



SGI® Foundation Software 2.4 Start  
Here

007-5641-005

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002	June 2010 Updated to support the SGI Foundation Software 2 Service Pack 1 release.
003	October 2010 Updated to support the SGI Foundation Software 2.2 release.
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005	April 2011 Updated to support the SGI Foundation Software 2.4 release.



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## About This Guide

This guide is a reference document for people who manage the operation of SGI computer systems. It describes how to use SGI Foundation Software 2.4 software on SGI computer systems.

### Related Publications

For a list of current SGI software and hardware manuals, see the *SGI Performance Suite 1.2 Start Here*:

- SGI documentation supporting SGI computer systems
- Novell documentation for SUSE Linux Enterprise Server 11 (SLES11)
- Red Hat Enterprise Server 6 (RHEL 6)
- Intel Compiler Documentation
- Intel documentation about Xeon architecture

### Obtaining Publications

You can obtain SGI documentation in the following ways:

- See the SGI Technical Publications Library at: <http://docs.sgi.com>. Various formats are available. This library contains the most recent and most comprehensive set of online books, release notes, man pages, and other information.
- Online versions of the *SGI Performance Suite 1.2 Start Here*, release notes, which contain the latest information about software and documentation for each SGI Performance Suite product, the list of RPMs distributed with each product can be found in the `/docs` directory on each SGI Performance Suite product media.
- You can view man pages by typing `man title` on a command line.

## Conventions

The following conventions are used throughout this document:

<b>Convention</b>	<b>Meaning</b>
<code>command</code>	This fixed-space font denotes literal items such as commands, files, routines, path names, signals, messages, and programming language structures.
<i>variable</i>	Italic typeface denotes variable entries and words or concepts being defined.
<b>user input</b>	This bold, fixed-space font denotes literal items that the user enters in interactive sessions. (Output is shown in nonbold, fixed-space font.)
[ ]	Brackets enclose optional portions of a command or directive line.
...	Ellipses indicate that a preceding element can be repeated.

## Reader Comments

If you have comments about the technical accuracy, content, or organization of this publication, contact SGI. Be sure to include the title and document number of the publication with your comments. (Online, the document number is located in the front matter of the publication. In printed publications, the document number is located at the bottom of each page.)

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## SGI Foundation Software Overview

This guide documents the installation, configuration, and administration of the SGI Foundation Software 2.4 release. It contains the following sections:

- "Software Introduction" on page 1
- "SGI Foundation Software CD Contents" on page 2
- "Getting Updates" on page 2
- "Getting the Latest Firmware/Software for Your SGI Altix XE or SGI Altix ICE Series System" on page 3
- "Getting the Latest BIOS for Your SGI Altix UV 1000 or UV 100 Series System" on page 3
- "License Manager Updates" on page 4
- "Embedded Support Partner" on page 4
- "Topology API" on page 5
- "Check Feature Utility" on page 5

### Software Introduction

SGI provides two primary software packages to enable your SGI systems to run with improved performance and enhanced technical support features:

- SGI Foundation Software
- SGI Performance Suite

The SGI Foundation Software suite provides the core set of tools and utilities, as described in "SGI Foundation Software CD Contents" on page 2. The SGI Performance Suite products provide additional performance enhancements, as described in the *SGI Performance Suite 1.2 Start Here*.

The SGI Foundation Software 2.4 release is fully supported on the SUSE Linux Enterprise Server 11 Service Pack 1 (SLES 11 SP1) base distribution or the Red Hat Enterprise Server 6 (RHEL 6) base distribution. It also runs on the Community

ENTERprise Operating System (CentOS 6) base distribution. While SGI support will answer questions relating to any of these products, it does not provide technical support for the CentOS operating system.

The SGI Foundation Software 2.4 release supports X86-64 systems only.

