IBM XL Fortran Advanced Edition V10.1 for Blue Gene

Installation Guide

GC10-4312-00

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GC10-4312-00

Note!
Before using this information and the product it supports, be sure to read the general information under "Notices" on page 31.

First Edition

This edition applies to:

- IBM XL Fortran Advanced Edition V10.1 for Blue Gene (Program number 5799-TRH)

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.

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About this document

This document contains essential information about installing IBM XL Fortran Advanced Edition V10.1 for Blue Gene. Please read it carefully before installing this product. Be sure to read the README file on the CD, which contains the most current information about the product. After you install the product, you can find the README file in the *installation_path*/xlf/bg/10.1/ directory, where *installation_path* is the location of the compiler on your system. If you install the compiler in the default location, the *installation_path* is /opt/ibmcmp/.

Who should read this document

This document is intended for anyone responsible for installing IBM XL Fortran Advanced Edition V10.1 for Blue Gene.

This document addresses the needs of the majority of users who will use the basic installation method, which provides guidance during the installation process. *Basic examples* are tailored to reflect, as much as possible, the procedures used by users as they perform a basic installation.

This document also addresses the needs of users who want to perform a customized installation for various purposes, such as maintaining more than one version of XL Fortran on a single system. These are users who are familiar with compiler installations and with the file structures of all versions of all compiler products installed on the system. In this document, you are referred to as an *advanced user*. The additional information that you will need is labeled "for advanced users".

How to use this document

This document provides procedures for three main installation scenarios:

"Basic" installation
This scenario allows you to install a single version of XL Fortran to a default location. This scenario is applicable to the majority of users, and is the recommended method of installing the product. For an overview of the steps that you need to follow to perform a basic installation, refer to "Tasks for basic installation" on page 2, which provides links to the relevant procedures in this guide.

"Advanced" installation
This scenario allows you to maintain multiple versions of XL Fortran on a single system, or to install the product to a non-default location. This scenario is only applicable to advanced users, who have specialized needs; it is not recommended for the majority of users. For an overview of the steps that you need to follow to perform an advanced installation, refer to "Tasks for advanced installation" on page 3, which provides links to the relevant procedures in this guide.

"Update" installation
This scenario applies to users who have obtained an update package for an existing XL Fortran V10.1 basic or advanced installation. For an overview of the steps that you need to follow to perform an update, refer to "Tasks

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for basic installation" on page 2 or "Tasks for advanced installation" on page 3, depending on the type of installation you need to update.

For highly specialized installation scenarios that are outside the scope of this document, refer to Technotes at http://www.ibm.com/software/awdtools/fortran/xlfortran/support.

How this document is organized

This book is organized to reflect the pre-installation, installation, post-installation, and troubleshooting phases of an XL Fortran installation.

Table 1. Phases of an XL Fortran installation

Phase	Chapters	User segment
Pre-installation	Chapter 1, "Before installing XL Fortran," on page 1	All users
Installation	Chapter 2, "Basic installation," on page 7	Users who: • Want to use the simplest, most direct installation process • Do not have any special requirements, such as the use of multiple versions of the compilers
	Chapter 3, "Advanced installation," on page 11	Users who: • Want to install the compiler in a non-default location • Want to have multiple versions of the compiler on the same system
	Chapter 4, "Installing an update," on page 15	Users who want to update XL Fortran V10.1 to the next fix level
Post-installation	Chapter 5, "Configuring XL Fortran (for advanced users)," on page 19	Users who: • Are using the advanced, non-default method to install or update the compiler • Need to update components previously installed to a non-default location
	Chapter 6, "After installing XL Fortran," on page 23	All users
Product removal	Chapter 7, "Uninstalling XL Fortran," on page 27	Any user who needs to remove an XL Fortran compiler from the system
Troubleshooting	Chapter 8, "Troubleshooting the installation and configuration," on page 29	Any user who needs to know how to respond to an error message or unexpected results during the installation or configuration of XL Fortran

Conventions used in this document

Typographical conventions

The following table explains the typographical conventions used in this document.

Table 2. Typographical conventions

Typeface	Indicates	Example
bold	Commands, executable names, compiler options and pragma directives	If you specify **-O3**, the compiler assumes **-qhot=level=0**. To prevent all HOT optimizations with **-O3**, you must specify **-qnohot**.
italics	Parameters or variables whose actual names or values are to be supplied by the user. Italics are also used to introduce new terms	The maximum length of the *trigger_constant* in fixed source form is 4 for directives that are continued on one or more lines.
`monospace`	Examples of program code, command strings, or user-defined names	Also, specify the following runtime options before running the program, with a command similar to the following: `export XLFRTEOPTS="err_recovery=no: langlvl=90std"`

Syntax diagrams

Throughout this document, diagrams illustrate XL Fortran syntax. This section will help you to interpret and use those diagrams.

- 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 command, directive, or statement.

  The —► symbol indicates that the command, directive, or statement syntax is continued on the next line.

  The ►— symbol indicates that a command, directive, or statement is continued from the previous line.

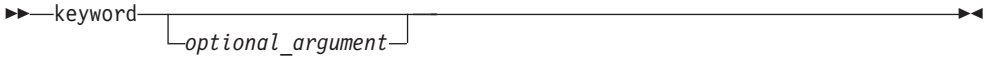
  The —►◄ symbol indicates the end of a command, directive, or statement.

  Fragments, which are diagrams of syntactical units other than complete commands, directives, or statements, start with the |— symbol and end with the —| symbol.

  IBM XL Fortran extensions are marked by a number in the syntax diagram with an explanatory note immediately following the diagram.

  Program units, procedures, constructs, interface blocks and derived-type definitions consist of several individual statements. For such items, a box encloses the syntax representation, and individual syntax diagrams show the required order for the equivalent Fortran statements.
- Required items are shown on the horizontal line (the main path):

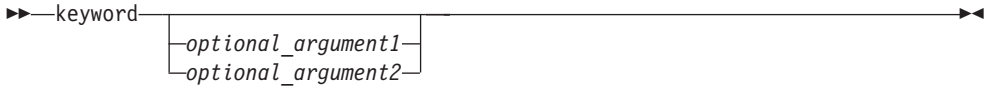
- Optional items are shown below the main path:



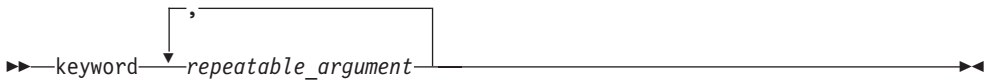
  Note: Optional items (not in syntax diagrams) are enclosed by square brackets ([and]). For example, `[UNIT=]u`
- If you can choose from two or more items, they are shown vertically, in a stack.

