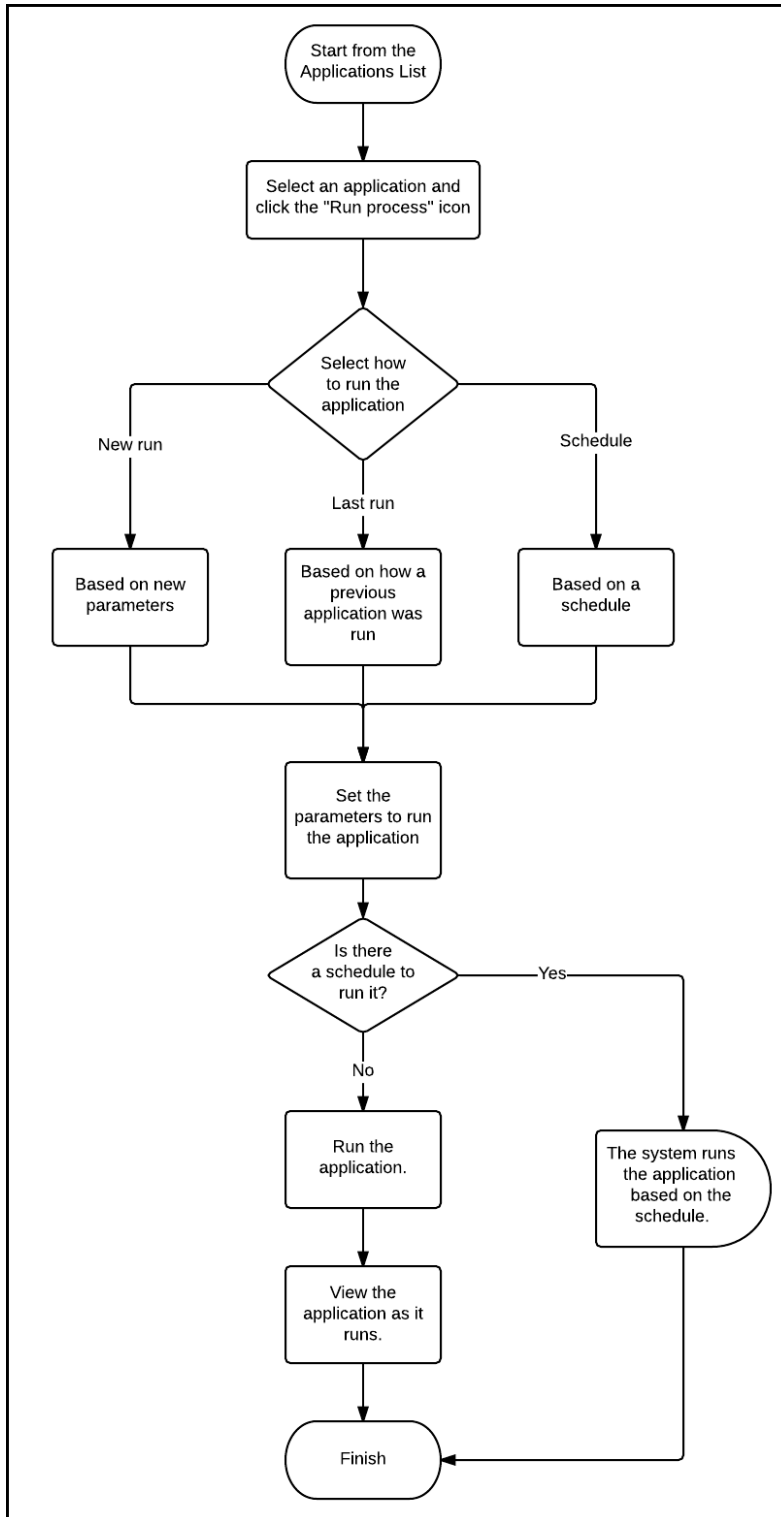


To verify that the application is ready to run, go to the Applications List. When the **Run process** button is green, you can deploy (run) the application.

Deploying (Running) Applications

Note: Within ElectricFlow, the terms *deploy* and *run* are synonymous. When deploying an application in ElectricFlow, you are actually running it to produce your software or application.

Overview



You can deploy (run) an application one of these ways:

- Smart deploy

The system deploys the application only with artifacts that have not been deployed to a resource or selected versions of the artifact have not been deployed to new resources since a previous run.

- Full run

The system runs the application with all the application processes, components, and artifacts in the application.

- Partial run

The system runs the application with only the selected application processes, components, and artifacts in the application.

- Selecting artifacts with specific versions to run

The system runs the application with only the selected versions of the artifacts.

- Snapshot

The system deploys a snapshot of the application.

- A combination of the previous ways.

These are possible combinations to deploy an application:

	Smart Deploy	Full Run	Partial Run	Artifacts with Specific Versions	Snapshot
Smart Deploy		No	Yes	Yes	Yes
Full Run	No		No	Yes	Yes
Partial Run	Yes	No		Yes	Yes
Artifacts with Specific Versions	Yes	Yes	Yes		Yes
Snapshot	Yes	Yes	Yes	Yes	n/a

You can view the results in the Application Inventory and the Environment Inventory.

Deploying an Application

Starting in the Home page:

1. Go to the Applications List.

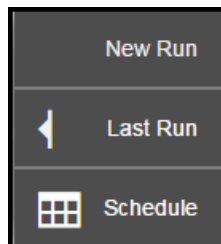
Example:

4 Applications					Select	All	Delete	Add
1	heatclinic-app	1 Component	2 Application Process	1 Tier Map				
2	hello_world-app	1 Component	2 Application Process	1 Tier Map				
3	jpetstore-app	2 Component	2 Application Process	1 Tier Map				
4	sample-app	0 Component	0 Application Process	0 Tier Map				

- Choose an application and click the **Run process** button.

A menu appears.

Example:



If this is the first time that you are running the application, the menu has only the **New Run** and **Schedule** options.

- To specify how you want to deploy (run) the application, select one of these options:
 - New run**—Set the parameters as described in [Running Applications with New Parameters](#) .
The **New** <Application name> dialog box opens.
 - Last run**—Use the parameters from a previous run. You can modify one or more of these parameters as described in [Running Applications with Parameters from Previous Runs](#).
The **Edit** <Application name> dialog box opens.
 - Schedule**—Set the application to run on a schedule as described in [Running Applications with Schedules](#).

Deploying Applications with Parameters from Previous Runs

When you use the **Last Run** option, you configure how to run the application based on parameters from a previous run.

- Go to the Applications List.

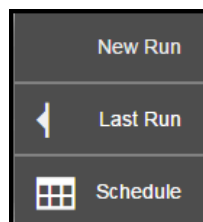
Example:

4 Applications					Select	All	Delete	Add
1	heatclinic-app	1 Component	2 Application Process	1 Tier Map				
2	hello_world-app	1 Component	2 Application Process	1 Tier Map				
3	jpetstore-app	2 Component	2 Application Process	1 Tier Map				
4	sample-app	0 Component	0 Application Process	0 Tier Map				

2. Choose an application and click the **Run process** button.

A menu appears.

Example:



3. Select **Last Run** to use the parameters from previously run application.

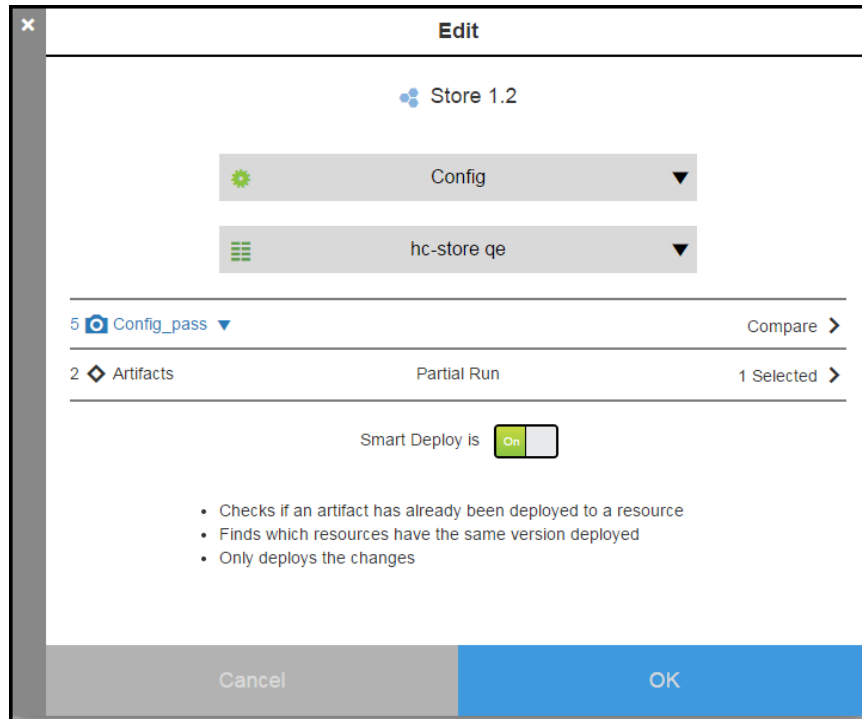
A list of applications appears.

4. Select a previous run.

The dialog box to set the parameters for running the application opens.

Example:

This example is not part of the hello_world-env deployment. It shows only the deployment for Store 1.2 is a Partial Run.



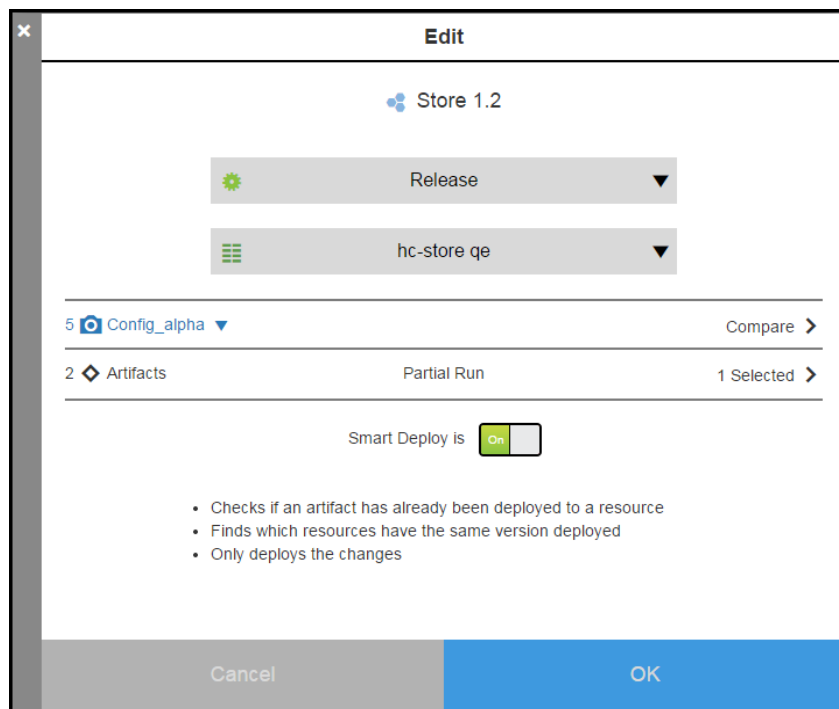
5. Select the application process.
6. Select an environment.

7. (Optional) Select a snapshot.

If this is the first time that you are running the application, smart deploy is not enabled.

Example:

This example is not part of the hello_world-env deployment. It shows only that there are five snapshots.



8. To select and configure the **Full Run** option:

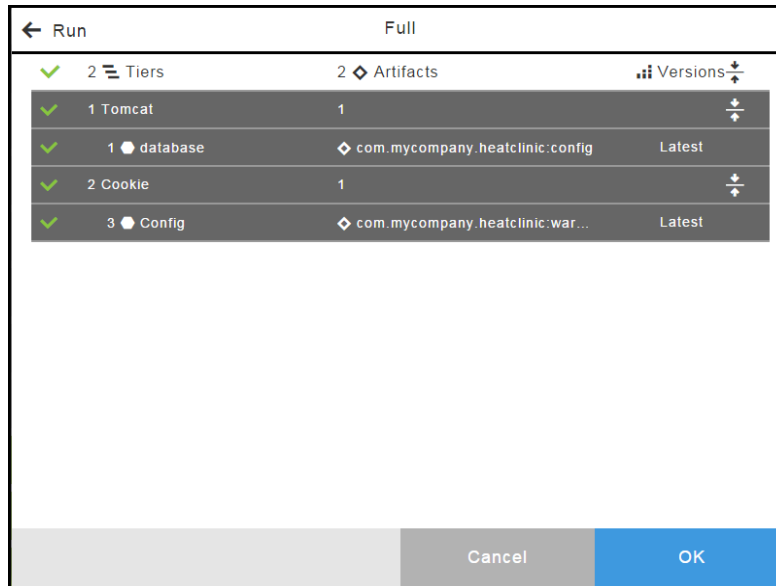
- a. Click **Full Run**.

A dialog box opens showing the objects in the application.

This example shows that all of the objects, application tiers, components, and artifacts, are selected.

Example:

This example is not part of the hello_world-env deployment. It shows only that the all objects are selected for the Full Run.

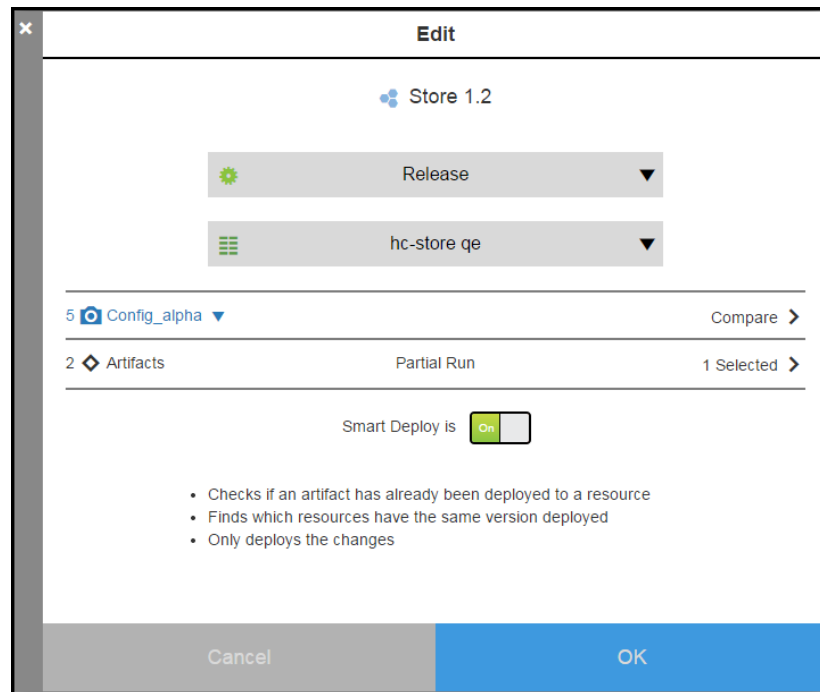


- b. Click **OK**.

The dialog box re-appears.

Example:

This example is not part of the hello_world-env deployment. It shows only that one of two artifacts will be deployed.



9. To select and configure the **Partial Run** option:

- a. Click **Partial Run**.

A dialog box opens showing the objects in the application.

- b. Determine the objects in the application that you do not want to run and click the each row to remove them from the run.
- c. Click **OK**.

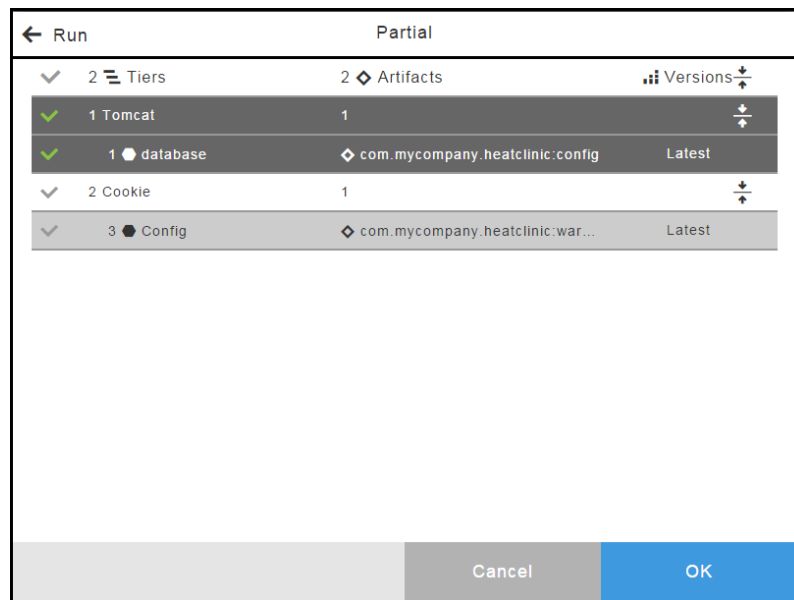
10. To select artifacts with specific versions:

- a. Click **Selected Artifacts**.

A dialog box opens showing the objects in the application. The version of each component is in the Version column. The current version of all the components is *Latest*, the latest version of the component.

Example:

This example is not part of the hello_world-env deployment. It shows how to select specific artifacts to deploy.



- b. To change the version of a component, click the down arrow next to current version.

A drop-down menu appears.

- c. Select the version that you want the application to run.

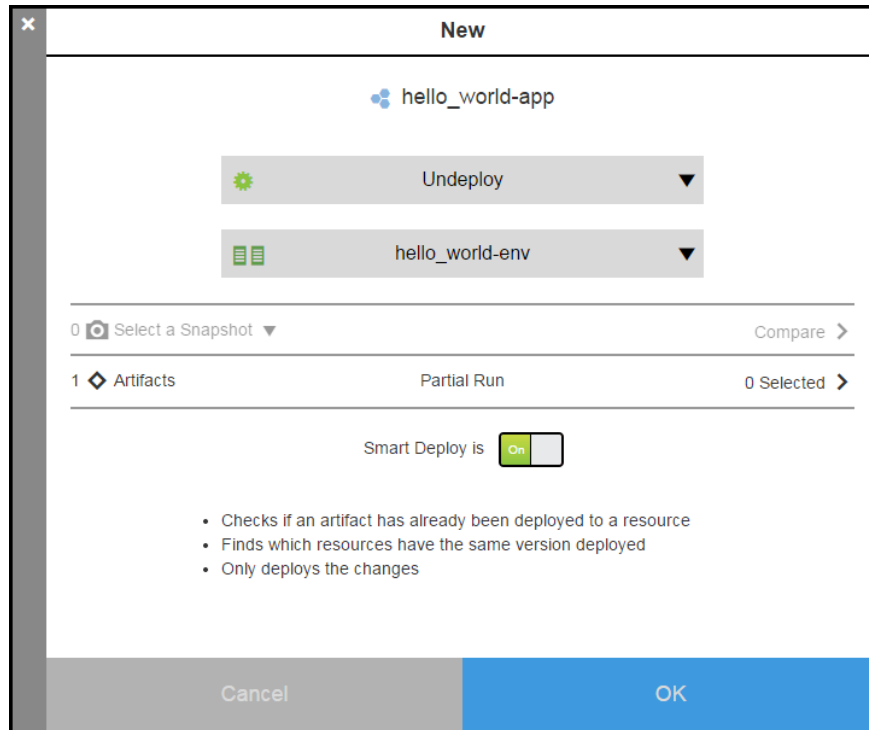
- d. Click **OK**.

The dialog box re-appears.

- Click **OK** to run the application.

Example:

This example shows one way to deploy the **hello_world-app** application.



You can view the results in the Application Inventory and the Environment Inventory. For more information, go to [Viewing Results and Troubleshooting](#).

Deploying (Running) Applications with Schedules

When you use the **Schedule** option, you set the day and time when the application runs.

- Go to the Applications List.

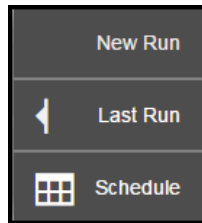
Example:

4 Applications					Select	All	Delete	Add
1	heatclinic-app	1 Component	2 Application Process	1 Tier Map				
2	hello_world-app	1 Component	2 Application Process	1 Tier Map				
3	jpetstore-app	2 Component	2 Application Process	1 Tier Map				
4	sample-app	0 Component	0 Application Process	0 Tier Map				

2. Choose an application and click the **Run process** button.

A menu appears.

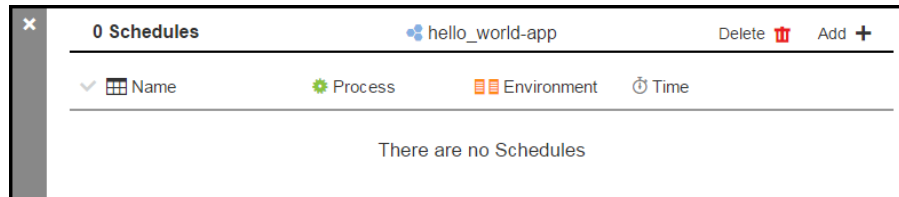
Example:



3. Select **Schedule** to set the day and time when the application will run automatically.

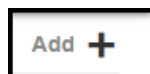
The **Schedule** dialog box opens.

Example:



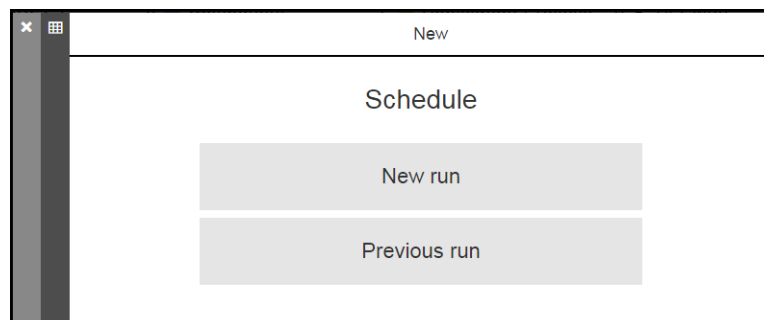
- a. Click the **Add +** button in the upper right corner.

Example:



The **New Schedule** dialog box appears.

Example:



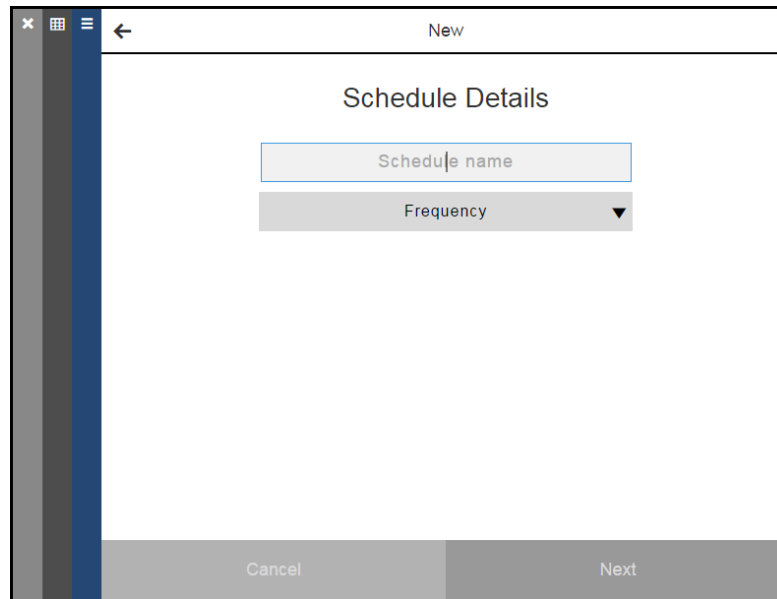
- b. Select **New run** or **Previous run**.

If this is the first time that you are running the application, select **New run** and go to the appropriate next step.

If you select **Previous Run**, go to the appropriate next step.

- c. Select **New run** to set a schedule for a new run, and enter a name for the schedule in the **New Schedule Details** dialog box.

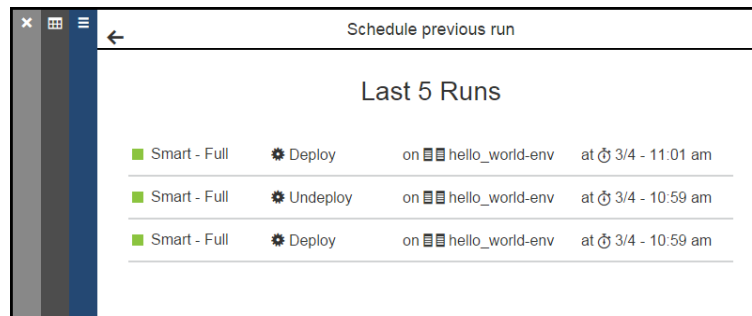
Example:



The screenshot shows a dialog box titled "New" with a back arrow. Inside, the title "Schedule Details" is centered. Below the title are two input fields: "Schedule name" and "Frequency" with a dropdown arrow. At the bottom are "Cancel" and "Next" buttons.

- d. Select **Previous run** to set a schedule used for a previous run, and select it in the **Schedule previous run** dialog box, which has information about the last five runs.

Example:



The screenshot shows a dialog box titled "Schedule previous run" with a back arrow. Inside, the title "Last 5 Runs" is centered. Below the title is a table with three rows of run information.

Last 5 Runs			
Smart - Full	Deploy	on hello_world-env	at 3/4 - 11:01 am
Smart - Full	Undeploy	on hello_world-env	at 3/4 - 10:59 am
Smart - Full	Deploy	on hello_world-env	at 3/4 - 10:59 am

The **New Schedule Details** dialog box opens.

- e. Enter the schedule name and click in the **Frequency** field to set how often the application runs.

Example:

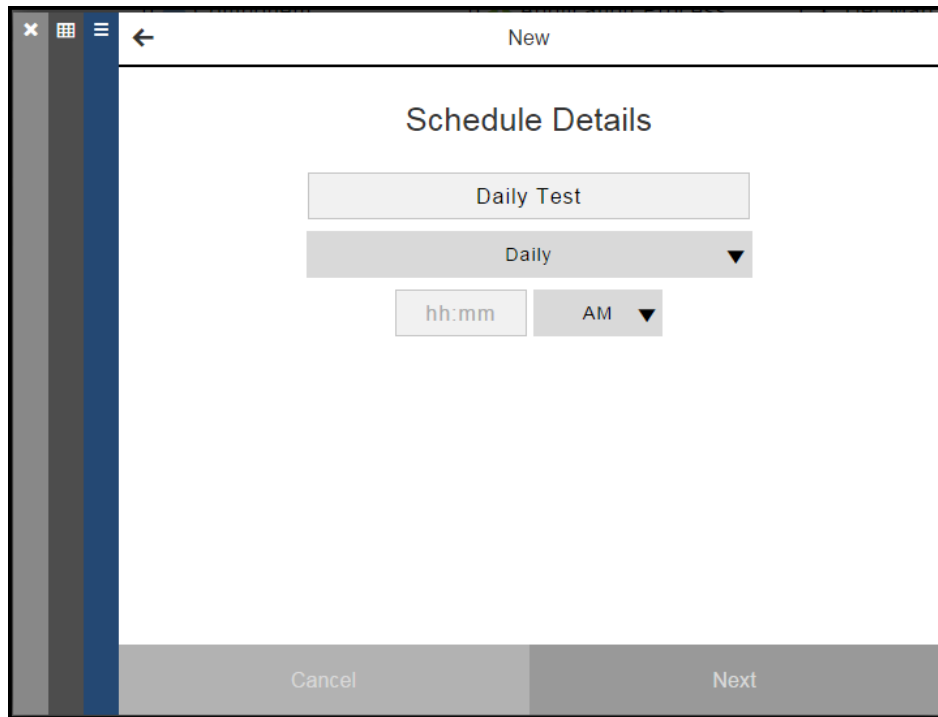
The screenshot shows a mobile application interface for creating a new schedule. The top bar is labeled 'New' with a back arrow. The main section is titled 'Schedule Details'. It contains a text field with the value 'Daily Test'. Below this is a 'Frequency' dropdown menu, which is currently open, displaying the options: 'Once', 'Daily', 'Weekly', and 'Monthly'. At the bottom of the screen, there are two buttons: 'Cancel' and 'Next'.

Depending on the frequency that you select, different fields appear.

- **Once**—Enter information in the date (Month, Day, and Year) and the time (hours, minutes, and **AM** or **PM**) fields.
- **Daily**—Enter only the time (hours, minutes, and **AM** or **PM**).
- **Weekly**—Enter the **Day of week** (Monday to Sunday) and the time (hours, minutes, and **AM** or **PM**).
- **Monthly**—Enter the **Day** and the time (hours, minutes, and **AM** or **PM**).

- f. Enter the appropriate information in the fields below the **Frequency** field.

Example:



The screenshot shows a mobile application interface for creating a new schedule. At the top, there is a header bar with a back arrow, a 'New' title, and standard mobile UI icons (close, grid, menu). Below the header, the title 'Schedule Details' is centered. The form contains three main input fields: a text field with 'Daily Test', a frequency dropdown menu currently set to 'Daily', and a time selection field. The time field consists of two parts: a text input for 'hh:mm' and a dropdown for 'AM' with a downward arrow. At the bottom of the form, there are two large, light-gray buttons labeled 'Cancel' and 'Next'.

For example, if you select **Daily**, set the time (hours, minutes, and **AM** or **PM**). In the time fields, click in it and enter the hours and minutes and then select **AM** or **PM**.

Example:

The screenshot shows a 'Schedule Details' dialog box. The title bar includes a 'New' button and a back arrow. The main area is titled 'Schedule Details'. It contains three input fields: a text field with 'Daily Test', a dropdown menu with 'Daily', and a time field with '01: __' and a dropdown menu with 'AM'. The 'AM' dropdown is open, showing 'AM' and 'PM' options. At the bottom, there are two buttons: 'Cancel' and 'Next'.

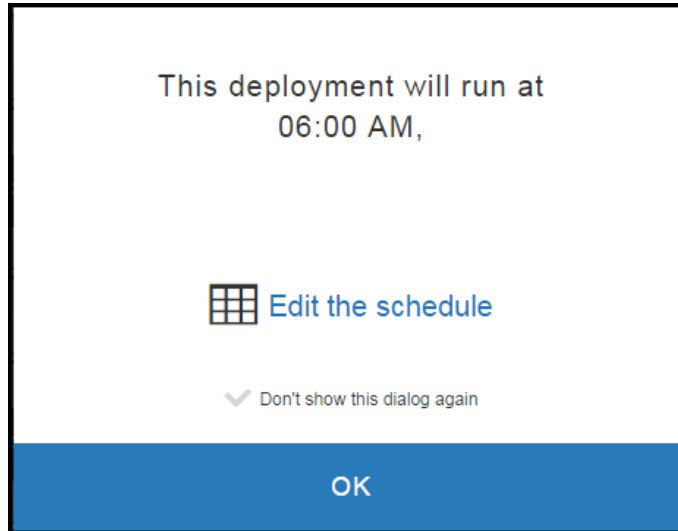
- g. Click **Next**. The dialog box to set the parameters for running the application opens.
4. Select an application process.
 5. Select an environment.

If this is the first time that you are running the application, smart deploy is not enabled.

6. Click **OK**.

A message appears about when the application is run according to the schedule.

Example:



When it is time for the application to run, the system runs it in the background.

You can view the results in the Application Inventory and the Environment Inventory. For more information, go to [Viewing Results and Troubleshooting](#).

Deploying Snapshots

1. Go to the Applications List.
2. Choose an application.
3. Click the **Run process** button.

Example:

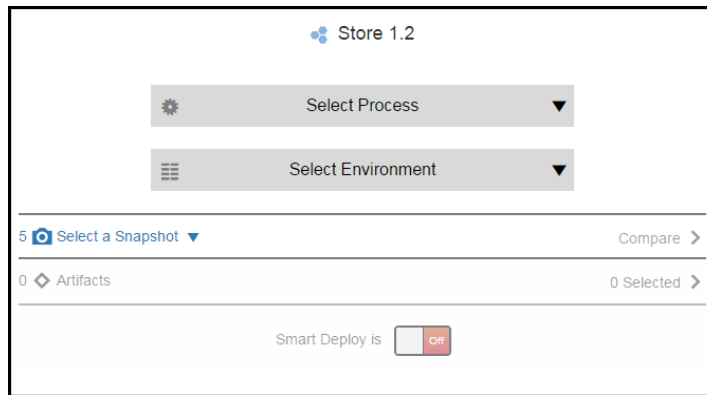


4. Select **New Run**, **Last Run**, or **Schedule**.

The dialog box to set the parameters for running an application opens.

In this dialog box, you can deploy a snapshot or compare the application to the selected snapshot.

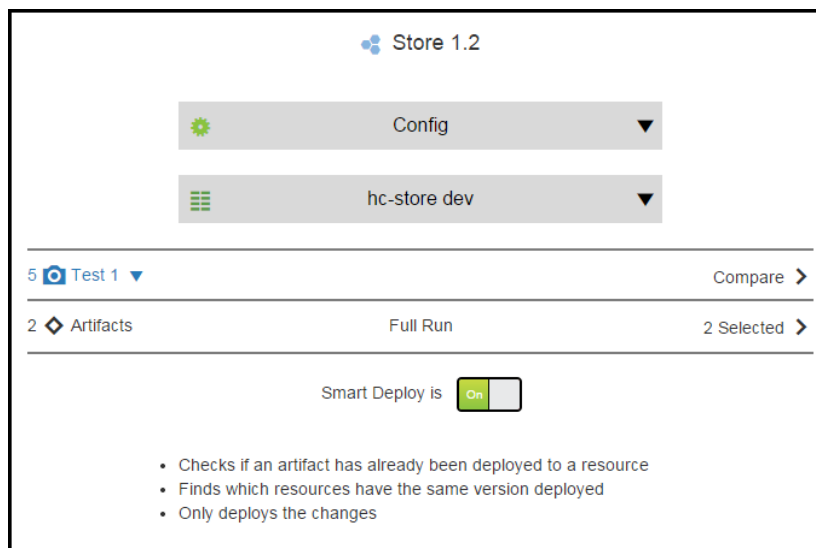
Example:



5. Select the parameters to run an application.

For more information, go to [Deploying or Comparing Snapshots](#) on page 418 and [Deploying \(Running\) Applications](#) on page 173.

Example:



6. To run (deploy) the snapshot:

1. Click **OK**.
2. Go to [Deploying \(Running\) Applications](#) on page 173 for more information.

7. To compare the application to the selected snapshots:

1. Click **Compare** to compare the application to the selected snapshot.
2. Go to [Comparing Snapshots](#) on page 421.

You can compare the application to other snapshots.

Deploying or Comparing Snapshots

How to get here: From the Home page, go to the Applications List, choose an application, click the Run process button, and select **New Run**.

Example:



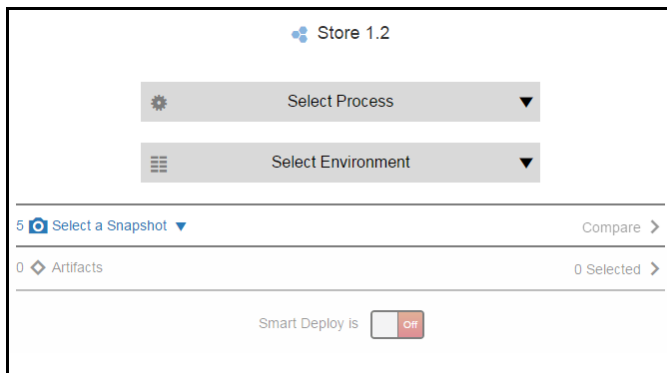
The dialog box to set the parameters for running (deploying) the application opens.

In this dialog box, you can deploy a snapshot or compare the application to a snapshot.

Setting Parameters in the Dialog Box

In the dialog box, the **Select a Snapshot** option is available (enabled) because the application has one or more snapshots saved.

Example:



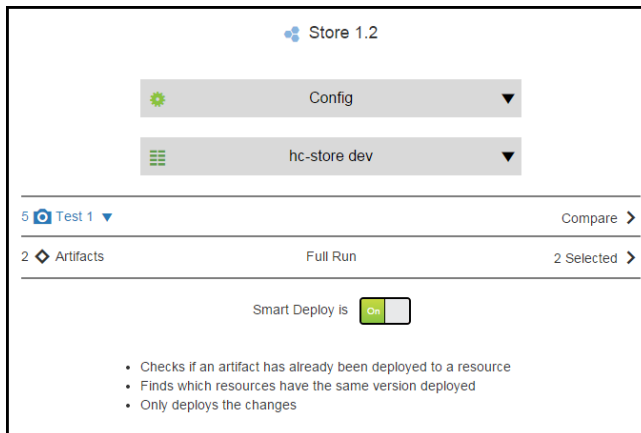
Select the following options to set the parameters to run the application:

- **Select Process**—Click the pull-down button to select the application to run.
- **Select Environment**—Click the pull-down button to select the environment in which the application will run.
- **Select a Snapshot**—Click the pull-down button to select one or more snapshot.

The **Compare** option is now available (enabled) because of the following

- There are one or more snapshots that can be compared to the application in the selected environment.
- The application has been selected.
- The environment has been selected.
- The one or more snapshot has been selected.

Example:



Deploying Snapshots

After setting the parameters, click **OK** to run (deploy) the selected snapshot.

For more information, go to

Comparing Snapshots

After setting the parameters, click **OK** to compare the selected application to a snapshot.

Deploying Applications with Parameters

Starting in the Applications List:

1. Choose the application that you want to deploy and click the **Run process** button.
2. Select **New Run** to deploy the application with new settings.

The **New** dialog box opens.

3. Select the application process, environment, tier map, snapshot, artifact, and resource options, as described in other topics in this document.



4. In the **Parameters** row, click the button to open a form showing the parameters that apply to the application process.
5. Enter information in the fields.

- Click **OK** to save the parameter settings and close the form.

The **New** dialog box now shows what you set in the previous two steps.

The Parameters row shows the number of required parameters. You must enter information for those parameters to deploy the application.

- Click **OK** to deploy the application.

Examples: Deploying (Running) Applications

These examples show how to set the parameters for:

- Full run

The system runs the application with all the application processes, components, and artifacts in the application.

- Partial run

The system runs the application with only the selected application processes, components, and artifacts in the application.

- Selecting artifacts with specific versions to run

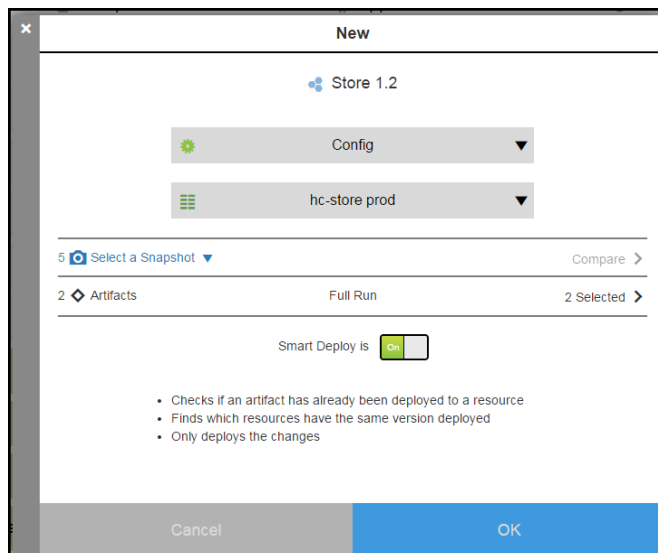
The system runs the application with only the selected versions of the artifacts.

- Combinations of these ways

Full Run

In this example, **Full Run** is selected. All the objects in Store 1.2 will be deployed.

Examples:



To view what objects in the application will run, click **Full Run**.

A dialog box with a list of objects in the application opens. The objects that are selected with the green check mark will run.

Example:

← Run			Full
✓ 2 Tiers	2 Artifacts	Versions	
✓ 1 Tomcat	1		
✓ 1 database	com.mycompany.heatclinic.config	Latest	
✓ 2 Cookie	1		
✓ 4 Config	com.mycompany.heatclinic.war...	Latest	

Partial Runs with Specific Artifact Versions

You can do a **Partial Run** to run only some of the objects.

To select an object that you do not want to deploy, click in its row.

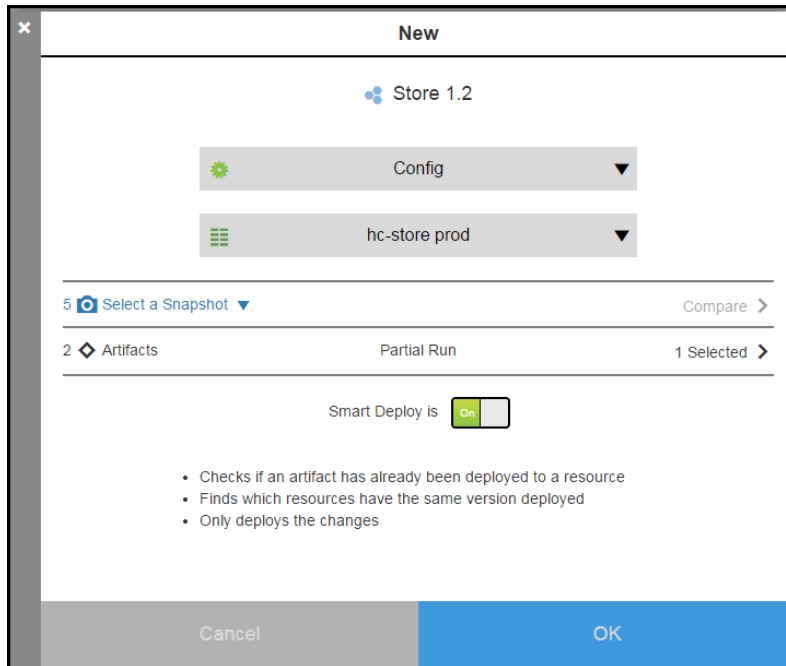
For example, if you click in the Cookie row, all the objects in the Cookie are removed from the next run.

Example:

← Run			Partial
✓ 2 Tiers	2 Artifacts	Versions	
✓ 1 Tomcat	1		
✓ 1 database	com.mycompany.heatclinic.config	Latest	
✓ 2 Cookie	1		
✓ 4 Config	com.mycompany.heatclinic.war...	Latest	

After you click **OK**, the dialog box now shows that the when the application runs, it is a *Partial Run* and that *1 of 2* artifacts in the application will run.

Example:



You can also select specific versions of artifacts.

To select the artifact versions, click in the row with Artifacts.

The dialog box opens.

Example:

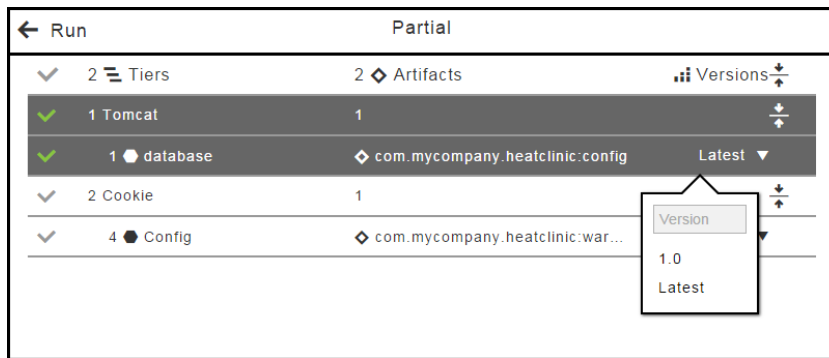
← Run		Partial	
✓ 2 Tiers	2 Artifacts	Versions	
✓ 1 Tomcat	1		
✓ 1 database	com.mycompany.heatclinic:config	Latest	▼
✓ 2 Cookie	1		
✓ 4 Config	com.mycompany.heatclinic:war...	Latest	▼

The version of each artifact is in the Version column. The current version is *Latest*.

To see the actual version, click the down arrow next to the current version. A drop-down menu appears.

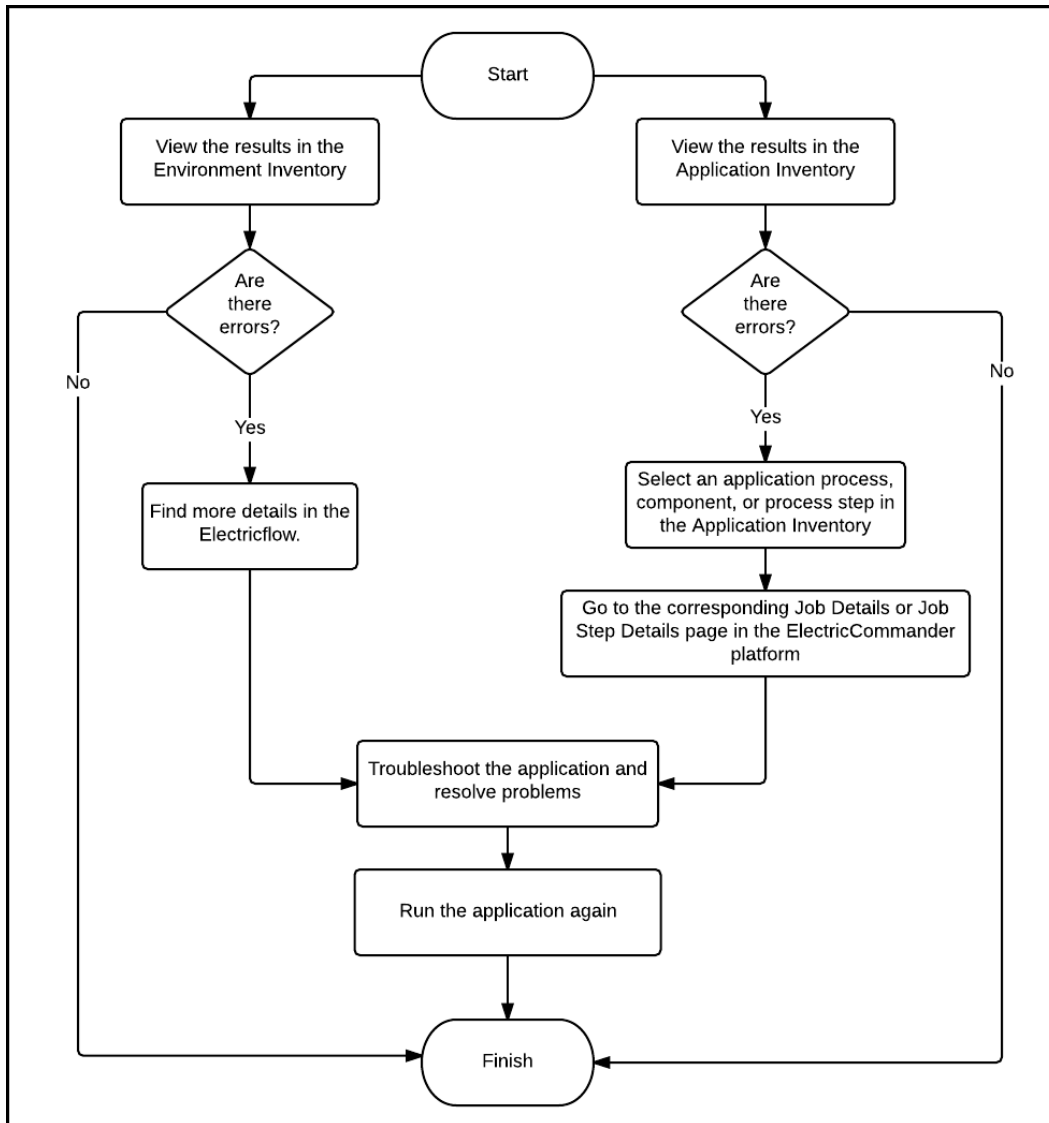
For the Backup1.zip component, the possible versions are in the drop-down list. The latest version is Version 2.0.

Example:



Click **OK** to save these settings and return to the dialog box.

Viewing Results and Troubleshooting



Viewing the Environment Inventory and Application Inventory

Follow these steps to get more information about the state of the environment at a point in time and to view information about an object during the deployment.

Starting at the Home page:

1. Go to the Environments List.
2. Choose an environment.

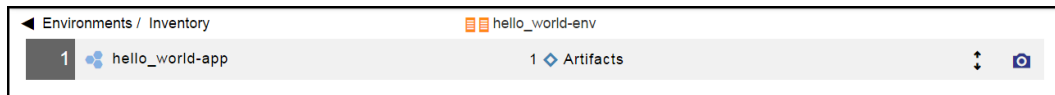
- Click the **Inventory** button.

Example:



The Environment Inventory opens.

Example:



- Click the **View** button to view more information about the application.

Example:



Information about the components appears.

Example:



- Click the **Process** button to view more information.

Example:



The Application Inventory opens and displays details about the application processes, components, and process steps.

Example:

Applications / View Run admin Running: hello_world-app - Deploy on hello_world-env Errors 0									
	3_Deploy_hello_world-app_Default_20150304...	★ Success	Mar 04, 2015	11:01 Pac...	00:01	÷	100%	⊕	➔
	put html files	★ Success	Mar 04, 2015	11:01 Pac...	00:01	÷	100%	⊕	➔
	get html files	★ Success	Mar 04, 2015	11:01 Pac...	00:00	÷	100%	⊕	➔
	copy to apache	★ Success	Mar 04, 2015	11:01 Pac...	00:00	÷	100%	⊕	➔

Note: You can also go to the Application Inventory by going to the Applications List, clicking the **View** button to show the previous deployments, choosing a deployment, and clicking the **View Details** button.

- Click the **View** buttons for the process steps to view more details.

Example:

Applications / View Run admin Running: hello_world-app - Deploy on hello_world-env Errors 0									
	3_Deploy_hello_world-app_Default_20150304...	★ Success	Mar 04, 2015	11:01 Pac...	00:01	÷	100%	⊕	➔
	put html files	★ Success	Mar 04, 2015	11:01 Pac...	00:01	÷	100%	⊕	➔
	get html files	★ Success	Mar 04, 2015	11:01 Pac...	00:00	÷	100%	⊕	➔
	hello_world-web-server-resource	★ Success	Mar 04, 2015	11:01 Pac...	00:00	÷	100%	⊕	
	copy to apache	★ Success	Mar 04, 2015	11:01 Pac...	00:00	÷	100%	⊕	➔
	hello_world-web-server-resource	★ Success	Mar 04, 2015	11:01 Pac...	00:00	÷	100%	⊕	

Examples: Viewing Deployment Details

The following are examples of the information that you can get about the objects in your deployment.

- The application is *hello_world-app*.
- The application process is *Deploy*, which has one application process step called *put html file*.
- The application process step calls a component process called *Deploy*, which has two steps: *get html files* and *copy to apache*.

- The "get html files" step runs on the resource called *hello_world-web-server-resource*.
- The "copy to apache" step runs on the resource called *hello_world-web-server-resource*.

Applications / View Run admin Running: hello_world-app - Deploy on hello_world-env ▲ Errors 0									
3_Deploy_hello_world-app_Default_20150304...	★ Success	Mar 04, 2015	11:01 Pac...	00:01	100%	⚙	🔍	🔍	1
put html files	★ Success	Mar 04, 2015	11:01 Pac...	00:01	100%	⚙	🔍	🔍	2
get html files	★ Success	Mar 04, 2015	11:01 Pac...	00:00	100%	⚙	🔍	🔍	3
hello_world-web-server-resource	★ Success	Mar 04, 2015	11:01 Pac...	00:00	100%	⚙	🔍	🔍	4
copy to apache	★ Success	Mar 04, 2015	11:01 Pac...	00:00	100%	⚙	🔍	🔍	
hello_world-web-server-resource	★ Success	Mar 04, 2015	11:01 Pac...	00:00	100%	⚙	🔍	🔍	

This information can be used to understand what was deployed and where, how long it took to run the processes and process steps, the state of objects at a specific time, when the application was modified and how, and so on. This information is useful when you troubleshoot the application and are evaluating it to find ways to optimize and enhance it.

Example 1: Application Process Level Details

When you click the **View Details** button for **3_Deploy_hello_world-app**, you go to the Job Details page for the application.

Job Details – 3_Deploy_hello_world-app_Default_20150304190119

Completed with Success

Start Time: 2015-03-04 19:01:19 UTC

Elapsed Time: 00:00:01.954

General Information

Project: Default

Procedure: External

Launched by: admin

Priority: normal

StepsDiagnosticsParametersPropertiesNotifiersPublished Artifact VersionsRetrieved Artifact Versions

View: All

Expand All | Collapse All

Step Name	Log	Status	Elapsed Time	Resource	Actions
put.html.files		Completed with Success	00:00:01.024		Track Changes
get.html.files		Completed with Success	00:00:00.489		Track Changes
hello_world-web-server-resource		Completed with Success	00:00:00.489		Track Changes
Retrieve Artifact		Completed with Success	00:00:00.530	hello_world-web-server-resource	Track Changes Edit
copy.to.apache		Completed with Success	00:00:00.069		Track Changes
hello_world-web-server-resource		Completed with Success	00:00:00.069		Track Changes
runCommand		Completed with Success	00:00:00.090	hello_world-web-server-resource	Track Changes Edit

Records per page: 100

1 thru 7 of 7

To get more information about **Retrieve Artifact**, click the **View Log** button.

Example:



The Job details appear.

Example:

Job: 3_Deploy_hello_world-app_Default_20150304190119

Workspace File – Retrieve Artifact.d7fc4f54-c2a0-11e4-acf4-0800276bd168.log


Source: /home/eccloud/sample_dsl/hello_world
 Artifact Name: hello_world.html
 Artifact Version: 1
 Destination directory: /opt/electriccloud/electriccommander/workspace/3_Deploy_hello_world-app_Default_20150304190119
 Fetching artifact: done.

Example 2: Application Process Step Level Details

When you click the **View Details** button for **put html files**, you go to the Job Details page for this job step. You can click the Job link in the General Information to view information about the job in the previous example.

Job: 3_Deploy_hello_world-app_Default_20150304190119

Job Step Details – put html files



Completed with Success

Start Time: 2015-03-04 19:01:20 UTC
 Elapsed Time: 00:00:01.024

General Information

Job: 3_Deploy_hello_world-app_Default_20150304190119
 Procedure: External

General | Diagnostics | Properties | Notifiers

General

Step Id: d7b09fe2-c2a0-11e4-b341-0800276bd168
 Step Name: put html files
 Subproject: Default
 Create Time: 2015-03-04 19:01:19 UTC
 Elapsed Time: 00:00:01.024
 End Time: 2015-03-04 19:01:21 UTC
 Last Modified: 2015-03-04 19:01:21 UTC
 Last Modified By: project: Default
 Run Condition: 1
 Exclusive Mode: none
 Release Mode: none

Diagnostics

Exit Code: 0
 Error Handling: Fail Procedure

Command

Exclusive Mode: none
 Release Mode: none

Example 3: Component Process Step Details

When you click the **View Details** button for **get html files**, you go to the Job Details page for this job step. You can click the Job link in the General Information to view information about the job in the previous example.

