

SGI® Origin® 3000 Series L3 Controller 1.7 Update Guide

The L3 software consists of the following components:

- Kernel software
- L1 USB module for the Red Hat 7.1 kernel
- L1 USB module for the Red Hat 7.2 kernel
- L1 USB module for the SGI ProPack 1.5 for Linux kernel
- L1 USB module for the SGI XFS 1.0 kernel
- L1 USB module for the SGI XFS 1.0.1 kernel
- L3 driver
- L1/L2 firmware utilities
- L3 install tool
- Silicon Graphics 230 Red Hat 6.2 re-install script

This product provides a system control platform for field service and system maintenance applications. Its features include:

- Advanced diagnostic support
- Maintenance of the SGI Origin 3000 system serial number

- Maintenance of the SGI Origin 3000 router port enable
- Console for L1 and L2 controllers

This guide contains the following sections:

- Related Information (page 2)
- Installing the Diagnostic Software from Downloaded Packages (page 3)
- Reinstalling Red Hat Linux on Silicon Graphics 230 (page 3)
- Installing Software on Systems with Pre-installed Red Hat Linux (page 5)
- New Features and Changes (page 6)

Related Information

The Origin 3000 series L3 controller 1.7 is available for download from the following website: <http://www.sgi.com/products/evaluation/>

For more information on the SGI L1, L2, and L3 controllers, see the following guides:

- *SGI Origin 3000 L3 Controller Installation Guide*
- *SGI Origin 3000 Series Owner's Guide*

Installing the Diagnostic Software from Downloaded Packages

To install the diagnostic software, follow these steps:

1. Log on to the L3 platform as root.
2. Enter the following commands to install the diagnostic software:

```
# cd /dir
```

where *dir* is the place you downloaded the software

```
# chmod 755 l3_install
```

```
# l3_install
```

3. To reboot the system, enter the following:

```
# reboot
```
4. After you have completed the product installation, you should remove the files that you downloaded.

Reinstalling Red Hat Linux on Silicon Graphics 230

If you install the L3 controller software on a Silicon Graphics 230 visual workstation, you must perform additional steps to restore the Red Hat Linux 6.2 operating system to the state in which it was installed at the factory. These instructions are provided in the *SGI Origin 3000 L3*

Controller Installation Guide. After performing the steps in the section “Installing the Auxiliary Linux Software” (page 18), follow these steps to install the L3 controller software from downloaded packages:

Note: The `sgi230_13_reinstall` script described in step 1 was available starting with the Origin 3000 series L3 controller 1.5 release.

1. Before executing the `l3_install` script in section 4 of the “Installation Instructions” on <http://www.sgi.com/products/evaluation>, enter the following command to copy the script to the proper script name:

```
# cp sgi230_13_reinstall-1.0 sgi230_13_reinstall
```

2. Enter the following command to make the `sgi230_13_reinstall` script executable:

```
# chmod 755 sgi230_13_reinstall
```

3. Enter the following command to run the script:

```
#!/sgl230_13_reinstall
```

The `sgi230_13_reinstall` script automatically installs additional Red Hat Linux components that are normally installed in the factory. This script installs additional required packages that are not part of the default Red Hat Linux installation. The script takes several minutes to run; it lists each package that it installs and displays a progress bar as it installs each package.

4. Continue with the steps in section 4 of the “Installation Instructions” on the website that relate to the execution of the `l3_install` script.

Installing Software on Systems with Pre-installed Red Hat Linux

If you install the L3 controller software on a Silicon Graphics 230 visual workstation on which the Red Hat Linux 6.2 operating system was pre-installed during manufacturing, you must perform additional steps. These steps are provided in the *SGI Origin 3000 L3 Controller Installation Guide*.

See the following sections in the *SGI Origin 3000 L3 Controller Installation Guide* for detailed installation instructions:

- Installation Overview (page 2)
- Software Installation Requirements (page 2)
- Installing the Auxiliary Linux Software (page 18)
- Installing the L3 Controller Software (page 19)
- Installing the Software from the Network (page 20)

Note: To configure the network (using the Network Configurator GUI) after the workstation has booted the operating system, see the “Configuring Network Settings” section (page 12). To configure user accounts (using the User Configurator GUI), see the “Configuring the Account” section (page 15). To connect the Silicon Graphics 230 visual workstation to an Origin 3000 series server, see the sections in the back of the *SGI Origin 3000 L3 Controller Installation Guide* that are appropriate for your system configuration (pages 21-27).

New Features and Changes

This section lists the new features and changes included in this release for firmware and software in the following sections:

- L1 Firmware (page 7)
- L2 Firmware (page 12)
- L3 Firmware (page 13)

Note: BEFORE INSTALLING THE L1 OR L2 FIRMWARE, FOLLOW THE INSTRUCTIONS IN SERVICE BULLETIN GIB 200215. If you are currently running L1 firmware version 1.4.1 or older, upgrading to this version of L1 firmware enables router port security and system serial number security features. If your system is not configured properly, these features can cause your R-bricks not to power on or boot.

