



IBM Enterprise PL/I for z/OS, V5.2 delivers significant usability and performance enhancements

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At a glance

IBM^(R) Enterprise PL/I for z/OS^(R), V5.2 delivers the following new features and enhancements:

- Exploits the new IBM z14 hardware.
- Provides several performance enhancements.
- Offers more messages to help improve code quality.
- Implements more than five client-requested requirements.

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 operating systems. The applications that are created by using Enterprise PL/I can interoperate with IBM CICS^(R), IBM DB2^(R), IBM IMSTM, and other transactional and data systems.

This compiler can help facilitate your new, on-demand business endeavors by helping to integrate PL/I and web-based business processes in web services, XML, JavaTM, and PL/I applications. This compiler's interoperability helps you capitalize on your existing IT investments while more smoothly incorporating new, web-based applications as part of your organization's infrastructure.

Version 5.2 offers:

- Exploitation of the new IBM z14 hardware
- Several performance enhancements, particularly to SELECT and INLIST
- More messages to help improve code quality
- Compilation of programs with SQL statements under z/OS UNIX System Services
- Over five additional client-requested enhancements that include:
 - Microseconds for improved accuracy in REPATTERN
 - Improved diagnosis of missing returns from functions
 - Support for inlining of nested functions
 - Message to explain when a function is not inlined
 - Flagging of incorrect PLIXOPT declares

Enterprise PL/I for z/OS, V5.2 reinforces the continuing IBM commitment to the PL/I programming language on the z/OS platform and the continued delivery of new features.

With Enterprise PL/I for z/OS, V5.2, you can take advantage of more than 50 years of IBM experience in PL/I compiler development.

Key prerequisites

Enterprise PL/I for z/OS, V5.2 requires the z/OS V2.1 (5650-ZOS) operating system, or later.

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

Planned availability date

September 8, 2017

Description

Usability enhancements

The compiler now:

- Uses microseconds as the intermediate value in REPATTERN to produce more accurate date-time conversions.
- Supports a 64-bit specific value for the NULL() built-in function.
- Flags code where the program logic could lead to the END statement even though the containing PROC was a function that should return a value.
- Flags SELECT statements where an expression in a WHEN clause matches a previous expression in one of the WHEN clauses in its containing SELECT statement.
- Flags more code where INIT could be replaced by VALUE.
- Flags a function that returns the address of an AUTOMATIC variable (because that address will be unreliable when used by the invoker of the function).
- Supports inlining of nested functions.
- Issues a message to explain when a function is not inlined.
- Flags a function that tries to return an address that points to automatic storage.
- Flags any declare of a variable named PLIXOPT that does not have the correct attributes for it to define run-time options.
- Flags logical AND and logical OR operations whose operands are identical.
- Flags code where the VALUE type function is applied to a structure type that is only partially initialized.
- Supports the compilation of programs with SQL statements under z/OS UNIX System Services.

Performance improvements

- The new level 12 of the ARCH compiler option allows the compiler to exploit the new IBM z14 hardware. In particular, this leads to improved performance for some PICTURE and some FIXED DECIMAL calculations.
- The code for INLIST is improved when the first argument is CHAR(n) with $1 \leq n \leq 4$ and all the other arguments are CHAR with length $\leq n$.
- The code for SELECT(x) is improved when x is CHAR.

