# UNICOS® Release Letter

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The UNICOS operating system is derived from UNIX® System V. The UNICOS operating system is also based in part on the Fourth Berkeley Software Distribution (BSD) under license from The Regents of the University of California.

# Contents

*Page*

*Page*

*Page*

# About This Document

This release letter describes the content of the UNICOS 10.0.0.4 update revision to the UNICOS 10.0 major release. It gives a broad overview of new features, enhancements, and changes in the UNICOS 10.0.0.4 release, as well as compatibilities and differences with the previous, UNICOS 10.0.0.3, release.

## Conventions

The following conventions are used throughout this document:

| Convention | Meaning |
|---|---|
| `command` | This fixed-space font denotes literal items such as commands, files, routines, path names, signals, messages, and programming language structures. |
| `manpage`(*x*) | Man page section identifiers appear in parentheses after man page names. The following list describes the identifiers:<br>1 User commands<br>1B User commands ported from BSD<br>2 System calls<br>3 Library routines, macros, and opdefs<br>4 Devices (special files)<br>4P Protocols<br>5 File formats<br>7 Miscellaneous topics<br>7D DWB-related information<br>8 Administrator commands<br>Some internal routines (for example, the `_assign_asgcmd_info`() routine) do not have man pages associated with them. |
| *variable* | Italic typeface denotes variable entries and words or concepts being defined. |

| | |
|---|---|
| **`user input`** | 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. |

The default shell in the UNICOS and UNICOS/mk operating systems, referred to in Cray Research documentation as the *standard shell*, is a version of the Korn shell that conforms to the following standards:

- Institute of Electrical and Electronics Engineers (IEEE) Portable Operating System Interface (POSIX) Standard 1003.2–1992
- X/Open Portability Guide, Issue 4 (XPG4)

The UNICOS and UNICOS/mk operating systems also support the optional use of the C shell.

## Definitions of Audiences

Chapters 2 and 3 of this release letter list types of users most affected by the described feature or compatibility issue. The following definitions are used for these audiences:

| Term | Definition |
|---|---|
| End user | Those who use the UNICOS operating system, products, applications, or network software. |
| Programmer | Those who write or modify system or application code for the purpose of solving computer system, scientific, or engineering problems. |
| Administrator | Those who perform system administration tasks such as installation, configuration, and basic troubleshooting. |
| System analyst | Those who perform advanced troubleshooting, tuning, and customization. |

| | |
|---|---|
| Operator | Those who perform operational functions or administer the computer system through an operator workstation. |

## Distribution of This Release Letter

A copy of this release letter is included with the UNICOS 10.0.0.4 update release package; you can also order it separately through the Silicon Graphics Minnesota Software Distribution Center. You can access this release letter electronically. ASCII and PostScript files are available on the following systems:

- The CRInform system, which is an online information and problem-solving system for Silicon Graphics customers with Cray products. For more information, see Section 5.3, page 24.
- The Silicon Graphics `craypark` system in the `/home/craypark/release_docs` directory. The `craypark` system is available to Silicon Graphics service personnel.

If you do not have access to these systems but would like a copy of the files, contact your Silicon Graphics representative.

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If you have comments about the technical accuracy, content, or organization of this document, please tell us. Be sure to include the title and part number of the document with your comments.

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We value your comments and will respond to them promptly.

# Introduction [1]

The *UNICOS Release Letter* is a public document that provides an overview of the UNICOS 10.0.0.4 update release.

**Note:** If you are planning to upgrade CRAY J90 CPUs to CRAY SV1 CPUs, please contact your Silicon Graphics support representative regarding any additional modifications that are required to support CRAY SV1 CPUs.

## 1.1 Contents of This Release Letter

This release letter includes the following chapters:

- Chapter 2, page 5, “Software Enhancements”, describes new features and enhancements since the UNICOS 10.0.0.3 update release. This chapter also includes plans for features to be supported in future releases of the UNICOS operating system.
- Chapter 3, page 9, “Compatibilities and Differences”, describes compatibility issues and functionality changes involved in upgrading from UNICOS 10.0.0.3 to UNICOS 10.0.0.4.
- Chapter 4, page 17, “Documentation”, lists the printed and online documentation supporting the UNICOS 10.0.0.4 operating system release.
- Chapter 5, page 23, “Customer Services”, describes the customer services that Silicon Graphics offers to support the UNICOS 10.0.0.4 operating system release. This includes software training, problem reporting, and general service information.
- Chapter 6, page 27, “Release Package”, contains licensing information and a list of release package contents.

## 1.2 UNICOS 10.0.0.4: Fourth Update Release to UNICOS 10.0

The UNICOS 10.0.0.4 release supports CRAY SV1 systems only. It is the fourth update release to follow the base UNICOS 10.0 operating system release.

Note that the UNICOS 10.0.0.5 release will support all platforms.

## 1.3 Hardware Supported by the UNICOS 10.0.0.4 Release

The UNICOS 10.0.0.4 release supports the following Silicon Graphics GigaRing platforms:

CRAY SV1 series

CRAY SV1 series with mixed CPUs (CRAY SV1, CRAY J90, and CRAY J90se)

The UNICOS 10.0.0.4 release also supports the following Silicon Graphics systems with Model V IOS:

CRAY SV1 series

CRAY SV1 series with mixed CPUs (CRAY SV1, CRAY J90, and CRAY J90se)

The UNICOS 10.0.0.4 release does not support memory HIPPI on Model V based systems.

The UNICOS 10.0.0.4 release does not support cross-targeting of CRAY J90 or CRAY J90se software. Only CRAY SV1 targeting is supported. A CRAY SV1 generated binary will run on a CRAY J90 or CRAY J90se system, but with possible performance degradation.

### 1.3.1 Revision A CPUs

The UNICOS 10.0.0.4 release supports the first revision of the CRAY SV1 CPU, which is referred to as *Revision A*. Revision A CPUs are the first introduction to the following CRAY SV1 innovations:

- 300 MHz clock rate (1.2 Gflops CPU)
- Vector caches
- Dual vector pipes

Special software is required to support Revision A CPUs as well as specific hardware configurations. Revision A CPUs are not binary compatible with other Cray PVP systems and therefore require recompilation of all codes prior to execution. Data cache is disabled by default for CRAY SV1 Revision A systems. See the `sv1cache`(7) man page for more information.

The next release of the CRAY SV1 CPU, referred to as *Revision B*, will provide the full potential of the hardware and software. Binary compatibility will be restored, cache will be enabled, and older Cray PVP binaries will execute correctly on the Revision B hardware.

## 1.4 Tested and Supported Upgrade Paths

If your site runs any version of the UNICOS 9.0 release or a later UNICOS release, and you are upgrading to a CRAY SV1 mixed CPU system, you must upgrade directly to the UNICOS 10.0.0.4 release. The exception is if you do not have a GigaRing based system and you wish to upgrade to a GigaRing based system. In this case, you must perform an initial installation.

