



ElectricFlow 6.0

Release Notes

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These Release Notes contain supplemental information about ElectricFlow™, Version 6.0.

Topics include:

ElectricFlow 6.0	2
Product Description	2
What's New or Modified	2
Installation and Upgrade Notes	6
Configuration Notes	7
Limitations	7
Known Issues	8
Documentation	10
Troubleshooting and Getting Help	12

ElectricFlow 6.0

ElectricFlow 6.0 is a long-term support (LTS) release that rolls up the previous Feature Releases and also brings many new improvements around user interface, agent technologies, security, and efficiency. For more information about ElectricFlow software release strategy, go to the [ElectricFlow/ElectricCommander Release Strategy Update](#).

Product Description

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

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

What's New or Modified

New Features and Functionality

- The ElectricCommander platform UI was re-skinned to match that of the new, more modern ElectricFlow UX. In the platform UI, the name “ElectricCommander” has been replaced with “ElectricFlow.”
- ElectricFlow Domain Specific Language (DSL)

DSL enables authoring of automation like procedures, steps, workflows using a high level Groovy based syntax, providing flexibility and programmatic control over automations and pipelines.
- Master Application Components (copy)

When authoring applications and their components, it is possible to create “Master Components” to more easily re-use standardized and best practice components across large enterprises.
- Agent modernization
 - Native 64 bit agents on Linux and Windows allow better usage of 64 bit resources.
 - Native JRuby and Groovy in command blocks and for plugin authoring enabling direct use of latest vendor provided APIs.
 - A smaller agent only installer makes agent distribution more efficient.
- Security enhancements
 - OpenSSL, Apache, and PHP updated to latest secure versions.
 - The SSLv3 protocol has been replaced with TLS.
 - Secured credentials can be used as parameters on workflows and application processes.

- Improvements to the User Experience
 - UI consistency improved across all features.
 - Management of key objects can be done from the new ElectricFlow UI, including Resources, Users, Groups, Plugins, Credentials, Artifacts, and Licenses.
 - The CI dashboard has been adjusted to be color-blind friendly.
- Efficiency improvements
 - Accelerate your edit/test/fix cycle by running application processes from the modeling canvases.
 - Get direct access to an application's processes and tier maps from the application list.
 - Upload or download a subset of the files from/to an artifact (using include or exclude).
- Provisioning environment templates outside of Deployments
- Pipelines (product preview, Free Beta)

Pipelines easily model a reusable single pathway to production across multiple stages and environments and provide an aggregated view of all the activity.

While pipelines are available for exploration with your current license, Electric Cloud reserves the right to change how this capability will be offered in future releases.
- All plugins in ElectricFlow 6.0 have been updated to reflect the new look, feel, and branding.

See the "Universal Access to Plugins Directory" section of the ElectricFlow Installation Guide to ensure that your agents will have access to these newest plugin versions.

Feature Release Rollup

The following set of features have been provided in earlier 5.X Feature Release versions of ElectricFlow, and are listed here for their first appearance in an LTS version.

- Change Tracking for faster root cause analysis and with the safety net of revert.
- RESTful and JavaScript APIs for programmatic control of your automations and pipelines.
- StatsD and Graphite integrations to simplify reporting and system health monitoring.
- Application snapshots to facilitate promotion and roll back of known application component versions.
- Native support for dynamic cloud environments to simplify provisioning/de-provisioning of resources in public and private clouds.

Native support for dynamic cloud environments for spinning up resource pools outside of application deployments
- Define custom parameters on application processes in your deployments.
 - ElectricFlow UI enhancements
 - Hold down **Ctrl** while clicking the left mouse button to open new tabs in your browser.
 - Embedded pages for automation-platform objects including procedures and workflows.
- Smart deploy reduces deployment risk and time by only deploying changed objects.
- Partial deploy deploys only components that you select.