L1 Firmware

This section lists the changed commands, added features, other changes, and bugs addressed for the L1 firmware.

Changed Commands

dsp	This command now shows the states of the "On," "Service Required," and "Failure" LEDs, in addition to the current L1 display message.
pbay *	The power bay commands are now available on PE-bricks.

Added Features

Support has been added for recognizing new IP35 PIMM types: R14Ka 500-MHz and R14Ka 600-MHz

Support has been added for mixing R14K 500-MHz PIMM (P/N 030-1520-002) and R14Ka 500-MHz PIMM (P/N 030-1799-001) in an Origin 3000 C-brick.

Support has been added for the operating system to power-cycle C-bricks that may have disabled CPUs.

Other Changes

Automatic power-on now works correctly on an Origin 300 system with a PE-brick.

Fixed the scan reset sequences for PE-bricks and X2-bricks. This eliminates the problem of PCI cards missing after power-on.

The problem of an L1 reboot occurring due to a brick automatically powering off, due to a power or fan problem, is fixed in this version.

Most messages pertaining to the bedrock and the system console L1 connection have changed to use "junkbus" instead of "bedrock." This provides messages that are appropriate across multiple product families.

To accommodate future brick types and the growing size of the L1 firmware image, the `l1.bin` file now contains two firmware images: a 1-MB image used on all brick types currently shipping, and a 2-MB image that will be used on all future brick types. The only difference between the 1-MB and 2-MB images is the brick types supported. The `flashsc` flash update utility handles all of the details for determining which image to use, so this transition should be transparent.

Implemented the power bay ACFAIL retry handling to prevent invalid ACFAIL alerts from being reported. This was fixed in L1 firmware version 1.6.x and 1.8.x but was broke in L1 firmware version 1.10.x.

Fixed the hang problem that occurred when performing an `* env` command on an Origin 3200 or dual Origin 300 system. The hang occurred due to insufficient memory available on the L1 to complete the command. The command still may not return all the output but it will no longer hang the L1.

Changed the nominal voltage for the 2.5V power supplies in the P-brick, PE-brick, and I-brick, from 2.5V to 2.561V. This is a workaround for a problem found with the QLogic 12160 PCI SCSI card.

Bugs Addressed

- 822648 O3k with pbay env on get "AC fail, lost redundancy" on console.
- 836660 ERROR: no response from 001c10
- 838878 L1 firmware gets a ATTN: PIMM0 CPU level stabilized @ 1.664V.
- 839378 O3K 600MHZ CPUs missing at PROM Bootup after a powercycle
- 843004 env monitoring is not able to be turned on
- 843415 VRM 2.5V still failed at power up
- 843517 incorrect error message when DIMM3 not installed
- 843519 incorrect Asterix L1 environmental warning temperatures
- 843931 L1 env shutdown immediately turns power supply off

844060 L1 pwr up command resets the system
844070 Mac address does not match the system SN
844128 ERROR: no response from 001c10 after resetting system serial number
845663 Asterix PROM output to monitor missing "CPUs enabled"
846004 L1 ver. 1.10.0 and 1.10.2s won't be able to detect temperature.
846088 L1 reboots on env temp failure
846100 L3 package that includes support for R14KA
847071 "link verbose" shows error for speedo2/pe-brick
847330 L1 software shouldn't margin the G-brick with a blanket L2 "margin" command.
847503 Bedrock: ppp error's on SN1
847901 L1 timezone (and time) not displayed correctly
848255 L1 env monitor needs more delay before a fan warning
848640 l1 command "pbay" doesn't work on a PE Brick
850697 Unable to see all pci cards on PE-brick during power up
850114 Autopower up needs to look at rack and slot numbers

- 851104 Unacceptably slow system console response through the L1
- 851697 env command locks up L1 on systems without L2's
- 852205 L1 firmware needs to adjust LP,PE brick 2.5v voltage higher

L2 Firmware

This section lists the changes and bugs addressed for the L2 firmware.

Changes

The following L2 touchscreen GUI buttons that had not been implemented were removed: **System Info...**, **Warnings/Faults...**, **L1/L2 Logs...**, and **Performance Graphs...**

Bugs Addressed

- 841821 Remove inactive L2 display buttons
- 846812 L2 emulator getting signal 11
- 847864 L2 firmware 1.10.1 powering up whole system

L3 Software

This section lists the changed applications and other changes for the L3 software.

Changed Applications

- l2 All changes listed for the L2 firmware in the “L2 Firmware” section on page 10 also apply to the L2 emulator.
- l2gui All L2 GUI changes listed for the L2 firmware in the “L2 Firmware” section on page 10 also apply to the L2 GUI display on the L3.

Other Changes

The `flashsc` supports the composite `l1.bin` image file, which contains 1-MB and 2-MB images. The utility handles all details for determining which image to flash on each brick (based on brick type), and is capable of flashing any combination of 1-MB and 2-MB image bricks simultaneously.

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