Customers with CRAY SV1 systems running the beta release of UNICOS 10.0.0.4 should upgrade to the UNICOS 10.0.0.4 release described in this release letter.

Initial installations of GigaRing based systems are supported with this UNICOS release and beyond.

Initial installations of Model V based systems are not supported with this UNICOS release.

> **Note:** If your site needs to perform an initial installation on a Model V based system, contact your Silicon Graphics support representative for more information.

For more information, see the following platform-specific installation and upgrade publications:

- *UNICOS Installation Guide for CRAY J90, CRAY J90se, and CRAY SV1 Model V based Systems*
- *UNICOS Installation Guide for CRAY J90, CRAY J90se, and CRAY SV1 GigaRing based Systems*

Contact your Silicon Graphics representative for further information.

## 1.5 Related Publications

This release letter only highlights new features released with the 10.0.0.4 update of the UNICOS operating system. For information about differences among other versions of the UNICOS operating system, see the following publications:

- The *UNICOS Release Letter*, publication RL–5001 10.0.0.3, describes differences between the UNICOS 10.0 and UNICOS 10.0.0.3 operating systems.
- The *UNICOS Release Letter*, publication RL–5001 10.0.0.2, describes differences between the UNICOS 10.0 and UNICOS 10.0.0.2 operating systems.

- The *UNICOS Release Overview* 10.0, describes differences between the UNICOS 9.0 and UNICOS 10.0 operating systems.

# Software Enhancements [2]

This chapter describes the new features and enhancements included since the UNICOS 10.0.0.3 operating system release.

For additional information about upgrading to this release, see Chapter 3, page 9.

## 2.1 Operating System

The following sections describe enhancements to the operating system that are new since the UNICOS 10.0.0.3 release.

### 2.1.1 File Synchronization Capability for Multiple Mainframes Added

The `cfsync`(8) and `cfupdate`(8) commands have been added to facilitate the synchronizing of files on multiple mainframes within a cluster.

The `cfsync` command copies files into a `cpio`(1) archive and propagates the archive to the designated mainframes. `cfsync` then installs the files by executing `cfupdate` on the remote mainframes. `cfupdate` unpacks the `cpio` archive created by `cfsync`. All of the file attributes, including security attributes, are propagated to the remote mainframes.

See the `cfsync`(8) and `cfupdate`(8) man pages for more information.

### 2.1.2 SEGLDR Checking for Segmentation Conflicts Added

By traversing all the paths through the call tree, SEGLDR will now check for segmentation conflicts during link time. These conflicts were previously caught only at application run time.

### 2.1.3 SEGLDR Option to Align Common Blocks Added

A SEGLDR option has been added to align common blocks on specified boundaries. Aligning common blocks on cache-line boundaries can help performance. Aligning on other specified boundaries is needed by some (nonportable) coding algorithms.

See the `segldr`(1) man page for more information.

### 2.1.4 Code Caching Option to Run 8 Megaword Codes on CRAY SV1 Systems Added to SEGLDR

A new SEGLDR option, `ORDER=YMP.8MW`, has been added that will allow applications with more than 4 megawords (and less than 8 megawords) of code to run unsegmented on CRAY SV1 systems. The code is ordered under the control of user directives so that some code (preferably rarely executed code) resides in data space and then, when needed, a code cache manager linked into the application copies the code into code space for execution.

See the `segldr`(1) man page for more information.

### 2.1.5 Directive to Scan a Program Added to SEGLDR

A new directive, `scanner=ON|OFF`, has been added that scans a program targeted for a CRAY J90 or CRAY J90se system and detects and corrects potential problems. The default is `ON`.

See the `segldr`(1) man page for more information.

### 2.1.6 Argument Added to scanit.1 Command

A new argument, `jsecache,` has been added to the `scanit`(1) command. This argument to the `-e` *feature* option makes *output_file* safe for using cache on CRAY J90se systems.

See the `segldr`(1) man page for more information.

## 2.2 Tape Subsystems

The following section describes enhancements to tape subsystems since the UNICOS 10.0.0.3 release.

### 2.2.1 ESCON Device Limits Documented

The following ESCON information has been added to the description of the `TAPE_MAX_DEV` parameter in the “Tape Configuration” chapter of *Tape Subsystem Administration*:

The BMN–1 and ESN–1 I/O nodes have an internal limit of 80 devices per I/O node, regardless of the setting of this parameter.

## 2.3 Networking and Communications

There are no enhancements to networking and communications since the UNICOS 10.0.0.3 release.

## 2.4 System Installation

There are no enhancements to system installation since the UNICOS 10.0.0.3 release.

## 2.5 File Systems

There are no enhancements to file systems since the UNICOS 10.0.0.3 release.

## 2.6 Diagnostics

The following section describes enhancements to diagnostics that are new since the UNICOS 10.0.0.3 release.

### 2.6.1 New Options Added to xdms(8) Actions

The `-f format` option has been added to the `-a readft` action of the `xdms`(8) command. This option allows you to choose the format of the defect list output.

The `-spindle` option has been added to the `-a surf` action of the `xdms` command. This option allows you to indicate an individual spindle of an array to surf.

See the `xdms`(8) man page for more information.

## 2.7 Disk and Storage Devices

There are no enhancements to disk and storage devices since the UNICOS 10.0.0.3 release.

# Compatibilities and Differences [3]

This chapter describes compatibility issues and functionality changes involved in upgrading from the UNICOS 10.0 major release and UNICOS 10.0.0.3 update release to the UNICOS 10.0.0.4 update release. This chapter also includes early information about changes planned for future UNICOS releases.

## 3.1 Compatibility Statement

To meet user requirements for compatibility between releases of Silicon Graphics software, upward compatibility is provided in subsequent releases of the system and products in the following areas:

- UNICOS user commands
- Standard language syntax, semantics, and Silicon Graphics extensions
- Absolute binary code
- Relocatable binary code

This chapter describes any incompatible changes that were introduced in this release for the following reasons:

- Hardware changes
- Third-party software changes
- Improved software design or numerical techniques
- Bugfixes

If possible, both the old and new software are provided for one release. In other cases, compatibility bridging is provided through special compatibility software for the duration of one major release.

## 3.2 Operating System

The following section describes compatibility issues that affect the UNICOS operating system beginning with the 10.0.0.4 release.

### 3.2.1 Memory HIPPI Not Supported on Model V based Systems

The UNICOS 10.0.0.4 release does not support memory HIPPI on Model V based systems.

### 3.2.2 Data Cache Disabled on Revision A CPUs

Data cache is disabled by default on CRAY SV1 Revision A systems. (See Section 1.3.1, page 2 for more information on Revision A CPUs.)

**Warning**: Enabling cache is not supported on Revision A CPUs and doing so could cause undetected memory corruption and system hang conditions.

If your site needs to enable cache for benchmarking purposes, contact your Silicon Graphics support representative.

See the `sv1cache`(7) man page for more information.

