



Licensed Program Specifications

IBM z/VSE®

Version 6.1

Product Number 5686-VS6

IBM® z/VSE is IBM's entry z Systems operating system offering for transaction and batch processing. z/VSE is a pregenerated package of the base programs listed below, which can be extended by a number of optional programs (as specifically announced).

The other base programs marked with ► are not subject to these licensed program specifications and follow their individual terms and conditions.

The base program z/VSE 6.1 listed below is subject to the licensed program specifications described herein.

z/VSE Base Programs	Program Number	Program Version, Release
z/VSE 6.1	5686-VS6	
Device Support Facilities (ICKDSF) ►	5747-DS2	1.17
Environmental Recording Editing and Printing (EREP) ►	5656-260	3.5
High Level Assembler for VSE (HLASM) ►	5696-234	1.6
Virtual Telecommunications Access Method for VSE/ESA (VTAM®) ►	5686-065	4.2
Customer Information Control System (CICS®) Transaction Server for z/VSE) ►	5655-VSE	2.1
DB2® Server for VSE and VM ►	5697-F42	7.5
Data Interfile Transfer, Testing and Operations Utility/ESA for VSE(DITTO/ESA) ►	5648-099	1.3
Transmission Control Protocol/Internet Protocol for z/VSE (TCP/IP for z/VSE) ►	5686-CS1	2.1
Internet Protocol Version 6 for VSE (IPv6/VSE) ►	5686-BS1	1.2

z/VSE Base Program

A summary of the functions provided by z/VSE is given below. z/VSE is designed and tested to be installed, used, and maintained within the package environment. z/VSE consists of the following components:

VSE/SP Unique Code Component

VSE/SP Unique Code provides support in the areas of system productivity and system usability. This includes:

- Installation support
- Automated system startup

- Interactive interface for users
- Workstation file transfer support

VSE/Advanced Functions Component

VSE/Advanced Functions provides basic system control for z/VSE. This includes functions and programs, such as:

- z/Architecture® mode
- 64-bit real addressing for system functions
- 64-bit virtual addressing
- Memory objects in the 64-bit address space
- 31-bit addressing
- Data spaces

- Virtual disks
- Virtual tapes
- Console support
- Input/Output Configuration Program (IOCP)
- Storage management
- Job Control Language (JCL)
- Librarian, Linkage editor
- Maintain System History Program (MSHP)
- Pregenerated supervisor for 1024 devices
- SCSI support for FCP-attached disks
- Enhanced z/OS® affinity
- z/VSE Fast Path to Linux on z Systems function (LFP)
- z/VSE Network Appliance (delivered on request)

VSE/Advanced Functions provides commands, statements, and macros for utilizing its functions.

z/VSE Network Appliance

The z/VSE Network Appliance is an integrated solution that provides TCP/IP stack functionality for z/VSE systems running in LPAR mode. It builds on the z/VSE Fast Path to Linux on z Systems (LFP) function and allows TCP/IP socket applications to access the network without requiring a TCP/IP stack on z/VSE.

REXX/VSE Component

REXX/VSE is a general purpose programming language and provides support to write programs and algorithms. This includes support for:

- VSE operation automation
- Direct communication to the VSE system console
- VSE/POWER job submission and controlling, and command execution

VSE/POWER Component

VSE/POWER provides system support and control in the areas of:

- Partition control
- Batch processing and spooling
- Networking
- System startup

VSE/VSAM Component

VSE/VSAM provides advanced data management support for files and libraries on disk devices and tape. This includes:

- Functions for file creation and maintenance
- The VSE/VSAM Backup/Restore function
- Data compression support
- The VSE/VSAM Space Management function for SAM, which complements the support provided by VSE/VSAM
- 31-bit addressing

VSE/VSAM provides commands and macros for utilizing its functions.

VSE/Fast Copy Component

VSE/Fast Copy is a utility for copying files from one disk device to another of the same device type. It also allows the copying of complete volumes.

VSE/ICCF Component

VSE/ICCF is an interactive tool for system administration and program development and includes functions for:

- Editing source code and data in VSE/ICCF libraries
- Creating and submitting jobs for processing
- Creating and maintaining VSE/ICCF libraries

OSA/SF for z/VSE Component

OSA/SF (Open Systems Adapter Support Facility) provides support for customizing and managing an OSA-Express adapter.

VSE Connectors Component

This component is part of the z/VSE connector support. It includes VSE Connector Server and VSE Connector Client support.

VSE Connector Workstation Component

This component provides the workstation part of the z/VSE connectors.

Encryption Facility for z/VSE Component

The Encryption Facility for z/VSE component can be used to encrypt and decrypt files, VSE Library members, and complete backups that were made using any z/VSE backup utility.

z/VSE Cryptographic Services Component

This component provides an OpenSSL runtime component and a programming interface. An OBJ is provided for vendor applications to get access to the SSL API. LE/C applications can use OpenSSL transparently via the LE/C Multiplexer (EDCTCPMC).

Language Environment Component

This component implements the Language Environment[®] architecture on the VSE platform (LE/VSE). LE/VSE provides a common execution environment (CEE) for application programs. LE/VSE provides essential languages and compiler object code library support routines.

