IBM AIX 7.2 with Technology Level 1
Expansion Pack

Release Notes

IBM

Note

Before using this information and the product it supports, read the information in "Notices" on page 15.

Contents

About this document

The Release Notes topics include late technical information that is not included in other topics, and they highlight new functions for the IBM AIX 7.2 with Technology Level 1 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 also identifies graphical objects such as buttons, labels, and icons that the you select.
Italics	Identifies parameters whose actual names or values are to be supplied by the user.
`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 information you 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.

Read this before installation

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

The Expansion Pack DVD contains programs that are provided by IBM and other program suppliers. Each program is licensed under the terms and conditions of that specific program. These terms and conditions can vary depending on the specific program or the program supplier. Specific information about the content of this DVD and the terms and conditions under which these programs are licensed are contained in a readme file on the media.

To obtain the content and Terms and Conditions information:

1. Log in as the root user.

2. Insert the DVD into the media drive. If your media drive is not **/dev/cd0**, substitute the correct device name and type the following commands:

   ```
   mount -v cdrfs -o ro /dev/cd0 /mnt
   cp /mnt/README*  /tmp
   unmount  /mnt
   ```

   The `/tmp/README` and `/tmp/README.html` files contain the content or the Terms and Conditions under which these programs are licensed. View this information by using a web browser, or run the **more** command or the **pg** command.

Softcopy documentation for each product is included with the product. These Release Notes supplement the product documentation by outlining the steps for getting started and by pointing you to more product information.

Installation, migration, upgrade, and configuration information

The AIX 7 with 7200-01 Expansion Pack Release Notes include information that helps you install the products that are included on the AIX 7 with 7200-01 Expansion Pack. To view the most current version, see the AIX Release Notes topic.

The AIX 7 with 7200-01 Expansion Pack is included with the AIX 7 with 7200-01 operating system as a vehicle for delivering new IBM and non-IBM products. Most AIX 7 with 7200-01 Expansion Pack products can be installed by using normal installation methods. Some Expansion Pack products cannot be installed by using normal installation methods. Their installation procedures are provided under their product descriptions.

The AIX 7 with 7200-01 Expansion Pack might include products that contain a cryptographic function that is subject to special export-licensing requirements by the US Department of Commerce. Import restrictions can also apply to certain countries. Different packages of the AIX 7 with 7200-01 Expansion Pack accommodate varying country export or import restrictions. To determine which package is appropriate for you, review the Ordering Information which is located in the Expansion Pack announcement. Contact your IBM representative or IBM Business Partner to determine which type of encryption you are entitled to receive.

The contents of the Expansion Pack vary over time. New software products can be added, changed, or removed. Changes to the content of the AIX 7 with 7200-01 Expansion Pack are announced either as part of an AIX announcement or independently of the release announcement.

Unless otherwise indicated, products can be installed from the DVD by using the System Management Interface Tool (SMIT). For more information about installing products, see the Installation and migration topic.

Listing and previewing installation software

You can list the available software products, packages, and filesets on AIX media, which can be a DVD or directory. The output shows the available packages and filesets on the media. The descriptions are provided at the fileset level.

You can perform a preview installation before performing the actual installation. A preview installation provides the preinstallation information that occurs during a regular installation, except that no software is installed.

When you select a package or fileset to be installed with the preview installation process, you can view a list that contains all of the requisite packages and filesets needed for the successful installation of the selected package or fileset.

Other information generated during the preinstallation process are required for the file system-size checking. The file systems are checked to ensure that there is enough free space available to install the selected package or fileset.

You can list the software and use the previewing software functions from the command line or the SMIT interface.

Listing and previewing software from the command line

1. Log in as the root user.
2. To list the software on the first DVD of the base media, insert the DVD into the media drive, and type the following command:

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

A list similar to the following is displayed:

```
fileset Name                    Level                    I/U Q Content
  ================================================================
  ICU4C.adt                     2.8.0.0                  I  N usr
#   ICU Application Developer's Toolkit

  ICU4C.man.en_US               2.8.0.0                  I  N usr
#   ICU Manual Pages - U.S. English
```

3. To perform a preview installation at the command line, use the **-p** flag with the **installp** command. For example, to preview the installation of the ICU4C.adt fileset, enter the following command from the command line:

```
installp -aXgq -p -d/dev/cd0 ICU4C.adt
```

The preview option displays the requisite filesets, that are to be installed and the system resources that are being used.

Listing and previewing software from the ASCII SMIT interface

1. Log in as the root user.
2. From the command line, enter smitty install_update.
3. Select **Install Software**.
4. Press F4 (List) to list the available input devices and select the appropriate device, or type the input device name in the blank field. Press Enter to continue.
5. In the **SOFTWARE to Install** field, press F4 (List) to list all available software on the selected media.
6. Scroll through the list of software by using the arrow keys or the Page Up and Page Down keys.

