SCO OpenServer Release 6.0.0
Maintenance Pack 2
Release and Installation Notes

February 2006

SCO OpenServer™ Release 6.0.0 Maintenance Pack 2 (MP2) contains important enhancements and fixes for your SCO OpenServer Release 6.0.0 system and should be applied at your next maintenance period. **Note that removal of MP2 is *not* supported**.

These *Release and Installation Notes* contain critical information that you need to know before and after installing MP2. Please read them entirely, and also check the SCO OpenServer Release 6.0.0 *Late News* web site, before beginning to install MP2. *Late News* can be found at: **http://www.sco.com/support/docs/openserver**.

Also periodically check http://www.sco.com/support/update/download/product.php?pfid=12&prid=20 (the **OpenServer 6 Supplements Web Site**) for additional updated drivers and software supplements.

Contents of this Document

Before Installing the Maintenance Pack

Before installing the Maintenance Pack, please read the following notes carefully:

1. This Maintenance Pack can only be installed on SCO OpenServer Release 6.0.0 systems. It supersedes and obsoletes the following Release 6.0.0 supplements:

   Maintenance Pack 1 (RS600A)
   OSS701A
   OSS702B

2. Perform a full backup of your system and verify the integrity of the backup before you install the Maintenance Pack. It is always important to have a full system backup available before beginning any system update procedure.

3. Maintenance Pack 2 (MP2) contains updates to base system components (installed with Release Supplement RS600B), as well as separately installable optional components:

SCO OpenServer Release 6.0.0 Maintenance Pack 2		
Software Components and Packages	**Previous Version**	**MP2 Version**

SCO OpenServer 600 Release Supplement	RS600A	RS600B
Supplemental Graphics, Web and X11 Libraries		
Supplemental Graphics, Web and X11 Libraries*	2.0.0	2.1.0
X.org X11R6.9.0 Runtime	6.8.2	6.9.0
X.org X11R6.9.0 Core Fonts	6.8.2	6.9.0
SCO UNIX Perl Interpreter	5.8.6	5.8.7
X-Window System Version 11		
X.org X11R6.9.0 Server	6.8.2	6.9.0
X.org X11R6.9.0 Clients	6.8.2	6.9.0
Apache Web Server		
Apache Web Server	1.3.33	1.3.34
Secure Sockets Layer (SSL) Support for Apache	2.8.23	2.8.25
Perl Support for Apache*	n/a	1.29.2
PHP4 Hypertext Processor*	4.3.11	4.4.2
ASP Support for Apache/Perl	n/a	2.59.1
AxKit XML Toolkit for Apache/perl	n/a	1.62.1
Secure Shell	OpenSSH_4.0p1	OpenSSH_4.2p1
VIM - Vi IMproved	6.3	6.4.0
Mozilla Web Browser	1.7.10	1.7.12
Lynx Web Browser	2.8.5dev.8	2.8.5rel5
Java 2 Standard Edition		
Java 2 Standard Edition (J2SE)	1.4.2_08	1.4.2_10
(URW)++ Free X11 Fonts	n/a	2.0
SCOx language support		
SCOx web services demos in 5 languages	1.1.0	1.1.0
gSOAP C and C++ SOAP Web Services	2.2.3	2.2.3
Portable Document Format (PDF) Viewer	3.0.0	3.01pl1
Heimdal Kerberos 5 Implementation	0.6.2	0.6.5
Samba File and Print Server	3.0.13	3.0.20
PostgreSQL Database Management System	7.4.7	8.1.2
ESP Ghostscript	7.7.1	8.15.1
Extended Shells	1.3	1.4.0

GNU Bourne Again Shell (bash)	3.0.14	3.1.1
Z Shell (zsh)	4.2.5	4.2.6
Extended C-Shell (tcsh)	5.13.0	5.14.0
Additional Optional custom Components (not part of the MP2 bundle)		
Apache Tomcat Servlet Container	4.1.31Pb	4.1.31Na
Squid Proxy Cache	2.5.9	2.5.12
ant - Java based build tool	n/a	1.6.5
Online Data Manager (ODM)	n/a	3.2
SVR5 Drivers (must be installed with pkgadd)		
ahci - AHCI HBA Driver	1.0	1.1
ide - Generic IDE/ATAPI Driver	7.1.4a	7.1.4c
nd - Network Drivers	n/a	8.0.6b

* The Supplemental Graphics libraries, Perl, and PHP components have many individual libraries and modules.
See the Appendix for complete lists.

4. Release Supplement RS600B (see the list above) contains the following components that you cannot select individually for installation:

   SCO OpenServer 600 Release Supplement RS600B:
   SCO OpenServer Operating System
   SCO OpenServer Operating System German Language Support
   SCO OpenServer Operating System French Language Support
   SCO UNIX SVR5 Kernel
   SCO TCP/IP
   SCO TCP/IP Development System
   SCO TCP/IP German Language Support
   SCO TCP/IP French Language Support
   SCO NFS
   SCO Network Interface Card Drivers
   SCO UNIX Development System
   SCO Visual Tcl
   SCO Administration Framework Development System
   SCO Online Documentation Utilities and Framework
   SCO Legacy OSR5 X11R5/Motif Development System
   SCO Standard X Clients
   SCO NFS Development System
   SCO Universal Driver Interface (UDI)
   SCO Universal Serial Bus (USB) Support
   SCO SendMail
   SCO Mail User Agents
   Administration Framework
   Extended X Clients

   These components contain updates to the versions of the same components originally delivered on the Release 6.0.0 media. **The updates for a particular component in RS600B (such as the SCO UNIX Development**

System or SCO SendMail) will *not* be installed with RS600B unless the 6.0.0 version of that component is already installed on the system. So, for example, if you plan to install the Development System, you should install it from the Release 6.0.0 media before installing the Maintenance Pack, so that important Development System updates from RS600B are installed.

The components other than RS600B (e.g.: Perl, Apache, Mozilla, Tomcat, Java, ant, etc.) are complete versions of the software and can be installed whether the version from the Release 6.0.0 media is already installed or not.

> **Note that removal of Maintenance Pack 2 is *not* supported.** Because MP2 contains important updates to the system, removing it or any of its components may cause unexpected behavior in components that remain installed.

5. **Space Requirements:**

   Before you install the Maintenance Pack, be sure that you have adequate free disk space available for the components you want to install:

Selected Components	Disk Space Requirements
Release Supplement RS600B	100MB
Remaining MP2 Components	45MB
Additional Optional Components	45MB
All of the above	190MB

   Remember that the above requirements are for the installed software only; free disk space will also be required for temporary space, user data, etc.

6. **Network Driver Package Update:**

   A new version of the **nd** (NIC Drivers) package (8.0.6b) is available on the CD in the directory */images*. This package is *not* installed automatically during installation of the Maintenance Pack; it must be installed using the **pkgadd**(ADM) command. **We strongly recommend you install this package** after you install the Maintenance Pack. If you do not, future NIC driver updates will cause several **custom** packaging problems. Please see the section Network Driver Package Update for details.

7. **PostgreSQL Upgrade Notes:**

   PostgreSQL 8.1.2 is included in the Maintenance Pack. It includes a change in internal database format and is a major upgrade from PostgreSQL 7.x. For this reason, you must perform a dump and subsequent restore of all PostgreSQL 7.x databases that you want to preserve across the upgrade.

   To preserve data from a PostgreSQL 7.x database and restore the data into a PostgreSQL 8.1.2 database on OpenServer 6, follow this procedure.

   1. On the system running PostgreSQL 7.x, login as the PostgreSQL super-user:

      ```
      # su - postgres
      ```

   2. Perform a dump of the databases you wish to preserve using either **pg_dump**(1) or **pg_dumpall**(1). For example, to preserve the database *exampledb*, you could enter the shell command:

      ```
      pg_dump -F c -f exampledb.out exampledb
      ```

   3. Move the existing default data directory to your PostgreSQL backups directory:

      ```
      # cd /usr/postgres
      # mv data backups/data-7.4.7
      ```

4. Exit the PostgreSQL super-user account

5. Install Maintenance Pack 2 following the instructions in Installing the Maintenance Pack, below. Both Release Supplement RS600B and PostgreSQL should be selected automatically for install by the Software Manager.

6. Configure and start the 8.1.2 PostgreSQL server:

   ```
   mkdev pgsql
   ```

7. Login as the PostgreSQL super-user:

   ```
   su - postgres
   ```

8. Restore the preserved databases from any previous dumps, as in this example for the database we backed up in Step 2:

   ```
   pg_restore exampledb.out
   ```

Detailed documentation on backing up and restoring PostgreSQL databases is available both in the online documentation:

``Migration Between Releases"
``Backup and Restore"

And, online at the PostgreSQL web site:

http://www.postgresql.org/docs/8.1/static/migration.html
http://www.postgresql.org/docs/8.1/static/backup.html

8. **Squid notes:**

   If **Squid** is selected for installation with the Maintenance pack and there is a previous version of Squid already installed, the Squid installation will not succeed. To install the version of Squid provided with this Maintenance Pack over a previous version, first install the Maintenance Pack and reboot the system. Then, begin the installation again and select Squid for install.

   Also note that, in order to maintain compatibility between Release 5.0.7 and Release 6, the directory which contains the configuration files has changed. The new location is now */usr/lib/squid/etc*. Prior to MP2, the location was */etc/squid*. */etc/squid* is now a control script used to start, stop, and restart the server.

Installing the Maintenance Pack

Follow the procedures in this section to obtain and install the Maintenance Pack.

If you want to install the MP on multiple systems on your TCP/IP network, you can load and install the software on one system and use that system as a Software Installation Server. You can then load all your other systems from the Server. See ``Installing the Maintenance Pack from the Network" for more information.

Installing the Maintenance Pack from CD, CD ISO Image, or Media Images

Maintenance Pack 2 install media can be obtained in three formats:

- a Supplement CD
- a Supplement CD ISO image
- a **tar** archive containing Media Image Files (VOL files)

Follow this procedure to install SCO OpenServer Release 6.0.0 MP2 from any of the above media.

1. Log in as *root*.
2. Do ***one*** of the following:
   A. If you have a SCO OpenServer Release 6.0.0 Supplement CD with MP2 on it, insert the CD into the primary CD drive.
   B. Download the CD ISO Image:
      1. Download the CD ISO Image *osr600mp2.iso* from either the SCO web site or using FTP:
         - http://www.sco.com/support/update/download/release.php?rid=133
         - ftp://ftp.sco.com/pub/openserver6/600/mp/osr600mp2/
      2. Make sure nothing is already mounted on */cd-rom*, and enter this command to mount the CD ISO image:

         ```
         # mount `marry -a /tmp/osr600mp2.iso` /cd-rom
         ```

         Note the backquote characters around the **marry** command above; the backquote key is usually on the upper left side of the keyboard.
   C. Download the Media Image Files:
      1. Download the file *600mp2_vol.tar* from either the SCO web site or using FTP:
         - http://www.sco.com/support/update/download/release.php?rid=133
         - ftp://ftp.sco.com/pub/openserver6/600/mp/osr600mp2/

         NOTE: The Maintenance Pack consists of a tar archive containing a number of media image files with names of the form *VOL.000.000*, *VOL.000.001*, and so forth. Because all maintenance packs use this same filename scheme, you should create a master directory with a unique subdirectory to store each maintenance pack. The master directory could be */usr/mp*, */usr/spool/patches*, or whatever suits your system layout. The master hierarchy should be writable by *root* only.
      2. Enter this command to extract the media image files from the **tar** archive:

         ```
         tar xvf 600mp2_vol.tar
         ```
3. Start the **Software Manager** by double-clicking on its icon on the desktop, or by entering the following at the command-line prompt:

   ```
   scoadmin software
   ```
4. From the **Software** menu, select **Install New**.
5. When prompted for the host (machine), select the current host and then click on **Continue**.
6. Do ***one*** of the following:
   A. **If you followed Step 2A:** select the appropriate CD-ROM drive as the Media Device and then select **Continue**.
   B. **If you followed Step 2B or 2C:** select **Media Images** as the Media Device, and then select **Continue**. (You may need to scroll down in the Media Device selection box before you see the **Media Images** option.) When prompted, enter the absolute pathname for the directory that contains the Maintenance Pack media images. If you are using the CD ISO Image, enter */cd-rom/opt/archives*. If you are using Media Image Files, enter */usr/spool/patches/600mp2*. Select **OK**.

7. In the **Install Selection** window, make sure that the Maintenance Pack is selected (it will be highlighted and/or have an asterisk). Select **Install** to apply the Maintenance Pack default selections to your system.

   WARNING: We strongly recommend that you install the MP with the default selections before selecting any of the other software bundled with the MP. Please ensure that you select *only* the Maintenance Pack in this step. Failure to do so can result in a corrupted installation.

8. The Software Manager will display a message if it finds previous versions of the components that are modified or upgraded by the Maintenance Pack. Select **Continue**.

