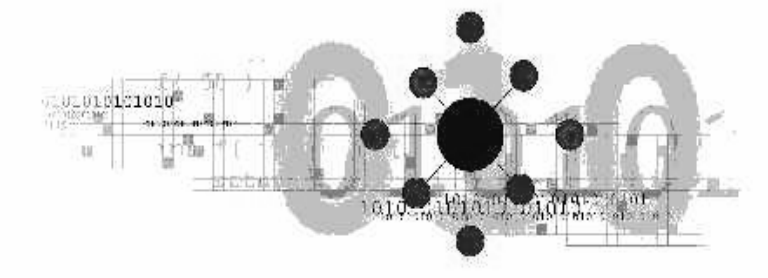
IRIX® 6.5.8 Update Guide



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May 2000

Dear Valued Customer,

SGI is pleased to present the new IRIX 6.5.8 maintenance and feature release. Starting with IRIX 6.5, SGI created a new software upgrade release strategy, which delivers both the maintenance (6.5.8m) and feature (6.5.8f) streams. This upgrade is part of a family of releases that enhance IRIX 6.5.

There are several benefits to this strategy: it provides periodic fixes to IRIX, it assists in managing upgrades, and it supports all platforms. Additional information on this strategy and how it affects you is included in the updated *Installation Instructions* manual contained in this package.

If you need assistance, please visit the Supportfolio Online Web site at: `http://support.sgi.com` or contact your local support provider.

We thank you for your continued commitment to SGI.

Sincerely,

Jorge Helmer
Vice President & General Manager
Customer Support Division
SGI

Welcome to your SGI IRIX 6.5.8 update. This booklet contains:

- A list of key features in IRIX 6.5.8
- A list of CDs contained in the IRIX 6.5.8 update kit
- A guide to SGI Web sites

IRIX 6.5.8 Key New Features

The following features are in the core IRIX 6.5.8 overlays.

Hardware Supported

- Support initiated for VPro Graphics, the next generation graphics for Silicon Graphics Octane systems

Introduced in 6.5.7:

- Support for Silicon Graphics Onyx2 InfiniteReality3 systems
- R12000S CPU on SGI 2200, SGI 2400, SGI 2800, SGI 2100, and Origin 200

Introduced in 6.5.5:

- QLA2200 (copper and optical) is supported for FC-AL, FC-AL via the Emulex hub, or fabric attach via the Brocade Silkworm 2000 switches

Introduced in 6.5.4:

- 270-MHz processor for Silicon Graphics O2 and Silicon Graphics Octane visual workstations
- HDTV XIO Board for Silicon Graphics Onyx2 and SGI Origin 2000 systems (this now includes the former Cray Origin 2000 system)

Introduced in 6.5.3:

- Systems using the MIPS R12000 processor
- Digital Video Multiplexer option board (DPLEX) for Silicon Graphics Onyx2 systems
- Redundant Power Supply (RPS)
- 21" Monitor Support for O2 and Octane systems

Introduced in 6.5.2:

- Flat Panel Monitor for O2 systems
- 16-pipe Onyx2 InfiniteReality systems
- GSN network adapter

Introduced in 6.5.1:

- Gigabit Ethernet for Octane and SGI Origin systems
- 128p Metarouter for Origin 2000 systems (formerly known as Cray Origin 2000 systems)
- Dual Channel Display option for O2 systems
- Onyx2 InfiniteReality2 systems
- 225QC for SGI Origin 200 systems

Software

Feature Stream Only

- Support for Comprehensive System Accounting (CSA). CSA is a set of user and administrative C programs and shell scripts that provide methods to collect per-process resource usage data, monitor disk usage, and charge fees to specific login accounts. CSA uses this per-process accounting information and combines it by job identifier within the system boot uptime periods. CSA provides the following features that are not available with any other IRIX accounting package:
  - Per-job accounting
  - Daemon accounting (tape and Network Queuing System (NQS))
  - Flexible accounting periods (daily and periodic accounting reports can be generated as often as desired and not restricted to once per day or once per month)
  - Flexible system billing units (SBUs)
  - User exits for site specific customization of daily and periodic accounting
  - Configurable parameters within the `/etc/csa.conf` file
  - User job accounting (`ja` command)

- For more information, see *IRIX Admin: Resource Administration* and the `csa`(1M) man page.