Job: 3_Deploy_hello_world-app_Default_20150304190119

Job Step Details – get.html.files Access Control

Completed with Success
 Start Time: 2015-03-04 19:01:20 UTC
 Elapsed Time: 00:00:00.489

General Information
 Job: 3_Deploy_hello_world-app_Default_20150304190119
 Procedure: External

General | Diagnostics | Properties | Notifiers

General

Step Id: d7d3df43-c2a0-11e4-acf4-0800276bd168
 Step Name: get.html.files
 Subproject: /plugins/EC-FileSysRepo/project
 Create Time: 2015-03-04 19:01:19 UTC
 Elapsed Time: 00:00:00.489
 End Time: 2015-03-04 19:01:20 UTC
 Last Modified: 2015-03-04 19:01:20 UTC
 Last Modified By: project: Default
 Run Condition: 1
 Exclusive Mode: none
 Release Mode: none

Diagnostics

Exit Code: 0
 Error Handling: Fail Procedure

Command

Exclusive Mode: none
 Release Mode: none

Example 4: Change History of a Resource

When you click the **Track Changes** button for resource called *hello_world-web-server-resource*, you go to the Change History for Details page for the application process.

Change History for Deploy ↶ ↷ 🔍

2/12/15 - 3:30 PM 22 3/20/15 - 1:45 PM

▼ Between... 🕒 🕒 ...and 🕒

View All Changes	When ▲ ▼	What	Name	By...	Change	Path
Objects						
Act (9)						
Property Sheet (4)						
✓ Process (1)						
✓ Property (4)						
✓ Process Step (1)						
✓ Formal Parameter (3)						
Changes						
✓ Created (22)						
Changed by...						
✓ Admin (22)						
	1	Mar 04, 2015 10:58 AM Pacif...	process	deploy	admin	* created -/+
	2	Mar 04, 2015 10:58 AM Pacif...	property	ec_notifier...	admin	* created -/+
	3	Mar 04, 2015 10:58 AM Pacif...	property	ec_deploy	admin	* created -/+
	4	Mar 04, 2015 10:58 AM Pacif...	processStep	put.html.files	admin	* created -/+
	5	Mar 04, 2015 10:58 AM Pacif...	formalPara...	ec_hello_...	admin	* created -/+
	6	Mar 04, 2015 10:58 AM Pacif...	formalPara...	ec_hello_...	admin	* created -/+
	7	Mar 04, 2015 10:58 AM Pacif...	formalPara...	ec_smartd...	admin	* created -/+
	8	Mar 04, 2015 10:58 AM Pacif...	property	ec_notifier...	admin	* created -/+
	9	Mar 04, 2015 10:58 AM Pacif...	property	ec_deploy	admin	* created -/+

Running a New Search Through the Change History

Follow these steps to start a search through the Change History.

Starting from the Home page:

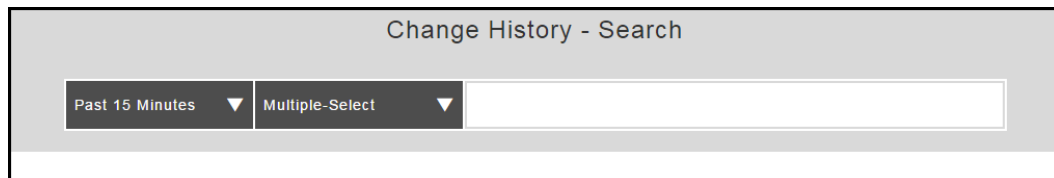
1. Click the **Search** button.

Example:



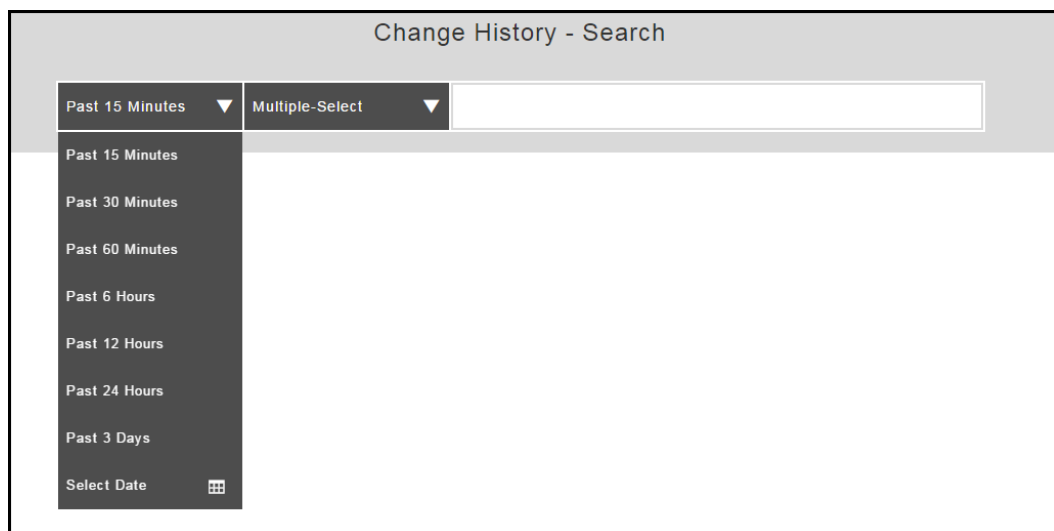
The **Change History - Search** dialog box opens.

Example



2. Click the down arrow in the Time Increment field to open the drop-down list.

Example:

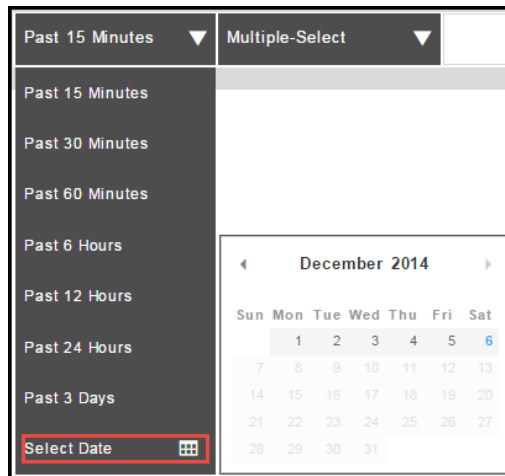


3. (Optional) If you want to use a time increment longer than three days, do the following:

- a. Click **Select Date**.

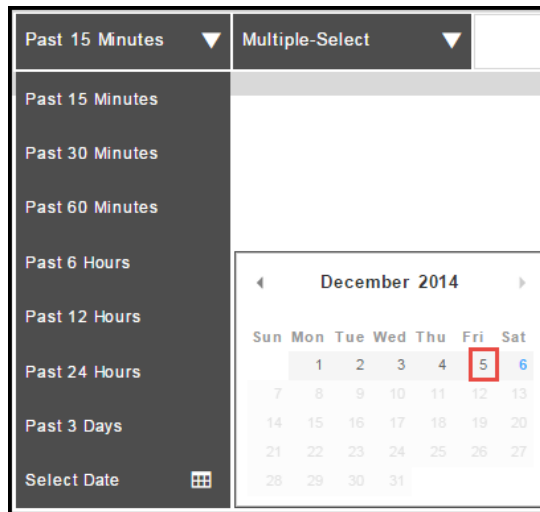
The Date Picker opens.

Example:



- b. Select a date.

Example:



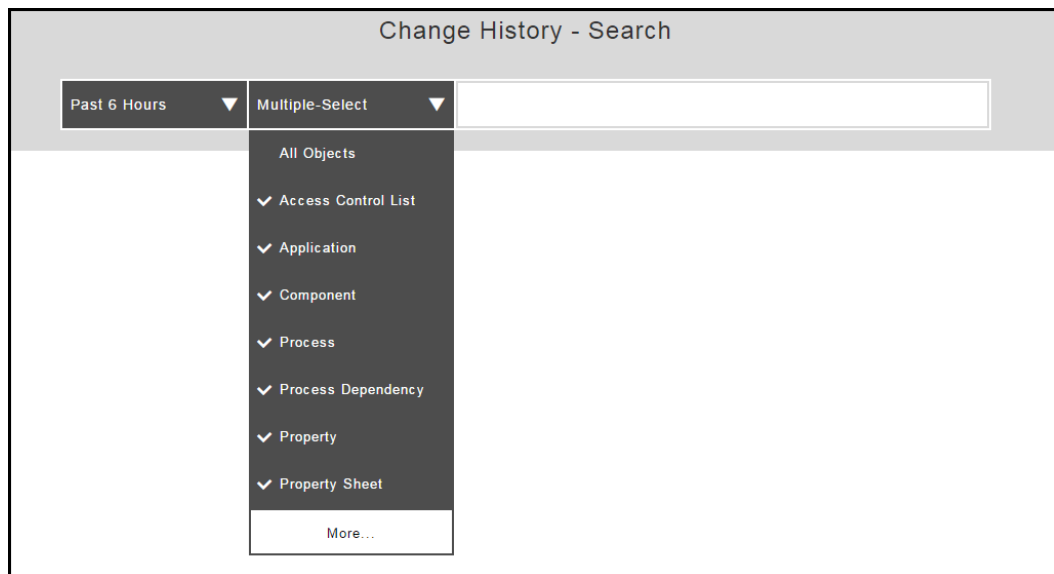
The Date Picker closes and the date that you selected appears in the Time Increment field.

Example:



4. Click **Multiple Select** to open the drop-down list of tracked objects.

Example:



5. Select the objects to include in the Change History.

Example:

The screenshot shows a web interface titled "Change History - Search". It features a header bar with two dropdown menus: "Past 6 Hours" and "Multiple-Select". Below the "Multiple-Select" menu, a list of object types is displayed, each preceded by a checkmark: "All Objects", "Access Control List", "Application", "Component", "Process", "Process Dependen...", "Property", "Property Sheet", "Access Control En...", "Agent", "Application Tier", and "Artifact". A search input field is visible to the right of the dropdown menu.

6. Enter the search criteria.

As you type, the system starts to search for objects that match your search criteria.

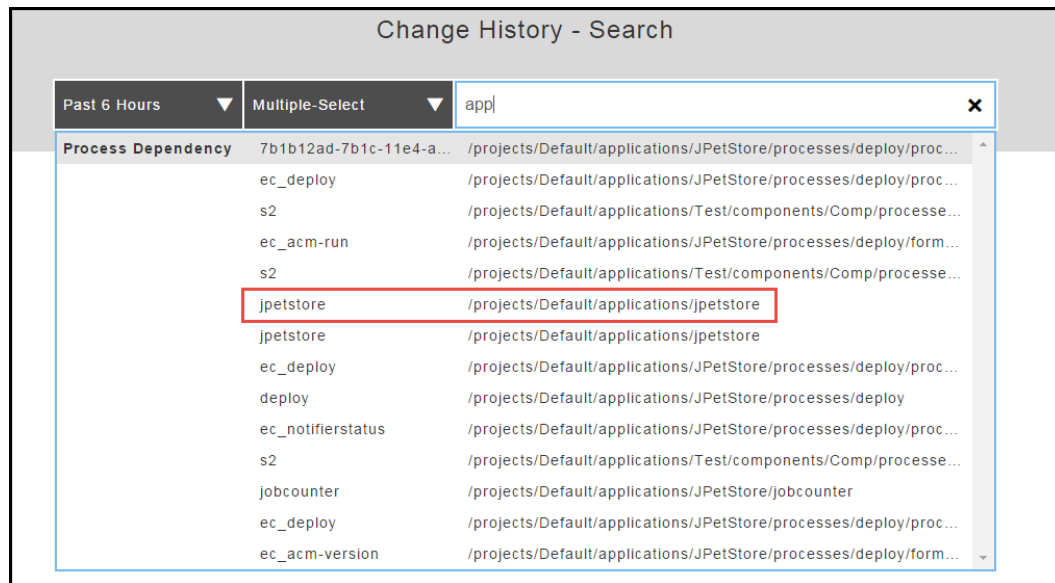
A list of objects matching your search criteria appears in the results section.

Example:

The screenshot shows the same "Change History - Search" interface. The search input field now contains the text "appl". A magnifying glass icon is visible at the end of the input field.

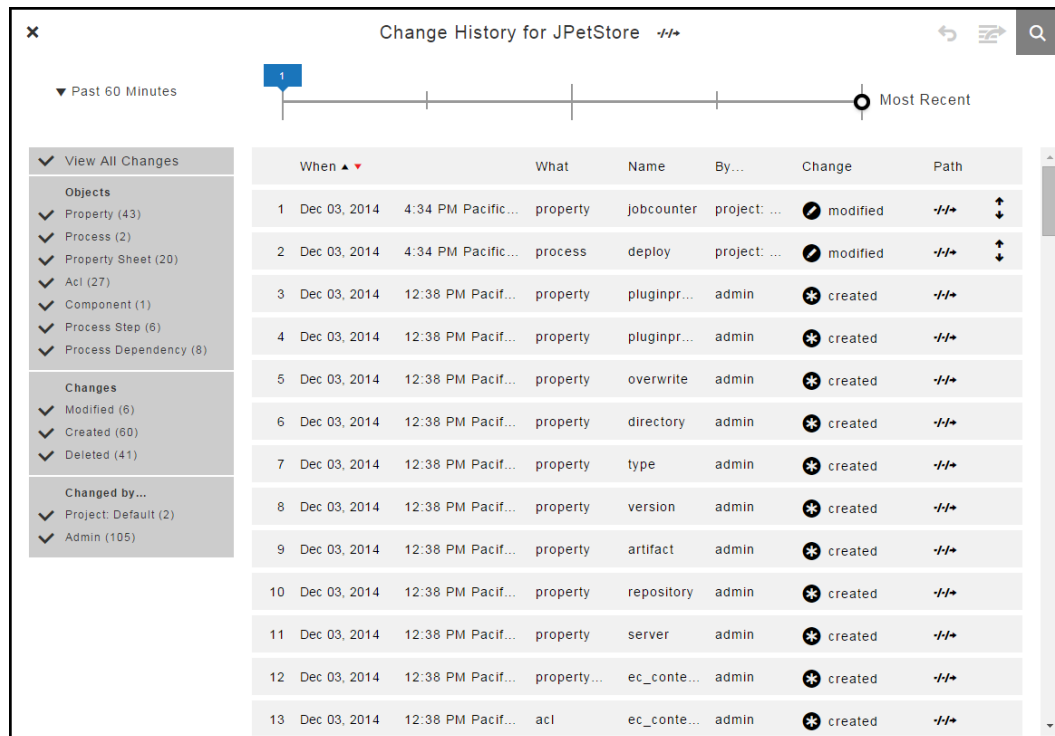
7. Select an object in the list.

Example:



The change history for the object that you selected appears.

Example:



Modeling and Deploying Applications in Dynamic Environments

Starting in ElectricFlow 5.4, you can model an application, deploy it in a dynamically created environment, and view and troubleshoot the results. In this workflow, you can create dynamic environments with cloud resources that are spun up when you deploy the application. It does not describe how to create static environments with resources in your system or network that are configured before deploying the application. For information about this workflow, go to [Modeling and Deploying Applications in Static Environments](#) on page 106

A dynamic environment is an environment that is provisioned using an environment template. You can add provisioned cloud resources as well as static resources to an environment template. All of the following are considered to be dynamic environments:

- An environment with only provisioned cloud resources
- An environment with only static resources added to an environment template
- An environment with provisioned cloud resources and static resources.

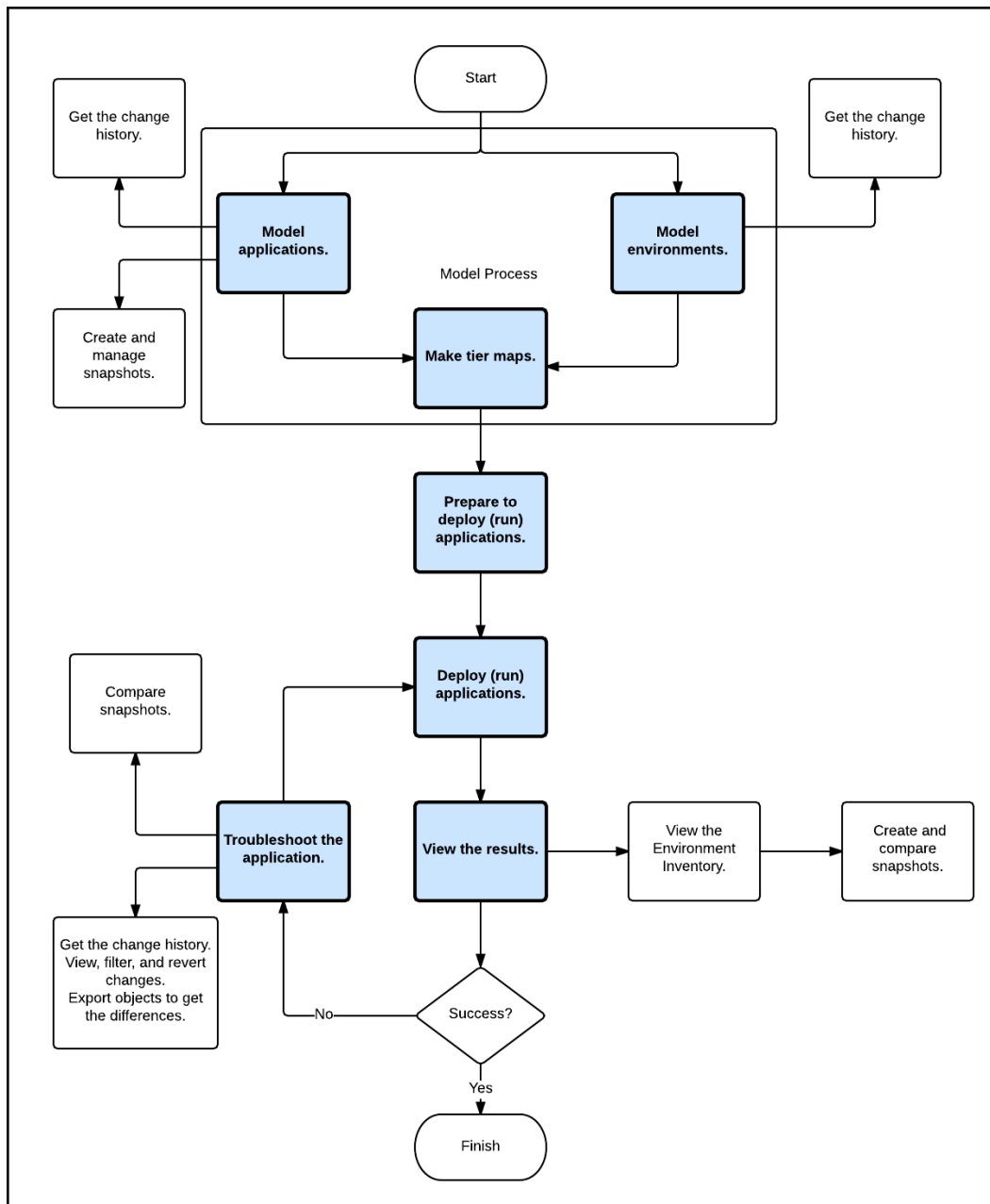
Using dynamic environments, teams that use dynamic cloud resources to deploy applications can do the following:

- Define and provision dynamic cloud resources when deploying applications.
- Configure the middleware of dynamic cloud resources on an on-demand basis.
- Re-use resource pools.
- Track how provisioned cloud resources are used.
- Provide ways to optimize how cloud resources are used.
- Provide status of the process that provisions cloud resources.
- Verify the credentials of cloud resources before provisioning them.

The following tasks describe how to model and deploy (run) applications at a high level.

1. [Logging in to ElectricFlow](#) on page 212
2. [Modeling Applications](#) on page 213
3. [Modeling Dynamic Environments](#) on page 267
4. [Deploying Applications With Provisioned Cloud Resources](#) on page 321
5. [Retiring Dynamic Environments](#) on page 329

For information about the UI, go to [ElectricFlow Buttons and Icons](#) on page 15.



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:

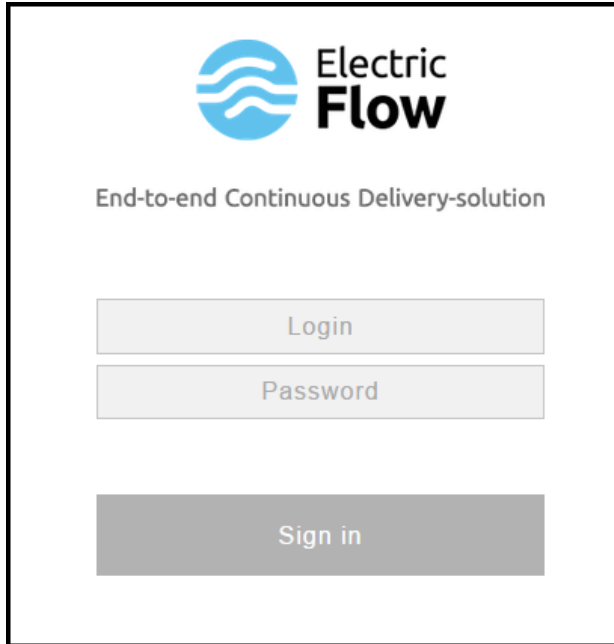
Term	Within ElectricFlow	Outside of ElectricFlow
Application	The application that you design and run (deploy) to produce your software for continuous delivery across different pipelines.	The software, system or application that you build, test, install, implement, release, and deploy using ElectricFlow. 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. <i>Run</i> is a synonym of <i>deploy</i> in ElectricFlow.	All the processes or actions to use software in its environment, including implementing, installing, configuring, debugging, troubleshooting, and releasing.

Logging in to ElectricFlow

1. Enter `http://<commander-server>/flow` in a browser window, where `<commander-server>` is the ElectricCommander server IP address or host name.

For example, when you go to `https://123.123.1.222/flow/`, the landing page opens.

Example:

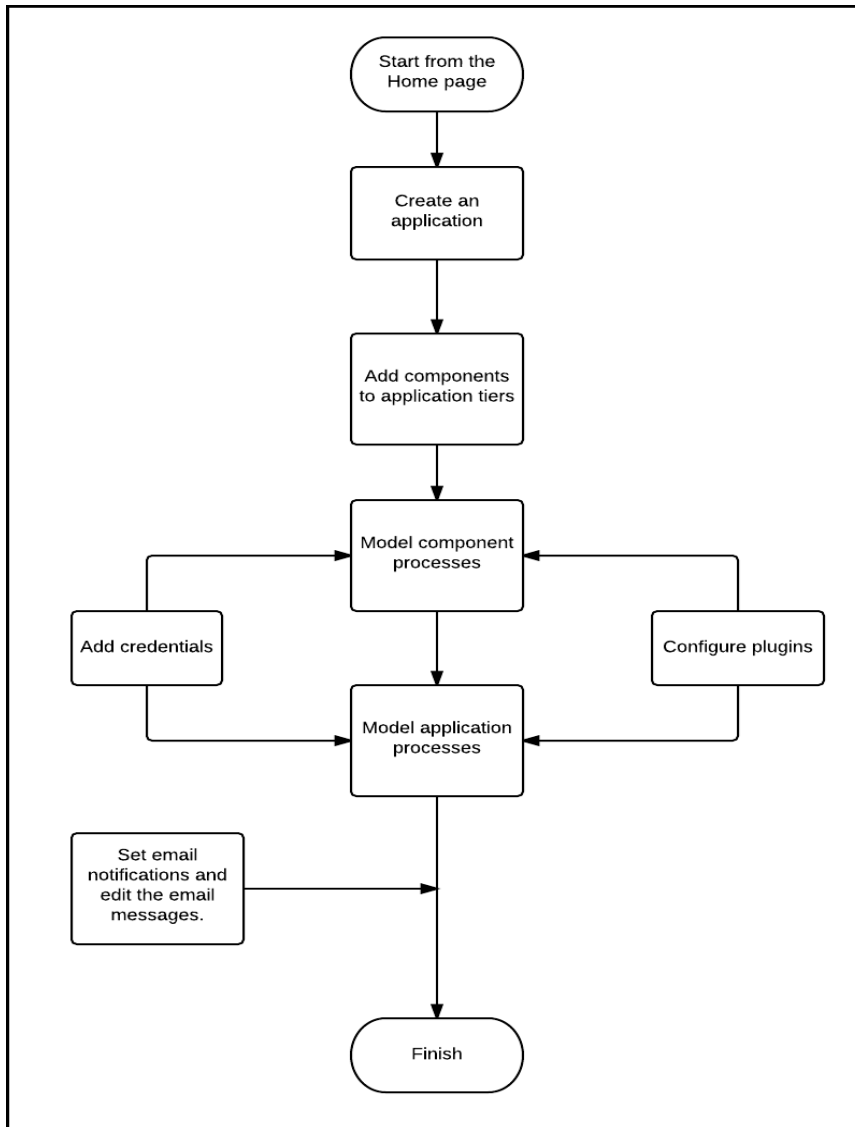
The image shows a login screen for ElectricFlow. At the top is the ElectricFlow logo, which consists of a blue circle with three white wavy lines inside, followed by the text "Electric Flow" in a bold, sans-serif font. Below the logo is the tagline "End-to-end Continuous Delivery-solution". Underneath the tagline are three input fields: a "Login" field, a "Password" field, and a "Sign in" button. The "Login" and "Password" fields are light gray, while the "Sign in" button is a darker gray.

IMPORTANT: For a new installation, the default admin account user name is *admin* and the password is *changeme*. You should change the default admin password as soon as possible.

2. Enter a user name and password.
3. Click **Sign in**.

The ElectricFlow Home page opens.

Modeling Applications



1. Create an application and application tiers.
2. Add components to the application tiers.
3. Model component processes.
4. Model application processes.
5. (Optional) Set email notifications and edit the email messages.

Creating an Application and Application Tiers

Starting from the Home page:

1. Go to the Applications List by either
 - Clicking the **Applications** launch pad.
 - Clicking the **Menu** button > **Applications**.

The Applications List opens.

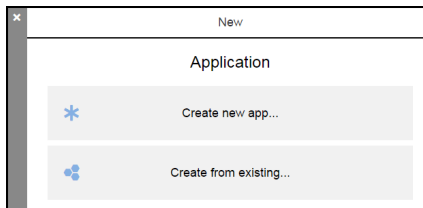
2. Click the **Add +** button in the upper right corner.

Example:



The New Application dialog box appears.

Example:



There are two ways to create an application:

- Click **Create new app** to create a new application.
 - Click **Create from existing** to create an application based on an existing application.
3. Create the application by going to appropriate next step.
 - To create a new application, go to [Creating a New Application](#) on page 216.
 - To create an application based on an existing application, go to the next step.

4. Click **Create from existing** to create an application based on an existing one.

The new application will have the same objects (components, artifacts, and application processes) as the existing application. However, it is not an exact copy of it because you need to configure new tier maps for it.

The **New Application from Existing** dialog box opens.

- a. Select an application.

The **New Application Name** dialog box opens with the name of the application you selected in the **Name** field.

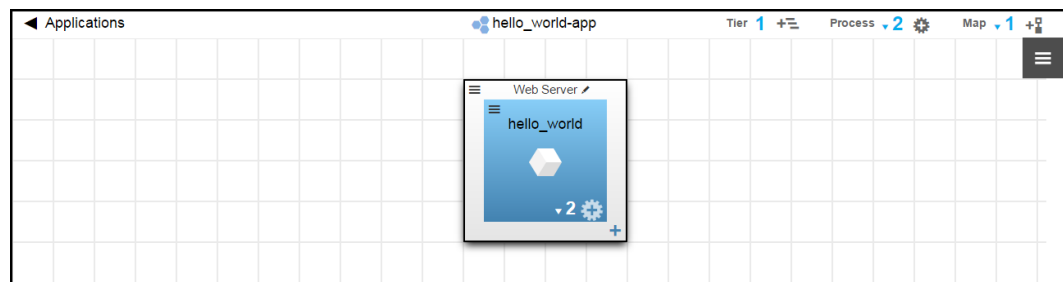
- b. Enter a name in the **Name** field.

It must not match the name of another application in the project.

- c. (Optional) Enter a description of the application in the **Description** field.

- d. Click **OK**.

If you are modeling an application based on an existing application, the Applications Visual Editor displays the same application tiers and components as the existing application with the name that you entered.

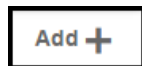


Creating a New Application

Starting in the Applications List:

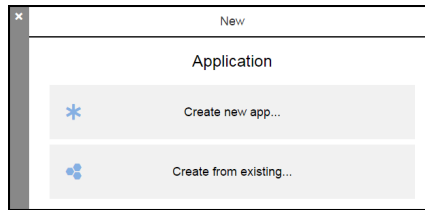
1. Click the **Add +** button in the upper right corner.

Example:



The New Application dialog box appears.

Example:



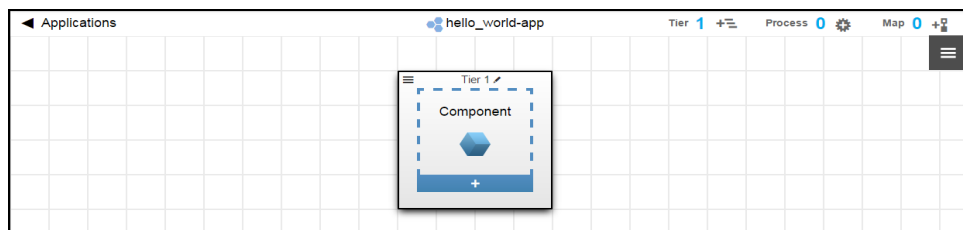
2. Click **Create new app** to create an application.

The **New Application Name** dialog box opens.

- a. Enter a name in the **Name** field.
- b. (Optional) Enter a description of the application in the **Description** field.
- c. Click **OK** to save the settings.

If you are modeling a new application, the Applications Visual Editor displays an application tier called Tier 1 with one component called Component.

Example:



3. Go to [Defining Components](#) on page 43 to set the component details.

Adding Components to the Application Tiers

Starting in the Applications Visual Editor:

1. Click the **Edit** button.

The **Application Tier Details** dialog box opens.

2. Change the name of the tier and click OK.

Example:

Change the name to **Web Server** and click **OK**.

The Applications Visual Editor now has an application tier called Web Server.

3. Click the **+** button in the component.

The **New Component** dialog box opens.

4. Enter a name in the **Name** field.
5. (Optional) Enter a description of the component in the **Description** field.

6. Click **Next** to save the settings.

The Component Details dialog box opens.

7. Click the **Current Location** field.

A list of available artifact locations appears.

8. Select a location and click **Browse**.

The information needed to define the artifact appears below.

9. Enter the appropriate information in the fields.

Example:

Component Details

hello_world Description

EC-FileSysRepo [Browse](#)

Source: /home/eccloud/sample_dsl/hello_ Required

Artifact: hello_world.html Required

Version: ☐ Latest ☒ Exact 1

Retrieve to Directory:

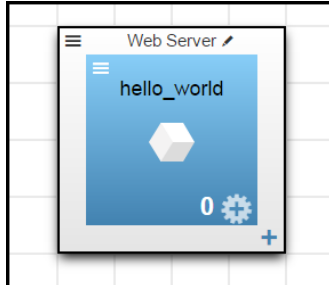
Cancel OK

1	Content Location of the component
2	Component details that vary depending on the Content Location

10. Click **OK**.

The Applications Visual Editor now shows an application tier called Web Server with a component called hello_world.

Example:



11. To add a component to the same tier, click the **+** button in the lower right corner of the tier.

A new undefined component appears in the tier.

12. Configure this component the same way you did the first one.

Adding a Component

To add component to the same application tier:

1. Click the **+** button in the lower right corner of the tier.

A new undefined component appears in the tier.

2. Click the **+** button in the new component to set the component details, following the steps previously described.

Adding an Application Tier

To add an application tier, click the **Add tier** button.

Modeling Component Processes

Starting in the Applications Visual Editor:

1. Click the **Add Process** button in a component to a component process to it.

Example:



The **New Component Process Details** dialog box opens.

2. Enter information about the component process in the Component Process Details dialog box.

Example:

The screenshot shows a 'New Component Process Details' dialog box. It features a title bar labeled 'New' and a main heading 'Component Process Details'. The form includes the following fields:

- Name:** A text input field with the placeholder text 'Name'.
- Description:** A larger text area for a detailed description.
- Deploy:** A dropdown menu currently showing 'Deploy'.
- Credential:** A text input field containing '0', with an 'Optional' link to its right.
- Workspace:** A dropdown menu showing 'default', with an 'Optional' link to its right.
- Time limit:** A text input field containing '0', followed by a 'Seconds' dropdown menu and an 'Optional' link.

At the bottom of the dialog are two buttons: 'Cancel' and 'OK'.

Field	Description and How to Set It
Name	Name of the process step
Description	Description of the process step
Process Type	<p>Type of process. The default is Deploy.</p> <p>To set the process type:</p> <ol style="list-style-type: none"> 1. Click the Type field to select the process type. 2. Select one of these options: <ul style="list-style-type: none"> Deploy—Enables Inventory Tracking. The ElectricCommander server tracks the artifacts deployed to environments. Undeploy—The next time that the process is run, the ElectricCommander server removes information about the artifacts deployed to environments. Other—Disables Inventory Tracking.

Field	Description and How to Set It
Credential	<p>An object consisting of a user name and password that ElectricFlow uses to run a process step.</p> <p>The dialog box displays the number of credentials for the process step, which are the same credentials that you use with procedures, steps, and schedules in the ElectricCommander platform.</p> <p>You can only impersonate one credential. To set the process type, see Adding Credentials.</p>
Workspace	<p>Area in the disk space where the files and results of the job step are stored.</p> <p>To set the workspace, click the Workspace field to open a drop-down list of workspaces in the ElectricCloud platform and select a workspace.</p> <p>For more information about workspaces, go to the ElectricCommander Help > Workspaces and Disk Management. To set the workspace, click Workspace to open a drop-down list of workspaces in the ElectricCloud platform. Select a workspace, and click OK.</p>
Time limit	<p>Maximum length of time that the step is allowed to run. After the time specified, the step is aborted,</p> <p>To set the time limit, enter the time and select the unit of time: seconds, minutes, or hours.</p> <p>For information about time limits for procedure job steps in the ElectricCommander platform, go to the ElectricCommander Help > API Commands.</p>

Example:

New

Component Process Details

Deploy

Description

Deploy

▼

Credential

0

Optional >

Workspace

▼

Optional

Time limit

0

Seconds

▼

Optional

Cancel

OK

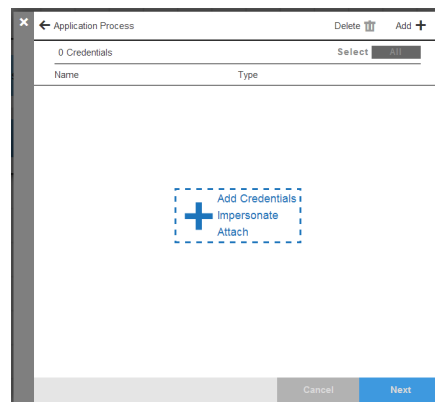
- (Optional) To add credentials, do the following:

IMPORTANT:

When you impersonate a credential, make sure that the impersonated user has the absolute path to the bin directories in the \$PATH environment.

If you define a process step with a command, you must enter the absolute path in the **Post Processor** and **Shell** fields in the Define Step dialog box.

- Click in the **Add Credentials** field.

Example:

- To impersonate one credential, select **Impersonate** in the **Type** field.
- Click the **Select Credential** field to open a drop-down list of credentials for the process step.
- Select a credential.
- Click **OK**.

The **Credentials** dialog box now shows the one credential for impersonation.

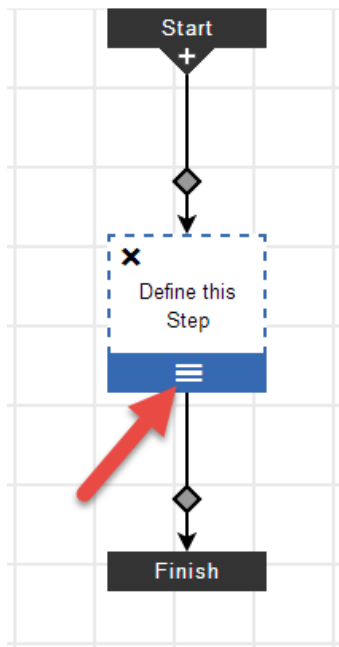
- To attach one or more credential to the process step, select **Attach** in the **Type** field.
- Click the **Select Credential** field to open a drop-down list of credentials for the process step.
- Select a credential.
- Click **OK**.

The **Credentials** dialog box now shows the attached credentials.

- Click **OK**.

The Component Process Visual Editor opens.

5. In the new process step, click the button below "Define this Step" to define it.

Example:

The Component Process Step dialog box opens.

6. Enter information about the step in the dialog box.

Example:

New Step

Component Process Step

Step name Required

Description

Credential >

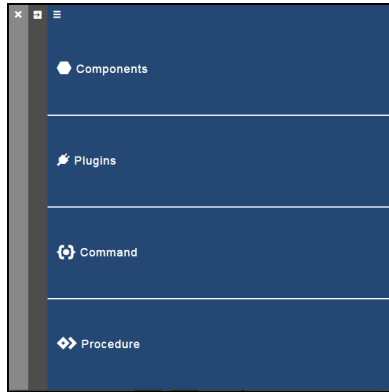
Workspace

Time limit Seconds

7. Click **Next**.

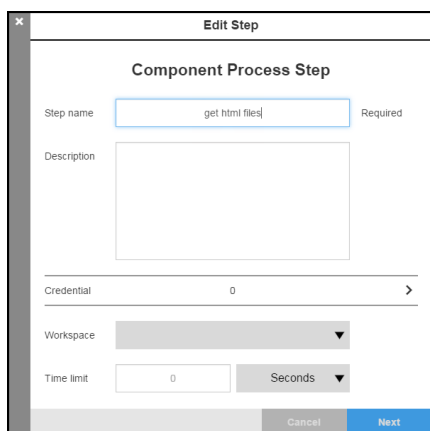
The Process Step dialog box opens.

Example:



8. To define the step, enter information in the dialog boxes that follow.

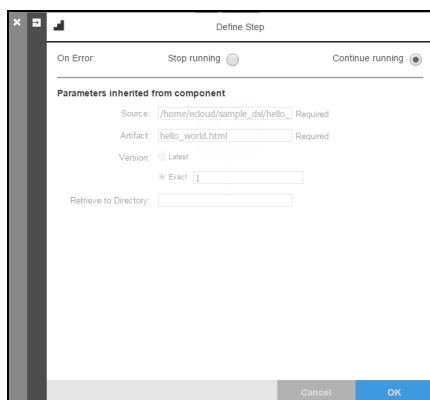
Examples:



The 'Edit Step' dialog box is titled 'Component Process Step'. It contains the following fields:

- Step name:** A text box containing 'get.html.files' with a 'Required' label to its right.
- Description:** A large empty text area.
- Credential:** A dropdown menu showing '0' with a right-pointing arrow.
- Workspace:** A dropdown menu.
- Time limit:** A text box containing '0' and a 'Seconds' dropdown menu.

At the bottom are 'Cancel' and 'Next' buttons.



The 'Define Step' dialog box has the following sections:

- On Error:** Radio buttons for 'Stop running' and 'Continue running' (selected).
- Parameters inherited from component:**
 - Source:** Text box with '/home/ec2cloud/sample_ds/hello_' and a 'Required' label.
 - Artifact:** Text box with 'hello_world.html' and a 'Required' label.
 - Version:** Radio buttons for 'Latest' (selected) and 'Exact'.
 - Retrieve to Directory:** An empty text box.

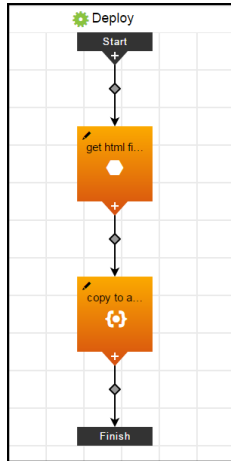
At the bottom are 'Cancel' and 'OK' buttons.

When you are done, the defined step now appears in the process in the Component Process Visual Editor.

9. Define more steps in the process.

You can also drag and drop a step into the process.

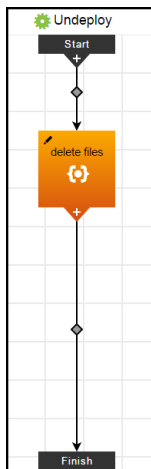
Example:



Modeling More Component Processes

Repeat the steps in the previous section to add additional component processes.

Example:



Modeling Application Processes

Starting in the Applications Visual Editor:

1. Click the **Add process** button in the upper right corner to add an application process.

Example:



The **New Application Process Details** dialog box opens.

2. Enter information in the New Application Process Details dialog box, and click **OK**.

Example:

New

Application Process Details

Name

Description

Credential

0

Optional >

Workspace

default

Optional

Time limit

0

Seconds

Optional

Cancel

OK

Field	Description and How to Set It
Name	Name of the process step
Description	Description of the process step
Credential	<div>An object consisting of a user name and password that ElectricFlow uses to run a process step.</div> <div>The dialog box displays the number of credentials for the process step, which are the same credentials that you use with procedures, steps, and schedules in the ElectricCommander platform.</div> <div>You can only impersonate one credential.</div>

Field	Description and How to Set It
Workspace	<p>Area in the disk space where the files and results of the job step are stored.</p> <p>To set the workspace, click the Workspace field to open a drop-down list of workspaces in the ElectricCommander platform and select a workspace.</p> <p>For more information about workspaces, go to the ElectricCommander Help > Workspaces and Disk Management.</p> <p>To set the workspace, click Workspace to open a drop-down list of workspaces in the ElectricCommander platform. select a workspace, and click OK.</p>
Time limit	<p>Maximum length of time that the step is allowed to run. After the time specified, the step is aborted,</p> <p>To set the time limit, enter the time and select the unit of time: seconds, minutes, or hours.</p> <p>For information about time limits for procedure job steps in the ElectricCommander platform, go to the ElectricCommander Help > API Commands.</p>

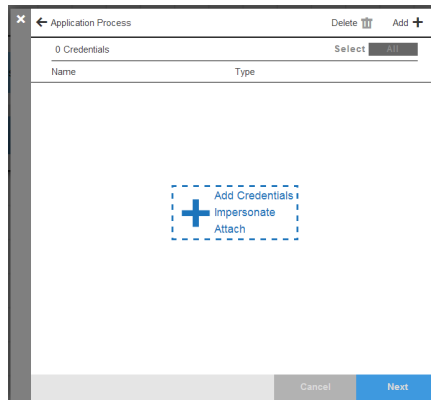
- (Optional) To add credentials, do the following:

Note:

When you impersonate a credential, make sure that the impersonated user has the absolute path to the bin directories in the \$PATH environment.

If you define a process step with a command, you must enter the absolute path in the **Post Processor** and **Shell** fields in the Define Step dialog box.

- Click in the **Add Credentials** field.

Example:

- To impersonate one credential, select **Impersonate** in the **Type** field.
- Click the **Select Credential** field to open a drop-down list of credentials for the process step.
- Select a credential.
- Click **OK**.

The **Credentials** dialog box now shows the one credential for impersonation.

- To attach one or more credential to the process step, select **Attach** in the **Type** field.
- Click the **Select Credential** field to open a drop-down list of credentials for the process step.
- Select a credential.
- Click **OK**.

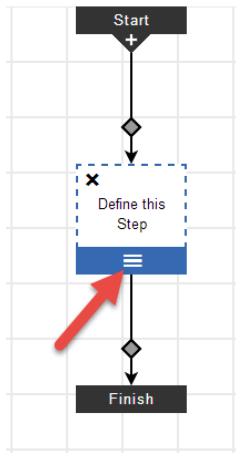
The **Credentials** dialog box now shows the attached credentials.

- Click **OK**.

The Applications Process Visual Editor opens.

5. In the new process step, click the button below "Define this Step" to define it.

Example:



The Application Process Step dialog box opens.

6. Enter information about the step in the dialog box.

Example

New

Application Process Details

Deploy

Description

Credential 0 Optional >

Workspace Optional

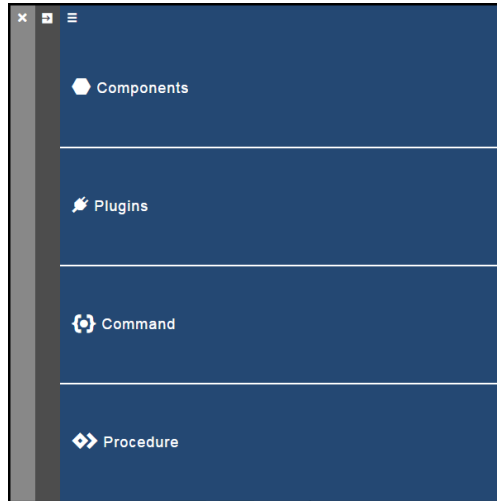
Time limit 0 Seconds Optional

Cancel OK

7. Click **Next**.

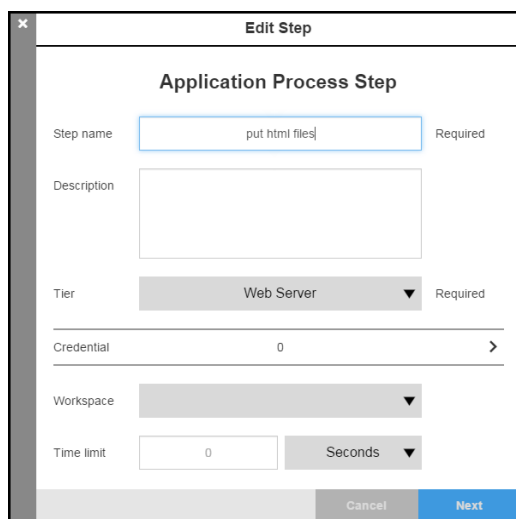
The Process Step dialog box opens.

Example:



8. To define the step, enter information in the dialog boxes that follow.

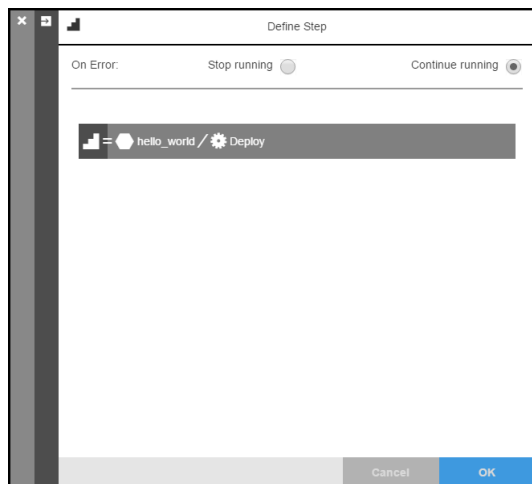
Example:



The 'Edit Step' dialog box is titled 'Application Process Step'. It contains the following fields:

- Step name:** A text box containing 'put.html.files', marked as 'Required'.
- Description:** A large empty text area.
- Tier:** A dropdown menu showing 'Web Server', marked as 'Required'.
- Credential:** A text box containing '0' with a right-pointing arrow.
- Workspace:** A dropdown menu.
- Time limit:** A text box containing '0' and a dropdown menu showing 'Seconds'.

At the bottom are 'Cancel' and 'Next' buttons.



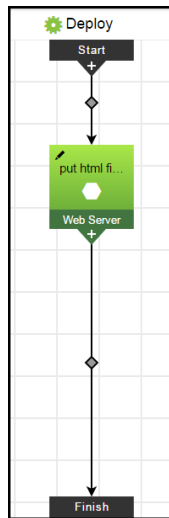
The 'Define Step' dialog box has a title bar with a close button and a maximize button. It contains the following elements:

- On Error:** Two radio buttons: 'Stop running' (unselected) and 'Continue running' (selected).
- Step Name:** A text box containing 'hello_world / Deploy'.

At the bottom are 'Cancel' and 'OK' buttons.

9. When you are done, the defined step now appears in the process in the Applications Process Visual Editor.

Example:



10. Define more steps in the process.

You can also drag and drop a step into the process.

Modeling More Application Processes

Repeat the steps in the previous section to add additional application processes.

Using the Drag and Drop Method to Add Process Steps

How to get to the Application Process Visual Editor:

- In an existing application process:

From the Applications Visual Editor, click the down arrow next to the number-of-application-processes button and select an application.

The Application Process Visual Editor for that application process appears.

- In a new application process:

From the Applications Visual Editor, click the **Add process** button, set the parameters in the **Application Process Details** dialog box, and click **OK**.

The Application Process Visual Editor for the application appears.

How to get to the Component Process Visual Editor:

- In an existing component process:

From the Applications Visual Editor, click the down arrow next to the number-of-component-processes button in a component, and select a component process in the drop-down list.

The Component Process Visual Editor for that component process appears.

- In a new component process:

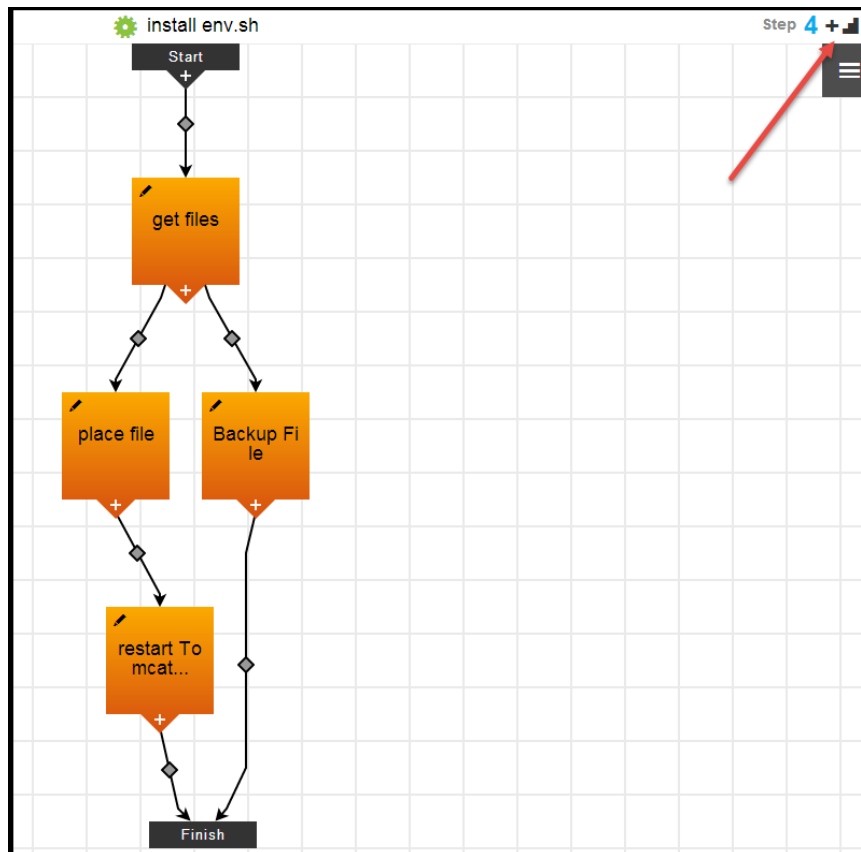
From the Applications Visual Editor, click the **Add process** button in a component, set the parameters in the **Component Process Details** dialog box, and click **OK**.

The Component Process Visual Editor for the component process appears.

To drag and drop a new step in a component or application process:

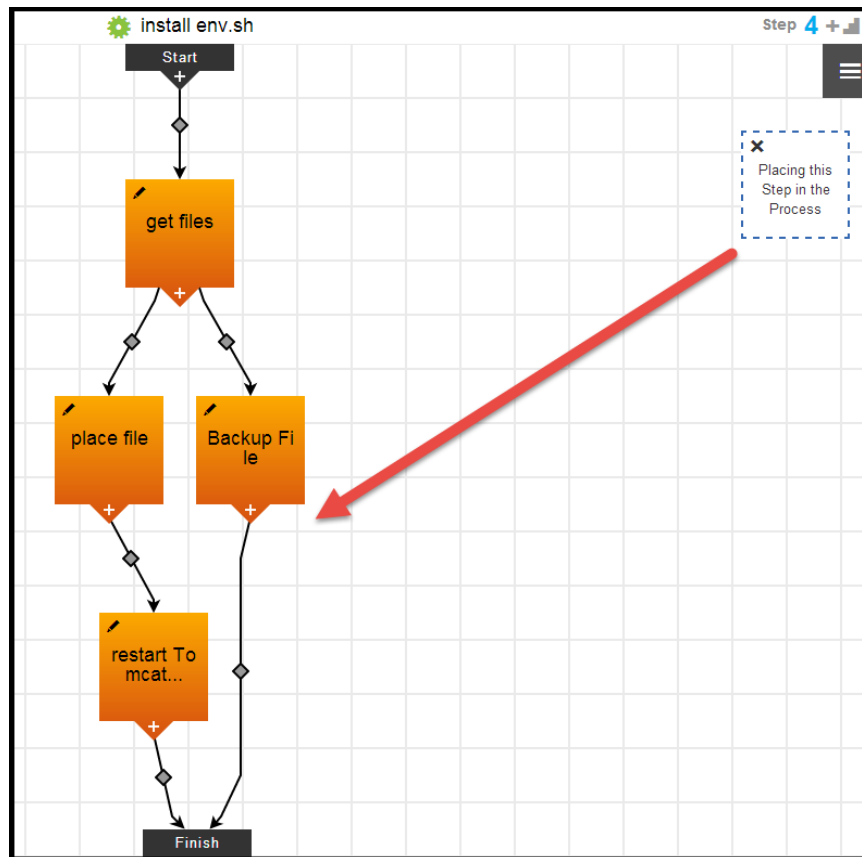
1. Click the **Add step** button in the upper right corner of the Component Process Visual Editor or Application Process Visual Editor.