   Note: The Software Manager also displays one or more warnings if the Maintenance Pack contains fixes for software features that are not currently installed on your system. If you do *not* plan to install the affected package at any time in the future, you can ignore such messages and click on *Continue*. However, if you do plan to install one of these packages, you should stop the MP install process now, install the package in question from the appropriate media, and then restart the Maintenance Pack installation. This ensures that fixes in the MP are applied properly (and avoids potential problems).

9. When the installation is complete, click on **OK**. The Software Manager lists the newly added component among the installed software.

10. Exit the Software Manager by selecting the **Host** menu, then **Exit**.

11. Enter the following command to reboot the machine:

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

12. See the section, Adding Software After Installing the Maintenance Pack to install additional software once the system reboots.

Installing the Maintenance Pack from the Network

You can install the Maintenance Pack from one SCO OpenServer system onto another across a TCP/IP network.

On the **server** side, to enable:

1. In the simplest case, install the Maintenance Pack on the system that you want to use as the software server using one of the installation procedures described under ``Installing the Maintenance Pack''.

2. Use the **Account Manager** (**scoadmin account**) to create a login account named **swadmin**. When a client system attempts to remotely install software from the server system, this password must be supplied by the client to authenticate the connection. If this account already exists and the password has been forgotten, use the **Account Manager** to define a new password.

On the **client** side, to install the Maintenance Pack from the server:

1. Start the **Software Manager** and select **Install New**.

2. In the **Begin Installation** window, you are prompted for the source location of the Maintenance Pack. Select **From Another Host**.

3. Type in the network node name of the software server and the password for the *swadmin* account on the software server.

4. Proceed with the installation as shown in the previous section, beginning with Step 7.

For more information, see ``Installing and managing software over the network'' in the online documentation under ``Installation and Licensing''.

Adding Software After Installing the Maintenance Pack

To add software from the Maintenance Pack that you did not originally choose for installation:

1. Log in as *root*.
2. Start the **Software Manager** by double-clicking its icon on the desktop, or by entering the following at the command-line prompt:

   ```
   scoadmin software
   ```

3. From the **Software** menu, select **Install New**.
4. When prompted for the host (machine), select the current host and then click on **Continue**.
5. Do ***one*** of the following:

   A. **If you have a Supplement CD**, ensure that the CD is in the CD-ROM drive and select the CD drive as the Media Device. Select **Continue**.

   B. **If you have a Supplement CD ISO Image or the VOL files from a tar archive** (see Steps 2B and 2C in Installing the Maintenance Pack from CD, CD ISO Image, or Downloaded Media Images), then select **Media Images** as the Media Device. (You may need to scroll down in the Media Device selection box before you see the **Media Images** option.) Select **Continue**.

   When prompted, enter the absolute pathname for the directory that contains the install media. If you are using the CD ISO Image, enter ***mountpoint****/opt/archives*, where ***mountpoint*** is the mount point of the CD ISO Image (e.g., */cd-rom/opt/archives*). If you are using the VOL files from a **tar** archive, enter the full path of the directory containing the VOL files. (e.g., */usr/spool/patches/600mp2*). Select **OK**.

6. In the **Install Selection** window, select the software you want to install. Note that MP2 is not listed first in the **Install Selection** window; you may need to scroll down in the list before you see it.

   You can list the individual components of each item in the list using the **Expand** button. Use the **Space Bar** to select and deselect components from the list. (See the section Before Installing the Maintenance Pack, above, for a list of the components in the Maintenance Pack.)

   Once you have selected all the software you want, select **Install** to begin copying the components to your system.

7. The Software Manager will display a message if it finds previous versions of the components that are modified or upgraded by the Maintenance Pack. Select **Continue**.

   Note: The **Software Manager** also displays one or more warnings if the Maintenance Pack contains fixes for software features that are not currently installed on your system. If you do *not* plan to install the affected package at any time in the future, you can ignore such messages and click on *Continue*. However, if you do plan to install one of these packages, you should stop the MP install process now, install the package in question from the appropriate media, and then restart the Maintenance Pack installation. This ensures that fixes in the MP are applied properly (and avoids potential problems).

8. When the installation is complete, click on **OK**. The **Software Manager** lists the newly added component among the installed software.
9. Exit the **Software Manager** by selecting the **Host** menu, then **Exit**.
10. Reboot the machine:

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

Maintenance Pack Features

MP2 includes the following notable enhancements to OpenServer 6. For a complete list of the enhancements and fixes provided with MP2, see the section Fixes Provided in MP2.

ANT: Java-Based Build Tool

ANT Version 1.6.5 is provided as an optional component installable separately from the Maintenance Pack; the Maintenance Pack should be installed prior to installing ANT.

ANT is a Java-based build tool that is an alternative to other build tools such as **make**, and is designed to overcome difficulties inherent in multi-platform development. It is commonly used in open source Java development.

For more information on ANT, please see the ANT web site at http://ant.apache.org/. The documentation for ANT 1.6.5 is available at http://ant.apache.org/manual/index.html.

Compatibility

The following enhancements and fixes have been made to improve application compatibility for both OSR5 and SVR5 applications.

- An SVR5 ABI version of ***libprot*** (*/usr/lib/libprot.so*) is provided, for use by SVR5 mode applications to be compiled and deployed on OpenServer 6. The OSR5 version of *libprot* is provided under */osr5/usr/lib/libprot.so*, and is for use by OSR5 ABI applications only. OSR5 ABI applications executing on Release 6 can expect that all *libprot* calls will function as in previous releases.

- An updated ***libiaf*** that's compatible with *libprot* and its Identification and Authentication implementation is also provided. This allows SVR5 applications coded to use the SVR5 */usr/lib/libiaf.so* routines for I&A to run on OpenServer 6.

- Compatibility in the ***libsocket*** library is improved by including support for the *inet_net_pton*, *inet_net_ntop*, *inet_neta*, *inet_cidr_pton*, and *inet_cidr_ntop* interfaces to *libnsl*.

- A reported OSR5 application failure was found to be caused by TCP/IP code in the kernel that was incompatible with OSR5 style socket addresses passed from OSR5 applications. The socket address structure changed from OSR5 to OSR6, with the 16-bit family field used in the OSR5 socket address replaced by eight-bit length and eight-bit family fields. The problem was fixed by a minor modification to the kernel TCP module.

- Changes to ***libc*** have been made so that the message catalog routines now understand all "X/Open style" message catalog files produced either by the OpenServer 5 **mkcatdefs** command or the SVR5 **gencat**

command. It is up to applications where they install and thus locate their respective message catalog files.

Console: default terminal settings changed

Installing the Release Supplement changes the default TERM settings for the console and for new users from **at386-ie** to **ansi**. Most applications will not notice this change, except for those that were hard-coded with escape sequences or function key strings instead of using *terminfo*. Display of special characters, such as accents and umlauts, should be improved by this change.

Applications hard-coded to use an **at386-ie** or similar console, may want to restore the **at386-ie** settings originally installed with OpenServer 6. To restore all the **at386-ie** settings, use the **scoadmin international settings** manager to change the internal codeset to either the ISO8859-15 or the ISO8859-1 code page (Western Europe, with or without the Euro character). The console TERM settings (including font, keyboard, and mappings) will change automatically to the original OpenServer 6 installation settings.

IDE Driver updated

The IDE driver has been updated to correct problems observed with various IDE controller models. The previous version had trouble working with Intel ICH (I/O Controller Hub) IDE controllers in Enhanced/non-AHCI mode. The updated driver supports Enhanced/non-AHCI mode for all Intel ICH chipsets. Note that SATA (Serial ATA) and AHCI (Advanced Host Controller Interface) modes on ICH chipsets are not supported by this version of the IDE driver. (SATA is currently supported only by the **ahci** driver; see Serial ATA (SATA) Support).

This driver is provided in **pkgadd** format, and is added using the following command (with the MP CD in the primary drive):

```
# mount -F cdfs /dev/cd0 /cd-rom
# pkgadd -d /cd-rom/images/ide.image ide
```

Then, rebuild the operating system and reboot the system:

```
# /etc/conf/bin/idbuild -B
# init 6
```

International keyboard issues resolved

Various issues with international keyboard support have been resolved, and a new set of keyboard mapping tables is included. Use the SCOadmin International Settings Manager (**scoadmin internat**) to select keyboard tables and codesets.

See the MP2 Graphics section for additional information on keyboard related fixes and procedures, including Euro character display issues.

Java 2 Standard Edition Upgrade

The Java 2 Standard Edition (J2SE) is upgraded from 1.4.2_08 to 1.4.2_10, and includes these fixes:

- The *NetworkInterface.getNetworkInterfaces*() method was not returning a complete list of network interfaces on an SVR5 system.
- The server option **-XX:+AggressiveHeap** would not take effect on SVR5 systems because the total physical memory was incorrectly calculated.
- The *RandomAccessFile*() contructor mode "d" (data synchronization) was incorrectly passed to the system *open*() function with a BSD O_DSYNC flag. While generally innocuous, it could result in an SVR5 kernel memory corruption when opening some devices and eventually result in a system panic.
- Availability of LARGEFILE support may not have been correctly detected in JVM runtime initialization.
- The *jre/lib/font.properties* file has been revised to use Lucida fonts provided with the J2SE release. The previous *font.properties* file has been renamed *font.properties.BKUP*.
- Sun Alert ID 102003: Three (3) security vulnerabilities with the use of "reflection" APIs in the Java Runtime Environment may (independently) allow an untrusted applet to elevate its priveleges. For example, an applet may grant itself permissions to read and write local files or execute local applications

that are accessible to the user running the untrusted applet.

Large file capable versions of the ftp and scp commands

The **ftp** and **scp** commands have been enhanced to handle the transfer of files larger than 2GB in size. Note that the file system on which a large file is created must be a VxFS file system enabled for large files. See Managing Large Files.

Multiple core processor support

Multiple core processors have two or more processor cores in each physical package. (The number of internal processors may also be used in the processor name; for example, "dual core" processors.) This architecture continues the trend started with hyperthreading, adding enhanced parallelism and improved performance.

One critical difference between hyperthreading and multiple core processors is that multiple processor cores are detected automatically and utilized if available; hyperthreaded processors, on the other hand, are not utilized unless the administrator specifically requests their use.

The use of multiple processor cores is enabled by default. To disable it, enter the **MULTICORE=N** boot parameter at the boot loader prompt (or add it to the */stand/boot* file). If the use of multiple processor cores is explicitly disabled, then the use of hyperthreading is also disabled. (Having multiple core support enabled has no effect on systems that do not have multiple core processors.)

Note that on some systems (particularly where multi-core processors are included in the system's MPS tables), **ACPI=Y** must be entered in addition to **MULTICORE=N** to disable the use of multiple cores.

Hyperthreaded processor support is disabled by default. Support for hyperthreaded processors can be enabled with any of the following boot parameters:

```
ENABLE_HT=Y
ENABLE_JT=Y
HYPERTHREAD=Y
```

These and all the boot parameters are discussed on the **boot**(HW) manual page.

Note that if your system supports hyperthreading, then hyperthreading should always be enabled *in the system BIOS*, regardless of the operating system setting.

Both AMD and Intel multiple core processors are supported. No additional CPU licenses are required to use either multiple processor cores or hyperthreaded processors.

Network Driver Package Update

A new version of the **nd** (NIC Drivers) package (8.0.6b) is available on the CD in the directory */images*. This package must be installed using **pkgadd**(ADM). Although it contains no updated drivers, it lays the framework for all future NIC driver deliveries; that is, they will be installed using **pkgadd** rather than **custom**.

We strongly recommend you install this package. If you do not, future NIC driver updates will cause several **custom** packaging problems that will be reported whenever a thorough verification is run on the **nics** component (e.g.: `custom -v thorough SCO:nics:NICS`).

To install the **nd** package, do the following as *root*:

1. Mount the CD:

   ```
   # mount -F cdfs /dev/cd0 /cd-rom
   ```

2. Enter:

   ```
   # pkgadd -d /cd-rom/images/nd.image nd
   ```

3. Select '1' to install the drivers (basically, it installs new copies of the drivers already located in

/etc/inst/nd/mdi).

4. If you currently have a 3rd party driver installed on the system, then you need to reinstall it so that it once again appears in the */etc/inst/nd/mdi* directory for future use (if it was configured via **scoadmin** or **netcfg**).

Online Data Manager (ODM)

The Online Data Manager (version 3.2) provides advanced data redundancy and recovery, including:

- concatenation (data is mapped linearly onto one or more subdisks in a plex)
- spanning (concatenation using subdisks that reside on more than one VM disk)
- mirroring (a technique of using multiple plexes to duplicate the information contained in a volume)
- striping (a technique of mapping data so that the data is interleaved among two or more physical disks)
- RAID-5 (a method of providing data redundancy through the use of parity--a calculated value that can be used to reconstruct data after a failure)
- logs for mirror recovery

ODM is a separately installable component that requires the Maintenance Pack. A separate license is also required, which can be entered before or after installing ODM using the SCOadmin License Manager (**scoadmin license**).

