# IBM z/VSE Central Functions Version 9.2 - z/VSE Version 5.2

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## At a glance

IBM® z/VSE® Version 5.2 is designed to:

- Support innovative IBM zEnterprise® EC12 and IBM zEnterprise BC12 technology:
  - Configurable Crypto Express4S feature
  - OSA-Express5S features
- Support enhanced IBM System Storage® options:
  - Systems Managed Encryption with IBM System Storage TS1140
  - IBM System Storage TS7700 Virtualization Engine Release 3.1
  - IBM System Storage DS8870 Release 7.2 (ECKD$^{TM}$ and FCP-attached SCSI disks)
  - Upgrade of the z/VSE support for the Parallel Access Volume (PAV) feature
  - Ability to use FCP-attached SCSI disks with:
    -- IBM Storwize® V5000 Midrange Disk
    -- IBM Storwize V3700 Entry Disk
- Exploit 64-bit virtual storage capabilities:
  - Virtual disk in 64-bit virtual storage
  - Allow 64-bit Input/Output (I/O) processing for applications
- Extend the z/VSE networking and connectivity options in heterogeneous environments:
  - Addition of IPv6 support to selected z/VSE components
  - "Enhanced" CICS® Listener support
  - Literal encoding style for z/VSE web services
- Provide security enhancements:
  - OpenSSL release 1.0.1e integration
  - Basic Security Manager (BSM) and Lightweight Directory Access Protocol (LDAP) enhancements
- Add ease-of-use functionality:
  - Tapeless initial installation
  - Stacking tape support

Selected enhancements are also available with PTFs for z/VSE V5.1, or z/VSE V4.3.

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

## Overview

z/VSE V5.2 is the newest release of z/VSE and is intended to be the base for future z/VSE enhancements.

This ongoing evolution of z/VSE, together with z/VSE's support of the newest IBM zEnterprise servers and IBM System Storage technology, is designed to help clients protect their investments in z/VSE, grow their workloads, or consolidate their systems. It demonstrates again IBM's commitment to z/VSE clients.

With the exploitation of z/VSE's 64-bit virtual support, z/VSE V5.2 builds upon the capabilities that were introduced with z/VSE V4 (z/Architecture® mode, 64-bit real addressing, more tasks, virtual storage constraint relief) and continued with z/VSE V5.1 (64-bit virtual addressing).

z/VSE V5.2 continues the focus on ease of use, scalability, networking, security, and connectivity between z/VSE and Linux™ on System z®.

**Enhancements for z/VSE V5.2 include:**

- **Support for innovative IBM zEnterprise EC12 and IBM zEnterprise BC12 technology**
  - Configurable Crypto Express4S feature
  - OSA-Express5S features
- **Support for enhanced IBM System Storage options**
  - Systems Managed Encryption with IBM System Storage TS1140
  - IBM System Storage TS7700 Virtualization Engine Release 3.1
  - IBM System Storage DS8870 Release 7.2 (ECKD and FCP-attached SCSI disks)
  - Upgrade of the z/VSE support for the Parallel Access Volume (PAV) feature
  - Ability to use FCP-attached SCSI disks with:
    -- IBM Storwize V5000 Midrange Disk
    -- IBM Storwize V3700 Entry Disk
- **Virtual disk in 64-bit virtual storage**

  z/VSE V5.2 is designed to transparently create a virtual disk (VDISK) in 64-bit virtual storage. This overcomes the 2 GB limitation when creating a VDISK in a data space. It may help clients who want to keep more data in memory to benefit from the increased processor storage and processor speed available with the latest IBM zEnterprise servers.

- **Networking, security, and connector enhancements**
  - IPv6 support added to selected z/VSE components
  - "Enhanced" CICS Listener support
  - Further Basic Security Manager (BSM) and Lightweight Directory Access Protocol (LDAP) functions
  - Integration of OpenSSL release 1.0.le
  - Literal encoding style for z/VSE web services
- **Ease of use functionality**
  - Tapeless initial installation

    Clients who use a tape for initial installation only, may no longer be forced to include a physical tape device into the z/VSE configuration. z/VSE V5.2 is designed to create an installation disk from a z/VSE DVD image or Internet delivery and then perform initial installation using this installation disk. z/VSE

V5.2 fulfills the statement of direction in Software Announcement 213-090, dated April 02, 2013.

– Stacking tape support

Stacking tape support may ease the migration of "older" tapes. It exploits the capacity of tape volumes such as TS1140 and thus may reduce costs.

**z/VSE V5 supports IBM System z servers:**

- IBM zEnterprise EC12 (zEC12)
- IBM zEnterprise BC12 (zBC12)
- IBM zEnterprise 196 (z196)
- IBM zEnterprise 114 (z114)
- IBM System z10® Enterprise Class (z10™ EC) and IBM System z10 Business Class (z10 BC)
- IBM System z9® Enterprise Class (z9® EC) and IBM System z9 Business Class (z9 BC)

z/VSE Version 5 executes in z/Architecture mode only. z/VSE Version 5 can run in logical partition (LPAR) mode, or as a guest in any supported z/VM® release. z/VSE V5.2 is the preferred follow-on VSE product for clients with z/VSE V5.1, z/VSE V4, z/VSE V3, or VSE/ESA installed. Clients may choose to use the Fast Service Upgrade (FSU) process when migrating from z/VSE V4.3 or z/VSE V5.1.

z/VSE V5.2 offers Midrange Workload License Charge (MWLC) pricing metrics, including a subcapacity option, for zEnterprise EC12, zEnterprise 196, System z10, and System z9 servers. IBM offers Advanced Entry Workload License Charge (AEWLC) pricing metrics, including a subcapacity option, for the zBC12 and z114 servers. The entry models (capacity setting A01) of the zBC12, z114, z10 BC, and z9 BC will be priced using zSeries Entry Charge (zELC) for their IBM monthly license charge software.

## Key prerequisites

Refer to the Hardware requirements , Software requirements , and Planning information sections for details.

## Planned availability date

April 25, 2014

## Description

z/VSE V5.2 enhancements include:

**Support of innovative IBM zEnterprise EC12 and IBM zEnterprise BC12 technology**

z/VSE V5.2 is designed to bring the value of selected IBM zEnterprise technology to z/VSE clients.

- **Configurable Crypto Express4S feature**

  The Crypto Express4S feature is exclusive to the zEC12 and zBC12 environment. z/VSE V5.2 supports the Crypto Express4S feature in both IBM Common Cryptographic Architecture (CCA) coprocessor and accelerator mode. It can be used in an LPAR and z/VM guest environment. The support is also available for z/VSE V5.1 with PTF UD53863 (APAR DY47414).

