Enterprise PL/I for z/OS
PL/I for AIX
Rational Developer for System z PL/I for Windows

Installation Guide

Version 3 Release 1

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Contents

Tables

Preface

About this information

This information provides installation instructions for IBM® PL/I for AIX®, V3.1. It also shows you how to test the installation, and view different types of product information. Read it carefully before installing. Also read the README file in the root directory of your installation media, which contains current information about the compiler.

The term VSAM file system is a generic reference to either the SdU (SMARTdata Utilities) or Encina SFS (Structured File Server) file system.

Who should read this information

This information is intended for anyone responsible for installing IBM® PL/I for AIX®, V3.1.

How to use this information

This information provides procedures for two installation scenarios:

- Installation

  This scenario tells you how to install a single version of PL/I for AIX.

  For an overview of the steps to perform an installation of a single version of PL/I for AIX, refer to Chapter 2, "Installation," on page 7.

- Update installation

  This scenario tells you how to install a Program Temporary Fix (PTF) package for an existing PL/I for AIX, V3.1 installation.

  For an overview of the steps required to install a PTF, refer to Chapter 3, "Update installation," on page 11.

How this information is organized

This information is organized to reflect the pre-installation, installation, post-installation, and product removal phases of a PL/I for AIX® installation.

Table 1. Phases of a PL/I for AIX installation

Phase	Topics	User segment
Pre-installation	Chapter 1, "Before installing PL/I for AIX," on page 1	All users
Installation	Chapter 2, "Installation," on page 7	Users who want to install PL/I for AIX, V3.1
Post-installation	Chapter 3, "Update installation," on page 11	Users who want to update PL/I for AIX, V3.1 to the next fix level
	Chapter 4, "After installing PL/I for AIX," on page 15	All users
Product removal	Chapter 5, "Uninstalling PL/I for AIX," on page 19	Users who want to uninstall PL/I for AIX, V3.1

How to read the syntax diagrams

Use the following description to read the syntax diagrams in this information:

- Read the syntax diagrams from left to right, from top to bottom, following the path of the line.

  The >>--- symbol indicates the beginning of a syntax diagram.

  The ---> symbol indicates that the syntax diagram is continued on the next line.

  The >--- symbol indicates that the syntax diagram is continued from the previous line.

  The --->< symbol indicates the end of a syntax diagram.

  Diagrams of syntactical units other than complete statements start with the >--- symbol and end with the ---> symbol.

- Required items appear on the horizontal line (the main path).

Format

```
►►──STATEMENT──required item────────────────────────────────────►◄
```

- Optional items appear below the main path.

Format

```
►►──STATEMENT──┬──────────────┬─────────────────────────────────►◄
               └─optional item─┘
```
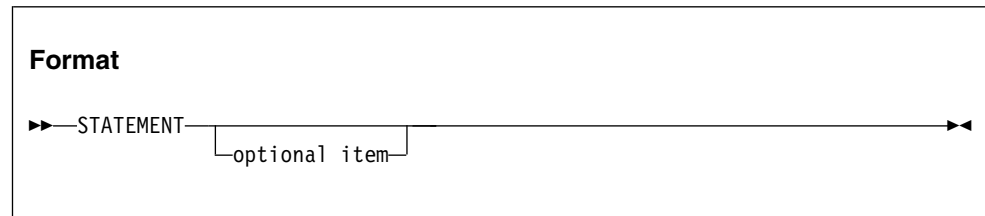
- When you can choose from two or more items, they appear vertically, in a stack.

  If you *must* choose one of the items, one item of the stack appears on the main path.

Format

```
►►──STATEMENT──┬─required choice 1─┬─────────────────────────────►◄
               └─required choice 2─┘
```
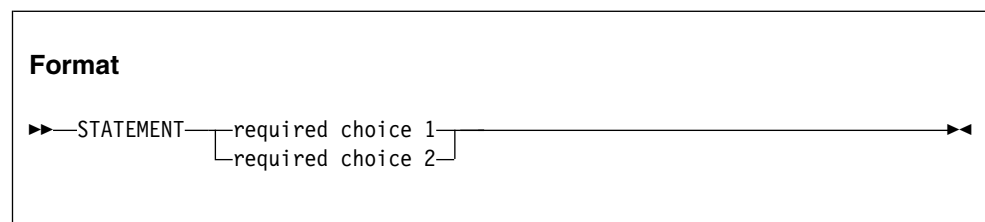
If choosing one of the items is optional, the entire stack appears below the main path.

Format

```
►►──STATEMENT────────────────────────────────────────────►◄
          ├─optional choice 1─┤
          └─optional choice 2─┘
```
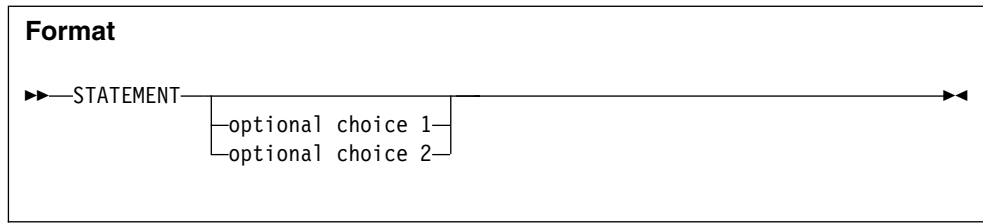
- An arrow returning to the left above the main line indicates an item that can be repeated.

