



IBM Enterprise PL/I for z/OS V4.2 delivers performance improvements and usability enhancements

Table of contents

| | |
|---|---|
| 1 Overview | 4 Technical information |
| 2 Key prerequisites | 6 Ordering information |
| 2 Planned availability date | 7 Terms and conditions |
| 2 Description | 7 Prices |
| 4 Program number | 8 Order now |

At a glance

IBM® Enterprise PL/I for z/OS® V4.2 delivers:

- Additional utilization of the latest IBM zEnterprise™ 196 architecture for improved compiler performance
- Compiler enhancements to improve debugging with IBM Debug Tool
- XML generation for improved web interoperability
- SQL preprocessor and SQL support enhancements
- Productivity improvements, many of them customer-requested

Overview

Enterprise PL/I is a leading-edge, z/OS-based compiler that helps you create and maintain mission-critical, line-of-business PL/I applications to execute on your z/OS systems. It gives you access to IBM DB2®, IBM CICS®, and IBM IMS™ systems, and other data and transaction systems.

This compiler facilitates your new On Demand Business endeavors by helping to integrate PL/I and web-based business processes in web services, XML, Java™, and PL/I applications. This compiler's interoperability helps you capitalize on existing IT investment while more smoothly incorporating new, web-based applications as part of your organization's infrastructure.

Version 4.2 offers additional utilization of the latest hardware architecture contained in the zEnterprise 196, compiler enhancements for improved debugging using IBM Debug Tool, improvements in XML generation, SQL preprocessor and SQL support enhancements, productivity improvements, many of them customer-requested.

Enterprise PL/I for z/OS, V4 underscores the continuing IBM commitment to the PL/I programming language on the z/OS platform.

With Enterprise PL/I for z/OS, V4, you can leverage more than 30 years of IBM experience in application development.

For ordering, contact your IBM representative or an IBM Business Partner. For more information, contact the Americas Call Centers at 800-IBM-CALL (426-2255). Reference: LE001

Key prerequisites

For details, refer to the [Software requirements](#) section.

Planned availability date

September 30, 2011

Description

Performance improvements

- The compiler utilizes the z196 high-word facility.
- The compiler utilizes the z196 floating-point extension facility.
- The compiler utilizes the z196 population-count facility.
- The new UNROLL compiler option gives the user control of loop unrolling.
- The compiler generates inline code to resolve the ULENGTH and USUBSTR built-in functions for UTF-8 strings.
- The compiler generates inline code for MEMINDEX (p, n, x) where x is WCHAR(1) just as it previously did if x was CHAR(1).
- The compiler generates inline code for STG (x) where x is a BASED variable using REFER when all NONVARYING BIT in x are ALIGNED and all other elements in x are UNALIGNED.

Debug Tool enhancements

The compiler supports typed structures in Debug Tool.

Improved web interoperability

XML generation, via the XMLCHAR built-in function, supports XML attributes and the omission of null values.

Enhanced middleware support

- Block scoping is supported.
- The SQL preprocessor load module is smaller than the earlier module.
- The SQL TYPE attribute can be used in a declare wherever any other PL/I data attribute is used.
- The SQL preprocessor handles PACKAGES.
- In processing declares of host variables, the SQL preprocessor honors the following compiler options so that defaults are appropriately applied and unsuitable host variables are rejected as appropriate:
 - DEFAULT(ANS/IBM)
 - DEFAULT(SHORT(HEX/IEEE))
 - DEFAULT((NON)NATIVE)
 - DEFAULT(ASCII/EBCDIC)
 - DEFAULT((NO)EVENDEC)
 - RULES((NO)LAXCTL)
- The SQL preprocessor recognizes the PRECISION attribute.
- The SQL preprocessor recognizes the UNSIGNED and COMPLEX attributes and rejects the use of these attributes in any host variable.

