AIX 7.3.1

Release Notes

Note

Before using this information and the product it supports, read the information in “Notices” on page 21.

First edition (November 2022)

This edition applies to AIX® 7.3 with Technology Level 1 and to all subsequent release and modifications until otherwise indicated in new editions.

Contents

About this document

The Release Notes topics include late technical information that is not included in other topics, and they highlights new functions for the AIX 7.3 licensed program.

Highlighting

The following highlighting conventions are used in this document:

Bold	Identifies commands, subroutines, keywords, files, structures, directories, and other items whose names are predefined by the system. Bold highlighting also identifies graphical objects, such as buttons, labels, and icons that the you select.
Italics	Identifies parameters for actual names or values that you supply.
`Monospace`	Identifies examples of specific data values, examples of text similar to what you might see displayed, examples of portions of program code similar to what you might write as a programmer, messages from the system, or text that you must type.

Case sensitivity in AIX

Everything in the AIX operating system is case sensitive, which means that it distinguishes between uppercase and lowercase letters. For example, you can use the **ls** command to list files. If you type LS, the system responds that the command `is not found`. Likewise, **FILEA**, **FiLea**, and **filea** are three distinct file names, even if they reside in the same directory. To avoid causing undesirable actions to be performed, always ensure that you use the correct case.

ISO 9000

ISO 9000 registered quality systems were used in the development and manufacturing of this product.

AIX 7.3.1 Release Notes

Review the changes and issues for IBM® AIX 7.3.1.

Read before installing

Before you use this software, you must go to the Fix Central website and install the latest available fixes that address security vulnerabilities and other critical issues.

Installation tips

The installation hints and tips are available at the AIX Installation tips article.

Software License Agreements

In some instances, the Software License Agreements (SLA) might not be displayed correctly. In this event, the license agreements can be viewed for all languages at the Software license agreements website.

Software Maintenance Agreement

In AIX 7.3, a separate Software Maintenance Agreement (SWMA) acceptance window displays during installation immediately after the license acceptance window. The response to the SWMA acceptance (accept or decline) is stored on the system, and either response allows the installation to proceed, unlike license acceptance, which requires you to accept to proceed.

The **SWMA acceptance** window is displayed during a new overwrite or preservation installation from base DVD media.

For NIM installations, if licenses have been accepted either from the choices that are made when you initialize the installation, or by using the `ACCEPT_LICENSES` field in a customized `bosinst.data` file, then this will constitute SWMA acceptance.

AIX Software Maintenance (SWMA) update access key

IBM Power10 processor-based servers, or later, include technology that helps you keep your Software Maintenance Agreements (SWMA) current so that you can apply AIX updates and receive support from IBM. The server uses an AIX update access key (UAK) that indicates the expiration date of the associated AIX SWMA agreement for the server and provides notification of SWMA expiration to ensure continued and uninterrupted software support. For more information about AIX UAKs, see the AIX update access key topic. You can find additional information in the Management of AIX Update Access Keys support article.

Fixes and problem-solving databases

You can download AIX fixes and search technical databases (including APARS and tips for AIX administrators), at the Fix Central website.

Security advisories

Security subscription services are available at My notifications website.

After you subscribe to the AIX security advisories, you will receive the advisories by email as soon as they are published.

Speculative-execution mitigation

AIX 7.3, and later includes support for enhancing AIX software with mitigation against speculative-execution vulnerabilities. AIX applications and kernel extensions can use the new cpu_context_barrier and cpu_speculation_barrier services to protect against attacks from untrusted sources. For more information about these services, view their description on the IBM Docs for AIX Technical Reference.

System requirements

Review the following information to determine the minimum and recommended system requirements that are needed to run AIX 7.3.1.

Required hardware

Only 64-bit Common Hardware Reference Platform (CHRP) machines that are running selected POWER8, POWER9, and Power10 processors in POWER8, or later, processor compatibility mode that implement the Power Architecture® Platform Requirements (PAPR) are supported.

Note: IBM Hyperconverged Systems, powered by Nutanix, with POWER8 processor-based servers (CS821 and CS822 models) do not support AIX 7.3, and later.

To see whether you have a supported machine, log in to the machine as the root user, and run the following command:

```
prtconf | grep 'Processor Type'
```

Firmware

I/O devices IPL limitation

Because of a firmware memory size limitation, only I/O devices in the first 144 I/O slots that are assigned to a logical partition or single system image partition can be used as an IPL (boot) source.

You can use the HMC to identify which devices are in the first 144 I/O slots by performing the following steps:

1. Select **Partition Properties** > **Hardware** > **I/O**.
2. Click the Bus column to sort the I/O devices in ascending order.

   The first 144 I/O devices in the sorted list are in the bootable adapter slots.

If you are using a partition or single-system image partition with more than 144 assigned I/O slots, the following scenarios and their results and resolutions are possible.

Table 1. Scenarios for partitions with more than 144 assigned I/O slots

Scenario	Result	Resolution
Attempting to boot from a device beyond the first 144 I/O slots for installation or diagnostic purposes.	The device is not selectable as a boot source from the SMS menus.	Use a device in the first 144 I/O slots.
Booting from a device in the first 144 I/O slots, and then attempt to select a target installation device in a slot beyond the first 144 I/O slots.	The boot will succeed to the installation menus, but devices beyond the first 144 I/O slots will not be listed as bootable installation targets in the AIX menus.	Select a device that is available and marked as bootable.

Table 1. Scenarios for partitions with more than 144 assigned I/O slots (continued)