ODM includes the Veritas Volume Manager (VxVM) and the Veritas Visual Administrator (VxVA). Once installed and licensed, follow the instructions in the online documentation under Filesystems to initialize and configure ODM. In particular, be sure to read the software notes and initialization instructions in the Overview and Installation document before you begin to use ODM. Also included are the ODM manual pages for all the ODM utilities.

Online documentation updates

The Release Supplement includes many updates to existing manual pages and guides, as well as new documentation for the Online Data Manager (see above), a comparison of Release 5 and Release 6 kernel tunable parameters, and updated BIND documentation.

PCI parallel port support

OpenServer 6 now automatically configures devices for all PCI parallel ports installed, including on-board ports and PCI add-on cards. These devices are configured using device names of the form */dev/lp**[0..n]***. There is no need to run the **mkdev parallel** command, as required in previous releases.

Use the graphical **dcu** interface or the command-line **resmgr** utility to list the enabled parallel ports. Enter **/sbin/dcu** and check the Hardware Device Configuration. You should see, for example:

```
  Device Name   IRQ IOStart IOEnd MemStart MemEnd DMA
= ===========   === ======= ===== ======== ====== ===
Y Parallel Port 7   3bc     3bf   -        -      -
```

You could also use the **resmgr** command:

```
# resmgr | grep mfpd
3 mfpd 1 5 1 7 3bc 3bf - - - - 1 - - - 1 -
```

If an existing parallel port is not listed by the **dcu** and **resmgr** utilities, reboot and enter the system BIOS to ensure that the port is enabled, and to determine the hardware resource settings (IRQ and I/O addresses) for the undetected port. Then, you need to change the BIOS settings or the **dcu/resmgr** settings (or both), so that they match.

You can add a parallel port manually within **dcu** by selecting **Software Device Drivers -> Miscellaneous -> mfpd**, selecting **F5**, and entering the appropriate values for the device. Similarly, you can edit the values for an existing driver by selecting the appropriate line in the **dcu** display and editing the values.

Or use the **resmgr** command, as in these examples:

```
# resmgr -a -p "MODNAME UNIT IPL ITYPE IRQ IOADDR BRDBUSTYPE ENTRYTYPE" -v "mfpd 1 5 1 7 3bc 3
# resmgr -a -p "MODNAME UNIT IPL ITYPE IRQ IOADDR BRDBUSTYPE ENTRYTYPE" -v "mfpd 1 5 1 7 378 3
```

Then run the following commands to rebuild the operating system and reboot:

```
# /etc/conf/bin/idconfupdate -f
# /etc/conf/bin/idbuild -B
# init 6
```

SCOadmin Filesystem Manager improvements

Various improvements, including pseudo filesystem support and enhanced support for memory-based (memfs) filesystems, have been made to the SCOadmin Filesystem Manager. Please see the SCOAdmin section of the section ``*Fixes Provided in MP2*'', below.

SCOadmin System Tuner

As an alternative to the **configure**(ADM) command, a graphical **System Tuner** is provided for changing kernel tunable parameters.

> **Note:** The **System Tuner** modifies *kernel* parameters - not to be confused with *networking* parameters (which are modified using the **inconfig**(ADMN) utility). For more information, including a list of kernel parameters, please see System Management • Performance in the online documentation.

To start the graphical System Tuner, enter **scoadmin hardware** and select **Tune Parameters** from the display or the **Kernel** menu. Note that you must start the System Tuner from a graphical desktop, or have your DISPLAY environment variable set to display on a graphical desktop in order to access the System Tuner, which is a graphical display only application. (On a character display, or when the DISPLAY environment variable is not set, the OpenServer classic character based **configure**(ADM) tool is launched instead.)

To view and change a parameter:

1. Kernel parameters are divided into categories you can view by clicking on the **category** button at the top of the window. To see a description of any parameter in the current category, click on the parameter. A description appears in the text box in the window. If the tunable parameter you want to modify is not shown in the current set of parameters, click on the **category** button and select the appropriate category.

2. Once the tunable parameter you want to change is displayed, click in the text box next to the parameter name.

3. To change the value of the tunable parameter, either enter the new value or move the slider bar near the bottom of the window until the desired value is displayed. If the **auto** check box appears for a parameter, you can select it to have the system select the parameter value automatically.

4. Use these buttons to control your selections:

Reset	resets values for all parameters changed since the last save
Reset to Factory	resets values to those that were set when the system was installed
Cancel	discards the changes you have made
OK	saves your settings (and proceeds to the next step)

5. If you changed any parameter values, you are prompted to rebuild the kernel to incorporate the new tunable values: choose **Yes** to rebuild it now or **No** to rebuild it the next time you reboot. If you rebuild the kernel, any errors encountered are recorded in the */tmp/kernel_status* file.

6. You are prompted to reboot now. If you select **Yes**, the system is rebooted immediately using the new kernel parameter values. If you select **No**, you continue with the old tunable parameter values in effect until the next reboot.

Security Fixes

Important security related fixes and enhancements are delivered with this Maintenance Pack. For a full list, see the following sections:

- **Security fixes in MP1**
- **Security fixes in MP2**

Serial ATA (SATA) Tape Support

The **ahci** driver has been updated to support Serial ATA (SATA) tape devices. The AHCI v1.0 Specification is fully supported with the exception of port multipliers and power management. All AHCI v1.0 compliant SATA controllers should work with this driver. Controllers based on the Intel ICH6M, ICH6R, ICH7M and ICH7R are known to work. This driver is provided in **pkgadd** format, and is added using the following command (with the MP CD in the primary drive):

```
# mount -F cdfs /dev/cd0 /cd-rom
# pkgadd -d /cd-rom/images/ahci.image ahci
```

Then, rebuild the operating system and reboot the system:

```
# /etc/conf/bin/idbuild -B
# init 6
```

UPS Support Fixes

The **mkdev apc** command has been updated to recognize that OSR6 serial ports are capable of the signalling required for the APC UPS daemon to operate.

USB Printing Fixes

The USB Printing subsystem has been updated to correct various problems, including unintelligible output observed at the end of many print jobs.

X.org X Server 6.9.0

The X.Org X server has been updated from Release 6.8.2 to Release 6.9.0. This new release contains: updated support for many drivers, including ATI Radeon (RN50/ES1000); several new or enhanced protocol extensions; and, a new acceleration architecture for improved graphics performance. For full details on this release please see http://wiki.x.org/wiki/X11R69Release.

Maintenance Pack Fixes

The fixes contained in this Maintenance Pack are described in the following sections (the references in parentheses following each description are internal tracking numbers).

Fixes Provided in MP1

MP2 contains the following fixes that were also included in MP1.

Hardware Support

1. **setclk command failures fixed** -- The **setclk** command was failing because of missing device nodes. This has been fixed.
(ID: 532605)

2. **Network card failover fixed** -- The problem of not being able to revert to the primary network interface card (NIC) after a failover occurred is fixed. When the primary NIC fails and the software switches to using a defined failover NIC, the option to **Revert to primary** is now presented in **netcfg**(ADM) when the primary NIC again becomes available.
(ID: 532629)

3. **udev driver updated** -- A flaw in the **udev** driver that caused errant behavior with respect to device number generation has been fixed.
(ID: 532577)

4. **Driver Updates** -- Updates for Host Bus Adapters and other device drivers are delivered separately from the Maintenance Pack. You can find the latest new and updated device drivers for Release 6.0.0 at: http://www.sco.com/support/update/download/product.php?pfid=12&prid=20.

Backup and Restore

5. **emergency_rec command fixed** -- Two problems with the **emergency_rec** command have been fixed. The **-e** option now backs up the entire disk, as described on the **emergency_rec**(ADM) manual page. Tape creation failures observed when the system is configured with a */tmp* directory of type **memfs** have also been fixed.
(ID: 532582, 532630)

Files and Directories

6. **non-LFS-aware commands no longer work on large files** -- MP2 fixes an error that allowed some file system related commands (such as */bin/chown* and */bin/rm*) that are not large file system (LFS) capable to effect changes in large files (files over 1GB in size). This error has been fixed, and these non-LFS-aware commands now return an error (E_OVERFLOW) when attempting to access a large file. It is important that users and applications that access large files have */u95/bin* first in their PATH so that the LFS-aware commands located there are invoked.
(ID: 532639)

Filesystems

7. **Problems running Mozilla and Firefox together fixed** -- Problems starting up either Mozilla or Firefox when the other was already running have been fixed.
(ID: 532645)

8. **Missing Java functionality provided** -- Java serial I/O support and SCOx web services support that was present in the most recent versions of SCO OpenServer 5 and UnixWare 7 was left out of Release 6.0.0 by mistake. MP2 corrects this as follows:
    - Java serial I/O support is contained in package **javaxcomm**, within a revised version of the Java 2 Standard Edition 1.4.2 parcel. It is automatically found within the standard Java extensions classpath.
    - Java web services support is contained in package **javasoap**, within the same revised Java parcel, and is also contained within a revised version of the Apache Tomcat Servlet Container 4.1.31 optional services product. It is automatically found within the standard extensions Java classpath.
    - C and C++ web services support is contained in a newly supplied package **gsoap** within the new **SCOxlang** optional services product. It is found at */usr/lib/gsoap/*.
    - Perl and PHP web services support was in 6.0.0, and is folded into those distributions.
    - Demos for using web services in all five languages are contained in a newly supplied package **scoxldemo** within the same new **SCOxlang** optional services product. These are installed into */usr/lib/scox/language_demos/*. The "mk" scripts within each subdirectory will indicate how to build and execute web services-enabled applications for all five languages.

(ID: 532362)

Networking

9. **Unsharing NFS resources errors fixed** -- The **unshare** and **unshareall** commands no longer return errors when unsharing NFS resources.
(ID: 532719)

10. **Firewall rules can be flushed only by owner** -- A bug that allowed any user to change or flush the firewall rules (see the **ipf**(ADMN) manual page) has been fixed. Only the owner has read and write permissions on **ipfilter** device nodes.
(ID: 532560)

11. **NFS deadlock with specfs file systems fixed** -- A deadlock that occurred when traversing **specfs** type file systems (such as */dev*) mounted over NFS has been fixed. Such operations no longer hang.
(ID: 532662)

12. **routed daemon updated** -- Problems observed using **routed** with */etc/inet/gateways* have been fixed.
(ID: 532052)

Security

13. **Mozilla updated to version 1.7.10** -- This update to Mozilla from Mozilla.org addresses the 9 security issues indicated at http://www.mozilla.org/projects/security/known-vulnerabilities.html#Mozilla:

```
MFSA 2005-56 Code execution through shared function objects
MFSA 2005-55 XHTML node spoofing
MFSA 2005-54 Javascript prompt origin spoofing
MFSA 2005-52 Same origin violation: frame calling top.focus()
MFSA 2005-51 The return of frame-injection spoofing
MFSA 2005-50 Possibly exploitable crash in InstallVersion.compareTo()
MFSA 2005-48 Same-origin violation with InstallTrigger callback
MFSA 2005-46 XBL scripts ran even when Javascript disabled
MFSA 2005-45 Content-generated event vulnerabilities
```

This updates the browser to the same code base as Mozilla Firefox 1.0.6 and Thunderbird 1.0.6.
(ID: 532746, 532631)

14. **Support for Access Control Lists (ACLs) added** -- ACLs are enabled by editing the file */etc/conf/sdevice.d/dac* and changing the **N** to a **Y** in the file. Save the change, and enter the following two commands to rebuild the kernel and reboot the system:

```
# /etc/conf/cf.d/link_unix
# shutdown -i6 -g0 -y
```

See the following manual pages for more information on ACLs: **getacl**(C), **setacl**(C), **acl**(S), **facl**(S), **aclipc**(S), **aclsort**(S).
(ID: 532597)

15. **lockpid and mpstat updated to restrict access** -- The set-gid (set group ID) bit was removed from the **lockpid** command. The set-gid bit was removed from the **mpstat** command, and the group was changed to **mem**.
(ID: 532359)

System Management

16. **psradm command fixed to no longer corrupt /etc/wtmp** -- The **psradm**(ADM) command was corrupting */etc/wtmp* and */etc/wtmpx*. This would cause commands like **who** to return errors. This problem has been fixed in MP2.
(ID: 532744)

17. **configure command -x option now works in pipelines** -- The **configure -x** command has been fixed to no longer execute its own internal pager; this made piping the output to another command fail.
(ID: 532516)

18. **telnet and rlogin fixed to allow eight-bit characters** -- The **telnet** and **rlogin** commands have been updated to allow eight-bit characters on input. This bug was preventing special symbols (such as Pound and Euro) from

being entered when a Release 6.0.0 machine was either the client or server in a **telnet** or **rlogin** session.
(ID: 532366)

19. **File limit in xemul updated** -- The XENIX Emulator **xemul**(C) no longer has a limit of 60 open files; it can open as many as the kernel is tuned to allow (the default is 2048).
(ID: 532564)