- **OSA-Express5S features - an Ethernet technology refresh**

  The OSA-Express5S family of features is exclusive to the zEC12 and zBC12 environment. z/VSE supports OSA-Express5S features in five modes of operation:

  – CHPID type OSC for TN3270E and non-SNA DFT 3270 emulation
  – CHPID type OSD for TCP/IP traffic with exploitation of two ports per CHPID
  – CHPID type OSE for SNA and TCP/IP passthru traffic with exploitation of two ports per CHPID
  – CHPID type OSX for access control to the IntraEnsemble Data Network (IEDN) (z/VSE V5.1 and later)
  – CHPID type OSN for OSA-Express for NCP

- **Availability of Open Systems Adapter Support Facility (OSA/SF) on the Hardware Management Console (HMC)**

  OSA/SF on the HMC is exclusive to the zEC12 and zBC12 environment and supports OSA-Express5S and OSA-Express4S features. It is required for the OSA-Express5S features.

  OSA/SF on the HMC makes the OSA/SF software component of z/VSE obsolete. This allows clients to include OSA-Express4S and later features in their configuration without the need to install software service for OSA/SF first.

- **Absolute physical capacity limit**

  Processor Resource/Systems Manager™ (PR/SM™) and the Hardware Management Console (HMC) of the zEC12 and zBC12 allow clients to limit the amount of physical processor capacity consumed by an individual logical partition (LPAR). This is transparently reflected in the subcapacity (SCRT89) records generated by the z/VSE Capacity Measurement Tool (CMT) for all z/VSE releases.

  It is also shown by the z/VSE Query Virtual Server (QVS) API which may be used for licensing purposes. The QVS support is also available for z/VSE V5.1 with PTF UD53970 (APAR DY47479). Using QVS under z/VM requires APAR VM65360.

**Exploitation of IBM System Storage options**

z/VSE V5.2 is designed to support selected IBM System Storage products and features. Innovative IBM System Storage technology may offer significant value to z/VSE clients.

- **Systems-managed encryption with the IBM System Storage TS1140**

  The IBM TS1140 (3592 Model E07) tape drive is the fourth generation of the highly successful IBM 3592 Enterprise tape drive. The TS1140 is designed to provide higher levels of performance, reliability, and cartridge capacity than the TS1130 (3592 Model E06) tape drive. The TS1140 also supports drive-based data encryption to help protect your data. For details see Hardware Announcement 111-087, dated May 09, 2011. z/VSE V5.2 supports the TS1140 for use in an LPAR and a z/VM guest environment. Usage of the TS1140 encryption capabilities is identical to that of the TS1130. The support is also available for z/VSE V5.1 with PTF UD53931 (APAR DY47436).

- **IBM System Storage TS7700 Virtualization Engine Release 3.1**

  IBM Virtualization Engine TS7700 Release 3.1 delivers 8 Gb FICON® adapter support, increased capacity, and other system enhancements. z/VSE V4.3 and later transparently supports the TS7700 Release 3.1.

- **IBM DS8870 Release 7.2**

  IBM DS8870 systems are designed to offer better performance with new processors, microcode, drive options, and advanced functions to enhance data protection. z/VSE V4.3 and later transparently supports the DS8870 Release 7.2 for use with Extended Count Key Data (ECKD) and FCP-attached Small Computer System Interface (SCSI) disks.

- **Upgrade of the z/VSE Parallel Access Volume (PAV) support with improved recovery capabilities**

  PAV is an optional licensed feature of the IBM System Storage DS8000® series. It enables a single System z server to simultaneously process multiple I/O operations to the same volume. PAV may result in a performance improvement compared to traditional I/O and may provide enhanced throughput. The z/VSE PAV support, which was introduced with z/VSE V4.2, allows accessing an ECKD-type volume with multiple concurrent requests. z/VSE V5.2 now provides an upgrade of the PAV support with improved recovery capabilities.

- **IBM Storwize V5000 Midrange Disk**

  Storwize V5000 is a highly flexible, easy-to-use, virtualized data storage for mid-sized businesses. z/VSE V4.3 and later transparently supports the Storwize V5000 for use with FCP-attached SCSI disks.

- **IBM Storwize V3700 Entry Disk**

  Storwize V3700 is an easy-to-use entry-level disk storage system with advanced capabilities for small and medium businesses. z/VSE V4.3 and later transparently supports the Storwize V3700 for use with FCP-attached SCSI disks.

**Exploitation of 64-bit virtual capabilities**

64-bit virtual addressing was introduced at general availability of z/VSE V5.1. z/VSE V5.2 is designed to further exploit 64-bit virtual storage for z/VSE functions.

- **Virtual disk in 64-bit virtual storage**

  z/VSE V5.2 transparently creates a virtual disk (VDISK) in 64-bit virtual storage. The maximum size of a VDISK in 64-bit virtual storage is 4 GB. This overcomes the 2 GB limitation when creating a VDISK in a data space. It may help clients who want to keep more data in memory to benefit from increased processor storage and processor speed available with the latest IBM zEnterprise servers.

  Dependent on the client's system configuration the virtual disk is transparently placed into 64-bit virtual storage.

- **64-bit Input/Output (I/O) processing for applications**

  With 64-bit I/O processing, clients have the flexibility to use 64-bit virtual storage for I/O buffers. 64-bit I/O processing is also available for z/VSE V5.1 with PTF UD53915/UD53917/UD53916 (APAR DY47419).

**Networking enhancements**

- **Exploitation of IPv6 support**

  The IPv6 TCP/IP stack, provided by IBM IPv6/VSE V1, and the Fast Path to Linux on System z function (LFP) allow z/VSE clients to participate in an IPv6 network. LFP is a z/VSE function that allows selected TCP/IP applications to communicate with a TCP/IP stack on Linux on System z without requiring a TCP/IP stack on z/VSE.

  z/VSE V5.2 is designed to add IPv6 support to selected z/VSE components to give clients more flexibility when configuring their network.

  IPv6 support is added to:

  – z/VSE e-Business connectors

    The z/VSE e-Business connectors can transparently be used in an IPv6 network and allow both IPv6 and IPv4 connections. To achieve transparency, the connectors use IPv6 or IPv4 features depending on the TCP/IP stack configuration. These are the z/VSE connectors that were enhanced:

    z/VSE Connector Server and Client, z/VSE Script Server and Client, z/VSE VSAM Redirector, z/VSE HTTP Client and SOAP Client, z/VSE LDAP Client, z/VSE Monitoring Agent and Trap Client.

