Release Notes

AIX Version 4.3.3
Release Notes

Document Number GI10-0697-09

Note
Before using this information and the product it supports, read the information in <u>Appendix A, Notices</u>.

Tenth Edition (April 2002)

Contents

AIX Version 4.3.3 Release Notes

Introduction

AIX 4.3.3 Release Notes contains information that will aid you in the installation and migration to AIX 4.3.3. For information about new function for AIX 4.3.3, visit the RS/6000 software web page at:

```
http://www.rs6000.ibm.com/software
```

For information on new, changed, or removed function that was not available at the time of publication of the AIX documentation, and for additional information not documented in other publications, refer to the AIX 4.3.3 README at **/usr/lpp/bos/README** or view the README in an HTML format at **/usr/lpp/bos/README.htm**.

Some of the installation instructions in this document assume knowledge of:

- AIX system administration commands
- System Management Interface Tool (SMIT)
- Software installation operations, such as *apply* and *commit*

AIX Version 4.3.3 Installation Documentation

Documentation is available only online except for *Installation Guide*, which is available both online and in hardcopy.

See the following web site for AIX Version 4.3.3 documentation:

```
http://www.rs6000.ibm.com/cgi-bin/ds_form
```

To order the *Installation Guide* book, contact your point of sale, or, in the U.S., call IBM Customer Publication Support at 1-800-879-2755. Specify order number SC23-4112.

The following publications describe AIX Version 4.3.3 installation:

- *Installation Guide*, order number SC23-4112
- *Network Installation Management Guide and Reference*, available only online

Hardware Documentation

Hardware documentation is available on the Web or can be ordered in printed hardcopy.

To access the hardware documentation on the Web, go to:

```
http://www.ibm.com/servers/eserver/pseries/library/hardware_docs
```

Installation, use, and service documentation is available from this Web site. To order printed versions of the books that are available in hardcopy, go to:

```
http://www.ibm.com/shop/publications/order
```

README Files

For information on how to view the README files for base operating system (BOS) software and optional software products, refer to the *Installation Guide*, SC23-4112.

Some README files are shipped in separate directories that are not accessible if you follow the procedure described in the *Installation Guide*. To find the README files installed on your machine, use the following command:

```
find /usr -name "*README*" -print
```

These notes should be used in conjunction with the AIX Version 4.3 Installation documentation.

Other Sources of Information

Installation Hints and Tips

The latest AIX 4.3.3 installation hints and tips can be obtained from:

- **The IBM FAX Information Server**

  Call 800-IBM-4FAX in the U.S. from any touch-tone telephone, or 415-855-4329 worldwide from your FAX machine, and request document number 8175.

- **The AIX Service Mail Server**

   Send electronic mail with a subject of **43_Install_Tips** to *aixserv@austin.ibm.com*.

Optional Software Information

Licensed programs include AIX 4.3.3 and optionally purchased products. Each program can have one or more separately installable filesets. The *Package Installation Database for Current Media* is an HTML database which contains information about the contents of these separately installable filesets. See Optional Software for instructions on viewing this online database.

How to Get Help and Report Problems

To report code-related problems, contact the Program Services representative for your area.

Listing and Previewing Installation Software

You can list the available software products, packages, and filesets on AIX media. This media can be a CD-ROM, tape, diskette, or directory. The output lists the available packages and filesets on the media. The descriptions are provided at the fileset level.

You can choose to do a preview installation before performing the acutal installation. A preview installation provides the preinstallation information that will occur during a regular installation, however no software will actually be installed.

When you select a package or fileset to be installed with the preview installation process, you will see a list that contains all the requisite packages and filesets needed by the selected package or fileset to be successfully installed.

The other information generated during the preinstallation process concerns file system size checking. The file systems are checked to make sure there is enough free space available to install the selected package or fileset.

You can run the list software and previewing software functions from the command line, the SMIT interface, or the Web-based System Manager interface.

Listing and previewing software from the command line:

1. Log in as the root user.
2. List the available software on the media using **installp -ld***device*. For example, to list the software on the first CD of the base media, insert the Volume 1 CD in the first CD drive. Then enter:

   ```
   installp -ld /dev/cd0 | pg
   ```

   This will display output in the following form:

   ```
    Fileset Name                 Level
      =======================================
      IMNSearch.bld.DBCS          2.3.1.0
   #   NetQuestion DBCS Buildtime Modules

       IMNSearch.bld.SBCS          2.3.1.0
   #   NetQuestion SBCS Buildtime Modules

   ...
   ```

3. To do a preview installation from the command line, use the **-p** flag with the **installp** command. For example, to preview the installation of the **IMNSearch.bld.DBCS** fileset, type:

```
installp -aXgq -p -d/dev/cd0 IMNSearch.bld.DBCS
```

The preview option shows the filesets selected to be installed, the filesets that will be pulled in by requisites, and the system resources that will be used by this **installp** operation.

Listing and previewing software from the ASCII SMIT interface:

1. Log in as the root user.
2. List available software on media using **smitty install_update**.
3. Select **Install Software**.
4. Press the F4 key to list the available input devices and select the appropriate one; or type the input device name in the blank field. Press Enter to continue.
5. To list all available software on the selected media, press the F4 key on the **SOFTWARE to Install** field.
6. Scroll through the list of software by using the arrow keys or the Page Up or Page Down keys.
   Note:
   > The software shown in this listing are the available packages and filesets for that software product. For example, in the following output example, the software product is IMNSearch.
   >
   > ```
   > IMNSearch.bld
   >    + 2.3.1.0   NetQuestion DBCS Buildtime Modules
   >    + 2.3.1.0   NetQuestion SBCS Buildtime Modules
   >
   > IMNSearch.rte.httpdlite
   >  @ 2.0.0.2   Lite NetQuestion Local Web Server
   > ```
   >
   > The two packages are IMNSearch.bld and IMNSearch.rte.httpdlite. The filesets in the IMNSearch.bld package are the NetQuestion DBCS Buildtime Modules fileset and the NetQuestion SBCS Buildtime Modules fileset. Both filesets are at the 2.3.1.0 level. Notice that the descriptions for the software product are described at the fileset level.
   >
   > If the fileset is preceded by a + (plus sign), then it is available to be installed. If the fileset is preceded by an @ (at sign), then the fileset is already installed at the level shown or later.

7. Select the package or fileset you wish to install by scrolling to that package or fileset, and pressing the F7 key to make the selection. Press enter to continue.
8. To do a preview installation of the package or fileset that you selected, press the Tab key to select **yes** in the **PREVIEW only?** field. Press Enter.
   Note:
   > To obtain detailed information about the installation, select **yes** in the **DETAILED output?** field. The filesets being installed are displayed in parentheses.

Listing and previewing software from the Web-based System Manager interface:

1. Log in as the root user.
2. To initialize the environment, run **wsm &** at the command prompt.
3. After the **Launch Pad** is running, double click on the **Software** icon
4. At the top of the **Software** window in the menu bar, select **Software** to display the **Software** menu.
5. Select **New Software (Install/Update)**.
6. Select **Install Additional Software**.
7. Specify or select a software source.
8. To list available software, click the **Browse** button To display a tree view of all the software on the media. The tree can be expanded by clicking the + (plus sign) to the left of the icon.
   Note:
   > If the software is already installed, you will see a small checkmark to the left of the fileset description.
9. Select the package or fileset you want to install by highlighting the package or fileset.
   Note:

You can select multiple packages or filesets by holding down the left mouse button while on one selection and dragging the mouse pointer up or down.

You can also use the Ctrl key or the Shift key to select multiple items. Hold the Ctrl key while making your selections with the left mouse button to choose nonconsecutive selections.Hold the Shift key while making your selections with the left mouse button to choose consecutive selections.

10. To do a preview installation of the selected package or fileset, press the **Preview** button.

Additional information about AIX-supported products is available from the following Web site:

`http://www.ibm.com/servers/aix/products/ibmsw`

Installation

This section contains information about installing AIX Version 4.3.3 that supplements the information contained in the AIX Version 4.3 Installation documentation. Refer to the publications listed in "AIX Version 4.3.3 Installation Documentation" for complete installation instructions.

Installing AIX Version 4.3.3

Note:
    If your system is at AIX 4.3.0 or later, proceed to the next section.

There are three ways to install AIX Version 4.3.3:

- Complete overwrite installation
- Preservation installation
- Migration installation

Boot from the product media and follow instructions in the *AIX Version 4.3 Installation Guide*, SC23-4112. It is recommended that you do a migration installation, if you are upgrading from a previous release of AIX. If you use preservation installation, some configuration information will not be saved. See the Migration section for more information about migration installations.

The AIX Version 4.3.3 product media cannot be used to boot a system with more than 64 GB of memory. Before upgrading your hardware configuration to have more than 64 GB of memory, you must install the updates on the 10/2000 (or later) AIX Update CD. You should make a system backup with the **mksysb** command of the system after installing the updates for system recovery, if necessary.

Installing AIX Version 4.3.3 on an Existing AIX Version 4.3 System

1. Update all additional currently installed software to the latest levels. Type the following on the command line and accept the default menu values:

   `smit update_all`

2. If you updated from a Version 4.3.0 system, **reboot** immediately.

   If you updated from a Version 4.3.1 or 4.3.2 system, **reboot** as soon as possible.