SGI hardware platforms and operating system configuration settings supported by SGI are documented at the following URL: <http://www.sgi.com/servers/altix/>

## SGI Foundation Software CD Contents

This section describes the major contents of the SGI Foundation Software 2.4 CD, as follows:

- Device driver libraries
- LSI Logic LSIUtil (`lsiutil`) configuration utility
- Memory logging utility
- Open source Performance Co-Pilot
- Embedded Support Partner (ESP)
- SGI support tools
- SGI LK software licensing mechanism
- Environment modules
- SGI recommended system and boot-time configuration changes
- Check feature utility
- SGC - DVI graphics input capture

## Getting Updates

This section describes how to get software updates for SGI Foundation Software 2.4 release.

Detailed instructions for downloading and installing SGI Foundation Software 2.4 updates are available from the SGI Foundation Software product pages on Supportfolio: [https://support.sgi.com/content\\_request/194480/index.html](https://support.sgi.com/content_request/194480/index.html).

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**Note:** You must have a Supportfolio account to access this page and the SGI update server.

---

Customers that received SGI Foundation Software 2.4 pre-installed on their new SGI Altix system may run the following command to add the proper update source for SGI Foundation Software 2.4:

```
$ /usr/sbin/sgi-foundation-update-source
```

This script will prompt you for your Supportfolio login and then add the proper SGI update source for the given architecture and base operating system.

## Getting the Latest Firmware/Software for Your SGI Altix XE or SGI Altix ICE Series System

For information on the basic input/output system (BIOS), Baseboard Management Controller (BMC) firmware, Intelligent Platform Management Interface (IPMI) control utility, Field Replaceable Unit/Sensor Data Record (FRUSDR) software, Hierarchical Storage Controller (HSC) software, LSI RAID firmware, Platform Manager cluster management software, InfiniBand drivers, INTEL MPI Runtime Environment Kit for Linux, and Java Runtime Environment (JRE), see the SGI Altix XE Firmware/Software page on SGI Supportfolio at: [https://support.sgi.com/content\\_request/229992/index.html](https://support.sgi.com/content_request/229992/index.html)

For information on SGI Altix ICE system firmware, see the “Firmware Management” section in Chapter 3, “System Operation” and the “System Firmware” section in Chapter 5, “System Maintenance, Monitoring, and Debugging” in the *SGI Management Center for Altix ICE* available on <http://docs.sgi.com>.

## Getting the Latest BIOS for Your SGI Altix UV 1000 or UV 100 Series System

Get the latest BIOS for your SGI Altix UV 1000 or SGI Altix UV 100 series system at SGI Supportfolio at <https://support.sgi.com>. For instructions for flashing compute

blade BIOS, see “Upgrading System BIOS” in the *SGI Altix UV CMC Controller Software User’s Guide*.

## License Manager Updates



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**Warning:** Please backup your license key files prior to installing SLES11 SP1, RHEL 6, and/or SGI Performance Suite 1.2 products. A license key file is not included in these RPMs.

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Your original license key files will need to be restored after you complete your installation.

In terms of software licensing support, the Red Hat and SUSE distributors do not ship any code. ISVs are responsible for obtaining and including software licensing components into their products.

SGI Foundation Software contains a licensing mechanism called LK. LK was developed by SGI for SGI products only. For more information, see the “SGI LK License Facility” chapter in the *Linux Configuration and Operations Guide* or *SGI Altix UV Systems Linux Configuration and Operations Guide* on the SGI Technical Publications Library at <http://docs.sgi.com>.

For more information, see the specific product release notes or the FAQ, as follows:

<http://www.sgi.com/support/licensing/faq.html>

If you encounter any license related problems, please contact your local support center at this location:

<http://www.sgi.com/support/supportcenters.html>

## Embedded Support Partner

Embedded Support Partner (ESP) is a support infrastructure which is integrated into the operating system. ESP components capture and store system level events, system configuration information, system availability information, provide an electronic logbook of activities performed on the system, log calls to the ESP database at SGI

and other support related activities. For more information, see *Embedded Support Partner User Guide* available on <http://docs.sgi.com>.

## Topology API

The SGI topology application programming interface (API) allows a workload management system (WMS) to obtain topology information from SGI systems. For more information on the SGI topology API, see the `sgitopo(8)` and `topology(1)` man pages.

