

System Controller Software 1.5 Update Guide

System Controller Software 1.5 provides a system control platform for field service and system maintenance applications. It includes the following features:

- Advanced diagnostic support
- Maintenance of the SGI Altix and Origin 3000 system serial number
- Maintenance of the SGI Altix and Origin 3000 router port enable
- Console for the L1 and L2 system controllers

You can download the System Controller Software 1.5 package from <http://support.sgi.com/apps/> or order it on CD-ROM (P/N 812-1138-006). Contact your SGI account representative if you need assistance obtaining the software package.

This guide contains the following sections:

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Components of Release Packages

This section lists the components of each of the following release packages:

- System Controller Software 1.5 (for an L3 controller)
- System Controller Software 1.5 (for the IRIX operating system)
- System Controller Software 1.5 (for SGIconsole)
- System Controller Software 1.5 (for the SGI ProPack for Linux operating system)

System Controller Software 1.5 (for an L3 controller) has 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 Red Hat 7.3 kernel

- L1 USB module for the Red Hat 8.0 kernel
- L1 USB module for the Red Hat 9.0 kernel
- L1 USB module for the SGI ProPack 1.5 for the Linux kernel
- L1 USB module for the SGI XFS 1.0 kernel
- L1 USB module for the SGI XFS 1.1 kernel (supports Red Hat 7.1 and 7.2 [2.4.9-31] kernel versions)
- L1 USB module for the SGI XFS 1.1 kernel (supports Red Hat 2.4.18 vanilla kernel versions)
- L1 USB module for the SGI XFS 1.0.1 kernel
- L1 USB module for the SGI XFS 1.0.2 kernel
- L3 driver
- L1/L2 firmware utilities
- Installation tool
- Silicon Graphics 230 Red Hat 6.2 reinstallation script
- L1 USB build script
- L1 USB source files (supports Linux 2.4.x kernels)

System Controller Software 1.5 (for the IRIX operating system) has the following component:

- L1/L2 firmware utilities

System Controller Software 1.5 (for SGIconsole) has the following components:

- L3 driver
- L1/L2 firmware utilities
- Installation tool

System Controller Software 1.5 (for the SGI ProPack for Linux operating system) has the following components:

- L1/L2 firmware utilities
- Installation tool

Related Information

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

- *SGI Origin 3000 L3 Controller Installation Guide* (007-4363-00x)
- *SGI Origin 3000 Series Owner's Guide* (007-4240-00x)
- *SGI L1 and L2 Controller Software User's Guide* (007-3938-00x)

Installing from a Downloaded Package

This section explains how to install, from a downloaded package, System Controller Software 1.5 for an L3 controller, for the IRIX operating system, for SGIconsole, and for the SGI ProPack for Linux operating system.

To install the System Controller Software 1.5 components for an L3 controller, follow these steps:

1. Log on to the L3 controller as root.
2. Enter the following commands:
cd /dir
 where *dir* is the directory in which you downloaded the software
chmod 755 install
chmod 755 sgi230_l3_reinstall
./install
3. To reboot the system, enter the following command:
reboot
4. After the system reboots, remove the files that you downloaded.

To install the System Controller Software 1.5 components for the IRIX operating system, follow these steps:

1. Log on to the IRIX system as root.
2. Enter the following commands:
cd /dir
 where *dir* is the directory in which you downloaded the software
tar -xf 6.5.12-23_field_diags_sysco.tar
inst -f field_diags_sysco
3. After the installation is complete, remove the files that you downloaded.

To install the System Controller Software 1.5 components for an SGIconsole system, follow these steps:

1. Log on to the SGIconsole system as root.
2. Enter the following commands:
cd /dir
 where *dir* is the directory in which you downloaded the software
chmod 755 install
./install
3. After the installation is complete, remove the files that you downloaded.

To install the System Controller Software 1.5 components for the SGI ProPack for Linux operating system, follow these steps:

1. Log on to the SGI ProPack system as root.
2. Enter the following commands:
cd /dir
 where *dir* is the directory in which you downloaded the software
chmod 755 install
./install
3. After the installation is complete, remove the files that you downloaded.