### 3.2.3 CRAY SV1 Specific Software Required

CRAY SV1 Revision A CPUs require CRAY SV1 specific software packages (including asynchronous software products). (See Section 1.3.1, page 2 for more information on Revision A CPUs.)

Revison A modules are not binary compatible with other Cray PVP systems. Therefore, all applications **must** be recompiled before running on Revison A CPUs. Contact your Silicon Graphics support representative for more information.

### 3.2.4 CPU Diagnostics Supported Only on Mixed CPU Systems

The online CPU diagnostics are supported only on CRAY SV1 systems with mixed CPUs. These diagnostics will run only on CRAY J90 and CRAY J90se CPUs in a mixed system. They are not supported on CRAY SV1 Revision A CPUs.

The following online CPU confidence tests are not supported:

`olcfpt`(8)

`olcm`(8)

`olcrit`(8)

`olcsvc`(8)

`olibuf`(8)

`olsbt`(8)

The following online CPU maintenance tests are not supported:

`olyfpt`

`olyscl`

`olyvpt`

### 3.2.5 /etc/shutdown.sh Script Changed

Between UNICOS 9.0 and UNICOS 10.0, the `/etc/shutdown.sh` script was changed to address problems seen at some sites in which users needed a user exit prior to shutting down the network from the mainframe. The change adds support for an `/etc/shutdown.mid` script. This script could be useful to sites that have NQS jobs that are being taken care of on NFS disks.

The script will be called after all user processes have been stopped, but the networks are still up. For more information about this change and the options available for the shutdown process, refer to *General UNICOS Administration*.

### 3.2.6 /etc/cpu Command Options Added

Several new options have been added to the `/etc/cpu`(8) command to provide greater control over program behavior and cache usage on CRAY SV1 Revision A systems. Two of the new options are intended for general use:

`-i` Provides a list of all the CPUs in the system and their status. A line will be reported for each CPU in the system. The output has the following information:

- `cpu` Physical CPU number (0 - 31).
- `type` CPU type: sv1 - CRAY SV1, j90se - CRAY J90se, j90 - CRAY J90.

`state` Current CPU state: up - CPU is up for normal use, or down - the CPU has been software downed (using the `-d` option of the `cpu` command) or put in the special hold state by the kernel because of a cache overrun.

The remainder of the output line shows various internal kernel flags for the CPU. Some of these include:

`cache` The CPU has CRAY SV1 cache capability.

`defon` The default cache setting is in use (instruction cache enabled, data cache disabled).

`msp` The CPU is part of an MSP.

Example:

```
mfel5% cpu -i
cpu  type  state
 0   sv1  up    cache defon
 1   sv1  up    cache defon
 2   sv1  up    cache defon
 3   sv1  up    cache defon
 4   sv1  down  cache defon
 5   sv1  up    cache defon
 6   sv1  up    cache defon
 7   sv1  up    cache defon
```

`-x` *cputype* Selects a CPU type. Tells the kernel to run a command on a certain type of CPU in a mixed

CPU system. One or more CPU types may be specified. Valid *cputype* arguments are:

| | |
|---|---|
| `SV1` , `sv1` | CRAY SV1 CPU |
| `J90SE`, `J90se`, `j90se` | CRAY J90se CPU |
| `J90`, `j90` | CRAY J90 CPU |

The `-x` option may not be used with the old CPU mask specifier (`/etc/cpu a` command) nor may it be used with the `-n` option.

If the binary is not CRAY SV1 Revision A safe, using the `-x SV1` flag alone will not force execution in a CRAY SV1 CPU. If this is attempted, the execution of the unsafe binary will fail.

Examples:

`/etc/cpu -x sv1` *command*

Runs *command* on any CRAY SV1 CPU in the system, but not on any other type of CPU in the system.

`/etc/cpu -x sv1,j90se` *command*

Runs *command* on any CRAY SV1 or CRAY J90se CPU in the system.

Two of the new `cpu` command options are intended for administrator use only:

| | |
|---|---|
| `-e` *enforcement* | Allows administrator control over the CRAY SV1 Revision A safe enforcement feature. |

CRAY SV1 Revision A systems do not implement the exact same memory ordering guarantees as previous systems. Executables run on CRAY SV1 Revision A systems must have the code corrected to properly execute on the system. Programs that have the necessary corrections are designated as *Revision A safe* binaries. Programs that do not have these corrections are known as *unsafe* binaries.

All executables must contain either the CRAY SV1-memory-ordering-patch (moc) or the CRAY SV1-all-rw-patch (arw) to be Revision A safe. In addition, any executable which attempts to multi-task (`tfork`(2)) with data cache enabled must also contain the CRAY SV1-aligned-cmr-semts-patch (act) to be considered safe. The `file`(1) command can be used to determine which

patches an executable program contains. See the sv1cache(1) man page for more details on patches.

To prevent memory ordering problems, the UNICOS kernel will automatically check all programs run on the system for the necessary code correction. This check takes place during the execution (via the exec(2) system call) of an executable. If the program does not have the necessary patches (either moc or arw), the executable will fail.

The kernel will also check a multitasking program run with data cache enabled for the necessary code correction. This check takes place during the tfork system call when a code begins to multitask. If the program does not contain the necessary patch (act), the tfork will fail.

Situations may occur where a system administrator wishes to temporarily disable this kernel Revision A safe enforcement. This option provides a mechanism to do this.

**Warning**: CRAY SV1 Revision A systems are **not supported** when running with kernel Revision A safe enforcement turned off.

Also, if enforcement is off, a multitasking program without the act patch will be allowed to run. This can result in a hung CPU that will require a system reboot to clear.

Valid *enforcement* options are:

| | |
|---|---|
| def | Turns on CRAY SV1 Revision A safe enforcement (the default setting for all Revision A systems). |
| off | Turns off CRAY SV1 Revision A safe enforcement. Note that CRAY SV1 Revision A systems are not supported when running in this mode. |

The following example turns off CRAY SV1 Revision A safe enforcement:

```
/etc/cpu -e off
```

The following example turns on CRAY SV1 Revision A safe enforcement:

```
/etc/cpu -e def
```

The other new option intended for administrator use is as follows:

| | |
|---|---|
| -f | Forces execution of an unsafe binary even when CRAY SV1 Revision A safe enforcement is turned on. |

When specified with the `-x SV1` option, this option can be used by the superuser or a user with `PRIV_RESOURCE` to override the kernel CRAY SV1 Revision A safe enforcement and allow an unsafe binary to run.

**Warning:** SGI does not support unsafe binaries that are run using the `-f` option to override the CRAY SV1 Revision A safe enforcement.

The `-f` option cannot be used alone. It must be used with `-x sv1`.

The following example runs an unsafe command despite the CRAY SV1 Revision A safe enforcement being on:

`/etc/cpu -x SV1 -f` *command*

## 3.3 Tape Subsystems

There are no compatibility issues affecting tape subsystems from previous system releases for the UNICOS 10.0.0.4 operating system release.