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

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



- An arrow returning to the left above the main line (a repeat arrow) indicates that you can make more than one choice from the stacked items or repeat an item. The separator character, if it is other than a blank, is also indicated:

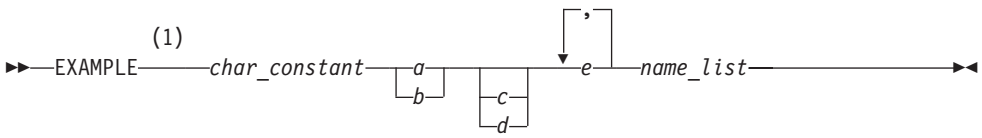


- The item that is the default is shown above the main path.

- Keywords are shown in nonitalic letters and should be entered exactly as shown.
- Variables are shown in italicized lowercase letters. They represent user-supplied names or values. If a variable or user-specified name ends in *_list*, you can provide a list of these terms separated by commas.
- If punctuation marks, parentheses, arithmetic operators, or other such symbols are shown, you must enter them as part of the syntax.

Sample syntax diagram

The following is an example of a syntax diagram with an interpretation:



Notes:

1 IBM extension

Interpret the diagram as follows:

- Enter the keyword EXAMPLE.
- EXAMPLE is an IBM extension.
- Enter a value for *char_constant*.
- Enter a value for *a* or *b*, but not for both.
- Optionally, enter a value for *c* or *d*.
- Enter at least one value for *e*. If you enter more than one value, you must put a comma between each.
- Enter the value of at least one *name* for *name_list*. If you enter more than one value, you must put a comma between each. (The *_list* syntax is equivalent to the previous syntax for *e*.)

Examples and basic examples

The examples in this document are labelled as either "Example" or "Basic example". *Basic examples* are intended to document a procedure as it would be performed during a basic installation, with little or no modification.

Related information

IBM XL Fortran publications

XL Fortran provides product documentation in the following formats:

- README files

  README files contain late-breaking information, including changes and corrections to the product documentation. README files are located by default in the /opt/ibmcmp/xlf/bg/10.1/ directory and in the root directory of the installation CD.

- Installable man pages

  Man pages are provided for the compiler invocations and all command-line utilities provided with the product. Instructions for installing and accessing the man pages are provided in this document.

- Information center

  The information center of searchable HTML files can be launched on a network and accessed remotely or locally. HTML documents are located by default in the /opt/ibmcmp/xlf/bg/10.1/doc/en_US/html/ directory The information center is also viewable on the Web at:

  http://publib.boulder.ibm.com/infocenter/lnxphelp/index.jsp

- PDF documents

PDF documents are located by default in the /opt/ibmcmp/xlf/bg/10.1/doc/en_US/pdf/ directory The PDFs are also available on the Web at:

http://www.ibm.com/software/awdtools/fortran/xlfortran/library

More documentation related to XL Fortran, including redbooks, white papers, tutorials, and other articles, is available on the Web at:

http://www.ibm.com/software/awdtools/fortran/xlfortran/library

Other IBM publications

- *Unfolding the IBM eServer Blue Gene Solution*, SG24-6686-00, available at http://www.redbooks.ibm.com
- *Blue Gene/L: Application Development*, SG24-7179-01, available at http://www.redbooks.ibm.com
- *ESSL for AIX V4.2 ESSL for Linux on POWER V4.2 Guide and Reference*, SA22-7904-02, available at http://publib.boulder.ibm.com/infocenter/clresctr/index.jsp

Technical support

Additional technical support is available from the XL Fortran Support page. This page provides a portal with search capabilities to a large selection of technical support FAQs and other support documents. You can find the XL Fortran Support page on the Web at:

http://www.ibm.com/software/awdtools/fortran/xlfortran/support

If you cannot find what you need, you can e-mail:

compinfo@ca.ibm.com

For the latest information about XL Fortran, visit the product information site at:

http://www.ibm.com/software/awdtools/fortran/xlfortran

How to send your comments

Your feedback is important in helping to provide accurate and high-quality information. If you have any comments about this document or any other XL Fortran documentation, send your comments by e-mail to:

compinfo@ca.ibm.com

Be sure to include the name of the document, the part number of the document, the version of XL Fortran, and, if applicable, the specific location of the text you are commenting on (for example, a page number or table number).

Chapter 1. Before installing XL Fortran

Before you install IBM XL Fortran Advanced Edition V10.1 for Blue Gene:

- Familiarize yourself with the installation image, which contains the installable compiler packages, and a utility program for installation.
- Determine the tasks you need to perform, depending on your installation requirements.
- Become either the root user or a user with administrator privileges.
- Ensure that system prerequisites are met and that all required software packages are installed.

The installation image and packages

The IBM XL Fortran Advanced Edition V10.1 for Blue Gene installation image is available on an installation CD.

The image includes:

- A set of RPM packages. See "Installation packages."
- An installation tool, **xlf_install**, to install and configure the compiler for a basic installation See "Tasks for basic installation" on page 2.

Installation packages

Table 3 lists the packages that are supplied with the installation image, and the locations to which they are installed by default during a basic installation. (For rules for installing packages to custom, non-default locations, see Table 9 on page 12).

You can use the Linux **rpm** utility to review the packages.

Table 3. XL Fortran for Blue Gene packages and default installation locations

Package Name	Package Description	Default installation location
xlsmp.bg.msg.rte	XL SMP runtime messages	/opt/ibmcmp/msg/bg/
xlsmp.bg.rte	XL SMP runtime dynamic libraries	/opt/ibmcmp/lib/bg/
xlsmp.bg.lib	XL SMP runtime static libraries	/opt/ibmcmp/xlsmp/bg/1.6
xlmass.bg.lib	IBM Mathematical Acceleration Subsystem (MASS) libraries	/opt/ibmcmp/xlmass/bg/4.3
xlf.bg.rte	XL Fortran runtime environment	/opt/ibmcmp/lib/bg/ /opt/ibmcmp/lib64/bg/
xlf.bg.rte.lnk	XL Fortran runtime environment links	/opt/ibmcmp/xlf/bg/10.1/
xlf.bg.msg.rte	XL Fortran runtime environment messages	/opt/ibmcmp/msg/bg/
xlf.bg.lic	XL Fortran license	/opt/ibmcmp/xlf/bg/10.1/
xlf.bg.lib	XL Fortran compiler libraries	/opt/ibmcmp/xlf/bg/10.1/
xlf.bg.cmp	XL Fortran compiler files	/opt/ibmcmp/xlf/bg/10.1/

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Table 3. XL Fortran for Blue Gene packages and default installation locations (continued)

Package Name	Package Description	Default installation location
xlf.bg.samples	XL Fortran samples	/opt/ibmcmp/xlf/bg/10.1/samples/
xlf.bg.help	XL Fortran documentation	/opt/ibmcmp/xlf/bg/10.1/doc/ /opt/ibmcmp/xlf/bg/10.1/man/

Determining the tasks you need to perform

You can use the tables provided in the following sections to help you find the information you need as you install and configure the product.

Tasks for basic installation

It is highly recommended that you use the "basic", or default, method of installation, as long as all of the following are true:

- You are maintaining a single version of the product on your system[1], with or without XL C/C++ Advanced Edition V8.0 for Blue Gene.
- You are installing the product to the default location, /opt/ibmcmp/.
- The Blue Gene tool chain is installed in the default location, /bgl/BlueLight/ppcfloor.