Use of System Management Facilities records to ease administration

- A new level of z/OS System Management Facilities (SMF) tracking support within Enterprise PL/I for z/OS, V5 allows you, when you have implemented sub-capacity tracking, to reduce your administrative reporting overhead.
- SMF collects and records system and job related information that is used by the Sub-Capacity Reporting Tool (SCRT) to report on sub-capacity products.
- With Version 5, Enterprise PL/I for z/OS is instrumented so it can be tracked by SMF89 records. If you have enabled the collection of SMF70 and SMF89 records on your machine and you are using SCRT to report the usage of the PL/I compiler, you will no longer have to tell SCRT where your PL/I compiler runs. Enterprise PL/I for z/OS, V5 can now automatically be tracked by SMF89 records and is supported by SCRT Java release V23.13.4 and SCRT Classic release V23.7.4 . You must use SCRT Java release V23.13.4 or SCRT Classic release V23.7.4, or a later release, whenever you use Enterprise PL/I for z/OS, V5.
- In conjunction with the SMF record support, system administrators can now define a disablement policy through the SYSx.PARMLIB(IFAPRDxx) parameter library. This client-requested feature can be used to disable the use of the Enterprise PL/I for z/OS, V5 compiler within a specific z/OS system.
- You continue to gain the benefits of implementing sub-capacity for Enterprise PL/I for z/OS, V5 while reducing your administrative overhead.

Accessibility by people with disabilities

A US Section 508 Voluntary Product Accessibility Template (VPAT) containing details on accessibility compliance can be found on the [IBM Accessibility](#) website.

Section 508 of the US Rehabilitation Act

Enterprise PL/I for z/OS, V5.2 is capable as of September 8, 2017, 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 found on the [IBM Accessibility](#) website.

Hardware and software support services

SmoothStart/installation services

IBM SmoothStart Services and Installation Services are not provided.

Program number

Program number	VRM	Program name
5655-PL5	5.2.0	IBM Enterprise PL/I for z/OS V5

Business Partner information

If you are a Direct Reseller - System Reseller acquiring products from IBM, you may link directly to [BP Attachment for Announcement Letter 217-352](#) for this announcement. A PartnerWorld ID and password are required (use IBMid).

Technical information

Specified operating environment

Hardware requirements

Enterprise PL/I for z/OS, V5.2 runs and generates code that runs on the following IBM Z servers:

- IBM z14
- IBM z13™
- IBM z13s
- IBM zEnterprise^(R) EC12 (zEC12)
- IBM zEnterprise BC12 (zBC12)
- IBM zEnterprise 196 (z196)
- IBM zEnterprise 114 (z114)

Software requirements

z/OS V2.1 (5650-ZOS), or later is required.

Optional licensed programs

Depending on the functions that are used, one or more of the following programs may be required:

- IBM CICS Transaction Server for z/OS, V5 (5655-Y04)
- CICS Transaction Server for z/OS, V4 (5655-S97)
- CICS Transaction Server for z/OS Value Unit Edition, V5 (5722-DFJ)
- Enterprise COBOL for z/OS V6 (5655-EC6)
- Enterprise COBOL for z/OS V5 (5655-W32)
- Enterprise COBOL for z/OS V4 (5655-S71)
- Enterprise PL/I for z/OS, V5 (5655-PL5)
- Enterprise PL/I for z/OS, V4 (5655-W67)
- IBM DB2 11 for z/OS (5615-DB2)
- DB2 10 for z/OS (5605-DB2)
- DB2 11 for z/OS Value Unit Edition (5697-P43)
- DB2 10 for z/OS Value Unit Edition (5697-P31)
- IBM Debug for z Systems™, V14.1 (5655-Q50)
- Debug for z Systems, V14.0 (5655-Q50)
- Debug Tool for z/OS, V13.1 (5655-Q10)
- IBM DFSORT element of z/OS (5650-ZOS)
- IBM z™/OS High Level Assembler/MVS™ and VM and VSE, V1.6 (5696-234)
- IBM Fault Analyzer for z/OS, V14.1 (5655-Q41)
- Fault Analyzer for z/OS, V13.1 (5655-Q11)
- IBM File Manager for z/OS, V14.1 (5655-Q42)
- IBM File Manager for z/OS, V13.1 (5655-Q12)
- IBM Application Performance Analyzer for z/OS, V14.1 (5655-Q49)
- Application Performance Analyzer for z/OS, V14.0 (5655-Q49)
- Application Performance Analyzer for z/OS, V13.1 (5655-Q09)
- IBM IMS V14 (5635-A05)
- IMS V13 (5635-A04)
- IMS Transaction Manager Value Unit Edition V14 (5655-TM3)
- IMS Transaction Manager Value Unit Edition V13 (5655-TM2)
- IMS Transaction Manager Value Unit Edition V12 (5655-TM1)
- IMS Database Value Unit Edition V14 (5655-DSE)

