

COBOL for AIX



Installation Guide

Version 3.1

COBOL for AIX



Installation Guide

Version 3.1

Note!

Before using this information and the product it supports, read the information in "Notices," on page 19.

Second Edition (February 2009)

This edition applies to IBM^(R) COBOL for AIX^(R), Version 3.1 (program number 5724-V62), and to all subsequent releases and modifications until otherwise indicated in new editions. Make sure you are using the correct edition for the level of the product.

You can order publications online at www.ibm.com/shop/publications/order/, or order by phone or fax. IBM Software Manufacturing Solutions takes publication orders between 8:30 a.m. and 7:00 p.m. Eastern Standard Time (EST). The phone number is (800)879-2755. The fax number is (800)445-9269.

You can also order publications through your IBM representative or the IBM branch office that serves your locality.

© **Copyright International Business Machines Corporation 1995, 2009.**

US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

Contents

Tables	v
---------------	----------

Preface	vii
----------------	------------

About this document	vii
Who should use this document	vii
How to use this document	vii
How this document is organized	vii
How to read the syntax diagrams	vii
How to send your comments	viii
Accessibility of COBOL for AIX	ix
Accessibility features	ix
Keyboard navigation	ix
Interface information	ix
Related accessibility information	ix
IBM and accessibility	x

Chapter 1. Before installing COBOL for AIX	1
---	----------

The installation image and filesets	1
System prerequisites	4
Previewing the installation and license agreements	5

Chapter 2. Installation	7
--------------------------------	----------

Tasks for installation	7
Product version migration	7
Operating system migration	8
Using SMIT	8
Using installp	9

Chapter 3. After installing COBOL for AIX	11
--	-----------

Checking compiler and fileset information	11
Enabling IBM Tivoli License Compliance Manager (ITLCM)	11
Setting environment variables	12
Enabling the COBOL for AIX error messages	12
Enabling the manual pages	13
Accessing the documentation	13
Accessing the Installation Guide, Quick Start Guide and License Agreement	13
Accessing the online documentation	13
Accessing PDF files	13
Viewing the manual pages	14
Testing the installation	14
Accessing additional information	15

Chapter 4. Uninstalling COBOL for AIX	17
--	-----------

Uninstalling an installation	17
Uninstalling the electronic license agreement	18

Appendix. Notices	19
--------------------------	-----------

Trademarks	21
------------	----

List of resources	23
--------------------------	-----------

COBOL for AIX	23
Related publications	23

Index	25
--------------	-----------

Tables

1.	Phases of a COBOL for AIX installation	vii	4.	SdU filesets and installation locations	2
2.	COBOL for AIX compiler filesets and installation locations	1	5.	IBM Debugger filesets	2
3.	COBOL for AIX runtime environment filesets and installation locations	2	6.	Steps for installation: new or upgrade installation	7

Preface

About this document

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

Who should use this document

This document is intended for anyone responsible for installing IBM COBOL for AIX, V3.1.

How to use this document

This document provides procedures to install a single version of COBOL for AIX.

How this document is organized

This document is organized to reflect the pre-installation, installation, post-installation, and product removal phases of a COBOL for AIX installation.

Table 1. Phases of a COBOL for AIX installation

Phase	Chapters	User segment
Pre-installation	Chapter 1, "Before installing COBOL for AIX," on page 1	All users
Installation	Chapter 2, "Installation," on page 7	Users who want to install COBOL for AIX,V3.1
Post-installation	Chapter 3, "After installing COBOL for AIX," on page 11	All users
Product removal	Chapter 4, "Uninstalling COBOL for AIX," on page 17	Users who want to uninstall COBOL for AIX,V3.1

How to read the syntax diagrams

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

- 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



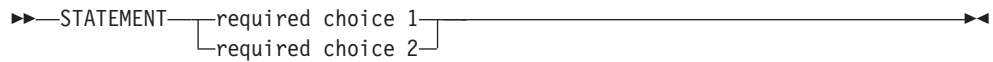
- Optional items appear below the main path.

Format



- 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



If choosing one of the items is optional, the entire stack appears below the main path.

Format



- An arrow returning to the left above the main line indicates an item that can be repeated.

Format



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, *parm*x). 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 documentation for this product, contact us in one of these ways:

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

IBM Corporation H150/090 555 Bailey Avenue San Jose, CA 95141-1003 U.S.A.

