UnixWare 7.1.3 Update Pack 4 New Features and Notes

May 2004

This document provides installation instructions, new feature descriptions, and release notes for Unixware 7.1.3 Update Pack 4.

Update Pack 4 is the final Update Pack for UnixWare 7.1.3 and is a *non-removable* upgrade to UnixWare 7.1.4. In order to receive Update Packs for UnixWare 7.1.4, you will need a new SCO Update License for this new release. To obtain a new license, please contact your software supplier.

Complete UnixWare documentation is available on the Documentation and Support Web Sites. Your UnixWare system serves the online documentation set, including manual pages, on **http://*hostname*:8458** (where *hostname* is the network name or IP address of the UnixWare system, or **localhost** when using a browser on the system running DocView).

Contents

Installation Notes

About Maintenance Packs and Update Packs

There are two support "tracks" for UnixWare:

Maintenance Packs

A Maintenance Pack (MP) is a collection of fixes for reported problems distributed as a single installable package. Maintenance Packs are made available periodically when such fixes are available, and can be downloaded and installed free of charge. Maintenance Packs are cumulative, so only the latest one needs to be installed. If installed individually, they must be installed in the order they are issued (i.e., MP1, MP2, etc.). A Maintenance Pack typically is accompanied by a single text file with installation instructions and release notes.

It is important to note that a Maintenance Pack cannot be installed onto a system that already has an Update Pack installed. This restriction ensures the integrity of the software installed on your system.

Update Packs

An Update Pack (UP) is a collection of features, enhancements, and problem fixes distributed as a single package or set, plus additional packages, in a CD ISO image. Update Packs are made available quarterly (for a licensing fee) to registered customers of the SCO Update Service. Update Packs are cumulative; you only need to install the current Update Pack to pick up all the features, enhancements, and fixes issued in all previously issued Update Packs and Maintenance Packs. If installed individually, they must be installed in the order they are issued (i.e., UP1, UP2, etc.).

The current UP can be installed on top of any *previously issued* Maintenance Pack (MP). Each Update Pack comes with full documentation, including installation and release notes (like the document you are reading now), that explain the target system requirements. No MP can be installed on a system that has one or more UPs already installed.

Switching Tracks

If you already have one or more Maintenance Packs installed, you can switch over to the UP track by installing the Update Pack that includes all the Maintenance Packs you have currently installed. For example, if you have Maintenance Pack 2 installed, you can switch over to the UP track by installing Update Pack 2 or later.

If you are an Update Pack customer and want to switch over to the MP track, you must first remove all Update Packs installed on your system (in the reverse order they were installed), and then install the latest Maintenance Pack. For example, if you loaded UP1 and then UP2 onto your system, and want to switch over to the MP track, remove UP2 and then UP1 from the system. Once all the Update Packs are removed, install the currently available Maintenance Pack.

NOTE: Update Pack 4, because it implements changing the system from a 7.1.3 system to a 7.1.4 system, *cannot be removed*. It is therefore critical that you back up your system before installing Update Pack 4 should you for any reason want to

go restore the previously running configuration. See: Before Beginning: Backup Your System.

UnixWare Maintenance Packs and Update Packs are available from the UnixWare Supplements Web Page.

Update Pack System Requirements

Update Pack 4 can be installed only on a Release 7.1.3 system. The system may have any combination of *previously issued* Maintenance Packs and Update Packs installed.

If you have any Maintenance Pack later than MP3 installed, you must remove it using pkgrm(1M) *before* installing Update Pack 4. Use the pkginfo(1) command or the scoadmin **application installer** to check your current software configuration.

Please Note: If you install an Update Pack on a system with one or more Maintenance Packs already installed, *do not* attempt to remove any of the Maintenance Packs from the system after installing the Update Pack. This will lead to unexpected system behavior.

Most individual packages distributed with Update Packs require the installation of the Update Pack Set in order for the software to work correctly.

Obtaining Update Packs

Update Packs (and Maintenance Packs) are available for download from the UnixWare Supplements Web Page. A registered SCO Update Service license is required to install the Update Pack Set and other licensed packages distributed with the Update Pack CD. Once registered, you can install the Update Pack from the CD ISO image. The ISO image can be written to a CD-ROM using any Windows or Unix CD recording software, such as **cdrtools** on UnixWare. The ISO image file can also be mounted directly without being written to a CD, as shown in the procedures below. Customers can also receive Update Packs on CD-ROM directly from SCO. For more information, please see your software supplier or go to the SCO Update Ordering Web Page.

Licensing Update Packs

A registered SCO Update Service (SUS) Enabling license is required to install the Update Pack Set and other packages indicated in the section Update Pack Contents. If you attempt to install any of these packages on a system that does not have a registered SUS license, the installation will fail.

To check your current licenses, launch SCOadmin from the graphical desktop and select **License Manager**, or launch the License Manager from the command line (as **root**):

```
scoadmin license
```

The License Manager's main screen displays the currently installed licenses. One of these should mention the SCO Update Service. If you do have a SCO Update Service license installed, it must also be registered in order to allow you to install the Update Pack Set. If the **Registered** column for your SCO Update Service license or bundled license does not have a

"**Yes**" or "**N/A**", you need to register that license before attempting to install the Update Pack Set.

An SUS Enabling license can be purchased as part of your License Edition (e.g., Base, Departmental, Enterprise, etc.), or purchased separately. Contact your software supplier if you do not have an SUS license or go to the SCO Update Ordering Web Page. For registration information, please see the SCO Update Service Registration web site.

The entire process of installing licenses on your system and registering your SCO Update Service license is described in the online documentation under **Installation and Licensing>Getting Started Guide>CD Contents, Licensing, Installation Profiles, and Support**. The *Getting Started Guide* is also available in a number of file formats from the UnixWare Doc Web Page.

Update Pack Contents

Update Pack 4 consists of a single Update Pack Set named **uw713up4**, as well as a number of additional updated packages.

The table below lists the package and set names as they are found on the Update Pack CD ISO image and optional Update Pack CD. Packages on the CD are in datastream format (files ending in .image) and in file system format (a directory with the same name as the package). The Installation Procedures section show you how to install both types of package formats.

The Update Pack Set requires a license; most other packages and sets do not. Those packages and sets that do require a license are indicated in the table below by an asterisk (*) before the package or set name.

Update Pack Contents

Package/Set	Description
*uw713up4.image Set	The Update Pack 4 Set installs these packages: • ***libc** - Updated Runtime C Library • ***libthread** - Updated Runtime Thread Library • ***update714** - Updates that did not require a package recut
adpu320 package	New Adaptec Ultra320 Family PCI SCSI HBA d3.0
adst70 package	Updated Adaptec Ultra160 Family PCI SCSI HBA d3.14
apache package	Updated Apache Web Server 1.3.29
basex package	Updated X11R6 Base X Runtime System
*cups/image package	New Common UNIX Print System (CUPS) Client and Server 1.1.19-01
*cupsdev.image package	New CUPS Development Libraries 1.1.19

cupsdoc package	New CUPS Online Guides and Manual Pages 1.1.19
db package	New Berkeley DB v4.1 library for open source OpenLDAP software suite
foomatic package	New Foomatic V3.0.0-01 -- Printer Filters and PPDs for CUPS
gimpprint package	New Printer Drivers and PPD files for CUPS and foomatic 4.2.5
***glib.image** package	New Library of utility functions for Gimp ToolKit 1.2.10
gs package	ESP Ghostscript 7.05.6 PostScript/PDF Interpreter with GNU Ghostscript 6.0 fonts
***gtk.image** package	New Gimp ToolKit 1.2.10 - runtime library for graphical user interfaces to X
hpijs package	New HP Inkjet Printer Driver (hpijs) and PPD Files 1.5
ide package	Updated Generic IDE/ATAPI Driver
iir package	New Intel Integrated Raid (IIR) HBA Driver Package 2.33
j2jre131 package	Updated Java 2 SE 1.3.1_10 Runtime Environment
j2sdk131 package	Updated Java 2 SE 1.3.1_10 Software Development Kit
j2plg131 package	Updated Java 2 SE 1.3.1_10 Java Plug-in (Netscape and Mozilla)
j2pls131 package	Updated Java 2 SE 1.3.1_10 Demos and Debug
***j2jre142.image** package	Updated Java 2 SE 1.4.2_03 Runtime Environment
***j2sdk142.image** package	Updated Java 2 SE 1.4.2_03 Software Development Kit
javaxcomm package	New Java support for RS-232 serial I/O and IEEE 1284 parallel I/O based on Sun COMM 2.0 and RXTX 1.4-8
jpeg package	New JPEG Image File Compression Library and Utilities
libIDL.image package	New Library for creating CORBA Interface Definition Language (IDL) files 0.6.8
libpng package	New PNG (Portable Network Graphic) File Library 1.2.5
***mozilla.image** package	New Mozilla Internet Browser 1.2.1b
mpt package	New LSI Logic Fibre Channel HBA Driver 1.3.26
nd package	Updated Network Drivers
nics package	Updated Netdriver Infrastructure and Configuration Subsystem
***openldap** package	New Open Source OpenLDAP software suite 2.1.22

openssh package	Updated Secure Shell remote access utility 3.7.1p2 (OpenSSH)
openssl package	Updated Secure Sockets Layer / TLS cryptography toolkit 0.9.7c (OpenSSL)
openssld package	Updated OpenSSL Documentation
***perl.image** package	New Perl Programming Language 5.8.0
pgsql package	New PostgreSQL Database Management System 7.4.2
ppp.image package	Updated Point-to-Point Protocol (PPP)
qlc2200 package	Updated QLogic PCI Fibre Channel HBA Driver 3.12
qlc2300 package	Updated QLogic PCI Fibre Channel HBA Driver 3.04
samba package	New Samba 3.0 - A Windows SMB/CIFS fileserver for UNIX
tiff package	New TIFF Image File Libraries and Utilities 3.5.7
***udienv.image** package	Updated Uniform Driver Interface (UDI) 1.01 Runtime Environment
uli package	Upgrade Wizard for Update Packs
urwfonts package	Updated (URW)++ Free X11 Fonts 2.0 for Java
***usb.image** package	Updated Universal Serial Bus (USB) 2.0 Drivers
uw7updoc package	Updated online topics
uw7upman package	Updated manual pages
xdrivers package	Updated X11R6 Graphics Drivers, Grafinfo Files and Configuration Scripts
xfonts package	Updated X11R6 100dpi, 75dpi, Speedo, Type1, and Miscellaneous Fonts
xserver package	Updated X11R6 X Server, Utilties, Font Server
zlib package	Updated zlib - General Purpose Data Compression Library 1.2.1

Installation Procedures

[Before Beginning: Backup Your System](#)
[Installing the Update Pack from CD](#)
[Installing Additional Packages after the Update Pack Set](#)

Please see the section Known Problems and Workarounds before beginning installation of the Update Pack.

Before Beginning: Backup Your System

Before you install any software or documentation from the Update Pack, it is important that you back up your system. A current system backup makes it easy to recover any files overwritten during the installation of the Update Pack. While the Update Pack Set does make copies of all the files it updates, not all supplemental packages do so. See Recovering Files Overwritten by the Update Pack (below) and Backup and Restore (in the online documentation) for more information.

> NOTE: Update Pack 4, because it implements changing the system from a 7.1.3 system to a 7.1.4 system, *cannot be removed*. It is therefore critical that you back up your system before installing Update Pack 4 should you for any reason want to go restore the previously running configuration.

Installing Update Packs from CD

The procedure below shows you how to install the Update Pack using the Upgrade Wizard, from either a mounted ISO CD image, or from a CD to which the ISO image has been written.

The instructions below assume you are using the Upgrade Wizard in graphical mode. If **uli** is executed on the console without X Window or another process running on vt01, the default back-end package installer is the **morepkgs** interface, where packages are presented in a single vertical list and selected and de-selected via the spacebar rather than **Add** and **Remove** buttons. To disable use of the **morepkgs** interface, the following environment variable can be set before **uli** is executed:

```
# ULI_USE_MOREPKGS=NO
# export ULI_USE_MOREPKGS
```

NOTE: You *must* install the Update Set before installing most of the other packages available with the Update Pack. This is done automatically by the Upgrade Wizard.

If you are applying the Update Pack to a newly installed or upgraded UnixWare system, be sure to reboot the system after the installation or upgrade is complete and *before* you apply the Update Pack.

1. Log into the system as **root**.

2. Do *one* of the following:

    a. If you have a CD with the Update Pack image on it, insert the CD into the primary CD drive and go to the next step.

    b. If you have the CD ISO image, copy the image into any directory that has enough

file system space to hold the CD image; we use */var/spool/pkg* in these procedures. Then, use the **marry**(1M) and **mount**(1M) commands, as in this example, to mount the CD ISO image as a device:

```
# marry -a /var/spool/pkg/uw713up4CDimage.iso
/dev/marry/var/spool/pkg/uw713up4CDimage.iso
# mount /dev/marry/var/spool/pkg/uw713up4CDimage.iso /install
```

Note that the return value of the **marry** command is used as the first argument of the **mount** command. You can also use the series of commands shown in the example below to reduce the amount of retyping required:

```
# device=`marry -a /var/spool/pkg/uw713up4CDimage.iso`
# echo $device
/dev/marry/var/spool/pkg/uw713up4CDimage.iso
# mount $device /install
```

The first command assigns the return value of the **marry** command to the environment variable $device. Note that the marry command is enclosed by backquote characters (`) -- not single quotes. (On many keyboards, the backquote character is found on the upper-left side of the keyboard.) The return value can be checked for errors using the **echo** command as shown.

3. Install the **uli** (Upgrade Wizard) package from the CD. Use either the SCOadmin Application Installer from the graphical desktop, or the following command line:

```
# pkgadd -d device uli
```

where *device* is **cdrom1** if you followed Step **2a**; or, **/install** if you followed Step **2b**.

4. Once the **uli** package is installed, launch the Upgrade Wizard. Do *one* of the following:

   a. If you are using a CD in the CD drive (Step **2a**), start the Upgrade Wizard by launching SCOadmin from the graphical desktop and selecting **Software Management > Upgrade Wizard**; or, enter the following at a shell prompt:

   ```
   # uli
   ```

   b. If you are using a mounted CD ISO image (Step **2b**), start the Upgrade Wizard from the command line by entering the following command:

   ```
   # uli -f device
   ```

   where *device* is the name of the directory where you mounted the ISO image in **Step 2b** (**/install** in the example).

5. When the Upgrade Wizard starts, a screen displays a message that the Upgrade Wizard will install the Update Pack software. Select **Next** to continue.

6. The Upgrade Wizard displays the Software License Agreement. Select **Accept** to

continue.

7. If you followed **Step 4a** and used the **uli** command with no options, skip to the next step.

   Otherwise, if you followed **Step 4b** and used **uli -f**, a screen is displayed that lists the primary CD drive and the directory you specified, with the directory selected as the default installation device. Select **Next** to continue and install from the directory.

8. The Wizard checks the contents of the installation device for the Update Pack. Select **Next** to continue and begin installing the Update Pack.

9. The Upgrade Wizard automatically installs the Update Pack Set (see the Update Pack Contents), displaying installation messages in a new window.

10. When the Upgrade Wizard finishes installing the Update Pack Set, it displays the **Package Selection List**, a list of the additional packages on the CD that are not installed automatically by the Update Pack Set. If the Wizard detects previous versions of any of the Update Pack CD packages on your system, the updated version on the CD appears in the **Chosen Packages** list on the right. Use the **Remove** button to move packages that you don't want to install from the **Chosen Packages** list to the **Available Packages** list. Any packages that remain in the **Available Packages** list will not be installed.

    > **NOTE:** Some packages on the CD may not be presented in the **Package Selection List**. This happens when the Upgrade Wizard does not find a previous version of the package on your system. In order to install such a package using the Upgrade Wizard, you need to first install the package from the original UnixWare media used to install the system (along with any prerequisite packages). Or, use pkgadd(1M) to install the package instead.
    >
    > After you are done installing software with the Upgrade Wizard, see the section Installing Additional Packages after the Update Pack Set and use **pkgadd**(1M) instead of the Upgrade Wizard to install the Update Pack version of any package not listed for selection by the Upgrade Wizard. If a package installation fails because a prerequisite package was not found, you will first need to install the prerequisite package from the Update Pack or the original installation media.

    When you are finished choosing packages, select **Next** to continue.

11. A summary of your package selections and the space they require on your hard disk is displayed. Select **Next** to confirm your selections and continue. Select **Previous** to go back to the previous step and change the **Package Selection List**.

12. After you confirm your package selections, the Upgrade Wizard installs the packages you selected. It displays a progress bar as each package is installed. When the Wizard is done, select **Finish** to exit.

13. If you followed **Step 1a**, go to the next step.

    Otherwise, if you followed **Step 1b**, unmount the CD image and delete the **marry** device:

    ```
    # umount /install
    # marry -d /dev/marry/var/spool/pkg/uw713up4CDimage.iso
    ```

14. Reboot your system to rebuild the kernel. From the Desktop, use the SCOadmin Shutdown Manager. From the command line, enter the following:

    ```
    # shutdown -i6 -g0 -y
    ```

15. When the system comes back up, you can log in and check the installation as shown in the section Checking Update Pack Installation.

    If you decide that you want to add additional packages from the Update Pack CD, see the section Installing Additional Packages after the Update Pack Set.

Installing Additional Packages after the Update Pack Set

After you have installed the Update Pack Set and rebooted your system, you can use either the Upgrade Wizard or the **pkgadd**(1M) command to install any packages that you did not select when you installed the Set.

If any desired package cannot be installed because a prerequisite package was not found, install the prerequisite package (either from the Update Pack or the original UnixWare installation media), and then attempt to install the desired package again.

Using the Upgrade Wizard will re-install the Update Set automatically before installing additional packages. Use the **pkgadd** command if you want to:

- load additional packages without re-installing the Update Set
- install *.image* files (package datastreams) from the download site or the Update Pack CD
- add any packages from the CD or CD ISO image not offered for installation by the Upgrade Wizard

To use the Upgrade Wizard, follow the Installation Procedure, omitting **Step 3**.

To use the pkgadd command:

1. Log into the system as **root**.

2. Do *one* of the following:

    a. If you have a CD with the Update Pack image on it, insert the CD into the primary CD drive and enter:

       ```
       # mount /dev/cdrom/cdrom1 /install
       ```

       Go to the next step.

    b. If you have the CD ISO image, copy the image into any directory that has enough file system space to hold the CD image; we use */var/spool/pkg* in these procedures. Then, use the **marry**(1M) and **mount**(1M) commands, as in this example, to mount the CD ISO image as a device:

```
# marry -a /var/spool/pkg/uw713up4CDimage.iso
/dev/marry/var/spool/pkg/uw713up4CDimage.iso
# mount /dev/marry/var/spool/pkg/uw713up4CDimage.iso /install
```

Note that the return value of the **marry** command is used as the first argument of the **mount** command. You can also use the series of commands shown in the example below to reduce the amount of retyping required:

```
# device=`marry -a /var/spool/pkg/uw713up4CDimage.iso`
# echo $device
/dev/marry/var/spool/pkg/uw713up4CDimage.iso
# mount $device /install
```

The first command assigns the return value of the **marry** command to the environment variable $device. Note that the marry command is enclosed by backquote characters (`) -- not single quotes. (On many keyboards, the backquote character is found on the upper-left side of the keyboard.) The return value can be checked for errors using the **echo** command as shown.

3. List the contents of the CD:

```
# ls -l /install
```

4. Install the desired packages using one of these methods:

   a. If the package is in a single file whose name ends in *.image*, enter:

   ```
   pkgadd -d /install/name.image
   ```

   where *name*.image is the name of the file on the CD. For example, the following command installs the Update Pack Set from the mounted CD image:

   ```
   pkgadd -d /install/uw713up4.image
   ```

   Each package image must be installed individually.

   b. If the package is contained in a directory on the CD, enter:

   ```
   # pkgadd -d /install package...
   ```

   Replace *package* with the names of one or more filesystem format packages on the CD. This example installs the **nd** and **nics** packages from a mounted ISO image file:

   ```
   # pkgadd -d /install nd nics
   ```

5. Shut down the system to rebuild the kernel. From the Desktop, use the SCOadmin Shutdown Manager. From the command line, enter the following:

```
# shutdown -i6 -g0 -y
```

6. When the system comes back up, you can log in and check the installation as shown in the section Checking Update Pack Installation.

Checking Update Pack Installation

Once installed, use the pkginfo(1) command to confirm that the Update Set has completely installed. The system should respond with output similar to that shown in the example below:

```
# pkginfo -lc set uw713up4
   PKGINST:   uw713up4
      NAME:   UnixWare 7 Release 7.1.3 Update Pack 4
       ...
    STATUS:   completely installed
```

If the **STATUS** field indicates anything other than **completely installed**, there was some problem during installation of the set. Re-install the set and record any error messages displayed. Then, check the Late News and Support web sites to check for additional installation notes.

To check the installation of other packages, use a command like the following:

```
pkginfo -l xdrivers j2re142
```

In addition, if you installed one or more of the Java packages, you can check which version is the default version of Java by entering this command:

```
java -version
```

The command will return with the appropriate release, depending on whether *usr/java* is linked to */opt/java2-1.3.1* or */opt/java2-1.4.2*. For example, to change the default Java from release 1.3.1 to release 1.4.2, enter the following commands, logged in as **root**:

```
# rm /usr/java
# ln -s /opt/java2-1.4.2 /usr/java
# rm /usr/java2
# ln -s /opt/java2-1.4.2 /usr/java2
```

If you update the links as in the example above to switch the active Java release, you should also remove and re-install the javaxcomm package, if it is on your system, so that it runs on the default Java version:

```
# pkgrm -n javaxcomm
# pkgadd -q -d pathname javaxcomm
```

Where *pathname* is the full path to the **javaxcomm** package.

Reinstalling the Update Pack

You will need to reinstall the Update Pack Set if any of the following situations arise:

- You are instructed to do so when installing a package or set. This happens, for example, when one or more files that was updated by the Update Pack is changed in any way by the installation of the new software. Reinstalling the Update Pack is required to ensure the integrity of the software already installed on your system.

- One or more files installed by the Update Pack needs to be refreshed for any number of reasons; for example, data corruption caused by faulty hardware or user error.

Reinstalling the entire Update Pack Set may be necessary, and can be done using the Upgrade Wizard (if you have the Update Pack CD or CD ISO image) or **pkgadd** (using either the CD ISO image or the Update Pack Set image). To reinstall the entire Update Pack Set, see the section <u>Installing Additional Packages after the Update Pack Set</u>, using the Update Pack CD ISO.

If you want or need to install only a subset of the packages in the Update Pack Set, you can use a **pkgadd** command line like the following to reduce required installation time:

```
pkgadd -d /var/spool/pkg/uw713up4.image update714
```

The example above installs only the **update714** package from the Update Pack 4 Set, which resides in this example in the file *uw713up4.image* under */var/spool/pkg*.

Recovering Files Overwritten by the Update Pack

After installation, you may want to recover files that have been overwritten by the Update Pack Set or one of the supplemental packages. For example, if you have a custom version of **sendmail**(1M) on your system, this will be overwritten by the Update Set. To recover any file overwritten by the Update Set, enter the following command, as *root*:

```
# cd /
# zcat /var/sadm/bkup/update714/bkup0/update.cpio.Z | cpio -icdumv pat
```

where *pathname* is the full pathname of the file you want to recover, without the leading slash (/). For example, to recover the /usr/lib/sendmail binary, enter:

```
# cd /
# zcat /var/sadm/bkup/update714/bkup0/update.cpio.Z | cpio -icdumv usr
```

See the file */var/sadm/bkup/uw713up4/filelist* for the contents of the Update Pack Set backup archive (*update.cpio.Z*).

The supplemental packages provided with the Update Pack generally do not back up the file they install. Check for backup files under */var/sadm/bkup/**packagename*** and */var/sadm/pkg/**packagename**/save*, where ***packagename*** is the name of the package. If a package has overwritten a file and not made a backup copy, recover the file from your regular system backup media.