   Note: The following listing shows the available software packages and filesets for that software product.

   If the fileset is preceded by a plus sign (+), it is available to be installed. If the fileset is preceded by an at sign (@), the fileset is already installed.

   In the following example output, the software product is ICU4C:

   ```
   ICU4C.adt                                                   ALL
    + 2.8.0.0  ICU Application Developer's Toolkit

   ICU4C.man.en_US                                             ALL
    + 2.8.0.0  ICU Manual Pages - U.S. English

   ICU4C.rte                                                   ALL
    + 2.8.0.0  International Components for Unicode
   ```

   The three packages are **ICU4C.adt**, **ICU4C.man.en_US**, and **ICU4C.rte**. The fileset in the **ICU4C.adt** package is the ICU Application Developer's Toolkit at level 2.8.0.0. The descriptions for the software product are provided at the fileset level. A package often consist of more than one fileset.

7. Select the package or fileset you want to install and press the F7 (Edit). Press Enter to continue.
8. To preview the installation of the package or fileset that you selected, press the Tab key and select **yes** in the **PREVIEW only?** field. Press Enter to continue.

   Note: To obtain detailed information about the installation, select **yes** in the **DETAILED output?** field. The filesets that are being installed are displayed in parentheses.

AIX 7 with 7200-01 Expansion Pack security

This section lists security restrictions and limitations for the AIX 7 with 7200-01 Expansion Pack.

OpenSSL version 1.0.2

OpenSSL 0.9.8 shared objects (libcrypto.so.0.9.8 and libssl.so.0.9.8) are also included in the OpenSSL 1.0.2.800 fileset libraries for compatibility with earlier versions of OpenSSL.

OpenSSL 0.9.8 is no longer supported by IBM. OpenSSL 1.0.1 is reaching end of support (EOS) in December 2016. The OpenSSL 0.9.8 shared objects are retained in the libraries as is. You should update your applications to use the newer version of the OpenSSL libraries.

Applications must use OpenSSL version 1.0.2 shared objects (libcrypto.so or libcrypto.so.1.0.0, and libssl.so or libssl.so.1.0.0) that are included in libraries of OpenSSL 1.0.2.800 fileset to continue using the supported version of OpenSSL.

POWER8 hardware cryptography capability and OpenSSL version 1.0.2.800

The OpenSSL version 1.0.2.800 fileset and AIX 7 with 7200-01 can use the in-core cryptographic function that is available with POWER8® systems. To use this function, the following conditions must be met:

- Any existing applications that use an older version of the OpenSSL fileset must be recompiled with the latest headers and relinked to the newer 1.0.2 libraries that are included with the OpenSSL 1.0.2.800 fileset.
- Applications that use the **dlopen** function to load the 0.9.8 version of the OpenSSL shared objects must be reconfigured to load the 1.0.2 version of the OpenSSL shared object.
- A future OpenSSL release that is incompatible must be recompiled with the latest headers and relinked with the newer binaries.

The following algorithms are implemented in OpenSSL version 1.0.2 that can use the POWER8 in-core cryptographic capabilities:

- AES-128-CBC
- AES-192-CBC
- AES-256-CBC
- AES-128-ECB
- AES-192-ECB
- AES-256-ECB
- AES-128-GCM
- AES-192-GCM
- AES-256-GCM
- AES-128-XTS
- AES-192-XTS
- AES-256-XTS
- SHA1
- SHA224
- SHA256
- SHA384
- SHA512

Note: Applications that use earlier versions of the OpenSSL fileset continue to function and use the OpenSSL default software cryptographic modules on the POWER8 system.

To download the latest version of the OpenSSL filset, see the AIX Web Download Pack Programs website.

Data Encryption Standard kernel extension 64-bit

You can now ues 64-bit kernels with the Data Encryption Standard (DES) kernel extension, `nfs_kdes_full.ext`. This extension uses secure Network File System (NFS) by encrypting time stamps sent between the client and the server, which allows each Remote Procedure Call (RPC) message to be authenticated.

For more information about the DES extension, see the Network File Systems security topic.

The DES encryption kernel extension is available from the des fileset on the AIX Expansion Pack.

Certificate Authentication Services

Certificate Authentication Services are not included with the AIX 7 with 7200-01 operating system.

IP Filter converted to the AIX operating system

IP Filter, Version 5.3.0.0 open source software is converted to the AIX operating system. The IP Filter software package can be used to provide network address translation (NAT) or firewall services.

Network security options TCP Wrapper 1.1.0.0

TCP Wrapper is a simple open source tool to monitor and control incoming network traffic. For more information about the TCP Wrapper, see the Wietse's tools and papers website.