- The SQL preprocessor is implemented so that DSNHMLTR is declared in the outermost procedure containing the code that needs DSNHMLTR.
- The SQL preprocessor no longer puts an unprintable character in the source when emitting code to set the SQLAVDAID.
- The SQL preprocessor allows indicator arrays to have any lower bound.
- The SQL parameter list structure emitted by the preprocessor has fewer unions, fewer init clauses, and no additional declares based on elements of the structure.

Increased productivity and user requests

- A new compiler option conditionally erases the listing generated from a preprocessor phase unless the phase produced some messages.
- The compiler will apply the NONASSIGNABLE attribute to any parameter declared with the INONLY attribute, and there the compiler will flag any assignment to a parameter declared as INONLY.
- The compiler supports a new STRICT/LOOSE suboption to RULES(NOLAXENTRY) so that under the LOOSE suboption OPTIONS(ASM) routines are not flagged when they do not specify a parameter list.
- Also, under RULES(NOLAXENTRY), the compiler will not flag names starting with DSN, and under RULES(NOUNREF), the compiler will not flag names starting with DSN or SQL.
- Under the new NOSELFASSIGN suboption of the RULES compiler option, the compiler flags assignments of variables to themselves.
- Under the new NOLAXRETURN suboption of the RULES compiler option, the compiler generates code to raise an ERROR when a RETURN with an expression is executed from a procedure coded without RETURN or vice versa.
- The compiler issues an improved message when a comma is missing in a structure declare.
- The compiler issues new and improved messages when source contains invalid shift-in and shift-out bytes.
- The compiler explicitly supports some use of adjustable BASED without REFER.
- The compiler supports comparisons of POINTER to " and "b.
- The compiler has raised the maximum number of distinct include files allowed in a single compilation from 2047 to 4095.

Accessibility by people with disabilities

A US Section 508 Voluntary Product Accessibility Template (VPAT) containing details on accessibility compliance can be requested at

http://www.ibm.com/able/product_accessibility/index.html

Section 508 of the US Rehabilitation Act

IBM Enterprise PL/I for z/OS V4 is capable as of September 30, 2011, when used in accordance with associated IBM documentation, of satisfying the applicable requirements of Section 508 of the Rehabilitation Act, provided that any assistive technology used with the product properly interoperates with it. A US Section 508 Voluntary Product Accessibility Template (VPAT) can be requested on the following website

http://www-3.ibm.com/able/product_accessibility/index.html

Hardware and software support services

SmoothStart/installation services

IBM SmoothStart and Installation Services are not provided.

Program number

| Program name | Program number |
|------------------------------------|----------------|
| IBM Enterprise PL/I for z/OS, V4.2 | 5655-w67 |

Business Partner information

If you are a Direct Reseller - System Reseller acquiring products from IBM, you may link directly to Business Partner information for this announcement. A PartnerWorld® ID and password are required (use IBM ID).

<https://www.ibm.com/partnerworld/mem/sla.jsp?num=211-341>

Technical information

Specified operating environment

Hardware requirements

Enterprise PL/I for z/OS, V4.2 will run on the following IBM servers:

- zEnterprise 196
- z10™ Enterprise Class, or follow-on product
- IBM System z9® Enterprise Class or z9® Business Class, or follow-on product
- zSeries® z990, or follow-on product
- zSeries z890, or follow-on product

Software requirements

Enterprise PL/I for z/OS, V4.2 runs under the control of, or in conjunction with, the currently supported releases of the following programs and their subsequent releases or their equivalents. For more information on programs listed below that require program temporary fixes (PTFs), refer to the *Program Directory* and the preventive service planning (PSP) bucket.

z/OS V1.11 (5694-A01), or later is a required licensed program.