20. **Problems recognizing memory with multiple licenses fixed** -- Problems recognizing extra memory on systems with multiple licenses applied (for example, an Upgrade license plus an 8GB Memory license) have been fixed.
(ID: 532691)

21. **DOS commands no longer fail on second try** -- The DOS file system related commands (**doscp**, **dosrm**, **dosdir**, **doscat**, **dosmkdir**) were failing on second and subsequent executions by any user, with errors like the following:

    ```
    /tmp/00448dos: Permission denied
    doscp: can't seize /dev/install
    ```

    This happened because of a temporary file left behind by the first execution of the command. This problem has been fixed.
    (ID: 532710, 532716)

    Development System

22. **cc error for bool variables fixed** -- The **cc** compiler could generate one or both of the following errors when compiling code using pointers to boolean values:

    ```
    UX:acomp: ERROR: "compiler_err.c", line 12: internal compiler error:  can't deal with op ST
    ...
    UX:as: ERROR: /var/tmp/ctm2AAAa005X_:56:invalid operand combination: xorb
    ```

    This problem is fixed.
    (ID: 532751)

23. **C++ bit-field struct initializer list error fixed** -- A fix for the C++ compiler is included in MP2 which corrects a bug in which broken code was generated for initialization of bitfield members of **struct/union/class** objects."
(ID: 532625)

24. **Set installation problems fixed** -- Package set *postinstall* scripts are now executed using the correct set of system commands.
(ID: 532526)

Fixes Provided in MP2

Commands and Utilities

1. **/sbin/emergency_disk incorrectly enumerates cdrecord device** --

Correctly set scsibus for cdrecord device string.
(ID: 533423:1)

2. **groupadd and groupdel fail when /etc/group is configured for NIS.** --
   Changed logic so that "+" lines get the right number of semi-colons.
   (ID: 533295:1)

3. **mount -r mounts a memfs filesystem read-only, but reports it as read-write** --
   Support for read-only memfs filesystems was removed.
   (ID: 533056:1)

4. **mount -F memfs refuses -r flag** --
   Support for read-only memfs filesystems was removed from the memfs mount command. The memfs mount command no longer accepts "-r", and will not mount memfs filesystems read write.
   (ID: 533001:1)

5. **useradd prints garbage when called with -m and -d if the argument is not a directory** --
   Added new -M flag to allow creation of account with bogus directory specified in order to accommodate machine account needs for Samba, and still meet security requirements.
   (ID: 532692:1)

6. **When a nonexistant group is specified, useradd produces garbage output.** --
   A further check for validity of numerically specified GIDs was added to userOsa by calling an existing routine.
   (ID: 532930:1)

7. **When called with no home directory specified, useradd errors over lack of default.** --
   Added better control of home directory and resolved conflicts between -m and -M options.
   (ID: 532931:1)

8. **Can't display multibytes character on samba3.0.4** --
   The **iconv** command has been updated to correct this problem.
   (ID: 530767:1 ESC: erg712771)

9. **/etc/magic change for COFF binaries** --
   The information displayed for "iAPX 386 COFF" files has been enhanced to indicate if the binary uses static shared libraries.
   (ID: 532186:1)

10. **The more command does not display Japanese characters correctly.** --
    This problem has been resolved.
    (ID: 531424:1 ESC: erg712800)

11. **The truss -t and -v options fail when tracing an OSR5 binary** --
    The '-t' and '-v' options of **truss** had no effect when tracing an OSR5 binary, due to a bug in the processing of these options within **truss**. The problem has been resolved.
    (ID: 533294:1)

12. **cm_vtcld core dumps when SFNOLIM set above 32767** --
    This problem has been resolved.
    (ID: 527772:1 ESC: erg712304)

13. **UW7 compress needs to understand OSR5 Huffman -H option and format** --
    Updated **compress** command.
    (ID: 532965:1)

14. **Error in the showtable(1) Perl script** --
    This problem has been resolved.
    (ID: 533062:1)

15. **apc portcheck utility uses poor test for whether port is a modem-control device** --
    The APC UPS setup program invoked by "mkdev apc" previously did not recognize OSR6 serial ports as being capable of the signalling required for the APC UPS daemon to operate. This has been fixed.
    (ID: 533261:1)

16. **openserver 6.0.0 backup command errors "cpio: ERROR: -B and -C are mutually exclusive"** --
    OSR6 **cpio** handles the -B and -C option differently than the OSR5 **cpio** which has the -C option override the -B. The **backup** command is updated so that if **-t** is specified, then the **-B** option, if present, is ignored.
    (ID: 533420:1)

17. **The /etc/cleanup cron job has a problem with large files** --
    Change /etc/cleanup to use */u95/bin/find* (which is LSF-aware)
    (ID: 532901:1)

18. **Disk nodes are created by ISL with world writable (666) permissions** --
    The **pdimkdev** command is updated to consider permissions when it checks to make sure the device nodes are correct on a system. **pdimkdev** will now check device node permissions against the value specified in the SDI prototype file (600), and change them to the prototype value if they do not match. Changing **pdimkdev** ensures that any attempt to change device node permissions will be corrected when the system is rebooted. As a result of the changes to **pdimkdev**, installing the Maintenance Pack will correct any device node permission problems created during the initial install of Release 6.
    (ID: 532561:2)

19. **osr600mp2/bl4Di system fails to function as an installation server** --
    This problem has been resolved.
    (ID: 533435:1)

20. **df should not display information about pseudo filesystems** --
    This problem has been resolved.
    (ID: 531816:1)

21. **The "-l" (minus ell) option of "df" doesn't exclude automounted file systems** --
    This problem has been resolved.
    (ID: 532028:1)

22. **mapchan -f fails with "cannot open /bin/awk for map conversion"** --
    This problem has been resolved.
    (ID: 532369:1)

23. **Diacriticals are not working with mapchan as they did on Openserver 5.0.7** --
    This is a difference between the Release 5 and Release 6 consoles and **mapchan** commands: the order of keystrokes matters in Release 6. Nevertheless, reversed compose key sequences have been added, so that U" and "U both produce U-umlaut.
    (ID: 533289:1)

24. **needs mouseadmin shortcut removed** --
    The shortcut to call mouseadmin directly was removed from the mkdev script, and a link made for mouseadmin so that the SCO Admin Harware/Kernel Manager can find it.
    (ID: 532677:1)

25. **Spacing between translated Legend ps column header elements is incorrect (French only)** --
    Changed the following headers:
    1) "GID Parent" to "PGID"
    2) "TEMPS SYS" to "TEMPSDEM"
    3) "HEURE" to "TEMPS"
    4) "NI" to " NI"
    5) "CG" to " CG"
    (ID: 532413:1)

26. **Ey: quot(ADM) fails with vxfs filesystems.** --
    This problem has been resolved.
    (ID: 530114:1)

27. **Misleading error message when file being removed is larger than 2GB** --
    Updated the **rm** command to report the true reason for *lstat*() failure. The message changes from:

    ```
    # rm file3g
    rm: file3g non-existent
    ```

    To:

    ```
    # rm file3g
    rm: file3g non-existent: Value too large for defined data type (error 79)
    ```

    (ID: 532738:1)

28. **OALIB not exported, causing pathing problems when using scosh** --
    Added OALIB to the proper export line.
    (ID: 533424:1)

29. **/bin/sh core dump from SIGSEGV** --
    This problem has been resolved.
    (ID: 533052:1)

30. **"test -x" of directories fail when invoked by root** --
    This problem has been resolved.
    (ID: 533407:1)

31. **chsysinfo command is not setting the correct release value for "osr5" option** --
    The "chsysinfo" command was not setting the OS release to "3.2" when the "osr5" option was given. This could cause problems with package installation that specifically checked for the OpenServer 5 release. With this fix:
    - the **chsysinfo** command for OpenServer 6.0.0 has been updated to properly set the OS release as "3.2".
    - SI_SET_RELEASE and SI_SET_DEFAULT_RELEASE action numbers have been added to */usr/include/sys/systeminfo.h*.
    - */etc/conf/pack.d/name/Driver.o* has been updated to handle the added *systeminfo.h* requests.
    (ID: 532803:1)

32. **The SVR5/UDK version of uname has been added as */udk/bin/uname*.**
    (ID: 533016:1)

33. **Xenix binaries failing on Legend** --
    This problem has been resolved.
    (ID: 532549:1)

34. **SCO Xenix sort utility fails on OpenServer 6.0.0** --
    Application was failing in a call to *ulimit*(), because that didn't implement XNX_UL_GMEMLIM. This is now implemented.
    (ID: 532997:1)

35. **Xenix basic application not handling SIGINTR the same as OSR5** --
    The Xenix emulator, when executing 16 bit Xenix binaries, did not properly handle the "return from signal handler" case properly. The result was an emulator failure should a signal be delivered to to the application, and should the applications handler then return. For example, if basic were executed, the ^C key should return basic to the "OK" prompt. However, instead of return to "OK", basic would exit. This problem is now fixed.
    (ID: 533354:1)

36. **HTFS panic: Assertion fail - htiget.c** --
    This problem has been resolved.
    (ID: 532497:1)

37. **termcap scoansi entry has the same values for LE and DO** --
    This problem has been resolved.
    (ID: 532672:1)

38. **ansi termcap/terminfo needs updating** --
    Fixed the errors in color handling.
    (ID: 533466:1)

39. **/usr/sbin/menu dumps core with simple menu screen** --
    The **menu** command would dump core with a simple menu file. Updated */usr/sbin/menu* to fix the problem.
    (ID: 532986:2)

40. **OSS702A breaks pkgadd** --
    This problem has been fixed.
    (ID: 533126:1)

41. **OSS702A causes installf failures with HBA packages** --
    Fixed the script.
    (ID: 533239:2)

Development System

42. **Incorrect boolean code generation** --
    Compiler can erroneously generate "movb MEM,MEM" with the current stin for BOOL assignments. This is fixed.
    (ID: 532751:3)

43. **Inconsistant rounding in common subexpression (CSE) temp** --
    This changes floating point code generation for C and C++ in those circumstances where a floating "common subexpression" is saved for later use. Instead of saving it with the precision of its implicit type, it will be saved as a full-width 80-bit value so that when it is later used it behaves just as if it had been recomputed for each such use.
    (ID: 532927:2)

44. ***getXXent_r*() APIs misbehave when the buffer is too short** --
    Add code to reset to the start of the line in this situation for the C library APIs. For the NIS aware ones, have it reuse the already created struct in this case. Note, however, that the NIS aware code (*nametoaddr* library) is not "pure" as the **get*_r*() routines can overwrite and/or trash an existing non-**_r*() routine's returned result.
    (ID: 533169:2)

45. **OSR5 ABI currently defaults to expect libc RT version 2** --
    If not specifically set by the cc or CC compiler commands, the linker (ld) may have set "runtime version needed" value incorrectly when linking OSR5 ABI binaries. The OSR5 runtime version used on OpenServer 6.0.0 is the same as that used on OpenServer 5.0.7. The linker (ld) has been fixed to reflect the correct default OSR5 ABI runtime version.
    (ID: 532816:1)

46. **rpcgen fails on OSR 6.0.0** --
    The **rpcgen** command was failing because it could not execute */lib/cpp*. **rpcgen** has knowledge of specific OS-based headers files for networking. These header files are different between SVR5 and OSR5 ABIs. An SVR5 ABI aware **rpcgen** is now installed in */usr/bin*; an OSR5 ABI aware **rpcgen** is installed in */osr5/usr/bin/rpcgen*. The C preprocessor is now accessible by each **rpcgen**. Users who wish to compile OSR5 ABI network programs with **rpcgen** should prefix their PATH environment variable with "/osr5/usr/bin". The correct **rpcgen** and C compilers will automatically be used.
    (ID: 532752:1)

47. **Missing SVR5 inet header file - */usr/include/sys/insrem.h*** --
    A network header file - */usr/include/sys/insrem.h* - was omitted from the FCS release. The missing header file is in this maintenance pack.