- Use the Online Readers' Comment Form at www.ibm.com/software/awdtools/rcf/.
- Fax your comments to this U.S. number: (800)426-7773.

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.

When you send information to IBM, you grant IBM a nonexclusive right to use or distribute the information in any way it believes appropriate without incurring any obligation to you.

Accessibility of COBOL for AIX

Accessibility features help users who have a disability, such as restricted mobility or limited vision, to use information technology products successfully.

Accessibility features

The major accessibility features of COBOL for AIX are:

- Interfaces that are commonly used by screen readers
- An accessible command-line interface through a direct attached or networked remote Windows® or Linux® system using AT® and terminal emulation software

The AIX Compiler Information Center and its related publications are accessibility enabled. The accessibility features of the information center are described in the IBM AIX Compiler Information Center at www.ibm.com/software/awdtools/cobol/aix/library.

Keyboard navigation

For information about accessing AIX interfaces, refer to the IBM AIX Compiler Information Center at www.ibm.com/software/awdtools/cobol/aix/library.

Interface information

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

Related accessibility information

The English-language XHTML format of this document that will be provided in the IBM AIX Compiler Information Center at www.ibm.com/software/awdtools/cobol/aix/library 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 at www.ibm.com/able for more information about the commitment that IBM has to accessibility.

Chapter 1. Before installing COBOL for AIX

Before you install IBM COBOL 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.
- Become either the root user or a user with administrator privileges.

The installation image and filesets

The installation image for COBOL for AIX is available physically on an installation CD and electronically in the `cobol.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:

- “COBOL for AIX compiler filesets 3.1”
- “COBOL for AIX runtime environment filesets 3.1” on page 2
- “SMARTdata UTILITIES filesets” on page 2
- “IBM Debugger filesets 6.1” on page 2

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 may optionally install all available filesets, or only the ones you want. If you select specific filesets for installation, you may 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 3 for a list of available locales.

COBOL for AIX compiler filesets 3.1

Table 2. COBOL for AIX compiler filesets and installation locations

Fileset name	Fileset description	Installation locations
cobol.cmp	COBOL for AIX compiler	/usr/lpp/cobol/ /usr/lpp/cobol/bin/ /usr/lpp/cobol/samples/ /usr/lpp/cobol/include/ /usr/bin/
cobol.dbg	COBOL for AIX debugger	/usr/lpp/cobol/lib /usr/lib/
cobol.license	COBOL for AIX electronic license <i>LANG = [en_US, ja_JP, ja_JP]</i>	/usr/swlag/cobol/31/ LANG/cobol.la
cobol.lic	COBOL for AIX license files	/usr/lpp/cobol/lib/

Table 2. COBOL for AIX compiler filesets and installation locations (continued)

Fileset name	Fileset description	Installation locations
cobol.man	COBOL for AIX compiler manual pages	/usr/man/cat1/
cobol.msg.LANG	COBOL for AIX compiler messages LANG = [en_US, ja_JP, ja_JP]	/usr/lib/nls/msg/LANG/

COBOL for AIX runtime environment filesets 3.1

Table 3. COBOL for AIX runtime environment filesets and installation locations

Fileset name	Fileset description	Installation locations
cobol.rte	COBOL for AIX runtime libraries	/usr/lpp/cobol/ /usr/lpp/cobol/lib/ /usr/lib/ /etc/
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/
cobol.msg.LANG	COBOL for AIX runtime messages LANG = [en_US, ja_JP, ja_JP]	/usr/lib/nls/msg/LANG/

SMARTdata UTILITIES filesets

Table 4. SdU filesets and installation locations

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

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

IBM Debugger filesets 6.1

Table 5. 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, en_ES, fr_FR, it_IT, ja_JP, ko_KR, pt_BR, zh_CN, zh_TW]
ibmdebugger.jre	IBM Debugger for AIX Java™ Runtime Environment
ibmdebugger.ui	IBM Debugger for AIX User Interface Components

The Eclipse-based IBM Debugger for AIX, V6.1 is included with the COBOL for AIX installation image, and adds source-level debugging to your development

environment. In addition, a Windows version of the Debugger UI is included with the installer, which allows you to remotely debug AIX applications from a Windows platform.