- Process scheduling—You can set schedules to run applications on a one-time, daily, weekly, or monthly basis.
- Email notifications—You can configure the system to send email notifications based on the success or failure of a process step.
- Process Branching—You can now create processes with conditional paths.

Resolved Issues

The following set of features have been provided in earlier ElectricFlow 5.x Feature Release versions, and are listed here for their first appearance in an LTS version.

- Fixed the issue where new procedure steps were run in the order in which they were created, instead of the order in which they were placed in the process. (CEV-3628)
- Added support for steps in process or process step to run as *admin/sudo/root*. (CEV-3633)
- Added support for impersonation in ElectricFlow applications. (CEV-3634)
- A better error message is displayed when the repository server is not able to use port 8200. (CEV-3636)
- Added the ability to delete a step in a process. (CEV-3637)
- Added support for complex branching conditions in application and component processes. (CEV-3640)
- Added EC-Maven and EC-FileSysRepo as content repository sources when you create a component. (CEV-3642)
- Added icons for the different types of steps in the application tier, such as component and shell steps. (CEV-3646)
- Added the ability to set execution and branching of steps based on conditional statements in the process visual editor. (CEV-3648)
- Added the environment name to the Tier Mapping dialog box. (CEV-3651)
- Fixed the issue where the EC-FileOps plugin list was corrupted. (CEV-3962)
- Fixed the issue where two versions of EC-Maven are displayed as content repository sources when you create a component. (CEV-5046)
- Fixed issue where the Deploy-to-environment pop-up window keeps loading. (CEV-5047)
- Fixed the issue where a tier map is lost when an application tier is renamed. (CEV-5076)
- Fixed the issue where component process steps appear randomly out of order on the Job Details page. (CEV-5097)
- Fixed the issue where custom parameters cannot be specified in application processes. (CEV-5124)
- Fixed the issue where the `deleteEnvironmentInventoryItem` API command returns a Java stack error when the component specified in the command does not exist. (CEV-5647)
- Fixed the issue where the variable denoting the artifact version is displayed instead of value. (CEV-5655)
- Fixed the issue where a resource name or workspace name has a "/" in it and the URL was not read properly when the system tried to access a step log. (NMB-16542)
- Fixed OpenSSL issues and verified that ElectricFlow 6.0 now includes PHP version 5.3.26 and Apache version 2.2.24. (NMB-16970)
- Fixed a Cross-site scripting (XSS) vulnerability in the userSettings area. (NMB-19660)

- Fixed the ElectricFlow server to ignore gateways connected to down resource on either side. (NMB-19523)
- Fixed the bug where the error "ecimpersonate: error reading ecwrapper pid from su output: TIMEOUT" occurs. The error message "AGENT_INTERNAL_ERROR" no longer appears. (NMB-19721)
- Added support for Ubuntu 14.04. (NMB-20169)
- Replaced RFC 1123 with RFC 1912 (1996) in ElectricFlow. (NMB-20191)
- Fixed the CI Dashboard to make it color-blind friendly. (NMB-20269)
- Fixed the issue where it took a long time to enable Change Tracking on a customer database. (NMB-20338)
- Fixed the issue where the `retrieveArtifactVersions` API command returns an error due to a checksum mismatch between the client and the repository server. (NMB-20380)
- Upgraded the Java version for ElectricFlow servers and agent to version 1.8.0_40. (NMB-20422)
- Fixed the issue where the Access Control dialog box for system object ACLs did not work properly. (NMB-20506)
- Fixed the issue where a change to a tracked object could not be reverted. (NMB-20531)
- Fixed the issue where the `retrieveArtifactVersions` API command can return specific parts of the artifact. (NMB-20584)
- Fixed the issue where the timeout is ignored for the `waitForJob` call. (NMB-20728)
- Reverted `commons-compress.jar` from version 1.8 to version 1.4.1 or version 1.5 to prevent a checksum mismatch while an artifact is retrieved from the repository server. (NMB-21055)
- Checked if `<COMMANDER_INSTALL_DIR>/repository/lib/commons-compress.jar` calculates the correct checksum for `retrieveArtifactVersions`. (NMB-21056)
- Fixed the issue where ElectricFlow could select the incorrect server IP address. (NMB-21101)

To use a different network interface, add the following line to

```
/opt/electriccloud/electriccommander/conf/wrapper.conf:  
wrapper.java.additional.310=-DCOMMANDER_BIND_IP=<IP_ADDRESS>
```

where `<IP_ADDRESS>` is the IP address of the ElectricFlow server.