Introduced in IRIX 6.5.7:

- Support for job limits

  Job limits allow system administrators to manage user access to system resources by setting limits on different system usage parameters. This can result in improved system throughput and utilization. For more information on the usage of the different system usage parameters, see the *IRIX Admin: Resource Administration Guide* and the following man pages: `jstat`(1), `jlimit`(1), `genlimits`(1M), and `showlimits`(1).

- Support for the CXFS product

  CXFS provides a cluster file system that allows file sharing between machines. CXFS includes the following capabilities: high resiliency and availability, reduced storage costs, and scalable high performance. The initial version of CXFS was introduced with IRIX 6.5.6.

  CXFS requires a new volume manager, XVM. XVM installed with CXFS is currently qualified only on IP27 (Origin 200, Origin 2000, and Onyx2) and IP30 (Octane) systems. The base cluster XVM software is packaged with IRIX 6.5.6f and above. Optional XVM features will be separately licensed and are targeted to release in the IRIX 6.5.9f and above time frame.

The IRIX 6.5.7 release version of CXFS contains metadata server recovery. See the *CXFS Software Installation and Administration Guide* for the administrative shutdown procedures and additional troubleshooting information.

See the “New for 6.5.8: Caveats before you Install” section at the “Caveats to Read Before You Upgrade“ link at `http://support.sgi.com/6.5/start_here/doc657/precaveats.html` for known dependencies or limitations before installing CXFS with XVM. Also, the "Caveat and Release Note Updates" link at `http://support.sgi.com/6.5/caveat_updates.html` should be checked periodically for information on the latest CXFS and XVM patches, descriptions of implemented CXFS and XVM features, updated Release Notes, or any late-breaking caveats.

Introduced in IRIX 6.5.6:

- Support for the Scheduled Transfers (ST) protocol. The ST protocol is an ANSI standard level two through four protocol suite designed to support extremely high performance data movement. ST provides a socket-based interface to applications, which lets you directly port the existing networking applications to ST. ST also supports the OS Bypass mode of operation, which allows smaller messages to be sent and received with extremely low latencies. In this initial release of ST, only the Gigabyte System Network (GSN) network adapter is supported.

Introduced in 6.5.2:

- Motif 2.1/IRIS ViewKit 2.1
- IRIX Oplock support
- Support for non EUC encoding and locales (sjis/big5/gbk/utf8)

Maintenance and Feature Streams

- Embedded Support Partner (ESP) patch 3895 migrates ESP 1.0 to ESP 2.0. This patch release includes new features and bug fixes. The major features are as follows:
  - Automatic Call Logging to the SGI call centers for Mission Critical Supported customers
  - Loading of specific event profiles for monitoring
  - A new command line interface to setup and use ESP
  - A new user interface with a high level of usability and navigational features
  - Fixes to the System Group Manager

  The Embedded Support Partner Overview and the Embedded Support Partner User Guide will be combined. The new document is called the Embedded Support Partner User Guide and will contain overview and usage information for the ESP 2.0 command line and graphical user interfaces.

- Support for 32-bit direct mapping to any node on the system. This feature lets the system administrator change the 32-bit direct mapping node for a specific Peripheral Component Interconnect (PCI) bus. It also provides a new interface, `pcibr_get_dmatrans_node()`, that lets a device driver obtain the node ID. For more information, see the *IRIX Device Driver Programmer's Guide* and the `pcibr_get_dmatrans_node`(D3) man page.
- Support for the cpuset programming interface (previously known as miser_cpuset). This interface is provided in the form of a Dynamic Shared Object (DSO). You can use this programming interface to create cpusets, remove cpusets, and attach processes to cpusets. You can use the cpuset programming interface in areas where the cpuset command is inappropriate. For example, if a batch system needs to use the cpuset capability in IRIX, the programming interface will provide a more flexible and robust solution than the cpuset command. For more information, see *IRIX Admin: Resource Administration* and the `cpuset`(5), `cpusetAllocQueueDef`(3x), `cpusetAttach`(3x), `cpusetCreate`(3x), `cpusetDestroy`(3x), `cpusetDetachAll`(3x), `cpusetFreeCPUList`(3x), `cpusetFreeNameList`(3x), `cpusetFreePIDList`(3x), `cpusetGetCPUCount`(3x), `cpusetGetCPUList`(3x), `cpusetGetName(`3x), `cpusetGetNameList`(3x), and `cpusetGetPIDList`(3x) man pages.

