IBM z/VSE
Version 6 Release 1

Release Guide

SC34-2696-00

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Note: Before using this information and the product it supports, be sure to read the general information under “Notices” on page v.

This edition applies to Version 6 Release 1 of IBM® z/Virtual Storage Extended (z/VSE), Program Number 5686-VS6, and to all subsequent releases and modifications until otherwise indicated in new editions.

This edition replaces SC34–2636–03.

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Accessibility

Accessibility features help a user who has a physical disability, such as restricted mobility or limited vision, to use software products successfully. The major accessibility features in z/VSE enable users to:

- Use assistive technologies such as screen readers and screen magnifier software
- Operate specific or equivalent features using only the keyboard
- Customize display attributes such as color, contrast, and font size

Using Assistive Technologies

Assistive technology products, such as screen readers, function with the user interfaces found in z/VSE. Consult the assistive technology documentation for specific information when using such products to access z/VSE interfaces.

Documentation Format

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About This Book

This manual first provides an introduction to z/VSE 6.1 and a list of the servers that are supported. It then provides an overview of the enhancements and changes implemented with z/VSE 6.1.

Who Should Use This Book

This manual is intended for those z/VSE users who need to be aware of important information provided with z/VSE 6.1.

How to Use This Book

The book contains two chapters:

- Chapter 1, "Introduction and Server Support," on page 1.
- Chapter 2, "Changes introduced with z/VSE 6.1," on page 3.

Where to Find More Information

Whenever appropriate, the book refers to other z/VSE manuals that provide further details on a specific topic.

The z/VSE home page provides additional z/VSE information:

z/VSE Home Page

z/VSE has a home page on the World Wide Web, which offers up-to-date information about VSE-related products and services, new z/VSE functions, and other items of interest to VSE users.

You can find the z/VSE home page at

http://www.ibm.com/systems/z/os/zvse/

z/VSE Knowledge Center

IBM Knowledge Center is the new home for IBM's technical information. The z/VSE Knowledge Center can be found here

http://www.ibm.com/support/knowledgecenter/SSB27H/zvse_welcome.html

Chapter 1. Introduction and Server Support

z/VSE 6.1 aims to continue the strategy that was defined for previous releases. This means:

- **Protect** customers' investments in the z/VSE platform,
- **Integrate** z/VSE into the overall IT environment, and
- **Extend** existing z/VSE application solutions by exploiting and leveraging *Linux on z Systems* (or any other application platform).

Linux on z Systems is central to z/VSE's strategy of enabling open standard e-business technologies to support new, more rapidly growing workloads.

Using the *z/VSE connectors*, you can integrate z/VSE resources with any Java-capable platform of your choice (that is, not only IBM z Systems).

z/VSE 6.1 focuses on online transaction processing, security, and networking. To help clients protect their investments in online environments, z/VSE 6.1 delivers CICS Transaction Server (CICS TS) for z/VSE V2.1.

Clients make high demands on secure networking. TCP/IP for z/VSE V2.1 and IPv6/VSE V1.2 address the security requirements and provide firewall functionality in the updated version or release of their product. Refer to "IBM TCP/IP for z/VSE V2.1 for enhanced security" on page 5 and "IBM IPv6/VSE V1.2 for enhanced security, and increased network availability" on page 5.

z/VSE 6.1 introduces an architectural level set (ALS) that requires IBM System z10 or later.

z/VSE 6.1 supports these IBM z Systems servers:
- IBM z13 (z13).
- 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).

For further details, see "Hardware Support" in the z/VSE Planning manual.

Chapter 2. Changes introduced with z/VSE 6.1

This chapter describes the changes delivered at General Availability of z/VSE 6.1.

It contains these topics:

Installation of z/VSE 6.1

z/VSE 6.1 requires initial installation. Fast Service Upgrade (FSU) to z/VSE 6.1 is not possible.

z/VSE 6.1 is shipped as English version only.

IPv6/VSE 1.2 is automatically installed during initial installation.

Support of innovative IBM z13 technology

z/VSE 6.1 supports innovative IBM z13 technology:

- Configurable Crypto Express5S for data encryption and SSL acceleration.
  - z/VSE 6.1 supports the Crypto Express5S adapter in both IBM Common Cryptographic Architecture (CCA) coprocessor and accelerator mode. It can be used in an LPAR and z/VM guest environment. This support is also available on z/VSE 5.1 and z/VSE 5.2 with PTFs for APAR DY47586.
  - More than 16 domain support allows a Crypto Express5S adapter to be shared across more than 16 domains, up to the maximum number of LPARs on the system. Users will have the flexibility of mapping individual LPARs to unique crypto domains or continuing to share crypto domains across LPARs. In order to use a Crypto Express5S adapter in any LPAR of the system when running z/VSE 5.1 or z/VSE 5.2 requires the PTFs for APAR DY47586.
- FICON Express16S feature.