.A new undefined step appears.



2. Select the new step.

3. Drag the step to where you want to add it in the process.



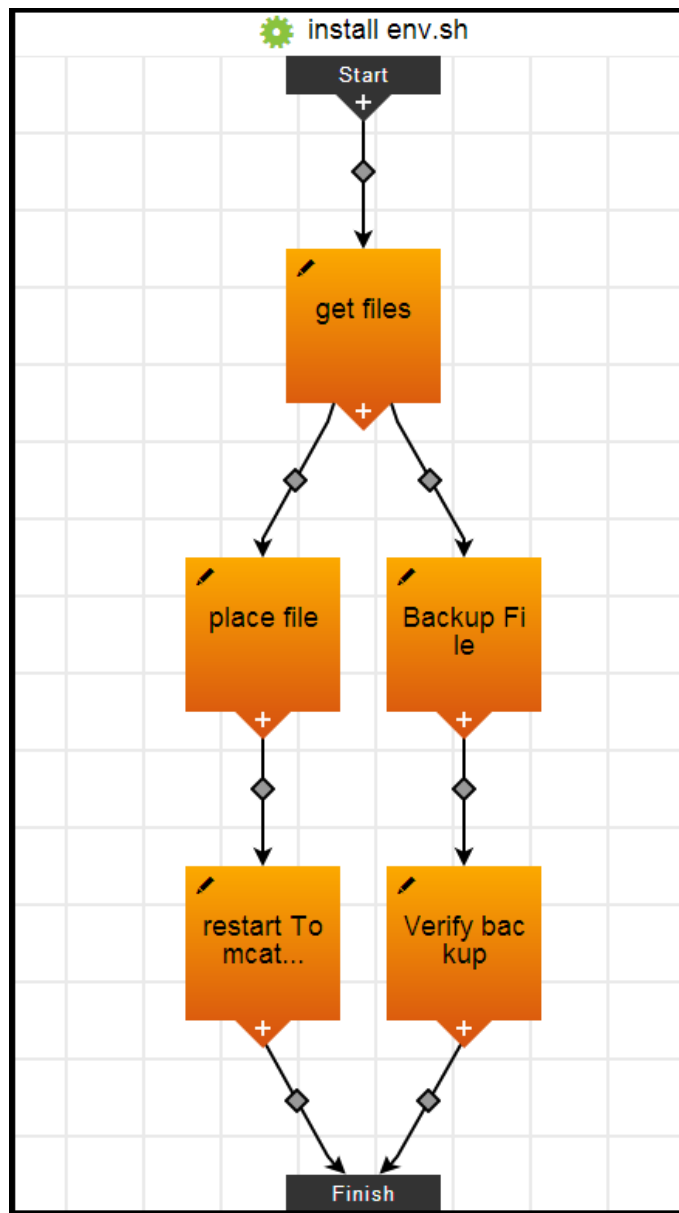
When you are near where you want to add the step in the process, notice that the icon changes shape and the text in it changes to "Dropping this Step in the Process."

4. Drop the step in the process.

The **Component Process Step** dialog box appears.

5. Enter information about the step.

The new step is in the process.

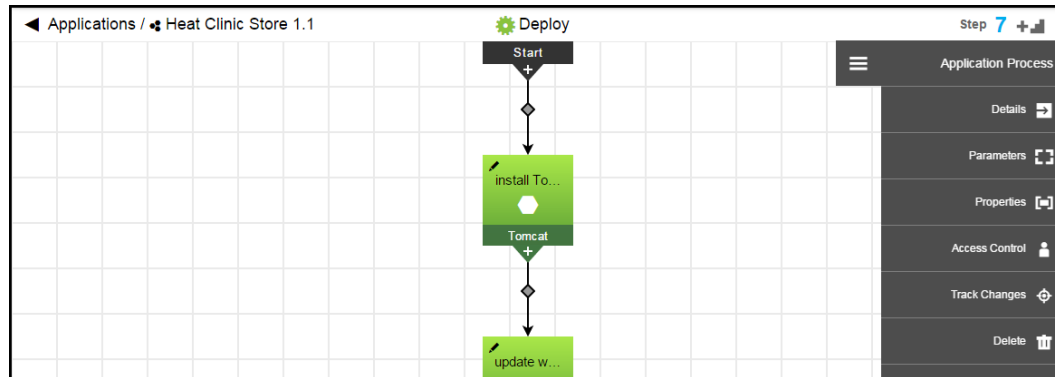


Setting Parameters for Application Processes

Starting in the Application Process Visual Editor:

1. Click the **Menu** button.
2. Click **Parameters**.

Example:



The **Parameters** dialog box opens.

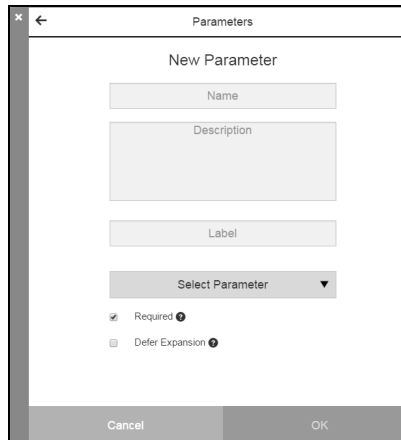
Example:



3. Click **There are no Parameters yet. Add one +**.

The **New Parameter** dialog box opens.

Example:



4. Enter the following information:

- **Parameter Name**—Name of the parameter.
- **Description**—This is optional.
- **Parameter Label**—This is optional.
- **Select Parameter**—Parameter type
- If the parameter is required, select the **Required** check box.
- If the parameter value contains \$ [] and you want ElectricFlow to interpret it literally (not as a parameter reference), select the **Defer Expansion** check box.

Depending on the parameter type that you select, other fields appear in the **New Parameters** dialog box.

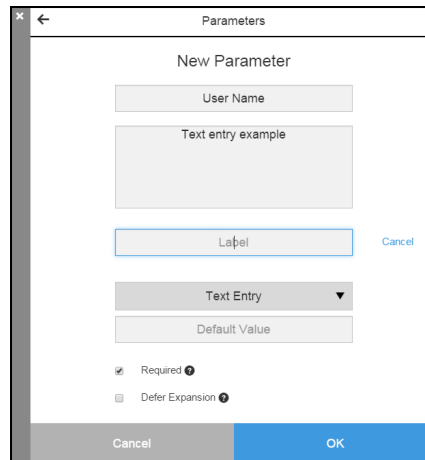
5. Enter information in the fields in Step 4.

If you select **Text Entry** as the parameter type, the **Default Value** field appears.

- a. (Optional) Enter a value in the **Default Value** field.

You do not have to enter a value in this field.

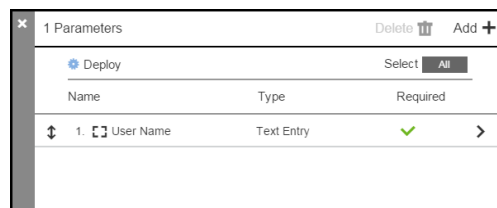
Example:



- b. Click **OK**.

The **Parameters** dialog box opens and shows the new parameter in the list.

Example:



1 Parameters			Delete	Add
Deploy			Select	All
Name	Type	Required		
1. User Name	Text Entry	✓		

6. Click **Add +** to add a parameter.

7. Enter information in the fields in Step 4.

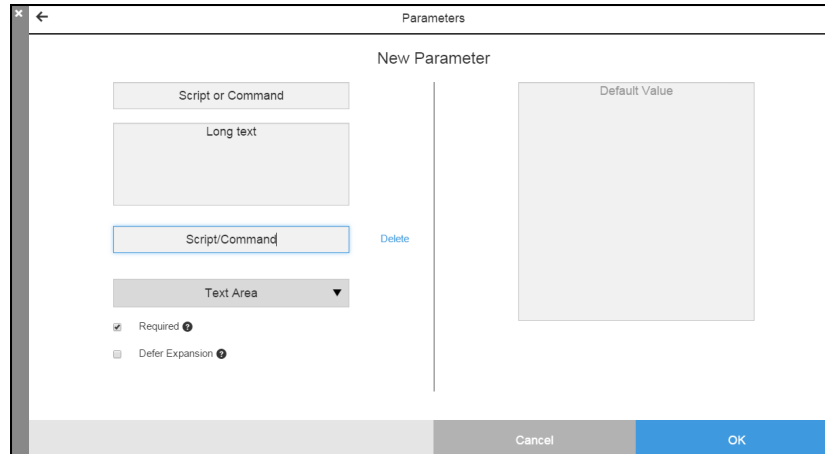
If you select **Text Area** as the parameter type, the **Default Value** field appears.

- a. (Optional) Enter a value in the **Default Value** field.

You do not have to enter a value in this field.

- b. Enter the Click **OK**.

Example:



The screenshot shows the 'Parameters' dialog box with a 'New Parameter' section. On the left, there are input fields for 'Script or Command', 'Long text', and 'Script/Command', followed by a 'Text Area' dropdown menu. Below these are checkboxes for 'Required' (checked) and 'Defer Expansion' (unchecked). On the right, there is a large 'Default Value' text area. A 'Delete' link is positioned between the input fields and the 'Default Value' area. At the bottom, there are 'Cancel' and 'OK' buttons.

The **Parameters** dialog box opens and shows the new parameter in the list.

8. Enter information in the fields in Step 4. If you select **Dropdown Menu** as the parameter type, the **Default Value** field and ways to add the menu options appear.

- a. (Optional) Enter a value in the **Default Value** field.

You do not have to enter a value in this field.

- b. On the right side of the dialog box, enter the menu options.

- c. Click **OK**.

The **Parameters** dialog box opens and shows the new parameter in the list.

Example:

The screenshot shows the 'Parameters' dialog box with the 'New Parameter' form. The form is divided into two main sections. The left section contains fields for 'Stage', 'Stage of the deployment process', 'Label', 'Dropdown Menu' (set to 'Dropdown Menu'), and 'Default Value'. Below these fields are two checkboxes: 'Required' (checked) and 'Defer Expansion' (unchecked). The right section shows three radio buttons for selecting the source of options: 'Enter options' (selected), 'Load options from list', and 'Load options from property sheet'. Below the radio buttons is an 'Add option +' button. A list of three options is displayed, each with a number, a text input field, a value field, and a delete button (X). The options are: 1. Development / Dev, 2. Quality / QA, and 3. Release / Prod. The 'Prod' value field is highlighted with a blue border. At the bottom of the dialog box are 'Cancel' and 'OK' buttons.

The **Parameters** dialog box opens and shows the new parameter in the list.

9. Enter information in the fields in Step 4.

If you select **Radio Selector** as the parameter type, the **Default Value** field and ways to add the menu options appear.

- (Optional) Enter a value in the **Default Value** field.
You do not have to enter a value in this field.
- On the right side of the dialog box, enter the menu options.
- Click **OK**.

Example:

The screenshot shows the 'Parameters' dialog box with the 'New Parameter' tab active. On the left, a list of parameters includes 'Ranking', 'Ranking in the queue', 'Priority', 'Radio Selector' (selected), and 'Normal'. A 'Delete' button is next to the 'Radio Selector' entry. Below the list, there are checkboxes for 'Required' (checked) and 'Defer Expansion' (unchecked). On the right, the 'Enter options' radio button is selected. Below it, there are three rows of options: 1. 'High' and 'High' with a delete 'x' button; 2. 'Normal' and 'Normal' with a delete 'x' button; 3. 'Low' and 'Low' with a delete 'x' button. An 'Add option +' button is at the top right of the options section. At the bottom of the dialog are 'Cancel' and 'OK' buttons.

The **Parameters** dialog box opens and shows the new parameter in the list.

10. Enter information in the fields in Step 4.

If you select **Checkbox** as the parameter type, the **Default Value** field and values for the check box appear.

- (Optional) Enter a value in the **Default Value** field.
You do not have to enter a value in this field.
- On the right side of the dialog box, enter the values.
- Click **OK**.

Example:

The screenshot shows the 'Parameters' dialog box with the 'New Parameter' tab selected. On the left, a list of parameters includes 'Ranking', 'Ranking in the queue', 'Priority', 'Radio Selector', and 'Normal'. The 'Radio Selector' parameter is selected, and its details are shown on the right. The 'Enter options' radio button is selected. Below it, there are three rows of options: 1. 'High', 2. 'Normal', and 3. 'Low'. The 'Low' option in the third row is highlighted. At the bottom, there are checkboxes for 'Required' (checked) and 'Defer Expansion' (unchecked). The 'Cancel' and 'OK' buttons are at the bottom right.

The **Parameters** dialog box opens and shows the new parameter in the list.

11. Enter information in the fields in Step 4. If you select **Credentials** as the parameter type, the **Default Value** field appears.
 - a. (Optional) Enter a value in the **Default Value** field.
You do not have to enter a value in this field.
 - b. Click **OK**.

Example:

The screenshot shows a 'New Parameter' dialog box with the following fields and options:

- Identity**: A text input field.
- Description**: A large text area.
- User Name and Password**: A text input field with a 'Delete' link to its right.
- Credentials**: A dropdown menu currently showing 'Credentials'.
- Default Value**: A text input field.
- Required**: A checked checkbox.
- Defer Expansion**: An unchecked checkbox.
- Buttons**: 'Cancel' and 'OK' at the bottom.

The **Parameters** dialog box opens and shows the new parameter in the list.

Example:

The screenshot shows the 'Parameters' dialog box with a list of 6 parameters. The table below represents the data shown in the dialog:

Name	Type	Required
1. User Name	Text Entry	✓
2. Script/Command	Text Area	
3. Stage	Dropdown menu	✓
4. Priority	Radio Selector	✓
5. QA Verification Required	Checkbox	
6. User Name and Password	Credential	✓

Setting and Modifying the Parameter Label

Starting in the **New Parameter** dialog box:

Example:

Parameters

New Parameter

QA Verification Required

Description

Label

Checkbox

Default Value

☐ Required

☐ Defer Expansion

Value when unchecked

No

Value when checked

Yes

☐ Initially checked

Cancel OK

1. Add a label in the **Label** .

Example:

New Parameter

QA Verification Required

Description

QA Verify [Delete](#)

Checkbox

Default Value

☐ Required

☐ Defer Expansion

Value when unchecked

No

Value when checked

Yes

☐ Initially checked

This is an optional task when you set parameters.

If you enter a label, it appears in the UI form when you deploy the application. If you do not enter a label, the parameter name appears in the UI form when you deploy the application.

2. Click **OK**.

3. To modify the label:
 - a. Open the **New Parameter** dialog box.
 - b. Clear the **Label** field.
 - c. Enter a new label.

Example:

The screenshot shows the 'New Parameter' dialog box. The left pane has the following elements: a text field 'QA Verification Required', a large text area 'Description', a text field 'Verify by QA' (highlighted with a red box), a dropdown menu 'Checkbox', and a text field 'Default Value'. The right pane has: a text field 'Value when unchecked' with 'No' entered, a text field 'Value when checked' with 'Yes' entered, and a checkbox 'Initially checked'. At the bottom left are two checkboxes: 'Required' and 'Defer Expansion', both with question marks.

- d. Click **OK** to save the change.

4. To delete the label:
 - a. Click **Delete** next to the **Label** field.

Example:

The screenshot shows a 'Parameters' window with a 'New Parameter' section. On the left, there are input fields for 'QA Verification Required', 'Description', 'Verify by QA', 'Checkbox', and 'Default Value'. Below these are checkboxes for 'Required' and 'Defer Expansion'. On the right, there are input fields for 'Value when unchecked' (containing 'No') and 'Value when checked' (containing 'Yes'), along with an 'Initially checked' checkbox. A blue 'Delete' button is highlighted with a red rectangle next to the 'Verify by QA' field. At the bottom are 'Cancel' and 'OK' buttons.

The text in the Label field changes.

Example:

This screenshot shows the same 'New Parameter' dialog box, but with a confirmation step. A blue button labeled 'Yes, delete this Label' is highlighted with a red rectangle, next to a smaller 'Cancel' button. The other elements of the dialog, including the input fields and checkboxes, remain the same as in the previous screenshot.

- b. Click in the **Label** field.

The label disappears.

Example:

The screenshot shows a 'Parameters' dialog box with a 'New Parameter' section. The form includes fields for 'QA Verification Required', 'Description', 'Label' (highlighted with a red rectangle), 'Checkbox', and 'Default Value'. There are also checkboxes for 'Required' and 'Defer Expansion'. On the right, there are fields for 'Value when unchecked' (set to 'No') and 'Value when checked' (set to 'Yes'), along with an 'Initially checked' checkbox. At the bottom, there are 'Cancel' and 'OK' buttons.

- c. Click **OK**.

The **Parameters** dialog box opens. The parameter name now appears in the name column.

Example:

6 Parameters			Delete	Add
Deploy		Select	All	
Name	Type	Required		
1. User Name	Text Entry		>	
2. Script/Command	Text Area		>	
3. Stage	Dropdown menu		>	
4. Priority	Radio Selector		>	
5. QA Verification Required	Checkbox		>	
6. User Name and Password	Credential		>	

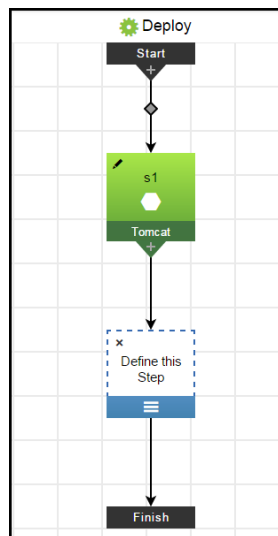
Delete this text and replace it with your own content.

Looking Up Parameters

To apply parameters to an application or component process step, starting in the Application Process Visual Editor:

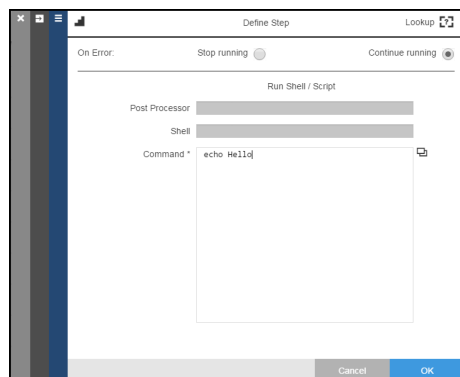
1. Add a new step to the process.

Example:



2. Define the process step in the **Define Step** dialog box.

Example:

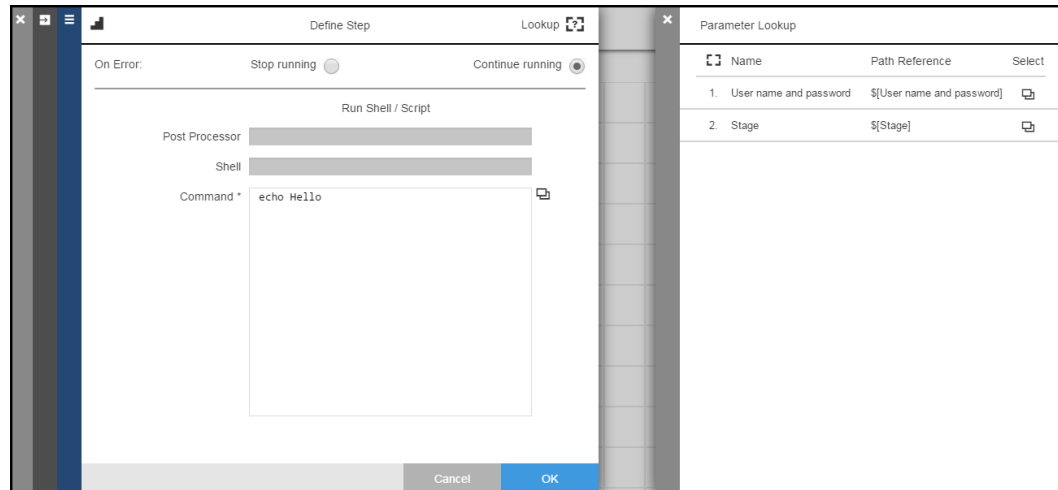


- When you define the process step with a plugin (**Plugins**), command or script (**Command**), or project (**Procedure**), click the **Lookup** button to open the **Parameter Lookup** dialog box.

Example:



The **Parameter Lookup** dialog box opens.



- Choose a parameter and click the **Copy** button to copy the path reference.

A message appears in the row : *<Parameter Name>* has been copied.

The **Define Step** dialog box now has a **Parameter** field.

- Click in the **Parameter** field and paste the path reference that you copied in it.
- Repeat the previous two steps to apply another parameter to the process step.
- Click **OK**.

Adding Credentials

How to get here: From the **Component Process Step** or the **Application Process Step** dialog box, click **>**. The **Credentials** dialog box opens.

You can attach one or more credentials to component process steps and application process steps.

You attach only one credential for impersonation on the following:

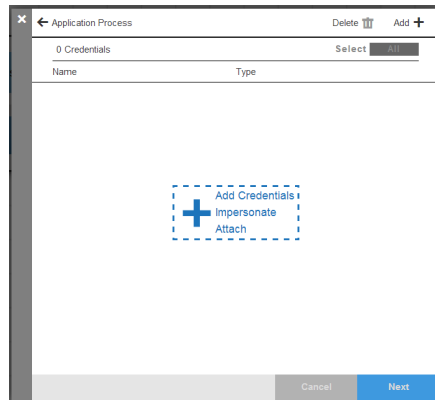
- Component process
- Component process step
- Application process
- Application process step

IMPORTANT:

When you impersonate a credential, make sure that the impersonated user has the absolute path to the bin directories in the \$PATH environment.

If you define a process step with a command, you must enter the absolute path in the **Post Processor** and **Shell** fields in the Define Step dialog box.

1. Click in the **Add Credentials** field.

Example:

2. To impersonate one credential, select **Impersonate** in the **Type** field.
3. Click the **Select Credential** field to open a drop-down list of credentials for the process step.
4. Select a credential.
5. Click **OK**.

The **Credentials** dialog box now shows the one credential for impersonation.

6. To attach one or more credential to the process step, select **Attach** in the **Type** field.
7. Click the **Select Credential** field to open a drop-down list of credentials for the process step.
8. Select a credential.
9. Click **OK**.

The **Credentials** dialog box now shows the attached credentials.

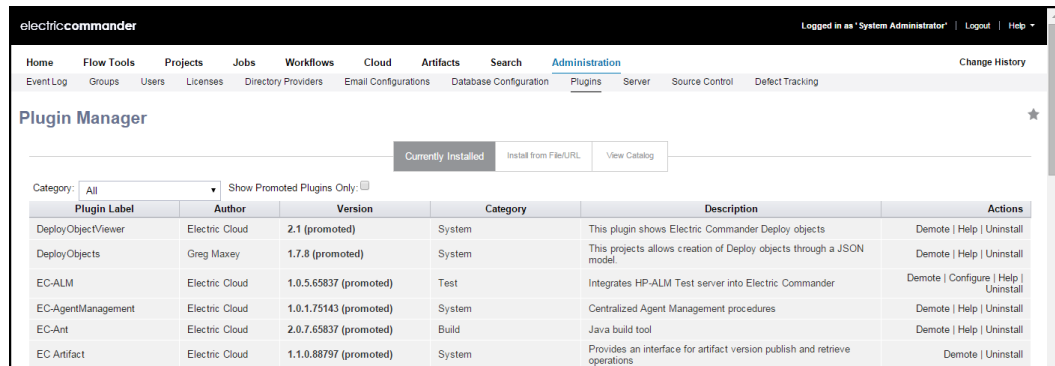
Using Plugins

When you want to use a plugin to define your application or component process step, all of the supported plugins appear in the Plugin Manager in the **Currently Installed** tab in the ElectricCommander automation platform. However, you may want to see only the list of plugins that apply to your group or organization, such as Apache Subversion (SVN) and Git plugins. You can remove any plugins that you are not using from the **Currently Installed** tab. You can re-install them later if you need them.

To remove plugins from the **Currently Installed** tab:

1. In the Home page, click the **Main menu** button and then click **Admin > Plugins**.

The Plugin Manager opens.



2. In the **Currently Installed** tab, select a plugin in the list.
3. In the Actions column for the selected plugin, click **Demote**.

The page refreshes.

The plugin is now inactive but is still in the list. If you want to use this plugin, click **Promote** to make it active.

4. If you want to remove the plugin from this list, click **Uninstall** to remove it from your system.

For more details, go to the **ElectricCommander Help > Web Interface Help > Plugin Manager**. This page describes what you can do in the Plugin Manager, including how to install a new version of a plugin or add a new plugin.

You can see all of the plugins available from Electric Cloud in the **View Catalog** tab on the **Administration > Plugins** page. To show a list of plugins that you can install directly from Electric Cloud, do the following:

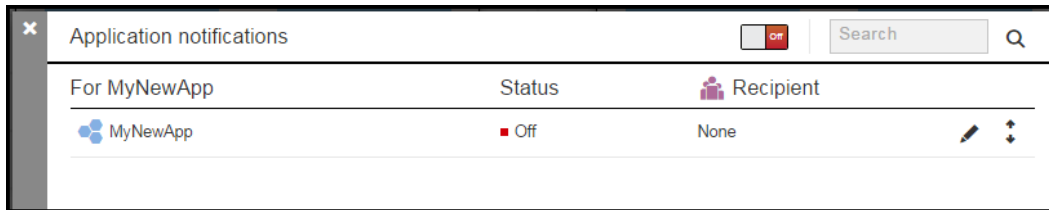
1. Click **Install** in the **Action** column.
2. Go to the **Currently Installed** tab.
3. Choose a plugin and click **Promote**.

The new plugin is now available for use in your system.

Setting Email Notifications

Review these guidelines before setting notifications:

New email notifications are disabled in the application, its application processes, and the process steps before you configure them.



You configure notifications in the "Application notifications / edit" dialog box.

IMPORTANT: The first time that you set notifications in this dialog box, the Notifications toggle changes to **On**. After you enter notification settings and click **OK**, email notifications are enabled at that level.

Go to [Application Notifications Dialog Box](#) on page 73 for information about how to use the "Application notifications" and "Application notifications /edit" dialog boxes.

By default, the application expects that the user creates an email configuration called "default." The email configuration defaults to the server property `/server/ec_deploy/ec_defaultEmailConfiguration`, which is set to 'default'.

If you want to use a different name for the email configuration, change the value of `/server/ec_deploy/ec_defaultEmailConfiguration` to the new email configuration name.

Starting from the Home page, to set email notifications:

1. Go to the Applications List.

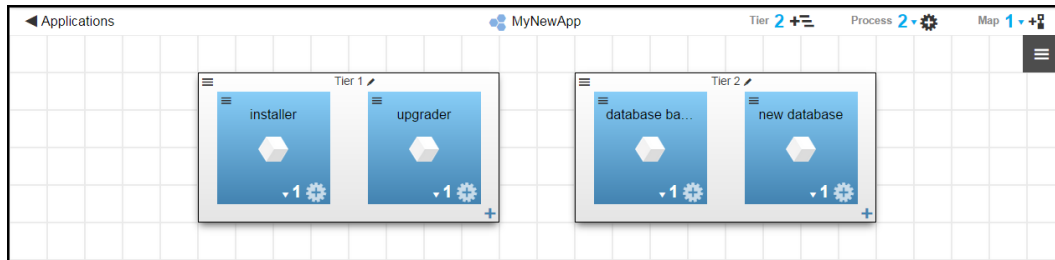
Example:

4 Applications					Select	All	Delete	Add
1	Arthur 23	1 Component	1 Application Process	1 Tier Map				
2	Heat Clinic Store 1.1	5 Component	2 Application Process	3 Tier Map				
3	MyNewApp	4 Component	2 Application Process	1 Tier Map				
4	Test	1 Component	1 Application Process	1 Tier Map				

2. Select an application.

The Applications Visual Editor opens.

Example:



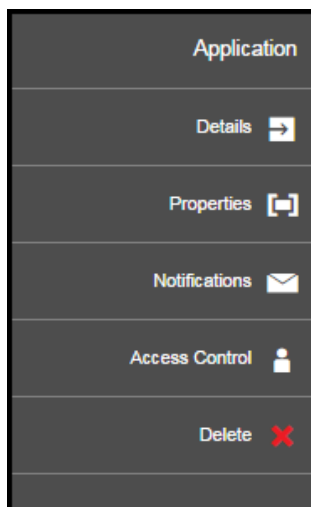
3. Click the **Menu** button.

Example:



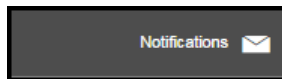
The Applications menu opens.

Example:



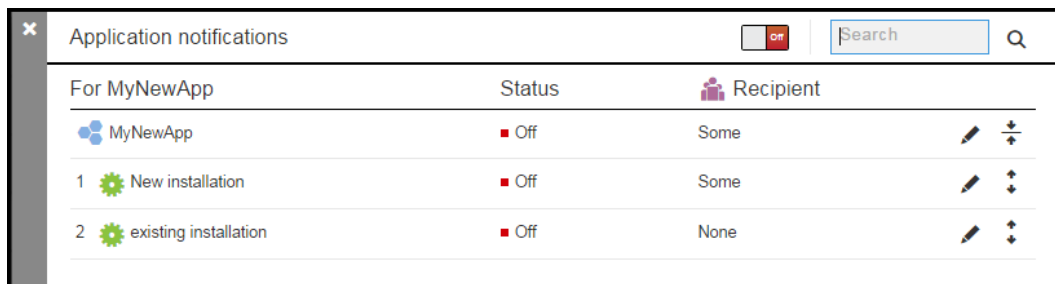
- Click **Notifications** to add a new application.

Example:



The Application notification dialog box opens.

Example:



Application notifications			
For MyNewApp		Status	Recipient
MyNewApp		Off	Some
1	New installation	Off	Some
2	existing installation	Off	None

- Configure email notifications for the application, an application process, or a process step.

You can configure one or more notifications in an application process or other object.

Configuring recipients

In the **Who** field, you add users or groups who are configured and managed in the ElectricCommander platform or email addresses.

When you start typing a user name, group name, or email addresses, a list of names or email addresses appear that match what you are typing.

Example:

Application notifications / edit

backup On

Who	When	Where
Add users, groups, or email addresses:	Event:	Environment:
a	Both Failed and Success...	All
admin (?) admin-asia (?) admin-aus (?) admin-uk (?) admin-us (?) jadams (?) sclaus (?)		

If one of the suggestions matches the name or email address, select it, or continue typing. You can add more than one name or email address.

Example:

Application notifications / edit

backup On

Who	When	Where
Add users, groups, or email addresses:	Event:	Environment:
admin admin-asia sclaus jadams userX@gmail.com	Both Failed and Success...	All
DevT200@gmail.com		

Configuring the event that triggers the notification

In the **When** field, you select the event that triggers a notification to be sent to the recipients in the **Who** field. The default is **Both Failed and Successful**. Click in the **When** field to select the event for the notification.

Example:

Application notifications / edit

backup On

Who When Where

Add users, groups, or email addresses:

admin admin-asia sclaus jadams userX@gmail.com

DevT200@gmail.com

Event:

Both Failed and Successful

Run Failed

Run Successful

Both Failed and Successful

Environment:

All

Configuring the environments where the notification applies

In the **Where** field, you select the environments to which the notifications apply. Click in the **Where** field to select the environments, which are the environments to which the application is mapped in the tier map.

Example:

Application notifications / edit

backup On

Who When Where

Add users, groups, or email addresses:

admin admin-asia sclaus jadams userX@gmail.com

DevT200@gmail.com

Event:

Run Successful

Environment:

All

hc-store dev

6. Select and edit the email notification message.

7. Add another notification for the the application, an application process, or a process step.

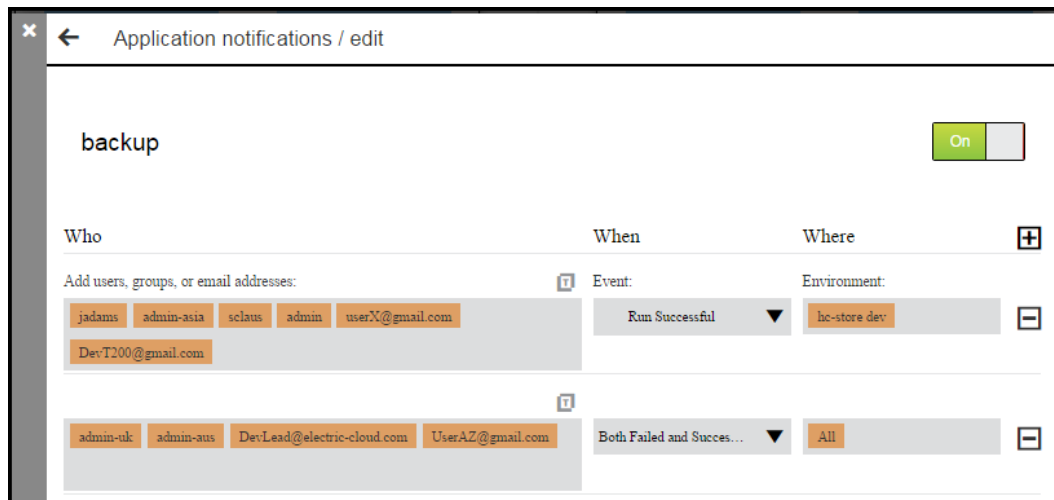
Click the **Add Notifications** button to add a new notification.

Example:



After you have added your email notifications, click **OK** to save the settings and return to the Application notifications dialog box.

Example:



The screenshot shows a web interface for editing application notifications. The title bar reads 'Application notifications / edit'. The notification name is 'backup', with a green 'On' status indicator. The interface is divided into three main sections: 'Who', 'When', and 'Where'. The 'Who' section, labeled 'Add users, groups, or email addresses:', contains a list of email addresses: jadams, admin-asia, sclaus, admin, userX@gmail.com, and DevT200@gmail.com. The 'When' section, labeled 'Event:', has a dropdown menu showing 'Run Successful'. The 'Where' section, labeled 'Environment:', has a dropdown menu showing 'bc-store dev'. There are plus and minus icons for adding and removing items. A second row of settings is partially visible below the first, showing 'Both Failed and Succes...' for the event and 'All' for the environment.

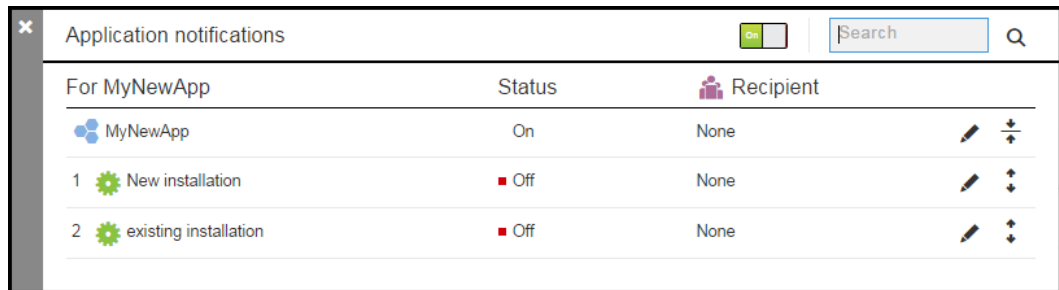
8. (Optional) Enable email notifications for the application, application processes, or process steps that are not already enabled.

To enable email notifications at the application level:

- Click the Notifications toggle and change it to **On**.

The status of the application changes to **On**.

Example:

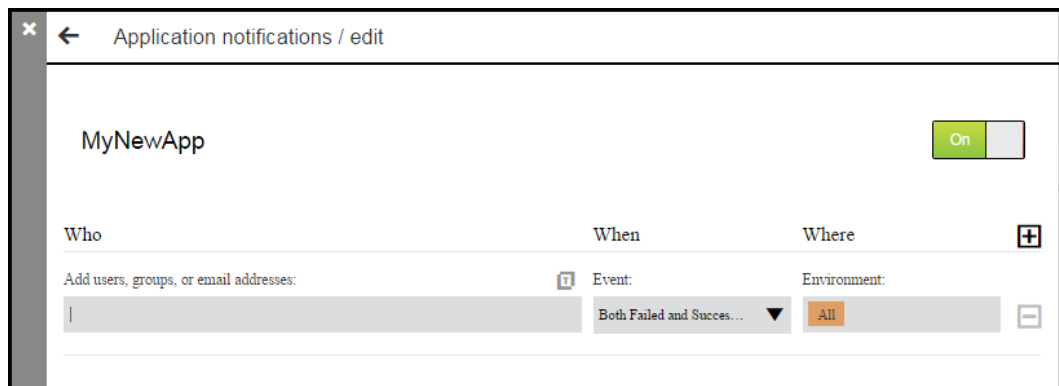


For MyNewApp	Status	Recipient
MyNewApp	On	None
1 New installation	Off	None
2 existing installation	Off	None

- Click the **Edit** button to open the **Application notifications / edit** dialog box.

The **Application notifications / edit** dialog box appears. The Notification toggle changes to **On**.

Example:



MyNewApp On

Who: Add users, groups, or email addresses:

When: Event: Both Failed and Success...

Where: Environment: All

To enable notifications at the application process and process step levels, go to the **Application Notifications / edit** dialog box for the specific process or process step.

The dialog box opens, and the Notifications toggle is now **On**.

Example:

When you enter notification settings in the dialog box and click **OK**, the settings are saved. The **Application notifications** dialog box appears and now shows that the application process status is **On**.

Example:

For MyNewApp	Status	Recipient
MyNewApp	On	Some
1 New installation	On	Some
2 existing installation	Off	None

Selecting and Editing Email Messages

Starting in the "Application notifications / edit" dialog box:

1. Click the **Template** button .

A drop-down box opens.

Example:

Application notifications / edit

backup On

Who	When	Where
Add users, groups, or email addresses: jadams admin-asia sclaus admin userN@gmail.com DevT200@gmail.com	Event: Run Successful	Environment: hc-store dev
admin-uk admin-aus	Both Failed and Succes...	All

Apply email message template

Default Success notific...

Cancel OK

2. Click the down arrow to open the list of email message templates that can apply to the application.

3. Select a template.

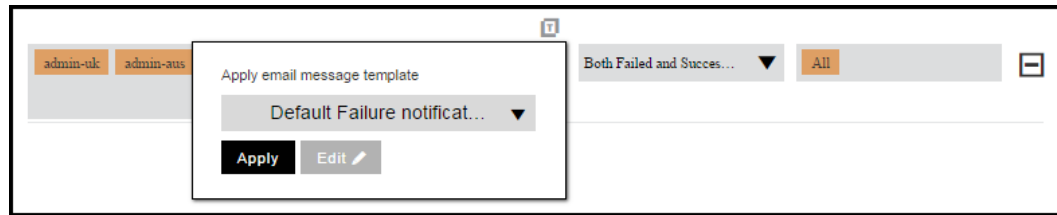
Example:

If the template is the current template applied to notification, the name of the template appears in dialog box.

Example:

If the template is not the current template, the **Apply** and **Edit** buttons appear in the dialog box.

Example:



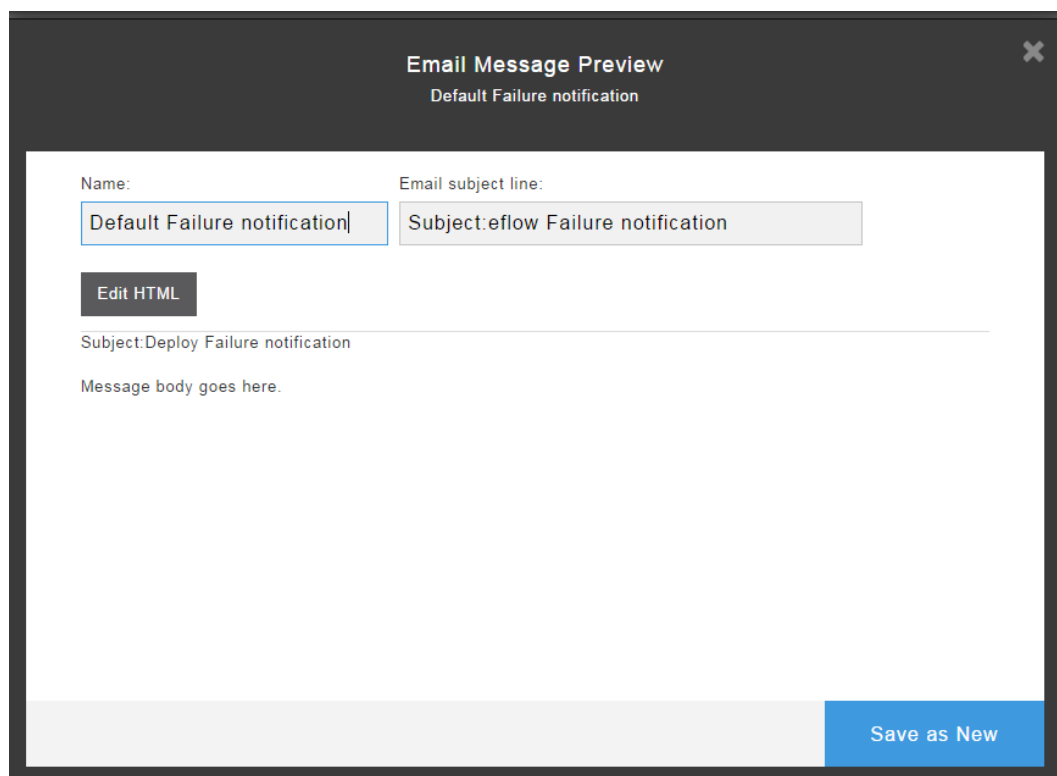
4. If you want to use the template that you selected instead of the current one and do not want to change it, skip the remaining steps in this task.
5. If you want to apply a different template or edit the template that you selected, do the remaining steps in this task.

If you click **Apply** to use the template as is, skip the remaining steps.

If you click **Edit** to modify the template to fit your needs, go to the next step.

The Email Message Preview dialog box appears.

Example:



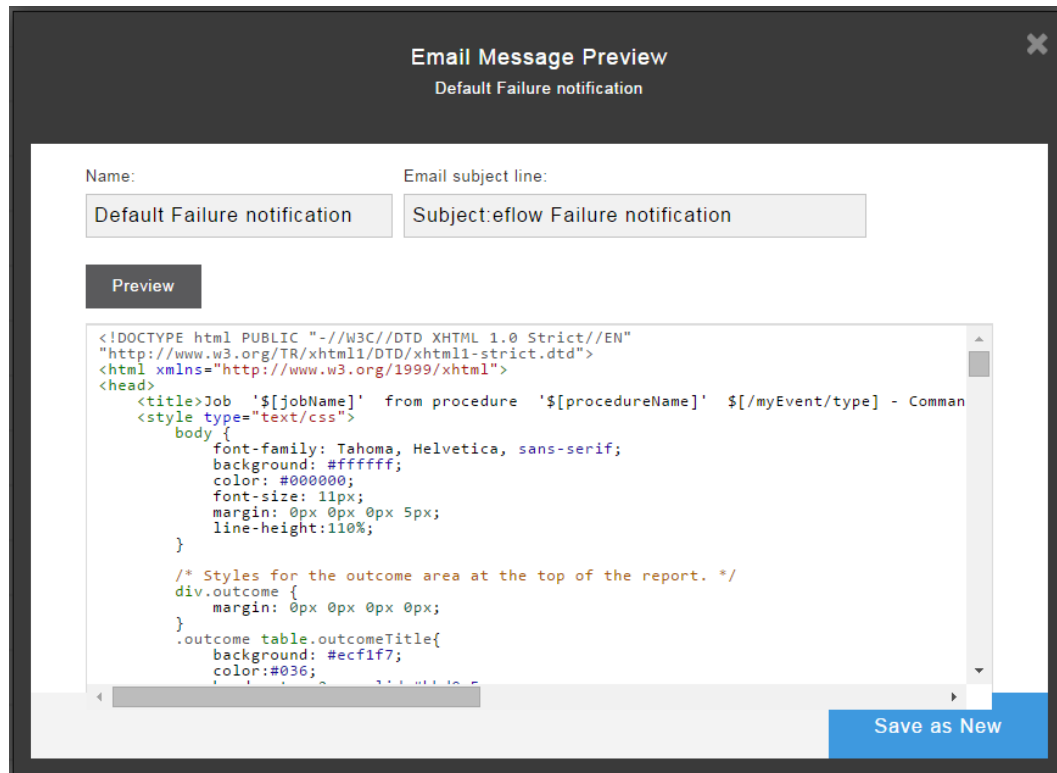
6. To edit the template:

Change the name of the template in the **Name** field.

Change the subject of the email in the **Email subject line**.

To modify the body of the email message, click **Edit HTML** and edit the HTML code.

Example:



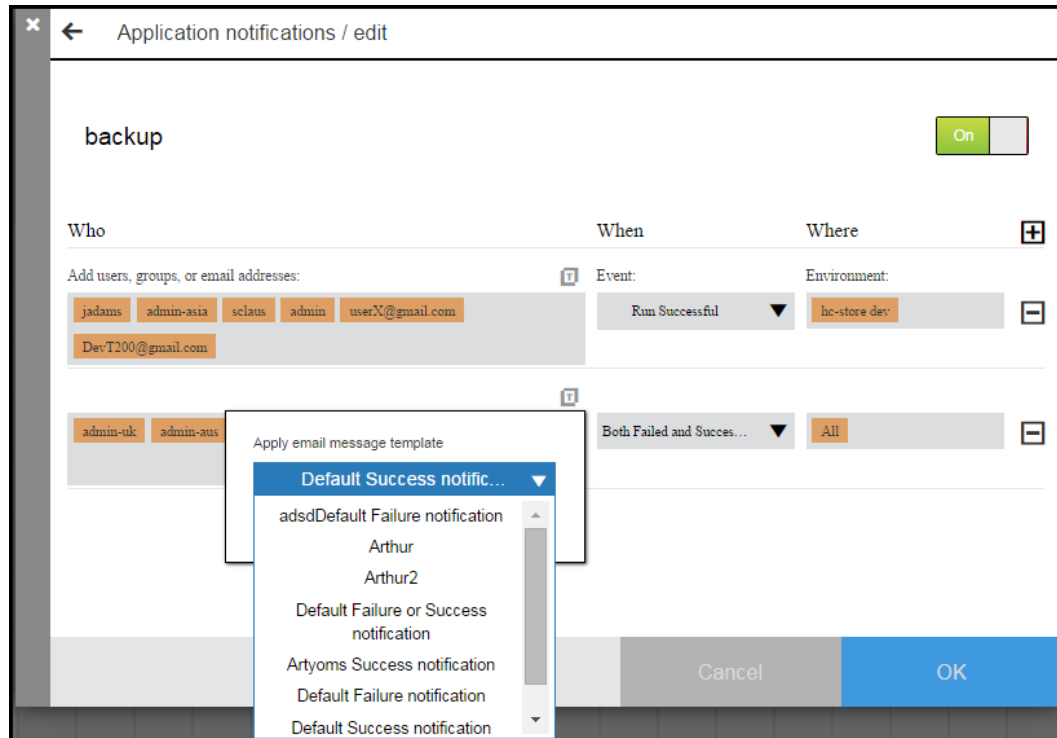
7. Click **Preview**.
8. To save your changes:
 - Click **Save Changes** to save the change in an existing template
 - Click **Save as New** to save the template as a new template.

The "Application notifications / edit" dialog box re-appears.

- Click the down arrow to open the list of email message templates that can apply to the application.

The new email message template is in the list.

Example:



- Click **OK** to save the settings.

Modeling Dynamic Environments

A dynamic environment is an environment that is provisioned using an environment template. You can add provisioned cloud resources as well as static resources to an environment template. All of the following are considered to be dynamic environments:

- An environment with only provisioned cloud resources
- An environment with only static resources added to an environment template
- An environment with provisioned cloud resources and static resources.

This is the high-level process to provision cloud resources that can be dynamically spun up during the application deployment.

- Create and define one or more resource templates.

The resource template has the information required to spin up the resources on an on-demand basis and to provision dynamic resource pools. It has the following information:

- Cloud provider and cloud instance details
- Configuration management settings

- Both cloud provider and configuration management settings

2. Create and define one or more environment templates.

When modeling an environment template, you define the environment tiers and then add resources to the tiers. You can either add static resources or a resource template to an environment tier.

When adding static resources, you can select one or more resources to add to the tier.

When adding resource templates, you can select only one to add to the tier and then enter the number of resources to provision. to add dynamic resources to the tier.

Environment templates have this information:

- Name and description
- Environment tier details and properties
- Resources assigned to the environment tiers
- Cloud resource details from the resource templates

Usage Guidelines and Best Practices

This matrix shows the resource types that are allowed in environments and environment templates.

Resource Type	Origin	Environment Tier	Environment Template Tier	Use Rules
Static resources	–	Yes	Yes	<p>You may only add them to one environment. You cannot re-use them in more than one environment.</p> <p>You can add one or more static resources to an environment tier or an environment tier template.</p>
Static resource pool	–	Yes	No	<p>You may only add it to one environment. You cannot re-use it in more than one environment.</p> <p>You can add only one resource pool to an environment tier.</p>

Resource Type	Origin	Environment Tier	Environment Template Tier	Use Rules
Resource pool provisioned in the resource template	ElectricCommander automation platform	Yes	No	You may only add it to one environment. You cannot re-use it in more than one environment. You can add only one resource pool to an environment tier.
Resource pool provisioned in an environment template	ElectricFlow	No	No	You cannot re-use the resource pools provisioned in an environment template. You can only use it in the dynamic environment created by the environment template.
Resource template	–	No	Yes	You may only add one resource template to an environment template tier.

In environments and environment templates, you can create a tier with static resources, a static resource pool, or a static resource template. When you are editing the tier, ElectricFlow maintains the initial resource-type association.

For example, if you initially add static resources to an environment tier, you can add only static resources to it. You are not allowed to add a resource this environment tier.

Creating AMIs

Before creating a resource template, you must create an Amazon Machine Image (AMI) with a pre-installed agent for the cloud provider. In ElectricFlow 5.4, Amazon EC2 and OpenStack are the supported cloud providers.

AMIs with Commander Agents

1. Install agents on Commander server node machines.

See the following sections in the [ElectricCommander Installation Guide](#) for detailed instructions:

- System Requirements and Supported Platforms > Agent Platforms
- System Requirements and Supported Platforms > Server and Agent Compatibility
- Installing ElectricCommander > Interactive Command-line Installation Method > Express Agent Command-Line

- Installing ElectricCommander > Non-Server Platform Agent Installation Method
 - Configuration > Environment Proxy Server Configuration > Configuring Proxy Agents
2. Create the AMI on the Amazon EC2 or OpenStack platform.
Go to <http://aws.amazon.com/amazon-linux-ami/> for Amazon EC2.
Go to <http://docs.openstack.org/image-guide/content/index.html> for OpenStack.
 3. Create a resource template in ElectricFlow.
When you set the cloud provider, you can select **Amazon** or **OpenStack** and enter information in the fields in the dialog boxes. The fields that you see depend on the cloud provider that you select.
For detailed Amazon EC2 instructions, go to [Configuring Amazon EC2 as the Cloud Provider](#).
For detailed OpenStack instructions, go to [Configuring OpenStack as the Cloud Provider](#).

AMIs with Commander Agents and Chef Configuration Management

1. Install agents on Commander server node machines.
See the following sections in the [ElectricCommander Installation Guide](#) for detailed instructions:
 - System Requirements and Supported Platforms > Agent Platforms
 - System Requirements and Supported Platforms > Server and Agent Compatibility
 - Installing ElectricCommander > Interactive Command-line Installation Method > Express Agent Command-Line
 - Installing ElectricCommander > Non-Server Platform Agent Installation Method
 - Configuration > Environment Proxy Server Configuration > Configuring Proxy Agents
2. Configure a Chef server with run-lists that will be applied to your cloud resources.
Go to <http://docs.chef.io/>.
3. Create the AMI on the Amazon EC2 or OpenStack platform.
Go to <http://aws.amazon.com/amazon-linux-ami/> for Amazon EC2.
Go to <http://docs.openstack.org/image-guide/content/index.html> for OpenStack.
4. Create a resource template in ElectricFlow.
 - a. When you set the cloud provider, you can select **Amazon** or **OpenStack** and enter information in the fields in the dialog boxes. The fields that you see depend on the cloud provider that you select.
For detailed Amazon EC2 instructions, go to [Configuring Amazon EC2 as the Cloud Provider](#).
For detailed OpenStack instructions, go to [Configuring OpenStack as the Cloud Provider](#).
 - b. When you set the configuration management tool, select **Chef**.
For detailed instructions, go to [Configuring Chef as the Configuration Management Tool](#).

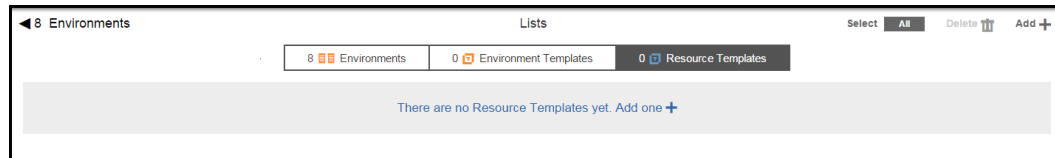
Creating Resource Templates

1. Go to the Resource Templates List.

- Starting from the Main menu, click the **Menu** button, select **Environments**, and then select **Resource Templates**.
- Starting from the Home page, click **Environments** and then click the **Resource Templates** tab.

If there are no defined resource templates, the Resource Templates List is empty.

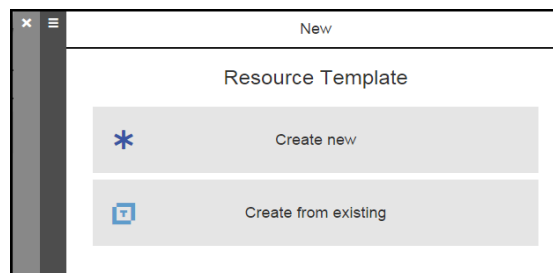
Example:



2. Add a resource template.

- If the Resource Templates List is empty, click **There are no Resource Templates yet. Add one +** or click the **Add +** button.
- If the Resource Templates List is not empty, click the **Add +** button.
- When you click **There are no Resource Templates yet. Add one +**, the **New Resource Template** dialog box opens.

Example:



3. To create a new resource template:

Click **Create New**.

Enter the name of the template and an optional description of the template.

