



ElectricAccelerator Release Notes

Version 8.2

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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 CL compiler. JobCache is supported with the CL compiler when the `/Z7` option is used for debug builds and for release builds where no debug is turned on.

Enhanced Cygwin Support

ElectricAccelerator now supports 64-bit Cygwin and Cygwin 2.x.

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)

Resolved Issues

- Performance of the Cluster Manager upgrade process is significantly improved, particularly for users that have run many builds. (EC-9670)
- The initial Java heap size for the Cluster Manager has been increased to 512Mb and the maximum Java heap size is now 1024Mb. (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 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)
- The performance of the Cluster Manager agent allocation algorithm has been improved. (EC-11740)
- 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 of a possible deadlock in the EFS while trying to terminate `mspdbsrv.exe`. (EC-11664)
- (Windows platforms) Fixed an issue where an EFS crash happened when the OS reaped the `devenv` process. (EC-11661)
- 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`) on the network share. (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)
- 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)

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)
- 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)

Installation and Upgrade Notes

MariaDB Replaces MySQL as the Default Local Database

Electric Cloud no longer bundles MySQL as the default local database for Accelerator on the Cluster Manager. Electric Cloud now bundles MariaDB and installs it as the default local database. When you upgrade the Cluster Manager, MariaDB replaces the local MySQL database (if applicable) 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.

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/eccloud/<arch>/cloud` 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.

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).

Fixes for Systems Running Ubuntu 10.04

You should consider upgrading to kernel 2.6.35 or newer. To install the upstream kernel, follow the example below (replace * with the version that you want to install):

```
sudo add-apt-repository ppa:kernel-ppa/ppa
sudo aptitude update
sudo apt-get install linux-image-2.6.35-*-generic
sudo apt-get install linux-headers-2.6.35-*-generic
sudo apt-get install linux-maverick-source-2.6.35 linux-maverick-headers-2.6 (optional)
```

A kernel upgrade might require you to reinstall kernel modules such as video drivers, `efs`, and `vm-tools`. You can do so by running `apt-get dist-upgrade` and then rebooting.

Other Known Issues

- (Linux platforms) Agent nodes might accumulate orphan inodes in the file system after builds completed. (EC-11452)
- 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.
- For Visual Studio 2012, if project dependencies are not fully defined, the project build order under eMake might be different to Visual Studio. If a build fails because a prerequisite project was not built, you can work around this issue by adding an explicit project dependency to the solution.
- 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 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

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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