Format

```
              ┌──────────────────┐
►►──STATEMENT──▼─repeatable item──┴────────────────────────►◄
```
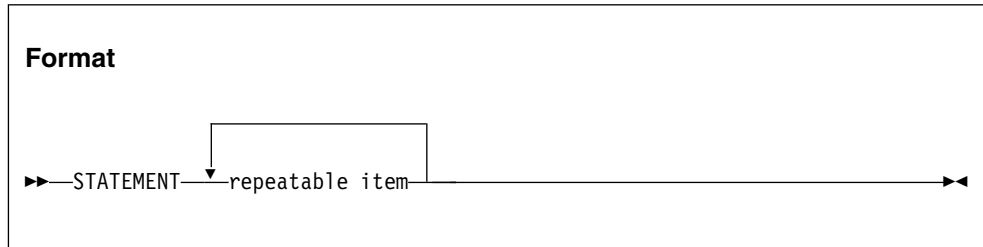
A repeat arrow above a stack indicates that you can make more than one choice from the stacked items, or repeat a single choice.
- Variables appear in italic lowercase letters (for example, *parmx*). They represent user-supplied names or values.
- If punctuation marks, parentheses, arithmetic operators, or other such symbols are shown, they must be entered as part of the syntax.

How to send your comments

Your feedback is important in helping us to provide accurate, high-quality information. If you have any comments about this document or any other PL/I for AIX documentation, contact us in one of these ways:

- Fill out the Readers' Comment Form and return it by mail or give it to an IBM® representative. If there is no Readers' Comment Form at the back, address your comments to:

  IBM Corporation
  Reader Comments
  DTX/E269
  555 Bailey Avenue
  San Jose, CA 95141-1003
  U.S.A.

- Use the Online Readers' Comment Form at www.ibm.com/software/awdtools/ rcf/.
- Send your comments to the following address: comments@us.ibm.com.

Be sure to include the name of the document, the publication number of the document, the version of the product, and, if applicable, the specific location (for example, page number or section heading) of the text that you are commenting on.

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Accessibility

Accessibility features help users who have a disability, such as restricted mobility or limited vision, to use information technology products successfully. The accessibility features in AIX® provide accessibility for PL/I for AIX.

The major accessibility features in AIX are:
- Interfaces that are commonly used by screen readers and screen-magnifier software
- Keyboard-only navigation
- An accessible command-line interface through a direct attached or networked remote Windows or Linux system using AT and terminal emulation software

Interface information

Assistive technology products work with the user interfaces that are found in AIX. For specific guidance information, see the documentation for the assistive technology product that you use to access AIX interfaces.

Keyboard navigation

For information about accessing AIX® interfaces, see Accessibility features for AIX in the IBM System p and AIX Information Center.

Accessibility of this information

The English-language XHTML format of this information that will be provided in the IBM® AIX® Compiler Information Center is accessible to visually impaired individuals who use a screen reader.

To enable your screen reader to accurately read syntax diagrams, source code examples, and text that contains the period or comma `PICTURE` symbols, you must set the screen reader to speak all punctuation.

IBM and accessibility

See the IBM Human Ability and Accessibility Center for more information about the commitment that IBM® has to accessibility.

Chapter 1. Before installing PL/I for AIX

Before you install IBM® PL/I for AIX®, V3.1 :

- Familiarize yourself with the installation image, which contains the installable compiler filesets.
- Ensure that system prerequisites such as disk space and operating system are met.
- Determine the tasks you need to perform, depending on your installation requirements.
- Become either the root user or a user with administrator privileges.
- Determine if you are using the evaluation copy of the PL/I for AIX compiler. If yes, you must follow these steps to upgrade it to a full product version:
  1. Uninstall the evaluation copy first by following the steps in Chapter 5, "Uninstalling PL/I for AIX," on page 19.
  2. Install the full product version of the PL/I for AIX compiler by following the steps in Chapter 2, "Installation," on page 7.

The installation image and filesets

The installation image for PL/I for AIX is available physically on an installation CD and electronically in the `pli.3.1.0.aix.GM.tar.Z` installation package, in the `/usr/sys/inst.images` directory.

The image includes filesets for the following compiler components:

- "PL/I for AIX compiler filesets 3.1" on page 2
- "PL/I for AIX runtime environment filesets 3.1" on page 2
- "XL C++ runtime environment filesets 11.1" on page 2
- "SMARTdata Utilities filesets" on page 3
- "IBM Debugger filesets 7.1" on page 3

Filesets

The following tables list the filesets included in the installation image and the directories to which the fileset contents are installed during an installation. You can optionally install all available filesets, or only the ones you want. If you select specific filesets for installation, you can also choose to automatically install any prerequisite filesets required by your selections by using the `installp` **-g** flag.

When fileset names differ only by the locale code, you can choose to install only the filesets relevant to your desired language and location. The LANG environment variable determines which message catalogs are used. The en_US (English) message catalogs are installed by default. If LANG is not defined or is assigned an unsupported locale, en_US message catalogs are used. See "National language support" on page 4 for a list of available locales.

