ElectricCommander 5.0

Upgrade Quick Start

July 29, 2014

This quick start guide describes how to upgrade from ElectricCommander® 4.2.x to ElectricCommander® 5.0.

> **IMPORTANT:** Read this before upgrading to ElectricCommander 5.0.

Topics include:

In ElectricCommander 5.0, Electric Cloud introduces significant changes that affect how you upgrade ElectricCommander.

> **IMPORTANT:**
>
> You need to make sure that the database has sufficient disk space for the upgrade, upgrade, which includes space for the data copied during the upgrade, log files, redo files, and undo files. We recommend that you have at least three times (3x) the size of your current database. See the Upgrade Considerations section for more details.

Overview

Starting with ElectricCommander 5.0, ElectricCommander supports clustering across multiple instances and now uses universally unique identifiers (UUIDs) for all IDs, including the widely utilized jobId and workflowId properties. Using UUIDs ensures that all IDs are unique across all instances. UUIDs are displayed as 36-character alphanumeric strings.

How the Upgrade Works

Because of the extensive modifications to the database schema to support UUIDs, the upgrade process to ElectricCommander 5.0 has changed:

- Rather than upgrade the entire database in place while the Commander server is down, Electric Cloud now provides a background upgrade tool, called the *background upgrader*, that migrates the bulk of your Commander 4.2.x database (the *source database*) to a separate database (the *target database*) while the Commander 4.2.x server is still running.

  However, this process to upgrade the database schema consumes more disk space on your database server than for previous upgrades. For more information, see the Upgrade Considerations.

- After the bulk of the data is migrated using the background upgrader, you follow the standard process of running the ElectricCommander 5.0 installer. It shuts down the Commander server, migrates the remainder of the Commander 4.2.x data to the Commander 5.0 database, upgrades the installation files, and points the Commander 5.0 server to the Commander 5.0 database.

We recommend that you test the entire upgrade process before running it in your production environment.

How UUIDs Affect You

In ElectricCommander 5.0, numeric object IDs are displayed as 36-character alphanumeric UUIDs. This affects you in the following cases:

- Job names and workflow names that include the object IDs (jobId or workflowId) now have UUIDs.

  If this is undesirable, Electric Cloud has included a *migration tool* that modifies job name templates and workflow name templates, replacing the object IDs with numeric properties that are automatically incremented to ensure uniqueness.

  For more information, see the "Using the Migration Tool" section in the "Upgrading ElectricCommander" chapter of the *ElectricCommander 5.0 Installation Guide*.

- This migration to numeric properties is backwards-compatible with previous versions of ElectricCommander, so we recommend running this tool before the upgrade. Thus, you always have numeric IDs in your job names and workflow names.

- If you have any scripts that refer to object IDs and assume that they are numeric, you must update these scripts to handle the IDs as strings. For example, a Perl script with `my $jobId = $[jobId];` should be modified by quoting the job ID as follows: `my $jobId = '$[jobId]';`.

- Job names that contain numeric jobIds in Commander 4.2.x are not migrated to Commander 5.0. However, you can use `ectool getJobDetails <jobId>` to show the jobName and other information about the job in Commander 5.0, where `jobId` is the value from Commander 4.2.x.

  For example, a job in Commander 4.2.x shows job_2341_20140519103845 as the `jobId`.

  When you launch this job in Commander 5.0, use `ectool getJobDetails job_2341_20140519103845` to show information about it, including the new `jobId` and `jobName`. The `jobId` will be a UUID.

Upgrade Processes

> **IMPORTANT:**
>
> You need to make sure that the database has sufficient disk space for the upgrade, upgrade, which includes space for the data copied during the upgrade, log files, redo files, and undo files. We recommend that you have at least three times (3x) the size of your current database.
>
> The database schema upgrade can be time-consuming and will consume more disk space than for previous ElectricCommander upgrades.
>
> The time that the upgrade takes place on your system and the amount of disk space that the upgrade process consumes depend on the hardware in your environment and how your system performs.
>
> For more information, see the Upgrade Considerations.

If you are currently running a Commander release earlier than ElectricCommander 4.2.x, you first need to update to ElectricCommander 4.2 or later. Then you can upgrade to ElectricCommander 5.0 using one of the following methods:

- If you want to reduce downtime, follow these steps to perform the bulk of the database upgrade while your Commander 4.2.x server is running.

    1. Prepare for the upgrade.

        For more information, see the "Preparing for Your Upgrade" section in the "Upgrading ElectricCommander" chapter of the *ElectricCommander 5.0 Installation Guide*.

2. Run the *migration tool* to update the jobNameTemplate and the workflowNameTemplate.

   The migration tool updates only the jobNameTemplate and the workflowNameTemplate. It does not look for and update other instances of jobId and workflowId in your code.

   If jobId or workflowId is used in a transitory manner, such as inside a script as an index but never outside of the script, these instances do not need to be changed.

   However, if jobId and workflowId are used to display information, they may need to be changed to jobCounter and workflowCounter. This depends on whether the variable using jobId or workflowId expects a numeric or alphanumeric value.

   For alphanumeric values, you should convert jobId to jobCounter and workflowId to workflowCounter because the new UUIDs are all alphanumeric.

   For more information, see the "Using the Migration Tool" section in the "Upgrading ElectricCommander" chapter of the *ElectricCommander 5.0 Installation Guide*.

3. Upgrade the database schema by using the background upgrader.

   For more information, see the "Using the ElectricCommander Upgrade Tool" section in the "Upgrading ElectricCommander" chapter of the *ElectricCommander 5.0 Installation Guide*.