Installing from the CD-ROM

This section explains how to install, from the CD-ROM, System Controller Software 1.5 for an L3 controller, for the IRIX operating system, for SGIconsole, and for the SGI ProPack for Linux operating system.

To install the System Controller Software 1.5 components for an L3 controller, follow these steps:

1. Log on to the L3 controller as root.
2. Insert the System Controller Software 1.5 CD-ROM into the CD-ROM drive.
3. Enter the following commands:

```
# cd /mnt/cdrom/RPMS/i386  
# ./install
```
4. Remove the CD-ROM from the CD-ROM drive.
5. To reboot the system, enter the following command:

```
# reboot
```


To install the System Controller Software 1.5 components for the IRIX operating system, follow these steps:

1. Log on to the IRIX system as root.
2. Insert the System Controller Software 1.5 CD-ROM into the CD-ROM drive.
3. Enter the following commands:

```
# cd /mnt/cdrom/dist  
# inst -f field_diags_sysco
```
4. Remove the CD-ROM from the CD-ROM drive.

To install the System Controller Software 1.5 components for an SGIconsole system, follow these steps:

1. Log on to the SGIconsole system as root.
2. Insert the System Controller Software 1.5 CD-ROM into the CD-ROM drive.
3. Enter the following commands:

```
# cd /mnt/cdrom/RPMS/i386  
# ./install
```
4. Remove the CD-ROM from the CD-ROM drive.

To install the System Controller Software 1.5 components for the SGI ProPack for Linux operating system, follow these steps:

1. Log on to the SGI ProPack system as root.
2. Insert the System Controller Software 1.5 CD-ROM into the CD-ROM drive.
3. Enter the following commands:
cd /mnt/cdrom/RPMS/ia64
./install
4. Remove the CD-ROM from the CD-ROM drive.

Reinstalling on a Silicon Graphics 230 Visual Workstation

If you install System Controller Software 1.5 for an L3 controller on a Silicon Graphics 230 visual workstation and later need to restore the workstation to the original factory configuration and reload the system controller software, you must complete the following steps:

1. Complete the steps in the “Installing the Auxiliary Linux Software” section of the *SGI Origin 3000 L3 Controller Installation Guide*. (The section ends on page 18 of that document.)
2. To run the `sgi230_13_reinstall` script, enter the following command:

```
# ./sgi230_13_reinstall
```

The `sgi230_13_reinstall` script automatically installs additional Red Hat Linux components that are normally installed at the factory. The script takes several minutes to run; it lists each package that it installs and displays a progress bar as it installs each package.

3. Perform one of the following actions:
- To install System Controller Software 1.5 from a downloaded package, complete steps 2 through 4 of the procedure for installing the software for an L3 controller in the “Installing from a Downloaded Package” section on page 5.
 - To install System Controller Software 1.5 from the CD-ROM, complete steps 2 through 5 of the procedure for installing the software for an L3 controller in the “Installing from the CD-ROM” section on page 8.

Installing on a Silicon Graphics 230 Visual Workstation Preinstalled with Red Hat Linux

To install System Controller Software 1.5 for an L3 controller on a Silicon Graphics 230 visual workstation preinstalled with the Red Hat Linux 6.2 operating system, you must load additional software packages before you can load the L3 controller software. Follow these steps:

1. Complete the steps in the “Installing the Auxiliary Linux Software” section of the *SGI Origin 3000 L3 Controller Installation Guide*. (This section ends on page 18 of that document.)
2. Perform one of the following actions:
 - To install System Controller Software 1.5 from a downloaded package, complete steps 2 through 4 of the procedure for installing the software for an L3 controller in the “Installing from a Downloaded Package” section on page 5.
 - To install System Controller Software 1.5 from the CD-ROM, complete steps 2 through 5 of the procedure for installing the software for an L3 controller in the “Installing from the CD-ROM” section on page 8.