To find out what packages have installed or updated a particular file, enter the following:

```
# pkgchk -lp pathname
```

where *pathname* is the full pathname of the file, as in:

```
# pkgchk -lp /usr/lib/sendmail
```

Removing the Update Pack

> **NOTE:** Update Pack 4, because it implements changing the system from a 7.1.3 system to a 7.1.4 system, *cannot be removed.* It is therefore critical that you back up your system before installing Update Pack 4 should you for any reason want to restore the previously running configuration. See: Before Beginning: Backup Your System.

UnixWare 7.1.4 New Features

Features in the Update Set:
Compatibility: New Tunable Parameters for 16-bit IPC
Desktop Login: Default Desktop
DocView Enhancements
Emergency Recovery CD Support
Emergency Recovery Master Boot Record Option
Filesystems: SCOAdmin Filesystem Manager Moved
Graphics: VESA BIOS Initialization of Newer Video Cards
Hardware: ACPI Boot Support
Hardware: Uniprocessor Hyperthreading Support
Hardware: PCI Serial Support
Hardware: Enhanced Hyperthreading Support
Internationalization: India Time Zone Listed
Licensing: Enhancements and Fixes
Licensing: Memory and CPU Limits
Mail and Messaging: Updated Sendmail
Message Catalog Format
Networking: dlpid Performance Enhancements
Networking: DNS Manager Enhancements
Networking: Additional DNS Manager Enhancements
Networking: Network Time Protocol (NTP) v4
Networking: IPsec (VPN Support)
PPP Enhancements
Performance: Swap Space Limit Extended to 4GB
Printing PostScript Files on PCL Printers
Printing: Increased Number of Print Jobs
Security: Core Dump for setuid Processes
Security: Name Service Switch (NSS)
Shells: Updated ksh
Storage Management: Disk, Partition, and Slice Managers
System Management: Upgrade to Unixware 7.1.4
UNIX95 Conformance

Features in Other Packages:

[Audio: Support for Intel On-Board Sound Chips](#)
[Compatibility: OpenServer Kernel Personality (OKP)](#)
[Database: Berkeley DB Toolkit 4.1.25 for OpenLDAP](#)
[Database: PostgreSQL 7.4.2](#)
[Hardware: Host Bus Adapter (HBA) Drivers](#)
[Hardware: Host Bus Adapter (HBA) Drivers](#)
[Hardware: Host Bus Adapter (HBA) Drivers](#)
[Hardware: Network Interface Card (NIC) Drivers](#)
[Hardware: Network Interface Card (NIC) Drivers](#)
[Hardware: Network Interface Card (NIC) Drivers](#)
[Hardware: Video Card Drivers](#)
[Hardware: Video Card Drivers](#)
[Hardware: Updated Drivers](#)
[Internet and Intranet: Java Communications API for Java Serial I/O Support (javax.comm)](#)
[Internet and Intranet: Java 2 Standard Edition 1.3.1_10](#)
[Internet and Intranet: Java 2 Standard Edition 1.4.2_03](#)
[Internet and Intranet: Mozilla 1.2.1b](#)
[Networking: OpenLDAP 2.2.4](#)
[Networking: tcpdump Enhancements](#)
[Networking and Security: OpenSSH and OpenSSL](#)
[Online Documentation: Updated Topics and Manual Pages](#)
[Online Documentation: Updated Topics and Manual Pages](#)
[Printing: CUPS (Common UNIX Print System)](#)
[Printing: Foomatic Filter and PPD Files](#)
[Printing: gimpprint Driver v4.2.5](#)
[Printing: Hewlett-Packard InkJet Driver hpijs v1.5](#)
[Printing: USB Support](#)
[Printing: USB Printing Enhancements](#)
[Programming: JPEG (image compression) Library](#)
[Programming: PNG Library](#)
[Programming: TIFF Image Library and Utilities](#)
[SCOx: Client API and Web Services Support](#)
[Security: Padding of Short Ethernet Frames](#)
[Security: zlib 1.2.1 Data Compression Library](#)
[Upgrade: Upgrade Wizard Enhancements](#)
[Windows Interoperability: Samba 3](#)

Update Pack 4 New Features

Update Pack 4 contains all the new features from [Update Pack 1](#), [Update Pack 2](#), and [Update Pack 3](#),as well as the additional new features listed in this section. See the [UnixWare 7.1.4 Feature List](#) for a complete list of new features since UnixWare 7.1.3.

Also see the sections [Problems Fixed](#) for a complete list of maintenance fixes, and [Known Problems](#) for limitations and workarounds.

Features in the Update Set:

Hardware: ACPI Boot Support
Hardware: Uniprocessor Hyperthreading Support
Networking: Network Time Protocol (NTP) v4
Networking: IPsec (VPN Support)
Security: Name Service Switch (NSS)
System Management: Upgrade to UnixWare 7.1.4

Features in Other Packages:

Audio: Support for Intel On-Board Sound Chips
Database: Berkeley DB Toolkit 4.1.25 for OpenLDAP
Database: PostgreSQL 7.4.2
Hardware: Host Bus Adapter Drivers
Hardware: Network Card Drivers
Hardware: Video Card Drivers
Internet and Intranet: Java Communications API for Java Serial I/O Support
(javax.comm)
Internet and Intranet: Java 2 Standard Edition 1.3.1_10
Internet and Intranet: Java 2 Standard Edition 1.4.2_03
Internet and Intranet: Mozilla 1.2.1b
Networking: OpenLDAP 2.2.4
Networking: Updated Point-to-Point Protocol (PPP)
Networking and Security: OpenSSH and OpenSSL
Online Documentation
Printing: CUPS (Common UNIX Print System)
Printing: Foomatic Filter and PPD Files
Printing: gimpprint Driver v4.2.5
Printing: Hewlett-Packard InkJet Driver hpijs v1.5
Printing: USB Printing Enhancements
Security: zlib 1.2.1 Data Compression Library
Security: zlib 1.2.1 Data Compression Library
Windows Interoperability: Samba 3

Features in the Update Pack Set:

The features listed in this section are installed with the Update Pack Set. See the Installation Procedures section for how to install the Update Pack Set.

Hardware: ACPI Boot Support

Support for booting UnixWare systems using the Advanced Configuration and Power Interface (ACPI) BIOS tables is provided. This allows UnixWare to run on multiprocessor (MP) systems that do not have Intel Multi-Processor Specification (MPS) BIOS tables. Previously, UnixWare would not boot on a system that did not have MPS tables. Booting from ACPI tables is disabled by default. To enable booting from ACPI:

1. Make sure the **osmp** (multi-processing support) package is installed (even if you have a UP system). Enter:

    `pkginfo osmp`

    To see if **osmp** is installed. If not, install it from the UnixWare 7 Installation CD#1, by inserting the CD into the primary CD drive and entering:

    `pkgadd -d cdrom1 osmp`

2. Add the following line to the file */stand/boot*:

    ACPI=Y

    Note: Booting from ACPI and hyperthreading may be used together by adding both **ACPI=Y** and **ENABLE_JT=Y** entries to the */stand/boot* file and rebooting the system. See the boot(4) manual page.

3. Reboot the system to rebuild the kernel:

    `shutdown -i6 -g0 -y`

4. If your hardware supports hyperthreading, enter the system BIOS utility as the system reboots to enable hyperthreading in your system BIOS. (See the hardware manufacturer's documentation for details.)

    Note: *on systems that support hyperthreading*, the hyperthreading feature should be enabled in the system BIOS when booting from the ACPI tables, even if hyperthreading is not enabled under UnixWare. Otherwise, if you boot from the ACPI tables on a system that supports hyperthreading but does not have hyperthreading enabled in the BIOS, UnixWare utilities like **psrinfo** may report fewer processors available than the actual number of processors installed.

    Save the BIOS configuration and boot UnixWare.

5. After the system boots, use the psrinfo(1M) command to check processor status.

Hardware: Uniprocessor Hyperthreading Support

Hyperthreading (Jackson Technology) support for UnixWare on Intel processors has been enhanced to work on uniprocessor (UP) systems. Previously, this technology worked only on multiprocessor (MP) systems. By default, hyperthreading is disabled. To enable hyperthreading:

1. Make sure the **osmp** (Multiprocessing Support) package is installed (even if you have a UP system). Enter:

    `pkginfo osmp`

    To see if **osmp** is installed. If not, install it from UnixWare 7 Installation CD#1, by

inserting the CD into the primary CD drive and entering:

pkgadd -d cdrom1 osmp

2. Add the following line to the file */stand/boot*:

   ENABLE_JT=Y

   Note: Hyperthreading and ACPI may be used together by adding both **ENABLE_JT=Y** and **ACPI=Y** entries to the */stand/boot* file and rebooting the system. See the boot(4) manual page.

3. Reboot the system to rebuild the kernel:

   shutdown -i6 -g0 -y

4. As the system reboots, enter the system BIOS utility to enable hyperthreading in your system BIOS. (See the hardware manufacturer's documentation for details.) Save the BIOS configuration and boot UnixWare.

5. After the system boots, use the psrinfo(1M) command to check processor status.

Networking: Network Time Protocol (NTP) 4.1.1

The Network Time Protocol (NTP) has been updated to Version 4.1.1 from http://www.ntp.org. NTP is used to synchronize the time of a computer client or server to another server or reference time source. This release maintains compatibility with NTP 2.x and 3.x, while support for NTP 1.x has been removed. See the NTP documentation provided with version 4, under Networking > Administering TCP/IP and Internet Services, in the online documentation. In particular, see the NTP Version 4 Release Notes and the Quick Start.

Networking: IPsec (VPN Support)

The IPsec (secure IP) protocol suite and associated tools provides the ability to encrypt and authenticate IP packets transmitted between cooperating hosts or subnets.

When IPsec is configured for a given communication path between hosts or subnets, most of the IP header and the entire data portion of each packet sent over the network is encrypted by the sending host, and decrypted by the receiving host. This is in contrast to non-IPsec packets, which are not encrypted.

In addition to encrypting IP packets, IPsec can authenticate each packet using the information in the expanded header supported by this protocol. Authentication can also be provided using private keys and signed certificates.

In this way, each host can not only be assured that each packet has been encrypted for delivery, but also validate that the packet received has originated with the expected host and that no third party has tampered with or had access to the data in the packets during transmission.

One of the uses of IPsec is to implement a Virtual Private Network (VPN). In a VPN, a non-secure communication path (such as an internet connection) is used for the transmission of encrypted and authenticated packets between hosts that have been set up to use that path and only provide IPsec packets over the path.

A VPN is really a set of security associations established on each host that requires secure IP communications, along with a security policy established for each "subnet" in the VPN. Thus, a corporate VPN might be defined by a gateway router that allows a number of remote systems (or other gateways) to connect over public transmission facilities (phone lines, cable modem, wireless), and access the corporate network. A properly configured IPsec facility on the gateways and the various remote systems prevents the kind of security threats inherent in public transmission systems, such as spoofing, masquerading, denial of service, and others.

IPsec is disabled by default; this is because running IPsec without first configuring it properly for your site reduces overall network performance with no benefit. To configure and enable IPsec, see Networking > Administering TCP/IP and Internet services > Secure IP (IPsec) in the online documentation. The documentation includes procedures and configuration examples.

Security: Name Service Switch (NSS)

The Name Service Switch (NSS) provides a single point of control for lookup operations on system databases (such as */etc/passwd*, */etc/group*, etc.). This gives a system administrator the ability to configure these operations while the system is running, including the ability to extend the implementation through plug-in runtime modules.

For more information see the NSS Overview in the online documentation.

System Management: Upgrade to UnixWare 7.1.4

The version identifier returned by the uname(1) command, the uname(2) system call, and associated utilities after installation is updated from **7.1.3** to **7.1.4**. For example:

```
# uname -v
```

Returns the following:

```
7.1.4
```

Features in Other Packages:

The features listed in this section are contained in separate packages from the Update Pack Set. To install them, either select them from the Upgrade Wizard when you install the Update Pack Set, or follow the instructions in the section Installing Additional Packages after the Update Pack Set.

Audio: Support for Intel On-Board Sound Chips

A new sound driver (**ich**) that supports on-board PCI sound cards on Intel 845 chipsets has been added to the **audio** package. The chipsets supported are ICH1, ICH2, ICH3, and ICH4. The driver also provides support for the AC97 mixer.

The AC97 codec on the soundcard must support VRA (variable rate) for any application to play audio files at variable rates. If the codec doesn't support VRA, then most applications will fail to play any audio files. For example, using **mpg123** with a soundcard that does not support VRA returns the following message:

```
No supported rate found !!
```

If your hardware supports the relevant chipsets, the **ich** driver is loaded and configured automatically when the **audio** package is added. You can also manually load the driver using:

```
modadmin -l ich
```

To test whether the driver is working properly, **mpg123** player for native UnixWare can be intlled and be used for playing audio files. You can find **mpg123** on the web at http://www.sco.com/skunkware. If you have installed the Linux Kernal Personality (LKP) on your system, you can also download the Linux version of Realplayer from the web (http://www.realplayer.com to play audio files. Both **mpg123** and Realplayer running on LKP have been tested with the new driver.

Note that the **ich** driver does not provide audio support for the SCO Merge product at this time.

Database: Berkeley DB Toolkit 4.1.25 for OpenLDAP

The **db** package contains version 4.1.25 of the Berkeley DB software, an embedded programmatic database toolkit. This package is provided primarily for, and is required by, the OpenLDAP software. It can be used in any application where a programmable embedded database is required. See the DB Documentation installed under */usr/docs* by the **db** package.

Database: PostgreSQL 7.4.2

PostgreSQL (**pgsql**) is a widely-used open source database system that offers the features and reliability usually associated with more costly proprietary database systems. PostgreSQL documentation is installed with the **pgsql** package and is available under Software Development in the online documentation. For a review of the advantages of deploying PostgreSQL, please see http://advocacy.postgresql.org/advantages/. General information and news about PostgreSQL is available from the PostgreSQL Web Site at http://www.postgresql.org.

Hardware: Host Bus Adapter Drivers

The QLogic PCI FibreChannel (**qlc2300**) and the Adaptec Ultra320 Family PCI SCSI HBA (**adpu320**) Host Bus Adapter (HBA) drivers have been updated, as follows:

QLogic PCI FibreChannel (qlc2300)

Fixes problems with board ID return value on some IBM systems with PCI-X slots.

Adaptec Ultra320 Family PCI SCSI HBA (adpu320)

Fixes problems experienced when disks are connected to both channels.

The **qlc2300** and **adpu320** drivers are available as separate package images in the Update Pack, as well as a floppy disk image suitable for use during a fresh install of UnixWare. The floppy image is available at: ftp://ftp.sco.com/pub/unixware7/drivers/storage.

Hardware: Network Interface Card Drivers

The Network Drivers (**nd**) package has been updated with new versions of the following existing Network Interface Card (NIC) drivers:

3Com EtherLink (e3bc) 1.1.1

Fixed problems seen in development environment only.

AMD PCnet (pnt) 3.0.1

Fixed some incorrect function return values and a system panic in bcopy(3C) caused by the driver.

Intel PRO/100 (eeE8) 2.6.8

Fixed minor problems and added new card support. The complete list of network adapters supported by the new version of **eeE8** follows:

```
645477-xxx      PRO/10+ PCI                              PILA8500

649439-xxx      PRO/10+ PCI                              PILA8520
701738-xxx      Pro/100+ PCI Management Adapter          PILA8461
668081-xxx      Pro/100+ PCI                             PILA8460
689661-xxx
722762-xxx

721383-xxx      Pro/100+ PCI Management Adapter          PILA8460B
741462-xxx      Pro/100+ PCI                             PILA8460B
748566-xxx      PRO/100 S Management                     PILA8460B
748564-xxx      PRO/100 S Management                     PILA8464B
742252-xxx      InBusiness(tm) 10/100 adapter            SA101TX
351361-xxx      PRO/100 PCI                              PILA8465
352509-xxx      EtherExpress(tm) PRO/100B PCI adapter    PILA8465B
661949-xxx
667280-xxx
678400-xxx
```

```
352433-xxx      PRO/100B PCI T4                              PILA8475B
691334-xxx      PRO/100+ PCI Management  Adapter             PILA8900
A80897-xxx      PRO/100 M Desktop                            PILA8460M
751767-xxx      PRO/100 S Desktop                            PILA8460C
```

```
                ================= Server Adapters ============
```

```
714303-xxx      PRO/100+ Dual Port Server Adapter            PILA8472
711269-xxx

748565-xxx      PRO/100 S Server                             PILA8474B
748568-xxx      Intel(c)PRO/100 S Server                     PILA8474B
710550-xxx      PRO/100+ PCI Server Adapter                  PILA8470
729757-xxx      PRO/100+ Server Adapter                      PILA8470B
A56831-xxx      PRO/100 S Dual Port Server Adapter           PILA8472C
752438-xxx      PRO/100 S Server                             PILA8470C
```

```
New NIC support in eeE8 2.6.8:
------------------------------
82559 Fast Ethernet LOM with Alert on LAN
PRO/100 S Mobile LAN on Motherboard
PRO/100 VM Network Connection
PRO/100 VE Network Connection

HP NC3133 Fast Ethernet NIC
HP NC3163 Fast Ethernet NIC
HP NC3162 Fast Ethernet NIC
HP NC3123 Fast Ethernet NIC
HP NC3134 Fast Ethernet NIC
HP NC3135 Fast Ethernet Upgrade Module
HP NC3120 Fast Ethernet NIC
HP NC3122 Fast Ethernet NIC
HP NC1120 Ethernet NIC
HP 10/100 TX PCI Intel WOL UTP Controller
HP NC3160 Fast Ethernet NIC
HP NC3121 Fast Ethernet NIC
HP NC3131 Fast Ethernet NIC
HP NC3132 Fast Ethernet NIC
```

Broadcom Gigabit (bcme) 7.0.7

Fixed minor problems and added new NIC support. The complete list of network adapters supported by the new version of **bcme** follows:

```
3Com 3C996/3C1000/3C94X Gigabit Ethernet
3Com 3C996-SX Gigabit Ethernet
Broadcom BCM5700 NetXtreme Gigabit Ethernet
Broadcom BCM5700S NetXtreme Gigabit Ethernet
Broadcom BCM5701 NetXtreme Gigabit Ethernet
```

```
Broadcom BCM5701S NetXtreme Gigabit Ethernet
Broadcom BCM5702 NetXtreme Gigabit Ethernet
Broadcom BCM5703 NetXtreme Gigabit Ethernet
Broadcom BCM5703S NetXtreme Gigabit Ethernet
Broadcom BCM5704 NetXtreme Gigabit Ethernet
Broadcom BCM5704S NetXtreme Gigabit Ethernet
Broadcom BCM5705 NetXtreme Gigabit Ethernet
Broadcom BCM5782 NetXtreme Gigabit Ethernet for hp
HP NC6770 Gigabit Ethernet
HP NC7722 Gigabit Server Adapter
HP NC7760 Gigabit Ethernet
HP NC7761 Gigabit Server Ethernet
HP NC7770 Gigabit Ethernet
HP NC7771 Gigabit Ethernet
HP NC7772 Gigabit Server Ethernet
HP NC7780 Gigabit Ethernet
HP NC7781 Gigabit Ethernet
HP NC7782 Gigabit Ethernet
HP NC7783 Gigabit Ethernet
```

Hardware: Graphics Adapter Drivers

The **xdrivers** package has been updated to include a new ATI Radeon Graphics Adapter Driver. This driver supports the following video cards:

```
ATI RADEON 7000 Graphics Adapter
ATI RADEON 7200 Graphics Adapter
ATI RADEON 7500 Graphics Adapter
```

Internet and Intranet: Java Communications API for Java Serial I/O Support (javax.comm)

The **javaxcomm** package contains version 2.0 of the Java Communications API for Java Serial I/O. This package enables Java applications to communicate over serial ports. See the Release Notes for **javax.comm**, and the RXTX open source web site at http://www.rxtx.org, for more information. Please note that this release of javax.comm does *not* support communication over parallel I/O ports.

Internet and Intranet: Java 2 Standard Edition 1.3.1_10

The following Java 2 SE 1.3.1 packages have been updated to the indicated versions in response to Sun Microsystems, Inc., security alerts:

j2jre131	Java 2 SE 1.3.1_10 Runtime Environment 1.3.1
j2sdk131	Java 2 SE 1.3.1_10 Software Development Kit
j2plg131	Java 2 SE 1.3.1_10 Java Plug-in (Netscape and Mozilla)
j2pls131	Java 2 SE 1.3.1_10 Demos and Debug

The alerts are:

Sun Alert ID	Description
57436	Verisign Class 3 and Class 2 PCA Root Certificate Expiration
57221	A Vulnerability in JRE May Allow an Untrusted Applet to Escalate Privileges

Internet and Intranet: Java 2 Standard Edition 1.4.2_03

The Java 2 Standard Edition 1.4.2 consists of the following packages:

j2jre142	Java 2 SE 1.4.2_03 Runtime Environment 1.4.2
j2sdk142	Java 2 SE 1.4.2_03 Software Development Kit

This is the first Java release for UnixWare to incorporate the Sun HotSpot Java virtual machine. It has greatly improved performance and scalability over the previous Java 1.3.1 release.

The **j2jre142** package requires the **urwfonts** package, and must be installed before installing **j2sdk142**.

On upgrade, Release 1.4.2 is installed by default and */usr/java* is updated to point to the 1.4.2 version (*/opt/java2-1.4.2*). See the section Checking Update Pack Installation for how to check and change the active Java version.

Note that there is currently no Release 1.4.2 Mozilla Java plugin support; this is provided by the j2plg131 package.

A JDK 1.4.2 debugging package (formerly j2pls131) is not being released. The debugging information for the Sun "hotspot" VM's (now mostly in C++) is too large to be of any practical use (debugging size exceeds 400MB for each VM-client server). The Java demos formerly in **j2pls131** have been moved into the **j2sdk142** package.

This release of the Java 2SE corresponds to Sun's J2SE 1.4.2_03 patch level and includes the following Sun security fixes:

Sun Alert ID	Description
57436	Verisign Class 3 and Class 2 PCA Root Certificate Expiration
unknown	Potential Denial of Service - SXun API for XML 1.0 Processing

Additional information on the Java 2SE can be found at the following links:

Java features and enhancements
>   SCO Java 2 Standard Edition v. 1.4.2_03 Release Notes
>   and
>   http://java.sun.com/j2se/1.4.2/docs/relnotes/features.html

Sun J2SE 1.4.2 Release Notes
>   New Features and Notes > Update Pack 4 new features (local)
>   or
>   http://java.sun.com/j2se/1.4.2/relnotes.html (web)

Potential problems with prior Java releases
>   http://java.sun.com/j2se/1.4.2/compatibility.html
>   http://java.sun.com/j2se/1.4.1/compatibility.html
>   http://java.sun.com/j2se/1.4/compatibility.html

Information on Sun HotSpot Java VM
>   http://java.sun.com/products/hotspot

Documentation
>   http://java.sun.com/j2se/1.4.2/docs/index.html
>   http://java.sun.com/j2se/1.4/ja/docs/ja/index.html

Known (Sun) Problems
>   http://developer.java.sun.com

Internet and Intranet: Mozilla 1.2.1b

The Mozilla web browser has been updated to version 1.2.1a to fix the following known security vulnerabilities in previous versions:

Mozilla Bug ID	Description
221526	Script.prototype.freeze/thaw could allow an attacker to run arbitrary code on your computer.
213012	By requesting a cookie with a path containing the escape sequence "%2E%2E", a malicious web site would be able to read cookies from different paths.
158049	Detecting variables in another domain is possible.
220122	A malicious website could gain access to a user's authentication credentials to a proxy server.
92773	It is possible to get and set variables in another domain.

For more information please go to

http://www.mozilla.org/projects/security/known-vulnerabilities.html.

Networking: OpenLDAP 2.2.4

The Lightweight Directory Access Protocol (LDAP) provides a set of commands and routines to create and manage a Directory Services database. This version of OpenLDAP (2.2.4) implements LDAPv3 as defined in RFC2251. The **openldap** package depends on the **db** package (Berkeley DB) for the database back-end. See the LDAP 2.2 Administrator's Guide and LDAP Manual Pages under Networking in the online documentation.