## 3.4 Networking and Communications

There are no compatibility issues affecting network connectivity and communications from previous system releases for the UNICOS 10.0.0.4 operating system release.

## 3.5 Programming Environments

There are no compatibility issues affecting programming environments from previous system releases for the UNICOS 10.0.0.4 operating system release.

## 3.6 System Installation

This section describes a compatibility issue that affects UNICOS installation beginning with the 10.0.0.4 release.

Inital installations of Model V based systems are not supported with this UNICOS release.

**Note:** If your site needs to perform an initial installation on a Model V based system, contact your Silicon Graphics support representative for more information.

## 3.7 Packaging

There are no changes to media, licensing, or packaging from previous system releases for the UNICOS 10.0.0.4 operating system release.

# Documentation [4]

This chapter describes the documentation that supports the UNICOS 10.0.0.4 release.

## 4.1 Printed Documentation

The following is a list of publications that are packaged in printed form with the UNICOS 10.0.0.4 operating system release package.

- *UNICOS Release Letter*
- *Common Installation Tool (CIT) Reference Card*
- *UNICOS System Configuration Using ICMS*
- *UNICOS Notes/Errata for CRAY J90 Model V based Systems*
- *UNICOS Installation Guide for CRAY J90, CRAY J90se, and CRAY SV1 Model V based Systems*
- *UNICOS Notes/Errata for Cray GigaRing Based Systems*
- *UNICOS Installation Guide for CRAY J90, CRAY J90se, and CRAY SV1 GigaRing based Systems*

## 4.2 Online Documentation

The UNICOS 10.0.0.4 release package includes a DynaWeb documentation CD which includes documentation written for all platforms supported by this release. The following publications are included on this CD in PostScript and PDF format.

**Note:** For further information about the DynaWeb documentation CD, see *Online Software Publications Installation Guide* and *Online Software Publications Administrator's Guide*.

- *UNICOS Release Overview*
- *UNICOS Release Letter*
- *Common Installation Tool (CIT) Reference Card*

- *OLNET Online Diagnostic Network Communications Program Maintenance Manual for UNICOS*
- *UNICOS under UNICOS Administrator's Guide*
- *Asynchronous Transfer Mode (ATM) Administrator's Guide*
- *General UNICOS System Administration*
- *UNICOS Resource Administration*
- *UNICOS Networking Facilities Administrator's Guide*
- *UNICOS Configuration Administrator's Guide*
- *UNICOS Basic Administration Guide for CRAY J90, CRAY J90se, and CRAY SV1 Model V based Systems*
- *UNICOS Basic Administration Guide for CRAY J90, CRAY J90se and CRAY SV1 GigaRing based Systems*
- *Tape Subsystem User's Guide*
- *Tape Subsystem Administration*
- *UNICOS Multilevel Security (MLS) Feature User's Guide*
- *Segment Loader (SEGLDR) and ld Reference Manual*
- *TCP/IP Network User's Guide*
- *Remote Procedure Call (RPC) Reference Manual*
- *Cray Message System Programmer's Guide*
- *UNICOS X Window System Reference Manual*
- *Cray Assembly Language (CAL) for Cray PVP Systems Reference Manual*

## 4.3 Man Page Manuals

Man pages changed for releases following the UNICOS 10.0 release are available only online through the man(1) command. To view a man page, enter the following:

```
% man command
```

PostScript and PDF files of the following man page manuals supporting the UNICOS 10.0 release are included on the UNICOS 10.0.0.4 DynaWeb CD. You may also order them in printed form from the Silicon Graphics Minnesota Software Distribution Center.

- *UNICOS User Commands Reference Manual*
- *UNICOS System Calls Reference Manual*
- *UNICOS File Formats and Special Files Reference Manual*
- *UNICOS Administrator Commands Reference Manual*
- *UNICOS System Libraries Reference Manual*

## 4.4 Man Page Ready References

The following are UNICOS man page ready references that support the UNICOS 10.0 operating system release. These may be ordered from the Silicon Graphics Minnesota Software Distribution Center.

- *UNICOS User Commands Ready Reference*
- *UNICOS System Libraries Ready Reference*
- *UNICOS System Calls Ready Reference*
- *UNICOS Administrator Commands Ready Reference*

## 4.5 Documents for Separately Licensed Products

The following documents are for separately licensed products.

They following document is available in online format only:

*Shared File System (SFS) Administrator's Guide*

The following document is available in printed format only:

*Kerberos Enigma Installation Guide*

The following documents are included on the DynaWeb documentation CD in PostScript and PDF format:

- *Kerberos Administrator's Guide*

- *Kerberos User's Guide*

## 4.6 Online Information

The following online information sources are available to UNICOS 10.0.0.4 update release customers:

- The *User Publications Catalog* describes Cray product documentation available to customers. Customers who subscribe to the CRInform program can access this information on CRInform. For additional information about the CRInform program, see Section 5.3, page 24. Silicon Graphics personnel can access the catalog at:

  `http://wwwsdiv.cray.com/PUBLIC/pubs`

- The DynaWeb server enables you to view manuals on the World Wide Web. See your Silicon Graphics system administrator for the local URL of the DynaWeb server.

- Silicon Graphics maintains information on publicly available Cray product documents at the following URL:

  `http://www.cray.com/swpubs/`

  This web site contains information that allows you to browse documents online and send feedback to Silicon Graphics.

- Man pages, which describe a particular element of the UNICOS operating system or a compatible product. To see a detailed description of a particular command or routine, use the `man`(1) command.

- Online message system, which provides explanations of error messages. To see an explanation of a message, use the `explain`(1) command.

- UNICOS online glossary, which explains the terms used in a manual. To get a definition, use the `define`(1) command.

## 4.7 Ordering Additional UNICOS Publications

To order additional copies of the UNICOS publications that are available in printed form, call the Silicon Graphics Minnesota Software Distribution Center at +1 651 683 5907. Silicon Graphics employees may send e-mail to `orderdsk@sgi.com` (UNIX system users).

Customers outside of the United States and Canada should contact their local service organization for information on ordering documentation.

# Customer Services [5]

This chapter describes the following customer services that Silicon Graphics offers to support the UNICOS 10.0.0.4 release:

- Customer Education Services support
- Software problem reporting and resolution process
- CRInform program
- *Pipeline* and the *Pipeline Supercomputing Supplement*

## 5.1 Customer Education Services Support

Silicon Graphics Customer Education provides both lecture/lab and self-paced IRIX and UNICOS training. You can attend one of several Silicon Graphics IRIX/UNICOS education centers in the U.S. or Canada.

To view the online catalog, which contains a description and schedule of current courses held at the United States or Canadian Education Centers, visit the public Silicon Graphics Education World Wide Web site at the following URL:

`http://www.sgi.com/support/custeducation`

You can also call one of the following:

U.S. Customer Education Hotline: +1 800 800 4SGI, option 4

Canadian Customer Education Hotline: +1 800 466 4308

On-site and customized courses are also available in the U.S. and Canada. Contact either the U.S. or Canadian Customer Education Hotline for more information on pricing and scheduling of on-site or customized courses.