- Fixed the issue where the web server could not connect to the ElectricFlow server at `https://localhost:8443`. (NMB-21143)
- Transport Layer Security (TLS) has replaced Secure Sockets Layer version 3.0 (SSLv3) on the ElectricFlow web server and the ElectricFlow server. (NMB-21316 and NMB-21498)
- Fixed the CommanderSDK issue with the list boxes for the GWT plugin UI does not render properly. (NMB-21331)
- Fixed the issue where the time to run standard reports increased after a software upgrade. (NMB-21160 and NMB-21384)
- Fixed the issue where large projects can take a long time to enable Change Tracking. (NMB-21397)
- Fixed the issue where API threads in the server were used by many `deleteJob` calls. (NMB-21398)
- Increased the queue size of the performance log file. (NMB-21399)

- Fixed the issue where the log page did not show an AccessDenied error when the user did not have access to a job step. (NMB-21451)
- Fixed the issue where a ZooKeeperPing exception is in the log file. (NMB-21452)
- Fixed the issue where the time to return a `workflow ID` in ElectricFlow 5.x has been improved. (NMB-21568)
- Fixed the issue where the shortcut name in the automation platform UI is the property sheet name instead of the value of the `shortcutName` property. (NMB-21579)
- Fixed the UI issue where the workflow links are too dark. (NMB-21580)
- Fixed the issue where it takes a significant amount of time to start ElectricFlow when Change Tracking is enabled. (NMB-21608 and NMB-22003)
- Better error messages are displayed with the ElectricFlow DSL. (NMB-21617)
- Fixed the issue where it took a long time to copy a project with Change Tracking enabled. (NMB-21624)
- Fixed the issue where the agent installer log partially revealed the password if it contains one or more spaces. (NMB-21637)
- Repaired an error that can occur when running `ec-groovy` as a shell. (NMB-21680)

Installation and Upgrade Notes

IMPORTANT: Product Name Change and Deprecation Notice

To bring a singular focus to the ElectricFlow brand moving forward, the name “ElectricCommander” is being changed to “ElectricFlow”. All of the capabilities you are familiar within ElectricCommander are still available and intact. All changes (involving the new name) are being introduced in a way that ensures backward compatibility. The scripts you’ve written and URL/shortcuts you currently have should work without any changes required. We’ve posted an [FAQ](#) to help answer questions you may have concerning this name change.

The installation documentation refers to the installer using the new ElectricFlow product name. Anywhere the installer is referenced you can also use the ElectricCommander named installer. However, be aware that we intend to stop providing the installer with "ElectricCommander" in the filename after this version.

For complete installation and upgrade information, see the *ElectricFlow Installation Guide* at http://docs.electric-cloud.com/eflow_doc/FlowIndex.html.

In the Oracle database, set the `OPEN_CURSORS` parameter to at least 1000 to prevent ElectricFlow from running out of open cursors.

IMPORTANT: *Before beginning the upgrade process, make sure you have backed up your existing ElectricFlow data.*

Upgrading Your Existing ElectricFlow Environment

- Upgrades to ElectricFlow 6.0 are supported only from ElectricCommander 4.2.x or from ElectricFlow 5.x. Any ElectricCommander systems and servers that are pre-Commander 4.2 must be upgraded to an ElectricCommander 4.2.x release. For upgrade instructions, see the *ElectricFlow Installation Guide*.
- Upgrading to ElectricFlow 6.0 from ElectricCommander 4.2.x requires a database upgrade.