Networking: Updated Point-to-Point Protocol (PPP)

The **ppp** package has been updated to improve the reliability and scalability of the PPP server, pppd(1M).

Networking and Security: Updated OpenSSH and OpenSSL

The **openssl** package has been updated to 0.9.7c. OpenSSL is an Open Source toolkit implementing the Secure Sockets Layer (SSL v2/v3) and Transport Layer Security (TLS v1) protocols as well as a general purpose cryptography library. A user level command, **openssl**(1), is provided that performs a variety of cryptographic functions.

Documentation for OpenSSL is packaged separately in **openssld**. The following manual pages are installed under */usr/man*, and can be viewed via **man**(1) or the DocView **Man Pages** button (**http://***hostname***:8458**):

asn1parse.1	pkcs12.1	bio.3	md5.3
ca.1	pkcs7.1	blowfish.3	mdc2.3
CA.pl.1	pkcs8.1	bn.3	OPENSSL_VERSION_NUMBER
ciphers.1	rand.1	bn_internal.3	OpenSSL_add_all_algori
crl.1	req.1	buffer.3	rand.3
crl2pkcs7.1	rsa.1	crypto.3	rc4.3
dgst.1	rsautl.1	d2i_DHparams.3	ripemd.3
dhparam.1	s_client.1	d2i_RSAPublicKey.3	rsa.3
dsa.1	s_server.1	des.3	sha.3
dsaparam.1	sess_id.1	dh.3	ssl.3
enc.1	smime.1	dsa.3	threads.3
gendsa.1	speed.1	err.3	
genrsa.1	spkac.1	evp.3	config.5
nseq.1	verify.1	hmac.3	
openssl.1	version.1	lh_stats.3	des_modes.7
passwd.1	x509.1	lhash.3	

For more information on OpenSSL see the OpenSSL Web Site.

The **openssh** package has been updated to version 3.7.1.p2 of OpenSSH. OpenSSH is a suite of network connectivity tools that encrypts all traffic to effectively eliminate

eavesdropping, connection hijacking, and other network-level attacks. OpenSSH provides a variety of secure tunneling capabilities and authentication methods. SSH protocol versions 1.3, 1.5, and 2.0 are supported.

The OpenSSH suite includes:

- **ssh**(1) (**slogin**), alternative to **rlogin** and **telnet**
- **scp**(1) (alternative to **rcp**)
- **sftp**(1) (alternative to **ftp**)
- **sshd**(8), the SSH server daemon (alternative to **rshd**)
- **sftp-server**(8), the SFTP server daemon (alterative to **ftpd**)
- **ssh-agent**(1), the authentication agent, and associated tools: **ssh-add**, **ssh-keygen**, **ssh-keyscan**

Manual pages are provided for all of the above commands, as well as pages for the **ssh_config**(5) and **sshd_config**(5) SSH client and server configuration files. To display them, use the **man**(1) command or DocView on **http://*hostname*:8458**. For more information on OpenSSH, please go to the OpenSSH Web Site http://www.openssh.org/manual.html.

NOTE: You should install OpenSSL from the Update Pack *before* installing OpenSSH, even if you have a previous version of OpenSSL already installed.

Online Documentation

Updated manual pages and online guides are provided by the **uw7upman** and **uw7updoc** packages, as well as some of the other packages included with the Update Pack. Both guides and manual pages can be viewed using any browser via the DocView Documentation Server. By default, DocView can be reached at **http://*hostname*:8458**, where *hostname* is the network node name of the UnixWare system, or **localhost** when using a browser on your UnixWare 7 system. The browser can be running on native UnixWare, on the Linux Kernel Personality (LKP), or on the OpenServer Kernel Personality (OKP). The manual pages can also be viewed using the **man**(1) command; this must be done from a UnixWare shell. (The **man** commands under LKP and OKP display the manual pages installed in those environments, not the UnixWare 7 pages.)

Newly added documentation will not be searchable using DocView's **Search** button until indexing is run. This is done, by default, at 3:10AM local time by a **root** crontab(1) entry. If this time is not appropriate for your site, you can edit the *crontab* entry to change the time indexing is run. In general, it is a good idea to run indexing when the system load is low, since indexing can consume considerable time and system resources, depending on the amount of text being indexed. You can also run indexing manually using the **/usr/lib/docview/conf/rundig** command after you finish installing documentation from the Update Pack.

Current UnixWare Documentation can also be viewed on the Internet at http://www.sco.com/support/docs/unixware.

Printing: CUPS (Common UNIX Print System)

CUPS has been updated to version 1.1.19_01 to correct problems displaying the names of USB printers in the graphical administrative interface. See CUPS and the Printing topic in the

online documentation.

Printing: Foomatic Filter and PPD Files

The **foomatic** package contains a generic filter and PPD files for various printer models. The filter and PPD files are integrated with the **cups** package (see CUPS), and cannot be used with the System V LP print system. Note that the CUPS package also provides its own PPD files.

This updated version of **foomatic** (3.0.0-01) includes the following:

- An updated **foomatic-rip** perl script that fixes a bug that caused PostScript printing to fail.
- Updated filters and PPD files from the December 2003 snapshot on **http://www.linuxprinting.org**. There are PPD files for new printers and updates to many existing PPD files.
- Previously, Hewlett-Packard printer PPD files were listed in the CUPS administrative web interface under both **HP** and **HEWLETT-PACKARD**; this release of **foomatic** lists all Hewlett-Packard PPD files under **HP**.

For more information, see the Printing topic in the online documentation after you install **cups** and **foomatic**.

Printing: gimpprint Driver v4.2.5 (CUPS)

The **gimpprint** package contains a suite of high-quality printer drivers for use with the **cups** and **foomatic** packages; see the notes for CUPS. The **gimpprint** package includes:

- The core driver (**libgimpprint.so**).

- A CUPS driver primarily for Canon and Epson printers (along with some Lexmark and Hewlett-Packard models), and the corresponding PostScript Printer Definition (PPD) files. These PPD files appear as follows in the CUPS administrative web interface:

      EPSON *model* CUPS+Gimp-print v4.2.5

  Try these PPD files before trying the IJS-based drivers (below).

- An IJS-based GhostScript driver (for use with **foomatic**) and corresponding PPD files. These PPD files appear as follows in the CUPS administrative web interface:

      Epson *model* Foomatic/gimp-print-ijs

- A utility to administer Epson printers, **escputil**.

Documentation for this driver is installed with the **gimpprint** package under Printing in the online documentation.

Printing: Hewlett-Packard InkJet Driver hpijs v1.5 (CUPS)

The Hewlett-Packard InkJet Driver (**hpijs**) is a printer driver for for more than 200 printer models, including, DeskJet, OfficeJet, Photosmart, Business InkJet and some LaserJet models. The **hpijs** package also contains PostScript Printer Definition (PPD) files for these printers, for use with the **cups** and **foomatic** packages. (See the notes for CUPS.) These PPDs appears as follows in the CUPS administrative web interface.

```
HP model Foomatic/hpijs (recommended) (en)
```

It is recommended that you use these PPD files even if there are other Foomatic PPDs for your printer model, for example:

```
HP model Foomatic/pcl3 (en)
```

The **hpijs** driver also provides PPD files for some non-HP printers. The list of these printers can be found at: http://www.linuxprinting.org/show_driver.cgi?driver=hpijs. Documentation for this driver is installed with the **hpijs** package under Printing in the online documentation.

Printing: USB Printing Enhancements

Prior to this release, only one Universal Serial Bus (USB) printer connected to the system at one time was supported. In addition to supporting multiple USB printers, this release also provides fixes to some known problems. See Printing: USB Support for an overview of USB printer support. These updates are in the **udienv** and **usb** packages.

SCO Web Services Support

SCO Web Services is a set of application programming interfaces that use standard web technologies such as WSDL, SOAP, XML, and XML Schemas to enable your applications to interface with Web Services. The web services supported by SCOx enable applications to exchange data directly over the internet, without human intervention. Such applications can be anything from simple requests to complex business processes.

The web services and libraries are available on a separate CD image. Release notes and installation instructions can be found at the top level of the CD image, and on the UnixWare Supplements Web Page. Also see the SCO Web Services Web Site.

Please Note: You must install the Update Pack Set before you install the Web Services CD. Please read the *Release Notes* from the CD or Supplements Page before installing the Web Services CD.

Also note that there are some known issues with using the web services support for Java when Java 1.4.2 has been installed. Please see the SCO Java 2 Standard Edition v. 1.4.2_03 Release Notes for more details. Also note that when using web services support for C or C++, you should compile with the UDK C or C++ compiler, and not with the Open Source Tools gcc or g++ compilers.

Security: zlib 1.2.1 Data Compression Library

The **zlib** package contains version 1.2.1 of the data compression library (*/usr/lib/libz.so*). The

zlib Manual from http://www.zlib.net is available as a manual page; enter **man zlib** or use the **Man Pages** button in the online documentation. Note that the version 1.1.4 manual is still the current manual for **zlib**.

<u>Windows Interoperability: Samba 3</u>

Samba provides filesharing capabilities using native Microsoft SMB and CIFS protocols for interoperability with Microsoft operating systems. Samba 3.0 is provided in a single-byte version for Western locales (**samba**); a multibyte version suitable for Asian locales will be made available in a future release.

Note the following when installing Samba:

- If you are upgrading from a previous release of Samba on UnixWare, save a copy of your existing */usr/lib/samba/lib/smb.conf* file before you begin installation, so you can restore any settings that might be affected by the upgrade.

- By default, */tmp* is automatically shared. This can be a security concern, since various system utilities keep temporary data in */tmp*. To remove the */tmp* share, log into SWAT (see above) and select the **Shares** icon. On the next screen, highlight the **tmp** share in the list box and select the **Delete Share** button.

- Samba cannot run together with Advanced File and Print Sharing (AFPS; found on the Optional Services CD #3), nor with the NetBIOS protocol running. If Samba will not start, do the following to determine if AFPS or NetBIOS are running, and disable them if necessary:

  1. Enter:

     ```
     # cd /etc/rc2.d
     ```

  2. Determine if either of the following files exist in this directory:

     S74netbios
     S99ms_srv

     If these one or both of these files exist, enter the appropriate command or commands shown below:

     ```
     # mv S74netbios s74netbios
     # mv S99ms_srv s99ms_srv
     ```

  3. Reboot the system:

     ```
     # shutdown -i6 -g0 -y
     ```

  4. Start Samba:

     ```
     # /etc/init.d/samba start
     ```

- Samba documentation and manual pages are available under the DOS and Windows topic in the online documentation.

- Samba is configured with the SWAT (Samba Web Administration Tool) utility using a web browser on **http://*hostname*:901**. To start SWAT:

    1. As root, enter:

       ```
       # /usr/lib/samba/sbin/swat
       ```

    2. Point a web browser at **http://localhost:901**.

    3. Log in to SWAT as *root*.

    4. The main SWAT screen provides links to all the Samba documentation. Select the Status icon to start the Samba daemons.

- To start, stop, and restart Samba from the command line, use the **/etc/init.d/samba** command, as in this example:

    ```
    # /etc/init.d/samba start
    ```

    To enable Samba at system startup, enter the following:

    ```
    # /etc/init.d/samba enable
    ```

    Samba will now start up automatically whenever the system boots. The **disable** parameter returns Samba to manual startup.

- Localization settings are accessed from the SWAT Home Page by clicking on the **Globals** tab, and then selecting **Advanced View**. Set appropriate values for your locale for the client code page, the character encoding system, and the other options (each option has context-sensitive help). Please refer to the documentation for **smb.conf** for further details.

More Samba documentation and other resources are provided on the Samba Home Page.

Update Pack 3 New Features

Update Pack 3 contains all the new features from Update Pack 1 and Update Pack 2, as well as the additional new features listed in this section. See the Update Pack Feature List for a complete list.

Also see the sections Problems Fixed for the maintenance fixes included in the Update Pack, and Known Problems for limitations and workarounds.

Features in the Update Set:
    Graphics: VESA BIOS Initialization of Newer Video Cards

Features in the Update Pack Set:

The features listed in this section are installed with the Update Pack Set. See the Installation Procedures section for how to install the Update Pack Set.

Graphics: VESA BIOS Initialization of Newer Video Cards

A new boot(4) parameter has been added that allows newer video cards and chips (such as the nVidia GeForce onboard chip) to work with UnixWare. In these newer cards and chips, EGA environment tables are no longer provided and the video modes must be initialized by the kernel using VESA BIOS calls instead. If the USE_VESA_BIOS boot parameter is set on boot, then the kernel will initialize the video modes using VESA BIOS calls; if it is not set or set to "NO" (the default), then the EGA environment table is used. If you are installing UnixWare 7.1.3 for the first time, this parameter is not yet available at installation time. Install the system using another supported graphics card; then, after the system is installed, you can then edit **boot**(4) as described above to enable VESA BIOS initialization. See the Compatible Hardware Web Page at http://www.sco.com/chwp for graphics cards that work during a fresh install of UnixWare.

Internationalization: India Time Zone Now Listed

An entry has been added for India Standard Time (IST) to the list of time zones presented in both the SCOadmin International Settings Manager (**scoadmin international**) and the SCOadmin Time Manager (**scoadmin system time**). After setting the new time zone, reboot the system and set the current system date and time, if necessary, to the current local date and time using the Time Manager or the date(1) command.

Licensing: Enhancements and Fixes

A number of enhancements and fixes have been made to the Licensing subsystem. Most of these are listed in the Problems Fixed section. The following changes in the Licensing subsystem are significant to administrators and users:

- The maximum number of simultaneous users, as determined by your current licenses, is now strictly enforced. Each connection (for example, via **telnet**, **rlogin**, **ssh**) counts as a "user", even if the same login is using multiple connections. If the number of allowable users (determined by the installed licenses) is exceeded, additional logins are denied until a current user logs off the system.

- The new **sco_pmd** license policy manager daemon replaces the **ifor_pmd**, **ifor_sld**, and **sco_cpd** daemons from previous releases. See the sco_pmd(1M) manual page for details.

See the Installation and Licensing topic in the online documentation for more information about licensing.

Mail and Messaging: Updated Sendmail

The sendmail(1M) Mail Transfer Agent (MTA) has been updated to version 8.12.9, along with security fixes from version 8.12.10. As a result, the following message will be displayed when sendmail starts:

```
Warning: .cf file is out of date: sendmail 8.12.9 supports version 10,
```

Mail will still continue to work as before; however, none of the new versions added to sendmail after version 8.9 (including anti-spam filters) will not be implemented in the configuration file, */etc/sendmail/sendmail.cf*. For a review of what has changed in **sendmail** since version 8.10, see .

For more information on using **sendmail**, see Mail and Messaging in the online documentation, and the **Sendmail** Web Site at http://www.sendmail.org.

Multi-line Message Catalog Format

The mkmsgs(1) command has been enhanced to accept message strings that span more than one line in the input file, and to accept message string input longer than 4095 characters. There is now no limit on the size of message string input.

Multi-line messages are encapsulated in the input file with "%<" and "%>" delimiters on a line by themselves, as in the following example:

```
%<
first line of message
second line of message
...
%>
```

Only space, tab, and linefeed characters are allowed on the lines with the delimiters.

Networking: DNS Manager Enhancements

The security and reliability of the rndc(1M) program and the handling of secret keys used between **rndc** and DNS/BIND control channels has been improved.

Performance: Swap Space Limit Extended to 4GB

The upper limit on the amount of swap space that can be allocated has been increased from 2GB (2 gigabytes) to 4GB. Use the **swap** command to increase the current swap space size. See the swap(1M) manual page and the sections Configuring systems for large physical memory and Adding swap space for more information.

Printing: USB Support

USB 2.0 support has been enhanced to include limited support for a single USB printer connected to the system. Rather than delay the release of this important feature in order to undertake the task of certifying a large sample of the wide range of printers currently available, SCO has chosen to speed the availability of this much-requested feature to our customers by certifying a small number of printers for this first release of USB Printing. These printers are listed in the SCO Certified Hardware Web Page (CHWP) at http://www.sco.com/chwp. As we certify new examples we will add them to the CHWP.

As of the publication of this document, the certified list includes:

- Hewlett Packard PSC 1210 PhotoSmart
- Hewlett Packard PSC 2210 PhotoSmart
- Hewlett Packard PhotoSmart 7350
- Hewlett Packard DeskJet 560C attached via a Dlink Parallel to USB converter

There is also a set of printers that we know are problematic. This list includes:

- Epson Stylus C82
- Hewlett DeskJet 895C
- Hewlett Packard LaserJet 1300
- Hewlett Packard officejet v40
- Lexmark Z20

In addition, we have some generic guidelines which will enhance your experience if you attempt to attach a printer that is not yet certified.

USB printer support in UnixWare is not designed to replace parallel printer support for existing installations. In fact, we strongly suggest that if you currently have a printer connected to your UnixWare system via the parallel interface you should not move it to a USB interface. It is likely that to do so would result in different printer behavior than you currently experience.

If you want to attach a new printer to your UnixWare system and the printer provides both a parallel interface and a USB interface, we suggest that you use the parallel interface. Our

testing suggests that many printers that support both interfaces provide a less than spec-compliant USB interface. Thus, using the parallel interface on these printers usually results in a better experience.

The Common UNIX Print System (see CUPS) is also being released along with USB Printing. We strongly suggest that you use CUPS as the print system when connecting USB printers. One side effect of this suggestion is that CUPS and System V LP cannot both be running at the same time on your UnixWare system. Although installing CUPS does not automatically replace LP as the default print spooler on your system, once you activate the CUPS print spooler the LP print spoller is disabled. In order for printers currently working under LP to work under CUPS, the printers must be manually added to the CUPS configuration. There is no provision to automatically transfer your System V LP printer configuration to your CUPS configuration. Further documentation on CUPS is available in the UnixWare online documentation under Printing (after you install the **cupsdoc** package) and at http://www.cups.org/documentation.php

CUPS provides a small set of printer drivers (also called PostScript Printer Definition files, or PPD files). If the printer descriptions supplied with CUPS do not meet your needs, we also provide the **foomatic** package of printer descriptions. Foomatic requires the ESP GhostScript printer drivers provided in the **gs** package, and supports dozens of printers. We have included all drivers except **gimp-print** and **hpijs**. If your printer model is only supported through these drivers (for example, the HP OfficeJet v40), it will not work with CUPS. These drivers will be made available in a future release.

Further documentation on the printers supported by **foomatic** is available at http://www.linuxprinting.org/printer_list.cgi. You can search this site for the proper driver name for your printer, and then look for the driver in the Make/Model selection list displayed by the CUPS graphical interface. You can also search for a driver and display the printers it supports. This site rates the quality as well as availability of printer drivers.

The support provided by **foomatic** for a given printer model also depends upon the cooperation which the Open Source community gets from various printer vendors. Vendors are ranked at http://www.linuxprinting.org/vendors.html. If the vendor for your printer is listed here in the "Useless" category, for example, it may not be possible to obtain an acceptable driver for your printer.

Please note that any fax and scanner capabilities provided by printers are not currently supported, even if the driver supports them.

To configure a USB printer using the active print subsystem from the command line, use the **lpadmin**(1M) command. Use the **scoadmin printer** graphical interface to add a USB printer to System V LP, or CUPS. If CUPS is the current print system, **scoadmin printer** launches the CUPS graphical interface on **http://localhost:631**. In the online documentation, see the CUPS Quick Start Guide and Adding a USB Printer to LP.

When defining the printer, use the USB device name. When a USB printer is connected to the system and turned on, two device nodes are created automatically for the printer. They can be listed by entering:

```
ls -tr /dev/usb_prnt* /dev/usblp*
```

The device node names are defined as follows:

/dev/usb_prnt#

> The # appearing in the device name is the order the printer was recognized as attached. If you have only one printer, it will always be at */dev/usb_prnt0* regardless of how it is physically connected. If you have multiple USB printers connected (which is not currently supported), the digits at the end should not be regarded as stable: they will change as, for example, device timing varies and configuration changes are made.

>> **Please Note**: Only device names of the form */dev/usb_prnt#* should be used in the **scoadmin printer** LP manager. See the procedures referenced above for how to add printers to LP and CUPS.

/dev/usblp-#####-[###.###.###.###.###.]###

> The first five digit number is the location of the host controller interface (HCI) to which the printer is connected. It's five digits represent the PCI bus number (two digits), the PCI device number (two digits), and the PCI function number (the final digit). For example:

> */dev/usblp-00072-1.4.2*

> The above device name indicates that the HCI is located at PCI bus number 00, PCI device 07, PCI function 2. Note that this number is completely determined by the hardware vendor's PCI configuration.

> The remainder of the device name after the second dash is a sequence of from one to six decimal numbers, each of which can be from one to three digits. The final number, which is required, indicates the port number on the device to which the printer is physically connected. Up to five hubs can be connected between the printer and the PC USB port, and the ports to which these devices are connected are indicated by the five optional three digit numbers in the device name, separated by periods.

> For example, if a USB printer were connected directly to the first USB port on the system, the device name might look like this:

> */dev/usblp-00072-1*

> A device name like */dev/usblp-00072-1.4.2* indicates the following device configuration:

```
PC USB Port 1 --- | Hub#1 Port 1
PC USB Port 2     | Hub#1 Port 2
                  | Hub#1 Port 3
                  | Hub#1 Port 4  --- | Hub#2 Port 1
                  ...                 | Hub#2 Port 2  --- USB Prin
                                      ...
```

> where Hub#1 is connected into the system's first USB port, a second hub is plugged into

Hub#1 Port 4, and the USB Printer is plugged into Hub#2 Port 2. This device name is completely unique and will not change as long as the physical configuration of the USB devices is not changed.

See the documentation for LP and CUPS (if installed) under the Printing topic in DocView for more information on printer management.

Shells: Updated ksh

The UNIX95 version of the Korn shell, */u95/bin/ksh*, has been updated to fix a number of problems:

- Fixed the **pwd** builtin so it no longer returns a double leading slash (//) for pathnames under some conditions.
- Fixed the shell so that it no longer resets the user's idle time every 10 minutes, as reported by commands such as **w**(1). .
- Fixed the **autoload** function so that it works when invoked from within a command substitution.

Features in Other Packages:

The features listed in this section are contained in separate packages from the Update Pack Set. To install them, either select them from the Upgrade Wizard when you install the Update Pack Set, or follow the instructions in the section Installing Additional Packages after the Update Pack Set.

Desktop: GhostScript PostScript and PDF Interpreter

The **gs** package includes version 7.05.6 of the GhostScript PostScript and PDF file interpreter, used to display, convert, and print PostScript and PDF (Portable Document Format) files. The documentation accompanying GhostScript is installed with the **gs** package. See the gs(1) manual page and the Desktops topic in the online documentation.

Hardware: Updated Drivers

The **ide** host bus adapter (HBA) driver has been updated to include a number of bug fixes, as well as the following new features:

- Compliance with the ATA/ATAPI-6 standard (see http://www.t13.org).

- Supported IDE hard disk capacity has increased from 128GB (gigabytes) to just below 1TB (terabyte), a total of 1,099,510,579,200 bytes (1 terabyte minus 1 megabyte). Full 48-bit addressing in the driver allows support for IDE hard disks up to 1PB (1 petabyte; 1,125,899,906,842,624 or 2^{50} bytes) in size; however, the 32-bit addressing used by the kernel limits IDE hard disk support on UnixWare to just below 1TB (a terabyte is 2^{40}

bytes).

The **ide** driver is available as a separate package image in the Update Pack, as well as a floppy disk image suitable for use during a fresh install of UnixWare. The floppy image is available at: ftp://ftp.sco.com/pub/unixware7/drivers/storage.

The Broadcom **bcme** network card driver has been updated to version 6.0.16. This version fixes known kernel panics in the previous driver, which occurred when calling *bcopy* to copy a transmit buffer. The driver code has also been improved for better transmit performance. The updated driver is included in the **nd** package. For a list of network cards supported by the **bcme** driver, please see the Update Pack 2 Notes.