LE/VSE Release 4 is the required runtime environment for applications generated with the following IBM language compilers:

- C for VSE/ESA
- COBOL for VSE/ESA
- PL/I for VSE/ESA

HLASM macros are also provided to allow seamless integration with a LE/VSE run-time environment.

Previous LE/VSE Compatibility:

LE/VSE Release 4 provides object and executable phase compatibility for applications generated using any of the above compilers with any earlier LE/VSE Release 4 modification level.

LE/VSE Release 4 provides object and executable phase compatibility for applications generated with the COBOL for VSE/ESA or PL/1 for VSE/ESA compilers linkedited with a previous LE/VSE release.

Previous COBOL Compiler Compatibility:

With certain exceptions, LE/VSE Release 4 provides object module and executable phase compatibility for applications generated by :

- DOS/VS COBOL Release 3.1 or later
- VS COBOL II Release 3.2 or later

Subject to exceptions, object modules created with the above unsupported COBOL compilers can be relink-edited and run with LE/VSE Release 4 without recompiling.

The above statements apply only to legacy, error-free applications (developed prior to the end-of-service dates of the old COBOL compilers)

to assist with application migration. Unsupported COBOL compilers should not be used for any application development.

See the *COBOL for VSE/ESA Migration Guide*, GC26-8070 for compatibility exceptions and migration details.

Other Language Compiler Compatibility:

Applications generated using the following IBM language compilers are not supported by LE/VSE:

- C/370™ Version 2 Release 1
- DOS PL/I Version 1
- DOS/VS RPG II

C/370 applications must be recompiled using the C for VSE/ESA compiler and link-edited with LE/VSE. DOS PL/I applications must be recompiled with the PL/I for VSE/ESA compiler and link-edited with LE/VSE. See the *C for VSE/ESA Migration Guide*, SC09-2423, or the *PL/I for VSE/ESA Migration Guide*, SC26-8056, for migration information.

VSE C Language Run-Time Support

z/VSE provides a full function LE/C runtime environment and library of callable services

Optional Program Support

A number of IBM optional programs can be ordered for use with z/VSE. z/VSE includes dialogs for installing these optional programs. The IBM manual *z/VSE Planning*, SC34-2681, provides information about supported optional programs. For the latest updates refer to the *z/VSE 6.1 Program Directory*.

Specified Operating Environment

Machine Requirements

Processor Storage:

The effective maximum real storage supported by z/VSE is 32 GB. z/VSE can be installed on IBM processors with a minimum of 64 MB of processor (real) storage. The minimum processor storage to create an installation disk in an LPAR is 512 MB. Once the installation disk is created the processor storage can be changed. The total amount of processor storage needed for efficient daily operation of a z/VSE system depends on the number of display stations in use and the mix of concurrent work. This mix may include:

- Batch processing
- Transaction processing
- Optional programs
- Online program development
- Communication with remote devices or other systems

Processor Support:

z/VSE Version 6 Release 1 supports these IBM z Systems servers:

- IBM z13 (z13)
- IBM z13s (z13s)
- IBM zEnterprise® EC12 (zEC12)
- IBM zEnterprise BC12 (zBC12)
- IBM zEnterprise 196 (z196)
- IBM zEnterprise 114 (z114)
- IBM System z10™ Enterprise Class (z10 EC)
- IBM System z10 Business Class (z10 BC)

You can run z/VSE in LPAR mode or as a guest system under any supported z/VM® release.

Minimum I/O Configuration:

The IBM manual *z/VSE Planning*, SC34-2681, has detailed information about supported devices. For the latest updates refer to the current *z/VSE Program Directory*. For initial installation, z/VSE requires a minimum configuration consisting of:

- A processor
- Two disk volumes of the same disk device type
- A system console
- A tape device or installation disk
- A display station. This can be a terminal or programmable workstation of any supported type

The following are disk device types supported for the installation of z/VSE 6.1:

- IBM 3380
- IBM 3390
- IBM FBA (also FCP-attached SCSI disk)

The total amount of disk space required by a z/VSE system depends on the amount of additional software installed and the size of user-data files.

Programming Requirements

The following IBM licensed compiler programs, with or without the Debug Tool for VSE/ESA feature, are optional when using LE/VSE:

- C for VSE/ESA Version 1 Release 1 (5686-A01)
- COBOL for VSE/ESA Version 1 Release 1 (5686-068)
- PL/I for VSE/ESA Version 1 Release 1 (5686-069)

The following IBM licensed programs are optional when using LE/VSE:

- DFSORT/VSE Version 3 Release 4 (5746-SM3)
- DL/I VSE Version 1 Release 12 (5746-XX1)
- DB2 Server for VSE and VM Version 7 (5697-F42)

Licensed Program Materials Availability

Restricted Materials – Yes. This licensed program is available with some licensed program materials designated as RESTRICTED MATERIALS OF IBM. The remaining licensed program materials are available and will not be designated as RESTRICTED MATERIALS OF IBM.

z/VSE is shipped partially in object code.

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Designated Machine Identification Required: Yes

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Some third party components, including third party components included or embedded in the Program and components referenced in any NOTICES.Z file located in z/VSE library IJSYSRS.SYSLIB.

The Excluded Components are:

- OpenSSL
- zlib

OpenSSL License

```
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