   `shutdown -rF`

Recovery From Failed Upgrades with CD-ROM Media

If you upgraded using a CD-ROM device, the Pre-installation Failure/Warning Summary may have the following text:

```
Not found on the installation media
```

If so, unmount the CD, and repeat the **update_all** step.

Use the following steps:

1. Run the mount command to determine the mount point for the CD-ROM. For example:

   ```
   # mount
     node       mounted          mounted over     vfs      date           options
   -------- ---------------  ---------------  ------ ------------ ---------------
            /dev/hd4         /                jfs    Mar 23 13:04 rw,log=/dev/hd8
            /dev/hd2         /usr             jfs    Mar 23 13:04 rw,log=/dev/hd8
            /dev/hd9var      /var             jfs    Mar 23 13:04 rw,log=/dev/hd8
            /dev/hd3         /tmp             jfs    Mar 23 13:04 rw,log=/dev/hd8
            /dev/hd1         /home            jfs    Mar 23 13:05 rw,log=/d ev/hd8
            /dev/cd0         /.cd_fRlNMc      cdrfs  Mar 24 09:15 ro
   ```

2. Unmount the CD-ROM. For example:

   ```
   # umount /.cd_fRlNMc
   ```

3. Reinvoke the **update_all** with the CD-ROM as the INPUT device. For example:

   ```
   smit update_all
   ```

Updating from the AIX Update CD

An Update CD is included with the AIX Version 4.3.3 product media, which contains updates that are required for some configurations and is recommended for all configurations. After completing the installation from the AIX Version 4.3.3 product media (including any additional program products), update from the Update CD by entering the following command:

```
smit update_all
```

IBM AIX Developer Kit, Java Technology Edition, Version 1.1.8

IBM AIX Developer Kit, Java Technology Edition, Version 1.1.8 (Java 1.1.8) is released in Java * filesets. The code on the Install CD is the GA code that was made available in September 1999. The code on the Update CD is the Java 1.1.8.8 code (PTF8).

Note:
  Java 1.1.8 PTF 12 images are located on the Update CD in the **/java118_ptf12** directory.

For more information (including a download of updates), go to the following Web site:

```
http://www.ibm.com/java/jdk/index.html
```

Installing the Parallel System Support Programs (PSSP) APARs

Before installing AIX 4.3.3 on RS/6000 SP systems, the following PSSP APARs must be installed so that the SP switch functions correctly:

- IY03104 PSSP 3.1.1
- IY03103 PSSP 2.4.0
- IY03102 PSSP 2.3.0

Memory Requirements

AIX 4.3.3 requires a minimum of 32 megabytes of physical memory.

Initial Paging Space Requirements

AIX 4.3.3 requires the initial paging space (**/dev/hd6**) to be a minimum of 64 megabytes in size.

Disk Space Requirements

AIX 4.3.3 requires additional disk space for the same set of installed filesets due to the increased library sizes and additional function. If you are migrating from previous releases of AIX, refer to the following tables for disk space requirements.

Note:

These measurements are not meant to be exact, but are meant to help you understand that additional disk space may be required on your system when you install or migrate to AIX 4.3.3.

Base AIX Install (graphical system with CDE)			
	AIX 4.1.5 Allocated (Used)	**AIX 4.2.1 Allocated (Used)**	**AIX 4.3.3 Allocated (Used)**
/	4MB (1.8MB)	16MB (2.9MB)	4MB (2.5MB)
/usr	140MB (134.3MB)	156MB (143.5MB)	294MB (279MB)
/var	4MB (0.4MB)	16MB (0.9MB)	4MB (1.3MB)
/tmp	8MB (0.3MB)	16MB (0.5MB)	16MB (0.6MB)

Base AIX Install with Network Support, X11, CDE, and client bundle installed			
	AIX 4.1.5 Allocated (Used)	**AIX 4.2.1 Allocated (Used)**	**AIX 4.3.3 Allocated (Used)**
/	4MB (2MB)	16MB (3.2MB)	8MB (4MB)
/usr	172MB (161.6MB)	192MB (170.2MB)	328MB (320MB)
/var	4MB (0.5MB)	16MB (0.9MB)	4MB (1.4MB)
/tmp	12MB (0.5MB)	16MB (0.7MB)	16MB (0.8MB)

AIX 4.3.3 with Network Support, X11, CDE after migration		
	AIX 4.1.5 Allocated (Used)	**AIX 4.2.1 Allocated (Used)**
/	4MB (3MB)	8MB (3.4MB)
/usr	320MB (284MB)	328MB (310MB)
/var	4MB (1.3MB)	4MB (1.3MB)
/tmp	16MB (0.7MB)	16MB (1.0MB)

AIX 4.3.3 with Network Support, X11, CDE, after update from AIX 4.3.2	
	Product Media Allocated (Used)
/	8MB (4MB)
/usr	390MB (313MB)
/var	12MB (2MB)
/tmp	16MB (0.6MB)

Note:

The filesets that are automatically installed have changed since AIX Version 4.1. That is, **bos.sysmgt.sysbr** (the **mksysb** fileset), **bos.sysmgt.nim.client**, and **bos.net.nfs.client** were not automatically installed in AIX 4.1, but are automatically installed in AIX 4.3.3. Some new filesets (such as Java, Web-based System Manager, and NetQuestion Web Server) are also automatically installed in AIX 4.3.3.

Multiple Volume CD-ROMs

AIX 4.3 has added multiple volume CD-ROMs. If you ask to install a fileset or a bundle of filesets, you may be prompted to insert another CD-ROM volume to complete the installation. If you do not want to be prompted, or do not have the other volumes available, set the **Process multiple volumes?** field in SMIT or the Web-based System Manager to **no** (it is set to **yes** by default). If you are using the command line to call **installp**, specify the **-S** flag to not process multiple volumes. If the CD volume is already mounted as a file system at the time of the installation, multiple volume processing is disabled.

Note:
>   You will *not* be asked to switch CD-ROMs during a Base (BOS) Installation of AIX. Multiple volume CD-ROMs are only enabled after the operating system has rebooted.

Network Installation Management (NIM) Enhancements - AIX 4.3.3

Network Installation Management (NIM) has been enhanced to suppport Kerberos 4 (K4) authentication.

To use K4 authentication in an SP environment using PSSP 3.1, you must install APAR IX88526. If this APAR is not installed, a failure is returned when a NIM master with K4 issues commands to a node without K4.

Other Installation Information

BOS Installation Support for Fibre Channel Boot

BOS installation supports installation to fibre channel-attached disks. Bootable AIX 4.3.3 installation media is required or NIM resources prepared from such media. The fibre channel-attached disks must be attached to a fibre channel host adapter that supports boot capability.

A fibre channel-attached disk can be identified by a World Wide Port Name and Logical Unit ID. To see the format of the World Wide Port Name and Logical Unit ID, type:

```
lsattr -E -O -l DiskName
```

- In a non-prompted BOS installation, you can specify a fibre channel-attached disk in the target_disk_data stanza of the **bosinst.data** file by:

  ```
  SAN_DISKID = (World Wide Port Name)//(Logical Unit ID)
  ```

  Where the (World Wide Port Name) and (Logical Unit ID) are each in the format returned by **lsattr**, that is, "0x" followed by 1-16 hexadecimal digits.
- In a prompted BOS Installation, the BOS Menus display the list of available disks and associated information. You can select the desired disk(s).

AIX Network Installation Management (NIM) README

The AIX Network Installation Management (NIM) includes a **README** file that is installed with the NIM Master **bos.sysmgt.nim.master** fileset. The path name of the file is **/usr/lpp/bos.sysmgt/nim/README**. The **README** file contains additional information about the AIX Version 4.3 NIM product.

Dedicated System Dump Device

The default system dump device is paging space. This may not be adequate for system configurations that have large memory sizes or when system availability is a concern. For these configurations, it is recommended that you allocate a dedicated system-dump logical volume.

The dump is now copied to tape in pax format because pax supports large (greater than 2 GB) files. You must install APAR IY12510 and IY13015.

License Use Management Runtime

Some of the products included in this release have been modified to use license management software. These products require a license password in order for you to use them. License Use Management Runtime for AIX is the new license management product. It is an enhancement to iFOR/LS included in AIX Version 4.1 and 4.2 and contains new license management functions, but still uses the same techniques and is completely compatible with iFOR/LS. For further information on License Use Management Runtime, see *Using License Use Management Runtime for AIX*.

Installing AIX 4.3 over AIX 4.1 or 4.2 with License Use Runtime Version 4 Installed

If you are using License Use Runtime Version 4 on AIX 4.1 or 4.2 and you upgrade to AIX 4.3, select **Migration Install** from the AIX installation menu. Do not select **Overwrite Install or Preservation Install**. This will maintain your license database and your configuration information.

Upgrading to a new Modification Level of AIX 4.3

If you are using License Use Runtime Version 4 on AIX 4.3, and you upgrade to a new modification level of AIX (for example, from AIX 4.3.1 to 4.3.3), use **smit** to upgrade. Choose **Install and Update Software**, and then the **Install/Update From All Available Software** option. This will maintain your license database and your configuration information.

What Software Must You Install?

The following section specifies which License Use Management Runtime filesets and other software you must install on the system.