The Intel e1008g PRO/1000 networking card driver has been updated to version 7.2.15. This version includes new adapter support, fixes a panic when transmitted packets are excessively fragmented, fixes PHY initialization problems, and fixes problems that caused the driver to return inaccurate speed information. The updated **e1008g** driver is included in the **nd** package, and now supports the following Intel network cards:

```
700262-xxx   PRO/1000 Gigabit Server Adapter          PWLA8490
717037-xxx   PRO/1000 Gigabit Server Adapter          PWLA8490
713783-xxx   PRO/1000 Gigabit Server Adapter          PWLA8490G1

A38888-xxx   PRO/1000 F Server Adapter                PWLA8490SX
738640-xxx,  PRO/1000 F Server Adapter                PWLA8490-SX
A06512-xxx   PRO/1000 Gigabit Adapter                 PWLA8490SXG1P20

A19845-xxx   PRO/1000 T Server Adapter                PWLA8490T
A33948-xxx   PRO/1000 T Server Adapter                PWLA8490TG1P20

A51580-014   PRO/1000 XT Server Adapter               PWLA8490XT
A73668-001   PRO/1000 XT Server Adapter               PWLA8490XTL
A68178-xxx   PRO/1000 XT Lo Profile PCI Server Adapter PWLA8490XTL
A50484-xxx   PRO/1000 XF Server Adapter               PWLA8490XF

739456-xxx   IBM Netfinity Gigabit Ethernet SX Adapter 09N3599
721352-xxx   IBM Netfinity Gigabit Ethernet SX Adapter 30L7076
A34085-xxx   IBM Gigabit Ethernet SX Server Adapter    06P3718
A36407-xxx   IBM Gigabit Ethernet Server Adapter       22P4618

A78408-xxx   PRO/1000 MT Desktop Adapter              PWLA8390MT
             PRO/1000 MT Low Profile Desktop          PWLA8390MTBK20
A92165-xxx   PRO/1000 MT Server Adapter               PWLA8490MT
A92111-xxx   PRO/1000 MT Dual Port Server Adapter     PWLA8492MT
A91622-xxx   PRO/1000 MF Server Adapter               PWLA8490MF
A91624-xxx   PRO/1000 MF Server Adapter (LX)          PWLA8490LX
A91620-xxx   PRO/1000 MF Dual Port Server Adapter     PWLA8492MF
             PRO/1000 MT Mobile Connection
A81081-xxx   PRO/1000 MT Server Adapter               PWLA8490MT
A65396-xxx   PRO/1000 MT Dual Port Server Adapter     PWLA8492MT
             PRO/1000 MT Quad Port Server Adapter     PWLA8494MT
```

```
A81983-xxx   PRO/1000 MF Server Adapter                    PWLA8490MF
A78709-xxx   PRO/1000 MF Dual Port Server Adapter          PWLA8492MF
             PRO/1000 CT Network Connection
             PRO/1000 CT Mobile Connection
             PRO/1000 MB Server Connection
             PRO/1000 MB Dual Port Network Connection
             82544GC Based Network Connection
             HP NC6132 Gigabit Module
             HP NC6133 Gigabit Module
             HP NC6134 Gigabit NIC
             HP NC6136 Gigabit Server Adapter
             HP NC6170 Dual PCI-X 1000-SX Server Adapter
             HP NC7131 Gigabit Server Adapter
             HP NC7132 Gigabit Upgrade Module
             HP NC7170 Dual PCI-X 1000-T Server Adapter
```

Online Documentation: Updated Topics and Manual Pages

Updated manual pages and online guides are provided by the **baseman** and **basedoc** packages, as well as some of the other packages included with the Update Pack (e.g., **cupsdoc**, **openssld**, **jpeg**, **tiff**, **libpng**). Both guides and manual pages can be viewed using any browser via the DocView Documentation Server. By default, DocView can be reached at **http://***hostname***:8458**, where *hostname* is the network node name of the UnixWare system, or **localhost** when using a browser on your UnixWare 7 system. The browser can be running on native UnixWare, on the Linux Kernel Personality (LKP), or on the OpenServer Kernel Personality (OKP). The manual pages can also be viewed using the **man**(1) command; this must be done from a UnixWare shell. (The **man** commands under LKP and OKP display the manual pages installed in those environments, not the UnixWare 7 pages.)

Note that none of the Update Pack documentation packages rebuild DocView's Search index, so any documentation added will not be searchable using DocView's **Search** button until indexing is run. This is done, by default, at 3:10AM local time by a **root** crontab(1) entry. If this time is not appropriate for your site, you can edit the *crontab* entry to change the time indexing is run. In general, it is a good idea to run indexing when the system load is low, since indexing can consume considerable time and system resources, depending on the amount of text being indexed. Alternately, you can run indexing manually using the **/usr/lib/docview/conf/rundig** command after you finish installing documentation from the Update Pack.

Printing: CUPS (Common UNIX Print System)

Version 1.1.19 of the Common UNIX Printing System (CUPS) is available in three separate packages:

cups	Client and Server Software for CUPS
cupsdev	CUPS Development Libraries
cupsdoc	CUPS Online Guides and Manual Pages

The current CUPS implementation supports all the documented features of CUPS, with the

following exceptions:

- *libpaper*
- PAM
- PHP scripts
- **python** scripts

CUPS also supports USB printing (see Printing: USB Support). We strongly suggest that you use CUPS as the print system when connecting USB printers. One side effect of this suggestion is that CUPS and System V LP cannot both be running at the same time on your UnixWare system. Although installing CUPS does not automatically replace LP as the default print spooler on your system, once you activate the CUPS print spooler the LP print spoiler is disabled. In order for printers currently working under LP to work under CUPS, the printers must be manually added to the CUPS configuration. There is no provision to automatically transfer your System V LP printer configuration to your CUPS configuration. Further documentation on CUPS is available in the UnixWare online documentation under Printing (after you install the **cupsdoc** package) and at http://www.cups.org/documentation.php

If the printer descriptions supplied with CUPS do not meet your needs, we are also providing the **foomatic** package of printer descriptions. Foomatic requires the ESP GhostScript printer drivers provided in the **gs** package, and supports dozens of printers.

Further documentation on the printers supported by **foomatic** is available at http://www.linuxprinting.org/printer_list.cgi. You can search this site for the proper driver name for your printer, and then look for the driver in the Make/Model selection list displayed by the CUPS graphical interface. You can also search for a driver and display the printers it supports. This site rates the quality as well as availability of printer drivers.

The support provided by **foomatic** for a given printer model also depends upon the cooperation which the Open Source community gets from various printer vendors. Vendors are ranked at http://www.linuxprinting.org/vendors.html. If the vendor for your printer is listed here in the "Useless" category, for example, it may not be possible to obtain an acceptable driver for your printer.

You must install the Update Pack Set before you install **cups**, or CUPS will not work properly. The following packages are required by CUPS to provide the indicated functionality; they can be installed either before or after **cups**:

foomatic	printer filters and PPD files
libpng	printing PNG image files
jpeg	printing JPEG image Files
gs	printing PostScript files
openslp	remote printer management
openssl	remote printer management
perl	support for Perl scripts used by CUPS
tiff	printing TIFF image files
zlib	decompressing image files

After you install **cups**, the System V LP System is still the default printing subsystem. Use the chprnsys(1M) command to switch between the System V LP and CUPS printing Systems, as in this example:

```
# chprnsys cups
```

The **chprnsys** command, among other things, reconfigures the system manual pages so that the pages appropriate to the currently active print subsystem are displayed by the **man** command and by DocView. The online CUPS guides can be viewed under the Printing topic in DocView, when CUPS is the active print subsystem. (Note that you must install **cupsdoc** to get all the CUPS manual pages and guides.)

CUPS can be administered using command line tools (see Printing for a list), or using the CUPS graphical interface on **http://localhost:631**. The **scoadmin printer** graphics interface will launch the administrative interface for the currently active print system. To get started, see the CUPS Quick Start Guide in the on line documentation.

> **Please Note:** If you have a USB printer, connect it to your system and turn it on before you enable CUPS. If you connect a USB printer after you enable CUPS, restart CUPS by entering:
>
> ```
> /etc/init.d/cups restart
> ```

Once you install **cups**, the Update Pack installation is locked, until you remove the **cups** package. This is necessary to preserve the integrity of system software. See the section Known Problems.

Printing: Foomatic Filter and PPD Files

The **foomatic** package contains a generic printer filter and PPD (PostScript Printer Definition) files for printers that understand printer languages other than PostScript (such as PCL). This enables printing of PostScript files to these printers, by translating the PostScript file to the language understood by the printer. The filter and PPD files are integrated with the **cups** package (see CUPS), and cannot be used with the System V LP print system. Note that the CUPS package also provides its own PPD files. For more information, see the Printing topic in the online documentation.

Programming: JPEG Image Compression) Library and Utilities

The **jpeg** package installs *libjpeg* and associated utilities from Version 6b of the Independent JPEG Group's open source JPEG image compression software. The *libjpeg* library allows applications to compress images and store them in JFIF format files, and decompress JFIF format files containing JPEG compressed images. For JPEG release notes, see the jpeg(7) manual page. The following utilities are also provided; see the associated manual pages listed below:

cjpeg(1)	sample application for converting PPM, PGM, BMP, Targa image formats to JPEG
djpeg(1)	sample application for converting JPEG files to PPM, PGM, BMP, GIF, Targa image formats
jpegtran(1)	utility for lossless transcoding between different JPEG processes
rdjpgcom(1)	extracts textual comments from JFIF files
wrjpgcom(1)	inserts textual comments in JFIF files

See the JPEG Archive Site at ftp://ftp.uu.net/graphics/jpeg for more documentation on the JPEG software.

Programming: Perl Programming Language Version 5.8.0

A new multithreaded version of the Perl Programming Language, version 5.8.0, is supplied and installed automatically when the **cups** package is selected for installation using the Upgrade Wizard. The **perl** package *does not replace* the version of Perl (**perl5**) installed from the UnixWare 7.1.3 media. Instead, it is installed separately under */opt*. The file */usr/bin/perl* is, however, made a link to the new 5.8.0 version of the **perl** interpreter.

The **perl** package can also be installed separately from **cups**. Most **perl** users will also want to install the **perlmods** package from the SCOx CD. This package fixes a *CGI.pm* security vulnerability (see Known Problems), and provides other updated and useful modules as well. The **perlmods** package can only be installed and used with the new **perl** package.

Programming: PNG (Portable Network Graphics) Image Library

The **libpng** package installs Version 1.2.5 of **libpng**, an open source library that applications can use to manipulate PNG (Portable Network Graphics) raster image files. See libpng(3) for release notes, a usage overview, and further references. See **libpng**(3) and libpngpf(3) for function definitions. Further documentation and archives are available at http://www.libpng.org, or ftp://ftp.uu.net/graphics/png. This package requires that the **zlib** package is already installed.

Programming: TIFF Image Library and Utilities

The **libtiff** package contains a library for manipulating Tag Image File Format (TIFF) image files, along with TIFF-related utilities. This version of **libtiff** supports TIFF version 4.0, 5.0, and 6.0 files. The package installs its own manual pages:

- See Section 3t. See the libtiff(3t) manual page for an introduction.

- Also see the following command manual pages:

fax2ps (1) - convert a TIFF facsimile to compressed

fax2tiff (1) - create a TIFF Class F fax file from raw fax data

gif2tiff (1) - create a TIFF file from a GIF87 format image file

pal2rgb (1) - convert a palette color TIFF image to a full color image

ppm2tiff (1) - create a TIFF file from a PPM image file

ras2tiff (1) - create a TIFF file from a Sun rasterfile

rgb2ycbcr (1) - convert non-YCbCr TIFF images to a YCbCr TIFF image

sgi2tiff (1) - create a TIFF file from an SGI image file

thumbnail (1) - create a TIFF file with thumbnail images

tiff2bw (1) - convert a color TIFF image to greyscale

tiff2ps (1) - convert a TIFF image to PS

tiff2rgba (1) - convert a TIFF image to RGBA color space

tiffcmp (1) - compare two TIFF files

tiffcp (1) - copy (and possibly convert) a TIFF file

tiffdither (1) - convert a greyscale image to bilevel using dithering

tiffdump (1) - print verbatim information about TIFF files

tiffgt (1) - display an image stored in a TIFF file (Silicon Graphics version)

tiffinfo (1) - print information about TIFF files

tiffmedian (1) - apply the median cut algorithm to data in a TIFF file

tiffsplit (1) - split a multi-image TIFF into single-image TIFF files

tiffsv (1) - save an image from the framebuffer in a TIFF file (Silicon Graphics version)

SCOx Client API and Web Services Support

The SCOx Client API is a set of application programming interfaces that use standard web technologies such as WSDL, SOAP, XML, and XML Schemas to enable your applications to interface with SCObiz. SCObiz is a comprehensive web site development, deployment, and hosting service through which SCO's partners can provide web site hosting solutions to their customers. SCObiz provides an infrastructure that enables solution providers to quickly and easily create e-Commerce or information-oriented web sites. The web services supported by SCOx and SCObiz enable applications to exchange data directly over the internet, without human intervention. Such applications can be anything from simple requests to complex business processes.

The SCOx client libraries and web services are available on a separate CD image. Release notes and installation instructions can be found at the top level of the SCOx CD image, and on the UnixWare Supplements Web Page. Also see the SCOx and SCObiz Web Sites.

Please Note: You must install the Update Pack Set before you install the SCOx CD. Please read the *SCOx Release Notes* from the CD or Supplements Page before installing SCOx.

Update Pack 2 New Features

Update Pack 2 contained all the new features listed below, as well as the new features from Update Pack 1. See the section Problems Fixed for the maintenance fixes included in the current Update Pack, and the section Known Problems for limitations and workarounds.

Features in the Update Set:
    Compatibility: New Tunable Parameters for 16-bit IPC
    Desktop Login: Default Desktop
    Filesystems: SCOAdmin Filesystem Manager Moved
    Hardware: PCI Serial Support
    Networking: DNS Manager Enhancements
    Printing: Increased Number of Print Jobs
    Security: Core Dump for root Processes
    Storage Management: Disk, Partition, and Slice Managers
Features in Other Packages:
    Hardware: Host Bus Adapter (HBA) Drivers
    Hardware: Network Interface Card (NIC) Drivers
    Hardware: Video Drivers
    Internet Browser: Mozilla 1.2.1
    Networking and Security: Updated OpenSSH and OpenSSL
    Online Documentation: Updated Guides and Manual Pages
    Security: Padding of Short Ethernet Frames
    Security: Updated zlib Data Compression Library
    Windows Interoperability: Samba 2.2.8a

Features in the Update Set:

The features listed in this section are installed with the Update Pack Set. See the Installation Procedures section for how to install the Update Pack Set.

Compatibility: New Tunable Parameters for 16-bit IPC

Previously, the system calls shmget(2), msgget(2), and semget(2) returned 32-bit InterProcess Communication (IPC) IDs for shared resources under UnixWare. OpenServer and Xenix applications, however, expect IPC IDs that are positive, signed 16-bit numbers.

A new flag, **IPC_SMALLID**, may be passed in to the IPC routines listed above. If this flag is passed in, then, on success, the invoked function returns a 16-bit IPC ID. Otherwise, a 32-bit

IPC ID is returned.

The **IPC_SMALLID** flag is introduced for use in cases in which a native UnixWare application requires a small IPC ID in order to share the ID and associated object with OpenServer or Xenix applications. For example, the Xenix emulator included with the OpenServer Kernel Personality (OKP) product uses **IPC_SMALLID** for every IPC ID it requests, so Xenix applications can use IPC as expected.

In addition to the **IPC_SMALLID** flag, three new tunables are also available for cases where the entire system must be tuned to return 16-bit IPC IDs to support OpenServer and Xenix applications. These tunables are **SHMSMALLID**, **MSGSMALLID**, and **SEMSMALLID**, and they affect the return values of **shmget**(2), **msgget**(2), and **semget**(2), respectively. Each has a default value of 0, and a range of values of 0 to 1. Each tunable controls whether the corresponding IPC system call returns a 16-bit ID by default. If the tunable is set to 0 (the default), then the corresponding routine always returns a 32-bit ID; if the tunable is set to 1, then the corresponding routine always returns a 16-bit ID.

The kernel has been modified to always return 16-bit IPC IDs to a running application that it recognizes as an OpenServer or Xenix executable, regardless of the setting of the above tuneables.

Desktop Login: Default Desktop

The [dtlogin](X1) daemon has been enhanced to save the desktop chosen when a user logs in. The next time the same user logs in, the previously used desktop will be launched, unless the user chooses another from the **Desktop** menu on the Graphical Login screen.

Two new keywords that control this feature can be specified in the file */etc/default/login*:

SAVEUSERGUI
  which can be **YES** or **NO**. This is a system wide default which controls whether **dtlogin** remembers what window manager the user used last. The default value is YES.
DEFAULTWINDOWMANAGER
  which can be **cde**, **kde**, or **pmwm**. This is a system wide default. If a user hasn't logged into the system before and doesn't select a window manager from the dtlogin **Options > Session** menu, then the **DEFAULTWINDOWMANAGER** is used.

Once a user has logged into a graphical desktop, the **dtlogin** menu **Options > Session** will display the following choices:

```
[Last Desktop Session Selected]
Common Desktop Environment (CDE) and UNIX Personality
Panorama Session and UNIX Personality
KDE2 and Linux Personality (LKP)
Failsafe Session
```

(If you do not have LKP installed, the entry "KDE2 and Linux Personality (LKP)" will not be displayed.)

Your default window manager is either the system default window manager (DEFAULTWINDOWMANAGER) as specified in */etc/default/login* or the window manager you previously selected from the **Options > Session** menu. You can change your personal default window manager by selecting a new window manager from the **Options > Session** menu. Your personal default window manager overrides the system default window manager unless SAVEUSERGUI is set to NO.

Filesystems: SCOAdmin Filesystem Manager Moved

The SCOadmin Filesystems Manager has been moved from the main SCOadmin screen (started from the CDE or Panorama Desktop menus, or from the command line with the **scoadmin** command), to a new **Storage** folder. The **Storage** folder also contains the new **Disk**, **Partition**, and **Slice** Managers, described below.

Hardware: PCI Serial Support

The **asy** and **asyc** drivers (see the asyc(7) manual page) are now configured by default to support up to ten total serial ports. The ports are named following the conventions described in the section Hardware > Configuring Serial Ports > Serial device node naming conventions in the online documentation. The drivers now support 16654 UARTS on the motherboard, as well as Digi Classicboard and Connecttech Blue Heat PCI cards.

PCI devices honor the **resmgr** entries created or modified by **dcu**(1M). Note that only scanned (i.e. not PCI) devices may be used for **kdb**(1M) or console devices.

For more information on the ConnecTech and Digi boards mentioned above, see the respective companies' web sites:

http://www.dgii.com/products/multiport%20serial%20cards/classicboard.jsp
http://www.connecttech.com/sub/Products/ProductList.asp

Networking: DNS Manager Enhancements

The DNS Manager (**scoadmin dns**) has been updated with the following fixes and enhancements:

- The DNS Manager will launch only one server deamon. In previous releases, the DNS Manager would invoke another DNS server when the Manager was started or terminated.

- Enhanced the Manager so that it does not remove configuration and zone data file information entered by other mechanisms (e.g., **vi**(1) or **h2n**(1M)). This was a problem in earlier releases.

- Enhanced h2n(1M) so that it will work properly with files created or edited by the DNS Manager (e.g., uses the same conventions, such as zone data file names). In previous

releases, you could not use both tools on the same set of files.

- The **Server** pull down menu now adds options reliably to the current configuration. The DNS configuration file it produces is validated with the **named-checkconf** utility. It also cleans up appropriately when configuration options and statements are removed.

- **Add** and **Modify Zones** commands for the Primary server type have been improved:

    - The Modify command now performs more reliably.
    - Fixed issues of generating corrupted Zone Data Files via the Manager.
    - Greatly improved the allowed character set and format of MAILBOX type entries for the SOA and RP Resource Records (improved RFC2822 support).
    - Improved the allowed character set and format of the HINFO Resource Record.
    - Greatly improved the allowed character set and format of the TXT Resource Record.

Printing: Increased Number of Print Jobs

The System V LP printing subsystem has been enhanced to allow a maximum of 999 print jobs per printer, or class of printers. In previous releases, only 999 print jobs for the entire system were permitted.

Security: Core Dump for root Processes

By default, privileged processes (i.e., processes running as *root*) do not dump *core* files, to prevent unprivileged access to sensitive data that may be contained in the *core* file. (See the core(4) manual page for a description of *core* files.) A new tunable parameter (COREFILE_SECURE) has been introduced that, if set in the current environment of a privileged process, allows the process to dump a *core* file when a program exception occurs. Such core files should be protected from unprivileged access by ensuring the file permissions allow only owner access, and that the file is owned by *root*. You can do this using the following commands:

```
chmod 400 corefile
chown root corefile
```

COREFILE_SECURE can also be set for the entire system using the System Tuner. Enter **scoadmin system tuner** at a shell prompt, or launch SCOadmin from the desktop and select **System > System Tuner**.

Storage Management: Disk, Partition, and Slice Managers

Three new SCOadmin managers provide a graphical mass storage management interface:

Disk Manager
Manages the logical and physical disk configuration, as well as I/O paths (including

Multi-Path I/O). The other two managers can be launched from this interface to define disk partitions and partition slices.

Partition Manager

Add and remove disk partitions. The **Slice Manager** can be launched from the Partition Manager to display the slices in a partition.

Slice Manager

Displays slices defined within a disk partition.

These managers are grouped under a new **Storage** folder in the SCOadmin main window. Start SCOadmin from the CDE or Panorama desktop menus, or by entering **scoadmin** at a UNIX shell prompt. Managers can also be started from the command line using their names; for example, **scoadmin disk** starts the **Disk Manager**. Use the **Help** button on the main window of any Storage manager to display the online documentation, or look under the Mass Storage Devices Overview topic at the top level of DocView on **http://*hostname*:8458**.

Features in Other Packages:

The features listed in this section are contained in separate packages from the Update Pack Set. To install them, either select them from the Upgrade Wizard when you install the Update Pack Set, or follow the instructions in the section Installing Additional Packages after the Update Pack Set. See Update Pack Contents for the list of additional packages available.

Hardware: Host Bus Adapter (HBA) Drivers

The following HBA drivers are new or updated:

Adaptec Ultra160 Family PCI SCSI HBA d3.14 (adst70)

This updated version of the **adst70** driver fixes a panic that occurred previously on transition to **init**(1M) state 1.

Adaptec Ultra320 Family PCI SCSI HBA d2.0 (adpu320)

This new driver supports the following Adaptec Host Bus Adapters:

Adapter	Chip	Type
AHA29320x, AHA39320x	AIC-7901A, AIC-7902A4	Ultra320 SCSI

Intel Integrated Raid (IIR) HBA Driver Package 2.33 (iir)

This new driver supports the following Intel® Host Bus Adapters:

Adapter	Type
SRCFC22C	Dual Channel 2 Gb/s Fibre Channel RAID w/Ultra160 SCSI
SRCS14L	Four Port S-ATA RAID
SRCMR	Modular RAID on Motherboard Ultra160 SCSI
SRCU-31	Single Channel Ultra160 SCSI RAID
SRCU-31L	Single Channel Ultra160 SCSI RAID
SRCU-32	Dual Channel Ultra160 SCSI RAID

Diskette images of these drivers suitable for use during a new installation of UnixWare are available at ftp://ftp.sco.com/pub/unixware7/drivers/storage.

Also see the Compatible Hardware Page for the latest supported hardware and drivers.

Hardware: Network Interface Card (NIC) Drivers

The **nd** package contains the following updated NIC drivers.