Click **Next**. The **New Cloud Provider** dialog box opens.

Go to Step 4 to Step 7 to complete the process to create a new template.

4. Enter the cloud provider settings.

5. To set Amazon EC2 as the cloud provider, go to [Configuring Amazon as the Cloud Provider](#) for detailed instructions.

IMPORTANT: Before configuring the cloud provider, you must have an Amazon Machine Image (AMI) with a pre-installed agent available.

6. To set OpenStack as the cloud provider, go to for detailed instructions.
7. (Optional) Enter the change management settings.
8. To set Chef as the configuration management tool, go to [Configuring Chef as the Configuration Management Tool](#) on page 284 for detailed instructions.

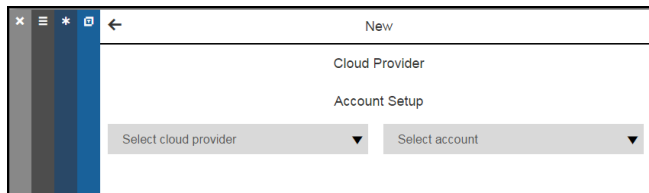
After completing all these steps, the Resource Template List now shows the templates that you created.

Configuring Amazon EC2 as the Cloud Provider

IMPORTANT: Before configuring the cloud provider, you must have an Amazon Machine Image (AMI) with a pre-installed agent available.

Starting in the **New Cloud Provider** dialog box:

Example:



1. Click **Select cloud provider**.
2. Select **Amazon**.

The **Account Setup** fields appear.

Example:

The screenshot shows the 'New' dialog box with the 'Account Setup' section selected. The 'Cloud Provider' is set to 'Amazon'. The 'Select account' dropdown is open. The 'Configuration Name' field is empty with a red error message 'Config is required'. The 'Description' field contains 'EC2 integration'. The 'Service URL' field contains 'https://ec2.amazonaws.com'. The 'Resource Pool' field contains 'default'. The 'Workspace' field contains 'default'.

The screenshot shows the 'New' dialog box with the 'Account Setup' section selected. The 'Cloud Provider' is set to 'Amazon'. The 'Access ID's' field is empty. The 'Username' field is empty with a red error message 'User name is required'. The 'Password' field is empty with a red error message 'Password is required'. The 'Repeat Password' field is empty. The 'Attempt Connection?' checkbox is unchecked. The 'Debug Level' field contains '1'. The 'Cancel' and 'Next' buttons are visible at the bottom.

IMPORTANT: If you have a pre-configured account with the Account Setup and Provision Parameter settings, click **Select account** to automatically enter the cloud provider settings. Then go to Step 6.

3. Enter your account settings:

- **Configuration Name**—A unique name for the EC2 connection (Required)
- **Description**—A description for this configuration. The default is *EC2 integration*.
- **Service URL**—The service URL for the EC2 service. For the Amazon public EC2, this should be *https://ec2.amazonaws.com*. (Required)
- **Resource Pool**—The name of the pool of resources on which the integration steps can run. The default is *default*.
- **Workspace**—The workspace to use for resources dynamically created by this configuration. The default is *default*.
- **Access ID's**—The access IDs, *Access ID* and *Secret Access ID*, that are required for communicating with Amazon EC2.

The configuration stores these as a credential, putting the Access ID in the **User Name** field of the credential and the Secret Access ID in the **Password** and **Retype Password** fields of the credential.

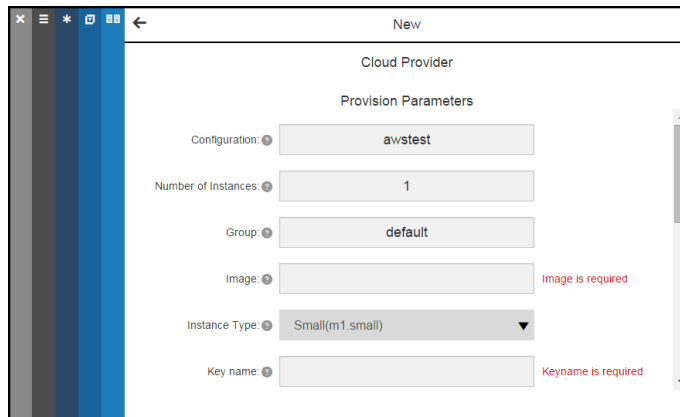
- **Attempt Connection?**—If the check box is selected, the system tries a connection to check credentials.
- **Debug Level**—The debug level for the output. The default is 1.

The possible values are

- **0** – Errors only.
- **1** – Normal headers and responses.
- **2+** – Debugging information included.

4. Click **Next**. The **Provision Parameters** fields appear.

Example:



New

Cloud Provider

Provision Parameters

Configuration: awstest

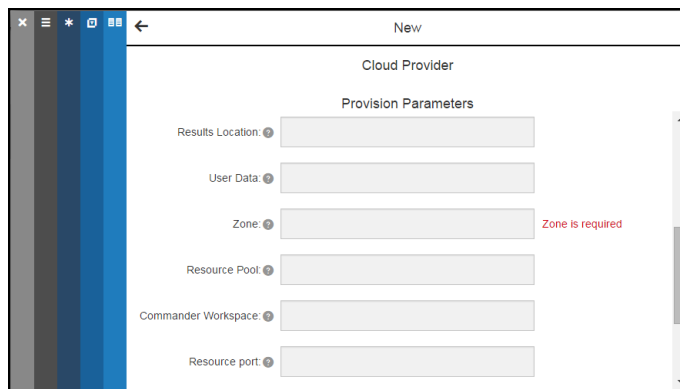
Number of Instances: 1

Group: default

Image: Image is required

Instance Type: Small(m1.small)

Key name: Keyname is required



New

Cloud Provider

Provision Parameters

Results Location:

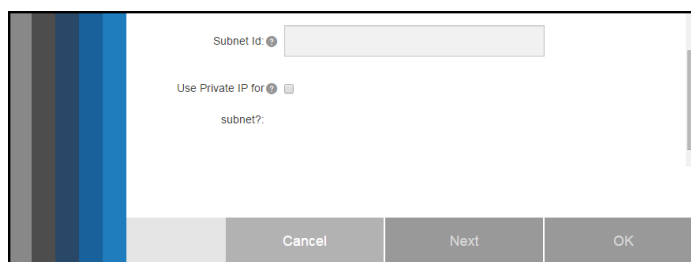
User Data:

Zone: Zone is required

Resource Pool:

Commander Workspace:

Resource port:



Subnet Id:

Use Private IP for subnet?:

Cancel Next OK

5. Enter the **Provision Parameters** values.

- **Configuration**—This field is prepopulated with the name you entered in the previous dialog box.
- **Number of Instances**—The number of instances to start. The default is 1.
- **Group**—The security group to use. The default is *default*.
- **Image**—The name of the EC2 image deploy.
- **Instance Type**—The instance type. The default is **Small(m1.small)**.

Select one of these types:

- Small(m1.small)
 - Large(m1.large)
 - Extra Large(m1.xlarge)
 - Micro(t1.micro)
 - High-Memory Extra Large(m2.xlarge)
 - High-Memory Double Extra Large(m2.2xlarge)
 - High-Memory Quadruple Extra Large(m2.4xlarge)
 - High-CPU Medium(c1.medium)
 - High-CPU Extra Large(c1.xlarge)
 - Cluster Compute Quadruple Extra Large(cc1.4xlarge)
 - Cluster GPU Quadruple Extra Large(cg1.4xlarge)
- **Key name**—The name of the key pair to use.
 - **Results Location**—Where to put the result. If the location is not specified, the result is only printed.
 - **User Data**—Extra user data to pass to the `API_runInstances` procedure.
 - **Zone**—The zone where the instance is created.
 - **Resource Pool**—Name of the resource pool. If you enter a name, a new resource is created and put in the pool.
 - **Commander Workspace**—Name of the workspace where the resources are created.
 - **Resource Port**—ID of the port to which the new resources are assigned.
 - **Subnet Id**—The ID of the subnet in which the instances are launched. This parameter is used with VPCs.
 - **Use Private IP for subnet?**—If this check box is selected, the subnet is Private IP network.

6. Click **Next** to set the configuration management settings.

The **New Configuration Management** dialog box opens.

Return to [Creating Resource Templates](#) on page 271 for instructions to continue creating the resource template.

7. If you do not want to set the configuration management settings, click **OK**.

The Resources Templates list now shows the resource template that you created.

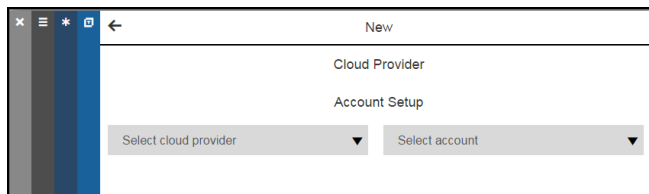
Return to [Creating Resource Templates](#) on page 271 for instructions to continue creating the resource template.

Configuring OpenStack as a Cloud Provider

IMPORTANT: Before configuring the cloud provider, you must have an Amazon Machine Image (AMI) with a pre-installed agent available.

Starting in the **New Cloud Provider** dialog box:

Example:



1. Click **Select cloud provider**.

2. Select **OpenStack**.

The **Account Setup** fields appear.

Example:

New

Cloud Provider

Account Setup

OpenStack ▼ Select account ▼

Configuration Name: Config is required

Description:

Identity Service URL: Identity service url is required

New

Cloud Provider

Account Setup

Compute Service URL: Compute service url is required

Block Storage URL: Blockstorage service url is required

Image Service URL: Image service url is required

New

Cloud Provider

Account Setup

Orchestration Service

URL:

Login as:

Username: User name is required

Password: Password is required

Repeat Password:

Compute API version:

The screenshot shows a 'New' dialog box with a left sidebar containing icons for a close button, a menu, a star, and a document. The main area is titled 'Cloud Provider' and 'Account Setup'. It contains six input fields, each with a question mark icon to its left: 'Keystone API version' with value '3', 'Blockstorage API version' with value '1', 'Image API version' with value '1', 'Resource' with value 'local', 'Workspace' with value 'default', and 'Debug Level' with value '1'. At the bottom right are 'Cancel' and 'Next' buttons.

Field	Value
Keystone API version	3
Blockstorage API version	1
Image API version	1
Resource	local
Workspace	default
Debug Level	1

IMPORTANT: If you have a pre-configured account with the Account Setup and Provision Parameter settings, click **Select account** to automatically enter the cloud provider settings. Then go to Step 6.

3. Enter your account settings:

- **Configuration Name**—A unique name for the OpenStack configuration. (Required)
- **Description**—A description for this configuration. The default is *OpenStack configuration*.
- **Identity Service URL**—The host name or IP address of the Identity Service for OpenStack. (Required)
- **Compute Service URL**—The host name or IP address of the Compute Service for OpenStack. (Required)
- **Blockstorage URL**—The host name or IP address of the Block Storage Service for OpenStack. (Required)
- **Image Service URL**—The host name or IP address of the Image Service for OpenStack. (Required)
- **Orchestration Service URL**—The host name or IP address of the Orchestration Service for OpenStack. (Required))
- **Login as**—OpenStack account username and password. It must have enough privileges to perform API functions. (Required)
- **Compute API version**—The version of the Compute Service API. The default is 2.0. (Required)
- **Keystone API version**—The version of the Keystone Service API. The default is 3. (Required)
- **Blockstorage API version**—The version of the OpenStack block storage API. The default is 1. (Required)
- **Image API version**—The version of the Image Service API. (Required)
- **Resource**—The name of the resource or pool on which the integration steps can run. The default is *local*. (Required)
- **Workspace**—The workspace where the configuration dynamically creates resources. The default is *default*. (Required)
- **Debug Level**—The debug level for the output. The default is 1.

The possible values are

- **0** – Errors only.
- **1** – Normal headers and responses.
- **2+** – Debugging information included.

4. Click **Next**. The **Provision Parameters** fields appear.

Example:

The screenshot shows a web form titled "New" with a "Cloud Provider" section. Below this is the "Provision Parameters" section, which contains five input fields, each with a red error message indicating it is required:

- Configuration: Connection config is required
- Tenant ID: Tenant id is required
- Number of Instances:
- Image ID: Image is required
- Flavor ID: Flavor is required

The screenshot shows a web form titled "New" with a "Cloud Provider" section. Below this is the "Provision Parameters" section, which contains four input fields, each with a red error message indicating it is required:

- Key Pair Name: Key pair name is required
- Security Group(s):
- Availability Zone:
- Customization script:

5. Enter the **Provision Parameters** values.

- **Configuration**—The name of a valid existing configuration with the connection information. (Required)
- **Tenant ID**—The ID of the tenant to use. (Required)
- **Number of Instances**—The number of servers to deploy. If there is more than one, a suffix ((_#) is added to the server names. The default is 1. (Required)
- **Image ID**—The ID of an existing image in OpenStack. (Required)
- **Flavor ID**—The ID of the flavor to use. (Required)
- **Key Pair Name**—The name of a key pair to use. (Required)
- **Security Group(s)**—A list of security groups.
- **Availability Zone**—The zone where the server is launched.
- **Customization script**—Configuration information or scripts to execute when the server starts.
- **Results Location**—Where the properties are stored.
- **Resource Pool**—The resource pool name associated with the machines in this configuration when resources are created. .
- **Resource workspace**—The workspace that the resource uses.

6. Click **Next** to set the configuration management settings.

The **New Configuration Management** dialog box opens.

Return to [Creating Resource Templates](#) on page 271 for instructions to continue creating the resource template.

7. If you do not want to set the configuration management settings, click **OK**.

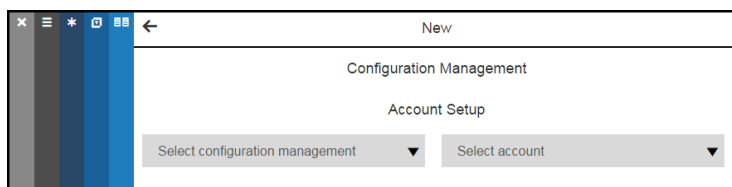
The Resources Templates list now shows the resource template that you created.

8. Return to [Creating Resource Templates](#) on page 271 for instructions to continue creating the resource template.

Configuring Chef as the Configuration Management Tool

Starting in the **New Configuration Management** dialog box:

Example:



1. Click **Select cloud provider**.
2. Select **Amazon**.

The **Account Setup** fields appear.

Example:

The screenshot shows a 'New' configuration window titled 'Configuration Management'. Under the 'Account Setup' section, there are two dropdown menus: 'Chef' and 'Select account'. Below these, the 'Configuration Name' field is empty, with a red error message 'Config is required'. The 'Description' field contains the text 'Chef configuration'. The 'Chef Server URL' field is empty, with a red error message 'Server is required'.

The screenshot shows the same 'New' configuration window. The 'Account Setup' section is now expanded, showing the 'Chef Server URL' field (empty, 'Server is required'), the 'Login as' field (empty, 'Required'), the 'Key Name' field (empty, 'Required'), and the 'Key' field (empty, 'Required'). At the bottom of the window, there are 'Cancel' and 'Next' buttons.

IMPORTANT: If you have a pre-configured account with the Account Setup and Converge Parameter settings, click **Select account** to automatically enter the configuration management settings. Then go to Step 6.

3. Enter your account settings:

- **Configuration Name**—A unique name for the configuration. (Required)
- **Description**—A description for this configuration. The default is *Chef configuration*.
- **Chef Server URL**—URL to the Chef server.
- **Login as**—Private key for authentication. (Required)

To log in, enter the **User Name** and private **Key**.

4. Click **Next**.

The **Converge Parameters** fields appear.

Example:

New

Configuration Management

Converge Parameters

Configuration:

Chef-client Path:

Run as a user with full ☒ system privileges:

Run List: Run list is required

New

Configuration Management

Converge Parameters

Run List: Run list is required

Node Name:

Additional Arguments:

Cancel OK

5. Enter the **Provision Parameters** values.

- **Configuration**—This field is prepopulated with the name you entered in the previous dialog box.
- **Chef-client Path**—The path to the chef-client (executable), such as /usr/bin/chef-client (the default value). (Required)
- **Run as user with full system privileges**—If this check box is selected, you run the application as a user with full system privileges.
- **Run List**—The ordered list of Chef recipes to run.
- **Node Name**—The name of the node to which recipes are added. (Required)
- **Additional Arguments**—Additional arguments use when running the application.

6. Click **OK**.

The Resource Templates List now shows the resource template that you created.

7. Return to [Creating Resource Templates](#) on page 271.

Viewing and Editing Resource Templates

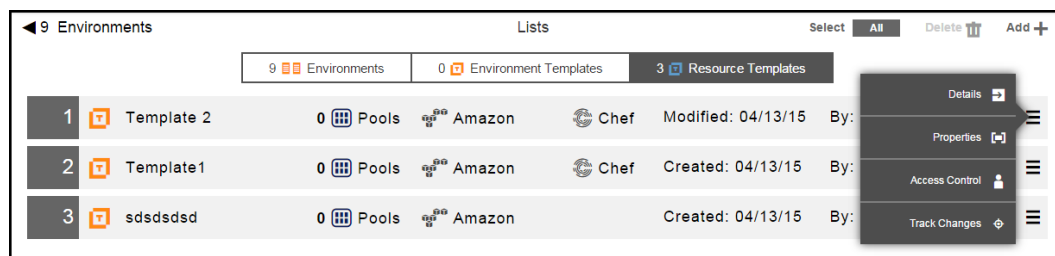
Resource Template Details

To view and edit the resource template details, starting in the Resource Template List:

1. Choose a resource template and click the **Menu** button.

A list of menu options appears.

Example:



2. Select **Details**.

The **Edit Resource Template Details** dialog box opens.

Example:

The screenshot shows a dialog box titled 'Edit' with a close button (X) in the top-left corner. Below the title bar is a tabbed interface labeled 'Resource Template Details'. The 'Details' tab is selected and highlighted. It contains two input fields: 'Name' with the value 'Template1' and 'Description' with the value 'Description'.

3. In the **Details** tab, edit the name and description of the resource template.

4. In the **Cloud Provider** tab, edit the cloud provider account information.

Example:

The screenshot shows the same dialog box, but now the 'Cloud Provider' tab is selected. At the top, a dropdown menu shows 'Amazon'. Below it are five input fields, each with a help icon (i): 'Configuration Name' (value: 'awstest'), 'Description' (value: 'EC2 integration'), 'Service URL' (value: 'https://ec2.amazonaws.com'), 'Resource Pool' (value: 'default'), and 'Workspace' (value: 'default'). At the bottom, there are three buttons: 'Cancel', 'Next' (highlighted in blue), and 'OK'.

5. In the **Provision** tab, edit the information about a provision settings for the cloud provider.

Example:

The screenshot shows a dialog box titled "Edit" with a tabbed interface. The tabs are "Details", "Cloud Provider", "Provision" (selected), "Configuration", and "Converge". Under the "Provision" tab, the "Resource Template Details" section contains the following fields:

- Configuration:
- Number of Instances:
- Group:
- Image:
- Instance Type:
- Key name:

At the bottom of the dialog are three buttons: "Cancel", "Next", and "OK".

6. In the **Configuration** tab, view and edit the configuration management details.

Example:

The screenshot shows the same "Edit" dialog box, but with the "Configuration" tab selected. The "Resource Template Details" section now shows:

- A dropdown menu with "Chef" selected.
- Configuration Name:
- Description:
- Chef Server URL:

The "Next" and "OK" buttons are still present at the bottom.

7. In the **Converge** tab, view and edit the details about how the virtual instances are converged in the defined configuration.

Example:

The screenshot shows a dialog box titled "Edit" with a sub-header "Resource Template Details". It has five tabs: "Details", "Cloud Provider", "Provision", "Configuration", and "Converge". The "Converge" tab is selected. Below the tabs, there is a dropdown menu showing "Amazon". Below that, there are five input fields with labels and icons: "Configuration Name" (value: awstest), "Description" (value: EC2 Integration), "Service URL" (value: https://ec2.amazonaws.com), "Resource Pool" (value: default), and "Workspace" (value: default). At the bottom, there are three buttons: "Cancel", "Next", and "OK".

8. Click **Next** to go to the next tab.
9. Click **OK** to save your changes.

Resource Template Properties

To view and edit the resource template properties, starting in the Resource Template List:

1. Choose a resource template and click the **Menu** button. A list of menu options appears.
2. Select **Properties**.

The **Properties** dialog box opens.

Example:

The screenshot shows a dialog box titled "Properties" with a sub-header "0 Properties". It has a "Delete" button with a red X icon, a "Folder" button with a blue folder icon and a plus sign, and an "Add" button with a plus sign. Below the buttons, there is a search bar with a magnifying glass icon and the text "fffff". Below the search bar, there is a table with two columns: "Name" and "Value". The table has one row with a blue folder icon and the text "fffff".

3. To view more details about a property, click the **Expand** button next to the property name.

4. To add a property:

- a. Click the **Add +** button.

The **Property Details** dialog box opens.

Example:

- b. Enter the details and click **OK** to save them.

The **Property Details** dialog box now shows the new property that you added.

Example:

Access Control Settings

When you click **Access Control**, you go to the Access Control page in the ElectricCommander automation platform.

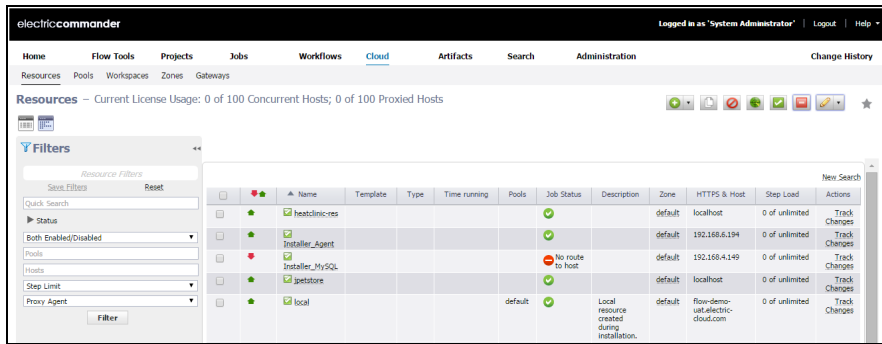
Change Tracking

When you click **Track Changes**, the Change History for the resource template opens.

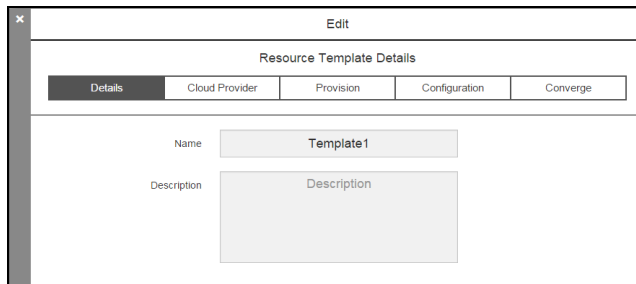
Resources Page

How to get here: Click the **Main Menu** button > **Automations** > **Resources**.

In the **Resources** page, click the name of the resource template to view the resource template details.



The **Edit Resource Template Details** dialog box opens:

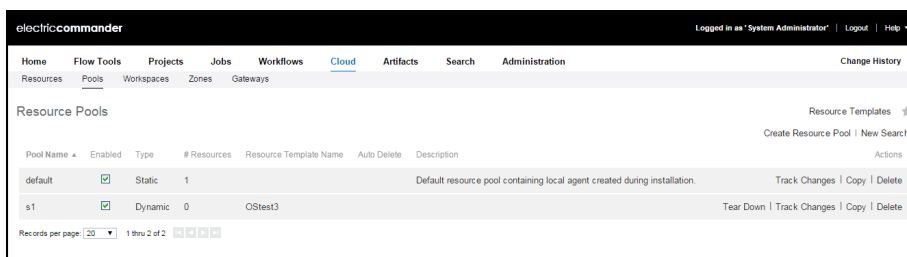


You can view and edit the resource template details as described in the previous sections.

Resource Pools Page

How to get here: Go to the ElectricCommander Help > **Cloud** tab > select **Pools**.

In the **Resource Pools** page, you get information about the resource pools. The page lists static and dynamic resource pools. Static resource pools are created in the ElectricCommander automation platform. Dynamic resource pools are created by provisioning a resource template in ElectricFlow or in the ElectricCommander automation platform.



When you click the name of the resource template that provisioned the dynamic resource pool, the **Edit Resource Template Details** dialog box opens, where you can view the details.

Edit

Resource Template Details

Details Cloud Provider Provision Configuration Converge

Name: Template1

Description:

You can view and edit the resource template details as described in the previous sections.

Accessing the Resource Templates in the ElectricCommander Automation Platform

You can access the resource templates from the ElectricCommander automation platform.

1. In the Home page, click **Automations** to go to the Home page of the ElectricCommander automation platform.
2. Go to **Cloud > Pools**.

Example:

electriccommander

Logged in as "System Administrator" | Logout | Help

Home Flow Tools Projects Jobs Workflows **Cloud** Artifacts Search Administration Change History

Resources Pools Workspaces Zones Gateways

Resource Pools

Resource Templates ★

Create Resource Pool | New Search

Pool Name ▲	Enabled	Type	# Resources	Resource Template Name	Auto Delete	Description	Actions
default	<input checked="" type="checkbox"/>	Static	1			Default resource pool containing local agent created during installation.	Track Changes Copy Delete
s1	<input checked="" type="checkbox"/>	Dynamic	0	OSTest3			Tear Down Track Changes Copy Delete

Records per page: 20 1 thru 2 of 2

3. Click **Resource Templates**.

The **Resource Templates** list opens.

Example:

Resource Templates

1	AWStest1	0	P... Amazon	Created: 03/3...	By: admin	Actions
2	AWStest2	0	P... Amazon	Created: 03/3...	By: admin	Actions
3	OStest3	1	P... OpenSt...	Created: 03/3...	By: admin	Actions

4. (Optional) To view details about a resource template, choose a template and click the **Menu** button for it.

The Context menu opens.

5. Click one of these options:

- **Details**—The **Edit Resource Template Details** dialog box opens.

The tabs that appear in the dialog box depend on the cloud provider specified in the resource template.

- **Properties**—The **Properties** dialog box opens.

You can view and edit the properties that apply to the resource template.

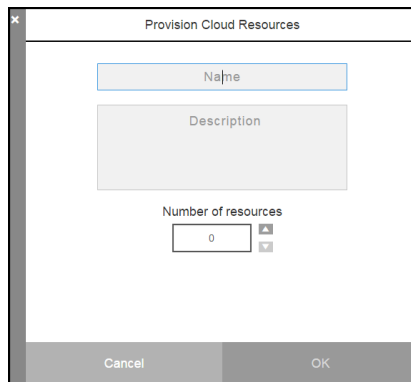
- **Access Control**—The Access Control page opens.

- **Track Changes**—The Change History for the resource template opens.

6. To provision the resource template, choose a resource template and click the **Provision** button.

The **Provision Cloud Resources** dialog box opens.

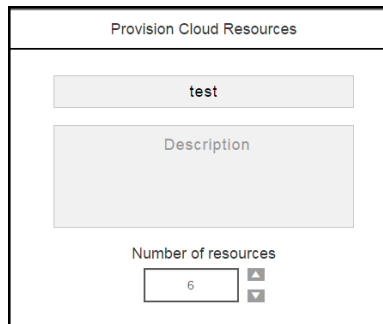
Example:



The screenshot shows a dialog box titled "Provision Cloud Resources". It contains three input fields: "Name" (a single-line text box), "Description" (a multi-line text area), and "Number of resources" (a spinner box with the value "0"). At the bottom, there are "Cancel" and "OK" buttons.

7. Enter the resource pool name, an optional description, and the number of resources in the pool, and then click **OK**.

Example:



Provision Cloud Resources

test

Description

Number of resources

6

You go to the Job Details page in the ElectricCommander automation platform.

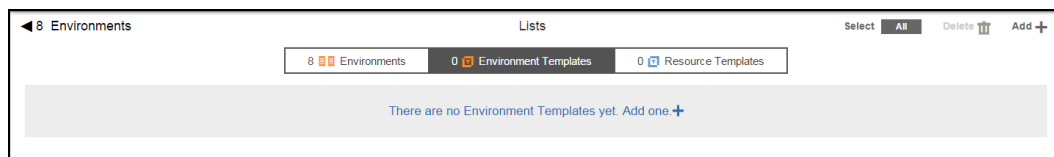
Creating Environment Templates

Creating a New Environment Template

1. Go to the Environment Templates List.
 - Starting from the Main menu, click the **Menu** button, select **Environments**, and then select **Environment Templates**.
 - Starting from the Home page, click **Environments** and then click the **Environment Templates** tab.

If there are no defined resource templates, the Resource Templates List is empty.

Example:



◀ 8 Environments

Lists

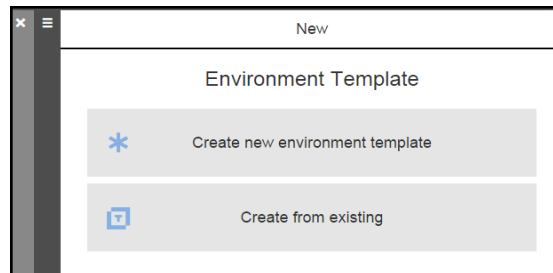
Select All Delete Add

8 Environments 0 Environment Templates 0 Resource Templates

There are no Environment Templates yet. Add one.

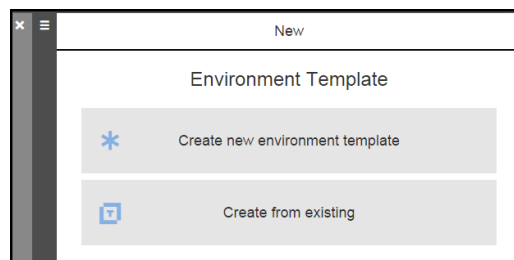
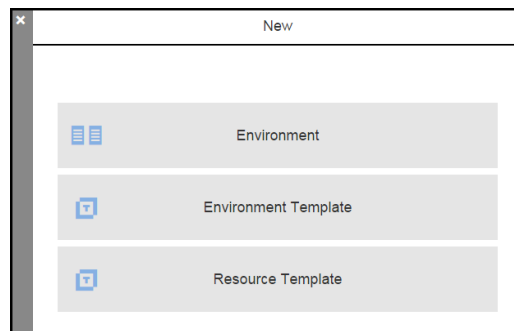
2. Add a resource template.
 - a. If the Resource Templates List is empty, click **There are no Environment Templates yet. Add one +** or click the **Add +** button.
 - b. If the resource list is not empty, click the **Add +** button.
 - c. When you click **There are no Environment Templates yet. Add one +**, the **New Environment Template** dialog box opens.

Example:



- d. After you click the **Add +** button, click **Environment Template** in the **New** dialog box.
- The **New Environment Template** dialog box opens.

Example:



3. Click **Create new environment template** to create a template with new settings.

The **New** dialog box opens.

Example:

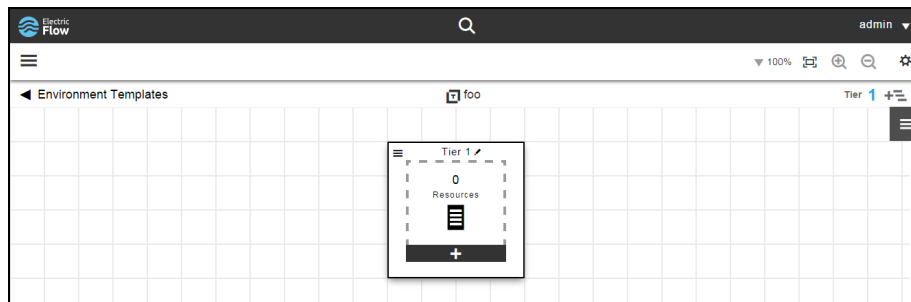


The 'New' dialog box is shown with a title bar containing a close button, a menu icon, and a back arrow. The main content area has a title 'Environment Template Name' and two input fields: 'Name' and 'Description'.

4. Enter a name and an optional description, and click **OK**.

The Environment Templates Visual Editor opens. The name of the environment template is at the top of the page. There is one tier with no assigned resources.

Example:



5. Click the **+** button to add a resource to the tier.

The **New** dialog box to add resources opens.

Example:



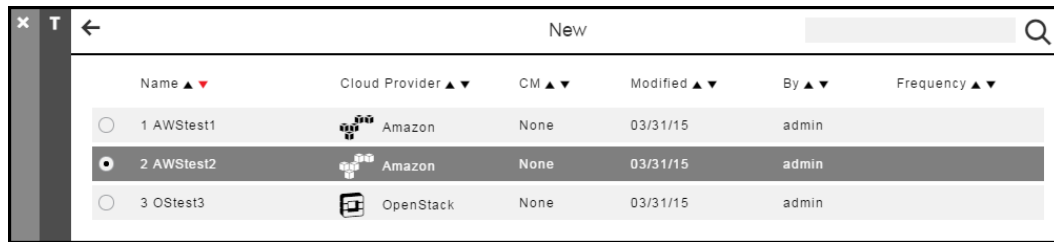
The 'New' dialog box is shown with a title bar containing a close button and a menu icon. The main content area has two buttons: 'Add resources' and 'Add resource template'.

6. Click **Add resource template** to select a resource template.

The Resource Templates List opens.

7. Select a resource template and click **OK**.

Example:

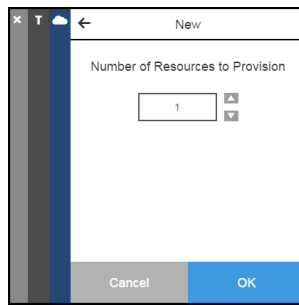


The screenshot shows a 'New' dialog box with a table of resource templates. The table has columns for Name, Cloud Provider, CM, Modified, By, and Frequency. Three templates are listed: 1 AWSTest1, 2 AWSTest2, and 3 OStest3. The second template, 2 AWSTest2, is selected with a radio button.

	Name ▲ ▼	Cloud Provider ▲ ▼	CM ▲ ▼	Modified ▲ ▼	By ▲ ▼	Frequency ▲ ▼
<input type="radio"/>	1 AWSTest1	Amazon	None	03/31/15	admin	
<input checked="" type="radio"/>	2 AWSTest2	Amazon	None	03/31/15	admin	
<input type="radio"/>	3 OStest3	OpenStack	None	03/31/15	admin	

The **New** dialog box to select the number of resources to provision opens.

Example:



The screenshot shows the 'New' dialog box with the 'Number of Resources to Provision' field set to 1. The field is a text input with up and down arrows. The 'Cancel' and 'OK' buttons are at the bottom.

Number of Resources to Provision

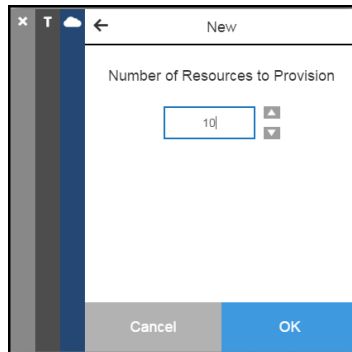
1

Cancel OK

8. Enter the number of resources to provision and click **OK**.

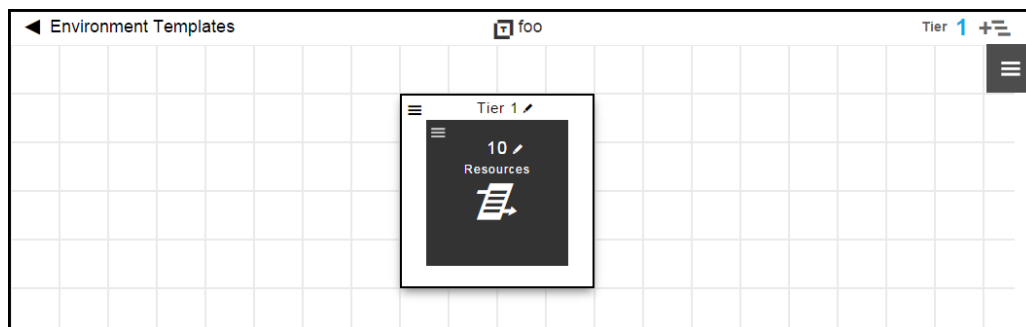
You must provision at least one resource (1).

Example:



The Environment Templates Visual Editor now shows that the tier (Tier 1) has 10 provisioned dynamic cloud resources.

Example:



9. To add static resources to an environment template:

- a. Click the **Add tier** button to create a new tier.

A new environment tier appears in the Environment Templates Visual Editor.

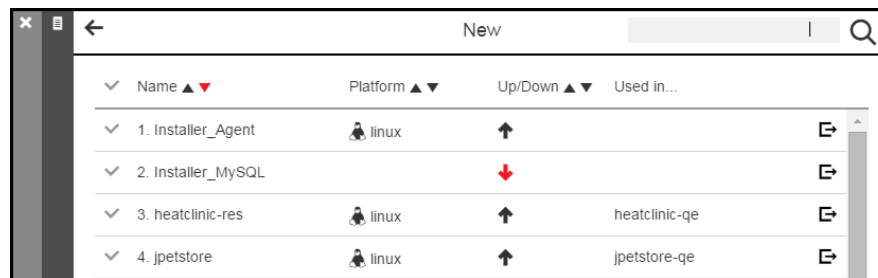
- b. Click the **+** button in the new tier to add resources to it.

The **New** dialog box opens.

- c. Click **Add resources** to add static resources to the environment tier.

A list of static resources opens.

Example:

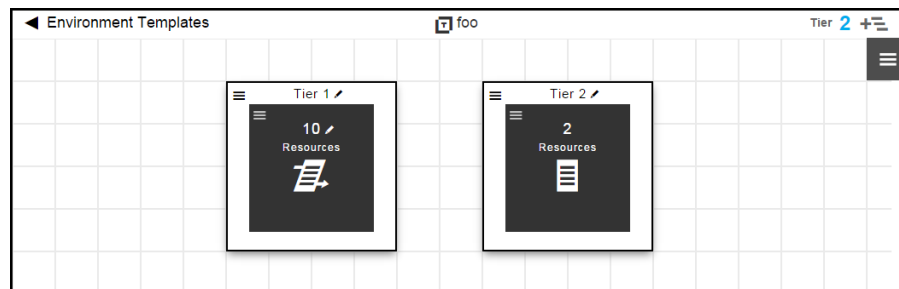


Name ▲ ▼	Platform ▲ ▼	Up/Down ▲ ▼	Used in...
1. Installer_Agent	linux	↑	
2. Installer_MySQL		↓	
3. heatclinic-res	linux	↑	heatclinic-qe
4. jpetstore	linux	↑	jpetstore-qe

- d. Select one or more resources in the list, and click **OK**.

The Environment Templates Visual Editor now shows that Tier 2 has two static resources.

Example:



Creating an Environment Template Based on an Existing Template

1. Go to the Environment Templates List.

- Starting from the Main menu, click the **Menu** button, select **Environments**, and then select **Environment Templates**.
- Starting from the Home page, click **Environments** and then click the **Environment Templates** tab.

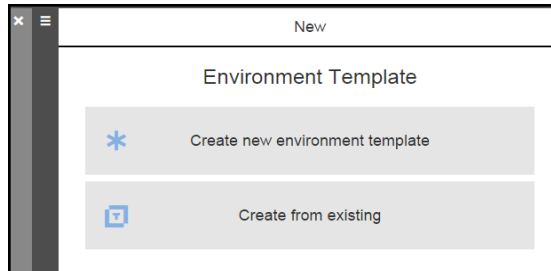
2. Add a resource template.

If the Resource Templates List is empty, click **There are no Environment Templates yet. Add one +** or click the **Add +** button.

If the resource list is not empty, click the **Add +** button.

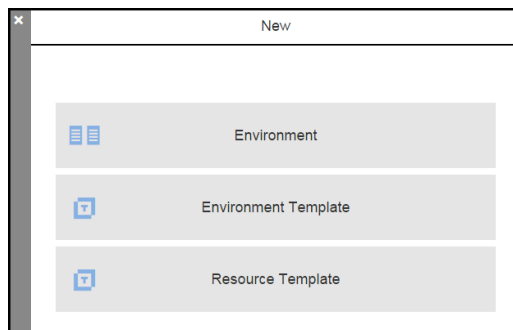
When you click **There are no Environment Templates yet. Add one +**, the **New Environment Template** dialog box opens.

Example:



After you click the **Add +** button, click **Environment Template** in the **New** dialog box. The **New Environment Template** dialog box opens.

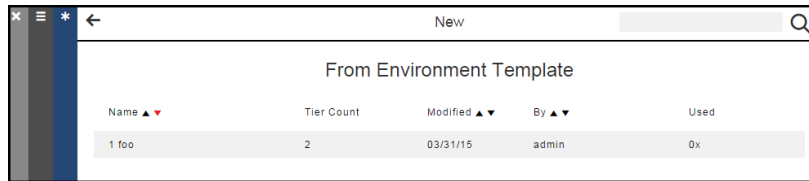
Example:



3. Click **Create from existing** to create a template based on an existing one.

The list of existing templates opens.

Example:



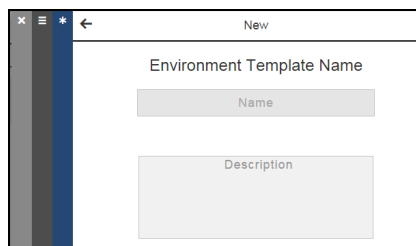
The screenshot shows a 'New' dialog box with a table titled 'From Environment Template'. The table has columns: Name, Tier Count, Modified, By, and Used. There is one row with the following data:

Name	Tier Count	Modified	By	Used
1 foo	2	03/31/15	admin	0x

4. Select an environment template.

The **New** dialog box opens.

Example:



The screenshot shows a 'New' dialog box with two input fields: 'Environment Template Name' and 'Description'. The 'Name' field is currently empty.

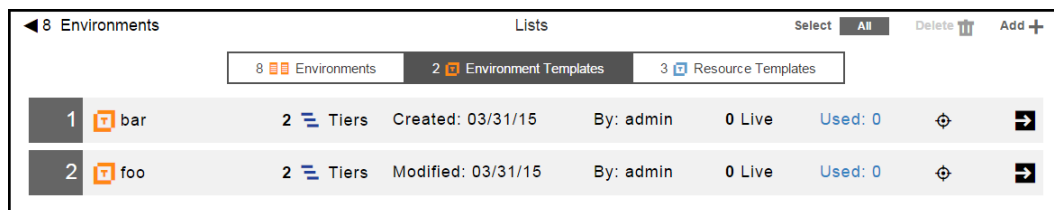
Viewing and Editing Environment Templates

Environment Template Details

To view and edit the environment template details, starting in the Environment Template List:

1. Choose an environment template and click the **View Details** button.

Example:

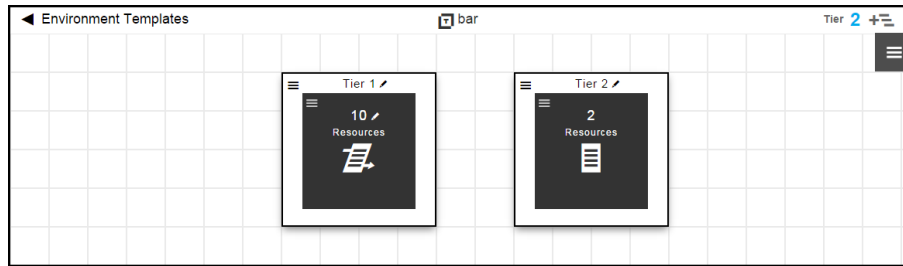


The screenshot shows a 'Lists' view for 'Environments'. It has tabs for 'Environments', 'Environment Templates', and 'Resource Templates'. The 'Environment Templates' tab is selected. The table below shows the details for two templates:

ID	Name	Tiers	Created	By	Live	Used	Actions
1	bar	2	03/31/15	admin	0	Used: 0	[View] [Edit]
2	foo	2	03/31/15	admin	0	Used: 0	[View] [Edit]

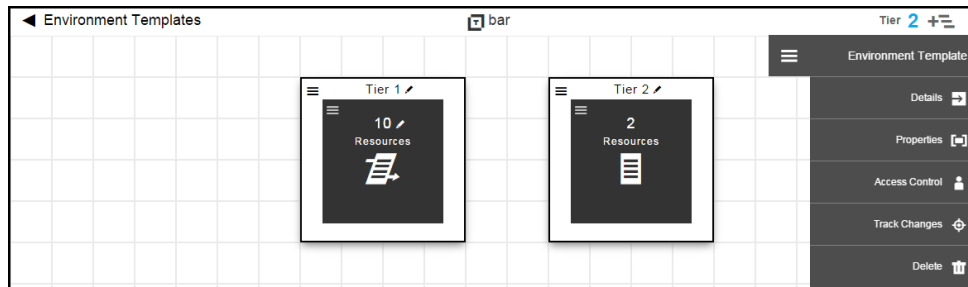
The Environment Templates for the selected template opens.

Example:



2. Click to **Menu** button to open the context menu for the environment template.

Example:



Click **Details** to view or edit the name and description of the environment template.

Click **Properties** to view or edit the environment template properties.

Click **Access Control** to go to the Access Control page in the ElectricCommander automation platform.

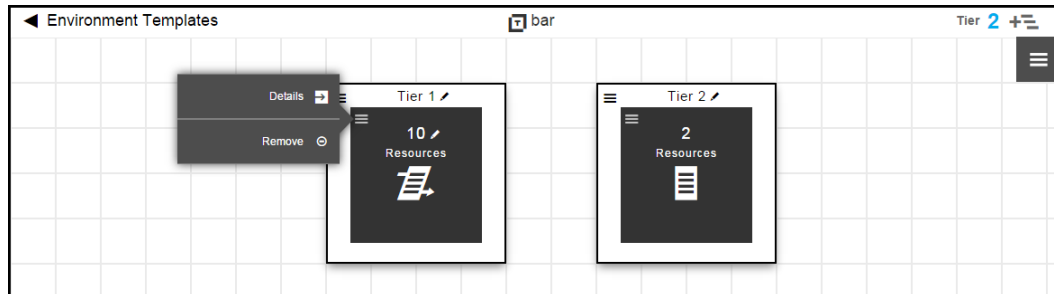
Click **Track Changes** to open the Change History of the environment template.

Click **Delete** to delete this template.

3. In an environment tier with dynamic resources, click the **Menu** button for the resources.

The context menu opens.

Example:



4. Click **Details**. The list of resource templates opens.

The template being used is selected.

Example:

The screenshot shows the 'Edit' dialog with a search bar and a table of resource templates. The table has columns: Name, Cloud Provider, CM, Modified, By, and Frequency. Three rows are listed: 1 AWStest1, 2 AWStest2 (selected), and 3 OStest3.

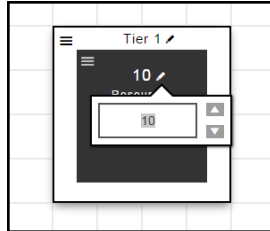
	Name ▲ ▼	Cloud Provider ▲ ▼	CM ▲ ▼	Modified ▲ ▼	By ▲ ▼	Frequency ▲ ▼
<input type="radio"/>	1 AWStest1	Amazon	None	03/31/15	admin	
<input checked="" type="radio"/>	2 AWStest2	Amazon	None	03/31/15	admin	
<input type="radio"/>	3 OStest3	OpenStack	None	03/31/15	admin	

5. Click the **Edit** button in an environment tier with dynamic resources.

The number box opens and shows the number of provisioned dynamic resources. In the example, there are 10 dynamic resources.

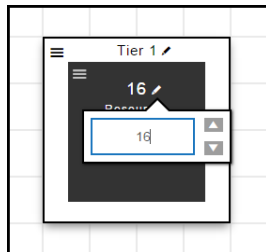
6. To change the number of provisioned dynamic resources:
 - a. Click the **Edit** button in an environment tier with dynamic resources.

Example:



- b. Enter a new number.
Use the up and down arrows to change the number.
You must enter one or more dynamic resources.

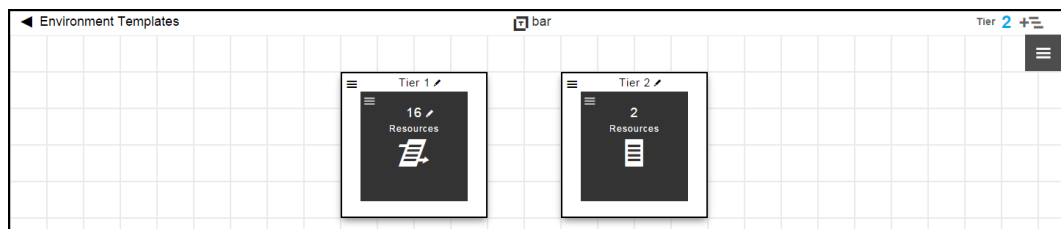
Example:



As you change the number of resources in the number box, the visual editor automatically updates the environment tier.

- c. Click outside of the tier or press **Enter** to save the change.
The Environment Templates Visual Editor now shows the new number of dynamic resources for the tier.

Example:

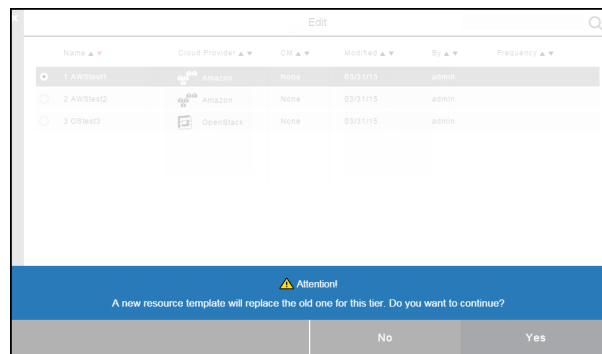


7. To change the resource template being used:

- a. Click the **Menu** button for the resources in an environment tier with dynamic resources.
- b. Click **Details** in the context menu. The list of resource templates opens.
- c. Select a different template other than the one that is currently selected.

A message appears.

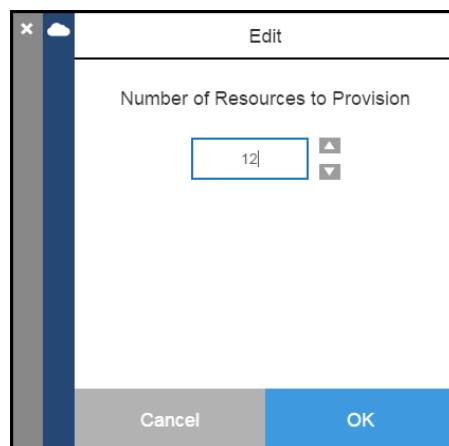
Example:



- d. Click **Yes** to replace the current template with the one that you selected.

The **Edit** dialog box to select the number of resources to provision opens.

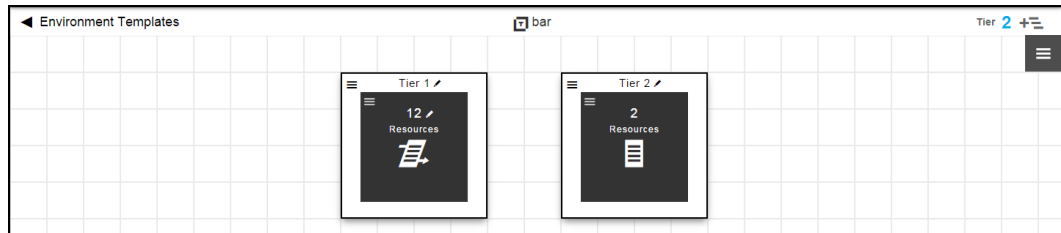
Example:



- e. To edit the number of dynamic resources to provision, enter the number and click **OK**.

The Environment Templates Visual Editor now shows that tier has the new number of dynamic resources.

Example:

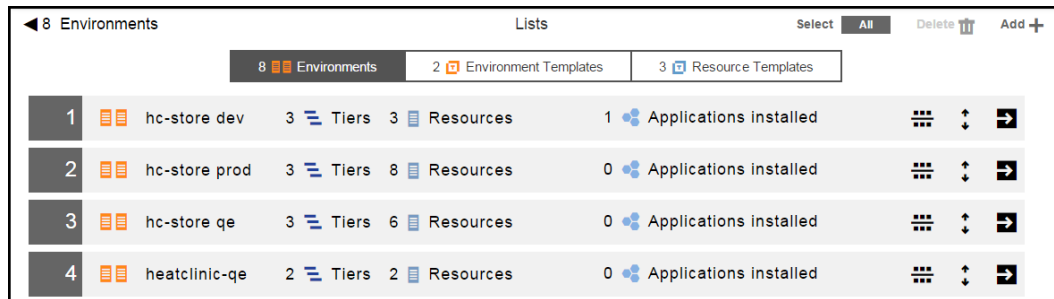


Modeling Environments with Resources or Resource Pools

1. Go to the Environment List.
 - Starting from the Main menu, click the **Menu** button, select **Environments**, and then select **Environments**.
 - Starting from the Home page, click **Environments**.

- Click the **Add +** button to add an environment.

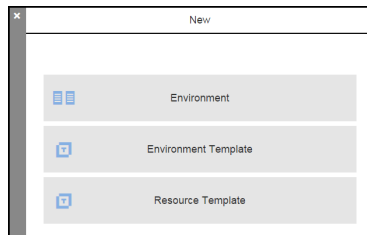
Example:



8 Environments		2 Environment Templates		3 Resource Templates	
1	hc-store dev	3 Tiers	3 Resources	1 Applications installed	
2	hc-store prod	3 Tiers	8 Resources	0 Applications installed	
3	hc-store qe	3 Tiers	6 Resources	0 Applications installed	
4	heatclinic-qe	2 Tiers	2 Resources	0 Applications installed	

The **New** dialog box opens.

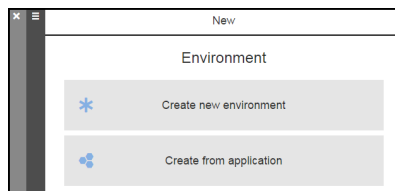
Example:



- Click **Environment**.

The **New Environment** dialog box opens.