– z/VSE Virtual Tape (VTAPE) support

A VTAPE file can also reside on a remote host system, such as Microsoft™ Windows™, Linux, and others. The VTAPE file is accessed using TCP/IP connectivity. With z/VSE V5.2, the remote system can now be part of an IPv6 network. The VTAPE START command has been enhanced and allows clients to specify an IPv6 address, an IPv4 address, or a host name to identify the remote system.

- **CICS Listener (EZA CICS Listener)**

  – The CICS Listener (EZA CICS Listener) now provides enhanced Listener support as known from z/OS®. The client is no longer required to transmit the transaction ID of the child server transaction. Instead, the enhanced Listener starts the CICS child server transaction based on information in the Listener configuration file, which provides more flexibility than changing a client program.
  – The configuration dialog for the CICS Listener has been enhanced to:

    -- Provide a CONVERT function, that converts a standard Listener to an enhanced Listener and vice versa.
    -- Select the TCP/IP stack that is to be used with the CICS Listener, which is especially helpful when several CICS Listeners are active.
  – The CICS Listener is designed to support the IPv6 TCP/IP protocol in addition to the IPv4 protocol. For each CICS Listener, the customer can configure which protocol is to be used.

**Security enhancements**

- **OpenSSL release 1.0.1e integration**

  OpenSSL is an open source project that provides a Secure Sockets Layer (SSL) and Transport Layer Security (TLS) implementation, and key management utilities. See

  http://www.openssl.org

  for details. OpenSSL release 1.0.1e provides support for TLS V1.2 for highest available security.

  To allow z/VSE clients and vendors to use OpenSSL for their applications, and thus benefit from OpenSSL functionality, z/VSE V5.2 is designed to provide an SSL implementation that integrates OpenSSL release 1.0.1e.

  The z/VSE SSL implementation also provides a z/OS compatible SSL programming interface, which allows existing z/VSE SSL applications, such as the z/VSE Connector Server or LDAP client, to run transparently with OpenSSL.

  Although OpenSSL provides software-based encryption for supported algorithms and key lengths, the z/VSE implementation transparently uses cryptographic hardware when available for improved performance. Thus clients benefit from IBM zEnterprise cryptographic hardware and its acceleration of cryptographic operations.

  The z/VSE SSL implementation is delivered as part of the z/VSE Cryptographic Services component. The OpenSSL 1.0.1e upgrade is also available for z/VSE V5.1 with PTF UD53983 (APAR DY47499).

  OpenSSL on z/VSE is exploited by IBM IPv6/VSE. TLS V1.2 support in IPv6/VSE requires PTF UK98397 (APAR PM98875).

- **LE/C Multiplexer**

  The LE/C Multiplexer controls access to the TCP/IP C-socket API depending on a given SYSID. With z/VSE V5.2, a new parameter SSLPHASE allows you to use OpenSSL independent of the TCP/IP stack. A sample for configuring the LE/C Multiplexer is provided with skeleton EDCTCPMC in ICCF library 62.

- **Basic Security Manager (BSM) support for AUDITOR ID**

  Check and balance is a common concept for security. The BSM in z/VSE V5.2 is designed to use this concept and optionally separates the auditor function from the administrator function. The BSM introduces a new user ID of type AUDITOR and allows you to assign the administration of the system-wide audit options to the AUDITOR only. The administrator keeps the responsibility to process logging information, but has no auditor rights any longer. The Interactive User Interface (IUI) of z/VSE is extended to define the AUDITOR ID.

- **LDAP enhancement**

  With z/VSE V4.2 LDAP sign-on support for a CICS TS environment was introduced. z/VSE V4.3 added LDAP sign-on support for a batch environment. z/VSE V5.2 is now designed to give clients the flexibility to inspect and administrate the LDAP directory on the LDAP server from within the z/VSE system. Batch tools are provided that support these LDAP functions on the LDAP directory:

  – LDAP search to perform a search using specified filters

  – LDAP add to add an entry

  – LDAP modify to modify an entry

  – LDAP delete to delete one or more entries

- **z/VSE SNMP Monitoring Agent enhancement**

  Simple Network Management Protocol (SNMP) Version 1 provides a security feature, the so-called community string, which is part of each SNMP packet. This community string is transferred without encryption and can therefore be read when network traffic is scanned. To enhance the security of the Monitoring Agent, incoming packets are processed only if the source IP address matches rules defined in the Monitoring Agent's configuration file.

  The z/VSE SNMP Monitoring Agent was introduced with z/VSE V4.3.

**z/VSE connectors enhancements**

- **Web services**

  The z/VSE Simple Object Access Protocol (SOAP) implementation integrates z/VSE in a heterogeneous environment using web services. z/VSE V5.2 is designed support the literal encoding style, in addition to the already supported SOAP-encoding style. With literal encoding an XML schema is used for data translation. Both the sender and the receiver of a SOAP message must know the schema and must use the same rules to translate the data. With this enhancement the z/VSE SOAP implementation now supports:

  - RPC-type web services using SOAP-encoding style

  - RPC-type web services using literal encoding style

  Literal encoding style became more important during the last years. The z/VSE support allows a widened number of users to use web services with z/VSE and thus even better integrates z/VSE in a heterogeneous environment.

- **Use of VSE/POWER eXtended Event Message (XEM) support**

  The z/VSE Java-based connector provides an interface for Java™ applications to utilize the new VSE/POWER XEM support. It provides a sample that shows how to use this interface.

  XEM support enables a VSE/POWER Spool Access Support (SAS) application to track all VSE/POWER queue activity.

**Ease-of-use functionality**

- **Tapeless initial installation**

  Clients who use a tape for initial installation only, may no longer be forced to include a physical tape device into the z/VSE configuration. z/VSE V5.2 is designed to allow initial installation of z/VSE from an installation disk in addition to tape installation. The installation disk must be an ECKD disk of type 3390. This fulfills the statement of direction in Software Announcement 213-090, dated April 02, 2013.

  z/VSE V5.2 provides utilities to create an installation disk, for both the LPAR and the z/VM CMS environment. These utilities are provided to clients who choose DVD or Internet (ShopzSeries) delivery. In an LPAR environment the installation disk can be created directly from the DVD using a 'Load' function of the Hardware Management Console (HMC) or Service Element (SE).