The **bcme** Broadcom Server Adapter driver v6.0.15 supports these models:

```
3Com 3C996/3C1000/3C94X Gigabit Ethernet
Broadcom BCM5700 NetXtreme Gigabit Ethernet
Broadcom BCM5701 NetXtreme Gigabit Ethernet
Broadcom BCM5702 NetXtreme Gigabit Ethernet
Broadcom BCM5703 NetXtreme Gigabit Ethernet
Broadcom BCM5704 NetXtreme Gigabit Ethernet
Broadcom BCM5704S NetXtreme Gigabit Ethernet
Broadcom BCM5705 NetXtreme Gigabit Ethernet
Broadcom BCM5782 NetXtreme Gigabit Ethernet for hp
HP NC6770 Gigabit Ethernet
HP NC7760 Gigabit Ethernet
HP NC7761 Gigabit Server Ethernet
HP NC7770 Gigabit Ethernet
HP NC7771 Gigabit Ethernet
HP NC7772 Gigabit Server Ethernet
HP NC7780 Gigabit Ethernet
HP NC7781 Gigabit Ethernet
HP NC7782 Gigabit Ethernet
HP NC7783 Gigabit Ethernet
```

The **e1008g** Intel PRO/1000 Server Adapter driver v7.0.11 supports these models:

```
PRO/1000 Gigabit Server Adapter PWLA8490
PRO/1000 Gigabit Server Adapter PWLA8490G1
```

```
PRO/1000 F Server Adapter PWLA8490SX
PRO/1000 Gigabit Adapter PWLA8490SXG1P20
PRO/1000 T Server Adapter PWLA8490T
PRO/1000 T Server Adapter PWLA8490TG1P20
PRO/1000 XT Server Adapter PWLA8490XT
PRO/1000 XT Server Adapter PWLA8490XTL
PRO/1000 XT Lo Profile Server Adapter PWLA8490XTL
PRO/1000 XF Server Adapter PWLA8490XF
IBM Netfinity Gigabit Ethernet SX Adapter 09N3599
IBM Netfinity Gigabit Ethernet SX Adapter 30L7076
IBM Gigabit Ethernet SX Server Adapter 06P3718
IBM Gigabit Ethernet Server Adapter 22P4618
PRO/1000 MT Desktop Adapter PWLA8390MT
PRO/1000 MT Server Adapter PWLA8490MT
PRO/1000 MT Dual Port Server Adapter PWLA8492MT
PRO/1000 MF Server Adapter PWLA8490MF
PRO/1000 MF Dual Port Server Adapter PWLA8492MF
```

The **eeE8** Intel Pro100 PCI Adapter driver v2.5.4 supports these models:

```
PRO/100+ Management Adapter (PILA8900)
PRO/100 Server (PILA8480)
Pro/100B T4 (PILA8475B)
PRO/100 S Server (PILA8474B)
PRO/100 S Server (PILA8474BUS)
PRO/100+ Dual Port Server Adapter (PILA8472)
PRO/100+ Server Adapter (PILA8470)
PRO/100+ Server Adapter (PILA8470B)
PRO/100+ Dual Port Server Adapter (61PMCA00)
PRO/100 (PILA8465)
PRO/100B Adapter (PILA8465B)
InBusiness 10/100 Adapter (SA101TX)
PRO/100 S Management (PILA8464B)
Pro/100+ Management Adapter (PILA8461)
Pro/100+ (PILA8460)
Pro/100+ Management Adapter (PILA8460B)
Pro/100+ (PILA8460BN)
PRO/100 S Management (PILA8460BUS)
Pro/10+ (PILA8500)
Pro/10+ (PILA8520)
```

See the Compatible Hardware Page for the latest supported hardware and drivers.

Hardware: Video Drivers

The **xdrivers** package provides a new **nvidia** graphics driver that supports the following graphics cards from NVIDIA Corporation:

```
NVIDIA RIVA TNT2/TNT2 Pro
```

```
NVIDIA RIVA TNT2 Ultra
NVIDIA Vanta/Vanta LT
NVIDIA RIVA TNT2 Model 64/Model 64 Pro
NVIDIA Aladdin TNT2
NVIDIA GeForce2 MX/MX 400
NVIDIA GeForce2 MX 100/200
NVIDIA Quadro2 MXR/EX
```

Also see the Compatible Hardware Page for the latest supported hardware and drivers.

Internet Browser: Mozilla 1.2.1

The Mozilla internet browser, version 1.2.1, is included in a separate package as an alternative to Netscape Communicator 4.61 (delivered in the base Release 7.1.3 system). If you install Mozilla using the Upgrade Wizard when you install the Update Set, all prerequisite packages will be installed as well. If you install Mozilla using **pkgadd**(1M), you will need to install them in the order shown (after installing the Update Set) to enable Mozilla on UnixWare 7.1.3:

- **basex**
- **xserver**
- **glib**
- **gtk**
- **libIDL**
- **mozilla**
- **j2jre131**
- **j2plg131**

The **j2re131** and **j2plg131** packages are required for Java plug-in support only.

For example, if you download all the *.image* files from the download site to */var/spool/pkg*, use the following commands to install these packages:

```
pkgadd -d /var/spool/pkg/basex.image all
pkgadd -d /var/spool/pkg/xserver.image all
pkgadd -d /var/spool/pkg/glib.image all
pkgadd -d /var/spool/pkg/gtk.image all
pkgadd -d /var/spool/pkg/libIDL.image all
pkgadd -d /var/spool/pkg/mozilla.image all
pkgadd -d /var/spool/pkg/j2jre131.image all
pkgadd -d /var/spool/pkg/j2plg131.image all
```

If you are using a mounted CD or CD ISO image (see Step 1 and 2 of Installing the Update Pack from CD), mounted under */install*, enter the following:

```
pkgadd -d /install basex
pkgadd -d /install xserver
pkgadd -d /install/glib.image all
pkgadd -d /install/gtk.image all
pkgadd -d /install/libIDL.image all
```

```
pkgadd -d /install/mozilla.image all
pkgadd -d /install j2jre131
pkgadd -d /install j2plg131
```

A **mozilla**(1) manual page is installed with the browser, and can be viewed with the **man**(1) command or with DocView on **http://***hostname***:8458**.

Using Mozilla in non-English Locales

The following notes apply to using the Update Pack 2 version of Mozilla in locales other than **en_US**.

1. The mozilla released in the Update Pack 2 has been built for the US English locales. All menus and help material are in English.

2. Localization of the user interfaces are provided by individual contributors to the Mozilla Localization Project. These typically:

    ○ provide localized chrome files and profile defaults.
    ○ are provided in the form of Language Packs for specific locales that will will install and register the new chrome files into the mozilla release.

3. Language Packs currently available for Mozilla 1.2.1 are:

    Asturian, Belarusian, Breton, Catalan, Simplified Chinese (China), Traditional Chinese (Hong Kong), Traditional Chinese (Taiwan), Czech, Danish, Dutch, English (United Kingdom), Esperanto, Estonian, French, Galician, German, Greek, Hungarian, Italian, Korean, Lithuanian, Mongolian, Norwegian Nynorsk, Telugu, Turkish, Romanian, Russian, Slovak, Slovenian, Sorbian, Spanish (Latin America), Spanish (Argentina), Spanish (Spain), Polish, Portuguese (Brazil) and Ukrainian.

4. To install individual Language Packs, do the following as **root** in Mozilla:

    a. Select **Edit > Preferences > Appearance > Language/Contents**.
    b. Under **Installed Language Packs**, select **Download More**. This will download the MLP Status web page.
    c. Select the Language Pack desired under the Mozilla 1.2.1 heading. The language pack will be downloaded and installed and the chrome registry will be updated.
    d. Repeat for each additional language pack desired on the system.

    NOTE: Do not attempt to download Mozilla "Content Packs". These contain binaries and libraries compiled for locales on specific operating systems. There are currently no Content Packs for Mozilla running on UnixWare 7, and loading one of them may result in unexpected behavior.

5. Once a Language Pack is installed, it must be enabled in Mozilla. Select **Edit > Preferences > Appearance > Language/Contents**, and choose the Installed Language Pack desired. Then restart Mozilla for the new language pack to take effect.

6. When using Mozilla in a Japanese locale, Japanese characters may not be displayed as they are typed using the X input method (invoked by typing **Shift+Space**). The Japanese characters are instead displayed when **Enter** is pressed. This behavior is the default

setting of the **xim.input_style** attribute in the Mozilla browser. To have characters displayed as they are typed in Japanese locales, add the following line to each user's java script preferences file (typically *$HOME/.mozilla/default/*/prefs.js*):

```
user_pref("xim.input_style", "over-the-spot");
```

Online Documentation: Updated Guides and Manual Pages

The **basedoc** and **baseman** packages contain guide material and manual pages for the new features, enhancements, and fixes delivered with Update Pack 2. They assume that the packages of the same name from Release 7.1.3 are already installed. Online documentation is viewed using the DocView documentation server (**docview**), at **http://*hostname*:8458**, where *hostname* is the network node name of the UnixWare system (e.g., **system1**, **system1.yourdomain.com**, etc.) or **localhost**. The document you are reading now is found under *New Features and Notes.*

Networking and Security: Updated OpenSSH and OpenSSL

The OpenSSL package has been updated to 0.9.7 with a security fix that prevents a timing-based attack on cipher suites used in SSL and TLS. OpenSSL is an Open Source toolkit implementing the Secure Sockets Layer (SSL v2/v3) and Transport Layer Security (TLS v1) protocols as well as a general purpose cryptography library. A user level command, **openssl**(1), is provided that performs a variety of cryptographic functions.

Documentation for OpenSSL is packaged separately in **openssld** on the UnixWare 7.1.3 Updates and Upgrades CD #2. The following manual pages are installed under */usr/man*, and can be viewed via **man**(1) or the DocView **Man Pages** button (**http://*hostname*:8458**):

```
asn1parse.1    pkcs12.1    bio.3               md5.3
ca.1           pkcs7.1     blowfish.3          mdc2.3
CA.pl.1        pkcs8.1     bn.3                OPENSSL_VERSION_NUMBER
ciphers.1      rand.1      bn_internal.3       OpenSSL_add_all_algori
crl.1          req.1       buffer.3            rand.3
crl2pkcs7.1    rsa.1       crypto.3            rc4.3
dgst.1         rsautl.1    d2i_DHparams.3      ripemd.3
dhparam.1      s_client.1  d2i_RSAPublicKey.3  rsa.3
dsa.1          s_server.1  des.3               sha.3
dsaparam.1     sess_id.1   dh.3                ssl.3
enc.1          smime.1     dsa.3               threads.3
gendsa.1       speed.1     err.3
genrsa.1       spkac.1     evp.3               config.5
nseq.1         verify.1    hmac.3
openssl.1      version.1   lh_stats.3          des_modes.7
passwd.1       x509.1      lhash.3
```

For more information on OpenSSL see the OpenSSL Web Site.

The **openssh** 3.4p1 package has been updated to fix several minor problems with the location and file permissions of */etc/sshd.pid*, and the location of */usr/X11R6.1/bin/xauth*. OpenSSH is a suite of network connectivity tools that encrypts all traffic to effectively eliminate eavesdropping, connection hijacking, and other network-level attacks. OpenSSH provides a variety of secure tunneling capabilities and authentication methods. This version fixes a major security vulnerability present in versions 2.3.1 to 3.3, and is built with privilege separation and compression turned on. SSH protocol versions 1.3, 1.5, and 2.0 are supported.

The OpenSSH suite includes:

- **ssh**(1) (**slogin**), alternative to **rlogin** and **telnet**
- **scp**(1) (alternative to **rcp**)
- **sftp**(1) (alternative to **ftp**)
- **sshd**(8), the SSH server daemon (alternative to **rshd**)
- **sftp-server**(8), the SFTP server daemon (alterative to **ftpd**)
- **ssh-agent**(1), the authentication agent, and associated tools: **ssh-add**, **ssh-keygen**, **ssh-keyscan**

Manual pages are provided for all of the above commands, as well as pages for the **ssh_config**(5) and **sshd_config**(5) SSH client and server configuration files. To display them, use the **man**(1) command or DocView on **http://*hostname*:8458**. For more information on OpenSSH, please go to the OpenSSH Web Site http://www.openssh.org/manual.html.

NOTE: You should install OpenSSL from the Update Pack *before* installing OpenSSH, even if you have a previous version of OpenSSL already installed.

Security: Padding of Short Ethernet Frames

Ethernet packets are required by RFC894 and RFC1042 to be a minimum of 46 bytes. Smaller packets are required to be padded with zeros to the 46 byte minimum, but the standards do not specify what part of the system (e.g., the kernel, the driver, etc.) should do the padding. As a result of this ambiguity in the standard, some drivers will pad Ethernet packets themselves (sometimes called "auto-padding") with random data obtained from a buffer. The information contained in the buffer is used as padding in the Ethernet frame, and therefore is available to any program that is monitoring network packets.

UnixWare closes this vulnerability by padding the Ethernet buffer with zeros at the DLPI level, before the driver (or any other entity) has an opportunity to pad the buffer with non-zero data.

The system is updated with this enhancement by the **nics** package.

Security: Updated zlib Data Compression Library

The **zlib** data compression library package (*/usr/lib/libz.so*) has been updated to eliminate a security vulnerability due to a buffer overflow condition in the *gzprintf* function. The **zlib** Manual from the zlib Home Page is available as a manual page; enter **man zlib** or use the **Man Pages** button in DocView on **http://*hostname*:8458**.

<u>Windows Interoperability: Samba 2.2.8a</u>

Samba provides filesharing capabilities using native Microsoft SMB and CIFS protocols for interoperability with Microsoft operating systems. Samba 2.2.8a is provided in two versions: a single-byte version for Western locales (**samba**) and a multibyte version suitable for Asian locales (**sambamb**). The important difference between the two versions is the sorting algorithm used for file ordering which determines whether the file sorting is compatible with wide-character or ascii character code environments.

Note the following when installing Samba:

- If you are upgrading from a previous release of Samba on UnixWare, save a copy of your existing */usr/lib/samba/lib/smb.conf* file before you begin installation, so you can restore any settings that might be affected by the upgrade.

- If Samba fails to start, make sure the directory */usr/lib/samba/private* exists, that it has 755 permission, and is owned by user *root* and group *bin*; then, start Samba, as shown:

  ```
  # cd /usr/lib/samba
  # mkdir private
  # chgrp bin private
  # chown root private
  # /etc/init.d/samba start
  ```

- By default, */tmp* is automatically shared. This can be a security concern, since various system utilities keep temporary data in */tmp*. To remove the */tmp* share, log into SWAT (see above) and select the **Shares** icon. On the next screen, highlight the **tmp** share in the list box and select the **Delete Share** button.

- Samba cannot run together with Advanced File and Print Sharing (AFPS; found on the Optional Services CD #3), nor with the NetBIOS protocol running. If Samba will not start, do the following to determine if AFPS or NetBIOS are running, and disable them if necessary:

  1. Enter:

     ```
     # cd /etc/rc2.d
     ```

  2. Determine if either of the following files exist in this directory:

     S74netbios
     S99ms_srv

     If these one or both of these files exist, enter the appropriate command or commands shown below:

     ```
     # mv S74netbios s74netbios
     # mv S99ms_srv s99ms_srv
     ```

3. Reboot the system:

   # **shutdown -i6 -g0 -y**

4. Start Samba:

   # **/etc/init.d/samba start**

- Samba is configured with the SWAT (Samba Web Administration Tool) utility using a web browser on **http://*hostname*:901**; links to all the Samba documentation are provided from there. To start SWAT:

  1. As root, enter:

     # **/usr/lib/samba/sbin/swat**

  2. Point a web browser at **http://localhost:901**.

  3. Log in to SWAT as *root*.

  4. The main SWAT screen provides links to all the Samba documentation. Select the Status icon to start the Samba daemons.

- To start, stop, and restart Samba from the command line, use the **/etc/init.d/samba** command, as in this example:

  # **/etc/init.d/samba start**

  To enable Samba at system startup, enter the following:

  # **/etc/init.d/samba enable**

  Samba will now start up automatically whenever the system boots. The **disable** parameter returns Samba to manual startup.

- Localization settings in both the single-byte and multibyte versions are accessed from the SWAT Home Page by clicking on the **Globals** tab, and then selecting **Advanced View**. Set appropriate values for your locale for the client code page, the character encoding system, and the other options (each option has context-sensitive help). Please refer to the documentation for **smb.conf** for futher details.

- **Note**: the **smbfs** file system and associated commands (**smbmnt**, **smbmount**, **smbumount**) are not supported on Release 7.1.3. Other client tools, such as **smbspool**, are supported.

More Samba documentation and other resources are provided on the Samba Home Page.

UnixWare 7.1.3 Update Pack 1 New Features

Update Pack 1 was delivered with the following features. See the section Problems Fixed for the maintenance fixes included in the current Update Pack, and the section Known Problems for limitations and workarounds.

> DocView Enhancements
> Emergency Recovery CD Support
> Emergency Recovery Master Boot Record Option
> Host Bus Adapter Drivers
> Network Card Drivers
> Networking: dlpid Performance Enhancements
> PPP Enhancements
> Printing PostScript Files on PCL Printers
> tcpdump Enhancements
> UNIX95 Conformance

DocView Enhancements

The DocView documentation server displays the UnixWare documentation set on port 8458, and is enabled by default for network access. Point any browser on your network at **http://*hostname*:8458**, where *hostname* is the network node name of the UnixWare system, or **localhost** if you are logged into the system running DocView.

Two enhancements have been made to DocView:

Automatic Indexing

> A *crontab* file entry that generates the DocView index automatically when changes are made to the installed documentation has been added to the **root** *crontab* file. The *crontab* entry runs indexing every day at 0310 hours (3:10 AM local time), and is enabled by default. This process can take a significant amount of time depending on the amount of documentation being indexed and available system resources. The *crontab* entry is enabled and disabled using the following commands:
>
> ```
> # /usr/lib/docview/conf/set.rundig.cron --add
> # /usr/lib/docview/conf/set.rundig.cron --remove
> ```
>
> To change the time that the script is run, log in as **root** and enter:
>
> ```
> # EDITOR=/bin/vi crontab -e
> ```
>
> The command above edits the **root** *crontab* file using the vi(1) editor. The *crontab* entry that starts DocView indexing looks like this:
>
> ```
> 10 3 * * * /usr/lib/docview/conf/rundig.crontab > /dev/null 2>&1
> ```
>
> Change the time as needed, following the file format shown on the crontab(1) manual

page. Save your changes to the file, and exit the editor.

DocView Print Service

A new printing interface has been added that allows you to pick a group of topics to be printed as a book.

Selecting the **Print Book** button at the top of the DocView screen opens a copy of the DocView Site Map, from which you can select topics by turning on the check boxes next to the listed topics. At the top of the Print Service screen, select whether you want to generate a PostScript or PDF file. Specify a title for the book, and the heading level to be used in the table of contents.

Select the **Submit** button to collect the selected topics and format them for printing. The cover and custom table of contents are generated and added to the beginning of the document, and the results are paginated appropriately.

When DocView is finished preparing the file, it displays a screen telling you the size of the file and the number of pages in the document. Select the **Proceed with download** button to start downloading the file to your browser (this requires appropriate plug-in support in the browser), or save it to a file on your local system.

The resulting files can be viewed with any PostScript or PDF viewer; this includes **xpdf** and **gs** (GhostScript) under UnixWare or the Linux Kernel Personality (LKP), and Adobe Acrobat on Windows) or any PDF-enabled browser. PostScript files can be printed to any UnixWare PostSript printer via **lp**, as in this example:

```
$ lp -T PS -d printer file
```

Note that the assembled PDF or PostScript file is limited to about 1.5MB of HTML text, or about 600 pages. If your selections exceed this limit, an error message is displayed. Select your browser's **Back** button to go back to the Print Service screen and turn off some of your selections.

Also note that the Print Book interface works only with non-multibyte text; multibyte text, such as that found in Asian-language files, can be printed using the browser's Print interface (if the proper language support is installed on your system and in your the browser). Display the document either by navigating to it through the DocView menus, or using the DocView **Site Map** button (which is organized the same as the **Print Book** interface). Then, print the document using the browser's Print command (**File > Print** in Netscape and Mozilla).

Emergency Recovery CD Support

The emergency_disk(1M) command supports creating an emergency recovery boot CD, as an alternative to using boot floppies. In previous releases, a set of emergency recovery floppy disks was required to boot the system. This meant that your system had to have a 3.5-inch floppy disk drive in order to be restored from emergency recovery media. This is a problem for newer systems that do not support IDE floppy drives. Now, **emergency_disk** can create a boot CD using CD-R or CD-RW media on an IDE, SCSI, or USB recordable CD drive, so that

boot floppies are no longer required. See the **emergency_disk**(1M) manual page for more information.

Note that the **cdrtools** package (found on the UnixWare 7.1.3 Optional Services CD #3) is required to create an emergency recovery boot CD, and that only CD-R, CD-RW, and DVD+RW drives that work with **cdrtools** are supported for emergency recovery.

To test a particular drive to see if it will work with **emergency_disk**, enter the **cdrecord** commands shown below. The first command returns the arguments you need in the second command. The second invocation of **cdrecord** should return the string shown as part of its output:

```
# /bin/cdrecord -scanbus
# /bin/cdrecord -inq dev=scsibus,target,lun
...
Device seems to be: Generic mmc CD-RW.
...
```

The following CD drives are known to work with emergency recovery:

> **CenDyne/AOpen 48X12X50 USB**
> **HP DVD+RW 200i ATAPI**
> **KHypermedia/BenQ 48X24X48 ATAPI**
> **LITE-ON LTR-52246S IDE**
> **Plextor CD-RW 16/10/40A ATAPI**
> **Plextor CD-RW 24/10/24U PX-W2410A USB**
> **Yamaha CD-RW CRW8824S SCSI**

Problems have been observed with the **IOMEGA ZIPCD USB** drive and the **OPTORITE CD-RW CW4802 IDE** drive.

To prevent a timeout problem when burning a CD using an IDE CD-RW drive, the following value in */etc/conf/pack.d/ide/space.c* is changed by the installation of the Update Pack from:

```
int atapi_timeout=10;
```

to:

```
int atapi_timeout=1000;
```

If you use **cdrtools** to burn CDs on an IDE hard drive but do *not* install the Update Pack, you can edit */etc/conf/pack.d/ide/space.c* to make the above change, rebuild the kernel (**idbuild -B**), and then reboot (**shutdown -i6 -g0 -y**).

Emergency Recovery Master Boot Record Option

When restoring the system using emergency recovery boot media (CD or floppy), a new option to write the master boot record (MBR) of the primary hard disk is displayed. This option writes the UnixWare MBR to the boot sector of the primary hard disk. This option is useful if the disk is known to have a valid operating system (OS) on it, yet the error `No OS found`, `No`

`operating system`, or a similar message is displayed when you attempt to boot from the disk. Writing the MBR may permit the disk to boot without further recovery. **Note:** any other OS boot loader in the boot sector (such as **grub**, **lilo**, or System Commander) will be overwritten by this option.

Host Bus Adapter Drivers

The following Host Bus Adapter (HBA) drivers are new or updated:

mpt

> A new LSI Logic PCI to SCSI and Fibre Channel host adapter driver for LSI Logic Ultra320 and Fibre Channel chipsets. For supported devices and other information, see mpt(7).

qlc2200

> Updated QLogic PCI FC host adapter driver to fix problems reported when removing disks from an IBM ESS Storage Area Network (SAN) Cabinet. For supported devices and other information, see qlc2200(7).

These drivers are not installed by the Upgrade Wizard (**uli**), unless (in the case of **qlc2200**), a previous version exists on the system. To install them, use the **pkgadd** command as shown in the section Installing Additional Packages after the Update Pack Set.

Also see the Compatible Hardware Page for the latest supported HBAs and drivers.