Optional licensed programs

- CICS Transaction Server for z/OS V4 (5655-S97)
- CICS Transaction Server for z/OS V3 (5655-M15)
- Enterprise COBOL for z/OS V4 (5655-S71)
- Enterprise COBOL for z/OS and OS/390® V3 (5655-G53)
- IBM DB2 10 for z/OS (5605-DB2)
- DB2 10 for z/OS VUE (5697-P31)
- DB2 V9 for z/OS (5635-DB2)
- DB2 V9 for z/OS VUE (5697-P12)
- DB2 UDB V8 for z/OS (5625-DB2)
- DB2 UDB V8 for z/OS VUE (5697-N29)

- IBM Debug Tool for z/OS V11 (5655-W45)
- Debug Tool for z/OS V10 (5655-V50)
- Debug Tool for z/OS V9 (5655-U27)
- Debug Tool for z/OS V8 (5655-S17)
- Debug Tool Utilities and Advanced Functions for z/OS V8 (5655-S16)
- IBM DFSORT element of z/OS (5694-A01) or OS/390 (5647-A01)
- IBM High Level Assembler/MVS and VM and VSE (5696-234)
- IBM IMS V11 (5635-A02)
- IMS V10 (5635-A01)
- IMS V9 (5655-J38)
- OS PL/I V2.3 (5668-909, 5668-910, 5668-911)
- PL/I for MVS™ & VM V1.1 (5688-235)
- IBM VS FORTRAN V2 (5668-806, 5688-087)
- For C/C++ with Enterprise PL/I -- You must use the XL C/C++ feature of z/OS (5694-A01).

User group requirements

This announcement addresses ten requirements from one or more of the worldwide user group communities. Groups include COMMON, COMMON Europe, Guide Share Europe (GSE), InterAction (Australia/New Zealand), Japan Guide Share (JGS), and SHARE Inc.

Requirements addressed include:

- MR0216116237
- MR0302115849
- MR0322112751
- MR0425113219
- MR0517112942
- MR0823107220
- MR0828104258
- MR093010733
- MR1001105028
- MR1222106055

Planning information

Packaging

The Enterprise PL/I for z/OS, V4.2 package includes:

- Basic machine-readable material on the customer-selected distribution medium
- Program Directory (GI11-9144)
- Licensed Program Specifications (GC14-7283)

Security, auditability, and control

The announced program uses the security and auditability features of the host operating system software. 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

Ordering z/OS through the Internet

ShopzSeries provides an easy way to plan and order your z/OS ServerPac or CBPDO. It will analyze your current installation, determine the correct product migration, and present your new configuration based on z/OS. Additional products can also be added to your order (including determination of whether all product requisites are satisfied). ShopzSeries is available in the US, Canada, and several countries in Europe. In countries where ShopzSeries is not available yet, contact your IBM representative (or IBM Business Partner) to handle your order via the traditional IBM ordering process. For more details and availability, visit the ShopzSeries website at

<http://www14.software.ibm.com/webapp/ShopzSeries/ShopzSeries.jsp>

Current licensees

Current licensees of IBM Enterprise PL/I for z/OS, V4.1 must order this release via MES.

New licensees

- Block scoping is supported.
- The SQL preprocessor load module is smaller than the earlier module.
- The SQL TYPE attribute can be used in a declare wherever any other PL/I data attribute is used.
- The SQL preprocessor handles PACKAGES.
- In processing declares of host variables, the SQL preprocessor honors the following compiler options so that defaults are appropriately applied and unsuitable host variables are rejected as appropriate:
 - DEFAULT(ANS/IBM)
 - DEFAUT(SHORT(HEX/IEEE))
 - DEFAULT((NON)NATIVE)
 - DEFAULT(ASCII/EBCDIC)
 - DEFAULT((NO)EVENDEC)
 - RULES((NO)LAXCTL)
- The SQL preprocessor recognizes the PRECISION attribute.
- The SQL preprocessor recognizes the UNSIGNED and COMPLEX attributes and rejects the use of these attributes in any host variable.
- The SQL preprocessor is implemented so that DSNHMLTR is declared in the outermost procedure containing the code that needs DSNHMLTR.
- The SQL preprocessor no longer puts an unprintable character in the source when emitting code to set the SQLAVDAID.
- The SQL preprocessor allows indicator arrays to have any lower bound.
- The SQL parameter list structure emitted by the preprocessor has fewer unions, fewer init clauses, and no additional declares based on elements of the structure.

