

SCO OpenServer 6.0.0 Maintenance Pack 4 Release Notes

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SCO OpenServer Release 6.0.0 Maintenance Pack 4 Release and Installation Notes

February 2009

SCO OpenServer™ Release 6.0.0 Maintenance Pack 4 (MP4) 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 MP4 is *not* supported.**

These *Release and Installation Notes* contain critical information that you need to know before and after installing MP4. Please read them entirely, and also check the SCO OpenServer Release 6.0.0 *Late News* web site, before beginning to install MP4. *Late News* can be found at:

<http://www.sco.com/support/docs/openserver>. Additional information and release notes for device drivers and some MP4 components (for example, Java, Mozilla® Firefox®, and Mozilla® Thunderbird™) are provided on each MP4 CD in the */info* directory.

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. In particular, these OpenServer 6.0.0 supplements are provided on the web site and are not included in maintenance packs:

- Dialogic 5.1a
- MergePRO 6.3.0f
- Online Data Manager (ODM)*
- Open Sound System Supplement 4.0.1
- Russian Language Support
- SCO Office Server 4.2.0

* ODM was previously provided on the OpenServer 6.0.0 MP2 CD. It is now provided on the public web site. Note that OpenServer 6.0.0 MP4 provides ODM updates to this web-posted ODM product. See the [Online Data Manager \(ODM\)](#) section below for further details.

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§1: Before Installing the Maintenance Pack

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

1. Superseded OpenServer 6.0.0 Supplements

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

- Maintenance Pack 1 (RS600A)
- Maintenance Pack 2 (RS600B)
- Maintenance Pack 3 (RS600C)
- OSS701A, the OpenServer 6.0.0 Account Manager Supplement
- OSS702B, the OpenServer 6.0.0 pkgadd Supplement
- OSS703A, the X Server Upgrade for Maintenance Pack 2.
- OSS704A, the Perl and PHP Upgrades for MySQL 5.
- OSS705A, the Perl Extensions Upgrade for PostgreSQL 8.
- OSS706C, the OpenServer 6 Maintenance Pack 2 Supplement (including US 2007 Daylight Saving Time Update).
- OSS707B, the OpenServer 6 Platform Support Update
- OSS708A, the OpenServer 6 Processor Licensing Update
- OSS709A, the Docview Update for Apache 2 (osr600)
- OSS710B, the OpenServer 6.0.0 Xenix Compatibility Update (osr600)
- Flash Player Version 7,0,70,0 (now included on MP4 CD #1)
- Java 2 SE 1.4.2.18 and earlier releases
- Java 2 SE 5.0, update 16 and earlier releases
- Mozilla 1.7.13Ca and earlier releases
- Mozilla Firefox version 2.0.0.16
- Mozilla Thunderbird version 2.0.0.16
- MPlayer 1.0 (now included on MP4 CD #2)
- OpenServer 6.0.0 MP2 USB Supplement
- OSR5 ABI Perl Interpreter (OSR5 ABI) (previously on MP3 CD #2 and now part of the MP4 perl component).
- PostgreSQL 8.2.3Dc
- Squid 2.6.STABLE17
- Western Australia DST Timezone Patch (for Java 1.4.2_13b and Java 1.5.0.09)

NOTE: If OSS703, OSS704, or OSS705 are installed, either remove them prior to installing OpenServer 6.0.0 MP4 or, during the OpenServer 6.0.0 MP4 installation, when prompted whether to rollback the patches or cancel the component or task, select "Rollback patches". Depending on which patches you have installed, you may be prompted more than once. These patches and the components they modified will then be replaced by updated X, Perl, and PHP components.

2. Back Up Your System

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. OpenServer 6.0.0 MP4 Version Information

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Maintenance Pack 4 (MP4) contains updates to base system components (installed with Release Supplement RS600D, as well as separately installable optional components:

SCO OpenServer Release 6.0.0				
Software Components and Packages	FCS/MP1 Version	MP2 Version	MP3 Version	MP4 Version
MP4 CD #1 (Required custom Components)				
SCO OpenServer 600 Release Supplement	RS600A	RS600B	RS600C	RS600D
Supplemental Graphics, Web and X11 Libraries				
Supplemental Graphics, Web and X11 Libraries*	2.0.0	2.1.0	3.0.0	3.0.1
X.org X11R7.2.0 Runtime	6.8.2	6.9.0	7.2.0	7.2.0
X.org X11R7.2.0 Core Fonts	6.8.2	6.9.0	7.2.0	7.2.0
SCO UNIX Perl Interpreter	5.8.6	5.8.7	5.8.8	5.8.8
X-Window System Version 11				
X.org X11R7.2.0 Server	6.8.2	6.9.0	7.2.0	7.2.0
X.org X11R7.2.0 Clients	6.8.2	6.9.0	7.2.0	7.2.0
PostgreSQL Database Management System	7.4.7	8.1.2	8.2.3	8.2.9
Apache 1 & 2 Web Servers				
Apache 1 Web Server	1.3.33	1.3.34	1.3.37	1.3.37
Apache 2 Web Server	n/a	n/a	n/a	2.2.6
Secure Sockets Layer (SSL)	2.8.23	2.8.25	n/a	n/a

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Support for Apache				
Perl Support for Apache 1 (modperl1)	n/a	1.29.2	1.30.0	1.30.0
Perl Support for Apache 2 (modperl2)	n/a	n/a	n/a	2.0.3
PHP Hypertext Processor	4.3.11	4.4.2	5.2.3	5.2.3
ASP Support for Apache/Perl	n/a	2.59.1	2.59.3	2.59.3
AxKit XML Toolkit for Apache/perl	n/a	1.62.1	1.62.3	1.70.0
Secure Shell	OpenSSH_4.0p1	OpenSSH_4.2p1	OpenSSH_4.6p1	OpenSSH_4.6p1
VIM - Vi IMproved	6.3	6.4.0	7.1.068	7.1.068
Mozilla Firefox Web Browser	n/a	n/a	n/a	2.0.0.18
OpenServer 6.0.0 Flash Player	n/a	n/a	7,0,70,0	7,0,70,0
Java 2 Standard Edition 1.4.2				
Java 2 Standard Edition (J2SE)	1.4.2_08	1.4.2_10	1.4.2_16	1.4.2_19
(URW)++ Free X11 Fonts	n/a	2.0	2.0	2.0
SCOx language support				
SCOx web services demos in 5 languages	1.1.0	1.1.0	1.1.1	1.1.1
gSOAP C and C++ SOAP Web Services	2.2.3	2.2.3	2.2.3	2.2.3
Portable Document Format (PDF) Viewer	3.0.0	3.01pl2	3.0.2	3.0.2
	1.1.21	n/a	n/a	1.3.9

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Common UNIX Printing System				
ESP Ghostscript	7.7.1	8.15.1	8.15.1	8.62
Heimdal Kerberos 5 Implementation	0.6.2	0.6.5	0.6.5	1.2
Samba File and Print Server	3.0.13	3.0.20	3.0.20	3.0.30
Extended Shells	1.3	1.4.0	1.5.0	1.5.0
GNU Bourne Again Shell (bash)	3.0.14	3.1.1	3.2	3.2
Z Shell (zsh)	4.2.5	4.2.6	4.3.4	4.3.4
Extended C-Shell (tcsh)	5.13.0	5.14.0	6.14.0	6.14.0
Korn Shell (ksh)	n/a	n/a	93s	93s
Lynx Web Browser	2.8.5dev.8	2.8.5rel5	2.8.5rel5	2.8.5rel5
Qt - Graphical User Interface Library	n/a	n/a	3.3.8	3.3.8
gmp	n/a	n/a	4.2.1	4.2.1
MP4 CD #1 (pkgadd Components) (For HBA drivers only, IHVVERSION shown below VERSION)				
aacraid - Adaptec AACRAID Family PCI SCSI IHV HBA	8.0.2 6011	n/a	8.0.3 6011	8.0.3 6011
adp94xx - Adaptec SAS HostRaid HBA	n/a	n/a	1.4 11658	1.4 11658
adpu320 - Adaptec Ultra320 Family PCI SCSI IHV HBA	7.1.3d d3.0	n/a	n/a	8.0.1a d3.0
adst70 - Adaptec Ultra160 Family PCI SCSI IHV HBA	7.1.3b d3.14	n/a	n/a	7.1.3c d3.14

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ahci - AHCI HBA Driver	1.0 1.1	1.1 1.1	1.2 1.2	1.2 1.2
ide - Generic IDE/ATAPI Driver	7.1.4a 7.1.4a	7.1.4c 7.1.4c	7.1.4g 7.1.4g	7.1.4h 7.1.4h
mega - LSI Logic MegaRAID HBA	8.0.3 2.0.5	n/a	8.0.3b 2.0.5	8.0.3b 2.0.5
megasas - LSI Logic MegaRAID SAS HBA	n/a	n/a	1.1 00.00.03.05	1.1 00.00.03.05
mpt - LSI Logic MPT IHV HBA	8.0.2 1.03.29	8.0.2 1.03.29	8.1.0 1.04.14	8.1.0 1.04.14
nd - Network Drivers	n/a	8.0.6b	8.0.6f	8.0.6g
MP4 CD #2 (Optional custom Components)				
ant - Java based build tool	n/a	1.6.5	1.6.5	1.6.5
Apache Tomcat Servlet Container	4.1.31Pb	4.1.31Na	4.1.31Na	4.1.31Na
Java 2 Standard Edition 5.0 (J2SE 5.0)	n/a	n/a	1.5.0_09d	1.5.0_17
KDE	3.3.2	n/a	3.5.6	3.5.9
KDE i18n Language Support	n/a	n/a	n/a	3.5.9
mod_jk - Apache Tomcat mod_jk Module	n/a	n/a	1.2.25	1.2.25
MPlayer	n/a	n/a	1.0rc1	1.0rc1
Squid Proxy Cache	2.5.9	2.5.12	2.6.12	2.7.3
Mozilla Thunderbird Mail/News	n/a	n/a	n/a	2.0.0.18

* The Supplemental Graphics libraries and Perl components have many individual libraries and modules. See the [Appendix](#) for complete lists.

4. OpenServer 6.0.0 MP4 Release Supplement RS600D

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Release Supplement RS600D (see the list above) contains the following components that you must not select individually for installation

SCO OpenServer 600 Release Supplement RS600D:

- SCO Online Documentation Utilities and Framework
- 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 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
- SCO PPP from Morning Star
- SCO MMDF
- VERITAS Online Disk Manager (ODM)

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 RS600D (such as the SCO UNIX Development System or SCO SendMail) will *not* be installed with RS600D 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 RS600D are installed. (If you install any component from your original OpenServer 6.0.0 media kit after installing MP4, please reinstall the release supplement RS600D so that the update for that component is installed as well.)

The components other than RS600D (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 4 is *not* supported. Because MP4 contains important updates to the system, removing it or any of its components may cause unexpected behavior in the 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. The amount of space you need depends on what software you previously installed. For a default installation the following space is needed:

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Selected Components	Disk Space Requirements
Release Supplement RS600D	225 MB
Remaining MP4 CD #1 Components	325 MB
MP4 CD #2 (Additional Optional Components)	1100 MB
All of the above	1650 MB

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. SVR5 Driver Updates

As listed in the [table](#) above showing all Maintenance Pack 4 Software Components, Maintenance Pack 4 CD #1 includes several updated HBA drivers as well as an updated Network Driver (**nd**) package. **We strongly recommend you install these updated driver packages.**

The Software Manager does *not* install these packages automatically during installation of the Maintenance Pack. As described in [§2: Installing the Maintenance Pack](#), you install these driver packages using the **pkgadd**(ADM) command. A good time to do this is immediately after installing the custom components from CD #1.

Network drivers were delivered in **custom** format in the original OpenServer 6.0.0 media. In Maintenance Pack 2 and later, network drivers are being delivered in **pkgadd** format in the **nd** package. Providing network drivers in **pkgadd** format going forward simplifies the maintenance of network drivers and makes it easier to install and maintain third-party drivers on OpenServer 6.0.0 systems. The first time you install the **nd** package on a system, package installation replaces the previous **custom** installed files with new **pkgadd** installed files. This conversion process requires you to reinstall **nd** immediately after installing it for the first time in order to update configured network drivers in the kernel build tree.

If you previously installed any **nd** package, version 8.0.6b or later, then you can skip this reinstallation step.

7. PHP 5 Upgrade Notes

Maintenance Pack 4, like MP3, includes PHP5, while Maintenance Pack 2 and earlier included PHP4. Upgrading to Maintenance Pack 4 from OpenServer Maintenance Pack 2 or earlier will introduce significant differences to the PHP configuration file `/usr/lib/php/php.ini` due to the PHP4 to PHP5 upgrade. In this case, your prior `/usr/lib/php/php.ini` file will be saved as `/usr/lib/php/php.ini-old`. Any user-configuration changes made to the old version need to be reapplied to the new PHP `/usr/lib/php/php.ini` version.

PEAR modules for PHP 5 are not included in MP4.

8. Apache 1 Upgrade Notes

The default Apache 1 configuration file `/usr/lib/apache/conf/httpd.conf` included in Maintenance Pack 4 matches the version that was first included in Maintenance Pack 3. The default file is installed if Apache 1 was not previously on your system, or if your original `httpd.conf` had no user modifications. If there were user modifications, then the MP4 installation only updates "php4" references, if there are any, to "php5"; your `httpd.conf` file is otherwise not modified. In this case, the install keeps a copy of your original file called `httpd.conf.backup`. The MP4 Apache 1 installation always includes `/usr/lib/apache/conf/httpd.conf.default` so you can see what other default configuration changes have

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been made since Maintenance Pack 2.

9. Cups Upgrade Notes

As described in the [Cups](#) feature section below, OpenServer 6.0.0 Maintenance Pack 4 provides significant enhancements to the Common UNIX Printing System (CUPS) system. Previous releases of Cups for OpenServer 6 carried forward any existing Cups `/etc/cups/cupsd.conf` configuration file. However, due to the many Cups changes this release introduces, a new `/etc/cups/cupsd.conf` configuration file is provided. Your existing `cupsd.conf` file is backed up as `/etc/cups/cupsd.conf.bak`.

If you made changes to your previous Cups configuration, after installing MP4 you will need to re-apply those changes to the newly installed `/etc/cups/cupsd.conf` file.

10. PostgreSQL Upgrade Notes

PostgreSQL 8.2.9 is included on the Maintenance Pack CD #1. This release of the PostgreSQL Database Server includes many performance and security enhancements. Systems running a prior release of PostgreSQL are encouraged to upgrade in order to take advantage of these features.

However, to provide these features, PostgreSQL 8.2.9 includes a change in internal database format and is a major upgrade from PostgreSQL 7.x and PostgreSQL 8.1.2. For this reason, you must perform a dump and subsequent restore of all PostgreSQL 7.x/8.1.2 databases that you want to preserve across the upgrade. (If you are upgrading from another version of Postgres 8.2.*, such as Postgres 8.2.3, then you do not need to back up/restore your existing Postgres databases.) Detailed instructions on this process are provided below.

To preserve data from a PostgreSQL 7.x or PostgreSQL 8.1.2 database and restore the data into a PostgreSQL 8.2.9 database on OpenServer 6, follow this procedure.

1. On the system running PostgreSQL 7.x/8.1.2, log in as the PostgreSQL super-user:

```
# su - postgres
```

2. Perform a dump of the databases you wish to preserve using either **pg_dumpall(1)** or **pg_dump(1)**. Backing up all databases using **pg_dumpall** is the recommended procedure.

For example, to preserve all databases in a cluster, you could enter the shell command:

```
# pg_dumpall > exampledb.out
```

To preserve only 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
```

or

```
# cd /usr/postgres
# mv data backups/data-8.1.2
```

4. Exit the PostgreSQL super-user account
5. Install PostgreSQL from CD #2 following the instructions in [§2.3: Adding Software after Installing the Maintenance Pack](#), below.

6. Configure and start the 8.2.9 PostgreSQL server:

```
# mkdev pgsql
```

7. Log in 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:

```
# psql -f exampledb.out postgres
```

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/8.2/static/migration.html>
<http://www.postgresql.org/docs/8.2/static/backup.html>

11. OpenLDAP Upgrade Notes

Upgrading OpenLDAP from version 2.2.24 or 2.2.30 to version 2.3.27 will result in any existing OpenLDAP database data no longer being accessible. To make existing data accessible, the database must be backed up before the upgrade and then restored following the upgrade.

Use the following procedure to backup an existing OpenLDAP database:

A. Log in as root.

B. Stop the slapd daemon, if running, to ensure a consistent backup:

```
# kill `ps -e | grep slapd | awk '{print $1}'`
```

C. Create an ldif backup file:

```
# slapcat -l /usr/lib/openldap/openldap-data/openldap.ldif
```

After the OpenLDAP upgrade, the OpenLDAP database backup can be restored using the following procedure:

A. Log in as root.

B. Restore schema file changes.

As part of the upgrade process, the OpenLDAP schema files will be overwritten by the new default files, requiring that any changes be manually remade to */etc/openldap/schema/*.schema*. The previous versions of these files are saved with the appended character "#":

```
# ls -l /etc/openldap/schema
README
corba.schema
corba.schema#
...
```

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New default configuration files are installed in */etc/openldap*, but the existing *slapd.conf* and *ldap.conf* are not overwritten. However, the upgrade edits *slapd.conf* to change the back-end modules extension from ".la" to ".so":

```
# ls -l /etc/openldap
DB_CONFIG.example
ldap.conf
ldap.conf.default
schema
slapd.conf
slapd.conf.default
```

C. Create an empty database directory:

```
# cd /usr/lib/openldap
# mv openldap-data openldap-data.bak
# mkdir openldap-data
# chmod 700 openldap-data
```

D. Restore the ldif backup file:

```
# slapadd -l /usr/lib/openldap/openldap-data.bak/openldap.ldif
```

A warning will display, although it doesn't affect the restoration of the database:

```
bdb_db_open: Warning - No DB_CONFIG file found in directory
/usr/lib/openldap/openldap-data: (2)
Expect poor performance for suffix dc=my-domain,dc=com.
```

/etc/openldap/DB_CONFIG.example can be used to create */usr/lib/openldap/openldap-data/DB_CONFIG* to avoid this warning.

12. Squid Upgrade Notes

Squid 2.7.STABLE3 requires a new configuration file, */etc/squid/squid.conf*. Any previously modified Squid configuration file will be backed up as the file */etc/squid/squid.conf.bak* and the changes (against the pre-MP4 */etc/squid/squid.conf.default* file) saved as the file */etc/squid/squid.conf.dif*. Configuration changes made to a previously installed Squid will need to be reapplied to the updated Squid configuration file.

The OpenServer 6.0.0 MP4 update returns the Squid configuration files back to */etc/squid* and the control script is */etc/init.d/squid*.

13. Tomcat Upgrade Notes

Installing the Tomcat upgrade available on Maintenance Pack 4 CD #2 will remove any previously installed third-party web applications residing under the */usr/lib/apache/jakarta-tomcat-4.1.31* directory structure. If you wish to preserve web applications that have been installed in a prior Tomcat installation, you will need to re-install these after upgrading Tomcat. If you lack installation media for these applications, you will need to back them up prior to, and restore them after, installing the updated Tomcat.

For example, the SCO HipCheck agent (**HcSCOUA**) installs such web applications. If you previously installed the HipCheck Agent, and then install the MP4 Tomcat upgrade, you will need to reinstall the HipCheck Agent.

14. DNS Upgrade Notes

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There are several bind8 to bind9 migration issues that you may encounter as part of this upgrade. For example, several */etc/named.conf* options have changed, logging categories are enhanced, handling of configuration error is different, and so on. One can run the *named-checkconf* command to ensure that the configuration file does not have any syntactic errors. Details are available at http://uw714doc.sco.com/en/NET_tcpip/dnsN.main.html#dns.bind8-9notes or at the ISC website <http://www.isc.org/software/bind/documentation>.

In addition, while it is recommended to use *rndc* to control the name daemon, *ndc* is also provided as a compatibility front-end to *rndc*. To use *ndc*, it is first necessary to run the following command to edit the pathname of various configuration files:

```
# cd /etc
# cp -p ndc ndc.old
# sed 's/\//etc//inet//etc/g' <ndc.old > ndc
```

15. GNU Utilities and Maintenance Pack 4

In Maintenance Pack 3 and earlier, a few GNU Utilities were shipped as part of GWXLIBS, a subparcel of the Maintenance Pack.

However, starting with Maintenance Pack 4, these GNU Utilities will be shipped as an independent package and will no longer be part of the Maintenance Pack.

Customers who install Maintenance Pack 4 will find that they are missing the GNU Utilities until they install the GNU Utilities package. This package can be downloaded from the following URL shortly after the release of MP4:

<http://www.sco.com/support/update/download/product.php?pfid=12&prid=20>

16. Removing P533446A

If P533446A, the OpenServer 6.0.0 CUPS pdftops security update, is installed on your system then we recommend that you remove it prior to installing OpenServer 6.0.0 MP4.

§2: 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 Installation Server. See ["Installing the Maintenance Pack from the Network"](#) for more information.

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

Maintenance Pack 4 install media is distributed on two CD images and can be obtained in three formats:

- two Supplement CDs
- two Supplement CD ISO images
- two **tar** archives containing Media Image Files (VOL files)

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Follow this procedure to install SCO OpenServer Release 6.0.0 MP4 from any of the above media.

1. Log in as *root*.
2. Do *one* of the following:

A. If you are installing from CDs:

Insert CD #1 into the primary CD drive.

B. If you are installing from CD ISO Images:

1. Download the CD ISO Images *osr600mp4_cd1.iso* and *osr600mp4_cd2.iso* from either the SCO web site or the SCO FTP server:

- <http://www.sco.com/support/update/download/release.php?rid=366>
- <ftp://ftp.sco.com/pub/openserver6/600/mp/osr600mp4/>

In what follows, we have chosen to save these images in the directory */osr600mp4*.

2. Make sure nothing is already mounted on */cd-rom*, and enter this command to mount the first CD ISO image:

```
# mount -F cdfs -r `marry -a /osr600mp4/osr600mp4_cd1.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. If you are installing from Media Image Files:

1. Download the files *osr600mp4_cd1.tar* and *osr600mp4_cd2.tar* from either the SCO web site or using FTP:

- <http://www.sco.com/support/update/download/release.php?rid=366>
- <ftp://ftp.sco.com/pub/openserver6/600/mp/osr600mp4/>

NOTE: The Maintenance Pack consists of two tar archives 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 in which to store and process each maintenance pack's media files. 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. The rest of this document assumes that this directory is */usr/spool/patches/osr600mp4*, with subdirectories *cd1* and *cd2* containing the VOL files for the first and second tar archives, respectively.