Scenario	Result	Resolution
Using an MPIO configuration where one adapter is in the first 144 I/O slots and another adapter is in a slot beyond the first 144 I/O slots. Both adapters are present at boot time.	The boot will succeed to the installation menus, and the device will be listed as bootable in AIX installation menus. The installation will proceed, but it will fail with the **bootlist** command failure "unable to set bootpath for all paths."	Use a device in the first 144 I/O slots for all paths.
Using DLPAR to add an adapter in a slot beyond the first 144 I/O slots, and then attempting to run the **alt_disk_install** command for the newly added device.	The device will not be listed as bootable.	Use a device in the first 144 I/O slots.
Using DLPAR to add an adapter in a slot beyond the first 144 I/O slots, and using the **bootlist** command to add the device as a bootable device (for example, by dynamically adding a redundant path to a current boot device or setting up for a network boot). Then, removing the original adapter and rebooting.	The **bootlist** command succeeds, but the boot fails from the specified device, and AIX will not receive control.	Use a device in the first 144 I/O slots.
Using DLPAR to add an adapter whose probe order will make it displace a current bootable device, and then rebooting.	The boot fails, and AIX will not receive control.	Move the boot device to one of the first 144 I/O slots or remove the previously added device.
Selecting a device in a slot beyond the first 144 I/O slots as a dump device for a firmware-assisted dump.	The **sysdumpdev** command does not allow devices in slots beyond the first 144 I/O slots to be selected as firmware-assisted dump storage devices. An error occurs during the firmware-assisted dump configuration, and a traditional AIX dump automatically becomes available.	Use a device in the first 144 I/O slots for firmware-assisted dumps.
Using DLPAR to add an adapter whose probe order will make it displace a currently valid firmware-assisted dump target device, and then rebooting after the dump.	The firmware-assisted dump process fails during the boot process and displays an error message. The traditional AIX dump still runs to retrieve the dump image.	Avoid displacing the selected firmware-assisted dump target device or reconfiguring the **sysdumpdev** command for the firmware-assisted dump target device selection, and specify a device within the first 144 I/O slots.

Table 1. Scenarios for partitions with more than 144 assigned I/O slots (continued)		
Scenario	**Result**	**Resolution**
Using DLPAR to add an adapter whose probe order will make it displace a currently valid firmware-assisted dump target device, and then rebooting.	The **sysdumpdev** command does not allow devices in slots beyond the first 144 I/O slots to be selected as firmware-assisted dump storage devices. An error occurs during the firmware-assisted dump configuration, and a traditional AIX dump automatically becomes available.	Use a device in the first 144 I/O slots for firmware-assisted dumps.

Memory requirements

AIX 7.3.1 minimum current memory requirements vary, based on the configuration.

A minimum current memory requirement for AIX 7.3.1 is 2 GB.

AIX 7.3.1 requires the minimum current memory requirement to increase as the maximum memory configuration or the number of devices scales upward, or both. Larger maximum memory configurations or extra devices scale up the minimum current memory requirement. If the minimum memory requirement is not increased along with the maximum memory configuration, the partition hangs during the initial program load (IPL).

Paging space requirements

AIX 7.3, and later creates a 512 MB paging space (in the `/dev/hd6` directory) for all new and complete overwrite installations.

Boot logical volume size requirement

Starting with AIX 7.3, the minimum size of the boot logical volume (hd5) is 40 MB.

The installation operation, which includes the operating system overwrite installation, operating system preservation installation, and operating system migration installation, create or increase the size of the hd5 logical volume to a minimum of 40 MB.

Before you migrate an operating system, run the pre-migration script that is available in the `usr/lpp/bos` directory, in your media, or in your NIM Shared Product Object Tree (SPOT). The pre-migration script checks whether the size of the hd5 boot logical volume is at least 40 MB. If the size of the hd5 logical volume does not meet the requirements, the pre-migration script checks whether the required free partitions are available. The partitions that are allocated for the hd5 boot logical volume must be contiguous and must be located within the first 4 GB space of the disk.

Disk requirements

AIX 7.3, and later, requires a minimum of 20 GB of physical disk space for a default installation that includes all devices, the Graphics bundle, and the System Management Client bundle.

Disk usage

The following table displays disk usage statistics:

File system	Allocated (Used)
/	128 MB (51 MB)
`/usr`	2368 MB (2123 MB)

File system	Allocated (Used)
/var	192 MB (39 MB)
/tmp	128 MB (2 MB)
/admin	128 MB (1 MB)
/opt	64 MB (18 MB)
/var/adm/ras/livedump	256 MB (1 MB)

Note:

1. If the /tmp directory has less than 64 MB, it is increased to 64 MB during a migration installation so that the AIX 7.3.1 boot image is successfully created at the end of the migration.

You must format the SAS disk properly before you install the AIX operating system on it. The AIX operating system requires the disk to be formatted to a sector size supported by the attached SAS controller. All AIX SAS controllers support 512-byte sector SAS disks. The 522-byte sector SAS disks are supported only when they are attached to SAS RAID controllers. If the disk has been formatted for SAS RAID, but is not attached to a SAS RAID controller, the disk might not configure. If the disk does configure, it might be unreadable in the AIX environment. In some instances, the certify function and the format function in AIX diagnostics can be used to reformat the disk for the attached SAS controller.

If any existing file system has a mount point in the /opt directory, or a mount point of /opt itself, the new logical volume, and file system are not created.

The AIX_FCPARRAY driver is not supported in AIX 7.3, and later. Before you migrate to AIX 7.3, or later, you must use the **manage_disk_drivers** command to convert any FCP array disks from the AIX_FCPARRAY driver to the AIX_AAPCM driver. The AIX_AAPCM driver supports Multipath I/O (MPIO) devices.

Disk capacity

Serial Attached SCSI (SAS) RAID controllers and Fibre Channel controllers support attached arrays and disks with capacities, which exceed 2 TB. The maximum supported capacity (beyond 2 TB) is limited by either the attached storage subsystem or the upper level logical storage management.

For additional information about SAS RAID controllers, see the SAS RAID controller for AIX topic.

For information about AIX capacity limitations for logical storage, see the Limitations for logical storage management topic.

File system and file size capacity limitations

For AIX 7.3, and later, the qualified and supported maximum capacity of Enhanced Journaled Filesystem (JFS2) file and file system is 128 TB.

File system and logical volume manager updates

Consider the following default characteristics of file system and logical volume manager:

- The **mkvg** command by default creates a scalable type of volume group that can accommodate up to 1024 physical volumes, 256 logical volumes, and 32768 physical partitions. Use the **-a** flag in the **mkvg** command to create a small volume group type that can accommodate up to 32 physical volumes and 255 logical volumes.
- The **mkvg** command by default enables the data encryption in the volume group.
- The **mklv** command by default creates a jfs2 type logical volume.
- The **mklv** command by default creates a logical volume with passive mirror write consistency as the default mirror write consistency policy for big type and scalable type of volume groups.
- The **crfs** command by default creates a file system with INLINE log device.

File extension update

Starting with AIX 7.3, the default file name extension is changed from `.Z` to `.gz` for the pax file that is compressed by using the **snap** command. The `snap.pax.gz` file is the default pax file that is compressed by using the **snap** command.