- Support for new Miser cpuset options. These options allow the creation of restrictive memory pools from the nodes that contain the CPUs listed in the configuration file.

  Processes that exceed the available memory on those nodes may be terminated or paged (selectable). For more information on these options, see the `cpuset`(4) man page.
- OpenGL Performer 2.2.8 overlay incorporates the latest fixes. The Performer 2.2.8 overlay can be installed from the `/CDROM/dist/unbundled` directory of the IRIX 6.5.8 Overlays CD (3 of 3), May 2000
- Documenter's Workbench with the latest Y2000 bug fixes can be installed from the `/CDROM/dist/unbundled` directory of the IRIX 6.5.8 Overlays CD (2 of 3), May 2000

Introduced in IRIX 6.5.7:

- Updating sendmail to version 8.9.3

  The version of the IRIX sendmail mail system supplied on this release and previous IRIX 6.5.*x* releases is based on sendmail version 8.8.8. Due to customer demand, the current sendmail.org release, sendmail version 8.9.3 (see `http://www.sendmail.org`), will be supplied via patch 3865 or its successor. Check the "Caveat and Release Note Updates" link at

`http://support.sgi.com/6.5/caveat_updates.html` for the IRIX 6.5.7 late breaking caveats to determine the availability of this patch on Supportfolio. SGI intends to support sendmail 8.9.3 (or above) as the standard released sendmail in a future IRIX release, target 6.5.9.

There are many differences between IRIX sendmail version 8.8.8 and version 8.9.3.

- The major difference is their configuration files. The configuration file in sendmail version 8.9.3 is configured with the `sendmail.mc` file which is processed using the m4 macro processor to create the `sendmail.cf` file.
- A new version of configmail configures the `sendmail.mc` file and provides features similar to the configmail utility in previous versions of IRIX. This version of configmail also processes the `sendmail.mc` file into `sendmail.cf` by using the m4 macro processor.
- One of the new features included in version 8.9.3 and in great demand by IRIX users is the anti-relay features which can be used to control spam messages.

For more information on the 8.9.3 version of sendmail, see the *IRIX Administration: Networking and Mail Guide* provided with the patch. For more information on how to configure sendmail 8.9.3, see `http://www.sendmail.org/m4/readme.html`.

- Open Inventor 2.1.6 overlay incorporates fixes included in versions 2.1.4 and 2.1.5. The Inventor 2.1.6 overlay can be installed from the `/CDROM/dist/unbundled` directory of the IRIX 6.5.8 Overlays CD (3 of 3), May 2000. This overlay requires that the base Inventor 2.1.4 image be installed already, or with the overlay during the same install session. The Inventor 2.1.6 overlay can be installed on IRIX 6.5.5 and later.
- OpenGL Performer 2.2.7 overlay incorporates the latest fixes. The Performer 2.2.7 overlay can be installed from the `/CDROM/dist/unbundled` directory of the IRIX 6.5.8 Overlays CD (2 of 2), February 2000.

Introduced in 6.5.6:

- Support for a multi-threaded version of the automatic filesystem mount daemon `autofsd`. This enhanced functionality allows for simultaneous multiple automounts. If a particular server for an automounted filesystem is not running or is slow to respond, one `autofsd` thread can wait for that server while other `autofsd` threads mount filesystems from other servers. This capability improves the automount performance and simultaneously provides longer wait times for downed servers, which should lead to a decrease in automount failures.