Note: To use the Network Configurator GUI to configure the network after the workstation has booted the operating system, see the “Configuring Network Settings” section on page 12 of the *SGI Origin 3000*

L3 Controller Installation Guide. To use the User Configurator GUI to configure user accounts, see the “Configuring the Account” section on page 15. To connect the Silicon Graphics 230 visual workstation to an Origin 3000 series server, see pages 21-27 of the *SGI Origin 3000 L3 Controller Installation Guide* for the sections that are appropriate for your system configuration.

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 15)
- L2 Firmware (page 21)
- L3 Software (page 23)

Caution: Before you install the L1 or L2 firmware, follow the instructions in service bulletin GIB 200215. If you currently have L1 firmware version 1.5.1 or older installed, upgrading to the L1 firmware in this release enables router port security and system serial number security features. If your system is not configured properly, these features can prevent your R-bricks from powering on or booting.

L1 Firmware

This section lists the changes in the L1 firmware.

Added Commands

`fru capture` Alpha version of the FRU Analyzer. These commands
`fru examine` only apply to the SGI Altix 3000 family of servers and
`fru print` superclusters.
`fru deadlock`

Changed Commands

`ioport` Fixed error reporting.
`force`
`400 | 600`

`fan | env` Fixed occasional L1 PANIC caused by a divide by zero error.

`env` Modified the output to display "<not present>" for any monitored devices that are not present in the brick configuration.
For Origin 350 bricks, implemented an automatic (variable-speed) fan control and added status displays for each of the fan control zones in the brick.

<code>leds</code>	Fixed LED value display for CPUs 1 through 3 on IP53 nodes in SGI Origin 3900 and SGI Origin 350 bricks. Updated text descriptions for SGI Altix 3000 LED values to correspond to PROM version 3.10.
<code>port link</code>	Added text descriptions for each port, instead of the arbitrary port letters (A, B, etc.) previously used.
<code>pimm</code>	This command now works on the O350 Rack-Mounted Workstation.
<code>pwr vrm</code>	Changed labels of the CPU VRMs (power pods) from "Titanium[0123]" to "CPU [01][AC] Pwr Pod".
<code>serial all</code>	Changed the DIMM EEPROM data so it displays non-standard data formats in the Part Number, Serial Number, and Revision fields of the SPD data.
<code>service *</code>	Formerly the <code>router service *</code> commands, the <code>service</code> commands now allow service modes on both R-bricks and C-bricks. (The service mode enables all router ports on R-bricks and enables all CPUs on C-bricks).

Added Features

- Full support for SGI Altix 350 bricks.

- Alpha version of the FRU Analyzer (supporting SGI Altix systems) was integrated into the L1/L2 System Controller firmware.
- Added support for R16KA 700MHz and 800MHz processors.
- Added support for DDR400 memory (up to 3 DIMM groups) in SGI Altix system bricks.
- Improved the L1 system console tracking capability. The L1 now clears the system console input subchannel on each reset, allowing the correct subchannel to be discovered on each reset. The current subchannel is also stored across L1 reboots and PANICs, so the subchannel setting is no longer lost on an L1 reboot. This change prevents the L1/L2 from selecting a brick without processors as the master C-brick.

Other Changes

- Removed the intermittent invalid "thermal trip" messages on SGI Altix system bricks.
- Based on extended thermal testing, temperature monitoring parameters were modified for SGI Origin 350, Silicon Graphics Fuel, router, and SGI Onyx 3000 (G-brick) bricks. These changes allow the bricks to operate at their respective specified maximum inlet air temperatures without shutting down.
- For Silicon Graphics Fuel and Silicon Graphics Tezro workstations, changed the L1 to automatically power up the system when

stand-by (L1) power is applied. This is the default for most Silicon Graphics desktop systems. Note that the `autopower` command still allows the user to enable and disable auto power up.