PL/I for AIX compiler filesets 3.1

Table 2. PL/I for AIX compiler filesets and installation locations

Fileset name	Fileset description	Installation locations
ibmpli.cmp	PL/I for AIX compiler	/etc/ /usr/lpp/ /usr/lpp/pli /usr/lpp/pli/bin/
ibmpli.dbg	PL/I for AIX debugger support	/usr/lpp/ /usr/lpp/pli/ /usr/lpp/pli/lib/ /usr/lib
ibmpli.license	PL/I for AIX electronic license *LANG = [en_US, ja_JP, Ja_JP]*	/usr/swlag/pli/31/LANG/ ibmpli.la

PL/I for AIX runtime environment filesets 3.1

Table 3. PL/I for AIX runtime environment filesets and installation locations

Fileset name	Fileset description	Installation locations
ibmpli.rte	PL/I for AIX runtime libraries	/usr/lpp /usr/lpp/pli /usr/lpp/pli/lib/ /usr/lib
ibmpli.rte.msg.*LANG*	PL/I for AIX runtime messages *LANG = [en_US, ja_JP, Ja_JP]*	/usr/lib/nls /usr/lib/nls/msg/ /usr/lib/nls/msg/*LANG*/ /usr/lpp/pli /usr/lpp/pli/msg /usr/lpp/pli/msg/*LANG*/

XL C++ runtime environment filesets 11.1

Table 4. XL C++ runtime environment filesets and installation locations

Fileset name	Fileset description	Installation locations
xlC.rte	XL C++ runtime libraries	/usr/lpp/xlC/lib/ /usr/lpp/xlC/lib/profiled/ /usr/ccs/lib/libp/
xlC.aix50.rte	XL C++ runtime environment for AIX 5.3 libraries	/usr/lpp/xlC/lib/aix53/ /usr/lpp/xlC/lib/profiled/ aix53/
xlC.aix61.rte	XL C++ runtime environment for AIX 6.1 libraries	/usr/lpp/xlC/lib/aix61/ /usr/lpp/xlC/lib/profiled/ aix61/
xlC.msg.*LANG*	XL C++ runtime messages *LANG = [en_US, ja_JP, Ja_JP]*	/usr/lib/nls/msg/*LANG*/

SMARTdata Utilities filesets

Table 5. SdU filesets and installation locations

Fileset name	Fileset description	Installation locations
SdU.sfs	SMARTdata Utilities SFS	/usr/lpp/SdU/ /usr/lpp/SdU/sfs/ /usr/lpp/SdU/sfs/lib/ /usr/lib/
SdU.vsam	SMARTdata Utilities VSAM	/usr/lpp/SdU/ /usr/lpp/SdU/vsam/ /usr/lpp/SdU/vsam/lib/ /usr/lib/

Important: SdU filesets are backward compatible with PL/I for AIX, Version 2 and COBOL for AIX, Version 4.

IBM Debugger filesets 7.1

Table 6. IBM Debugger filesets

Fileset name	Fileset description
ibmdebugger	IBM® Debugger for AIX®
ibmdebugger.engine	IBM Debugger for AIX Compiled Languages Engine
ibmdebugger.engine.msg.*LANG*	IBM Debugger messages *LANG = [de_DE, en_US, es_ES, fr_FR, it_IT, ja_JP,* *ko_KR, pt_BR, zh_CN, zh_TW]*
ibmdebugger.jre	Supersede entry, not installed
ibmdebugger.ui	Supersede entry, not installed

The IBM Debugger for AIX is included with the PL/I for AIX installation image. This source-level debugger adopts a client-server model such that the debugger engine (server) is installed on AIX, and the Eclipse-based debugger UI (client) is installed on a Windows workstation.

Remember: IBM Debugger for AIX, V7.1 supersedes IBM Distributed Debugger. If the IBM Distributed Debugger V9.2 is installed on your system, it will be removed upon installation of the IBM Debugger for AIX, V7.1. The post-installation script then modifies the idebug fileset levels in the Object Data Manager (ODM) database to 99.99.9999.9999 to prevent future installations of idebug.* filesets.

To install IBM Debugger and the Windows remote debug interface, see README.debug.txt in the root directory of the installation image.

Preparing the electronic distribution package

If you have downloaded the PL/I for AIX electronic distribution package, `pli.3.1.0.aix.GM.tar.Z`, follow these steps before attempting to install:

Remember: You must be logged in as root user or have superuser authority.

1. To uncompress and unpack the file, use the command:

   ```
   zcat pli.3.1.0.aix.GM.tar.Z | tar -xvf -
   ```

2. Use the command `inutoc` *directory_name* to generate a .toc file in the specified directory.

The following example shows the steps to prepare the electronic distribution package, `pli.3.1.0.aix.GM.tar.Z`, located in the new directory, `/compiler/install/` for installation.

```
cd /compiler/install
zcat pli.3.1.0.aix.GM.tar.Z | tar -xvf -
cd usr/sys/inst.images
inutoc .
```

Refer to System prerequisites to ensure that system prerequisites are met and the installation method described in Chapter 2, "Installation," on page 7 to install the compiler.

National language support

The PL/I for AIX compiler and runtime messages support the following language locales:
- en_US (ISO8859-1)
- ja_JP (IBM-eucJP)
- Ja_JP (IBM-943)

English (en_US) is the default national language. Following installation, you can set the NLSPATH so that messages are displayed in a different language. See "Enabling the PL/I for AIX error messages" on page 16.

System prerequisites

All system prerequisites must be present on your system before PL/I for AIX can be successfully installed and run.

