



**Electric Cloud**  
**ElectricAccelerator**  
version 7.1

**Release Notes**

October 11, 2013

These Release Notes contain supplemental information about ElectricAccelerator, version 7.1.

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## Product Description

ElectricAccelerator® is a software build accelerator that dramatically reduces software build times by distributing the build over a large cluster of inexpensive servers. Using a patented dependency management system, ElectricAccelerator identifies and fixes problems in real time that would break traditional parallel builds. ElectricAccelerator plugs into existing software development environments seamlessly and includes web-based management and reporting tools.

Electric Cloud also offers ElectricAccelerator Developer Edition, which enables individual developers to leverage the multiple cores in a personal workstation. Instead of running a build sequentially on a single core, ElectricAccelerator Developer Edition runs all of the build's workload in parallel on multiple cores on the local developer desktop.

ElectricAccelerator and ElectricAccelerator Developer Edition include the following components:

- Electric Make® (eMake)
- Electric File System (EFS)
- ElectricAccelerator® Agents (Electric Agent or Agent)
- Cluster Manager
- Electrify

**Note:** The Cluster Manager is a component of ElectricAccelerator only.

## What's New for Version 7.1

### Features and Functionality

- Schedule optimization - Starting with v7.1, eMake will use performance and dependency information from previous builds in order to optimize the runtime ordering of jobs in subsequent builds. This approach can improve performance on the same number of agents (compared to v7.0, or compared to v7.1 when the requisite information is not available), and enables eMake to realize the 'best possible' build performance for a given build with fewer agents.
- Javadoc caching - The new Javadoc caching feature can improve build performance by caching and reusing Javadoc files.
- ElectricAccelerator now supports Red Hat Enterprise Linux 6.4.
- Starting with v7.1, ElectricAccelerator no longer supports the following platforms:
  - Ubuntu 9.10
  - Windows Vista, 32 and 64-bit
  - Windows Server 2003, 64-bit
  - Solaris 9
  - Any Solaris version on the Cluster Manager machine
- Upgraded to Apache 2.2.24 and PHP 5.3.26.
- ElectricAccelerator no longer supports eMake Ant emulation.
- For new Cluster Manager installations, ElectricAccelerator now installs MariaDB as the default local database. For Cluster Manager upgrades, MariaDB replaces the local MySQL database (if applicable).

## Resolved Issues

- Removed references in the LSF agentconnect script to setonsignal, which is no longer used. (EC-10191)
- When running concurrent local-mode (no agent) builds on a single host, one or more of the builds could fail. This issue has been fixed. (EC-9929)
- Selecting "log output" on the Build Details page would display an error saying that there is no uploaded annotation file, even though one was available in .zip format. This issue has been fixed. (EC-9700)
- Improved handling of certain patterns that previously could cause builds to emit history serialization for particular files. (EC-9571)
- The agent now sets the environment variable MSBUILDNODECONNECTIONTIMEOUT to zero so MSBuild exits immediately after a build. (EC-8728)
- If EMMAKEFLAGS was defined with options that contained spaces in the value (for example, --emake-option="value with spaces"), emake printed a warning about unknown options. This issue has been fixed. (EC-6067)

## Installation/Upgrade Notes

### *Before You Upgrade*

Ensure you back up this directory: `/opt/ecloud/<arch>/cloud` for UNIX or `C:\ECloud\i686_win32` for Windows, to a safe location to preserve the existing files. The upgrade process does not preserve the existing files.

For additional security, perform a database backup following the recommended procedure for your respective database system.

### *Cluster Manager Fresh Installs*

If Apache fails to start properly after a fresh Cluster Manager install, reboot the system.

### *MariaDB Replaces MySQL as Default Local Database*

Electric Cloud no longer bundles MySQL as the default local database for ElectricAccelerator. Starting with ElectricAccelerator v7.1, Electric Cloud bundles MariaDB and installs it as the default local database on the Cluster Manager. When you perform a Cluster Manager upgrade, 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. As open-source software, there is no enterprise license support model available with MariaDB. If using an open-source database is of concern to your organization, you continue to have the option to use any of the following databases as a replacement: MySQL, Oracle, or SQL Server. See the online help topic "Database Configuration" for information about configuring Accelerator to use an external database.

### *Known Linux Kernel Issue and ElectricAccelerator Performance*

#### **Affected Kernel Versions**

- RHEL versions later than 2.6.18-194.32 and earlier than 2.6.32-131.
- Ubuntu versions 2.6.31, 32, 33, and 34

## Symptoms

Affected systems may encounter reduced performance on both ext3 and ext4 filesystems. Symptoms may 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 your environment has this kernel issue, run

```
dmesg | grep hung_task_timeout
```

If hung\_task\_timeout errors are present, this indicates that a known Linux kernel issue is present. Contact your kernel provider to obtain a different version of the precompiled kernel.