4. Run the ElectricCommander 5.0 installer to complete the upgrade.

   For more information, see the "Upgrading ElectricCommander" chapter of the *ElectricCommander 5.0 Installation Guide*.

- If your database is small or downtime is not an issue for you, follow these steps:

  1. Prepare for the upgrade.

     For more information, see the "Preparing for Your Upgrade" section in the "Upgrading ElectricCommander" chapter of the *ElectricCommander 5.0 Installation Guide*.

  2. Run the migration tool to update the jobNameTemplate and the workflowNameTemplate.

     The migration tool may not convert every instance of jobId to jobCounter and of workflowId to workflowCounter. You need to review your Commander configuration to verify that all the jobIds and workflowIds are converted properly.

     For more information, see the "Using the Migration Tool" section in the "Upgrading ElectricCommander" chapter of the *ElectricCommander 5.0 Installation Guide*.

  3. Run the ElectricCommander 5.0 installer.

     For more information, see the "Upgrading ElectricCommander" chapter of the *ElectricCommander 5.0 Installation Guide*.

Upgrade Considerations

When upgrading the database schema for ElectricCommander 5.0, you must create a target database that is required for the ElectricCommander 5.0 upgrade. The *target database* is the new Commander 5.0 database, which includes all the data in your current Commander 4.2.x database (the source database).

Upgrading the Database Schema

To upgrade the database schema, select one of the following processes. You must create a target database before starting the process.

- Use the background upgrader to prepopulate the target database while your Commander 4.2.x server is running.

  This is similar to the installation process used in earlier ElectricCommander releases, but will likely be longer than past attempts because of schema changes in ElectricCommander 5.0.

  You can run the background upgrader more than once to ensure that the source and target databases are synchronized.

- Let the Commander 5.0 installer automatically upgrade the database schema during the installation process.

  This is the same as the installation process used in earlier ElectricCommander releases.

After the upgrade process is complete, the disk space for the new Commander database will be slightly larger than before the upgrade.

Minimizing How Long the Upgrade Takes

To minimize the duration of the database schema upgrade process, consider the following:

- Make sure that your database server has sufficient free disk space. We recommend that you have at least three times (3x) as much available disk space as the size of your current database. This includes enough disk space for temporary database structures involved in copying significant amounts of data, such as log files, redo files, and undo files.

  To successfully upgrade to Commander 5.0, your database must be configured to allow the creation of at least as much data as is in your Commander 4.2.x database.

  Some of this space is needed temporarily for the upgrade process to run. After the upgrade process is completed, the disk space for the new Commander database is only a little larger than before.

  > **IMPORTANT:** The exact requirements depend on the database vendor-specific specifications and performance of your system, and are beyond the scope of this document. Consult with your DBA to determine and verify the detailed requirements.

- If your source database has a lot of old job data, we recommend that you delete as much of the data as possible before starting the upgrade process.

- Reduce database-intensive activities running in the background during the upgrade.

  For example, do not run reports or import/export tasks during the database schema upgrade.

- If you have a large database, you can run the background upgrader more than once to resynchronize the source and target databases while the Commander 4.2.x server is still running.

Estimating How Long You Need for the Upgrade Phase

After you initially run the database schema upgrade, follow these steps to estimate the duration of the next database schema upgrade pass:

1. Find the log file called upgrade.log.

   If you run the background upgrader, the log file is in a subdirectory of the directory in which the background upgrader was run.

2. In the log file, search for the phrase "End of pass <number> through tables."

3. Calculate the duration of the last database schema upgrade pass.

   For the duration of the last upgrade pass, look for the timestamp when the last upgrade pass ended and the timestamp when the previous upgrade pass ended.

   The duration is the difference between the time when the last upgrade pass ended and the time when the previous upgrade pass ended.

The installation downtime is expected to take at least as long as the last upgrade pass.

FAQ

- **I am using the embedded H2 database with Commander 4.2.x. How does this affect the upgrade?**

   You cannot upgrade the Commander 4.2.x H2 database schema.

   If you want to continue to use this database in Commander 5.0 and later, follow the procedure in the "Using the Commander 4.2 Built-In Database in Commander 5.0 or Later" section in the "Upgrading ElectricCommander" chapter in the *ElectricCommander 5.0 Installation Guide*.

- **My log drive ran out of free disk space during the upgrade. I am using the same database server for current Commander 4.2.x database and the new Commander 5.0 database. How much disk space is needed to prevent this from occurring again?**

   In a standard configuration with no customizations, the following disk space is required:

   - Data drive–Minimum of three times (3x) the size of the current database.
   - Log drive–Minimum of two times (2x) the size of the current database.

   Log files will grow larger than data files during the upgrade.

   The size of the database files may vary due to your system's usage and customizations.

- **Where do I get more information about clustering?**

   Go to the Chapter 4, the "Clustering" chapter in the *ElectricCommander 5.0 Installation Guide*.

- **How much downtime should I expect?**

   You can estimate the duration of a database schema upgrade. See the "Upgrade Considerations" section.

   You can also look at the log file to see how long the last database schema upgrade pass took.

- **Can I rerun the background upgrader after the Commander server is upgraded to Commander 5.0?**

   No.

- **My log drive ran out of disk space during the upgrade process. How much free disk space is needed to prevent this from occurring again?**

   Log files can grow larger than data files.

Troubleshooting and Getting Help

Contacting Technical Support:

Before you contact our technical support staff, have the following information available.

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

Hours: 9:00 AM to 5:00 PM PST (Monday-Friday, except Holidays)

Phone: 408-419-4300, Option #2

Email: support@electric-cloud.com