2. Enter these commands to extract the media image files from the **tar** archives corresponding to the Maintenance Pack CDs:

```
# mkdir -p /usr/spool/patches/osr600mp4/cd1
# mkdir -p /usr/spool/patches/osr600mp4/cd2
# cd /usr/spool/patches/osr600mp4/cd1
# tar xvf osr600mp4_cd1.tar
# cd ../cd2
# tar xvf osr600mp4_cd2.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 are installing from CDs:**

Select the appropriate CD-ROM drive as the Media Device and then select **Continue**.

B. **If you are installing from CD ISO Images or Media Image Files:**

1. Select **Media Images** as the Media Device, and then select **Continue**. (You may need to scroll down in the Media Device selection box in order to see the **Media Images** option.)
 2. When prompted, enter the absolute pathname for the directory that contains the Maintenance Pack media images:
 - If you are installing from CD ISO Images, enter */cd-rom/opt/archives*.
 - If you are installing from Media Image Files, enter */usr/spool/patches/osr600mp4/cd1*.
 3. Select **OK**.
7. In the **Install Selection** window, you will see the Maintenance Pack highlighted and/or with an asterisk. By default, all the packages on CD #1 are selected for installation. Select **Install**.

PLEASE NOTE: It is strongly recommended that you install all packages on CD #1 (default for CD #1). Other packages, contained on CD #2, are optional, and may be installed at a later time. (See [§2.3: Adding Software after Installing the Maintenance Pack](#))

8. Depending on your pre-existing software configuration, The Software Manager may display any or all of the following messages in dialog boxes:

- ◆ **"These components selected for installation will be upgraded"**, if it finds previous versions of the components that are modified or upgraded by the Maintenance Pack. You should select **Continue**.
- ◆ **"These patches cannot be installed because the software they modify is not installed"**, if it finds the Maintenance Pack contains fixes for software features that are not currently installed on your system. This message is also accompanied by **"These patches can be installed"** followed by the list of fixes in the Maintenance Pack which will be applied. This dialog box is titled **"Install Patch Error"**, but is a typical and normal part of the install process. You should select **Continue** if you do *not* plan to install the absent package(s) at any time in the future. 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.
- ◆ **"Software Already Installed"** and **"Part of the software selected for installation is already installed. This operation will only install the software not currently on the system."** This is usually because the software in question was installed via a previous Maintenance Pack. You can look at the **Details** screen to see what software components will be installed, and which already exist on the system. Select **Continue**.
- ◆ **"OpenLDAP Databases Changed"**, followed by a WARNING message to back up existing databases before proceeding. You can respond with **OK** to proceed, or **Cancel** to perform the relevant backups first. Typically, select **OK** to continue the installation.

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- ◆ Other informational dialog messages or warnings concerning other software components that are about to be upgraded, such as PHP and the post MP3 Apache 2 web release. Please read these dialogs carefully if they appear. The typical response is **OK** to continue the installation.
9. When the installation is complete, click on **OK**. The Software Manager lists the newly added component among the installed software.

NOTE: Just prior to completion, the information dialog "During this installation, the kernel was relinked. You must reboot your system to make this kernel effective." appears. We recommend installing the **nd** package update as well as desired HBA updates, as outlined below, before rebooting, in order to save time.

10. Exit the Software Manager by selecting the **Host** menu, then **Exit**.
11. It is prudent to install updated HBA drivers and the updated **nd** package at this time.

Note: If you have any third-party network drivers installed on the system, and if this is the first time you are installing the **pkgadd**-format **nd** package, then you will need to reinstall your third-party drivers after installing the **nd** package.

To install these packages, do the following as *root*:

- a. See whether you already have a version of the **nd** package installed by running:

```
# pkginfo nd
```

If you see this output:

```
system          nd              Network Drivers
```

then you are upgrading from an earlier version of **nd** and no special steps are required below. Otherwise, this is a first-time installation of the **nd** package, and you should follow the instructions at [step 4](#) below after you finish installing the driver packages.

- b. Find out which HBAs are present on your system:

```
# /sbin/sdiconfig
```

- c. Do *one* of the following:

A. If you are installing from Media Image Files:

Download the MP4 device drivers from <http://www.sco.com/support/update/download/release.php?rid=367>. Mount this ISO and then follow the **If you are installing from CDs or CD ISO Images** instructions below.

B. If you are installing from CDs or CD ISO Images:

1. If you are installing from CDs, make sure that Supplement CD #1 is still in the drive and that nothing is already mounted on /cd-rom, and enter this command to mount the CD:

```
# mount -F cdfs -r <cdrom-device> /cd-rom
```

where *<cdrom-device>* is the block-device name of the drive in which the CD has been inserted.

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2. Enter:

```
# pkgadd -d /cd-rom
```

This will bring up a list of driver packages you can install, including updated HBA drivers and the **nd** package.

3. Select one or more desired driver packages to install as a comma-separated list, using either the listed numbers or names.

Once all the drivers you select are installed, you will be prompted again for additional selections or to quit. Continue the process until all desired drivers are installed, and then enter **q** at the prompt.

Individual driver packages may have additional prompting; read the prompts carefully as they are displayed. Typically, select the default responses that are offered.

4. If you installed the **nd** package, and if this was a first-time install of that package rather than an upgrade from a previous version, then install the **nd** package a second time, as follows:

```
# pkgadd -d /cd-rom nd
```

This is necessary to update configured network drivers in the kernel build tree.

5. If you are installing from CDs, unmount the CD with this command:

```
# umount /cd-rom
```

and remove Supplement CD #1 from the CD drive.

12. Enter the following commands to reboot the machine:

```
# cd /  
# shutdown -i6 -g0 -y
```

13. See the section, [Adding Software after Installing the Maintenance Pack](#) to install CD #2 of the Maintenance Pack once the system reboots, or to install additional software from CD #2 not originally chosen for installation (at any later time).

§2.2: 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".

§2.3: Adding Software after Installing the Maintenance Pack

To install CD #2 of the Maintenance Pack once the system reboots, or to install additional software from CD #2 not originally chosen for installation (at any later time):

1. Log in as *root*.
2. Do *one* of the following:

A. If you are installing from CDs:

Insert CD #2 into the primary CD drive.

B. If you are installing from CD ISO Images:

Make sure nothing is already mounted on */cd-rom*, and enter the following commands to mount the CD #2 ISO image:

```
# CD2DEV=`marray -a /osr600mp4/osr600mp4_cd2.iso`  
# mount -F cdfs -r $CD2DEV /cd-rom
```

The shell variable CD2DEV will be used later.

C. If you are installing from Media Image Files:

Proceed to the next step; no action is required here.

3. Start the **Software Manager** by double-clicking 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 are installing from CDs:

Select the appropriate CD-ROM drive as the Media Device and then select **Continue**.

B. If you are installing from CD ISO Images or Media Image Files:

1. Select **Media Images** as the Media Device, and then select **Continue**. (You may need to scroll down in the Media Device selection box to see the **Media Images** option.)
2. When prompted, enter the absolute pathname for the directory that contains the Maintenance Pack media images:

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- If you are installing from CD ISO Images, enter `/cd-rom/opt/archives`.
- If you are installing from Media Image Files, enter `/usr/spool/patches/osr600mp4/cd2`.

3. Select **OK**.

7. In the **Install Selection** window, select the software you want to install.

When installing components from CD #2 of the Maintenance Pack, an expanded list should automatically appear. 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 CD #2 of the Maintenance Pack.)

To select multiple non-adjacent items to install while using the Software Manager in graphical mode, first select one or more adjacent items by clicking and holding your left mouse button. Next release the mouse button; the items just selected will be highlighted. For each additional item that you want to select or de-select, first move the cursor over that item. Then while holding the <CTRL> key click your left mouse button once.

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

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. Additionally, some components, such as Tomcat, PostgreSQL, and Squid, may display informational dialogs or warnings. Read all these messages carefully and take appropriate action, if necessary. However, typically you should select **Continue** or **OK** to progress with the installation.

For more information on upgrading some of these components, refer to the various Upgrade Notes in [Before Installing the Maintenance Pack](#).

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. Do *one* of the following:

A. If you are installing from CDs::

Remove CD #2 from the CD drive.

B. If you are installing from CD ISO Images::

Enter the following commands to unmount the CD #2 ISO image:

```
# umount /cd-rom
# marry -d $CD2DEV
```

C. If you are installing from Media Image Files:

Proceed to the next step; no action is required here.

12. While there is no need to reboot the system after installing these packages, if your system is running any libraries or commands that are contained in these packages, then these programs will continue to run with the old versions of these libraries or commands until the system is rebooted.

Once all necessary packages and patches have been installed, it is good practice to reboot the system at the earliest opportunity by invoking the following commands as root:

```
# cd /  
# shutdown -i6 -g0 -y
```

This will ensure that no programs continue to run with the old libraries or commands.

§3: Maintenance Pack Notes and Limitations

The following notes and limitations apply to SCO OpenServer Release 6.0.0 Maintenance Pack 4:

1. **OpenServer 6.0.0 MP4 removal is not supported.**
2. **Additional Release Notes**

The OpenServer 6.0.0 MP4 CDs */info* directory provides these *Release and Installation Notes* (the document you are reading) and additional release notes. See the */info* directory for MP4 HBAs, networking device drivers, Java releases, Mozilla Firefox, and Mozilla Thunderbird release notes.

3. **Updating Configuration Files**

As described in the [Before Installing the Maintenance Pack](#) section, after installing MP4 you may need to restore your [PHP](#), [Apache 1](#), [Cups](#), [PostgreSQL](#), [OpenLDAP](#), [Squid](#), and/or [Tomcat](#) configuration/databases.

Also, if you installed the post OpenServer 6.0.0 MP3 Apache 2 web supplement, you need to back up any Apache 2 configuration file changes; remove that Apache 2 parcel, and then reapply those changes after installing MP4. See the [Apache 2](#) feature section for more information.

4. **OSR5 ABI Perl Interpreter Is Included in the MP4 Parcel.** In OpenServer 6.0.0 MP3, CD #2 provided a separate OSR5 ABI Perl Interpreter (OSR5 ABI) component. In MP4 this component has been superseded by an updated **perl** component that is installed as part of the OpenServer 6.0.0 MP4 parcel on CD #1. The updated **perl** component provides both the SVR5 (OpenServer 6) and the OSR5 ABI (in */osr5/...*) binaries.
5. **MP4 Provides Both Apache 1 and Apache 2** Both Apache 1 and Apache 2 are provided in this MP. You can configure your server to use either or both. By default both are enabled; Apache 1 listens on port 80; and **docview** displays web pages using Apache 2. You can update your configuration to modify these configuration options. See the [Apache 2](#) feature description section below for details.
6. **Firefox/Thunderbird Now Supersedes Mozilla** As described in [Mozilla® Firefox®](#) and [Mozilla® Thunderbird™](#), OpenServer 6.0.0 MP4 provides Firefox and Thunderbird which obsoletes Mozilla.

To facilitate user transition to Firefox and Thunderbird, Mozilla is not removed from your system. Users can use either browser/mailler. Instructions for moving existing user Mozilla configurations to FireFox/Thunderbird are provided in the MP4 CDs' in the *info/mozilla* directory .

NOTE: If you intend to continue using Mozilla than you should download the final version for OpenServer 6.0.0, Mozilla 1.7.13Ca, from the SCO FTP site.

7. **Firefox Upgrade Notes**

If you installed Firefox version 2.0.0.20 or later before you installed MP4, then after installing MP4 you must remove this later version of Firefox and then reinstall it.
(ID: 535210:1)

8. **Thunderbird Upgrade Notes**

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If you installed Thunderbird version 2.0.0.19 or later before installing MP4 and then installed Thunderbird 2.0.0.18 from CD #2, you must remove the later version of Thunderbird and then reinstall it.

(ID: 535215:1)

9. Using the MP4 CD #1 as an ISL HBA CD

The OpenServer 6.0.0 MP4 CD #1 has been designed to be a OpenServer 6.0.0 and UnixWare 7.1.4 ISL HBA CD. During an ISL installation of OpenServer 6.0.0 or UnixWare 7.1.4, you can obtain the latest OpenServer 6/UnixWare 7 by using the OpenServer 6.0.0 MP4 CD #1 when prompted for an HBA CD.

10. Licensing warning when installing MP4

After installing the RS600D Release Supplement from MP4, 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.

11. PHP PEAR modules

PEAR modules for PHP 5 are not included in MP4.

12. Screen corruption after display of OpenLDAP message

If you are installing MP4 via a terminal emulation then you may see a corrupted screen when the OpenLDAP database message is displayed and you choose to continue the install. If you see a corrupt screen and prompt, simply hit <Enter> to continue with the installation.

(ID: 534538:1)

13. Mplayer does not zoom the video when resizing the window

To fix this problem, append this line:

```
zoom="1"
```

to the *\$HOME/.mplayer/config* configuration file.

(ID: 534416:1)

14. **Samba/Squid */usr/bin/ntlm_auth* utility** OpenServer 6.0.0 provides both the Samba package */usr/bin/ntlm_auth* and the Squid package */usr/bin/squid_ntlm_auth* utilities. If configuring Squid for NTLM authentication, we recommend using the Samba package */usr/bin/ntlm_auth* utility.
15. **Xenix applications** If you are running Xenix applications, please see additional limitations described in the [Xenix Compatibility Enhancements](#) section.
16. **Java upgrade may remove *mysql.jar* link** If you installed MySQL before MP4 CD #1 or the Java 1.5.0 product from OpenServer 6.0.0 MP4 CD #2, then the */usr/java/lib/mysql.jar* link may have been overwritten. You can recreate this link via:

```
ln -s /opt/K/SCO/MySQL/4.1.10Na/usr/java/lib/mysql.jar \
    /usr/java/lib/mysql.jar
```

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In a future release we plan to create this link in a location that does not conflict with a Java upgrade.

17. Insufficient space error during KDE upgrade

After installing OpenServer 6.0.0 MP4 CD #1 you need to reboot your system before installing other products. This includes the additional software on the OpenServer 6.0.0 MP4 CD #2 such as KDE. Failure to reboot leaves your system in an inconsistent state and can have non-obvious ramifications, such as this insufficient space message.

The workaround is to reboot your system and retry the installation. If this error message appears again, then check that you have sufficient space on your system.

(ID: 534305:1)

18. KDE upgrade notes

Although upgrading to version 3.5.9 while in your current KDE environment will succeed, doing so may cause anomalous behavior for some icons and warnings when exiting the desktop. You may wish to switch to another environment, such as the xdt3 desktop or a console login shell, when upgrading KDE.

If you have previously installed either or both of the French and German language support packages, you'll likely want to also install the KDE 3.5.9 i18n Language Support

(<http://www.sco.com/support/update/download/release.php?rid=305>) to get matching localized support for the new KDE.

Upgrading to KDE 3.5.9 renders the older KDE 3.3.2 language support packages obsolete if they are present on your system. It also removes symlinks to files in these now-obsolete packages, in turn causing **custom** verify errors. Therefore, if you have not previously removed them, we recommend that you remove the **KDE French Language Support Release 3.3.2** and **KDE German Language Support Release 3.3.2** packages after KDE 3.5.9 has been installed.

You can use **custom** interactively to remove these packages. The **KDE French Language Support Release 3.3.2** package is found below the **SCO OpenServer Release 6.0.0 Graphics French Language Support**, which in turn is found below **SCO OpenServer Release 6.0.0 French Language Support** in the **custom** display. Similarly, the **KDE German Language Support Release 3.3.2** package is found below the **SCO OpenServer Release 6.0.0 Graphics German Language Support**, which in turn is found below **SCO OpenServer Release 6.0.0 German Language Support**.

Alternatively, use these commands to remove these packages:

```
custom -r KDE3FR          # to remove KDE 3.3.2 French Language Support
custom -r KDE3DE          # to remove KDE 3.3.2 German Language Support
```

19. KDE sound error

On systems without a sound driver, KDE may display the following message on start-up:

```
Sound server information message:
Error while initializing the sound driver.
device /dev/dsp can't be opened (No such file or directory)
The sound server will continue, using the null output device.
```

To use sound with KDE, install the Open Sound System Supplement 4.0. You can download this supplement from:

<http://www.sco.com/support/update/download/release.php?rid=283>

Alternatively, to disable the above message, enter the KDE Control Center, select **Sound & Multimedia**, then select **Sound System**, and deselect **Enable the sound system**.

(ID: 534468:1)

20. X server configuration problems

X server configuration problems have been seen occasionally after using **xorgcfg** or **scoadmin video** (which is a front end for **xorgcfg**). To recover, stop the X server if it is running and generate a new X server configuration file:

```
/usr/X11R7/bin/Xorg -configure
```

This will autodetect your hardware configuration and generate a new configuration file in */xorg.conf.new*. When you are ready, back up the old configuration file and copy the new one into place:

```
mv /etc/xorg.conf /etc/xorg.conf.sav  
mv /xorg.conf.new /etc/xorg.conf
```

Restart the X server.

21. Running the X server with AGP devices

Starting with OpenServer 6.0.0 MP3, AGP devices are supported. However, only a single instance of an X session is supported when an AGP device is being used.

(ID: 535083:3)

22. sysmonitor app-default Configuration

OpenServer 6.0.0 MPs' release supplements (rs600d for MP4, rs600e for MP5, and so on) overwrite the **sysmonitor** app-default configuration. Any modifications you made to this file must be manually reapplied. The prior version of this file is saved in */usr/lib/X11/app-defaults/sysmonitor.prers600<release_supplement_letter>*; for example, in */usr/lib/X11/app-defaults/sysmonitor.prers600d*.

23. DNS Verification Error

MP4 incorrectly reports a verify error for the */etc/named* file. If you select the **custom** option to fix verify errors then **custom** will change the */etc/named* link to a pre-MP4 binary. The old **named** binary will not function correctly with MP4. We thus recommend not fixing this verify error in MP4.

If you have already selected to fix this verify error then this link needs to be restored to its MP4 location. To do so log in as **root** and run these commands:

```
cd /etc  
mv named named.old  
mv named# named
```

The proper *named* link was moved to *named#* when you asked **custom** to try to fix the verify errors. The above steps restores the correct link.

(ID: 535181:2)

24. Erroneous Pathnames in ndc Command

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The *ndc* command includes erroneous pathnames. To use *ndc*, it is first necessary to run the following command to edit the pathname of various configuration files:

```
# cd /etc
# cp -p ndc ndc.old
# sed 's/\/etc\/inet\/etc/g' <ndc.old > ndc
```

Note that with the upgrade to bind9, the command *rndc* is now the primary means for controlling the name daemon. *Ndc* is provided as a compatibility front-end to *rndc*.

(ID: 535186:1)

25. Compilation Error: Library Not Found

The following error may sometimes be seen when trying to compile certain programs on OpenServer 6.0.0 MP4:

```
UX:ld: ERROR: library not found: -lintl
```

This problem occurs because there are a few *libtool* archive (compilation options and link directives) and a */usr/bin/*-config* file that are still referencing *libintl* as a needed library to link against. This is incorrect. All should require linking against *libgnuintl* instead.

(ID: 535198:1)

26. Open Office Icons

If you are running the Open Office package supplied by SCO and had Open Office icons installed on your KDE desktop or KDE main panel, you will notice that they now appear as the default KDE application widget. To refresh these icons after installing MP4:

- ◆ Remove/delete the default icons from your desktop or main panel by "right" clicking on the icon and select removal.
- ◆ Reinstall the Open Office application icons of your choice by "right" clicking the application from the KDE menu and add to your desktop or main panel.

(ID: 535216:1)

§4: Maintenance Pack Features

OpenServer 6.0.0 MP4 includes the following notable enhancements to OpenServer 6:

1. All the features and bug fixes in OpenServer 6.0.0 MP1, MP2, and MP3. See the ``Features Provided in MP2'', ``Features Provided in MP3'', and ``§5: Maintenance Pack Fixes'' sections below for details. This includes important security related fixes and enhancements as described in these sections below:
 - ◆ Security fixes in MP1
 - ◆ Security fixes in MP2
 - ◆ Security fixes in MP3
 2. Many new features. See the ``Features Provided in MP4'' section below for details.
 3. Many additional bug fixes since MP3. See the §5.4: Fixes Provided in MP4 section below for details.
-

§4.1: Features Provided in MP2

OpenServer 6.0.0 MP4 includes all the features previously provided in OpenServer 6.0.0 MP2. Description of these OpenServer 6.0.0 MP2 features follows:

- ANT: Java-Based Build Tool
- Compatibility
- Console: default terminal settings changed
- International keyboard issues resolved
- Java 2 Standard Edition Upgrade
- Large file capable versions of the ftp and scp commands
- Multiple core processor support
- Network Driver Package Update
- Online Data Manager (ODM)
- Online documentation updates
- PCI parallel port support
- SCOadmin Filesystem Manager improvements
- SCOadmin System Tuner
- Security Fixes
- Serial ATA (SATA) Support
- UPS Support Fixes
- USB Printing Fixes
- X.org Windows System updated

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 */usr5/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

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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 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 fixes and features in the Java 2 SE 1.4.2.10 contained in MP2 are contained in the Java 2 SE 1.4.2.16 update in MP4 that completely replaces all previous versions of J2SE 1.4.2.

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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()* constructor 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 privileges. 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
```

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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

MP2 supplied version 8.0.6b of the network driver **nd** package. MP3 updated this package to version 8.0.6f.

MP4 updates this package to version 8.0.6g. For more information, see [Network Driver Package version 8.0.6g](#) in [§4.3: Features Provided in MP4](#).

Online Data Manager (ODM)

The Online Data Manager (ODM), version 3.2, was provided in Maintenance Pack 2. It is currently available as a download from either the SCO web site or using FTP:

◇ <http://www.sco.com/support/update/download/release.php?rid=297>

◇ <ftp://ftp.sco.com/pub/openserver6/600/other/odm.3.2/>

Maintenance Pack 4 includes updates to ODM. These updates are applied during installation of MP3 only if ODM is already installed. Thus, to install ODM with MP3, you must first install MP3; then install ODM; and then reinstall MP3 to get the ODM updates.

ODM 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 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.

ODM requires a separate license, which can be entered using the SCOadmin License Manager (**scoadmin license**), either before or after installing ODM.

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

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

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

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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.

