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IBM XL Fortran Advanced Edition V8.1 for Mac OS X − A new platform supported in the IBM XL Fortran family

Overview

IBM extends the XL Fortran family to the Apple Mac OS X platform.

XL Fortran Advanced Edition V8.1 for Mac OS X now brings Fortran function to customers running the Mac OS X operating system on the new Apple Power Mac G5 computer (Power Mac G4 also supported). With this release, Apple Mac OS X developers can take advantage of proven IBM compiler technology.

XL Fortran Advanced Edition V8.1 for Mac OS X is based on the mature compiler technology of XL Fortran for AIX® and Linux. It is fully compliant with Fortran 77, Fortran 90, and Fortran 95 standards. It partially supports draft Fortran 2000 standard features. It also supports both IBM and industry extensions.

Key prerequisites

- Computer: Apple Power Mac G5 (or Power Mac G4)

- Disk space, at minimum:
  - 80 MB for product package
  - 512 MB for paging and temporary files

- Memory: 256 MB minimum (high levels of optimization may require more memory)

- Operating system: Mac OS X V10.2 or V10.3

Planned availability date

January 16, 2004

- Electronic software delivery
- Media and documentation

At a glance

XL Fortran Advanced Edition V8.1 for Mac OS X includes:

- Full compliance with Fortran 77, Fortran 90, and Fortran 95 standards

- Partial draft Fortran 2000 standard support

- IBM and industry extensions

- Industry-leading optimization technology

- Exploitation of G5 architecture

- Symbolic debugging support

For ordering, contact:
Your IBM representative or the Americas Call Centers at

| 800-IBM-CALL | Reference: YE001 |

Description

The IBM Fortran compiler family extends support to a whole new platform, Apple Mac OS X. XL Fortran Advanced Edition for Mac OS X is based on the mature compiler technology of XL Fortran for AIX and Linux. With this release, Apple Mac OS X developers can take advantage of proven IBM compiler technology.

Fortran 77, Fortran 90, Fortran 95 standards

XL Fortran Advanced Edition V8.1 for Mac OS X is a compiler that produces highly optimized code that exploits G5 architecture (G4 architecture also supported) and fully complies with Fortran 77, Fortran 90, and Fortran 95 standards. It partially supports draft Fortran 2000 standard features and also supports IBM and industry extensions from various compiler vendors.

Supported draft Fortran 2000 features include:

- Allocatable components
- IEEE floating point exception handling
- Pointer with INTENT attribute
- Stream-access I/O
- VALUE attribute
- PROTECTED attribute

Exploiting the G5 architecture

XL Fortran Advanced Edition for Mac OS X exploits G5 architecture. The -qarch and -qtune compiler options instruct the compiler to generate and tune code to a specific architecture. This allows the compiler to take advantage of machine-specific instructions to further improve performance. The -qarch option specifies the target architectures on which the resulting programs will run. The -qtune and -qcache options refine the degree of platform-specific optimization performed.

Industry-leading optimization technology

XL Fortran Advanced Edition V8.1 for Mac OS X includes the benefits of IBM compiler optimization technology. Through compiler options and directives, programmers are offered a number of ways to optimize their code. A range of optimization levels (-O2, -O3, -O4 and -O5) allow you to perform comprehensive low-level optimization to more extensive optimization. Other compiler options for optimization include:

- -qarch and -qtune instruct the compiler to optimize applications to a number of architectures.

- -qhot allows for high-order transformations that specifically improve performance of loops.

- -qipa invokes interprocedural analysis (IPA) that enables the compiler to optimize across different files (whole-program analysis). This can result in significant performance improvements.

- -qpdf tunes optimization through profile-directed feedback. Results from sample program execution are used to fine tune optimizations in conditional branches and frequently executed code sections.

Symbolic debugger support

Use gdb or other symbolic debuggers for your programs.

Port or migration support

The XL Fortran Advanced Edition for Mac OS X compiler helps you port or migrate source code between Fortran compilers by providing full Fortran 77, Fortran 90, and Fortran 95 language support and selected language extensions (such as intrinsic functions, data types) from

many different compiler vendors. Code ported from XL Fortran for AIX and Linux is highly compatible with Mac OS X.

The xlf, f77, and fort77 commands provide maximum compatibility with existing Fortran 77 programs. The default options provided with the xlf90 command gives access to the full range of Fortran 90 language features. The default options provided with the xlf95 command gives access to the full range of Fortran 95 language features.

XL Fortran Advanced Edition V8.1 for Mac OS X supports interlanguage calls to and from XL C/C++ Advanced Edition so that you may include C and C++ code segments within your Fortran programs.

Xcode integration

Xcode is Apple's new integrated development environment for developing software on Mac OS X. Xcode provides a powerful user interface to many industry-standard and open-source tools, including GCC, javac, jikes, and GDB. Xcode contains templates for creating applications, frameworks, libraries, plug-ins, Java™ applications and applets, and command-line tools.

XL Fortran Advanced Edition V8.1 for Mac OS X is enabled for the Xcode application development environment by allowing the XL Fortran compiler to be invoked from within Xcode.