- You cannot upgrade the ElectricCommander 4.2.x built-in database to an ElectricFlow 6.0 database. If you want to continue using the built-in database in ElectricFlow 6.0, follow the database upgrade procedures described in the *ElectricFlow Installation Guide*.

Behavior Changes

- The `attachParameter` API call in ElectricFlow 6.0 is not backward compatible with previous ElectricFlow releases.

To make `attachParameter` work properly in ElectricFlow 6.0, change the API call as follows:

From `$cmdr->attachParameter(<projectName>, <procedureName>, <stepName>, <formalParameterName>);`

To `$cmdr->attachParameter(<projectName>, <formalParameterName>, {procedureName=><procedureName>, stepName=><stepName>});`

- The default built-in database for ElectricFlow is now HyperSQL Database (HSQLDB). In releases earlier than ElectricFlow 5.0, the built-in database was H2.
- ElectricFlow 6.0 no longer supports these server and agent platforms:
 - All 32-bit platforms for servers only
 - Windows XP (32-bit and 64-bit) for servers
 - Microsoft Windows 2000 for agents

Configuration Notes

- When you export your project data before upgrading from ElectricCommander 4.2.x to ElectricFlow 6.0, you must replace the component plugin versions, including EC-Artifact, in the export file before importing the project data to ElectricFlow 6.0.
- You must register your plugin to display it as an option in the following situations.
 - When a user uses the plugin to configure a step in a component or application process.
 - In a procedure in the automation platform.

For details, see the “Register your procedure for the step creation dialog” section in the “Examples and Tutorials” chapter of the *ElectricFlow Plugin Developer Guide* at http://docs.electric-cloud.com/eflow_doc/FlowIndex.html.

Limitations

These are the session management limitations:

- When a user logs out, the user is logged out only on the node where the logout occurred.
- When a user is deleted from the system, the user’s session is active until it expires.
- When a job ends, the user’s session is active until it expires.

Known Issues

- Component process steps randomly appear out of order on the Job Details page. (CEV-5097)
- When you are importing a previously exported application from ElectricFlow 5.4 to ElectricFlow 6.0 and the application has parameters with options, the application process parameters that you defined in ElectricFlow 5.4 need to be recreated. (CEV-7788)
- An error occurs in the following scenario (CEV-7890):
 1. In ElectricFlow 5.4, attach credentials to a component process or a component process step.
 2. Export the application that contains the component process.
 3. Upgrade to ElectricFlow 6.0.
 4. Import the application to ElectricFlow 6.0.

When you deploy the application process that contains the component process, the error occurs.

Workaround:

1. View the details of the component process step where you previously set the credentials in the Edit Step dialog box.
 2. Click **Next**.
 3. Click **OK** to close the dialog box.
 4. Redeploy the application process.
- There is a known issue preventing the use of SSH key-based authentication when using the "Install or Upgrade Remote Agents" feature available from the Resources page. (CEV-7958)

The workaround is to use password-based authentication.
 - In a cluster, you must shut down the cluster and set a node to single-server mode to create a trusted agent. (NMB-18924)
 - The following entry in the wrapper.conf file might cause performance slowdowns (a gradual slowdown of everything over time), and should therefore be deleted (NMB-19735):

```
wrapper.java.additional.105=-XX:+TieredCompilation
```
 - To access the Electric Cloud API UI, use https://<electricflow_server_hostname>:8443/rest/doc/v1.0/ where *electricflow_server_hostname* is the fully qualified domain name (FQDN) of the ElectricFlow server. (NMB-19960)
 - When you are adding a resource to a remote ElectricFlow server during an agent installation, the server does not discover the host name of the agent machine through DNS, and an error message about the "Name or service not known" appears.

The workaround is to do one of the following so that the resource is available after the agent installation (NMB-20605):

- Add the host name of the agent machine to the hosts file of the remote server.
- In the Resource Details panel, edit the Agent Host Name of your resource and use the IP address of the agent machine instead of the fully qualified domain name (FQDN).