Security enhancements

Review the following security enhancements in AIX 7.3, and later:

- Uses SSHA-256 as the default password algorithm for overwrite and migration installation. The passwords in the SSHA-256 algorithm can contain up to 255 characters for the default AIX configuration.
- Enables UNIX password compatibility by default for overwrite and migration installation.
- Sets the permission for new users on the default home directories to 750 for overwrite and migration installation.
- Supports longer usernames for overwrite installation, by default.
- Removes the deprecated LDAP cache timeout functionality for overwrite installation.
- Strengthens the user default password policy with the latest security industry standards for overwrite installation.
- Strengthens security of AIXPert default password policy with the latest industry standards for overwrite installation.
- Enables the sendmail application to support Simple Authentication and Security Layer (SASL) based authentication.
- Encrypts the physical volumes that uses the small computer systems Interconnect® (SCSI) protocol. You can use the **hdcryptmgr** command to manage encryption of physical volumes.
- Supports IBM Cloud® Hyper Protect Crypto Services (HPCS) for encryption in logical volumes and physical volumes.

Active Memory Expansion (AME)

AME on AIX now has a default page size of 64 KB on Power10 processor-based systems.

AIX MPIO default settings updates

To support Fibre Channel (FC) and Internet Small Computer Systems Interface (iSCSI)-attached devices in both the IBM DS8000® and the IBM SAN Volume Controller or IBM Flash Systems family, in AIX 7.3 and later, the default values of the following attributes have been changed in the Object Data Manager (ODM) that is shipped with AIX:

- The **reserve_policy** attribute value is changed to `no_reserve`.
- The **algorithm** attribute value is changed to `shortest_queue`.
- The **queue_depth** attribute value is changed to 64 for the IBM DS8000 family and 32 for the IBM SAN Volume Controller or IBM Flash Systems family.

Additionally, the following ODM attributes that are associated with MPIO disks are changed to non-displayable attributes: **clr_q**, **q_err** and **q_type**, **dist_err_pcnt** and **dist_tw_width**, **lun_reset_spt**, **reassign_to**, and **start_timeout**.

VPM throughput mode updates for Power10

When Power10 systems run in shared processor mode, the default value of the throughput mode for the virtual processor management (VPM) is 2. When you migrate the system to or from a Power10 system, and later, the AIX operating system automatically changes the default value of the throughput mode for the VPM. During boot operation, the AIX operating system selects the default value of the **vpm_throughput_mode** tunable parameter of the **schedo** command based on the type of server on

which the LPAR is running. The value of the **vpm_throughput_mode** tunable parameter that is selected by the AIX operating system is preserved and used on the destination server. On Power10 systems, you can switch to the recommended value of 2 for the **vpm_throughput_mode** tunable parameter by using the following command:

```
schedo -d vpm_throughput_mode
```

Note: When you migrate to or from a Power10 system, and later, it is recommended to move the operating system level to 7300-00, 7200-05-03-2147, 7200-04-05-2148, 7100-05-09-2148 or later. Without this feature that enables you to change the **vpm_throughput_mode** tunable parameter by using the **schedo** command, updating the operating system levels to 7200-05-00-2037, 7200-04-03-2038, and 7100-05-07-2037 might override the value set for the **vpm_throughput_mode** tunable parameter.

Installing

This section contains information about installing AIX 7.3, and later, that supplements the information that is contained in the Installation and Migration topic.

Installing AIX 7.3.1

The following methods can be used to install AIX 7.3.1:

- Complete overwrite installation
- Preservation installation
- Migration installation

Beginning with AIX 7.3, the OpenSSH client and server software are installed by default. The former bundle offerings no longer exist. The following `bos.net.tcp` filesets are not installed by default:

- `bos.net.tcp.ftp`
- `bos.net.tcp.ftpd`
- `bos.net.tcp.rcmd`
- `bos.net.tcp.rcmd_server`
- `bos.net.tcp.slip`
- `bos.net.tcp.telnet`
- `bos.net.tcp.telnetd`
- `bos.net.tcp.timed`
- `bos.net.tcp.x500`

Note:

- OpenSSH client and OpenSSH server filesets will be installed by default for overwrite, preservation, and migration installations. Any `bos.net.tcp` filesets that are available on your system before migration, will remain on your system after migration, and those filesets will be upgraded to the newer levels.
- The `bos.net.tcp.bind` and `bos.net.tcp.bind_utils` filesets of AIX 7.3.0 are replaced by the `bind.rte` fileset. The `bind.rte` fileset is not installed by default.

A new bundle offering is available to install the following filesets that are not installed by default: `bos.net.tcp.ftp`, `bos.net.tcp.ftpd`, `bos.net.tcp.telnet`, and `bos.net.tcp.telnetd`.

Note: After you install or migrate a system to AIX 7.3, or later, you can install a lower level of AIX by restoring a system backup or by performing a new and complete overwrite operation by using base media. Preservation installations from AIX 7.3.1 to a lower level of AIX are not supported.

Note: Using the update media is recommended for updates. If you use the base media to update, install the `bos.dsc` fileset first by using the following command: `# installp -e /tmp/install.log -aXd` *`software_source`* `bos.dsc`. If you use the base media to update, some ODM settings (such as SRC subsystems settings) might be lost. If you use base media, or a software source create from base media,

for an **update_all** operation, previous history of your software installation will be removed. Whenever a base image is installed, the history of the fileset installations are reset. The history is maintained when service updates are used for an **update_all** operation.

The minimum size of the boot logical volume is 40 MB. If your current boot logical volume is lesser than this value, the installation process tries to increase it. However, partitions in a boot logical volume must be contiguous, and within the first 4 GB on the disk. If your system does not have free space that meets these requirements, a message indicates that the system does not have enough space to expand hd5 (the boot logical volume).

To install AIX 7.3.1, follow the instructions in the Installing the base operating system topic.

Logical Volume encryption enhancements

Starting with AIX 7.3, encryption is enabled on the root volume group for new and complete overwrite installation. You can select the logical volumes that must be encrypted in the **Base Operating System Install** menus, or by using a `bosinst_data` resource for network installation.

You can select the following logical volumes to be encrypted during the installation: hd2 (`/usr`), hd9var (`/var`), hd3 (`/tmp`), hd1 (`/home`), hd10opt (`/opt`), hd11admin (`/admin`), dumplv (`lg_dumplv`). For more information, see BOS installation options.

All logical volumes that are encrypted during the operating system installation are initialized with the Platform Key Store (PKS) authentication method. You are prompted to add passphrase recovery method after the system starts. You can add other encryption key-protection methods to the logical volumes, but you must have the PKS method on logical volumes that are created during the installation. For more information, see Encrypted logical volumes.