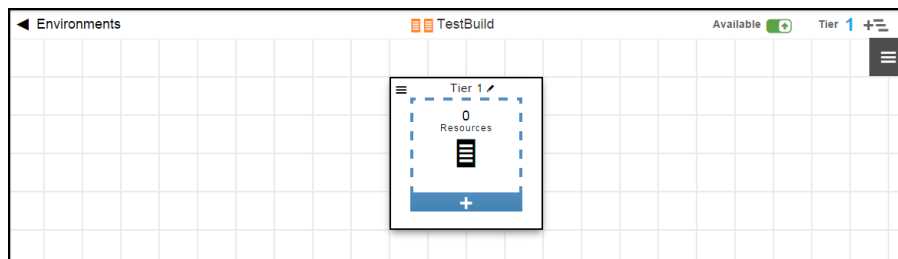
Example:



- Select **Create new environment**.
- Enter the name of the environment and an optional description, and then click **OK**.

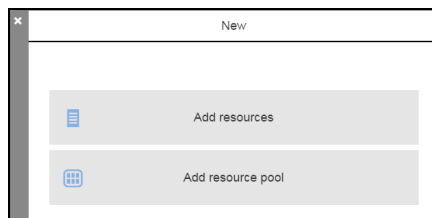
6. Click the + button to add resources to the environment tier.

Example:



The **New** dialog box to add resources or a resource pool to the environment tier.

Example:



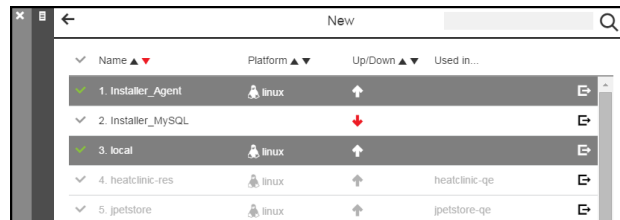
7. To add one or more static resources:

- a. Click **Add resources**.

A list of resources appears.

- b. Select one or more resources, and then click **OK**.

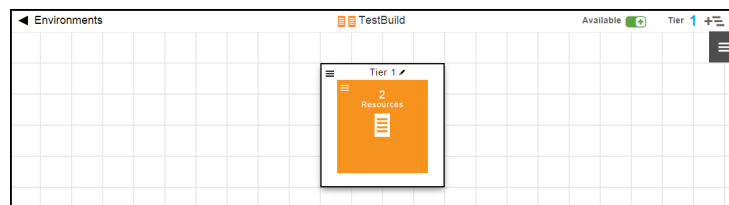
Example:



Name ▲▼	Platform ▲▼	Up/Down ▲▼	Used in...
1. installer_Agent	linux	↑	
2. installer_MySQL	linux	↓	
3. local	linux	↑	
4. heatclinic-res	linux	↑	heatclinic-ge
5. jpetstore	linux	↑	jpetstore-ge

The Environments Visual Editor now shows a tier with two static resources.

Example:



8. To add a resource pool:

- a. Click **Add resource pool**.

A list of resource pools appears.

- b. Select one resource pool, and then click **OK**.

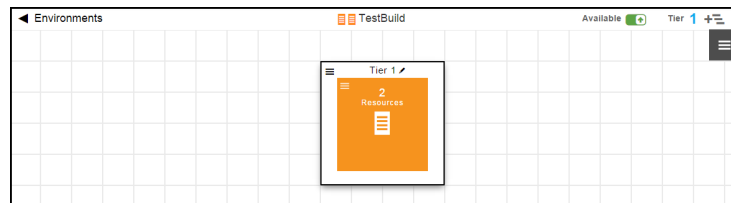
Example:



Name ▲ ▼	Description	Resource count	Status ▲ ▼
1. default		1	↑
2. s1		2	↑

The Environments Visual Editor now shows a tier with the resource pool that has two resources.

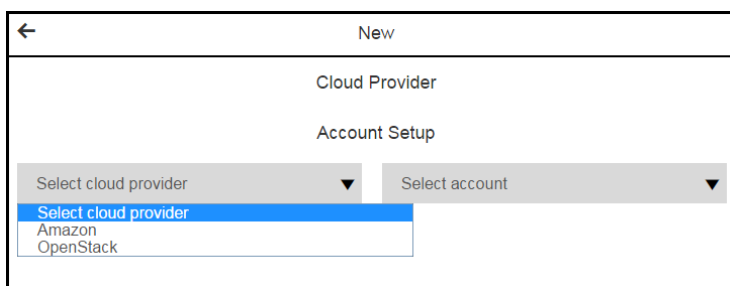
Example:



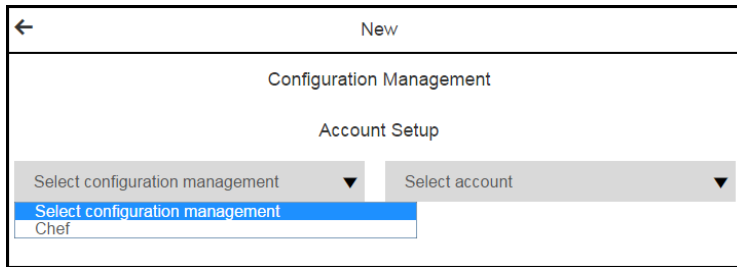
Developer Task: Creating Custom Plugins

ElectricFlow uses third-party plugins to provision cloud resources in resource templates for Dynamic Environments. Starting in ElectricFlow 5.4, Amazon EC2 (EC-EC2) and Openstack (EC-OpenStack) are supported as out-of-the-box cloud provider plugins, and Chef (EC-Chef) is supported as an out-of-the-box configuration management plugin.

To view the supported cloud provider plugins, open the **New Cloud Provider** dialog box and click **Select cloud provider** to view the drop-down menu of cloud providers.



To view the supported configuration management plugins, click **Select configuration management** to view the drop-down menu of configuration management tools.



The screenshot shows a mobile application interface for 'New' configuration management. At the top is a back arrow and the word 'New'. Below that is a header 'Configuration Management'. Underneath is a section titled 'Account Setup'. There are two dropdown menus side-by-side: 'Select configuration management' and 'Select account'. The 'Select configuration management' dropdown is open, showing a list with 'Select configuration management' at the top (highlighted in blue) and 'Chef' below it.

If you have an existing procedure that you would prefer to use instead of an out-of-the-box third-party plugin to provision cloud resources, you can create a custom plugin based on your deployment scenario.

The process to create custom cloud provider and configuration management plugins uses metadata to loosely couple them to the application you want to deploy. The custom plugins define specific known properties that are automatically recognized by Dynamic Environments.

- Go to [Creating Custom Cloud Provider Plugins](#) on page 313 for the details to create cloud provider plugins.
- Go to [Creating Custom Configuration Management Plugins](#) on page 317 for the details to create configuration management plugins.

An ElectricFlow user can now deploy an application by selecting the environment template that provisions cloud resource using one or more custom plugins.

Go to [Deploying Applications With Provisioned Cloud Resources](#) on page 321 for the details.

Creating Custom Cloud Provider Plugins

This section applies to developers who want to create custom cloud provider plugins for Dynamic Environments in ElectricFlow.

How to Create a Custom Cloud Provider Plugin

1. To convert your procedure to a plugin, define the name of the plugin and the ElectricFlow project to which the plugin belongs.

Later in this procedure, you will use these properties to create pre- and post-hooks to the plugin in ElectricFlow.

2. Define the following properties in your plugin under a top-level plugin property called `ec_cloudprovisioning_plugin`, which the Dynamic Environment system can access.

Property Name	Description
<code>ec_cloudprovisioning_plugin/</code>	Top-level plugin property directory
Properties defined by the custom plugin under <code>ec_cloudprovisioning_plugin</code>	
<code>displayName</code>	<p>Name of the plugin that appears in the New Cloud Provider dialog box.</p> <p>Example: Amazon for the EC-EC2 plugin</p>
<code>hasConfiguration</code>	<p><Boolean flag - 0 1 true false></p> <ul style="list-style-type: none"> When this property is set to 0, the plugin does not have any configuration procedures (<code>CreateConfiguration</code> and <code>DeleteConfiguration</code>). When this property is set to 1, the plugin has configuration procedures.
<code>configurationLocation</code>	<p>Name of the property sheet used by the plugin to store the saved configurations.</p> <p>This value is relative to the plugin's top-level properties.</p> <p>If this value is set as <code>ec2_cfgs</code>, the configurations are in <code>/plugins/<PLUGIN_KEY>/project/ec2_cfgs</code>.</p>
<code>operations/</code>	Property sheet for the specific operations required by the Dynamic Environment system.
Properties under <code>operations/</code> – These operations are mapped to the plugin operations through the following child properties.	
<code>createConfiguration/</code>	Properties for the procedure that creates the plugin configuration. It is usually called <code>createConfiguration</code> .
<code>deleteConfiguration/</code>	Properties for the procedure that deletes the plugin configuration. It is usually called <code>deleteConfiguration</code> .
<code>provision/</code>	Properties for the procedure that provisions virtual instances.
<code>retireResource/</code>	Properties for the procedure that tears down a previously provisioned virtual instance backing the specified resource.

Property Name	Description
<code>retireResourcePool/</code>	Properties for the procedure that tears down all previously provisioned virtual instances for the specified resource pool.
Properties for the previously listed operations defined in the <code>operations</code> property sheet	
<code>procedureName</code>	Name of the procedure name in the plugin to which the operation is mapped.
<code>ui_formRefs/</code>	Property sheet that references the <code>ui_forms</code> properties defined under the plugin's top-level properties.
<code>parameterRefs/</code>	Property sheet for the input parameters to the procedure that can be used by the Dynamic Environment system. The parameter list is operation-specific.

Go to [Creating Custom Cloud Provider Plugins](#) on page 313 for an example of the properties for the EC-EC2 (Amazon) plugin.

3. Save the plugin file in the appropriate location on your Commander server.
4. To import the plugin file to the ElectricCommander automation platform:
 - a. In the ElectricCommander platform, go to **Administration > Plugins** to open the **Plugin Manager** page.
 - b. Click the **Install from File/URL** tab.
 - c. In the **File Install** field, click **Choose file** to select the plugin file.
 - d. Click **Upload** to install it.

The plugin file appears in the **Currently Installed** tab.

 - e. Find your plugin and click **Promote** in the Actions column to make it available for use by ElectricFlow.
5. In ElectricFlow, to create a resource template:
 - a. Go to [Creating Resource Templates](#) on page 271 for the details.
 - b. In the **Select cloud provider** field, select your plugin as the cloud provider.
 - c. Enter the plugin settings in the form.
 - d. (Optional) Set the configuration management tool.

Go to [Creating Resource Templates](#) on page 271 for the details.

6. In the ectool API, enter the following commands to set pre- and post-hooks linking the plugin to an application that you later deploy in a dynamic environment.

- a. To create a pre-hook, enter

```
ectool createHook postConfigurationHook --hookType POST_CONFIGURATION --
procedureName <hookProcedure> --procedureProjectName <hookProject> --
resourceTemplateName <awsResourceTemplate> --projectName default
```

where `hookProcedure` is the your plugin name, `hookProject` is the name of the project to which the plugin belongs, and `awsResourceTemplate` is the name of the resource template that you created.

- b. To create a post-hook, enter

```
ectool createHook preConfigurationHook --hookType PRE_CONFIGURATION --
procedureName <hookProcedure> --procedureProjectName <hookProject> --
resourceTemplateName <awsResourceTemplate> --projectName default
```

where `hookProcedure` is the your plugin name, `hookProject` is the name of the project to which the plugin belongs, and `awsResourceTemplate` is the name of the resource template that you created.

7. Create an environment template with the resource template that you created.

Example: Property Structure for a Cloud Provider Plugin

This is the EC-EC2 (Amazon) plugin property structure.

Property Name	Property Values
ec_cloudprovisioning_plugin/	
displayName	Amazon
hasConfiguration	1
configurationLocation	ec2_cfgs
operations/	createConfiguration/ deleteConfiguration/ provision/ retireResource/ retireResourcePool/
ec_cloudprovisioning_plugin/createConfiguration/	
procedureName	CreateConfiguration
ui_formRefs/	parameterForm called ui_forms/EC2CreateConfigForm
parameterRefs/	configuration called config

Property Name	Property Values
ec_cloudprovisioning_plugin/deleteConfiguration/	
procedureName	DeleteConfiguration
ui_formRefs/	–
parameterRefs/	configuration called config
ec_cloudprovisioning_plugin/provision/	
procedureName	API_RunInstances
ui_formRefs/	parameterForm called ec_parameterForm
parameterRefs/	configuration called config resourcePool called res_poolName count called count
ec_cloudprovisioning_plugin/retireResource/	
procedureName	API_TearDownResource
ui_formRefs/	–
parameterRefs/	resourcePool called res_poolName
ec_cloudprovisioning_plugin/retireResourcePool/	
procedureName	API_TearDownResource
ui_formRefs/	–
parameterRefs/	resourcePool called res_poolName

Creating Custom Configuration Management Plugins

This section applies to developers who want to create custom configuration management plugins for Dynamic Environments in ElectricFlow.

How to Create a Custom Configuration Management Plugin

1. To convert your procedure to a plugin, define the name of the plugin and the ElectricFlow project to which the plugin belongs.

Later in this procedure, you will use these properties to create pre- and post-hooks to the plugin in ElectricFlow.

2. Define the following properties in your plugin under a top-level plugin property called `ec_configurationmanagement_plugin`, which the Dynamic Environment system can access.

Name	Description
<code>ec_configurationmanagement_plugin/</code>	Top-level plugin property directory
Properties defined by the custom plugin under <code>ec_configurationmanagement_plugin</code>	
<code>displayName</code>	Name of the plugin that appears in the Dynamic Environment UI Example: Chef for the EC-Chef plugin
<code>hasConfiguration</code>	<Boolean flag - 0 1 true false> <ul style="list-style-type: none"> When this property is set to 0 or false, the plugin does not have any configuration procedures (CreateConfiguration and DeleteConfiguration). When this property is set to 1 or true, the plugin has configuration procedures.
<code>configurationLocation</code>	Name of the property sheet used by the plugin to store the saved configurations. This value is relative to the plugin's top-level properties. If this value is set as <i>chef_cfgs</i> , the configurations are in <i>/plugins/<PLUGIN_KEY>/project/chef_cfgs</i> .
<code>operations/</code>	Property sheet for the specific operations required by the Dynamic Environment system.
Properties under <code>operations/</code> – These operations are mapped to the plugin operations through the following child properties.	
<code>createConfiguration/</code>	Properties for the procedure that creates the plugin configuration. It is usually called <i>createConfiguration</i> .
<code>deleteConfiguration/</code>	Properties for the procedure that deletes the plugin configuration. It is usually called <i>deleteConfiguration</i> .

Name	Description
<code>converge/</code>	Properties for the procedure that converges the virtual instances to the defined configuration (including policies and roles).
<code>teardown/</code>	Properties for the procedure that deletes the configuration details on the specified dynamic resource or resource pool. For Chef, properties for the procedure that deletes the Chef API client and Chef node on the specified dynamic resource or resource pool.
Properties for the previously listed operations defined in the <code>operations</code> property sheet	Properties for the previously listed operations defined in the <code>operations</code> property sheet
<code>procedureName</code>	
<code>ui_formRefs/</code>	Property sheet that references the <code>ui_forms</code> properties defined under the plugin's top-level properties.
<code>parameterRefs/</code>	Property sheet for the input parameters to the procedure that can be used by the Dynamic Environment system. The parameter list is operation-specific.
Name	Description

Go to [Example: Property Structure for a Configuration Management Plugin](#) on page 320 for an example of the properties for the EC-Chef plugin.

3. Save the plugin file in the appropriate location on your Commander server.
4. To import the plugin file to the ElectricCommander automation platform:
 - a. In the ElectricCommander platform, go to **Administration > Plugins** to open the **Plugin Manager** page.
 - b. Click the **Install from File/URL** tab.
 - c. In the **File Install** field, click **Choose file** to select the plugin file.
 - d. Click **Upload** to install it.

The plugin file appears in the **Currently Installed** tab.
 - e. Find your plugin and click **Promote** in the Actions column to make it available for use by ElectricFlow.

5. In ElectricFlow, to create a resource template:

- Go to [Creating Resource Templates](#) on page 271 for the details.
- In the **Select cloud provider** field, select your plugin as the cloud provider.
- Enter the plugin settings in the form.
- Set the configuration management tool.

Go to [Creating Resource Templates](#) on page 271 for the details.

6. In the ectool API, enter the following commands to set pre- and post-hooks linking the plugin to an application that you later deploy in a dynamic environment.

- To create a pre-hook, enter

```
ectool createHook postConfigurationHook --hookType POST_CONFIGURATION --
procedureName <hookProcedure> --procedureProjectName <hookProject> --
resourceTemplateName <awsResourceTemplate> --projectName default
```

where `hookProcedure` is the your plugin name, `hookProject` is the name of the project to which the plugin belongs, and `awsResourceTemplate` is the name of the resource template that you created.

- To create a post-hook, enter

```
ectool createHook preConfigurationHook --hookType PRE_CONFIGURATION --
procedureName <hookProcedure> --procedureProjectName <hookProject> --
resourceTemplateName <awsResourceTemplate> --projectName default
```

where `hookProcedure` is the your plugin name, `hookProject` is the name of the project to which the plugin belongs, and `awsResourceTemplate` is the name of the resource template that you created.

7. Create an environment template with the resource template that you created.

Example: Property Structure for a Configuration Management Plugin

This is the EC-Chef plugin property structure.

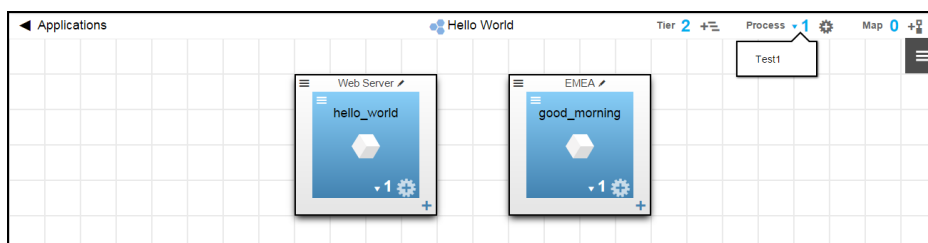
Name	Values
ec_configurationmanagement_plugin/	
displayName	Chef
hasConfiguration	1
configurationLocation	chef_cfgs
operations/	createConfiguration/ deleteConfiguration/ converge/ teardown/

Name	Values
ec_configurationmanagement_plugin/createConfiguration/	
procedureName	CreateConfiguration
ui_formRefs/	parameterForm called forms/CreateConfigForm
parameterRefs/	configuration called config
ec_configurationmanagement_plugin/deleteConfiguration/	
procedureName	DeleteConfiguration
ui_formRefs/	–
parameterRefs/	configuration called config
ec_configurationmanagement_plugin/converge/	
procedureName	_RegisterAndConvergeNode
ui_formRefs/	parameterForm called ec_parameterForm
parameterRefs/	configuration called config
ec_cloudprovisioning_plugin/teardown/	
procedureName	_DeleteNode
ui_formRefs/	–
parameterRefs/	resourceName called resource_name

Deploying Applications With Provisioned Cloud Resources

About the example in this topic:

The example in this topic consists of an application called "Hello World" application with one application process called *Test1*, which has two steps.



Test1 will be deployed in a dynamic environment called *CloudEnv*. You model the CloudEnv environment using the *AWSTest* environment template.



The AWSTest environment template has three tiers:

- Tier 1 and Tier 3 have cloud resources defined in resource templates. These resources can be provisioned when you deploy the application.
- Tier 2 has static resources, which cannot be provisioned.

Starting in the Home page:

- Go to the Applications List.
 - Starting from the Main menu, click the **Menu** button, and then select **Applications**.
 - Starting from the Home page, click **Applications**.

The Applications List opens.

Example:

This example uses the "Hello World" application.

6 Applications					Select	All	Delete	Add
1	Heat Clinic Store 1.1	5 Component	2 Application Process	3 Tier Map				
2	HeatClinic	3 Component	2 Application Process	1 Tier Map				
3	Hello World	2 Component	1 Application Process	0 Tier Map				

- Choose an application, and click the **Run process** button for that application.

Example:

6 Applications					Select	All	Delete	Add
1	Heat Clinic Store 1.1	5 Component	2 Application Proce...	3 Tier Map				
2	HeatClinic	3 Component	2 Application Proce...	1 Tier Map				
3	Hello World	2 Component	1 Application Proce...	0 Tier Map				

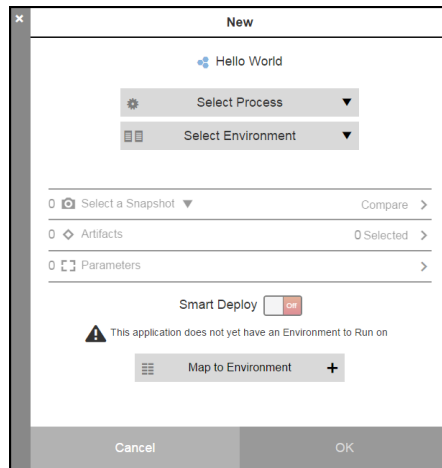
A context menu is shown over the 'Hello World' application row, with options: **New Run** and **Schedule**.

3. Click **New Run**.

The **New** dialog box to deploy the application opens.

See the messages in this dialog box for hints about what you need to do to deploy the application.

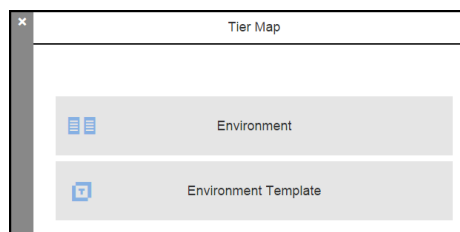
Example:



4. Select the application process to deploy.
5. Click **Map to Environment +** to create a tier map for the application.

The **Tier Map** dialog box opens.

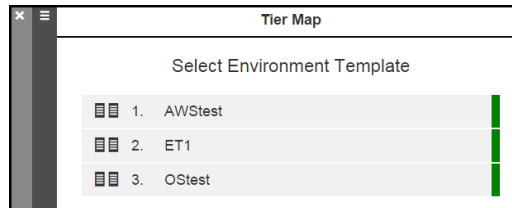
Example:



6. Select **Environment Template**.

The **Tier Map** dialog box to select an environment tier opens.

Example:

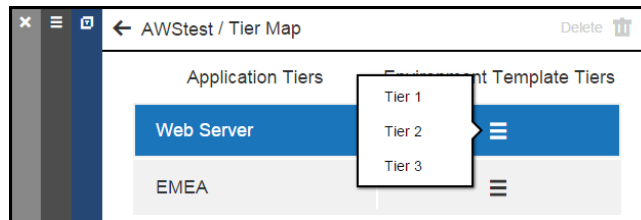


7. Select an environment template.

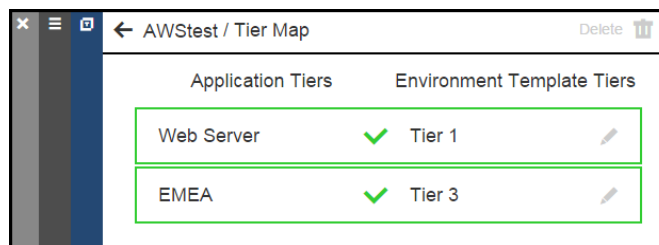
The <Environment template>/Tier Map dialog box opens.

8. For each application tier, click the **Menu** button to select an environment tier to which the application tier is mapped.

Example:



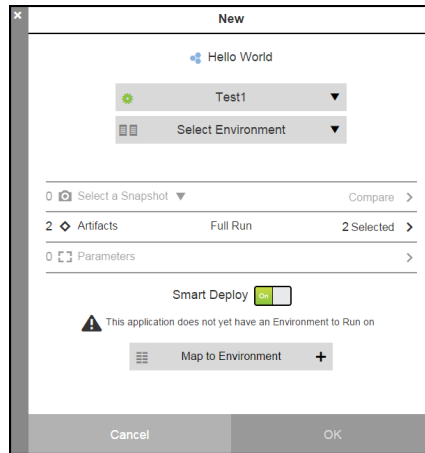
Example:



- Click **OK**.

The **New** dialog box to deploy the application re-opens.

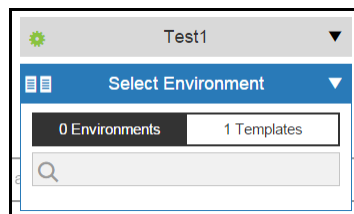
Example:



- Click **Select Environment** to select an environment template.

A list of available environments and environment template based on the tier map opens.

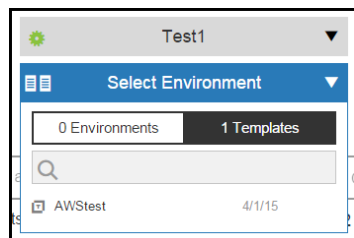
Example:



- Select **1 Templates**.

A list of available environment templates appears.

Example:

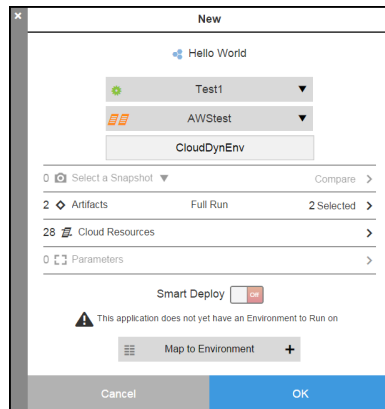


- Click the environment template that you want to use.

13. Enter a name for the dynamic environment.

The **New** dialog box to deploy the application now shows the environment template name below the application process name. It also shows the number of cloud resources provisioned in the environment templates.

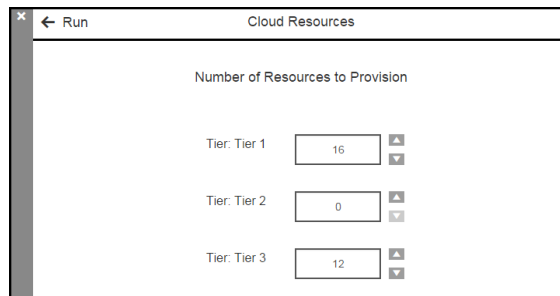
Example:



14. Click in the **Cloud Resources** row.

The **Cloud Resources** dialog box opens.

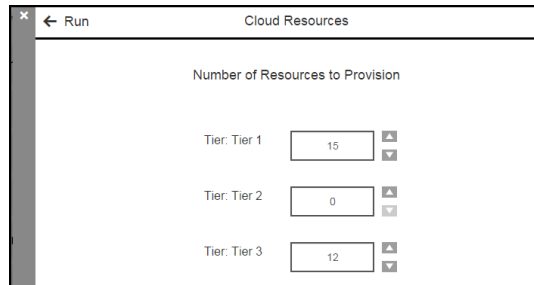
Example:



15. Change the number of cloud resources to provision

Example:

In this example, Tier 1 and Tier 3 have one or more resources to provision because they have cloud resources. You cannot provision resources in Tier 2 because it has only static resources.



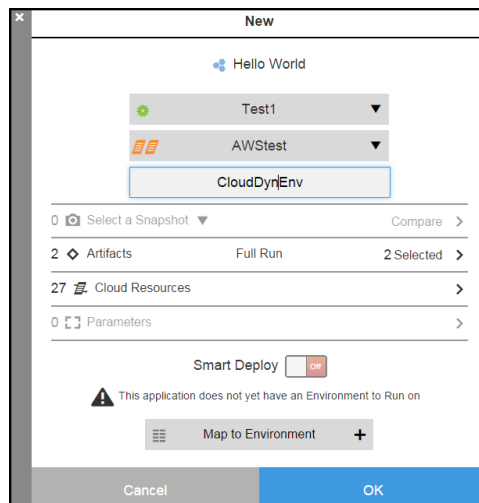
16. Click **OK**.

The **New** dialog box now shows the new number of resources to provision.

The message "This application does not yet have an Environment to Run on" still appears.

When you click **OK**, ElectricFlow first attempts to create the dynamic environment. If this is successful, it deploys the application.

Example:

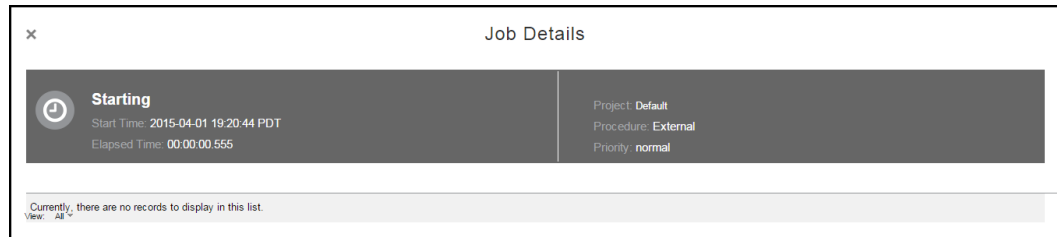


The Applications List opens.

- To view the job details, click the **View Details** button to open to the Job Details page.

ElectricFlow first runs the job to create the dynamic environment. If this job is successful, it deploys the application.

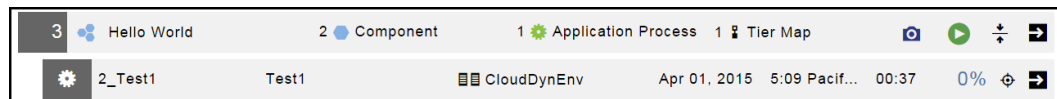
Example:



You can also see the status of jobs as they progress in the Applications List.

Example:

This example shows the Application List when the job starts.



If you provision resources that are not available, such as 20 cloud resources in Tier 1 and 3 static resources in Tier 2, the job to create the dynamic environment fails and the application is not deployed.

Deploying Applications with Parameters

Starting in the Applications List:

- Choose the application that you want to deploy and click the **Run process** button.
- Select **New Run** to deploy the application with new settings.

The **New** dialog box opens.

- Select the application process, environment, tier map, snapshot, artifact, and resource options, as described in other topics in this document.



- In the **Parameters** row, click the button to open a form showing the parameters that apply to the application process.
- Enter information in the fields.
- Click **OK** to save the parameter settings and close the form.

The **New** dialog box now shows what you set in the previous two steps.

The Parameters row shows the number of required parameters. You must enter information for those

parameters to deploy the application.

7. Click **OK** to deploy the application.

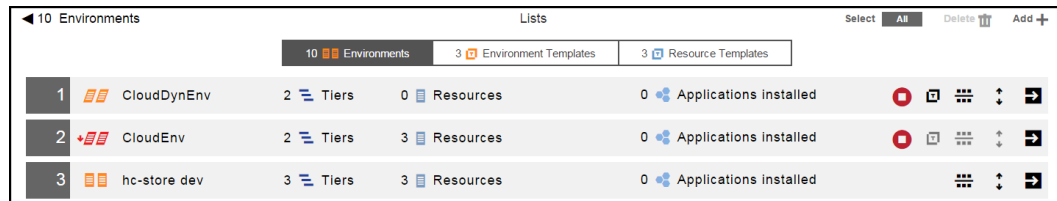
Retiring Dynamic Environments

After you have deployed your application in a dynamic environment, you can retire it and make the cloud resources available for other dynamic environments.

Starting in the Environments List:

1. Choose a dynamic environment.

Example:

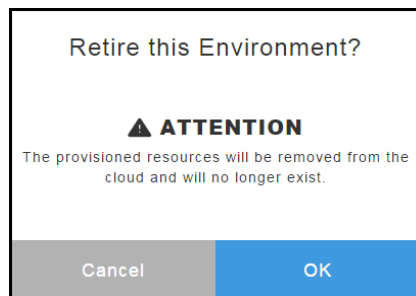


10 Environments					Lists		Select	All	Delete	Add
10 Environments					3 Environment Templates		3 Resource Templates			
1	CloudDynEnv	2 Tiers	0 Resources	0 Applications installed						
2	CloudEnv	2 Tiers	3 Resources	0 Applications installed						
3	hc-store dev	3 Tiers	3 Resources	0 Applications installed						

2. Click the **Tear down** button for that environment.

A message appears.

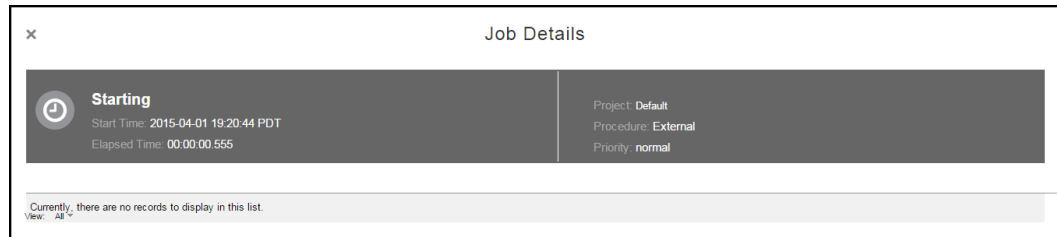
Example:



- Click **OK** to verify that you want to retire the environment.

The Job Details page opens.

Example:



- View the results in the Job Details page.

Dynamic Environment Example with Amazon and Chef

This example shows what you see in the ElectricFlow UI when your dynamic environment is configured with Amazon as the cloud provider and Chef for the configuration management.

Resource Templates

In resource templates, you define cloud resources that will be provisioned for dynamic environments. Examples of cloud resources are a HAProxy server, MySQL server, PHP-FPM server, and Resque server.

This is the Resource Template List.

◀ 0 Environments

Lists

Select

All

Delete


Add


8 Environments


0 Environment Templates

4 Resource Templates

1



 HAProxy_Image

0  Pools


 Amazon


Created: 03/31/15


By: admin

2



 MySQL_Image

0  Pools


 Amazon


Created: 03/31/15


By: admin

3



 PHP-FPM_Image

0  Pools


 Amazon


Created: 03/31/15


By: admin

4



 Resque_Image

0  Pools

 Amazon

Created: 03/31/15

By: admin

These are the cloud provider settings for a resource template. It is defined by cloud provider account credentials and by an Amazon Machine Image (AMI).

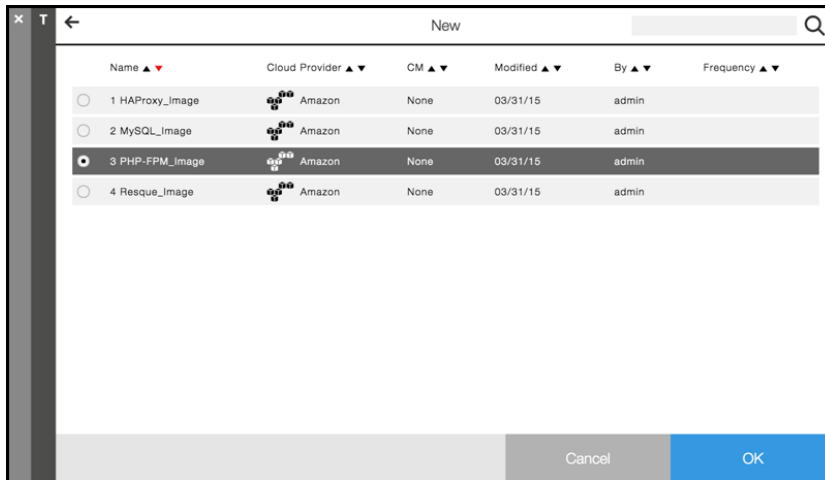
The screenshot shows a web interface for creating a new resource template. The title bar says 'New'. Below it, the 'Resource Template Details' section has two tabs: 'Provider' and 'Configuration Management', with 'Configuration Management' selected. Under 'Account Setup', there are two dropdown menus: 'Amazon' and 'EC AWS 1'. Below these are five text input fields: 'Configuration Name' (filled with 'EC AWS 1'), 'Description' (filled with 'EC2 integration'), 'Service URL' (filled with 'https://ec2.amazonaws.com'), 'Resource Pool' (filled with 'cloud_servers'), and 'Workspace' (filled with 'default'). At the bottom right are 'Cancel' and 'Next' buttons.

These are the configuration management settings for a resource template. It calls a Chef recipe to configure the cloud resources. You can configure the resources with other recipes or predefined configuration, such as a MySQL stack configuration or a HAProxy load balancer configuration.

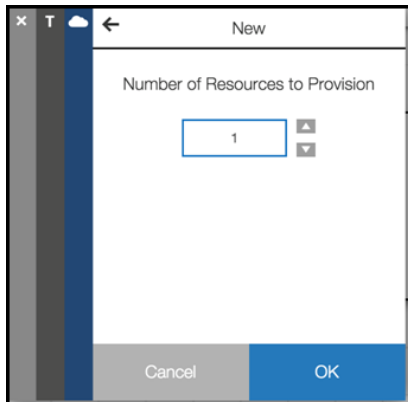
The screenshot shows the same web interface but with the 'Provider' dropdown set to 'Chef'. The 'Configuration Management' tab is still selected. The 'Account Setup' section now has a 'Select account' dropdown. Below it are three text input fields: 'Configuration Name' (filled with 'EC-SJ-ChefServer'), 'Description' (filled with 'Chef configuration'), and 'Chef Server URL' (filled with 'https://ce.chefserver.internal.com/123'). There is also a small 'I login as:' label with a user icon. At the bottom right are 'Cancel' and 'Next' buttons.

Environment Templates

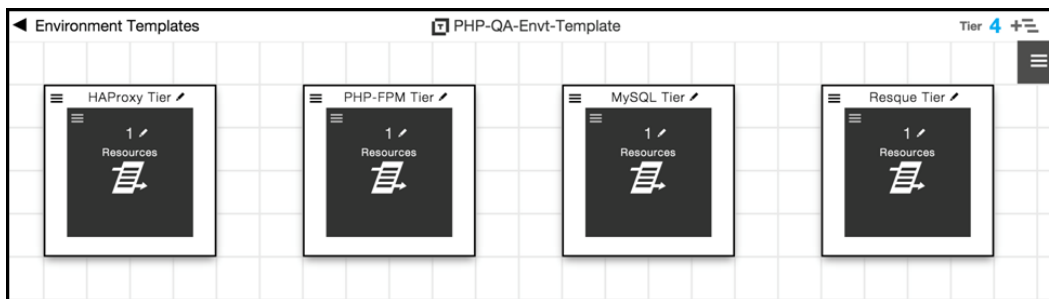
When you create a new environment template, you can add one resource template to an environment tier. These are the resource templates from which you can select.



After you select a resource template and click **OK**, you enter the number of resources to provision in an environment tier.

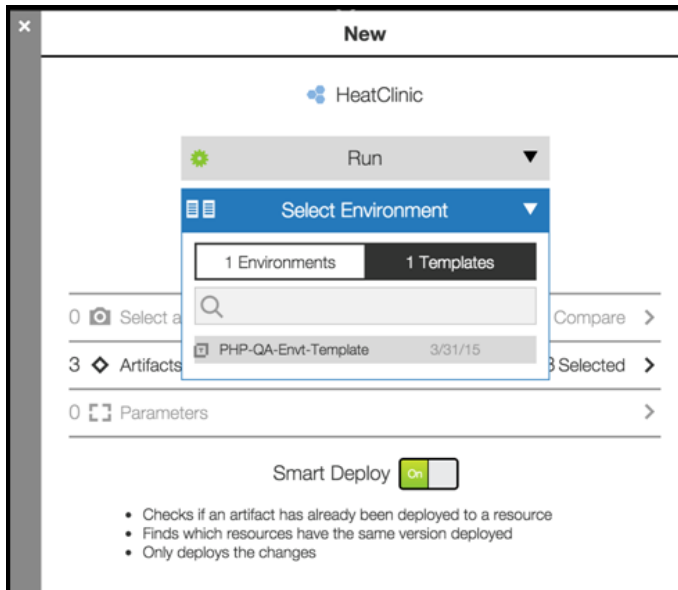


This is an environment template with four tiers. Each tier is configured with a resource template, and resource template has a provisioned resource.



Deploying Applications to Dynamic Environments

After you select an application to deploy, you select the application process to run and the environment in which to deploy the application.



To deploy the application in a dynamic environment, you can select an environment template. A dynamic environment is created with the provisioned cloud resources. After the resources are provisioned and the dynamic environment is created, the application is deployed.

You can view the status of the provisioning process.

Applications / View Run						admin Running: HeatClinic - Run on 4.1.15-PHP-...		Errors 0	
10_Run_HeatClinic_Default_201503311031...	Mar 31, 2015	10:31 PDT	00:19	0%					
Provisioning - 4.1.15-PHP-QA - HAProx...	Mar 31, 2015	10:31 PDT	00:14	25%					
Provisioning - 4.1.15-PHP-QA - MySQL...	Mar 31, 2015	10:31 PDT	00:14	25%					
Handle Provisioning and Configuring Err...	Mar 31, 2015	10:31 PDT	00:00	0%					

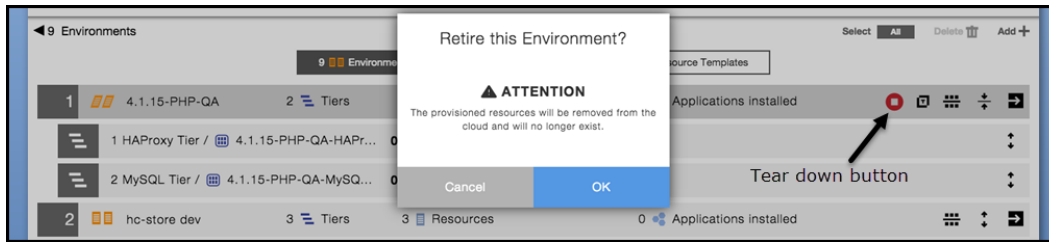
Retiring Dynamic Environments

After the provisioning process completes, the new dynamic environment appears in the Environments List.

9 Environments						Lists		Select All Delete Add	
1	4.1.15-PHP-QA	2 Tiers	0 Resources	0 Applications installed					
	1 HAProxy Tier / 4.1.15-PHP-QA-HAPr...	0 Resources							
	2 MySQL Tier / 4.1.15-PHP-QA-MySQL...	0 Resources							
2	hc-store dev	3 Tiers	3 Resources	0 Applications installed					

You can retire dynamic environments on an on-demand basis to prevent excessive use of cloud resources and reduce costs.

You click the **Tear down** button to retire the selected dynamic environment.



Process Branching

This section describes Processing Branching and how to use it.

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. <i>Run</i> is a synonym of <i>deploy</i> in ElectricFlow.	All the processes or actions to use software in its environment, including implementing, installing, configuring, debugging, troubleshooting, and releasing.

About Process Branching

Starting in ElectricFlow 5.1, you can use process branching to specify the path through an application or component process based on transition conditions other than out-of-the-box options. Decisions about the next step in the process are made while the process runs. This is similar to the transition conditions for workflows in the ElectricCommander platform.

If the application or component process applies to multiple use cases, you can design one process with two or more branches instead of designing multiple processes for each use case. You can also define steps that run in parallel.

For example, to install or upgrade software, you can define one process for multiple use cases and use the same steps except for the following:

- The source files can be in .zip or .tar format. The steps to extract the files depend on the format.
- The operating system can be Linux or Windows. The steps to download the files, install them on the server, and enter commands depend on the operating system.

ElectricFlow supports the following branching conditions. The default is **Always**.

- Completion status of the previous process step
- A property set in another part of the system, not the in the previous step
- Custom validation rules

When you define a step in an application or component process, you configure what ElectricFlow does when an error occurs. You select **stop running** or **continue running** in the On Error field in the Define Step dialog box. *This setting overrides any job-step-level branching condition.* If an error occurs in a job step and the **stop running** is set, ElectricFlow aborts even if the branching condition is fail.

How to Use the Process Branching UI

How to get to the Application Process Visual Editor:

- Existing application process: From the Applications Visual Editor, click the down-arrow button and select an application.

The Application Process Visual Editor for that application process appears.

- New application process: From the Applications Visual Editor, click the **Add application process** button, set the parameters in the **Application Process Details** dialog box, and click **OK**.

The Application Process Visual Editor for the application process appears.

How to get to the Component Process Visual Editor:

- Existing component process: From the Applications Visual Editor, click the **Number of component processes** button, and select a component process in the drop-down list.

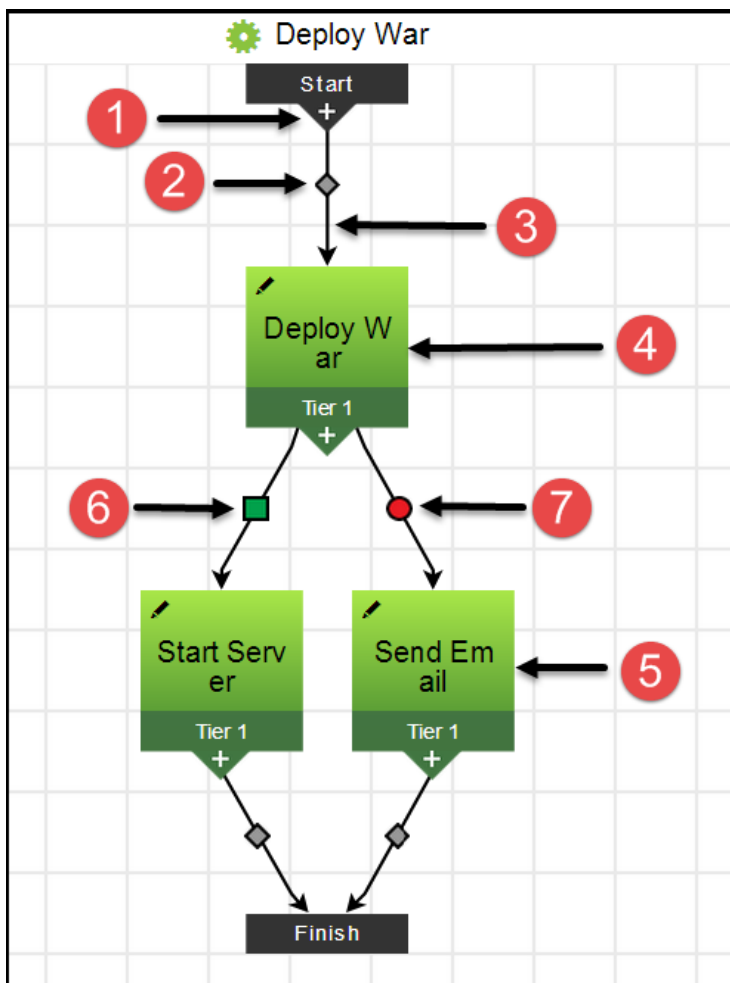
The Component Process Visual Editor for that component process appears.

- New component process: From the Applications Visual Editor, click the **Add component process** button to a component, set the parameters in the **Component Process Details** dialog box, and click **OK**.

The Component Process Visual Editor for the component process appears.

UI Objects

This example shows how a process appears in the ElectricFlow UI.



The process has these UI objects:

1	<p>Click the plus sign (+) to add a step after the selected step.</p> <p>In this example:</p> <ul style="list-style-type: none"> • When you click the plus sign, a new step is added after the Start and parallel to the existing next step called Deploy War. • The steps immediately after the "Deploy War" step are parallel steps. The decision about the next step, either the "Start Server" or the "Send Email" step, depends on the branching condition. The results of the "Deploy War" step determine what the next step is. <ul style="list-style-type: none"> ◦ If the results of the "Deploy War" step are successful (shown by the square green connector), the next step is the "Start Server" step. ◦ If the results fail (shown by the circular red connector), the next step is the "Send Email" step.
2	<p>Connector between two objects in the process. The default branching condition is Always.</p> <p>When you click the connector, the branching conditions menu opens.</p>

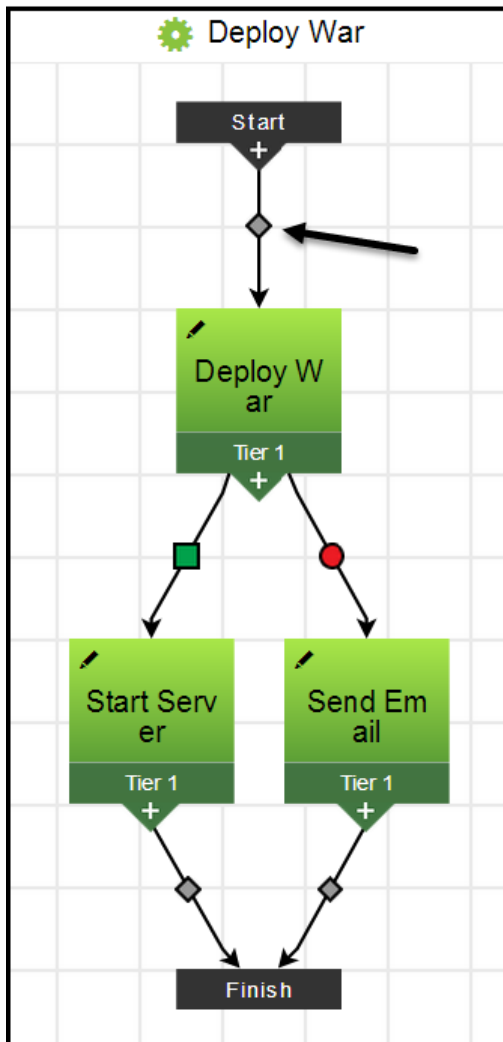
3	Link between two steps in the process. The link goes from the source step to the target step.
4	Source–The link starts at this step. For the link between the "Deploy War" and the "Send Email" steps, the source is the "Deploy War" step.
5	Target–The link ends at this step. For the link between the "Deploy War" and the "Send Email" steps, the source is the "Send Email" step.
6	The branching condition is Successful . If the War file is run successfully in this example, the next step is Start Server.
7	The branching condition is Failure . If the file is not run in this example, the application fails and the next step is to send an email to the administrator.

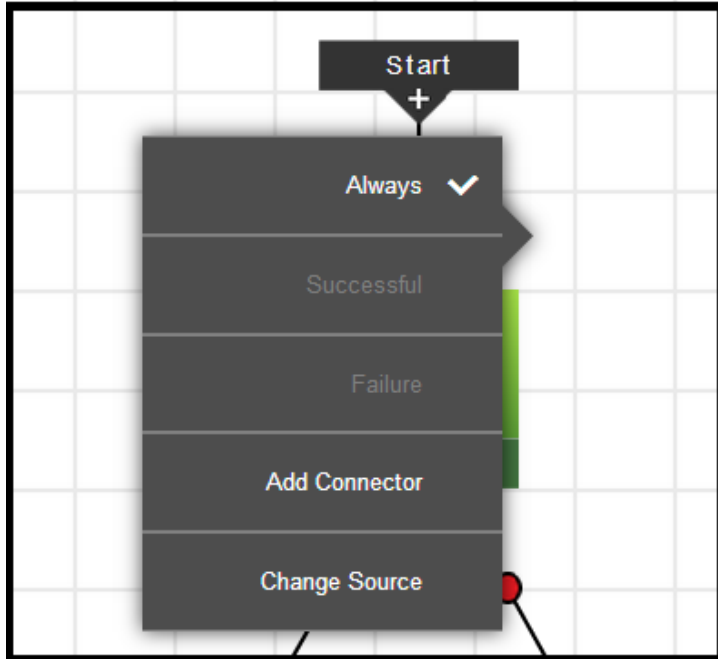
Branching Conditions Menu

When you click a connector on a link, the branching conditions menu opens. Depending on the location of the connector, some of the menu options may not be available. These are possible branching conditions:

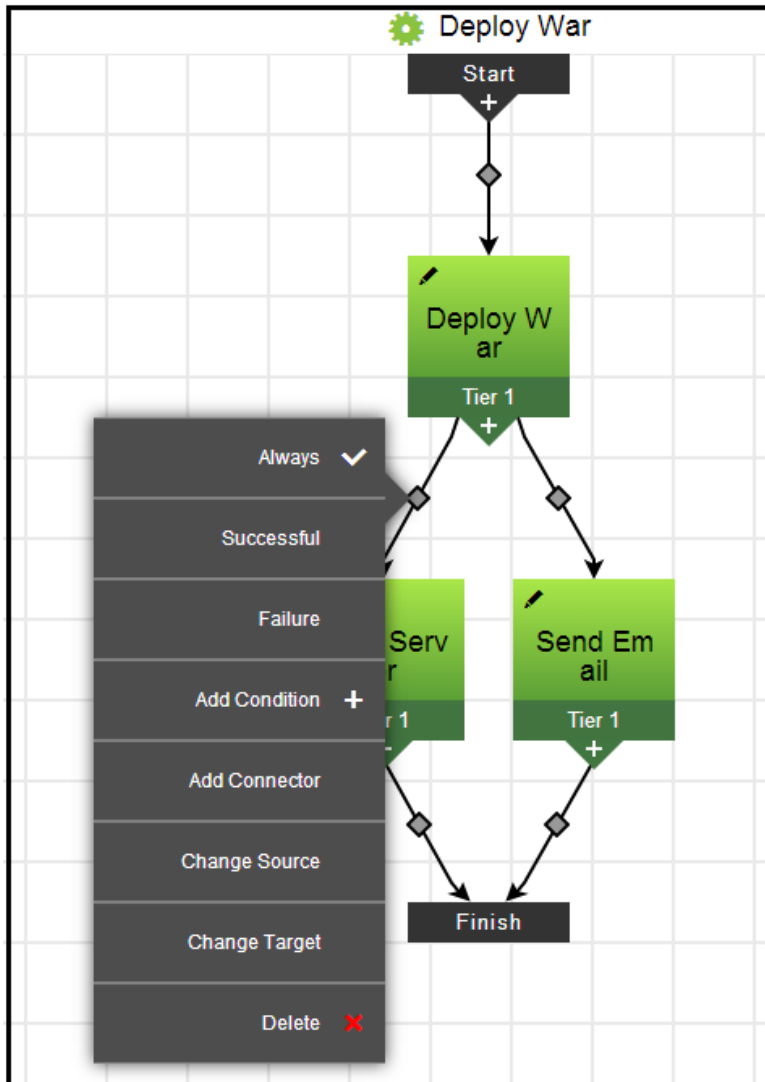
- **Always**–Always go to the next step, referred to as the target.
- **Successful**–Go to the next step if the previous step, referred to as the source, is successful.
- **Failure**–Go to the next step if the previous step fails.
- **Add Condition**–Add a custom condition.
- **Add Connector**–Add a connector from the source of the link to a new target by selecting one of the highlighted eligible steps. You can only select an eligible step.
- **Change Source**–Change the source by selecting one of the highlighted eligible steps, which has a red outline. You can only select an eligible step.
- **Change Target**–Change the target by selecting one of the highlighted eligible steps, which has a red outline. You can only select an eligible step.
- **Delete**–Delete the selected connector and link.