- IMS Database Value Unit Edition V13 (5655-DSM)
- IBM Developer for z Systems, V14 (5724-T07)
- IBM Rational^(R) Developer for System z^(R), V9 (5724-T07)
- Rational Developer for System z, V8.5 (5724-T07)
- IBM VS FORTRAN, V2 (5668-806, 5688-087)
- IBM Application Delivery Foundation for z Systems, V3.1 (5655-AC6)
- IBM Application Delivery Foundation for z Systems, V3.0 (5655-AC6)
- Application Delivery Foundation for z Systems, V1.2 (5697-CDT)
- XL C/C++ with Enterprise PL/I (You must use the XL C/C++ feature of z/OS, V2.1, (5650-ZOS) or later.)

Enterprise PL/I for z/OS, V5.2 in this announcement is supported for use only with the announced and currently supported levels of IBM software in the previous list. Enterprise PL/I for z/OS, V5.2 should continue to work with certain earlier, unsupported IBM software products.

IBM will undertake to fix problems found by using Enterprise PL/I for z/OS, V5.2 in this announcement with the earlier mentioned, unsupported product levels. IBM must be able to reproduce the problem using a supported level of the same product. If the problem can be reproduced and fixed, the fix will be developed and tested using supported levels of IBM software. If a fix is made available, it is likely to work on the unsupported product level; however, IBM cannot guarantee that the fix will work with the unsupported product.

User group requirements

This announcement addresses the following 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:

- RFE88094
- RFE90976
- RFE99268
- RFE99575
- RFE99592

Planning information

Packaging

The Enterprise PL/I for z/OS, V5.2 (5655-PL5) package includes:

- Basic machine-readable material on the customer-selected distribution medium
- Program Directory (GI13-4534)
- Licensed Program Specifications (GC27-4621)

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

Shopz 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). Shopz is available in the US, Canada, and several countries in Europe. In countries where Shopz is not available yet, contact your IBM representative (or IBM Business Partner) to handle your order through the traditional IBM ordering process. For more details and availability, go to the [Shopz](#) website.

New licensees

- Orders for new licenses can be placed now.
- Registered customers can access IBMLink for ordering information and charges.
- Shipment will not occur before the availability date.
- Unless a later date is specified, orders entered before the planned availability date will be assigned a schedule date of one week following availability.
- Orders entered after the planned availability date will be assigned a schedule date for the week following order entry.

Shipment will begin on the planned availability date.

New users of Enterprise PL/I for z/OS, V5.2 should specify: Type: 5655 Model: PL5

No Graduated or Processor-Based Charges

Parallel Sysplex license charge (PSLC)

Parallel Sysplex^(R) license charge (PSLC) basic license

To order a basic license, specify the program number and quantity of MSU.

If there is more than one program copy in a Parallel Sysplex, the charge for all copies is associated to one license by specifying the applicable PSLC license options and quantity represented by the sum of the Service Units in Millions (MSUs) in your Parallel Sysplex. For all other program copies, specify the System Usage Registration No-Charge (SYSUSGREG NC) Identifier on the licenses.