Hardware requirements:

PL/I for AIX, V3.1 and its generated object programs run on any processors that are supported by AIX® V5.3.9.0 or later, AIX V6.1.0.0 or later, or AIX V7.1. These processors must be configured with at least one supported display, keyboard, and mouse.

Software requirements: Required programs

PL/I for AIX, V3.1 and its generated object programs run on the following operating systems: AIX V5.3.9.0 or later, AIX V6.1.0.0 or later, or AIX V7.1.

To view and print PDF and license agreement files you need the Adobe Acrobat Reader.

Software requirements: Optional programs

To use PL/I for AIX with optional programs such as online help, DB2® and CICS®, additional products are required:
- Online help:
  - A Mozilla browser to access the information center.
- DB2:

- PL/I 32-bit applications that embed EXEC SQL statements require DB2 V9.1 for Linux, UNIX, and Windows, DB2 V9.5 for Linux, UNIX, and Windows with fix pack 3, or DB2 V9.7 for Linux, UNIX, and Windows.
- CICS:
  - PL/I applications that embed EXEC CICS statements require TXSeries for Multiplatforms, Version 7.1 with PTF 3.

Verifying the amount of hard disk space available

You can use the following command to determine the amount of space available in the installation location (/usr/lpp/pli/):

```
df -m /usr
```

Verifying that the required filesets are installed

The following filesets *must* be installed on your system in order to install IBM® PL/I for AIX, V3.1:

Fileset name	Fileset description
bos.adt.libm	Base application development math library
bos.rte	Base operating system run time
bos.rte.libc	Base application runtime library

At least one of the following locale-specific filesets must be installed on your system:

Fileset name	Fileset description
bos.loc.*LANG*	Base locale support
bos.loc.pc.*LANG*	Base system locale PC code set
bos.loc.utf.*LANG*	Base system locale UTF code set
bos.loc.iso.*LANG*	Base system locale ISO code set

You can view information about the installed filesets by using the lslpp command.

Use the following command to determine if these filesets have been installed:

```
lslpp -L bos.loc.* bos.rte. bos.rte.libc
```

Previewing the installation and license agreements

Before installing IBM® PL/I for AIX®, V3.1, you can verify the installation process, check file sizes and disk space, and preview the license agreements using either SMIT or `installp`.

The terms and conditions for using PL/I for AIX are specified in the following PDF files, which are located in the root directory of the distribution package:
- LicAgree.pdf
- LicInfo.pdf

After installation, the license PDF files can be found in the /usr/lpp/pli/ directory with the file names:
- LicenseAgreement.pdf

- license.pdf

Using SMIT

You can use the System Management Interface Tool (SMIT) to preview the PL/I for AIX installation.

Follow the steps to install the compiler to the location given in "Using SMIT" on page 7. When prompted with the SMIT dialog to customize the installation in step 3, set the `Preview only?` field to **yes**. With this setting enabled, SMIT displays progress messages at each stage of the installation but does not actually install the compiler on your system.

Using installp

You can also preview the command-line installation process and write the output to a log file, using the installp command. Follow the steps to install the compiler to the location given in "Using installp" on page 8 and specify the **-p** flag to preview the process without installing the compiler.

The following example previews the installation of all available compiler filesets in the /cdrom/usr/sys/inst.images source directory to the location /usr/lpp/pli/ and writes an installation log file to /tmp/install.log.

```
installp -paXgd /cdrom/usr/sys/inst.images -e /tmp/install.log all
```

Chapter 2. Installation

The installation methods below install PL/I for AIX into the /usr/lpp/pli/ directory. If you have root access or a profile with superuser privileges, you can use either the System Management Interface Tool (SMIT) or the `installp` command to install the compiler.

You can use the installation methods to perform any of the following tasks:

- Install PL/I for AIX, V3.1 on a clean system.
- Install PL/I for AIX, V3.1 on a system where IBM COBOL for AIX, V4.1 is already installed. In this case, both compilers use the SMARTData Utilities provided with PL/I for AIX, V3.1.
- Install an update on a system where IBM® PL/I for AIX®, V3.1 has already been installed. In this case, use the procedure in Chapter 3, "Update installation," on page 11.

Tasks for installation

Before you perform an installation, you must make sure that you have a user account with administrator privileges and that your system meets all system requirements.

The complete procedure for installation is outlined in the following table.

Table 7. Steps for installation: new or upgrade installation

Task	For more information, see . . .
Become either the root user or a user with administrator privileges.	Documentation supplied with the operating system.
Ensure that all system prerequisites are met.	"System prerequisites" on page 4
Use SMIT or the `installp` command to install and configure the compiler.	"Using SMIT" or "Using installp" on page 8
Confirm that the compiler packages were successfully installed, and test the installation.	"Checking compiler and fileset information" on page 15, "Testing the installation" on page 18
If your system locale or encoding, or both are *not* en_US, enable the compiler and runtime error messages. Otherwise, you can skip this step.	"Enabling the PL/I for AIX error messages" on page 16

Using SMIT

The SMIT interface guides you step-by-step through the installation process.

Remember:

- If you use the command `smit install_latest`, SMIT produces an error message indicating that either xlC.aix50.rte or xlC.aix61.rte failed to install. This is normal, and you can ignore the error message. If you install the compiler onto a system running AIX® V5.3, only xlC.aix50.rte is required, and xlC.aix61.rte

automatically fails to install. Likewise, if you install the compiler onto a system running AIX V6.1 or AIX V7.1, only xlC.aix61.rte is required, and xlC.aix50.rte fails to install.