  To create the installation disk in z/VM, the utilities and the z/VSE base tape image have to be transferred to the z/VM CMS guest first. The installation disk is identical, no matter in which environment it was created.

- **Stacking tape support**

  z/VSE V5.2 is designed to provide stacking tape support. A stacking tape is a standard labeled tape of type 3592 on which several tape images can be stored. Stacking tape support is especially helpful for tape migration of "older" tapes, such as 3480 or 3490. Up to 800 tapes of, for example, type 3480 can be stored on one high-capacity 3592 tape. This helps to exploit the capacity of tape volumes such as TS1140 and thus reduces costs.

  Stacking tape support is based on z/VSE's virtual tape (VTAPE) support. A stacking tape is implemented as multiple virtual tape files each one containing one single tape image. The Job Control VTAPE command has been extended to support stacking tapes. New VTAPE functions INIT and LIST are provided to initialize a stacking tape and to list its contents.

- **Initial installation without locally attached VTAM® terminals**

  When TCP/IP is configured during initial installation the system no longer requires a VTAM terminal, but accepts a TCP/IP Telnet terminal. This simplifies the hardware configuration, especially in an LPAR environment.

**Component changes**

Basic operating system and component improvements are often driven by requirements submitted by customers, for example through

https://www.ibm.com/systems/z/os/zvse/contact/requirement.html

and/or user groups. z/VSE V5.2 endeavors to address many of these requests. This section cannot cover each and every improvement. However, a few examples are described below.

**VSE/POWER**

- eXtended Event Message (XEM) support

  VSE/POWER already provides job notification messages that allow a VSE/POWER Spool Access Support (SAS) application to monitor the jobs it has submitted. VSE/POWER now generates on request eXtended Event Messages that enable a SAS application to track all VSE/POWER queue activity.

  Since z/VSE V4.3, VSE/POWER can redirect punch output into a VSE/AF library member for later use in a job via * $$ SLI. Now the * $$ SLI function has been enhanced by operand DEL=YES to delete the VSE/AF library member after it has been inserted.

### LE/VSE

- LE/VSE provides the new CICS Run-Unit Work-Area (RUWA) trace facility via the LE/VSE-supplied CRUT transaction. This function provides information about the run unit storage requirements of an LE/VSE CICS program.
- CEETRACE tool enhancements include:
  - COBOL/VSE application tracing performance improvements
  - An updated exit interface, tracing operational control using SETPARM, and a CICS refresh capability

### VSE Fast Copy

The Fast Copy control statement DUMP now allows users to specify OPTIMZE=5 for improved performance compared to OPTIMIZE=4. With OPTIMIZE=5, Fast Copy reads 15 tracks with one Input/Output (I/O) operation, thus reducing the number of I/O operations.

### VSE/VSAM

VSE/VSAM has been enhanced to use the z/VSE batch security for the IDCAMS utility. System administrators can restrict the usage of IDCAMS commands by defining user rights in the new IDCAMS.GENERAL profile of the resource class FACILITY.

### Dump enhancement for 64-bit virtual storage

A new dump option allows users to better handle system dumps that include data in 64-bit virtual storage.

### Section 508 of the US Rehabilitation Act

z/VSE V5 is capable as of April 25, 2014, when used in accordance with IBM's associated 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.

## Product positioning

This new release provides a natural advancement of the z/VSE environment, confirming IBM's ongoing support and commitment.

The newest member of the IBM zEnterprise family, the zBC12, provides significant improvements in availability, security, performance, and total system scale to support continued growth. z/VSE V5.2 is exploiting selected new IBM zEnterprise technology in scope of our strategy to "Protect and Extend" in both traditional and new workloads including consolidation, cloud, mobile, and analytics.

Install from DVD delivers on the statement of direction included in Software Announcement 213-090, dated April 02, 2013 and allows initial installation of z/VSE without requiring a physical tape. This vital extension is part of the successful and continued implementation of the z/VSE strategy to "Protect, Integrate, and Extend."

With added IPv6 enablement to z/VSE functions, and z/VSE Connector enhancements, IBM continues the long-term exploitation of the rich set of hybrid computing options for z/VSE clients.

With OpenSSL, support of the zEnterprise Crypto Express4S card, and the extended security of VSAM commands, z/VSE V5.2 continues the focus on data protection.

## Statement of direction

IBM makes the following statements of general direction:

- IBM intends to provide new capability in a future release of IBM CICS Transaction Server for z/VSE, to provide: (i) Updates to CICS resources for CICS Explorer®, and (ii) Channels and Containers to enable the transfer of large amounts of data between CICS applications.
- IBM intends to rename the product z/VSE Central Functions to z/VSE in a new z/VSE version.
- z/VSE V5.2 will be the last release that supports IBM System z9. Future releases of z/VSE will support IBM System z10 and higher.

Stabilization of support and discontinued functions:

- CICS DDM: Support for CICS Distributed Data Management (DDM) is stabilized in CICS TS for VSE/ESA V1.1.1. In a future release of CICS TS for z/VSE, IBM intends to discontinue support for CICS DDM.

IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion. Information regarding potential future products is intended to outline our general product direction and it should not be relied on in making a purchasing decision. The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code, or functionality. Information about potential future products may not be incorporated into any contract. The development, release, and timing of any future features or functionality described for our products remain at our sole discretion.

## Hardware and software support services

### SmoothStart/installation services

IBM SmoothStart and Installation Services are not provided.

## Reference information

Refer to Software Announcement 213-090, dated April 02, 2013.

## Availability of national languages

```
Description                Availability date  Language

z/VSE Central Functions V9.2   04/25/14           English
z/VSE Central Functions V9.2   05/23/14           Kanji
```

## Program number

```
Program                 Program
number        VRM       name

5686-CF9      920       z/VSE Central Functions
```

## 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=214-074

# IBM z/VSE Version 5 product content

### z/VSE Version 5 base programs

The following is a complete list of z/VSE Version 5 base programs, including their release/modification levels.

