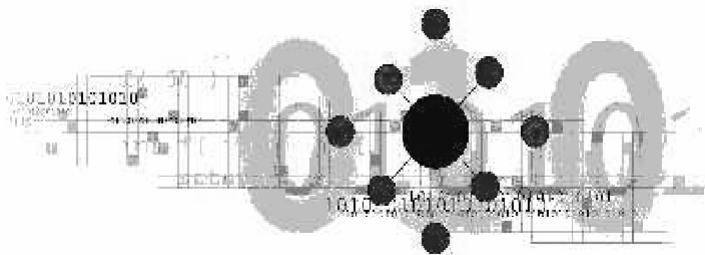




IRIX® 6.5.20 Update Guide





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Dear Valued Customer,

SGI® is pleased to present the new IRIX® 6.5.20 maintenance and feature release. Starting with IRIX® 6.5, SGI created a new software upgrade strategy, which delivers both the maintenance (6.5.20m) and feature (6.5.20f) streams to our support contract customers. This upgrade is part of a family of releases that periodically enhances IRIX 6.5.

There are several benefits to this release 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 website at <http://support.sgi.com/> or contact your local support provider.

In conjunction with the release of IRIX® 6.5.15, SGI added the Limited Support Mode to our existing software life cycle management categories. The software life cycle management categories describe the different levels of support we provide to our users. This new support mode is

targeted for open source products. We now offer eight modes of service for software supported by SGI: Active, Maintenance, Limited, Legacy, Courtesy, Divested, Retired, and Expired.

Active Mode is our highest level of service. It applies to products that are being actively developed and maintained and are orderable through general distribution. Software fixes for all levels of problems can be expected.

Maintenance Mode software is maintained and is still an important part of our product mix. No new functionality is added to products in this support mode. Functional fixes for severe problems are generally available. Products in this support mode category are still orderable through general distribution. Software usually stays in this category for approximately 18 months before being moved to a mode of lesser support.

Limited Mode is a restricted level of service developed mainly for products developed and maintained by open source organizations and distributed by SGI.

Legacy Mode software generally runs on out-of-production operating system versions or system platforms that are no longer in active development or maintained. These products are usually distributed with limited availability. New support contracts may be offered and renewed. Services provided with Legacy Mode are limited to providing existing fixes and “workarounds” for reported problems. IRIX® 6.2, IRIX® 6.3, and

IRIX® 6.4 operating system revisions are examples of major operating system releases that were supported in this category until January 2003.

Courtesy Mode software is not officially part of the software support offerings. Courtesy mode software is not covered by software support contracts, and call center support is not available. An e-mail alias may be provided to facilitate customer communications and to address any technical questions. Response times will vary according to availability of resources. The e-mail alias may be terminated at any time without advance notice. IRIS Showcase™ and Cosmo Worlds™ are examples of products with Courtesy Mode support.

Divested Mode software has been turned over to a third party who assumes all responsibility for support. SGI no longer distributes these products. Calls received at the SGI Call Center for support on divested products will be redirected to the applicable third party. CA Unicenter® TNG and Syntax TAS™ are examples of divested products.

Retired Mode provides restricted support for older software products which are no longer generally distributed by SGI. This level of support has severe limitations on portability to new platforms. Availability of support at this level is limited to existing customers with whom we have existing contractual obligations. This is the final stage before a product is completely removed from the SGI product set. IRIX 6.2, IRIX 6.3, and IRIX 6.4 operating system versions are examples of major operating system releases that are supported in this category beginning January 2003.

Software stays in this category for a minimum of 18 months before being moved to Expired Mode.

Expired Mode software products have reached the end of their useful life. These products are not supported or distributed in any form by SGI. Examples are: IRIX® 5.3, IRIXPro™, and Proconf.

Supportfolio Online (<http://support.sgi.com/>) contains a Power Search capability to locate further information regarding the eight software support modes. Using the Power Search section can also help locate links to the latest customer letters and lists of the various software products that have changed support modes. We thank you for your continued commitment to SGI.

Terry Oberdank

Vice President, Global Services
SGI

Welcome to your SGI IRIX 6.5.20 update. This booklet contains:

- A list of key features in IRIX 6.5.20
- A list of CDs contained in the IRIX 6.5.20 update kit
- A guide to SGI websites

IRIX 6.5.20 Key New Features

The following changes have been incorporated into the core IRIX 6.5.20 overlay CDs and the Applications CD.

New Software Features - Feature Stream Only

Filesystems

- **Changes to CXFS and XVM Manager GUIs**

IRIX 6.5.20f provides the following options for the CXFS and XVM Manager GUIs:

- New GUI login choices, including support for a remote shell connection, which connects to the server via a user-specified command shell, such as `rsh(1C)` or `ssh(1)`.
- The ability for the root user to grant other users permission to execute specific GUI tasks.

