System Controller Software 1.3
Update Guide

System Controller Software 1.3 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 1.3 package from http://support.sgi.com/apps/ or order it on CD-ROM (P/N 812-1138-004). 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 1.3 (for an L3 controller)
- System Controller Software 1.3 (for the IRIX operating system)
- System Controller Software 1.3 (for SGIconsole)
- System Controller Software 1.3 (for the SGI ProPack for Linux operating system)

System Controller Software 1.3 (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 1.3 (for the IRIX operating system) has the following component:

- L1/L2 firmware utilities

System Controller Software 1.3 (for SGIconsole) has the following components:

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

System Controller Software 1.3 (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, from a downloaded package, System Controller Software 1.3 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 1.3 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 1.3 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 6.5.12-21_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 1.3 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 1.3 components for the SGI ProPack forLinux 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 1.3 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 1.3 components for an L3 controller, follow these steps:

1. Log on to the L3 controller as root.

2. Insert the System Controller Software 1.3 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 1.3 components for the IRIX operating system, follow these steps:

1. Log on to the IRIX system as root.

2. Insert the System Controller Software 1.3 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 1.3 components for an SGIconsole system, follow these steps:

1. Log on to the SGIconsole system as root.

2. Insert the System Controller Software 1.3 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 1.3 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 1.3 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 1.3 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_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 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 1.3 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 1.3 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 1.3 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 1.3 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 1.3 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 17)
- L3 Software (page 18)

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, 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 added commands, changed commands, added features, other changes, and bugs addressed for the L1 firmware.

Added Commands

`mbrick`	Command added to display brick status of the M- or C-brick for the Altix systems.
`mbrick memory`	Command added to force the brick to be a memory-only brick for the Altix systems.
`mbrick cpu`	Command added to enable the CPUs on an Altix brick. Support is available when security is off for a specified brick.
`mbrick cpu <auth>`	Command added to enable the CPUs on an Altix brick. Support is available when security is on for a specified brick.

Changed Commands

`pbay *`	Command now supports PX- and IX-bricks.

`serial dimm` Command now supports Cx-bricks.

`eeprom`   Command fixed so that it no longer causes an `"L1 malloc ALERT"` message.

Added Features

- Added support for Altix memory bricks (M-brick).

Other Changes

- The X2-brick margining problems were fixed. The 3.3v low margin previously failed during margining.
- PCI hot-swap is now fully supported on PX- and IX-bricks.

Bugs Addressed

881523   Tigon3 L1 Hot swap problem

886149   I/X Brick doesn't support the L1 "pbay" command.

887285   Automation fails to flash boot prom after reboot_l1 at POT

890006   PANIC during PCIX hotswap on PX/IX

890608   X2 bricks get "MARGIN MALFUNCTION" when margined low

L2 Firmware

This section lists the other changes for the L2 firmware.

Other Changes

- System console brick selection now correctly recognizes an IX-brick as a type of base I/O brick.

L3 Software

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

Added Applications

`flashsvf` `flashsvf` is a standalone application that is used to update configuration EEPROMs for FPGAs located on system PCI cards. The tool only updates the IOC4 EEPROM located on the IO9 card. In the future, it will support EEPROM updates of other cards, as needed. The tool has an interface similar to the `flashsc` system controller firmware update tool. (See the `flashsvf` man page for more details.)

The `flashioc4` utility is being phased out in preparation for the new, generic `flashsvf` tool. `flashioc4` will be available for this release, but will be removed in future releases. Please note that `flashioc4` only supports IOC4 updates in the IX-bricks. The `flashsvf` utility supports updates in all brick types that can contain IO9 cards.

Changes from Previous Release

- The `flashsvf` tool was added to support updating the IOC4 EEPROM.

- The `flashsvf` tool supports updating the IOC4 EEPROM without powering down the other PCI slots in the brick. This is necessary for future brick types, where the PCI slots cannot be powered up and down individually.

- The `flashsvf` is standalone and is not dependent on the boundary scan packages or the `x_svf` utility for proper operation.

- The `flashsvf` and `flashioc4` tools operate faster. The IOC4 update typically took 8 minutes in an IX-brick.

- Kernel modules for Red Hat 9.0 L1 USB driver support was added.

- The IOC4 PROM image (version 79) was added to the release. This PROM image is used to program an FPGA that implements base hardware I/O functions. This chip via a PCI bus provides access to the following ports: 1 ATA, 4 16550-based serial, byte bus (used to control NVRAM in IO9), generic PIO, RTI/RTO, and PS/2 keyboard and mouse.

    - The changes from the previous release are as follows:

        - Added support for serial RX timer register (SRTR), keyboard, and mouse.

- • The serial port hang was fixed.
- – The following bugs were addressed:

889671   IOC4 Serial Ports Hang With PCI_SPEED Bit Set To 0