

SGI™ Origin™ 3000 Series L3 Controller 1.4 Update Guide

Overview

The L3 software consists of four components:

- Kernel software
- L3 driver
- L1/L2 firmware utilities
- L3 install tool

This product provides a system control platform for field service and system maintenance applications. The 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

Related Information

The Origin 3000 Series L3 Controller 1.4 CD release will automatically ship to any sites receiving an SGI Origin 3000. Existing customer sites can obtain a CD release by contacting your SGI account representative to obtain the Origin 3000 Series L3 Controller 1.4 (P/N 812-0879-005) or you can download the software from the software download location <http://www.sgi.com/products/evaluation/>.

For more information on the SGI L1, L2, and L3 controllers, refer to the following documents:

- *SGI Origin 3000 L3 Controller Installation Guide*, part number 007-4363-001
- *SGI Origin 3000 Series Owner's Guide*, part number 007-4240-002

Installing the Diagnostic Software

To install the diagnostic software, perform the following steps:

1. Log onto the L3 platform as root.
2. Insert the Origin 3000 Series L3 Controller 1.4 CD-ROM into the CD-ROM drive.

3. Enter the following commands to load the diagnostic software:

```
# cd /mnt/cdrom/RPMS  
# l3_install
```

4. Remove the CD-ROM from the CD-ROM drive.
5. Reboot the system:

```
# reboot
```

Software Installation on Systems with Preinstalled Red Hat™ Linux®

In order to install the L3 Controller software on a Silicon Graphics 230 visual workstation that has the Red Hat Linux 6.2 operating system preinstalled during manufacturing, some additional steps must be performed. Instructions for performing these steps can be found in the *SGI Origin 3000 L3 Controller Installation Guide* (publication number 007-4363-001).

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

- Installation Overview (p. 2)
- Software Installation Requirements (pp. 2 – 4)

- Installing the Auxiliary Linux Software (p. 18)
- Installing the L3 Controller Software (p. 19)
- Installing the Software from the CD-ROM (pp. 19 – 20)

Note: To configure the network (using the Network Configurator GUI) after the workstation has booted to OS, refer to the “Configuring Network Settings” section (pp. 12 – 14). To configure user accounts (using the User Configurator GUI), refer to the “Configuring the Account” section (p. 15). To connect the Silicon Graphics 230 visual workstation to an SGI Origin 3000 series server, refer to the sections that are appropriate for your system configuration (pp. 21 – 27).

New Features and Changes

The following new features and changes are included in this release.

L1 Firmware

Note: ** BEFORE INSTALLING THIS FIRMWARE, FOLLOW THE INSTRUCTIONS AS OUTLINED IN THE SERVICE BULLETIN GIB 200215 ** This version of L1 firmware (version 1.6.0) enables the Router Port security and System Serial Number security features (if not already

enabled by previously installing a 1.4.x version of L1 firmware). If your system is not configured properly, these features can cause your R-bricks not to power up or boot.

Changed Commands

`leds` Changed references to the "R12K" processor to "processor".

`mgn <sply> <val>` Does not attempt to margin supplies that are not present (such as when a PIMM is missing). If a supply is not present, the "mgn <sply> <val>" command does nothing and reports no error, exactly like "mgn <supply> low | norm | high".

Added Features

Added support for IP45 (Speedo2), N-brick, and X2-brick.

Added support for R14KA 600MHz PIMM.

Enabled System Serial Number security (see SERVICE BULLETIN GIB 200215).

Enabled Router Port security (see SERVICE BULLETIN GIB 200215).

Added recovery features to Power Bay flash capability.

Other Changes

P-bricks are now forced to run at 600MHz (previous firmware versions allowed P-bricks to run at 400MHz).

Adjusted timeout values when writing packets to the Bedrock (HUB) UART; this allows flash updates of multiple L1's or L2's in parallel (i.e. with the "flashsc -p" command) through the system controller from the "flashsc" utility running under IRIX.

On the X-bricks, the -12V supply is not turned on. This supply is not used, and enabling this supply will damage an Odyssey graphics card plugged into an X2 logic board.

Resolved problems with reading IP35 brick serial numbers during the OS boot

- Print a warning and don't write to the bedrock UART, when user attempts to type characters in console mode when the brick power is off.
- Reset the bedrock UART at power-up (just before reset is released).

Fixed problems with flashing firmware over the SMP port from Linux PCs.

Adjusted System Serial Number ranges for different system types:

- IP35 continues to use Lxxxxxxx and IP45 uses Mxxxxxxx.