- Similarly, any language specific filesets that are not supported by your system produces an error message and fails to install. For example, if local support is not present for Ja_JP, installation might fail when attempting to install a Ja_JP specific language fileset for the compiler. These error messages are normal and can be ignored.
- The runtime libraries and compiler filesets are always required.
- You do not need all of the compile-time and runtime message catalogs, only those for the national languages that you need for compile-time and runtime messages.
- Messages are displayed as each part is successfully installed.
- The installation log is stored in the /home/smit.log file.

To install the compiler using the SMIT interface, follow these steps:

1. Enter the command `smit install_latest`. This command invokes SMIT, which presents a menu-driven user interface for the installation process. You must specify the device and directory in the `INPUT device/directory of the software` field.
2. Press F4 to select from a list of suggested devices and directories, or type in the name of the CD-ROM device or the path to the location of the packages. If you want to install over a network you must have a network server installed, and then specify the directory on the client that corresponds to the installation source on the network server.
3. Press Enter. At this stage you are prompted with a list of questions that will help you customize the compiler installation on your system. Verify the default values, or modify them where necessary to accommodate your preferences.

   Important: You must select **yes** next to `Accept new LICENSE agreements?` field to continue with the installation.

   Tip:
   - You can select the `SOFTWARE to install` field and press F4 to view the installable filesets on the device or in the directory, then select the filesets to install. Install the runtime libraries first, then install the other filesets in any order. It is recommended that you keep the default setting, `_all_latest`, to install all the filesets.
   - To preview the installation process without actually installing the compiler select **yes** next to the `Preview only?` field.
4. Press Enter and then Enter again.

Using installp

You can install PL/I for AIX directly from the command line using the AIX® command `installp`.

Remember:
- If you use the keyword *all*, as in the example above, `installp` produces an error message indicating that either xlC.aix50.rte or xlC.aix61.rte failed to install. This is normal, and you can ignore the error message. If you install the compiler onto a system running AIX V5.3, only xlC.aix50.rte is required, and xlC.aix61.rte

automatically fails to install. Likewise, if you install the compiler onto a system running AIX V6.1 or AIX V7.1, only xlC.aix61.rte is required, and xlC.aix50.rte fails to install.

- Similarly, any language specific filesets that are not supported by your system produces an error message and fails to install. For example, if local support is not present for Ja_JP, install fails when it attempts to install a Ja_JP specific language fileset for the compiler. These error messages are normal and can be ignored.

To install the compiler and write the installation output to a log file, run this `installp` command:

```
installp -aXYgd install_images_location -e logfile fileset_names
```
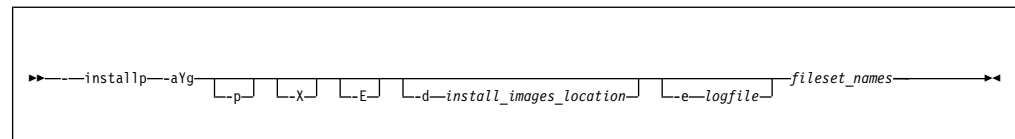

-aYg   Specifies that all the latest and prerequisite installable filesets available in the *install_images_location* directory are applied and committed, and that the required software license agreement is accepted.

-p   Performs a preview of the installation process by running the preinstallation checks. See "Previewing the installation and license agreements" on page 5.

-X   Attempts to expand the file system at the installation location if there is insufficient space to complete the install.

-E   Displays software license agreements. This flag is only valid with the **-a** or **-l** flags. If the **-E** flag is specified with the **-a** flag, a new section is displayed showing the pending license agreements associated with the selected filesets. If the **-E** flag is specified with the **-l** flag, output is displayed showing the license agreements associated with all filesets on the media.

-d *install_images_location*
    Specifies the directory where the filesets are located. This path might also be a mounted CD-ROM drive.

-e *logfile*
    Specifies the name and location of the installation log file.

fileset_names
    Specifies a list of names of the filesets in *install_images_location* that you want to install.

    Tip: The keyword *all* can be used to indicate that all filesets should be attempted during installation.

The following example installs all available compiler filesets in the /cdrom/usr/sys/inst.images source directory to the locations specified in "The installation image and filesets" on page 1, and writes an installation log file to /tmp/install.log.

Example:

```
installp -aXYgd /cdrom/usr/sys/inst.images -e /tmp/install.log all
```

Chapter 3. Update installation

A program temporary fix (PTF) is an update to PL/I for AIX that provides a fix or multiple fixes to the product.

You can download the latest compiler updates from the support web site: www.ibm.com/software/awdtools/pli/pliaix/support. You can also find the instructions on Fix Central.

You can install updates by using either "Using SMIT" on page 7 or the `installp` command.

Tasks for update installation

The complete procedure for update installation is outlined in the following table.

Table 8. Steps for installation: update installation

Task	For more information, see . . .
Become either the root user or a user with administrator privileges.	Documentation supplied with the operating system.
Ensure that all system prerequisites are met.	"System prerequisites" on page 4
Download, uncompress, and unpack the PTF package.	"Preparing a PTF package for installation"
Generate a .toc file.	"Preparing a PTF package for installation"
Use SMIT or the `installp` command to install PTFs, using the default paths.	"Using SMIT" on page 12 or "Using installp" on page 12
Confirm that the compiler packages were successfully installed, and test the installation.	"Checking compiler and fileset information" on page 15, "Testing the installation" on page 18

Preparing a PTF package for installation

Updates to the compiler are supplied as PTF packages. Before these PTF packages can be used to update the compiler, they must be downloaded and uncompressed, and a .toc file must be generated.