- Fixed the IO9 PCI card detection. In previous versions, the IO9 would occasionally power up as a 33MHz PCI card, causing incorrect operation.
- The L1 no longer translates carriage returns/line feeds (CR/LF) on the system console output. In previous versions, the L1 would translate LF to CR+LF on the system console output.
- Added a 2.5 second delay after powering on the main 12V supply for Silicon Graphics Fuel systems. This allows the Sparkle power supplies to stabilize without generating warning messages.
- Rearranged power supply power up order for SGI Origin 3900s, by moving the VCPU ahead of the 2.5V.
- Added a 4-second delay between the 2 power on resets on MIPS CPU bricks. This fix resolves IP53 scache initialization issues.
- Changed the labels of the CPU VRMs (power pods) from "Itanium[0123]" to "CPU [01][AC] Pwr Pod" in the environmental warning and fault messages.
- Fixed the power monitor to correctly identify a fault on a monitor that currently has a warning condition.

- The L1 now monitors low power faults and warnings after power up. In previous versions, when a system was powered up from the L2, the L1 would ignore all low power faults after the machine was powered up.
- Fixed an L1 PANIC condition on Silicon Graphics Fuel systems. The L1 would PANIC when an I2C error occurred (for example, due to a missing PIMM) and the env monitoring was enabled.
- Fixed an L1 PANIC condition on SGI Altix systems. The L1 would PANIC during an auto power down caused by an environmental fault.
- Fixed an L1 PANIC condition on SGI Origin 300 and SGI Origin 350 bricks. The L1 would PANIC during an auto power down, caused by a temperature fault.
- Fixed incorrectly reported Power Supply (PS) fan speeds on SGI O350 system 2U bricks.
- Fixed incorrectly reported Snowball EEPROM errors on CG- and CGN-bricks.

Bugs Addressed

894284 Add L1 request to read NL3 router MMRs

899586 ALERT: CPU X thermal trip temp with l1= 1.23.17

- 900866 Increased PS fan speed on Chimera and Voyager with L1 version 1.24.8
- 901808 L1 reports EEPROM read error for Snowball card when AGP riser present
- 901809 Remove all CR/LF translation on the L1/L2 system console display
- 901817 Need meaningful port names in the L1 "port" and "link" commands
- 901818 L1 prom should produce useful error info when a Itanium power pod error occurs.
- 901908 losing system console when disabling cpus during MFG PowerOnTest
- 901974 L1 not detecting voltage Fault if it first gets voltage warning.
- 902786 DMA engine test failing for IO9 on systems with lots of disk IO

L2 Firmware

This section lists the changes in the L2 firmware.

Added Commands

`fru capture` Alpha version of the FRU Analyzer. These commands
`fru examine` only apply to the SGI Altix 3000 family of servers and
`fru print` superclusters.
`fru deadlock`

Changed Commands

`pwr s` Fixed the summary of margin settings so it is displayed correctly for the various bricks in a system. This requires L1 version 1.26.1 or later.

Added Features

- Alpha version of the FRU Analyzer (supporting SGI Altix systems) was integrated into the L1/L2 System Controller firmware.
- System Serial Numbers beginning with “R” are now valid. This is required for use with SGI Altix 350 systems.

Other Changes

- The L2 interface now displays all bricks in a fully-populated SGI Altix system rack. Previously a maximum of 12 bricks would be displayed.
- The L2 no longer does CR/LF translation on system console output. Previously the L1 would translate LF to CR+LF on system console output.

Bugs Addressed

- 900761 SGI Altix system L2 display only shows individual bricks through slot 31
- 901809 Remove all CR/LF translation on the L1/L2 system console display

L3 Software

This section lists the added applications and the changes from the previous release, for the L3 software.

Changes from Previous Release

- `flashsvf` now supports updating EEPROMs on ImageSync (IS1) cards, using the `isl.svf` file.
- `flashsvf` can be run from IRIX when the system is running.
- `flashsvf` now supports flashing when multiple flashable cards are installed in a brick.
- The IO9 IOC4 PROM (version 0.79A) image file was previously named `ioc4.svf`. It has been renamed `io9.svf` in this release. This revision of the IO9 PROM image supports all hardware revisions of the IO9 card.

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