Installing the License Use Runtime GUI on AIX 4.3.3

If you have AIX 4.3.3 and you want to use the License Use Runtime graphical user interface, install the following:

1. IPF/X Runtime Support. This is required if you install the backward compatibility GUI. IPF/X Runtime Support is in the **ipfx.rte** package that is shipped with the AIX installation media.
2. License Use Runtime Filesets: **ifor_ls.compat.cli.** and **ifor_ls.compat.gui** (optional)

Note:
If you installed the backward compatibility package on AIX 4.3.0, 4.3.1, or 4.3.2, and then you migrated to AIX 4.3.3, the backward compatibility package is automatically upgraded to the 4.3.3 level. You do not need to do any additional installation.

For more information about License Use Runtime, see the **/usr/opt/ifor/ls/os/aix/doc/readme.ark** file.

Some Licenses not Registered

Some applications, such as DB2 V5, register their product license using the License Use Management (LUM) Nodelock Administration Tool **/var/ifor/i4nat**. This tool is included in the LUM Compatibility fileset **ifor_ls.compat** that was shipped with AIX 4.3.2 as an option, but is *not* part of the base installation. Install this fileset before installing DB2 V5 on AIX 4.3.2 or later, or attempting to upgrade a DB2 V5 demonstration license to a product license.

bos.content_list Fileset and the which_fileset Command

AIX 4.3.2 and later include a new, optionally installable fileset, **bos.content_list**, that lists all installable files and the filesets/packages that contain them. The fileset includes one file, **/usr/lpp/bos/AIX_file_list**.

The **bos.rte.install** fileset now also ships the **/usr/sbin/which_fileset** command, which allows you to search the **/usr/lpp/bos/AIX_file_list** file after **bos.content_list** is installed.

ARTIC960 Adapter

When running SNA Version 5.0 with the ARTIC960 adapter, you may experience system hangs or crashes. APARs IX82178 and IX82256 are available to fix these problems.

Welcome Center

The Welcome Center application as shipped on RS/6000 systems, contains a Java Search applet that searches the Welcome Center files only when the Welcome Center is launched during the system reboot. Note the following information about this function:

- When running the Welcome Center on a GXT150 class graphics adapter, the Java Search applet colors show blue on black, which could be difficult to read.
- After you **login** to the Common Desktop Environment, you can run the Welcome Center by the icon in the Application Manager. In this environment, the Documentation Library search function will be launched instead of the Java Search applet.
- The search function is not provided in the ja_JP locale.

Migration

Migrating to AIX Version 4.3

When migrating to AIX Version 4.3 from an earlier level of AIX, you must update filesets from all CD-ROM volumes. The initial migration installation updates only the filesets from volume 1. After the system is booted in normal mode, enter the following command:

```
smit update_all
```

This command updates the filesets from the additional CD-ROM volumes. SMIT prompts for the additional volumes as necessary.

sendmail update in AIX Version 4.3.3

AIX 4.3.3 runs sendmail Version 8.9.3 which contains fixes, new configuration options, and Anti-Spam features. For more information about sendmail, see the **/usr/lpp/bos/README** file.

sendmail on AIX Version 3.2.5/4.1.5 and sendmail on AIX Version 4.3.3

sendmail Version 5.64 (supported on AIX version 3.2.5 and 4.1.5) and sendmail Version 8.9.3 (supported on AIX 4.3.3) are not compatible. sendmail 8.9.3 does not work with the Version 5.64 **/etc/sendmail.cf** file. There is no script available to assist in migration of the Version 5.64 **/etc/sendmail.cf** file to the Version 8.9.3 **/etc/sendmail.cf** file.

During migration installation of AIX Version 4.3.3, the Version 5.64 sendmail files are saved in the following locations:

```
/usr/lpp/save.config/usr/sbin/sendmail
/usr/lpp/save.config/etc/sendmail.cf
/lpp/save.config/etc/sendmail.nl
```

The **/etc/aliases** file is not modified during the installation.

sendmail on AIX 4.2.0/4.2.1/4.3.0/4.3.2 and sendmail on AIX 4.3.3

sendmail Version 8.7 (supported on AIX 4.2.0, AIX 4.2.1, and AIX 4.3.0) and sendmail Version 8.8.8 (supported on AIX 4.3.2) and sendmail Version 8.9.3 are somewhat compatible. The Version 8.7 **/etc/sendmail.cf** file works with the Version 8.8.8 and Version 8.9.3 sendmail binaries. The Version 8.8.8 **/etc/sendmail.cf** file works with the Version

8.9.3 sendmail binary. However, each new version of **/etc/sendmail.cf** contains new rewrite rules, macros, and options that are particular to the updated sendmail binary. Therefore, if you choose to run the Version 8.7 **/etc/sendmail.cf** file with the Version 8.9.3 sendmail binary, you could lose some new features and function particular to Version 8.9.3. You may want to merge the new options, macros, and rewrite rules. The new **sendmail.cf** file should have been saved in **/usr/lpp/save.config/etc/sendmail.cf.new**. You must merge this manually, because no migration script exists.

Migrating to the AIX Common Desktop Environment 1.0

This section provides information on moving to the AIX Common Desktop Environment (CDE) 1.0 from any version of AIX 3.2 or AIX 4.

Notes:

1. AIX Common Desktop Environment (AIX CDE) is the default desktop shipped with AIX 4.1.3 or later.

2. AIXwindows Desktop is the default desktop shipped with AIX 3.2.x, 4.1.0, 4.1.1, and 4.1.2.

If, after migrating to AIX CDE 1.0 from AIXwindows desktop on AIX 4.1.1 or 4.1.2, you have problems with the desktop (for example, icons on the front panel do not execute properly, icons are missing, or actions cannot be found), check that the following has been done:

1. The **X11.Dt.compat** fileset has been installed.
2. Action, data type, and front panel definitions in personal directories have been migrated to a valid format for AIX CDE 1.0.

An online help volume is provided to assist you in migrating to AIX CDE 1.0 from the AIXwindows Desktop. View this online help by selecting **Welcome to AIX CDE 1.0** from the Help Manager subpanel.

OpenGL, UMS or graPHIGS Migration

After migrating the OpenGL filesets some filesets may remain at the same VRMF level. For example, if you migrate from AIX 4.1.5 to AIX 4.3.2 and have all of the OpenGL filesets installed, the following filesets will not be migrated and their VRMF will not change:

```
Fileset name                            VRMF
----------------------------------      -------
OpenGL.OpenGL_X.adt.doc                 4.1.0.0
OpenGL.OpenGL_X.dev.pci.14104000.PPC    4.1.5.0
OpenGL.OpenGL_X.tools.glperf            4.1.0.0
```

This is an expected result and is not an indication that the migration was not successful or did not finish.

UMS Deinstalled on AIX 4.3 Migration Installations

When performing a migration installation from any version of AIX 4.1 or AIX 4.2 toAIX 4.3, an existing UMS will be deinstalled. This is to prevent problems due to incompatibilities between the UMS X11R5 XVideo Extension and the AIX X11R6 Xserver contained in AIX 4.3. After the migration installation, the user must reinstall UMS, including the **UMS.video_ext** package containing the X11R6 version of the UMS XVideo Extension, from the AIX 4.3 Bonus Pack CDs.

AIX Version 3.2 to 4.3 Migration Problems

On some AIX Version 3.2 systems, the default installation method is set as preservation (instead of migration). Check the default settings and select your desired method of installation from the **Change/Show Installation Settings and Install** panel. See "Step 5. Verifying or Changing the Installation Settings" in the *Installation Guide*, SC23-4112-00, for additional information.

4.3.3.0 Installation Media

Updates for some IBM products are included on the AIX 4.3.3.0 Installation media. They are included because these products will not function correctly after updating to 4.3.3 without them. The products themselves are not included on the AIX media, and must be obtained/purchased separately.

If you try to install these updates and you do not have the product installed, an error similar to the following displays:

```
Sample failure:
.........
Requisite Failures
------------------
SELECTED FILESETS:  The following is a list of filesets that you asked to
install.  They cannot be installed until all of their requisite filesets
are also installed.  See subsequent lists for details of requisites.

sysback.rte 4.1.3.1                    # AIX System Backup & Recovery
sysback.sbom 4.1.3.0                   # Sysback Offline Mirror Backu..

MISSING REQUISITES:  The following filesets are required by one or more
of the selected filesets listed above. They are not currently installed
and could not be found on the installation media.

sysback.rte 4.1.0.0                    # Base Level Fileset
sysback.sbom 4.1.0.0                   # Base Level Fileset

.........
```

This error indicates that the updates cannot be applied without the base level product.

Firmware

The firmware in many of the PCI bus-based RS/6000 machines is limited regarding the region of the hard disk from which it can read a boot image. This problem will not be encountered under most circumstances. The symptom of the problem is a failure to boot from hard disk, and a message from firmware similar to `unrecognized Client Program format`.

The affected machines can be identified most easily as the machines that provide access to the firmware System Management Services by means of pressing the F1 keys on the system attached keyboard, or the 1 key on a tty keyboard.

The problem is that the firmware on the affected machines cannot read the boot image from the hard disk if any part of the boot image resides past the 4 gigabyte boundary on the hard disk. This is not a problem for most customers because the AIX installation process creates the boot logical volume at the beginning of the disk. This is achieved by using the **-a** flag with the **mklv** command and specifying **e** (which corresponds to **edge**) as the argument for the **-a** flag. Using the **mklv** command with this parameter results in the boot logical volume being created at the edge of the hard disk, and the resulting address that the firmware uses to read the boot image will be within a safe range. The AIX installation process has always created the boot logical volume near the edge of the hard disk because that region of the hard has the slowest access time, and this allows other regions of the hard disk to be used by filesystems that can benefit from the better performance.