Entitlement identifier	Description	License option/Pricing metric
S017ZPT	IBM Enterprise PL/I for z/OS, V5	Basic MLC, PSLC below 3 MSU Basic MLC, PSLC AD SYSUGREGL NC, PSLC AD

Advanced Workload License Charges (AWLC)

Advanced Workload License Charges (AWLC) basic license

To order a basic license, specify the program number and quantity of MSUs. If there is more than one program copy in a Parallel Sysplex, the charge for all copies is associated to one license by specifying the applicable AWLC license options and quantity represented by the sum of the Service Units in Millions (MSUs) in your Parallel Sysplex. For all other program copies, specify the System Usage Registration No-Charge (SYSUSGREG NC) Identifier on the licenses.

Entitlement identifier	Description	License option/Pricing metric
S017ZPT	IBM Enterprise PL/I for z/OS, V5	Basic MLC, AWLC Workload Registration No Charge, AWLC

Advanced Entry Workload License Charges (AEWLC)

Advanced Entry Workload License Charges (AEWLC) basic license

To order a basic license, specify the program number and quantity of MSUs.

Program name: IBM Enterprise PL/I for z/OS, V5

Program PID: 5655-PL5

Entitlement identifier	Description	License option/Pricing metric
S017ZPT	IBM Enterprise PL/I for z/OS, V5	Basic MLC, AEWLC

Country Multiplex License Charge (CMLC) basic license

To order a basic license, specify the program number and the correct level.

Specify the CMLC monthly license option.

Entitlement identifier	Description	License option/Pricing metric
S017ZPT	IBM Enterprise PL/I for z/OS, V5	Basic MLC, CMLC Workload Registration No Charge, CMLC

Country Multiplex License Charges (CMLC)

Country Multiplex License Charges (CMLC) basic license

To order a basic license, specify the program number and quantity of MSUs.

If there is more than one program copy in a Country Multiplex, the charge for all copies is associated to one license if all the copies are licensed to one customer number within the multiplex. If there is more than one customer number, the charge for all copies is prorated to one license for each customer within the multiplex.

For each license being charged, specify the applicable CMLC license options and the prorated quantity of the Service Units in Millions (MSUs) for each customer number within the multiplex. For all other program copies, specify the Workload Registration No-Charge (WREG NC) Identifier on the licenses.

Program name: IBM Enterprise PL/I for z/OS V5

Program PID: 5655-PL5

Entitlement identifier	Description	License option/Pricing metric
S017ZPT	IBM Enterprise PL/I for z/OS V5	Basic MLC, CMLC

Variable Workload License Charge (VWLC)

Workload License Charge (WLC) Basic License

If there is more than one program copy in a Parallel Sysplex, the charge for all copies is associated to one license by specifying the applicable WLC license options and quantity represented by the sum of the Service Units in Millions (MSUs) in your Parallel Sysplex. For all other program copies, specify the Workload Registration Variable WLC Identifier on the licenses.

Entitlement identifier	Description	License option/Pricing metric
S017ZPT	IBM Enterprise PL/I for z/OS, V5	Basic MLC, Variable WLC Workload Registration No Charge, Variable WLC

Entry Workload License Charge (EWLC)

Entry Workload License Charge (EWLC) Basic License

To order a basic license, specify the program number and the quantity of MSUs.

Entitlement identifier	Description	License option/Pricing metric
S017ZPT	IBM Enterprise PL/I for z/OS, V5	Basic MLC, Entry WLC

Growth Opportunity License Charge (GOLC)

To order a basic license, specify the program number and the correct level.

Specify the GOLC monthly license option.

Entitlement identifier	Description	License option/ Pricing metric
S017ZPT	IBM Enterprise PL/I for z/OS, V5	Basic MLC, GOLC

z Systems Entry License Charge (zELC)

To order zELC software, specify the program number and z800 model.

Specify the zELC monthly license option.

Entitlement identifier	Description	License option/ Pricing metric
S017ZPT	IBM Enterprise PL/I for z/OS, V5	Basic MLC, zELC

Basic machine-readable material

Orderable Supply ID	Language	Distribution medium	Description
S017ZPS	US English	3590 Tape Cartridge	Enterprise PL/I z/OS, ENU, CST3590-128T
S017ZPR	Japanese	3590 Tape Cartridge	Enterprise PL/I z/OS, JPN, CST3590-128T

Customization options

Customization options are not applicable to this offering.