- You create a dynamic environment and deploy an application in that environment by performing these steps (NMB-21176):
 1. Create and save an OpenStack configuration in a resource template.
 2. Create an environment template using the resource template.
 3. Create a dynamic environment using the environment template.
 4. Deploy the application in the dynamic environment successfully.

When you edit and resave the OpenStack configuration and then create a new dynamic environment, the application is deployed with errors, because the authentication credentials are incorrect.

- If this sequence of events occurs (NMB-21278):
 1. Changes are made to the list of credentials that are attached to a procedure, component, process, process step, or a schedule while change tracking is disabled at either the project level or the server level.
 2. Change tracking is enabled.
 3. The procedure, component, process, process step, or a schedule is reverted to a point after change tracking was enabled.

Then the changes that were made while change tracking was disabled may be lost.

- There is a known issue preventing users being able to parse an XML file with Perl's LibXML module on Linux platforms. (NMB-22095)

The workaround is to copy the `libz.so.1` file from `<installDirectory>/apache/lib/libz.so.1` to `<installDirectory>/lib`.

- If you delete the default project and do not recreate it, ElectricFlow will no longer be available. To use it again, you must reinstall ElectricFlow.
- Before importing an export file, you must change the plugin name, including the plugin version, in the file.

- Change tracking

IMPORTANT: It can take a while to restart the ElectricFlow server, because new records are being created for all the tracked objects. This may take at least as long as it would take to export or import all the projects (a large project can take long as 10 to 40 minutes).

- You can revert changes only for high-level design objects such as applications, procedures, procedure steps, workflow definitions, and state definitions.
- When you disable change tracking and then later re-enable it, the system performance may be reduced during this sequence of events:
 1. Change tracking is disabled at the server level.
 2. Change tracking is re-enabled at the server level.

The change history for all objects, including those not in projects, is now tracked.

It can take a while to restart the ElectricFlow server, because new records are being created for all the tracked objects. This may take at least as long as it would take to export or import all the projects (a large project can take long as 10 to 40 minutes).

- Pages in the ElectricFlow UI may be slow to render if the application or environment has too many tiers.

Performance and Scalability Issues

- For hundreds of parallel job steps, you may experience Job Scheduler performance issues at job startup. (NMB-16185)
- The amount of time needed to add a property to a job increases as the number of properties increases. (NMB-16120)
- The amount of time needed to add a step to a procedure increases as the number of steps increases. (NMB-16118)

Documentation

ElectricFlow documentation is available at http://docs.electric-cloud.com/eflow_doc/FlowIndex.html. Updated documentation will be available on that page when any documents are updated post-release.

ElectricFlow has the following product documentation:

- *ElectricFlow User Guide*
- *ElectricFlow Installation Guide*
- *ElectricFlow API Guide*
- A complete, robust online help system. Click any Help link in the upper-right corner of each web page in the platform UI
- A standalone Help system is available for viewing outside the product at http://docs.electric-cloud.com/eflow_doc/FlowIndex.html
- *ElectricFlow Help Guide*
- *ElectricFlow Release Notes*

- Additional ElectricFlow documentation that accompanies the ElectricFlow release, but not necessarily updated with each ElectricFlow release
 - The *Plugin Developers Guide*, which is used with the CommanderSDK, is updated on its own release cycle

Troubleshooting and Getting Help

Technical Support

Contact Electric Cloud technical support:

- 408.419.4300, option 2. Hours are 9 A.M.–5 P.M. PT Monday–Friday (except holidays)
- support@electric-cloud.com

You will be asked to provide the following information:

- Your name, title, company name, phone number, and email address
- Operating system and version number
- Product name and release version
- Problem description

Electric Cloud "Ask" Website

Go to <http://ask.electric-cloud.com>:

- Ask questions or read answers to questions from other users
- Get help with installation and configuration
- Submit feedback

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