The only way that a customer can encounter this problem is by creating and initializing a new boot logical volume that extends past the 4 gigabyte boundary of the hard disk, either in part or in entirety.

In almost all cases, there is no need for a customer to create a new boot logical volume, but if they do, they should use the **lsvg** and **lslv** commands to verify that the newly created boot logical volume does not reside above the 4 gigabyte address on the hard disk.

An example of this calculation follows:

1. Run **lsvg rootvg** to determine PP SIZE.
   Note:

On a 4.5 gigabyte hard disk,the default PP SIZE is 8 megabytes.

2. Run **lslv -m bootlv00**

Replace bootlv00 with the name of the newly created boot logical volume. The numbers in the second, fourth, and sixth columns of the output indicate the physical partitions which have been assigned to the boot logical volume. If the PP SIZE is 8 megabytes, the boot logical volume must not use any physical partition above 511. (512 * 8 = 4096, which is 4 gigabytes). Similarly, if the PP SIZE is 16 megabytes, the boot image must not use any partition above 255, and if the PP SIZE is 4 megabytes, then the boot image must not use any partition above 1023.

As a reminder, this problem will not happen unless the customer has created and initialized a boot image that resides above the 4 gigabyte boundary.

Base Operating System (BOS)

This section contains information about the base operating system (BOS).

AutoFS Compatibility

In the event that an administrator wants to use the **automount** command rather than the **AutoFS** command, they must set an environment variable before invoking the **automount** command. They should also ensure that any map parameters previously used by the **automount** command are passed to the **automount** command with the **COMPAT_AUTOMOUNT** environment variable set and exported.

The **/usr/bin/automount** script looks for a **COMPAT_AUTOMOUNT** environment variable. If **COMPAT_AUTOMOUNT** is set to any value, the old version of **automount** is used and it now runs as **/usr/sbin/compat_automount**.

Logical Volume Manager (LVM) Enhancements

The LVM enhancements allow commands **mklv**, **rmlv**, **splitlvcopy**, and **chlv** (except name change) to function in concurrent mode and the new options for **syncvg** (**-H -P**) that allow a faster concurrent **syncvg** require that all machines in the cluster be at AIX Version 4.3. These new functions should not be attempted in mixed release level environments. If your environment is a mixture of AIX 4.1 or AIX 4.2 and AIX 4.3, do not try these new functions until you obtain the following APARs:

- IX70098 - V41 - clvmd should not vary off volume group for all NAK cases.
- IX70099 - V42 - clvmd should not vary off volume group for all NAK cases.

Otherwise, the passive cluster nodes will vary off the volume group when the new functions are attempted.

If you wish to do **rootvg** mirroring, use **mirrorvg** to setup the mirroring and **unmirrovg** to remove the mirroring. With these two commands, the limitations on rootvg mirroring have been removed. The white paper "Mirroring the rootvg Volume Group for AIX 4" is therefore no longer valid with AIX 4.3 and should not be followed.

A new partition allocation policy (Super Strict) is supported. This policy prohibits partitions from one mirror from sharing a disk with a second or third mirror.

Note:
Super Strict policies and mirroring and striping are not supported on AIX releases prior to AIX Version 4.3.3. You cannot import volume groups to AIX Version 4.3.2 and earlier if the volume groups include Super Strict policies or mirroring and striping functions.

wlmcntrl Command Correction

The description of the **-u** flag for the **wlmcntrl** command is incorrect in the AIX 4.3.3 documentation.

Use the following information for the **-u** flag:

-u
> Update: request to change the limits and/or shares of the active classes. Classes cannot be added or removed this way.

Print Subsystem Changes

The location of the device file for HP JetDirect attached printers changed between AIX Version 3 and Version 4. In AIX Version 3, the device file resided in the **/var/spool/lpd/pio/dev** directory. In AIX Version 4, this device file has moved to the **/var/spool/lpd/pio/@local/dev** directory.

Having the device file reside in a different directory will cause problems for existing HP JetDirect queues after an upgrade from AIX Version 3 to Version 4. Because the **/etc/qconfig** file is user-configurable, it is not modified during an AIX upgrade.

To allow the HP JetDirect queues to work after an upgrade, the **/etc/qconfig** file must be edited to indicate the new pathname for a device file. Any existing HP JetDirect queue must have the **@local** directory inserted between the **pio** and **dev** directories for the **file** entry of the queue, as shown in the following example.

This is an HP JetDirect queue on an AIX Version 3 system:

```
netps:
device = hp@server
hp@server:
file =
/var/spool/lpd/pio/dev/hp@server
header = never
trailer = never
access = both
backend = /usr/lib/lpd/pio/etc/piojetd server
```

To allow this queue to work after an upgrade to AIX Version 4, change the line containing **file** = for the queue to the following:

```
file = /var/spool/lpd/pio/@local/dev/hp@server
```

Parallel Printer Cable Selection

The parallel printer cable must be changed to a cable that is IEEE1284 compliant if all of the following are true:

- Your system was manufactured since 1998.
- The printer is "parallel attached."
- The attached printer is *not* a dot-matrix printer.
- The output of the **lsdev -C -l ppa0** command contains the word `IEEE1284`.

If the output of the **lsdev** command above contains the word `Standard`, or the printer is a dot-matrix printer, an IEEE1284 compliant cable is *not* required.

Cables that are not IEEE1284 compliant may not properly transmit data to high speed printers and loss of printer data may occur, because the cables may not be capable of transmitting data at rates that are possible with newer ECP parallel ports.

man Command

To access manual pages with the **man** command on a remote system, you have to specify the **-r** flag.

The syntax is:

```
man [[[ -c ] [ -t ] [ Section ]] | [ -k | -f ]] [ -M MPath ] [ -r ] Title ...
```

Note:

> If the **-r** flag is specified with the **man** command for accessing remote manual pages, set the **DOCUMENT_SERVER_MACHINE_NAME** environmental variable to the name of the documentation search server machine you want to use.

New Flag for the sar Command

In order to enable the **sar** command to read binary files generated by an older version of the **sadc** command, a new **-X** option was introduced. The **-X** file extracts the records from the file parameter, which is generated by the older version of the **sadc** command. The new **-X** option has to be specified if the binary file is generated by the older version of the **sadc** command.

The new option "-X" has to be specified if the binary file is generated by the older version of the sadc.

The modification to the 4.3.3 **sar** command is below:

Current syntax:

```
/usr/sbin/sar { -A | [-a][-b][-c][-d][-k][-m][-q][-r][-u]
[-v][-w][-y] } [-s hh[:mm[:ss]]] [-e hh[:mm[:ss]]]
[-P processor_id[,...] | ALL]
[-f file] [-i seconds] [-o file] [interval [number]] [-V]
```

New syntax:

```
/usr/sbin/sar { -A | [-a][-b][-c][-d][-k][-m][-q][-r][-u]
[-v][-w][-y] } [-s hh[:mm[:ss]]] [-e hh[:mm[:ss]]]
[-P processor_id[,...] | ALL]
[-f file] [-X file][-i seconds] [-o file] [interval [number]] [-V]
```

shutdown Command

This section of the Release Notes is included to document the **-u** flag in the **shutdown** command. This flag was not documented in any 4.3 releases. The **-u** flag is used by diagnostics to update the flash memory and reboot.

Use the following syntax to implement the **-u** flag in the **shutdown** command:

```
shutdown [-d] [-F] [-h] [-i] [-k] [-m] [-p] [-r] [-t mmddHHMM[yy]] [-u] [-v] [+Time[Message]]
```

lsps Command

The current man page for the **-c** flag of the **lsps** command reads:

```
-c   Specifies that the output should be in colon format. The colon format gives the paging space
     size in physical partitions.
```

The documentation should say:

```
-c   Specifies that the output should be in colon format. The colon format gives the paging space
     size in logical partitions.
```

chnlspath Command

Purpose

Modifies the value of the secure NLSPATH system configuration variable.

Syntax

```
chnlspath nlspath-value
```

Description

The **chnlspath** command is used to modify the secure NLSPATH system configuration variable.

lsnlspath Command

Purpose

Views the value of the secure NLSPATH.

Syntax

```
lsnlspath
```

Description

The **lsnlspath** command outputs the current value of the secure NLSPATH variable from the system.

Communications, Networking and I/O

This section contains information about communications, networking, and I/O-related topics.

gated Compatibility

The new **gated**, in **/usr/sbin**, uses a different syntax from the old version. Therefore, the **gated** configuration file in **/etc/gated.conf** should not be used. There is a sample **gated.conf** file in **/usr/tcpip/samples** that contains the correct syntax for the new version, and should be used as a guide for configuring **gated** in this release.

In AIX 4.3.3, the **udp_pmtu_discover** and **tcp_pmtu_discover** network options have a default value of 1. This enables path MTU discovery. Path MTU may cause problems for users running **gated** in environments where dynamic routing changes are expected to become effective quickly throughout the network.

If you experience problems when running **gated**, you can disable path MTU discovery by using the following commands:

```
no -o udp_pmtu_discover=0
no -o tcp_pmtu_discover=0
```

To make this change permanent, add the commands to your **/etc/rc.net** file.