If these conditions match your needs, the basic installation is the easiest and fastest method, as it allows you to automatically uninstall any previously installed XL Fortran for Blue Gene compiler, install the latest version, and configure the compiler, all through the use of a single installation tool.

If you are installing XL Fortran V10.1 for the first time, perform the steps listed in Table 4. If you are installing an update to XL Fortran V10.1, perform the steps listed in Table 5 on page 3.

Table 4. Steps for basic 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 the **xlf_install** tool to install and configure the compiler, using the default paths.	Chapter 2, "Basic installation," on page 7
Confirm that the compiler packages were successfully installed, and test the installation.	"Querying for installed packages" on page 23, "Testing the installation" on page 23
Enable the compiler man pages.	"Enabling the XL Fortran man pages" on page 24
If your system locale and/or encoding are *not* en_US, enable the compiler error messages. Otherwise, you can skip this step.	"Enabling the XL Fortran error messages" on page 24

1. Note for Blue Gene users: Earlier versions of XL Fortran Advanced Edition for Linux are not considered to be the same product as XL Fortran for Blue Gene. Therefore, IBM XL Fortran Advanced Edition V10.1 for Blue Gene can co-reside with earlier versions of the compiler products for Linux with no additional installation requirements.

Table 4. Steps for basic installation: new or upgrade installation (continued)

Task	For more information, see . . .
(Optional) If you did not choose to create symbolic links to the compiler invocation commands during the installation process, set up the environment to locate the invocation commands without the full path. Otherwise, you can skip this step.	"Setting up the environment for the invocation commands" on page 25

Table 5. Steps for basic 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 satisfied.	"System prerequisites" on page 4
Use the **xlf_install** tool to install the update packages.	"Running the xlf_install utility to update a basic installation" on page 15
Confirm that the compiler packages were successfully installed, and test the installation.	"Querying for installed packages" on page 23, "Testing the installation" on page 23
(Optional) If you did not choose to create symbolic links to the compiler invocation commands during the update process, set up the environment to locate the invocation commands without the full path. Otherwise, you can skip this step.	"Setting up the environment for the invocation commands" on page 25

Tasks for advanced installation

You will need to use the "advanced" method of installation in the following cases:

- You are maintaining multiple versions of the same product on a single system.
- You are installing the product to a non-default location.
- The Blue Gene tool chain is installed in a non-default location.

If any of these conditions is true, you need to follow an "advanced" installation method which requires that you separately install and configure the compiler. You may also need to manually uninstall previous versions of the compiler from your system.

If you are installing XL Fortran V10.1 for the first time, perform the steps listed in Table 6. If you are installing an update to XL Fortran V10.1, perform the steps listed in Table 7 on page 4.

Table 6. Steps for advanced 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.
If you do not need to maintain multiple versions of the product on your system, remove any existing versions of XL Fortran for Blue Gene.	Chapter 7, "Uninstalling XL Fortran," on page 27
Ensure that all system prerequisites are satisfied.	"System prerequisites" on page 4

Table 6. Steps for advanced installation: new or upgrade installation (continued)

Task	For more information, see . . .
Use one of the advanced installation methods to install the compiler.	Chapter 3, "Advanced installation," on page 11
Use the **new_install** or **vac_configure** tool to configure the compiler.	Chapter 5, "Configuring XL Fortran (for advanced users)," on page 19
Confirm that the compiler packages were successfully installed, and test the installation.	"Querying for installed packages" on page 23, "Testing the installation" on page 23
Enable the compiler man pages.	"Enabling the XL Fortran man pages" on page 24
If your system locale and/or encoding are *not* en_US, enable the compiler error messages. Otherwise, you can skip this step.	"Enabling the XL Fortran error messages" on page 24
(Optional) Set up the environment to locate the invocation commands without the full path.	"Setting up the environment for the invocation commands" on page 25

Table 7. Steps for advanced 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 satisfied.	"System prerequisites"
Install the update packages to the non-default location.	"Installing XL Fortran to a non-default location" on page 11
Configure the compiler.	Chapter 5, "Configuring XL Fortran (for advanced users)," on page 19
Confirm that the compiler packages were successfully installed, and test the installation.	"Querying for installed packages" on page 23, "Testing the installation" on page 23
(Optional) Set up the environment to locate the invocation commands without the full path.	"Setting up the environment for the invocation commands" on page 25

System prerequisites

The following are the requirements for installing IBM XL Fortran Advanced Edition V10.1 for Blue Gene:

- **Operating system:** SUSE LINUX Enterprise Server 9 Service Pack 2 (SLES9 SP2) for IBM POWER
- **Hardware:** You can use any of the following hardware platforms:
  - IBM eServer OpenPower system
  - IBM eServer PowerPC system
  - IBM eServer BladeCenter JS20 system
  - IBM eServer p5 system
  - IBM System p5
  - IBM eServer pSeries system
  - IBM eServer i5 system

- IBM eServer iSeries system

- **Required hard disk space:**
  - Approximately 200 MB for product packages
  - At least 2 GB for paging
  - At least 512 MB for temporary files

  Note: High levels of optimization can require more space for paging and temporary files.

  To verify that you have enough hard disk space available, see the procedure in "Verifying the amount of hard disk space available."
- **Required software:**
  - Blue Gene tool chain and runtime environment packages. For information on these packages, see the redbooks referenced in the preface of this document, or contact your system administrator.
  - GNU, Perl, and Java packages, as listed in the following table. To verify that the required packages are installed, see the procedure in "Verifying that the required GNU, Perl, and Java packages are installed" on page 6.

Table 8. Required GNU, Perl, and Java packages for the SLES9 SP2 operating system

Package name	Version requirements
gcc	3.3.3
gcc-c++	3.3.3
gcc-64bit	9
glibc	2.3.3
glibc-64bit	9
glibc-devel-64bit	9
libgcc	3.3.3
libgcc-64bit	9
libstdc++	3.3.3
libstdc++-64bit	9
libstdc++-devel-64bit	9
Perl	5.0 or greater **Note:** Perl V5.0 is shipped and automatically installed with the SLES9 SP2 operating system.
java2	1.3.1
java2–jre	1.3.1

- **Optional software:**
  - A graphical desktop environment such as the K Desktop Environment or Gnome
  - A frames-capable HTML browser (to access help and other web pages)
  - PDF viewer (to access PDF documentation)

Verifying the amount of hard disk space available

XL Fortran requires about 200 MB of hard disk storage space. This amount accommodates the optional samples and documentation that are shipped with the product.

You can use the following command to determine the amount of space available in the default installation location (/opt/ibmcmp/):

```
df -h /opt
```

If you plan to install the compiler to a non-default location, you can use the following command:

```
df -h installation_path
```

where *installation_path* represents the non-default location.