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 ahci
```

Then, rebuild the operating system and reboot the system:

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

UPS Support Fixes

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The **mkdev apc** command has been updated to recognize that OSR6 serial ports are capable of the signaling 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

MP3 updates the X.org Windows System version 6.9.0 released in MP2 with version 7.2.0.

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 [EF="REF="http://wiki.x.org/wiki/X11R69Release">http://wiki.x.org/wiki/X11R69Release](http://wiki.x.org/wiki/X11R69Release).

§4.2: Features Provided in MP3

OpenServer 6.0.0 MP4 includes all the features previously provided in OpenServer 6.0.0 MP3. Description of these OpenServer 6.0.0 MP3 features follows:

- [AGP Device Driver](#)
- [Apache 1.3.37/PHP 5.2.3](#)
- [DST Changes](#)
- [Extended Shells 1.5.0](#)
- [Flash 7.0.70.0](#)
- [GMP 4.2.1](#)
- [GWXLIBs 3.0.0](#)
- [Java 2 SE 1.4.2](#)
- [Java 2 SE 5.0](#)
- [KDE 3.5.6](#)
- [SCO Mobile Enhancements](#)
- [Apache Tomcat mod_jk Module](#)
- [MPlayer 1.0rc1](#)
- [Network Driver Package version 8.0.6f](#)
- [OpenSSH 4.6p1](#)
- [Perl 5.8.8](#)
- [OSR5 ABI Perl 5.8.8 Supplement](#)
- [PostgreSQL 8.2.3](#)
- [QT3 3.3.8](#)
- [SCO Admin Enhancements](#)
- [Squid 2.6.12](#)
- [USB Enhancements](#)
- [ViM \(VI Improved\) 7.2](#)
- [Xenix Compatibility Enhancements](#)
- [X.ORG 7.2.0](#)
- [XPDF 3.0.2](#)

AGP Device Driver

OpenServer 6.0.0 MP3 adds an Accelerated Graphics Port (AGP) driver for faster access to the graphics controller. It uses a Graphics Address Remapping Table (GART) to map discontinuous host

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memory into a physically contiguous view for DMA transfer to video memory. It is primarily used for running the X11 server on the Intel i81x and AMD 7x1 class of controllers. Note that only a single instance of an X session is supported when an AGP device is being used.

Apache 1.3.37/PHP 5.2.3

Apache has been upgraded to version 1.3.37, and includes both Perl and PHP support. With this release of SCO OpenServer, PHP has been significantly updated from version 4.3.11 to version 5.2.3.

See also [PHP 5 Upgrade Notes](#) and [Apache 1 Upgrade Notes in §1: Before Installing the Maintenance Pack](#).

DST Changes

Timezone rules were updated to comply with changes to United States Daylight Savings Time beginning in 2007.

Extended Shells 1.5.0

The Extended Shells package has been updated to provide modern versions of the shells originally provided, as well as to add the latest version of the Korn Shell. The following shells have been upgraded or added:

- ◇ The Z Shell (zsh) has been upgraded from 4.2.6 to 4.3.4
- ◇ The GNU Bourne Again Shell (bash) has been upgraded from 3.1 to 3.2
- ◇ The Korn Shell (ksh98) version ksh98s has been added

Flash 7,0,70,0

OpenServer 6.0.0 MP3 provides a Flash Player plugin for Mozilla and Firefox. This plugin was previously provided as a post OpenServer 6.0.0 MP2 supplement on the SCO public FTP site.

Please note:

1. If you install Mozilla after installing the OpenServer 6.0.0 Flash Player product then remove and reinstall the OpenServer 6.0.0 Flash Player product. This is needed to create the Mozilla links for the Flash Player.
2. The Flash plugin uses the OSS sound APIs. To enable sound support, install the 4Front oss package which is available from <http://www.sco.com/support/update/download/release.php?rid=214>.

GMP 4.2.1

GMP 4.2.1 is the initial release of GNU MP for OpenServer 6. GNU MP is a free library for arbitrary precision arithmetic.

Additional information on GNU MP can be found at <http://gmplib.org>.

GWXLIBS 3.0.0

This release of SCO OpenServer contains a new release of the Supplemental Graphics, Web and X11 Libraries (GWXLIBS) set of packages. Aside from many of the individual libraries being updated, there has been a significant change in the way these libraries are packaged. Each library is now its own component, which allows for finer grained dependencies for user packages that use these libraries, as well as making future updates significantly smaller and easier. The build procedure has also been significantly simplified for those who want to rebuild all or part of the package.

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The following libraries have been updated:

1. All X11 libraries upgraded from 6.9.2 to 7.2.0
2. GNU gettext upgraded from 0.14.5 to 0.16.1
3. JASper JPEG-2000 upgraded from 1.701.0 to 1.900.1
4. TIFF upgraded from 3.7.4 to 3.8.2
5. libpng upgraded from 1.2.8 to 1.2.18
6. libmng upgraded from 1.0.9 to 1.0.10
7. FreeType 2 upgraded from 2.1.10 to 2.3.5
8. libgd2 upgraded from 2.0.33 to 2.0.35
9. libgif upgraded from 4.1.0 to 4.1.4
10. NetPBM upgraded from 10.26.14 to 10.34
11. GTK 2 upgraded from 2.8.9 to 2.10.14
12. Pango upgraded from 1.10.2 to 1.17.3
13. Cairo upgraded from 1.0.2 to 1.4.10
14. GNU readline upgraded from 5.1 to 5.2
15. BerkeleyDB upgraded from 4.3.28 to 4.6.18
16. Expat upgraded from 1.95.8 to 2.0.1
17. libxml2 upgraded from 2.6.22 to 2.6.29
18. libxslt upgraded from 1.1.15 to 1.1.21
19. XMLSEC 1 upgraded from 1.2.9 to 1.2.10
20. OpenSSL 0.9.8e added
21. OpenSSL 0.9.7 upgraded from 0.9.7i to 0.9.7m
22. OpenSSL 0.9.6m has been deprecated and no longer provided
23. OpenLDAP upgraded from 2.2.30 to 2.3.37
24. Cyrus SASL upgraded from 2.1.20 to 2.1.22
25. MM upgraded from 1.4.0 to 1.4.2
26. PCRE upgraded from 6.4 to 7.2
27. LCMS upgraded from 1.15 to 1.16
28. libIDL upgraded from 0.8.6 to 0.8.8
29. cURL upgraded from 7.15.1 to 7.16.4
30. Sablotron upgraded from 1.0.2 to 1.0.3
31. ICU upgraded from 3.4 to 3.6
32. FontConfig upgraded from 2.2.2 to 2.4.2
33. trio upgraded from 1.10 to 1.12
34. libart LGPL upgraded from 2.3.17 to 2.3.19
35. GNOME Options Library (libpopt) upgraded from 1.7 to 1.10.4
36. GNOME Structured File library (libgsf) upgraded from 1.13.3 to 1.14.5
37. GNOME CSS library (libcroco) upgraded from 0.6.0 to 0.6.1
38. librsvg upgraded from 2.13.3 to 2.18.0
39. libexif upgraded from 0.6.12 to 0.6.16
40. GnuPG upgraded from 1.4.0 to 1.4.7
41. libgcrypt upgraded from 1.2.2 to 1.2.4
42. libgpg-error upgraded from 1.0.0 to 1.5
43. Tcl 8.4 upgraded from 8.4.10 to 8.4.15
44. Tk 8.4 upgraded from 8.4.10 to 8.4.14

For more details please see [Appendix: Graphics libraries, Perl modules, and PHP PEAR modules](#).

Java 2 SE 1.4.2

OpenServer 6.0.0 can have both J2SE 1.4.2 and J2SE 5.0 installed and functional at the same time. J2SE 1.4.2 is used specifically by various OpenServer tools and by default is updated to version

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1.4.2_16 when you install OpenServer 6.0.0 MP3 CD #1.

The Java 2 Standard Edition (J2SE) is upgraded from 1.4.2_10 (in MP2) to 1.4.2_16 (in MP3), and includes these fixes:

- ◇ A fix for Sun Alert #102934: A buffer overflow vulnerability in the image parsing code in the Java Runtime Environment may allow an untrusted applet or application to elevate its privileges. 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. A second vulnerability may allow an untrusted applet or application to causes the Java Virtual Machine to hang.
- ◇ A fix for numeric keypad data entry with the keyboard Num Lock active.
- ◇ A JVM abort when the mouse wheel is used on a scrolled List widget has been resolved.
- ◇ The latest fixes from Sun including DST timezone changes.
- ◇ A problem with embedded Java JVM initialization within a thread application has been corrected.
- ◇ Additional Root CA Certificates.
- ◇ A fix for Sun Alert #102686: The JRE and Java Secure Socket Extension (JSSE) may verify incorrect RSA PKCS #1 v1.5 signatures if the RSA public key exponent is 3. This may allow applets or applications that are signed by forged signing certificates and web sites with forged web server certificates to be verified as valid.
- ◇ Java option **-XX:+UseAltSigs** was not honored in previous releases. The option functions as Sun intended in 1.4.2_12.
- ◇ Fixes in java.nio.MappedByteBuffer support. Behavior difference and availability of APIs fsync(), fdatsync() and madvise() between Solaris and UnixWare (SVR5) have been resolved.
- ◇ Removal of the javasoa package containing the Apache Axis jar file from the j2se142 component. Jar file(s) required by Apache/Tomcat have been incorporated into the Apache/Tomcat updates.
- ◇ The latest bug and security fixes from Sun.

After installing MP3 both the symbolic links **/usr/java** and **/usr/java2** will point to the J2SE 1.4.2 installation.

For more information please see the "Java 2 Standard Edition, v 1.4.2_16 for SCO UNIX Operating Systems" (*ReleaseNotes.html*) in the info/java/J2SE_142 directory of MP3 CD #1.

Java 2 SE 5.0

By default, OpenServer 6.0.0 provides Java 2 Standard Edition (J2SE) 1.4.2. That version of Java is used by various OpenServer tools and by default is updated to version 1.4.2_16 when you install OpenServer 6.0.0 MP3.

OpenServer 6.0.0 MP3 CD #2 offers you the option of additionally installing and using Java 2 Standard Edition (J2SE) 5.0, update 09d (1.5.0Id). This version provides:

J2SE 5.0_09d Runtime Environment (JRE)

J2SE 5.0_09d Java Plugin for Mozilla

J2SE 5.0_09d Software Development Kit (SDK)

Java Communications API, vers. 2.0

Apache Axis SOAP Web Services 1.2 and Apache Xerces-J XML Parser 1.4.4

J2SE 5.0, update 09d, contains the following fixes to the the J2SE 5.0's update 06 previously released on the SCO Support web site.

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- ◇ A packaging fix to make the javap executable.
- ◇ A fix to avoid a bug on SCO platforms in the parallel garbage collection routines encountered when running JBoss on "server class" systems. This update is a minimum requirement for the SCO Me Inc. Mobility Server on OpenServer 6.0.0.
- ◇ Daylight Savings Time timezone changes that go into effect in 2007.
- ◇ Additional Root CA certificates have been added to the cacerts file.
- ◇ A problem with embedded Java JVM initialization within a threaded application has been corrected.
- ◇ A fix for Sun Alert #102760: A buffer overflow vulnerability in processing GIF images in the Java Runtime Environment may allow an untrusted applet to elevate its privileges.
- ◇ A fix for Sun Alert #102732: Two vulnerabilities in the Java Runtime Environment may allow an untrusted applet to access data in other applets.
- ◇ A fix for Sun Alert #102731: Two vulnerabilities related to serialization in the Java Runtime Environment may independently allow an untrusted applet or application to elevate its privileges.
- ◇ A fix for Sun Alert #102729: Two buffer overflow vulnerabilities in the JRE may independently allow an untrusted applet to elevate its privileges. For example, an applet may grant itself permissions to read and write a local file or execute local applications that are accessible to the user running the untrusted applet.
- ◇ A fix for Sun Alert #102662: A security vulnerability in the JRE Swing library may allow an untrusted applet to access data in other applets.
- ◇ A fix for Sun Alert #102686: The JRE and Java Secure Socket Extension (JSSE) may verify incorrect RSA PKCS #1 v1.5 signatures if the RSA public key exponent is 3. This may allow applets or applications that are signed by forged signing certificates and web sites with forged web server certificates to be verified as valid.
- ◇ Removal of the javasoa package containing the Apache Axis jar file from the j2se142 component.

If you install this version from MP3 CD #2 after installing CD #1, then both **/usr/java** and **/usr/java2** will point to J2SE 5.0 software. If this is not what you want to use as the default Java, you can manually change either or both of these links. These adjustments will need to be repeated following the installation of any J2SE updates.

For more information please see the "Java 2, Standard Edition 5.0, update 9d for SCO UNIX Operating Systems" (*ReleaseNotes.html*) in the **info/java/J2SE_150** directory of MP3 CD #1.

KDE 3.5.6

KDE 3.5.6 contains numerous fixes and additional features as well as many security fixes since the previous release of KDE for OpenServer 6.

Changes since the previous release of KDE for OpenServer 6 can be found at:

1. http://www.kde.org/announcements/changelogs/changelog3_5_5to3_5_6.php
2. http://www.kde.org/announcements/changelogs/changelog3_5_4to3_5_5.php
3. http://www.kde.org/announcements/changelogs/changelog3_5_3to3_5_4.php
4. http://www.kde.org/announcements/changelogs/changelog3_5_2to3_5_3.php

In addition, KDE 3.5.6 International is provided on the SCO web site (<http://www.sco.com/support/update/download/release.php?rid=305>). Additional KDE utilities and the KDE Integrated Development Environment, KDevelop, are provided on the SCO Skunkware download site at <ftp://ftp2.sco.com/pub/skunkware/osr6/vols/>. SCO SkunkWare is not officially supported; report any problems to skunkware@sco.com.

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Once you have installed KDE 3.5.6 and then the KDE 3.5.6 i18n Language Support, first select the menu item **Settings** (Control Center) -> **Regional & Accessibility** -> **Country/Region & Language**. Next follow the **Add Language** button -> **Other** -> *your desired language from the menu list*, and click on **Apply**.

SCO Mobile Enhancements

OpenServer 6.0.0 Maintenance Pack 4 now allows you to install and run the SCO Mobile Server or SCO HipCheck Mobile Server at the same time that you install and run the SCO HipCheck agent for OpenServer. Thus you can now use the HipCheck agent to monitor and manage the SCO Mobile Server or HipCheck Mobile Server itself.

OpenServer 6.0.0 Maintenance Pack 4 also allows you to install and run the SCO HipCheck agent at the same time that you install third-party Java application server software, such as Tomcat, JBoss, WebLogic, and so on.

Apache Tomcat mod_jk Module

OpenServer 6.0.0 MP3 CD #2 provides a new product, **Apache Tomcat mod_jk Module** (mod_jk). This replaces the mod_jk2 functionality that was previously part of the **Apache Tomcat Servlet Container** (tomcat) product. The prior mod_jk2 implementation is deprecated and interferes with other Java web server applications such as the SCO Mobility Server.

MPlayer 1.0rc1

MPlayer 1.0rc1 is the initial release of MPlayer for OpenServer 6. MPlayer is a movie and animation player that supports a wide range of codecs and file formats including AVI, MPEG, QuickTime, FLC/FLI, and WMV.

Additional information on MPlayer can be found at <http://www.mplayerhq.hu/design7/info.html>.

Network Driver Package version 8.0.6f

MP3 supplied version 8.0.6f of the network driver **nd** package.

MP4 updates this package to version 8.0.6g. For more information, see [Network Driver Package version 8.0.6g](#) in [§4.3: Features Provided in MP4](#).

First-time installation of the **nd** package requires extra steps described in [SVR5 Driver Updates](#) in [§1: Before Installing the Maintenance Pack](#).

OpenSSH 4.6p1

OpenSSH has been upgraded to version 4.6p1, and several bugs have been fixed. Most notably, OpenSSH now correctly sets the MAIL environment variable to the correct location.

Perl 5.8.8

Perl has been upgraded to version 5.8.8, and most of the extension modules have been updated to later versions. See [Appendix: Graphics libraries, Perl modules, and PHP PEAR modules](#) for more details.

OSR5 ABI Perl 5.8.8 Supplement

In support of OpenServer 5 customers that may have a third-party Perl interface to their OSR 5 application and that interface requires Perl to load an OSR5 ABI shared object, the basic OSR5 perl binaries, scripts and runtime have been provided. This component should only be installed when there is a definitive need for an OSR5 ABI perl.

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These binaries install in `/osr5/usr/bin/` and make use of the generic Perl modules and programs installed by the regular (SVR5) Perl in `/usr/lib/perl5`. Customers that require the OSR5 ABI perl should prefix the PATH environment setting with `/osr5/bin`.

```
PATH=/osr5/bin:$PATH
```

before starting "perl". Any complete path invocation of `perl - /usr/bin/perl` or `/bin/perl -` should be modified to use `/osr5/bin/perl`.

At present, the only known requirement for the OSR5 ABI perl is an interface to the Oracle 7.3.x database.

Note that this is not a complete Perl release for the OSR5 ABI, For example the Perl extensions for the OSR5 ABI have not been released but can be released if and when a need arises.

PostgreSQL 8.2.3

PostgreSQL 8.2.3 is included on the OpenServer 6.0.0 MP3 CD #2. This release of the PostgreSQL Database Server includes many performance and security enhancements. A complete list of changes can be found at <http://www.postgresql.org/docs/8.2/static/release-8.2.html>.

Systems running a prior release of PostgreSQL are encouraged to upgrade to take advantage of these features. However, due to internal database format changes made by the PostgreSQL developers to provide these features, a dump of any existing databases you wish to preserved must be performed prior to installing this upgrade. Details on this process are provided [here](#) in these release notes.

QT3 3.3.8

Qt 3.3.8 contains numerous fixes, including several security fixes. A complete list of changes can be found at <http://trolltech.com/developer/notes/changes/changes-3.3.8>.

SCO Admin Enhancements

The SCO Admin Account Manager has been enhanced to better facilitate accounts on systems running Samba and NIS.

The SCO Admin Network Configuration Manager is now more robust in its handling of network configuration on systems with multiple NICs.

New for SCO OpenServer 6 are the SCO Admin System Monitor Manager and SCO Admin DNS Manager. For those familiar with SCO UnixWare, these are the same applications found in SCO UnixWare 7 ported to the SCO OpenServer 6 platform.

The SCO Admin System Monitor Manager is a graphical tool that allows choices from a selected set of system performance metrics to be displayed in real-time on a configurable graph. The tool has been improved for OpenServer 6 to provide more robust operation and enhanced usability, however it works only in graphical mode and currently provides no "Help" facility.

The SCO Admin DNS Manager is a graphical tool that enables DNS servers and services to be configured using a convenient interface that helps eliminate the need to run command line utilities and edit DNS configuration files with a text editor. Because the SCO Admin DNS Manager is new for OpenServer 6, there are a few caveats regarding its use that need to be kept in mind:

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- ◇ The SCO Admin DNS Manager is a graphics only tool. It will not execute on a character console in CHARM mode.
- ◇ *While careful attention to detail when using the SCO Admin DNS Manager for most common tasks will produce optimal results, it is important to **make backups of your DNS configuration files before starting the manager** in case it becomes necessary to restore them due to operation or execution problems with the DNS Manager.* The files that should be backed up include /etc/named.conf and all files in the /etc/named.d hierarchy, especially db.<your domain name>, db.<your subnet address>, and any other files beginning with "db".
- ◇ When entering fully qualified domain names, be sure to include the final '.' (dot), e.g. "beta.mydomain.com."
- ◇ Care must be taken to only add hosts inside already configured zones. When adding a host, specifying a zone that has not been configured can result in corruption of reverse lookup files. Note: if your domain uses the class C address space 192.168.213, the the reverse lookup file would be "db.213.168.192". (No trailing '.')
- ◇ It is important that you properly specify your zone's network address correctly the first time. Attempting to modify the network address with the SCO Admin DNS Manager, or delete it and reconfigure it with the manager, will often result in configuration file corruption and a non-functional manager.
- ◇ Configuring a "Caching-only" server can result in problems executing the "host" utility, which is fundamental to several SCO Admin managers and other system utilities. If after using the SCO Admin DNS Manager to configure a "Caching-only" server problems such as hung SCO Admin managers are encountered, try deleting the "Caching-only" configuration. While it may be possible to delete the "Caching-only" configuration with the DNS Manager, it may be necessary to remove /etc/named.conf and edit the /etc/named.d/db* files manually, or restore previous versions from backup copies. *DO NOT simply remove all the files under /etc/named.d!*
- ◇ The SCO Admin DNS Manager may not always properly handle case-sensitivity issues with host names. In particular, adding, modifying, or deleting hostnames or zones with hostnames that differ only in the case of some or all of the letters in their names will generally cause corruption of the DNS configuration files. For best results, make sure all hostnames and zone names are unique without respect to case. E.g., do not have the hostnames "beta" "Beta" or "BETA" in the same domain, nor attempt to configure zones "mydomain.com", "MyDomain.com" (or "MYDOMAIN.com") on the same system. Note: while some applications and environments support case sensitivity, DNS specifications do not recognize case.
- ◇ There are several problems with importing host data from the /etc/hosts file that can result in extensive corruption of DNS configuration data. At this time, it is best to not use this feature of the SCO Admin DNS manager.
- ◇ Presently, the manager's "Help" buttons and menu "Help" selections do not work.

Squid 2.6.12

Squid 2.6.STABLE12 contains a fix for a denial of service attack.

USB Enhancements

OpenServer 6.0.0 MP3 provides updated UDI and USB subsystems. This includes the enhancements provided by the earlier OpenServer 6.0.0 MP2 USB Supplement plus additional bug fixes.

The OpenServer 6.0.0 supplement provided an enhanced USB driver that supports both USB modems and serial adapters. The device driver adds support for USB modems that conform to the CDC/ACM specification. Written to the Uniform Driver Interface (UDI) specification, the new driver includes a number of fixes that improve performance and device support.

Among the USB devices supported by this supplement are:

- All SeaLevel single and multiport devices
 - Allied Data Tornado SFM56.0-USB Modems
 - BAFO Technologies BF-800 and BF-810 Single port adapters
 - Byterunner Technologies USB Communications Adapters.
 - Cables Unlimited USB to RS232 Serial Adapter
 - Control RocketPortII USB Serial Hubs
 - CP-US-03 USB Serial Adapters
 - Modems supporting the "Abstract Control Model" Communications Subclass Interface type.
 - MultiTech MultiModemUSB Modems
 - Serial Adapters that use the FT8U232AM Chipset (**)
 - Serial Adapters that use the PL-2303 Chipset (**)
 - VScom USB Serial Adapters
 - Zoom/Faxmodem 56K USB Modems (*)
- (*) Zoom has intermittent start-up failures due to firmware problems.
(**) If a vendor changed the product ID in PL-2303 and FT8U232 then the device may not work with this release.

OpenServer 6.0.0 MP3 also provides these additional bug fixes that were not in the OpenServer 6.0.0 Maintenance Pack 2 USB supplement:

- ◇ fz534075:1, Recognize Iomega REV changer by not caching INQ across LUNS
- ◇ fz534090:1, Improve EHCI performance by raising maximum interrupt rate.

Notes on using USB follow.

After installing MP3, once your system is rebooted any supported USB Serial and USB Modem devices connected to the system will be automatically recognized and device nodes for these devices will be created.

To list the serial ports of the USB devices that are recognized by your system run the the command:

l /dev/usb_ser*

This will return output similar to:

```
crw-rw-rw-  1 root    root      295,108 Oct 24 10:05 /dev/usb_ser0A
crw-rw-rw-  1 root    root      295,107 Oct 24 10:05 /dev/usb_ser0a
crw-rw-rw-  1 root    root      295,106 Oct 24 10:05 /dev/usb_ser0h
crw-rw-rw-  1 root    root      295,105 Oct 24 10:05 /dev/usb_ser0s

/dev/usb_ser:
total 0
crw-rw-rw-  1 root    root      295,108 Oct 24 10:05 tty.03001-3.A
crw-rw-rw-  1 root    root      295,107 Oct 24 10:05 tty.03001-3.a
crw-rw-rw-  1 root    root      295,106 Oct 24 10:05 tty.03001-3.h
crw-rw-rw-  1 root    root      295,105 Oct 24 10:05 tty.03001-3.s
```

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where

```
/dev/usb_ser0A is the modem control device
/dev/usb_ser0a is the non modem control device
/dev/usb_ser0h is the Hardware flow control device
/dev/usb_ser0s is the Software flow control device
```

and

```
/dev/usb_ser/tty.03001.3.A
/dev/usb_ser/tty.03001.3.a
/dev/usb_ser/tty.03001.3.h
/dev/usb_ser/tty.03001.3.s
```

are USB Serial Device names for the serial ports where the first five digit number is the location of the host controller interface (HCI) to which the serial port/modem is connected. It's five digits represent the PCI bus number (two digits), the PCI device number (two digits), and the PCI function number (the final digit). For example:

```
/dev/usb_ser/tty.03001.3.A
```

The above device name indicates that the HCI is located at PCI bus number 03, PCI device 00, PCI function 1. Note that this number is completely determined by the hardware vendor's PCI configuration.

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

In the example above, the serial port is connected to PC USB Port 3.

A device name like `/dev/usb_ser/tty.00072.1.4.2` indicates the following device configuration:

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

You can use the Serial Manager to configure USB Serial Port devices. For details on configuring serial ports using the serial manager see

http://osr600doc.sco.com/en/HW_io/config_trigger_level.html

You can use the Modem Manager to configure USB Modem devices. For more details on the modem manager see: http://osr600doc.sco.com/en/HW_modem/modem_manager.html

ViM (VI Improved) 7.2

The VIM editor has been upgraded to the latest available version, 7.2. This version has many new features, including structure completion for C programs and other languages. Many bugs have been fixed and improvements made.

Xenix Compatibility Enhancements

OpenServer 6.0.0 MP3 implements a major update for the Xenix emulator and the underlying kernel services. In general, most known Xenix emulator problems have been addressed. Both Xenix x.out binaries as well as COFF applications linked with the Xenix Services library via the `-lx` flag should now function correctly.

The kernel now implements Xenix semaphores, Xenix shared memory, and Xenix file and record locking. Additionally, the Xenix emulator `xrun` has been enhanced to make use of the restored kernel services.

The `brkctl(S)` system call has now been fully implemented for the Xenix emulator. This mostly affects model large Xenix applications, most of which previously did not run on OSR6.

The `ls` command has been upgraded to display properly Xenix shared memory and semaphore device nodes.

Limitations

1. A previously installed Xenix application that uses semaphores may fail immediately after upgrading to MP3 because of a change in the way Xenix semaphores are implemented. Previously, the `xrun` emulator simulated Xenix semaphores via System V semaphores, using regular files that contained information about the semaphore properties. As noted above, MP3 eliminates that implementation in favor of a direct kernel-level implementation of Xenix semaphores.

If such an application failure is encountered after installing MP3, application functionality can usually be restored by shutting down the application, deleting the old semaphore files, and then restarting the application. In a few cases, it might be necessary to reinstall the application.

2. This update does not address missing Xenix ioctls (fz530099:2).
3. This update does not address Xenix applications that fails due to various ancillary environmental issues, such as missing termcap entries, changed VT characteristics, etc.
4. Xenix shared memory may not work properly when using `sdget(S)` with the `SD_UNLOCK` flag in small model data segments (i.e. models small and medium). This behavior is consistent with the original Xenix manual page, which states, "For 286 programs, it is strongly recommended that `sdget` and other shared memory data function be reserved for large model programs only." (Statement reproduced from SCO document XG-6-21-87-4.0, (c) 1980-1987 Microsoft Corporation, (c) 1983-1987 Santa Cruz Operation, Inc.)

We believe this problem is unlikely to be encountered in practice.

5. Post-System V Xenix 386 x.out binaries and COFF binaries linked with `-lx` are virtually indistinguishable when executing on OSR5 because both execute directly on the kernel; neither one is emulated. However, Xenix 386 x.out binaries run under the `xrun` emulator in OSR6, and as a result, there is a small chance that environmental differences, such as address space layout, might cause application failures.

X.ORG 7.2.0

SCO OpenServer Release 6 Maintenance pack 3 contains a major upgrade to the X11 windowing system. This has been upgraded from the 6.9.2 series to the 7.2.0 series. This new version has several new driver optimizations, drivers for more video cards, and improvements to older drivers. Changes include the new RandR extension; better OpenGL support; the new EXA accelerated driver

architecture; better TrueType font support; and many other improvements.

XPDF 3.0.2

Xpdf 3.02 contains support for PDF 1.6 and PDF 1.7 as well as numerous fixes and additional features. A complete list of changes can be found at: <http://www.foolabs.com/xpdf/CHANGES>

§4.3: Features Provided in MP4

OpenServer 6.0.0 MP4 provides the following new features:

[Apache 2](#)
[Bind](#)
[Cups](#)
[Ghostscript](#)
[IGMP v3](#)
[ISL HBA CD](#)
[Java 2 Standard Edition \(J2SE\), 1.4.2, 5.0 Updates](#)
[Mozilla® Firefox®](#)
[Mozilla® Thunderbird™](#)
[KDE](#)
[Encrypted marry Support](#)
[Network Driver Package version 8.0.6g](#)
[PostgreSQL 8.2.9](#)
[Samba](#)

Apache 2

OpenServer 6.0.0 MP4 installs both the Apache 1 and Apache 2 Web Servers for SCO OpenServer 6.0.0. By default both Apache 1 and 2 are installed and are available for use, either separately or in combination.

NOTE: Apache 2 was first released as an OpenServer 6.0.0 MP3 web posting. The Apache Web Servers included in MP4 cannot be installed on top of SCO's web-released Apache 2 product; the MP4 web servers do upgrade prior OpenServer 6.0.0 Apache 1 releases.

If MP4 is attempted to be installed on a system with the web-released Apache 2, a clashing software message is displayed and you are directed to discontinue MP4's install.

To allow MP4's install in this case, you will first need to remove your existing web-released Apache 2 package. If you have made any changes to configurable Apache 2 files, such as */usr/lib/apache2/conf/httpd.conf* (the main configuration file), you should save a copy before removing your existing Apache 2 package.

Once the web-released Apache 2 is removed, MP4 can be installed.

The **docview** patch that accompanied the Apache 2 handoff has also been integrated into MP4 (and now it works with either Apache 1 or Apache 2).

Whether either or both Apache servers will be active is controlled by their respective administration scripts:

```
/etc/apache      # for Apache 1
/etc/apache2     # for Apache 2
```

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Both of these scripts accept the same argument strings:

```
enable          # have the server automatically run on reboot
disable         # do not have the server started on reboot
restart        # reset a running server; otherwise start it
start          # begin running the server
stop           # shutdown a running server
```

For example, `/etc/apache2 enable` causes Apache 2 to be run whenever your server is rebooted.

Also, both Apache 1 and 2 have their respective configuration files:

```
/usr/lib/apache/conf/httpd.conf
/usr/lib/apache2/conf/httpd.conf
```

A key part of what is specified in these files is the port number on which that server will be listening. **Note:** You cannot have the two different Apache servers listening on the same port number.

For http (the main way web pages are accessed), the default port number is 80 (see `/etc/services`), which is what is specified in both of the supplied `httpd.conf` files. A URL can name an explicit port number to use instead of 80, and will look like

```
http://myserver.com:1234/mypage.html
```

where the port specified here is 1234.

By default, Apache 1 listens on port 80.

Docview and Apache

System documentation is also made available in your web browser through a completely separate use of Apache for **docview** on port 8457. Docview also has a main administration script

```
/etc/docview
```

which accepts the following argument strings

```
start
stop
```

Docview will choose to use Apache 2 if it's installed as its documentation server, but it will use Apache 1 otherwise. So by default Apache 2 is the documentation server. If you want to have docview use Apache 1 even though Apache 2 is installed, add the following line to `/etc/default/man`:

```
APACHE=apache
```

Then stop and start up docview:

```
/etc/docview stop
/etc/docview start
```

Docview will continue to use Apache 1, even after reboots, until the `APACHE=apache` line is removed from `/etc/default/man`.

Running one or both Apache servers

The simplest approach to web serving is to choose one of Apache 1 or 2 to be enabled and running. For example, to have just Apache 2 used:

```
/etc/apache stop
/etc/apache disable
/etc/apache2 enable
/etc/apache2 start
```

However, there's no problem with having both Apache servers running at the same time as long as they are listening on separate ports.

For example, suppose you want Apache 2 to listen on port 80 and you also want Apache 1 enabled and serving web pages, but instead listening on, say, port 81. Be sure to choose a port number which is not already in use (not displayed by **netstat -an**) and not reserved for another application (look through */etc/services*). Then:

- ◇ Edit */usr/lib/apache/conf/httpd.conf* and have it have specify port 81 by changing its Port directive line:

```
Port 81
```

- ◇ Ensure that Apache 2 is listening on port number 80 by checking its */usr/lib/apache2/conf/httpd.conf* file.
- ◇ Have both Apache servers set to run after a system reboot and be sure that both are using their (potentially) just modified configuration files:

```
/etc/apache enable
/etc/apache2 enable
/etc/apache restart
/etc/apache2 restart
```

Apache Loadable Modules

Both Apache servers accept various loadable modules to support:

- ◇ Secure Sockets Layers (SSL)
- ◇ Perl CGI Scripts
- ◇ PHP CGI Scripts

and other capabilities. If you want to disable any of these modules, perhaps because of security concerns, edit the appropriate Apache configuration file:

```
/usr/lib/apache/conf/httpd.conf
/usr/lib/apache2/conf/httpd.conf
```

Search for lines that begin with

```
LoadModule
```

Then comment out (or just remove) the lines which refer to modules which you want to disable. After you're done editing the file(s) restart the affected Apache server(s). For example, run **/etc/apache2 restart** to restart the Apache 2 server.

Bind

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OpenServer 6.0.0 MP4 includes an upgrade to bind version 9.4.2-P1. Among the new features in bind9, this version includes several critical security fixes related to weak query-ids (CVE-2007-2930) and cache-poisoning attacks (CVE-2008-1447).

There are several additional bind8 to bind9 migration issues that you may need to deal with as part of this upgrade. For example, several */etc/named.conf* options have changed and logging categories are different. Details are available at http://uw714doc.sco.com/en/NET_tcpip/dnsN.main.html or at the ISC website <http://www.isc.org>.

CUPS

CUPS is one of the two print systems included in OpenServer 6.0.0. It uses the Internet Printing Protocol ("IPP") as the basis for managing print jobs and queues, and supports network printer browsing and PostScript Printer Description ("PPD") based printing options.

This update includes CUPS 1.3.9. Among the features added are the following:

- ◇ It now automatically detects whether a client is connecting with SSL encryption, so CUPS can support unencrypted, SSL encryption, or TLS encryption on a single port.
- ◇ The server default printers are now advertised by default, to help clients choose the correct default network printer.
- ◇ The default configuration will show shared printers from any address (not just @LOCAL).
- ◇ The list of available printers is now only shown when requested, and an **Add This Printer** button allows you to change the default name, location, and description.
- ◇ Now raw printers and classes can be configured using the **Set Printer Options** button.
- ◇ You can now set the list of users and/or groups that are allowed or not allowed to access a printer or class.
- ◇ You can now move an active job to a different printer or class.
- ◇ Kerberos authentication is supported.
- ◇ The new **cupsctl** command allows you to perform basic server configuration from the command line.

For a full list of updated features please see the "Changes in CUPS 1.2" and "Changes in CUPS 1.3" documents available below <http://www.cups.org/documentation.php>.

Ghostscript

GNU Ghostscript 8.62 is included on the OpenServer 6.0.0 MP4 CD #1. This is a merge of GNU Ghostscript and the ESP Ghostscript fork used to support the CUPS printing system. This release includes many important bug fixes and improvements to performance, memory footprint, shading, and image

IGMP v3

The Internet Group Management Protocol (IGMP) is upgraded to the Version 3. This version adds support for source filtering so that packets are either allowed or not allowed from specific source addresses. It is also commonly referred to as source-specific multicast in contrast any-source multicast.

ISL HBA CD

The OpenServer 6.0.0 MP4 CD #1 has been designed to be a OpenServer 6.0.0 and UnixWare 7.1.4 ISL HBA CD. During an ISL installation of OpenServer 6.0.0 or UnixWare 7.1.4, you can obtain the latest OpenServer 6/UnixWare 7 by using the OpenServer 6.0.0 MP4 CD #1 when prompted for an HBA CD.

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For more information, see the various HBA README files in the `info/drivers` directory of the MP4 CD or `osr600mp4_cd1.iso`, image, once mounted.

Java 2 Standard Edition (J2SE), 1.4.2, 5.0 Updates

Synchronized J2SE Updates - Security Fixes

Following Sun MicroSystem's synchronized release of updates for all actively supported versions of the Java 2 Standard Edition (J2SE), SCO is releasing the same updates for the following J2SE versions supported on SCO OpenServer 6.0.0:

J2SE 1.4.2_19

J2SE 5.0, update 17

For a complete list of security issues resolved in each J2SE version, check the Release Notes for that version in the:

◇ `ReleaseNotes.html` of the corresponding version directory of the `info/java` directory of the MP4 CD or the `osr600mp4_cd1.iso` image, once mounted.

◇ `ReleaseNotes.html(.txt)` for each version, once installed, in `/opt/java2-1.x.x`

Because these updates resolve numerous security issues, it is strongly recommended that all J2SE versions on your system be updated. J2SE 1.4.2 is part of MP4 and will be updated by default. The J2SE 5.0, update 16, is on the OpenServer 6.0.0 MP4 CD #2, and you must select this component for update or installation.

These J2SE updates are the same J2SE updates recently posted on the SCO Support web-site, but with a package installation change to make the Java plug-in module available to any Mozilla browser installed on the system.

Multiple Java 2 SE Releases on OpenServer 6.0.0

Multiple major versions of J2SE can co-exist on your SCO UNIX platform. The installation is to a version specific directory in `/opt`.

J2SE 1.4.2 ==> `/opt/java2-1.4.2`

J2SE 5.0 ==> `/opt/java2-1.5.0`

Updates to each major version of J2SE install in the same base directory.

Prior to an earlier synchronized release of J2SE 1.4.2_17 and 5.0 update 15, the installation of the JRE piece for each of these major point releases would automatically symbolically link `/usr/java` and `/usr/java2` to point to the "newly" installed JRE directory. Starting with those synchronized J2SE releases, the symbolic links will only be updated if the JRE being installed is a later J2SE version than the current symbolic links.

For example, if prior to installation of J2SE 5.0, update 15, the symbolic links were:

`/usr/java ==> /opt/java2-1.4.2`

`/usr/java2 ==> /opt/java2-1.5.0`

Following the installation of J2SE 5.0, update 15, the links would be:

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```
/usr/java ==> /opt/java2-1.5.0  
/usr/java2 ==> /opt/java2-1.5.0
```

Removal of the J2SE 5.0, update 15, will attempt to restore the pre-installation links, if and only if an executable `/opt/java2-1.4.2/bin/java` still exists on the system.

System administrators can and should readjust these symbolic links as needed by their specific system and software requirements.

Other software released by SCO for your SCO UNIX platform, as well as third party applications that use Java, may require a specific J2SE major version. That software may either reference the J2SE of interest through:

- ◇ an environment variable such as `JAVA_HOME` that points to `/usr/java` or directly to the installation directory `/opt/java2-1.x.x`
- ◇ an absolute command path, either `/usr/java/bin/command` or `/opt/java2-1.x.x/bin/command`

Caution: Before removing earlier/other major versions of J2SE on your system, be certain that other installed software does not require that version. For example, the Apache-Tomcat product released on UnixWare 7.1.4 and OpenServer 6.0.0 have been configured, tested and certified with J2SE 1.4.2. Removal of that JRE will result in Tomcat failing to start.

Mozilla® Firefox®

Mozilla® Firefox® is the browser successor to the Mozilla browser suite 1.7.x released as part of the OpenServer 6.0.0 product. Like the former releases of Mozilla for SCO platforms, Firefox is built from the source code open-sourced by the Mozilla Foundation. What previously was a single application with multiple functionality is now released as separate products; Firefox providing the browser and file download features. The e-mail client and news reader functions are provided by Mozilla Thunderbird™ which is a separate component released as part of MP4, on CD2. The ChatZilla internet relay chat (IRC) feature of Mozilla is available through a Firefox add-on extension; see the "User Customization" section in the accompanying release notes..

While Firefox is the ultimate replacement for the Mozilla browser on OpenServer 6.0.0, installation of this Firefox release will install in parallel with the existing Mozilla browser. Installation of Firefox will not automatically remove Mozilla from your system. Because there are a variety of ways in which the "default browser" can be configured on any installed system, there is no simple way to automatically replace the Mozilla browser with the new Firefox browser. Allowing both browsers to be active on the system provides each site the opportunity to switch from Mozilla to Firefox at their convenience. If users have been using the Mozilla e-mail / news client, the Mozilla Thunderbird application will also need to be installed.

See the accompanying release notes for:

- ◇ system and user configuration and migration issues
- ◇ toolbar customization, add-ons themes and extensions
- ◇ useful links to help and tutorials
- ◇ steps in removing the Mozilla browser suite 1.7.x from your system

The release notes are in the *Firefox.README.html* file in the `info/mozilla` directory of the MP4 CD or **osr600mp4_cd1.iso** image, once mounted. When Firefox is installed, this README will be installed in `/usr/lib/firefox/README.html`.

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Mozilla and Firefox are registered trademarks of the Mozilla Foundation.

Mozilla® Thunderbird™

Mozilla® Thunderbird™ is the e-mail client and news group reader successor to the Mozilla browser suite 1.7.x released as part of the OpenServer 6.0.0 product. Like the former releases of Mozilla for SCO platforms, Thunderbird is built from the source code open-sourced by the Mozilla Foundation. What previously was a single application with multiple functionality is now released as separate products; the e-mail client and news reader functions are provided by Mozilla Thunderbird.

While Thunderbird is the ultimate replacement for the Mozilla e-mail client on OpenServer 6.0.0, installation of this Thunderbird release will install in parallel with the existing Mozilla suite. Installation of Thunderbird will not automatically remove Mozilla from your system. Because the functionality provided by the earlier Mozilla suite is now provided by separate applications, there is no simple way to automatically replace the Mozilla suite with the new Thunderbird e-mail client. Allowing both e-mail clients to be active on the system provides each site the opportunity to switch from Mozilla to Thunderbird at their convenience.

The Thunderbird component is contained on the OpenServer 6.0.0 MP4 CD #2. This component can be optionally installed following the installation of MP4.

For more information on the configuration and usage of Thunderbird, migration from the Mozilla 1.7.x e-mail client, and useful links for extensions and help from the Mozilla community, see the *Thunderbird.README.html* release notes in the `info/mozilla` directory of the MP4 CD or **osr600mp4_cd1.iso** image, once mounted. When Thunderbird is installed, this README will be installed in `/usr/lib/thunderbird/README.html`.

Mozilla and Thunderbird are trademarks and registered trademarks of the Mozilla Foundation.

KDE

KDE 3.5.9 is included on the OpenServer 6.0.0 MP4 CD #2. This release of KDE provides numerous security fixes as well as many important bug fixes and performance enhancements. Also, the KDE 3.5.9 i18n Language Support parcel is now included on the OpenServer 6.0.0 MP4 CD #2.

Encrypted marry Support

MP4 enhances the **marry(7)** command to support a configurable 128, 192, or 256 bit AES key length. A new **-k** option is provided to specify the key length. The default key length continues to be 128-bit to ensure compatibility with existing encrypted marry devices.

Network Driver Package version 8.0.6g

MP4 updates the Network Driver Package (**nd**) to version 8.0.6g. A README file for the package is on CD #1 in `/info/drivers`. This file provides more information about the **nd** package, including the list of supported network cards, as well as what is new in this package from the previous version.

The **nd** package is installed using **pkgadd**. We recommend installing this package following installation of the **custom** components in CD #1. Please see the instructions at [step 11](#) of [§2.1: Installing the Maintenance Pack from CD, CD ISO Image, or Media Images](#).

First-time installation of the **nd** package requires an extra step described in [SVR5 Driver Updates](#) in [§1: Before Installing the Maintenance Pack](#).

PostgreSQL 8.2.9

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PostgreSQL 8.2.9 is included on the OpenServer 6.0.0 MP4 CD #1. This release of the PostgreSQL Database Server includes many performance and security enhancements. A complete list of changes can be found at <http://www.postgresql.org/docs/8.2/static/release-8.2.html> .

Systems running a prior release of PostgreSQL are encouraged to upgrade to take advantage of these features. However, due to internal database format changes made by the PostgreSQL developers to provide these features, a dump of any existing databases you wish to preserved must be performed prior to installing this upgrade. (Note: This step is not necessary if you have an earlier 8.2.* version of PostgreSQL installed.) Details on this process are provided [here](#) in these release notes.

Samba

Samba 3.0.30 is included on the OpenServer 6.0.0 MP4 CD #1. This release of Samba provides many important security and bug fixes as well as performance enhancements and support for interoperability with the Microsoft Vista operating system.

§5: 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"](#)

[`Fixes Provided in MP2"](#)

[`Fixes Provided in MP3"](#)

[`Fixes Provided in MP4"](#)

§5.1: Fixes Provided in MP1

MP4 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>:

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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 (**doscsp**, **dosrm**, **dosdir**, **doscat**, **dosmkdir**) were failing on second and subsequent executions by any user, with errors like the following:

```
/tmp/00448dos: Permission denied  
doscsp: 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
...
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)

§5.2: Fixes Provided in MP2

MP4 contains the following fixes that were also included in MP2:

[Commands and Utilities](#)

[Development System](#)

[Drivers](#)

[Graphics](#)

[Kernel](#)

[Installation](#)

[Networking](#)

[Operating System](#)

[Printing](#)

[SCOAdmin](#)

[Security](#)

[Other Fixes](#)

[Commands and Utilities](#)

25. **/sbin/emergency_disk incorrectly enumerates cdrecord device** --
Correctly set scsibus for cdrecord device string.
(ID: 533423:1)
26. **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)
27. **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)
28. **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)
29. **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)
 30. **When a nonexistent 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)
 31. **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)
 32. **Can't display multibytes character on samba3.0.4 --**
The **iconv** command has been updated to correct this problem.
(ID: 530767:1 ESC: erg712771)
 33. **/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)
 34. **The more command does not display Japanese characters correctly. --**
This problem has been resolved.
(ID: 531424:1 ESC: erg712800)
 35. **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)
 36. **cm_vtcmd core dumps when SFNOLIM set above 32767 --**
This problem has been resolved.
(ID: 527772:1 ESC: erg712304)
 37. **UW7 compress needs to understand OSR5 Huffman -H option and format --**
Updated **compress** command.
(ID: 532965:1)
 38. **Error in the showtable(1) Perl script --**
This problem has been resolved.
(ID: 533062:1)
 39. **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 signaling required for the APC UPS daemon to operate. This has been fixed.
(ID: 533261:1)
 40. **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)
 41. **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)
 42. **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)

43. **osr600mp3/bl4Di system fails to function as an installation server --**

This problem has been resolved.
(ID: 533435:1)

44. **df should not display information about pseudo filesystems --**

This problem has been resolved.
(ID: 531816:1)

45. **The "-l" (minus ell) option of "df" doesn't exclude automounted file systems --**

This problem has been resolved.
(ID: 532028:1)

46. **mapchan -f fails with "cannot open /bin/awk for map conversion" --**

This problem has been resolved.
(ID: 532369:1)

47. **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)

48. **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 Hardware/Kernel Manager can find it.
(ID: 532677:1)

49. **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)

50. **Ey: quot(ADM) fails with vxfs filesystems. --**

This problem has been resolved.
(ID: 530114:1)

51. **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)

52. **OALIB not exported, causing pathing problems when using scosh --**

Added OALIB to the proper export line.

- (ID: 533424:1)
53. **/bin/sh core dump from SIGSEGV --**
 This problem has been resolved.
 (ID: 533052:1)
54. **"test -x" of directories fail when invoked by root --**
 This problem has been resolved.
 (ID: 533407:1)
55. **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)
56. **The SVR5/UDK version of uname has been added as /udk/bin/uname.**
 (ID: 533016:1)
57. **Xenix binaries failing on Legend --**
 This problem has been resolved.
 (ID: 532549:1)
58. **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)
59. **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 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)
60. **HTFS panic: Assertion fail - htiget.c --**
 This problem has been resolved.
 (ID: 532497:1)
61. **termcap scoansi entry has the same values for LE and DO --**
 This problem has been resolved.
 (ID: 532672:1)
62. **ansi termcap/terminfo needs updating --**
 Fixed the errors in color handling.
 (ID: 533466:1)
63. **/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)
64. **OSS702A breaks pkgadd --**
 This problem has been fixed.
 (ID: 533126:1)
65. **OSS702A causes installf failures with HBA packages --**
 Fixed the script.

(ID: 533239:2)

Development System**66. Incorrect boolean code generation --**

Compiler can erroneously generate "movb MEM, MEM" with the current stin for BOOL assignments. This is fixed.

(ID: 532751:3)

67. Inconsistent 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)

68. *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)

69. 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)

70. 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 */usr5/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 */usr5/usr/bin*. The correct **rpcgen** and C compilers will automatically be used.

(ID: 532752:1)

71. 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)

72. /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)

73. 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)

74. libprot needs to be implemented for the SVR5 ABI --

This problem has been resolved.

(ID: 531946:1, 531946:2)

75. libiaf ia_* routines need to be implemented using SVR5 libprot --

This problem has been resolved.

(ID: 531946:4)

76. cuserid(), getlogin(), et. al. fail on OSR6 --

This problem has been resolved.

(ID: 533043:1, 533064:2)

77. 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 *fsstat(S)* is returning 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)

78. UDK and OSR versions of lckpddf on OSR6 use different lock files --

Change *lckpddf()* so that it uses the same pathname as (*etc/.pwd.lock*) for both OSR5 and SVR5/UDK versions of command.

(ID: 533271:1)

Drivers

79. SATA Tape support --

Updated the *ahci* driver for Serial ATA (SATA) tape drive support.

(ID: 532857:1)

80. Intel e1008g Gigabit driver 2.7.5 reports "Speed/Dx:10/H" --

This problem has been resolved.

(ID: 517482:2)

81. xAPIC detection is broken --

This problem has been resolved.

(ID: 532824:1)

82. Combined IDE mode does not work on some servers --

Two major changes were made to accommodate 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

83. 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.

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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)

84. **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)

85. **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)

86. **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)

87. **Numeric keypad Del key does not work correctly when Num Lock is on --**
 This problem has been resolved.
 (ID: 532805:1)
88. **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

89. **Balance callouts across multiple cpus --**
 Allow kernel timeouts to run across multiple cpus if the caller context is unbound.
 (ID: 532367:3)
90. **FPU control register initialization bad when isSCO set. --**
 Changed FPU initialization as per request.
 (ID: 529630:1)
91. **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)
92. **vxfs snapshot panic using BackupEdge --**
 Problems involving direct I/O reads of snapshot filesystems have been resolved.
 (ID: 532771:1)
93. **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)
94. **Need support for PCI parallel devices --**
 The parallel port (**lp**) driver has been enhanced to support PCI parallel devices.
 (ID: 533168:3)
95. **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 eliminates both the corruption and the subsequent panic.
 (ID: 533322:1)
96. **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)
97. **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

98. **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)
99. **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)
100. **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)
101. **Update pkgadd tools to latest SVR5 version --**
 Updated tools and infrastructure for **pkginstall** (**pkgadd**), **pkgremove** (**pkgrm**), etc.
 (ID: 532013:1)
102. **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)
103. **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)
104. **ISL installs incorrect cpio binary in /udk/bin --**  
 The file */udk/bin/cpio* has been removed.  
 (ID: 533090:1)

### Networking

105. **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)
106. **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)
107. **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)
108. **MTU is not set correctly in response to an ICMP Error - Fragmentation Needed --**  
 This problem has been resolved.  
 (ID: 529427:4 ESC: erg712617)
109. **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)

110. **rpcbind errors on startup - rpcbind: Could not find any loopback transport. Exiting --**  
 This problem has been resolved.  
 (ID: 532689:1)
111. **"scoadmin license" fails when dhcp is configured --**  
 This problem has been resolved.  
 (ID: 533310:1)
112. **"mkdev cf" does not remove a smart host --**  
 This problem has been resolved.  
 (ID: 532370:2)
113. **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)
114. **"mkdev cf" does not populate sendmail.cf or local-host-names with alternate hostname information --**  
 This problem has been resolved.  
 (ID: 533128:2)
115. **mkdev cf masquerading option "allmasquerade" is questionable and causes problems --**  
 Fixed This problem has been resolved.  
 (ID: 533129:2)
116. **mkdev cf does not update /usr/mmdf/mmdftailor MLNAME variable for hostname --**  
 This problem has been resolved.  
 (ID: 533130:2)
117. **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)
118. **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)
119. **svc\_start: ss\_accept 4 warning in syslog --**  
 Don't print the warning for EINTR (normal case).  
 (ID: 532163:1)
120. **Errors indicated when Installing and Verifying an anonymous Home Directory --**  
 Bogus entries removed from script.  
 (ID: 532669:1)
121. **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)
122. **nfs start can be run multiple times --**  
 Added code to 'start' case to check if any NFS services are already running.  
 (ID: 532222:1)
123. **Lc: exportfs fails with /etc/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)

124. **Need LFS aware ftpd for legend --**

The **ftpd** daemon and **ftp** client can now handle files larger than 2GB in size.

(ID: 533392:1)

125. **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\_socks system call: map the EAGAIN return code to OEWOULDBLOCK.

(ID: 533307:1)

126. **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 the `ss_listen_backlog` tunable parameter to 1 before issuing the **ttcp** command.

(ID: 533025:1)

127. **mkdev cf results in error when uucp connection specified --**

Fixed This problem has been resolved.

(ID: 532600:2)

128. **NFS daemon messages appear in syslog with an extraneous date-stamp. --**

This problem has been resolved.

(ID: 532121:1)

129. **netconfig does not properly manage /etc/net/ti\*/hosts files --**

This problem has been resolved.

(ID: 532878:1)

130. **netconfig: changing one field of the IP address changes the netmask & broadcast --**

This problem has been resolved.

(ID: 532135:1)

131. **netconfig: In character mode: Number Key Enter behaves differently than keyboard enter. --**

Problem has been fixed.

(ID: 532380:1)

132. **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)

133. **/etc/mkfilters doesn't generate a valid filter for ipf to use --**

This problem has been resolved.

(ID: 532361:1)

**Operating System**

134. **Deliver AMD Dual Core Support --**

AMD multiple core processors are supported.

(ID: 532956:1)

135. **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)

136. **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)

137. **limits need raising --**

The default for FLCKREC (maximum number of lock table entries) was raised to 16,000.  
(ID: 532885:1)

138. **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)

139. **Update French and German message catalogs.**

(ID: 533311)

140. **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)

141. **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)

142. **Cannot enter OSR5.0.5 in license manager --**

This problem has been resolved.

(ID: 531320:1)

143. **brand accepts an SMP license data-entry error which PMD later rejects --**

This problem has been resolved.

(ID: 533111:1)

144. **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)

145. **Need ATI Radeon video driver with RN50E chipset support --**

Upgraded to X.Org 6.9.0.

(ID: 532772:1 ESC: erg712887)

146. **Line drawing font for right hand top corner is not right on console --**

This problem has been resolved.

(ID: 532659:1)

147. **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)

148. **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)
149. **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)
150. **Device database is in inconsistent state which is not allowing emergency recovery CD creation --**  
 This problem has been resolved.  
 (ID: 533125:1)
151. **-x option for /bin/sh does not work on OSR6 --**  
 This problem has been resolved.  
 (ID: 533127:1)
152. **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)
153. **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.)

154. **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)
155. **Not able to print using lpr to an LPD print server --**  
 This problem has been fixed.  
 (ID: 532792:1 ESC: erg712893)
156. **NetWare support removed from the Printer Manager --**  
 (ID: 532886:1)
157. **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**

158. **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)
159. **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)
160. **NetWare support needs to be removed from Filesystem manager --**  
Removed NetWare support.  
(ID: 532987:1)
161. **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)
162. **Filesystem mgr displays many duplicate labels in character mode; X mode looks fine. --**  
Deleted apparently excess label declarations  
(ID: 532334:1)
163. **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)
164. **International settings manager has illegible text --**  
This problem has been resolved.  
(ID: 532193:1)
165. **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)
166. **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)
167. **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)
168. **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)
169. **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)
170. **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)

171. **SCOadmin System Tuner needed.** --  
New graphical tool for adjusting kernel parameters.  
(ID: 532676:1)
172. **The vxva graphical interface for ODM is needed.** --  
The Online Data Manager's Visual Administrator graphical interface is now available.  
(ID: 533245:1)
173. **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)
174. **"netcfg" has node name problems with multiple NICS** --  
These problems have been resolved.  
(ID: 532511:1)
175. **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)
176. **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)
177. **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)
178. **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)
179. **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)
180. **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**

181. **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)
182. **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 by a boundary error in the "HTTrjis()" function's handling of article headers sent from NNTP (Network News Transfer Protocol) servers. This can be exploited to cause a

stack-based buffer overflow (e.g. by 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)

183. **SECURITY: Lynx Command Injection Vulnerability --**  
[SCOSA-2006.7.1] Lynx has been updated to version 2.8.5rel.5 to resolve 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)

184. **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)

185. **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)

186. **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)

187. **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)

**188. 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)

**189. 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)

**190. SECURITY: X.Org X server -- X11R6.8.2 arbitrary code execution --**

Updated X.Org to version 6.9.0.

(ID: 532984:1 ESC: erg712935)

**191. 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)

**192. SECURITY: Tcpcdump Denial of Service Vulnerability --**

[SCOSA-2005.61] Various flaws in tcpcdump can allow remote attackers to cause denial of service.

(ID: 533034:2 ESC: erg712955)

**193. 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)

**194. 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)

**195. 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)
196. **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)
197. **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)
198. **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)
199. **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)
200. **SECURITY: OpenSSH < 4.2 GatewayPorts and GSSAPIDelegateCredentials exploits --**  
OpenSSH has been updated to version 4.2p1.  
(ID: 532976:1 ESC: erg712931)
201. **SECURITY Vim 6.3 < 6.3.082 input validation --**  
VIM has been updated to version 6.4.  
(ID: 533037:1 ESC: erg712958)
202. **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)
203. **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)
204. **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)
205. **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)
206. **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.

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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)

### 207. **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).

infrees.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)

### 208. **SECURITY: libpcre < 6.3 PCRE Heap Overflow Arbitrary Code Exec** --

libpcre has been updated to version 6.4.

(ID: 532923:1 ESC: erg712924)

### 209. **SECURITY: libwww Denial of Service** --

This problem has been resolved in patched libwww-5.4.0.

(ID: 533164:1)

### 210. **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)

### 211. **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**

#### 212. **/bin/showtable perl script calls non-existent /usr/lib/perl5** --

Small packaging error fixed in modern perl handoffs.

(ID: 532082:1)

#### 213. **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)

- 214. **Unzip < 5.53 Race Condition Priv Esc --**  
[<http://secunia.com/advisories/16309/>] This problem has been fixed.  
(ID: 532852:1, 532852:2 ESC: erg712905)
  - 215. **tput error when regular users log in on console VTs: unknown terminal "-ie:at386-ie" --**  
This problem has been resolved.  
(ID: 533257:1)
  - 216. **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)
- 

## §5.3: Fixes Provided in MP3

MP4 contains the following fixes that were also included in MP3:

- Commands and Utilities
- Development System
- Drivers
- Graphics
- Kernel
- Installation
- Networking
- Operating System
- Printing
- SCOAdmin
- Security
- Other Fixes

### Commands and Utilities

- 217. **syslog messages not being logged to console --**  
Fixed console logging of syslog messages. (ID: 533590:2)
- 218. **uadmin hangs system --**  
Improvement to uadmin has reduced delay during shutdown. (ID: 534484:1)
- 219. **Australia changes TZ rules --**  
Western Australia has just decided to reinstate Daylight Saving Time for a few years. This update to the compiled timezone files (in */etc/TZ*) includes this change and all other changes up to the end of November 2006. (ID: 534117:4)
- 220. **The "file" command should be able to identify huge files (>2GB) --**  
The file command has been modified to use specific 64-bit stat and open functions, allowing files greater than 2 gigabytes to be queried. (ID: 533973:2)
- 221. **Xenix version 2.3 or 3.0 a.out not reported as "pre-SysV" --**  
The file command now correctly reports "pre-SysV" for version 2.3 and 3.0 Microsoft Xenix a.out files. (ID: 534488:1)
- 222. **Long user or group names in NIS accounts can cause core dumps --**  
This fixes a segmentation violation (core dump) of programs that called the getgrent() APIs when NIS was configured with very long login or group names. (ID: 533719:1)
- 223. **pkgmk fails when using '-c' and packaging a file like 'file\$1name' --**  
This problem has been resolved. (ID: 534023:3)
- 224. **The tty changes when logging out (only from tty12) --**  
A problem existed, where, upon exit from tty12, you end up at tty02 if scologin is enabled or at the

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- console if scologin is disabled. This has been fixed so that you remain at tty12 upon exiting, just like all the other tty's. (ID: 534230:1)
225. **Added OSR5 Huffman -H support to /u95/bin/compress --**  
Added OSR5 Huffman -H support to /u95/bin/compress. (ID: 532965:3)
226. **dircmp -d fails if pathnames include whitespace --**  
dircmp was fixed so that it correctly handles files or directories reached whose names included white space. (ID: 533260:1)
227. **ssh does not set the \$MAIL environment variable correctly --**  
The MAIL environment variable setting, which was broken when logging in via ssh, has been fixed. (ID: 533827:1)
228. **Request to move /etc/egd-pool to /var/run/egd-pool --**  
A "named pipe" (egd-pool) used by /etc/prngd was moved from /etc into /var/run. (ID: 534102:1)
229. **Remove emergency\_disk cdrecord -v option to reduce verbosity --**  
This change significantly reduces the /sbin/emergency\_disk command output when writing to CR-R or RW media but still includes a sufficient amount of cdrecord output for debugging potential problems. (ID: 534331:1)
230. **Change the default /sbin/emergency\_disk media type to cdrom --**  
The default emergency recovery boot media type was changed from diskette to cdrom, since only cdrom media are currently supported. (ID: 534337:1)
231. **The portcheck utility used by mkdev apc produces an incorrect result if DCD is asserted --**  
If DCD is asserted at the time that mkdev apc is run, the portcheck utility will now detect this, issue a warning, and abort, instead of complaining that the port does not support modem control. (ID: 534342:3)
232. **/usr/sbin/racoon permissions not set correctly --**  
/usr/sbin/racoon now has permissions 555; previously the execute bit was not set. (ID: 534417:1)
233. **acctcom enhancements --**  
acctcom has several new options. For a summary do "acctcom -X". (ID: 533850:5)
234. **Can't access USB tape drive using emergency recovery cdrom --**  
Create USB tape drive device nodes when using the emergency recovery cdrom tape restore option. (ID: 534147:1)
235. **calendar program treats itself as a calendar --**  
calendar no longer searches for calendar files in pseudo-users' home directories (ID: 533589:2)
236. **df does not behave as it did in openserver 5.0.6 --**  
The /u95/bin/df command has been updated to accept the combination of the '-vk' options. (ID: 533828:1)
237. **divvy or mkfs can't handle 2048 sector size on MO CD drive. get LBA out of range errors --**  
Fixed sdimkosr5 to handle target drives with sector size other than 512. (ID: 533011:2 ESC: erg712947)
238. **Problem with supplementary group membership --**  
Fixed bugs in libprot.so which resulted in long entries in /etc/group file being read incorrectly. (ID: 534013:2)
239. **/usr/bin/posix/sh should symlink to u95 ksh instead of ksh88 --**  
/usr/bin/posix/sh is now a symlink to /u95/bin/sh (/u95/bin/ksh) instead of /usr/bin/ksh. (ID: 533880:1)
240. **ps -e output different between OSR5 & OSR6 --**  
In the 'ps' command, the COMM field was truncated to 8 characters. It has been updated to 14 characters, as it was in OpenServer 5.0.7. (ID: 533288:1)
241. **ps -ef output has trailing space which wasn't present in osr5 --**  
Removed the trailing space present in ps output which may cause OSR5 scripts to fail. (ID: 533657:2)
242. **sar fails when you run fdisk -p /dev/rhd00 --**  
The fdisk(ADM) command has been fixed so that it is no longer necessary to run /sbin/metreg by

hand following creation or destruction of a disk partition. Without this fix, the sar(ADM) and rtpm(ADM) commands would fail following a partition configuration change (until */sbin/metreg* was run). (ID: 533469:1)

243. **mcctl permissions changed from 444 to 555 --**  
*/usr/sbin/mcctl* has its permissions fixed to permit execution (mode 444 to mode 555). (ID: 533990:1)
244. **/etc/mountall passes wrong option to fsck --**  
 In some cases at boot time when a filesystem is found to be in need of checking, one could instead see a usage diagnostic from the filesystem-specific fsck command. This has been corrected, specifically for the dosfs and vxfs filesystems. (ID: 533902:1)
245. **Add -m option to mkfs to display the command line used to create a particular file system --**  
 Implemented mkfs -m for HTFS, EAfs, AFS, and S51K. (ID: 533241:1)
246. **mkdev fd should say up front that you cannot create floppy boot media --**  
 'mkdev fd' would fail the option to 'Create Emergency Boot and Root floppy filesystems'. This option is no longer fully implemented, and, when selected, now displays the message: 'Creation of emergency boot and root filesystems for floppy media is no longer supported. Please see emergency\_disk(1M) for creating emergency boot and root cdroms.' (ID: 532538:1)
247. **mkdev hd fails on certain popular storage configuration --**  
 Fixed a problem in mkdev hd which caused it to fail on many dynamic RAID configurations when disks are used as hot spares or combined into RAID volumes. The problem occurred because the disk aliases can become non-sequential (e.g., disk1, disk2, disk5) and mkdev hd assumed that the aliases will always be sequential. (ID: 533954:1)
248. **Umount hangs and subsequent access gives Resource Temporarily Unavailable (error 11) --**  