For information on these options, see *CXFS Version 2 Software Installation and Administration Guide*.

- **Changes to CXFS**

In IRIX 6.5.20f, the default values for `cxfsd_min` and `cxfsd_max` have changed to 16 (note that the default values shown in the *CXFS Version 2 Software Installation and Administration Guide* are incorrect). The legal value for `cxfsd_max` has also changed to be an integer in the range 8 through 4096.

New Software Enhancements - Maintenance and Feature Stream

Sysadm Base GUIs

- **Sysadm Base GUIs use Java2 (version 1.4.1)**

For the IRIX 6.5.20 release, Sysadm Base 3.0 ports the Sysadm Base 2.0 software from Java1 (version 1.1.8) to Java2 (version 1.4.1) which is the latest Java version supported by SGI. Sysadm Base 3.0 supports SGI's IRIX software for remote cluster and storage administration. The CXFS, FailSafe, and XVM Manager GUIs depend on Sysadm Base.

The use of Java2 simplifies the Java installation and co-operation with third-party GUIs. This also enhances the ability to run the GUIs through a web browser. For example, for the CXFS GUI, you can open `http://server/CXFSManager/`.

Digital Media

- **MPEG Layer 3 (MP3) audio decoding**

IRIX 6.5.20 integrates MP3 audio decoding into the digital medial libraries and all associated dmedia tools. For information, see the `soundplayer(1)` man page and the *Digital Media Programmers Guide*.

- **Huffman YUV (HuffYUV) video codec**

IRIX 6.5.20 supports the Huffman YUV (HuffYUV) video codec, which allows lossless real-time compression of 4:2:2 video in the range of 2:1 to 3:1. Note that since it is software-based, we do not

guarantee real-time compression. For information, see the `movieplayer(1)`, `dmconvert(1)`, and `makemovie(1)` man pages.

- **Griffin iMic USB audio interface**

IRIX 6.5.20 adds support for the Griffin iMic USB audio interface.

- **M-Audio Revolution PCI audio card**

IRIX 6.5.20 adds support for the M-Audio Revolution PCI audio card.

Graphics Software

- **OpenGL Shader 3.0.1 Execution Only Environment**

OpenGL Shader is now shipped with IRIX. OpenGL Shader is a powerful multi-platform appearance-modeling tool that provides incredible realism effects through an easy and powerful development toolkit. For information see the release notes installed under `/usr/relnotes/shader_eoe` and the ISL shading language specification installed under `/usr/share/shader/doc/user/islspec.html`.

Graphical Interface

- Motif and ViewKit added to maintenance stream.

For the 6.5.20 release of IRIX, support for Motif 2.1 and ViewKit 2.1 development has been added to the maintenance stream.

Security

- Kerberos bundled in IRIX

IRIX 6.5.20 includes libraries and utility programs from MIT

Kerberos V version 1.2.7. The libraries included are: `libcom_err.so`, `libdes425.so`, `libgssapi_krb5.so`, `libk5crypto.so`, and `libkrb5.so`. The following utility programs are included: `kdestroy`, `kinit`, `klist`, `kpasswd`, and `kvno`. For information on Kerberos, see <http://web.mit.edu/kerberos/www/>.

- **OpenLDAP bundled in IRIX**

IRIX 6.5.20 includes OpenLDAP version 2.1.12 with support for TLS/SSL and Kerberos authentication. This includes the complete suite of programs and header files necessary to implement an LDAP server and client applications. For information on OpenLDAP, see <http://www.openldap.org/>.

Filesystems

- **Write-capable UDF filesystem format**

Universal Disk Format (UDF) is the filesystem used on DVDs. The UDF specifications are produced by OSTA, and are based on the ECMA-167 specification.

A read-only implementation of UDF was added to IRIX 6.5.18, and a write-capable version was added for IRIX 6.5.20.

Job Limits and CSA

- Job Limits and CSA packages added to maintenance stream
The Job Limits and Comprehensive System Accounting packages, long available in the Irix feature stream, have been added to the

maintenance stream. These features are available in the optionally installable packages `eeo.sw.jlimits` and `eeo.sw.csa`.

sgi_apache Web Server

- **mod_ssl package added to sgi_apache web server**

For IRIX 6.5.20 the `mod_ssl` package has been added to the `sgi_apache` web servers. The `mod_ssl` package adds secure http (https or TLS) support to apache, using `openssl` to do the encryption. Note that to use secure connections you must generate a certificate for your host. See the `sgi_apache` release notes for details.