Starting with AIX 7.3 Technology Level 1, the Live Update operation supports encrypted logical volumes and PKS migration. Support for encrypted logical volumes is restricted to non-rootvg volume groups. Support for PKS migration is restricted to Power® Firmware Level at FW1030, or later.

Hardware requirement: POWER9 and later processor-based systems

Limitations:

- For installations that use mksysb images, **alt_disk_copy** and **alt_disk_mksysb** commands, PKS and passphrase authentication methods are created again automatically. Any other encryption methods that were present must be created again by the system administrator.
- You can restore an encrypted data volume group or user volume group by using the **restvg** command or SMIT on the target system. You cannot restore an encrypted data volume group or user volume group by using NIM.
- The **multibos** command is not supported on a system that contains encrypted logical volumes.

Security model updates in AIX 7.3.1

Starting with AIX 7.3, the following security models are not available. The following security options are removed from the **Operating System Install** menus and from the `bosinst.data` templates:

- Trusted AIX
- Trusted AIX LAS/EAL4+ Configuration Install
- BAS and EAL4+ Configuration Install

The following security options are available for use:

- Logical volume encryption
- Digital signature policy
- Secure by default

Installing AIX using a USB flash drive

AIX 7.3, and later, supports installation by using a USB flash drive on POWER8 systems, and later. A USB flash drive that contains an AIX installation image can be created by first downloading the AIX installation image from the IBM Entitled System Support website. A single volume installation image of AIX 7.3.1 is made available on the IBM Entitled System Support website for writing to USB flash memory. After downloading the AIX installation image, the image can be written to a USB flash drive. IBM recommends that you use a recently manufactured USB flash drive. The minimum capacity requirements of the USB flash drive for AIX installation is 16 GB. On an AIX or a Linux® based system, the image can be written to a USB flash drive by using the dd command.

Additionally, it is possible to create an installable USB flash drive by copying the image directly from AIX DVD installation media by using the dd command:

```
$ dd if=/dev/cd0 of=/dev/usbms0 bs=4k
```

Comparable commands exist on Windows-based machines for writing the installation image to a USB flash drive.

After the USB flash drive AIX installation media has been created, the media can be used on POWER8 systems, and later, similar to the DVD install media.

Note: The AIX `bootlist` command can only recognize the USB flash drive (usbmsX) as a bootable device if the USB flash drive was present during IPL of the AIX partition. On POWER8 systems, and later, the SMS menus can always be used to assign the USB flash drive as the boot source.

AIX and IBM Power Systems USB implementation is compliant with relevant USB standards. In the unlikely event a USB flash drive is not properly recognized by AIX, IBM recommends that you use a different brand of device.

NIM installations with updated LPP_SOURCE

To create a NIM SPOT from an LPP_SOURCE directory that contains base images from a prior release and that contains updates to the current release, there must be enough space in the SPOT's file system before you start. Failure while creating the SPOT include the following symptoms:

- When you run the **`lsnim`** command operation on the SPOT, the output shows missing images, similar to the following example output:

```
missing       = "network boot image"
missing       = bos.net.nfs.client
missing       = bos.net.tcp.bootp
```

- You might see errors regarding space or `chfs` in the SPOT log file.

If any of these symptoms occur, remove the incomplete SPOT, increase the space in the file system, and recreate the SPOT.

NIM installations by using an LPP_SOURCE directory that contains base images from a prior release and that contains updates to the current release require that you use an `image_data` resource during operating system installations.

When you use an LPP_SOURCE directory that contains base images from a prior release and updates to the current release, create an `image_data` resource to use for any operating system installations. The SPOT must be updated with the updates added to the LPP_SOURCE directory, or a new SPOT must be created. In that SPOT, copy the `image.template` file that is found at *SPOT_LOCATION*`/lpp/bosinst/image.template` to a new location outside of the SPOT. Create a NIM `image_data` resource that points to that location. Use that NIM `image_data` resource for all operating system installations.

Certain file systems have grown in size, and the default `image.data` file that is used during an operating system installation comes from the BOS image in your LPP_SOURCE directory, which is the prior release `image.data` file.

Network Installation Management

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`.

AIX mksysb image and DVD

In AIX 7.3, and later, you can continue to use DVD media to write and restore the mksysb image. However, based on the broader industry trends, the AIX operating system has reduced emphasis on DVD as a core technology for the backup and restore operations of the mksysb image. If you rely only on DVD mksysb image, you are encouraged to explore alternative methods of using mksysb image capabilities.

AIX cloud-ready images

In addition to installation images, cloud-ready images are available in `RAW` format that can be readily deployed with PowerVC. These images contain a default AIX base media installation configuration that includes cloud-init software package and its dependencies.

Starting with AIX 7.3, the cloud-ready images in `qcow2` format are no longer available.

Java Technology Edition

IBM software development kit (SDK) and Java™ Runtime Environment (JRE) for AIX, Java Technology Edition is released in Java*V.x* filesets, where *V* represents the version of Java, such as Java 8, and *x* is the individual fileset, such as `Java8_64.sdk`.

The following versions of Java Technology Edition are available on the AIX 7.3, and later, base media:

Table 2. Java versions

Java Version	Base media DVD1	Base media DVD2	Expansion pack
Java Version 6 (32 bit)	None	None	None
Java Version 6 (64 bit)	None	None	None
Java Version 7 (32 bit)	None	None	All
Java Version 7 (64 bit)	`Java7_64.jre` and `Java7_64.sdk`	Remaining `Java7_64` software	None
Java Version 7.1 (32 bit)	None	None	None
Java Version 7.1 (64 bit)	None	None	None
Java Version 8 (32 bit)	None	None	All
Java Version 8 (64 bit)	All except non-Japanese message filesets	Remaining message filesets	None

Only Java Version 8, 64-bit, will be installed for new overwrite or preservation operating system installation. For these installations, the *PATH* variable in the `/etc/environment` file will point to `java8_64`. If you perform an operating system migration to AIX 7.3, or later, all previous levels of Java remain on the system, and the `/etc/environment` *PATH* variable is not changed. Later, if you remove the previous levels of Java (Java Version 6 and Java Version 7), then you must change the `/etc/environment` *PATH* variable to point to `java8_64`.

It is recommended to use `java8_64`. There is no support for security vulnerabilities in Java Version 6.