Verifying that the required GNU, Perl, and Java packages are installed

Before you can install XL Fortran for Blue Gene, you should verify that the required versions of GNU, Perl, and Java packages were installed with the operating system. For a list of the required packages, see Table 8 on page 5.

You can use the following command to verify that the correct versions of the required packages are installed:

```
rpm -qa | grep package_name
```

Example: Determining the installed version of gcc-c++

To see whether gcc-c++ is installed, query for the gcc-c++ package as follows:

```
rpm -qa | grep gcc-c++
```

If gcc-c++ version 3.3.3 is installed, you will get a result similar to the following output:

```
gcc-c++-3.3.3-43.24
```

Chapter 2. Basic installation

XL Fortran provides an interactive utility, **xlf_install**, that walks you through a basic installation. You can use **xlf_install** to do any of the following:

- Install XL Fortran V10.1 for Blue Gene on a clean system
- Install XL Fortran V10.1 for Blue Gene to co-reside with any existing version of XL Fortran for Linux
- Install XL Fortran V10.1 for Blue Gene on a system where XL C/C++ Advanced Edition V8.0 for Blue Gene is already installed. In this case, both compilers will use the XL SMP and MASS libraries provided with XL Fortran for Blue Gene. (For information about installing XL C/C++ V8.0 for Blue Gene, refer to the *XL C/C++ Advanced Edition V8.0 for Blue Gene Installation Guide*.)
- Install an update on a system where XL Fortran V10.1 for Blue Gene has already been installed. In this case, use the procedure in "Running the xlf_install utility to update a basic installation" on page 15.

You should use the **xlf_install** utility to install XL Fortran as long as *all* of the following conditions apply:

- You are installing the compiler to the default location, which is /opt/ibmcmp/.
- You agree to remove any previously installed XL Fortran for Blue Gene components.
- The Blue Gene tool chain is installed in the default location, /bgl/BlueLight/ppcfloor.

If any of these conditions does not apply, do *not* use the **xlf_install** utility. Instead, see the procedures in Chapter 3, "Advanced installation," on page 11.

Running the xlf_install utility for a new installation

The **xlf_install** utility is located in the root directory of the installation image.

Note: Because the **xlf_install** utility is written in Perl, you must ensure that Perl is installed on your system before you run the utility. See "Verifying that the required GNU, Perl, and Java packages are installed" on page 6.

When you run the **xlf_install** utility for a new installation, it does the following:

- Checks for all prerequisite software packages
- Checks for the existence of the Blue Gene tool chain in the default location
- Uninstalls any previously installed XL Fortran for Blue Gene components
- Installs all compiler packages into the default location
- Automatically invokes the **new_install** utility, which installs the license file and generates the default configuration file
- Optionally creates symbolic links in /usr/bin/ to the compiler invocation commands
- Generates an installation log in the /tmp/ directory

To run the **xlf_install** utility to install IBM XL Fortran Advanced Edition V10.1 for Blue Gene:

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1. Assuming that the IBM XL Fortran Advanced Edition V10.1 for Blue Gene CD is mounted at the /cdrom location in the system, issue the following commands:

   ```
   # cd /cdrom
   # ./xlf_install
   ```

   For additional arguments that you can specify for **xlf_install**, see "xlf_install options" on page 9.

   If another instance of XL Fortran for Blue Gene is detected on your system, you are prompted to uninstall it.
2. Confirm that you want to proceed with the uninstallation. If you choose not to uninstall the existing instance of the compiler, the installation process will terminate.

   If other versions of the XL SMP and MASS packages are detected on your system, either alone or as part of an XL C/C++ Advanced Edition V8.0 for Blue Gene installation, you are prompted to uninstall them.
3. Confirm that you want to proceed with uninstalling the existing SMP and MASS packages. If you choose not to uninstall the previously installed components, the installation process will terminate.

   Note: **xlf_install** will uninstall these packages from their existing location and reinstall them to the default location, /opt/ibmcmp/. Therefore, if they were previously installed in a non-default location as part of an XL C/C++ for Blue Gene installation, you will need to run **vac_configure** to re-configure the XL C/C++ compiler to point to the default location for these packages. For procedures, see "Running the **vac_configure** utility directly" in the *XL C/C++ Advanced Edition V8.0 for Blue Gene Installation Guide*.

   You are presented with the licensing agreement and licensing information.
4. Accept the licensing agreement and licensing information.

   You are prompted to create symbolic links for the compiler invocations in the /usr/bin/ directory.
5. Optionally, create the symbolic links.

   Note: An alternative to this step is to add the path that contains the compiler invocations to the PATH environment variable. See "Setting the PATH environment variable to include the path to the XL Fortran for Blue Gene invocations" on page 25.

   If you chose to create symbolic links, the following links are created in the /usr/bin/ subdirectory:

   - blrts_f77
   - blrts_f90
   - blrts_f95
   - blrts_fort77
   - blrts_xlf
   - blrts_xlf90
   - blrts_xlf95

   Note: Some command links are not created in /usr/bin/, either because they might delete user-defined, XL Fortran for Linux or GCC-related invocations, or because they are not compiler invocation commands. These include:

- f77, f90, f95, fort77
- xlf, xlf_r, xlf90, xlf90_r, xlf95, xlf95_r
- cleanpdf, mergepdf, new_install, resetpdf, showpdf, xlf_configure

If all packages are successfully installed:

- A message is displayed confirming the successful installation.
- The configuration file is generated. Its location is /etc/opt/ibmcmp/xlf/bg/10.1/xlf.cfg. Any previously generated configuration file is renamed and saved in the same directory.
- The installation log is moved to its permanent location: /opt/ibmcmp/xlf/bg/10.1/xlf_install.log.

xlf_install options

The **xlf_install** utility provides the following options:

-h Displays the installation utility help page.

-rpmloc *rpmlocation_path*
Explicitly specifies the path where all compiler packages are located. The default *rpmlocation_path* is *./platform*/rpms, which is relative to the path of the installation tool. Therefore, the default *rpmlocation_path* is ./SLES9-BGL/rpms.

Note: Normally, the **-rpmloc** *rpmlocation_path* option is not required in the installation invocation. If you use the utility directly from the CD, it will automatically determine the source location of the packages.

-U Updates the compiler to the *Version.Release.Modification-Fix* level that the installation utility version supports. For more information, see "Running the xlf_install utility to update a basic installation" on page 15.

-v Displays debugging information.

-vv Displays more detailed debugging information.

Chapter 3. Advanced installation

It is highly recommended that you install XL Fortran for Blue Gene to the default location and use the procedure provided in Chapter 2, "Basic installation," on page 7. However, you will need to install XL Fortran for Blue Gene in a non-default location for customized scenarios, including the following:

- You want to maintain more than one version of XL Fortran for Blue Gene on the same system.
- You want to try out a new update of the compiler before removing an existing installation from the default location.
- The Blue Gene tool chain is installed in a non-default location (the default path is /bgl/BlueLight/ppcfloor).

