ElectricFlow 8.0.3
Release Notes

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Electric Cloud

ElectricFlow version 8.0.3

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Trademarks

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ElectricFlow 8.0.3 is a maintenance release (MR). For more information about the ElectricFlow software release strategy, go to the ElectricFlow/ElectricCommander Release Strategy Update.

Product Description

ElectricFlow® is an enterprise-grade DevOps Release Automation platform that simplifies provisioning, building, and releasing multi-tiered applications. Its model-driven approach to managing environments and applications lets teams coordinate multiple pipelines and releases across hybrid infrastructure in an efficient, predictable, and auditable way.

What's New or Modified

This release consists of the following resolved issues and new or updated bundled plugins.

Resolved Issues

- A job execution performance improvement is made for when a large number of concurrent steps are in the processing queue. This issue appeared in ElectricFlow versions as early as 6.0.0. (NMB-25707)
- To improve performance, ElectricFlow now creates GUIDs in an order that Microsoft SQL Server considers to be sequential to minimize fragmentation in clustered indexes. (NMB-25714, NMB-25713, and NMB-25392)
- (MacOS platforms only) An issue with user impersonation on agent hosts running MacOS 10.13 ("High Sierra") is fixed. (NMB-25847)
- An issue where the DevOps Insight installer overwrote the existing configuration settings with the default settings during an upgrade or re-installation is fixed. (NMB-25830)
- A `403 Access Forbidden by CSRFProtector!` error no longer appears when you click **OK** to save certain changes in the Automation Platform. (NMB-25741)
- All `modifyJobStep` Perl API command arguments except for `jobStepId` and `status` were nonfunctional and are removed. (NMB-25731)
- An `Entity content is too long` error in `jagent.log` no longer occurs when a large (multi-gigabyte) artifact is retrieved from the ElectricFlow repository. (NMB-25708)
- The following options are added to the ElectricFlow `ecconfigure` tool:
  - `--serverStatsdHost=<host>`
  - `--serverStatsdPort=<port>`
  - `--serverStatsdPrefix=<string>`
  - `--serverStatsdIncludeHostname=<true|false>`

  Modifications to the corresponding settings in the `wrapper.conf` file are now preserved during upgrades. For details about the preserved settings in version 8.0.3, see the "Configuration Settings Preserved After an Upgrade" section in the upgrade chapters of the *ElectricFlow 8.0 Installation Guide* at http://docs.electric-cloud.com/eflow_doc/FlowIndex.html. For details about the `ecconfigure` options in version 8.0.3, see the "ElectricFlow Installed Tools" section in the "Automation Platform" chapter of the *ElectricFlow 8.0 User Guide* at http://docs.electric-cloud.com/eflow_doc/FlowIndex.html. (NMB-25704)

- Chrome 61.0 no longer becomes stuck in a grayed-out state when you try to attach credentials to a step in a procedure. (NMB-25540)
- The `elasticsearch.yml` configuration file now includes a `Custom Settings` section, which lets you add settings not managed by the DevOps Insight server without being lost during an upgrade. If you added settings to this file that you want to preserve, you must back up the file to a separate location *before* upgrading and then add the settings to the `Custom Settings` section after the upgrade. During future upgrades, the installer will preserve the settings in the `Custom Settings` section. (NMB-25526)
- The *ElectricFlow 8.0 API Guide* is updated to recommend that for best performance, you should not use "single" batch mode for multiple-read transactions. For details, see the "Using the Batch API" section in the "Using the ElectricFlow Perl API" chapter of the guide at http://docs.electric-cloud.com/eflow_doc/FlowIndex.html. (NMB-25476)
- The *KBEC-00387 - Configuring Initial and Maximum Memory Settings for a Containerized ElectricFlow Server or ElectricFlow Repository Server* KB article is introduced. This KB article provides background information and instructions for replacing these percentage-based settings with fixed settings to work around a Java issue where the JVMs for these servers cannot see the container's total system memory when run in a Docker container.