Trusted IRIX

- **Trusted IRIX support in CPR**

The IRIX 6.5.20 release adds support for Trusted IRIX attributes to checkpoint and restart processes (CPR). If enabled, capabilities, mandatory access control (MAC) labels, and access control lists (ACLs) are saved at the time of checkpoint and restored upon restart. Capabilities are saved and restored for processes and files. MAC labels are saved and restored for processes, files, pipes, named pipes, and System V shared memory segments. ACLs are saved and restored for files and named pipes. For more information on these attributes, the *IRIX Checkpoint and Restart Operation Guide* and the `capabilities(4)`, `DOMINANCE(5)` and `acl(4)` man pages.

- **Capability assignment**

The IRIX 6.5.20 release adds information about set-capabilities (SCAP) programs in a Trusted IRIX environment to the “Capability Assignment” section of *Trusted IRIX/CMW Security Administration Guide* as follows:

Like set-user-ID (SUID) and set-group-ID (SGID) programs, programs assigned capabilities (set-capabilities (SCAP) programs) are handled differently. A user cannot use the process activity reporter `par` system utility program on a SCAP process or trace a SCAP process unless the user has the `CAP_PROC_MGT` capability. See the `par(1)` and `exec(2)` man pages for more details.

Similarly, certain environment variables are not respected when dealing with SCAP programs. These include `_RLD*_LIST` and `LD_LIBRARY*_PATH` environment variables of the runtime linker `rld` command, the `IFL_DATABASE` environment variable of the Image Format Library `ifl` command (see `rld(1)` and `ifl(1)`) and the `NLSPATH` environment variable of the `open/close` a message catalogue `catopen` routine that allows user control of message formatting (see `catopen(3C)`).

System Kernel

- Using XThread Control Interface (XTCI) with cpusets
IRIX 6.5.20 adds information to *IRIX Admin: Resource Administration*

on using the XThread Control Interface (XTCI) with cpusets as follows:

Kernel system threads and interrupt threads can be confined to the boot cpuset by using the XThread Control Interface (XTCI), which is documented in the `realtime(5)` man page and the *REACT Real-Time Programmer's Guide*.

SGI Software Product Life Cycle Management

- **IRIX Support Policy**

In accordance with the SGI software product life cycle management strategy announced in December 2002, SGI will announce support mode changes for various software products on a semi-annual basis. To view customer letters containing support mode changes announced since December 2002, as well as the latest IRIX Support Policy documents, visit the IRIX Support Policy Web page on Supportfolio Online (<http://support.sgi.com/>).

Applications CD

The following full images have been added to the IRIX 6.5 Applications CD, May 2003:

- Java2 v1.4.1 Execution Environment (Sun JRE v1.4.1)
- Java2 v1.4.1 Development Environment (Sun JDK v1.4.1)
- Java2 v1.4.1 Debug Binaries (Sun JDK v1.4.1)

- Java2(tm) Runtime Plug-in for Irix, Edition 1.4.1

The following full images have been revised for the IRIX 6.5 Applications CD, May 2003:

- Color Management 2.3
- Cosmo Create Authoring Environment, 1.0.3a
- ImageVision Tools, 3.2.2
- Information Searching Execution Environment, 6.5.20m
- Macrovision FLEXIm (v8.3b) License Tools 3.4.9
- Mozilla 1.0.2
- MPI 4.2 (MPT 1.7)
- MPT 1.7
- SGI Scientific Library 1.4.1.2 (SCSL 1.4.1.2)
- SGImeeting 2.0.5
- SGI WebServer Based on Apache 1.3.27a
- IRIS Showcase 3.4.3a
- SiteMgr - Web Content Administration, 1.2.1
- SMA 4.0 (MPT 1.7)
- Web Setup and Administration, 3.5

The following overlays have been revised for the IRIX 6.5 Overlay CD, May 2003:

- IRIX Interactive Desktop
- IRIX Interactive Desktop Tools
- IRIX Interactive Desktop Administration
- Impressario Printing & Scanning Tools

The following images have been retired from the IRIX 6.5 Applications CD, May 2003:

- On-Line Registration, 1.4
- FDDIVisualyzer, 6.5
- Novell NetWare Client 1.1.1
- VLAN software 1.0 for IRIX 6.5
- 3D File Translators 1.1.1

In IRIX 6.5.20, several overlays have been revised to fix Section 508 bugs.

IRIX OS Bundled Software

For information about the bundled software that is included with this release, see the Bundled software and licenses webpage that you can access from the Welcome webpage.