## Check Feature Utility

The check feature utility, `chkfeature(8)`, checks the contents of `/etc/opt/sgi/features` directory and provides status. Without arguments, it prints a list of all the files. To use the `chkfeature` command, you must first load the `chkfeature` module, as follows:

```
module load chkfeature
```

```
# chkfeature
```

```
sgi-array          status          on
sgi-cpuset         status          on
sgi-foundation     status          on
sgi-job            status          on
sgi-libbitmask    status          on
sgi-libcpuset     status          on
sgi-lk             status          on
sgi-memacct       status          on
sgi-mpt           status          on
```

To determine if a feature is active, perform the following:

```
# chkfeature -a
sgi-array          active          on
sgi-cpuset         active          on
sgi-foundation     active          on
sgi-job            active          on
sgi-libbitmask     active          on
sgi-libcpuset      active          on
sgi-lk             active          off    Not applicable
sgi-memacct        active          on
sgi-mpt            active          on    2.03
```

For more information, see the `chkfeature(8)` man page.

## SGI Foundation Software Installation

This manual describes the contents of the SGI Foundation Software 2.4 release and how to install and configure it.

### Table of Disk Partitions

SGI ships systems with Xeon processors from the factory running SGI Foundation 2.4 with SLES11 with the partition layout shown in Table 2-1 on page 7.

**Table 2-1** Disk Partitions for x86\_x64 Systems with SFS 2.4 and SLES 11 SP1

Partition	Type	Mount Point	Size
part1	ext3	/boot	100 GB
part2	XFS	/	100 GB
part3	SWAP	/swap	10 GB
part4			Remainder of the disk with filesystem mounted as /data1

SGI ships systems with Xeon processors from the factory running SGI Foundation 2.4 with RHEL 6 with the partition layout shown in Table 2-2 on page 7.

**Table 2-2** Disk Partitions for x86\_x64 Systems with SFS 2.4 and RHEL 6 or CentOS 6

Partition	Type	Mount Point	Size
part1	ext4	/boot	200 MB
part2	ext4	/	100 GB

Partition	Type	Mount Point	Size
part3	SWAP	/swap	10 GB
part4	ext4	/data1	Remainer of the disk with filesystem mounted as /data1

## Linux Kernel Crash Dump

In the event of a system crash running SLES11 SP1 or RHEL 6, the system uses the `kexec/kdump` crash dump utility. The `kexec/kdump` utility creates a Linux kernel crash dump at `/var/crash/timestamp/vmcore` if `kexec/kdump` is installed, enabled, and configured. In order to analyze a crash dump, you need the `debuginfo` packages installed. For more information, see the appropriate operating system documentation.

## Installing SGI Foundation Software

The following set of instructions is based on an install using the physical product media. For other installation methods, see the product release notes.

### Installing on SUSE Linux Enterprise Server 11 SP1

For an overview of SLES11 SP1 installation, see the *SUSE Linux Enterprise Server 11 Installation Quick Start* (`installquick.pdf`). This document provides a quick overview of how to run through the default installation of SLES walking you through a number of installation screens. For detailed installation instructions, see the *SUSE Linux Enterprise Server 11 Deployment Guide* (`deployment.pdf`)

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**Note:** Documentation for SUSE Linux Enterprise Server 11 SP1 is located on your system in the `/docu/en` directory.