Note: IBM Debugger for AIX, V6.1 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, V6.1. 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 after ibmdebugger.* filesets have been installed.

Preparing the electronic distribution package

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

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

- Uncompress and unpack the downloaded package into an empty directory:
 1. To uncompress the file, use the command

```
uncompress cobol.3.1.0.aix.GM.tar.Z
```
 2. To unpack the resulting tar file, use the command

```
tar -xvf cobol.3.1.0.aix.GM.tar
```
- 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, `cobol.3.1.0.aix.GM.tar.Z`, located in the new directory, `/compiler/install/` for installation.

```
cd /compiler/install
uncompress -f cobol.3.1.0.aix.GM.tar.Z
tar -xvf cobol.3.1.0.aix.GM.tar
cd usr/sys/inst.images
inutoc .
```

Refer to “System prerequisites” on page 4 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 COBOL 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 COBOL for AIX error messages” on page 12.

System prerequisites

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

Hardware requirements:

- COBOL for AIX, V3.1 and its generated object programs run on any processors that are supported by IBM AIX 5L™ for POWER™ Version 5.3 or IBM AIX, Version 6.1. These processors must be configured with at least one supported display, keyboard, and mouse.
- An SVGA 800 x 600 display (1024 x 764 recommended).
- 256 MB of memory (512 MB, or higher, recommended).
- 200 MB of disk space for the COBOL compiler, tools, and documentation.

Software requirements: Required programs

COBOL for AIX, V3.1 and its generated object programs run under the following system environments (or subsequent releases): AIX 5L for POWER Version 5.3 or AIX Version 6.1.

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

You need the cumulative fix package for IBM C++ Runtime Environment Components for AIX. For your convenience the IBM XL C++ Runtime, V10.1 filesets are included with COBOL for AIX, V3.1. For more information about this fix package, see www.ibm.com/support/docview.wss?uid=swg24019562.

Software requirements: Optional programs

To use COBOL for AIX with optional programs such as online help, DB2® and CICS®, additional products are required:

- Online help
 - A Mozilla or Netscape browser to access the F1 help from the debugger.
 - A Mozilla or Netscape browser to access the information center.
- DB2:
 - COBOL 32-bit applications that embed EXEC SQL statements require DB2 Universal Database, Version 8.2 or DB2 9.1 for Linux, UNIX®, and Windows or DB2 9.5 for Linux, UNIX, and Windows with Fixpack 3.
 - COBOL 64 bit applications that embed EXEC SQL statements require DB2 9.1 for Linux, UNIX, and Windows or DB2 9.5 for Linux, UNIX, and Windows with Fixpack 3.
- CICS:
 - COBOL applications that embed EXEC CICS statements require TXSeries® for Multiplatforms:
 - When you use the integrated translator: TXSeries for Multiplatforms, Version 6.2 with PTF 1.
 - When you use the precompiler: TXSeries for Multiplatforms, Version 6.
 - When you use both the integrated translator and the precompiler: TXSeries for Multiplatforms, Version 6.2 with PTF 1.
- Java

- Applications that use object-oriented COBOL syntax for Java interoperability require, Java 2 Platform, Standard Edition, v 1.4.2, Java 2 Platform, Standard Edition, v 5, or Java 2 Platform, Standard Edition, v 6.
- 64-bit applications require the 64-bit version of the Java SDK.
- 32-bit applications require the 32-bit version of the Java SDK.

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/cobol/):

```
df -m /usr
```

Verifying that the required filesets are installed

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

Fileset name	Fileset description
bos.rte.5.3.0.60 or later	Base operating system runtime
bos.rte.libc.5.3.0.60 or later	Base application runtime library

As well as at least one of the following locale-specific filesets:

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 `ls1pp` command.

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

```
ls1pp -L bos.loc bos.loc.pc bos.loc.utf bos.loc.iso bos.rte bos.rte.libc
```

Previewing the installation and license agreements

Before installing IBM COBOL for AIX, V3.1, you can verify the installation process, check file sizes and disk space and preview the license agreements.

The terms and conditions for using COBOL 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 (LicenseAgreement.pdf, license.pdf) can be found in the /usr/lpp/cobol/ directory with the file names:

- LicenseAgreement.pdf
- license.pdf

Using SMIT

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

Follow the steps to install the compiler to the location given in “Using SMIT” on page 8. 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 9 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/cobol/` and writes an installation log file to `/tmp/install.log`.

