Licensed Program Specifications

IBM PL/I for VSE/ESA
Release 1
Program Number 5686-069

IBM* PL/I for VSE/ESA* (PL/I VSE) is an IBM Language Environment* for VSE/ESA-conforming PL/I compiler for the VSE/ESA environment.

IBM Language Environment for VSE/ESA (LE/VSE) provides a common run-time environment for its conforming languages: currently, PL/I VSE and IBM COBOL for VSE/ESA (COBOL/VSE).

Highlights

PL/I is designed to provide a single programming language for scientific, engineering, commercial, and systems programming tasks. To support this wide range of tasks, PL/I provides:

- Structured programming constructs
- Powerful exception-handling capabilities
- Dynamic storage management
- Extensive data types, arrays, and structures, all of which can be used in combination
- Extensive input/output capabilities
- A large number of built-in functions

PL/I VSE brings to VSE the functions of IBM PL/I MVS & VM (PL/I MVS & VM). Many of the highlights described here are a result of these migrated functions.

PL/I VSE provides the capability to integrate PL/I applications into LE/VSE. This integration allows you to take advantage of features from both PL/I and LE/VSE. In addition, common function across supported Language Environment-conforming languages and platforms improves usability as well as programmer productivity.

Specific highlights of PL/I VSE include:

Supported by LE/VSE run-time environment: PL/I VSE uses the run-time services provided by LE/VSE: the common callable services (such as the math library) that can be used by any LE/VSE-conforming language, and language-specific services used only by PL/I VSE.

Support for LE/VSE interlanguage communication (ILC) with COBOL/VSE: In conjunction with LE/VSE, PL/I VSE applications can communicate with applications created by the COBOL/VSE compiler. Both static and dynamic ILC between PL/I VSE and COBOL/VSE are supported under batch and CICS/VSE*.

Dynamic loading of subprograms: The FETCH statement dynamically loads subprograms in batch or in CICS/VSE. In addition, you can use OPTIONS(FETCHABLE) to designate the entry point in a fetched phase.

Support for LE/VSE math routines: You have the option of getting results that are compatible with LE/VSE or with the DOS PL/I Optimizing Compiler (DOS PL/I).

Virtual Storage Constraint Relief (VSCR): Although the PL/I VSE compiler runs below the 16-megabyte line, PL/I VSE applications created by the compiler can use VSE/ESA **extended architecture** 31-bit addressing. This allows you to take advantage of address space above the 16-megabyte line.

Thus, you can construct large applications that use extensive tables of data without resorting to techniques like segmentation to fit large programs into the available address space.

Support for selected PL/I Package/2 features: In order to provide a greater level of compatibility and to facilitate migration between PL/I Package/2 and PL/I VSE, this product implements the following selected features:

- OPTIONS(BYVALUE) and OPTIONS(BYADDR) let you pass arguments to external procedures and entry points by value or by address.
- OPTIONAL arguments, which allow you to omit arguments to assembler routines.
- %PROCESS statement, which allows you to override compiler options.
- The NOT compiler option, which allows you to specify up to seven alternate symbols, any of which may be used as the logical NOT operator.
- The OR compiler option, which allows you to specify up to seven alternate symbols, any of which may be used as the logical OR operator and the string concatenation operator when paired.

Security and auditability: PL/I VSE uses the security and auditability features of the host machines or programs. Management is responsible for evaluation, selection, and implementation of security features, administrative procedures, and appropriate controls in application systems and communication facilities.

Compatibility considerations

PL/I VSE provides source program compatibility with DOS PL/I and PL/I MVS & VM for most PL/I language elements.

Where there are conflicts between DOS PL/I and PL/I MVS & VM, PL/I VSE retains compatibility with DOS PL/I.

PL/I VSE does not provide object compatibility with either DOS PL/I or PL/I MVS & VM. To use the functions of PL/I VSE, application programs must be recompiled with the PL/I VSE compiler and link-edited with the LE/VSE run-time library.

Specified operating environment

Machine requirements

The PL/I VSE compiler and compiler-generated object code runs on any hardware configuration supported by the licensed programs specified below.

Storage requirements

Compilation requires a minimum of 512K of storage.

Programming requirements

In conjunction with LE/VSE, PL/I VSE runs under the control of, or in conjunction with, the following licensed programs and their subsequent releases unless otherwise announced by IBM.

Operating system

PL/I VSE runs on the following operating systems:

- VSE/ESA Version 1 Release 4 (5750-ACD)
- VSE/ESA Version 2 Release 1 (5690-VSE)

Run-time environment

PL/I VSE requires that LE/VSE (5686-067) be installed before installing PL/I VSE. The PL/I VSE compiler requires LE/VSE for compilation. The object code produced by the PL/I VSE compiler requires LE/VSE for execution.

Other required software

The PL/I VSE compiler runs in conjunction with licensed programs supported by LE/VSE and other compilers. The following program is required for customizing compiler options:

- High Level Assembler/MVS & VM & VSE Release 1 (5696-234)

Optional software

PL/I VSE programs run in conjunction with licensed programs supported by LE/VSE, and other compilers. The following licensed programs are optional:

- CICS/VSE Version 2 Release 3 (5686-026)
- SQL/DS* Version 3 Release 4 (5688-103)
- DFSORT/VSE Version 3 Release 1 (5746-SM3)
- DOS/VS Sort/Merge Version 2 Release 5 (5746-SM2)
- DL/I DOS/VS Release 10 (5746-XX1)

Licensed program materials availability

Restricted materials—No. This licensed program is available without source licensed program materials. It is available in object code.

Supplemental terms

Designated machine identification

Designated machine identification required—Yes.

Testing period

- Basic license: Two months.
- DSLO license: Not applicable.

Installation/location license

Not applicable. A separate license is required for each machine on which the licensed program will be used.

Usage restriction

Not applicable.

Type/duration of program services

- Central Service.
- Until discontinued by IBM with a minimum of six months written notice.

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