

System Controller Software 1.14 Update Guide

System Controller Software 1.14 provides a system control platform for field service and system maintenance applications. It includes the following features:

- Advanced diagnostic support
- Maintenance of the SGI® Origin® 3000 and SGI® Altix® 3000 and 4700 system serial number
- Maintenance of the SGI Origin 3000 and SGI Altix 3000 and 4700 router port enable
- Console for the L1 and L2 system controllers

You can download the System Controller Software 1.14 package from <http://support.sgi.com/apps/> or order it on CD-ROM (P/N 812-1138-015). 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 1.14 (for an L3 controller)
- System Controller Software 1.14 (for the IRIX operating system)
- System Controller Software 1.14 (for SGIconsole™)
- System Controller Software 1.14 (for the SGI ProPack™ for Linux operating system)

System Controller Software 1.14 (for an L3 controller) has the following components:

- Kernel software for the Red Hat 6.2 kernel
- 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 and 2.6.x kernels)

System Controller Software 1.14 (for the IRIX operating system) has the following component:

- L1/L2 firmware utilities

System Controller Software 1.14 (for SGIconsole) has the following components:

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

System Controller Software 1.14 (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 the System Controller Software 1.14 software from a downloaded package onto the following platforms: an L3 controller, the IRIX operating system, an SGIconsole system, and the SGI ProPack for Linux operating system.

To install the System Controller Software 1.14 components on 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_13_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 1.14 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 6.5.12-30_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 1.14 components on 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 1.14 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 the System Controller Software 1.14 software from the CD-ROM onto the following platforms: an L3 controller, the IRIX operating system, an SGIconsole system, and the SGI ProPack for Linux operating system.

To install the System Controller Software 1.14 components on an L3 controller, follow these steps:

1. Log on to the L3 controller as root.
2. Insert the System Controller Software 1.14 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 1.14 components for the IRIX operating system, follow these steps:

1. Log on to the IRIX system as root.
2. Insert the System Controller Software 1.14 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 1.14 components on an SGIconsole system, follow these steps:

1. Log on to the SGIconsole system as root.
2. Insert the System Controller Software 1.14 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 1.14 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 1.14 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 1.14 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 starts on page 18 of that document.)
2. To run the `sgi230_l3_reinstall` script, enter the following command:

```
# ./sgi230_l3_reinstall
```

The `sgi230_l3_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 it installs and displays a progress bar as it installs each package.

3. Perform one of the following actions:
 - To install System Controller Software 1.14 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 of this document.
 - To install System Controller Software 1.14 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 of this document.

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

To install System Controller Software 1.14 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 1.14 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 of this document.
 - To install System Controller Software 1.14 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 of this document.

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 SGI 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 17)
- “L3 Software” (page 18)
- “IA64 Software” (page 19)

Caution: Before you install the L1 or L2 firmware, follow the instructions in service bulletin GIB 200215. If you currently have L1 firmware version 1.4.1 or older installed, upgrade to the L1 firmware in System Controller Software 1.14 release. This release enables the router port security and system serial number security features. If the system is not configured properly, these features may prevent R bricks from powering on or booting.

L1 Firmware

This section lists the added features and changes in the L1 firmware.

Added Commands

shub shubcfg addr addrmode 512 1k 2k 4k 8k	Command to set SHUB2 address mode. (NOTE: An updated PROM is required to retrieve the ShrMode value from the L1.)
shub shubcfg addr addrmode	Command to show SHUB2 address mode. (NOTE: An updated PROM is required to retrieve the ShrMode value from the L1.)
shub shubcfg addr shrmode <val>	Command to set SHUB2 ShrMode PROM setting. (NOTE: An updated PROM is required to retrieve the ShrMode value from the L1.)
shub shubcfg addr shrmode	Command to show SHUB2 ShrMode PROM setting. (NOTE: An updated PROM is required to retrieve the ShrMode value from the L1.)
shub shubcfg	Command to show SHUB2 address mode and ShrMode. (NOTE: An updated PROM is required to retrieve the ShrMode value from the L1.)
router meta1 meta2 meta3	Command to explicitly set metarouter level.

Added Features

- Added support for the quad dense router brick.
- Added support for larger SGI® Altix® 4700 systems (512 processors and beyond).
- Initial IP75 blade support.
- Initial 1955 chassis support.
- Initial IX2S blade support.
- Improved reporting of PSMI power supply errors in SGI® Altix® 4700 IRUs.
- Added `router meta1|meta2|meta3` command to explicitly set the level of metarouters in a system. Should allow PROM to more reliably discover a sparsely populated system, such as a system with multiple partitions powered down (PV 934120).
- Added support for scramble mode in quad dense routers and external links on SGI® Altix® 4700 IRUs.

Other Changes

- Fixed a firmware build problem that caused some USB-ethernet adapters to function incorrectly when connected to NUMALink™ 4 router bricks in the initial 1.42.x firmware versions.

- Updated SHub2 settings for to latest engineering-endorsed values for IP73 and IP75 compute blades.
- Corrected the L1 clock frequency in the legacy L1 image to improve system clock drift by ~10x.

L2 Firmware

This section lists the changes in the L2 firmware.

Added Features

- Improved large SGI® Altix® 4700 system support. The L2 will now allow L1 and L2 commands to be sent even during early boot when there is a large volume of console output.
- On a system reset, all system console output that is queued up from a previous reset is flushed (for example, constantly streaming error messages due to a link failure).

L3 Software

This section lists the changes in the L3 software.

Changed Commands

<code>flashsc</code>	Updated to version 1.4.1. Added support for flashing firmware onto SGI® Altix® 4700 systems, and for flashing the correct firmware versions onto systems with mixed new and legacy brick types.
<code>sgill_make_driver</code> <code>sgill.tar.gz</code>	Fixed build errors when building with 2.6.15 or newer kernels (PV 949714). Added checks for "blacklisted" kernels in <code>sgill_make_driver</code> . The original Red Hat® Fedora® Core 5 kernel, 2.6.15-1.2054_FC5, has a bug that prevents loading of certain loadable kernel modules.

Changes from Previous Release

- All changes listed above for the L2 firmware also apply to the L2 emulator.

IA64 Software

This section lists the changes in the IA64 software.

Changes from Previous Release

- All changes for `snxsc_firmware-1.44.x-1.i386.rpm` also apply to the IA64 software package `snxsc_firmware-1.44.x-1.ia64.rpm`.

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