Note that z/VSE is the successor to IBM's VSE/ESA product and that many products and functions supported on z/VSE may continue to use VSE/ESA in their product names.

```
                             Version/
                             Release/       Program
Program name                 Modification   number       Notes

z/VSE Central Functions      9.02.00        5686-CF9      (1)
High Level Assembler for     1.06.00        5696-234      (1)
  z/OS, z/VM, z/VSE
VSE/EREP                     3.05.00        5656-260      (2)
VSE/ICKDSF                   1.17.00        5747-DS2      (2)
CICS Transaction Server for
  VSE/ESA                    1.01.01        5648-054
ACF/VTAM for VSE/ESA         4.02.00        5686-065
 - Client/Server (CS)
 - Multi Domain  (MD)
 - Inter Enterprise (IE)
DITTO/ESA for VSE            1.03.00        5648-099
TCP/IP for VSE/ESA           1.05.00        5686-A04
 - Application Pak
 - NFS Feature                                           (3)
 - GPS Feature                                           (3)
DB2 Server for VSE and VM    7.05.00        5697-F42
 - DataPropagator            7.04.00
DB2 Client Edition for VSE   7.05.00        5697-F42

Note:    (1)   Mandatory product, not selectable.
               All others are optional. Some may have
               commercially available alternatives.
         (2)   No-charge product, not selectable.
         (3)   NFS/GPS require the Application Pak.
```

### z/VSE Version 5 optional programs

The following is a complete list of z/VSE Version 5 optional programs, including their release/modification levels.

```
                             Version/
                             Release/       Program
Program Name                 Modification   number       Notes

Optional z/VSE Base Features:

Encryption Facility for z/VSE 1.02.00       5686-CF9
High Level Assembler Tool Kit 1.06.00       5696-234
DITTO/ESA for VSE, VM Option  1.03.00       5648-099
ACF/VTAM Version 4 VM Options 4.02.00       5686-065
 - Client/Server (CS)
 - Multi/Domain  (MD)
 - Inter/Enterprise (IE)
ACF/VTAM APPC for VM                                      VM-format
```

```
DB2 Server for VSE and VM       7.05.00      5697-F42    NLV
 - Data Restore Feature
 - Control Center Feature
 - QMF™ for VSE                                          Base and NLV
 - QMF for Windows                                       Base and NLV
DB2 Client Edition for VSE      7.05.00      5697-F42    NLV


System Control and Networking:

IPv6/VSE                        1.01.00      5686-BS1
VSE/ACLR                        1.02.01      5746-XE7

Database and Utilities:

DL/I VSE                        1.12.00      5746-XX1
CICSVR/VSE                      1.02.00      5686-011
DFSORT/VSE                      3.04.00      5746-SM3

Network Control - Current:

ACF/SSP                         4.08.01      5686-064
ACF/NCP for IBM 3745            7.08.01      5648-063
X.25 NPSI for ACF/NCP Version 7 3.09.00      5688-035
EP V1 for ACF/NCP Version 7     1.14.00      5735-XXB

Languages and Compilers:

IBM COBOL for VSE - full function 1.01.00    5686-068
IBM COBOL for VSE - alt. function 1.01.00    5686-068
IBM PL/I for VSE  - full function 1.01.00    5686-069
IBM PL/I for VSE  - alt. function 1.01.00    5686-069
IBM C for VSE/ESA - full function 1.01.00    5686-A01
IBM C for VSE/ESA - alt. function 1.01.00    5686-A01
CCCA for VSE                    2.01.00      5686-A07
IBM Rational® COBOL Runtime for 7.05.00      5648-F66
  z/VSE V7.5
DOS/VS RPG II                   1.03.00      5746-RG1

Application Development:

WebSphere MQ for z/VSE          3.00.00      5655-U97
SDF II                          1.06.00      5746-XXT

Business Professional Support:

GDDM VSE                        3.02.00      5686-057
GDDM IMD                        2.01.03      5668-801
GDDM PGF                        2.01.03      5668-812
GDDM IVU                        1.01.03      5668-723

Advanced Function Printing:

PSF/VSE Comp. Fonts Base        2.02.01      5686-040
AFP Font Collection S/390®      2.01.01      5648-B33
  - incl. fonts
PPFA/370                        1.01.00      5688-190
OGL/370                         1.01.00      5688-191
```

## Technical information

### Specified operating environment

#### *Hardware requirements*

z/VSE V5.2 operates on:

| IBM System z server | LPAR Mode | Guest under z/VM (1) |
|---|---|---|
| IBM zEnterprise EC12 | x | x |
| IBM zEnterprise BC12 | x | x |

```
IBM zEnterprise 196                          x           x
IBM zEnterprise 114                          x           x
IBM System z10 Enterprise Class              x           x
IBM System z10 Business Class                x           x
IBM System z9 Enterprise Class               x           x
IBM System z9 Business Class                 x           x
```

x: supported
(1) Supported z/VM release required.
z/VM V6 requires IBM System z10, or later.

Hardware-assisted asymmetric key encryption (RSA only) requires:

- Crypto Express4S (in either coprocessor or accelerator mode) on zEC12 or zBC12.
- Crypto Express3 (in either coprocessor or accelerator mode) on z196, z114, z10 EC, or z10 BC.
- Crypto Express2 (in either coprocessor or accelerator mode) on z10 EC, z10 BC, z9 EC, or z9 BC.

4096-bit RSA key support is available with configurable Crypto Express3, or later.

Hardware-assisted symmetric key encryption requires the CPACF feature on an:

- IBM System z9 or later for DES, T-DES, and AES-128
- IBM System z10 or later for AES-256

zEC12, zBC12, z196, or z114 is required for:

- IntraEnsemble Data Network (IEDN) support
- Fast Path to Linux on System z function in an LPAR environment
- z/VSE z/VM IP Assist
- Static power save mode (zEC12, z196 only)

z10, or later is required for:

- Dynamically adding logical CPs without preplanning
- Large page (1 megabyte page) support
- Adjunct processor (AP)-queue interruption facility
- Dynamically adding and removing cryptographic processors
- z/VM mode LPAR

To support new functions and features, machine change levels (MCLs) of System z servers are required.

Descriptions of the MCLs are available through the following resource link

http://www.ibm.com/servers/resourcelink

### Software requirements

Many z/VSE clients choose to run under z/VM for operational flexibility or to supplement the capabilities of z/VSE alone. z/VSE clients who choose to run one or more z/VSE V5 systems as guest systems under z/VM will require a supported z/VM release.

For specific functions and for the most current information on z/VM, refer to

http://www.vm.ibm.com

z/VM allows users to exploit state-of-the-art virtualization technology for one or more of the following reasons:

- Multiple z/VSE production, development, or test images

---

- Multiple Linux on System z images to exploit the potential of Integrated Facility for Linux (IFL) speciality engines
- Both z/VSE and Linux on System z to extend the z/VSE capabilities with Linux on System z
- Both z/VSE and z/OS on a permanent basis

A z/VM mode logical partition (LPAR) allows clients to run z/VSE images on standard CPs and Linux on System z images on IFLs, all in the same z/VM LPAR for enhanced staff productivity and resource efficiency. A z/VM mode LPAR requires z10, or later and z/VM V5.4, or later.

