# System Controller Software 1.9 Update Guide

System Controller Software 1.9 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 SGI® Origin® 3000 system serial number
- Maintenance of the SGI Altix and SGI Origin 3000 router port enable
- Console for the L1 and L2 system controllers

You can download the System Controller Software 1.9 package from http://support.sgi.com/apps/ or order it on CD-ROM (P/N 812-1138-010). Contact your SGI account representative if you need assistance obtaining the software package.

This guide contains the following sections:

- “Reinstalling on a Silicon Graphics® 230 Visual Workstation” (page 11)
- “Installing on a Silicon Graphics 230 Visual Workstation Preinstalled with Red Hat Linux” (page 13)
- “New Features and Changes” (page 14)

# Components of Release Packages

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

- System Controller Software 1.9 (for an L3 controller)
- System Controller Software 1.9 (for the IRIX operating system)
- System Controller Software 1.9 (for SGIconsole™)
- System Controller Software 1.9 (for the SGI ProPack™ for Linux operating system)

System Controller Software 1.9 (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 1.9 (for the IRIX operating system) has the following component:

- L1/L2 firmware utilities

System Controller Software 1.9 (for SGIconsole) has the following components:

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

System Controller Software 1.9 (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* (007-4363-00*x*)
- *SGI Origin 3000 Series Owner's Guide* (007-4240-00*x*)
- *SGI L1 and L2 Controller Software User's Guide* (007-3938-00*x*)

# Installing from a Downloaded Package

This section explains how to install the System Controller Software 1.9 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 1.9 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 1.9 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 6.5.12-27_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 1.9 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 1.9 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 1.9 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 1.9 components on an L3 controller, follow these steps:

1. Log on to the L3 controller as root.
2. Insert the System Controller Software 1.9 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 1.9 components for the IRIX operating system, follow these steps:

1. Log on to the IRIX system as root.
2. Insert the System Controller Software 1.9 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 1.9 components on an SGIconsole system, follow these steps:

1. Log on to the SGIconsole system as root.
2. Insert the System Controller Software 1.9 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 1.9 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 1.9 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 1.9 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 1.9 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 1.9 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 1.9 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 1.9 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 1.9 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 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 1.9 release. This release enables router port security and system serial number security features. If the system is not configured properly, these features can prevent R-bricks from powering on or booting.

# L1 Firmware

This section lists the changes in the L1 firmware.

## Added Commands

| | |
|---|---|
| `nlcfg scram enable\|disable` | Command enables and disables NL4 scramble mode. This is only needed for SGI® Altix® 3700 Bx2 systems larger than1024P and contain 7M NUMAlink™ 4 cables. |

## Changed Commands

| | |
|---|---|
| `fru *` | Command fully supports SGI Altix 3700 Bx2 and NUMAlink 4 router bricks. |
| `ioport` | Command shows the correct 600MHz for unconnected II ports on all SHub-based bricks |
| `link, port` | Command displays status and errors for internal links on multinode bricks |

## Added Features

- Support was added for SGI Altix 3700 Bx2 systems larger than 512P.
- Initial support for the Silicon Graphics Prism™ brick.

- Initial support for the IP59 node.
- Initial support for the SGI® Altix® 350 TIO-based brick.

## Other Changes

- Made several enhancements to the reset sequences for SGI Altix systems to eliminate intermittent NI link issues at reset time.
- For bricks with integrated L2 support (via a USB-ethernet adapter), the changes listed in the “L2 Firmware” section apply to the integrated L2 controller.

## Bugs Addressed

| | |
|---|---|
| 894177 | Include on-board NI links when reporting link status using the L1 “link” command |
| 918653 | Add NL4R support for L1/L2 FRU utility. |
| 918654 | Add Vortix brick support to L1/L2 FRU utility. |
| 921675 | Enabling “SSI” on one Vortix Brick doesn’t not propagate to the whole system. |
| 922850 | ioprt command on Vortix shows unconnected SHub II is running @ 400 MHz. |
| 924654 | L1 Firmware 1.32.6 causing links to go down between O350MIPS <>PE-Brick |

# L2 Firmware

This section lists the changes in the L2 firmware.

## Added Commands

| | |
|---|---|
| `cfg diff` | Command reports the differences in the brick list from the last invocation of `cfg snap.` |
| `cfg snap` | Command captures the current list of bricks in the system. |
| `router\|compute\|io\|other <command>` | Command sends only the `<command>` to the type of brick specified. It will send the command to bricks in multiple partitions. |

## Changed Commands

| | |
|---|---|
| `fru *` | Command fully supports SGI Altix 3700 Bx2 and NUMAlink 4 router bricks |
| `p * reset` | Command resets the routers in the system before resetting the partitions. |

| | |
|---|---|
| `p * pwr d` | Command correctly powers down routers in an SGI Altix 3700 Bx2 system. |
| `p * <command>` | Command issues the <`command`> to all bricks in the system. |

## Added Features

- Added support for SGI Altix 3700 Bx2 systems larger than 512P.

## Other Changes

- Environmental events on all bricks in the system or partition are correctly propagated to the OS (to be logged via `syslog`) on SGI Altix 3700 Bx2 systems.
- Fixed the L2 to allow greater than 40 bricks to be connected to a single L2 via USB.

## Bugs Addressed

925400 Problem with L3 1.8 addressing more than 64 L1s

# L3 Software

This section lists the changes in the L3 software.

## Changed Commands

`install` Added support for correctly building the L1 USB driver when running Linux 2.6 kernels.

## Changes from Previous Release

- `install` reports an error if the L1 USB kernel module cannot be built and installed properly.