7135 RAIDiant Array for AIX requirements (when upgrading to AIX 4.3)

Customers upgrading systems with attached 7135-110 or 7135-210 RAIDiant Array subsystems to AIX 4.3 must also obtain and install the latest version of controller and drive microcode. This microcode update can be obtained using hardware service channels (800-IBM-SERV in the U.S.) by requesting ECA 010. A new publication for the 7135,

containing information on microcode and device driver installation, should also be ordered. This publication is titled *7135 RAIDiant Array for AIX: Installation Guide and Reference*, SC23-1742.

Interface Specific Network Options (ISNO)

Prior to AIX 4.3.3, several key network options had a single global default value, making it very difficult to tune a system that has widely differing network adapters. Some applications are capable of setting their own options (overriding the defaults), but most of these applications only allow a single setting and this does not work well with different network adapters.

AIX 4.3.3 provides a feature called Interface Specific Network Options (ISNO). This feature can be enabled (the default) or disabled by setting the **no** option (**use_isno**) to 1 or 0.

For each network interface, five new parameters have been added; **rfc1323**, **tcp_nodelay**, **tcp_sendspace**, **tcp_recvspace**, and **tcp_mssdflt**. These correspond to the same values in the **no** options.

If these values are set for a specific interface, then they will override the system **no** default value. This allows different network adapters to be tuned for the best performance.

Use the **lsattr -E -l** *interface* command to display the values. They can be changed via the **chdev -l** *interface* **-a** *attribute=value* command. For example, `chdev -l en0 -a tcp_recvspace=65536 -a tcp_sendspace=65536` sets the **tcp_recvspace** and **tcp_sendspace** to 64K for **en0** interface. Using the **chdev** command will change the value in the ODM database so it will be saved between system reboots. If you want to set a value for testing or temporarily, use the **ifconfig** command. For example, `ifconfig en0 hostname tcp_recvspace 65536 tcp_sendspace 65536 tcp_nodelay 1` sets the **tcp_recvspace** and **tcp_sendspace** to 64K and enables **tcp_nodelay**.

You can also use the **ifconfig** *interface* command to display these values.

inetd.conf Migration

When you complete your migration, the **tftp**, **ftp**, **telnet**, **shell**, **login**, and **exec** services defined in /**etc/inetd.conf** may be enabled to run, even if they were disabled in the previous release.

Network Terminal Accelerator

Network Terminal Accelerator is not supported on AIX Version 4.3.

System Networking, Analysis and Performance Pilot (SNAPP)

The 4330-05 Recommended Maintenance Package contains the SNAPP product. SNAPP is used for performing limited system administration and basic RS/6000 network configuration from a handheld Personal Digital Assistant (PDA) through a serial line connection. The handheld PDA must be compatible with Palm OS.

The SNAPP product's primary purpose is to allow IP address configuration on a newly preinstalled AIX system that does not have a monitor or ASCII terminal and keyboard attached. It is assumed that once the AIX machine is on a network, access can be given to it through **telnet**, the **rlogin** command, or some other TCP/IP remote login command. However, the SNAPP product is not designed to replace a monitor or ASCII terminal.

The SNAPP product consists of a SNAPP client, the **Snapp.prc** program, which resides on a handheld PDA, and a SNAPP server, **/usr/sbin/snappd**, which resides in AIX. The client and server communicate over the serial connection using simple XML statements. The SNAPP server performs system administration tasks through perl scripts.

The serial connection is made as the handheld PDA's serial cable is plugged into the serial port of an AIX box.

The SNAPP product is contained in the **bos.net.snapp** fileset. When this fileset is installed, all the necessary files for the SNAPP server are installed on the local machine. The SNAPP client binary is installed in **/usr/samples/snapp/Snapp.prc**. It can also be downloaded from the AlphaWorks site at the following URL:

```
http://www.alphaWorks.ibm.com/tech/snapp
```

The SNAPP client requires a handheld PDA that is compatible with Palm OS and has a Palm OS software level of V3.5.0 or above. To copy the SNAPP client binary onto your handheld PDA, copy the **Snapp.prc** file to a PC and install the SNAPP application as you would install any other handheld PDA application. The SNAPP icon displays as a light bulb with the label **SNAPP** beneath it.

Additional information on SNAPP is available in **/usr/samples/snapp** and from the AlphaWorks web site.

TCP Selective Acknowledgement (SACK)

TCP SACK is available in AIX 4.3.3 and later. It is described in detail in RFC 2018, TCP *Selective Acknowledgement Options*. SACK allows TCP to recover from multiple losses within the window in lossy networks and internetworks.

By default, SACK is disabled. To enable it, enter the following command:

```
/usr/sbin/no -o sack=1
```

DVD-RAM Drive Support

Functionality was added in AIX 4.3 to support backing up to DVD-RAM. System backups (such as the **mksysb** and **savevg** commands) have a limitation that they expect the media to be 4.7 GB or larger per side. They will not process the next volume until they write over 4 GB on the current volume, thus the use of smaller media would result in corruption when going beyond the media's capacity. The other commands (such as **tar**, **cpio**, **backup**) do not have this size constraint.

For more information on creating CD and DVD backups, refer to the **/usr/lpp/bos.sysmgt/mkcd.README.txt** file.

Graphics

This section contains information about graphics software.

X11R5/X11R6.3 Compatibility Issues On AIX Version 4.3

The AIX 4.3.0, AIX 4.3.1, and AIX 4.3.2 X server is upgraded to the X Consortium release 6 version of X (commonly known as X11R6.3). The libraries are upgraded to X11R6.3 as well. These libraries are backward-compatible, in that the broad majority of applications work as on previous releases of AIX. For maximum customer flexibility, compatibility options for X11R3, X11R4, and X11R5 libraries are also shipped.

Applications that use the loadable extension facility provided by the X server may need to change. The X server allows the addition of new functionality through its extension mechanism. For each extension, part of the extension is loaded into the X server before it can be executed. X11R6.3 has modified how this mechanism works in the course of improvements to X, and it is this part of the extension that must be made compatible with X11R6.3 to execute properly. All of the extensions that are supplied are compatible and execute properly. In some circumstances, including the following, a customer may have an extension that will not work with X11R6.3:

- A customer has a sample extension downloaded from the X Consortium FTP site.
- A customer develops his own extension.
- A customer uses a third-party extension.

In these cases, the extension must be made compatible with X11R6.3 before it executes properly. Customer-developed extensions and sample X consortium extensions must be recompiled with the X11R6.3 environment. For third-party extensions, the customer should contact the vendor for a X11R6.3 compatible update.

Customers using non-IBM display adapters may also be using vendor-supplied software specific to those devices,

which uses X11R6.3 Server capabilities. If so, this software must be made compatible with X11R6.3 to operate properly. The customer should contact the particular vendor of the display adapter for this software.

An AIX Version 4.3 porting guide and the information on *The Developers Connection* CD provides assistance to customers and vendors developing adapters or extensions for AIX.

graPHIGS for AIX 4.3

graPHIGS applications that run Distributed Application Processes (DAPs) may need to change. By default on AIX 4.3, DAPs run with the new X11R6 libraries. If a DAP requires X11R5 libraries for any reason, the user may use a new flag, **-r5**, with the **gPinit** command as follows:

```
gPinit -a -r5
```

The **-a** flag allows for DAP execution and has not changed.

If the **-r5** flag is used, then all DAPs run as X11R5 clients. By default, DAPs and the graPHIGS remote nucleus run as X11R6 clients in AIX Version 4.3.

The **-r5** flag is useful for DAPs that depend on X11R5 functionality that no longer exists in X11R6 (for example, **XAsyncInput()**).

If the following message is observed while running a X11R5 DAP, then restart the graPHIGS remote nucleus with the **-r5** flag in addition to the **-a** flag.

```
WARNING: The XAsyncInput API is no longer implemented in X11R6.
```

Ultimedia Services for AIX

Customers upgrading to AIX 4.3.3 on systems with either the GXT2000P or GXT3000P graphics adapter must run the **smit update_all** command using the AIX 4.3.3 Bonus Pack CD to upgrade **UMS.objects** to version 2.2.1.5 or later. See the *AIX Version 4.3.3 Bonus Pack Release Notes* for detailed instructions.

Documentation

This section contains information about documentation changes.

Installation and Configuration

If you have a system that supports a GUI (Graphical User Interface) and are running in the X-Windows System, you can use the Configuration Assistant to install and configure the library service, or you can use the manual method. It is highly recommend that you use Configuration Assistant because it automatically performs some steps for you and is easier to use. Configuration Assistant starts automatically at reboot after the system installation. After you close Configuration Assistant, you can reopen it from the command line by entering configassist

AIX Documentation Libraries

The AIX Version 4.3 documentation is contained on two compact discs:

- AIX Version 4.3 Base Documentation CD, contains the following types of documentation:
    - User guides
    - System management guides
    - Application programmer guides
    - Commands reference volumes

- Files reference information
- Technical reference volumes used by application programmers
- AIX Version 4.3 Extended Documentation CD, contains the following types of documentation:
    - Adapter guide and reference books
    - Technical specifications describing industry-standard functions
    - Technical reference volumes used by system programmers

These CDs contain AIX and related products documentation designed for use with an HTML 3.2 Web browser, such as the Netscape browser that is shipped with the AIX Version 4.3 Bonus Pack. The discs require a CD-ROM drive. A few documents in these libraries are in PDF format and must be viewed using the Adobe Acrobat Reader, Version 3.0.

