



## **ElectricAccelerator Release Notes**

**Version 8.2.1**

**Electric Cloud, Inc.**  
35 South Market Street, Suite 100  
San Jose, CA 95113  
[www.electric-cloud.com](http://www.electric-cloud.com)

## Product Description

ElectricAccelerator® is a software build accelerator that dramatically reduces build times by distributing the build over a large cluster of inexpensive servers. ElectricAccelerator (“Accelerator”) uses a patented dependency-management system to identify and fix problems in real time that break traditional parallel builds. Accelerator plugs seamlessly into existing software development environments and includes web-based management and reporting tools.

Accelerator includes the following components:

- Electric Make® (eMake)
- Electric File System (EFS)
- ElectricAccelerator Agents (“Agents”)
- Cluster Manager
- Electrify

## What's New or Modified

### New Features and Functionality

#### *JobCache Feature for Windows*

The JobCache feature is now available on the Windows platform for both the gcc compiler and the Microsoft Visual Studio C/C++ compiler. JobCache is supported with the Visual C/C++ compiler when the `/Z7` compile debug option is used as well as for release builds where no debug is turned on. Jobcache for Visual C/C++ is not compatible with the compiler debug options `/ZI` and `/ZL`.

#### *Enhanced Cygwin Support*

This release introduces support for 64-bit versions of Cygwin as well as support for the latest versions of Cygwin on 32-bit platforms.

These Cygwin versions have been validated by Electric Cloud:

Bitness	Cygwin Version
32-bit emake with 32-bit	Cygwin 2.3.0, 2.0.4, 1.7.9, 1.5.25
64-bit emake with 64-bit	Cygwin 2.3.0, 2.0.4

#### *Android M and JACK Support*

ElectricAccelerator now supports acceleration of Android Marshmallow (6.0.1) and the Java Android Compiler Kit (JACK).

#### *Other New Features and Functionality*

- The output from the `cmtool getResources` command now includes `matchingAgents` and the field is also displayed in the Resources on the Cluster Manager. (EC-11710)
- When running a build using `electrify`, `jobs` may specify `ELECTRIFY_JOB_NAME` in their environment to provide a name for the job which will appear in annotation files.

- Several web security best practices were applied to the ElectricAccelerator Cluster Manager, such as disabling web server directory listings and disabling `TLSv1`. Note that disabling `TLSv1` may impact compatibility with some versions of Internet Explorer. Users should ensure that `TLSv1.1` and `TLSv1.2` are enabled in Internet Explorer by visiting Tools -> Internet Options -> Advanced -> Security in their browser.
- The Cluster Manager report drilldown tables now contain data relevant to the report. (EC-11622)

## New Platforms

For the list of "What's New" for Visual Studio Integration, go to the "What's New" section in the Visual Studio Integration Guide, Version 4.2.5.

Support is added for the following platforms:

- RHEL 7.2 (kernel 3.10.0-327) (64-bit)
- RHEL 6.7 (kernel 2.6.32-573) (32- and 64-bit)
- RHEL 5.11 (kernel 2.6.18.-398) (32- and 64-bit)
- Ubuntu Linux 16.04 (kernel 4.4.0-18) (64-bit)
- Ubuntu Linux 15.10 (kernel 4.2.0-34) (64-bit)
- Windows 10 (64-bit)
- Window Server 2012 (64-bit)

## Resolved Issues

- The performance of the Cluster Manager agent allocation algorithm has been improved. (EC-11740)
- Performance of the Cluster Manager upgrade process is significantly improved, particularly for users that have run many builds. (EC-9670)
- The Java heap size settings for the Cluster Manager have been doubled to 512MB (initial) +1024Mb (Max). (EC-11767)
- Removed the **Log Output** option from the Build Details page for performance and scalability reasons. The build log can still be downloaded from the Build Details page, provided that annotation upload was enabled when the build was run (`--emake-annoupload=1`). (EC-11611)
- Fixed an issue where the `cmtool getResources` command would return an error if the resource type was set to `priority pool`. (EC-11802)
- (Windows platforms) Fixed an incompatibility between ElectricAccelerator and Symantec Endpoint Protection 12.x, which could cause BSOD crashes on Windows in rare cases. (EC-11522)
- `emake` will now let you use local agents as remote agents, if the agents are colocated and `--emake-localagents=N` is set. The build will progress, but the agents will be disabled in the Cluster Manager while they are being used. (EC-11730).
- (Linux Platforms) The installer has been improved to warn of missing 32-bit libraries on 64-bit Linux systems. (EC-11199)
- Fixed an issue where the installer failed to delete all the files in the installation directory when doing a full uninstall. (EC-10900)
- Fixed a defect which prohibited using passwords with leading or trailing spaces. If users have scripts or workflows that depend upon the original whitespace-trimming behavior, they will have to modify their scripts to eliminate the superfluous space characters. (EC-9704)