To check whether a more recent service refresh is available for a version of Java, see the AIX Download and service information website.

New filesets

python3.9.base
Python 3.9 64-bit binary distribution (installed by default)

python3.9.test
Python 3.9 64-bit self-test suite

bash.rte
Bash shell (installed by default). For information on locale support, see the Bash Locale Support technote.

pigz.rte
Parallel implementation of GZIP (installed by default)

bind.rte
BIND 9.16 Domain Name System support for the AIX operating system

Fileset updates

Starting with AIX version 7.3, Technology Level 1, the `bos.net.tcp.bind` and `bos.net.tcp.bind_utils` filesets are replaced by the `bind.rte` fileset. The `bind.rte` fileset is not installed by default.

Starting with AIX 7.3, the `bos.net.tcp.ntp` and `bos.net.tcp.ntpd` filesets are replaced by the `ntp.rte` fileset that is installed by default.

Starting with AIX 7.3, the zlibNX accelerated zlib compression library is moved from the expansion pack to the base media and the compression library is installed by default. The `bos.perf.pmaix` package is no longer part of the AIX operating system.

To provide you with more control over the software that is installed on your system, the `bos.net.tcp.client` and `bos.net.tcp.server` filesets are split into 31 new filesets. Beginning with AIX 7 with 7200-05, each of the `bos.net.tcp.*` filesets are shipped as individual images, instead of including them with the `bos.net` image. You can now remove unwanted filesets from a NIM installation that uses an LPP_SOURCE directory.

Note: Requisites for installing filesets are unchanged so you must be sure when you remove an image. This image might be required by other filesets that you might want to install.

The core code for each original fileset is in the `bos.net.tcp.client_core` and `bos.net.tcp.server_core` filesets. Requisites for software that is shipped with the AIX operating system (the `bos.net.tcp.client` and `bos.net.tcp.server` filesets) are changed to the `bos.net.tcp.client_core` and `bos.net.tcp.server_core` filesets. Additional requisites are added to the other new fileset as needed.

The original filesets still exist to satisfy any requisites from other software. The original filesets have requisites to all the new filesets to ensure that all the requirements are met.

To remove any of the new filesets, you must first remove either the `bos.net.tcp.client` fileset or the `bos.net.tcp.server` fileset. To remove the `bos.net.tcp.client` fileset, the `bos.net.tcp.server` fileset, or a new fileset, run the **`lslpp -d`** *fileset_name* command. If no other software has requisites to the fileset that you want to remove, the removal is possible.

During an operating system migration, code changes occur, so that all the system configuration and user configurable files, which were owned by the `bos.net.tcp.client` and `bos.net.tcp.server` filesets, are merged by the new filesets that now own the files.

The list of new filesets follows:

- `bos.net.tcp.client_core`
- `bos.net.tcp.server_core`
- `bind.rte`
- `bos.net.tcp.bootp`

- bos.net.tcp.dfpd
- bos.net.tcp.dhcp
- bos.net.tcp.dhcpd
- bos.net.tcp.ftp
- bos.net.tcp.ftpd
- bos.net.tcp.gated
- bos.net.tcp.imapd
- bos.net.tcp.mail_utils
- bos.net.tcp.pop3d
- bos.net.tcp.pxed
- bos.net.tcp.rcmd
- bos.net.tcp.rcmd_server
- bos.net.tcp.sendmail
- bos.net.tcp.slip
- bos.net.tcp.slp
- bos.net.tcp.snmp
- bos.net.tcp.snmpd
- bos.net.tcp.syslogd
- bos.net.tcp.tcpdump
- bos.net.tcp.telnet
- bos.net.tcp.telnetd
- bos.net.tcp.tftp
- bos.net.tcp.tftpd
- bos.net.tcp.timed
- bos.net.tcp.traceroute
- bos.net.tcp.x500
- bos.net.tcp.cpd

The encoded software in the bos.net.uucp fileset moved to the bos.net.uucode fileset.

Migrating

You can migrate your operating system version to AIX 7.3.1 from any prior *version.release* of the AIX operating system, on a system that supports AIX 7.3.1 boot. Installing any new level of AIX requires more disk space than previous levels. Verify that you have enough free space in the file systems, or that you have free partitions in the rootvg. Migrating requires slightly more free space than a basic installation.

If you are using a NIM **lpp_source** created with a prior level base media and later levels of updates added, you should initially create the **lpp_source** with the base media at the same release date or later than the level of AIX 5.3, AIX 6.1, or AIX 7.1 that you are migrating from. The last 4 digits of the output of the **oslevel -s** command represent the year and week of the service pack currently installed (YYWW).

The default value of the **j2_inodeCacheSize** tunable parameter was changed from 400 to 200. The **j2_inodeCacheSize** tunable parameter allows approximately 50,000 open files per gigabyte (GB) of main memory, and improves system performance. However, the **j2_inodeCacheSize** tunable parameter value of 200 can cause issues in systems that have a small amount of main memory (4 GB or less) and many concurrent users or many concurrent open files. To fix these issues, you can change the values for the **j2_inodeCacheSize** and the **j2_metadataCacheSize** tunable parameters from 200 to the previous value of 400 by running the following command:

Note: When you run the following command, the current value and boot value of both the tunable parameters are reset.

```
ioo -p -o j2_inodeCacheSize=400 -o j2_metadataCacheSize=400
```

If the issues are not fixed after you change the values for the **j2_inodeCacheSize** and the **j2_metadataCacheSize** tunable parameters, you can contact IBM Support.

IBM License Metric Tool

The IBM License Metric Tool version 7.3 is no longer supported. To learn more about the replacement version of IBM License Metric Tool Version 9.x, go to IBM License Metric Tool 9.2.

IBM PowerSC Trusted Surveyor

IBM PowerSC Trusted Surveyor is not supported in AIX 7.3, and later. If you are migrating to AIX 7.3, or later, you must remove the `powersc.ts` fileset before you start the migration process. If you have WPARs that you are migrating, you must verify that the `powersc.ts` fileset is not installed on the WPARs.

Reliable Scalable Cluster Technology (RSCT)

When you upgrade to AIX 7.3, or later, RSCT Version 3.3.0.0 is installed and replaces the previous version of RSCT. For more information about RSCT, see the IBM Docs for RSCT 3.3.