(ID: 533162:1)

48. ***/usr/include/pwd.h* does not declare *getpwent_r*() and other routines** --
Three headers were updated with missing **_r*() declarations:
<*grp.h*> *[f]getgrent_r*()
<*pwd.h*> *[f]getpwent_r*()
<*shadow.h*> *[f]getspent_r*() and *getspnam_r*()
(ID: 533377:1)

49. **Complete set of man pages added by the Development System (FCS) is not configured** --
Some sections of manpages installed by the Development System component were not configured after installation and as a result were not visible in the manpage list. Installation of OSR 6.0.0 MP2 corrects that problem.
(ID: 532375:1, 532375:3)

50. **libprot needs to be implemented for the SVR5 ABI** --
This problem has been resolved.
(ID: 531946:1, 531946:2)

51. **libiaf ia_* routines need to be implemented using SVR5 libprot** --
This problem has been resolved.
(ID: 531946:4)

52. **cuserid(), getlogin(), et. al. fail on OSR6** --
This problem has been resolved.
(ID: 533043:1, 533064:2)

53. **fsstat(S) is not returning correct values against disk devices** --
The opening of <slice-only> device nodes is translated to <active-partition,slice> channel by *vtocopen*() by using cloning mechanism, due to which the snode of this opened channel has no real fs inode pointer and hence no information about the filesystem's special file. This is the reason why *fstat*(S) is returing incorrect and different information than *stat*(S). The fix is to make all */dev* & */dev/[r]dsk* slice-only device nodes have the same minor as the active partition device nodes of the same logical unit.
(ID: 533144:1, 533144:2 ESC: erg712967)

54. **UDK and OSR versions of *lckpwdf* on OSR6 use different lock files** --
Change *lckpwdf*() so that it uses the same pathname as (*/etc/.pwd.lock*) for both OSR5 and SVR5/UDK versions of command.
(ID: 533271:1)

Drivers

55. **SATA Tape support** --
Updated the *ahci* driver for Serial ATA (SATA) tape drive support.
(ID: 532857:1)

56. **Intel e1008g Gigabit driver 2.7.5 reports "Speed/Dx:10/H"** --
This problem has been resolved.
(ID: 517482:2)

57. **xAPIC detection is broken** --
This problem has been resolved.
(ID: 532824:1)

58. **Combined IDE mode does not work on some servers** --
Two major changes were made to accomodate all kinds of IDE controllers:
1) Change PCI so Enhanced or Combined mode controllers take ONE resmgr entry as they should. Legacy mode IDE controllers (ISA) need to have two entries since *cm_intr_attach*() needs two separate instances to bind to IRQs 14 and 15.

2) Change IDE ISR and CFG_ADD to understand the new **resmgr** layout.
(ID: 533413:1)

Graphics

59. **Euro symbol: can't display or print** --
To display and print the Euro symbol (€) from the console or any **xterm** session, do the following:

    1. As *root*, enter: **scoadmin international**.
    2. Set the Internal Codeset to ISO8859-15 using the **Settings --> Codesets --> Internal Codeset** menu command.
    3. When the Internal Codeset is changed in the last step, the Console Codeset changes automatically to IBM858. You can also set the console codeset to ISO8859-15 using the **Settings --> Codesets --> Console Codeset** menu command, if desired. Both codesets will enable you to display the Euro symbol, but IBM858 is slightly preferable, because this setting lets you use an ansi-based TERM type (specifically, **ansi-858**).
    4. Select an appropriate Console Keyboard from the list on the right of the International Settings screen.
    5. Select **File --> Save** to save the new settings; then, **File --> Exit** to close the manager.

    Further notes on displaying and printing the Euro symbol:

    - There's a minor bug in the X.org X server's keyboard layout files that prevents the Euro symbol from being correctly mapped in some keyboards. Use the **xmodmap** command to work around this problem. For example, the following commands map the Euro symbol to **Alt-4** (the right-hand "Alt" key followed by "4"):

      ```
      # xmodmap -e 'keycode 113 = Mode_switch'
      # xmodmap -e 'keycode 13 = 4 dollar currency currency'
      ```

      (On many non-US keyboards, the first command above is not necessary.)

      Other keyboard layouts place the Euro symbol on other keys, so different **xmodmap** commands would be called for. See the **xmodmap**(C) man page for details. Once the proper commands have been determined, they can be placed in *$HOME/.startxrc* so they will be run before every X session.

    - Note that Euro symbols do not work in **scoterm**; use **xterm** instead.

    - Euro symbols can also be typed using compose key sequences. Run the command:

      ```
      # mapchan -f /usr/lib/mapchan/deadcomp
      ```

      This enables the key sequence "^_ee" (control-underscore, e, e) to type a Euro symbol.

    - To print a file containing Euro symbols to a PostScript printer, set the LANG environment to refer to an ISO8859-15 locale, as in this example:

      ```
      # LANG=en_US.ISO8859-15 lp <filename>
      ```

    (ID: 533332, 533304:2)

60. **xterm cannot display the Euro(€) symbol** --
The International Settings Manager (**scoadmin internat**) was not setting fonts correctly for non-console sessions, making it necessary to run the following command to enable Euro character display in an **xterm**:

    ```
    xterm -fn 8x13bold-15
    ```

    The International Setting Manager now modifies the default X *font.alias* file, so that when the administrator chooses an internal codeset of ISO8859-15, a font with the Euro symbol will be used in **xterm** and other

applications. Changing to a different internal codeset will revert the fonts back to their original state.
(ID: 532426:1)

61. **Incorrect action of BROWSE_SELECT if configure XmNdoubleClickInterval to 3000.** --
This effect showed with both BROWSE_SELECT and SINGLE_SELECT, even more clearly with SINGLE_SELECT. The problem is that after the first click the List widget would start the time counter, and any click within DoubleClickInterval would be seen as the second click of the double-click on the original item. The problem is not seen with short interval because it's very difficult to do the second click on a different item within that short interval. The highlight frame gets updated correctly because it's updated on the ButtonUp event of the first click. Changed the double-click detection code in List to check if the second click happened on the same item (then it's a double-click) or on a different item (then it's a new single click).
(ID: 532813:1 ESC: erg712897)

62. **Black mark is displayed under first character if height of text widget is lower than character.** --
This problem has been resolved.
(ID: 532175:1 ESC: erg712839)

63. **Numeric keypad Del key does not work correctly when Num Lock is on** --
This problem has been resolved.
(ID: 532805:1)

64. **Xorg does not look at a user's *.startxrc* file like the previous X server** --
startx now looks at the users *$HOME/.startxrc*. Note that it does not use the *sys.startxrc* file, however.
(ID: 533029:1)

Kernel

65. **Balance callouts across multiple cpus** --
Allow kernel timeouts to run across multiple cpus if the caller context is unbound.
(ID: 532367:3)

66. **FPU control register initialization bad when isSCO set.** --
Changed FPU initialization as per request.
(ID: 529630:1)

67. **Systeminfo defines for SI_SET_VERSION and SI_SET_SYSNAME reuse numbers issued to Solaris** --
The system info numbers used for SI_SET_SYSNAME (267) and SI_SET_VERSION (267) are numbers previously registered with UNIX International (USL) by Sun Solaris. The mistake has been corrected in */usr/include/sys/systeminfo.h*. The chsysinfo command, which uses systeminfo action numbers in this range, and the kernel driver (*/etc/conf/pack.d/Driver.o*) that processes requests in this range have been updated.
(ID: 533077:2)

68. **vxfs snapshot panic using BackupEdge** --
Problems involving direct I/O reads of snapshot filesystems have been resolved.
(ID: 532771:1)

69. **Bad declaration of _h_errno() function return type** --
Change *netdb.vh* and *libsocket/inet/nd_gethost.c* to agree that *_h_errno*() returns "`int *`" and not "`const int *`". Also updated header file */usr/include/netdb.h*.
(ID: 531073:2)

70. **Need support for PCI parallel devices** --
The parallel port (**lp**) driver has been enhanced to support PCI parallel devices.
(ID: 533168:3)

71. **kernel panics with trap E after running Java program** --
A kernel memory corruption occurs if a Java program opens a non-cloning non-TCP streams device with the "d" flag. The particular case observed involved "/dev/ptyp0". The corruption might be followed by a kernel panic, though it could be delayed in time. This fix elminates both the corruption and the subsequent panic.

(ID: 533322:1)

72. **The configure command should provide limits before the user entry of a new value** --
    A message was added to display the recommended extreme values just before the user is prompted for data.
    (ID: 532494:1)

73. **The configure command produces errors on some *mtune* file entries** --
    Added check for spurious characters in parameter names, and programmed utility to ignore parameters with nonstandard formats. (Note: systuner also ignores parameters with nonstandard formats. The configuration files have to be edited manually and the idtools executed by hand if the (currently 2) nonstandard parameters need to be changed.
    (ID: 532861:1)

Installation

74. **Added fstyp command to emergency recovery CD** --
    Updated **emergency_rec**(ADM) to add the fstyp command to the emergency recovery CD image.
    (ID: 532595:1)

75. **Fix fsck, mount argument handling on emergency recovery cdrom** --
    Add */etc/fstyp -> /usr/sbin/fstyp* symlink for **fsck** without *-F fstype* argument.
    (ID: 532596:2)

76. **Add ability to fsck HTFS filesystems using emergency recovery cdrom** --
    Fixed. HTFS utils are included on the CD image when one of the slices uses HTFS (from */etc/vfstab*).
    (ID: 532598:1)

77. **Update pkgadd tools to latest SVR5 version** --
    Updated tools and infrastructure for **pkginstall** (**pkgadd**), **pkgremove** (**pkgrm**), etc.
    (ID: 532013:1)

78. **Installf failure** --
    The **installf** command fails during package installation with a message like the following:

```
installf: ERROR: bad entry read in contents file
    pathname=/tmp
    problem=illegal value for mode
UX:pkginstall: ERROR: postinstall script did not complete successfully.
```

    This problem has been resolved.
    (ID: 532895:1)

79. **Cannot install software from remote OSR6 server using custom** --
    SVR5 cpio extended attributes for ACLs causes custom to fail. Use /osr5/usr/bin/cpio if it's there. Fallback to /usr/bin/cpio if OSR5 version not available.
    (ID: 531068:1, 531797:1)

80. **ISL installs incorrect cpio binary in /udk/bin** --
    The file */udk/bin/cpio* has been removed.
    (ID: 533090:1)

Networking

81. **NFS traffic related panic in tcl_open()** --
    The system gets many "Out of stream" messages in */var/adm/log/osmlog* and it goes into panic state after some time. This problem has been resolved.
    (ID: 530251:4 ESC: erg712707)

82. **ndsample package should be updated to work on Legend** --
    Updated ndsample package to be able to build drivers on OSR6 and UW7. FIxed a make failure bug in this update.

(ID: 531687:1)

83. **tcp timers can delay other critical activity** --
In a system with a high connect/disconnect rate, 2msl timers, zombie timers, etc. can take significant amount of time to process and clean up the connection. This has the potential of starving/delaying other non-tcp and tcp timers as well as STREAM activity. This problem has been resolved.
(ID: 532371:3)

84. **MTU is not set correctly in response to an ICMP Error - Fragmentation Needed** --
This problem has been resolved.
(ID: 529427:4 ESC: erg712617)

85. **Continue socket compatibility work** --
Improved compatibility by including support for *inet_net_pton*, *inet_net_ntop*, *inet_neta*, *inet_cidr_pton*, *inet_cidr_ntop* interfaces to *libnsl*.
(ID: 533218:1)

86. **rpcbind errors on startup - rpcbind: Could not find any loopback transport. Exiting** --
This problem has been resolved.
(ID: 532689:1)

87. **"scoadmin license" fails when dhcp is configured** --
This problem has been resolved.
(ID: 533310:1)

88. **"mkdev cf" does not remove a smart host** --
This problem has been resolved.
(ID: 532370:2)

89. **IMAP and POP clients garble undeleted mail on OSR600 mailserver** --
popper fails to account for mailx separator when attempting to ensure that the 'From ' line precedes the X-UIDL: line it adds, and as a consequence writes mailboxes in which the From line is no longer the first line of messages. mailx reacts very badly to this corruption, and further corrupts the mailbox. Corrected the mailbox writing.
(ID: 532730:1)

90. **"mkdev cf" does not populate sendmail.cf or local-host-names with alternate hostname information** --
This problem has been resolved.
(ID: 533128:2)

91. **mkdev cf masquerading option "allmasquerade" is questionable and causes problems** --
Fixed This problem has been resolved.
(ID: 533129:2)

92. **mkdev cf does not update *./usr/mmdf/mmdftailor* MLNAME variable for hostname** --
This problem has been resolved.
(ID: 533130:2)

93. **sendmail is using KERN logging instead of MAIL logging fills syslog even after editing *syslog.conf*** --
syslogd was reading from */dev/osm* for messages and assuming that they are all OS messages. It now reads from */dev/log* and correctly sorts facilities and priorities. It does, however, no longer log boot time messages.
(ID: 533267:1, 533267:2)

94. **sendmail expects the "aliases" file in /var/spool/mqueue** --
If one doesn't select NIS support, the NISDOMAIN was set to null causing the mc file to contain the bogus definition of ALIAS_FILE to null. This problem has been resolved.
(ID: 533456:1)

95. **svc_start: ss_accept 4 warning in syslog** --
Don't print the warning for EINTR (normal case).