PowerBay interface changes:

- Implemented work-around for bogus Power Bay ACFAIL alerts by performing retries if an ACFAIL fault is detected.
- Implemented work-around for bogus Power Bay DCport failures by performing retries if a DCport failure is detected (needed because there is a brief time after enabling 48V on a port when the Power Bay reports 48V as enabled but failing).
- Increased frequency of polling for Power Bay faults to once per minute (from once every 5 minutes). The long delay between polls caused users to think faults were not being reported.

Bugs Addressed

- 796280 L1 display board noL1 needs to implement 6/8 Port Router enabling
- 814497 L1 display locks up 1.3.3 firmware
- 819969 Cannot Reliably Read IP35 Brick Serial Number
- 821220 Old X-brick power boards can fry out Odyssey Graphics in new X2-Bricks
- 821819 Can't update the L1/L2 firmware from IRIX
- 821963 L1 needs to implement Secure Serial Numbering
- 822629 L1 needs to force P-brick port speed to 600

822648 O3k with pbay env on get "AC fail, lost redundancy" on console.
825455 Bogus power bay DCport errors reported
827121 P0/P1 Nbrick don't work with 6.81 prom and L1 ucode

L2 Firmware

Changed Commands

`sel reset` Fixed behavior related to partitioned systems. This command sets the current partition to "none", clears any console overrides (i.e. resulting from "sel <rack> <slot>"), and turns console filtering off. In a partitioned system, this leaves the system console undefined, however, it can be set using the "sel part <partition>" command. In a non-partitioned system, the console is set to the default (lowest numbered rack/slot C-brick with an attached I-brick).

Added Features

Implemented a new L2 touchscreen display Graphical User Interface (GUI).

Added support for new brick types: IP45, N-brick, X2-brick.

Boosted the amount of free memory in the L2 Controller, to provide more reliable scaling to larger system sizes.

Added support for using the typical L1 rack/slot/brick type output format (i.e. "001c10") to direct a command to a particular brick. This

allows an L1 rack/slot/type string to be cut-and-pasted from the L1/L2 output. For example: "001c10 ver" will return the firmware version running on the brick at rack 1, slot 10; equivalent to "r 1 s 10 ver" or "1.10 ver").

Other Changes

Fixed the bug that caused L2's to stop receiving status updates (which contains such info as the L1's partition number) after running for extended period of time.

Larger blocks of text can now successfully be returned from commands (previously, command results would be truncated when the responses contained amounts of text greater than 64K.

Bugs Addressed

- 812933 Teras- BEDROCK tracebacks generation extremely slow ending in a PANIC
- 813444 communication to kernel debugger lost after system crash
- 822177 L2 version 1.4.2 shows wrong partition numbers for L1s
- 823809 L2 "sel filter on" doesn't work on partitioned systems
- 827899 Power down from L2 does not work for partitioned systems

L3 Software

Changed Applications

- l2 All changes listed above for the L2 firmware also apply to the L2 emulator.
- l2cmd Fixed problem with truncating output on commands with a large amount (greater than 64K) of response data.

Added Features

For all applications, when using the `--serial` option (to direct-connect to an L1 via an Annex serial port), the application will make sure the specified port is a binary port and not a telnet port. This catches a typical error case when flashing through an Annex port and specifying a 5xxx port rather than the correct 7xxx port range.

For all applications, if the `--sysname/--ssn/--l2` or `--serial/--dev` options are not specified, the application will exit with an error if it finds more than one system to connect to. This forces the user to select the system to connect to explicitly.

Other Changes

Added a new kernel (sgisn1_usb-2.4.2-1) RPM which adds the SGI L1 USB functionality to the RedHat 7.1 and ProPack 1.5 kernels. This is the preferred method for RH 7.1 and ProPack 1.5 rather than using the kernel_sgisn1 USB kernel.

The kernel RPM (kernel_sgisn1-2.2.16-2.i386.rpm) has been improved to be more resilient in the event that it cannot make the necessary modifications to the /etc/lilo.conf file during installation.

For all kernel RPMs, the devices (/dev/sgil1*) for the SGI L1 USB driver are created at boot-time rather than install time. This eliminates problems creating the /dev/sgil1* device nodes with devfs running when a non-devfs kernel is installed.

Bugs Addressed

814521 l2cmd does truncates output

816875 inst of L3 sw don't create /dev/sgil1_xx

©2001, Silicon Graphics, Inc. All rights reserved; provided portions may be copyright in third parties, as indicated elsewhere herein. No permission is granted to copy, distribute, or create derivative works from the contents of this electronic documentation in any manner, in whole or in part, without the prior written permission of Silicon Graphics, Inc. Silicon Graphics and IRIX are registered trademarks, and SGI, the SGI logo, and Origin are trademarks of Silicon Graphics, Inc. Linux is a registered trademark of Linus Torvalds. Red Hat is a trademark of Red Hat, Inc.