---

There are a number of ways to install SGI Foundation Software 2.4 on top of the SUSE Linux Enterprise Server 11 Service Pack 1 (SLES 11 SP1) operating system. One

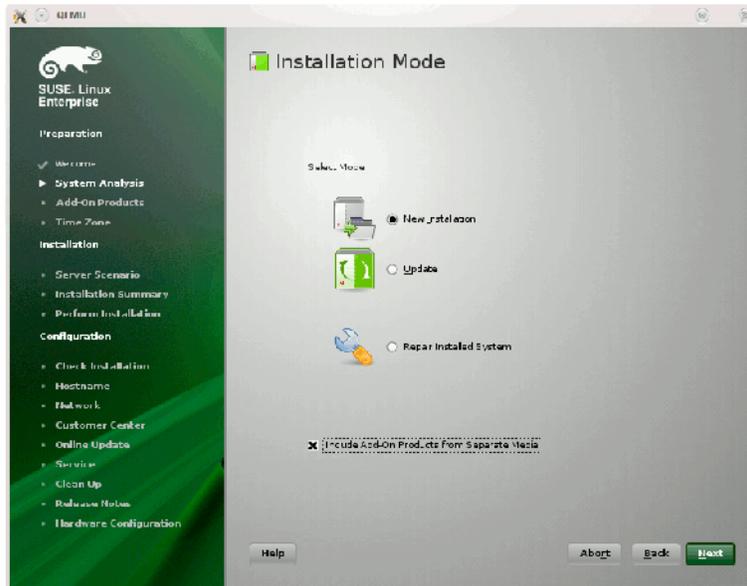
method is to install it at the same time as you install SLES11 SP1. Another method is to install SGI Foundation Software 2.4 after SLES 11 SP1 has been completely installed. The two procedures are quite similar and are described in this section, as follows:

- "Install SLES 11 SP1 and SGI Foundation Software 2.4 Together" on page 9
- "Install SGI Foundation Software 2.4 on a Previously Installed SLES 11 SP1 System" on page 12

### **Install SLES 11 SP1 and SGI Foundation Software 2.4 Together**

To install SUSE Linux Enterprise Server 11 Service Pack 1 (SLES 11 SP1) from the DVD media and SGI Foundation Software 2.4 as an add-on product, perform the following steps:

1. Insert the SLES 11 SP1 Installation DVD in the DVD drive and reboot your system.
2. Follow the steps in the *SUSE Linux Enterprise Server 11 Installation Quick Start*. When you get to the **Installation Mode** screen, as shown in Figure 2-1 on page 10, click the button next to **Include Add-On Products from Separate Media** and then click **Next** to continue.



**Figure 2-1 SLES11 Installation Mode Screen**

3. From the **Media Type** screen, shown in Figure 2-2 on page 11, click the button to the left of **CD**.

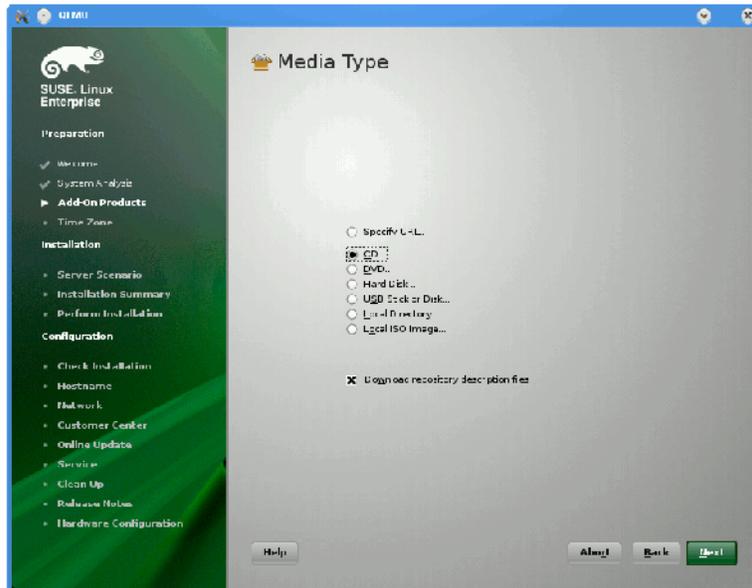


Figure 2-2 SLES11 Media Type Screen

4. The **Insert the add-on product CD** dialog box appears. Insert the SGI -Foundation-x86\_64 CD into the drive and click the **Continue** button and then **Next** to proceed.
5. From the **Add-On Product Installation** screen, as shown in Figure 2-3 on page 12, click on **SGI-Foundation-x86\_64 1-6 cd:///Directory** and click the **Add** button and then **Next** to proceed
6. Follow the SLES11 SP1 instructions to complete the installation.