(ID: 532163:1)

96. **Errors indicated when Installing and Verifying an anonymous Home Directory** --
Bogus entries removed from script.
(ID: 532669:1)

97. **Saving a Home Directory Report causes the FTP manager to die, and the log is not saved.** --
This problem has been resolved.
(ID: 532670:1)

98. **nfs start can be run multiple times** --
Added code to 'start' case to check if any NFS services are already running.
(ID: 532222:1)

99. **Lc: exportfs fails with *letc/dfs/dfstab* in some usages.** --
This occurs with any usage of the **-d** option to **exportfs**, where there is whitespace in the argument to **-d**. The shell processing done in the **exportfs** script consumes a backslash preceding double quote characters in the */etc/dfs/dfstab* entries before the command line entries (i.e. calls to the **share** command) are executed. The problem is resolved within **exportfs** by inserting a backslash character before the double quote character.
(ID: 532085:2)

100. **Need LFS aware ftpd for legend** --
The **ftpd** daemon and **ftp** client can now handle files larger than 2GB in size.
(ID: 533392:1)

101. **TCP *send*(): When *tcpsend*() blocks for any condition, it returns EAGAIN instead of EWOULDBLOCK** --
The problem was caused by the mapping of EWOULDBLOCK to EAGAIN in the SVR5 kernel. For OSR5 applications this is wrong and needs to be mapped to OEWOULDBLOCK. Since EAGAIN is expected for other system calls, the fix is for SYS_socksys system call: map the EAGAIN return code to OEWOULDBLOCK.
(ID: 533307:1)

102. **ttcp(ADM) command does not work on OpenServer 6** --
Properly handle the sockaddr of AF_UNSPEC family when the socket was created with AF_INET. Also, set ss_listen_backlog tuneable to 1 before issuing the **ttcp** command.
(ID: 533025:1)

103. **mkdev cf results in error when uucp connection specified** --
Fixed This problem has been resolved.
(ID: 532600:2)

104. **NFS daemon messages appear in syslog with an extraneous date-stamp.** --
This problem has been resolved.
(ID: 532121:1)

105. **netconfig does not properly manage /etc/net/ti*/hosts files** --
This problem has been resolved.
(ID: 532878:1)

106. **netconfig: changing one field of the IP address changes the netmask & broadcast** --
This problem has been resolved.
(ID: 532135:1)

107. **netconfig: In character mode: Number Key Enter behaves differently than keyboard enter.** --
Problem has been fixed.
(ID: 532380:1)

108. **Once NIS is set up, the useradd command fails** --
Both **useradd** and **usermod** now use the default HOME_DIR from */etc/default/accounts* to create a home directory if a **-d** value is not specified with **-m**.

(ID: 533358:1)

109. **/etc/mkfilters doesn't generate a valid filter for ipf to use** --
This problem has been resolved.
(ID: 532361:1)

Operating System

110. **Deliver AMD Dual Core Support** --
AMD multiple core processors are supported.
(ID: 532956:1)

111. **Display PCI slot numbers correctly on PCI BIOSes revisions 2.3 and higher.** --
Fixed PCI driver to report slot numbers on systems with 2.2+ compliant PCI BIOS.
(ID: 533287:1)

112. **Xenix emulator can't fully handle locking(S) calls** --
Added code to check for EBADF, and in this case change to a read-lock and retry the operation.
(ID: 530097:1)

113. **limits need raising** --
The default for FLCKREC (maximum number of lock table entries) was raised to 16,000.
(ID: 532885:1)

114. **PANIC: DBLFLT exception** --
A panic of the following type may be observed while running Release 5 network applications that use **ioctl** commands specific to Release 5:

```
PANIC: DBLFLT exception; registers saved in TSS  0xFFFF5AF0
...
```

Observed cases so far have been provoked by the SIOCGIFCONF ioctl. This problem has been resolved.
(ID: 533228:1, 533228:2)

115. **Update French and German message catalogs.**
(ID: 533311)

116. **Fix OSR5 application compatibility problem with old style socket addresses.** --
A reported OSR5 application failure was found to be caused by TCP/IP code in the kernel that was incompatible with old style socket addresses passed from OSR5 applications. The socket address structure changed from OSR5 to OSR6, with the 16-bit family field used in the OSR5 socket address replaced by eight-bit length and eight-bit family fields. The problem was fixed by a minor modification to the kernel TCP module.
(ID: 533449:1)

117. **Function keys and arrow keys stop working with ASCII/english_us/ps.ibm.usa** --
ASCII is no longer available as a codeset. Function/arrow keys have been corrected in remaining keyboard files.
(ID: 532879:1)

118. **Cannot enter OSR5.0.5 in license manager** --
This problem has been resolved.
(ID: 531320:1)

119. **brand accepts an SMP license data-entry error which PMD later rejects** --
This problem has been resolved.
(ID: 533111:1)

120. **Need pmd functionality to query number of licensed CPUs, Users, and Memory ceiling** --
Added the following options to the **brand**(ADM) command:
-c returns CPU count
-m returns memory licensed

-O return OS serial number

Note that brand already supports these options:

-t total number of licensed users

-u number of user licenses in use

(ID: 532756:1)

121. **Need ATI Radeon video driver with RN50E chipset suppport** --
Upgraded to X.Org 6.9.0.
(ID: 532772:1 ESC: erg712887)

122. **Line drawing font for right hand top corner is not right on console** --
This problem has been resolved.
(ID: 532659:1)

123. **Incompatible format/content of */etc/default/codeset*.** --
The interpretation/use of */etc/default/codeset* has been changed to the Release 5 behavior. The first line of */etc/default/codeset* is the internal/system codeset, and the second line is the console codeset.
(ID: 532737:1)

124. **Default term types need changing from at386-ie to ansi** --
Default TERM settings for new users and the console have been changed from **at386-ie** to **ansi**. Most applications will not notice this change, except for those that were hard-coded with escape sequences or function key strings instead of using *terminfo*. Applications that use international characters, such as accents and umlauts, should work better. Applications hard-coded to use an **at396-ie** console, may want to switch back to **at386-ie**. To get **at386-ie** back, use the **scoadmin international settings** manager to change the console codeset to one of the ISO8859 code pages -- ISO8859-15 or ISO8859-1 (western europe, with and without the Euro character). The console terminal type will change automatically.
(ID: 533318:1, 533434:1)

125. **Minor cosmetic error in custom and scoadmin menus in CHARM mode** --
Console codeset was IBM850; term type was ansi and should have been set to ansi-850. This problem is fixed.
(ID: 533440:1)

126. **Device database is in inconsistent state which is not allowing emergency recovery CD creation** --
This problem has been resolved.
(ID: 533125:1)

127. **-x option for /bin/sh does not work on OSR6** --
This problem has been resolved.
(ID: 533127:1)

128. **Cannot use the Modem serial ports for dialin and dialout** --
Streams devices do not allow multiple entry into device open, so the traditional way of allowing dialout access to devices enabled for dialin does not work. To circumvent this, do a non-blocking open on device, and then wait for DCD to be asserted.
(ID: 533149:1)

129. **Porting of VxVM/ODM on OSR6** --
The Veritas Volume Manager is ported to OSR6.
(ID: 532973:1)

Printing

(Also see the Security section for security updates to CUPS.)

130. **USB printing errors after every job** --
The root of the problem is the mishandling of an incoming buffer by the GIO Mapper. This problem has been fixed.
(ID: 532127:1)

131. **Not able to print using lpr to an LPD print server** --
This problem has been fixed.
(ID: 532792:1 ESC: erg712893)

132. **NetWare support removed from the Printer Manager** --
(ID: 532886:1)

133. **OpenServer 6 remote printer configuration incompatible with OpenServer 5** --
Changed **osaserver** path to */etc/sysadm.d/bin/osaserver* in *libsysadm* (the Release 5 path).
(ID: 532953:1)

SCOAdmin

134. **Pseudo fs, memfs, and nfs not managed properly with the GUI** --
Added code to filesystemGUI to cause fsck option to be stippled in its menu if the selected filesystem is known to be unfsckable. Extensively modified filesystemGUI, as well as made changes to filesystemOsa and fsUtils.tlib in order to support memfs (ramdisk) filesystems. New screens were added and a special fstyp was created to provide the manager with the correct response when the system's fstyp returns "Unknown_fstyp" on memfs filesystems.
(ID: 532007:1)

135. **Filesystem Manager's "Check and Repair" option fails and refuses to respond afterwards** --
Exception code added to prevent display, and therefore operations on, pseudo filesystems.
(ID: 532467:1)

136. **NetWare support needs to be removed from Filsystem manager** --
Removed NetWare support.
(ID: 532987:1)

137. **Filesystem Manager errors when detecting DOSFS during mount configuration** --
Changed tests & actions for DOS to work for DOSFS. Also fixed a bug that caused the manager to fail when administering DOS filesystems due to use of utilities (sfsys and mfsys) that are not available in OpenServer 6. (They were OpenServer 5 link kit utilities that therefore have no relevance in OpenServer 6.)
(ID: 533140:1)

138. **Filesystem mgr displays many duplicate labels in character mode; X mode looks fine.** --
Deleted apparently excess label declarations
(ID: 532334:1)

139. **Security issue while installing legend with security level as 'High'** --
The SCOadmin Account Manager now enforces minimum password length specifications as established in */etc/default/passwd* with the PASSLENGTH setting.
(ID: 532048:1)

140. **International settings manager has illegible text** --
This problem has been resolved.
(ID: 532193:1)

141. **Possibly bogus error message when changing account distribution to NIS in scoadmin.** --
pw_id_map was not being updated when the Account Manager changed an account from being local to being NIS distributed. This has been fixed by adding a rsynch retry for *pw_id_map* to *find_passwd_line* in *libprot*'s *pwconv*.
(ID: 532450:1)

142. **Using scoadmin to change account distribution from NIS to local looks broken.** --
Created a new function to delete accounts from *passwd.yp* when they are changed from being distributed to local only.
(ID: 532451:1)

143. **Remove AFPS-related code from the account manager.** --
The fix enables Samba's */usr/bin/net* to exist on the system without impacting the SCO Admin Account Manager.
(ID: 532545:1)

144. **The mkuser scripts install default login files with bad termtype specified** --
Changed the default TERM settings in all the default environment setup files for the various shells to be **at386-ie**.
(ID: 532586:1)

145. **The Account Manager doesn't play well with external useradd processes.** --
Extensive modifications to the Account Manager were made to cause it to be more aggressive about refreshing its cached data, and its displays. Other display problems were also fixed.
(ID: 532934:1)

146. **Account Mgr & useradd sometimes fail due to treating $s in account names as variable references.** --
The userOsa, accountGUI, useradd, and usermod were all updated to allow a '$' as the last character in an account name, but only as the last character. Previous work had made '$' a permitted character, but had not completely excluded it from occurring anywhere in the account name.
(ID: 533250:1)

147. **SCOadmin System Tuner needed.** --
New graphical tool for adjusting kernel parameters.
(ID: 532676:1)

148. **The vxva graphical interface for ODM is needed.** --
The Online Data Manager's Visual Administrator graphical interface is now available.
(ID: 533245:1)

149. **Localized SCOadm msgs are missing** --
The main C library will now understand all "X/Open style" message catalog files produced by OpenServer 5 **mkcatdefs** as well as all those produced by SVR5's **gencat**. It is still up to applications where they install and thus locate their respective message catalog files.
(ID: 532671:1)

150. **"netcfg" has node name problems with multiple NICS** --
These problems have been resolved.
(ID: 532511:1)

151. **Modification of Network Protocol is not possible.** --
Permissions on */opt/K/SCO/tcp/6.0.0Ni/usr/lib/netcfg/bin/tcp.BE* changed from 0444 to 0755. The file must be executable.
(ID: 533457:1)

152. **View Protocol configuration in Network Configuration manager does not kick off** --
Permissions on */opt/K/SCO/tcp/6.0.0Ni/usr/lib/netcfg/bin/tcp.BE* changed from 0444 to 0755. The file must be executable.
(ID: 533458:1)

153. **Command 'scoadmin hot' generates error if system was rebooted with Hot-plug Manager still running.** --
Added lock file processing to augment existing pipe check. The system is not able to clean up (remove) the pipe file if it gets shut down abruptly.
(ID: 533053:1)

154. **When the system time is changed, cron should probably be restarted** --
The System Time Manager is updated to restart **cron** when the time is changed.
(ID: 532750:1)

155. **The useradd command adds a user even if the home directory cannot be created** --

If **-m** is supplied on the command line, check to see if the parent of the desired home directory exists before producing any changes on the system.
(ID: 531294:1, 531294:2)

156. **The useradd command no longer assumes a default directory** --
Change to **useradd**, so that if **useradd** is invoked as "useradd -m username", it assumes that the home directory is */u/username* and creates it.
(ID: 533436:1)

Security

157. **SECURITY: CUPS Denial of Service Vulnerability** --
[SCOSA-2005.51] A remote user can cause the CUPS service to hang and consume all available CPU resources.

(ID: 533150:3)

158. **SECURITY: Lynx Remote Buffer Overflow** --
[SCOSA-2006.7.1] Lynx has been updated to version 2.8.5rel.5 to resolve the following:

A vulnerability in Lynx can be exploited by malicious people to compromise a user's system.

The vulnerability is caused due to a boundary error in the "HTrjis()" function in the handling of article headers sent from NNTP (Network News Transfer Protocol) servers. This can be exploited to cause a stack-based buffer overflow by e.g. tricking a user into visiting a malicious web site which redirects to a malicious NNTP server via the "nntp:" URI handler.