## 5.2 Software Problem Reporting and Resolution Process

If you experience problems with the UNICOS operating system, contact your Silicon Graphics service representative: your service representative will work with you to resolve the problem. If you choose to have full-time or part-time on-site support, your on-site support personnel are your primary contacts for service. If you have elected not to have on-site support, please call your Silicon Graphics Technical Assistance Center (SGI TAC) and report your problem to

them or submit a request for technical assistance (RTA) through the CRInform program.

For current information on the status of all SPRs, see the CRInform / Software Problem Report (SPR) database.

## 5.3 CRInform Program

The CRInform program is a World Wide Web-based information and problem-reporting service for Silicon Graphics customers with Cray products. Using the CRInform program, you can do the following:

- Report software problems
- Request technical assistance
- Communicate directly with other Silicon Graphics customers with Cray products
- Read about software problems similar to yours reported at other sites
- Learn about solutions to various problems
- Find out about classes
- Read about new products, and more

The CRInform program automatically logs as news items those events that are pertinent to your site, so you do not have to search through the system for new information. The logged events include changes in Software Problem Report (SPR) or request for technical assistance (RTA) activity, new orderable software, new issues of the *Pipeline Supercomputing Supplement*, new field notices (FNs), new software release documents, new software problem fix information, new marketing information, and new CRInform program information. You can also get automatic e-mail notification of any or all of the news items.

Version 5.0 of the CRInform program is available through the World Wide Web. You need access to the CRInform web server and a browser (such as Mosaic, Netscape, or Lynx), which allows you to view information or make service requests. You can use your own site's browser, or use either the Mosaic or Lynx browsers available on the CRInform system.

## 5.4 Pipeline and the Pipeline Supercomputing Supplement

Customers who have a support contract receive *Pipeline*, the Silicon Graphics customer newsletter. Customers who have a support contract for a Cray system also receive the *Pipeline Supercomputing Supplement*. *Pipeline* provides product and support information about Silicon Graphics workstations and servers, and the *Pipeline Supercomputing Supplement* provides product and support information about Cray supercomputers.

*Pipeline* and the *Pipeline Supercomputing Supplement* are both published six times a year (January/February, March/April, and so on).

*Pipeline* is available on the World Wide Web in Supportfolio Online (`http://support.sgi.com/`), and the *Pipeline Supercomputing Supplement* is available in CRInform (`http://crinform.cray.com/`).

# Release Package [6]

This chapter contains the following information about the UNICOS 10.0.0.4 release package:

- UNICOS 10.0.0.4 release hardware and software requirements
- Licensing information
- Optional software
- Release package contents
- Ordering UNICOS 10.0.0.4 release package

**Note:** The UNICOS 10.0.0.4 release supports CRAY SV1 systems only.

## 6.1 UNICOS 10.0.0.4 Release Hardware and Software Requirements

The following sections cover the hardware platforms that support the UNICOS 10.0.0.4 release, and the software required with this release.

### 6.1.1 Silicon Graphics Systems Supported

The UNICOS 10.0.0.4 release supports the following Silicon Graphics GigaRing platforms:

CRAY SV1 series

CRAY SV1 series with mixed CPUs (CRAY SV1, CRAY J90, and CRAY J90se)

The UNICOS 10.0.0.4 release also supports the following Silicon Graphics systems with Model V IOS:

CRAY SV1 series

CRAY SV1 series with mixed CPUs (CRAY SV1, CRAY J90, and CRAY J90se)

The UNICOS 10.0.0.4 release does not support memory HIPPI on Model V based systems.

The UNICOS 10.0.0.4 release does not support cross-targeting of CRAY J90 or CRAY J90se software. Only CRAY SV1 targeting is supported. A CRAY SV1 generated binary will run on a CRAY J90 or CRAY J90se system, but with possible performance degradation.

#### 6.1.1.1 Revision A CPUs

The UNICOS 10.0.0.4 release supports the first revision of the CRAY SV1 CPU, which is referred to as *Revision A*. Revision A CPUs are the first introduction to the following CRAY SV1 innovations:

- 300 MHz clock rate (1.2 Gflops CPU)
- Vector caches
- Dual vector pipes

Special software is required to support Revision A CPUs as well as specific hardware configurations. Revision A CPUs are not binary compatible with other Cray PVP systems and therefore require recompilation of all codes prior to execution. Data cache is disabled by default on CRAY SV1 Revision A systems. See the `sv1cache`(7) man page for more information.

The next release of the CRAY SV1 CPU, referred to as *Revision B,* will provide the full potential of the hardware and software. Binary compatibility will be restored, cache will be enabled, and older Cray PVP binaries will execute correctly on the Revision B hardware.

### 6.1.2 Tested and Supported Upgrade Paths

If your site runs any version of the UNICOS 9.0 release or a later UNICOS release, and you are upgrading to a CRAY SV1 mixed CPU system, you must upgrade directly to the UNICOS 10.0.0.4 release. The exception is if you do not have a GigaRing based system and you wish to upgrade to a GigaRing based system. In this case, you must perform an initial installation.

Customers with CRAY SV1 systems running the beta release of UNICOS 10.0.0.4 should upgrade to the UNICOS 10.0.0.4 release described in this release letter.

Initial installations of GigaRing based systems are supported with this UNICOS release and beyond.

Initial installations of Model V based systems are not supported with this UNICOS release.

> **Note:** If your site needs to perform an initial installation on a Model V based system, contact your Silicon Graphics support representative for more information.

For more information, see the following platform-specific installation and upgrade publications:

- *UNICOS Installation Guide for CRAY J90, CRAY J90se, and CRAY SV1 Model V based Systems*
- *UNICOS Installation Guide for CRAY J90, CRAY J90se, and CRAY SV1 GigaRing based Systems*

Contact your Silicon Graphics representative for further information.

### 6.1.3 SWS-ION Software

UNICOS 10.0.0.4 supports SWS-ION version 4.0.

For information about ordering the SWS-ION release, see the *SWS-ION Release Overview*.

### 6.1.4 Fortran Run-time Libraries

Sites that install the UNICOS 10.0.0.4 release must upgrade to the Programming Environment 3.2 or later release to obtain Fortran run-time libraries. This is because these libraries were no longer released with the UNICOS system beginning with UNICOS 9.0.

## 6.2 Asynchronous Software Products Supported with This Release

The following sections list the software products most commonly used in conjunction with the UNICOS operating system. The product release level required with UNICOS 10.0.0.4, if any, is specified. For information about other products, contact your Silicon Graphics representative.

### 6.2.1 Programming Environments Supported

The UNICOS 10.0.0.4 release supports the following Silicon Graphics programming environments, which are released asynchronously or otherwise separately from the UNICOS 10.0.0.4 release.