Example:

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

Chapter 2. Installation

The installation methods below, will install COBOL for AIX to the directory, /usr/lpp/cobol/. 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 do any of the following:

- Install COBOL for AIX, V3.1 on a clean system.
- Install COBOL for AIX, V3.1 on a system where IBM PL/I for AIX, V2.0 is already installed. In this case, both compilers will use the SdU utilities provided with COBOL for AIX, V3.1.

If COBOL for AIX is already installed on your system and you want to install a different version, see “Product version migration.”

If COBOL for AIX is already installed on your AIX 5.3 system and you want to migrate to AIX 6.1, see “Operating system migration” on page 8.

Tasks for installation

Before you perform a installation, you should make sure that you have a user account with administrator privileges and that your system meets all system requirements. After you have finished installing the compiler, you should confirm that the installation was successful and enable the compiler’s man pages.

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

Table 6. 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 satisfied.	“System prerequisites” on page 4
Use SMIT or the installp command to install and configure the compiler.	“Using SMIT” on page 8 or “Using installp” on page 9
Confirm that the compiler packages were successfully installed, and test the installation.	“Checking compiler and fileset information” on page 11, “Testing the installation” on page 14
Enable the compiler man pages.	“Enabling the manual pages” on page 13
If your system locale and/or encoding are <i>not</i> en_US, enable the compiler and runtime error messages. Otherwise, you can skip this step.	“Enabling the COBOL for AIX error messages” on page 12

Product version migration

If you have a previous version of the compiler, you can replace it with the current version.

Before installing IBM COBOL for AIX, V3.1, any previously installed versions of the compiler should be uninstalled. See Chapter 4, “Uninstalling COBOL for AIX,” on page 17.

If you are upgrading to COBOL for AIX, V3.1 using the Chapter 2, “Installation,” on page 7, any previous versions of the filesets already installed on your system are automatically detected and migrated to the current version.

Once COBOL for AIX, V3.1 is installed, older compiler versions *cannot* be installed unless V3.1 is uninstalled first.

Operating system migration

If you have the compiler installed on AIX 5.3, you may want to migrate the operating system to AIX 6.1.

The compiler filesets are not OS specific and do not require migration if COBOL for AIX, V3.1 is installed on AIX 5.3 and the operating system is migrated to AIX 6.1 or higher. If an OS specific fileset is required in the future for a higher level of AIX, it will be identified in a Tech Note tied to the PTF that will add support for that version of AIX.

Note: When an AIX 5.3 machine is migrated to AIX 6.1, the AIX 5.x C++ runtime fileset (xlC.aix50.rte) is uninstalled, and the AIX 6.1 C++ runtime fileset (xlC.aix61.rte) is installed from the AIX 6.1 install image. The service level of the AIX 6.1 C++ runtime on the install image may be different from the service level of the AIX 5.x C++ runtime on your machine prior to migration. This means that after an OS migration, any PTFs applied to the C++ runtime before OS migration will be gone, and will have to be re-installed.

Using SMIT

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

To install the compiler using the SMIT interface:

1. Enter the command `smit install_latest`. This command invokes SMIT, which presents a menu-driven user interface for the installation process. It will ask you to specify the INPUT device/directory of the software.
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? to continue with the installation.

Note:

- 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.

- If you have read the license agreement and agree to its terms, you must select **yes** next to Accept new LICENSE agreements? to continue with the installation.
- 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.

Note:

- If you use the command `smit install_latest`, SMIT will produce an error message indicating that either `xlC.aix50.rte` or `xlC.aix61.rte` failed to install. This is normal, and you should ignore the error message. If you are installing the compiler onto a system running AIX 5.3, only `xlC.aix50.rte` is required, and `xlC.aix61.rte` will automatically fail to install. Likewise, if you are installing the compiler onto a system running AIX 6.1, only `xlC.aix61.rte` is required, and `xlC.aix50.rte` will fail to install.
- Any language specific filesets that are not supported by your system will produce an error message and fail to install. For example, if local support is not present for `Ja_JP`, you will get a failure when attempting to install a `Ja_JP` specific language fileset for the compiler. These error messages are normal and should be ignored.
- The runtime libraries and compiler filesets are always required.
- You do not need all of the compile-time or runtime message catalogs, only those for the national languages that you need for compile-time messages.
- Messages are displayed as each part is successfully installed.
- The installation log will be stored to file `/home/smit.log`.