Successful exploitation allows execution of arbitrary code.
(ID: 533159:4)

159. **SECURITY: Lynx Command Injection Vulnerability** --
[SCOSA-2006.7.1] Lynx has been upated to version 2.8.5rel.5 to resolved the following:

Remote exploitation of a command injection vulnerability could allow attackers to execute arbitrary commands with the privileges of the underlying user.

The problem specifically exists within the feature to execute local cgi-bin programs via the "lynxcgi:" URI handler. The handler is generally intended to be restricted to a specific directory or program(s). However, due to a configuration error on multiple platforms, the default settings allow for arbitrary websites to specify commands to run as the user running Lynx.
(ID: 533314:6)

160. **SECURITY: RPCBind Remote Denial of Service Vulnerability** --
[SCOSA-2005.43] When the RPC portmapper (rpcbind) receives an invalid portmap request from a remote (or local) host, it falls into a denial of service state and cannot respond. As a result, the RPC services will not operate normally.
(ID: 533036:2 ESC: erg712957)

161. **SECURITY: TCP Remote ICMP Denial Of Service Vulnerabilities** --
[SCOSA-2005.38] The ICMP RFC recommends no security checking for in-bound ICMP messages, so long as a related connection exists, and may potentially allow several different Denials of Service. The following individual attacks are reported:

A blind connection-reset attack is reported, which takes advantage of the specification that describes that on receiving a 'hard' ICMP error, the corresponding connection should be aborted. A remote attacker may terminate target TCP connections and deny service for legitimate users.

An ICMP Source Quench attack is reported, which exploits the specification that a host must react to ICMP Source Quench messages by slowing transmission on the associated connection. A remote attacker may effectively degrade performance for a legitimate connection.

To fix these issues, a new networking parameter tcp_ignore_quench is introduced for configuring ICMP source quench message behavior for tcp connections. When it is set to 1, ICMP source quench messages are ignored for tcp connections. Default value of this parameter is 1.
(ID: 533089:2 ESC: erg712928)

162. **SECURITY: Xloadimage NIFF Image Title Handling Buffer Overflow Vulnerability** --
[SCOSA-2005.62] A buffer overflow in xloadimage, might allow user-complicit attackers to execute arbitrary code via a long title name in a NIFF file, which triggers the overflow during (1) zoom, (2) reduce, or (3) rotate operations.
(ID: 533253:4)

163. **SECURITY: Squid 2.5.STABLE10 and earlier DoS** --
Squid has been updated to version 2.5.STABLE12 to resolve the following:

store.c in Squid 2.5.STABLE10 and earlier allows remote attackers to cause a denial of service (crash) via certain aborted requests that trigger an assert error related to STORE_PENDING.

The sslConnectTimeout function in ssl.c for Squid 2.5.STABLE10 and earlier allows remote attackers to cause a denial of service (segmentation fault) via certain crafted requests.
(ID: 533116:1)

164. **SECURITY: Squid 2.5.STABLE10 and earlier DoS** --
Squid has been updated to version 2.5.STABLE12 to resolve the following:

Squid 2.5.STABLE10 and earlier, while performing NTLM authentication, does not properly handle certain request sequences, which allows attackers to cause a denial of service (daemon restart).
(ID: 533151:1)

165. **SECURITY: Squid 2.5 STABLE11 and earlier DoS** --
Squid has been updated to version 2.5.STABLE12 to resolve the following:

The rfc1738_do_escape function in ftp.c for Squid 2.5 STABLE11 and earlier allows remote FTP servers to cause a denial of service (segmentation fault) via certain "odd" responses.
(ID: 533254:1)

166. **SECURITY: X.Org X server -- X11R6.8.2 arbitrary code execution** --
Updated X.Org to version 6.9.0.
(ID: 532984:1 ESC: erg712935)

167. **SECURITY: cpio Multiple Vulnerabilities** --
[SCOSA-2006.2] A race condition in cpio allows local users to modify permissions of arbitrary files via a hard link attack on a file while it is being decompressed, whose permissions are changed by cpio after the decompression is complete. A directory traversal vulnerability allows remote attackers to write to arbitrary directories via a .. (dot dot) in a cpio file.
(ID: 532911:2 ESC: erg712912)

168. **SECURITY: Tcpdump Denial of Service Vulnerability** --
[SCOSA-2005.61] Various flaws in tcpdump can allow remote attackers to cause denial of service.
(ID: 533034:2 ESC: erg712955)

169. **SECURITY: Unzip File Permissions Change Vulnerability** --
[SCOSA-2005.39] A vulnerability in unzip can be exploited by malicious, local users to perform certain actions on a vulnerable system with escalated privileges. The vulnerability is caused due a race condition that exists when the uncompressed file is closed and before its permissions are changed. This can be exploited via hardlink attacks to change the permissions of other files belonging to the user running unzip. Successful exploitation requires that the malicious user is able to delete the uncompressed file and replace it with a hardlink to another file owned by the unzip user, before permissions are set on the file.
(ID: 532852:1 ESC: erg712905)

170. **SECURITY: Gzip Multiple Vulnerabilities** --
[SCOSA-2005.59] Gzip has been updated to version 1.3.5-12 to resolve the following:

zgrep in gzip does not properly sanitize arguments, which allows local users to execute arbitrary commands via filenames that are injected into a sed script.

Race condition in gzip, when decompressing a gzipped file, allows local users to modify permissions of arbitrary files via a hard link attack on a file while it is being decompressed, whose permissions are changed by gzip after the decompression is complete.

Directory traversal vulnerability in gunzip -N allows remote attackers to write to arbitrary directories via a .. (dot dot) in the original filename within a compressed file.
(ID: 532855:1 ESC: erg712906)

171. **SECURITY: TCP RFC1323 Denial of Service Vulnerability** --
[SCOSA-2005.65] TCP does not adequately validate segments before updating timestamp value allowing a remote attacker to arbitrarily modify host timestamp values that will in turn cause TCP connections to abort/drop segments, leading to a denial-of-service condition.
(ID: 533038:2 ESC: erg712959)

172. **SECURITY: wu-ftp Denial of Service Vulnerability** --
[SCOSA-2005.63] The wu_fnmatch function in wu_fnmatch.c allows remote attackers to cause a denial of service (CPU exhaustion by recursion) via a glob pattern with a large number of * (wildcard) characters, as demonstrated using the dir command.
(ID: 533027:2 ESC: erg712952)

173. **SECURITY: BIND Denial of Service Vulnerability** --
[SCOSA-2006.1] BIND version 8.4.4 is vulnerable to a remote denial of service attack, caused by a buffer overflow in the in q_usedns array.
(ID: 531004:1 ESC: erg712788)

174. **SECURITY: Telnet Environment Leakage** --
[SCOSA-2005.50] Certain BSD-based telnet clients allow remote malicious telnet servers to read sensitive environment variables via the NEW-ENVIRON option with a SEND ENV_USERVAR command.
(ID: 533032:2 ESC: erg712953)

175. **SECURITY: KAME Racoon Daemon Denial of Service** --
[SCOSA-2005.52] A new vulnerability was identified in KAME Racoon, which may be exploited by attackers to conduct Denial of Service attacks. The flaw occurs when handling specially crafted ISAKMP Packet Headers, which may be exploited to crash the application.
(ID: 533033:2 ESC: erg712954)

176. **SECURITY: OpenSSH < 4.2 GatewayPorts and GSSAPIDelegateCredentials exploits** --
OpenSSH has been updated to version 4.2p1.
(ID: 532976:1 ESC: erg712931)

177. **SECURITY Vim 6.3 < 6.3.082 input validation** --
VIM has been updated to version 6.4.
(ID: 533037:1 ESC: erg712958)

178. **SECURITY: LibXpm Integer Overflow Vulnerability** --
[SCOSA-2006.5] An integer overflow vulnerability in libXpm can be exploited by a remote user to cause arbitrary code to be executed. The 'scan.c' code does not properly validate user-supplied data contained in image files. A remote user can create a specially crafted image file that, when processed by the target user or application, will trigger the overflow and execute arbitrary code.
(ID: 533161:2)

179. **SECURITY: ESP Ghostscript Insecure Temporary File Creation Vulnerabilities** --
These problems have been resolved and additionally ESPGS has been updated to version 8.15.1.

(ID: 533156:1)

180. **SECURITY: GTK+ gdk-pixbuf XPM Loader Heap Overflow Vulnerability** --
[SCOSA-2006.8] Integer overflow in the GTK+ gdk-pixbuf XPM image rendering library in GTK+ allows attackers to execute arbitrary code via an XPM file with a number of colors that causes insufficient memory to be allocated, which leads to a heap-based buffer overflow.
(ID: 533256:1)

181. **SECURITY: Docview (htdig) Cross- Site Scripting Flaw** --
[SCOSA-2005.46] Cross-site scripting vulnerability in docview (htdig) allows remote attackers to execute arbitrary web script or HTML via the config parameter, which is not properly sanitized before it is displayed in an error message.
(ID: 531484:3 ESC: erg712808)

182. **SECURITY: LibTIFF BitsPerSample Tag Buffer Overflow Vulnerability** --
[SCOSA-2006.3] TIFF has been updated to version 3.7.4 to resolve the following:

Tavis Ormandy has reported a vulnerability in libTIFF, which potentially can be exploited by malicious people to compromise a vulnerable system.

The vulnerability is caused due to a boundary error and can be exploited to cause a buffer overflow via a specially crafted TIFF image containing a malformed BitsPerSample tag.

Successful exploitation may allow execution of arbitrary code, if a malicious TIFF image is opened in an application linked against the vulnerable library.
(ID: 532777:1 ESC: erg712888)

183. **SECURITY: Zlib Multiple Vulnerabilities** --
[SCOSA-2006.6] zlib has been updated to version 1.2.3 to resolve the following:

The error handling in the (1) inflate and (2) inflateBack functions in ZLib compression library 1.2.x allows local users to cause a denial of service (application crash).

inftrees.h in zlib 1.2.2 allows remote attackers to cause a denial of service (application crash) via an invalid file that causes a large dynamic tree to be produced.

Buffer overflow in zlib 1.2 and later versions allows remote attackers to cause a denial of service (crash) via a crafted compressed stream, as demonstrated using a crafted PNG file.
(ID: 532829:1 ESC: erg712899)

184. **SECURITY: libpcre < 6.3 PCRE Heap Overflow Arbitrary Code Exec** --
libpcre has been updated to version 6.4.
(ID: 532923:1 ESC: erg712924)

185. **SECURITY: libwww Denial of Service** --
This problem has been resovled in patched libwww-5.4.0.
(ID: 533164:1)

186. **SECURITY issues: Mozilla 1.7.10 and 1.7.11** --
The release of Mozilla 1.7.12 in this maintenance pack resolves a number of security issues including:
#1: http://secunia.com/advisories/16846/
Mozilla 1.7.10 (and 1.7.11) allows attackers to execute arbitrary commands via shell metacharacters in a URL that is provided to the browser on the command line, which is sent unfiltered to bash. CAN-2005-2968

#2: http://secunia.com/advisories/16917/
Multiple vulnerabilities have been reported in Mozilla Suite, which can be exploited by malicious people to conduct spoofing attacks, manipulate certain data, bypass certain security restrictions, and compromise a user's system. CAN-2005-2701 CAN-2005-2702 CAN-2005-2703 CAN-2005-2704 CAN-2005-2705 CAN-2005-2706 CAN-2005-2707

(ID: 533139:1)

187. **SECURITY: cURL/libcURL NTLM Username Handling Buffer Overflow Vulnerability** --
Fixed in *libcurl* version 7.15.1 in the **Supplemental Graphics, Web and X11 Libraries** component.
(ID: 533174:1)

Other Fixes

188. **/bin/showtable perl script calls non-existent /usr/lib/perl5** --
Small packaging error fixed in modern perl handoffs.
(ID: 532082:1)

189. **Accounts with $ signs in their names may be added but cannot be removed or managed.** --
The **useradd**, **usermod**, and **userdel** commands have been fixed to properly handle a **$** character as the last character in an account name. The SCOAdmin Account Manager should *not* be used to manage such accounts; use the command line interface instead.
(ID: 532674:1)

190. **Unzip < 5.53 Race Condition Priv Esc** --
[http://secunia.com/advisories/16309/] This problem has been fixed.
(ID: 532852:1, 532852:2 ESC: erg712905)

191. **tput error when regular users login on console VTs: unknown terminal "-ie:at386-ie"** --
This problem has been resolved.
(ID: 533257:1)

192. **Mozilla 1.7.10 has 2 mail client regressions** --
Two mail client regressions in the Mozilla.org source release of Mozilla 1.7.10 have been corrected in the version of Mozilla in this maintenance release.
(ID: 533017:3)

Maintenance Pack Notes and Limitations

The following notes and limitations apply to SCO OpenServer Release 6.0.0 Maintenance Pack 2:

- **Warning after installing MP2** --
After installing the RS600B Release Supplement from MP2, the following message is displayed on the console (and recorded in */var/adm/messages* and */var/adm/syslog*):

```
WARNING:
    The SCO Licensing Policy Manager Daemon (sco_pmd) has terminated
    and been restarted.  This usually indicates a serious system problem
    and you are encouraged to contact your SCO service provider for help.
```

  This message is expected when the Release Supplement is installed and can be safely ignored. The Release Supplement contains updates to the Policy Manager Daemon (PMD); the PMD is stopped and restarted by the Supplement to configure the updates.