In all of these scenarios, you must use the Linux **rpm** utility to install the compiler; you can not use the **xlf_install** utility to do so. Once you have successfully installed the compiler to a non-default location, you will need to manually configure the compiler environment using the **new_install** or **xlf_configure** utilities; see Chapter 5, "Configuring XL Fortran (for advanced users)," on page 19 for procedures.

Installing XL Fortran to a non-default location

This section provides procedures for two possible installation scenarios:

- You can install all compiler packages to a single non-default location. For example, rather than installing all packages into the default directory /opt/ibmcmp/, you could install them to a directory of your choice, such as /home/mydirectory/. The procedure for doing so is provided in "Installing all XL Fortran packages to a single non-default location."
- For highly specialized situations only, you can install groups of compiler packages to multiple, different locations. For example, you could install all the compiler library packages to one directory, the runtime environment packages to another directory, and so on. Note, however, that certain packages must be installed together in the same directory; rules for installing packages into multiple non-default directories, as well as procedures for doing so, are provided in "Installing XL Fortran packages to multiple non-default locations" on page 12.

Note that in both of these scenarios, it is highly recommended that you uninstall any previous versions of the compiler from your system before installing any new versions; for uninstallation procedures, see Chapter 7, "Uninstalling XL Fortran," on page 27.

Installing all XL Fortran packages to a single non-default location

To install all compiler packages to a single non-default directory, ensure that your current working directory contains all of the packages for XL Fortran V10.1 for Blue Gene and no other RPM packages. From your current working directory, use the following command:

```
rpm -ivh *.rpm --prefix installation_path
```

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where *installation_path* is a directory that is not /opt/ibmcmp/.

Installing XL Fortran packages to multiple non-default locations

For highly specialized situations only, you might need to install different packages to different locations.

Note: If you want to install packages in different subdirectories, do not install any packages in the /opt/ibmcmp/ directory.

Table 9 provides information about which packages must be installed together in the same directory and which can be installed in any directory.

Table 9. Rules for installing XL Fortran for Blue Gene packages to multiple non-default locations

Package Name	Package Description	Rules for installation to a non-default location
xlsmp.bg.msg.rte	XL SMP runtime messages	All SMP packages must be installed in the same location. For the remainder of this document, the name *xlsmprt_path* is used to refer to this location.
xlsmp.bg.rte	XL SMP runtime dynamic libraries	
xlsmp.bg.lib	XL SMP runtime static libraries	
xlmass.bg.lib	IBM Mathematical Acceleration Subsystem (MASS) libraries	Any location. For the remainder of this document, the name *xlmass_path* is used to refer to this location.
xlf.bg.rte	XL Fortran runtime environment	All XL Fortran runtime packages must be installed in the same location. For the remainder of this document, the name *xlrte_path* is used to refer to this location.
xlf.bg.rte.lnk	XL Fortran runtime environment links	
xlf.bg.msg.rte	XL Fortran runtime environment messages	Must be installed in the same location as the other runtime packages above.
xlf.bg.lic	XL Fortran license	Any location. For the remainder of this document, the name *lic_path* is used to refer to this location.
xlf.bg.lib	XL Fortran compiler libraries	All XL Fortran compiler and library packages must be installed in the same location. For the remainder of this document, the name *xlcmp_path* is used to refer to this location.
xlf.bg.cmp	XL Fortran compiler files	
xlf.bg.samples	XL Fortran samples	Any location (optional). For the remainder of this document, the name *smpls_path* is used to refer to this location.
xlf.bg.help	XL Fortran documentation	Any location (optional). For the remainder of this document, the name *doc_path* is used to refer to this location.

To install a relocatable RPM package to any location other than the default location, issue the following command for each group of packages you want to install to a non-default directory:

```
rpm -ivh package --prefix  package_installation_path
```

where *package_installation_path* is a directory other than /opt/ibmcmp/, and corresponds to one of the appropriate paths listed in Table 9 on page 12.

Example: Installing XL Fortran V10.1 for Blue Gene to multiple non-default directories

In order to avoid dependency errors during installation of XL Fortran V10.1 for Blue Gene, issue the following commands in the order given:

```
rpm -ivh xlsmp.bg.msg.rte-1.6.0-0.ppc64.rpm --prefix xlsmprt_path
rpm -ivh xlsmp.bg.rte-1.6.0-0.ppc64.rpm --prefix xlsmprt_path
rpm -ivh xlsmp.bg.lib-1.6.0-0.ppc64.rpm --prefix xlsmprt_path
rpm -ivh xlmass.bg.lib-4.3.0-0.ppc64.rpm --prefix xlmass_path
rpm -ivh xlf.bg.msg.rte-10.1.0-0.ppc64.rpm --prefix xlrte_path
rpm -ivh xlf.bg.lic-10.1.0-0.ppc64.rpm --prefix lic_path
rpm -ivh xlf.bg.lib-10.1.0-0.ppc64.rpm --prefix xlcmp_path
rpm -ivh xlf.bg.cmp-10.1.0-0.ppc64.rpm --prefix xlcmp_path
rpm -ivh xlf.bg.rte-10.1.0-0.ppc64.rpm --prefix xlrte_path
rpm -ivh xlf.bg.rte.lnk-10.1.0-0.ppc64.rpm --prefix xlrte_path
```

The sample programs and product documentation packages have no dependency on other RPM packages and can be installed in any order using the following commands:

```
rpm -ivh xlf.bg.help-10.1.0-0.ppc64.rpm --prefix doc_path
rpm -ivh xlf.bg.samples-10.1.0-0.ppc64.rpm --prefix smpls_path
```

Chapter 4. Installing an update

An update of XL Fortran V10.1 for Blue Gene provides a fix or multiple fixes to the product. You can download updates from the support web site: http://www.ibm.com/software/awdtools/fortran/xlfortran/support

Every update package comes in tar.gz (or compressed) format and includes a version of the **xlf_install** utility that is customized to install only the update that accompanies it. If you have any version (including an earlier update) of XL Fortran V10.1 for Blue Gene installed on your system, you can apply the latest update. If you are applying the update to an installation in the default location, follow the procedure in "Running the xlf_install utility to update a basic installation." If you are applying the update to an installation in a non-default location, you must use one of the procedures in "Installing XL Fortran to a non-default location" on page 11.

If you want to try out a new update of the compiler before you remove the existing version from the system, you must install the new update to a non-default location. After you have verified that you want to replace the older version with the new update, you can run the **xlf_install** utility that comes with the update package, and it will do all of the following:

1. Remove the new update from the non-default location
2. Remove the older version from the default location

   Note: Do not uninstall the xlf.lic package because this package is required for the next step.
3. Re-install the new update to the default location

For instructions to use the **xlf_install** utility to install the new update, see "Running the xlf_install utility to update a basic installation."

Running the xlf_install utility to update a basic installation

You can use the **xlf_install** utility to update XL Fortran V10.1 for Blue Gene when all the following conditions have been met:

- The base version of XL Fortran V10.1 for Blue Gene is already successfully installed in the /opt/ibmcmp/ directory.
- The update package (in tar.gz format) has been uncompressed and unpacked in the /home/root/ directory of the system.