- When running emake in hybrid mode on an agent host, if a local connection was requested while a remote connection was open, the agent would occasionally crash. (EC-11746)
- Environment variables for the Java Service Wrapper used by ElectricFlow are now ignored by the parse avoidance feature. (EC-11470)
- Fixed an issue where `matchingHosts` was not a recognized field in the response from the `cmtool getResources` command. (EC-11250)
- Fixed a file system incompatibility issue where the ElectricAccelerator agent crashed when using RHEL 7.1 on an ext4 file system. (EC-11800)
- Fixed an issue where eMake was handling command line variable definitions slightly differently than gmake with respect to whether or not they are exported to the environment. (EC-11799)
- Improved the performance of the `cmtool getBuilds` command when using `--filter="result = -1"` to see what builds are running. (EC-11751)
- Fixed an issue where the Agents Available line on the Agent Usage report was double the actual value. (EC-11738)
- (Windows platforms) Fixed an issue where 1000's of INFO messages were being added to the Cluster Manager log when Symantec Endpoint Protection 12.1.x was running.(EC-11660)
- (Windows platforms) Fixed an issue where proxyCmd.exe was returning Unix style line endings on Windows. (EC-11657)
- Fixed an issue where 1000's of INFO messages were being added to the Cluster Manager log when Symantec Endpoint Protection 12.1.x was running.
- Fixed an issue where proxyCmd.exe was returning Unix style line endings on Windows. (EC-11657)
- Fixed an issue where if the history file was on a network drive, eMake was leaving temporary files (`wd*.tmp`) behind. (EC-11653)
- Fixed an issue where the `-emake-annodetail` command line option was not overriding the Build Class Details Annotation Levels from the cluster manager. (EC-11329)
- Fixed an issue where the `cmtool deleteResources` command was not working with the `resource_name` filter. (EC-11282)
- (Windows platforms) Fixed a crash that occurred when using `-emake-clearcase=vobs` on 64-bit Windows. (EC-11210)
- Fixed an issue where truncated annotation files were being uploaded to the Cluster Manager. (EC-9182)
- Fixed an issue for Visual Studio 2012 builds where if project dependencies were not fully defined, the project build order under eMake might have been different to Visual Studio, which could cause a build to fail because a prerequisite project was not built. (VSP-563)

## Installation and Upgrade Notes

### MariaDB Replaces MySQL as the Default Local Database

Electric Cloud bundles MariaDB starting with ElectricAccelerator 7.1 and installs it as the default local database. When you upgrade the Cluster Manager, MariaDB replaces the local MySQL database (if you are upgrading for a version earlier than ElectricAccelerator 7.1) and migrates all information from it.

MariaDB is an open-source database that is fully compatible with MySQL. You can alternatively use the MySQL, Oracle, or SQL Server databases. See the Cluster Manager online help topic "Database Configuration" for information about configuring Accelerator to use an external database.

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## Hardware Requirements

- Accelerator 7.2 and newer versions require a Pentium 4 or newer processor when running in a 32-bit Solaris x86 environment.
- The recommended total amount of RAM for an agent host is 2 GB *per agent* plus the amount of RAM normally needed to execute your build. For example, if you are running four agents, and your build normally needs 16 GB, you will need  $((2 * 4) + 16) = 24$  GB.

## Backing Up Before You Upgrade

- Back up the `/opt/ecloud/<arch>/ccloud` directory for Linux and Solaris or `C:\ECloud\<arch>` for Windows to a safe location. The upgrade process does not preserve the existing files.
- For additional security, perform a database backup following the recommended procedure from your database vendor.