## Corrective Actions

### For Systems Running RHEL 5.6, 5.7, 5.8, and 6.0

Consider upgrading to 2.6.32-131 (RHEL 6.1), or downgrading to 2.6.18-194.32 (RHEL 5.5).

### For Systems Running Ubuntu 10.04

Consider upgrading to kernel version 2.6.35 or later.

To install the upstream kernel, do the following, for example (replace \* with the version 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)
```

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

## ECLOCK\_TIMEOUT\_DELAY

If you currently set the eclock ECLOCK\_TIMEOUT\_DELAY environment variable, it is no longer used and can be deleted. To replace the environment variable’s behavior, divide the value of ECLOCK\_TIMEOUT\_DELAY by 100, and set ECLOCK\_BUSY\_WAIT to the resulting value. (The ECLOCK\_BUSY\_WAIT default value is 100, so you do not need to set it to that value explicitly.)

## Linux Automounted Filesystems

If you previously implemented a workaround for automounted filesystems on Linux (such as hard mounting filesystems or manually changing the automounter configuration) you can undo those changes after you upgrade to the latest version of ElectricAccelerator.

## Windows Application Setup

Any Windows applications that store user-specific data must be run [on all hosts] by the user who owns the agent processes on those hosts.

For example, if you plan to use Microsoft Visual Studio, you must log in to each agent host and run devenv as the user that owns the respective agent processes (usually ECloudInternalUser1, ECloudInternalUser2, and so on). You can use the psexec tool (downloadable from <http://technet.microsoft.com/en-us/sysinternals/bsb896649.aspx>) to eliminate the need to log in and log out multiple times. Using this tool is

more efficient because some applications such as Visual Studio or Excel store user settings in the registry and create files in "My Documents."

If you install Visual Studio after installing ElectricAccelerator, register the add-in on the hosts by running `install_ecaddin<N>.bat` where N is 70, 71, 80, 90, 100, or 110 depending on your Visual Studio version.

If you are using Visual Studio 2005 or later, reduce the number of parallel builds Visual Studio performs:

1. In Visual Studio, select Tools > Options.
2. In the Options dialog, open Projects and Solutions > Build and Run.
3. Set maximum number of parallel project builds to 1.

When setting up Windows, be sure to initialize the Customer Experience Improvement Program setting.

## Known Issues

This version of ElectricAccelerator has the following known issues:

- If you upgraded Accelerator, and then logged in to the Cluster Manager and saw a Server Startup Status similar to the following:



The screenshot shows the ElectricAccelerator web interface. The top navigation bar includes links for Home, Builds, Agents, Reports, Messages, and Administration. The main content area is titled "Server Startup Status" and contains a "Server Status" section. The server state is reported as "databaseSchema". Below this, the "Last 10 Messages" are listed, showing a sequence of INFO messages: "Starting ElectricAccelerator Server version 7.1.0.49611 (build\_7.1\_49611\_OPT\_2013.10.02\_04:40:48)", "Starting API Service", "JDBC url: jdbc:mysql://localhost:3306/ecloud", "Connected to the database", and "A database schema incompatibility prevented the server from starting." The final message is "Last message repeated 44 times".

You must modify the Cluster Manager database schema. Follow these steps:

1. Log in to the database by running the following command (or its equivalent):

```
<installdir>/<arch>/mysql/bin/mysql.exe ecloud
```

2. At the MySQL prompt, type:

```
show columns from ec_server;
```

Verify that the column "build\_access\_limited" says TinyInt(1)

3. Type:

```
alter table ec_server modify build_access_limited BIT(1);
```

4. Type:

```
show columns from ec_server;
```

Verify that the column "build\_access\_limited" now says Bit(1)

5. Type:

```
exit;
```

6. Refresh the Cluster Manager browser window.
- For Visual Studio 2012, the project build order under eMake may be different to Visual Studio if project dependencies are not fully defined.

Workaround: If a build fails because a prerequisite project has not been built, add an explicit project dependency in the solution.

## Documentation

ElectricAccelerator documentation is available on the Electric Cloud Support web site at <https://electriccloud.zendesk.com/entries/22575906-electricaccelerator-documentation>. Updated documentation will be available on that page if any documents are updated post-release.

ElectricAccelerator provides the following product documentation:

- *ElectricAccelerator Installation and Configuration Guide* also available within the online help system
- *ElectricAccelerator Electric Make Users Guide* also available within the online help system
- *ElectricAccelerator cmtool Reference and Users Guide* also available within the online help system
- *ElectricAccelerator Visual Studio Integration Guide*
- A complete, robust online help system - click any Help link in the upper-right corner of each web page.
- Tooltips with information to help fill-in form fields (information also available in online help topics).
- *ElectricAccelerator Release Notes*

## Troubleshooting and Getting Help

Contacting Technical Support:

*Before* you contact our technical support staff, please 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:** 8AM - 5PM PST (Monday-Friday, except Holidays)

**Phone:** 408-419-4300, Option #2

**Email:** support@electric-cloud.com

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