Using installp

You can install COBOL for AIX directly from the command line using the AIX command `installp`.

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

```
installp -aYgd install_images_location -e logfile fileset_names
```

```
►--installp--aYg-[-p] [-X] [-d=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.

-X

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

-d *install_images_location*

Specifies the directory where the filesets are located. This path may 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.

Note: 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 “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
```

Note:

- If you use the keyword *all*, as in the example above, *installp* will produce an error message indicating that either *xlC.aix50.rte* or *xlC.aix61.rte* failed to install. This is normal, and you should ignore the error message. If you are installing the compiler onto a system running AIX 5.3, only *xlC.aix50.rte* is required, and *xlC.aix61.rte* will automatically fail to install. Likewise, if you are installing the compiler onto a system running AIX 6.1, only *xlC.aix61.rte* is required, and *xlC.aix50.rte* will fail to install.
- Similarly, any language specific filesets that are not supported by your system will produce an error message and fail to install. For example, if local support is not present for *Ja_JP*, you will get a failure when attempting to install a *Ja_JP* specific language fileset for the compiler. These error messages are normal and should be ignored.

Chapter 3. After installing COBOL for AIX

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

These are documented in the following sections:

- “Checking compiler and fileset information”
- “Enabling IBM Tivoli License Compliance Manager (ITLCM)”
- “Setting environment variables” on page 12
- “Enabling the COBOL for AIX error messages” on page 12
- “Enabling the manual pages” on page 13
- “Accessing the documentation” on page 13
- “Testing the installation” on page 14

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*)

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

Note: ITLCM is not a part of the COBOL 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 COBOL for AIX is installed, the signature files are in the /usr/lpp/cobol/cobolx030100.sys directory. For more information about IBM Tivoli License Compliance Manager Web, see: www.ibm.com/software/tivoli/products/license-mgr/.

Setting environment variables

Before using the compiler, verify that the environment variables LANG, MANPATH, NLSPATH, and PATH are set.

You can use the echo command to determine the current setting of these variables:

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

LANG	Specifies the national language for message files. See “National language support” on page 3. The LANG environment variable can be set to any of the locales provided on the system. See the description of locales in <i>AIX General Programming Concepts</i> 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.
MANPATH	Optionally specifies the directory search path for finding man pages. MANPATH must contain /usr/man/cat1 before the default man path.
NLSPATH	Specifies the path name of the message files.
PATH	Specifies the directory search path for the executable files of the compiler.

Note: 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 COBOL 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 “National language support” on page 3 for a list of supported language locales.

Enabling the manual pages

Manual pages are provided for the compiler invocation commands and other compiler utilities.

Before you can view the manual pages, you must add the manual page directory to the MANPATH environment variable by entering the following on the command line:

```
export MANPATH=/usr/man/cat1/:$MANPATH
```

To test whether the manual pages have been successfully installed, open one or more of the manual pages, as described in “Viewing the manual pages” on page 14.

Accessing the documentation

This section provides an overview of the documentation offered with the product. Information about the compiler, its debugger and utilities, and the COBOL 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

This *Installation Guide* (install.pdf) and *Quick Start Guide* (quickstart.pdf) are located in the /doc/en_US/pdf/ directory of the distribution package. Alternatively, you can find the documents (install.pdf, quickstart.pdf) by going to the COBOL for AIX library page at www.ibm.com/software/awdtools/cobol/aix/library.

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

Accessing the online documentation

HTML versions of the COBOL for AIX documentation including the IBM Debugger for AIX, V6.1 documentation are part of the IBM AIX Compiler Information Center at www.ibm.com/software/awdtools/cobol/aix/library.

The IBM Debugger for AIX, V6.1 documentation consists of HTML online help and additional HTML documentation accessible from the 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, V6.1, check the README files for the debugger. You can find the README files for the debugger in /usr/idebug/readme/.