To prepare the update package for installation, follow these steps:

Remember: You must be logged in as root or have superuser authority.

1. Download the desired PTF package (for example pli.31.aix.YYMMDD.tar.Z) into an empty directory.
2. Restore the compressed file and extract the PTF filesets from the downloaded package:
   a. To uncompress the file, use the command:

      `zcat package_name.tar.Z`

   b. To unpack the resulting tar file, use the command:

      `tar -xvf package_name.tar`

3. Use the command `inutoc directory_name` to generate a .toc file in the same directory as the unpacked filesets.

The following example shows the steps to prepare the package, pli.31.aix.YYMMDD.tar.Z, located in the new directory, /compiler/update/ for installation:

```
cd /compiler/update
zcat -f pli.31.aix.YYMMDD.tar.Z
tar -xvf pli.31.aix.YYMMDD.tar
inutoc .
```

Using SMIT

To install a PTF using the SMIT interface, follow these steps:

1. Run the command: `smit update_all`.

   This command invokes SMIT, which presents a menu-driven user interface for the installation process.

2. When asked to, specify the path of the directory where the PTF filesets and .toc are located in the `INPUT device/directory of the software` field.

3. Press Enter.

   At this stage, you are prompted with a list of questions to help you customize the compiler installation on your system. Verify the default values, or modify them where necessary, to accommodate your preferences.

4. Press Enter and then Enter again.

   Messages display as each part is successfully installed, and the installation log is stored to `/home/smit.log`.

Tip: PTF packages often ship base level filesets as prerequisites. If the command `smit update_all` is used, then those packages will not install, which might cause requisite failures. For this reason, use `smit install_all` to install the prerequisites and commit the updates.

Using installp

To install a PTF by using the `installp` command and write the output to a log file, run this command:

`installp -aXgd PTF_filesets_location -e logfile fileset_names`
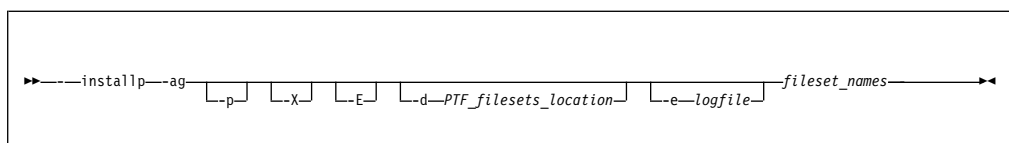
-ag   Specifies that all the latest installable and requisite filesets available in the *PTF_filesets_location* directory are applied and committed.

-p   Performs a preview of the installation process by running the preinstallation checks. See "Previewing the installation and license agreements" on page 5.

-X   Attempts to expand the file system at the default location if there is insufficient space to complete the install.

-E   Displays software license agreements. This flag is only valid with the **-a** or **-l** flags. If the **-E** flag is specified with the **-a** flag, a new section is displayed showing the pending license agreements associated with the

selected filesets. If the **-E** flag is specified with the **-l** flag, output is displayed showing the license agreements associated with all filesets on the media.

-d *PTF_filesets_location*
> Specifies the directory where the filesets are located. This path might also be a mounted CD-ROM drive.

-e *logfile*
> Specifies the name and location of the installation log file.

fileset_names
> Specifies a list of names of the filesets in *PTF_filesets_location* that you want to install.

> **Tip:** The keyword *all* can be used to indicate that all filesets must be attempted during installation.

The following example installs all available PTF filesets in the /compiler/update/ source directory to the default locations, as specified in "The installation image and filesets" on page 1, and writes an installation log file to /tmp/install.log.

Example:
```
installp -aXgd /compiler/update/ -e /tmp/install.log all
```

Product version migration

Before installing IBM® PL/I for AIX®, V3.1, any previously installed versions of the compiler must be uninstalled. See Chapter 5, "Uninstalling PL/I for AIX," on page 19.

Upgrading from a previous release of IBM PL/I for AIX, V3.1 is not supported.

Operating system migration

If you have the compiler installed on AIX® V5.3, you might want to migrate the operating system to AIX V6.1 or later to take advantage of the latest IBM® POWER® technology.

The compiler filesets are not OS specific and do not require migration if PL/I for AIX, V3.1 is installed on AIX V5.3 and the operating system is migrated to AIX V6.1 or later. If an OS specific fileset is required in the future for a higher level of AIX, it will be identified in an IBM Technical Note tied to the PTF that will add support for that version of AIX.

Remember: When an AIX V5.3 machine is migrated to AIX V6.1, the AIX V5.x C++ runtime fileset xlC.aix50.rte is uninstalled, and the AIX V6.1 C++ runtime fileset xlC.aix61.rte is installed from the AIX V6.1 install image. The service level of the AIX V6.1 C++ runtime on the install image might be different from the service level of the AIX V5.x C++ runtime on your machine before migration. This means that after an OS migration, all PTFs applied to the C++ runtime before OS migration are gone, and then have to be re-installed. If the AIX V6.1 C++ runtime is at a different version, you can download the latest runtime updates from Fix Central.

Chapter 4. After installing PL/I for AIX

There are some optional setup and verification procedures that you can use after you have installed the compiler. You might also want to use the product information.

