

## **System Controller Software 1.15 Update Guide**

System Controller Software 1.15 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 1.15 package from <http://support.sgi.com/apps/> or order it on CD-ROM (P/N 812-1138-016). Contact your SGI account representative if you need assistance obtaining the software package.

This guide contains the following sections:

- “Components of Release Packages” (page 2)
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- “Installing from the CD-ROM” (page 8)

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- “Installing on a Silicon Graphics 230 Visual Workstation Preinstalled with Red Hat Linux” (page 13)
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## **Components of Release Packages**

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

- System Controller Software 1.15 (for an L3 controller)
- System Controller Software 1.15 (for the IRIX operating system)
- System Controller Software 1.15 (for SGIconsole™)
- System Controller Software 1.15 (for the SGI ProPack™ for Linux operating system)

System Controller Software 1.15 (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 1.15 (for the IRIX operating system) has the following component:

- L1/L2 firmware utilities

System Controller Software 1.15 (for SGIconsole) has the following components:

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

System Controller Software 1.15 (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 1.15 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 1.15 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\_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 1.15 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 1.15 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 1.15 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 1.15 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 1.15 components on an L3 controller, follow these steps:

1. Log on to the L3 controller as root.
2. Insert the System Controller Software 1.15 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 1.15 components for the IRIX operating system, follow these steps:

1. Log on to the IRIX system as root.
2. Insert the System Controller Software 1.15 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 1.15 components on an SGIconsole system, follow these steps:

1. Log on to the SGIconsole system as root.
2. Insert the System Controller Software 1.15 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 1.15 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 1.15 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 1.15 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 1.15 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 1.15 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 1.15 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 1.15 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 1.15 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 20)
- “L3 Software” (page 21)
- “IA64 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 1.4.1 or older installed, upgrade to the L1 firmware in System Controller Software 1.15 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 changes in the L1 firmware.

### Changed Commands

shub   shubcfg addr   addrmode 512   1k   2k   4k   8k	Set SHUB2 address mode.
shub   shubcfg addr   addrmode	Show SHUB2 address mode.
shub   shubcfg addr   shrmode <val>	Set SHUB2 ShrMode PROM setting.
shub   shubcfg addr   shrmode	Show SHUB2 ShrMode PROM setting. NOTE: An updated PROM is required to retrieve the ShrMode value from the L1.
shub   shubcfg	Show SHUB2 address mode and ShrMode. NOTE: An updated PROM is required to retrieve the ShrMode value from the L1.
hour meter   m read   r	Read the brick hour meter.

```
ssn override <str> Change the ssn series of brick, using authenticator.  
<str> <str> <str>  
ssn override removeChange the ssn series of brick, using authenticator.
```



### Added Features

- Added support for IP75 processor blades.
- Added support for IE2S, IX2S, and IE4D blades.
- Numerous fixes to improve stability on large SGI® Altix® 4700 systems.
- Numerous fixes to improve NUMALink™ bit error rates on SGI® Altix® 4700 systems.
- Fixed intermittent L1<->L1 communication problems (would result in 'connected, not configured' status in the L1s `cfg p` command output).
- Added support for automatically disabling scramble mode on NUMALink[tm] connections, before boundary scan operations, and restoring the scramble mode state when the scan operation completes.
- Fixed problem that would cause BX2 brick resets to fail in systems with the BX2 connected to a blade chassis (i.e. SGI® RASC™ blades).
- Fixed problem that could cause PCI bus speed and mode errors to be incorrectly displayed on IA-/PA-bricks connected to SGI® Altix® 4700 systems.
- SGI® Altix® 4700 450 and SGI® Altix® 4700 IRUs can be joined together in a system using special authenticator keys.

### Other Changes

- Fixed a firmware build problem that caused some brands of USB-ethernet adapters not to function properly connected to NL4R bricks in the initial 1.42.x firmware versions.
- Updated SHUB2 settings for latest Engineering-endorsed values for IP73 and IP75 compute blades.
- Corrected the L1 clock frequency in the "legacy" Linux L1 image to improve system clock drift by ~10x.
- Changing from low to high margin on an SGI® Altix® 4700 system will step to normal between the two settings, rather than making a direct jump.
- Workaround for disabling QDRTR blade 3. Use the command `fan auto off` before disabling.
- Increased QDRTR minimum fan speeds. Changed to allow only 1 fan to fail, second fan failure will power down brick.
- Reset button on a 191010 chassis was re-enabled.

### Bugs Addressed

- 950087 BaseIO blade does not link in the 191010 with a Dual Router disabled
- 951677 wolfberry 11 errors
- 951933 Quad Dense Router fan speed not ramping up after 1 fan fails.

- 952554 Quad Dense Router 0 RPM fan will not power down
- 953167 VRM failure on partition 5 powered down all six partitions.
- 953739 QDR power supply failure is not flagged.
- 953927 disabling cpus on some blades doesn't work
- 953951 An IRU power problem will shutdown ALL partitions.
- 954331 QDR Power ON LEDS No Longer Work.
- 954543 IP75 with dual socket Monticeto processor will not boot with one socket disabled
- 954719 L1 commands not working on A450 chassis
- 954831 P75 blades with Monticeto processors fail to boot on power cycles or resets
- 954889 Need system control command to authenticate and allow a merge of A450 & A4700.
- 955651 Add SHUB2 PI CRB info to FRU capture and dump data set.
- 955658 Add Shub2 test point dumping to L3 FRU capture and dump.

## **L2 Firmware**

This section lists the changes in the L2 firmware.

### **Added Features**

- On standalone hardware (diskless) L2s, the gateway IP address can now be set properly (removed the default route that would incorrectly override a gateway address set manually or by DHCP).
- Numerous fixes to improve stability on large SGI® Altix® 4700 systems.

## L3 Software

This section lists the changes in the L3 software.

### Changed Commands

`install`            The `vacm-l2` RPM (which provides the `SGIconsole[tm] 12.100se` module) will now be distributed with the L3 package. This fixes the incompatibility problems seen between `SGIconsole[tm] 2.x` the `snxsclib` in the L3 package. The `12.100se` binary is now statically linked with the necessary L3 functionality (the `snxsclib` shared library is no longer used).

### Changes from Previous Release

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

### Bugs Addressed

- 940158    QE: `SGIconsole-2.x 12.100se` core with `sys_ctrl_rel-1.11 snxsc_13-1.38.0-1`
- 950404    newer vesions of `snxsc_13` don't work with `SGIConsole 2.1`

952159 QE: Altix 4700 I2 not compatible w/sgiconsole

## **IA64 Software**

This section lists the changes in the IA64 software.

### **Changes from Previous Release**

- All changes for `snxsc_firmware-1.46.x-1.i386.rpm` also apply to the IA64 software package  
`snxsc_firmware-1.46.x-1.ia64.rpm`.

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