- **PHP user configuration file is changed by OSR600MP2** --
The */usr/lib/php.ini* file is changed with the updated PHP. Users should use the newer *php.ini* file. The existing *php.ini* file is backed up and available for reference.
(ID: 533395:1)

Appendix: Graphics libraries, Perl modules, and PHP PEAR modules

Graphics Libraries

The following libraries are provided as part of the **Supplemental Graphics, Web and X11 Libraries** component (see Before Installing the Maintenance Pack).

Library	Versions Current	Previous
GNU gettext library	0.14.5	
GNU Compression library (libz)	1.2.3	1.2.2
BZIP2 Compression library (libbz2)	1.0.3	
IJG JPEG Library (libjpeg)	6b	
JASPER JPEG-2000 library (libjasper)	1.701.0	
JBIG-Kit ISO/IEC 11544:1993 (libjbig)	1.6	
TIFF Image Manipulation Library (libtiff)	3.7.4	3.7.2
Portable Network Graphics Library (libpng)	1.2.8	
Multi-image Network Graphics (libmng)	1.0.9	
True-Type Font Library Version 1 (libttf)	1.3.1	
True-Type Font Library Version 2 (libfreetype)	2.1.10	
GD Graphics Manipulation Library 1 (libgd1)	1.8.4	
GD Graphics Manipulation Library 2 (libgd2)	2.0.33	
GIF Image Manipulation Library (libgif)	4.1.0	
Compface Manipulation Library (libcompface)	1.0.0	
M-Peg Encoder/Decoder Library (libmpeg_lib)	1.2.1	
Portable Bitmap Library (netpbm)	10.26.14	10.26.1
GIMP Toolkit (GTK+/GDK) 1	1.2.10	
GIMP Toolkit (GLIB) 1	1.2.10	
GIMP Toolkit (GTK+/GDK) 2	2.8.9	2.4.14
GIMP Toolkit (GLIB) 2	2.8.4	2.4.8
GIMP Toolkit (ATK)	1.10.3	1.8.0
GIMP Toolkit (Pango)	1.10.2	1.4.1
Cairo	1.0.2	
Enlightenment Image Library (libimlib)	1.10.0	
GNU Readline Library (libreadline,libhistory)	5.1	5.0
3D Athena Widget Set (libXaw3d)	1.5E	
Slang Screen Library (libslang)	1.4.9	
GNU Database Manipulation Library (libgdbm)	1.8.0	
Berkeley Database (libdb)	4.3.28	4.3.27
Expat XML Processing Library (libexpat)	1.95.8	
XML Processing Library 2 (libxml2)	2.6.22	2.6.19
XSLT XML Stylesheet Library (libxslt)	1.1.15	1.1.14
XML DOM Library (libgdome2)	0.8.1	
XML Security Library (xmlsec)	1.2.9	1.2.8
MD5 Digest Library (libmd5)	1.0.0	
Truerand Random Number Library (librand)	1.0.0	
OpenSSL Secure Socket Layer (libssl,libcrypto)	0.9.7i/0.9.6m	0.9.7g
OpenSLP Service Location Protocol (libslp)	1.2.1	
OpenLDAP Library Kit (libldap,liblber)	2.2.30	2.2.24
SASL Library (libsasl)	2.1.20	(see below)*
MM Library (libmm)	1.4.0	1.3.1
W3C Consortium Library (libw3c,libwww)	5.4.0	
Perl Compatible Regular Expressions (PCRE)	6.4	5.0
Little Color Management System (lcms)	1.15	1.14
IDL Processing library (libIDL-2.0)	0.8.6	0.8.5
cURL URL fetching library (libcurl)	7.15.1	7.13.2
JavaScript Library	1.5rc5	
Sablotron XML Processor	1.0.2	
International Components for Unicode (ICU)	3.4	3.2
Xerces-C Validating XML Parser	2.7.0	2.6.0
Xalan-C XSLT processor	1.10.0	1.9.0
FontConfig	2.2.2	
trio	1.10	
Windows MetaFile (WMF) library (libwmf)	0.2.8.4	
GNOME HTTP library (libghttp)	1.0.9	
GNOME ART library (libart_lgpl)	2.3.17	
GNOME popt library (libpopt)	1.7	
GNOME structured file library (libgsf)	1.13.3	1.11.1
GNOME CSS2-parsing library (libcroco)	0.6.0	
GNOME SVG processing libary (librsvg)	2.13.3	2.9.5
GNOME HTML Widget for GTK+ (libgtkhtml)	2.11.0	2.6.3
EXIF processing library (libexif)	0.6.12	0.6.10
GTK widgets for libexif (libexif-gtk)	0.3.5	
GnuPG	1.4.0	
GNU Crypto Library (libgcrypt)	1.2.2	1.2.1
GPG Error Library (libgpg-error)	1.0.0	
Tcl	8.4.10	8.4.9
Tk	8.4.10	8.4.9
Extended Tcl (TclX)	8.3.5	

```
Expect                                          5.43          5.42
```

* With respect to Cyrus-SASL: the version hasn't changed, but the way in which it was compiled has changed significantly. In previous releases all of the backends were static. All the backends are now dynamic.

Perl Modules

The core Perl interpreter was upgraded from 5.8.6 to 5.8.7. The following Perl extensions are included with 5.8.7.

```
Archive-Tar-1.26
Archive-Zip-1.16
Authen-SASL-2.09
Authen-SASL-Cyrus-0.12
BerkeleyDB-0.26
Cache-2.02
Cache-Cache-1.04
Class-ErrorHandler-0.01
Class-Loader-2.03
Compress-Bzip2-2.09
Compress-Zlib-1.40
Convert-ASCII-Armour-1.4
Convert-ASCII-String-0.36
Convert-ASN1-0.19
Convert-PEM-0.07
Crypt-Anubis-1.0.4
Crypt-Blowfish-2.09
Crypt-Blowfish_PP-1.12
Crypt-CAST5-0.04
Crypt-CAST5_PP-1.03
Crypt-CBC-2.15
Crypt-DES-2.03
Crypt-DES_EDE3-0.01
Crypt-DES_EEE3-0.01
Crypt-DES_PP-1.00
Crypt-DH-0.06
Crypt-DSA-0.12
Crypt-ECB-1.40
Crypt-GOST-1.00
Crypt-IDEA-1.02
Crypt-OpenPGP-1.03
Crypt-OpenSSL-Bignum-0.03
Crypt-OpenSSL-DSA-0.12
Crypt-OpenSSL-RSA-0.21
Crypt-OpenSSL-Random-0.03
Crypt-OpenSSL-SMIME-0.02
Crypt-Primes-0.50
Crypt-RIPEMD160-0.04
Crypt-RSA-1.56
Crypt-Random-1.23
Crypt-Random-1.25
Crypt-Rijndael-0.05
Crypt-Rot13-0.04
Crypt-SEAL2-1.0.4
Crypt-SSLeay-0.51
Crypt-Salt-0.01
Crypt-SmbHash-0.12
Crypt-TripleDES-0.24
Crypt-Twofish-2.12
Crypt-Twofish2-1.01
Crypt-UnixCrypt-1.0
DBD-Pg-1.43
DBD-SQLite-1.09
DBD-SQLite2-0.33
DBD-mysql-3.0002
DBI-1.48
DBM-Any-0.1
Data-Buffer-0.04
Data-ShowTable-3.3
DateManip-5.44
Digest-BubbleBabble-0.01
Digest-EMAC-1.2
Digest-HMAC-1.01
Digest-MD2-2.03
Digest-MD4-1.5
```

Digest-Nilsimsa-0.06
Digest-SHA-5.31
Digest-SHA1-2.10
Digest-SHA2-1.1.0
Error-0.15
ExtUtils-CBuilder-0.14
ExtUtils-ParseXS-2.11
File-AnySpec-0.06
File-NFSLock-1.20
File-PM2File-0.08
File-Package-0.06
File-SmartNL-0.05
File-Where-0.05
FreezeThaw-0.43
HTML-Clean-0.8
HTML-FillInForm-1.05
HTML-Parser-3.45
HTML-SimpleParse-0.12
HTML-TagReader-1.08
HTML-Tagset-3.04
HTTP-GHTTP-1.07
Heap-0.71
IO-Socket-SSL-0.97
IO-String-1.06
IO-Zlib-1.04
IO-stringy-2.110
IPC-MM-0.03
IPC-ShareLite-0.09
MIME-Lite-3.01
MIME-Types-1.15
MIME-tools-5.417
MLDBM-2.01
MLDBM-Sync-0.30
MailTools-1.67
Math-Pari-2.010604
Module-Build-0.2611
Module-ScanDeps-0.51
Module-Signature-0.50
Msgcat-1.03
MySQL-Config-1.03
Net-DNS-0.53
Net-DNS-Codes-0.08
Net-DNS-SEC-0.12
Net-DNS-ToolKit-0.25
Net-Daemon-0.38
Net-Daemon-SSL-1.0
Net-IP-1.23
Net-Server-0.88
Net-ext-1.011
NetAddr-IP-3.25
Net_SSLeay.pm-1.25
PAR-0.89
PAR-Dist-0.07
Parse-RecDescent-1.94
Parse-Yapp-1.05
Perl-Tidy-20031021
PlRPC-0.2018
RPC-XML-0.58
SOAP-0.28
SOAP-Lite-0.60
Sort-Versions-1.5
String-CRC32-1.3
Text-Iconv-1.4
Tie-Cache-0.17
Tie-EncryptedHash-1.21
Tie-Gzip-0.06
Tie-IxHash-1.21
Tie-TextDir-0.06
TimeDate-1.16
URI-1.35
Unicode-Map8-0.12
Unicode-String-2.07
Unix-Syslog-0.100
XML-DOM-1.44
XML-DOM-XPath-0.09
XML-Dumper-0.71
XML-Dumper-0.79

```
XML-Encoding-1.01
XML-Filter-BufferText-1.01
XML-GDOME-0.86
XML-GDOME-XSLT-0.75
XML-Generator-0.99
XML-Generator-DBI-1.00
XML-Generator-PerlData-0.89
XML-Grove-0.46alpha
XML-LibXML-1.58_1
XML-LibXML-Common-0.13
XML-LibXSLT-1.58
XML-NamespaceSupport-1.09
XML-Parser-2.34
XML-SAX-0.12
XML-SAX-Expat-0.37
XML-SAX-Writer-0.44
XML-Sablotron-1.01
XML-Simple-2.14
XML-Twig-3.21
XML-Writer-0.530
XML-Writer-0.600
XML-Writer-String-0.1
XML-XPath-1.13
XML-XSLT-0.48
XML-Xerces-2.5.0-0
YAML-0.39
gettext-1.01
libwww-perl-5.803
libxml-enno-1.02
libxml-perl-0.08
```

PHP PEAR Modules

With PHP, the following PEAR modules are provided. Updated modules are marked with an asterisk (*):

```
*Archive_Tar-1.3.1
 Auth-1.2.3
 Auth_PrefManager-1.1.4
 DB-1.7.6
*HTML_CSS-1.0.0RC2
 HTML_Common-1.2.2
*HTML_Form-1.3.0
 HTML_Menu-2.1.1
 HTML_Page2-0.5.0beta
*HTML_Progress-1.2.5
 HTML_QuickForm-3.2.5
*HTML_QuickForm_Controller-1.0.5
 HTML_QuickForm_SelectFilter-1.0.0RC1
*HTML_Table-1.6.1
*HTML_Table_Matrix-1.0.9
*HTML_Template_IT-1.1.3
*HTML_Template_Sigma-1.1.4
*HTTP-1.4.0
*HTTP_Download-1.1.0
*HTTP_Header-1.2.0
*HTTP_Request-1.3.0
 HTTP_Session-0.5.1
 HTTP_Upload-0.9.1
 Image_Color-1.0.2
*Log-1.9.3
 Mail-1.1.9
 Mail_Mime-1.3.1
 Net_CheckIP-1.1
 Net_Curl-1.2.2
 Net_DIME-0.3
*Net_DNS-1.0.0rc3
 Net_FTP-1.3.1
 Net_IMAP-1.0.3
*Net_IPv4-1.3.0
 Net_Ident-1.1.0
 Net_LDAP-0.6.6
 Net_NNTP-1.1.2
 Net_POP3-1.3.6
 Net_SMTP-1.2.7
 Net_Socket-1.0.6
```

```
 Net_URL-1.0.14
 Net_UserAgent_Detect-2.1.0
*PEAR-1.4.5
 SOAP-0.9.1
*XML_Parser-1.2.7
*XML_RPC-1.4.4
 XML_Util-1.1.1
*XML_XPath-1.2.3
```