## Installing JDBC Drivers for MySQL or Oracle Databases

Electric Cloud no longer distributes the JDBC drivers for MySQL or Oracle databases. If you want to use one of these databases, you must download its driver directly from the Oracle website, copy it to the appropriate directory on the Cluster Manager server, and restart the Cluster Manager service. For more information, see the “Installing JDBC Database Drivers” section in Chapter 3 of the *ElectricAccelerator 8.0 Installation and Configuration Guide* at [http://docs.electric-cloud.com/accelerator\\_doc/AcceleratorIndex.html](http://docs.electric-cloud.com/accelerator_doc/AcceleratorIndex.html).

## Copying the execserver Executable to a New Location if You Relocate eMake

If you copy the 'emake' executable to a new location, you must also copy the execserver executable to that location. By default, the path to the execserver executable is `/opt/ecloud/i686_Linux/bin/execserver` (or `/opt/ecloud/i686_Linux/64/bin/execserver`, if you are running 64-bit eMake).

## Regenerating History Files After an Upgrade

The identifier that is used to find certain types of jobs in the eMake history file is changed in version 8.0. After an upgrade from version 7.2.2 or older versions to version 8.0 or newer versions, users should regenerate their history files by running their first build with the `--emake-history=create` eMake option to avoid unnecessary serializations. This build might have more conflicts than normal (but subsequent builds should return to normal).

## Known Issues

### Linux Kernel Issue That Affects ElectricAccelerator Performance

#### Affected Kernel Versions

- RHEL kernel versions later than 2.6.18-194.32 and earlier than 2.6.32-131
- Ubuntu Linux kernel versions 2.6.31, 2.6.32, 2.6.33, and 2.6.34

#### Symptoms

Affected systems might encounter reduced performance on both ext3 and ext4 file systems. Symptoms might include

- `hung_task_timeout_secs` messages in system dmesg logs
- Widely variable agent availability (entering and exiting agent “penalty” status frequently)

- Contention over the `ecagent.state` file
- Slower builds (with unexplained variances)

To help determine if this issue exists, run the `dmesg | grep hung_task_timeout` command. `hung_task_timeout` errors show that this issue is present. Contact your kernel provider for another version of the precompiled kernel.

### **Fixes for Systems Running RHEL 5.6, 5.7, 5.8, and 6.0**

You should consider upgrading to 2.6.32-131 (RHEL 6.1) or downgrading to 2.6.18-194.32 (RHEL 5.5).

## **Other Known Issues**

- Results in the Cluster Usage report in the Cluster Manager might not appear in Internet Explorer 10. To work around this issue, choose **Tools > Compatibility View** from the browser menu and then re-run the report. (EC-11608)
- Options in the `emake.conf` configuration file override options that are set using Accelerator environment variables (such as `EMAKE_CM`). (EC-10272)
- Because of a Linux kernel compatibility issue with LOFS, Accelerator agents cannot be installed on Ubuntu 12.10.
- If Apache fails to start properly after a new Cluster Manager installation, reboot the system.

## **Documentation**

### **Product Documentation**

Accelerator documentation is available at [http://docs.electric-cloud.com/accelerator\\_doc/AcceleratorIndex.html](http://docs.electric-cloud.com/accelerator_doc/AcceleratorIndex.html) as follows:

- *ElectricAccelerator Installation and Configuration Guide*
- *ElectricAccelerator Electric Make User Guide*
- *ElectricAccelerator cmtool Reference Guide*
- *ElectricAccelerator Error Messages Guide*
- *ElectricAccelerator Visual Studio Integration Guide*
- *ElectricAccelerator Release Notes* (this document)
- PDF, HTML, and mobile-optimized HTML versions of the online help that is also built into the Cluster Manager

Documentation on the website is updated periodically.

### **Cluster Manager Online Help and Tooltips**

Built into the Cluster Manager are the following:

- A complete, robust, context-sensitive online help system (click the Help link in any page of the Cluster Manager web UI). See the documentation website as described above for the latest updates to this information
- Tooltips with information to help fill in form fields

# 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](mailto: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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