

Compatibilities and Differences [3]

This chapter describes compatibility issues and functionality changes involved in upgrading from the UNICOS 9.0 major release to the UNICOS 9.3 restricted release. This chapter also includes early information about changes planned for future UNICOS releases.

Because this release letter documents all features and compatibility issues since the UNICOS 9.0 base release, each compatibility issue also includes the UNICOS release in which the compatibility issue was introduced. This information is provided to help our customers focus on the compatibility issues that will specifically affect their upgrade.

3.1 Compatibility statement

To meet user requirements for compatibility between releases of Cray Research 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 Cray Research 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 sections describe compatibility issues affecting the UNICOS operating system.

3.2.1 Continued support for GigaRing nodes

Users affected: system administrators and site analysts

Hardware supported: Cray T90 systems with GigaRing-based I/O, Cray J90 systems with GigaRing-based I/O

The UNICOS 9.3 release supports the sending and receiving of message and Memory Mapped Register (MMR) packets to GigaRing I/O nodes. The `/dev/fmsg` directory contains the character special nodes that provide a general purpose interface from UNICOS to the GigaRing message complex. These nodes are created with the `mkfm(8)` command. For information on the files in `/dev/fmsg`, see the `fmsg(8)` man page.

The `fping(8)` command sends an echo packet to a GigaRing node. The `mmr(8)` command reads or writes a GigaRing MMR register. These commands use the files in the `/dev/fmsg` directory.

For more information, see the `fmsg(4)`, `fping(8)`, `mkfm(8)`, and `mmr(8)` man pages.

3.2.2 Ability to disable core files reinstated

Users affected: all

Hardware supported: all Cray Research systems

The `limit` command has been changed to allow you to disable the creation of core files. This feature was removed from UNICOS 8.0, but has been reinstated for UNICOS 9.3.

This feature adds an extra option to the `limit(1)` command and `limit(2)` system call. These options allow you to disable core file creation.

The `limit(1)` command syntax for this feature is as follows:

```
limit -d nocore
```

The `limit(2)` system call syntax has been enhanced to accept a new limit of `NO_CORE_FILES`. For example:

```
limit (C_PROC, 0, LCORE, NO_CORE_FILES)
```

For more information, see the `limit(1)` and `limit(2)` man pages.

3.2.3 Support removed for `libwatch.a` library

Users affected: all

Hardware supported: all Cray Research systems

The `libwatch.a` library and the `watchword(7)` man page are no longer supported. They have been removed with the CDBX debugger and CF77 compiler.

See Section 3.4.1, page 18 for more information.

3.3 Networking and communications

The following sections describe compatibility issues affecting network connectivity and communications.

3.3.1 X11 removed from the UNICOS source tree

Users affected: all

Hardware supported: all Cray Research systems

X11 release 6 has been removed from the UNICOS source tree in UNICOS 9.3. Now, binaries will first reside in `~unicos/93/adm/pend/X11R6`, and updates will follow the normal promote process.

The final destination for X11R6 will be `~unicos/93/net/X11R6`.

The X Consortium discontinued support of a number of programs as of X11, release 6. As a result, Cray Research discontinued support of the affected features in UNICOS 9.2. (See *UNICOS Release Letter*, publication RL-5001 9.2, for more information.)

3.3.2 Pre-UNICOS 9.2 `sendmail` queue files incompatible with UNICOS 9.2 and later

Note: This item applies only to sites upgrading to UNICOS 9.3 from a release prior to UNICOS 9.2.

Queue files generated by `sendmail` in UNICOS 9.2 are incompatible with those generated in previous releases of UNICOS. As a result, pre-UNICOS 9.2 `sendmail` queue files can be delivered by the new `sendmail`. Due to differences in options between the two versions, however, queue files generated by the new `sendmail` can not likewise be delivered by the older version.

For further information, see appendix C of the *UNICOS Networking Facilities Administrator's Guide*, publication SG-2304.

3.4 Programming environments

The following sections describe compatibility issues affecting programming environments.

3.4.1 CF77 `gen` compiler removed

Users affected: all

Hardware supported: all Cray Research systems

The `cf77 gen` compiler is no longer available with UNICOS operating system releases. This includes the removal of the `CONFIG_CFT77`, `CONFIG_FPP`, and `CONFIG_GPP` programming environment parameters from the `config.mh` file.

3.4.1.1 Fortran rules for `make` and `nmake` changed

As a result of the removal of the CF77 `gen` compiler, the fortran rules for `make` and `nmake` have been changed to use `f90` as the default.

Note: `nmake` must be re-created and promoted before the new Fortran rules can take effect.

For more information, see the `make(1)` and `nmake(1)` man pages.

3.5 Install tool

The following section describes changes to the install tool for UNICOS 9.3.

3.5.1 Common Installation Tool (CIT) supported on new platforms for UNICOS 9.3

Users affected: system administrators

Hardware supported: CRAY T90 Model-E, CRAY T90 GigaRing, and CRAY J90se GigaRing based systems

UNICOS 9.3 is the first release of UNICOS to support the Common Installation Tool (CIT) on the above-listed systems.

For more information, see *Common Installation Tool (CIT) Reference Card*, publication SQ-2218.

3.5.2 Build menu support for J90 source packages

Users affected: system administrators

Hardware supported: CRAY J90 systems

The install tool build menu has been modified in UNICOS 9.3 to allow full system builds for CRAY J90 systems from within the install tool. A new selection, `Release Type`, has been added to the main build menu for this purpose. This allows you to specify which system components have been installed in `/usr/src`, and to control which components will be built.

If you select `Executable`, only the `uts` component of the system will be built. Otherwise, all standard components of `/usr/src` are built whether or not the system is a CRAY J90.

On CRAY J90 systems, the default release type is `executable`. The default on all other systems is `source`.

3.6 Packaging

The following section describes changes in the media, licensing, or packaging.

3.6.1 Changes extended to PVP system in UNICOS 10.0

The following changes in packaging were applied to CRAY T90 systems in UNICOS 9.2. They will be applied to Cray PVP systems for the UNICOS 10.0 release.

The packaging changes can be broken down into three categories:

- Full replacement of `root` and `usr` files. Previously, these were installed by a build.
- Full replacement of source file relocatables. Previously, only partial replacement of source file relocatables was available.
- Full replacement of source code. Previously, only source code modifications (mods) were available.

Full replacement of `root` and `usr` impacts customers as follows:

- There is no need for a complete system build. This implies less margin for error. (The kernel, optional products, and local changes still require a build.)
- The files that are used for production can be verified, or assured to match what was shipped.
- Installation time and complexity is greatly reduced.
- Full replacement allows for the removal of obsolete files.

Full replacement of source code has the following customer impacts:

- A customer does not need to rely upon code to determine what mods were introduced in order to generate the modified source. Therefore, any errors associated with such mods are eliminated. (This is a packaging issue.)
- A customer does not require code to apply mods on site. Thus, such code related errors are eliminated.
- Local mods **must** be removed before the next release is loaded, and reapplied afterward. (This was required in the past, but not enforced. Now, it will be enforced.)

Please refer any comments, questions, or suggestions to ice@cray.com.