Unlicensed documentation

A *Program Directory* (GI13-4534) and *Licensed Program Specification* (GC27-4621) are supplied automatically with the basic machine-readable material. No other hardcopy publications are shipped with the product.

Subsequent updates (technical newsletters or revisions between releases) to the publications shipped with the product will be distributed to the user of record for as long as a license for this software remains in effect. A separate publication order or subscription is not needed.

Customized Offerings

Product deliverables are shipped only through CBPDO and ServerPac. These customized offerings are offered for internet delivery from Shopz. Internet delivery reduces software delivery time and allows you to install software without the need to handle tapes. For more details on internet delivery, go to the Help section on the [Shopz](#) website.

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 include:

- 3590
- 3592

Most products can be ordered in ServerPac the month following their availability in CBPDO. z/OS can be ordered through CBPDO and ServerPac at general availability. Many products will also be orderable in a Product ServerPac without also having to order the z/OS operating system or subsystem.

Shopz and CFSW will determine the eligibility based on product requisite checking. For more details on the product ServerPac, go to the Help section on the [Shopz](#) website.

For additional information on the Product ServerPac option, refer to Software Announcement [212-272](#), dated July 31, 2012.

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.

Terms and conditions

The terms for IBM Enterprise PL/I for z/OS V5.2, as previously announced in Software Announcement [216-185](#), dated June 14, 2016, licensed under the IBM Customer Agreement are unaffected by this announcement.

Statement of good security practices

IT system security involves protecting systems and information through prevention, detection, and response to improper access from within and outside your enterprise. Improper access can result in information being altered, destroyed, or misappropriated or can result in misuse of your systems to attack others. Without a comprehensive approach to security, no IT system or product should be considered completely secure and no single product or security measure can be completely effective in preventing improper access. IBM systems and products are designed to be part of a lawful, comprehensive security approach, which will necessarily involve additional operational procedures, and may require other systems, products, or services to be most effective.

Important: IBM does not warrant that any systems, products, or services are immune from, or will make your enterprise immune from, the malicious or illegal conduct of any party.

Prices

For additional information and current prices, contact your local IBM representative or IBM Business Partner.

Growth Opportunity License Charge

Entitlement identifier	License option/ Pricing metric
S017ZPT	Description Enterprise PL/I for z/OS, V5 Basic MLC, GOLC

z Systems Entry License Charge

Entitlement identifier	Description	License option/ Pricing metric
S017ZPT	Enterprise PL/I for z/OS, V5	Basic MLC, zELC

Parallel Sysplex License Charge

Entitlement identifier	Description	License option/ Pricing metric
S017ZPT	Enterprise PL/I for z/OS, V5	Basic MLC, PSLC below 3 MSU Basic MLC, PSLC AD SYSUGREGL NC, PSLC AD

Advanced Workload License Charge

Entitlement identifier	Description	License option/ Pricing metric
S017ZPT	Enterprise PL/I for z/OS, V5	Basic MLC, AWLC Workload Registration No Charge, AWLC

Advanced Entry Workload License Charge

Entitlement identifier	Description	License option/ Pricing metric
S017ZPT	Enterprise PL/I for z/OS, V5	Basic MLC, AEWLC

Variable Workload License Charges

Entitlement identifier	Description	License option/ Pricing metric
S017ZPT	Enterprise PL/I for z/OS, V5	Basic MLC, Variable WLC Workload Registration No Charge, Variable WLC

Sub-capacity charges for VWLC products

Sub-capacity charges for VWLC products are based on product LPAR utilization capacity. Product LPAR utilization capacity for a VWLC product is the highest number of MSUs utilized by the combined LPARs in which a VWLC product runs concurrently during a reporting period. The number of MSUs is based on the highest observed rolling 4-hour average utilization used by the combination of the relevant LPARs during the reporting period.