Checking compiler and fileset information

You can check the versions of the compiler and individual filesets installed by using the `lslpp` command:

```
lslpp option_string
```

where *option_string* can be:

-L *fileset*
  Displays the version and state of the fileset specified

-f *fileset*
  Displays the files and symbolic links associated with the fileset specified

-w *filename*
  Indicates which fileset belongs to the specified file (*filename*)

Restriction: The command `lslpp` does not detect filesets that have not been installed using the SMIT or `installp` methods. For example, to check the version of the compiler installed, enter the following command:

```
lslpp -L ibmpli.cmp
```

Enabling IBM Tivoli License Compliance Manager (ITLCM)

IBM® Tivoli® License Compliance Manager (ITLCM) is a web-based solution that can help you manage software usage metering and license allocation services on supported systems. In general, ITLCM recognizes and monitors the products that are installed and in use on your system.

IBM PL/I for AIX®, V3.1 is ITLCM-enabled for inventory support only, which means that ITLCM is able to detect product installation of PL/I for AIX, but not its usage.

Remember: ITLCM is not a part of the PL/I for AIX compiler offering, and must be purchased and installed separately.

Once installed and activated, ITLCM scans your system for product inventory signatures that indicate whether a given product is installed on your system. ITLCM also identifies the version, release, and modification levels of the product. Inventory signature files are not updated after PTF installation.

When PL/I for AIX is installed, the signature files are in the /usr/lpp/pli/ IBMPLIX0301.SYS2 directory. For more information about IBM Tivoli License Compliance Manager, see: www.ibm.com/software/tivoli/products/license-mgr/.

Setting environment variables

Before you use the compiler, verify that the environment variables LANG, NLSPATH, and PATH are set. To determine the current setting of these variables, use this command:

```
echo "\n $LANG \n\n $NLSPATH \n\n $PATH"
```

LANG
Specifies the national language for message files. See "The installation image and filesets" on page 1.

The LANG environment variable can be set to any of the locales provided on the system. See the description of locales in *AIX® General Programming Concepts* for more information.

The national language code for United States English is en_US. If the appropriate message catalogs have been installed on your system, any other valid national language code can be substituted for en_US.

NLSPATH
Specifies the path name of the message files.

PATH
Specifies the directory search path for the executable files of the compiler.

Remember: The LANG and NLSPATH environment variables are initialized when the operating system is installed, and might differ from the ones you want to use.

Enabling the PL/I for AIX error messages

If your system uses the en_US locale and encoding, the compiler and runtime message catalogs are automatically configured to display correctly. However, if your system uses any other supported locale, you must set the NLSPATH environment variable so that the compiler and runtime functions can find the appropriate message catalogs following installation.

For example, to specify the Japanese locale with the IBM_eucJP code page, use the following commands:

```
LANG=ja_JP
NLSPATH=/usr/lib/nls/msg/%L/%N:/usr/lib/nls/msg/prime/%N
export LANG NLSPATH
```

Substitute any valid national language code for ja_JP, provided the associated message catalogs are installed.

See "The installation image and filesets" on page 1 for a list of supported language locales.

Accessing the information

This section provides an overview of the information offered with the product. Information about the compiler, its debugger and utilities, and the PL/I programming language is provided through an HTML-based information center on the IBM® external web and through publications in Portable Document Format (PDF).

Accessing the Installation Guide, Quick Start Guide and License Agreement

The *Installation Guide* (install.pdf) is located in the doc/en_US/pdf/ directory of the distribution package. Alternatively, the *Installation Guide* (install.pdf) is available for download from the web in the PL/I for AIX library page at www.ibm.com/software/awdtools/pli/pliaix/library/. The *Quick Start Guide* (quickstart.pdf) is located in the root directory of the distribution package.

The License Agreement PDF (LicenseAgreement.pdf) is also located in the root directory of the distribution package. After the installation, the license files can be found in the /usr/lpp/pli/ directory.

Accessing the online information

HTML versions of the PL/I for AIX information including the IBM Debugger for AIX, V7.1 information are part of the IBM® AIX® Compiler Information Center at publib.boulder.ibm.com/infocenter/comphelp/v111v131/.

The IBM Debugger for AIX, V7.1 information consists of HTML online help and additional HTML information accessible from the debugger graphical user interface.

Context-sensitive help for the debugger is available by pressing F1 while you are using the debugger.

For the latest information regarding the IBM Debugger for AIX, V7.1, check the README file for the debugger. You can find the README file for the debugger in /usr/idebug/readme/.

Accessing PDF files

PDF versions of the PL/I for AIX information are available for download from the web in the PL/I for AIX library page at www.ibm.com/software/awdtools/pli/pliaix/library/. You can view and print this information by using the Adobe Acrobat Reader. If you do not already have the Adobe Acrobat Reader program installed, you can download it from the Adobe web site at www.adobe.com.

The following PDF files are available from the PL/I for AIX library page:
- *PL/I for AIX Installation Guide* (this information), GC14-7322, provides information about prerequisite products and the steps for installing PL/I for AIX.
- *PL/I for AIX Programming Guide*, SC14-7319, provides information about how to write, compile, link-edit, and run PL/I for AIX programs.
- *PL/I for AIX Language Reference*, SC14-7320, describes the PL/I language supported by IBM® PL/I for AIX®, V3.1.