For users running z/VSE V5 together with Linux on System z, a Linux distribution is needed. Linux on System z is not provided by IBM. It must be obtained from an independent distributor. For a current list of Linux on System z distributors, refer to

http://www.ibm.com/systems/z/os/linux/index.html

To use the Linux Fast Path function in an LPAR environment, one of the following Linux distributions is required:

- SUSE Linux Enterprise Server (SLES): SLES 11 SP2 or later
- Red Hat Enterprise Linux (RHEL): RHEL 6.3 or later

Details of the system requirements for both the CICS Explorer and CICS Explorer SDK are available at

http://www.ibm.com/software/htp/cics/explorer/requirements/

Details relating to service and support for CICS Explorer are available at

http://www.ibm.com/support/docview.wss?uid=swg21380083

### Compatibility

Compatibility aspects include:

- z/VSE V5 operates in z/Architecture mode only.
- z/VSE V5 is shipped with a single supervisor only, $$A$SUPI. Starting with z/VSE V4.1, supervisor generation was dropped.
- The support for up to 512 VSE tasks has to be enabled explicitly. A compatibility mode is provided for applications that rely on the old 255 task limit.
- From z/VSE V4.1 onwards, the Label Area must reside on a virtual disk.
- If initial installation is performed, the ACF/VTAM 31-bit I/O buffer support is enabled. It might be necessary to increase the number of copy blocks.
- Starting with z/VSE V4.3, CICS/VSE V2.3 is no longer part of the z/VSE package and the CICS coexistence environment has been removed.
- CICS/VSE V2.3 is no longer supported (EOS).
- CICS/VSE V2.3 cannot be used with z/VSE V5.
- Starting with z/VSE V4.3, DL/I V1.12 is the only DL/I release that can be used with z/VSE. It replaces DL/I VSE V1.11 and DL/I DOS/VS V1.10. DL/I V1.12 cannot be used with CICS/VSE V2.3.
- The Japanese national language version continues to be available.
- The optional feature GPS (shipped with TCP/IP for VSE/ESA) does not support Double Byte Character Set (DBCS) printing.
- z/VSE V5 is not delivered on 3480 tape cartridges.
- z/VSE V5 is no longer delivered on CD-ROM, but on DVD.

### Limitations

Limitations when using the Fast Service Upgrade (FSU) process:

- FSU to z/VSE V5.2 is possible from z/VSE V4.3 and z/VSE V5.1. The FSU process supports two releases only.
- Users migrating from VSE/ESA V2.4, or later can either use FSU several times or do an initial installation.
- Users migrating from a release prior to VSE/ESA V2.4 must use initial installation.
- If ACF/VTAM 31-bit support is not enabled on your current system, you have to enable it explicitly after FSU to z/VSE V5.2. It might be necessary to increase the number of copy blocks.
- On a z/VSE V5 system, neither DL/I V1.11, DL/I DOS/VS V1.10, nor CICS/CSE V2.3 can be used.

### Performance considerations

The overall performance of z/VSE Version 5 depends on the individual hardware and software components and on the specific environment and setup parameters.

In general, the overall CPU requirement of z/VSE V5.2 is similar to that of z/VSE V5.1. This applies as long as the same environment is used (for example, Batch or CICS TS for VSE/ESA V1.1.1) without exploitation of new functions. Actual user experience may vary.

For more information on z/VSE Version 5 performance, visit the z/VSE home page at

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

### User group requirements

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

| | |
|---|---|
| MR1008092213<br>MR1129112136<br>MR0724125527<br>WAVV201205 | Enable Installation from DVD |
| MR1126136148 | SYSLNK use for large object generation |
| MR0327123133 | Allow language identification for fetchable LE/PLI subroutines in CICS |
| MR0215132212 | Load ICONV converter phases through CICS service when running under CICS |
| MR0610106333<br>MR1012065128 | Provide security for IDCAMS commands |
| MR0529076422 | CISIZE for VSAM Implicit Definitions |
| MR0511116615 | Separate libraries for TCP/IP products |
| MR0301135710 | Enhance BSM's TCPIP security exit BSSTISX to support member types |
| MR0909095748 | API for LSR Pool statistics - SHOWCB LSR Interface |
| MR1019116527<br>WAVV201108 | Security of VSAM catalogs |
| MR0506113642 | Hardware configuration: Allow deletion of devices in ranges |
| MR0506113131 | Initial installation without local terminals |
| MR0523123859 | IPv6 support for standard listener via EZAC |

**Planning information**

*Customer responsibilities*

**FSU:** The FSU process is available for users migrating to z/VSE V5.2 from z/VSE V5.1 and z/VSE V4.3.

**Status of z/VSE V4.2:** End of service is effective since October 31, 2012.

**Status of z/VSE V4.3:** End of service has been announced for z/VSE V4.3 and will be effective October 31, 2014.

**Status of CICS/VSE V2.3:** End of service is effective since October 31, 2012.

The end of service dates for z/VSE V4.2 and CICS/VSE V2.3 have been aligned since z/VSE V4.2 is the last z/VSE release that offers CICS/VSE V2.3 as part of the z/VSE package and supports the CICS coexistence environment.

The most current status of z/VSE V4 and z/VSE V5 marketing and support can be found on the z/VSE website at

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

This information is provided for planning purposes only and is not a commitment by IBM. IBM plans are subject to change without notice at any time.

**Products not supported with z/VSE V5:**

- CICS/VSE V2.3. (The replacement product is CICS TS for VSE/ESA V1.1.1.)
- 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.)
- MQSeries® for VSE/ESA V2.1.2. (The replacement product is IBM WebSphere® MQ for z/VSE V3.0.)

Further information on the status of z/VSE and related programs can be found at

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

**Software key management**

**Product access keys from IBM and third-party vendors are different and are not interchangeable.**

The access keys will be generated and delivered automatically from IBM whenever an order is placed for a product or a key protected feature.

**IPv6/VSE V1.1**

IPv6/VSE V1.1 (IPv6/VSE) will be shipped with the z/VSE V5 Extended Base tape. IPv6/VSE requires a unique user access key. IPv6/VSE can be used for 30 days after activation without a key.

The SSL support of IPv6/VSE is also usable with the IPv6/VSE unique access key.