Network Card Drivers

The **nd** package on the Update Pack CD contains updated versions of the following network interface card (NIC) drivers, which now support the indicated network cards:

eeE8

```
PRO/100+ Management Adapter (PILA8900)
PRO/100 Server (PILA8480)
Pro/100B T4 (PILA8475B)
PRO/100 S Server (PILA8474B)
PRO/100 S Server (PILA8474BUS)
PRO/100+ Dual Port Server Adapter (PILA8472)
PRO/100+ Server Adapter (PILA8470)
PRO/100+ Server Adapter (PILA8470B)
PRO/100+ Dual Port Server Adapter (61PMCA00)
PRO/100 (PILA8465)
PRO/100B Adapter (PILA8465B)
InBusiness 10/100 Adapter (SA101TX)
PRO/100 S Management (PILA8464B)
Pro/100+ Management Adapter (PILA8461)
Pro/100+ (PILA8460)
```

```
Pro/100+ Management Adapter (PILA8460B)
Pro/100+ (PILA8460BN)
PRO/100 S Management (PILA8460BUS)
Pro/10+ (PILA8500)
Pro/10+ (PILA8520)
```

e1008g

```
PRO/1000 Gigabit Server Adapter PWLA8490
PRO/1000 Gigabit Server Adapter PWLA8490G1
PRO/1000 F Server Adapter PWLA8490SX
PRO/1000 Gigabit Adapter PWLA8490SXG1P20
PRO/1000 T Server Adapter PWLA8490T
PRO/1000 T Server Adapter PWLA8490TG1P20
PRO/1000 XT Server Adapter PWLA8490XT
PRO/1000 XT Server Adapter PWLA8490XTL
PRO/1000 XT Lo Profile Server Adapter PWLA8490XTL
PRO/1000 XF Server Adapter PWLA8490XF
IBM Netfinity Gigabit Ethernet SX Adapter 09N3599
IBM Netfinity Gigabit Ethernet SX Adapter 30L7076
IBM Gigabit Ethernet SX Server Adapter 06P3718
IBM Gigabit Ethernet Server Adapter 22P4618
PRO/1000 MT Desktop Adapter PWLA8390MT
PRO/1000 MT Server Adapter PWLA8490MT
PRO/1000 MT Dual Port Server Adapter PWLA8492MT
PRO/1000 MF Server Adapter PWLA8490MF
PRO/1000 MF Dual Port Server Adapter PWLA8492MF
```

You can select the **nd** package when you use the Upgrade Wizard to install the Update Pack CD. To add the **nd** package separately, see the instructions in the section Installing Additional Packages after the Update Pack Set.

The UnixWare 7.1.3 **nd** package can also be installed on Release 7.1.1 and Release 7.1.2 (also known as OpenUNIX 8.0.0) to update the network drivers or to take advantage of the enhanced **tcpdump** functionality (see tcpdump Enhancements).

Please note the following when installing the Release 7.1.3 **nd** package on Release 7.1.1:

- You will also need to install **ptf7689b** (view text file | download) on Release 7.1.1 before installing the updated **nd** package; otherwise the latest **tcpdump** fails on Release 7.1.1 with the message `dynamic linker: tcpdump: binder error: symbol not found: strlcpy`.

- During installation on Release 7.1.1, the error `UX: grep: ERROR: cannot open /etc/inst/nd/mdi/shrkudi/Master: No such file or directory` is displayed. This error affects the UDI **shrk** driver only, which is not supported on Release 7.1.1. Use the MDI version of the **shrk** driver instead.

See the Compatible Hardware Page for the latest supported network cards and drivers.

Networking: dlpid Performance Enhancements

Poor system and network performance has been observed on some systems when one or more of the Network Interface Cards (NICs) attached to the system is unplugged from the network. This was due to repeated failure indications being sent to the dlpid(1M) daemon.

In Release 7.1.3, a change was made to **dplid** to correct this problem. **dlpid** was changed to check the time between successive hardware failure indications. If the time difference is less than 10 seconds, **dlpid** sleeps for a 10 second interval before trying the device again.

dlpid has been further extended to sleep for a configurable duration between successive hardware failure indications, to allow the NIC to reset and come out of the failure mode, in cases where the default 10-second wait is not enough time for the NIC to reset. A new **dlpid** option, **-r**, is added to wait for the specified time. By default it is set to 10 seconds. If the pre-7.1.3 behavior is required (i.e., no wait between successive hardware failure indications), then **dlpid** can be started with the **-r** option set to **0**.

PPP Enhancements

Various enhancements were made to the pppd(1M) daemon to enhance the reliability and scalability of Point-to-Point Protocol (PPP) connections. Most of these improvements were made to driver code, and so are not visible at the user level. Some are listed in the section Problems Fixed.

Printing PostScript Files on PCL Printers

A System V **lp**(1) filter has been added to allow printing of PostScript files (such as those created by Netscape) to be printed on PCL Printers (such as Hewlett-Packard). To enable this feature:

1. Check to see if GhostScript is already installed, by entering:

    `pkginfo gs`

    If it is not installed, install the **gs** package from the Update Pack as shown in the section Installing Additional Packages after the Update Pack Set.

2. Define a PCL printer using the **scoadmin printer** interface.

3. Enter a command like the following to print a PostScript file on the printer.

    `lp -TPS -d pcl_printer file.ps`

    Where *pcl_printer* is the name of the printer and `file.ps` is the name of the PostScript file. This command (without the file name) can be specified in your browser's preferences to print files automatically to this printer.

tcpdump Enhancements

Version 3.7.1 of [tcpdump](1M) is provided, along with its supporting library, [libpcap](3) (version 0.7). The **tcpdump** utility allows you to view and save TCP headers passing through a particular network interface. Boolean expressions can be used to select only those headers that match the criteria given by the expression.

This version of **tcpdump** has many enhancements over the version (3.4a5) provided in UnixWare 7.1.3. Most notably, the new version does not require a dedicated network card for **tcpdump**. Multiple instances of **tcpdump** can be started to monitor the same card. See the **tcpdump**(1M) and **pcap**(3) manual pages. Also see the [tcpdump web site](#) for **libpcap** tutorials, as well as **tcpdump** and **libpcap** source code.

A number of changes to the MDI and DLPI interfaces were made to support the new version of **tcpdump**.

1. Two new MDI **ioctl** commands are added for MDI2.2 drivers, to turn promiscuous mode on and off: `MACIOC_PROMISCON` and `MACIOC_PROMISCOFF`. `MACIOC_PROMISCON` is compatible with `MACIOC_PROMISC` in MDI2.1.

2. The following DLPI2.0 features are also implemented:

   - Allow sharing of SAPs by network interface cards.
   - Support the `DL_PROMISCON_REQ` and `DL_PROMISCOFF_REQ` primitives.

To support the above changes, updated header files *dlpimod.h* and *mdi.h* are provided in the **nics** package, as well as the updated support for running tcpdump on a non-dedicated network card. **tcpdump**, **libpcap**, and related header files are provided by the **nd** package. If the **nd** package is installed without the updated **nics** package, the updated **tcpdump**, etc., are installed, but must be used with a dedicated network controller as in previous releases.

The updated **nd** package can also be installed on Release 7.1.1 and Release 7.1.2 (Open UNIX 8.0.0) if the latest version of **tcpdump** is desired. The **nics** package is not supported and will not install on these earlier releases, however, so **tcpdump** on Release 7.1.1 and 7.1.2 will continue to require a dedicated network card.

UNIX95 Conformance

The following minor modifications have been made in order to maintain conformance to the UNIX95 standard:

- The **dd** command was modified to accept and ignore a double dash (--) as an end of options indicator. Note that **dd** has no options that begin with a dash (-), so "--" can only appear as the leading argument and consequently has no real purpose.

- The **sort** command has been modified *to remove* its previous (mistaken) UNIX95 behavior. Previously, when using **sort -c** with the `POSIX2` environment variable set, **sort** only indicated whether the input was sorted through its exit value. Now, **sort -c** will always return a diagnostic if the input is out of order (regardless of whether `POSIX2` is set or not).

- Previously, the two supported Korn shells (*/bin/ksh* and */u95/bin/sh*) did not recognize an

integer literal with a leading **0** as being octal, nor a leading **0x** or **0X** as hexadecimal in arithmetic constructs. This does not match the intent of the POSIX.2 and Open Group shell specification. So, for example, the following output was seen in previous versions of the Korn shell:

```
$ echo $((10+1))
11
$ echo $((010+1))
11
$ echo $((0x10+1))
/u95/bin/sh: 0x10+1: arithmetic syntax error
```

A change has been made to accept octal and hexadecimal specifiers as explained above when the **POSIX2** environment variable is set:

```
$ export POSIX2=on
$ echo $((10+1))
11
$ echo $((010+1))
9
$ echo $((0x10+1))
17
```

Note that because integer constants like **010** have a silent change in behavior, this change requires **POSIX2** to be set in the environment.

- Minor namespace changes were made to the following header files:

```
arpa/inet.h
netdb.h
netinet/in.h
netinet/in6_f.h
netinet/in_f.h
fmtmsg.h
grp.h
libgen.h
pwd.h
stdarg.h
strings.h
unistd.h
utmp.h
utmpx.h
wchar.h
sys/fcntl.h
sys/stat.h
sys/statvfs.h
sys/convsa.h
sys/stropts.h
sys/mman.h
sys/socket.h
```

sys/un.h
sys/regset.h
sys/siginfo.h
sys/ucontext.h
sys/fp.h

Problems Fixed in UnixWare 7.1.3 Update Pack 4

Update Pack 4 (**uw713up4**) contains all the fixes from Maintenance Pack 1 (**uw713mp1**), Maintenance Pack 2 (**uw713mp2**), Maintenance Pack 3 (**uw713mp2**), Update Pack 1 (**uw713up1**), Update Pack 2 (**uw713up2**), and Update Pack 3 (**uw713up3**), plus additional fixes. See the lists below. The identifiers at the end of each description are SCO escalation and problem report numbers.

[Problems fixed in Maintenance Pack 1](#)
[Problems fixed in Update Pack 1](#)
[Problems fixed in Maintenance Pack 2](#)
[Problems fixed in Update Pack 2](#)
[Problems fixed in Update Pack 3](#)
[Problems fixed in Update Pack 4](#)
[Problems Fixed in Update Pack 2 Supplemental Packages](#)
[Problems Fixed in Update Pack 3 Supplemental Packages](#)
[Problems Fixed in Update Pack 4 Supplemental Packages](#)

Problems fixed in Maintenance Pack 1

uw713mp1 contained the following fixes:

1. Prevents system panics previously caused when **fusers** examines an exiting process.
   fz526462

2. Prevents hangs seen on Compaq ML350 and ML370 Systems when hyperthreading (Jackson Technology) is enabled, i.e., when the boot parameter **ENABLE_JT** is set to **YES**.
   fz526444

3. Fixed problems with the CDE desktop help viewer.
   fz526501

4. Provides missing **scoadmin filesystem** files that were not installed when upgrading from UnixWare 7.1.1 or Open UNIX 8.0.0.
   fz526550

5. Provides updated */usr/include* files that were not installed when upgrading from UnixWare 7.1.1 or Open UNIX 8.0.0.
   fz526552

6. Provides a new **makewhatis**(1M) command that was not installed when upgrading from

UnixWare 7.1.1 or Open UNIX 8.0.0.
fz526526

7. Fixed **crash**(1M) to recognize changes to the *callout* structure.
fz518517

8. Fixes issues target disk driver error recovery.
fz520729

Problems fixed in Update Pack 1

uw713up1 contains all the fixes listed above for **uw713mp1**, plus the following additional fixes. Fixes listed with (MP2) at the beginning of the description are also included in Maintgenance Pack 2 (MP2); see [Problems fixed in Maintenance Pack 2](#).

Security Fixes

9. (MP2) Closing file descriptors 0, 1 and/or 2 before **exec**'ing a **setuid** program can make this program open files under these file descriptors, which have special meanings for **libc** (`stdin/stdout/stderr`). Reading or writing to root-owned files can be made possible, since `stdin/stdout/stderr==opened_file`.
erg712059/fz526562/CSSA-2002-SCO.43

10. (MP2) A rogue **talk** client is able to cause the **talk** demon to overrun a buffer, and could be able to compromise a machine running **talkd**.
erg712055/fz521053/CSSA-2002-SCO.42

11. (MP2) Buffer overflow in XPR portion of *libnsl* library.
erg712182/fz526861/CSSA-2003-SCO.7

12. (MP2) A command line buffer overflow in **ps** command can be exploited.
erg712109/fz525292/CSSA-2003-SCO.1

13. (MP2) The implementation of *xdr_array* can be tricked into writing beyond the buffers it allocated when deserializing the XDR stream.
erg501642/fz525725/CSSA-2003-SCO.7

14. (MP2) Fixed a security vulnerability in the **sendmail** binary that can be exploited by remote users to gain root access.
fz527484/erg712247/CSSA-2003-SCO.5

15. (MP2) When using **ftp** to transfer a file with a pipe as the first character in its name (for example, │**xyz**), **ftp** executes the file on client machine.
erg712227/fz527425/CSSA-2003-SCO.3

Networking Fixes

16. (MP2) Panic in PPP driver - *pppwsrv*() - due to a race condition.
erg501673/fz526330

17. (MP2) Panic in PPP's **pcid** driver.
erg501650/fz525867

18. (MP2) Communication problem between **pcid** and **ppp** driver.
    erg501678/fz526352

19. (MP2) The **ttymon** process sometimes stops listening to a port after PPP disconnect.
    erg501634/fz525626

20. (MP2) When receiving data from a TCP socket it may lock up indefinitely with data buffered up in the kernel but never returned to the process.
    erg501604/fz520887

21. (MP2) Connection server fails with the following error:

    10/24/02 17:14:51; 27209; cs: ioctl() set signal error; errno=22

    erg712153/fz526540

22. (MP2) Improved network printing performance.
    erg712041/fz520932

23. (MP2) If an **ftp** client host was reset (as in cycling the power) during the data transmission to the server, the **ftp**-data connection never times out on the server. If the client tries to use again the same port after reboot for an **ftp** transmission, the server responds with **EADDRINUSE**.
    erg501703/fz526973

24. (MP2) After removing a network interface, **pkgchk nics** complains about missing files.
    erg712152/fz526505

25. (MP2) Repeated logins on virtual terminals (*/dev/vt02 ... /dev/vt08*) result in file descriptor leakage in **ttymon**.
    erg501636/fz525650

26. (MP2) When excessive short-lived **rlogin** sessions are being created, */var/adm/wtmp* and */var/adm/wtmpx* get out of sync and must be rewritten. While these files are being rewritten, no one can **rlogin** to the system. If these files grow quite large, this can take up to 20-30 minutes. Also under heavy load the short-lived **rlogin** sessions may leave in *utmp* the entries from sessions that have actually completed.
    fz526496/erg712151

27. (MP2) Can't write to **/dev/_tcp/***num* tty device (**rlogin** connection).
    erg712250/fz526110

28. (MP2) Occasionally *bind*() returns **EADDRINUSE** for no apparent reason.
    erg712209/fz527217

29. (MP2) Fixed tape driver bug relating to SAN attached tape drives.
    erg712195/fz526396

30. (MP2) Fixed an NFS panic which can occur following certain types of transmission errors.
    fz526648

31. (MP2) Cleaned up code which handles dispatching of *tcp* timers.
    fz526796

32. (MP2) Panic in *tcp_close*.
    fz527439/erg712230

33. The function **write**(2) erroneously returns `EISCONN` on a raw socket.
    erg501681 fz526404

34. Fixed an NFS hang which can occur when mounting an NFS file system.
    fz526665

35. Unplugged network cable causes terrible interactive console performance.
    fz520663

36. System panic while running LSV **inet** stress tests (GetService).
    fz526345

37. The utility **cs**(1Mbnu) fails to include the phone number.
    erg501670, fz526315

38. PPP stability and scalability improvements.
    fz527328

Miscellaneous Fixes

39. (MP2) Multi-threaded application may hang in an unkillable *sleep*, during *exec*.
    erg712172 fz526750

40. (MP2) Fix for **sdiadd -n** panic on systems with a pre-DDI8 Host Bus Adapter (HBA). The problem was that *sdi_hot_add*() was not converting the older style SCSI address into the newer extended SCSI addressing scheme properly. The original fix set the address to -1's instead of 0's for the wildcard case. *pdi_hot* will set the SCSI address to all -1's to tell SDI that we want to scan the entire SCSI bus starting from absolute address 0/0/0/0 (controller/bus/target/lun).
    erg712223 fz527360

41. (MP2) Added minor command modifications required by The Open Group for UNIX95 certification. For details, see [UNIX95 Conformance](#).
    fz526395/fz526629/fz527377

42. (MP2) The **emergency_disk**(1M) boot media hangs on system with more than 4 GB RAM.
    fz527578

43. (MP2) Added undocumented option **noquota** to the vxfs **mount** command to fix the problem where the output of **mount -p** when used in */etc/vfsta*b, is rejected by **mount** with the message:

    `UX:vxfs mount: ERROR: illegal -o suboption -- noquota`

    erg712190 fz526894

44. (MP2) The kernel can panic in *mod_dev_load* if a DDI8 driver does not get configured properly.
    fz526791

45. (MP2) Repeated logins on virtual terminals (*/dev/vt02 ... /dev/vt08*) result in file descriptor leakage in **ttymon**.
   erg501636 fz525650

46. System hangs due to multiple, racing calls to *stropen*.
   erg501706 fz527158

47. **lint**(1) previously warned about *_nanf*() and *nanf*() in *math.h*. Adding a $/*LINTED*/$ line in front of each suppresses this noise.
   fz527588

48. The utility **cs**(1Mbnu) exits unexpectedly due to *fork*(2) failure.
   erg501710 fz527253

49. The **emergency_rec**(1M) command doesn't ignore commented entries in */usr/lib/drf/tapeconfig*.
   fz527399

50. The command **pwck**(1M) should print the line being processed, when errors are encountered.
   erg712157 fz518020

51. Fix locking of CD-ROM tray.
   fz527497

52. The command **sar -d** returns busy values > 100%
   fz521100 erg501658

53. Fixed bugs which caused the licensing daemons (**ifor_pmd**, **ifor_sld**, and **sco_cpd**) and the **idmknodd** daemon to be killed on transitions to **init** state 1 and never restarted.
   fz526649, fz526656

54. The **mousemgr** process could not be run in init state 1.
   fz527032

55. Updated **/sbin/usb** to only run when *usbd* is configured.
   fz527495

56. Fixed potential problem evaluating constant expressions in *full_optimization* **asm**(1) functions.
   fz527501

57. Panic in the routine *v86bios0*().
   fz526652

58. Include support tool **sysinfo**(1M) in shipping product.
   fz519999

59. Intel's fix for p6update panics on prototype Pentium 4 Xeon system.
   fz521607

60. Kernel panic in *kmem_alloc*, from *tcpopen*.
   fz521356

61. New tunable **COREFILE_SECURE**. Privileged, **setuid** or **setgid** processes are prohibited from dumping core. A new tunable **COREFILE_SECURE**, if tuned to 0, will allow such processes to core dump.
fz526524/erg712163

62. System hangs sporadically after calling *execv* directly after *fork1* in multithreaded applications.
fz526597

63. Netscape postscript printing in **kole** (Korean) environment is broken.
fz520071

64. If the Skunkware **ghostscript** package is installed, the PostScript files (such as those printed by Netscape) can be automatically converted for printing on the PCL printers (such as HP LaserJet). An example of command to enter in the Netscape print dialog:

> **lp -T PS**

65. Correctly display version of **dump** command with **-V** option.
fz518607

66. Fix for missing charset attribute for Japanese documentation in DocView.
fz526356

Development Fixes

67. Assembly peep-hole optimizer (**optim**) fix for three operand integer multiplication by one which was not caught by the global optimizer on C++ code.
fz526555

68. C++ compiler fix: Unless in strict ANSI mode, allow an undefined inline function to be referenced if the point of reference is never used.
fz526499 fz526480

69. Debugging information for a "long long" local variable assigned to register pair **%ebx/%esi** was incorrectly stated as **%ebx/%esp**. C and C++ compilers fixed.

Compatibility Fixes

70. (MP2) Fix for panic on certain OpenServer binaries.
erg550013/fz514721

71. (MP2) *chown*() arguments of -1 do not work for OpenServer binaries
fz526683

Problems fixed in Maintenance Pack 2

uw713mp2 contains all the fixes listed above for Maintenance Pack 1, the fixes marked (MP2) delivered with Update Pack 1, plus the following fixes:

Security Fixes:

72. **uudecode** does not validate the filename; it should not write to pipes or symbolic links.
CSSA-2002-SCO.44

Networking Fixes:

73. KMA corruption in *tcp*.
fz521356/erg712086

74. Status requests are not being automatically generated for a network printer if it is very busy resulting in job ids not being freed.
erg501666/fz526164

75. Hangs and delays in streams caused by streams routines unnecessarily allocating large physically contiguous buffers.
fz527550/erg712266

Compatibility Fixes:

76. Fixed system call restart code for OpenServer applications. Also modified code for the connect system call so that connect is properly restartable for OpenServer applications.
fz527264

77. System hangs during boot up on older (Pentium III and earlier) IBM hardware.
fz527522

78. Allow use of an ELF interpreter which contains a **PT_NOTES** section, as some older OpenServer libraries do.
fz527571

79. Enable 16-bit IPC IDs for OpenServer and Xenix compatibility.
fz527373

80. Implement support of **MAP_NOEOF** *mmap* flag for OpenServer applications running on UnixWare.
fz527536

Miscellaneous Fixes:

81. Fixed an unrecoverable "internal error" experienced by the **debug** command when reading some core files from threaded applications. Fixed the recently added **-m** command line option to specify an alternate runtime library path when analyzing core files from other systems.
erg501675/fz526224/fz526635/fz526681

82. The **vtoc** driver has been fixed to support disks whose physical sector size is an integral multiple of 512.
erg501717/fz527726

83. System may refuse to take console input after 248 days, thereby appearing to hang, due to invalid time stamps in the **cmux** driver.
fz527517/erg501720

84. The command **useradd**(1M) allows $ in usernames (SAMBA requirement)
fz526483

85. The **ksh95** built in **pwd** command can output pathnames starting with *//*.
    fz199364

86. PSE memory remains unavailable after dynamically adding memory.
    erg712235/fz527455

87. System hangs in **vxfs** filesystem. Processes blocked waiting on a call to *vx_iget*.
    erg712184/fz526355

88. Restore the pre-7.1.3 *lookuppn* syntax so that third-party provided filesystems continue to work. The extra *root vnode* argument has been removed from *lookuppn*. A new *lookuppnx* function has been created with this extra argument.
    fz527503

Problems fixed in the Update Pack 2 Set

uw713up2 contains all the fixes listed above for Maintenance Pack 1, Update Pack 1, and Maintenance Pack 2, plus the following additional fixes.

Networking Fixes:

89. Hangs and delays in streams caused by streams routines unnecessarily allocating large physically contiguous buffers.
    fz527550 erg712266

90. If two arp -d's are called in quick succession, one of the entries may not be deleted.
    erg711628/fz516107

91. When DNS is not configured, mailadmin (scoadmin mail) will not allow you to change any settings.
    erg712296/fz527783

92. System panic due to a race condition in tcp timers code.
    erg501722/fz527554

93. Fixed scoadmin DNS Manager' abnormal terminations; fixed corruption of DNS/BIND's configuration and zone data files caused by scoadmin DNS Manager; fixed ndc/rndc utility and interactions with DNS/BIND.
    fz518460 fz518604 fz521436

Compatibility Fixes:

94. If the name of remote system for a remote printer is not found in /etc/lp/Systems, lpsched does not complain at startup and later on coredumps when a status or cancel request is sent to that printer.
    fz527931

95. Remote print requests remain indefinitely in queue if remote system is down. They do not timeout even if timeout parameter is specified in /etc/lp/Systems for the corresponding remote system.
    fz527934

WARNING: Since by default the timeout is set to 10 minutes, print setups with large network delays may suddenly experience timed-out jobs. For such systems, system administrators should either increase the timeout value or set timeout to "never" to restore old behavior.