Accessing PDF files

PDF versions of the COBOL for AIX documentation are available for download from the Web in the COBOL for AIX library page at www.ibm.com/software/

awdtools/cobol/aix/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 documents are available from the COBOL for AIX library page:

- *COBOL for AIX Installation Guide* (this document), GC23–8569, provides information about prerequisite products and the steps for installing COBOL for AIX.
- *COBOL for AIX Programming Guide*, SC23–8566, provides information about how to write, compile, link-edit, and run COBOL for AIX programs.
- *COBOL for AIX Language Reference*, SC23–8567, describes the COBOL language supported by IBM COBOL for AIX, V3.1.
- *VSAM File System Reply Messages*, SC23–8568, provides information about the causes of reply messages that you might receive while using the Virtual Storage Access Method (VSAM) file system.

Viewing the manual pages

Man pages are included for all compiler invocation commands and utilities.

For instructions on how to enable the man pages for viewing, see “Enabling the manual pages” on page 13.

To invoke a manual page, run the command:

```
man command
```

where *command* is any COBOL for AIX invocation or utility command.

Example:

```
man cob2
```

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 COBOL program:

```
[hello.cb1]
000100 IDENTIFICATION DIVISION.
000200 PROGRAM-ID. HELLO.
000300 AUTHOR. JOE PROGRAMMER.
000400 ENVIRONMENT DIVISION.
000500 DATA DIVISION.
000600 PROCEDURE DIVISION.
000700 MAINLINE.
000800 DISPLAY 'Hello World!'.
000900 STOP RUN.
```

2. Compile the test program. For example:

```
cob2 hello.cb1 -o hello
```

3. Run the program:

```
./hello
```

The expected result is that “Hello World!” 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 COBOL for AIX, visit the IBM COBOL for AIX Web site at www.ibm.com/software/awdtools/cobol/aix/about/.

Chapter 4. Uninstalling COBOL for AIX

This section outlines the steps required to uninstall COBOL for AIX.

Note:

1. You must have root user access to uninstall this product.
2. Some filesets may not be uninstalled if they are required by other installed products. See “Filesets” on page 1 for details about filesets included with IBM COBOL for AIX, V3.1.
3. As uninstalling dependent packages automatically may introduce problems, it is recommended that you preview uninstallation to ensure that all dependent filesets are no longer required.

Uninstalling an installation

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 COBOL for AIX, V3.1 using the SMIT interface, enter the following on the command line:

```
smit remove
```

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

```
cobol.*
```

Otherwise, enter the following in the field:

```
cobol.* SdU.*
```

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

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

Using installp

To uninstall IBM COBOL for AIX, V3.1 using the `installp` command, enter the following on the command line:

```
installp -ugw filesets
```

where *filesets* is the list of filesets (wildcards accepted) to uninstall.

If you have PL/I for AIX installed, you must not remove any filesets which are shared between the compilers. In this case, *filesets* should be:

```
cobol.*
```

Otherwise, *filesets* should be:

```
cobol.* SdU.*
```

Cleaning up kernel and library memory

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

```
slibclean
```

Uninstalling the debugger

To uninstall the IBM Debugger for AIX, V6.1 engine/client on AIX, issue this command when logged on as the root user:

```
installp -u ibmdebugger*
```

For the latest information regarding the IBM Debugger for AIX, V6.1, check the README files for the debugger. You can find the README files for the debugger in `/usr/idebug/readme/`.

Uninstalling the electronic license agreement

The license agreement text file remains on the system after the license fileset has been uninstalled. This is so you do not have to accept the product license again if you reinstall COBOL for AIX.

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

```
ODMDIR=/usr/lib/objrepos; odmdelete -o lag -q "fileset=cobol.license"  
rm -rf /usr/swlag/cobol/31/*/cobol.la
```

Appendix. Notices

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

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:

IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
U.S.A.

For license inquiries regarding double-byte (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

IBM World Trade Asia Corporation
Licensing
2-31 Roppongi 3-chome, Minato-ku
Tokyo 106-0032, Japan

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law:

INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

IBM Corporation
J46A/G4
555 Bailey Avenue
San Jose, CA 95141-1003
U.S.A.

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this information and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement, or any equivalent agreement between us.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

All statements regarding IBM's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

COPYRIGHT LICENSE:

This information contains sample application programs in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs.

Each copy or any portion of these sample programs or any derivative work, must include a copyright notice as follows:

© (your company name) (year). Portions of this code are derived from IBM Corp. Sample Programs. © Copyright IBM Corp. _enter the year or years_. All rights reserved.