Sub-capacity charges terms and conditions

z Systems software charges at less than full machine capacity for eligible VWLC products apply when z/OS is running in z/Architecture^(R) (64-bit) mode on an IBM z SystemsTM 900, no other MVS-based operating system is licensed to that server, and the required information is provided by the customer in accordance with the applicable terms.

Sub-capacity charges for a VWLC product is based on the utilization of the LPARs where/when the product executes. To obtain charges at less than full machine capacity for VWLC products, the customer is required to:

- Sign and abide by the terms of the Attachment for IBM z Systems Workload License Charges - (Z125-6516).

- Obtain the latest version of the Sub-Capacity Reporting Tool.
- Install any VWLC product and IBM z Systems 900 Licensed Internal Code (LIC) service required for sub-capacity charging. Required service will be listed on the [IBM z Systems Software Pricing](#) website.
- Collect SMF data as required by the Sub-Capacity Reporting Tool. Retain the collected SMF data for a period of not less than six months.
- Use the IBM provided Sub-Capacity Reporting Tool to process the collected SMF data. The Sub-Capacity Report produced by the tool is used to determine required license capacity for the VWLC products. Required license capacity is determined based on the largest MSU value of a VWLC product running concurrently in all LPARs during the reporting period. IBM reserves the right to request the system data that supports these product-defined capacity values for a period of up to six months after the data was collected.
- Provide an initial Sub-Capacity Report to begin to receive the benefits of less than full machine capacity charges. Sub-capacity charging will follow submission of a Sub-Capacity Report. There will be no retroactive application of sub-capacity charges.
- Submit Sub-Capacity Reports monthly.
- Submit Sub-Capacity Reports for all VWLC products with complete data for the entire reporting period to the email address and by the date specified in the current IBM z Systems Workload License Charges Exhibit (Z125-6324) and on the [IBM z Systems Software Pricing](#) website.

Sub-Capacity Reports that reflect a changed product defined capacity will be considered to be orders placed by the customer without further action on the customer's part, and IBM is authorized to make any resulting billing increase or decrease. To place an order for a new license or to discontinue licenses, move licenses between machines, report a hardware model upgrade, or enable or disable product features, the customer must contact IBM or their IBM Business Partner.

- Configure the machine to send weekly Transmit System Availability Data (TSAD) to IBM via the IBM z Systems 900 Remote Support Facility (RSF). If the machine cannot connect via the RSF, provide this TSAD through an alternate means documented in the z/OS publication *Planning for Workload License Charges* on the [IBM z Systems Software Pricing](#) website.

Entry Workload License Charge (EWLC)

Entitlement identifier	Description	License option/ Pricing metric
S017ZPT	Enterprise PL/I for z/OS, V5	Basic MLC, Entry WLC

Country Multiplex License Charge (CMLC)

Entitlement identifier	Description	License option/ Pricing metric
S017ZPT	Enterprise PL/I for z/OS, V5	Basic MLC, CMLC Workload Registration No Charge, CMLC

Variable charges

The applicable processor based one-time charge will be based on the group of the designated machine on which the program is licensed for use. If the program is designated to a processor in a group for which no charge is listed, the charge of the next higher group listed applies. For movement to a machine in a higher group, an upgrade charge equal to the difference in the then-current charges between the two groups will apply. For movement to a machine in a lower group, there will be no adjustment or refund of charges paid.

Order now

To order, contact the IBM Digital Sales Center, 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). For more information, contact the IBM Digital Sales Center.

Phone: 800-IBM-CALL (426-2255)

Fax: 800-2IBM-FAX (242-6329)

For IBM representative: askibm@ca.ibm.com

For IBM Business Partner: pwcs@us.ibm.com

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Coppell, TX 75019-4642, US

The IBM Digital Sales Center, 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.

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