Miscellaneous Fixes:

96. System can refuse to take console input after 248 days, thereby appearing to hang, due to invalid time stamps in the **cmux** driver.
fz527517 erg501720

97. Short-lived floating point temp value may be left on the floating point stack when used within the second or third operand of a conditional operator. This may result in a floating point stack overflow.
fz527712

98. Potential floating point stack overflow detected in /usr/sbin/vxassist.
fz527712

99. Shell metacharacters that are part of the options to the C++ compiler are properly preserved (escaped) for reuse during recompilation done as part of C++ auto template instantiation.
fz527527

100. Fixed an unrecoverable "internal error" experienced by the debug command when reading some core files from threaded applications. Fixed the recently added '-m' command line option to specify an alternate runtime library path when analyzing core files from other systems.
erg501675 fz526224 fz526635 fz526681

101. The vtoc driver has been fixed to support disks whose physical sector size is an integral multiple of 512.
erg501717 fz527726

102. Fixed division by zero error in /usr/ccs/lib/optim encountered in calculating potential benefits of locals in a register for what appears to be a series of heavily nested loops.

103. Fix to ps -o time so that when the accumulated CPU time exceeds 24 hours, the number of days is no longer off by one.
fz527776/erg712295

104. Change the "enum boolean" tag in /usr/include/sys/types.h to "enum __boolean", removing the type/tag "boolean" from the user name space.
fz527818

105. Add support for Digi ClassicBoard/PCI and Connect Blue Heat serial cards.
fz527694

106. System hangs in vxfs filesystem. Processes blocked waiting on a call to vx_iget.
erg712184 fz526355

107. Restore the pre UnixWare 7.1.3 lookuppn syntax so that third-party provided filesystems continue to work. The extra "root vnode" argument has been removed from lookuppn. A new lookuppnx function has been created with this extra argument.
fz527503

108. Status requests are not being automatically generated for a network printer if is very busy resulting in job ids not being freed.
erg501666 fz526164

109. Display per-processor callouts as well as global callouts from the callout command.
fz527802

110. Enhanced the Printing subsytem to have a maximum of 999 printjobs per printer or class of printers rather 999 printjobs for the whole system.
erg501712/fz526370

111. Lpsched performs poorly when a large number of jobs (200+) are submitted at once.
erg501718/fz527462

112. The sdipath -o repair command can hang when run against active paths.
erg712254/fz527498

113. PSE memory remains unavailable after dynamically adding memory.
erg712235 fz527455

114. Periodic Local timeouts can migrate to global callout lists. If a driver uses a dtimeout interface to schedule a periodic callout on a particular cpu, the callout migrates to the global list after the first firing. This then allows allows callout to be scheduled on any cpu.

fz527675

115. scoadmin now includes a graphical disk manager
fz527823

116. xAPIC support for IBM xSeries x440 servers - allows multiple CECs to be used and more than 8 logical CPUs
fz526749 fz527522

117. Fix the ksh problem where an empty assignment (for example, ksh -c 'x=; echo ${x/y/z}') would cause a memory fault.
fz527943

118. Change umask to 022 so that /etc/ssh.pid is not world writable.
fz526605

119. Correct /usr/sbin/sshd binary to use /usr/X/bin/xauth instead of /usr/X11R6/bin/xauth.
fz526871

120. Added STO_386_COPY support to RTLD and the linker to aid in the evolution of the

IA32 psABI.
fz527833

121. Add support for the BSD and Linux asprintf() and vasprintf() routines. These two routines are additional *sprintf() variations. Here, you pass the address of a "char *" into which is placed a malloc()d buffer of sufficient length to hold the entire sprintf() result. The caller is responsible for free()ing the buffer when done.
fz527834

122. Correct /usr/include/sys/nattr.h definition of NATTR_CSUM_MASK.
fz527534

Problems fixed in the Update Pack 3 Set

uw713up3 contains all the fixes listed above for Maintenance Pack 1, Update Pack 1, Maintenance Pack 2, and Update Pack 2, plus the following additional fixes.

Security Fixes:

123. Fixed exploitable buffer overflows in **metamail**.
erg712265 fz527543

124. Drop TCP packets when both SYN & FIN are set.
erg712274 fz527623

125. sendmail char sign extension buffer overflow. Upgraded to Sendmail 8.12.9.
erg712276 fz527629

126. DocView no longer permits certain URLs from reading publicly-readable system files.
fz528126 erg712368

127. **sendmail** remotely exploitable buffer overflow in prescan.
erg712433 fz528320 CSSA-2003-SCO.23

Networking Fixes:

128. Kernel panics with a bad read pointer in a STREAMS message block, caused by mishandling of the message block in the STREAMS utility msgpullup and in the IP protocol handling routine ip_input.
erg712321 fz527939

129. Some STREAMS *ioctl* coomands involving multiple message exchanges with the driver may timeout prematurely and return EAGAIN erroneously.
erg712396 fz528199

130. Code generation error in **ppp** library.
fz528222

131. *flock()* hangs when the NFS server is Microsoft SFU (3.0)
erg712347 fz528048

132. Data corruption during TCP connection setup. A race condition could erroneously acknowledge enqueued data that has not been sent causing receiver to get partial data.
erg712389 fz528172

Development Fixes:

133. C/C++ inlining of a small function may attempt to use a FP constant as if it were and integer value in memory.
fz528225

134. Optimzation bug fix. Optim may erroneously remove a structure return temp space from the stack.
fz528221:1

135. C++ compiler internal error if shift operator amount is a 64 bit data type.
fz528230

136. Warning diagnostic for **cc -Xc** about intermixed statements and declarations could be issued inappropriately.
fz527343

137. The *qsort()* routine was reworked to increase performance, especially when presented with lots of "equal" data items.
fz527984 fz528071

138. The C compiler's preprocessing inappropriately took a '_' as starting a fresh token when in the middle of a "ppnumber" token. In practice, this only had an effect on code which created identifier tokens through pasting.
fz528049

139. The *bsearch()* routine was improved to handle zero-valued "size" and "number of items" parameters.
fz528073

140. **cc -Xt** no longer warns about "return;" for functions whose return type is other than void.
fz528120

141. A bug was repaired in which an inlined function call, having been passed a null pointer, would trigger an internal C compiler error when this parameter was the target of a *strcpy()* or *strncpy()* call.
fz528141

142. The obsolete *ustat()* routine has been moved from the unshared portion of the C library to the shared *libc.so.1*. The backward compatibility library libcudk70.a has an unshared *ustat()* added.
fz528274

143. The **strip** and **mcs** utilities no longer attempt to make use of the *rename()* system call to move the updated temporary file over the file being operated on.
fz528164

Miscellaneous Fixes:

144. When pkgadd fails early on, before any package has been selected, it gives the following message: UX:mailx: WARNING: No message !?! This message was confusing to users and is now not displayed.
fz527750

145. When hyperthreading is enabled on a uniprocessor system without MPS BIOS tables, the system will attempt to use a standard two cpu multiprocessor configuration to enable hyperthreading.
fz527457

146. Hyperthreading is disabled (erroneously) on some systems.
erg712350 fz528053

147. System hang. Hard hang unable to enter **kdb** or dump the system.
erg712346 fz528045

148. **ksh93** autoload functions invoked within command substitution fail to execute.
erg712312 fz527879

149. **/etc/conf/bin/idconfupdate** now creates its .idlock file in *etc/conf* instead of */var/tmp*. This avoids idtools problems when */var/tmp* is not mounted.
fz528107:1 fz528129:1

150. **/etc/magic** expanded to recognize Java class files and SVR4 pkgadd datastream image files.
fz160445, fz527896

151. Large block sized i/o requests failing with Pre-DDI8 HBA drivers.
fz527917:1 erg712316

152. When reporting information for multiple files, **/usr/bin/file** may reference previously freed memory.
fz219396

153. Panic in **specfs**, NULL pointer dereference (s_cp).
erg712337 fz528010

154. **/usr/ucb/lastcomm** core dumps.
fz528025

155. **syslogd** fails to respond to SIGHUP.
erg712414 fz528159

156. */etc/magic* has been expanded to provide recognition of of more file types.
fz144358 fz528024

157. /**u95/bin/ksh** users' `w` idle time resets every 10 min.
erg712362 fz528070

158. Added dacread,macread privileges to /usr/lib/fs/vxfs/quota.
fz528196

159. Fixed failures mounting/creating **vxfs** snapshots which indicated that the filesystem is either already mounted, busy, or the allowable number of mount point exceeded when none of these failure conditions were true.
erg712361 / fz528100:1

160. Fixed kernel stack overflows with **lxuwfs**, replacing relatively large stack variables with allocated areas. Matching change made to **lxdevfs**.
fz527910 / fz528131

161. */sbin/dfspace* now does not list LKP and OKP mount points.
fz519343:1

162. Updated **kcrash** with bug fixes.
fz528295

163. Fixed **scoadmin** Slice Manager character mode display for cylinders and attributes views.
fz528041

164. Updated **mkmsgs**.
fz527996, fz528200

165. Updated **swap** command to handle swap files up to 4GB.
fz202265

166. Updated time zone data for India (IST).
fz526471

167. **ksh95** built in **pwd** can output pathnames starting with //.
fz199364

168. When installing UnixWare on some machines with the nVidia GeForce4 video chipset, the screen goes black and the machines freezes after the initial kernel is loaded and before the language selection screen. Separate boot floppies are required to install such a system. The fix delivered in UP3 ensures systems installed in such a manner continue to work.
erg712344 fz528030

169. USB chipsets using the optional EHCI 64-bit addressing modes no longer get "Descriptor Read Failure load failed during enumeration" on USB startup.
fz528043

170. The USB drive from Melco/Yedata no longer fails on USB startup with "Inquiry Read failed, unbinding".
fz528046

171. DocView Print Book feature now handles documents that were not properly assembled for printing.
fz527824

172. Support logical volumes up to 1 TB. **mkfs_vxfs** failed on logical volumes > 512GB and fdisk reported invalid cylinders in "1 TB boundary" cases.
fz520676 erg712311

173. The **queue** command within **crash** prints garbage at the end of the line.
fz528406

174. The **date** command core dumps. Attempting to update the time via SCOadmin will display an error message, although the time does get updated.
erg712397 fz528056

175. The **userdel** command core dumps.
fz528409

Problems fixed in the Update Pack 4 Set

uw713up4 contains all the fixes listed above for Maintenance Pack 1, Update Pack 1, Maintenance Pack 2, Update Pack 2, and Update Pack 3, plus the following additional fixes. Note that some of the fixes below were also include in Maintenance Pack 3; all Maintenance Pack 3 fixes are included in Update Pack 4.

Security Fixes:

176. SECURITY - CRLF (Carriage Return, Line Feed) injection vulnerability in lynx.
fz712379 fz528144

177. Security fix for OpenSSL version 0.9.7b. See http://cvs.openssl.org/chngview?cn=11213.

fz528383

178. Fixed */proc* security bug.
fz712482 fz528474

179. Fixed LKP chroot security vulnerability in intpexec
fz528642 erg712519

Networking Fixes:

181. Repaired a bug in the ftp daemon that would cause it to report "426 Data connection: Error 0" after a successful transfer.
fz528430 fz528034

182. Fixed problem where rcp of */proc* causes denial of service.
fz712112 fz525927

183. Fixed a bug in traceroute that would cause it to core dump.
fz528289

184. An optimization to predict the MAC header size is now a tuneable. A value of 0 allows the OS to discover the optimal header size. A value less than 0 disables the optimization and a value above 0 enforces the value specified in the tuneable. This is specifically useful for applications like IBM SNA Gateway which provides a media frame header size different than calculated by the OS.
fz527969

185. There are three new tuneables provided: tcp_rexmit_min to control the minimum retransmission timeout value, tcp_rttdflt to specify a default initial RTT value and the tcp_maxrxt_min to allow configuration of cumulative minimum retransmission value.
fz527766

Development Fixes:

186. C/C++ inlining of a function or type "char *" into an expression that expects an integer type expression may result in an internal compiler error.
fz528442

187. DT_RUN_PATH formats accepted with the -R option of the CC (C++) command have been expanded to include $ORIGIN and relative paths.

fz528471

188. The Java first-class executables feature has been upgraded to support Java 1.4.2.
     fz528476

189. The 'fs' memory checking tool within the UDK C++ compilation system has been fixed to handle the C++ standard library <memory> header.
     fz528482

190. Optimization bug fix. */usr/ccs/lib/optim* does not properly track source memory usage for the third operand of a three operand SHLDL instruction.
     fz528620

191. The C++ compiler would emit incorrect code to handle object cleanup during exception handling throw processing, when the object was of a multidimensional array of classes type.
     fz528674

192. C/C++ compilers may encounter an internal compiler error when handling a cast of a volatile type to a void type.
     fz528689

193. Fixed problem where programs linked with libthread that call fork1() from the original thread produce children that are not properly protected from signals in critical library code.
     fz528522

194. Changed *libc*'s internal *%f* and *fcvt*() formatting to give a slightly more accurate result when more digits are requested than are handled internally.
     fz528370

195. Corrected some exported *libc* symbols that should have been weak to be so.
     fz528448

196. Fill-in some missing iconv (command and library routine) codeset conversion to permit direct conversion to/from UTF-8 and the following codesets: PC437, PC850, PC860, PC863, PC865, 8859/1, eucJP, and sjis. The same effect was available before this by using a "unicode" (UCS2) intermediate codeset target.
     fz528539

197. Repair a *qsort*() bug in which an incorrect internal swap routine can be used.
     fz528569

198. Changed the Motif (*libXm* and *libWXm*) libraries to be built using the system's *strcasecmp*() and register expression routines.
     fz528651

199. Repaired a bug in libthread such that a null pointer can be dereferenced in *cond_broadcast*() after a *fork1*().
     fz528714

200. Changed *libthread*'s timer mechanism so it recognizes hard system clock resets.
     fz712390 fz527957

201. Fixed RTLD *exit*() processing to prevent a segmentation fault observed when a

loaded-at-startup shared libary *dlopen*()s some other library and then uses its *_fini*() routine to *dlclose*() this other library. Previously, the RTLD *exit*() processing resulted in the *dlclose*() causing a segmentation fault as it attempts to modify memory through a null pointer.
fz528933

Miscellaneous Fixes:

201. Fixed panic in realitexpire.
fz712352 fz528064

202. The rtpm command incorrectly reports it is out of memory and exits; the time reported by rtpm gets out of sync with the system clock.
fz712441 fz528135 erg712393 fz528133

203. Shared memory that is in use by a process experiencing a fork failure might not be released.
fz712399 fz528204

204. System hang; infinite loop in *deadflck*.
fz712154 fz526541

205. **Ksh** sleep call is waiting forever due to missed SIGALRM.
fz712386 fz528169

206. The multibyte to wide-character conversion code for EUC was broken.
fz712507 fz528536

207. **cs** daemon allows 2 child processes to talk to the same device.
fz501731 fz527737

208. System call entry handler for linux binaries will panic if a real device is attached to the same vector or if a spurious interrupt is received on that vector.
fz712348 fz528051

209. Corrected permissions on various */etc/inst/locale/*/menus/LKP/lxrpms.msgs* files. These permissions were correct for systems which had a fresh Unixware 7.1.3 ISL installation. The permissions were incorrect for customers who had upgraded from to UnixWare 7.1.3 from a prior UnixWare/Open UNIX release.
fz520137

210. MAXRUN is a new **cron** tuneable parameter in */etc/default/cron*. It defaults to 25 and defines the number of simultaneous cron jobs in the system.
fz712469 fz528435

211. Fix *libDtHelp* buffer overflow problem.
erg712445 fz528372

212. Fix bug in **mousemgr** which causes graphical login to fail to restart after logout when using a serial mouse.
fz528706

213. Ensure that */etc/conf/bin/idcpunix* invokes **rm -rf** from a directory with a known path to avoid certain failures which can occur when invoking */etc/conf/bin/idcpunix* (and therefore **rm -rf**) from a directory with no known path. Also, add the directory

/etc/conf.unix.old/mod.d to the loadable module search path after moving the current loadable module directory there.
fz527874 fz527875

214. The compress command dies with a SIGSEGV, and fails to compress the file.
fz712220 fz527292

215. Fixed problem where embedded EHCI on IBM 8430/13x took inordinate amount of time to reset.
fz501727 fz527381

216. Packaging change to **samba** and **sambamb** packages.
fz526999

217. sysi86 doesn't validate selector when clearing a descriptor.
fz521540

218. Updated Scoadmin Video Configuration Manager to stay set to VESA if configured to VESA and not switch to an autodetected video adapter configuration.
fz528393

219. */etc/magic* was updated to handle the OSR5 tar format.
fz528854:1

220. Auto-enabling of memory above 4GB. When the OS detects memory above 4GB, it automatically enables PAE mode in order to access the memory above 4GB. Previously, this had to be done manually, by setting $ENABLE\_4GB\_MEM=yes$ in */stand/boot* followed by a reboot.
fz528501:3

Fixes Included in Update Pack 2 Supplemental Packages

The following fixes are not included in the Update Pack Set; they are installed with the indicated package provided on the Update Pack CD. See Update Pack CD Contents.

1. **adst70** - Provide updated adst70 HBA driver to prevent a panic going into init 1.
fz527526

2. **basex** - Avoid potential duplicate data being flushed from buffers when the child process, used for initial house keeping, in the pseudo tty client open transport function exits.
fz527709

3. **nd** - Updated Intel PRO/100 driver (eeE8) to version 2.5.4. Bug fixes and new card support.
fz527508 fz527922

4. **nd** - Updated Intel PRO/1000 driver (e1008g) to version 7.0.11. Bug fixes and new card support.
fz527502 fz527911

5. **nd** - Correct typos in Intel PRO/1000 (e1008g) Drvmap file affecting hotplug support for certain NICS.

fz527792

6. **nics** - Short Ethernet frames are now padded with octets of zero to prevent information leakage.
   erg712090 fz521367

7. **openssh** - SECURITY Provide rlogin/telnet login replacements to correct flawed kill routine.
   fz526587

8. **openssl** - SECURITY Upgraded OpenSSL version to fix timing attack vulnerability.
   fz527507

9. **samba** and **sambamb** - SECURITY Upgraded Samba version to fix security holes where anonymous or remote users could gain root access.
   fz527530 fz527681

10. **xdrivers** - Matrox G100/G200/G400 Series Graphics driver (mtx) doesn't close pcix driver causing xserver package to hang during installation.
    fz527729

11. **xdrivers** - Provide support for Nvidia TNT2, GeForce2 and Quadro2 Graphics adapters.
    fz527795

12. **zlib** - SECURITY Fix a zlib (gzprintf) format string overflow vulnerability by rebuilding the zlib library to use snprintf().
    fz527490

Problems Fixed in Update Pack 3 Supplemental Packages

The following fixes are not included in the Update Pack Set; they are installed with the indicated package provided on the Update Pack CD. See Update Pack CD Contents.

13. **basex, j2jre131, xfonts** - The */usr/lib/X11/fonts/TrueType/watanabe-mincho.ttf* Japanese font has been removed from these packages, and is removed from the system when you install these packages on top of a previous version.
    fz528440

14. **nd** - Updated Intel PRO/1000 driver (e1008g) to version 7.2.10. Bug fixes and new card support.
    fz528257

15. **nd** - Updated Broadcom NetXtreme Gigabit Ethernet driver (bcme) to version 6.0.16. Corrects panic in bcopy+13 with bcme v6.0.3.
    fz527953 fz528305

16. **netmgmt** - The SNMP trap_rece utility trap_rece quits prematurely with the error message `Couldn't assign requested address`.
    erg712289 fz527728

17. **nics** - A new **dlpi** driver tuneable in */etc/conf/pack.d/dlpi/space.c* allows the administrator to turn off MAC header size prediction, which causes problems on IBM SNA Gateway systems. See [Known Problems](#).
527969

18. **nics** - Changed **ndcfg** for PCI device recognition to fix a bug which prevented some serial port boards from being recognized.
erg712319 fz527935

Problems Fixed in Update Pack 4 Supplemental Packages

The following fixes are not included in the Update Pack Set; they are installed with the indicated package provided on the Update Pack CD. See [Update Pack CD Contents](#).

19. **apache** - Updated to 1.3.29 to pick up latest fixes.

20. **nd** - Fixed 'nd' package menu option #2 install. Install failed to work properly when installing on either UnixWare 7.1.1 or Open UNIX 8.0.0.
fz527574

21. **nd** - Updated AMD PCnet driver (pnt) to version 3.0.1. Fixes a panic that appeared in bcopy().
fz527095

22. **nd** - Updated 3Com EtherLink DDI8 driver (e3bc) to version 1.1.1. Fixes a bad ASSERT panic in the DEBUG kernel on startup. Only occurs in DEBUG kernel.
fz528447

23. **nd** - Updated Intel PRO/100 driver (eeE8) to version 2.6.8. Bug fixes and new support.
fz528724

24. **nd** - Updated Intel PRO/1000 driver (e1008g) to version 7.2.15. Bug fixes and new support.
fz528381

25. **nd** - Updated Broadcom NetXtreme Gigabit Ethernet driver (bcme) to version 7.0.7. Bug fixes and new card support.
fz528589

26. **nd** - Updated **tcpdump**(1M) command to fix the following security vulnerabilities:

    ○ A vulnerability existed in the way the *rawprint*() function (in *print-isakmp.c*) parses certain malformed ISAKMP packets containing an invalid "len" or "loc" value.
    ○ A vulnerability existed in the way the I() function (in *print-radius.c*) parses RADIUS attributes containing overly long length values.
    ○ A vulnerability existed in the way **tcpdump** parses specially crafted ISAKMP packets.

    erg712544 fz528784

27. **nics** - **netconfig** fails to configure network card properly in certain situations with

multiple NICS.
erg712451 fz528400

28. **xdrivers** - Provide support for ATI Radeon 7000, 7200 and 7500 Graphics adapters.
fz528394

Known Problems and Workarounds

Please take note of the following known problems and workarounds when installing UnixWare 7.1.3 Update Pack 4 or UnixWare 7.1.4:

Installation: xAPIC Support
Installation: Disabling MAC header size prediction for IBM SNA Gateways
Installation: IBM xSeries PCI Expansion Box Devices
Installation: License Message in System Logs
Installation: OpenSSH requires OpenSSL
Installation: Timezone and Locale Clashes Display Warnings
Installation: Restart Upgrade Wizard When Freeing Space
Installation: Upgrade Wizard Exits if Space Pressed Repeatedly
Installation: Upgrade Wizard Fails with "Incorrect media detected"
Installation: Upgrade Wizard Mouse Failure
Installation: Warnings About Changed Files
Installation: Warnings in Installation Logs
Mozilla: Classic Theme May Not Work with 256 Colors
Netscape: Default Home Page
Networking: OpenLDAP slapd Startup Script Missing
Online Documentation: "Print Book" Problems
OKP: Do Not Add OKP License Before Installing OKP
Package Removal: Removing vxva Package Causes Account Manager to Fail
PostgreSQL: Documentation Errata
Samba: Sample smb.conf Not Provided
Samba: Warnings When Starting smbd and smbclient
Security: Updated Perl CGI.pm
Squid: Documentation Errata

Installation: xAPIC Support

xAPIC support was designed for IBM x440 systems. On some platforms, such as the IBM xSeries 360 (x360), the OS detects it should use xAPIC but the platform does not properly support it. If this happens, the symptoms are device timeouts (either a disk driver or HBA) very early during the boot process. The system will display a message stating that an HBA or disk command has timed out, and the system will become unresponsive (hang). If you are using a Multi-Processing (MP) system with Pentium 4 (Xeon) processors and this occurs do the following:

1. Reset the system.

2. When the system displays the UnixWare logo during the boot sequence, interrupt the

boot by pressing any key.

3. At the **boot** prompt enter:

   USE_XAPIC=N
   boot

   The system should now boot normally.

4. Once the system is running, edit *stand/boot* and add the following entry to the file:

   USE_XAPIC=N

   This will ensure that you do not need to interrupt the boot process again.