Beginning with AIX Version 4.3.3, the Documentation Library Service allows users to navigate, read, and search registered HTML documents using their Web browser and the library application. The library application presents documents in an expandable-tree format that can be navigated by clicking on button controls in the tree. This action opens those documents for reading and also allows users to search keywords using a search form in the application. The Documentation Library Service searches for those words and then presents a list of results that are linked to information contained in the online documentation files.

The Documentation Library Service provides three types of Graphical User Interfaces (GUIs) to the user, as follows:

- The Global Documentation Library Service GUI. This GUI shows all documentation on the documentation server that has been registered with the Global GUI. This GUI can be accessed by the icons in the Help sub-panel in the CDE desktop.
- The AIX Documentation Library GUI. This GUI contains the AIX operating system manuals. This GUI can be accessed by the icons in the Help sub-panel in the CDE desktop.
- The application GUI. Applications can use the library to create GUIs that just show the manuals for that application. This type of GUI is typically launched from within the application. An example of this type of GUI is the extended help GUI that is launched from within the AIX Web-Based System Manager application.

Users can access the global library application by typing `docsearch` on the command line or by clicking the **Documentation Library** icon in the Help subpanel under the CDE Desktop front panel.

Note:
IBM continues to ship **topnav.htm**. If you have a bookmark to **topnav.htm**, the links out of that navigation model will continue to work; however, the header and footer links will take you into the Documentation Library Service, and you may not be able to get back to **topnav.htm**. If you try to open the AIX Version 4.3.3 Documentation Library using the AIX Library Documentation icon and you do not have AIX 4.3.3 documentation installed for the language you are using, you will be sent to a previous level 4.3 (for example, 4.3.2) documentation navigation page. This page allows you to navigate to any previous level of AIX manuals that may be installed.

The documentation information is made accessible by loading it onto the hard disk or by mounting the documentation CD in the CD-ROM drive. While mounting the CD saves on the amount of hard disk space used, it requires the CD be kept in the CD-ROM drive at all times. Also, searching the documentation from the CD-ROM drive can be significantly slower (in some cases up to ten times slower) than searching the information if it is installed on a hard disk.

You can install all of the AIX documentation from the AIX Version 4.3 Base Documentation CD and the AIX Version 4.3 Extended Documentation CD or you can selectively install pieces of the documentation. Some documentation may have previously been installed with the operating system or other licensed products. Run the **lslpp** command to determine which packages and filesets are already installed on your system.

See *Installation Guide*, SC23-4112, for information about mounting the documentation CD-ROMs, installing documentation from these CD-ROMs, and configuring a documentation server.

Testing the Documentation Library Service

If you are not sure if the search service is installed and configured, enter the following command:

You will see one of the following results or messages:

- The library application appears, with no error messages and the search form appears at the top of the page. This search form contains one or more fields where you can enter words you want to search for. There are documents visible in at least one of the views. Try opening a document to read it and then searching keywords to test the search function.

  If everything is working correctly and you need to install some of the operating system manuals, see "Installing the Online Documentation" section of Installation Guide.

  If the search fails, go to "Problem Determination" in Chapter 19 of *System Management Concepts: Operating System and Devices*.

- There are no documents installed for this view. The library service may be installed, but the service cannot find any installed documents that are registered for the current view you are looking at. Try clicking on the other views to see if they contain documents. Once you find a view with documents, try reading and searching the documents.

  The library may be installed and configured correctly, but you cannot fully test the service until documentation is installed and registered. To install the operating system manuals go to "Installing the Online Documentation" in *Installation Guide*. You may also install and register any other documents that register themselves with the library service. After you have done this, return to this section and retest the library functions.

- Search is not enabled. The service is not fully installed and configured. See "Installing the Documentation Library Service" in Chapter 7 of the *Installation Guide*.
- Search is not supported in this language. The search engine cannot perform searches in a language installed on the system. This is not an error. This message will always be visible when you are using this language.
- Cannot find or execute ds_form. The wording of this message varies. The search service is not installed and configured correctly. See "Manually Installing the Documentation Library Service" in Chapter 7 of the *Installation Guide*.
- No browser appears. The search service is not installed and configured correctly. See "Manually Installing the Documentation Library Service" in Chapter 7 of the *Installation Guide*.

For more information about the Documentation Library Service, see the **/usr/docsearch/README** file. This README file ships as part of the Documentation Library Service package on the first AIX CD.

Using the man Command

If you are interested in viewing reference information (on topics such as commands, subroutines, and files) by using the **man** command, you must first install the AIX documentation. See the "Installation and Configuration" subsection under the "Documentation" section of this publication for more information.

Configuring the Language of the AIX Documentation

By default, documentation that is viewed by using the **docsearch** command or the CDE Desktop icons for the AIX Documentation or the Documentation Library appears in the same language as the current locale of the user's client computer.

However, you may want to see the documentation in a language other than the language of the system's or user's current default locale. Starting in AIX 4.3.2, the documentation language can be changed for all users on a system, or it can be changed for a single user. The **chdoclang** utility program is available for configuring the language of the AIX Documentation.

Locale Requisite for Documentation

Starting with AIX Version 4.3.3, the documentation requires its locale to be installed. The only exception is the English documentation, which does not require the en_US locale to be installed.

This prerequisite allows the unified library CGIs to collate and parse text when the library is being searched.

Changing the Documentation Language for All Users

To change the default documentation language for all users, the system administrator, logged in as the root user, runs the following command:

```
/usr/bin/chdoclang locale
```

Where *locale* is the locale specification of the desired documentation language. Running the command as the root user adds the following line to the system's **/etc/environment** file:

```
DOC_LANG=locale
```

where locale is the *locale* that is the new default documentation viewing and searching language. See the "Available Languages for AIX Documentation Library" section for the appropriate locale name to be used with the **chdoclang** command when configuring the language to be viewed when selecting the Documentation Library icon.

Note:
> If the users are using a remote documentation server, the DOC_LANG variable should be set on the user's client computer, not the remote server. Also, the language change does not take effect until the next time a user logs out and back into the computer.

For example, when a computer's default locale is English, a user sees English documentation when using the docsearch command or selecting the Documentation Library icon.

If the system administrator now wants all the users to see Japanese documentation instead of English, the administrator would enter the following command:

```
/usr/bin/chdoclang Ja_JP
```

Which adds the following line to the system's **/etc/environment** file:

```
DOC_LANG=Ja_JP
```

A user logging out and then logging back in will now see Japanese documentation when using the **docsearch** command or selecting the Documentation Library icon.

Note:
> Before a computer can serve documents in a language, the AIX locale (language environment) for that language and the translated versions of the documents must also be installed on the documentation server.

Changing the Documentation Language for a Single User

A user may override their system's default documentation language by running the following command:

```
/usr/bin/chdoclang locale
```

Where *locale* is the locale specification of the desired documentation language. Running the command as described above will add the following line to the user's **$HOME/.profile** file (when the Korn shell is the default shell of the user):

```
DOC_LANG=locale; export DOC_LANG
```

Where *locale* is the locale that will be the new default documentation viewing and searching language. See the "Available Languages for AIX Documentation Library" section for the appropriate locale name to be used with the

chdoclang command when configuring the language to be viewed when selecting the Documentation Library icon.

For example, when a user's default locale is Japanese, the user will see Japanese documentation when they use the **docsearch** command or select the Documentation Library icon.

However, suppose that the Japanese documentation is not installed but the English documentation is installed. To view the English documentation when the default locale is set to Japanese, the user would execute the following command:

```
/usr/bin/chdoclang en_US
```

Which adds the following line to the user's **$HOME/.profile** file (when the Korn shell is the default shell of the user):

```
DOC_LANG=en_US; export DOC_LANG
```

A user logging out and then logging back in will now see English documentation when using the **docsearch** command or selecting the Documentation Library icon.

Note:
> Defining the DOC_LANG environment variable in a user's **$HOME/.profile** (or **$HOME/.cshrc** for C shell users) will take precedence over any global DOC_LANG setting in their system's **/etc/environment** file.

Also, CDE users must uncomment the "DTSOURCEPROFILE=true" line in the **$HOME/.dtprofile** file, which will cause the **$HOME/.profile** (or **$HOME/.cshrc** for C shell users) to be read during CDE login.

Available Languages for AIX Documentation Library

The AIX Base Documentation is currently available in a number of different languages. When configuring the documentation language using the **chdoclang** command, use the following locale specifiers:

Documentation Language	Locale specifier for the chdoclang command
Brazilian-Portuguese	pt_BR
Catalan	ca_ES
Czech	cs_CZ
English	en_US
German	de_DE
Hungarian	hu_HU
Japanese	Ja_JP
Korean	ko_KR
Polish	pl_PL
Russian	ru_RU
Spanish	es_ES
Traditional Chinese	Zh_TW

InfoExplorer

InfoExplorer is no longer a part of the AIX Base Operating System. In AIX Version 4.3, InfoExplorer is sold as a separate AIX feature. If you have applications or personal documentation that requires the InfoExplorer browser, contact your point of sale to order the InfoExplorer feature.

Migration installation to AIX 4.3 preserves non-AIX InfoExplorer documentation. Prior to installation of the InfoExplorer feature for 4.3, the **lppchk -v** utility will report that the required software to access the InfoExplorer documentation is missing.