Introduced in 6.5.5:

- Embedded Support Partner, which is an integral part of the IRIX operating system, provides system administrators with a way to monitor various events (such as system events, changes in system hardware and software configuration, and system performance) on their systems. Embedded Support Partner is a set of daemons that perform the monitoring activities. These include an event monitoring daemon (`eventmond`), an event management daemon (`espemd`), and a database daemon (`espdbd`). Embedded Support Partner provides single-system monitoring capabilities as a standard part of IRIX. Optionally, Embedded Support Partner can be configured to receive event and system configuration data from all systems contained within a system group. Embedded Support Partner is controlled through a Web browser that is connected to the Configurable Web Server, which is included in the Embedded Support Partner package. For more information, see the *Embedded Support Partner Overview*, the *Embedded Support Partner User Guide*, and the Embedded Support Partner man pages.
- Support for the version 2 XFS directory format; this format lets you choose a filesystem block size to match the distribution of data file sizes without adversely affecting directory operation performance. The directory format is specified with the `-n` parameter of the `mkfs` command. For more information, see *IRIX Admin: Disks and Filesystems* and the `mkfs_xfs`(1M) man page.

- Support for the math and scientific library SCSL 1.2. SCSL 1.2 will replace *Challengecomplib* on all supported system platforms at the time of the next major IRIX Release.

  SCSL provides support for the math and scientific libraries and is widely used in scientific and technical compute-intensive applications. SCSL 1.2 incorporates all the current *Challengecomplib* 3.1 features and will be distributed as a separately packaged product until the next major IRIX release.

  SCSL 1.2 can be downloaded from the SGI "Download Cool Software" Web page at `http://www.sgi.com/Products/Evaluation`. If you do not have Web access and are a current support customer, you can request CD media free of charge through your local support center. Non-contract customers can contact their sales representatives to order SCSL 1.2.

  New features introduced in addition to the *Challengecomplib* functionality since the release of SCSL 1.1 are:

  – Added convolution/correlation and filter routines to the signal-processing functionality (formerly available only in *Challengecomplib*)
  – Improved ordering techniques for the sparse linear solvers
  – Performance enhancements for the MIPS R12000 processor
  – Bug fixes from SCSL 1.1

Challengecomplib entered maintenance mode with the release of IRIX 6.5.5. No new features or enhancements will be incorporated.

For more information on SCSL, see `http://www.sgi.com/software/scsl.html`

- Support for Automated Performance Monitoring. Together with Embedded Support Partner, the base performance monitoring services in the *pcp_eoe* product have been extended to include an inference engine for evaluating rules about system-level performance and raising alarms. Also provided is a parameterized set of standard rules that can be selectively enabled and tuned to meet local requirements and to choose alternative alarm notification mechanisms. These features are of most value to operations staff running production IRIX systems. For more information, see the `pmie`(1) and `pmieconf`(1) man pages, and the *Performance Co-Pilot IRIX Base Software Administrator's Guide*.
- Two new options were added to the `miser_create_cpuset` command. These options allow additional restrictions on memory assignment for processes running on a CPU set. These options are documented in the `miser_cpuset`(4) man pages.

Introduced in 6.5.4:

- Support for the Miser queue repack policy. When a job finishes execution before the end of its schedule, the system resources it was using are released. This policy attempts to reschedule the jobs using

earlier start and end times to take advantage of these released system resources. The order of the scheduled jobs will be maintained. This feature can be used by all Miser users running IRIX 6.5.4m or f and later releases. For more information, see the `miser`(4) and `miser`(5) man pages, and *IRIX Admin: System Configuration and Operation*, Chapter 7 "Managing User Processes."