Installation: Disabling MAC header size prediction for IBM SNA Gateways

A new **dlpi** driver tuneable in */etc/conf/pack.d/dlpi/space.c* allows the administrator to turn off MAC header size prediction, which causes problems on IBM SNA Gateway systems:

int mac_header_size = 0;

This variable can be set as follows:

0 (default)	the kernel discovers the optimal MAC header size
less than 0	disable MAC header size prediction optimization
greater than 0	use the MAC header size specified in the *space.c* file

To disable MAC header size prediction, edit */etc/conf/pack.d/dlpi/space.c* and change the value of **mac_header_size** to **-1**. Then enter the following commands to rebuild the kernel and reboot:

```
# idbuild -M dlpi
# shutdown -i6 -g0 -y
```

The **mac_header_size** tuneable is installed with the **nics** package.
527969

Installation: IBM xSeries PCI Expansion Box Devices

If you are installing UnixWare 7.1.4 for the first time on an IBM xSeries Server with devices in an attached IBM RXE-100 Remote I/O Expansion Enclosure, you must enter a boot paramater for the devices in the RXE-100 to be recognized. As the UnixWare installation program boots, it displays the Unixware logo. When you see the logo, press the **Spacebar** to interrupt the program. When the **[boot]** prompt appears, enter the following two commands:

```
[boot] psm=mps
[boot] boot
```

Your system will then continue to boot. Continue the installation normally.

Installation: License Messages in System Logs

Notices like the following may appear in */var/adm/syslog* and */var/adm/log/osmlog* after installation of the Update Pack:

```
Jan 30 11:47:40 systemname sco_pmd[884]: license [nnnnnnnnn/167/1.
dependent product [xxx/8.0]
```

These messages are a consequence of the license upgrade process and can be safely ignored. Enter the following commands, as **root**, to remove the offending license from the license database and refresh the Policy Manager Daemon (**sco_pmd**):

```
/etc/brand -r nnnnnnnnn
/etc/sco_pmd -r
```

Where *nnnnnnnnn* is copied from the notices in the system logs, as shown in the example above. Once the **brand** command is run as shown and **sco_pmd** is restarted, these notices will no longer be generated in the system logs.

Installation: OpenSSH requires OpenSSL

You may see the following error during installation of the OpenSSH (**openssh**) package:

```
##Executing postinstall script.
dynamic linker:  /usr/sbin/sshd: could not open libcrypto.so.0.9.7
Killed
/etc/init.d/opensshd: Error 137 starting /usr/sbin/sshd....Bailing
```

Or, you may see the following errors when running OpenSSH commands after installation:

```
dynamic linker: /usr/bin/ssh-keygen: binder error: symbol not foun
OPENSSL_add_all_algorithms_noconf; referenced from: /usr/bin/ssh-k

Killed
dynamic linker: /usr/bin/ssh-keygen: binder error: symbol not foun
OPENSSL_add_all_algorithms_noconf; referenced from: /usr/bin/ssh-k

Killed
dynamic linker: /usr/bin/ssh-keygen: binder error: symbol not foun
OPENSSL_add_all_algorithms_noconf; referenced from: /usr/bin/ssh-k

Killed
OpenSSL version mismatch. Built against 90703f, you have 90607f
/etc/init.d/opensshd: Error 255 starting /usr/sbin/sshd... bailing
```

These messages indicates that the OpenSSL (**openssl**) package is either not installed, or the

installed version of OpenSSL is an earlier version than the one required by OpenSSH. To fix this, install the latest **openssl** package (from the same media on which you found **openssh**) and then re-install **openssh**.
527982 528971

Installation: Restart Upgrade Wizard When Freeing Space

Although the Upgrade Wizard will display a warning about insufficient disk space when selecting packages, it may fail to automatically select all packages for update without displaying a warning. If the summary of packages automatically selected to be installed is incomplete due to insufficient disk space, use the work-around below to abort the Upgrade Wizard:

```
# ps -af | grep uli
    root  3672  2721   TS  80  0 13:23:58 pts/15   0:00 /usr/lib/uli/f
izardFW /usr/lib/uli/wizard/ULIWZD
# kill -9 3672
# rm -f /tmp/uli.lck
```

The **kill** command takes as its argument the Process ID (PID) of the **uli** process returned by the **ps** command, as shown.

After terminating the **uli** process, and freeing space on your hard disk, restart the Upgrade Wizard.

Installation: Upgrade Wizard Exits if Space Pressed Repeatedly

When launching the Upgrde Wizard using the **uli** command from a desktop window, the Upgrade Wizard may exit unexpectedly if you press the space bar a few times while it is loading. To work around this, re-run the Upgrade Wizard.
527905

Installation: Upgrade Wizard Fails with "Incorrect media detected"

If you use the Upgrade Wizard (**uli**) to install, and you see the message `Incorrect media detected`, you are using the incorrect version of the Upgrade Wizard for the media you are trying to install. Exit the Upgrade Wizard, and load the **uli** package from the Update Pack media you are attempting to install, following the directions in the section Installation Procedures.

Installation: Upgrade Wizard Mouse Failure

If the Upgrade Wizard loses window focus after the Update Set is installed and it's not possible to select packages or activate window buttons using the mouse, either press the <Ctrl> key while clicking the mouse button, or re-start the window manager from the root window menu (click the right mouse button to see the menu).

Installation: Warnings About Changed Files

During installation of the Update Pack on a system that was upgraded from a release prior to

Release 7.1.3, warnings such as the following may be displayed:

```
UX: pkginstall: WARNING: /etc/conf/pack.d/msr/Driver.o <shared file is
UX: pkginstall: WARNING: /etc/conf/pack.d/pcid/Driver.o <shared file is
UX: pkginstall: WARNING: /etc/conf/pack.d/ppp/Driver.o <shared file is
UX: pkginstall: WARNING: /etc/conf/pack.d/pppml/Driver.o <shared file i
...
```

The Warnings displayed on your system will depend on the originally installed release. These Warnings are expected and can be safely ignored.
527406

Installation: Warnings in Installation Logs

After installation, you may see the following messages in */var/sadm/install/logs/uw713u4.out*:

```
UX: removef: ERROR: attribute verification of
</usr/lib/locale/de/LC_MESSAGES/ifor.cat> failed
       pathname does not exist
  UX: removef: ERROR: attribute verification of
</usr/lib/locale/es/LC_MESSAGES/ifor.cat> failed
       pathname does not exist
  UX: removef: ERROR: attribute verification of
</usr/lib/locale/fr/LC_MESSAGES/ifor.cat> failed
       pathname does not exist
  UX: removef: ERROR: attribute verification of
</usr/lib/locale/ja/LC_MESSAGES/ifor.cat> failed
       pathname does not exist
```

You may also see the following warnings in */var/sadm/install/logs/uw713u4.log*:

```
UX: pkginstall: WARNING: /etc/conf/mdevice.d/mps <shared file is
UX: pkginstall: WARNING: /usr/sbin/ifor_pmd <no longer a regular
```

These messages are expected and may be safely ignored.
528812

Mozilla: Classic Theme May Not Work with 256 Colors

If you use the CDE desktop, the default Classic Mozilla theme may result in a color scheme that is unreadable when your graphics card is set to use 256 colors. To work around this, do one of the following:

- Increase the number of colors used by the card to more than 256. Do this using the **scoadmin video** configuration manager.

- Change the Mozilla theme to the **modern** theme. Open Mozilla, and select **Edit > Preferences > Appearance > Themes** from the menu. Choose the **modern** them, and select **OK**. A screen pops up, informing you that you need to restart Mozilla for the change to take effect. Click **OK**, and then restart Mozilla.

Netscape: Default Home Page

The default home page listed in the **Edit > Preferences > Navigator** window is **http://www.caldera.com**, even though the link points to The SCO Group, Inc., Web Site at http://www.sco.com. This is a legacy of previous releases of the system, and can be updated if desired.

Networking: OpenLDAP slapd Startup Script Missing

The startup script for the OpenLDAP **slapd** daemon is missing, so **slapd** will not start on boot. To start **slapd**, enter the following command, as **root**:

```
/usr/libexec/slapd -u root -h 'ldap:/// ldaps:///' 2>/dev/null
```

You can also create a file named */etc/rc2.d/S99slapd*, with the above contents, and **slapd** will start automatically on reboots. For further information on **slapd**, see the slapd(8C) manual page and the OpenLDAP documentation under **Networking** in the online documentation on **http://localhost:8458**.

Online Documentation: "Print Book" Problems

Problems have been observed with the DocView (**http://***hostname***:8458**) **PRINT BOOK** facility:

1. Some files do not print when selected from the **PRINT BOOK** list, or the incorrect content is printed instead. This occurs in C and non-C locales.

2. Multibyte files cannot be printed (this includes, for example, Japanese-language documentation from the **jabasedoc** package on the Localized Documentation CD in the UnixWare Media Kit) from the **PRINT BOOK** list. This is because the underlying engine in DocView for printing HTML (**HTMLDOC**) does not support multibyte files.

3. Some documents are not being printed in foreign languages when locale is properly selected and the foreign-language documentation is installed.

The workaround in all these cases is to display the files individually from the DocView **SITE MAP** interface (which is identical to the **PRINT BOOK** list), and use your browser's **Print** command to print the files.

For example, if you use the **PRINT BOOK** interface to print a *New Features* file and it does not work, click on the **SITE MAP** button on the DocView menu (**http://***hostname***:8458**) and select the name of the link that you wanted to print (the **SITE MAP** and **PRINT BOOK** lists are identical). Once the document is loaded into the browser, print it using your browser's **Print** command (**File > Print** in Netscape) to print to a local printer or to a file. The formats available depend on your local browser's setup.
527817

OKP: Do Not Add OKP License Before Installing OKP

If you are installing the OpenServer Kernel Personality (OKP) product on top of the Upgrade Pack, do not add the OKP License to the License Manager before beginning installation of OKP. Instead, add the license during installation of OKP, as described in the OKP Release Notes. If you do add an OKP License to the License Manager before the OKP product is installed, the License Manager may report the following when you install the license:

```
Licensing of <Unknown Product with id 181> is successfully completed
```

Thereafter, the main License Manager screen may list the OKP license incorrectly, as follows:

```
Unknown Product with id 181
```

If this occurs, you should remove the OKP license (**License > Remove** in the License Manager menu) and then add it again (**License > Add**). The License Manager will then display the license correctly.
528252

Package Removal: Removing vxva Package Causes Account Manager to Fail

Removing the **vxva** package (VERITAS ODM Visual Administrator) from the system causes the **scoadmin account** graphical account manager to fail with these messages:

```
Unable to retrieve locales
Unable to get initial list of users
```

The problem is caused by symbolic links left behind by the removal of the **vxva** package. To fix the problem, remove the links by entering the following commands (as **root**):

```
rm /usr/lib/locale/C/LC_MESSAGES/Vxva_inst
/usr/lib/locale/C/LC_MESSAGES/Vxva_msgs
```

PostgreSQL: Documentation Errata

The PostgreSQL installation creates a **postgres** user if one does not already exist on the system. The **postgres** user is automatically configured with **root**'s password. The script */etc/init.d/postgresql* can be used to automatically start the PostgreSQL postmaster binary running as this user. The **postgres** user's password can be modified using the **passwd**(1) program.

Samba: Sample smb.conf Not Provided

The **samba** package (Samba 3.0) does not contain a sample */usr/lib/samba/lib/smb.conf*; Samba will not start without one. If you already have an earlier version of Samba installed, your existing *smb.conf* file will not be altered, and Samba should start normally. If you are installing Samba for the first time, copy the file provided in Appendix A below to */usr/lib/samba/lib/smb.conf*, and to */usr/lib/samba/lib/smb.conf.sample* as a backup copy. You can then edit *smb.conf* for your configuration.

Another alternative is to launch the Samba Web Administration Tool (SWAT) utility (**/usr/lib/samba/sbin/swat**) and use the web interface to create an initial *smb.conf*.

Note: if you use SWAT to configure Samba, SWAT overwrites */usr/lib/samba/lib/smb.conf* with a version it creates from your specifications in the web interface. This will lose any customizations you make to a manually edited version. It is therefore important to keep a back-up copy of any manual edits you make to *smb.conf*.

Samba: Warnings When Starting smbd and smbclient

When starting **smbd** or **smbclient**, warnings like the example below are displayed: for smbd in */var/adm/syslog*, and for **smbclient** to standard out.

```
[2004/02/23 10:52:17, 0] lib/charcnv.c:(134)
  Conversion from UTF8 to CP850 not supported
```

These warnings can be safely ignored; both **smbd** and **smbclient** should startup after these messages are displayed.

Security: Updated Perl CGI.pm

CGI.pm is a Perl module (contained in the **perl5** package available from the base UnixWare media) that provides function calls for form definition. There is a vulnerability present in forms created with the *start_form*() and *start_multipart_form*() functions defined in *CGI.pm*. If the action for the form is left unspecified in a call to either function, the form action can be manipulated by a malicious user (using an appropriate URL) to launch a cross site scripting attack against the host system.

If you use the *CGI.pm* module in any Perl programs, it is recommended that you install the perl and **perlmods** packages, available on the SCO Web Services Enabling CD. The **perlmods** package contains an updated CGI.pm module that closes this vulnerability.
528214

Squid: Documentation Errata

The **squid** manual page installed by the **squid** package contains a number of errors:

- The Squid proxy server control script is located at */etc/init.d/squid*.

- The Squid software is located under */usr/lib/squid*.

- To start up Squid, the Domain Name Service (DNS) daemon in.named(1M) must already be running, and Squid must be able to reach at least one of the specified DNS servers; otherwise, it will not start. Follow this procedure to configure and begin using Squid:

    1. Edit the file */usr/lib/squid/etc/squid.conf*, and make the following changes:

        a. Search for the **visible_hostname** keyword, and insert a line like the following:

`visible_hostname` *nodename*

where *nodename* is the name you want returned by the server to clients in messages.

b. Enable access for your clients. This is done with a combination of the `http_access` and `acl` keywords (search for `http_access` keyword; the acl section is just above it in the file). To simply allow all hosts to access squid, enter a single `http_access` statement:

`http_access allow all`

Most sites will want better security, and allow only known sites to access the proxy. The following two statements allow only hosts on the "10.0.0" subnet to access the server:

```
acl local 10.0.0.0/255.255.255.0
http_access allow local
```

Note that the ordering of `http_access` entries in the *squid.conf* file is important. You may need to put entries for local clients at the top of the list of `http_access` entries in order for them to work.

See the comments in the file */usr/lib/squid/etc/squid.conf* as well as the Squid documentation installed along with the **squid** package, in the online documentation under [Internet and Intranet](), for more information on configuring Squid.

2. Enter, as root:

`/usr/lib/squid/bin/squid -z`

to initialize the Squid caches.

3. Start Squid:

`/etc/init.d/squid start`

4. On each client (including the local system), set the browser's preferences to go to the proxy server instead of connecting directly to the internet. In Netscape or Mozilla, this is done by opening the browser Preferences (**Edit > Preferences**) and selecting **Advanced > Proxies**. Select **Manual Configuration**, and click on **View**. In the following window, set at least the **http:** and **ftp:** entries to point to the nodename or IP address of the UnixWare system running the Squid proxy server; then, set the port for both entries to **3128**, the default port on which the UnixWare Squid server listens for requests. Save your changes to the browser's Preferences.

The browser will now access the internet through the Squid proxy. Check the files under */usr/lib/squid/logs* if you encounter problems.

Appendix A: Sample Samba 3.0 smb.conf

```
# This is the main Samba configuration file. You should read the
# smb.conf(5) manual page in order to understand the options listed
# here. Samba has a huge number of configurable options (perhaps too
# many!) most of which are not shown in this example
#
# Any line which starts with a ; (semi-colon) or a # (hash)
# is a comment and is ignored. In this example we will use a #
# for commentry and a ; for parts of the config file that you
# may wish to enable
#
# NOTE: Whenever you modify this file you should run the command "test
# to check that you have not many any basic syntactic errors.
#
#======================= Global Settings =============================
[global]

# workgroup = NT-Domain-Name or Workgroup-Name
   workgroup = MYGROUP

# server string is the equivalent of the NT Description field
   server string = Samba Server

# This option is important for security. It allows you to restrict
# connections to machines which are on your local network. The
# following example restricts access to two C class networks and
# the "loopback" interface. For more examples of the syntax see
# the smb.conf man page
;   hosts allow = 192.168.1. 192.168.2. 127.

# if you want to automatically load your printer list rather
# than setting them up individually then you'll need this
   printcap name = lpstat
   load printers = yes

# It should not be necessary to spell out the print system type unless
# yours is non-standard. Currently supported print systems include:
# bsd, sysv, plp, lprng, aix, hpux, qnx
   printing = sysv

# Uncomment this if you want a guest account, you must add this to /et
# otherwise the user "nobody" is used
;   guest account = pcguest

# this tells Samba to use a separate log file for each machine
```

```
# that connects
   log file = /usr/lib/samba/var/log.%m


# Put a capping on the size of the log files (in Kb).
   max log size = 50


# Security mode. Most people will want user level security. See
# security_level.txt for details.
   security = user
# Use password server option only with security = server
;    password server = NT-Server-Name


# Password Level allows matching of _n_ characters of the password for
# all combinations of upper and lower case.
;  password level = 8
;  username level = 8


# You may wish to use password encryption. Please read
# ENCRYPTION.txt, Win95.txt and WinNT.txt in the Samba documentation.
# Do not enable this option unless you have read those documents
;  encrypt passwords = yes
;  smb passwd file = /etc/smbpasswd


# The following are needed to allow password changing from Windows to
# update the Linux sytsem password also.
# NOTE: Use these with 'encrypt passwords' and 'smb passwd file' above
# NOTE2: You do NOT need these to allow workstations to change only
#         the encrypted SMB passwords. They allow the Unix password
#         to be kept in sync with the SMB password.
;  unix password sync = Yes
;  passwd program = /usr/bin/passwd %u
;  passwd chat = *New*UNIX*password* %n\n *ReType*new*UNIX*password* %


# Unix users can map to different SMB User names
;  username map = /etc/smbusers


# Using the following line enables you to customise your configuration
# on a per machine basis. The %m gets replaced with the netbios name
# of the machine that is connecting
;    include = /etc/smb.conf.%m


# Most people will find that this option gives better performance.
# See speed.txt and the manual pages for details
   socket options = TCP_NODELAY SO_RCVBUF=8192 SO_SNDBUF=8192


# Configure Samba to use multiple interfaces
# If you have multiple network interfaces then you must list them
# here. See the man page for details.
;    interfaces = 192.168.12.2/24 192.168.13.2/24
```

```
# Configure remote browse list synchronisation here
#  request announcement to, or browse list sync from:
#       a specific host or from / to a whole subnet (see below)
;    remote browse sync = 192.168.3.25 192.168.5.255
# Cause this host to announce itself to local subnets here
;    remote announce = 192.168.1.255 192.168.2.44


# Browser Control Options:
# set local master to no if you don't want Samba to become a master
# browser on your network. Otherwise the normal election rules apply
;    local master = no


# OS Level determines the precedence of this server in master browser
# elections. The default value should be reasonable
;    os level = 33


# Domain Master specifies Samba to be the Domain Master Browser. This
# allows Samba to collate browse lists between subnets. Don't use this
# if you already have a Windows NT domain controller doing this job
;    domain master = yes


# Preferred Master causes Samba to force a local browser election on s
# and gives it a slightly higher chance of winning the election
;    preferred master = yes


# Use only if you have an NT server on your network that has been
# configured at install time to be a primary domain controller.
;    domain controller = NT-Domain-Controller-SMBName


# Enable this if you want Samba to be a domain logon server for
# Windows95 workstations.
;    domain logons = yes


# if you enable domain logons then you may want a per-machine or
# per user logon script
# run a specific logon batch file per workstation (machine)
;    logon script = %m.bat
# run a specific logon batch file per username
;    logon script = %U.bat


# Where to store roving profiles (only for Win95 and WinNT)
#        %L substitutes for this servers netbios name, %U is username
#         You must uncomment the [Profiles] share below
;    logon path = \\%L\Profiles\%U


# All NetBIOS names must be resolved to IP Addresses
# 'Name Resolve Order' allows the named resolution mechanism to be spe
# the default order is "host lmhosts wins bcast". "host" means use the
# system gethostbyname() function call that will use either /etc/hosts
# DNS or NIS depending on the settings of /etc/host.config, /etc/nsswi
```

```
# and the /etc/resolv.conf file. "host" therefore is system configurat
# dependant. This parameter is most often of use to prevent DNS lookup
# in order to resolve NetBIOS names to IP Addresses. Use with care!
# The example below excludes use of name resolution for machines that
# on the local network segment
# - OR - are not deliberately to be known via lmhosts or via WINS.
; name resolve order = wins lmhosts bcast

# Windows Internet Name Serving Support Section:
# WINS Support - Tells the NMBD component of Samba to enable it's WINS
;    wins support = yes

# WINS Server - Tells the NMBD components of Samba to be a WINS Client
#        Note: Samba can be either a WINS Server, or a WINS Client, but
;    wins server = w.x.y.z

# WINS Proxy - Tells Samba to answer name resolution queries on
# behalf of a non WINS capable client, for this to work there must be
# at least one  WINS Server on the network. The default is NO.
;    wins proxy = yes

# DNS Proxy - tells Samba whether or not to try to resolve NetBIOS nam
# via DNS nslookups. The built-in default for versions 1.9.17 is yes,
# this has been changed in version 1.9.18 to no.
    dns proxy = no

# Case Preservation can be handy - system default is _no_
# NOTE: These can be set on a per share basis
;   preserve case = no
;   short preserve case = no
# Default case is normally upper case for all DOS files
;   default case = lower
# Be very careful with case sensitivity - it can break things!
;   case sensitive = no

#=========================== Share Definitions ====================
[homes]
   comment = Home Directories
   browseable = no
   writable = yes

# Un-comment the following and create the netlogon directory for Domai
; [netlogon]
;   comment = Network Logon Service
;   path = /home/netlogon
;   guest ok = yes
;   writable = no
;   share modes = no
```

```
# Un-comment the following to provide a specific roving profile share
# the default is to use the user's home directory
;[Profiles]
;     path = /home/profiles
;     browseable = no
;     guest ok = yes


# NOTE: If you have a BSD-style print system there is no need to
# specifically define each individual printer
[printers]
   comment = All Printers
   path = /var/spool/samba
   browseable = no
# Set public = yes to allow user 'guest account' to print
   guest ok = no
   writable = no
   printable = yes

# This one is useful for people to share files
;[tmp]
;     comment = Temporary file space
;     path = /tmp
;     read only = no
;     public = yes

# A publicly accessible directory, but read only, except for people in
# the "staff" group
;[public]
;     comment = Public Stuff
;     path = /home/samba
;     public = yes
;     writable = yes
;     printable = no
;     write list = @staff

# Other examples.
#
# A private printer, usable only by fred. Spool data will be placed in
# home directory. Note that fred must have write access to the spool d
# wherever it is.
;[fredsprn]
;     comment = Fred's Printer
;     valid users = fred
;     path = /homes/fred
;     printer = freds_printer
;     public = no
;     writable = no
;     printable = yes
```

```
# A private directory, usable only by fred. Note that fred requires wr
# access to the directory.
;[fredsdir]
;    comment = Fred's Service
;    path = /usr/somewhere/private
;    valid users = fred
;    public = no
;    writable = yes
;    printable = no

# a service which has a different directory for each machine that conn
# this allows you to tailor configurations to incoming machines. You c
# also use the %u option to tailor it by user name.
# The %m gets replaced with the machine name that is connecting.
;[pchome]
;   comment = PC Directories
;   path = /usr/pc/%m
;   public = no
;   writable = yes

# A publicly accessible directory, read/write to all users. Note that
# created in the directory by users will be owned by the default user,
# any user with access can delete any other user's files. Obviously th
# directory must be writable by the default user. Another user could o
# be specified, in which case all files would be owned by that user in
;[public]
;    path = /usr/somewhere/else/public
;    public = yes
;    only guest = yes
;    writable = yes
;    printable = no

# The following two entries demonstrate how to share a directory so th
# users can place files there that will be owned by the specific users
# setup, the directory should be writable by both users and should hav
# sticky bit set on it to prevent abuse. Obviously this could be exten
# as many users as required.
;[myshare]
;    comment = Mary's and Fred's stuff
;    path = /usr/somewhere/shared
;    valid users = mary fred
;    public = no
;    writable = yes
;    printable = no
;    create mask = 0765
```