WLM Commands

wlmassign Command

Purpose

Manually assign a process to a class.

Syntax

wlmassign *ClassName PID*

Description

The **wlmassign** command assigns the process designated by by its process ID, *PID* to the class named *ClassName*. This overrides the automatic assignment.

The **wlmassign** command is restricted to the root user.

The *ClassName* parameter specifies the class that the process is to. The *PID* parameter specifies the process ID of the process to be assigned to the new class.

In addition to manual assignment, AIX 4.3.3 now supports a new class attribute called **inheritance**. This attribute, with a **yes** or **no** value, can be added to the classes file in the same way the **tier** attribute is, for example. The default value is **no**, indicating that new processes will be automatically classified upon calling "exec". If the **inheritance** attribute is set to **yes**, a new process created by a process in the class will remain in the class regardless of which application it executes. The syntax in the classes file is similar to the syntax for the other attributes. Example of the description in the classes file of a class named "student":

```
student:
   tier = 1
   inheritance = yes
```

Inheritance can be used together with manual assignment to assign an application to a class when the application starts and make sure that all the processes spawned by the application remain in the class to which the application was manually assigned. Inheritance can be used independently of manual assignment.

The **wlmassign** command and inheritance attribute are provided in AIX 4.3.3 to give 4.3.3 users early access to some of the features available in Workload Manager with AIX 5L. AIX 5L supports both manual assignment and the inheritance attribute. The AIX 5L **wlmassign** command is a superset of the 4.3.3 command and shell scripts using the 4.3.3 **wlmassign** command syntax will still work when users upgrade to AIX 5L. This situation is also true for class description files (classes) using inheritance.

When trying to manually reassign to a different class several cooperating processes sharing memory, there is a risk of seeing shared memory segments go to the shared class because between the individual manual assignments, processes already assigned to the new class and processes net yet assigned to the new class access the shared memory. It is therefore better to reassign an application before it has spawned processes and start sharing memory, using inheritance to make sure the children remain in the new class. If this is not possible, reassign the different processes when the application is not actively executing.

Note:
> The AIX 5L version of WLM does not have this constraint since the AIX 5L wlmassign command takes as a parameter a list of PIDs and WLM makes the reassignment of all the processes as a single operation, thus preventing "false sharing."

The **wlmassign** command comes with a 4.3.3 service update and as such does not support localization, that is, the error messages are in English only. The possible errors are as follows:

- **wlmassign** is invoked by a non-root user.
- Syntax errors. The command issues the "usage" string as it appears in the Syntax paragraph above.
- WLM is not started.
- The class *ClassName* does not exist
- The process *PID* does not exist.

wlmset Command

Purpose

Set global options for Workload Manager.

Syntax

```
wlmset [-a hardcpumax={yes|no} ] [-a shared={yes|no} ]
```

Description

The **wlmset** command is used to customize WLM by setting global option flags altering the standard behavior of WLM:

- The **hardcpumax** flag determines whether the CPU maximum limits should be treated as "soft" limits; that is, they can be exceeded if there is no contention for the CPU resource, or as "hard" (absolute) limit should never be exceeded, even if no other class requests any CPU cycles.
- The **shared** flag determines whether shared memory segments must be "charged" to the Shared class when they are accessed by processes in different classes, or remain into the class they were initially assign on the first page fault (the class of the process which first accessed the segment).

The "standard" behavior when no options are set (when the **wlmset** command has not been used) is:

- CPU maximum limits are treated as soft limits.
- A segment is classified to the Shared class the first time that a process belonging to a class different from that of the segment faults on one page of the segment.

The fact that these options are global WLM flags means that they apply to all the classes when set. The **wlmset** command can be used whether or not WLM is active. For consistent results, it is recommended that the **wlmset** command be used to customize Workload Manager prior to starting it. Otherwise, in the case of the shared memory for instance, shared memory segments accessed by processes in different classes will go into the Shared class (and remain there) prior to the shared flag being set and the shared memory segments accessed by processes in different classes after the flag has been set will remain in their class of origin.

The customization of WLM is done by setting global flags in memory, and thus has to be done every time a system is rebooted. The best method, when using the same set of flags for each reboot, is to run the **wlmset** command from the **inittab** prior to starting WLM.

The **wlmset** command is restricted to the root user.

Flags

The **-a** flag precedes a keyword indicating which option is to be set or reset. The valid keywords are:

hardcpumax
  Possible values are "yes" or "no". Yes indicates that the CPU maximum limits should be treated as absolute limits and should never be exceeded. No indicates that the CPU maximum limits should be treated as "soft" limits and can be exceeded if there is no contention for the CPU resource. No is the default when **wlmset** is not

used or is used without specifying the **hardcpumax** keyword.

shared

Possible values are "yes" or "no". Yes indicates that shared memory segments should "migrate" to the Shared class when accessed (page fault) by a process belonging to a different class as that of the segment. This is the default when **wlmset** is not used or is used without specifying the shared keyword. No indicates that the segment should remain in the class it was first classified into, regardless of the class of the processes accessing it.

This command is provided in AIX 4.3.3 to give AIX 4.3.3 users early access to some of the features available in Workload Manager with AIX 5L.

AIX 5L supports both "hard" and "soft" maximum limits which can be set independently for all resource types managed by WLM, including CPU. AIX 5L also provide a per-class attribute (localshm) to prevent shared memory segments to go into the Shared class on a per-class basis. It is expected that users of **wlmset** will modify their WLM configuration files to take full advantage of the corresponding AIX 5L features when they upgrade from AIX 4.3.3 to AIX 5L, and **wlmset** is not supported by AIX 5L.

This command comes with an AIX 4.3.3 service update and as such does not support localization. The error messages are in English only. The possible errors are as follows:

- The **wlmset** command is invoked by a non-root user.
- Syntax errors, and in this case the command issues the "usage" string as it appears in the "Syntax" paragraph above.
- Trying to run the command with a version of the AIX operating system that does not support the WLM global flags described above. This should not happen except in cases where AIX updates have been incorrectly installed.

Optional Software

This section contains information about optional software.

Viewing Information about Optional Software

Licensed programs include AIX 4.3 and optionally purchased products. Each program can have one or more separately installable filesets. Information about individual software products is available in HTML format. To view the software products information:

1. You must have installed an HTML Version 3.2 web browser, such as the one available on the AIX Version 4.3 Bonus Pack.
2. Install the Package Installation Database for Current Media software package (pkg_gd). The home page for the Package Installation Database for Current Media is located at:

   `/usr/share/man/info/en_US/a_doc_lib/aixins/inslppkg/toc.htm`

3. When viewing the Package Installation Database for Current Media, check to see if there is migration information for the databases you want to install.

Installing NetWare

When installing NetWare for AIX on your system using a language other than English, do the following:

1. Type `locale` at the system prompt.
2. Note the value of the **LC_ALL** variable.
3. Set the **LC_ALL** variable to **en_US** by using the following command:

   `export LC_ALL=en_US`

4. Install NetWare.
5. After installing NetWare, reset the **LC_ALL** variable to the original value noted in step 2.

SecureWay Directory V3.1.1 Lightweight Directory Access Protocol (LDAP)

SecureWay Directory LDAP is shipped with AIX 4.3.3 and runs on AIX Version 4.3.1 and later. The following information applies to this product.

SecureWay Directory LDAP Installation Considerations

Before installing the directory server, install only the **ldap.html**.*Lang* package and carefully follow the installation instructions found in the Install/Configuration Guide (see the note below about accessing this guide). Install the **ldap.html**.*Lang* by using SMIT or by running the following:

```
installp -acgXd /dev/cd0 ldap.html.en_US
```

Note:
When the Installation/Configuration Guide has been installed, use your local Web browser to view **file:/usr/share/man/info/<LanguageTag>/ldap/config/aparent.htm**.

Special Installation Instructions for LDAP If DB2 Is Already Installed

If you already have a version of DB2 installed, do not use the **Update Installed Software to Latest Level (Update All)** option with the LDAP and DB2 images packaged with AIX. This option might cause installation of a newer version of some of your existing DB2 file sets, but the resulting DB2 image might not be usable as a DB2 server. Instead, update your DB2 installation with the latest Fixpak that is available through the normal DB2 service channels prior to installing the LDAP server. DB2 FixPaks are available at:

```
http://www.software.ibm.com/data/db2/db2tech/version5.html
```

Note:
A full installation of DB2 Version 6.1 requires up to 255 MB of disk space if installed with all options and all manuals for any one language.

SecureWay Directory LDAP Enhancements

SecureWay Directory is enhanced for AIX 4.3.3. See the following Web site for the latest information about this product:

```
http://www.software.ibm.com/network/directory
```

SecureWay Directory V3.1.1 Lightweight Directory Access Protocol (LDAP) is delivered through the following packages and filesets:

Package	Fileset	Description
ldap.server		SecureWay Directory Server
	ldap.server.rte	SecureWay Directory Server Runtime
	ldap.server.com	SecureWay Directory Server Framework
	ldap.server.admin	SecureWay Directory Server Administrative Interface
ldap.client		SecureWay Directory Client
	ldap.client.rte	SecureWay Directory Client Runtime
	ldap.client.adt	SecureWay Directory Client SDK

ldap.html.<*Langd*> See Note 1.		SecureWay Directory Documentation
	ldap.html.<*Langd*>**.config**	SecureWay Directory Install/Config Gd - Langd
	ldap.html.<*Langd*>**.man**	SecureWay Directory Man Pages - Langd
ldap.msg.<*Langd*> See Note 2.		SecureWay Directory Messages
	ldap.msg.<*Langd*>	SecureWay Directory Messages - Langd

Notes:

1. <*Langd*> stands for the following locales having documentation; however, some portions of the documentation may not be translated. Zh_CN, ca_ES, cs_CZ, de_DE, en_US, es_ES, fr_FR, hu_HU, it_IT, ko_KR, pl_PL, pt_BR, ru_RU, sk_SK, and zh_TW.