  Also, the *ElectricFlow 8.0 Installation Guide* is updated with instructions for configuring the initial and maximum memory settings for the ElectricFlow server and the ElectricFlow repository server when run inside Docker containers to work around the issue described above. For details, see the "Memory Settings" section in the "System Requirements and Supported Platforms" chapter of the guide at http://docs.electric-cloud.com/eflow_doc/FlowIndex.html. (NMB-25473)
- The *KBEC-00385 - Converting a MySQL Database From Latin-1 to UTF-8 Before Upgrading to ElectricFlow 8.0.1* KB article is introduced. UTF-8 is required by the ElectricFlow server and enables better multilingual support. A reference to this KB article is added to the "Required and Recommended MySQL Settings" section in the "Configuration" chapter of the *ElectricFlow 8.0 Installation Guide*. (NMB-25469)
- An issue where the host name in the `COMMANDER_SERVER` property in the `apache/conf/httpd.conf` configuration file was not updated during installation to use an FQDN as with the host name in the `COMMANDER_SERVER_NAME` property in the `conf/commander.properties` file is fixed. (NMB-22993)
- An issue that caused a Java heap dump and an `OutOfMemoryError: Requested array size exceeds VM limit` error during an ElectricFlow or ElectricCommander restart is fixed. (NMB-22687)

Bundled Plugins

The following plugins are new or updated.

Name	New Version	Status
EC-ALM	1.1.0	Updated
EC-AmazonECS	1.0.4	Updated
EC-GoogleContainerEngine	1.0.4	Updated
EC-Kubernetes	1.0.6	Updated
ECSCM-MKS	2.2.2	Updated

For a complete list of bundled plugins, see the "Plugins That are Bundled with ElectricFlow" appendix in the *ElectricFlow 8.0 User Guide* at http://docs.electric-cloud.com/eflow_doc/FlowIndex.html.

Installation and Upgrade Notes

For complete installation and upgrade information, see the *ElectricFlow 8.0 Installation Guide* at http://docs.electric-cloud.com/eflow_doc/FlowIndex.html.

Changing the Default Prefix for StatsD

In `DATA_DIR/conf/wrapper.conf`, change the default prefix for StatsD from

```
wrapper.java.additional.802=-DCOMMANDER_STATSD_PREFIX=commander
```

to

```
wrapper.java.additional.802=-DCOMMANDER_STATSD_PREFIX=flow
```

(NMB-22835)

Upgrading Your Existing ElectricFlow Environment

IMPORTANT: *Before starting an upgrade*, make sure to back up your existing ElectricFlow data.

- Upgrades to ElectricFlow 8.*x* are supported only from ElectricCommander 4.2.*x* or any version before 8.0. 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 8.0 Installation Guide* at http://docs.electric-cloud.com/eflow_doc/FlowIndex.html.
- Upgrading to ElectricFlow 8.*x* from ElectricCommander 4.2.*x* requires a database upgrade.
- You cannot upgrade from a previous version running the built-in database to an ElectricFlow 8.*x* database. If you want to continue using the built-in database in ElectricFlow 8.*x*, follow the database upgrade procedures described in the *ElectricFlow 8.0 Installation Guide* at http://docs.electric-cloud.com/eflow_doc/FlowIndex.html.
- The DevOps Insight installer overwrites the `elasticsearch.yml` configuration file with a new file. As of DevOps Insight version 8.0.3, the file includes a `Custom Settings` section, which lets you add Elasticsearch settings not managed by the DevOps Insight server without being lost during an upgrade. If you added settings to this file in version 8.0.2 or earlier that you want to preserve, you must back up the file to a separate location *before* upgrading to version 8.0.3 or newer versions and then add the settings to the `Custom Settings` section after the upgrade. During future upgrades, the installer will preserve the settings in the `Custom Settings` section. (NMB-25526)

Upgrading the DevOps Insight Server from Version 7.3 to Version 8.*x*

Re-Specifying Configuration Settings Not Preserved During the Upgrade

The installers (GUI, interactive console, and silent mode) for the DevOps Insight server do not preserve the configuration setting for the DevOps Insight server host name (`--hostName`) or the setting for the Elasticsearch number of shards (`--elasticsearchNumberOfShards`) during the upgrade from 7.3 to 8.*x*. If you specified nondefault values during the 7.3 Reporting server installation, you must re-specify these settings during the upgrade. (All other settings are preserved.)