Freeware CDs

The following changes have been incorporated into the May 2003 update to the SGI IRIX Freeware Project.

New products for this release:

aalib-1.4rc5 - ASCII Art library

bluefish-0.9 HTML Editor

bochs-2.0 IA-32 PC Emulator

d4x-2.4.1 - WebDownloader for X

db4-NoCrypto-4.1.25 - Berkeley DB 4.1

flac-1.1.0 - Free Lossless Audio Codec

foomatic-filters-2.9.1 - filter scripts for CUPS + Ghostscript

lftp-2.6.3 - Sophisticated command-line FTP client

libcdaudio-0.99.9 - Audio CD control library

libgphoto2-2.1.1 - Digital camera access library

libmnote-0.5.6 - MakerNote-EXIF tag editor library

Maelstrom-3.0.6 - Asteroids-like game

phoenix-0.5 - Mozilla based web browser

SDL_image-1.2.2 - Image loading add-on for SDL
SDL_mixer-1.2.4 - Audio mixer add-on for SDL
SDL_net-1.2.4 - Network support add-on for SDL
SDL_ttf-2.0.5 - TrueType font support add-on for SDL
snort-1.9.1 - An open source network intrusion detection system
unrar-3.2.0 - UNRAR archiver
vcdimager-0.7.13 - (Super)VideoCD authoring tools
w3m-0.3.2.2 - Text based web browser and pager
xautolock-2.1 - Automatic X screen locker/screensaver
xcdroast-0.98alpha13 - GUI for cdrtools/cdlabelgen
xmlrpc-c-0.9.9 - XML-RPC library for C and C++
Updated products for this release:
aolserver-3.3 - AOLserver Web Server
apache-2.0.43 Apache Web Server
autoconf-2.57 source configuration tool
automake-1.7.2 autoconf file generator

bc-1.06 - arbitrary precision calculator
cdlabelgen-2.5.0 - generate CD case inserts
cdrtools-2.0 - audio/data CD recording tools
cups-1.1.18 - Common UNIX Printing System
curl-7.10.3 - URL transfer tool
cvs-1.11.5 - Concurrent Versions System
exif-0.6 - JPEG/EXIF image handler
exim-3.36 - sendmail replacement
expat-1.95.6 - XML parser library
fltk-1.1.3 - C++ GUI toolkit
freetype-2.1.3 - TrueType font manipulation library
gcalculator-0.9 - GTK2 Calculator
gawk-3.1.2 - GNU AWK programming language
gcc-3.2.2 - GNU Compiler Suite
gcombust-0.1.54 - GUI for cdrtools/cdlabelgen
gettext-0.11.5 - GNU message catalog utilities

gimp-print-4.2.5 - print facility for GIMP and CUPS
gnupg-1.2.1 - GNU Privacy Guard
gphoto2-2.1.1 - Digital camera access frontend
grep-2.5.1 - GNU grep/fgrep/egrep
gtk2+-2.0.6 - GIMP Toolkita
hp2xx-3.4.3 HP-GL image conversion tools
indent-2.2.9 - GNU C code formatter
lcms-1.09 - ICC color management system
less-381 - a more-like file browser
libexif-0.5.9 - EXIF tag parsing library
libmng-1.0.5 - Multiple-image Network Graphics library
libpng-1.0.15 - PNG image format library
libxml2-2.5.4 - XML manipulation library
licq-1.2.6 ICQ clone
lynx-2.8.4d - Text-based WWW Browser
make-3.80 - GNU make

mozilla-1.3 - X11 based web browser
ncurses-5.3 - GNU curses package
nethack-3.4.1 - Rogue-like game (X11 and tty)
openldap-2.1.16 - LDAP server and client tools
openssh-3.5p1 - secure rsh, rcp replacements
openssl-0.9.6i - Secure Sockets Layer Toolkit
PAM-0.77 - Pluggable Authentication Modules
php-4.2.3 - PHP: Hypertext Processor http-server scripting
pine-4.53 - email/news client
plan-1.8.5 - Calendar/reminder tool
postgresql-7.3.2 - Object-Relational DBMS
procmail-3.22 mail processing package
regina-3.0.1 - REXX interpreter
Samba Version 2.2.8
sane-backends-1.0.11 - SANE scanner library backends
sane-frontends-1.0.10 - SANE scanner library frontends

screen-3.9.15 - GNU virtual terminal manager
SDL-1.2.5 - Simple DirectMedia Library
soup-0.7.4 - SOAP (Simple Object Access Protocol)
squid-2.5.STABLE1 - Internet Object Cache
sudo-1.6.6 - restricted configurable 'su'
t1lib-1.3.1 - Type 1 font rasterizer
teTeX-2.0.2 - TeX/LaTeX et al.
texinfo-4.5 - GNU documentation system
TightVNC-1.2.8 - cross-platform remote-desktop access
vim-6.1.289 - Vi IMproved vi editor clone
w3c-libwww-5.4.0 - W3C Protocol Library
WindowMaker-0.80.2 - X11 window manager with a GNUstep look
xpdf-2.01 - PDF file viewer
xsane-0.90 - SANE graphical frontend

For more information about the freeware that is included with this release, including a complete list of the freeware packages, see <http://freeware.sgi.com/>.