  The introduction of FICON Express16S on the IBM z13 offers additional growth opportunities for the storage area network (SAN). FICON Express16S supports a link data rate of 16 gigabits per second (Gbps) and also supports autonegotiation to 4 or 8 Gbps for synergy with existing switches, directors, and storage devices. z/VSE 5.1 and later transparently supports the FICON Express16S features in two modes of operation:

- CHPID type FC when utilizing FICON or Channel-to-Channel (CTC).
- CHPID type FCP for support of FCP-attached SCSI disks.

CICS Transaction Server for z/VSE 2.1

The z/VSE 6.1 package is delivered with CICS Transaction Server for z/VSE 2.1 (CICS TS for z/VSE 2.1), a new version of CICS TS. Note that the CICS Transaction Server for VSE/ESA V 1.1.1 can no longer be used with z/VSE 6.1.

New capabilities provided with CICS TS for z/VSE V2.1 are:

- CICS Explorer update and control capabilities for CICS resources.
- EXEC CICS Channel and Container API to overcome the COMMAREA limitation.
- Customer requirements.

A detailed description can be found in the CICS Transaction Server for z/VSE, Enhancements Guide.

With CICS TS for z/VSE 2.1 these requirements were implemented:

- Support for EXEC CICS INQUIRE SYSTEM OSLEVEL.
- Millisecond option added to various EXEC CICS commands.
- Provide SSL Cipher Suites AES 128 and AES 256 for CICS WEB Support.

CICS Explorer

The IBM CICS Explorer (CICS Explorer) is a workstation-based CICS tool that allows you to monitor your CICS systems. This monitoring support is available with z/VSE since z/VSE 5.1. With CICS Transaction Server for z/VSE 2.1 (CICS TS for z/VSE 2.1) as part of z/VSE 6.1 the CICS Explorer has been extended to provide control/update capabilities. These capabilities are available for all CICS resources which formerly could only be monitored. For more details see the CICS Transaction Server for z/VSE, Enhancements Guide.

Channel and Container

Instead of using a communication area (COMMAREA), a more modern method of transferring data between CICS programs is to use a channel (and its containers). Channels have several advantages over COMMAREAs. A COMMAREA is limited to 32KB. With channels there is no limitation, except the storage that is available to the CICS partition. The channel and container approach provides an easy and flexible way for exchanging large amount of structured data between CICS programs.

CICS Transaction Server for z/VSE supports channel and containers through the EXEC CICS application programming interface (API) for use within CICS programs. CICS TS for z/VSE supports a subset of the functionality which is available on CICS Transaction Server for z/OS.

Exploitation of IBM System Storage Technology

This is how z/VSE 6.1 exploits IBM System Storage technology:

- IBM System Storage TS7700 Virtualization Engine Release 3.3:

  TS7700 R3.3 supports the use of TS1150 tape drives as physical, back-end tape drives for TS7700 tape-attached systems, and the use of the IBM Security Key Lifecycle Manager (SKLM) for disk-based encryption in encryption-capable TS7700 systems. Logical volume sizes of up to 25 GB, and additional virtual tape drives were introduced with TS7700 R3.2.

  z/VSE 5.1 and later transparently supports the TS7700 Release 3.3.
- IBM DS8870 Release 7.5:

  IBM DS8870 Release 7.5 delivers expanded connectivity with support for 16 Gbps FCP/ FICON host adapters and other enhancements.

  z/VSE 5.1 and later transparently supports the DS8870 Release 7.5 for use with ECKD and FCP-attached SCSI disks.
- IBM FlashSystem V9000 for use with FCP-attached SCSI disks:

  IBM FlashSystem V9000 is a comprehensive all-flash enterprise storage solution. FlashSystem V9000 delivers the full capabilities of IBM FlashCore technology plus a rich set of storage virtualization features. z/VSE 5.1 and later transparently supports IBM FlashSystem V9000 for use with FCP-attached SCSI disks.

IBM TCP/IP for z/VSE V2.1 for enhanced security

IBM TCP/IP for z/VSE 2.1 is a new level set that integrates all prior maintenance.

- This new version adds a white list firewall feature to provide a more secure environment.
- In addition it contains internal processing improvements to provide a more stable and efficient stack as well as many functional enhancements based upon user requests. These are:
  - External partition socket requests will be using cross memory services to improve efficiency.
  - New utilities will be provided to externalize applications for automation and TN3270 services.
  - The TLS/SSL cryptography will be enhanced to support RFC5746. This will allow the usage of TLS extensions to prevent the handshake renegotiation security exposure.

