

ElectricAccelerator Release Notes

Version 10.1.1

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ElectricAccelerator version 10.1.1

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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

BitBake Build Acceleration

You can now use Accelerator with BitBake-based projects such as Yocto. Versions 2.4 and 2.5 of the Yocto project are supported.

Accelerator uses the `bemake` wrapper utility to run eMake in BitBake builds. This utility replaces GNU Make (`gmake`) with eMake `do_compile` build steps and runs `gmake` for other types of build steps. For instructions, see the [KBEA-00166 - Using eMake to Accelerate BitBake Builds](#) KB article.

Resolved Issues

Security-Related Issues

The following Cluster Manager web server issues are fixed:

- (Linux platforms only) PHP is upgraded from version 5.6.29 to version 5.6.37. (EC-12868)
- jQuery is upgraded from version 1.11.1 to version 1.12.1. (EC-12840)
- A critical SQL injection vulnerability was fixed. (EC-12823)
- An HTTP GET cross-site scripting vulnerability in the **Comments** section of the **Build Details**, **Build Class Details**, **Agent Details**, and **Resource Details** pages in the Cluster Manager web UI was fixed. Note that any HTML entered in these comments (including HTML entered in prior versions before an upgrade to 10.1.1) is no longer interpreted by the Cluster Manager web UI. (EC-12823)

Other Issues

- (Linux platforms only) The installer now creates the symbolic links for the `bin` and `lib` directories using paths relative to the current directory rather than absolute paths starting from `/opt/ecloud/i686_Linux/64/`. (EC-12864)

- An issue is fixed in which low-priority builds using local agents could fail with error EC1068 when the agents are revoked from a low-priority build for use by a high-priority build. This condition is now treated as a normal agent revocation rather than as a fatal error. (EC-12863)
- An issue is fixed in which environment variables were not correctly propagated in Android builds that included vendor kernel modules, which caused build failures. (EC-12861 and EC-12844)
- eMake no longer reports per-agent workload data to the Cluster Manager. This resolves an issue in which reporting of this data caused errors and timed-out builds in clusters containing a large number of agents. (EC-12858)
- (Windows platforms only) An issue where the installer crashed with the following error is **resolved**: The instruction at 0x004221a3 referenced memory at 0x0000000c. The memory could not be read. (EC-12847)
- The **Legacy Filters** section in each of the **Saved Filters** menus in the Cluster Manager web UI is simplified by the removal of all filters that required user input:

Agents On Host	Resource Name	Resource Stats By Date
Agents By Name	Host Mask	Build ID
Messages By Date	Build Class Name	Message ID
Messages By Agent	Resource Request	Build Class
Messages By Host	Builds By Date	Custom SQL
Messages By Build ID	User Build	Filters By Table
Messages By Build Class	User At Machine	

(EC-12843)

- An upgrade of a Cluster Manager server that uses an Oracle database no longer causes NULL entry errors for certain tables if the database contains no build history. (EC-12833)

Installation and Upgrade Notes

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

- The upgrade process does not preserve the existing files. Back up the `/opt/ecloud/<arch>/cloud` directory for Linux and Solaris or the `C:\ECloud\<arch>` folder for Windows to a safe location.
- For additional security, back up the database by 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. To use one of these databases, you must download its driver directly from the Oracle website, then copy it to the appropriate directory on the Cluster Manager server, and then restart the Cluster Manager service. For details, see the "Installing JDBC Database Drivers" section in the "Installing ElectricAccelerator" chapter of the *ElectricAccelerator 10.1 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/32/bin/execserver` (for 32-bit eMake) or `/opt/ecloud/i686_Linux/64/bin/execserver` (for 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 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` option to avoid unnecessary serializations. This build might have more conflicts than normal (but subsequent builds should return to normal).

Concurrent Build Licensing

As of version 9.1, for new Accelerator subscription licenses, the number of builds that you can run concurrently is license-limited. The `noLicenseWaitTime` performance metric indicates the amount of time that a build spent waiting for a concurrent build license because the number of concurrent builds reached the license limit. Also, as of version 9.1, JobCache is not separately licensed and is now included with the concurrent build license.

Customers using pre-9.1 Accelerator licenses may continue to use those licenses, including the licenses for the JobCache add-on.

For details about licensing for concurrent builds, see the *ElectricAccelerator 10.1 Installation and Configuration Guide* at http://docs.electric-cloud.com/accelerator_doc/AcceleratorIndex.html. (EC-12095)

Updating the Resource Manager Type If You Are Using LSF

During a Cluster Manager upgrade to Accelerator 10.0 or later, the installer changes the "cloud" resource manager type to "none." This means that if you are using LSF, you must move the scripts from the `<InstallDir>/<arch>/cloud/` directory to the `<InstallDir>/<arch>/cloud/lsf` directory.

`<InstallDir>` is `/opt/ecloud` by default on Linux and `C:\ECloud` by default on Windows. `<arch>` is either `i686_Linux` or `i686_win32`.

Also, you must specify LSF as the resource manager to be used by the Cluster Manager. To do so, open the Cluster Manager web UI, then click **Administration > Server Settings**, then choose **LSF** from the **Resource Manager Type** menu, and then click **OK**. (EC-12579)

Known Issues

Linux Kernel Issue That Affects Accelerator 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

- If you kill a build manually, and the agents running on an Amazon EC2 instance fail to connect, the instance will continue to run. You must kill the instance manually.
- The `cmtool importData` command does not import license properties (such as `maxAgents`). To work around this issue, re-import the license after using `importData`. (EC-12371)
- You cannot control breakpoints from the Cluster Manager. (EC-12322)
- Options in the `emake.conf` configuration file override options that are set using Accelerator environment variables (such as `EMAKE_CM`). (EC-10272)
- 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 Quick Start*
- *ElectricAccelerator Terms and Concepts*
- *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 accessible from the Cluster Manager **Help** button.

Documentation on the website is updated periodically.

Cluster Manager Online Help and Tooltips

Built into the Cluster Manager are

- A complete, robust, context-sensitive online help system (click the **Help** button 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:

- +1 408.419.4300, option 2. Hours are 9 A.M.–5 P.M. PT Monday–Friday (except holidays)
- support@electric-cloud.com
- <https://helpcenter.electric-cloud.com/> and then click **Submit a request** to submit or see your support tickets

Be prepared to provide 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>—a member-moderated community forum where you can:

- Ask and answer questions as well as comment on (and vote for) the questions of others and their answers
- Get help with installation and configuration
- Submit feedback

ElectricAccelerator Knowledge Base

Go to <https://helpcenter.electric-cloud.com/hc/en-us/sections/200516893-Accelerator-KB> to find in-depth explanations of specific topics and solutions for specific problems.