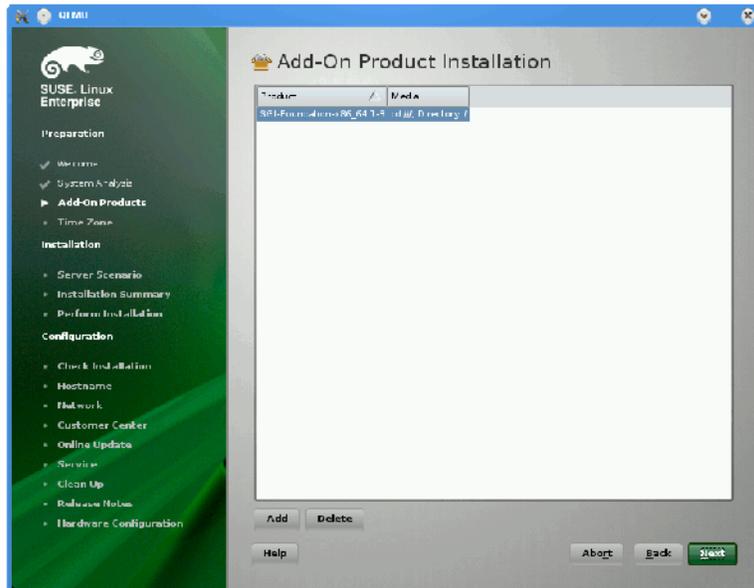


Figure 2-3 SLES11 SP1 Add-On Product Installation Screen Showing SGI Foundation

### Install SGI Foundation Software 2.4 on a Previously Installed SLES 11 SP1 System

To install SGI Foundation Software 2.4 on a previously installed SLES 11 SP1 system, perform the following steps:

1. Start the graphical (`yast2`) version of the YaST install tool.
2. Under the **Software** section, choose **Add-On Products**.
3. From the **Add-On Product Installation** screen, press the **Add** button on the bottom left side.
4. The **Media Type** screen appears, as shown in Figure 2-2 on page 11. Insert the SGI -Foundation-x86\_64 CD into the drive and press the **Continue** button and then the **Next** button to proceed.
5. Enter your SGI SupportFolio login and password. This will enable you to set up an install source for software updates from SGI Foundation Software 2.4.

6. If you wish to simply install suggested defaults, simply press **Accept** in the screen that lists available patterns. The software will then be installed.

## Installing on Red Hat Enterprise Linux 6

These instructions assume that you have a VGA display or that you are able to remotely display X11 graphics. If you do not have a VGA display, you should connect from your workstation to the target server with the following command:

```
% ssh -X root@target-server
```

To install SGI Foundation Software 2.4 on RHEL 6, perform the following steps:

1. Make sure you have registered with the Red Hat Network (RHN). If you have not yet registered, run the following command:

```
% /usr/bin/rhn_register
```

2. Insert the product media and enter the following command to mount it:

```
% mount /dev/cdrom/mnt
```

3. Run the following command and follow the examples provided:

```
% /mnt/create-yum-config-file
```

Additional installation instructions are provided in the release notes file.

## Upgrade from Earlier Releases

For information on upgrading from SLES10 SPx to SLES 11 SP1, see the appropriate Novell, Inc. documentation.

For information on upgrading from a previous RHEL release to RHEL 6, see the appropriate Red Hat, Inc. documentation.

To upgrade to SGI Foundation Software 2.4, upgrade the SLES 11 SP1 or RHEL 6 base operating system, and then follow "Installing on SUSE Linux Enterprise Server 11 SP1" on page 8 or "Installing on Red Hat Enterprise Linux 6" on page 13, respectively.

## **Reinstalling Your Software**

To reinstall all of the software on your system, follow the entire set of installation instructions listed previously, using the latest SGI Foundation Software 2.4 CD.

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