IBM IPv6/VSE V1.2 for enhanced security, and increased network availability

These are some of the highlights of the new IPv6/VSE release:

- Basic firewall support:
  - The basic firewall security facility examines IPv4 packets and IPv6 Ethernet frames for basic types of information. The source IP address, packet protocol, TCP or UDP port numbers, and ICMP message type and code can be verified and processing accepted or denied.
- Automatic OSA Express device failover using HOTSWAP devices for high availability:

  - IBM IPv6/VSE 1.2 allows users to automatically recover from OSA Express device failures by utilizing a backup HOTSWAP device. This can dramatically reduce the duration of network interruptions.
- Improved stack CPU optimization:
  - This can result in reduced CPU utilization by the stack partitions and thus may improve network throughput.
- Improved SSL support including TLS1.2 and DH/ECC sockets:
  - IBM IPv6/VSE V1.2 supports the latest updates in the IBM OpenSSL port, including support for TLSV1.2 and DH/ECC SSL socket, and all the latest security fixes.
  - The SSL Proxy and Automatic TLS facilities support establishing up to 16 SSL sockets concurrently. This can dramatically improve performance for applications that establish multiple connections to z/VSE including TN3270(E), CICS, and web services applications.
- Virtual IP address support using virtual network interfaces:
  - IBM IPv6/VSE V1.2 supports having multiple IP addresses defined for a single network interface through the use of virtual network interfaces. The virtual network interfaces share a single OSA Express device.

MQ Client Trigger Monitor

IBM WebSphere MQ for z/VSE V3.0 has been withdrawn from service, effective September 30, 2015. However, the IBM WebSphere MQ Client for VSE will continue to be available. Using the WebSphere MQ Client for VSE, a WebSphere MQ application can interact by means of the MQ API with one or more WebSphere MQ servers on any supported platform and connect to their queue managers. Therefore, the MQ Client for VSE may be an alternative for clients currently using the WebSphere MQ for z/VSE server. Unlike the MQ Client packages that are available for Linux, z/OS, and other platforms, the WebSphere MQ Client for VSE does not contain a trigger monitor. Triggering is a must-have feature to process asynchronous messages. It allows the system to start (trigger) an application when a message arrives on a queue of a WebSphere MQ server. The MQ Client Trigger Monitor closes this gap. It triggers a z/VSE CICS application when messages arrive on a queue of a WebShere MQ Server. Adding trigger functionality for the WebSphere MQ Client for VSE fulfills user requirements and may enable clients to use the WebSphere MQ client instead of the WebSphere MQ Server on z/VSE.

Networking enhancements

Configurable output buffers for HiperSockets and OSA Express devices for improved TCP/IP throughput:

- Best performance can be achieved when data always is delivered successfully without the need of resending. z/VSE uses a default of eight QDIO (Queued Direct I/O) output buffers. This might not always be sufficient. z/VSE 6.1 allows users to configure up to 64 QDIO output buffers for HiperSockets (CHPID type IQD) and OSA-Express (CHPID types OSD and OSX) devices. To ease the configuration, skeleton SKOSACFG in ICCF library 59 can be used. Additional QDIO output buffers might require users to increase the size of the TCP/IP partition.

Products not supported with z/VSE 6.1

These are products which are not supported with z/VSE 6.1 onwards:

- CICS TS for VSE/ESA V1.1.1. (The replacement product is CICS TS for z/VSE V2.1.)
- CICS/DDM is not supported with CICS TS for z/VSE V2.1.
- CICS/VSE V2.3. (The replacement product is CICS TS for z/VSE V2.1.)
- DL/I DOS/VS V1.10, DL/I VSE V1.11. (The replacement product is DL/I VSE V1.12.)
- VisualAge Generator Server V1.2. (The replacement product is IBM Rational COBOL Runtime for z/VSE V7.5.)
- IBM WebSphere MQ for z/VSE V3.0. (The IBM WebSphere MQ Client for VSE will continue to be available. In addition the MQ Client Trigger Monitor is provided with z/VSE 6.1.)

Products not orderable with z/VSE 6.1

These are products which are not orderable with z/VSE 6.1 onwards:

- IBM Advanced Communication Function/System Support Program (ACF/SSP) for VSE/ESA V4.8.1.
- IBM Advanced Communication Function/Network Control Program (ACF/NCP) V7.8.1.
- IBM X.25 NCP Packet Switching Interface (NPSI) V3.9.0.
- IBM Overlay Generation Language (OGL/370) V1.1.0.
- NFS for IBM TCP/IP for VSE/ESA - Feature S001G2C.
- WebSphere MQ for z/VSE - V3.0.0 5655-U97.
- EP (Emulation Program) - V1.14 5735-XXB.

Items no longer supported with z/VSE 6.1

These are the items no longer supported with z/VSE 6.1 onwards:

- Migration question

  At initial installation the user is asked if he wants to migrate from previous systems :

  – Hardware configuration.

  – User profiles.

  This has been dropped.
  Message IESI0063D, which asks if DB2 should be installed during initial installation, is dropped as well.
- Choice of naming conventions for VTAM resources

  z/VSE offers the following naming conventions for VTAM resources:

  – Two byte subarea addressing (up to 255 subareas are possible) .

  – Extended subarea addressing (allowing more than 255 subareas).

  The IUI panel asking the user to select the wished naming convention will not be displayed any more. Extended subarea addressing is used as default.
- The IUI dialog for transaction security via DTSECTXN has been removed.

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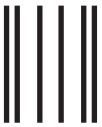

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