Fortran run-time environment (RTE)

On the same media of XL Fortran Advanced Edition V8.1 for Mac OS X, a run-time environment to support library modules and I/O services and utilities is provided.

Documentation and online help

XL Fortran Advanced Edition V8.1 for Mac OS X provides product documentation in HTML and Portable Document Format (PDF), and Man page formats. The HTML version has a search function as part of Apple Help Center.

- XL Fortran Advanced Edition for Mac OS X User's Guide
  - Explains how to compile, link, and run programs that are written in the Fortran language
- XL Fortran Advanced Edition for Mac OS X Language Reference
  - Describes the Fortran programming language
- XL Fortran Advanced Edition for Mac OS X Installation Guide
  - Briefly explains what prerequisites are needed and how to install this product

Technology preview ─ Selected functions

The selected function below is provided as a "technology preview" with the XL Fortran Advanced Edition V8.1 for Mac OS X product. Technology previews provide insight into IBM plans and directions and information is provided "as-is" and without warranty or condition of any kind. Availability of the selected function will be announced at a later date.

OpenMP

OpenMP is an industry specification describing a common set of APIs, which support Symmetric Multi-Processing (SMP) programming in C/C++ and Fortran on all architectures, including UNIX and Windows NT™ platforms. OpenMP is a portable, scalable model. This gives shared-memory parallel programmers a simple and

flexible interface for developing parallel applications for platforms ranging from the desktop to the supercomputer.

XL Fortran Advanced Edition V8.1 for Mac OS X provides a technical preview of OpenMP Fortran API V2.0 support. For more information on the OpenMP, visit:
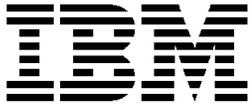
http://www.openmp.org/specs/

Offering information

Product information is available through the Offering Information Web site at:

http://www.ibm.com/common/ssi

and through the Passport Advantage® Web site at:

http://www.ibm.com/software/passportadvantage

Publications

No publications are shipped with this product.

The IBM Publications Center:

http://www.ibm.com/shop/publications/order

The Publications Center is a worldwide central repository for IBM product publications and marketing material with a catalog of 70,000 items. Extensive search facilities are provided. Payment options for orders are via credit card or customer number. A large number of publications are available online in various file formats, and they can all be downloaded free of charge.

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Technical information

Hardware requirements

- Computer: Apple Power Mac G5 (or Power Mac G4)

- Disk space, at minimum:

  - 80 MB, for product package
  - 512 MB, for paging and temporary files

- Memory: 256 MB minimum (high levels of optimization may require more memory)

- CD-ROM drive

- Mouse or pointer device

Software requirements

- Operating system: Mac OS X V10.2 or V10.3

- Mac OS X Developer Tools Package which includes gcc V3.3

- To access and display the documentation:

  - A frames-capable browser to access HTML-format online documentation
      or
  - A PDF viewer to view PDF files

Planning information

To find additional details on XL Fortran compiler information, visit:

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

Customer responsibilities: XL Fortran Advanced Edition V8.1 is licensed based on a charge unit of one authorized user per operating system. Separate user authorizations are required by individual users for each operating system on which the program is used. For each user authorization on a given operating system, the program may be stored on more than one machine, provided that the program is not in active use by that individual user on more than one machine at the same time.

An authorized user is an individual or specific named user authorized to have access to the program or any portion of the program on a single operating system. The Proof of Entitlement for this program is evidence of your authorization. Each individual or specific named user must obtain a Proof of Entitlement for each operating system on which the program is used.

When XL Fortran Advanced Edition V8.1 is ordered, its run-time component is shipped with the compiler on the same media. Solution developers who sell applications that pre-req the XL Fortran run-time environment may redistribute it to their customers but their customers will not receive support directly from IBM. Solution developers wanting their customers to receive support directly from IBM should require their customers to purchase XL Fortran Advanced Edition V8.1 licenses.

Software Maintenance, previously referred to as Subscription and Technical Support, is now included in the Passport Advantage Agreement. Installation and technical support for the products announced in this letter are provided by the Software Maintenance offering of the IBM International Passport Advantage Agreement. This fee service enhances customer productivity by providing voice and/or electronic access into the IBM support organizations.

For additional information, contact your IBM representative or IBM Business Partner, or refer to the IBM software support Web site at:

http://www.ibm.com/software/support/

Packaging: XL Fortran Advanced Edition V8.1 for Mac OS X media package:

- One CD-ROM containing XL Fortran Advanced Edition V8.1 for Mac OS X

This announcement is provided for your information only. For additional information, contact your IBM representative, call 800-IBM-4YOU, or visit the IBM home page at: http://www.ibm.com.

- Passport Advantage Customer Letter
- PA Media Pack Pointer Sheet
- License Information Booklet
- License Agreement Booklet

Security, auditability, and control

XL Fortran Advanced Edition for Mac OS X uses the security and auditability features of the Mac OS X operating system.

The customer is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities.

Ordering information

This product is only available via Passport Advantage. It is not available as shrinkwrap.