AIX 7.3 (and later) and RSCT Version 3.3.0.0 no longer support the Virtual Shared Disk (VSD) and Low-level Application Programming Interface (LAPI) products. If these products are already installed from an older code level, both the `rsct.vsd` and `rsct.lapi.rte` filesets must be removed before migrating to AIX 7.3, or later. If you have third-party products that use VSD, you must review the current Spectrum Scale product offerings for a replacement.

In AIX 7.3, and later, RSCT has stopped shipping the following old filesets:

- `rsct.basic.hacmp`
- `rsct.basic.sp`
- `rsct.compat.basic.hacmp`
- `rsct.compat.basic.sp`
- `rsct.compat.clients.hacmp`
- `rsct.compat.clients.sp`

The filesets that end with `.sp` are no longer used by any products currently. If you still have these filesets installed at any supported AIX version, you can uninstall them whenever convenient. The filesets that end with `.hacmp` are still needed by some products at older AIX versions, but no longer required in AIX 7.3, and later. If you still have these filesets installed after you migrate to AIX 7.3, or later, you can then remove them whenever convenient.

DSM

The `dsm.core` fileset ships a `/etc/ibm/sysmgt/dsm/overrides/dsm.properties` file, which allows you to override SSH configuration. If this file was modified, the file needs to be backed up manually before an update or a migration, as it is overwritten.

Thin Servers

If you migrate any previous version of the AIX Common Operating System Image (COSI) and associated AIX Thin Servers to the AIX 7.3 (or later), it is recommended that you delete any dump device that is associated with the migrated Thin Servers and re-create the Thin Servers.

Additionally, you must install the `devices.tmiscsw.rte` fileset on the NIM master for the AIX 7.3 Thin Server to create a dump device. The `devices.tmiscsw.rte` fileset is available in the AIX Expansion Pack.

IBM Subsystem Device Driver

AIX Version 7.3, and later, does not support the IBM Subsystem Device Driver (SDD) for IBM TotalStorage Enterprise Storage Server®, the IBM TotalStorage DS family, and the IBM System Storage SAN Volume Controller. If you are using SDD, you must move to Subsystem Device Driver Path Control Module (SDDPCM) or AIX Path Control Module (PCM) for the multipath support on AIX for IBM SAN storage. SDD to SDDPCM migration scripts are available to help you with the transition.

Contact IBM storage technical support to request access to the migration scripts.

For more information about the available Multipath I/O solutions and supported AIX versions for IBM SAN storage products, see the IBM System Storage Interoperation Center (SSIC) website.

Db2 migration

IBM Db2® Version 11.1 with FP5 is available on the AIX base media. You can upgrade your Db2 environment from Db2 Version 10.5, 10.1, or 9.7 to Db2 Version 11.1. For more information about upgrading to Db2 Version 11.1, see the Upgrade to Db2 Version 11.1 topic.

Configuring

This section contains information about configuring the AIX operating system.

Dynamic attribute update

When you change a device attribute while the device is in the open state, the device attribute changes dynamically. In the AIX operating system, you can change specific device attributes while the device is in the open state by running the **chdev** command with the **-U** flag. Some of the device attributes in AIX 7.3, and later, that support dynamic change are as follows:

- **queue_depth** attribute for MPIO disk devices
- **rw_timeout** attribute for Serial Attached SCSI (SAS) Fibre Channel and iSCSI disk
- **num_cmd_elems** attribute for Fibre Channel adapter protocol devices

Dynamic network options

You can adjust the protocol stack of your unique networking environment by using the AIX networking options. You can now use the **no** command to dynamically configure the following TCP re-transmission timeout values:

- **rto_high**
- **rto_length**
- **rto_limit**
- **rto_low**

libusb library

The libusb library is an open source C library that is supported on AIX 7.3, and alter. The libusb library provides generic access to USB devices. You can run libusb applications on AIX 7.3 (and later) by recompiling the applications with this new libusb package. You can download the libusb RPM Package Manager (RPM) from the https://public.dhe.ibm.com/aix/freeSoftware/aixtoolbox/RPMS/ppc/libusb/ website. For more information about using the libusb library, see the following topics:

- usblibdev Special File

- USBLIBDD Passthru Driver

Diagnostics tasks

AIX 7.3, and later, supports scheduling periodic diagnostics multiple times a day instead of only once per day. To schedule periodic diagnostics multiple times a day, run the **diag** command and select **Task Selection** > **Periodic Diagnostics** and specify a time interval between each test.

AIX 7.3, and later, supports formatting and certifying up to 10 disks in parallel instead of a single at a time. To format or certify multiple disks, run the **diag** command and from the **Task Selection** menu, select **Certify Media in Parallel** or **Format Media in Parallel**. All eligible resources are displayed in a list. You can select up to 10 disks from the list. The status of the operation is updated every 5 seconds. The time the operation takes to complete for each disk is based on various factors such as disk type, size, and speed.

Trace facility

The usage of trace facility is now limited to the root user by default.

Updates in Korn shell

AIX 7.3, and later, has updated the Enhanced Korn shell (**ksh93**) from the **t** version to the **u+** version. Applications that rely on the specific exit values for the shell (instead of 0 or nonzero) might not be compatible with the **u+** version of the ksh93 shell. The exit status of the **ksh93** shell has been modified to align with the **ksh93** community. For compatibility with earlier versions of AIX, the default shell remains **ksh** (also known as **ksh88**). The **ksh** shell will not be enhanced for any new functions or performance. However, if feasible, support will be provided to address any critical security vulnerabilities. The users of the **ksh** shell must consider using the **ksh93** shell. In AIX 7.3.1, the bash shell is also available. A future AIX update might replace the default AIX shell with the **ksh93** shell.

Collecting processor frequency and EnergyScale information

You can use the **lparstat -E 1** command to report the calculated processor frequency per logical partition. You can use the **mpstat -E 1** command to report the calculated processor frequency per virtual processor. AIX 7.3, and later, enhances the **pmcycles -M** command to report the measured processor frequency. AIX 7.3 (and later) also supports collection of EnergyScale power and performance mode and processor frequency information on Power10 processor-based servers, and later, by using the **lparstat -N** command.

Limitations and Restrictions

This section lists restrictions and limitations that apply to AIX 7.3, and later.

Limitations with Java8.jre 8.0.0.635

When you migrate from AIX 7.2 to AIX 7.3, or later, if the logical partition has Java 8 32-bit SR6FP35 (VRMF 8.0.0.635) installed, you must upgrade the Java version to a later level that can be downloaded from the Java SDK on AIX page. Java 8 32-bit SR6FP35 (VRMF 8.0.0.635) might not load properly on AIX 7.3 (or later).