For ordering information on IBM Enterprise PL/I for z/OS V4, refer to Software Announcement [210-232](#), dated July 22, 2010.

Customized offerings

Product deliverables are shipped only via CBPDO, ServerPac, SystemPac®.

CBPDO and ServerPac are offered for Internet delivery in countries where ShopzSeries product ordering is available. Internet delivery reduces software

delivery time and allows you to install software without the need to handle tapes. For more details on Internet delivery, refer to the ShopzSeries help information at

<http://www.software.ibm.com/ShopzSeries>

You choose the delivery method when you order the software. IBM recommends Internet delivery. In addition to Internet and DVD, the supported tape delivery options for CBPDO, ServerPac, SystemPac include:

- 3590
- 3592

Most products can be ordered in ServerPac and SystemPac the month following their availability on CBPDO. z/OS can be ordered via all three offerings at general availability. Production of software product orders will begin on the planned general availability date.

- CBPDO shipments will begin one week after general availability.
- ServerPac shipments will begin two weeks after general availability
- SystemPac shipments will begin four weeks after general availability due to additional customization, and data input verification.

Terms and conditions

The terms for Enterprise PL/I for z/OS, V4, as previously announced in Software Announcement [210-232](#), dated July 22, 2010, licensed under the IBM Customer Agreement, are unaffected by this announcement.

IBM Operational Support Services - SupportLine

Yes

Prices

The pricing information for Enterprise PL/I for z/OS, V4, as previously announced in Software Announcement [210-232](#), dated July 22, 2010, remains unaffected by this announcement.

Contact your IBM representative for information on the current prices for this program.

IBM Global Financing

IBM Global Financing offers competitive financing to credit-qualified customers to assist them in acquiring IT solutions. Offerings include financing for IT acquisition, including hardware, software, and services, from both IBM and other manufacturers or vendors. Offerings (for all customer segments: small, medium, and large enterprise), rates, terms, and availability can vary by country. Contact your local IBM Global Financing organization or visit

<http://www.ibm.com/financing>

IBM Global Financing offerings are provided through IBM Credit LLC in the United States, and other IBM subsidiaries and divisions worldwide to qualified commercial and government customers. Rates are based on a customer's credit rating, financing terms, offering type, equipment type, and options, and may vary by country. Other restrictions may apply. Rates and offerings are subject to change, extension, or withdrawal without notice.

Financing offering and capabilities: For more financing information, visit

<http://www.ibm.com/financing>

Order now

To order, contact the Americas Call Centers or your local IBM representative, or your IBM Business Partner.

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

Phone: 800-IBM-CALL (426-2255)
Fax: 800-2IBM-FAX (242-6329)
Internet: callserv@ca.ibm.com
Mail: IBM Teleweb Customer Support
ibm.com® Sales Execution Center, Americas North
3500 Steeles Ave. East, Tower 3/4
Markham, Ontario
Canada
L3R 2Z1

Reference: LE001

The Americas Call Centers, our national direct marketing organization, can add your name to the mailing list for catalogs of IBM products.

Note: Shipments will begin after the planned availability date.

Trademarks

zEnterprise, IMS, z10 and MVS are trademarks of IBM Corporation in the United States, other countries, or both.

IBM, z/OS, DB2, CICS, PartnerWorld, System z9, z9, zSeries, OS/390, SystemPac and [ibm.com](http://www.ibm.com) are registered trademarks of IBM Corporation in the United States, other countries, or both.

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

Terms of use

IBM products and services which are announced and available in your country can be ordered under the applicable standard agreements, terms, conditions, and prices in effect at the time. IBM reserves the right to modify or withdraw this announcement at any time without notice. This announcement is provided for your information only. Additional terms of use are located at:

<http://www.ibm.com/legal/us/en/>

For the most current information regarding IBM products, consult your IBM representative or reseller, or visit the IBM worldwide contacts page

<http://www.ibm.com/planetwide/us/>