When you run the **xlf_install** utility to apply an update, it does the following:

- Checks for all prerequisite software packages
- Uninstalls XL Fortran V10.1 for Blue Gene packages
- Installs updated compiler packages into the default location
- Automatically invokes the **new_install** utility, which installs the license file, renames the old configuration file, and generates a new configuration file
- Optionally creates symbolic links in /usr/bin/ to the compiler invocation commands
- Generates an installation log in the /tmp/ directory

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To run the **xlf_install** utility to apply an update for IBM XL Fortran Advanced Edition V10.1 for Blue Gene:

1. Change to the directory in which you have unpacked the update package:

   ```
   # cd /home/root/update/xlf/mmmYYYY
   ```

   where *mmmYYYY* is the month and year of the update shipment date. (For example, `jun2006` indicates a shipment date in June of 2006.)
2. Issue the following command:

   ```
   # ./xlf_install -U
   ```

   For additional arguments that you can specify for **xlf_install**, see "xlf_install options" on page 9.

   You are prompted to uninstall any previously installed XL Fortran V10.1 for Blue Gene packages.
3. Confirm that you want to proceed with uninstalling the outdated packages.

   You are prompted to uninstall any XL SMP and MASS packages that were previously installed with XL Fortran V10.1 for Blue Gene.
4. Confirm that you want to proceed with uninstalling the existing SMP and MASS packages.

   Note: **xlf_install** will uninstall these packages from their existing location and reinstall them to the default location, /opt/ibmcmp/. Therefore, if they were previously installed in a non-default location as part of an XL C/C++ for Blue Gene installation, you will need to run **vac_configure** to re-configure the XL C/C++ compiler to point to the default location for these packages. For procedures, see "Running the **vac_configure** utility directly" in the *XL C/C++ Advanced Edition V8.0 for Blue Gene Installation Guide*.

   You are presented with the licensing agreement and licensing information.
5. Accept the licensing agreement and licensing information.

   You are prompted to create symbolic links for the compiler invocations in the /usr/bin/ directory.
6. Optionally, create the symbolic links.

   Note: An alternative to this step is to add the path that contains the compiler invocations to the PATH environment variable. See "Setting the PATH environment variable to include the path to the XL Fortran for Blue Gene invocations" on page 25.

   If you chose to create symbolic links, the following links are created in the /usr/bin/ subdirectory:
   - blrts_f77
   - blrts_f90
   - blrts_f95
   - blrts_fort77
   - blrts_xlf
   - blrts_xlf90
   - blrts_xlf95

Note: Some command links are not created in /usr/bin/, either because they might delete user-defined, XL Fortran for Linux or GCC-related invocations, or because they are not compiler invocation commands. These include:

- f77, f90, f95, fort77
- xlf, xlf_r, xlf90, xlf90_r, xlf95, xlf95_r
- cleanpdf, mergepdf, new_install, resetpdf, showpdf, xlf_configure

7. If you customized the previously generated configuration file, manually edit /etc/opt/ibmcmp/xlf/bg/10.1/xlf.cfg to replicate those changes in the newly generated configuration file.

Chapter 5. Configuring XL Fortran (for advanced users)

Before you can run the XL Fortran for Blue Gene, you must configure (or re-configure) the compiler if any of the following conditions apply:

- You did not use **xlf_install** to install the compiler.
- The compiler is installed a non-default location, or compiler components were relocated after installation.

Two configuration tools are provided with the compiler: **new_install** and **xlf_configure**, both located in the *installation_path*/xlf/bg/10.1/bin/ directory after installation.

It is recommended that you use the **new_install** utility to configure the compiler, provided that *all* of the following conditions are met:

- Only one version of XL Fortran for Blue Gene is installed on your system.
- Only one version of GCC is installed in your system and it can be found in the PATH environment variable.
- You have root or administrator privileges.
- You want to generate the configuration file in the default directory /etc/opt/ibmcmp/xlf/bg/10.1/.
- The Blue Gene tool chain is installed in the default location, /bgl/BlueLight/ppcfloor.

For instructions, see "Running the new_install utility."

You should invoke the **xlf_configure** utility directly *only* when any of the following is true:

- You have multiple versions of XL Fortran for Blue Gene installed on your system.
- You receive an error from the **new_install** command.
- You want the generated configuration file to be placed in a non-default location.
- You have multiple versions of GCC installed on your system and you need to specify which GCC version you would like to reference in the configuration file.
- The Blue Gene tool chain is installed in a non-default location.

Note: If you configure the compiler using **xlf_configure**, your output configuration file, xlf.cfg, can be written to any location where you have write permission. You would not need root or administrative privileges.

For instructions, see "Running the xlf_configure utility directly" on page 20.

Running the new_install utility

The **new_install** utility does the following:

- Backs up any existing configuration file
- Queries the RPM database for the paths to the compiler packages and the path to the 32-bit GCC (*gcc32path*) and the 64-bit GCC (*gcc64path*) in the PATH environment variable, and then uses the obtained values to execute the **xlf_configure** utility

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- Searches for the Blue Gene tool chain in the default location, /bgl/BlueLight/ppcfloor
- Installs the license file
- Generates the configuration file in the default location /etc/opt/ibmcmp/xlf/bg/10.1/xlf.cfg

To run the **new_install** utility:

1. Change to the directory that contains the compiler executables:

   ```
   cd installation_path/xlf/bg/10.1/bin/
   ```

   where *installation_path* is the installation location of the compiler packages. If the compiler is installed in the default location, *installation_path* is /opt/ibmcmp/.
2. Run the following command:

   ```
   ./new_install
   ```
3. Accept the license agreement and licensing information.

Running the xlf_configure utility directly

You can use the **xlf_configure** utility to generate the configuration file as long as the compiler has been successfully installed.

To run the **xlf_configure** utility:

1. Change to the directory that contains the compiler executables:

   ```
   cd installation_path/xlf/bg/10.1/bin/
   ```

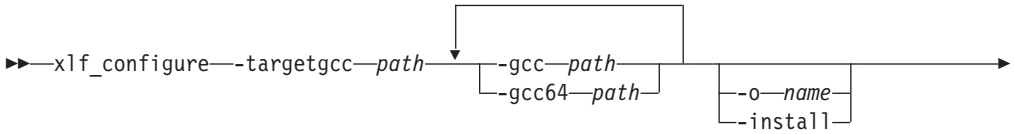
   where *installation_path* is the installation location of the compiler packages. If the compiler is installed in the default location, *installation_path* is /opt/ibmcmp/.
2. Run the following command:

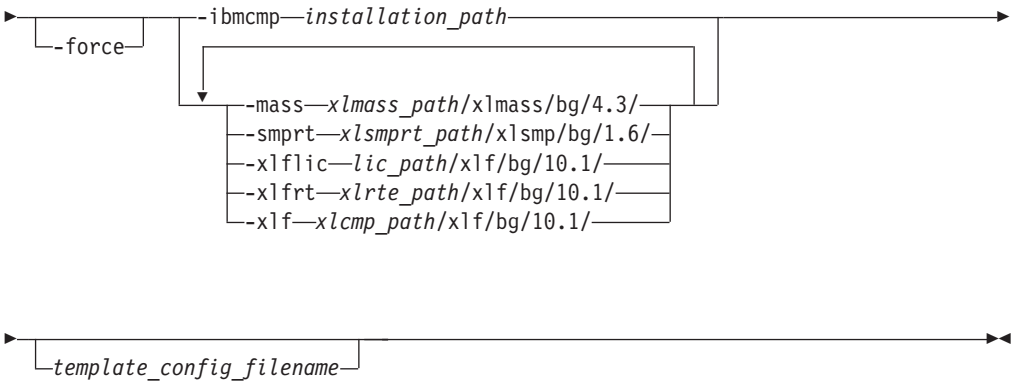
   ```
   ./xlf_configure options
   ```

See the following section for required arguments to the **xlf_configure** command.

xlf_configure options

The **xlf_configure** command has the following syntax:





where:

-targetgcc *path*
Specifies the path where the Blue Gene GCC bin/ directory is installed. For example, if the Blue Gene tool chain is installed in the default directory, you would specify:

```
-targetgcc /bgl/BlueLight/ppcfloor/blrts-gnu/powerpc-bgl-blrts-gnu
```

-gcc *path*
Specifies the path where the native GCC bin/ directory is installed. For example, if the GCC command is **/usr/bin/gcc**, you would specify:

```
-gcc /usr
```

-gcc64 *path*
Specifies the path where the native 64-bit GCC bin/ directory is installed. For example, if the 64-bit GCC command is **/usr/bin/gcc -m64**, you would specify:

```
-gcc64 /usr
```

-o *file_name*
Specifies the name and path of the configuration file to generate. By default, output is written to the display only.

-install
Generates the configuration file as /etc/opt/ibmcmp/xlf/bg/10.1/xlf.cfg. By default, output is written to the display only.

-force Forces the **xlf_configure** utility to overwrite any existing output file with the same name and path as that specified by the **-o** or **-install** options. By default, if you do not use **force**, **xlf_configure** issues an error message and stops if the specified file already exists.

-ibmcmp *installation_path*
Specifies the path where all of the XL Fortran packages are installed (if all packages are installed in the same path). By default, the path is /opt/ibmcmp/.

-mass *xlmass_path***/xlmass/bg/4.3/**
Specifies the path where the xlmass.bg.lib package is installed. By default, the full path is /opt/ibmcmp/xlmass/bg/4.3.

-smprt *xlsmprt_path***/xlsmp/bg/1.6/**
Specifies the path where the xlsmp.bg.msg.rte, xlsmp.bg.rte, and xlsmp.bg.lib packages are installed. By default, the full path is /opt/ibmcmp/xlsmp/bg/1.6.

-xlflic *lic_path***/xlf/bg/10.1/**
Specifies the path where the xlf.bg.lic package is installed. By default, the full path is /opt/ibmcmp/xlf/bg/10.1/.

-xlfrt *xlrte_path***/xlf/bg/10.1/**
Specifies the path where the xlf.bg.rte and xlf.bg.rte.lnk packages are installed. By default, the full path is /opt/ibmcmp/xlf/bg/10.1/.

-xlf *xlcmp_path***/xlf/bg/10.1/**
Specifies the path where the xlf.bg.cmp and xlf.bg.lib packages are installed. By default, the full path is /opt/ibmcmp/xlf/bg/10.1/.

template_config_file_name
The input file that is used to construct the configuration file. By default, this is /opt/ibmcmp/xlf/bg/10.1/etc/xlf.base.cfg. If you relocated the xlf.bg.cmp package to *xlcmp_path* but want to use the default template, specify:

```
xlcmp_path/xlf/bg/10.1/etc/xlf.base.cfg.
```

Chapter 6. After installing XL Fortran

After installing the compiler, there are verification and setup procedures that you will need, or might need, to follow. These are documented in the following sections:

- "Querying for installed packages": This section applies to all users.
- "Testing the installation": This section applies to all users.
- "Enabling the XL Fortran man pages" on page 24: This section applies to all users.
- "Enabling the XL Fortran error messages" on page 24: This section applies only to users whose system uses a locale or language encoding other than en_US.
- "Setting up the environment for the invocation commands" on page 25: This section applies only to users who did not use **xlf_install** to install or update the product, or who did not create symbolic links during the installation process with **xlf_install**.

Querying for installed packages

To query for an individual package, issue a command such as the following:

```
rpm -q xlf.bg.cmp
```

The result should be:

```
xlf.bg.cmp-V.R.M-F
```

where *V.R.M-F* is the Version.Release.Modification-Fix level of the compiler installed on the system.

If the installation was not successful, you will get a message indicating that the package has not been installed.

To confirm installation of all compiler packages, issue the following command:

```
rpm -qa | grep -e xlf.bg -e xlsmp.bg -e xlmass.bg
```

The result should be a list that contains all of the packages listed in Table 3 on page 1. If none of the packages listed in the table was properly installed, there will be no output from the command.

Testing the installation

To test the product installation and the critical search paths, build and run a sample application.

Basic example: Creating and running "Hello World"

1. Create the following Fortran program and name the source file `hello.f`:

   ```
   PRINT *, "Hello World!"
   END
   ```

   Note: Each line must have six blank spaces before the first text character.
2. To run the program, refer to the section "Running applications" in *Blue Gene/L: Application Development*.

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Enabling the XL Fortran man pages

Man pages are provided for the compiler invocation commands and other utilities that are supplied with the compiler.

However, before you can read the compiler-supplied man pages, you must add the full directory path to the MANPATH environment variable. The command depends on the Linux shell you are using.

To set the MANPATH environment variable using the Bourne or Korn shell, use the following command:

```
export MANPATH=installation_path/xlf/bg/10.1/man:$MANPATH
```

To set the MANPATH environment variable using the C shell, use the following command:

```
setenv MANPATH  installation_path/xlf/bg/10.1/man:$MANPATH
```

where *installation_path* is the location where you have installed the XL Fortran packages (by default, this is /opt/ibmcmp/).

Enabling the XL Fortran error messages

If your system uses the en_US locale and encoding, the compiler message catalogs are automatically configured to display correctly, whether you used the basic or advanced method of installation and configuration. However, if your system uses en_US.utf8 encoding, you must set the NLSPATH environment variable so that the compiler and runtime functions can find the appropriate message catalogs following installation.

The command to set the NLSPATH environment variable depends on the shell that you are using.