Configuring DevOps Insight Server Security

The introduction of enhanced security for the DevOps Insight server in version 8.0 requires that you specify the new security settings during DevOps Insight server installation. These settings are used to enable

connectivity and authentication between the DevOps Insight server and the ElectricFlow server. For details about specifying these settings during DevOps Insight server installation, see the "Installing ElectricFlow" chapter of the *ElectricFlow 8.0 Installation Guide* at http://docs.electric-cloud.com/eflow_doc/FlowIndex.html.

Running the DevOps Insight Server on a System with Other ElectricFlow Components

For a production environment, Electric Cloud recommends that you install the DevOps Insight server on a system other than systems running other ElectricFlow components (such as the ElectricFlow server, web server, repository server, or agent). If you must install it on the same system (such as for testing or other non-production or trial-basis situations) see the "Running the DevOps Insight Server on a System with Other ElectricFlow Components" section in the *ElectricFlow Installation Guide* at http://docs.electric-cloud.com/eflow_doc/FlowIndex.html for details.

Configuration Notes

Performing a Full Import

During a full import, the import operation might hang in the following scenarios. To import successfully into ElectricFlow 8.0 and newer versions, perform the appropriate workarounds (CEV-15447 and CEV-11873):

- A manual process step in a process has formal parameters. The workaround is to remove the entry related to the property sheet for the job step that is associated with the manual process step.
- In the exported XML file from the earlier release, two pipelines are in different projects, and both pipelines have no gate tasks. The flow associated with the pipeline is duplicated under both projects. The workaround is to remove the flow element under the projects.

Updating Application Component Plugin Versions in the Export File When Upgrading from 5.*x* to 8.*x*

Application components are based on plugins (EC-Artifact, EC-Maven and EC-FileSysRepo) with plugin details (such as name, procedure, and parameters) stored in properties on the component. Before version 5.4, the value for the `pluginProjectName` property included the plugin name and version (for example, EC-Artifact-1.0.3.4), which closely tied components to specific versions.

When you export your project data before upgrading from ElectricCommander 5.0, 5.1, 5.2, or 5.3 to ElectricFlow 8.*x*, you must update the application component plugin versions in the export file to the versions on the target ElectricFlow server before importing the data to ElectricFlow 8.*x*.

For example, if the promoted EC-Artifact plugin version is 1.0.4.1, then in the snippet below, you would change EC-Artifact-1.0.3.4 to EC-Artifact-1.0.4.1:

```
<property>

  <propertyId>3f509ffd-506b-11e6-9960-f01faf2c26a3</propertyId>
  <propertyName>pluginProjectName</propertyName>
  <counter>0</counter>
  <createTime>2016-07-23T00:20:20.829Z</createTime>
  <expandable>1</expandable>
  <lastModifiedBy>admin</lastModifiedBy>
  <modifyTime>2016-07-23T00:20:20.829Z</modifyTime>
  <owner>admin</owner>
  <tracked>1</tracked>
  <value>EC-Artifact-1.0.3.4</value>
  </property>
<property>
```

Starting with release 5.4, ElectricFlow uses the plugin key (which does not include the version) when defining a component. (CEV-6679)

Diffie-Hellman Key Size Incompatibility

To enable the ElectricFlow server versions 7.0 or newer to configure Diffie-Hellman cipher suites properly, ElectricFlow uses OpenSSL-1.0.1T with SSLv2 enabled. Because of OpenSSL and JRE changes, the minimum Diffie-Hellman key size requirement is increased to 1024 bits (from 768 bits) as of version 7.0.