2. <*Langd*> stands for the following locales having message filesets. Ca_ES, De_DE, Es_ES, Fr_FR, It_IT, Ja_JP, Zh_CN, Zh_TW, ca_ES, cs_CZ, de_DE, en_US, es_ES, fr_FR, hu_HU, it_IT, ja_JP, ko_KR, pl_PL, pt_BR, ru_RU, sk_SK, zh_CN, and zh_TW.

Communications Server

If you are using Communications Server for Systems Network Architecture (SNA) support, you must use the following levels:

- Communications Server for AIX, Version 5: 5.0.4.3
- Communications Server for AIX, Version 6: 6.0.0.1

X.25 Migration and Configuration

The following information contains procedures for migrating the AIXLink/X.25 LPP to version 1.1.5.

Note:
   The AIXLink/X.25 LPP version 1.1.5 is supported on AIX versions 4.1.5, 4.2.1, and 4.3.1 and later.

Minimum Requirements for X.25 Migration

To perform a successful migration, you must meet the following requirements:

- AIX Version 4.1.5, 4.2.1, or 4.3.1 or later with required updates installed on the system or be migrating to AIX Version 4.1.5, 4.2.1, or 4.3.1 or later.
- AIXLink/X.25 licensed product already installed on your system.
- All software and hardware requirements listed in the *AIXLink/X.25 LPP Guide and Reference, X.25 Installation and Configuration*.

Migration Procedures

The X.25 licensed program is delivered as an installable image. When migrating to AIXLink/X.25 Version 1.1.5, perform the following steps to save your X.25 configuration:

1. Use the **backupx25** command to save your system's X.25 configuration.
   Note:
      If you are migrating AIX at this time, you must back up your X.25 configuration to a file system that will be kept during in the AIX migration process. Then **tar** this file to a disk or other removable media.
2. Use the **removex25** command to remove the system's X.25 configuration.

3. Use the **installp** command or SMIT to install AIXLink/X.25 Version 1.1.5
4. Use the **restorex25** command to redefine your system's X.25 configuration.

DCE/DFS Migration to AIX Version 4.3

Minimum Required Levels of DCE 2.1 on AIX 4.3: Some optional DCE 2.1 filesets must be installed at or later certain levels in order for DCE to be functional on AIX 4.3. The filesets and minimum levels are as follows:

```
dce.client.dfs.rte          2.1.0.24
dce.dfs_server.rte          2.1.0.21
dce.dfsnfs.rte              2.1.0.11
dce.edfs.rte                2.1.0.19
```

These upgrades are necessary for the DCE Distributed File System to work on an AIX 4.3.2 or higher system. If DFS is started on an AIX 4.3.2 machine without these upgrades, the machine will experience network problems and may eventually crash.

For customers using the DCE Distributed File System (DFS) for AIX, migrating an existing AIX system to AIX 4.3 will automatically upgrade the following filesets if they exist on the system:

```
DCE Client Services                 dce.client.core.rte 2.1.0.26
DCE Security Services               dce.security.rte    2.1.0.24
DCE DFS Client Services             dce.client.dfs.rte  2.1.0.24
DCE DFS Base Server                 dce.dfs_server.rte  2.1.0.21
DCE Enhanced DFS                    dce.edfs.rte        2.1.0.19
DCE NFS to DFS Authenticating Gateway dce.dfsnfs.rte
```

If the automatic upgrades are not successful during the AIX 4.3 migration installation, the AIX 4.3 system installation procedure will detect that the DCE filesets are not at the minimum required level for running on AIX 4.3. The installation procedure will move the existing **/etc/dce/rc.dce** file to **/etc/dce/rc.dce.downlevel** to prevent DCE/DFS from starting on the system.

If this occurs, apply the DCE PTFs from the AIX installation media, then reboot the system. The **/etc/dce/rc.dce.downlevel** file can then safely be moved back to **/etc/dce/rc.dce** and DCE/DFS started on the system.

If you install DCE filesets after installing AIX 4.3, be sure to install the required minimum levels prior to configuring DCE on the machine.

The DCE/DFS images on the AIX CD 1 media are not LPP images; they are DCE/DFS updates that will be applied on machines where DCE/DFS is currently installed and the customer is migrating to AIX 4.3. The AIX installation utilities may show them as possible installation images but you cannot install DCE/DFS from these images. You must install DCE from the media that DCE ships on and not the AIX CD 1 media.

Minimum Required Levels of DCE 2.2 on AIX 4.3: Some optional DCE 2.2 filesets must be installed at or above certain levels in order for DCE to be functional on AIX 4.3.2. or higher. The filesets and minimum levels are:

```
dce.client.dfs.rte          2.2.0.2
dce.dfs_server.rte          2.2.0.2
dce.dfsnfs.rte              2.2.0.2
dce.edfs.rte                2.2.0.2
```

These upgrades are necessary for the DCE Distributed File System to work on an AIX 4.3 system. If DFS is started on an AIX 4.3 machine without these upgrades, the machine may eventually crash.

For customers using the DCE Distributed File System (DFS) for AIX, migrating an existing AIX system to AIX 4.3 will automatically upgrade the following filesets if they exist on the system:

```
DCE Client Services                 dce.client.core.rte 2.2.0.2
DCE Security Services               dce.security.rte    2.2.0.2
DCE DFS Client Services             dce.client.dfs.rte  2.2.0.2
DCE DFS Base Server                 dce.dfs_server.rte  2.2.0.2
DCE Enhanced DFS                    dce.edfs.rte        2.2.0.2
DCE NFS to DFS Authenticating Gateway dce.dfsnfs.rte      2.2.0.2
```

Also, beginning with AIX Version 4.2.1, the DCE Distributed File System (DFS) for AIX no longer supports the use of the DFS fileset backup and restore utilities with JFS filesystems exported to DFS

The DFS backup and restore utilities are as follows:

- The **fts** commands (**fts dump**, **fts restore**)
- The DFS Backup System (the **bak dump**, **bak restoredisk**, **bak restoreft**, and **bak restoreftfamily** commands)

If you export JFS data to DFS from an AIX 4.2.1 or later system, the DFS commands to dump and restore this data will display the following message:

```
Error in <dump|restore>: The system call does not exist on this system
```

This occurs even if you are running the DFS commands on earlier versions of AIX. The critical point is the level of the AIX system on the DFS File Server where the data is being exported to DFS.

Use standard AIX backup and restore utilities to back up JFS data that is exported to DFS.

Tivoli Management Agent (TMA), Version 3.2

The Tivoli Management Agent can be installed on your system now, or in the future, if it is to be a managed node within the Tivoli Enterprise Software suite.

The foundation for the Tivoli Enterprise Software product suite and third-party management products is the Tivoli Management Framework. This framework provides the graphical desktop, object-oriented databases, and base services used by other management products. TMA is a "lightweight" version of the Tivoli Management Framework for installation on client systems.

For more information about Tivoli Systems products and services, including how to become a Tivoli customer:

1. Call: 1-800-2TIVOLI (to be connected to your local sales office)
2. Visit the Tivoli Home page at: http:// www.tivoli.com

Installation

Install the Tivoli_Management_Agent.client fileset (400K).

Configuration

The installation process only copies files to the disk. See the **/usr/lpp/Tivoli_Management_Agent.client/Readme.txt** file for configuration instructions.

Soft5080

Customers who want to use Soft5080 with AIX 4.3.3 or 4.2.1 to perform 5080 emulation must apply APAR IX82499.

Perl

The following Perl filesets are shipped with AIX pursuant to the terms of the Artistic License:

- **perl.rte 5.6.0** (version 5.6)
- **perl.man.en_US**

For more information, run the **perl -v** command or to view the Artistic License, see:

```
http://www.perl.com/language/misc/Artistic.html
```

Note:

> The **perl.rte** fileset will be installed automatically.

IBM will continue to update Perl to the next stable release as new versions of AIX are shipped. However, IBM will not support Perl.

For more information about Perl, see the following Web site:

```
http://www.perl.org
```

Service

Electronic Fix Distribution for AIX

Fixes on the Internet

You can download AIX fixes from the IBM Server Support Web site:

```
http://www.ibm.com/server/support
```

Registration is required to download fixes. Registration is free, and no service agreement is necessary.

Problem Solving Databases for AIX

Besides electronic fix distribution, IBM also provides searchable technical databases through the World Wide Web. Much of the technical information is available to customers with support contracts but, IBM also provides a large assortment of technical information to any web user.

You can search AIX-related bug reports and technical tips at the following Web address:

```
http://www.ibm.com/servers/support/
```

Appendix A. Notices

This information was developed for products and services offered in the U.S.A.

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