If a newer version of Java is not available, Java 8 32-bit SR6FP30 (VRMF 8.0.0.630) images are provided on AIX 7.3.1 Expansion pack. You can force-install this Java image to revert to an earlier version that does not have any loading issues.

Upgrading IBM Security Directory Server

IBM Security Directory Server Version 6.4 is available on the AIX base media. To upgrade to Security Directory Server Version 6.4, you must upgrade from Security Directory Server Version 6.3. For

instructions about upgrading to Security Directory Server Version 6.4, see the Upgrade an instance of IBM Security Directory Server topic.

You might have to manually accept the license terms when you install IBM Security Directory Server version 6.3.0.17, or later, with the AIX operating system. The installation process stops until the license terms are accepted, which prevents an unattended installation when the license is not already installed. For more information, see the License acceptance required for Security Directory Server 6.3.0.17 (or later) topic.

OpenSSL version 3.0

Open Source Secure Sockets Layer (OpenSSL) has been updated from version 1.0.2 to version 3.0.5, starting with AIX 7.3 Technology Level 1, (7.3.1). The updates include, a few APIs are deprecated, removal of weak ciphers, support for Transport Layer Security (TLS) version 1.3, and an introduction to provider concepts.

The AIX operating system ensures that the existing applications do not get impacted by the version update. Hence, the shared objects of OpenSSL 1.0.2 and OpenSSL 1.1 are retained in the OpenSSL library. The applications that depend on OpenSSL libraries will have to migrate to OpenSSL 3.0 before the end of support for the previous versions.

Note: The support for OpenSSL 1.0.2 and OpenSSL 1.1 will be provided till the end of year 2023. The shared objects of OpenSSL version 0.9.8 are no longer supported as it is sunset and the **libcrypto_compat.a** and **libssl_compat.a** libraries have been removed since they contain only 0.9.8 shared object. Also the libraries **libcrypto.a** and **libssl.a** will not have 0.9.8 shared object in them. As a mitigation, customers who are dependent on these shared objects are now recommended to compile their applications against the latest supported shared objects. OpenSSL1.1 shared object provided in OpenSSL3.0 library is from the corresponding latest release of library provided with strong-cipher support (that is with VRMF 1.1.2.1201). Customers who prefer to use this shared object are requested to compile application using the 1.1 library with strong-cipher support which is provided in AIX Web Download Pack Programs.

The command line tool **openssl** and **openssl64** will be linked with the shared object of OpenSSL 3.0. Due to compatibility issues, the commands might not function properly.

Note: Many options are added to OpenSSL 3.0; hence, it is mandatory to validate the command line tools (**openssl** and **openssl64**) before using them.

The OpenSSL 3.0 is compiled by using the following configuration option:

```
no-deprecated no-idea no-rc5 no-weak-ssl-ciphers no-psk
    no-srp
```

The new symbols that are introduced in OpenSSL 3.0 configuration file is stored in the `/var/ssl/openssl.cnf` file. It is recommended to backup and save the changes in the old configuration file because the old OpenSSL configuration file is not retained for the use.

To use the legacy providers that are built inside the application, make the following changes in the new configuration file:

```
openssl_conf = openssl_init

 [openssl_init]
 providers = provider_sect

 [provider_sect]
 default = default_sect
 legacy = legacy_sect

 [default_sect]
 activate = 1

 [legacy_sect]
 activate = 1
```

Note: You can update the **openssl.base** fileset to 3.0.7 version, or later, from the AIX Web Download Pack Programs. The current OpenSSL version 3.0.5.101 is not secured.

For more information about updates between OpenSSL 1.0.2 and OpenSSL 3.0, see the community migration guide (https://www.openssl.org/docs/man3.0/man7/migration_guide.html).

To raise any query, see IBM AIX support website.

OpenSSH Version 8.1p1

The OpenSSH fileset has been updated to open source community 8.1p1 release with AIX VRMF 8.1.102.210.

- The OpenSSH fileset includes the patch for GSSAPI Key Exchange feature.
- The OpenSSH fileset has been compiled with OpenSSL 1.0.2u version.
- All of the vulnerabilities reported in the higher version of OpenSSH (including 8.7p1 release) have been back ported to this fileset.

OpenSSH 6.0p1 with VRMF 6.0.0.6204, or earlier, OpenSSH 7.1p1 with VRMF 7.1.102.1100, or earlier, and OpenSSH 7.5p1 with VRMF 7.5.102.1600 or earlier are no longer supported. To download the latest version of the OpenSSH fileset, go to the AIX Web Download Pack Programs website.

AIX 7.3, and later, includes OpenSSH as part of the minimal AIX installation.

GSKit version requirement for NIST compliance

GSKit version 8.0.55.19 is provided on the AIX 7.3 Expansion Pack media.

You must use GSKit version 8.0.50.10, or later, when you use IP Security with Rivest-Shamir-Adleman (RSA) key lengths that are greater than 2048 bits. The minimum RSA key length of 2048 bits is a requirement for complying with the National Institute of Standards and Technology (NIST) standard as defined in Special Publication 800-131A. When you generate certificates for IP security (IPsec), consider the requirements that are listed in Installing the IP security feature.

Perl

The previous version of Perl was upgraded to Perl Version 5.34.1.0. Perl is a separate 3rd-party open source package that is not owned by IBM. The Perl package might not preserve full compatibility across all versions. If you are moving Perl scripts to version 5.34.1.0, you must complete an evaluation of the scripts to verify that they continue to work as expected. For more information about Perl, see the Perl Programming Documentation website.

DBX and IBM OpenXL C/C++ compiler

The DBX debugger utility is not compatible with IBM OpenXL C/C++ compiled binary files because of the missing features in DBX DWARF support. Full DWARF support will be available in a subsequent release of DBX.

YUM and DNF

AIX 7.3, and later, does not support YUM as RPM package manager from the AIX toolbox. DNF (dandified yum, the next-generation of the Yellowdog Updater) can be installed from AIX toolbox and must be used to manage RPM packages.

Code and functions removed from AIX 7.3

The following code and functions are removed from AIX 7.3, or later:

- The InfiniBand adapter feature 5283 and feature 5285 (PCIe2 dual-port 4X InfiniBand QDR adapter) are not supported in AIX 7.3.