 A rare race condition, which may sometimes cause umount of an HTFS file system to hang, has been fixed. (ID: 534153:1)

## Development System

249. **C++fe painting of cast of function address to "long long" confuses the c++be --**  
 The C++ compiler was fixed so that it neither generates bad code nor fails with an internal compiler error when casting an address constant to a 64-bit integer type. (ID: 534078:2)
250. **C++ compiler assertion failure in automatic template instantiation --**  
 A C++ internal compiler error failure (an assertion in templates.c) has been fixed involving automatic template instantiation. (ID: 534213:1)
251. **Spurious diagnostic on members of nested classes in unnamed namespace --**  
 When a member function of a nested class in an unnamed namespace was defined, the C++ compiler used to issue a warning that that function was defined but not referenced even though it was used by a member function of the enclosing class. (ID: 534214:1)
252. **Incorrect clean-up of EH object - ptr to class --**  
 When the type of a thrown C++ exception was of type "pointer to class", the C++ runtime exception handling was incorrectly attempting to call the destructor of the class pointed to upon completion of the exception "catch" handler. This runtime bug has been fixed. (ID: 534238:2)
253. **C++ decrement of char bit-fields result in invalid assembly instruction and register combo --**  
 An assembly syntax error generated for a C++ prefix or postfix decrement of an "unsigned char" bit-field has been corrected. (ID: 533998:2)
254. **RTTI symbols must be available at runtime for OpenOffice port to SCO Unix --**  
 In support of a port of Open Office 2.x, the C++ compiler now treats RunTime Type Information (RTTI) symbols as global, weak symbols. This allows the Open Office native C++ to UNO bridge to locate and use C++ generated RTTI info when converting UNO exceptions into native C++ exceptions. (ID: 534208:1)

255. **Assembler error: part of large C++ template function name read as an opcode --**  
An insufficient buffer to contain very, very large mangled template function names in the C++ exception handling range table post code generation processing has been resolved. (ID: 534249:1)
256. **Postfix addition executed twice when used as an index in arg to strcpy() --**  
A C++ code generation bug where a prefix or postfix operator expression used as an index may be executed twice has been fixed. Incorrect code was limited to cases where the expression was part of an argument to a "single statement" inline function and that argument was used multiple times in that single statement. The problem could also manifest itself if the function was one of the known C standard functions that the compiler may be able to treat as an inline function. (ID: 534437:1)
257. **Invalid code when field operator used directly with function call returning a class or struct --**  
A C++ internal compiler error or invalid code generation could occur for an expression that dereferenced a member (type pointer) of the result of a call to a function returning a struct, union or class. This was not a problem with a constructor, or function returning reference or pointer to a struct or class. struct A func\_returning\_struct (); func\_returning\_struct().ptr -> other\_field; This problem has been fixed. (ID: 534445:2)
258. **::wctrans() undefined when \_XOPEN\_SOURCE is defined --**  
If \_XOPEN\_SOURCE is defined, the C wctrans() function is not available. The C++ header file cwctype has been updated to abide by that restriction. (ID: 533723:1)
259. **Definition of const\_mem\_fun1\_t incorrect in header "CC/functional" --**  
The template function prototype for const\_mem\_fun1\_t() was corrected; "const" qualifier added to the first argument. (ID: 533785:2)
260. **Assembler syntax error on C++ inline function - when optimized --**  
When removing register(s) containing a known zero value from base or base/indexing addresses, the assembly code optimizer has been fixed to replace an implicit zero displacement with an explicit zero displacement to maintain acceptable assembly operand syntax. (ID: 534166:1)
261. **ICE: Internal Compiler Error - Open Office 2.0.3 port --**  
An internal compiler error (ICE) in the C++ compiler detected when porting Open Office 2.0.x has been corrected. The ICE occurred when initializing a large, complex static const array needing runtime results from template functions. (ID: 534043:1)
262. **Tech. Corr. 2 for C99 says \_Bool bit fields should be size 0 or 1 only --**  
The C compiler is updated to warn when it sees the declaration of a boolean bit-field with a width of more than one bit. (ID: 534130:2)
263. **Dropped padding in automatic aggregate initialization --**  
In certain initializations of automatic (stack) aggregates, the C compiler (prior to this fix) would leave insufficient space for the part to be filled in at runtime. (ID: 534212:2)
264. **Problems found running PlumHall test suite --**  
For strict C90 conformance, when compiling -Xc mode the C compiler will take a `/**` character sequence as being a division operator followed by the start of a comment instead of being just the start of a `/**-` style comment. It will warn when doing so as this is a change in behavior, albeit a very minor, dusty corner case. Also, the simplest style of compound literal, like `(int){2}` was broken by a recent repair. This problem has been corrected. (ID: 534226:2)
265. **Assembly optimizer erroneously deleting some 3 operand SHLDL instrs --**  
A bug in the assembly language code peep-hole optimizer, where a three operand SHLDL instruction may be removed erroneously, has been fixed. (ID: 534233:1)
266. **K&R C-preprocessor defines static buffer too small --**  
Both K&R C-preprocessors, `/usr/lib/cpp` and `/usr5/lib/cpp`, have been updated to accept the `-S` option which overrides the default setting of the "sbf" buffer size. See the "cpp" man page. (ID: 534261:1)
267. **ld can overlay hidden objects in bss when creating relocatable object file --**  
If `ld` was used to create an object file from a collection of other object files, some of which included uninitialized static storage (BSS), and name visibility (`-B hide` or `-B export`) is applied, then (prior to

- this fix) some of these BSS symbols could end up assigned improper addresses. (ID: 533672:2)
268. **nm - nullptr dereference on many C++ object files --**  
This fixes a null pointer access bug present when nm was used on ELF files with STV\_EXPORTED symbol visibility present. (ID: 534167:2)
269. **SVR5 curses unable to draw vertical or horizontal lines on ansi VT screen --**  
The SVR5 ABI hline() and vline() curses APIs were fixed so that they use the line-drawing characters on ANSI screens. (ID: 534175:1)
270. **optim bug causes driver panic --**  
A bug in the assembly code optimizer logic was corrected where it eliminated certain register-to-register MOV instructions erroneously believed to be redundant, resulting in the loss of a CSE (common subexpression) value in a register. (ID: 533819:1)
271. **Loop unrolling breaks updated sed's ycomp() --**  
The assembler peep-hole optimizer (/usr/ccs/lib/optim) may, on rare occasions, incorrectly remove the "testl" instruction on a loop where the loop-variable is progressing to zero and a previous optimization replaced the decrement (DECL) instruction with an equivalent instruction that does not affect the condition codes. This problem has been corrected. (ID: 533839:2)
272. **Optim malloc loop exhausts memory --**  
A memory allocation logic problem which could result in the the exhaustion of available memory has been fixed in the assembly peep-hole optimizer. (ID: 534250:1)
273. **Special symbol \_\_libc\_init for RRTLD is not visible in libc.so.1 --**  
The special symbol to denote that libc.so.1 is one of the system libraries where the initialization order is important was not properly exported. An updated libc.so.1 runtime is provided for both the SVR5 and OSR5 ABIs (ID: 534205:2)
274. **Dynamic linker repairs for OpenOffice --**  
Repairs were made to the runtime linker (RTLD) involving process shutdown and calling the finalization routines for runtime-opened shared libraries. The problem could only occur in fairly complicated uses of runtime-opened shared libraries, which was found to occur when using OpenOffice. (ID: 534211:1)
275. **wcsrtombs(NULL,...) with bogus code value other than first seg faults --**  
A bug was fixed where if wcsrtombs() was asked to compute the length needed to hold a wide character string (a null pointer is given as the destination) and the incoming multibyte string contains an invalid code somewhere other than at the string start, a segmentation fault would result when it attempted to write using the null pointer. (ID: 534135:2)
276. **nsdispatch() fails to clear "unreg" member for nonexistent modules --**  
A bug was fixed in the C library in which a segmentation fault could occur within NSS processing, but only when a /etc/nsswitch.conf file exists and is modified (ID: 534239:2)
277. **Add shell-style patterns to lists of symbols in ld --**  
The ld command is enhanced to take shell-style patterns as well as regular symbol names in all of the various -B options. For each one that accepts a "list" or "symfile", one can now cover all symbol names that match the list of symbol name patterns. (ID: 534216:2)
278. **/usr/bin/javaexec needs updated to support J2SE 5.0 --**  
The /usr/bin/javaexec command, used by the kernel to control Java VM invocation for first-class executables, has been updated to handle J2SE 5.0 Java classes. (ID: 534029:2)
279. **extended DST will require new timezone rules --**  
The US Daylight Saving Time rules were changed in 2005 to come into effect in 2007. Now DST starts at 2am (local time) on the second Sunday of March, and ends at 2am on the first Sunday of November. (ID: 532758:3)
280. **PKG: undefined symbol \_SC\_NPROCESSORS\_PHYS on MP2 --**  
The /usr/include/sys/unistd.h header file has been updated to fix application compiles that previously failed due to a missing \_SC\_NPROCESSORS\_PHYS symbol. (ID: 533872:1)

**281. Memory leaks in Motif --**

Memory is no longer leaked when shell widgets are created and destroyed. (ID: 533105:1 ESC: erg712964)

**282. OSR5 applications running on OSR6 use more file descriptors than when running on OSR5 --**

Allow MAP\_ANONYMOUS for all processes, including those running OSR5-ABI programs, in order to eliminate extra opens of /dev/zero by the runtime linker, thereby keeping file descriptor usage by OSR5-ABI programs running on OSR6 similar to the usage when running on OSR5. (ID: 534174:2)

**Drivers**

**283. system hangs in asyc driver --**

Eliminate system hangs that can occur when serial lines are in use. (ID: 534127:1)

**284. /usr/sbin/dlpid is in MP1 but not MP2 (nics patch with this one binary should not have been removed) --**

dlpid is included in MP3. (ID: 534225:1)

**285. The e1008g driver incorrectly parses settings values in space.c --**

The code checking the valid values for e1008g\_autoneg\_advertised was repaired. This fix is also included in the latest e1008g driver from Intel (9.2.6) which is part of MP3. (ID: 533841:1)

**286. Process Intel's e1008g 9.2.6 NIC handoff --**

The Intel e1008g NIC driver has been updated to version 9.2.6. Note that the *nd* package needs to be installed with *pkgadd* on your system after installing MP3 to get this update. (ID: 534141:1)

**287. During installation, get "No such file or directory". --**

Some misleading "noise" warning messages have been removed which were sometimes displayed when installing the *nd* package. (ID: 534285:1)

**288. Add initialization code for future Atheros network driver pccard support. --**

Changes were made to the pcic driver to anticipate support of future Atheros (ath) network hardware. (ID: 533938:1)

**289. Add new LSI MegaRAID SAS driver --**

The latest MegaRAID SAS driver from LSI is included in MP3 which includes 1078 support. (ID: 533694:1)

**290. scsi.h changes cause HP drivers to not build --**

The SS\_MOVE\_MEDIUM, SS\_EXCHANGE, and SS\_RD\_STATUS macros have been restored in /usr/include/sys/scsi.h for compatibility. (ID: 533955:1)

**291. the vtoc driver can corrupt memory if invalid devices are opened --**

A fix was implemented to the vtoc driver that repairs the following bug: An open is done on a special file with the vtoc major number and with an invalid minor number, resulting in memory corruption and a subsequent kernel panic. The vtoc driver helps to manage the hard disk. This rarely observed problem could occur on stale disk device nodes of the form /dev/rdisk/cNbNtNdN. (ID: 534114:1)

**292. Iomega Rev changer not recognized correctly by USB --**

Recognize Iomega REV changer by not caching INQ across LUNS. The USB stack now recognizes the changer component of the REV 280 and REV 560 autoloaders. (ID: 534075:2)

**Graphics**

**293. libXm.so.1.3 - List.c - not redrawing list when valid mouse wheel scroll --**

Correctly sync scrolled list widget and its scroll bar when using a mouse wheel on the list to scroll the list. Updated the SVR5 libXm.so.1.3. (ID: 533978:4)

**294. Provide /usr/bin/X11/xterm link --**

/usr/bin/X11/xterm is now a link to /opt/K/SCO/XORGRT//usr/X11R6/bin/xterm. (ID: 534302:1)

295. **Some foreign keyboards are not working properly.** --  
 A problem where the wrong character set was being used in a scoterm session has been corrected. This problem was especially noticeable when using certain non-US keyboards. (ID: 534444:1)
296. **Graphics appears hung after scologin stop - scologin start sequence.** --  
 Fix a hang that occurs occasionally when using /etc/scologin to start the desktop. (ID: 533783:1)
297. **ROINAMUR (dual video card system) won't come up in graphical mode after upgrade to MP3** --  
 --  
 The Xorg graphics drivers for MP3 will now include a working one for the i810 chipset. (ID: 534496:1)
298. **Qt Designer dumps core on startup if you select Main Window** --  
 The MP3 release fixes problems with Qt designer, in particular some important ones involving plugin wizards. (ID: 533735:1)
299. **KDE 3.5.2 clock always displays the time in GMT** --  
 The new KDE requires that the "modern style" compiled timezone files be installed and reachable. With this addition, KDE has the correct local time as well as many others available. (ID: 534055:1)
300. **kcontact crashes with a SIGSEGV on exit** --  
 A bug which caused kontakt (part of KDE) to die has been fixed in the MP3 release. (ID: 534471:1)

## Kernel

301. **Increase clock rate to allow fine-grain user control for multimedia apps.** --  
 The clock interrupt frequency is now configurable using a new boot parameter KHZ. KHZ can be set to be 100 (the default, for full compatibility) meaning 100 clock ticks per second, 200, 500, 1000, or 2000. Outside the kernel, only the setitimer() system call is affected by changing the KHZ setting. By setting KHZ to a higher value, setitimer() will present a finer granularity, providing help to those applications, such as multimedia ones, that can make use of such. (ID: 533870:2)
302. **Hot removal of devices may panic kernel in certain circumstances** --  
 Fix problems that may cause a kernel panic after hot removal of a device. (ID: 533714:1)
303. **OSR 6.0 missing OSR5 POSTWAIT SUPPORT FOR ORACLE 7** --  
 Several changes were made in the MP3 release for compatibility with Oracle version 7. For example, making sure there exists a postwait driver compatible with OSR5's, reached through /dev/sleeper. (ID: 533756:1)
304. **Set default clock tick value to 100 rather than 1000** --  
 Ensure that the compatible value of 100 for the new boot parameter KHZ is what is used by default. (ID: 534165:2)
305. **Some platforms may lock up when hyperthreading or multicore support is enabled.** --  
 1. Add support for "hybrid" ACPI/MPS system initialization, required on some platforms when hyperthreading or multicore support is enabled. Hybrid ACPI/MPS system initialization takes processor information from ACPI BIOS tables and all other platform information from MPS BIOS tables.

Specifying "ACPI=X" in /stand/boot or at the interactive boot prompt enables hybrid ACPI/MPS initialization when hyperthreading or multicore support is also enabled. Hybrid ACPI/MPS initialization should be enabled only if the default full-ACPI based initialization fails.

2. Implement dynamic PCI interrupt assignment to fix interrupt related problems seen on some platforms when hyperthreading, multicore, and/or ACPI are enabled. Observed problems included excess interrupt activity, poor device response, and device timeouts.

3. Allow override of kernel algorithms for sorting the processors listed in ACPI BIOS tables through the use of the new LAPIC\_SORT parameter. This is necessary on some platforms to ensure that all

logical processors can be used even if the ACPI BIOS tables does not list them in the proper order.

Specifying "LAPIC\_SORT=Y" in /stand/boot or at the interactive boot prompt will cause the kernel to reorder the processors listed in the ACPI BIOS tables; "LAPIC\_SORT=N" disables that reordering. If LAPIC\_SORT is unspecified, then the kernel uses its own internal algorithm to determine whether to reorder the processors listed in the tables. (ID: 533926:1)

- 306. **\*URGENTFIX\* system panic. vx\_dqwrite+6d (including fz532771 vxfs snapshot panic) --**  
A VXFS-related kernel panic was fixed. (ID: 534067:1)
- 307. **Add AGP GART support --**  
Add AGP GART support in the kernel. (ID: 534017:2)
- 308. **SVR5 OSR5 ABI differences in termios ioctl c\_lflag bit meaning. --**  
When running various OpenServer 5 binaries which used termio/termios related ioctl's, certain operations were not working correctly. Among these issues were the setting of the termio/termios c\_lflag TOSTOP, ECHOCTL, and IEXTEN flags, and the termios c\_cc elements VSTART, VSTOP, VDSUSP, and VREPRINT. The mentioned items have been corrected, so the proper settings are done when running the OpenServer 5 binary. (ID: 534510:1)
- 309. **Add OSR5 memcntl(MC\_SYNC) call to OSR6 --**  
Add support for OSR5 msync(2) system call. (ID: 534523:1)
- 310. **Panic occur if I use 640MB MO disk as dosfs filesystem --**  
Panic on dosfs filesystem for 640MB MO disk drive has been fixed. (ID: 534171:1)
- 311. **Application fails to open more than 60-70 files for ISAM --**  
An kernel error was repaired in handling the OSR5 ABI sem/msg/shm system call families in which an EOVERFLOW error was returned instead of processing the request. (ID: 534061:2)
- 312. **panic in put from strdaemon --**  
A race condition bug that could cause a kernel panic has been repaired. The race was between a TCP endpoint being simultaneously closed and aborted. (ID: 534173:2)
- 313. **xemul/xrun issues with foxbase after oss706 is installed --**  
A bug was repaired in the Xenix emulator which caused Xenix applications to hang when using the rdchk() system call. (ID: 534183:1)
- 314. **Boot parameter LAPIC\_SORT value can't be set --**  
The code which parses the enabling of the boot parameter LAPIC\_SORT was incorrect, not allowing the parameter to be set to 'Y' or 'y'. This has been corrected. (ID: 534265:1)
- 315. **The OSR5 ABI for getpgid() is not working correctly on OpenServer 6 --**  
The OSR6 kernel's implementation of the OpenServer ABI getpgid() system call has been fixed. It had been behaving as if there was no such system call. (ID: 534284:1)
- 316. **Kernel address fault panic can occur when invalid arguments passed in ioctl --**  
A kernel bug was repaired in which a null pointer can be dereferenced due to mishandling of an mmap() system call error case. (ID: 534346:1)

## **Installation**

- 317. **No console works after first Reboot --**  
A kernel bug was repaired in which a file that should have been a "named pipe" is instead taken to be a character device.  
  
This very unusual situation only occurred when an inode number was first used for /dev/udp or /dev/tcp, then deleted, and then reused for a named pipe. (ID: 533770:3)
- 318. **GWXLIB component name name is misspelled --**  
Fixed spelling of Berkeley in component name. (ID: 534303:1)
- 319. **Add mega and megasas device drivers to MP3 CD #1 --**  
The mega and megasas device drivers are now included on MP3 CD #1. (ID: 534431:1)

320. **USB keyboard stop working at the end of Installation --**  
 The halt message has been modified to indicate that USB keyboards are no longer active after the system has been halted. (ID: 531915:1)

## Networking

321. **system panic at dlpi\_send\_iocack+d --**  
 A panic condition fixed in dlpi module. (ID: 532999:4 ESC: erg712943)
322. **arp bug with MAC address changes for IP sharing dual port NICS --**  
 A bug was repaired in which ARP messages were not printed correctly when the MAC address of an existing arp entry was changed. (ID: 533779:4)
323. **accept() doesn't handle O\_NONBLOCK correctly --**  
 A bug in the kernel was repaired so that poll()/select() now behave according to The Open Group specifications when the socket is listening and nonblocking. (ID: 533560:3)
324. **Send an ACK if many small-packet size data are received --**  
 Send an ACK if all queued data (of very small packet size) are processed regardless of whether delay-ACK is enabled. (ID: 518838:3)
325. **Kernel panic in tcplrpout() function --**  
 A kernel bug that could cause a panic was repaired which occurred when prematurely reusing TCP minor numbers when a connection was simultaneously being shutdown. (ID: 534203:1)
326. **small final segment TCP packets are not processed correctly --**  
 Avoid miscalculating checksum for the last segment which is less than 8 bytes in a multi-segment transfer. (ID: 534293:3)
327. **dlpid does not failover to chain of NICs, nor share backups, mismatching our doc --**  
 Following new features are added/updated related to failback/failover of NICs:  
 - A NIC can be configured as the backup of one or more than one NICs.  
 - Backup of a backup NIC can be configured.  
 - Protocol Information of a backup device can be viewed.  
 - The main tree gives more backup NICs info.  
 - Updated for features: "Switch to backup" & "Revert to primary".  
 - Updated for removing primary/backup devices. (ID: 529245:5)
328. **Receipt of improperly formed LLC XID packets and TEST frames may cause memory leaks. --**  
 Fixed a bug in the dlpi driver to prevent streams memory leaks that could occur when improperly formed LLC XID packets were received from some routers, and a similar bug caused by receipt of improperly formed LLC test frames. (ID: 533862:1)
329. **The MMDF package in OSR6 included the wrong sendmail program. --**  
 The MMDF package now includes the correct version of sendmail. In the initial release of OSR6, the MMDF package erroneously included the sendmail program from the sendmail package instead of the MMDF-specific sendmail program. (ID: 533873:1)
330. **:saved directory missing --**  
 This fix ensures that there will be a /var/spool/mail/:saved directory present, regardless of whether sendmail or MMDF is used as your mailer. (ID: 534443:1)
331. **If no DATA text received before net connection dropped, message should not be submitted --**  
 If no DATA text is received from a remote system before an error occurs, message submission is aborted. The new net\_timeout smtp channel configuration string allows configuration of the network read timeout. It specifies the number of seconds to wait for data from a remote host before message submission is aborted. The default is 180. (ID: 534456:3)
332. **Update SendMail to latest version - 8.13.8 --**  
 Sendmail has been updated to version 8.13.8. (ID: 534095:1)
333. **unable to make ppp connect - total failure --**  
 Fixed various problems in ppp. First, ppp will now support baud rates above 38400. Second, it is no

longer necessary to disable a serial port before dialing out. Finally, the pppframe module now handles TCFLSH ioctl(), eliminating an error message that formerly appeared in the pppd.log file whenever a link was disconnected. (ID: 533476:2)

334. **Problems over NFS mount of Services for Unix (SFU) on Windows 2000 --**  
Fixed the issue that the default value of uid/gid as -2 was not being accepted and resulted in EOVERFLOW error for NFS mounted partitions. (ID: 533644:2)
335. **setacl and getacl commands are not NIS-aware. --**  
Enable setacl and getacl to access user and group information from sources other than /etc/passwd and /etc/group. For example, if NIS is enabled, setacl and getacl will recognize user and group names provided by the NIS server, even if such names are not locally defined. (ID: 533532:2)
336. **"ps -f" does not convert numerical UIDs to NIS user names --**  
For a system set up with reasonably dynamic user accounts (such as NIS), the cached UID-to-login name mapping saved by the ps command could end up without displaying a login name for a newish UID. ps has been changed so that it will now regenerate its mapping information when it finds that what it has is out-of-date. (ID: 533533:2)
337. **tcp connection reset reporting errors --**  
Immediately return an error from the system call for OSR5 applications when a TCP error is posted, irrespective of other considerations. (ID: 534207:1)
338. **netstat -ian does not show the correct number of multicast addresses --**  
The kernel was updated to provide for larger valued number of multicast addresses for netstat to display. (ID: 533900:2)
339. **The -f (var. traceroute impl.) and -Q (Solaris) options would be useful. --**  
Add the following options to traceroute:  
-f is used to specify the first TTL to send probes for, instead of the default of 1.  
-Q is used to specify the maximum number of probe packet timeouts allowed for a given TTL before probing at that TTL is aborted and the next TTL is tried. The default is to probe for the requested number of queries regardless of whether packets time out or not. (ID: 533474:1)
340. **BL12 e1008g nic driver report same device when network unplugged from 2 different devices --**  
The message displayed when the status changes for a networking connection (using the e1008g driver) has been updated to include sufficient data to distinguish all hardware connections on the system. (ID: 532442:1 ESC: erg712895)
341. **Kernel stack overflow panic when using aacraid driver --**  
A bug in the aacraid driver that could cause a kernel panic has been repaired. The driver was changed to use significantly less kernel stack space. (ID: 533669:1)