**TCP/IP for VSE/ESA V1.5 (service pack F)**

TCP/IP for VSE/ESA will be shipped with the z/VSE V5 Base tape and is installed during the standard z/VSE V5 installation.

Clients who do not wish to use TCP/IP for VSE/ESA from IBM are requested to run product delete jobs (that are provided with z/VSE V5) after system installation, to delete the product from their system.

TCP/IP for VSE/ESA will be shipped enabled for demonstration mode only. It is not suited for production purposes.

Each feature of TCP/IP for VSE/ESA (Application Pak, NFS, GPS) requires a unique user access key. The license order for TCP/IP for VSE/ESA can be placed either together with any other program with the z/VSE V5 product set or alone at a later point in time.

The SSL support of TCP/IP for VSE/ESA is also key protected and can be used with the key for the Application Pak only. If you use a product key that allows you to run TCP/IP in demonstration mode, you cannot use the SSL support.

**DB2® Server for VSE and VM V7.5, DB2 Server for VSE Client Edition V7.5**

DB2 Server for VSE and VM and DB2 Server for VSE Client Edition use an access/ usage protection method that requires a password key to enable the software function. The password key will be generated and delivered automatically from IBM when an order is placed for DB2 Server for VSE and VM or DB2 Server for VSE Client Edition.

**ACF/VTAM for VSE/ESA V4.2**

ACF/VTAM for VSE/ESA V4.2 uses an access and usage protection method that requires a password key to enable the software function. The following types may be ordered:

- Client/Server (CS)
- Multi Domain (MD)
- Inter Enterprise (IE)

The password key will be generated and delivered automatically from IBM accordingly when an order is placed for ACF/VTAM for VSE/ESA V4.2.

**IBM Customer Key Center**

In exceptional cases (for example, offline situations), it may be necessary to contact the IBM Registration Center by telephone, fax, mail, or email as appropriate. Note that the IBM Registration Center cannot handle product or license orders. You may contact them only if you already have a license for your software program.

```
Mail:        WW Customer Support
             Sortemosevej 21
             Allerod, 3450
             Denmark

Telephone:  - From Australia, call 1-800-992-402
            - From Hong Kong, Malaysia, New Zealand, South Korea
              and China, call +800-539-274-26
            - From all other countries, call our
              non toll-free number +45 48 10 10 61

Email:       wwswkeys@dk.ibm.com
```

*Installability*

The Fast Service Upgrade (FSU) process is available for users migrating from z/VSE V5.1 or z/VSE V4.3.

Initial installation of z/VSE Version 5 is possible on the following disk types:

- 3380
- 3390
- FBA (FBA also includes FCP-attached SCSI disks)

### *Packaging*

Depending on the order, z/VSE V5.2 is packaged and delivered either:

- On three tape volumes (of type 3590 or 3592) containing:
  - z/VSE Base (including z/VSE Base products)
  - z/VSE Extended Base
  - DB2 Server for VM and VSE Help Text
- On DVD containing:
  - DB2 Server for VM and VSE Help Text
  - Readme File
  - z/VSE Base (including z/VSE Base products)
  - z/VSE Extended Base
  - Installation files for tapeless initial installation
- Through electronic delivery (via ShopzSeries) to be downloaded, containing:
  - z/VSE Base (including z/VSE Base products)
  - z/VSE Extended Base
  - Help Text
  - Readme File
  - Installation files for tapeless initial installation

Depending on the order, the package will contain one or more additional cartridges for the z/VSE V5 optional programs, stacked one after the other on the medium.

Program directories and the publication entitlement sets of the ordered z/VSE base and optional programs will be shipped with the z/VSE package. The Program Directory for z/VSE V5 has the following IBM form number: GI11-9703.

For further information, refer to the z/VSE home page

   http://www-03.ibm.com/systems/z/os/zvse/index.html

### Security, auditability, and control

The announced programs use the security and auditability features of the 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

### Order VM SDO and VSE SIPO through the Internet

ShopzSeries provides an easy way to plan and order System z software upgrades. This now includes VM and VSE. Using ShopzSeries, you can quickly generate orders for VM SDOs and VSE SIPOs. Additionally, ShopzSeries will ensure your order is technically correct (that is, ensures any corequisite or prerequisite or incompatibility conditions are resolved to ensure timely order placement and processing). ShopzSeries is available in the United States 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://www.ibm.com/software/ShopzSeries

## New licensees

Orders for new licenses can be placed from April 7, 2014. When z/VSE Central Functions V9.2 is available, z/VSE Central Functions V9.1 will no longer be available.

Registered customers can access IBMLink for ordering information and charges.

New users of z/VSE Central Functions V9.2 should specify:

```
        Type: 5609      Model: ZV5 (SIPO)
        Type: 5686      Model: CF9 (CF)
        Type: 5686      Model: 065 (ACF)
        Type: 5648      Model: 099 (DITTO)
        Type: 5696      Model: 234 (HLASM)
        Type: 5747      Model: DS2 (ICKDSF)
        Type: 5656      Model: 260 (EREP)
        Type: 5686      Model: A04 (TCPIP)
        Type: 5648      Model: 054 (CICS)
        Type: 5697      Model: F42 (DB2)
```

MWLC for z/VSE V5 Basic license structure

| Entitlement identifier | Description | License option/ Pricing metric |
|---|---|---|
| S016TNK | z/VSE Central Functions V9.2 | Basic MLC, MWLC |
| S016TNJ | Encryption Facility for z/VSE V1.2 | Basic MLC, MWLC |

### *Advanced Entry Workload License Charges (AEWLC) basic license*

| Entitlement identifier | Description | License option/ Pricing metric |
|---|---|---|
| S016TNK | z/VSE Central Functions V9.2 | Basic MLC, AEWLC |
| S016TNJ | IBM Encryption Facility for z/VSE V1.2 | Basic MLC, AEWLC |

## Tiered Workload License Charge (TWLC)

To order TWLC software, specify the TWLC monthly charge feature number from the following table.

| Entitlement identifier | Description | License option/ Pricing metric |
|---|---|---|
| S016TNK | z/VSE Central Functions V9.2 | Basic MLC, Tiered WLC |
| S016TNJ | IBM Encryption Facility for z/VSE V1.2 | Basic MLC, Tiered WLC |

### *System z entry license charge (zELC)*

Specify the zELC monthly license option.

| Entitlement identifier | Description | License option / pricing metric |
|---|---|---|
| S016TNK | z/VSE Central Functions V9.2 | Basic MLC, zELC |

```
S016TNJ           IBM Encryption Faci-   Basic MLC, zELC
                  lity for z/VSE V1.2
```

### *Single version charging*

To elect single version charging, the customer must notify and identify to IBM the prior program and replacement program and the designated machine the programs are operating on.