Documentation

The following manuals have been revised for the new features incorporated into this release.

CXFS Version 2 Software Installation and Administration Guide, 007-4016-017, was updated to include CXFS Manager GUI login changes, use of Java2, and new tasks to grant and revoke access to GUI tasks.

IRIX 6.5 Installation Instructions, 007-3862-008, includes updated information on installing software keys.

IRIX Admin: Backup, Security, and Accounting, 007-2862-004, includes new information about default auditable events and IPFilter.

IRIX Admin: Resource Administration, 007-3700-014, includes information on the XThread Control Interface (XTCI) with cpusets. It also includes information about user exits to “/usr/lib/acct Directory”, and provides sample user exit scripts.

IRIX Admin: System Configuration and Operation, 007-2859-021, includes miscellaneous editing and formatting changes.

IRIX Checkpoint and Restart Operation Guide, 007-3236-007, added support for Trusted IRIX attributes to checkpoint and restart (CPR) processes.

ONC3/NFS Administrator's Guide, 007-0850-150, added information about the `/etc/config/autofs.options` and `etc/config/autofs.options` files.

REACT Real-Time Programmer's Guide, 007-2499-010, documents the XThread Control Interface (XTCI). In some situations, kernel threads, like user threads, must run on specific processors or with other special behavior. XTCI controls these special behaviors.

Trusted IRIX/CMW Security Administration Guide, 007-3299-007, adds information about set-capabilities (SCAP) programs in a Trusted IRIX environment.

XVM Volume Manager Administrator's Guide, 007-4003-014, includes small updates and clarifications to the chapter on GUI operation.

Key New Features from Previous IRIX Releases

Descriptions of key new features and changes for the IRIX releases from 6.5.1 through 6.5.19 are provided in the Customer Welcome document. This document is available on the 6.5.20 Overlay CDs and can be accessed in any of the following ways:

- Insert Installation Tools and Overlays CD 1 or CD2 into the CD-ROM drive and point a web browser at `file:///CDROM/WhatsNew/yourssystem.html`. Note that you enter the literal `yourSystem.html`; do not type your actual system name.
- After completing an install, click on the Guide button of the web browser. Holding the button down yields a menu with `Welcome` as the first item.
- After completing an install, double click the “Welcome to SGI” icon on the desktop.

Descriptions of new features for IRIX 6.5.17 and later are available on Supportfolio Online from the following webpage: http://support.sgi.com/search_request/publications. After logging in to Supportfolio, enter “Start Here” as the keyword and select “IRIX OS Docs ” as the Publication type. Select a Start Here document and follow the “Key New Features and Changes” link for information on the new features for the release selected.

IRIX 6.5.20 Update Kit Contents

The IRIX 6.5.20 Update Kit contains the following items for both server and workstation system configurations:

- CD Name:
 1. IRIX 6.5.20 (1 of 4) Installation Tools & Overlays CD, May 2003
 2. IRIX 6.5.20 (2 of 4) Installation Tools & Overlays CD, May2003
 3. IRIX 6.5.20 (3 of 4) Overlays CD, May2003
 4. IRIX 6.5.20 (4 of 4) Overlays CD, May 2003
 5. IRIX Applications for 6.5.20, May 2003
- The IRIX CD booklet *Installation Instructions: Installing an Intermediate (Overlay) Release, Installing Applications, Installing Software Licenses*

SGI Websites

IRIX 6.5-Related Websites

- SGI product information
<http://www.sgi.com/products/>
- IRIX 6.5 datasheet
<http://www.sgi.com/software/irix6.5/datasheet.pdf>
- Supportfolio Online, IRIX 6.5 content
<http://support.sgi.com/irix/6.5>

Services

- Customer Education Services
<http://www.sgi.com/support/custeducation/>
- 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/>
- Online documentation - Technical Publications Library
<http://docs.sgi.com/>
- Supportfolio Online
<http://support.sgi.com/>

Other Sites

- Download Cool Software
<http://www.sgi.com/products/evaluation/>
- Free Software
<http://freeware.sgi.com/>

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