Server versions 7.0 or newer use Jetty (a Java HTTP server), which listens on the 8000 (unsecure) and 8443 (secure) ports. Server versions 7.0 or newer use Java 1.8.0_66, in which the ephemeral DH key size defaults to 1024 bits during SSL/TLS handshaking in the SunJSSE provider.

For details on the increase of the key size requirement as of Java 1.6-u101, see the Java release note at http://www.oracle.com/technetwork/java/javase/overview-156328.html#6u101-b31. For details as of Java 1.7-u85, see the Java release note at http://www.oracle.com/technetwork/java/javase/7u85-relnotes-2587591.html.

Because their minimum key size is 1024 bits, agent versions 7.0 or newer can connect only to:

- Server versions 5.4, 6.0.1, or 6.5 or higher via ectool
- External applications that require SSL with a minimum key size of 1024 bits

However, ElectricCommander agents of versions 5.0.6, 5.3, or 5.4 and ElectricFlow agent versions 6.0.1 or 6.5 or newer can connect to all ElectricFlow server versions (including 7.0 or newer) via ectool and ec-perl.

ElectricCommander server versions 5.0.6 or 5.3 or newer can run jobs using all agent versions (including 7.0 or newer). ElectricFlow server versions 7.0 or newer can run jobs using ElectricCommander agent versions 5.0.6 or 5.3 or newer.

Limitations

- When an application is cloned from one project (the original project) to another (the destination project), the tier maps for the application will point to the environments with the same names in the destination project. To deploy the application to the environments in the original project, you must create tier maps connecting the application to those environments.
- When an assignee is added in a manual process step or stage task through the web interface, the Search field displays only the users who have actually logged into the system.
- Session management limitations:
    - When a user logs out, they are logged out only on that node.
    - When a user is deleted from the system, their session is active until it expires.
    - When a job ends, the user's session is active until it expires.

Known Issues

Performance and Scalability Issues

Performance Impact of Recursive Traversal of Group Hierarchy

Enabling **Recursively Traverse Group Hierarchy** might impact system performance when the LDAP group hierarchy is traversed. The amount of impact varies with the configurations of the ElectricFlow and LDAP servers, the depth of group hierarchy in the LDAP server, and the network latency between the servers. Make sure that your directory provider can handle the additional load for supporting nested group hierarchy traversal.

The following response times were recorded during Electric Cloud performance tests with nested LDAP groups support.

Test Environment Details

- ElectricFlow server

  Intel® Core™ i5-3210M CPU @ 2.50GHz CPU

  3011MiB RAM

  80 GiB (85 GB) VBOX HARDDISK disk

- Active Directory server

  Intel Core i5-3210M CPU @ 2.50GHz CPU

  2 GB RAM

  Windows Server 2012 R2 OS

- Performance data set

  5040 users

  126 groups

  Average number of 40 users per group

  Average number of 2 immediate groups per parent group

  Maximum depth of 6 in group hierarchy

Response Times with Active Directory

Average of 1000 API calls with user and group at the fifth nested level in the Active Directory group hierarchy.

API command	ElectricFlow 6.5 without recursive group hierarchy traversal	ElectricFlow 6.5 with recursive group hierarchy traversal
login	1.066 seconds	1.195 seconds
getUser	1.086 seconds	1.213 seconds
getGroup	0.918 seconds	1.102 seconds

Response Times with OpenLDAP

Average of 1000 API calls with user and group at fifth nested level in the Active Directory group hierarchy.

API command	ElectricFlow 6.5 without recursive group hierarchy traversal	ElectricFlow 6.5 with recursive group hierarchy traversal
login	0.744 seconds	0.753 seconds
getUser	0.705 seconds	0.714 seconds
getGroup	0.657 seconds	1.011 seconds

Scalability Issues

- Hundreds of parallel job steps might cause Job Scheduler performance issues at job startup. (NMB-16185)
- The time needed to add a property to a job increases as the number of properties increases. (NMB-16120)
- The time needed to add a step to a procedure increases as the number of steps increases. (NMB-16118)