For example, when you select the connector between the Start and "Deploy War" steps, only some of conditions appear and only some are available. The condition between the Start and the next step is **Always**, the default branching condition.



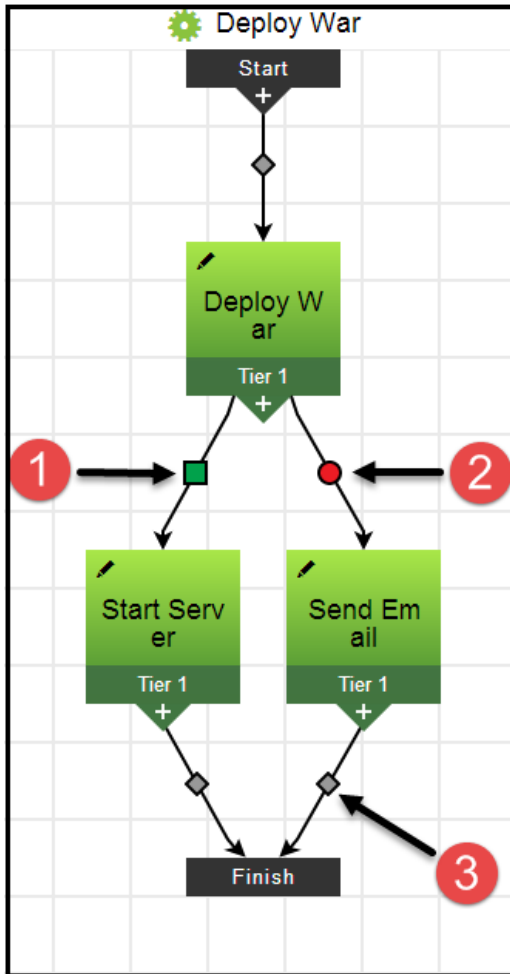


When you select the connector between the "Deploy War" and "Start Server" steps, all of the these conditions appear.



Analysis of a Process With Simple Branching

This example shows a process with simple branching that runs the War file. For the steps to design this example, see [Simple Process Branching Example](#) on page 348.



1	The branching condition is Successful . If the War file is run successfully, the next step is Start Server.
2	The branching condition is Failure . If the file is not run successfully, the application fails and the next step is to send an email to the administrator.
3	The branching condition is Always .

The example has the following job-step branching dependencies:

Source	Target	Branching Condition
Deploy War	Start Server	Successful
Deploy War	Send Email	Failure

Process Branching States and Conditions

State of the Branching Condition Connectors in the UI

In the ElectricFlow UI, the status of the link is based on the shape and color of the connector.

Shape	Color	Link Status
Diamond	Light gray	Always
Diamond	Dark gray	Disabled
Square	Green	Successful
Circle	Red	Failure

Examples of Branching Conditions

These are examples of branching conditions that you can apply in your processes.

- Based on the status of the previous step

Follow the branch based on the result of the previous step: Successful, Failure, or both (Always).

Example:

- **Successful**—If the file is downloaded successfully, the next step is to extract the files.
- **Failure**— If the file was not downloaded properly, the next step is to abort the process.
- **Always**—The next step is to always extract the files.

- Based on a value of an operation during the step

Follow the branch that matches the result of an operation such as calculating a value or processing data during the step.

Example: The result of an operation is a file type.

- If the result is an XML zip file, the next step is open an XML text editor.
- If the result is a .htm file, open a web browser.
- If the result is a .mov, open an application to play the movie.

- Based on a property in another part of the system

Follow the branch based on a property set in another part of the system, not in the previous process step.

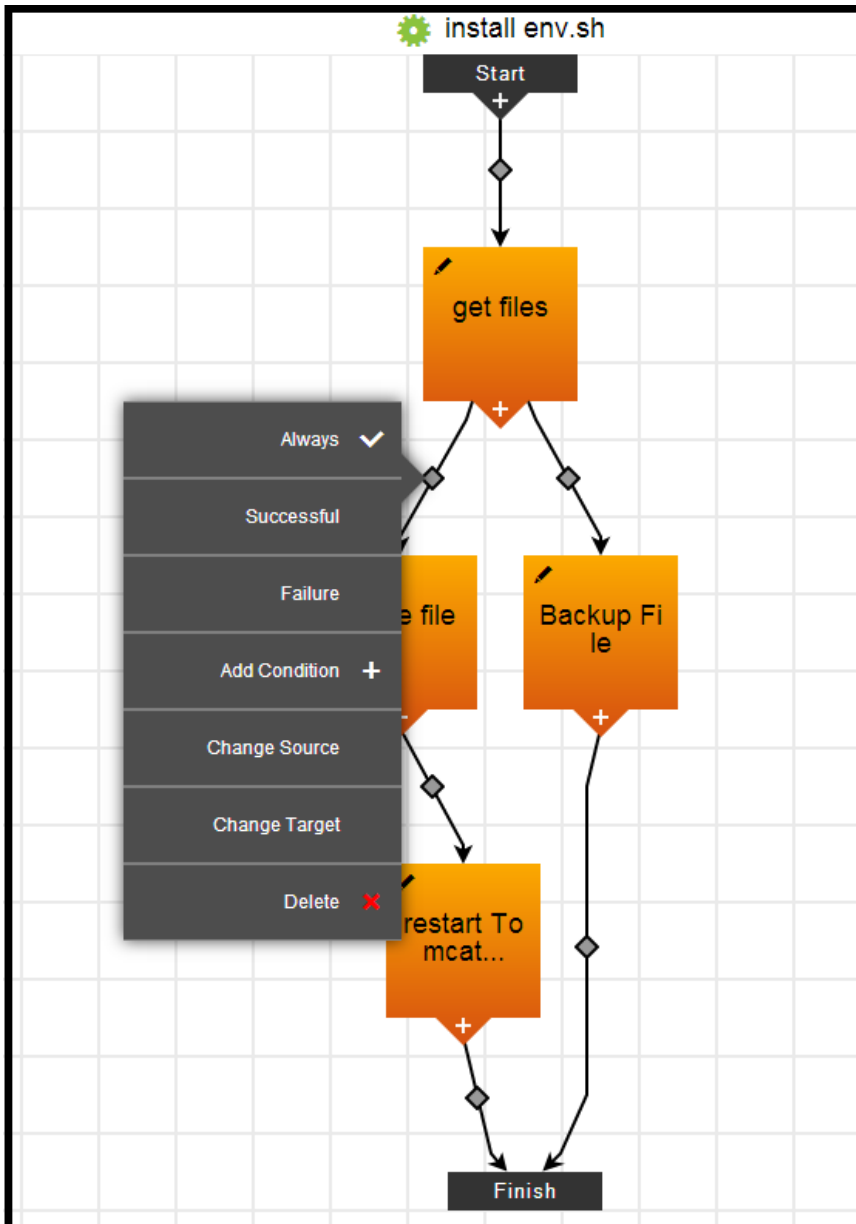
Example:

- If the property `os_type = linux` is set on a resource, always follow the branch for Linux steps.
- If the property `release_type` is set to minor in the application, always follow the branch for minor releases when running the process.

Custom Conditions in Process Branching

How to get here: In a component or application process with branching, click the connector on a link to open the branching options menu.

In this example, click the connector between the "Deploy War" and "Start Server" steps, and select **Add Condition** to add a custom condition.

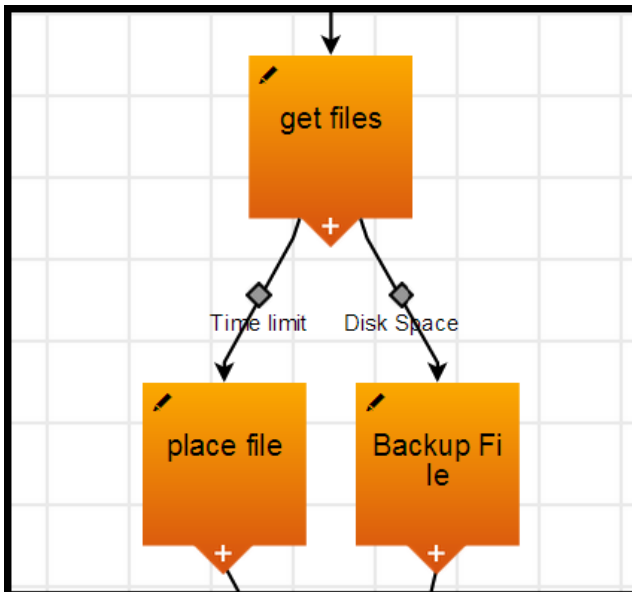


The Condition dialog box opens.

When you click the connector between the "Deploy War" and "Start Server" steps, these conditions appear:

- **Always**—Always go to the next step, referred to as the target.
- **Successful**—Go to the next step if the previous step, referred to as the source, is successful.
- **Failure**—Go to the next step if the previous step fails.
- **Add Condition**—Add a custom condition.
- **Add Connector**—Add a connector from the source of the link to a new target by selecting one of the highlighted eligible steps. You can only select an eligible step.
- **Change Source**—Change the source by selecting one of the highlighted eligible steps, which has a red outline. You can only select an eligible step.
- **Change Target**—Change the target by selecting one of the highlighted eligible steps, which has a red outline. You can only select an eligible step.
- **Delete**—Delete the selected connector and link.

After you configure your conditions, they appear near the affected connectors in the process.



When you configure a **Property based** condition, the fields in the Condition dialog box remain the same .

When you configure a **Custom** condition, the fields change.

Condition [X] Delete [X]

[Condition Name]

Property based... ☐ Custom ☒

Cancel OK

Configuration Guidelines for Process Branching

Follow these guidelines when you use process branching in your application or component processes.

- When you add a step, you must define it before adding another step.
- You can only configure branching conditions on a connector between two process steps.
- You cannot configure branching conditions between these objects:
 - The start of the process and the steps immediately after it.
 - The end of the process and the steps immediately before it.
- You cannot configure branching conditions between these objects:
 - The start of the process and the steps immediately after it.
 - The end of the process and the steps immediately before it.
- When you define a step in an application or component process, you configure what ElectricFlow does when an error occurs.

Select **stop running** or **continue running** in the **On Error** field in the Define Step dialog box. *This setting overrides any job-step-level branching condition.*

If an error occurs in a job step and the **stop running** is set, ElectricFlow aborts even if the branching condition is set to Failure.

Simple Process Branching Example

How to get to the Application Process Visual Editor:

- Existing application process: From the Applications Visual Editor, click the number-and-down-arrow button and select an application. The Application Process Visual Editor for that application process appears.
- New application process: From the Applications Visual Editor, click the **Add application process** button, set the parameters in the **Application Process Details** dialog box, and click **OK**. The Application Process Visual Editor for the application appears.

How to get to the Component Process Visual Editor:

- Existing component process: From the Applications Visual Editor, click the **Number of component process** button, and select a component process in the drop-down list. The Component Process Visual Editor for that component process appears.
- New component process: From the Applications Visual Editor, click the **Add component process** button to a component, set the parameters in the **Component Process Details** dialog box, and click **OK**. The Component Process Visual Editor for the component process appears.

This example shows how to design a new process and run the War file.

- If the application succeeds, ElectricFlow starts the server.
- If the application fails, ElectricFlow sends an email to the administrator.

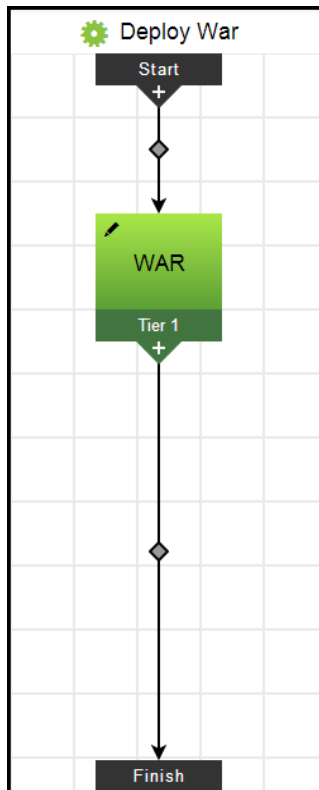
Beginning in the Application Process or Component Process Visual Editor:

1. Click the button below "Define this Step."

The process step dialog box appears.

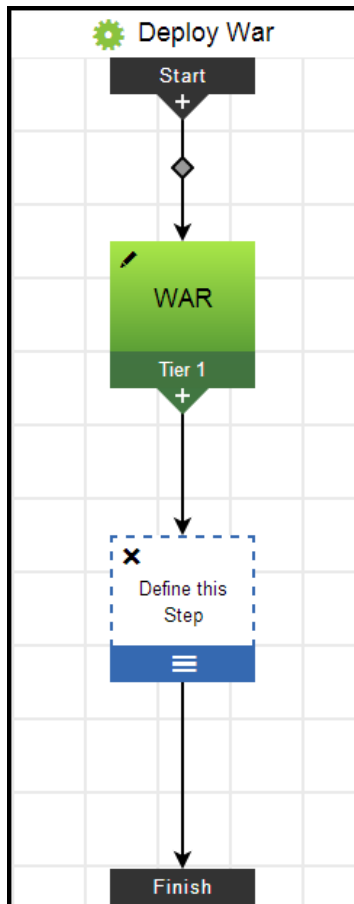
2. Configure the step.

The first step is now configured.

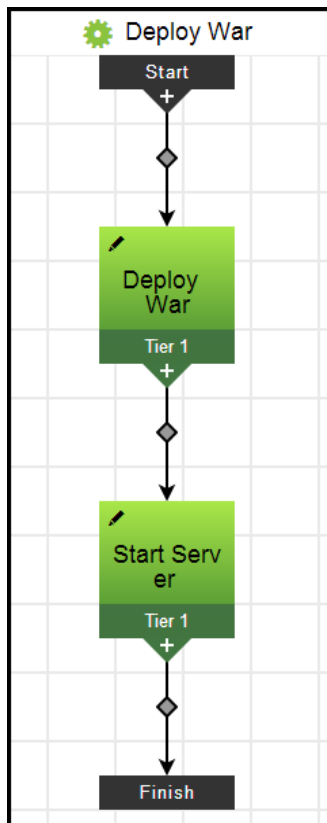


3. To add a step below the first step, click the plus sign (+) below the tier name in the first step.

A new undefined step appears below the first step.

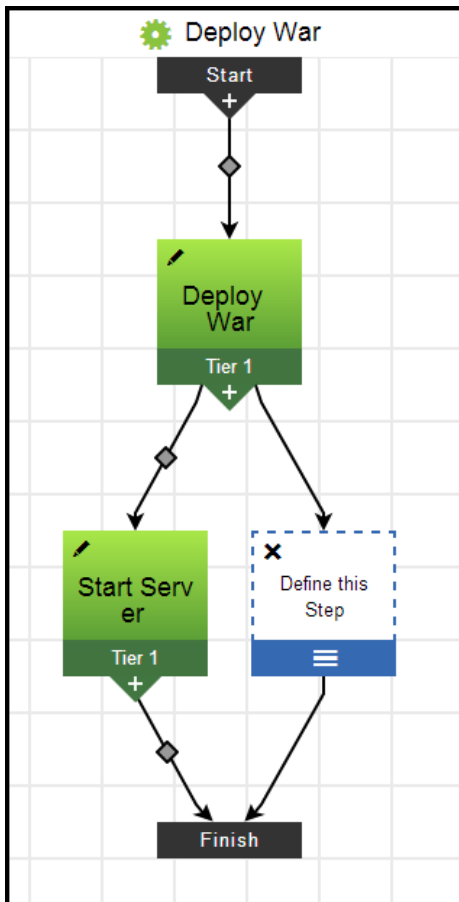


4. Define the new step.

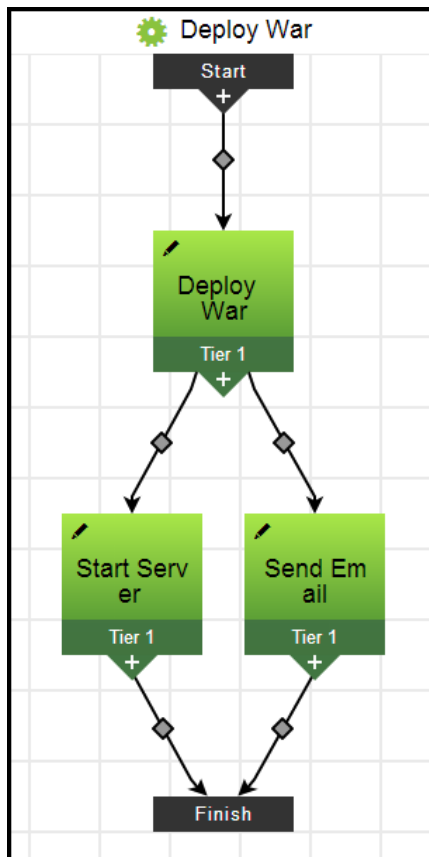


5. To add a step that will be parallel to the second step, click the plus sign in the first step.

A new undefined step appears below the first step and parallel to the second step.

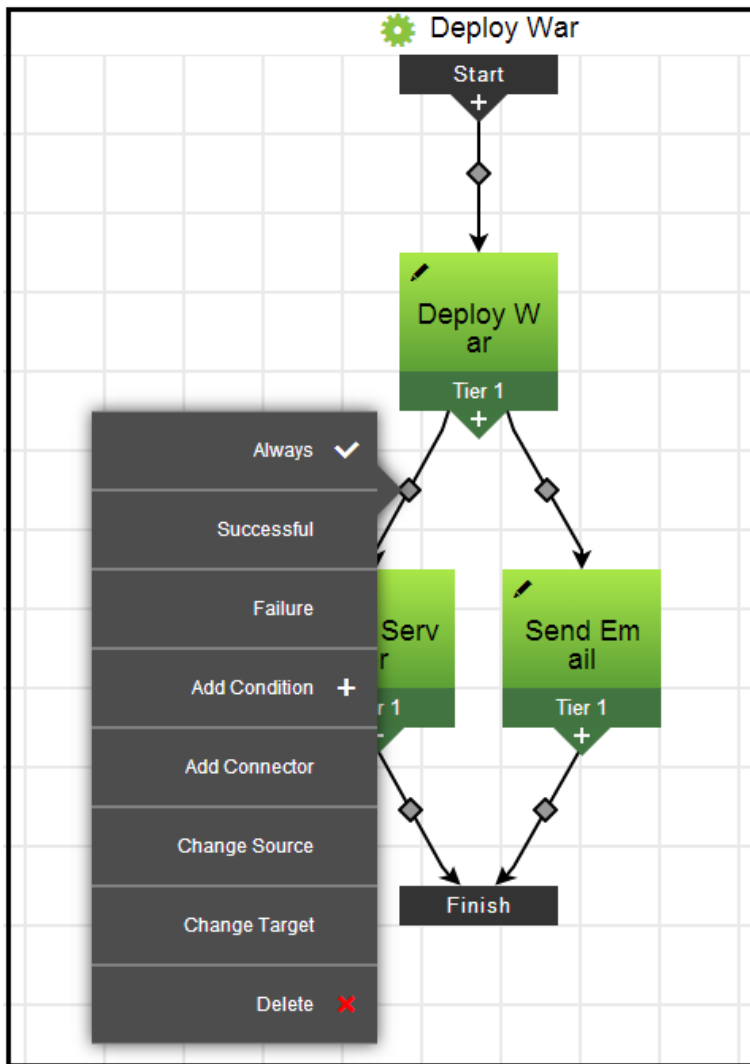


6. Define the third step.



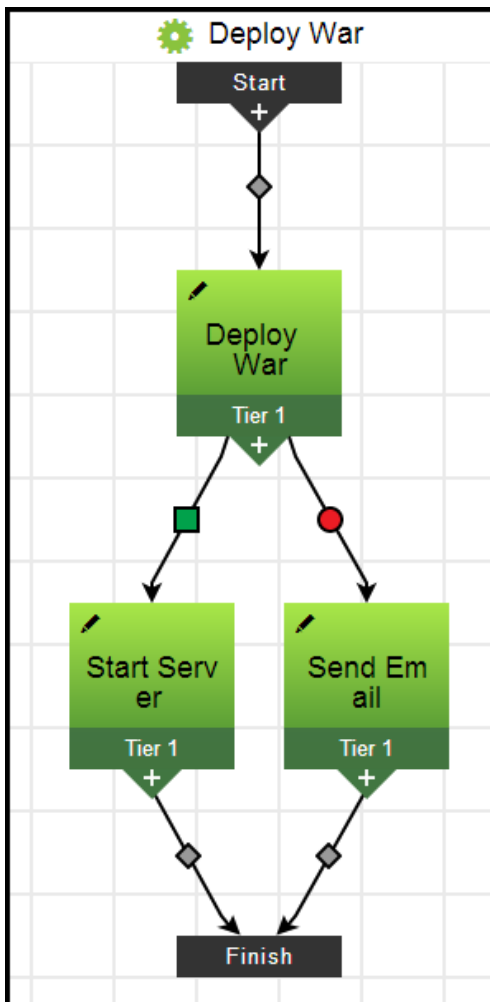
7. To configure the branching condition between the "Deploy War" step and the "Start Server" step, click the connector between them.

The branching conditions menu opens.



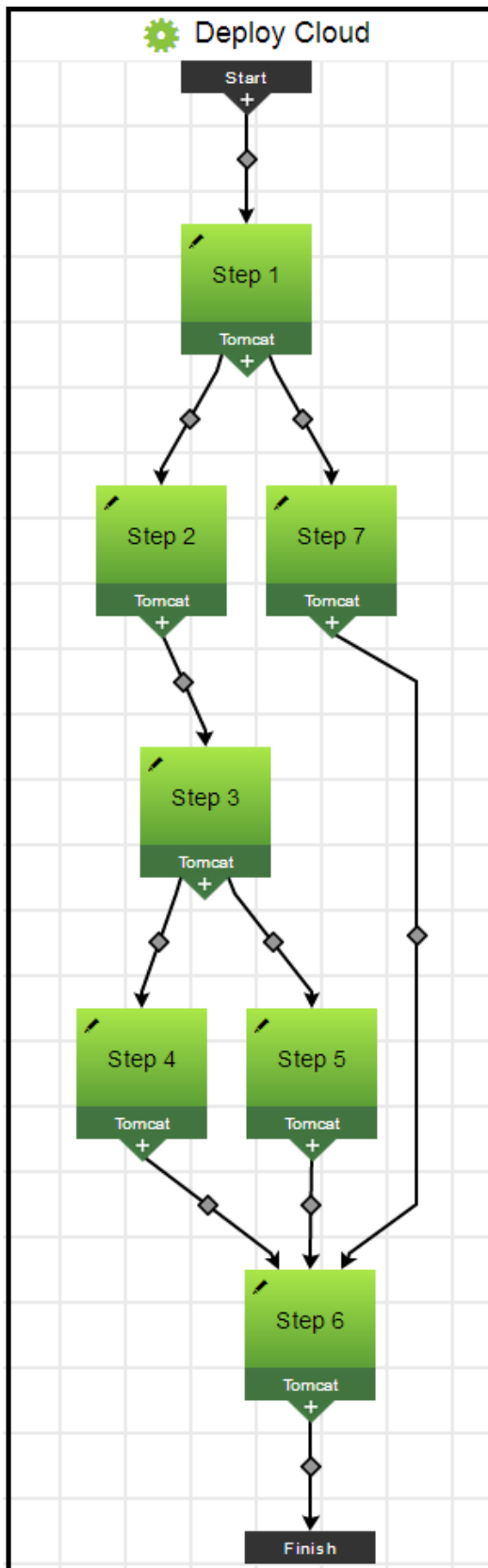
For the "Start Server" step, select **Successful**.

8. To configure the branching condition between the "Deploy War" step and the "Send Email" step, click the connector between them, and select **Failure** in the branching conditions menu.



Process Branching Example: Deleting Steps

This example shows how a process changes when you delete process steps.



Deleting Step 3

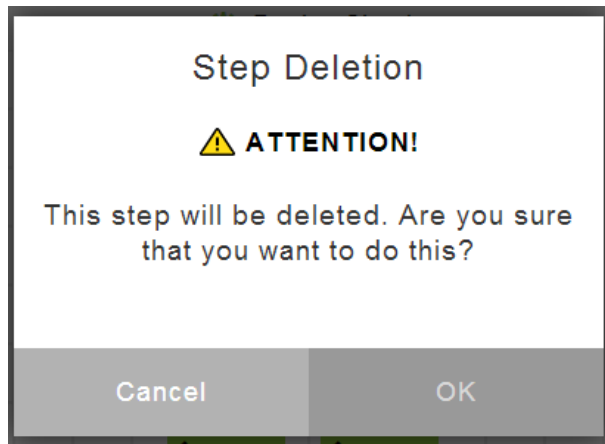
To delete Step 3:

1. Click the **Edit** button on Step 3.

The step details menu appears.

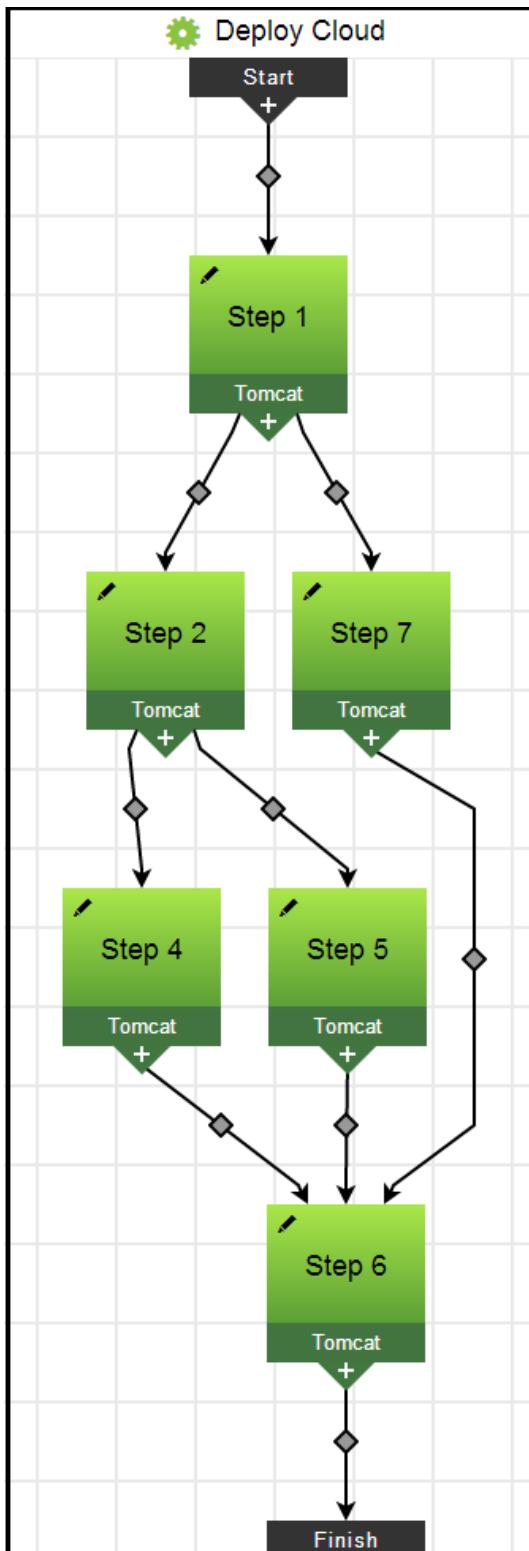
2. Click **Delete**.

The Step Deletion dialog box appears.



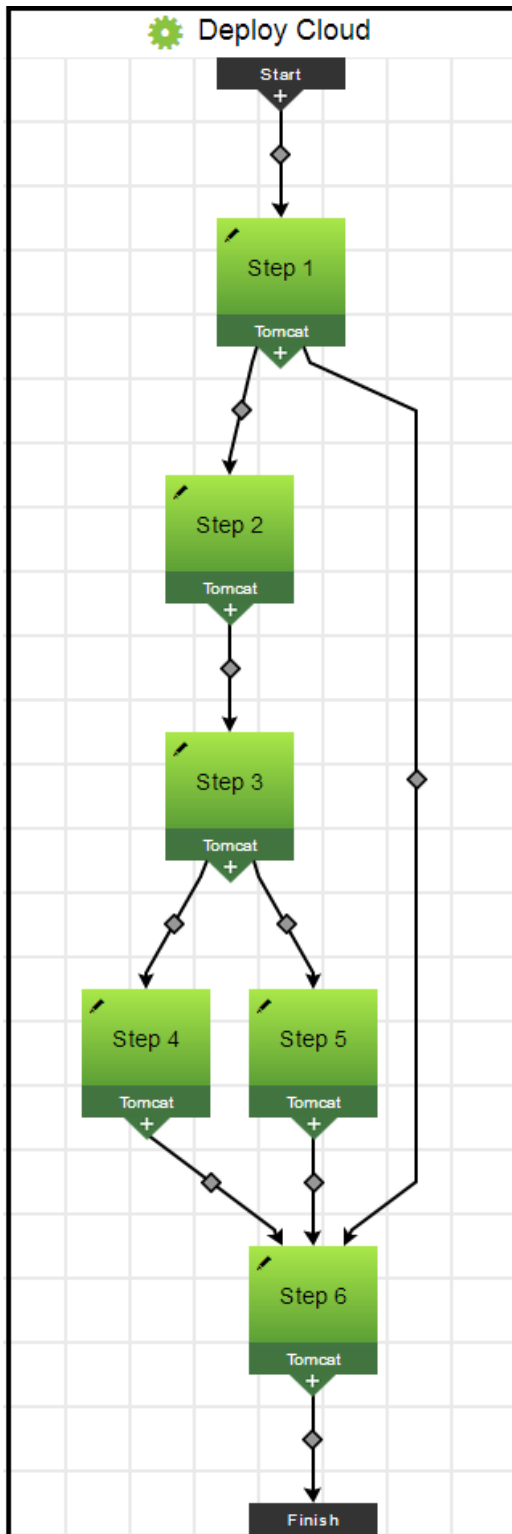
3. Click **OK** to delete the step.

When you delete Step 3, Step 2 becomes the source for Step 4 and Step 5.



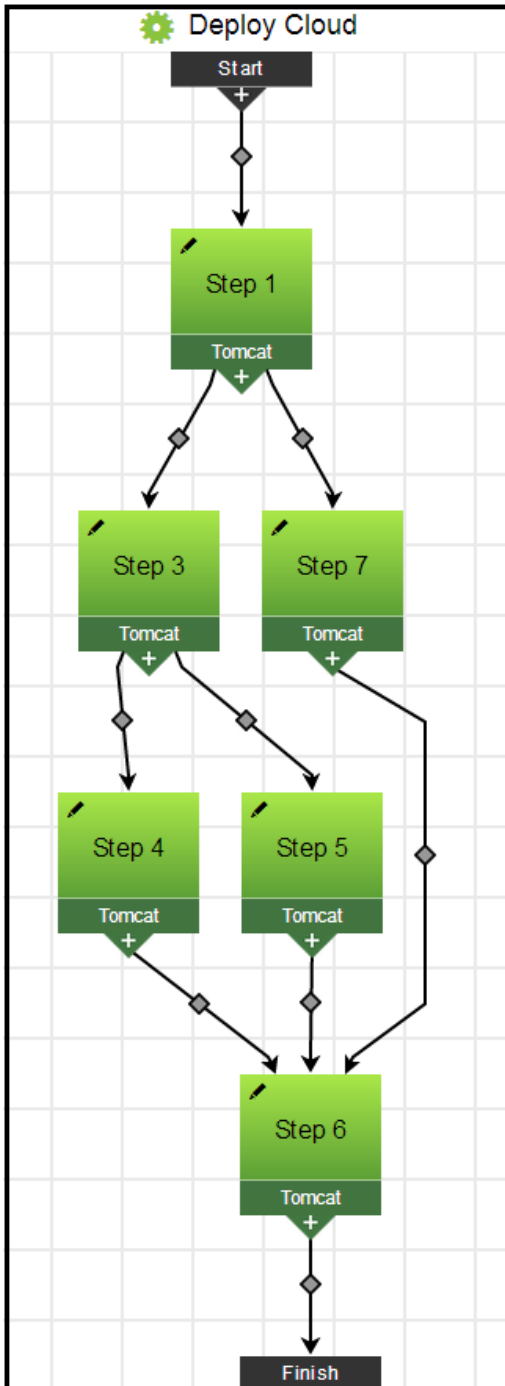
Deleting Step 7

Step 1 becomes the source for Step 6.



Deleting Step 2

Step 1 becomes the source for Step 3.



Change Tracking

ElectricFlow tracks the changes to tracked entities in objects including applications, procedures, workflows, workspaces, resources, and project-owned components such as library components and records a *change history* of the historical states of the system and the changes between them.

Using Change Tracking with snapshots makes it easier to deploy reliable and repeatable software in a continuous delivery cycle.

In the Change History, you can do the following:

- When you are debugging a failed job or want to more information about a component, see the change history for the changes relevant to that object.
- When you search for specific change history records, filter the records by time frame, change type, entity type, or developer.
- Revert changes to an object or to an objects and its children.
- When you want to determine the differences between objects, export them at various levels in the object hierarchy.

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. <i>Run</i> is a synonym of <i>deploy</i> in ElectricFlow.	All the processes or actions to use software in its environment, including implementing, installing, configuring, debugging, troubleshooting, and releasing.

Configuring Change Tracking

Change Tracking must be enabled when ElectricFlow starts for your system to track changes and record the change history.

By default, Change Tracking is enabled.

Enabling Change Tracking Globally

When you are installing ElectricFlow:

1. Add this line to the `database.properties` file:

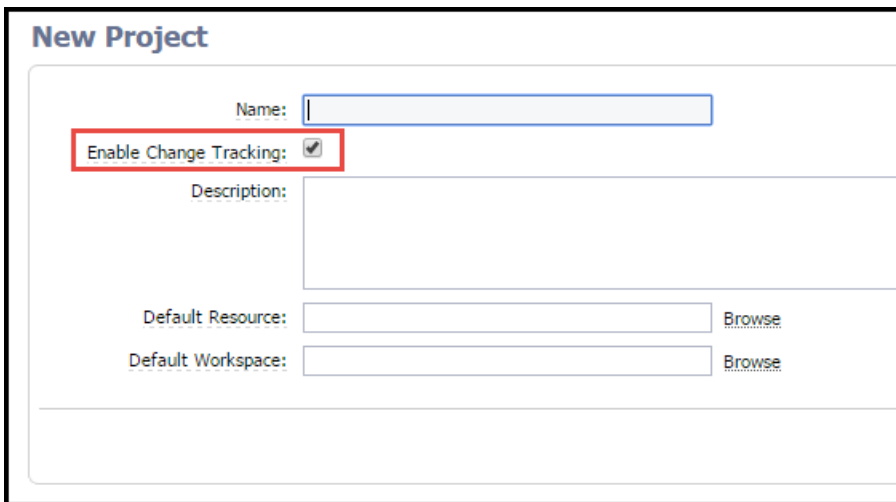
```
COMMANDER_DB_AUDITING_ENABLED=true
```

2. Restart the ElectricCommander server.

Enabling Change Tracking on a Per-Project Basis

In the ElectricCommanderUI:

Change Tracking is enabled by default on a project:



The screenshot shows the 'New Project' dialog box. It has a title bar 'New Project'. Inside, there is a 'Name:' label followed by a text input field. Below that is a checkbox labeled 'Enable Change Tracking:' which is checked, and this entire row is highlighted with a red rectangular box. Below the checkbox is a 'Description:' label followed by a large text area. At the bottom, there are two rows: 'Default Resource:' with a text input field and a 'Browse' button, and 'Default Workspace:' with a text input field and a 'Browse' button.

To disable Change Tracking, click to clear the **Enable Change Tracking** check box. and click **OK**.

In ectool:

- Enter `ectool modifyProject <projectName> --tracked true` to enable Change Tracking.
- Enter `ectool modifyProject <projectName> --tracked false` to disable Change Tracking.

In ec-perl:

- Enter `$cmdr->modifyProject(<projectName>, {tracked => true});` to enable Change Tracking.
- Enter `$cmdr->modifyProject(<projectName>, {tracked => false});` to disable Change Tracking.

Upgrading to ElectricFlow 5.4

Change Tracking is enabled when you upgrade to ElectricFlow 5.4. This can significantly increase the time it takes to complete the upgrade.

If you want to upgrade with Change Tracking disabled, add this line to the `database.properties` file before starting the upgrade:

```
COMMANDER_DB_AUDITING_ENABLED=false
```

Customizing the Change History Page

The performance of the Change Tracking feature is affected by number of records in the Change History as well as the number of entries being tracked. For example, a page showing 5000 entries may be slow to load and update and does not provide much useful information.

These Commander server uses the lowest of the following limits to determine the maximum amount of records to display in the Change History page:

- Maximum amount of records on the Change History page

To change the maximum number of records in the Change History page:

1. Set the `CHANGE_TRACKING_HARD_MAX_RECORDS` parameter in the `wrapper.conf` file to a new value.

The default value is 1000.

2. Restart the ElectricCommander server.

- Maximum number of records retrieved

Set the `TrackingMaxRecords` server setting to a new value not exceeding the `CHANGE_TRACKING_HARD_MAX_RECORDS` parameter in the `wrapper.conf` file.

To set `TrackingMaxRecords`, do one of the following:

Change the value in the UI. See the Server Settings page in the ElectricCommander automation platform UI.

Use `ectool` to change the value. For example, enter the following command to limit the number of records retrieved to 100:

```
ectool setProperty /server/settings/changeTrackingMaxRecords --value 100
```

Usage Guidelines

Be aware of these known issues:

- You can ignore warnings about Change Tracking in the log file that start with the "Unable to safely follow an Acl parent chain upwards while trying to figure out whether to have Envers audit an Acl" string. These warnings are added to the log file when Change Tracking is enabled and running.
- The `beforePATH` and `afterPATH` values in the change history records for the deletion of objects are often incorrect or missing.

Viewing the Change History

You can open and view the change history from the following objects in ElectricFlow:

- Applications List
- Applications Visual Editor
- Application Process Designer
- Artifacts
- Component
- Component Process Designer
- Environments Designer
- Environment Tier
- Jobs
- Process Step (Application or Component)
- Projects
- Resources
- Workflows

Related Topics:

[Viewing the Change History from the Applications List](#) on page 364

[Viewing the Change History from the Applications List](#) on page 364

[Viewing the Change History for Artifacts, Jobs, Projects, and Workflows](#) on page 372

Viewing the Change History from the Applications List

You may want to view the Change History for these objects in an application:

- An application process that did not run successfully

4	JPetStore	1 Component	1 Application Process	4 Tier Map	
5	Test	1 Component	1 Application Process	1 Tier Map	
7_Proc	Proc	Env	Dec 04, 2014 11:08 Pac...	00:06	100%
6_Proc	Proc	Env	Dec 04, 2014 10:45 Pac...	00:07	100%
5_Proc	Proc	Env	Dec 04, 2014 10:12 Pac...	00:05	100%

- Component or component process in an application process that did not run successfully

setup database	Dec 04, 2014 10:11 Pac...	03:4...	50%
Create database	Dec 04, 2014 10:11 Pac...	03:4...	50%

- Resource that was not deployed successfully

Starting from the Home page:

1. Go to the Applications List.
2. Choose an application.
3. Click the **View** button.

Example:



A list of the application processes for the application appear.

4. To view the Change History of an application process:
 - a. Choose a process.
 - b. Click the **Change History** button.

Example:



The Change History for the application process opens.

5. To view the change history for an object in the application process,
 - a. Click the **View Details** button.

A list of objects in the application process (components and component processes) appears, and the breadcrumb changes to *Applications/View Run*.

- b. Choose an object.
- c. Click the **Change History** button to see the change history for the object.

Viewing the Change History From an Application or Environment

You may want to view the Change History for these objects:

- An application in the [Application Visual Editor](#) on page 366
- An application process and process step in the [Applications Visual Editor](#) on page 38
- A component process and process step in the [Component Process Visual Editor](#) on page 368
- An environment in the [Environments Visual Editor](#) on page 370
- Resources in the [Environment Tier](#) on page 371

Application Visual Editor

1. Go to the Applications List.

2. Select an application.

The Applications Visual Editor opens.

3. Click the **Menu** button.

Example:



4. Select **Track Changes**.

The Change History for the object opens.

The default time increment is **Past 60 Minutes**.

Example:

Change History for Pet Store 1.0

▼ Past 60 Minutes

When	What	Name	By...	Change	Path
1 Dec 16, 2014 12:29 PM Pacif...	application	pet store 1.0	admin	created	...
2 Dec 16, 2014 12:29 PM Pacif...	property	ec_notifierstatus	admin	created	...
3 Dec 16, 2014 12:29 PM Pacif...	property	ec_deploy	admin	created	...
4 Dec 16, 2014 12:29 PM Pacif...	applicationTier	tier 1	admin	created	...
5 Dec 16, 2014 12:29 PM Pacif...	component	websphere	admin	created	...
6 Dec 16, 2014 12:29 PM Pacif...	property	ec_content_details	admin	created	...
7 Dec 16, 2014 12:29 PM Pacif...	property	artifactname	admin	created	...
8 Dec 16, 2014 12:29 PM Pacif...	property	versionrange	admin	created	...
9 Dec 16, 2014 12:29 PM Pacif...	property	artifactversionlocatio...	admin	created	...
10 Dec 16, 2014 12:29 PM Pacif...	property	overwrite	admin	created	...
11 Dec 16, 2014 12:29 PM Pacif...	property	filterlist	admin	created	...
12 Dec 16, 2014 12:29 PM Pacif...	property	pluginprocedure	admin	created	...

View All Changes

Objects

- AcI (89)
- Property Sheet (47)
- Application (1)
- Property (101)
- Application Tier (4)
- Component (5)
- Process (7)
- Process Step (12)
- Tier Mapping (6)
- Tier Map (3)
- Formal Parameter (16)
- Process Dependency (5)

Changes

- Created (280)
- Modified (6)
- Deleted (10)

Changed by...

- Admin (292)
- Project: Default (4)

1. Go to the Applications List.

2. Select an application.

The Applications Visual Editor opens.

3. Select an application process.

The Application Process Visual Editor opens.

4. To view the Change History for the application process:

- a. Click the **Menu** button.

Example:



- b. Select **Track Changes**.

The Change History for the application process opens.

The default time increment is **Past 60 Minutes**.

Example:

Change History for Deploy

Past 60 Minutes

0

Most Recent

View All Changes	When	What	Name	By...	Change	Path
Objects	1	Dec 16, 2014 12:41 PM Pacif...	process	deploy	admin	* created
Acl (24)	2	Dec 16, 2014 12:41 PM Pacif...	property	ec_notifierstatus	admin	* created
Property Sheet (10)	3	Dec 16, 2014 12:41 PM Pacif...	property	ec_deploy	admin	* created
Process (1)	4	Dec 16, 2014 12:41 PM Pacif...	processStep	s1	admin	* created
Property (10)	5	Dec 16, 2014 12:41 PM Pacif...	formalParameter	ec_config-version	admin	* created
Process Step (4)	6	Dec 16, 2014 12:41 PM Pacif...	formalParameter	ec_config-run	admin	* created
Formal Parameter (9)	7	Dec 16, 2014 12:41 PM Pacif...	formalParameter	ec_smartdeployop...	admin	* created
Process Dependency (3)	8	Dec 16, 2014 12:41 PM Pacif...	property	ec_notifierstatus	admin	* created
Changes						
Created (61)						
Changed by...						
Admin (61)						

5. To view the Change History for the application process step:

- a. Choose a step.
- b. Click the **Edit** button in the step to open the context menu.

Example:



- c. Select **Track Changes**.

The Change History for the application process step opens.

The default time increment is **Past 60 Minutes**.

Example:

When	What	Name	By...	Change	Path
1 Dec 16, 2014 12:41 PM	Pacific... processStep	s2	admin	created	...
2 Dec 16, 2014 12:41 PM	Pacific... property	ec_notifierstatus	admin	created	...
3 Dec 16, 2014 12:41 PM	Pacific... property	ec_deploy	admin	created	...

Component Process Visual Editor

1. Go to the Applications List.
2. Select an application.
The Applications Visual Editor opens.
3. Choose a component.
4. Select a component process for the component.
The Component Process Visual Editor opens.

5. To view the Change History for the component process:

- a. Click the **Menu** button.

Example:



- b. Select **Track Changes**.

The Change History for the component process opens.

The default time increment is **Past 60 Minutes**.

Example:

✕

Change History for SetProperties

↶ ↷ 🔍

▼ Past 60 Minutes

9

View All Changes

Objects

✓ Process (1)

Property Sheet (3)

✓ Property (9)

✓ Process Step (1)

Changes

✓ Created (19)

Changed by...

✓ Admin (19)

When ▲ ▼	What	Name	By...	Change	Path
✓ 1 Dec 16, 2014 12:32 PM Pacif...	process	setproperties	admin	* created	././
✓ 2 Dec 16, 2014 12:33 PM Pacif...	property	repositoryname	admin	* created	././
✓ 3 Dec 16, 2014 12:33 PM Pacif...	property	artifactname	admin	* created	././
✓ 4 Dec 16, 2014 12:33 PM Pacif...	property	artifactversionversion	admin	* created	././
✓ 5 Dec 16, 2014 12:33 PM Pacif...	property	compress	admin	* created	././
✓ 6 Dec 16, 2014 12:33 PM Pacif...	property	dependentartifactv...	admin	* created	././
✓ 7 Dec 16, 2014 12:33 PM Pacif...	property	excludepatterns	admin	* created	././

6. To view the Change History for the component process step:
 - a. Choose a step.
 - b. Click the **Edit** button in the step to open the context menu.

Example:



- c. Select **Track Changes**.

The Change History for the component process step opens.

Example:

When	What	Name	By...	Change	Path
1 Dec 16, 2014 12:33 PM Pacif...	property	artifactversionversion	admin	created	...
2 Dec 16, 2014 12:33 PM Pacif...	processStep	s1	admin	created	...
3 Dec 16, 2014 12:33 PM Pacif...	property	artifactname	admin	created	...
4 Dec 16, 2014 12:33 PM Pacif...	property	compress	admin	created	...
5 Dec 16, 2014 12:33 PM Pacif...	property	dependentartifactv...	admin	created	...
6 Dec 16, 2014 12:33 PM Pacif...	property	excludepatterns	admin	created	...
7 Dec 16, 2014 12:33 PM Pacif...	property	followsymlinks	admin	created	...

Environments Visual Editor

1. Go to the Environments List.
2. Select an environment.

The Environments Visual Editor opens.
3. Click the **Menu** button.

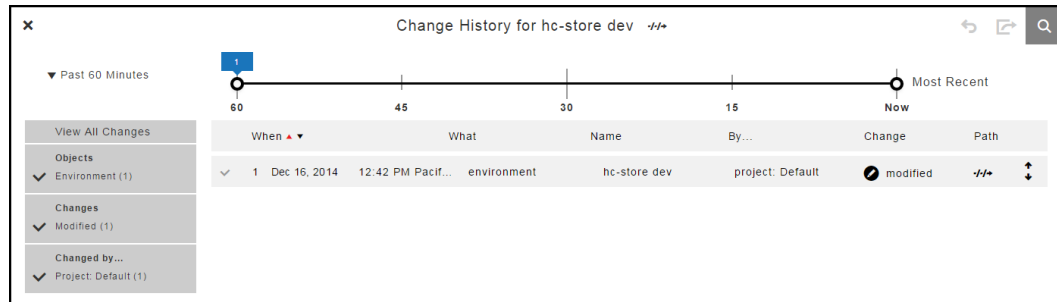
Example:



4. Select **Track Changes**.

The Change History for the object opens.

Example:



Environment Tier

1. Go to the Environments Designer.
2. Choose an environment tier.
3. Click the **Menu** button.

Example:

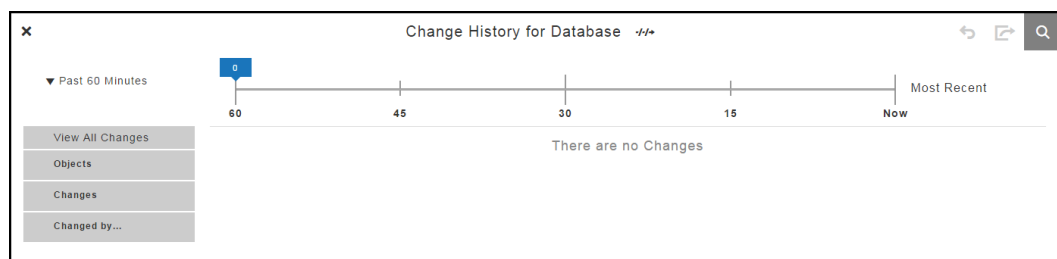


4. Select **Track Changes**.

The Change History for the object opens.

The default time increment is **Past 60 Minutes**.

Example:



Viewing the Change History for Artifacts, Jobs, Projects, and Workflows

When troubleshooting why a job failed, you can view the Change History for artifacts, jobs, projects, and workflows in the ElectricCommander platform.

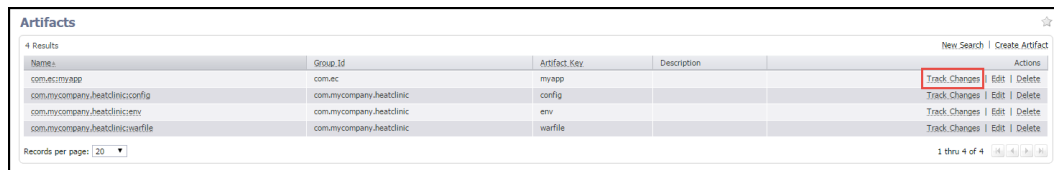
- [Artifacts](#) on page 372
- [Jobs](#) on page 373
- [Projects](#) on page 375
- [Workflows](#) on page 375

Artifacts

Starting from the Home page:

1. Go to the Artifacts tab.
2. Choose an artifact.
3. Click **Track Changes**.

Example:



Artifacts				New Search Create Artifact	
Name	Group Id	Artifact Key	Description		Actions
com.ec:myapp	com.ec	myapp		Track Changes	Edit Delete
com.mycompany.heatclinic:config	com.mycompany.heatclinic	config		Track Changes	Edit Delete
com.mycompany.heatclinic:env	com.mycompany.heatclinic	env		Track Changes	Edit Delete
com.mycompany.heatclinic:warfile	com.mycompany.heatclinic	warfile		Track Changes	Edit Delete

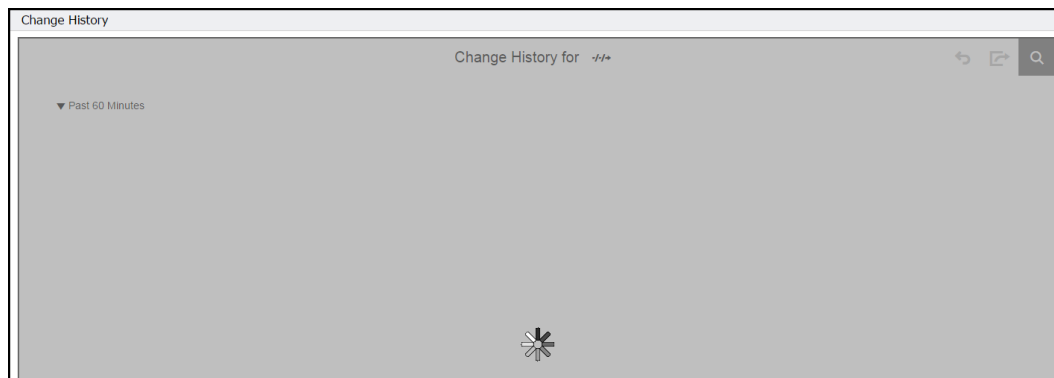
Records per page: 20


1 thru 4 of 4

The Change History for the selected artifact opens.

The default time increment is **Past 60 Minutes**.

Example:



Change History	
Change History for <artifact>	
▼ Past 60 Minutes	
	

Jobs

Starting from the Home page:

1. To go to the Job Details page, do one of the following:
 - Use the Jobs tab.
 - Use the Jobs Quick View list.
2. If you use the Jobs tab, follow these steps:
 - a. Click the Jobs tab.

The Jobs page opens.

Example:

Job	Status	Priority	Procedure	Launched By	Elapsed Time	Start Time	Actions
1_AppProc1_ectoolApp_Default_20141216125730	Running	normal	External	admin	01:06:39.998	2014-12-16 12:57:30 PST	Abort
job_3_20141216134447	Error	normal	Default:ECMavenTest	admin	00:00:06.611	2014-12-16 13:44:47 PST	Delete
job_2_20141216134049	Success	normal	Default:ECMavenTest	admin	00:00:14.179	2014-12-16 13:40:49 PST	Delete
1_API1_c_Default_20141216125425	Success	normal	External	admin	00:00:07.361	2014-12-16 12:54:25 PST	Delete
4_Test_Pet_Store_1.0_Default_20141216124537	Success	normal	External	admin	00:00:29.511	2014-12-16 12:45:37 PST	Delete
3_Test_Pet_Store_1.0_Default_20141216124427	Success	normal	External	admin	00:00:21.686	2014-12-16 12:44:27 PST	Delete
2_Test_Pet_Store_1.0_Default_20141216124339	Success	normal	External	admin	00:00:13.450	2014-12-16 12:43:39 PST	Delete
1_Test_Pet_Store_1.0_Default_20141216124244	Success	normal	External	admin	00:00:31.681	2014-12-16 12:42:44 PST	Delete
1_AppProc1_ectoolApp_Default_20141216122811	Error	normal	External	admin	00:00:06.964	2014-12-16 12:28:11 PST	Delete
1_AppProc1_ectoolApp_Default_20141216121148	Error	normal	External	admin	00:00:07.334	2014-12-16 12:11:48 PST	Delete
1_P1_Test001_Default_20141216113550	Success	normal	External	admin	00:00:08.413	2014-12-16 11:35:50 PST	Delete
2_P1_App_Default_20141216090922	Success	normal	External	admin	00:00:05.894	2014-12-16 09:36:22 PST	Delete
1_P1_App_Default_20141216090412	Success	normal	External	admin	00:00:11.546	2014-12-16 09:34:12 PST	Delete

- b. Click a job name to select a job.