If you are viewing this information softcopy, the photographs and color illustrations may not appear.

Trademarks

The following terms are trademarks of International Business Machines Corporation in the United States, other countries, or both:

IBM
AIX
AIX 5L
AT
CICS
DB2
DB2 Universal Database
POWER
Tivoli
TXSeries

Microsoft®, Windows, Windows NT®, and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both.

Adobe, the Adobe logo, PostScript®, and the PostScript logo are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States, and/or other countries.

Java and all Java-based trademarks are trademarks of Sun Microsystems, Inc. in the United States, other countries, or both.

Linux is a trademark of Linus Torvalds in the United States, other countries, or both.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Other company, product, or service names may be trademarks or service marks of others.

List of resources

COBOL for AIX

Installation Guide, GC23-8569

Language Reference, SC23-8567

Programming Guide, SC23-8566

VSAM File System Reply Messages, SC23-8568

Support

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

Related publications

AIX

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

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

Commands Reference: Volume 3, l - 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 ix
 keyboard navigation ix
 of COBOL for AIX ix
 of this document ix
assistive technologies ix

C

COBOL for AIX
 accessibility ix

D

debugger 2
documentation 13
 HTML 13
 man pages 14
 PDF 13

E

electronic distribution package 3
environment variables, setting 12
error messages, enabling 12

F

filesets
 checking 11
 included in installation image 1
 required 5
format notation, rules for vii

H

hard disk space available
 determining 5
 required 4
hardware
 required 4
help files 13

I

installation
 instructions 7
 overview 7
 testing 14
 uninstallation 17
installation CD 1
installation image 1
installp
 compiler installation 9
 compiler uninstallation 17
 preview installation 6
ITLCM 11

K

keyboard navigation ix

L

languages
 environment variables 12
 locale-specific filesets 5
 man pages 13
 supported 3
license agreement
 previewing 5
 uninstallation 18
License Compliance Manager, IBM
 Tivoli 11
locales, supported 3
lspp 5, 11

M

man pages 13
 enabling 13
 viewing 14
memory, cleaning
 kernel 18
 library 18
migration 7
 operating system 8
 product version 7

N

national language support 3

O

operating system
 migration 8
 required 4
optional words, syntax notation viii

P

post-installation 11
pre-installation 1
 prerequisites 4
preface vii
previewing 5
 installation 5
 license agreements 5
product version
 migration 7
publications
 COBOL for AIX 23
 related 23

R

railroad track format, how to read vii
repeated words, syntax notation viii
required words, syntax notation vii
rules for syntax notation vii

S

SMIT
 compiler installation 8
 compiler uninstallation 17
 preview installation 6
software
 optional 4
 required 4
syntax notation, rules for vii

T

testing the installation 14

U

uninstallation 17
 basic 17
 debugger 18
 electronic license agreement 18

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

COBOL for AIX
Installation Guide
Version 3.1

Publication No. GC23-8569-01

We appreciate your comments about this publication. Please comment on specific errors or omissions, accuracy, organization, subject matter, or completeness of this book. The comments you send should pertain to only the information in this manual or product and the way in which the information is presented.

For technical questions and information about products and prices, please contact your IBM branch office, your IBM business partner, or your authorized remarketer.

When you send comments to IBM, you grant IBM a nonexclusive right to use or distribute your comments in any way it believes appropriate without incurring any obligation to you. IBM or any other organizations will only use the personal information that you supply to contact you about the issues that you state on this form.

Comments:

Thank you for your support.

Send your comments to the address on the reverse side of this form.

If you would like a response from IBM, please fill in the following information:

Name

Address

Company or Organization

Phone No.

E-mail address



Cut or Fold
Along Line

Fold and Tape

Please do not staple

Fold and Tape



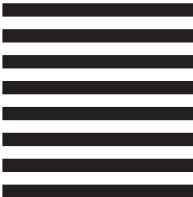
NO POSTAGE
NECESSARY
IF MAILED IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 40 ARMONK, NEW YORK

POSTAGE WILL BE PAID BY ADDRESSEE

IBM Corporation
Reader Comments
DTX/E269
555 Bailey Avenue
San Jose, CA
U.S.A. 95141-9989



Fold and Tape

Please do not staple

Fold and Tape

Cut or Fold
Along Line



Program Number: 5724-V62

Printed in USA

GC23-8569-01