### *Basic machine-readable material*

### *5609-ZV5 System Program Order*

To order, select the desired distribution medium. Basic machine-readable material for the individual licensed base programs will be shipped on 3590 or 3592 tape cartridges, on DVD, or via Electronic Delivery as part of the 5609-ZV5 system program order.

```
Orderable
supply     Description

S016SF1    3590 Tape Cartridge US English
S016SF2    3592 Tape Cartridge US English
S0177NF    DVD US English

S016SBJ    3590 Tape Cartridge Japanese
S016SBK    3592 Tape Cartridge Japanese
S0177NG    DVD Japanese
```

### *Midrange Workload License Charges (MWLC)*

```
MWLC for z/VSE V5 Basic license structure

Entitlement                            License option/
identifier      Description            Pricing metric

S016TNK         z/VSE Central Func-    Basic MLC, MWLC
                tions V9.2

S016TNJ         Encryption Facility    Basic MLC, MWLC
                for z/VSE V1.2
```

### *Unlicensed documentation*

Unlicensed documentation within the z/VSE Version 5 library is available as Adobe™ PDF files. All z/VSE V5 publications are available as an online collection kit that is available in compressed format for download from the IBM Publications Center (SK3T-8348).

The IBM Publications Center is a worldwide central repository for IBM product publications and marketing material. Extensive search facilities are provided, as well as payment options via credit card. Furthermore, a large number of publications are available online in various file formats, which can currently be downloaded free of charge.

**Adobe PDF files:** Publications that are available in PDF format are provided on the online collection kit that is available in compressed format for download from the IBM Publications Center (SK3T-8348).

You can view a PDF file using the Adobe Reader, which is available from the Adobe website at

http://www.adobe.com

You can also print the entire publication or just the section in which you are interested.

**Printed books:** If some books are still available in hardcopy format you can order these books for an additional fee from the IBM Publications Center at

http://www.ibm.com/shop/publications/order

### Licensed documentation

### z/VSE V5 base programs

With the Viewing Program Listings (VPL) system, entitled users are able to view both Program Temporary Fix (PTF) and base program listings electronically. VPL can be accessed via ServiceLink and Dial IBM. For details, ask your IBM representative, or an IBM Business Partner.

### z/VSE V5 optional programs

May be available, as announced, with the individual programming announcements.

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.

## Terms and conditions

The terms for z/VSE Central Functions V9, as previously announced (Software Announcement 213-090, dated April 02, 2013) licensed under the IBM Customer Agreement are unaffected by this announcement.

### IBM Operational Support Services - SupportLine

Yes

## IBM Electronic Services

Electronic Service Agent™ and the IBM Electronic Support web portal are dedicated to providing fast, exceptional support to IBM Systems customers. The IBM Electronic Service Agent tool is a no-additional-charge tool that proactively monitors and reports hardware events, such as system errors, performance issues, and inventory. The Electronic Service Agent tool can help you stay focused on your company's strategic business initiatives, save time, and spend less effort managing day-to-day IT maintenance issues. Servers enabled with this tool can be monitored remotely around the clock by IBM Support, all at no additional cost to you.

Now integrated into the base operating system of AIX® V5.3, AIX V6.1, and AIX V7.1, Electronic Service Agent is designed to automatically and electronically report system failures and utilization issues to IBM, which can result in faster problem resolution and increased availability. System configuration and inventory information collected by the Electronic Service Agent tool also can be viewed on the secure Electronic Support web portal, and used to improve problem determination and resolution by you and the IBM support team. To access the tool main menu, simply type smitty esa_main, and select Configure Electronic Service Agent. In addition, ESA now includes a powerful web user interface, giving the administrator easy access to status, tool settings, problem information, and filters. For more information and documentation on how to configure and use Electronic Service Agent, refer to

http://www.ibm.com/support/electronic

The IBM Electronic Support portal is a single Internet entry point that replaces the multiple entry points traditionally used to access IBM Internet services and support. This portal enables you to gain easier access to IBM resources for assistance in resolving technical problems. The My Systems and Premium Search functions make it even easier for Electronic Service Agent tool-enabled customers to track system inventory and find pertinent fixes.

## Benefits

Increased uptime: The Electronic Service Agent tool is designed to enhance the Warranty or Maintenance Agreement by providing faster hardware error reporting and uploading system information to IBM Support. This can translate to less wasted time monitoring the symptoms, diagnosing the error, and manually calling IBM Support to open a problem record. Its 24x7 monitoring and reporting mean no more dependence on human intervention or off-hours customer personnel when errors are encountered in the middle of the night.

Security: The Electronic Service Agent tool is designed to be secure in monitoring, reporting, and storing the data at IBM. The Electronic Service Agent tool securely transmits via either the Internet (HTTPS or VPN) or modem, and can be configured to communicate securely through gateways to provide you a single point of exit from your site. Communication is one way. Activating Electronic Service Agent does not enable IBM to call into a your system. System inventory information is stored in a secure database, which is protected behind IBM firewalls. It is viewable only by you and IBM. Your business applications or business data is never transmitted to IBM.

More accurate reporting: Because system information and error logs are automatically uploaded to the IBM Support Center in conjunction with the service request, you are not required to find and send system information, decreasing the risk of misreported or misdiagnosed errors. Once inside IBM, problem error data is run through a data knowledge management system and knowledge articles are appended to the problem record.

Customized support: Using the IBM ID entered during activation, you can view system and support information in the My Systems and Premium Search sections of the Electronic Support website at

  http://www.ibm.com/support/electronic

My Systems provides valuable reports of installed hardware and software using information collected from the systems by Electronic Service Agent. Reports are available for any system associated with your IBM ID. Premium Search combines the function of search and the value of Electronic Service Agent information, providing advanced search of the technical support knowledgebase. Using Premium search and the Electronic Service Agent information that has been collected from your system, you are able to see search results that apply specifically to your systems.

For more information on how to utilize the power of IBM Electronic Services, contact your IBM Systems Services Representative, or visit

  http://www.ibm.com/support/electronic

## Prices

For all local charges, contact your IBM representative.

For additional product information, refer to Software Announcement 211-466, dated October 12, 2011.

## 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)
For IBM representative: callserv@ca.ibm.com
For IBM Business Partner: pwcs@us.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.

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