ElectricAccelerator

Version 7.2.2

Release Notes

March 2, 2015

These Release Notes contain supplemental information about ElectricAccelerator® version 7.2.2.

Topics include:

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 uses a patented dependency-management system to identify and fix problems in real time that would break traditional parallel builds. ElectricAccelerator seamlessly plugs into existing software development environments and includes web-based management and reporting tools.

Electric Cloud also offers ElectricAccelerator Developer Edition, which lets individual developers leverage the multiple cores in a personal workstation. Instead of running a build sequentially on a single core, ElectricAccelerator Developer Edition runs the build's entire 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 (a component of ElectricAccelerator)

- Electrify

What's New for Version 7.2.2

Resolved Issues

- (Linux platforms) With Linux kernel version 3.6 and newer versions, an unmounting failure occurred when using LOFS while Agents were running. (EC-10944)

- Agents set the Java `CLASSPATH` environment variable and omitted the current directory (".") that is implied when `CLASSPATH` is initially empty, which caused some builds to fail. (EC-10938)

- (Linux platforms) On Linux kernel 3.11 or newer, a LOFS issue that affected directory read operations resulted in empty directory listings. (EC-10889)

- (Windows platforms) An outdated SmartHeap library included in ElectricAccelerator caused eMake to crash when performing local builds. (EC-10864)

- (Linux platforms) Agents became unusable if a build was interrupted while a file system was mounted. (EC-10818 and EC-10620)

- (Linux and Solaris platforms) Selecting the **Log Output** menu option on the **Build Details** page displayed an error stating that there was no uploaded annotation file, although the file was available. (EC-9700)

- (Windows platforms) A WoW64 registry key redirection and reflection error caused an issue with 32-bit applications running under eMake on 64-bit windows. Registry virtualization for 32-bit applications on 64-bit agent hosts is now fully supported. (EC-9418)

Release Notes for Previous 7.2 Versions

- Version 7.2.1

- Version 7.2

All ElectricAccelerator documentation is available at http://docs.electric-cloud.com/accelerator_doc/AcceleratorIndex.html.

Installation and Upgrade Notes

Before You Upgrade

Make sure that you back up the directory `/opt/ecloud/<arch>/cloud` 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.

Hardware Requirements

- ElectricAccelerator version 7.2 and newer versions require a Pentium 4 or newer processor when running in a 32-bit Solaris *x*86 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.

Cluster Manager Fresh Installations

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

MariaDB Replaces MySQL as Default Local Database

Electric Cloud no longer bundles MySQL as the default local database for ElectricAccelerator. Electric Cloud now bundles MariaDB and installs it as the default local database on the Cluster Manager. 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. Because it is open-source software, MariaDB has no enterprise license support model. If using an open-source database is of concern to your organization, you can still use the MySQL, Oracle, or SQL Server databases instead. See the online help topic "Database Configuration" for information about configuring Accelerator to use an external database.

Installing JDBC Drivers for MySQL or Oracle Databases

Electric Cloud does not distribute 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 7.2 Installation and Configuration Guide* at http://docs.electric-cloud.com/accelerator_doc/AcceleratorIndex.html.

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 Linux versions 2.6.31, 32, 33, and 34

Symptoms

Affected systems might encounter reduced performance on both ext3 and ext4 filesystems. 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 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 another 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 newer.

To install the upstream kernel, use 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 linux-maverick-source-2.6.35 linux-maverick-headers-2.6 (optional)
```

Upgrading the kernel 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.

ECLOCK_TIMEOUT_DELAY

The eclock `ECLOCK_TIMEOUT_DELAY` environment variable 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 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, to use Microsoft Visual Studio, you must log in to each agent host and run `devenv` as the user who 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/bb897553.aspx) to eliminate the need to log in and log out multiple times. Using this tool is more efficient, because applications such as Visual Studio or Excel store user settings in the registry and create files in the My Documents folder.

If you install Visual Studio after installing ElectricAccelerator, you must 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 newer, you should reduce the number of parallel builds that Visual Studio performs. To do so:

1. In Visual Studio, select **Tools > Options**.

2. In the **Options** dialog, open **Projects and Solutions > Build and Run**.

3. Set the maximum number of parallel project builds to 1.

Known Issues

- Options in the `emake.conf` configuration file override options that are set using ElectricAccelerator 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.

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

Documentation

ElectricAccelerator documentation is available at http://docs.electric-cloud.com/accelerator_doc/AcceleratorIndex.html. Updated documentation will be available on this website if any documents are updated after the 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 (also available in online help topics)

- *ElectricAccelerator Release Notes*

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

Before you contact technical support, have the following information available:

- 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