- The CAPI adapter feature EJ17 and feature EJ18 (PCIe3 CAPI Fibre Channel (FC) Flash Accelerator adapters) are not supported in AIX 7.3.
- The AIX Multipath I/O (MPIO) Active Passive (AP) PCM is removed from AIX 7.3.
- AIX USB support for diskette and audio devices is removed from AIX 7.3.
- IPFilter version 4.1.13 (`ipfl.rte 5.3.0.7`) is removed from AIX 7.3.
- Filesets for devices that are not supported by POWER8, and later systems are removed from AIX 7.3.
- Trusted AIX is removed in AIX 7.3. If you want to implement a fine-grained security model where privileges are separated across different users based on applying a labeled model to users and resources, consider the AIX Domain RBAC feature.

CIFS client fileset

The `bos.cifs_fs` software package has moved to the AIX 7.3 Expansion Pack media. The Common Internet File System (CIFS) client is provided as-is (without support).

Note: >|AIX 7.3 supports SMB client file system that is based on Server Message Block (SMB) protocol version 2.1 and version 3.0.2. The SMB client file system is replacement of CIFS client. The CIFS client is based on SMB protocol version 1. For more information, see SMB client file system.|<

CPU limit

The AIX operating system supports up to 240 dedicated or virtual processors. AIX 7.3 supports Simultaneous Multi-threading (SMT-8, SMT-4, SMT-2), and single-threaded (SMT-1) configuration. Each processor contains up to eight hardware threads that allows up to 1920 logical processors to be assigned to a single LPAR when the AIX operating system is configured in SMT-8 mode. You can use the **`smtctl`** command to switch the SMT mode that is used by the AIX operating system.

Network Time Protocol (NTP) updates

AIX 7.2, and earlier, supports both NTP version 3 and NTP version 4. Both NTP versions are supported by using symbolic links from the `/usr/sbin` directory to the NTP binary files of one of the NTP versions. Starting with AIX Version 7.3, support for NTP version 3 is removed. For compatibility with earlier versions of NTP, the symbolic links point to NTP version 4 binary files by default so that the same commands continue to work.

The following list contains a mapping of NTP binary directories in AIX 7.3 and later:

Table 3. Mapping of NTP binary directories

NTPv4 binary files in the `/usr/sbin/ntp4` directory	**Default symbolic link to NTP version 4 binary files from the `/usr/sbin` directory**
`ntpd4`	`/usr/sbin/xntpd-->/usr/sbin/ntp4/ntpd4`
`ntpdate4`	`/usr/sbin/ntpdate-->/usr/sbin/ntp4/ntpdate4`
`ntpdc4`	`/usr/sbin/xntpdc-->/usr/sbin/ntp4/ntpdc4`
`ntpq4`	`/usr/sbin/ntpq-->/usr/sbin/ntp4/ntpq4`
`ntp-keygen4`	`/usr/sbin/ntp-keygen-->/usr/sbin/ntp4/ntp-keygen4`
`ntptrace4`	`/usr/sbin/ntptrace-->/usr/sbin/ntp4/ntptrace4`
`sntp4`	`/usr/sbin/sntp-->/usr/sbin/ntp4/sntp4`

Berkeley Internet Name Domain (BIND) updates

AIX version 7.3, and earlier, supports BIND version 9.4.1. Starting with AIX 7.3, Technology Level 1, support for BIND version 9.4.1 is removed and support for BIND version 9.16 is added. For compatibility with earlier versions of BIND, the symbolic links point to BIND version 9.16 binary files to ensure that the same commands continue to work.

Note: Starting from AIX 7.3, Technology Level 1, the `/usr/bin/hostnew` binary file is removed.

BIND version 9.16 is included in the `bind.rte` fileset in AIX 7.3, Technology Level 1, base media package. The `bind.rte` fileset is not installed by default. During migration from the previous AIX version to AIX 7.3, Technology Level 1, the `bos.net.tcp.bind` and `bos.net.tcp.bind_utils` filesets that are installed on the previous AIX versions are removed, and the `bind.rte` BIND fileset is installed. During the update operation, the `bind.rte` fileset must be explicitly selected for installation. Otherwise, the `bos.net.tcp.bind` and `bos.net.tcp.bind_utils` BIND filesets remain in the updated system.

The following list contains a mapping of BIND binary directories in AIX 7.3, Technology Level 1 and later:

Table 4. Mapping of BIND 9.16 binary directories

BIND binary files in `/usr/sbin/bind_9_16` directory	**Default symbolic link to BIND version 9.16 binary files**
`named-checkconf`	`/usr/sbin/named-checkconf-->/usr/sbin/bind_9_16/named-checkconf`
`named-checkzone`	`/usr/sbin/named-checkzone-->/usr/sbin/bind_9_16/named-checkzone`
`rndc-confgen`	`/usr/sbin/rndc-confgen-->/usr/sbin/bind_9_16/rndc-confgen`
`dig`	`/usr/bin/dig-->/usr/bin/bind_9_16/dig`
`host9`	`/usr/bin/host9-->/usr/bin/bind_9_16/host9`
`nslookup`	`/usr/bin/nslookup-->/usr/bin/bind_9_16/nslookup`
`dnssec-keygen`	`/usr/sbin/dnssec-keygen-->/usr/sbin/bind_9_16/dnssec-keygen`
`dnssec-signzone`	`/usr/sbin/dnssec-signzone-->/usr/sbin/bind_9_16/dnssec-signzone`
`named9`	`/usr/sbin/named9-->/usr/sbin/bind_9_16/named9`
`nsupdate`	`/usr/sbin/nsupdate-->/usr/sbin/bind_9_16/nsupdate`
`rndc`	`/usr/sbin/rndc-->/usr/sbin/bind_9_16/rndc`

Additional information

IBM AIX 7.3 Documentation

To view the most current version of the AIX 7.3 information, see the AIX Documentation website.

AIX Dynamic System Optimizer

The IBM AIX Dynamic System Optimizer (DSO) extends the features that are provided by the Active System Optimizer (ASO) to automatically adjust some system settings to maximize the efficiency of the AIX operating system. The DSO automates the difficult job of manually tuning the specific system settings to optimize eligible workloads. The additional features that are provided by DSO are large page optimization and data stream prefetch optimization.

DSO is no longer a stand-alone feature and is included in AIX 7.3, Technology Level 1, or later, as a part of ASO. For more information about DSO and ASO, see AIX Dynamic System Optimizer.

Server-side support for new Unicode locales

For information about server-side support for new Unicode locales, see the Supported languages and locales topic.

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