342. **bcme has invalid entry in /etc/inst/nd/mdi/bcfg/b5701.bcfg --**  
In the Broadcom NIC's bcme driver, there was a typo in the b5701.bcfg file, which has been corrected. The incorrect matching board id has been changed from 0x14E46145 to the corrected version, 0x14E41645. (ID: 534340:1)
343. **Process Broadcom bcme 8.3.13 driver handoff. --**  
Updated bcme driver to version 8.3.13. (ID: 533131:1)
344. **Fix device id in bcme driver's b5781.bcfg file --**  
Fixed device ID typo in the bcme driver b5781.bcfg file. (ID: 533980:1)
345. **Update eeE8 driver with Intel's 4.0.4 handoff --**  
Updated the eeE8 driver to version 4.0.4. (ID: 534263:1)
346. **ct is not working in osr6 --**  
Fix getty and serial driver to allow ct to do a callback. (ID: 534028:2)
347. **If Apache httpd.conf file was not updated by the user, then provide new default file --**  
A new Apache /usr/lib/apache/conf/httpd.conf file is included with MP3. This file is installed if Apache was not previously on your system, or if your original httpd.conf had no user modifications. If there were user modifications, then the MP3 install only updates "php4" references to "php5"; your httpd.conf file is otherwise not modified. In this case, the install keeps a copy of your original file

called `httpd.conf.backup`. The MP3 apache installation always includes `/usr/lib/apache/conf/httpd.conf.default` so you can see what other new configuration changes are available. (ID: 534398:3)

- 348. **Remove mod\_jk2 connector from Tomcat package --**  
mod\_jk2 is obsolete and has been removed from the Tomcat package. It is replaced by a new mod\_jk product on MP3 CD #2. (ID: 534448:1)
- 349. **"help" menu doesn't work in "swat" --**  
The manpages looked for via the help menu in Samba's SWAT tool are now reached. (ID: 534514:1)

## Operating System

- 350. **Duramax application for Xenix 286 fails on OSR6 --**  
Xenix compatibility bugs involving the `dup2()`, `rdchk()`, and `chsize()` system calls were repaired. (ID: 533666:1)
- 351. **Failure seen in Megabasic, a Xenix program, running on OpenServer 6.0.0 MP2 --**  
Some Xenix programs, especially model large programs using `brkctl(S)`, were known to fail when an access was made beyond the end of a segment. One such program is 'megabasic'. While the program is in error here, and would fail if run on an actual Xenix system, the behavior of the OSR6 system was not compatible with OSR5, which was lax enough to allow such programs to execute.

The memory allocation policy for Xenix programs in OSR6 has been loosened to match OSR5, allowing such programs to work as before.

It is no longer necessary to set `XEMUL_OS5` to obtain Xenix execution behavior compatible with OSR5. Such behavior is now the default and only case available. The `XEMUL_OS5` environment variable is no longer supported. The default behavior is now as if `XEMUL_OS5=1` had been set. Pre-OSR5 behavior is no longer supported. (ID: 534333:1)

- 352. **Xenix app fails when acquiring write lock on a file opened read-only. --**  
For the oldest Xenix binaries supported on OSR6, permit write locks on files not opened for writing. (ID: 534465:2)
- 353. **Xenix emulator implementation not fully complete --**  
Xenix emulator has been enhanced, using a native kernel implementation of file and record locking [`locking(s)`], Xenix shared memory and Xenix semaphores. These services are also available to System V old ABI binaries linked with `-lx`. Various other limitation of Xenix emulation have also been addressed, most notably the previously partial implementation of `brkctl(S)` has been completed. (ID: 530099:1)
- 354. **X server failure on ServerEngines Matrox G200E chipsets. --**  
Fixed a problem in MP2 that caused the X Server display not to start on some platforms that use the Matrox G200E graphics chipset from ServerEngines. (ID: 534178:5)
- 355. **Add support for USB modems and USB serial devices --**  
The new hardware support and enhanced functionality previously provided in the OpenServer 6.0.0 MP2 USB supplement has been integrated into OpenServer 6.0.0 MP3. (ID: 533754:1)
- 356. **USB/EHCI performance unnecessarily constrained --**  
Increase throughput of the USB/EHCI driver by raising the driver's maximum interrupt rate. (ID: 534090:2)
- 357. **xterm/scoterm gets an "Unable to install selected keyboard" error --**  
Specification errors in various `/usr/lib/keyboard` mapkey files have been corrected. These errors caused problems with `xterm` and `scoterm`. (ID: 534332:1)
- 358. **Add SCOoffice Server 4.2 licensing definitions --**  
Added the SCOoffice Server 4.2 base and user bump definitions for the `scoadmin` License Manager. (ID: 534194:1)

## SCO OpenServer 6.0.0 Maintenance Pack 4 Release Notes

359. **sco\_pmd provided in MP2 limit business edition license to 2 users, should be 5 --**  
Fixed a bug in licensing code that caused the Small Business Edition license to be limited to 2 users rather than 5 in OpenServer 6 Maintenance Pack 2. (ID: 533834:2)
360. **drv\_callback does not handle NMI --**  
Provide correct routing of non-maskable interrupts (NMIs) when hyperthreading, multicore, and/or ACPI are enabled. (ID: 533969:1)
361. **mount command can hang on trying to mount a cdrom with no media inserted --**  
Fixed an occasional hang of the mount command when trying to mount a cdrom with no media inserted. (ID: 534420:1)
362. **OSR6 tape driver missing crucial functionality that existed in osr5 --**  
Fixed a bug in /usr/bin/tar which did not allow it to write to tape drives having block size greater than 512. (ID: 533853:2)
363. **Line drawing font for right hand top corner is not right on console --**  
An issue was fixed, where the glyph character for the top right hand corner (single lines), was displayed incorrectly. (ID: 532659:2)
364. **MP2 changes keyboard layout - AltGr no longer works --**  
A bug was fixed so that special keys like AltGr (on some non-US keyboards) will work again. (ID: 533718:1)
365. **mapchan files reject the CONTROL keyword --**  
mapchan was only accepting the lower case version of the 'CONTROL' keyword. It has been fixed, so that both lowercase and uppercase versions of the keyword are now accepted. (ID: 533901:1)
366. **Regression: FoxPro - key causing VT switch to tty02 --**  
The Xenix emulator was repaired so that it better matches the expected tty/console behavior when placed into "scancode" mode. (ID: 534001:1)
367. **Enhance USB code to handle hardware stalls --**  
The kernel's USB support code has been enhanced to better deal with certain hardware which inappropriately (according to the USB specification) stalls in configuration cycles. The support code will now retry a few times when it believes it has detected this situation, which appears to be good enough to work around these hardware failings. (ID: 532626:2)
368. **Temporary keyboard lockup immediately after VT switch or num lock/caps lock/scroll lock --**  
Modified the system behavior so that, by default, it will attempt to determine at runtime whether or not an 8042 keyboard/mouse controller is present, rather than assume one is present. Autodetection of the 8042 improves system response on platforms which lack an 8042 controller, and in particular, avoids temporary keyboard lockups that can occur on such platforms immediately after certain keyboard operations such as VT-switches or pressing the Caps Lock key. The system's treatment of the 8042 controller can be modified by changing the value of the variable i8042\_detection in /etc/conf/pack.d/ws/space.c and then rebuilding and rebooting the kernel. If i8042\_detection is initialized to 1, which is the default, then the operating system detects the presence or absence of an 8042 controller at runtime. If i8042\_detection is initialized to 0, then the system bypasses the runtime detection and always acts as if an 8042 controller is present. If i8042\_detection is initialized to -1, then the system bypasses the runtime detection and always acts as if an 8042 controller is not present. (ID: 534034:1)
369. **Problems booting from secondary disk when root disk encapsulated and mirrored --**  
The kernel's booting process was fixed so that it will successfully boot from the mirrored copy of the root disk (presumably the primary being removed or otherwise nonfunctional). (ID: 533688:2)
370. **Disk replacement using vxdiskadm broken --**  
The vxdiskadm utility (part of ODM) was repaired so that disk replacement works. (ID: 533893:1)
371. **disks in disks.exclude file are not excluded while running vxinstall --**  
Fixed vxinstall of ODM which was incorrectly including disks which were excluded using disks.exclude file. (ID: 533911:1)

**372. replacing the mirror root disk using vxdiskadm broken --**

Some issues regarding the replacement of failed disks in mirroring setups have been repaired. (ID: 533912:4)

**Printing**

**373. lpstat -o doesn't display year in time submitted field (\*\*HIPCHECK affected\*\*) --**

A new option (-y) has been added to the lpstat utility which prints the date with the year. This option is only applicable in combination with the -o option. (ID: 533956:2)

**SCOAdmin**

**374. Query Log (i.e. Logging Queries to syslog) Option does not work --**

Changes made to the Query Log setting in the SCO DNS Manager will now have the desired effect. (ID: 532942:1)

**375. System Monitor Manager Line color selections do not have enough variance --**

The SCO Admin System Monitor Manager now displays a highly differentiated selection of graph line colors at every pixel depth selection. Previously, only a subtly graduated selection of blues and blacks was available. (ID: 533641:1)

**376. System Monitor Manager graph window starts out collapsed. --**

The SCO Admin System Monitor Manager now starts up with a blank graph displayed. Previously, at startup the manager displayed no graph at all, regardless of whether any monitoring had been selected; it was necessary to find and move the graph expansion widget to see the graph. (ID: 533642:1)

**377. System Monitor Manager sometimes hangs or crashes with small polling intervals --**

The System Monitor Manager polling interval can now be as low as 1 second without causing the monitor to crash. (ID: 533643:1)

**378. /tcb/lib/auth\_scripts/pttyupd references osr5 file and fails to work. --**

An error in the /tcb/lib/auth\_scripts/pttyupd script caused failures because it was accessing invalid files. The script has been corrected to work properly. (ID: 533368:1)

**379. scoadmin client doesn't allow the domain search order to be changed --**

Allow the scoadmin Network Client Manager domain search order to be specified when a local domain string is present. (ID: 534164:1)

**380. scoadmin serial / modem managers don't see the usb serial devices --**

Added USB support to the scoadmin serial & modem managers.

Notes:

USB modems & serial port adapters need to be plugged in and powered on for the /dev/usb\_ser\* device nodes to be created and listed in the serial and modem managers.

Automatic detection is not available for USB modems - use the manual configuration option with the Standard Modem selection. (ID: 534245:3)

**381. xorg.conf generated by scoadmin video is incompatible with 600mp3 --**

The graphical console settings configuration tool has been enhanced to include an auto-detection choice for an appropriate pixel depth. This helps with support of certain (likely old and limited) video hardware. (ID: 534508:1)

**382. Account Manager incorrectly handles account names ending in \$ --**

The SCO Admin Account Manager now properly handles account names ending in '\$' as required by Samba. However, the '\$' character does count as one of the characters in the account name, which is still limited to 8 characters total. Consequently, if an account name ends in '\$', the alpha-numeric part

of the name can be composed of no more than 7 characters. E.g., it is not possible to use an 8 character system name as a Samba account name by simply adding a '\$' to the end of it. The system name would first have to be truncated to 7 characters. (ID: 533527:1)

383. **\*URG\*Selecting fast check for VxFS f/s adds invalid -f flag to /etc/default/filesys fsckflags field.**  
 --  
 VXFS's fsck utility has been enhanced to support a -f (fast) option which means to do only a "log recovery". The DOSFS fsck was changed to include a do-nothing -f. (ID: 533903:2)
384. **scoadmin filesystem doesn't allow read-only VXFS filesystem --**  
 Allow the scoadmin filesystem manager to set the access mode for non-root VXFS filesystems as read-only in addition to read-write. (ID: 534241:1)
385. **Please add UW system monitor scoadmin manager --**  
 The System Monitor Manager from UnixWare is now included in OSR6. (ID: 532399:1)
386. **netcfg -v results in tcl error on OSR6 --**  
 This has been fixed to correctly return the nics component version. (ID: 534218:1)
387. **netconfig has problems adding a second NIC --**  
 The SCO Admin Network Configuration Manager and the netconfig tool have been fixed so that reconfiguring, removing, and reinstalling additional network interfaces, even if done repeatedly, will not have unexpected affects on other network configuration, particularly that of the primary interface. (ID: 534283:1)
388. **Command 'scoadmin hot' generates error if system was rebooted with Hot-plug Manager still running. --**  
 The scoadmin hot-plug manager has been repaired so that it can be used even if the system was previously shutdown while the manager was active. (ID: 533053:2)

## Security

389. **SECURITY: CVE-2006-1173 sendmail DenialOfService security problem --**  
 Previously, sendmail could allow a remote attacker to cause a denial of service via deeply nested, malformed multipart MIME messages that exhaust the stack during the recursive mime8to7 function for performing 8-bit to 7-bit conversion, which prevents Sendmail from delivering queued messages and might lead to disk consumption by core dump files. (CVE-2006-1173)
- Sendmail has been updated to version 8.13.8 which is not vulnerable to this attack. (ID: 534042:4)
390. **SECURITY: A race condition in Sendmail may allow a remote attacker to execute arbitrary code --**  
 Previously, sendmail could allow a remote attacker to execute arbitrary code as root, caused by a signal race vulnerability. (CVE-2006-0058)
- Sendmail has been updated to version 8.13.8 which is not vulnerable to this attack. (ID: 533700:4)
391. **SECURITY: KDE LibGadu malformed data remote code exec --**  
 Multiple security alerts are addressed in this update to KDE, which has been updated to version 3.5.6. (ID: 532830:1 ESC: erg712901)
392. **SECURITY: KDE 3.2.0-3.4.2 kcheckpass local root symlink --**  
 Multiple security alerts are addressed with this update to KDE, which has been updated to version 3.5.6. (ID: 532974:1 ESC: erg712929)
393. **SECURITY: OpenSSH scp Command Line Shell Command Injection --**  
 The version of ssh was upgraded to 4.6p1, which repairs some security issues. (ID: 533530:1)
394. **SECURITY:GnuPG is prone to vulnerability involving incorrect verification of non-detached signatures --**  
 GnuPG (/bin/gpgv) was upgraded to version 1.4.7, which repairs some security issues. (ID: 533677:1)

**395. SECURITY: Mozilla Multiple Vulnerabilities --**

The Mozilla 1.7.13 previously released on the support web-site is included in the MP3 media. For a list of resolved security issues see:

<http://www.mozilla.org/projects/security/known-vulnerabilities.html#Mozilla> (ID: 533769:1)

**Other Fixes**

**396. TERM in Single-User-Mode is different from Multi-User-Mode --**

To be consistent with multiuser, the default TERM setting in single-user is changed to be "ansi". (ID: 533800:1)

**397. /usr/lib/php/php.ini (user configurable file) is changed --**

Due to the PHP4->PHP5 upgrade /usr/lib/php/php.ini is significantly different in MP3. Your prior /usr/lib/php/php.ini file is saved as /usr/lib/php/php.ini-old. Any user-configuration changes made to the old version needs to be reapplied to the new PHP /usr/lib/php/php.ini version. (ID: 534240:1)

**398. java console doesn't recognize certain keys on the keyboard --**

A J2SE 1.4.2 bug with numeric keypad input has been corrected in release version 1.4.2Nc (version 1.4.2\_14c). (ID: 534155:1)

**399. modify gsoap and scoxdemo components --**

The jvasoap component has been removed from the system. Apache Axis web services libraries that used to be found automatically via the Java system extension classpath mechanism, now must be specified explicitly via the normal application classpath method. When the Tomcat package is installed, the Axis libraries may be found in /usr/lib/apache/tomcat/webapps/axis/WEB-INF/lib. The "mk" scripts in the SCOxlang web services languages demos component have been updated to reflect this. (ID: 534447:2)

**400. Need OSR5 ABI perl - for Oracle 7.3 perl interface --**

To support the migration, from OpenServer 5 to OpenServer 6, of third party applications that have a Perl interface and that make direct usage of an OSR5 ABI shared object, the basic Perl package for OpenServer 5 has been configured for installation on OpenServer 6. This optional component is on the MP3 media and should only be installed if specifically needed. The OSR5 ABI perl is installed in /usr5/usr/bin. (ID: 534513:1)

**401. Installation of Tomcat servlet breaks HipCheck Agent --**

Add install warning; will need doc for hipcheck. (ID: 534543:1)

**402. postgres fail to start after MP3 --**

A cqs script is now run prior to extracting the new PostgreSQL. If a previously installed PostgreSQL exists a warning is issued and the user has a chance to exit the installation and perform a dump of existing databases. The PostgreSQL section of the Release Notes has been modified to explain exactly how to do that. (ID: 534300:1)

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## §5.4: Fixes Provided in MP4

MP4 contains the following additional fixes that were not in MP3:

Commands and Utilities

Development System

Drivers

Graphics

Kernel

Installation

Networking

Operating System

Printing

SCOAdmin  
Security  
Other Fixes

## Commands and Utilities

403. **The permissions on iconv are incorrect. It should be executable.** --  
 /usr/bin/iconv in prior MPs had the wrong permissions; the permissions are now correctly set to 711. (ID: 535003:1)
404. **File command enhanced - additional data types and operators supported** --  
 The file utility was enhanced with more expressive /etc/magic operators and directives, the better to identify more kinds of file contents. (ID: 528263:2)
405. **File command may look at characters beyond buffer or data read** --  
 When processing multiple files at a time, the **file** command could potentially look several characters beyond the data read from a small file. Slightly different result could be reported. This potential variation has been fixed. (ID: 528299:2)
406. **/u95/bin/ksh memory leak** --  
 The newer Korn shell (ksh93) has been built so that it has a smaller memory footprint. (ID: 534721:2)
407. **In -sf src dst where "dst" exists fails, where -f should make it work regardless** --  
 The **ln** utility was repaired so that the combination of the **-s** and **-f** options will cause the symbolic link to be created, even if the file already exists. (ID: 534091:2)
408. **Enhanced sysinfo for OpenServer 6.0.0** --  
 The sysinfo utility was updated to collect additional information, including ODM, ReliantHA, SCO Office, and HipCheck optional services information. (ID: 534246:1)
409. **When I login via ssh, I see "Couldn't stat /var/adm/lastlog: No such file or directory"** --  
 The ssh daemon for OSR600MP4 has been changed to create a /var/adm/lastlog file if it finds none present. (ID: 534619:1)
410. **Xenix app that worked on MP2 fails on MP3** --  
 Some locking calls from Xenix applications failed because the Xenix emulator failed to set the return value to 0 in some cases. The problem has been fixed. (ID: 534637:2)
411. **Need 256bit AES encryption in marry(ADM)** --  
 Enhanced marry(7) to support a configurable 128, 192 or 256 bit AES key length. (ID: 534878:1)
412. **"expect" binary not in expected location.** --  
 The **expect** and **expectk** utilities are again found in /usr/bin. (ID: 535098:1)
413. **The -v (no-verbose) flag should suppress time-of-day restriction messages** --  
 The **acctcom** utility's **-v** option was modified so that it also suppresses time-restriction diagnostic messages. (ID: 534809:3)
414. **acctcom can miss records when end-time restrictions are given** --  
 The **acctcom** utility was repaired so that use of end-time restrictions will no longer potentially cause record entries to be skipped. (ID: 534810:3)
415. **Wrong idle times reported** --  
 The **finger** utility's displayed idle time has been changed to take the later of the tty access time and the login time, to more accurately reflect user activity. (ID: 533943:7)
416. **imake is broken in MP3** --  
 The /usr/X11R6/bin/imake binary has been built correctly configured so that has a working path for /usr/ccs/lib/cpp. (ID: 534787:1)
417. **Missing X11R6 directory in default MANPATH** --  
 /etc/default/man 's MANPATH variable now includes the /usr/X11R6/share/man directory. This enables display of Xorg manual pages. (ID: 535149:1)
418. **usemouse is sending extra "right button press" indication** --  
 The **usemouse** utility was not correctly handling the type of mouse events which could result in it

acting as if a mouse button was pressed when it hadn't been. This has been fixed so that now **usemouse** accurately reflects mouse motion and button events. (ID: 534725:2)

419. **vi command fails to use wild cards (print command and -W option) --**  
Shell wildcard expansion through the wordexp() API for OSR5-ABI utilities (such as **vi** and its **:e** command) were broken by MP3. It has been repaired in MP4, now that wordexp() again uses its expected shell. (ID: 534798:1)
420. **The headers displayed by -H are not aligned properly if -ux is given. --**  
The **who** utility was repaired so that the option combination **-H -u -x** will now correctly align the column headings. (ID: 534811:5)

## Development System

421. **"putenv()" deadlocks in multithreaded code --**  
A potential deadlock for threaded programs calling **putenv()** or **setenv()** very early (before any dynamic memory allocation has occurred) has been eliminated. (ID: 534709:2)
422. **Enhancement - accept the 3 operand form of shift double with explicit %cl --**  
The x86 assembler has been enhanced to accept three operand forms of shift double instructions with an explicit **%cl** register as the first operand. Previously, the assembler would only accept a three operand form if the first operand was a integer constant. The **%cl** form was handled as a two operand instruction with an implicit **%cl** for length which was the form generated by the C and C++ compilers. (ID: 535152:1)
423. **Using declaration error - too strict interpretation of C++ standard --**  
Member using-declarations must refer to declarations that are visible in a direct base class. The C++ compiler used to interpret this rule too strictly when the using-declaration refers to an overloaded function that is made visible in a direct base class through another using-declaration. This is now fixed. (ID: 534675:2)
424. **Buffer overflow - instruction line - symbolic info and C++ template functions --**  
The disassembler (**dis**) may encounter a local buffer overflow when adding symbolic information (**-s** option) to local branch instructions if the the C++ template function signature is very long. This can occur with a large number of arguments of template class types. The problem has been fixed. (ID: 534579:1)
425. **Default action of \$\$=\$1 for zero-length rules accesses garbage --**  
A long-standing bug in the parser code generated by **yacc** has been fixed which, at times, caused the default value for a rule being reduced to come from accessing garbage. (ID: 534994:2)
426. **Missing API - madvise() implied in sys/mman.h --**  
To aid in porting open source code, the OSR6 SVR5-ABI C library now contains **madvise()** and **posix\_madvise()** APIs. (ID: 533578:2)
427. **strftime() on OSR has %s extension, UW should match it --**  
For compatibility with OpenServer, the SVR5 **strftime()** routine now supports **%s**, for "seconds since the Epoch". (ID: 534396:2)
428. **RTLD can scribble on replacement RTLD's presumed-to-be-zeroed space --**  
A bug in which an OSR5-ABI dynamic binary could core dump in the */usr/lib/libc.so.1* RTLD startup code was repaired. (ID: 534936:1)
429. **random sleep hangs 40.96 seconds in application that worked fine in OSR507 --**  
Fixed a race condition between scheduling a timer and the clock interrupt handler. (ID: 534914:1)
430. **tcpd.h is missing in MP3. Looking like a packaging prob on the TCPDEV --**  
Provide */usr/include/tcpd.h* header file which is needed by */usr/lib/libwrap.a*. (ID: 535000:1)
431. **Update mcs to generate correct binaries --**  
The **mcs** and **strip** utilities can now handle object files and binaries that make use of the option section grouping feature. (This feature is not used by the SCO compilers.) (ID: 533854:2)

**432. Xenix application compatibility file locking errors --**

Some fcntl and locking calls from Xenix applications failed in MP3 because both the Xenix emulator and the kernel converted Xenix-domain values into the native SVR5-ABI domain. This sometimes resulted in double conversions, in turn causing erroneous values to be used in some file locking system calls. This problem caused failures in several applications, including FoxBase+, that had worked prior to the installation of Maintenance Pack 3 (MP3). The problem has been fixed by performing these translations only in the Xenix emulator. (ID: 534761:1)

**433. Xenix emulator open file table management error --**

An error in the management of the open file table maintained by the Xenix emulator on behalf of Xenix applications caused some Xenix applications to fail. This problem affected file descriptors that had been duped or had been created by duping another file descriptor. This problem has been fixed. (ID: 534762:1)

**434. Add extended stdio APIs to help with opensrc porting --**

To further aide the porting of open source software, some common extended <stdio.h> APIs have been added:

```
void _flushlbf(void);
size_t __fbufsiz(FILE *stream);
size_t __fpending(FILE *stream);

void __fpurge(FILE *stream);

int __flbf(FILE *stream);
int __freading(FILE *stream);
int __fwriting(FILE *stream);

int __freadable(FILE *stream);
int __fwritable(FILE *stream);
```

(ID: 535164:1)

**435. Postgres libpq as shipped with MP3 contains a needed entry for libssl.so.0.9.7 --**

The PostgreSQL libpq now correctly depends on the current version of libssl (0.9.8). (ID: 534620:1)

**436. dynamic linker: gv: relocation error: symbol not found: TemplateAction; referenced from: /usr/lib/li --**

The *libXaw3d.so* released in MP3 was missing an internal routine TemplateAction(). This has been corrected in MP4. (ID: 534654:1)

**437. libIDL pkg.config (.pc) files incorrectly formed --**

A typo was fixed so that the */usr/lib/pkgconfig/libIDL\*.pc* configuration files will now have a correct Requires: line. (ID: 534799:1)

**438. pkg-config (.pc) files incorrectly linking against -lintl - should be -lgnuintl --**

The */usr/lib/pkgconfig* files *gdk\*.pc* and *glib-2.0.pc* were modified so that they no longer incorrectly specify linking with *-lintl*. They now have the correct *-lgnuintl*. (ID: 534800:1)

**439. glib2 glib-2.0/glibconfig.h incorrectly assuming C compiler supports "inline" keyword" --**

The *glibconfig.h* headers in */usr/include/glib-1.2* and */usr/include/glib-2.0* have been modified so that they no longer assume that SCO's C compiler takes "inline" as a keyword. This permits building cc -Xb, which can be necessary when building some open source code. (ID: 534801:1)

**440. libXaw.so is missing from MP3 --**

The SVR5- and OSR5-ABI versions of the missing */usr/X11R6/lib/libXaw.so* library have been restored in MP4's XORGRT package. (ID: 535032:1)

**441. Remove exports of GNU utilities added to /usr/bin and /usr/gnu/bin in MP3 --**

To prevent any difficulties later on, the added exports of the handful of GNU utilities included in the MP3 version of GWXLIBS have been removed in MP4. The tools continue to remain with the */usr/bin/gwx\** spellings. (ID: 535074:1)

## Drivers

442. **Optical Jukebox with adaptec controller 39320A panics the kernel --**  
Eliminate a NULL pointer dereference error that caused kernel panics under certain conditions, such as when using the adpu320 HBA with an optical jukebox. (ID: 534840:1)
443. **Process Broadcom's bnx2 3.4.0 driver handoff --**  
OSR600MP4 includes a brand new Broadcom bnx2 nic device driver (version 3.4.0). (ID: 534935:1)
444. **Process Broadcom's bcme 10.4.5 driver handoff --**  
OSR600MP4 includes an updated bcme device driver from Broadcom (version 10.4.5a). (ID: 534938:1)
445. **Add support of 80861209 devices to eeE8 bcfg file --**  
The missing ID for the supported Intel 82599ER nic was added to the eeE8 device driver. (ID: 534939:1)
446. **When the nd package updates from custom to pkgadd format, 3rd party drivers are lost --**  
When an nd package was added to the system for the first time, 3rd party NIC drivers could get removed. This problem has been resolved. (ID: 534594:1)
447. **Adding a one-off driver to OSR600mp3 with an nd package installed, fails --**  
A bug in the nd packaging files was repaired which could have blocked a subsequent update to that package. (ID: 534909:1)
448. **MP CD (and MP Drivers only CD) should become ISL HBA CDs --**  
The OpenServer 6.0.0 MP4 CD can be used as an HBA CD during OpenServer 6.0.0 and UnixWare 7.1.4 ISL installations. This provides the common latest HBA device drivers for both platform. (ID: 534634:1)
449. **Incorrect mode for USB printers --**  
An issue was addressed, where cups may not work properly with USB printers. This was caused by incorrect permissions on the /dev/usb/lp-\* and /dev/usb/lp/\* nodes. The permissions have been changed to root as owner, lp as group, and with mode 0660 to work properly with cups. This correction has also been reflected in a new version of the udisetup program. (ID: 534563:3)
450. **USB descriptor load failed during enumeration --**  
The kernel code that handles all USB device connections has been changed to be more tolerant of anomalous behavior of some hardware. In part, this includes the insertion of a few seconds delay at the start of the USB connection logic. (ID: 534670:1)

## Graphics

451. **multiple X sessions unavailable - even when startx provided available display --**  
The usr/bin/startx script and the /usr/X11R6/bin/xinit have been modified to allow multiple X sessions to be started. A simple "startx" will begin the next available X session on the current VT. A "startx -- :n" will begin start the designated number X session, if available, on the current VT. (ID: 534353:1)
452. **xdm and some related binaries in MP3 expect /usr/lib/libpam.so.1 --**  
MP3 included an xdm that expected to use /usr/lib/libpam.so.1 to do its authentication. MP4 fixes this since there is no PAM on OSR6. (ID: 535004:1)
453. **KDE's VNC viewer core dumps on a SIGSEGV --**  
OSR600MP4 includes KDE version 3.5.9 which corrects a VNC viewer core dump. (ID: 534591:2)
454. **Cannot log into a KDE desktop --**  
A bug which could prevent starting up KDE while using the Korn shell (**ksh**) was fixed in OpenServer 6.0.0 MP4. (ID: 534593:1)
455. **Konqueror startup noisy and full of error messages. --**  
OSR600MP4 includes KDE version 3.5.9 whose konqueror, as appropriate, starts up without error or

warning diagnostics. (ID: 534600:1)

## **Kernel**

456. **panics using Microlite's RecoveEDGE media after MP4 installation --**  
A memory corruption in dynamically loadable module subsystem is fixed which was caused by repeated loading and unloading of modules/drivers while an intervening open is initiated to get a hold on the driver. (ID: 534990:1)
457. **thread test dumps core on libxml2 2.6.30 - apparent stack corruption --**  
With the threads library changing its default stack size in OSR600MP4, the libxml threads tests pass. (ID: 534641:1)
458. **increase default thread stack size --**  
The default thread stack size was increased from 16k to 64k, the better to match common expectations of open source code. (ID: 534663:2)
459. **libthread setcontext() garbles signal (blocking) mask if mask was not to be restored --**  
A libthread bug has been repaired, in which it caused the signal mask inappropriately to be changed to block most signals when a thread used sigsetjmp()/siglongjmp() and had requested that the signal mask NOT be saved. (ID: 534701:2)
460. **OSR5 compiled binaries running on OSR6 terminate on receiving SIGWINCH --**  
With OSR600MP4, for graphical windows using an OSR5-ABI shell (such as /bin/ksh), resizing will no longer cause the shell to die and thus end up closing the window. (ID: 534162:3)
461. **Processor cores not enabled on some platforms --**  
Fixed three problems related to multicore and hyperthread support:
1. The OS sometimes failed to recognize some processor cores because of mishandling of the LAPIC\_SORT boot parameter. Previously, the LAPIC\_SORT boot parameter erroneously defaulted to NO and setting it to YES has no effect; it now defaults to YES.
  2. The number of available processor cores may be cut in half on systems on which the processor supports hyperthreading but on which the BIOS has hyperthreading disabled.
  3. An error in the processor licensing check could prevent some processor cores from coming online even when the system had the requisite processor licensing. (ID: 534338:2)
462. **Increase the default value of ARG\_MAX --**  
Increased the default value of ARG\_MAX from 32768 to 262144. This is about 2.5 times the default value in OSR507. This kernel tunable limits the total number of characters allowed in the arguments and environment strings when starting a new process. (ID: 535101:1)

## **Installation**

463. **Some platforms may panic if 5 option cards are installed. --**  
Eliminated a NULL pointer dereference in a low-level kernel-to-BIOS interface routine that resulted in kernel panics under certain conditions, including when five or more option cards were installed on some platforms. (ID: 534773:1)
464. **MP3 overwrites DNS db.cache file --**  
OpenServer 6.0.0 through OpenServer 6.0.0 MP2 did not provide a */etc/inet/named.d/db.cache* file. If the user created this file then MP3 would overwrite it. Starting in MP4 *db.cache* is only created if an existing *db.cache* file does not exist. (ID: 535139:1)

## **Networking**

465. **rx errors get reported as tx errors and vice versa --**  
A problem was repaired in which the transmit errors were incorrectly reported as receive errors and vice versa for several media types. (ID: 533656:2)
466. **add IGMPv3 support --**  
OSR600MP4 adds support for IGMPv3 to allow source-specific multicasting. (ID: 533801:1)
467. **accept() does not set sockaddr's sa\_family field to AF\_UNIX --**  
Set length and family in the return address of the accept system call for UNIX domain sockets. (ID: 534555:2)
468. **telnetd hangs when >10000 characters are pasted into telnet client (DOS issue) --**  
Increase the master pseudo-tty queue high watermark to reduce the possibility of a deadlock when a large block of data is sent by a telnet client. (ID: 533023:1)
469. **When mp3 is installed the owner of /usr/bin/checkmail gets changed --**  
/usr/bin/checkmail and /usr/bin/rmail are now owned by mmdf. (ID: 534633:1)
470. **local mail delivery logs write failures without naming the pipe/file that couldn't be written to. --**  
The MMDF mailer diagnostics now make it clear the filename which cannot be written. (ID: 534585:3)
471. **Add the backslash syntax for recursive alias lookup suppression in .forward files --**  
The MMDF syntax (in .forward files) has been enhanced to accept \alias as a means to suppress recursion for that alias, to match that used by other mailers. (ID: 534808:5)
472. **If setreuid() or setregid() fails, the logged error message contains garbage --**  
MMDF used to display junk values in situations in which the setreuid() or setregid() system calls failed. OSR600MP4 fixes this problem. (ID: 534825:3)
473. **system panics in tcp\_output on OSR6+MP2 --**  
The OSR600MP4 kernel fixes a bug in which an OSR5 ioctl() system call for RTSTR\_SEND was incorrectly being converted to the SVR5 equivalent. (ID: 534310:1)
474. **Correct /usr/lib/libwrap.a packaging --**  
OSR600MP4 restores the missing libwrap.a library as well as its corresponding header files. (ID: 534999:1)
475. **unable to set multicast route to use a 4 bit subnet --**  
The route command is changed to correctly set the mask for multicast addresses. (ID: 534646:1)
476. **client/server app w/o TCP\_NODELAY performs significantly slower on OSR6 vs. OSR5 --**  
For OSR5 ABI applications, Nagle algorithm is turned off. For SVR5 ABI applications, Nagle algorithm is on and can be adjusted with TCP\_NODELAY socket option or by a new tunable tcp\_nonagle. (ID: 534772:1)
477. **SNMP trap\_rece(ADMN) exits with error "couldn't assign requested address" --**  
Fixed the issue of SNMP trap\_rece(ADMN) which used to exit with error "couldn't assign requested address" (ID: 533968:2)
478. **Apache2's htdbm command does not support GDBM or DB databases. --**  
SCO's Apache 2 port now fully supports Apache user databases in DB, GDBM, and SDBM format. (ID: 534732:1)
479. **Can remove postgresql 8.2.3 from a system that has Apache 2 installed --**  
The Apache2 package now correctly includes a dependency on the PostgreSQL package. (ID: 534822:1)
480. **Please remove hardcoded dependency on 8.2.3 --**  
The Apache 2 package now expects to find, as already installed, at least Maintenance Pack 3 and at least postgresql version 8.2.3Dc. (ID: 534823:1)
481. **Installing osr600mp3 Apache 2 causes osr600mp3 Apache 1 verify errors --**  
The Apache packaging has been simplified so that both Apache 1 and Apache 2 are together in one complete package. (ID: 534978:1)
482. **get\_server\_pid() in /etc/apache2 and /etc/apache returns wrong PID data. --**  
The Apache control scripts (/etc/apache\*) would likely use the wrong PID value when attempting to

shut down a running daemon. This has been fixed. (ID: 535080:1)

483. **problem with packaging.. unable to access samba documentation --**

A mistake in the packaging of the Samba documentation directories, which resulted in a symbolic link "loop", has been repaired in OSR600MP4. (ID: 534627:1)

484. **Customer request for Samba 3.0.28 for support for Vista + SP1 --**

OSR600MP4 upgrades Samba to version 3.0.30 which interoperates with Microsoft Vista machines. (ID: 534889:1)

## Operating System

485. **Australia/New Zealand timezone rules need to be updated --**

The compiled timezone files (under */etc/TZ*) have been updated to match the rules as of the end of March 2008. This includes the latest Australia and New Zealand changes. (ID: 534795:2)

486. **No longer enforce licensed number of CPUs --**

Updated the licensing daemon */etc/sco\_pmd* to no longer enforce a limit on the number of CPUs. (ID: 534688:2)

487. **Installation of UDI drivers reported as FAILED --**

During OpenServer 6.0.0 MP3 some intermediate pkgadds failed sending email to root and showing partially installed pkgadd UDI/USB packages. In the end the MP3 installed fixed the problem as these misleading failure messages were benign. In OpenServer 6.0.0 MP4 the intermediate pkgadd now succeeds. The UDI/USB subsystems continue to function correctly (now without the prior pkgadd noise). (ID: 534590:2)

488. **lock error in adst70 driver causes panic under kstuff kernel --**

Fixed lock hierarchy violation issues in *adst70* and *adpu320* driver. (ID: 534036:2)

489. **OSR6 "tape" drive is much slower then "tape" drive on OSR507 --**

Due to newer tape hardware with variable block sizes, the default block size for tar was causing heavy uses to consume excessive time. This has been repaired in OSR600MP4 by having tar use larger block sizes by default when connected to variable block size hardware. (ID: 534657:2)

490. **after applying OSR6MP3 fcntl with F\_SETLKW64 sleeps forever --**

The OSR600MP4 kernel has been fixed so that it will properly identify and wake up sleeping processes that are waiting on file lock ranges. Previously this could result in processes that would never be awakened. (ID: 534985:1)

491. **mapchan isn't accepting multiple control definitions in map files of the same character --**

The *mapchan* command failed to allow valid syntax where control sections (input or output) contained equivalent starting sequences. This issue has been corrected. (ID: 533901:2)

492. **SUPATH in /etc/default/su needs /sbin and /usr/sbin --**

Updated */etc/default/su*'s default SUPATH variable to include */usr/sbin* and */sbin*. If you previously modified SUPATH then, depending on your modification, the new SUPATH may not include these two extra directories. Otherwise, when you *su* into your OpenServer 6.0.0 MP box as root, */usr/sbin* and */sbin* will be in your PATH. (ID: 534630:2)

493. **System panics when unplugging USB Modem --**

OSR600MP4 fixes a panic-causing race condition between a concurrent close and a hot-unplug of a USB device. (ID: 534838:1)

494. **usb\_msto driver blocks some UFI commands --**

The USB mass storage driver (*usb\_msto*) blocked certain USB Floppy Interface (UFI) commands that are needed in order to format USB diskettes. This problem has been fixed. (ID: 535120:1)

## Printing

495. **Double quotes in the banner may result in print job loss. --**

The lp utility in OSR600MP4 has been modified so that special characters (like double-quotes) in title strings no longer can cause ill effects such as the loss of the print job. (ID: 534792:1)

**SCOAdmin**

496. **scoadmin DNS Manager doesn't understand AAAA records in /etc/named.d/db.cache --**

Changed the scoadmin DNS Manager to filter IPv6 AAAA records from dig command output when creating /etc/named.d/db.cache in order to prevent scoadmin dns startup failure. (ID: 535063:1)

497. **scoadmin client manager wipes out /etc/ntp.conf --**

Don't remove a non-empty /etc/ntp.conf on exit from scoadmin client when the broadcastclient directive isn't specified. (ID: 532302:1)

498. **scoadmin printer seems to hang --**

Previously a "scoadmin printer" invocation would, at times, hang or otherwise fail with error diagnostics. This problem has been corrected in OSR600MP4. (ID: 535123:1)

499. **scoadmin dns over writes existing configuration --**

Changed scoadmin DNS Manager to no longer re-write /etc/named.d/db.cache on exit when caching nameserver is configured. Display of the host & zone icons was also fixed. (ID: 534842:1)

**Security**

500. **SECURITY: BIND 9: cryptographically weak query ids --**

BIND was upgraded to version 9.4.2. The upgrade removes dnssec-signkey and dnssec-makekeyset commands. (ID: 534372:1)

501. **SECURITY: Bind9 weakness permitting cache poisoning in recursive resolver --**

An attacker could exploit this weakness to poison the cache of a recursive resolver and thus spoof DNS traffic, which could e.g. lead to the redirection of web or mail traffic to malicious sites. OSR600MP4 includes a fix for this vulnerability. (ID: 534997:1)

502. **SECURITY: Pkgadd directory traversal vulnerability - IDEF2722 --**

A potential security issue with the pkgadd utility was fixed. (ID: 534589:4)

503. **SECURITY: CUPS xpdf multiple buffer overflow vulnerabilities --**

These problems are fixed in the pdftops included in cups 1.3.7 (ID: 533446:1)

**Other Fixes**

504. **OpenServer MPs should not disable openssh --**

The OSR600 MP4 openssh package will now have the replacement SSH daemon running once it has been installed. If, however, you have installed MP4 on top of an OSR600 without any previously applied maintenance packs, the SSH daemon cannot restart until the newer kernel has booted. (ID: 534617:1)

505. **Xenix application fails on OSR6 due to poll() returning EINVAL.. --**

The Xenix application runtime environment lacked a working poll() function. This problem has been fixed. (ID: 534943:2)

506. **OpenSource binaries fail to run under OSR6 + MP3 --**

The MP3 **gettext** *libgnuintl.so* library failed to provide full binary compatibility with its MP2 version. This has been corrected in MP4 by providing the older *libgnuintl.so.4* library for use by applications linked in the MP2 timeframe. (ID: 534640:1)

507. **Qt3 compiled with -DQT\_NO\_CHECK in OSR6 MP3 --**

The Qt3 in OSR600MP4 is built so that it includes safety checks for various boundary issues like null pointers and bad indices. (ID: 534643:1)

**508. mysql "repair table operation fails with EFBIG --**

For compatibility with other systems, LFS-ized variants on the mkstemp() routine are now provided by the C library. mkstemp() and mkstemp64() open the temp file with large file permission whereas mkstemp32() does not. (ID: 534671:3)

**509. Need to port docview to Apache 2.2.0 --**

By default docview will use Apache 2 to serve its pages when Apache 2 is installed. But docview will still use Apache 1 when there's no Apache 2 available or when the /etc/default/man file has a APACHE=apache line to force docview to use Apache 1. (ID: 533687:1)

**510. Display List of Manpages doesnt work after installing oss709a --**

The docview link to "Display List of Manpages" has been repaired so that it also takes OSR6 and UW7 as known operating systems. (ID: 534824:1)

**511. Tomcat with Axis fails to shut down completely --**

The Tomcat shutdown script shutdown.sh has been modified to perform a "kill -9" on process(es) not shutdown normally. (ID: 533909:1)

**512. Need to synch OSR5 ABI perl - for Oracle 7.3 perl interface for osr600mp4 --**

To support the migration, from OpenServer 5 to OpenServer 6, of third party applications that have a Perl interface and that make direct usage of an OSR5 ABI shared object, the OSR600MP4 Perl now includes both the SVR5- and OSR5-ABI worlds. The OSR5 ABI perl is installed under /osr5. (ID: 534513:3)

**513. Update pgsq1 for OSR6MP4 --**

OSR600MP4 updates PostgreSQL to version 8.2.9. (ID: 534727:2)

**514. /etc/pgsq1 advises "Please run mkdev mysql" --**

Modified the pgsq1 startup script /etc/init.d/pgsq1 replacing "mysql" with "pgsq1". (ID: 534812:1)

## Appendix: GWXLIBs Components and Perl Modules

### GWXLIBs Components

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

| Software Components and Packages        | Abbreviation    | FCS Version | MP2 Version | MP3/MP4 Version |
|-----------------------------------------|-----------------|-------------|-------------|-----------------|
| 3D Athena Widget Set for X11            | <b>xaw3d</b>    | 1.5E        | 1.5E        | 1.5E            |
| Apache Portable Runtime Utility Library | <b>aprutil</b>  | n/a         | n/a         | 1.2.8           |
| Apache Portable Runtime                 | <b>apr</b>      | n/a         | n/a         | 1.2.9           |
| Accessibility Toolkit                   | <b>atk</b>      | 1.8.0       | 1.10.3      | 1.10.3          |
| bzip2 compression library and utilities | <b>bzip2</b>    | 1.0.3       | 1.0.3       | 1.0.3           |
| Cairo Graphics Library                  | <b>cairo</b>    | n/a         | 1.0.2       | 1.4.10          |
| compface Image Manipulation Library     | <b>compface</b> | 1.0.0       | 1.0.0       | 1.5.2           |
| cURL URL Library                        | <b>curl</b>     | 7.13.2      | 7.15.1      | 7.16.4          |
| Berkeley-DB Database Library            | <b>bdb</b>      | 4.3.27      | 4.3.28      | 4.6.18          |
| Expat XML Parser                        | <b>expat</b>    | 1.95.8      | 1.95.8      | 2.0.1           |

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|                                            |                  |         |         |         |
|--------------------------------------------|------------------|---------|---------|---------|
| Expect TCL Extension                       | <b>expect</b>    | 5.42    | 5.43    | 5.43    |
| FontConfig                                 | <b>fontcfg</b>   | 2.2.2   | 2.2.2   | 2.4.2   |
| FreeType Font Engine Version 1             | <b>freetype1</b> | 1.3.1   | 1.3.1   | 1.3.1   |
| FreeType Font Engine                       | <b>freetype2</b> | 2.1.9   | 2.1.10  | 2.3.5   |
| GD Graphics Library                        | <b>gd1</b>       | 1.8.4   | 1.8.4   | 1.8.4   |
| GD Graphics Library                        | <b>gd2</b>       | 2.0.33  | 2.0.33  | 2.0.35  |
| GNU dbm Library                            | <b>gdbm</b>      | 1.8.0   | 1.8.0   | 1.8.0   |
| Gnome DOM Library                          | <b>gdome2</b>    | 0.8.1   | 0.8.1   | 0.8.1   |
| GNU gettext                                | <b>gettext</b>   | 0.14.1  | 0.14.5  | 0.16.1  |
| GIF Image Manipulation Library             | <b>giflib</b>    | 4.1.0   | 4.1.0   | 4.1.4   |
| GIMP Portability Library                   | <b>glib1</b>     | 1.2.10  | 1.2.10  | 1.2.10  |
| GIMP Portability Library                   | <b>glib2</b>     | 2.4.8   | 2.8.4   | 2.12.13 |
| GNU Privacy Guard (gnupg)                  | <b>gnupg</b>     | 1.4.0   | 1.4.0   | 1.4.7   |
| GIMP Toolkit                               | <b>gtk1</b>      | 1.2.10  | 1.2.10  | 1.2.10  |
| GIMP Toolkit                               | <b>gtk2</b>      | 2.4.14  | 2.8.9   | 2.10.14 |
| GWXLIBS Base Support Tools                 | <b>gwxlibs</b>   | 2.0.0   | 2.1.0   | 3.0.0   |
| International Components for Unicode (ICU) | <b>icu</b>       | 3.2     | 3.4     | 3.6     |
| Enlightenment Imaging Library              | <b>imlib</b>     | 1.10.0  | 1.10.0  | 1.9.15  |
| JASper JPEG2000 library                    | <b>jasper</b>    | 1.701.0 | 1.701.0 | 1.900.1 |
| ISO/IEC 11544:1993 JBIG kit                | <b>jbig</b>      | 1.6     | 1.6     | 1.6     |
| IJG JPEG library                           | <b>jpeg</b>      | 6b      | 6b      | 6b      |
| JavaScript Embedded C Library              | <b>js</b>        | 1.5rc5  | 1.5rc5  | 1.5     |
| Little Color Management System (LCMS)      | <b>lcms</b>      | 1.14    | 1.15    | 1.16    |
| Gnome IDL Library                          | <b>libIDL</b>    | 0.85    | 0.8.6   | 0.8.8   |
| Gnome ART library                          | <b>libart</b>    | 2.3.17  | 2.3.17  | 2.3.19  |
| Gnome CSS2 Parsing Toolkit (libcroco)      | <b>libcroco</b>  | 0.6.0   | 0.6.0   | 0.6.1   |
| Gnome EXIF Widget for GTK                  | <b>exifgtk</b>   | 0.3.5   | 0.3.5   | 0.3.5   |
| EXIF Processing Library                    | <b>libexif</b>   | 0.6.10  | 0.6.12  | 0.6.16  |
| GNU Cryptographic Library                  | <b>libgcrypt</b> | 1.2.1   | 1.2.2   | 1.2.4   |

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|                                            |                   |          |               |                |
|--------------------------------------------|-------------------|----------|---------------|----------------|
| Gnome HTTP Client Library                  | <b>libghttp</b>   | 1.0.9    | 1.0.9         | 1.0.9          |
| GNU Privacy Guard Error Library            | <b>libgpg-err</b> | 1.0.0    | 1.0.0         | 1.5            |
| Gnome Structured File Library              | <b>libgsf</b>     | 1.11.1   | 1.13.3        | 1.14.5         |
| Gnome HTML Widget for GTK                  | <b>gtkhtml</b>    | 2.6.3    | 2.11.0        | 2.11.0         |
| Multi-image Network Graphics (MNG) Library | <b>libmng</b>     | 1.0.9    | 1.0.9         | 1.0.10         |
| Portable Network Graphics (PNG) Library    | <b>libpng</b>     | 1.2.8    | 1.2.8         | 1.2.18         |
| Gnome SVG Rendering Library                | <b>librsvg</b>    | 2.9.5    | 2.13.3        | 2.18.0         |
| WMF Conversion Library                     | <b>libwmf</b>     | n/a      | 0.2.8.4       | 0.2.8.4        |
| W3C Consortium Library (libwww)            | <b>libwww</b>     | 5.40     | 5.40          | 5.40           |
| libxml2 XML C Parser and Toolkit           | <b>libxml2</b>    | 2.6.19   | 2.6.22        | 2.6.29         |
| libxslt XSLT C Parser and Toolkit          | <b>libxslt</b>    | 1.1.14   | 1.1.15        | 1.1.21         |
| Libtool Dynamic Loading                    | <b>ltdl</b>       | 1.5.22   | 1.5.22        | 1.5.22         |
| MD5 Hash Library                           | <b>md5</b>        | 1.0.0    | 1.0.0         | 1.0.0          |
| mktemp                                     | <b>mktemp</b>     | 1.5      | 1.5           | 1.5            |
| OSSP mm Shared Memory Allocation Library   | <b>mm</b>         | 1.3.1    | 1.4.0         | 1.4.2          |
| MPEG Encoder/Decoder Library               | <b>mpeglib</b>    | 1.2.1    | 1.2.1         | 1.3.1          |
| Portable Bitmap Utilities and Libraries    | <b>netpbm</b>     | 10.26.1  | 10.26.14      | 10.34          |
| OpenLDAP                                   | <b>openldap</b>   | 2.2.24   | 2.2.30        | 2.3.37         |
| OpenSLP (Service Location Protocol)        | <b>openslp</b>    | 1.2.1    | 1.2.1         | 1.2.1          |
| OpenSSL                                    | <b>openssl</b>    | 0.9.7g   | 0.9.7i/0.9.6m | 0.9.7m/0.9.8e* |
| Pango Layout and Text Rendering Library    | <b>pango</b>      | 1.4.1    | 1.10.2        | 1.17.3         |
| Perl Compatible Regular Expressions        | <b>pcre</b>       | 5.0      | 6.4           | 7.2            |
| pkg-config                                 | <b>pkgconfig</b>  | pre 0.19 | 0.19          | 0.22           |
| Gnome Option Processing Library            | <b>popt</b>       | 1.7      | 1.7           | 1.10.4         |
| True Random Library                        | <b>rand</b>       | 1.0.0    | 1.0.0         | 1.0.0          |
| GNU readline                               | <b>readline</b>   | 5.0      | 5.1           | 5.2            |
| Sablotron XML, DOM and XPath Processor     | <b>sablot</b>     | 1.0.1    | 1.0.2         | 1.0.3          |

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|                                  |                   |        |          |        |
|----------------------------------|-------------------|--------|----------|--------|
| Cyrus SASL                       | <b>sasl</b>       | 2.1.20 | 2.1.20** | 2.1.22 |
| S-lang Interpreter and Library   | <b>slang</b>      | 1.4.9  | 1.4.9    | 1.4.9  |
| Tcl 8.4                          | <b>tcl84</b>      | 8.4.9  | 8.4.10   | 8.4.15 |
| Extended Tcl                     | <b>tclx84</b>     | 8.3.5  | 8.3.5    | 8.4    |
| TIFF library and utilities       | <b>tiff</b>       | 3.7.2  | 3.7.4    | 3.8.2  |
| Tk 8.4                           | <b>tk84</b>       | 8.4.9  | 8.4.10   | 8.4.14 |
| trio printf library              | <b>trio</b>       | 1.10   | 1.10     | 1.12   |
| Xalan XSLT Processor             | <b>xalan</b>      | 1.9.0  | 1.10.0   | 1.10.0 |
| Xerces Validating XML C++ Parser | <b>xerces</b>     | 2.6.0  | 2.7.0    | 2.7.0  |
| XML Security Library             | <b>xmlsec1</b>    | 1.2.8  | 1.2.9    | 1.2.10 |
| X.org Fonts                      | <b>XORGF</b> onts | 6.8.2  | 6.9.0    | 7.2.0  |
| X.org Runtime                    | <b>XORG</b> RT    | 6.8.2  | 6.9.0    | 7.2.0  |
| zlib compression library         | <b>zlib</b>       | 1.2.2  | 1.2.3    | 1.2.3  |

\* For OpenServer 6.0.0 MP3, OpenSSL 0.9.8e has been added; OpenSSL 0.9.7 is upgraded from 0.9.7i to 0.9.7m; and OpenSSL 0.9.6m is deprecated and no longer provided.

\*\* With respect to Cyrus-SASL: the version did not change in OpenServer 6.0.0 MP2 but the way it was compiled significantly changed. In previous (prior to OpenServer 6.0.0 MP2) 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 (5.8.7 in MP2) to 5.8.8. The following Perl extensions are included with 5.8.8:

```

Archive-Tar-1.32
Archive-Zip-1.20
Authen-SASL-2.10
BerkeleyDB-0.32
Bit-Vector-6.4
Cache-2.04
Cache-Cache-1.05
Carp-Clan-5.9
Class-ErrorHandler-0.01
Class-Loader-2.03
Compress-Bzip2-2.09
Compress-Zlib-1.42
Convert-ASCII-Armour-1.4
Convert-ASN1-0.21
Convert-PEM-0.07
Crypt-Anubis-1.0.4
Crypt-Blowfish-2.10
Crypt-Blowfish_PP-1.12
Crypt-CAST5-0.05
Crypt-CAST5_PP-1.04
Crypt-CBC-2.22

```

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Crypt-DES-2.05  
Crypt-DES\_EDE3-0.01  
Crypt-DES\_EEE3-0.01  
Crypt-DES\_PP-1.00  
Crypt-DH-0.06  
Crypt-DSA-0.14  
Crypt-ECB-1.40  
Crypt-GOST-1.00  
Crypt-IDEA-1.08  
Crypt-OpenPGP-1.03  
Crypt-OpenSSL-Bignum-0.04  
Crypt-OpenSSL-DSA-0.13  
Crypt-OpenSSL-RSA-0.25  
Crypt-OpenSSL-Random-0.04  
Crypt-OpenSSL-SMIME-0.02  
Crypt-Primes-0.50  
Crypt-RIPEMD160-0.04  
Crypt-RSA-1.58  
Crypt-Random-1.25  
Crypt-Rijndael-1.04  
Crypt-Rot13-0.6  
Crypt-SEAL2-1.0.4  
Crypt-SSLeay-0.56  
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-SQLite-1.12  
DBD-SQLite2-0.33  
DBI-1.58  
DBM-Any-0.1  
Data-Buffer-0.04  
Data-Random-0.05  
Data-ShowTable-3.3  
Date-Calc-5.4  
DateManip-5.44  
Devel-Symdump-2.07  
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-5.45  
Digest-SHA1-2.11  
Digest-SHA2-1.1.1  
Error-0.17008  
ExtUtils-CBuilder-0.19  
ExtUtils-ParseXS-2.18  
File-NFSLock-1.20  
File-PM2File-0.08  
File-Package-0.06  
File-SmartNL-0.05  
File-Where-0.05  
FreezeThaw-0.43  
Getopt-ArgvFile-1.11  
HTML-Clean-0.8  
HTML-FillInForm-1.06  
HTML-Parser-3.56

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HTML-SimpleParse-0.12  
HTML-TagReader-1.08  
HTML-Tagset-3.10  
HTML-Tree-3.23  
HTML-TreeBuilder-XPath-0.08  
HTTP-GHTTP-1.07  
Heap-0.80  
IO-Multiplex-1.09  
IO-Socket-SSL-1.07  
IO-String-1.08  
IO-Zlib-1.07  
IO-stringy-2.110  
IPC-MM-0.03  
IPC-ShareLite-0.09  
MIME-Lite-3.01  
MIME-Types-1.20  
MIME-tools-5.420  
MLDBM-2.01  
MLDBM-Sync-0.30  
MailTools-1.77  
Math-Pari-2.010604  
Module-Build-0.2808  
Module-ScanDeps-0.60  
Module-Signature-0.55  
Msgcat-1.03  
Net-DNS-0.60  
Net-DNS-Codes-0.09  
Net-DNS-SEC-0.14  
Net-DNS-ToolKit-0.31  
Net-Daemon-0.39  
Net-Daemon-SSL-1.0  
Net-IP-1.25  
Net-Server-0.97  
Net-ext-1.011  
NetAddr-IP-4.007  
Net\_SSLeay.pm-1.30  
PAR-0.94  
PAR-Dist-0.10  
Parse-RecDescent-1.94  
Parse-Yapp-1.05  
Perl-Tidy-20070508  
PlRPC-0.2020  
Pod-Coverage-0.18  
Pod-Escapes-1.04  
Pod-Readme-0.09  
Pod-Simple-3.05  
RPC-XML-0.59  
Regexp-Common-2.120  
Sort-Versions-1.5  
String-CRC32-1.4  
Test-Pod-1.26  
Test-Pod-Coverage-1.08  
Test-Portability-Files-0.05  
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

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Unicode-Map8-0.12  
Unicode-String-2.09  
Unix-Syslog-0.100  
XML-DOM-1.44  
XML-DOM-XPath-0.13  
XML-Dumper-0.81  
XML-Encoding-2.01  
XML-Filter-BufferText-1.01  
XML-GDOME-0.86  
XML-GDOME-XSLT-0.75  
XML-Generator-1.01  
XML-Generator-DBI-1.00  
XML-Generator-PerlData-0.89  
XML-Grove-0.46alpha  
XML-Handler-YAWriter-0.23  
XML-LibXML-1.63  
XML-LibXML-Common-0.13  
XML-LibXSLT-1.62  
XML-NamespaceSupport-1.09  
XML-Parser-2.34  
XML-SAX-0.16  
XML-SAX-Expat-0.39  
XML-SAX-Writer-0.50  
XML-Sablotron-1.01  
XML-Simple-2.16  
XML-Twig-3.29  
XML-Writer-0.603  
XML-Writer-String-0.1  
XML-XPath-1.13  
XML-XPathEngine-0.08  
XML-XSLT-0.48  
YAML-0.65  
gettext-1.05  
libwww-perl-5.806  
libxml-errno-1.02  
libxml-perl-0.08

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