The Job Details page opens.

Example:

Job Details

- 1_AppProc1_ectoolApp_Default_20141216122811

Completed with Errors

Start Time: 2014-12-16 12:28:11 PST

Elapsed Time: 00:00:06.964

General Information

Project: Default

Procedure: External

Launched by: admin

Priority: normal

Steps

Diagnostics

Parameters

Properties

Notifiers

Published Artifact Versions

Retrieved Artifact Versions

View: All

Step Name

Log

Status

Elapsed Time

Resource

Actions

AppStep1

Completed with Errors

00:00:02.556

Track Changes

CompStep1

Completed with Errors

00:00:02.556

Track Changes

local copy

Completed with Errors

00:00:02.556

Track Changes

Retrieved Artifact

1 error

00:00:02.596

local copy











Track Changes | Edit

Records per page: 100

1 thru 4 of 4

- If you use the Jobs Quick View list, click a job name to select a job.

Example:

Jobs Quick View				Add Category
Last 10 Jobs				Modify Delete
job_3_20141216134447		Error	00:00:06.611	Details
job_2_20141216134049		Success	00:00:14.179	Details
1_AppProc1_ectoolApp_Default_20141216125730		Running	01:12:37.903	Details
1_API_c_Default_20141216125425		Success	00:00:07.361	Details
4_Test_Pet_Store_1.0_Default_20141216124537		Success	00:00:29.511	Details
3_Test_Pet_Store_1.0_Default_20141216124427		Success	00:00:21.686	Details
2_Test_Pet_Store_1.0_Default_20141216124339		Success	00:00:13.450	Details
1_Test_Pet_Store_1.0_Default_20141216124244		Success	00:00:31.681	Details
1_AppProc1_ectoolApp_Default_20141216122811		Error	00:00:06.964	Details
1_AppProc1_ectoolApp_Default_20141216121148		Error	00:00:07.334	Details

The Job Details page opens.

Example:

Job Details - 1_AppProc1_ectoolApp_Default_20141216122811

Completed with Errors

Start Time: 2014-12-16 12:28:11 PST

Elapsed Time: 00:00:06.964

General Information

Project: Default

Procedure: External

Launched by: admin

Priority: normal

Steps

Diagnostics

Parameters

Properties

Notifiers

Published Artifact Versions

Retrieved Artifact Versions

View: All

Expand All | Collapse All

Step Name	Log	Status	Elapsed Time	Resource	Actions
AppStep1		<div></div> Completed with Errors	00:00:02.556		<div>Track Changes</div>
CompStep1		<div></div> Completed with Errors	00:00:02.556		<div>Track Changes</div>
local copy		<div></div> Completed with Errors	00:00:02.556		<div>Track Changes</div>
Retrieve Artifact	<div></div>	<div></div> 1 error	00:00:02.596	local copy	<div>Track Changes Edit</div>

Records per page: 100

1 thru 4 of 4

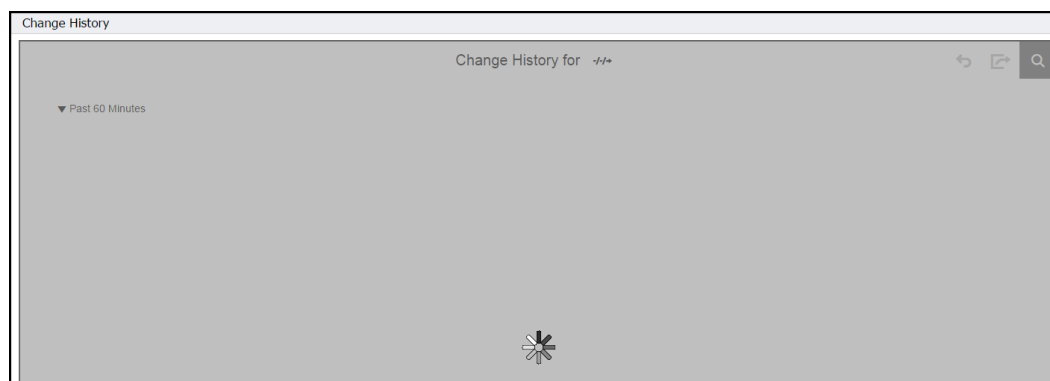
- Choose a job or job step.

- Click **Track Changes** for the job or job step.

The Change History for the job or job step opens.

The default time increment is **Past 60 Minutes**.

Example:



Projects

Starting from the Home page:

- Go to the Projects tab.
- Choose a project.
- Click **Track Changes**.

The Change History for the project opens.

Example:

Project	Description	Impersonation Credential	Create Date	Actions
Default	Default project created during installation.		2014-12-16 07:51:36 PST	Track Changes Edit Copy Delete
DeployObjects-1.7.8			2014-12-16 08:11:15 PST	Track Changes Edit Copy Delete
EC-Examples	This project contains templates for procedures that perform basic tasks within ElectricCommander.		2014-12-16 07:52:07 PST	Track Changes Edit Copy Delete
EC-Tutorials-1.0.0.69504	This project contains small pieces of code which show how to use features in ElectricCommander.		2014-12-16 08:03:02 PST	Track Changes Edit Copy Delete
EC-Utilities	This project contains procedures that perform basic tasks within ElectricCommander. Also, the procedures can be used as examples that can be copied and modified in another project.		2014-12-16 07:55:07 PST	Track Changes Edit Copy Delete
Electric.Cloud	Electric Cloud Procedures		2014-12-16 07:58:38 PST	Track Changes Edit Copy Delete

Records per page: 20 1 thru 6 of 6

Workflows

Starting from the Home page:

- Go to the Workflows tab.
- Choose a workflow.
- Click **Track Changes**.

The Change History for the workflow opens.

Change History Page

How to get here: Click the **Search** button to open the "Change History - Search" form, and enter the search criteria.

The search results appear in the Change History page and include the following information:

The screenshot shows the 'Change History for JPetStore' interface. It includes a timeline at the top with a search icon (5) and a 'Past 60 Minutes' filter (6). A table of changes is displayed with columns: When, What, Name, By..., Change, and Path. A left sidebar (7) contains filters for Objects, Changes, and Changed by... The table lists 13 changes, with the last one (13) highlighted by a red arrow (8). A red arrow (9) points to the 'Path' column of the last row.

	When	What	Name	By...	Change	Path
1	Dec 03, 2014 4:34 PM Pacific...	property	jobcounter	project: ...	modified	-/-
2	Dec 03, 2014 4:34 PM Pacific...	process	deploy	project: ...	modified	-/-
3	Dec 03, 2014 12:38 PM Pacific...	property	pluginpr...	admin	created	-/-
4	Dec 03, 2014 12:38 PM Pacific...	property	pluginpr...	admin	created	-/-
5	Dec 03, 2014 12:38 PM Pacific...	property	overwrite	admin	created	-/-
6	Dec 03, 2014 12:38 PM Pacific...	property	directory	admin	created	-/-
7	Dec 03, 2014 12:38 PM Pacific...	property	type	admin	created	-/-
8	Dec 03, 2014 12:38 PM Pacific...	property	version	admin	created	-/-
9	Dec 03, 2014 12:38 PM Pacific...	property	artifact	admin	created	-/-
10	Dec 03, 2014 12:38 PM Pacific...	property	repository	admin	created	-/-
11	Dec 03, 2014 12:38 PM Pacific...	property	server	admin	created	-/-
12	Dec 03, 2014 12:38 PM Pacific...	property...	ec_conte...	admin	created	-/-
13	Dec 03, 2014 12:38 PM Pacific...	acl	ec_conte...	admin	created	-/-

How to get here:

From the Home page in the ElectricCommander platform, use one of the following methods to open and view the change history for jobs, projects, workflows, and artifacts:

- Select a job that failed > Click the job name to go to the Job Details page > Click **Track Changes** in the upper right of the page.
- Click the Jobs tab > Select a job that failed to the Job Details page > Click **Track Changes** in the upper right of the page.

The search results appear in the Change History page for the job and include the following information:

Change History for Proc

12/04/14 - 10:45 AM

12/04/14 - 6:42 PM

View All Changes

Objects

- Process (2)
- Process Step (3)
- Process Dependency (1)
- Act (4)
- Property Sheet (3)
- Property (3)

Changes

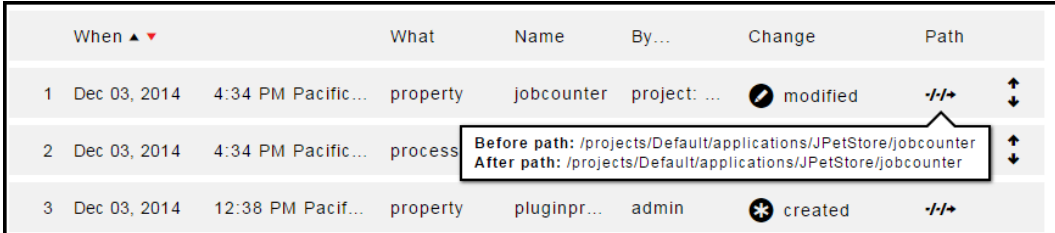
- Modified (4)
- Created (12)

Changed by...

- Project: Default (1)
- Admin (15)

When	What	Name	By...	Change	Path
1 Dec 04, 2014 11:08 AM Pacif...	process	proc	project: Default	modified	/...
2 Dec 04, 2014 11:08 AM Pacif...	processStep	s2	admin	modified	/...
3 Dec 04, 2014 11:07 AM Pacif...	processDepend...	d086ed98-7be8...	admin	created	/...
4 Dec 04, 2014 11:07 AM Pacif...	acl	ec_deploy	admin	created	/...
5 Dec 04, 2014 11:07 AM Pacif...	acl	d3	admin	created	/...
6 Dec 04, 2014 11:07 AM Pacif...	propertySheet	d3	admin	created	/...
7 Dec 04, 2014 11:07 AM Pacif...	propertySheet	ec_deploy	admin	created	/...
8 Dec 04, 2014 11:07 AM Pacif...	propertySheet	d3	admin	created	/...

1	Time range. The end time is the current time. You can change the end time after you run the search and get the search results.
2	Name of the tracked object.
3	Path to the tracked object. Example:
4	After making a change, you can revert or export the object. Click this to go to the undo or redo the last action on the page.
5	Click this to run a new change history search.
6	Time line. The start time is based on the time range that you selected. The end time is the current time. You can manually change the start and end times after you run the search and get the search results.

7	<p>Filters for the change history.</p> <p>You can view all changes or view only selected changes.</p> <p>The objects in the list are the objects in the change history search results.</p>																													
8	<p>Change history for the selected object.</p> <ul style="list-style-type: none"> • When–the date and time that the object changed. • What–The type of object. • Name–The name of the object. • By–The "user" that changed the object, which can be a project or a user. • Change–The type of change. • Path–Click the View Path button to see the path to the object.  <table border="1"> <thead> <tr> <th></th><th>When ▲ ▼</th><th>What</th><th>Name</th><th>By...</th><th>Change</th><th>Path</th></tr> </thead> <tbody> <tr> <td>1</td><td>Dec 03, 2014 4:34 PM Pacific...</td><td>property</td><td>jobcounter</td><td>project: ...</td><td>modified</td><td>View Path</td></tr> <tr> <td>2</td><td>Dec 03, 2014 4:34 PM Pacific...</td><td>process</td><td colspan="4"> <div> Before path: /projects/Default/applications/JPetStore/jobcounter After path: /projects/Default/applications/JPetStore/jobcounter </div> </td><td>View Path</td></tr> <tr> <td>3</td><td>Dec 03, 2014 12:38 PM Pacific...</td><td>property</td><td>pluginpr...</td><td>admin</td><td>created</td><td>View Path</td></tr> </tbody> </table>		When ▲ ▼	What	Name	By...	Change	Path	1	Dec 03, 2014 4:34 PM Pacific...	property	jobcounter	project: ...	modified	View Path	2	Dec 03, 2014 4:34 PM Pacific...	process	<div> Before path: /projects/Default/applications/JPetStore/jobcounter After path: /projects/Default/applications/JPetStore/jobcounter </div>				View Path	3	Dec 03, 2014 12:38 PM Pacific...	property	pluginpr...	admin	created	View Path
	When ▲ ▼	What	Name	By...	Change	Path																								
1	Dec 03, 2014 4:34 PM Pacific...	property	jobcounter	project: ...	modified	View Path																								
2	Dec 03, 2014 4:34 PM Pacific...	process	<div> Before path: /projects/Default/applications/JPetStore/jobcounter After path: /projects/Default/applications/JPetStore/jobcounter </div>				View Path																							
3	Dec 03, 2014 12:38 PM Pacific...	property	pluginpr...	admin	created	View Path																								
9	Click the View button to see more details about the object.																													

Time Line

The time line for the change history is at the top of the Change History page.

The time line is automatically separated into divisions based on the number of minutes, hours, or days between the end time and the start time.

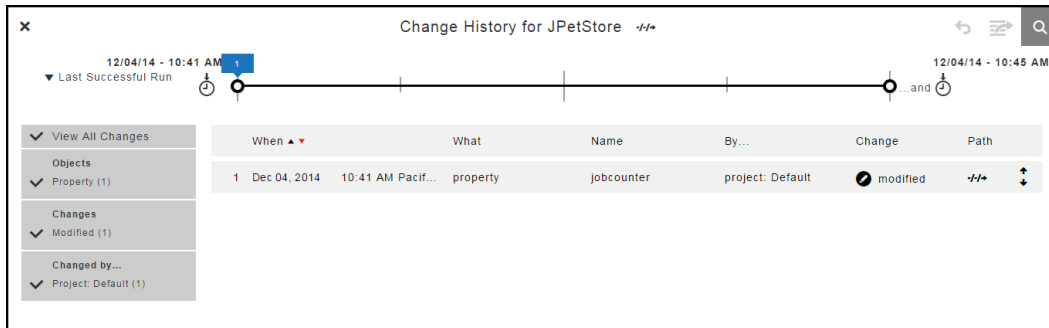
Default Settings

These are the default settings for the time line:

- The start time is the selected time range in the upper left of the page.
- The end time is **Most Recent** when the latest change to the object occurred.
- The default range is from the **Last Successful Run** to the **Most Recent**.
- The entire time line is displayed, and all the changes are in the list below the time line.

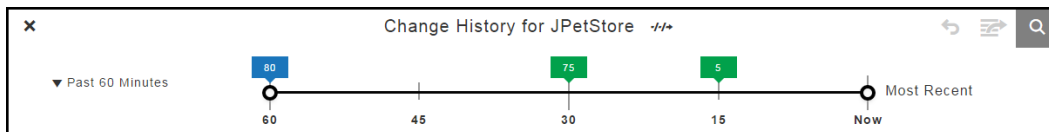
The time line on this page has the default range.

Note: The **Last Successful Run** range is available only after the first time that you run an application.

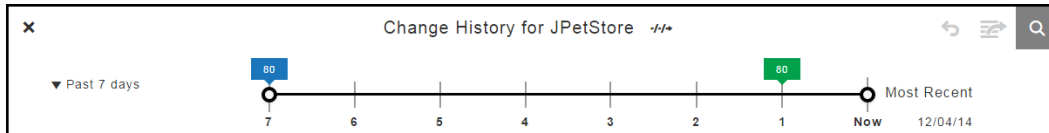


When the range is changed to **Past 60 Minutes**, the time line changes:

- The start time is 60 minutes from **Now**.
- The end time is when the **Most Recent** change occurred (**Now**).
- The time line has four divisions.



If the increment is **Past 7 Days**, the time line has seven one-day divisions.



You can view the change history in different ways depending on the time range for the time line.

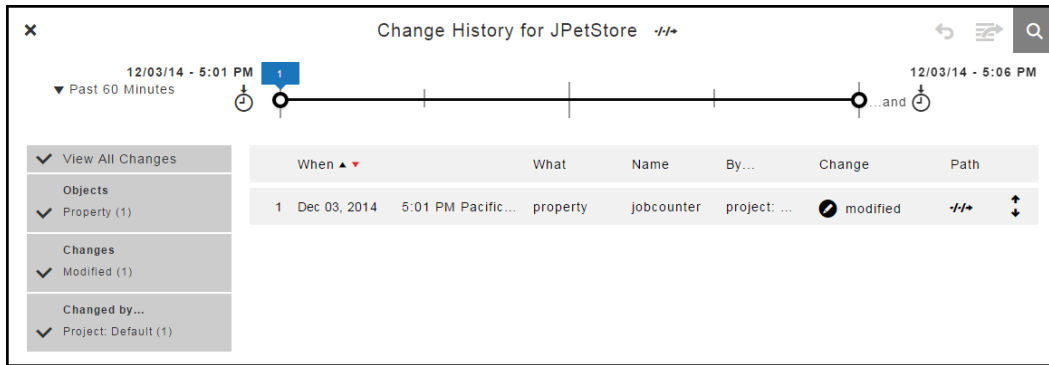
Selecting the Time Range

You can view the change history in different ways depending on the time range for the time line.

Click the down arrow next to the time range to select a different range for the change history.



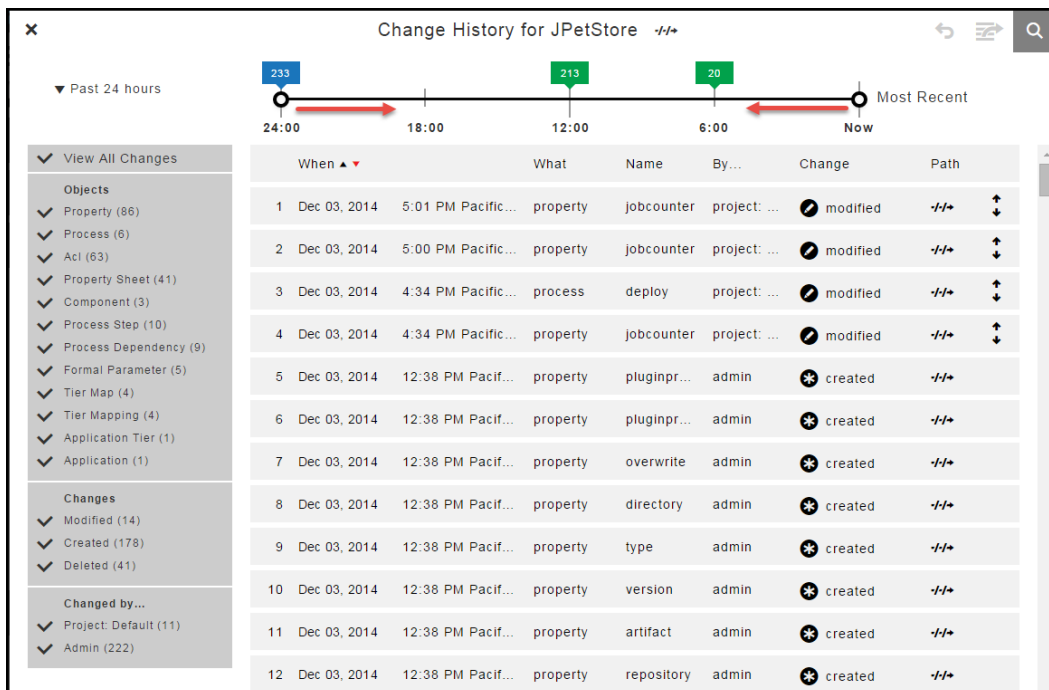
You can see the change history since the last successful run. Notice that the information on the left side shows a summary of the changes, which is a subset of the results that you got.



Moving the Start and End Times

You can manually move the start and end times on the time line.

When you move the start time to 18:00 and the end time to 6:00, notice that the list of objects in the change history changes.



When you move the start time to 18:00 and the end time to 6:00, notice that the list of objects in the change history changes.

Specifying the Time Range

Example:

Change History for JPetStore

12/04/14 - 11:07 AM 20 12/04/14 - 11:49 AM

▼ Last Successful Run

View All Changes	When ▲▼	What	Name	By...	Change	Path
Objects						
Property (16)	1 Dec 04, 2014 11:14 AM Pacif...	property	ec_content...	admin	deleted	...
Property Sheet (2)	2 Dec 04, 2014 11:14 AM Pacif...	property	artifactvers...	admin	deleted	...
Act (2)						
Changes						
Deleted (10)	3 Dec 04, 2014 11:14 AM Pacif...	property	filterlist	admin	deleted	...
Created (10)	4 Dec 04, 2014 11:14 AM Pacif...	property	overwrite	admin	deleted	...
Changed by...						
Admin (20)	5 Dec 04, 2014 11:14 AM Pacif...	property	pluginproc...	admin	deleted	...
	6 Dec 04, 2014 11:14 AM Pacif...	property	pluginproje...	admin	deleted	...

To manually set the times and dates for the start and end times:

1. Select **Between**.

A drop down dialog box opens.

Example:

11/26/14 - 3:30 PM 0

▼ Between...

View All Char

Objects

Changes

Changed by...

Time

3 : 30 PM

Date

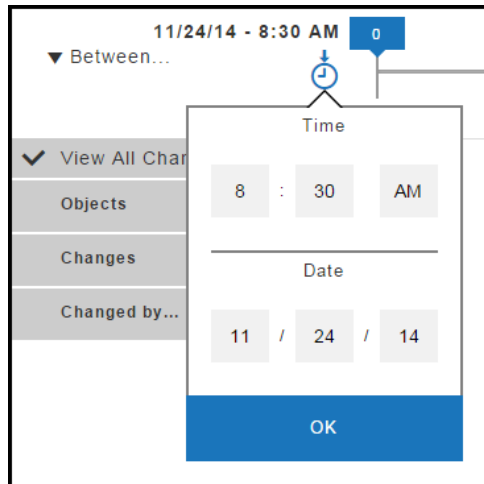
11 / 26 / 14

OK

2. Select the time and date for the start of the time line.

The default settings are 3:30 pm and eight days before the current date.

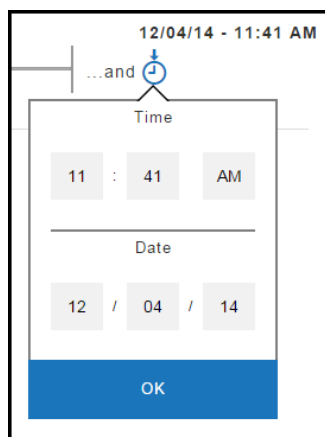
Example:



3. Click **OK**.

A drop down dialog box opens at the other end of the time line.

Example:



4. Select the time and date for the end of the time line.

The defaults are 3:30 pm and the current date.

Example:

5. Click **OK**.

The time line changes to show only the changes from the start and end times and dates that you selected.

Example:

When	What	Name	By...	Change	Path
1 Dec 04, 2014 10:28 AM Pacif...	acl	jpetstore	admin	* created	././
2 Dec 04, 2014 10:28 AM Pacif...	acl	jpetstore	admin	* created	././
3 Dec 04, 2014 10:28 AM Pacif...	propertySh...	jpetstore	admin	* created	././
4 Dec 04, 2014 10:28 AM Pacif...	propertySh...	ec_deploy	admin	* created	././
5 Dec 04, 2014 10:28 AM Pacif...	application	jpetstore	admin	* created	././
6 Dec 04, 2014 10:28 AM Pacif...	property	ec_notifier...	admin	* created	././
7 Dec 04, 2014 10:28 AM Pacif...	property	ec_deploy	admin	* created	././
8 Dec 04, 2014 10:28 AM Pacif...	acl	ec_deploy	admin	* created	././
9 Dec 04, 2014 10:28 AM Pacif...	acl	apptier	admin	* created	././
10 Dec 04, 2014 10:28 AM Pacif...	propertySh...	apptier	admin	* created	././
11 Dec 04, 2014 10:28 AM Pacif...	acl	apptier	admin	* created	././

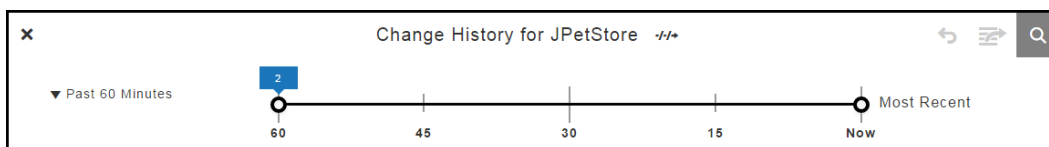
Number of Changes

The time range at the top of the change history shows the number of changes.

- There have been 233 changes in the last 24 hours.
- There have been 213 changes in the last 12 hours.
- There have been 20 changes in the last 6 hours.

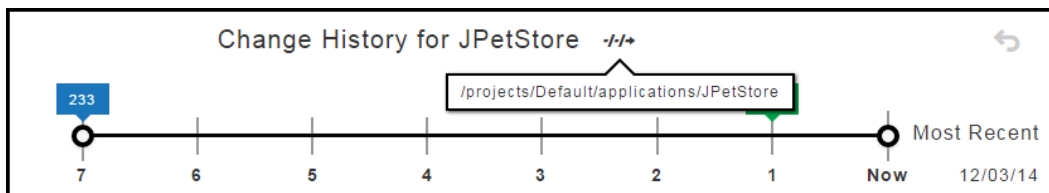


When you change the time range, the number of changes also changes. In the last 60 minutes, there have been only two changes.



Paths to Objects

Click the **View Path** button next to the "Change History for JPetStore" title to see the path to the application.



Click the **View Path** button to see the change in the path to the object before and after the change.

	When ▲ ▼		What	Name	By...	Change	Path
1	Dec 03, 2014	4:34 PM Pacific...	property	jobcounter	project: ...	modified	View Path
2	Dec 03, 2014	4:34 PM Pacific...	process	Before path: /projects/Default/applications/JPetStore/jobcounter After path: /projects/Default/applications/JPetStore/jobcounter			
3	Dec 03, 2014	12:38 PM Pacific...	property	pluginr...	admin	created	View Path

Detailed Object Changes

Click the **View** button to see the change in the property called jobcounter.

When ▲ ▼	What	Name	By...	Change	Path
1 Dec 03, 2014 4:34 PM Pacific...	property	jobcounter	project: ...	modified	↔
Column Changed	From...	To...	Current state		
1. value	5	6	6		

Filters

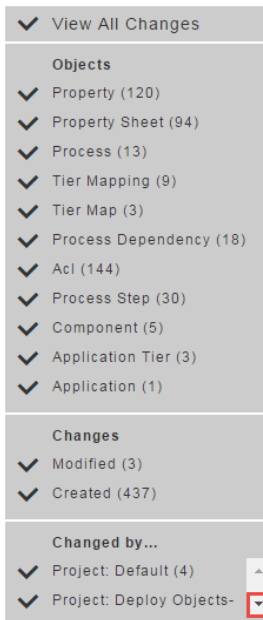
You can use filters to view changes to specific objects, the types of changes, and the users how made those changes.

Instead of selecting **View All Changes**, you can select specific objects, such as only properties, processes, property sheets, process steps, and process dependencies that have been modified by the Project:Default and Admin users.

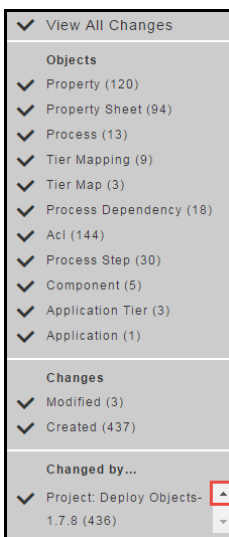
View All Changes	When ▲ ▼	What	Name	By...	Change	Path
Objects	1 Dec 03, 2014 4:34 PM Pacific...	property	jobcounter	project: ...	modified	↔
✓ Property (43)	2 Dec 03, 2014 4:34 PM Pacific...	process	deploy	project: ...	modified	↔
✓ Process (2)	3 Dec 03, 2014 11:35 AM Pacific...	process	deploy	admin	modified	↔
✓ Property Sheet (20)						
AcI (27)						
Component (1)						
✓ Process Step (6)						
✓ Process Dependency (8)						
Changes						
✓ Modified (6)						
Created (60)						
Deleted (41)						
Changed by...						
✓ Project: Default (2)						
✓ Admin (105)						

When the list of filter criteria is long, not all of the criteria may appear in the filter list. To see all of the criteria, use the up or down arrows to see all the options.

This list does not show all of the users. Use the up and down arrows to see all four of the users.



Click the down arrow to see the other users.



Modifying the Change History

You can modify the information that appears in the Change History with these settings:

- Time increment—Go to [Change History Time Line](#) on page 387.
- Time line—Go to [Change History Time Line](#) on page 387.
- Filters—Go to [Change History Filters](#) on page 393.

Related Topics:

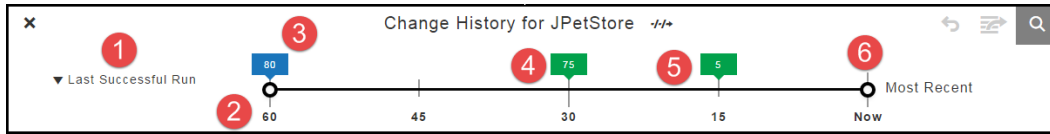
[Change History Page](#) on page 84


[Change History Page](#) on page 84

Change History Time Line

The time line is at the top of the Change History page.

This example shows the following information about the object called JPetStore.



1	<p>Time increment.</p> <p>The default is Last Successful Run.</p> <p>Click the down arrow to select another time increment:</p> 
2	<p>The system automatically calculates the minutes, hours, and days since the last successful run.</p> <p>In the example, the last successful run occurred 60 minutes ago. The time line is divided into four 15-minute subdivisions.</p>
3	<p>Total number of changes in the selected time increment.</p>
6	<p>The number of changes that occurred from 30 minutes ago to now is 75.</p>
4	<p>Filters for the change history.</p> <p>You can view all changes or view only selected changes.</p> <p>The objects in the list are the objects in the change history search results.</p>
5	<p>When you click the change number, the Change History is updated and shows only those changes.</p>
6	<p>Drag the start and end time markers to view specific changes.</p>

Default Settings

The default time increment is **Last Successful Run**.

Note: The **Last Successful Run** option is available only after the first time that you run an application.

The entire time line is displayed, and all the changes are in the list below the time line.

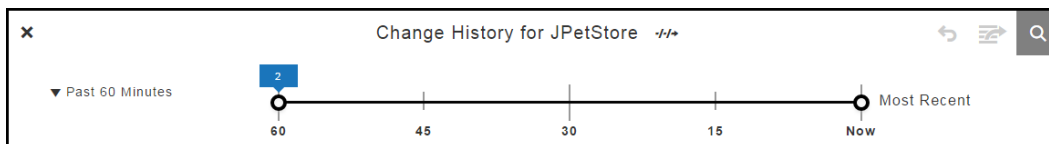
Number of Changes

The time line shows the number of changes throughout the time increment. In the following example:

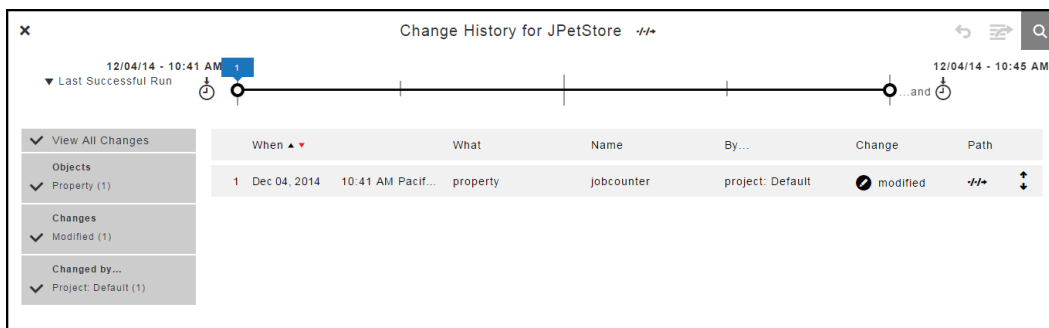
- There have been 233 changes in the last 24 hours.
- There have been 213 changes in the last 12 hours.
- There have been 20 changes in the last 6 hours.



When you change the time increment, there have been two changes in the previous 60 minutes.



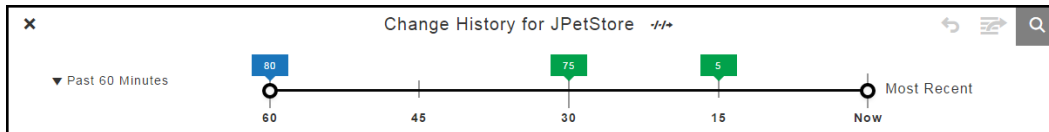
Time Increment



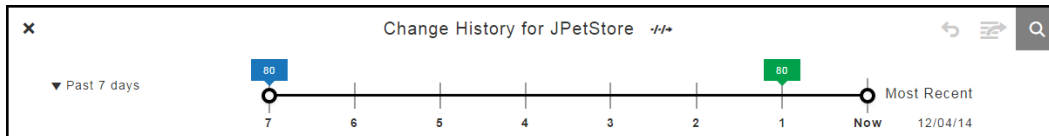
The system automatically determines how the time line is divided for the selected time increment.

When the range is changed to **Past 60 Minutes**, the time line changes:

- The start time is 60 minutes from **Now**.
- The end time is when the **Most Recent** change occurred (**Now**).
- The time line has four divisions.



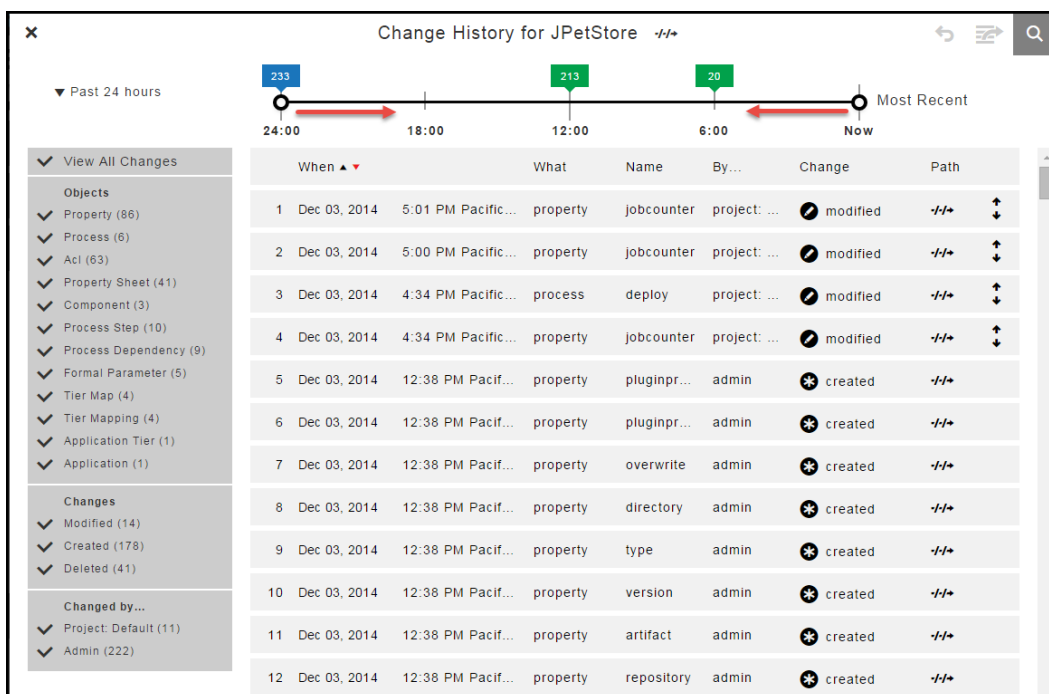
If the increment is **Past 7 Days**, the time line has seven one-day divisions.



Moving the Start and End Times Manually

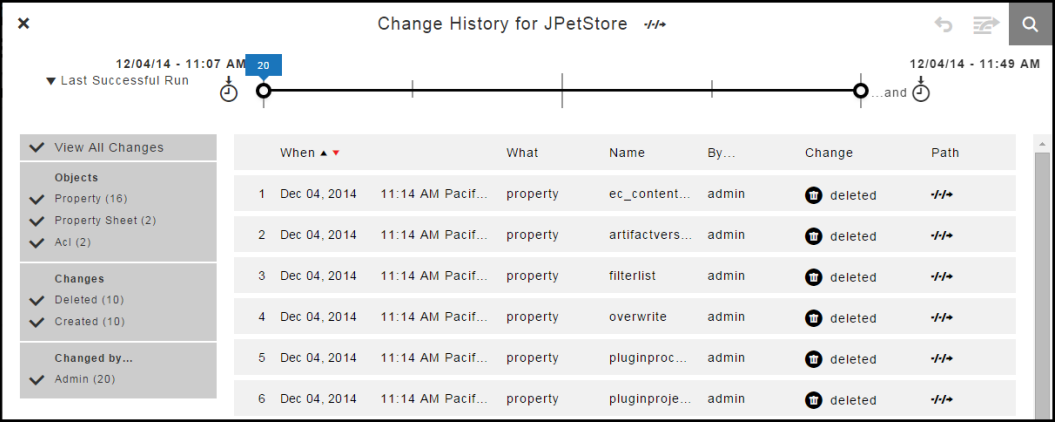
You can manually move the start and end times on the time line.

When you move the start time to 18:00 and the end time to 6:00, the list of objects in the change history changes.



Setting Custom Time Increments

Example:

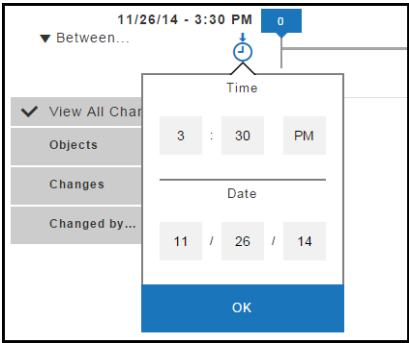


To set other time increments, use the **Between** option:

1. Select **Between**.

A drop down dialog box opens.

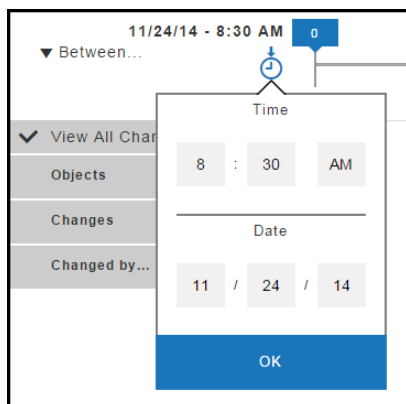
Example:



2. Select the time and date for the start of the time line.

The default settings are **3:30 PM** and eight days before the current date.

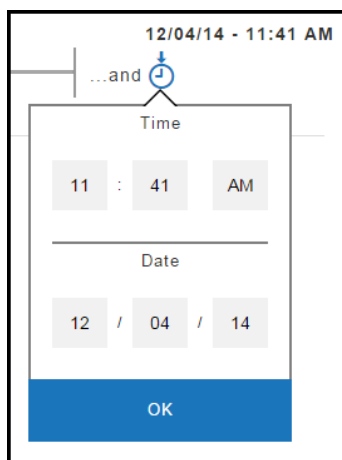
Example:



3. Click **OK**.

A drop down dialog box opens at the other end of the time line.

Example:



- Select the time and date for the end of the time line.

The defaults are **3:30 PM** and the current date.

Example:

- Click **OK**.

The time line changes to show only the changes from the start and end times and dates that you selected.

Example:

When	What	Name	By...	Change	Path
1 Dec 04, 2014 10:28 AM Pacif...	acl	jpetstore	admin	* created	...
2 Dec 04, 2014 10:28 AM Pacif...	acl	jpetstore	admin	* created	...
3 Dec 04, 2014 10:28 AM Pacif...	propertySh...	jpetstore	admin	* created	...
4 Dec 04, 2014 10:28 AM Pacif...	propertySh...	ec_deploy	admin	* created	...
5 Dec 04, 2014 10:28 AM Pacif...	application	jpetstore	admin	* created	...
6 Dec 04, 2014 10:28 AM Pacif...	property	ec_notifier...	admin	* created	...
7 Dec 04, 2014 10:28 AM Pacif...	property	ec_deploy	admin	* created	...
8 Dec 04, 2014 10:28 AM Pacif...	acl	ec_deploy	admin	* created	...
9 Dec 04, 2014 10:28 AM Pacif...	acl	apptier	admin	* created	...
10 Dec 04, 2014 10:28 AM Pacif...	propertySh...	apptier	admin	* created	...
11 Dec 04, 2014 10:28 AM Pacif...	acl	apptier	admin	* created	...

Change History Filters

You can use filters to view changes to specific objects, the types of changes, and the users who made those changes.

Instead of selecting **View All Changes**, you can select specific objects, such as only properties, processes, property sheets, process steps, and process dependencies that have been modified by the Project:Default and Admin users.

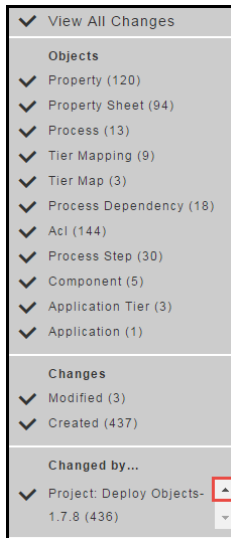
View All Changes	When ▲ ▼	What	Name	By...	Change	Path
Objects ✓ Property (43) ✓ Process (2) ✓ Property Sheet (20) Acl (27) Component (1) ✓ Process Step (6) ✓ Process Dependency (8)	1 Dec 03, 2014 4:34 PM Pacific...	property	jobcounter	project: ...	modified	↔
	2 Dec 03, 2014 4:34 PM Pacific...	process	deploy	project: ...	modified	↔
	3 Dec 03, 2014 11:35 AM Pacific...	process	deploy	admin	modified	↔
Changes ✓ Modified (6) Created (60) Deleted (41)						
Changed by... ✓ Project: Default (2) ✓ Admin (105)						

When the list of filter criteria is long, not all of the criteria may appear in the filter list. To see all of the criteria, use the up or down arrows to see all the options.

This list does not show all of the users. Use the up and down arrows to see all four of the users.

✓ View All Changes
Objects ✓ Property (120) ✓ Property Sheet (94) ✓ Process (13) ✓ Tier Mapping (9) ✓ Tier Map (3) ✓ Process Dependency (18) ✓ Acl (144) ✓ Process Step (30) ✓ Component (5) ✓ Application Tier (3) ✓ Application (1)
Changes ✓ Modified (3) ✓ Created (437)
Changed by... ✓ Project: Default (4) ✓ Project: Deploy Objects- ▼

Click the down arrow to see the other users.



Reverting and Exporting Changes to Objects

Starting in ElectricFlow 5.3, you can revert or exporting changes that were made to an object and to an objects and its children.

Follow these steps to select the changes that you want to revert:

1. Go to the Change History.
2. Configure the filters to view specific changes in the Change History.

If View All Changes is selected, click it to remove the check mark next to it.

Select only the objects, change types, and the users or groups who made the changes. A check mark appears next to the filter criteria that you select.

While selecting changes, make sure to be aware of the number of changes.

3. Choose an object in the Change History.

4. Click the **View** button to view the change details.

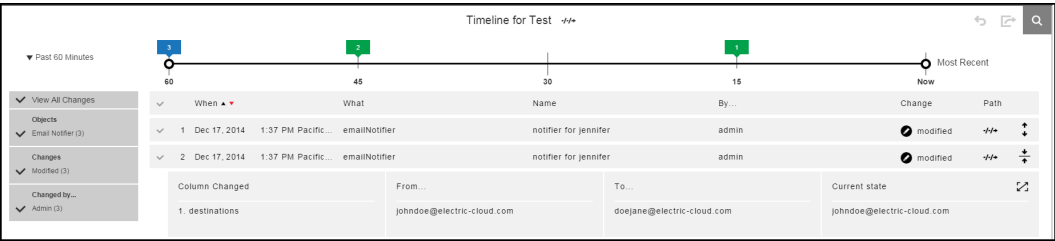
Example:



This information appears:

- Name of the child object (**Column Changed**)
- State of the child object before the change (**From**)
- State of the child object after the change (**To**)
- Current state of the child object (**Current state**).

Example:



5. Choose a change to revert.

6. In the **To** column, select the row of the object that you want to revert.

Example:

2 Dec 17, 2014 1:37 PM Pacific...		emailNotifier		notifier for jennifer		admin		modified		
Column Changed		From...		To...		Current state				
1. destinations		johndoe@electric-cloud.com		doejane@electric-cloud.com		johndoe@electric-cloud.com				

The Revert button is now available (enabled).

Example:



The Export changes button is now available (enabled).

Example:



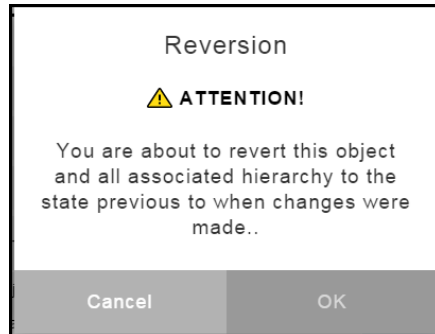
Repeat this step for each change that you want to revert or export.

7. To revert the changes, do the following steps:

- a. Click the Revert button.

A message confirming that you want to revert the selected object appears.

Example:



- b. If you want to revert the selected changes, click **OK**.

If the changes are successfully reverted, a message that the current state of the selected objects are successfully reverted appears.

If the changes are not successfully reverted, a message that the current state of the selected objects are not successfully reverted appears.

- c. If you do not want to revert the selected changes, click **Cancel**.

8. Click the Export changes button to export the changes to an XML file.

Searching Through the Change History

Use one of these methods to search through the change history:

- [Running a New Search Through the Change History in the ElectricCommander Platform UI](#) on page 404
- [Searching Through the Change History From an Existing Change History](#) on page 411

Running a New Search Through the Change History

Follow these steps to start a search through the Change History.

Starting from the Home page:

1. Click the **Search** button.

Example:



The **Change History - Search** dialog box opens.

Example

The dialog box titled "Change History - Search" features a header bar. Below the header, there are two dark grey buttons: "Past 15 Minutes" and "Multiple-Select", each with a small downward arrow. To the right of these buttons is a large, empty white rectangular input field.

2. Click the down arrow in the Time Increment field to open the drop-down list.

Example:

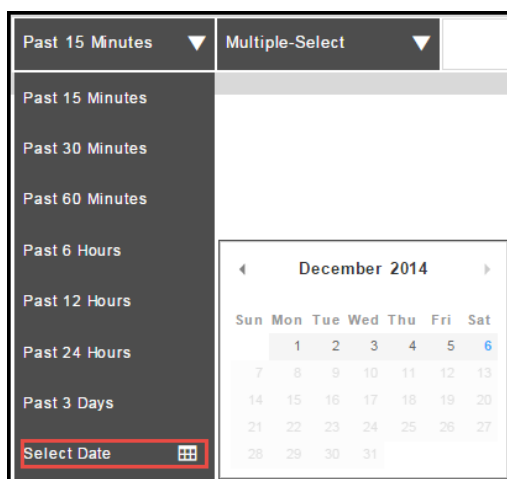
This example shows the "Change History - Search" dialog box with the "Past 15 Minutes" dropdown menu open. The menu is a dark grey vertical list with the following options: "Past 15 Minutes", "Past 30 Minutes", "Past 60 Minutes", "Past 6 Hours", "Past 12 Hours", "Past 24 Hours", "Past 3 Days", and "Select Date". A small calendar icon is located at the bottom right of the "Select Date" option. The "Multiple-Select" button and the input field remain visible to the right of the open menu.

3. (Optional) If you want to use a time increment longer than three days, do the following:

- a. Click **Select Date**.

The Date Picker opens.

Example:



- b. Select a date.

Example:

The screenshot shows the ElectricFlow interface with the Date Picker menu open. The menu is divided into two sections. The left section lists time increments: Past 15 Minutes, Past 30 Minutes, Past 60 Minutes, Past 6 Hours, Past 12 Hours, Past 24 Hours, Past 3 Days, and Select Date. The right section displays a calendar for December 2014. The date December 5, 2014, is selected and highlighted with a red box. The calendar shows the days of the week (Sun, Mon, Tue, Wed, Thu, Fri, Sat) and the dates (1 through 31). The date 5 is highlighted in blue, and the date 6 is highlighted in red.

The Date Picker closes and the date that you selected appears in the Time Increment field.

Example:

The screenshot shows the ElectricFlow interface with the Date Picker menu closed. The date 'Since Dec 5, 2014' is displayed in the Time Increment field, highlighted with a red box. The field is part of a larger form with a 'Multiple-Select' dropdown menu and a text input field.

4. Click **Multiple Select** to open the drop-down list of tracked objects.

Example:

The screenshot displays a web interface titled "Change History - Search". It features a header bar with a dark grey background. Below the header, there are three main components: a date range selector, a dropdown menu, and a search input field. The date range selector is labeled "Past 6 Hours" with a downward arrow. The dropdown menu is labeled "Multiple-Select" with a downward arrow and is currently open, showing a list of tracked objects. The search input field is a white box with a light grey border. The list of tracked objects includes "All Objects" and several items with checkmarks: "Access Control List", "Application", "Component", "Process", "Process Dependency", "Property", and "Property Sheet". At the bottom of the dropdown menu is a "More..." link.

Change History - Search		
Past 6 Hours ▼	Multiple-Select ▼	<input type="text"/>
	<div><div>All Objects</div><div>✓ Access Control List</div><div>✓ Application</div><div>✓ Component</div><div>✓ Process</div><div>✓ Process Dependency</div><div>✓ Property</div><div>✓ Property Sheet</div><div>More...</div></div>	

5. Select the objects to include in the Change History.

Example:

The screenshot shows the 'Change History - Search' interface. At the top, there is a header bar with the title 'Change History - Search'. Below the header, there are two dropdown menus: 'Past 6 Hours' and 'Multiple-Select'. To the right of these menus is a search input field. The 'Multiple-Select' dropdown menu is open, displaying a list of object types with checkmarks next to them: 'All Objects', 'Access Control List', 'Application', 'Component', 'Process', 'Process Dependen...', 'Property', 'Property Sheet', 'Access Control En...', 'Agent', 'Application Tier', and 'Artifact'. The search input field is empty.

6. Enter the search criteria.

As you type, the system starts to search for objects that match your search criteria.

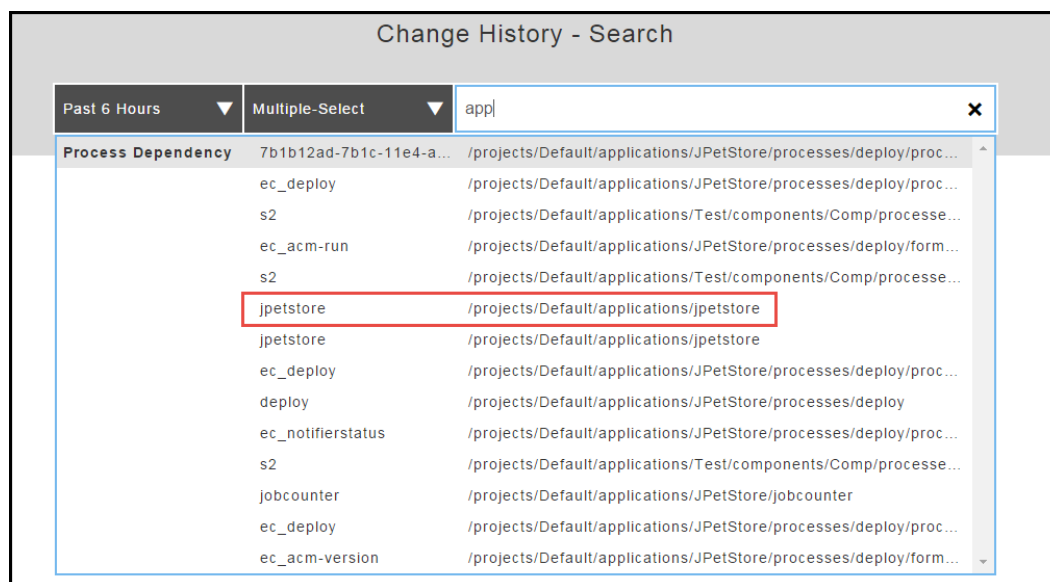
A list of objects matching your search criteria appears in the results section.

Example:

The screenshot shows the 'Change History - Search' interface. The 'Past 6 Hours' and 'Multiple-Select' dropdown menus are visible. The search input field now contains the text 'appl' and a search icon (magnifying glass) is visible on the right side of the input field.

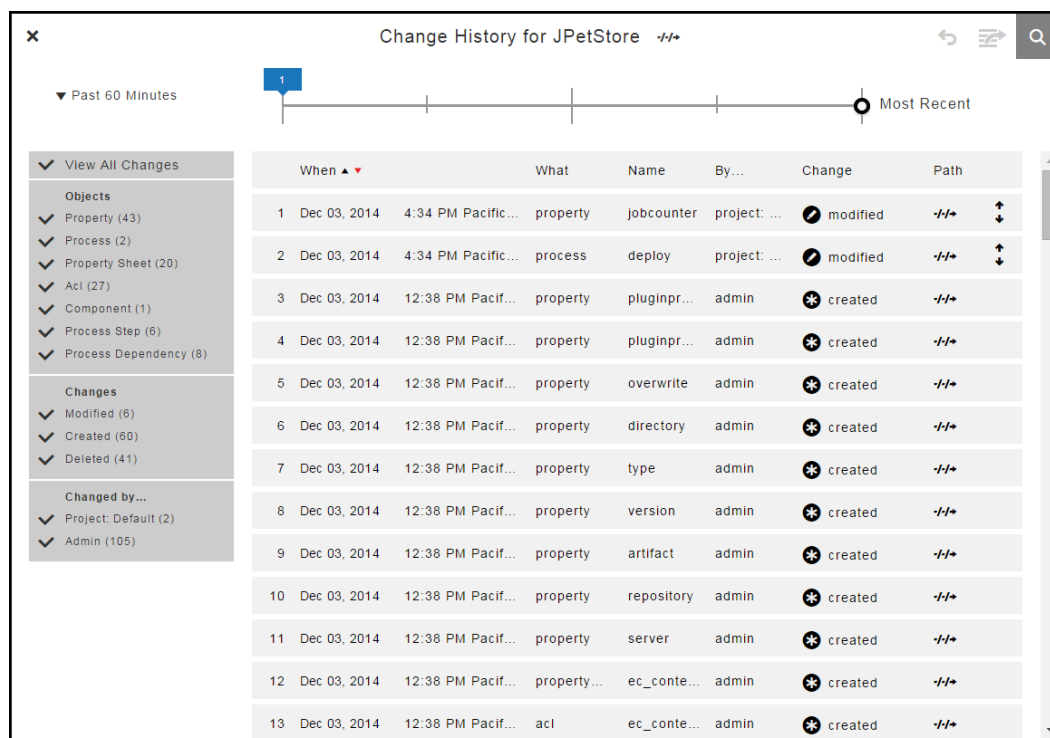
7. Select an object in the list.