- *PL/I for AIX Messages and Codes*, GC14-7321, provides information about the causes of reply messages that you might receive while using the IBM PL/I for AIX, V3.1 compiler.

Testing the installation

To test the product installation and the critical search paths, try building, compiling, and running a simple program.

For example:

1. Create the following PL/I program:

   ```
   [hello.pli]
   hello1: proc options(main);
           display('Hello!');
   end hello1;
   ```

2. Compile the test program. For example:

   ```
   pli hello.pli -o hello
   ```

3. Run the program:

   ```
   ./hello
   ```

   The expected result is that "Hello!" is displayed on the screen.

4. Check the exit code of the program:

   ```
   echo $?
   ```

   The result should be zero.

Accessing additional information

For the latest information about PL/I for AIX, visit the IBM® PL/I for AIX® website at http://www.ibm.com/software/products/en/pliaix.

Chapter 5. Uninstalling PL/I for AIX

This section outlines the steps required to uninstall PL/I for AIX.

Remember:
1. You must be a root user or a user with administrator privileges to uninstall this product.
2. Some filesets might not be uninstalled if they are required by other installed products. See Filesets for details about filesets included with IBM® PL/I for AIX®, V3.1.
3. Because uninstalling dependent packages automatically might introduce problems, it is recommended that you preview uninstallation to ensure that all dependent filesets are no longer required.

Uninstalling an installation

Remember: You must be a root user or a user with administrator privileges to uninstall the product.

To uninstall the compiler, you can use either SMIT or `installp` to remove the compiler filesets.

If you attempt to remove a fileset that is required by another installed fileset, the selected fileset will not be removed unless its dependents are also being removed.

Using SMIT

To uninstall IBM® PL/I for AIX®, V3.1 using the SMIT interface, enter the following command:

```
smit remove
```

In the `SOFTWARE name` field, enter the fileset names (wildcards accepted) separated by a space. If you have COBOL for AIX installed, you must not remove any filesets which are shared between the compilers. In this case, enter the following name in the field:

```
ibmpli.*
```

Otherwise, enter the following name in the field:

```
ibmpli.* SdU.*
```

To uninstall the IBM Debugger for AIX, V7.1 engine on AIX, also enter the following name in the field:

```
ibmdebugger*
```

In the `REMOVE dependent software?` field, select **yes**.

To preview the uninstallation, set the `PREVIEW only?` value to **yes**.

Using installp

To uninstall IBM PL/I for AIX, V3.1 using the `installp` command, enter the following command:

```
installp -u filesets
```

where *filesets* is the list of filesets (wildcards accepted) to uninstall. If you have COBOL for AIX installed, you must not remove any filesets which are shared between the compilers. In this case, *filesets* are as follows:

```
'ibmpli.*'
```

Otherwise, *filesets* are as follows:

```
'ibmpli.*' 'SdU.*'
```

To uninstall the IBM Debugger for AIX, V7.1 engine on AIX, enter the following command:

```
installp -u ibmdebugger
```

To uninstall the Windows remote debug interface, see the instructions in idebug.install_7.1.0\README.idebug.txt.

For the latest information regarding the IBM Debugger for AIX, V7.1, check the README file for the debugger. You can find the README file for the debugger in /usr/idebug/readme/.

Cleaning up kernel and library memory

To remove any currently unused modules in kernel and library memory, enter the following command:

```
slibclean
```

Uninstalling the electronic license agreement

The license agreement text file remains on the system after the license fileset has been uninstalled, so that you do not have to accept the product license again if you reinstall PL/I for AIX.

To remove the license agreement text file, run the commands:

```
ODMDIR=/usr/lib/objrepos; odmdelete -o lag -q "fileset=ibmpli.license"
rm -rf /usr/swlag/pli/41/*/ibmpli.la
```

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List of resources

PL/I for AIX

Installation Guide, GC14-7322

Language Reference, SC14-7320

Programming Guide, SC14-7319

Messages and Codes, GC14-7321

Support

If you have a problem using PL/I for AIX, see the following site, which provides up-to-date support information www.ibm.com/software/awdtools/pli/pliaix/support/.

Related publications

AIX

Commands Reference: Volume 1, a - c, SC23-5243

Commands Reference: Volume 2, d - h, SC23-5244

Commands Reference: Volume 3, i - m, SC23-5245

Commands Reference: Volume 4, n - r, SC23-5246

Commands Reference: Volume 5, s - u, SC23-5247

Commands Reference: Volume 6, v - z, SC23-5248

General Programming Concepts: Writing and Debugging Programs, SC23-5259

Index

A

- accessibility
  - assistive technologies
  - keyboard navigation
  - of PL/I for AIX
  - of this information
- assistive technologies

D

- debugger

E

- electronic distribution package
- environment variables, setting
- error messages, enabling

F

- filesets
  - checking
  - included in installation image
  - required
- format notation, rules for

H

- hard disk space available
  - determining
  - required
- hardware
  - required

I

- information
  - HTML
  - PDF
- installation
  - instructions
  - overview
  - testing
  - uninstallation
- installation CD
- installation image
- installp
  - compiler installation

Readers' Comments — We'd Like to Hear from You

Enterprise PL/I for z/OS
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Installation Guide
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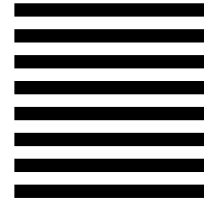
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