- CF90 Programming Environment 3.2 or later for Cray PVP and MPP systems. See the *Programming Environment Releases Overview* for additional information.
- Cray C++ Programming Environment 3.2 or later for Cray PVP and MPP systems. This package includes Cray Standard C. See the *Programming Environment Releases Overview* for additional information.

- CAL 9.1 (Cray Assembly Language for Cray PVP Systems). See the *Cray Assembly Language (CAL) for Cray PVP Systems Reference Manual* for additional information.

### 6.2.2 Distributed Computing and Networking Software Supported

The UNICOS 10.0.0.4 release supports the following Silicon Graphics distributed computing and networking software products, which are released asynchronously or otherwise separately from the UNICOS 10.0.0.4 release.

- Distributed Computing Environment (DCE) 1.1.2 or later

  Customers wishing to use the Cray Distributed Computing Environment (DCE) Client Services, must purchase a DCE Client Services license. DCE 1.1.2 or later is required with UNICOS 10.0.0.4. For more information about DCE licensing or to purchase a DCE license, contact your Silicon Graphics representative.

  For information describing this product, see the *Cray DCE Client Services/Cray DCE DFS Server Release Overview* or contact your Silicon Graphics representative.

- Distributed File System (DFS) 1.1.2 or later

  To use the Cray DCE Distributed File System (DFS), sites must purchase a DFS Server license, as well as a DCE Client Services prerequisite license. For more information about DFS licensing or to purchase a DFS license, contact your Silicon Graphics representative.

  For information describing this product, see the *Cray DCE Client Services/Cray DCE DFS Server Release Overview* or contact your Silicon Graphics representative.

- Network Queuing Environment (NQE) 3.3.0.11 or later

  The Cray Network Queuing Environment (NQE) is a set of clients and servers that allows batch requests to be executed across a load-balanced network of hosts. UNICOS 10.0.0.4 supports NQE version 3.3.0.11 or later.

  For more information about NQE or to purchase an NQE license, contact your Silicon Graphics representative or see the *NQE Release Overview*.

- SUPERLINK/VMS 1.4

SUPERLINK for DEC VAX/VMS Systems provides a link between DEC VAX/VMS systems and the UNICOS operating system on Cray PVP systems. UNICOS 10.0.0.4 supports the 1.4 version of SUPERLINK/VMS.

**Note:** You must purchase a SUPERLINK/VMS license to use this product.

For information describing this product, see the *SUPERLINK for DEC VAX OpenVMS and Alpha AXP Systems 1.4 Release Overview*.

**Note:** This product has been placed in maintenance mode. Maintenance mode means that this product has been stabilized and there will be no future development of this product. Silicon Graphics will no longer be issuing any feature updates or new releases to this product, and publications will not be updated.

Silicon Graphics will, however, continue to support this product for those customers who have current service contracts. Those customers will continue to receive telephone technical assistance, and bugfix packages will be provided on an "as needed" basis. Critical and urgent SPRs are candidates to be fixed in accordance with the SPR Response Guidelines.

- Cray Visualization Toolkit (CVT) 3.1

  The Cray Visualization Toolkit is a collection of tools that allows users to create visual interfaces for Silicon Graphics system applications. UNICOS 10.0.0.4 supports the 3.1 version of CVT.

  **Note:** You must purchase a CVT license to use this product.

- Remote Queuing System (RQS/VMS) 2.0

  The Remote Queuing System (RQS) for DEC VAX/VMS Systems is used for remote job submission and control to Cray PVP systems from a DEC VAX/VMS running VMS 5.4 or later. UNICOS 10.0.0.4 supports the 2.0 release of RQS/VMS.

  **Note:** You must purchase an RQS/VMS license to use this product.

  For information describing this product, see the *RQS for DEC VAX/VMS Systems Release Overview*

**Note:** This product has been placed in maintenance mode. Maintenance mode means that this product has been stabilized and there will be no future development of this product. Silicon Graphics will no longer be issuing any feature updates or new releases to this product, and publications will not be updated.

Silicon Graphics will, however, continue to support this product for those customers who have current service contracts. Those customers will continue to receive telephone technical assistance, and bugfix packages will be provided on an "as needed" basis. Critical and urgent SPRs are candidates to be fixed in accordance with the SPR Response Guidelines.

- Front End Servicing for IBM/MVS Systems (FES MVS) 2.0

  The Front End Servicing for IBM/MVS Systems (FES MVS) integrates UNICOS online tape management on CRAY SV1 systems running UNICOS with tape management systems for other computer systems running the IBM/MVS operating system. UNICOS 10.0.0.4 supports the 2.0 version of this product.

  **Note:** You must purchase an FES MVS license to use this product.

  For information on FES MVS see the *FES MVS Installation and Administration Guide*.

  **Note:** This product has been placed in maintenance mode. Maintenance mode means that this product has been stabilized and there will be no future development of this product. Silicon Graphics will no longer be issuing any feature updates or new releases to this product, and publications will not be updated.

  Silicon Graphics will, however, continue to support this product for those customers who have current service contracts. Those customers will continue to receive telephone technical assistance, and bugfix packages will be provided on an "as needed" basis. Critical and urgent SPRs are candidates to be fixed in accordance with the SPR Response Guidelines.

## 6.3 Storage Management Software Supported

The UNICOS 10.0.0.4 release supports the following Silicon Graphics storage management software products. These are released asynchronously or otherwise separately from the UNICOS 10.0.0.4 release.

- Data Migration Facility

The Cray Data Migration Facility (DMF) ensures the availability of file system space by moving selected files from online disk to an offline storage medium. DMF 2.5.5.1 is the level of DMF required with UNICOS 10.0.0.4.

**Note:** You must purchase a DMF license to use this product.

- HIPPI disk support software

  Silicon Graphics will supply HIPPI disk software free of charge to customers purchasing disks from Silicon Graphics. If customers choose to purchase their disks from another vendor, HIPPI disk support software must be licensed and purchased from Silicon Graphics.

- Cray REELibrarian (CRL)

  CRL is a client/server volume management system that controls a centrally stored library of tapes (or volumes) and allows requests for tape mounts. UNICOS 10.0.0.4 supports the 2.0.9 release of CRL.

  **Note:** You must purchase a CRL Client or CRL Server license to use this product.

For additional software availability, contact your Silicon Graphics representative.

## 6.4 Licensing Information

The UNICOS operating system is licensed under a software contract by Silicon Graphics to its customers. The UNICOS 10.0.0.4 release is available in binary format only. CRAY SV1 customers may, however, obtain an optional SV1 UNICOS Source Materials package, providing they obtain a separate SV1 UNICOS Source Materials license.

**Note:** The UNICOS 10.0.0.4 release package requires a UNICOS System Software license; customers with a UNICOS System Software license do not need additional Silicon Graphics licenses to receive the standard UNICOS 10.0.0.4 release package (see Section 6.4.2, page 36 for information on UNIX license requirements). Software for programming environments (compilers) and the Data Migration Facility (DMF) is licensed separately from the UNICOS System Software license. Other functionality is also offered as separately licensed products.