Example:



The change history for the object that you selected appears.

Example:



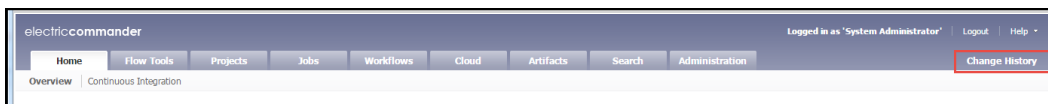
Running a New Search Through the Change History in the ElectricCommander Platform UI

Follow these steps to start a search through the Change History.

In the ElectricCommander platform:

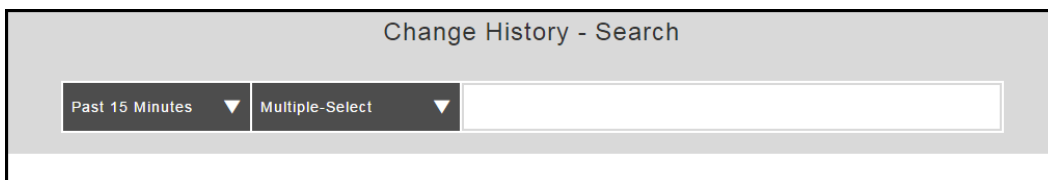
1. Click **Change History**.

Example:



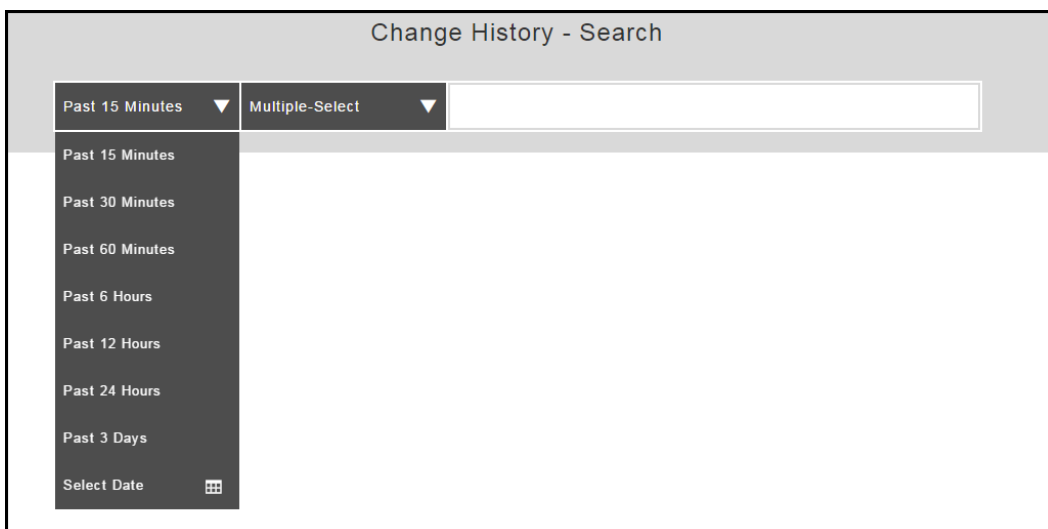
2. The Change History - Search dialog box opens.

Example:



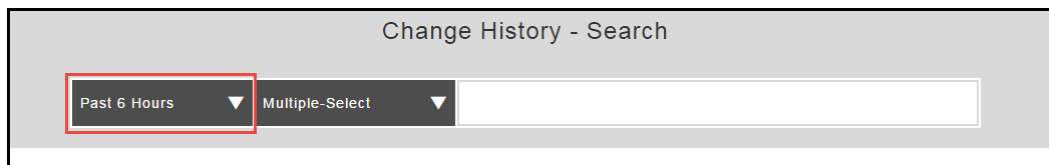
3. Click the down arrow in the Time Increment field to open the drop-down list.

Example:



4. Select a time increment.

Example:



The screenshot shows a search interface titled "Change History - Search". It contains two dropdown menus and a text input field. The first dropdown menu, labeled "Past 6 Hours", is highlighted with a red rectangle. The second dropdown menu is labeled "Multiple-Select". The text input field is empty.

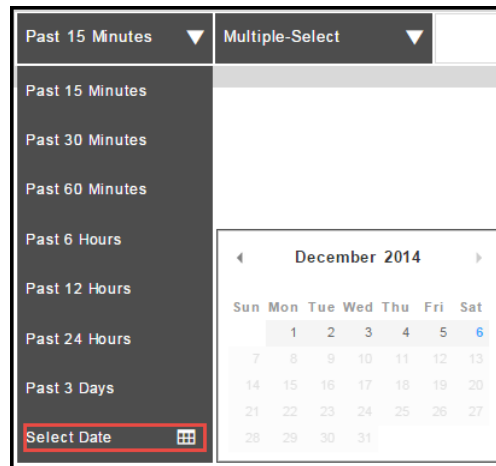
If you want to select a time increment longer than three days, go to the next step.

5. (Optional) If you want to use a time increment longer than three days, do the following:

- a. Click **Select Date**.

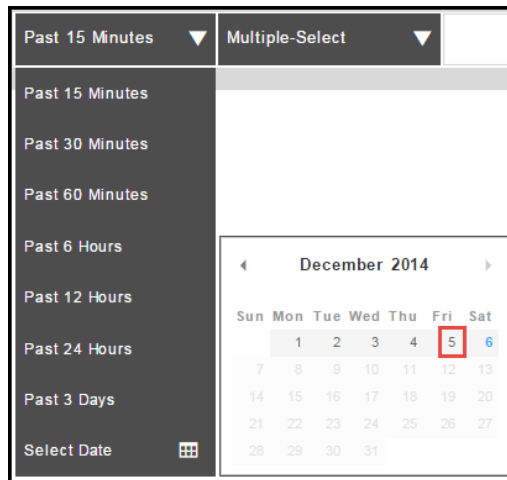
The Date Picker opens.

Example:



- b. Select a date.

Example:



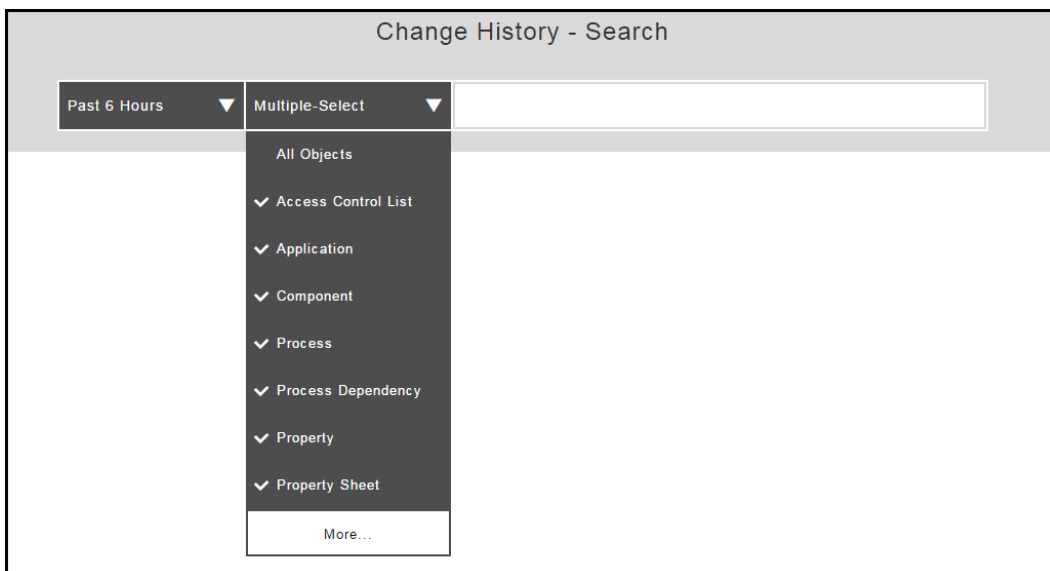
The Date Picker closes and the date that you selected appears in the Time Increment field.

Example:



6. Click **Multiple Select** to open the drop-down list of tracked objects.

Example:



7. Select the objects to include in the Change History.

Example:

Change History - Search

Past 6 Hours ▼

Multiple-Select ▼

work ✱

All Objects

✓ Access Control List

✓ Procedure

✓ Procedure Step

✓ Project

✓ Property

✓ Property Sheet

✓ Workflow Definition

✓ Access Control Entry

✓ Agent

Application

Application Tier

8. Enter the search criteria.

As you type, the system starts to search for objects that match your search criteria.

A list of objects matching your search criteria appears in the results section.

Example:

Change History - Search

Past 6 Hours ▼

Multiple-Select ▼

work| ✖

Example:

Change History - Search

Past 6 Hours ▼

Multiple-Select ▼

work| ✖

Access Control Entry

ec-klocwork-2.0.2.65837 /plugins/ec-klocwork-2.0.2.65837

workspaces /systemObjects/workspaces

ec-klocwork-ea-1.0.3.65837 /plugins/ec-klocwork-ea-1.0.3.65837

ec-klocwork-ea-1.0.3.65837 /plugins/ec-klocwork-ea-1.0.3.65837

ec-klocwork-ea-1.0.3.65837 /projects/ec-klocwork-ea-1.0.3.65837

ec-klocwork-2.0.2.65837 /plugins/ec-klocwork-2.0.2.65837

workspaces /systemObjects/workspaces

workspaces /systemObjects/workspaces

ec-klocwork-2.0.2.65837 /plugins/ec-klocwork-2.0.2.65837

ec-klocwork-ea-1.0.3.65837 /plugins/ec-klocwork-ea-1.0.3.65837

ec-klocwork-2.0.2.65837 /projects/ec-klocwork-2.0.2.65837

workspaces /systemObjects/workspaces

workspaces /systemObjects/workspaces

workspaces /systemObjects/workspaces

Access Control List

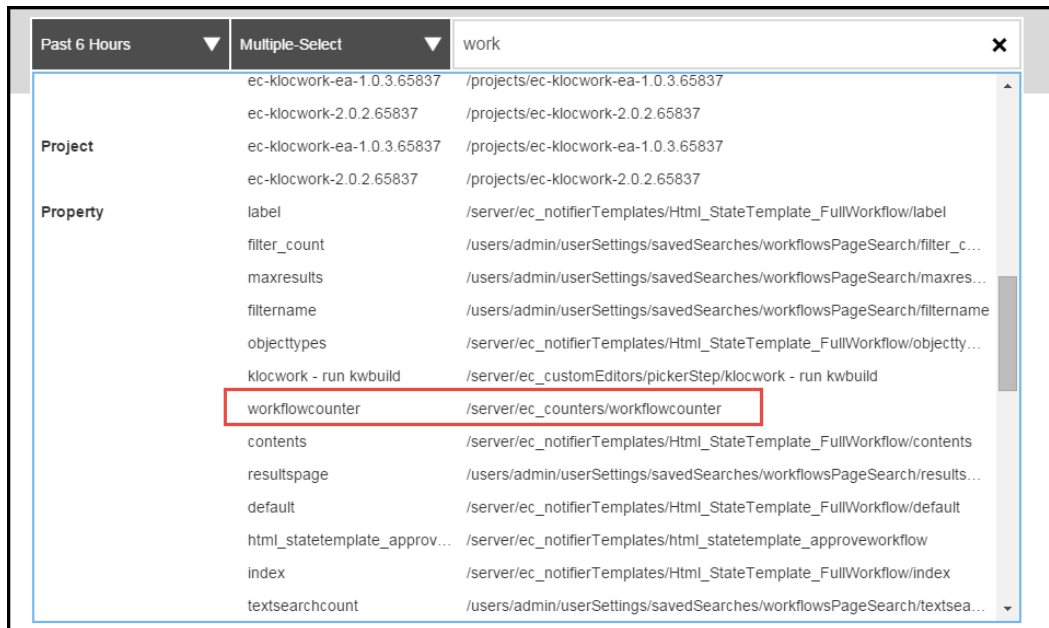
workflowspagesearch /users/admin/userSettings/savedSearches/workflowspagesearch

html_statetemplate_fullwor... /server/ec_notifierTemplates/html_statetemplate_fullworkflow

sort2 /users/admin/userSettings/savedSearches/workflowsPageSearch/sort2

9. Select an object in the list.

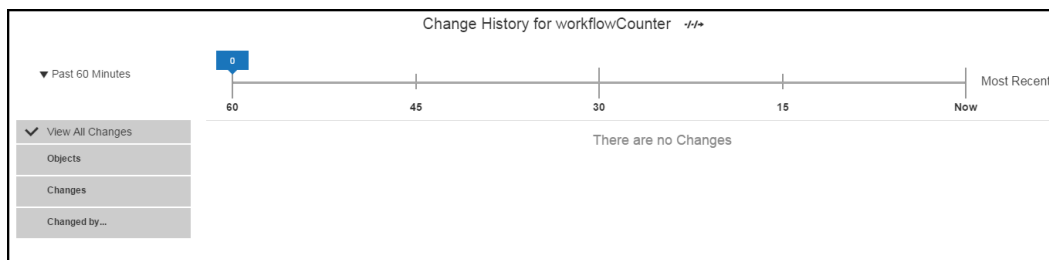
Example:



	Property	
Project	ec-klocwork-ea-1.0.3.65837	/projects/ec-klocwork-ea-1.0.3.65837
	ec-klocwork-2.0.2.65837	/projects/ec-klocwork-2.0.2.65837
	ec-klocwork-ea-1.0.3.65837	/projects/ec-klocwork-ea-1.0.3.65837
	ec-klocwork-2.0.2.65837	/projects/ec-klocwork-2.0.2.65837
Property	label	/server/ec_notifierTemplates/Html_StateTemplate_FullWorkflow/label
	filter_count	/users/admin/userSettings/savedSearches/workflowsPageSearch/filter_c...
	maxresults	/users/admin/userSettings/savedSearches/workflowsPageSearch/maxres...
	filtername	/users/admin/userSettings/savedSearches/workflowsPageSearch/filtername
	objecttypes	/server/ec_notifierTemplates/Html_StateTemplate_FullWorkflow/objectty...
	klocwork - run kwbuild	/server/ec_customEditors/pickerStep/klocwork - run kwbuild
	workflowcounter	/server/ec_counters/workflowcounter
	contents	/server/ec_notifierTemplates/Html_StateTemplate_FullWorkflow/contents
	resultspage	/users/admin/userSettings/savedSearches/workflowsPageSearch/results...
	default	/server/ec_notifierTemplates/Html_StateTemplate_FullWorkflow/default
	html_statetemplate_approv...	/server/ec_notifierTemplates/html_statetemplate_approveworkflow
	index	/server/ec_notifierTemplates/Html_StateTemplate_FullWorkflow/index
	textsearchcount	/users/admin/userSettings/savedSearches/workflowsPageSearch/textsea...

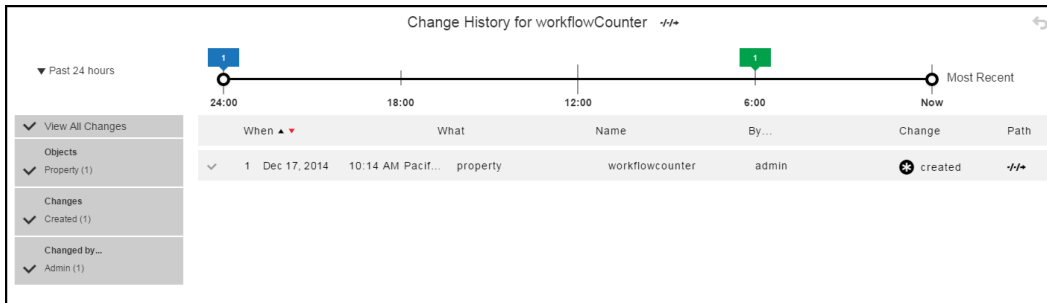
The change history for the object that you selected appears.

Example:



The selected object has no changes in the default time increment. You can change the time increment to show more changes to the selected object.

Example:



In the ElectricCommander platform, you can start a search through the Change History

Searching Through the Change History From an Existing Change History

Follow these steps to search through the Change History from an existing Change History.

Starting from the Change History:

1. Click the **Search** button.

Example:



The **Change History - Search** dialog box opens.

Example

Change History - Search

Past 15 Minutes Multiple-Select

Cancel

2. Click the down arrow to open the drop-down list.
3. Select a time increment.

If you want to select a time increment longer than three days, go to the next step.

4. (Optional) If you want to use a time increment longer than three days, do the following:

- a. Click **Select Date**.

The Date Picker opens.

- b. Select a date.

The Date Picker closes and the date that you selected appears in the Time Increment field.

5. Click **Multiple Select** to open the drop-down list of tracked objects.

6. Select the objects to include in the Change History.

7. Enter the search criteria.

As you type, the system starts to search for objects that match your search criteria.

A list of objects matching your search criteria appears in the results section.

8. Select an object in the list.

The change history for the object that you selected appears.

Snapshots

Use snapshots to reliably and repeatedly deploy your software in a continuous delivery cycle. A snapshot is an immutable version of an application in ElectricFlow with specific versions of the artifacts. You can save more than one snapshot of the application during the build, test, deploy, and release phases. You can compare snapshots to optimize and troubleshoot the application.

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. <i>Run</i> is a synonym of <i>deploy</i> in ElectricFlow.	All the processes or actions to use software in its environment, including implementing, installing, configuring, debugging, troubleshooting, and releasing.

Adding Snapshots

Follow these steps to add snapshots:

1. Go to the Applications List.
2. Choose an application.

- Click the **Snapshot** button.

Example:



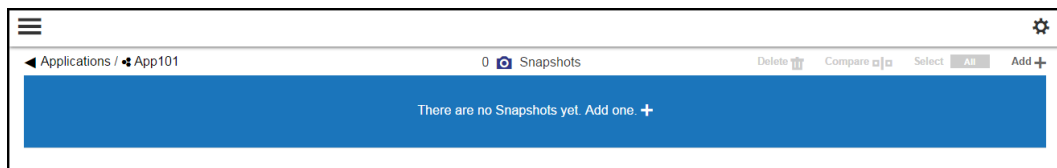
- Select **Snapshot List**.

The Snapshot List appears.

- To add a new snapshot, do one of the following:

If there are no snapshots in the list, click anywhere in the **Add one. +** pane to open the New Snapshot dialog box.

Example:

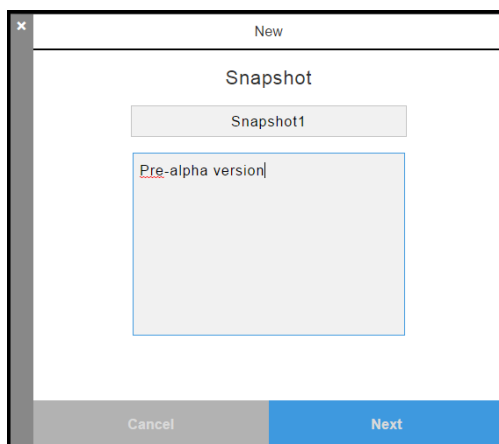


If the list has one or more snapshots, click **Add +**.

The New Snapshot dialog box appears.

- Enter a name for the snapshot that must be unique within the application.
- (Optional) Enter a description of the snapshot.

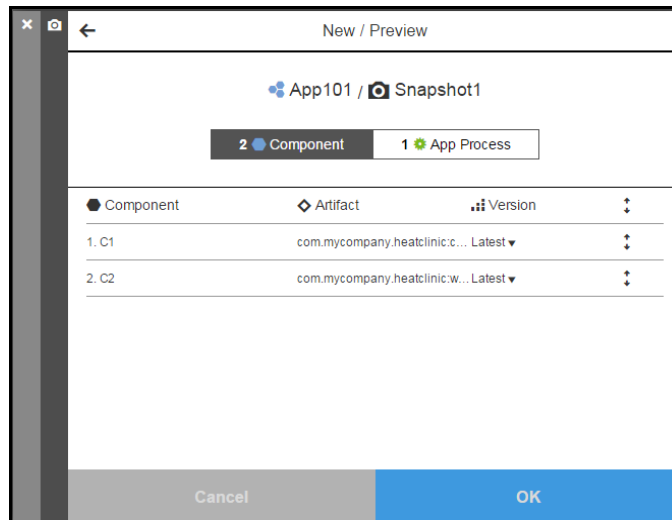
Example:



- Click **Next**.

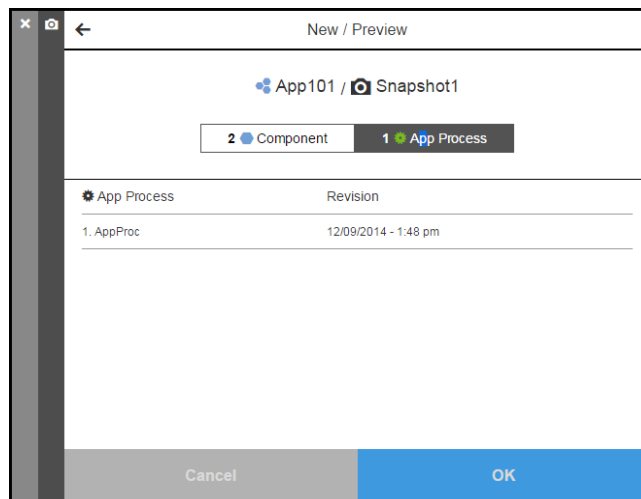
- The New/Preview dialog box opens.

Example:



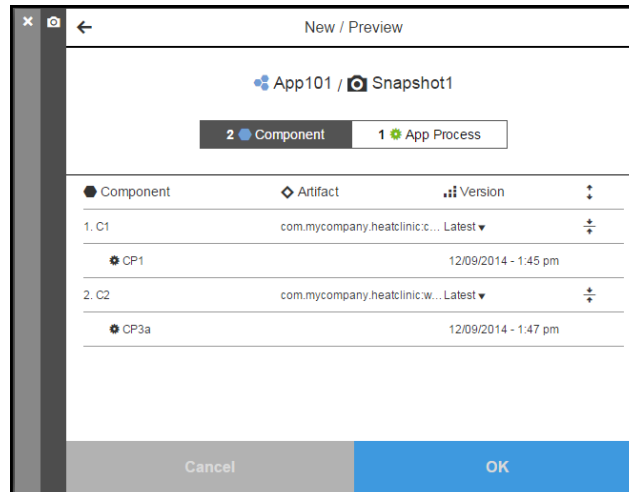
- Toggle between the Component and App Process views to see the components and application processes for the selected application.

Example:



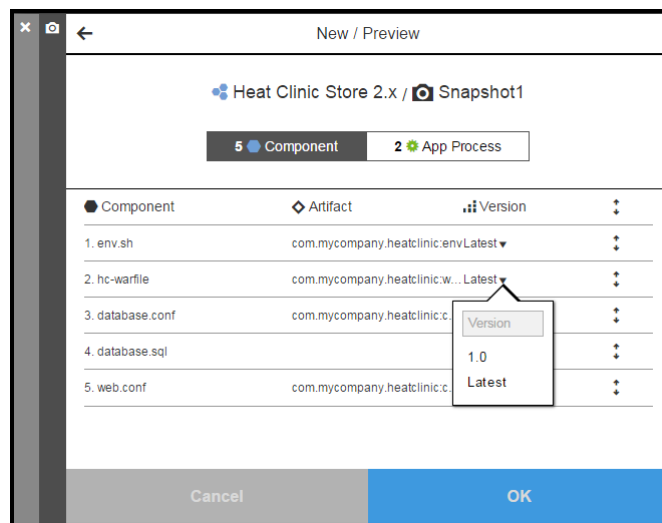
11. In the Component view, select the artifact versions for the snapshot:
 - a. Click the **View** button to see the component processes for a component.

Example:



- b. Click the down arrow in the **Version** column to open the drop-down list of available artifact versions.

Example:



- c. Select an artifact version.

- Click **OK**.

The "Snapshot <snapshot_name> has been created.>" message appears.

The Snapshot List is updated and now has the snapshot that you added.

Example:

Applications / App101		2 Snapshots		Delete	Compare	Select	All	Add
1	Snapshot1	Pre-alpha version	12/09/2014 - 2:09 PM	By admin				
2	Snapshot2	Automated test sample	12/09/2014 - 2:21 PM	By admin				

Deploying Snapshots

- Go to the Applications List.
- Choose an application.
- Click the **Run process** button.

Example:



- Select **New Run**, **Last Run**, or **Schedule**.

The dialog box to set the parameters for running an application opens.

In this dialog box, you can deploy a snapshot or compare the application to the selected snapshot.

Example:

Store 1.2

Select Process

Select Environment

5 Select a Snapshot

Compare

0 Artifacts

0 Selected

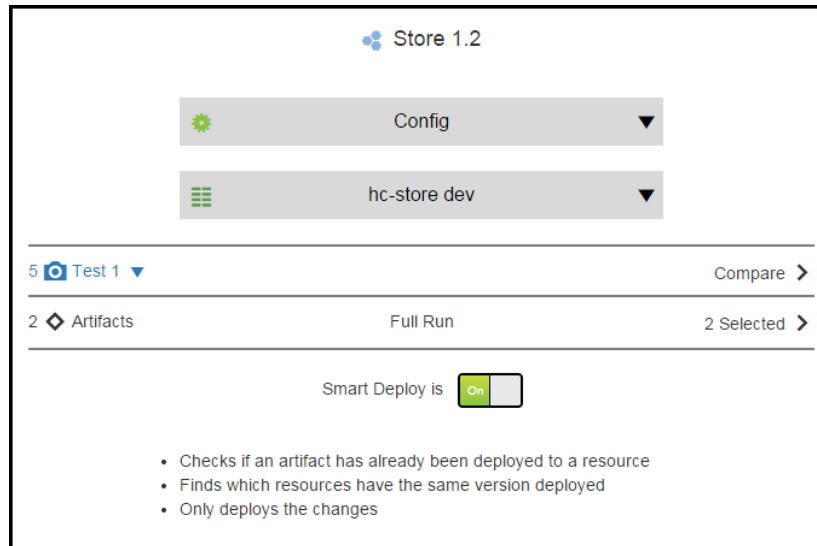
Smart Deploy is

Off

5. Select the parameters to run an application.

For more information, go to [Deploying or Comparing Snapshots](#) on page 418 and [Deploying \(Running\) Applications](#) on page 173.

Example:



6. To run (deploy) the snapshot:
 1. Click **OK**.
 2. Go to [Deploying \(Running\) Applications](#) on page 173 for more information.
7. To compare the application to the selected snapshots:
 1. Click **Compare** to compare the application to the selected snapshot.
 2. Go to [Comparing Snapshots](#) on page 421.

You can compare the application to other snapshots.

Deploying or Comparing Snapshots

How to get here: From the Home page, go to the Applications List, choose an application, click the Run process button, and select **New Run**.

Example:



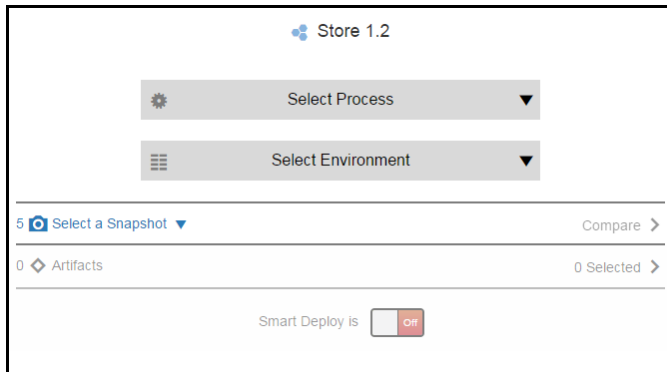
The dialog box to set the parameters for running (deploying) the application opens.

In this dialog box, you can deploy a snapshot or compare the application to a snapshot.

Setting Parameters in the Dialog Box

In the dialog box, the **Select a Snapshot** option is available (enabled) because the application has one or more snapshots saved.

Example:



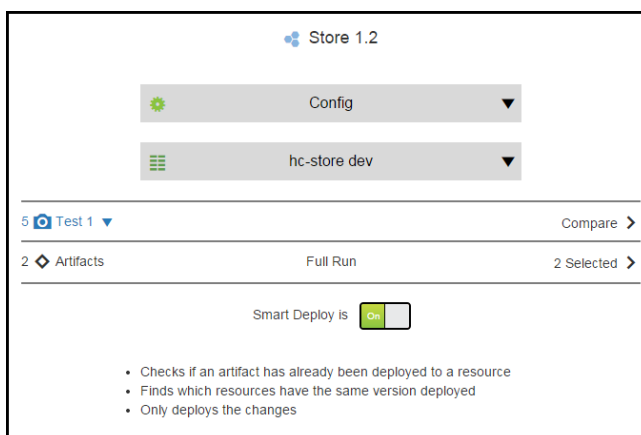
Select the following options to set the parameters to run the application:

- **Select Process**—Click the pull-down button to select the application to run.
- **Select Environment**—Click the pull-down button to select the environment in which the application will run.
- **Select a Snapshot**—Click the pull-down button to select one or more snapshot.

The **Compare** option is now available (enabled) because of the following

- There are one or more snapshots that can be compared to the application in the selected environment.
- The application has been selected.
- The environment has been selected.
- The one or more snapshot has been selected.

Example:



Deploying Snapshots

After setting the parameters, click **OK** to run (deploy) the selected snapshot.

For more information, go to

Comparing Snapshots

After setting the parameters, click **OK** to compare the selected application to a snapshot.

Managing Snapshots

You can do the following tasks on a Snapshot List:

To open the Snapshot List:

1. Go to the Applications list.
2. Choose an application.
3. Click the **Snapshot** button.

Example:

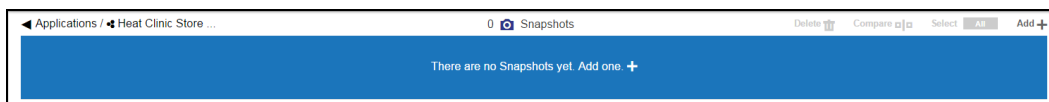


4. Select **Snapshot List**.

5 Applications				Select	All	Delete	Add +
1	App001	1 Component	1 Application Process	1 Tier Map			
2	App002	1 Component	1 Application Process	1 Tier Map			
3	App101	2 Component	1 Application Process	2 Tier Map			
4	Heat Clinic Store 1.1	5 Component	2 Application Process	3 Tier Map			
5	Heat Clinic Store 2.x	5 Component	2 Application Process	3 Tier Map			

The Snapshot List opens.

If no snapshots have been saved, the Snapshot List is empty. Go to [Adding Snapshots](#) on page 413 to add a snapshot in the application.



If one or more snapshots have been saved, the Snapshot List shows the saved snapshots.

Applications / App101		2 Snapshots		Delete	Compare	Select	All	Add
1	Snapshot1	Pre-alpha version	12/09/2014 - 2:09 PM	By admin				
2	Snapshot2	Automated test sample	12/09/2014 - 2:21 PM	By admin				

After you choose a snapshot, click the **View details** button to view more information about the snapshot.

Comparing Snapshots

Use one of these methods to compare snapshots:

- [Comparing an Application to Snapshots](#) on page 421
- [Comparing Snapshots](#) on page 423

Comparing an Application to Snapshots

1. Go to the Environments List.
2. Select an environment.

Example:

3	hc-store dev	Enabled	1 Applications installed	1 ...
4	hc-store prod	Enabled	1 Applications installed	...
5	hc-store qe	Enabled	1 Applications installed	1 ...

3. Click the **Inventory** button to open the Environment Inventory.

Example:



4. Choose an application.

Example:

Environments / Inventory		hc-store dev		
1	Store 1.2	3 Artifacts	1	

- Click the **Snapshot** button.

Example:



- Select **Compare**.

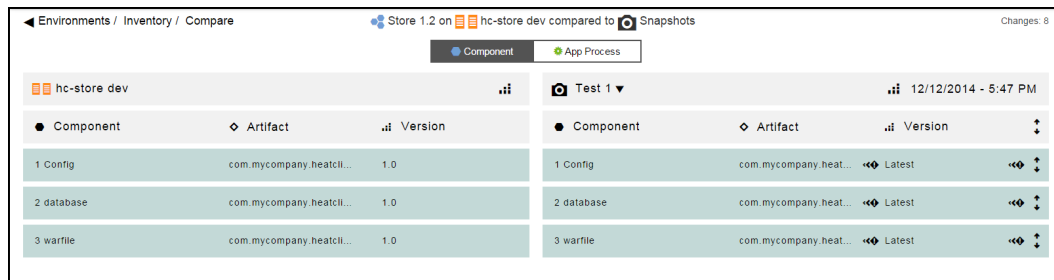
Example:



The Snapshot Comparison page opens. You can compare the currently deployed application to a snapshot.

The currently deployed application is on the left, and the snapshot is on the right. You can choose the snapshot for the comparison.

Example:



- Click the pull-down button next to the snapshot name to select a different snapshot.

Example:

Environments / Inventory / Compare

Store 1.2 on hc-store dev compared to Snapshots

Component App Process

hc-store dev

Component	Artifact	Version
1 Config	com.mycompany.heatcli...	1.0
2 database	com.mycompany.heatcli...	1.0
3 warfile	com.mycompany.heatcli...	1.0

Test 1

Component	Artifact	Version
1 Config_pass	com.mycompany.heatcli...	Latest
2 database	com.mycompany.heatcli...	Latest
3 warfile	com.mycompany.heatcli...	Latest

12/12/2014 - 5:47 PM

The Snapshot Comparison page now shows the comparison between the application and the Config_pass snapshot. The components and component processes have changed.

Example:

Environments / Inventory / Compare

Store 1.2 on hc-store dev compared to Snapshots

Component App Process

hc-store dev

Component	Artifact	Version
1 Config	com.mycompany.heatcli...	1.0
2 database	com.mycompany.heatcli...	1.0
3 warfile	com.mycompany.heatcli...	1.0

Config_pass

Component	Artifact	Version
1 Config	com.mycompany.heatcli...	Latest
2 database	com.mycompany.heatcli...	Latest
3 warfile	com.mycompany.heatcli...	Latest

12/12/2014 - 2:32 PM

Comparing Snapshots

- Go to the Applications List.
- Select an application.
- Click the **Snapshot** icon.
- Select **Snapshot List**. The Snapshot Comparison page opens.

Example:

Applications / Store 1.2

5 Snapshots

Delete Compare Select All Add

1	Config_alpha	12/12/2014 - 2:35 PM	By admin	
2	Config_pass	12/12/2014 - 2:32 PM	By admin	
3	Release_beta	12/12/2014 - 2:37 PM	By admin	
4	Release_pass	12/12/2014 - 2:37 PM	By admin	
5	Test 1	12/12/2014 - 5:47 PM	By admin	

Comparing an Application to Snapshots

How to get here: From the Home page, go to the Environments List, select an environment, and click the **Inventory** button to open the Environment Inventory.

Example:



This example shows the Store 1.2 application.

5	Store 1.2	3	Component	2	Application Process	3	Tier Map				
⚙	8_Release	Release	☰	hc-store prod	Dec 12, 2014	2:58 Pacif...	00:04	100%	⚙	➡	
⚙	7_Config	Config	☰	hc-store prod	Dec 12, 2014	2:57 Pacif...	00:18	100%	⚙	➡	
⚙	6_Release	Release	☰	hc-store dev	Dec 12, 2014	2:36 Pacif...	00:03	100%	⚙	➡	
⚙	5_Config	Config	☰	hc-store prod	Dec 12, 2014	2:34 Pacif...	00:18	100%	⚙	➡	
⚙	4_Config	Config	☰	hc-store prod	Dec 12, 2014	2:31 Pacif...	00:19	100%	⚙	➡	
⚙	3_Release	Release	☰	hc-store dev	Dec 12, 2014	2:30 Pacif...	00:05	100%	⚙	➡	
⚙	2_Config	Config	☰	hc-store qe	Dec 12, 2014	2:29 Pacif...	00:26	100%	⚙	➡	
⚙	1_Config	Config	☰	hc-store dev	Dec 12, 2014	2:28 Pacif...	00:20	100%	⚙	➡	

The application was run in these environments:

3	hc-store dev	Enabled	1	Applications installed	1	
4	hc-store prod	Enabled	1	Applications installed		
5	hc-store qe	Enabled	1	Applications installed	1	

The Environment Inventory for the environment called hc-store dev shows that three artifacts were deployed.

Environments / Inventory	hc-store dev	3	Artifacts	1		
1	Store 1.2					

After you click the **View** button, more information about the artifacts appear.

Environments / Inventory	hc-store dev	3	Artifacts	1		
1	Store 1.2					
database	com.my...config	1.0		41 minutes ago	1/1	
Config	com.my...arfile	1.0		41 minutes ago		
warfile	com.my...arfile	1.0		33 minutes ago		

When you click the **Snapshot** button, you can either create a new snapshot or compare a snapshot to the currently deployed application.

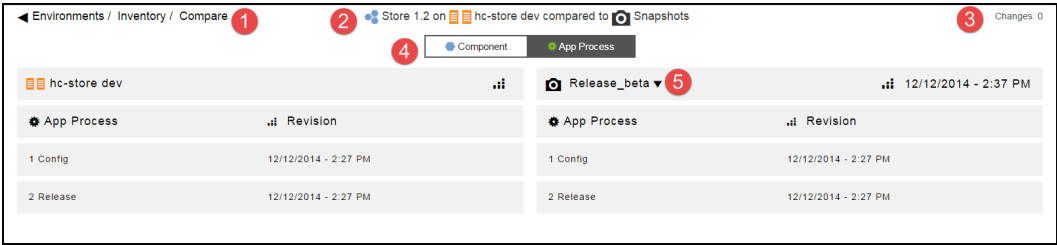
When one or more snapshots are saved for an application, this menu appears. If the application has no snapshots, you can only create a snapshot.

Example:



In the Snapshot Comparison page, you can compare the currently deployed application to a snapshot. The currently deployed application is on the left, and the snapshot is on the right. You can choose the snapshot for the comparison.

The Snapshot Comparison page has the following information:



1	Breadcrumb to the Snapshot Comparison page: <i>Environments / Inventory / Compare</i>
2	Page title: <Application name> on <Environment Name> compared to Snapshots
3	Number of changes, which is updated automatically depending on the selected snapshot.
4	Toggle between the Component and App Process views.
5	When more than one snapshot is saved, the pull-down button is available (enabled). You can select other snapshots to compare.

6	Change Alert icon, which appears next to the object that changed.
7	Click the View button to expand all the rows and view information about the objects in both columns.
8	Click the View button in each object row to view more information about the object in both columns.

When you expand the rows to show details about the objects, the comparison shows that the component processes changed between the currently deployment application and the Release_beta snapshot.

Environments / Inventory / Compare

Store 1.2 on hc-store dev compared to Snapshots

Changes: 6

Component App Process

Component	Artifact	Version
1 Config	com.mycompany.heatcli...	1.0
2 database	com.mycompany.heatcli...	1.0
3 warfile	com.mycompany.heatcli...	1.0

Component	Artifact	Version
1 Config	com.mycompany.heatcli...	1.0
1 Save		12/12/2014 - 2:26 PM
2 database	com.mycompany.heatcli...	Latest
1 DBUpdate		12/12/2014 - 2:30 PM
3 warfile	com.mycompany.heatcli...	1.0
Deleted		
2 Deploy file		12/12/2014 - 2:23 PM
Deleted		

You can compare a different snapshot to the application. Click the pull-down button next to the snapshot name to select a snapshot.

Environments / Inventory / Compare

Store 1.2 on hc-store dev compared to Snapshots

Changes: 6

Component App Process

Component	Artifact	Version
1 Config	com.mycompany.heatcli...	1.0
2 database	com.mycompany.heatcli...	1.0
3 warfile	com.mycompany.heatcli...	1.0

Component	Artifact	Version
1 Config	com.mycompany.heatcli...	1.0
2 database	com.mycompany.heatcli...	Latest
3 warfile	com.mycompany.heatcli...	1.0

The Snapshot Comparison page now shows the comparison between the application and the Config_pass snapshot. The components and component processes changed.

Environments / Inventory / Compare Store 1.2 on hc-store dev compared to Snapshots Changes: 8

Component App Process

Component	Artifact	Version
1 Config	com.mycompany.heatcli...	1.0
2 database	com.mycompany.heatcli...	1.0
3 warfile	com.mycompany.heatcli...	1.0
1 DBUpdate		12/12/2014 - 2:23 PM
2 Deploy file		12/12/2014 - 2:26 PM
3 Save		12/12/2014 - 2:30 PM

Component	Artifact	Version
1 Config	com.mycompany.heatcli...	Latest
1 Save		12/12/2014 - 2:26 PM
2 database	com.mycompany.heatcli...	Latest
1 DBUpdate		12/12/2014 - 2:30 PM
3 warfile	com.mycompany.heatcli...	Latest
Deleted		
2 Deploy file		12/12/2014 - 2:23 PM
Deleted		

Comparing Snapshots in the Snapshot List

How to get here: From the Applications List, select an application > click the **Snapshot** button > select **Snapshot List**.

Example:



This example shows the Store 1.2 application.

5	Store 1.2	3 Component	2 Application Process	3 Tier Map				
8_Release	Release	hc-store prod	Dec 12, 2014 2:58 Pacif...	00:04	100%			
7_Config	Config	hc-store prod	Dec 12, 2014 2:57 Pacif...	00:18	100%			
6_Release	Release	hc-store dev	Dec 12, 2014 2:36 Pacif...	00:03	100%			
5_Config	Config	hc-store prod	Dec 12, 2014 2:34 Pacif...	00:18	100%			
4_Config	Config	hc-store prod	Dec 12, 2014 2:31 Pacif...	00:19	100%			
3_Release	Release	hc-store dev	Dec 12, 2014 2:30 Pacif...	00:05	100%			
2_Config	Config	hc-store qe	Dec 12, 2014 2:29 Pacif...	00:26	100%			
1_Config	Config	hc-store dev	Dec 12, 2014 2:28 Pacif...	00:20	100%			

The Snapshot List has four snapshots:

Applications / Store 1.2	4 Snapshots	Delete	Compare	Select	AB	Add
1	Config_alpha	12/12/2014 - 2:35 PM	By admin			
2	Config_pass	12/12/2014 - 2:32 PM	By admin			
3	Release_beta	12/12/2014 - 2:37 PM	By admin			
4	Release_pass	12/12/2014 - 2:37 PM	By admin			

Click the **Compare Snapshots** button to open the Snapshot Comparison Page.

Example:



In this Snapshot Comparison page, you can compare two snapshots. The newest snapshot is on the left, and the snapshot that was saved before the previous one is on the right.

The Snapshot Comparison page has the following information:

Applications / Store 1.2 / Snapshots compare

Store 1.2

Changes: 2

Component

App Process

Release_pass

12/12/2014 - 2:37 PM

Release_beta

12/12/2014 - 2:37 PM

Component	Artifact	Version
1 Config	com.mycompany.heatcli...	Latest
2 warfile	com.mycompany.heatcli...	Latest
3 database	com.mycompany.heatcli...	Latest

Component	Artifact	Version
1 Config	com.mycompany.heatcli...	1.0
2 warfile	com.mycompany.heatcli...	1.0
3 database	com.mycompany.heatcli...	Latest

Applications / Store 1.2 / Snapshots compare

Store 1.2

Changes: 0

Component

App Process

Release_pass

12/12/2014 - 2:37 PM

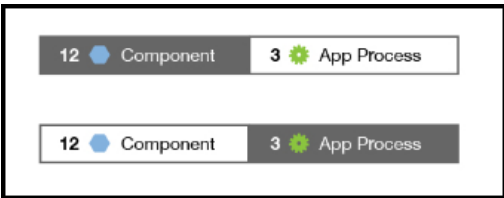
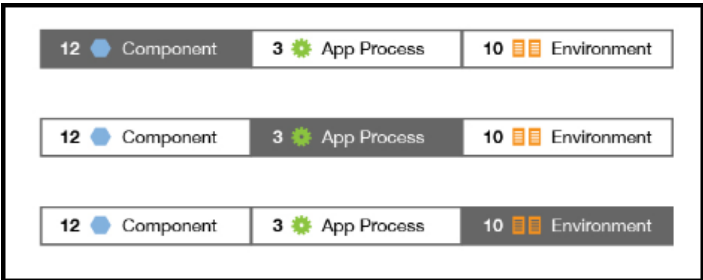
Release_beta

12/12/2014 - 2:37 PM

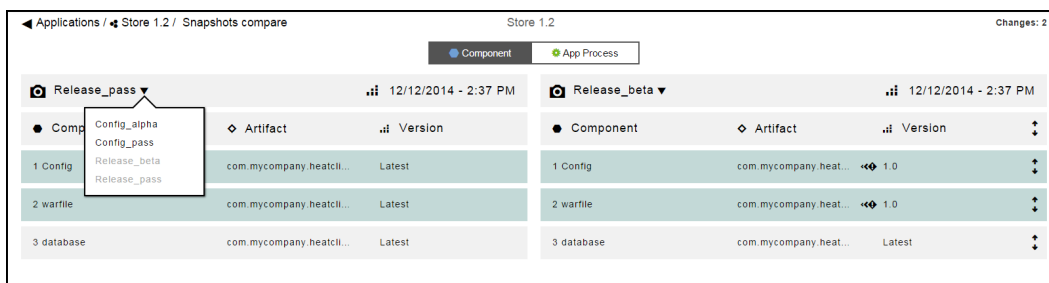
App Process	Revision
1 Config	12/12/2014 - 2:27 PM
2 Release	12/12/2014 - 2:27 PM

App Process	Revision
1 Config	12/12/2014 - 2:27 PM
2 Release	12/12/2014 - 2:27 PM

1	Breadcrumb to this page: <i>Applications / <Application name>/ Snapshots compare</i>
2	Application name
3	Number of changes, which is updated automatically depending on the selected snapshots.

4	<p>Toggle between the Component, App Process, and Environment views.</p> <p>Before a snapshot is deployed, only the Component and App Process views are available.</p>  <p>After the snapshot is deployed, Component, App Process, and Environment views are available.</p> 
5	<p>When more than two snapshots are saved, the pull-down button is available (enabled). You can select other snapshots to compare.</p>
6	<p>When more than two snapshots are saved, the pull-down button is available (enabled). You can select other snapshots to compare.</p>
7	<p>Change Alert icon, which appears next to the object that changed.</p>
8	<p>Click the View button to expand all the rows and view information about the objects in both columns.</p>
9	<p>Click the View button in each object row to view more information about the object in both columns.</p>

You can compare other snapshots to compare. Click the pull-down button next to the snapshot name in a column to select other snapshots.



The results change when you select different snapshots:

Applications / Store 1.2 / Snapshots compare				Store 1.2				Changes: 3			
				Component				App Process			
Config_pass ▼				12/12/2014 - 2:32 PM				Config_alpha ▼			
● Component	◇ Artifact	⚙ Version		● Component	◇ Artifact	⚙ Version		● Component	◇ Artifact	⚙ Version	
1 Config	com.mycompany.heatcli...	Latest		1 Config	com.mycompany.heatcli...	1.0		1 Config	com.mycompany.heatcli...	1.0	
2 database	com.mycompany.heatcli...	Latest		2 database	com.mycompany.heatcli...	1.0		2 database	com.mycompany.heatcli...	1.0	
3 warfile	com.mycompany.heatcli...	Latest		3 warfile	com.mycompany.heatcli...	1.0		3 warfile	com.mycompany.heatcli...	1.0	

Deleting Snapshots

Do one of these methods to delete snapshots:

- [Selecting Snapshots to Delete](#) on page 431
- [Deleting All the Snapshots](#) on page 432

Selecting Snapshots to Delete

To delete one or more snapshots:

1. Select the snapshots that you want to delete.
2. Click the Delete button.

Example:

Applications / Store 1.2				5 Snapshots				Delete [X] Compare [A] Select [All] Add [+			
1	Config_alpha	12/12/2014 - 2:35 PM	By admin	2	Config_pass	12/12/2014 - 2:32 PM	By admin	3	Release_beta	12/12/2014 - 2:37 PM	By admin
4	Release_pass	12/12/2014 - 2:37 PM	By admin	5	Test 1	12/12/2014 - 5:47 PM	By admin				

A message appears.

Delete Snapshot

⚠ ATTENTION!

This will delete 3 snapshots

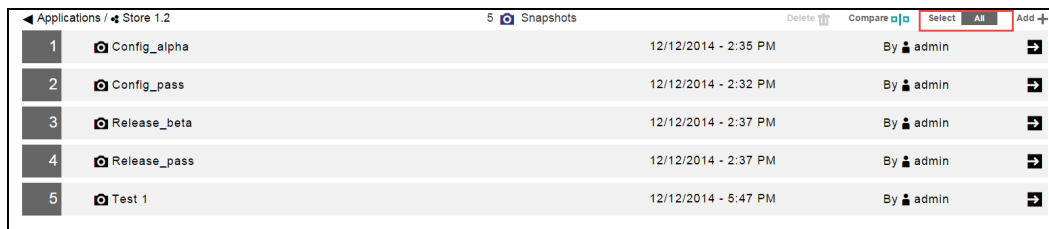
Are you sure that you want to do this?

Cancel OK

3. Click **OK**.

Deleting All the Snapshots

1. Click **All**.

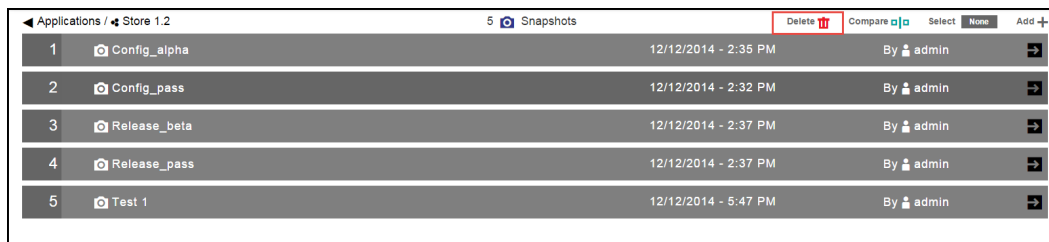


The screenshot shows a table titled '5 Snapshots' under the path 'Applications / Store 1.2'. The table has five rows, each representing a snapshot. The 'Select' button in the top right corner is highlighted with a red box, and the 'All' option is selected. The table columns are: ID, Name, Time, User, and Action.

ID	Name	Time	User	Action
1	Config_alpha	12/12/2014 - 2:35 PM	By admin	[icon]
2	Config_pass	12/12/2014 - 2:32 PM	By admin	[icon]
3	Release_beta	12/12/2014 - 2:37 PM	By admin	[icon]
4	Release_pass	12/12/2014 - 2:37 PM	By admin	[icon]
5	Test 1	12/12/2014 - 5:47 PM	By admin	[icon]

All of the snapshots are selected.

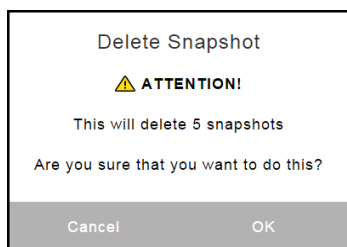
2. Click the Delete button.



The screenshot shows the same '5 Snapshots' table. The 'Delete' button in the top right corner is highlighted with a red box. The 'Select' button is now disabled and labeled 'None'.

ID	Name	Time	User	Action
1	Config_alpha	12/12/2014 - 2:35 PM	By admin	[icon]
2	Config_pass	12/12/2014 - 2:32 PM	By admin	[icon]
3	Release_beta	12/12/2014 - 2:37 PM	By admin	[icon]
4	Release_pass	12/12/2014 - 2:37 PM	By admin	[icon]
5	Test 1	12/12/2014 - 5:47 PM	By admin	[icon]

A message appears.



The dialog box is titled 'Delete Snapshot' and contains a warning icon and the text 'ATTENTION!'. It informs the user that 5 snapshots will be deleted and asks for confirmation. The 'OK' button is highlighted.

Delete Snapshot

⚠ ATTENTION!

This will delete 5 snapshots

Are you sure that you want to do this?

Cancel OK

3. Click **OK**.

ElectricFlow Tutorials

This topic has tutorials to help you use ElectricFlow to deploy your software, system, or application.

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. <i>Run</i> is a synonym of <i>deploy</i> in ElectricFlow.	All the processes or actions to use software in its environment, including implementing, installing, configuring, debugging, troubleshooting, and releasing.

- [Running Applications with Deploy Options](#) on page 433

Running Applications with Deploy Options

Starting in ElectricFlow 5.2, when running an application, you can do a full or partial deploy and you can run the application on a schedule.

This tutorial describes how to run an application by adding a new artifact and selecting artifact versions to run (partial deploy and smart deploy).

Before You Begin

We recommend designing an application as described in the following list and then running it.

- The application has one application process consisting one or more steps to retrieve an artifact.
- The application has two application tiers, and each tier has two components.
- The application has five artifacts, and each artifact has two versions.

- For four of the artifacts, an artifact is retrieved as part of an application or component process.
- The fifth artifact is the new artifact that will be added to the application.
- Each component has a component process with one or more steps to retrieve an artifact from a repository.
- The environment has two tiers, and each tier has two resources.
- There are at least two tier maps.

Tutorial

To run the application you add a new artifact and select the specific version of an existing artifact:

1. In the application, add the fifth artifact to an application process step that retrieves the artifact.
2. Go to the Applications List, click on the **Run process** button, and select **New Run**.
The dialog box where you set the parameter to run the application opens.
3. Select the application process and environment, and enable smart deploy.
4. Click **Full run** to open the dialog box with the list of objects in the application.
5. Select the new artifact.
6. For the existing artifact, find it in the list and select the artifact version that you want to use.
7. Click **OK** to return to the dialog box.
8. Click **OK** to run the application.
9. See the results in the Environment Inventory and the Application Inventory.