Other Known Issues

- Icons for a microservice cluster might be missing from the Environments Visual Editor after an upgrade from version 8.0 to version 8.0.2 or later. To work around this issue, open and resave the cluster definition after the upgrade to restore the icons. (CEV-16416)
- A component process uses `runProcess` parameters to identify the final artifact version to be retrieved by the component. Therefore, retry steps will continue to use the parameters even if the artifact version is updated in the component definition. (CEV-15207)
- An application process step that is run using “retry on error” that calls a component process containing many steps (at least one of which is a step using “stop on error”) causes the job to abort without a retry of the application process. (CEV-15171)
- If an application process step cannot expand to its child steps (because of an invalid run condition or an invalid formal parameter), then the step is not retried even if it uses “retry on error” error handling. The job eventually completes with an error. (CEV-15122)
- “Retry on error” icons might remain in the pipeline runtime UI even though the corresponding gate rules were executed to completion. (CEV-14706)
- No error message appears for failed tasks and retry tasks during a pipeline runtime. (CEV-14689)
- Error messages for runtimes started by a schedule are not visible if the schedule was created with a missed configuration. (CEV-12363)
- The stage inclusion status in the Release Dashboard (also called the Release List) changes color after a stage is renamed. (CEV-12429)
- When an application with snapshots created in ElectricFlow 6.1 or earlier is cloned, and a project containing this application is imported to ElectricFlow 6.3 or higher, the import operation fails. (CEV-11106)
- An application deployment job will hang when a process step name is a number (for example, 1 or 2) or contains a slash (/ or \). The workaround is to change the process step name to be non-numeric and to not have a slash (/ or \). (CEV-10238)
- (Solaris and AIX platforms only) The artifact cache is not updated during artifact retrieval operations. (NMB-24955)
- When you use the Automation Platform UI to upload and publish artifact files with non-English characters in their file names, the operation fails with the following error: `Upload file: Exit code 1: ERROR: Publish failure: Unexpected retrieval exception for repository error.` (NMB-24949)

- You can revert changes only for high-level design objects such as applications, procedures, procedure steps, workflow definitions, and state definitions.

  IMPORTANT: Restarting the ElectricFlow server while new records are created for all tracked objects might take at least as long as an export or import of all projects (a large project can take 10 to 40 minutes).

- System performance might decrease if you disable change tracking at the server level and then you re-enable it at that level. (Change tracking is enabled by default.)

  For details about using change tracking, see the "Change Tracking" chapter in the *ElectricFlow 8.0 User Guide* at http://docs.electric-cloud.com/eflow_doc/FlowIndex.html.)

Documentation and Online Help

Product Documentation

ElectricFlow product documentation is available at http://docs.electric-cloud.com/eflow_doc/FlowIndex.html as follows:

- *ElectricFlow Installation Guide*
- *ElectricFlow User Guide*
- *ElectricFlow API Guide*
- *ElectricFlow Release Notes*
- *ElectricFlow SDK Plugin Developer Guide* (updated on its own release cycle)
- *ElectricFlow SDK Plugin Developer Release Notes* (updated on its own release cycle)

Documentation on the website is updated periodically.

Automation Platform Online Help

The Automation Platform web UI has a complete, robust, context-sensitive online help system. To use it, click the **Help** button in any page of the web UI.

Troubleshooting and Getting Help

Technical Support

Contact Electric Cloud technical support:

- +1 408.419.4300, option 2. Hours are 9 A.M.–5 P.M. PT Monday–Friday (except holidays)
- support@electric-cloud.com
- https://helpcenter.electric-cloud.com/ and then click **Submit a request** to submit or see your support tickets

Be prepared to provide 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—a member-moderated community forum where you can:

- Ask and answer questions as well as comment on (and vote for) the questions of others and their answers
- Get help with installation and configuration
- Submit feedback

ElectricFlow Knowledge Base

Go to https://helpcenter.electric-cloud.com/hc/en-us/sections/200516863-ElectricFlow-KB to find in-depth explanations of specific topics and solutions for specific problems.