Product information

Licensed function title	Product group	Product category
IBM XL Fortran Advanced Edition	App Integration Middleware Other	XL Fortran

XL Fortran Advanced Edition V8.1 has one charge unit: Authorized user

It is available in fixed order quantities of one authorized user.

Note: XL Fortran Advanced Edition V8.1 is licensed based on a charge unit of one authorized user per operating system. Separate user authorizations are required by individual users for each operating system on which the program is used. For each user authorization on a given operating system, the program may be stored on more than one machine, provided that the program is not in active use by that individual user on more than one machine at the same time.

An authorized user is an individual or specific named user authorized to have access to the program or any portion of the program on a single operating system. The Proof of Entitlement for this program is evidence of your authorization. Each individual or specific named user must obtain a Proof of Entitlement for each operating system on which the program is used.

When XL Fortran Advanced Edition V8.1 is ordered, its run-time component is shipped with the compiler on the same media. Solution developers who sell applications that pre-req the XL Fortran run-time environment may redistribute it to their customers but their customers will not receive support directly from IBM. Solution developers wanting their customers to receive support directly from IBM should require their customers to purchase XL Fortran Advanced Edition V8.1 licenses.

Passport Advantage program licenses

XL Fortran Advanced Edition for Mac OS X

Part description	Part number
XL Fortran Advanced Edition	
XL Fortran Adv for Mac OS X Users License & SW Maintenance 12 Months	D5308LL
XL Fortran Adv for Mac OS X Users SW Maintenance Reinstatement 12 Months	D5309LL
XL Fortran Adv for Mac OS X Users SW Maintenance Annual Renewal	E012CLL

Passport Advantage supply

XL Fortran Adv for MAC OS X V8.1.0

Media Pack English US Apple Macintosh Operating System CD-ROM Digital Disk ─ ISO 9660 Standard V8.1.0	BA0BRNA

Passport Advantage customer: media pack entitlement details

Customers with active maintenance or subscription for the products listed below are entitled to receive the corresponding media pack.

XL Fortran Adv for Mac OS X V8.1.0

Entitled maintenance offerings description	Media packs description	Part number
XL Fortran Advanced Edition for Mac OS X	XL Fortran Adv for Mac OS X English U.S. Apple Macintosh Operating System	BA0BRNA

Terms and conditions

Agreement: IBM International Program License Agreement. Proofs of Entitlement (PoE) are required for all authorized use.

Part number products only, offered outside of Passport Advantage, where applicable, are license only and do not include Software Maintenance.

License information form numbers

Program name	Program number	Form number
XL Fortran Advanced Edition for Mac OS X	5724-G13	CT2J2NA

Limited warranty: Yes

Warranty: This program has warranty for a minimum of one year from acquisition from IBM or authorized Business Partner.   The warranty provided to the customer, for at least one year from acquisition, is access to data bases (read Web sites) for program information, FAQs, including any known fixes to defects, which the customer can download or obtain otherwise and install at their leisure.

Program technical support: Technical support of a program product will be available for a minimum of three years from the general availability date, as long as your Software Maintenance is in effect. This technical support allows you to obtain assistance (via telephone or electronic means) from IBM for product-specific, task-oriented questions regarding the installation and operation of the program product. Software Maintenance also provides you with access to updates, releases, and versions of the program. Customers will be notified, via announcement letter, of discontinuance of support with 12 months' notice. If you require additional technical support from IBM, including an extension of support beyond the discontinuance date, contact your IBM representative or Business Partner. This extension may be available for a fee.

Money-back guarantee: If for any reason you are dissatisfied with the program, return it within 30 days from the invoice date to the party (either IBM or its reseller) from whom you acquired it for a refund. This applies only to your first acquisition of the program.

Copy and use on home/portable computer: Yes

Volume orders (IVO): No

Passport Advantage applies: Yes, and through the Passport Advantage Web site at:

> **http://www.ibm.com/software/passportadvantage**

Software maintenance applies: Yes

Software Maintenance, previously referred to as Subscription and Technical Support, is now included in the Passport Advantage Agreement.   Installation and technical support for the products announced in this letter are provided by the Software Maintenance offering of the IBM International Passport Advantage Agreement. This fee service enhances customer productivity by providing voice and/or electronic access into the IBM support organizations.

IBM includes one year of Software Maintenance with the initial license acquisition of each program acquired. The initial period of Software Maintenance can be extended by the purchase of a renewal option that is available.

While your Software Maintenance is in effect, IBM provides you assistance for your routine, short duration installation and usage (how-to) questions, and code-related questions.   IBM provides assistance via telephone and, if available, electronic access, only to your information systems (IS) technical support personnel during the normal business hours (published prime shift hours) of your IBM support center. (This assistance is not available to your end users.) IBM provides Severity 1 assistance 24 hours a day, every day of the year. For additional details, consult your IBM Software Support Guide at:

> **http://techsupport.services.ibm.com/guides/ handbook.html**

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You can visit the Passport Advantage Web site at:

> **http://www.ibm.com/software/passportadvantage**

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Prices

Passport Advantage

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> **http://www.ibm.com/software/passportadvantage**

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To identify your local IBM Business Partner or IBM representative, call 800-IBM-4YOU (426-4968).

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