Customers outside the United States and Canada must sign a Letter of Assurance before software can be shipped. Address all questions regarding which customers have signed a Letter of Assurance, or which software requires this letter to Alan Benfell, at the following address:

Alan Benfell
International Administration
Silicon Graphics, Inc.
655F Lone Oak Drive
Eagan, MN 55121
Telephone: +1 651 683 7460
Fax: +1 651 683 7509
E-mail: benfa@sgi.com

### 6.4.1 Products That Require Flexible License Manager Keys

The UNICOS 10.0.0.4 release includes the Flexible License Manager (FLEXlm), which controls the use of certain products in the UNICOS operating system. In UNICOS 10.0.0.4, the following products are licensed through FLEXlm:

- ONC+
- UNICOS shared file system
- CRSTK/STKRED
- CRIBM/IBM 3495 (implementation of IBM 3495 Tape Library Dataserver support is deferred)
- CREMS/DTDL and CREMS/ER90
- BDS (Bulk Data Services) Client
- BDS (Bulk Data Services) Server
- NQE (Network Queuing Environment)

Whether products are packaged with the UNICOS operating system or separately packaged, the license keys are generated by the Silicon Graphics order desk during the product order cycle. After the order desk has received notice of the order, it issues the contracted license keys. The license keys and installation instructions are sent by e-mail.

For a complete list of products that operate with UNICOS software, contact your Silicon Graphics representative.

If a licensed product has been installed and a problem arises that is suspected to be related to the license key, it is possible to get an emergency key from the Customer Service Call Center in the United States or from the service organization in other countries.

#### 6.4.1.1 ONC+

To use ONC+ technology, sites must purchase an ONC+ license. For more information about ONC+ licensing or to purchase an ONC+ license, contact your Silicon Graphics representative.

For information describing this product, contact your Silicon Graphics representative.

#### 6.4.1.2 UNICOS Shared File Systems

To use UNICOS shared file systems (SFS), sites must purchase an SFS license. For more information about SFS licensing or to purchase an SFS license, contact your Silicon Graphics representative.

For information describing this product, contact your Silicon Graphics representative.

#### 6.4.1.3 CRSTK/STKRED

To use StorageTek RedWood drive autoloader cartridge system support, sites must purchase a CRSTK/STKRED license. For more information about CRSTK/STKRED licensing or to purchase a CRSTK/STKRED license, contact your Silicon Graphics representative.

For additional information, contact your Silicon Graphics representative.

#### 6.4.1.4 CRIBM/IBM 3495

To use IBM 3495 support software, sites must purchase a CRIBM/IBM 3495 license. For more information about CRIBM/IBM 3495 licensing or to purchase a CRIBM/IBM 3495 license, contact your Silicon Graphics representative.

Implementation of IBM 3495 Tape Library Dataserver support is deferred.

#### 6.4.1.5 CREMS/DTDL and CREMS/ER90

To use the EMASS robotic and ER90 device products, sites must purchase a CREMS/DTDL license. For more information about CREMS/DTDL licensing or to purchase a license, contact your Silicon Graphics representative.

#### 6.4.1.6 BDS (Bulk Data Services) Server

The BDS Server data transfer product is available for Cray PVP systems for UNICOS 10.0.0.4. BDS Server is controlled by FLEXlm and requires a separate license for access.

For more information on this product, see the `bds`(8) man page or contact your Silicon Graphics representative.

#### 6.4.1.7 BDS (Bulk Data Services) Client

The BDS Client data transfer product is available for Cray PVP systems for UNICOS 10.0.0.4. BDS Client is controlled by FLEXlm and requires a separate license for access.

For more information on this product, see the `bds`(8) man page or contact your Silicon Graphics representative.

#### 6.4.1.8 NQE (Network Queuing Environment)

UNICOS 10.0.0.4 supports the 3.3.0.11 release of NQE. If you are using the NQE feature, you are required to have a FLEXlm license key for NQE 3.3.0.11 only if you did not previously use the NQE 3.1 or NQE 3.2 feature. If you are using only the NQS and FTA subset of NQE, it is not necessary to obtain a FLEXlm license key unless you wish to use the full NQE product.

Rights to use the NQS and FTA subset are covered under the operating system contractual license. Customers wishing to use the NQE feature must purchase an NQE contractual license, which is separate from the operating system license.

For information describing this product, see the *NQE Release Overview* or contact your Silicon Graphics representative.

### 6.4.2 UNIX System V Licenses for CRAY SV1 Systems

CRAY SV1 customers who have a standard binary release of UNICOS 10.0.0.4 must have a UNIX System V, Release 4.0 *binary* license, available only through Silicon Graphics.

CRAY SV1 customers with the SV1 Source Materials Option need an additional UNIX System V, Release 4.0 *source* license, available through Silicon Graphics, or through The Santa Cruz Operation, Inc. (SCO).

For information on who to contact if you have licensing questions, or if your site has not signed all appropriate Silicon Graphics software license agreements, see Section 6.4.3 or Section 6.4.4.

For information about available optional software products that are included with your UNICOS license but which you must order to receive with your UNICOS 10.0.0.4 release package, see Section 6.5, page 40.

For more information about the FLEXlm license manager, or for information about products that are included in the UNICOS 10.0.0.4 release software but which require a FLEXlm license key to access the product, see Section 6.4.1, page 34.

### 6.4.3 Licensing Contacts for Customers in the U.S.

For more information on the licensing and pricing of the UNICOS 10.0.0.4 release, customers in the United States should contact their account representative or one of the following contract negotiators:

**Americas Government Region**
Lee Weimer
Silicon Graphics, Inc.
4041 Powder Mill Road
Suite 600
Calverton, MD 20705
Telephone: +1 301 595 2644
Fax: +1 301 595 2647
E-mail: `weimerld@clubfed.sgi.com`

**Americas West Region**
Tim Frush
Silicon Graphics, Inc.
3000 Executive Parkway
Suite 410
San Ramon, CA 94583
Telephone: +1 510 824 1762
Fax: +1 510 277 1982
E-mail: `frusht@sanramon.sgi.com`

**Americas East Region**
Kent Randolph
Silicon Graphics, Inc.
4041 Powder Mill Road
Suite 600

Calverton, MD 20705
Telephone: +1 301 595 2631
Fax: +1 301 595 2647
E-mail: krandolp@clubfed.sgi.com

Raquel Jackson
Silicon Graphics, Inc
4041 Powder Mill Road
Suite 600
Calverton, MD 20705
Telephone: +1 301 595 2685
Fax: +1 301 595 2647
E-mail: jackrc@clubfed.sgi.com

### 6.4.4 Licensing Contacts for Customers outside the U.S.

Customers outside the U.S. may obtain further licensing and export information by contacting their account representative or the individuals listed in the following sections.