- Distributed Computing Environment (DCE) Client for accessing shared resources in distributed computing DCE/DFS serving environments
  - Kernel libraries only
  - Requires installation of DCE/DFS 1.2.2a software for full functionality

Introduced in 6.5.3:

- (Octane systems only) The worst-case interrupt response time is guaranteed to be less than one millisecond on properly configured Octane systems
- Support for the X security and appgroup extensions (combined with a new Netscape plug-in, these allow the embedding of X applications in Web pages)
- Support for European fonts, including the Euro currency symbol
- New Software Manager and Inst commands to simplify selections for upgrades

- New Software Manager and Inst configuration variable to more easily handle cases where configuration files are upgraded. See the *smart_config_handling* preference in *inst* or *swmgr* for more information.
- Support for LDAP 3.0

Introduced in 6.5.2:

- AutoFS extended to use UNS for map information
- Support for DCShare application sharing extension
- Fibre channel support to Dmnet
- Three new HP printer drivers: HP4000, HP5000 and HP4500 (Color LaserJet 4500DN)

Updated Documentation

The documents below have been revised for features listed:

- *IRIX Admin: Resource Administration Guide*:
  - Comprehensive System Accounting/CSA
  - API for cpusets
- *IRIX Checkpoint and Restart Operation Guide*
  - Job Limits
  - CSA

- *CXFS Software Installation and Administration Guide*
  - DMAPI

Applications CD with IRIX 6.5.8

- No major feature or enhancements for this release
- Accessx, Desktop Runtime, Impressario, Infosearch, Insight, License Runtime, Sysadmin Desktop updated with bug fixes

Introduced in 6.5.7

- SGImeeting and SGImeeting Extensions are now both licensed products and are no longer available on the Applications CD. Future revisions of the base SGImeeting product and the Extensions will be distributed on separate CDs and licensed separately. For additional information or assistance, contact your local SGI sales representative.
- Netscape 4.7A provides additional localization and the Flash plug-in since the 4.7 release.

Introduced with IRIX 6.5.6:

- Upgrade to Netscape Communicator 4.7; for details, see `http://home.netscape.com/communicator/v4.5`.

New features include: Enterprise Calendaring, Winamp MP3 player, and Netscape AIM 3.0

Note: Netscape Radio is implemented only for systems with the G2 player installed.

Introduced with IRIX 6.5.5

- WebViewer Library Execution only Environment 3.0

Note: Applications take two forms: full images and overlays. The base versions of each can be found on the Applications CD. When full images are updated, new versions are placed on the Applications CD. Upgrades of overlay products, however, are located on the Overlays.

IRIX 6.5.8 Update Kit Contents

The IRIX 6.5.8 Update Kit contains the following items for both server and workstation system configurations:

- CD Name:
  1. IRIX 6.5.8 (1 of 3) Installation Tools & Overlays CD, May 2000
  2. IRIX 6.5.8 (2 of 3) Installation Tools & Overlays CD, May 2000
  3. IRIX 6.5.8 (3 of 3) Overlays CD, May 2000
  4. IRIX Applications for 6.5.8, May 2000
- The IRIX CD booklet *Installation Instructions : Installing an Intermediate (Overlay) Release, Installing Applications, Installing Software Licenses*

SGI Web Sites

IRIX 6.5-Related Web Sites

- SGI product information

  `http://www.sgi.com/products`
- IRIX 6.5 datasheet

  `http://www.sgi.com/software/irix6.5/datasheet.pdf`
- Start Here: Installing IRIX 6.5.8

  `http://support.sgi.com/6.5/installing.html`
- To view all qualified applications compatible with IRIX 6.5 releases, see `http://support.sgi.com/6.5/spk`

Services

- Customer Education Services

  `http://www.sgi.com/support/custeducation.html`
- Professional Services

  `http://www.sgi.com/services`

Online Tools

- Customer Registration
  `http://www.sgi.com/support/custreg.html`
- Software Licensing/Key-O-Matic
  `http://www.sgi.com/Support/Licensing`
- Supportfolio Online
  `http://support.sgi.com`
- Online documentation —Technical Publications Library
  `http://techpubs.sgi.com`

Year 2000 Compliance

- Information about the SGI Year 2000 Program
  `http://www.sgi.com/tech/year2000`

Other Sites

- Download Cool Software
  `http://www.sgi.com/Products/Evaluation`
- Free Software
  `http://freeware.sgi.com`

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