If you are using Bourne or Korn shell, use the following command:

```
export NLSPATH=$NLSPATH:
  xlsmprt_path/msg/bg/%L/%N:
  xlrte_path/msg/bg/%L/%N:
  xlcmp_path/xlf/bg/10.1/msg/%L/%N
```

If you are using C shell, use the following command:

```
setenv NLSPATH $NLSPATH:
  xlsmprt_path/msg/bg/%L/%N:
  xlrte_path/msg/bg/%L/%N:
  xlcmp_path/xlf/bg/10.1/msg/%L/%N
```

where:

- *xlsmprt_path* is the installation location of the XL SMP packages. By default this is /opt/ibmcmp/.
- *xlrte_path* is the installation location of the XL Fortran runtime packages. By default this is /opt/ibmcmp/.
- *xlcmp_path* is the installation location of the XL Fortran compiler packages. By default this is /opt/ibmcmp/.

Setting up the environment for the invocation commands

If you used the **xlf_install** utility to install the compiler and you elected to create the symbolic links at that time, you have already set up the environment for the invocation commands. Do not perform the procedures in this section.

If you did not elect to create the symbolic links when you installed the compiler and want to be able to invoke the compiler without having to specify the full path, you must perform one of the following tasks:

- Set the PATH environment variable, as shown in "Setting the PATH environment variable to include the path to the XL Fortran for Blue Gene invocations."
- Create symbolic links to the compiler invocation commands, as shown in "Creating symbolic links to the XL Fortran for Blue Gene compiler invocations."

Setting the PATH environment variable to include the path to the XL Fortran for Blue Gene invocations

To use XL Fortran for Blue Gene commands without typing the complete path, you can add the location of the compiler invocations to the PATH environment variable.

If you are using Bourne or Korn shell, use the following command:

```
export PATH=$PATH:installation_path/xlf/bg/10.1/bin/
```

If you are using C shell, use the following command:

```
setenv PATH $PATH:installation_path/xlf/bg/10.1/bin/
```

where *installation_path* is the location where you have installed the compiler packages (by default, this is /opt/ibmcmp/).

Creating symbolic links to the XL Fortran for Blue Gene compiler invocations

To use the compiler without typing the complete path, you can create symbolic links in the /usr/bin/ directory for the specific invocations contained in the *installation_path*/xlf/bg/10.1/bin/ directory.

If you have not already done so when you ran **xlf_install**, you can create the symbolic links for the following compiler invocations:

- blrts_f77
- blrts_f90
- blrts_f95
- blrts_fort77
- blrts_xlf
- blrts_xlf90
- blrts_xlf95

Links to some invocations are not recommended, either because they delete user-defined, XL Fortran for Linux, or GCC invocations, or because they are not compiler invocation commands. These include the following commands:

- f77, f90, f95, fort77
- xlf, xlf_r, xlf90, xlf90_r, xlf95, xlf95_r

- cleanpdf, mergepdf, new_install, resetpdf, showpdf, xlf_configure

Use the following command to create a symbolic link:

```
ln –s installation_path/xlf/bg/10.1/bin/invocation /usr/bin/invocation
```

where:

- where *installation_path* is the location where you have installed the compiler packages (by default, this is /opt/ibmcmp/).
- *invocation* is one of the compiler invocations (such as **blrts_xlf**) in *installation_path*/xlf/bg/10.1/bin/.

Basic example: Creating a symbolic link to the blrts_xlf compiler invocation

This example assumes that the entire XL Fortran V10.1 for Blue Gene is installed in the default location /opt/ibmcmp/.

```
ln –s /opt/ibmcmp/xlf/bg/10.1/bin/blrts_xlf /usr/bin/blrts_xlf
```

Chapter 7. Uninstalling XL Fortran

XL Fortran does not provide a standalone uninstallation tool. You must use the Linux **rpm** utility to uninstall XL Fortran.

Notes:

1. You must have root user access to uninstall the compiler.
2. Whenever you uninstall a package, specify the *V.R.M-F* (Version.Release.Modification-Fix level) of the package.
3. Always uninstall packages in the reverse order of that in which they were installed. In other words, the last package installed is the first package that you remove. *Exception:* The sample programs and product documentation do not have any package dependencies. You can remove them in any order.
4. You cannot uninstall packages that are required by other packages. For example, xlsmp.bg.rte is a shared component if XL C/C++ Advanced Edition V8.0 for Blue Gene is also installed on the same system.
5. The uninstallation commands will not remove any configuration files that were generated by **new_install** or **xlf_configure**.

Example: Uninstalling XL Fortran V10.1 for Blue Gene

In this example:

- The compiler packages have a *V.R.M-F* of 10.1.0-0
- The XL MASS library package has a *V.R.M-F* of 4.3.0–0.
- The XL SMP library packages have a *V.R.M-F* of 1.6.0–0.

To uninstall XL Fortran V10.1 for Blue Gene, issue the following commands, in the same order:

```
rpm -e xlf.bg.rte.lnk-10.1.0-0
rpm -e xlf.bg.rte-10.1.0-0
rpm -e xlf.bg.msg.rte-10.1.0-0
rpm -e xlf.bg.cmp-10.1.0-0
rpm -e xlf.bg.lib-10.1.0-0
rpm -e xlf.bg.lic-10.1.0-0
rpm -e xlmass.bg.lib-4.3.0-0
rpm -e xlsmp.bg.lib-1.6.0-0
rpm -e xlsmp.bg.rte-1.6.0-0
rpm -e xlsmp.bg.msg.rte-1.6.0-0
```

You can issue the following commands in any order:

```
rpm -e xlf.bg.samples-10.1.0-0
rpm -e xlf.bg.help-10.1.0-0
```

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Chapter 8. Troubleshooting the installation and configuration

At the beginning of the installation process, the installation utility creates a new log file in /tmp/. The temporary log files are uniquely named.

After the installation is completed successfully, the log file is moved to the default installation location for future reference. If the installation fails, the installation log will stay in the /tmp/ directory. Regardless of whether the installation succeeds or fails, the file name of the corresponding installation log is displayed as part of the standard output.

Use the information in this chapter to help you respond to any problems you can encounter when you install and configure XL Fortran.

Error messages and recommended actions

The compiler generates messages to help you recognize and respond to error conditions. This section provides recommended responses.

The specified directory *rpmlocation_path* does not exist.

Scenario

You are running the **xlf_install** utility to install the compiler to the default location when you get the following error message:

```
ERROR: The specified directory, "rpmlocation_path", does not exist.
```

Action

Ensure that you have specified the location of the existing compiler packages correctly. You might need to use the **-rpmloc** *rpmlocation_path* option if you moved the **xlf_install** utility to a different location than the one provided in the installation image. For more information, see "xlf_install options" on page 9.

rpmlocation_path does not contain . . .

Scenario

You are running the **xlf_install** utility to install the compiler to the default location when you get the following error message:

```
ERROR: rpmlocation_path does not contain all of the RPM packages
 for the XL compiler.
```

Action

Ensure you have all of the packages listed in Table 3 on page 1 in the path before running the **xlf_install** utility again. You might need to use the **-rpmloc** *rpmlocation_path* option if you have moved the **xlf_install** utility to a different location than the one provided in the installation image. For more information, see "xlf_install options" on page 9.

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