#### 6.4.4.1 Silicon Graphics European Regional Contract Negotiators

Customers in Europe can direct licensing inquiries to the following Regional Contract Negotiators/Specialists:

**Europe North Sales Region (including UK / Ireland / Russia / Poland / Denmark / Finland / Norway / Sweden / Netherlands)**
Nick Jacobs
Silicon Graphics Limited
1530 Arlington Business Park
Theale
Reading
Berkshire, RG7 4SB, England
Telephone: +44 118 925 70 41
Fax: +44 118 925 77 16
E-mail: niknik@reading.sgi.com

**Rest of Europe and South Africa**
Simon Locke
Silicon Graphics Limited
1530 Arlington Business Park
Theale
Reading

Berkshire, RG7 4SB, England
Telephone: +44 118 925 70 49
Fax: +44 118 925 79 46
E-mail: srl@sgi.com

**Europe Central (including Germany and Austria)**
Thomas Wegener
Silicon Graphics GmbH
Am Hochacker 3
85630 Grasbrunn–Neukeferloh
Germany
Telephone: +089 46108 321
Fax: +089 46108 322
E-mail: thomasw@munich.sgi.com

**Europe South Sales Region (including France)**
Cecile Goachet / Patricia Guillerm-Brillet
Silicon Graphics France
21, rue Albert Calmette
78351 Jouy en Josas
France
Telephone: +33 01 34 88 82 51
Fax: +33 01 34 65 96 19
E-mail: cecile@sgi.com and pguiller@paris.sgi.com

#### 6.4.4.2 Silicon Graphics Japan Contracts / Legal

Customers in Japan can direct licensing inquiries to Yuko Hizume at the following address:

Yuko Hizume
Nihon Silicon Graphics Cray K.K.
P.O. Box 5011 Yebisu Garden Place Tower
4–20–3, Ebisu
Shibuya-ku, Tokyo 150
Japan
Telephone: +81 3 54 88 18 19
Fax: +81 3 54 20 70 20
E-mail: hizume@nsg.sgi.com

#### 6.4.4.3 Other Customers

International customers outside Europe and Japan should direct licensing inquiries to their respective country attorneys.

## 6.5 Optional Software

You can order the following software products on your UNICOS 10.0.0.4 software order form as optional software when you order your UNICOS 10.0.0.4 release package.

> **Note:** These products are included with your UNICOS license, but they are not automatically shipped as part of the UNICOS 10.0.0.4 release package. If you want any of the following products, you must order them on the UNICOS 10.0.0.4 order form.

The products described are as follows:

- Kerberos Enigma software
- DWB

For a complete list of Silicon Graphics products that operate with the UNICOS 10.0.0.4 operating system, contact your Silicon Graphics representative.

### 6.5.1 Kerberos Enigma Software

The Kerberos Enigma software contains software for CRYPT and Kerberos. The Kerberos Enigma tape replaces the CRYPT and RPC Enigma tapes. The Kerberos Enigma software is available in both binary and source code, depending on the license terms with each customer and on-site location.

#### 6.5.1.1 Kerberos Enigma Software Shipped within the U.S. and Canada

For shipments of Kerberos Enigma software within the United States and Canada, order it as optional software on the UNICOS 10.0.0.4 software order form.

Customers in the United States and Canada receive tapes that include versions of the Kerberos programs that support data stream encryption. The software is available in either source or binary form, depending on the license terms with each customer.

#### 6.5.1.2 Kerberos Enigma Software Shipped outside of the U.S. or Canada

Customers outside the United States and Canada receive binary software regardless of whether their site has a source or binary UNICOS license. With this software, customers outside the United States and Canada can run

Kerberos without support for data stream encryption. To order this software, use the UNICOS 10.0.0.4 software order form.

An export license from the U.S. Department of Commerce is required for software shipments outside the United States or Canada. This export license is required in addition to the Department of Commerce export license necessary for Silicon Graphics hardware. If a U.S. Department of Commerce export license is **not** in place for the customer serial number for which the Kerberos Enigma software is desired, a U.S. Department of Commerce Application Request for Kerberos Enigma is required before an export license can be processed. If an export license already exists, the statement is **not** required. The Kerberos Enigma binary software order form contains a U.S. Department of Commerce Application Request for Kerberos Enigma.

> **Note:** Jurisdiction for exporting Kerberos has changed from the U.S. Department of State to the U.S. Department of Commerce. Customers who currently hold export licenses with the Department of State do not need to reapply for new licenses with the Department of Commerce. Current Department of State licenses are still valid through the expiration date listed on the license, or until the maximum number of copies of Kerberos allowed under the license are shipped.

You can obtain a U.S. Department of Commerce export license for UNICOS from Alan Benfell at the following address:

Alan Benfell
International Administration
Silicon Graphics, Inc.
655F Lone Oak Drive
Eagan, MN 55121
Telephone: +1 651 683 7460
Fax: +1 651 683 7509
E-mail: `benfa@sgi.com`

### 6.5.2 DWB

DWB is based on Documenter's Workbench from Novell, Inc. Only binary software is provided.

DWB is packaged separately from the UNICOS operating system. To receive DWB, order it using the "Additional Software" section of the UNICOS 10.0.0.4 software order form.

**Note:** A separate license is not required for DWB. The UNICOS System Software license includes a binary license for DWB.

## 6.6 Release Package Contents

The UNICOS 10.0.0.4 release package includes the following:

- Software media that contains the UNICOS 10.0.0.4 release.
- Online man page files. To display these files, use the `man`(1) command.
- A CD-ROM that contains the DynaWeb server and the UNICOS publications.
- A set of printed publications.

## 6.7 Ordering the UNICOS 10.0.0.4 Release Package

UNICOS is distributed by order only to sites that have signed a Silicon Graphics software license agreement for the UNICOS product. The most current revision of the release package is supplied.

Please make sure your site has signed a Silicon Graphics software license agreement before you order the UNICOS 10.0.0.4 release package (see Section 6.4, page 33, for details).

You can order the UNICOS 10.0.0.4 release package using one of the following methods:

- Customers who subscribe to the CRInform program can order software release packages electronically by using the `Order Cray Software` option.
- Customers can contact the order desk at the Silicon Graphics Minnesota Software Distribution Center by telephone (+1 651 683 5907 or +1 800 284 2729 extension 35907) or e-mail (`orderdsk@sgi.com`).
- Customers outside of the United States and Canada should contact their local service organization for ordering and documentation information.

Software will be shipped by ground service or 5-day international service unless otherwise requested.

Sites outside the United States may be required to provide a customer-signed Letter of Assurance before this software can be shipped. Address questions about which customers must sign Letters of Assurance or which software requires such a letter to Alan Benfell at the following address:

Alan Benfell
International Administration
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E-mail: benfa@sgi.com

### 6.7.1 Further Information

If you have questions, or if your site has not signed a Silicon Graphics software license agreement, contact your regional contract negotiator or your account representative, or contact Jenny Gross at the following address:

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