AIX Network Data Administration Facility

The AIX Network Data Administration Facility (AIX NDAF) for AIX 7 with 7200-01 is not available on the Expansion Pack media. It is available on the base media.

IBM Security Directory Server

IBM Security Directory Server is no longer available on the AIX expansion pack media.

IBM Security Directory Server Version 6.4 is available on the AIX 7 with 7200-01 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.

The following Security Directory Server Version 6.2 and Version 6.3 cryptography filesets are no longer provided on the AIX expansion pack media:

- `idsldap.clt_max_crypto32bit62`
- `idsldap.clt_max_crypto64bit62`
- `idsldap.srv_max_cryptobase64bit62`
- `idsldap.webadmin_max_crypto62`

Parameter setting for IBM Security Directory Server Version 6.4

GSKit version 8.0.50.59 is included on the AIX 7 with 7200-01 Expansion Pack media. When you run GSKit version 8.0.50.59 with IBM Security Directory Server Version 6.4, if you set the **ICC_IGNORE_FIPS**

parameter to a value of *yes*, the Security Directory Server does not start. To avoid this issue, set the **ICC_IGNORE_FIPS** parameter to a value of *no* by entering the following command:

```
export ICC_IGNORE_FIPS=no
```

Modern Cryptographic Library

The Modern Cryptographic Library is updated from version 6.1.0.2 to version 6.1.0.3.

The updates for Modern Cryptographic Library version 6.1.0.3 include the following **modcrypt** filesets:

- **modcrypt.base.lib**
- **modcrypt.base.includes**

The updated **modcrypt** filesets are required if the ACF and PKCS11 device driver version 7.1.3.30 (**security.acf** fileset) is installed on your system and if you are using a Network File System (NFS) with Kerberos 5 authentication. If your system does not meet these requirements, the system fails when the NFS **gssd** daemon starts.

IBM Network Authentication Service, Version 1.5.0.3 for AIX

IBM Network Authentication Service, Version 1.5.0.3 for the AIX environment is a network-authentication protocol based on the IETF RFC 1510 standards protocol for the Kerberos V5 IBM Network Authentication Service. The IBM Network Authentication Service includes the Generic Security Service API (GSSAPI) and the Key Distribution Center (KDC) server. With IBM Network Authentication Service, AIX middleware and external application writers can use authenticated and optionally encrypted message flow between their respective components.

Documentation

Read the README.*lang* file for IBM Network Authentication Service, Version 1.5 before you configure or use the program, where *lang* is one of the following language locales:

- Chinese (Simplified)
- Chinese (Traditional)
- English
- Korean
- Portuguese (Brazilian)

The README.*lang* file for the AIX environment is located in the `/usr/lpp/krb5` directory after the `krb5.client.rte` fileset is installed from the krb5.client client installation package. The `README.`*lang* file can also be viewed by using the SMIT **list_media_info** command to list supplemental fileset information about the installation media for the `krb5.client.rte` fileset.

Documentation for IBM Network Authentication Service is available in the README.*lang* installation packages, where *lang* is one of the following language locales:

- en_US (US English)
- Ja_JP (Japanese)
- ko_KR (Korean)
- zh_CN (Simplified Chinese)

The documentation is available in both HTML and PDF formats. Install the `krb5.doc.`*lang*`.html` fileset to access HTML documents and the `krb5.doc.`*lang*`.pdf` fileset to access PDF documents.

The *IBM Network Authentication Service Version 1.5 Administrator's and User's Guide* is installed in the following directories:

- HTML

  `/usr/lpp/krb5/doc/html/lang/ADMINGD`
- PDF

  `/usr/lpp/krb5/doc/pdf/lang/ADMINGD`

The *IBM Network Authentication Service Version 1.5 Application Development Reference* is installed in the following directories:

- HTML

  `/usr/lpp/krb5/doc/html/lang/APDEVREF`
- PDF

  `/usr/lpp/krb5/doc/pdf/lang/APDEVREF`

Java Technology Edition

The following versions of Java™ Technology Edition are available on the AIX Expansion Pack media:

Table 1. Java versions		
Java Version	**32-bit**	**64-bit**
Java Version 6	Yes	Yes
Java Version 7	Yes	No (on base media)
Java Version 7.1	Yes	Yes
Java Version 8	Yes	Yes

Note: Java 5 is not available on the AIX 7 with 7200-01 base media or Expansion Pack media.

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

Reliable Scalable Cluster Technology (RSCT) CIM resource manager

The Common Information Model (CIM) resource manager is a Resource Monitoring and Control (RMC) resource manager that enables RMC to be used for querying system configuration through CIM classes. CIM resource manager is contained in the `rsct.exp` package.

After installation, the CIM resource manager readme file is located in the `/usr/sbin/rsct/README/rsct.exp.README` directory.

For more information about the CIM resource manager, see the Resource classes defined by the CIM resource manager topic.

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