



IBM z/VSE V6.1 extends online capabilities, connectivity, and security

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At a glance

IBM^(R) z/VSE^(R) V6.1 is designed to:

Exploit innovative IBM z13TM technology

- Configurable Crypto Express5S for data encryption and SSL acceleration.
- FICON^(R) Express16S supporting a link rate of 16 Gbps.

Support enhanced IBM System Storage^(R) options

- IBM System Storage TS7700 Virtualization Engine Release 3.3.
- IBM System Storage DS8870 Release 7.5 (ECKDTM and FCP-attached SCSI disks).
- IBM FlashSystem^(R) V9000 for use with FCP-attached SCSI disks.

Introduce an architectural level set of IBM System z10^(R), or later

Deliver CICS^(R) TS for z/VSE V2.1

CICS TS for z/VSE V2.1 can only be used with z/VSE V6.1, and replaces CICS TS for VSE/ESA V1.1.1. New functionality includes:

- Update and control capabilities to CICS resources for the CICS Explorer^(R) system management tool.
- A new API to enable the transfer of large amounts of structured data between CICS applications to meet the needs of growing workloads.

Deliver IBM TCP/IP for z/VSE V2.1

- This new version replaces IBM TCP/IP for VSE/ESA V1.5F, and includes firewall functionality and other enhancements.

Deliver IBM IPv6/VSE V1.2

- This new release of IPv6/VSE provides firewall functionality, increased network availability, and other enhancements.

Add trigger functionality for the WebSphere^(R) MQ Client for VSE

- The MQ Client Trigger Monitor adds trigger functionality for the WebSphere MQ Client for VSE to ease asynchronous message processing.

Selected enhancements are also available with PTFs for z/VSE V5.1 and z/VSE V5.2.

For ordering, contact your IBM representative or an IBM Business Partner. For more information, contact the Americas Call Centers at: 800-IBM-CALL (426-2255).

Reference: LE001

Overview

In 2015, z/VSE celebrates its fiftieth anniversary. The ongoing success story of z/VSE would not have been possible without the close relationship to z/VSE business partners, vendors, and clients.

In continuation of these 50 years of innovation and evolution, IBM is pleased to announce a new z/VSE version, z/VSE V6.1.

Whereas the past z/VSE versions often addressed scalability and constraint relief, z/VSE V6.1 now focuses on online transaction processing, security, and networking.

To help clients protect their investments in online environments, z/VSE V6.1 delivers CICS Transaction Server (CICS TS) for z/VSE V2.1.

Clients make high demands on secure networking. Both z/VSE TCP/IP stacks, IBM TCP/IP for z/VSE V2.1 and IBM IPv6/VSE V1.2, address the security requirements and are designed to provide firewall functionality in the updated version or release of their product.

z/VSE clients may want to leverage the IBM MobileFirst™ Platform Foundation to develop mobile applications that interact with z/VSE. Using z/VSE connectors such as web services and the CICS Transaction Gateway, mobile applications can integrate z/VSE data and applications.

z/VSE V6.1, together with the support of the newest IBM z Systems™ servers and IBM System Storage technology, is designed to help clients grow their workloads, and protect their investments in the z/VSE platform.

z/VSE V6.1 is designed to:

- Exploit innovative IBM z13 technology.
- Support enhanced IBM System Storage options.
- Introduce an architectural level set that requires IBM System z10 or later.
- Deliver:
 - CICS TS for z/VSE V2.1.
 - IBM TCP/IP for z/VSE V2.1.
 - IBM IPv6/VSE V1.2.

Enhancements include:

Exploitation of innovative IBM z13 technology:

- Configurable Crypto Express5S for data encryption and SSL acceleration.
- FICON Express16S supporting a link rate of 16 Gbps.

Support of enhanced IBM System Storage options:

- IBM System Storage TS7700 Virtualization Engine Release 3.3.
- IBM System Storage DS8870 Release 7.5 (ECKD and FCP-attached SCSI disks).
- IBM FlashSystem V9000 for use with FCP-attached SCSI disks.

Usage of architectural capabilities introduced with IBM System z10:

- This requires an architectural level set of IBM System z10 or later.

CICS TS for z/VSE V2.1:

CICS TS for z/VSE V2.1 can only be used with z/VSE V6.1, and replaces CICS TS for VSE/ESA V1.1.1. It delivers:

- Update and control capabilities to CICS resources for the CICS Explorer system management tool.
- A new API to enable the transfer of large amounts of structured data between CICS applications to meet the needs of growing workloads.

CICS Distributed Data Management (CICS/DDM) is not supported with CICS TS for z/VSE V2.1.

CICS TS for z/VSE V2.1 will fulfill the statement of direction in Software Announcement [214-074](#), dated April 07, 2014.

IBM TCP/IP for z/VSE V2.1:

- This new version replaces IBM TCP/IP for VSE/ESA V1.5F, and includes firewall functionality and other enhancements.

IBM IPv6/VSE V1.2:

- This new release of IPv6/VSE provides firewall functionality, increased network availability, and other enhancements.

MQ Client Trigger Monitor:

- The MQ Client Trigger Monitor adds trigger functionality for the WebSphere MQ Client for VSE to ease asynchronous message processing.

z/VSE V6.1 supports IBM z Systems servers:

- IBM z13
- IBM zEnterprise^(R) EC12 (zEC12) and IBM zEnterprise BC12 (zBC12)
- IBM zEnterprise 196 (z196) and IBM zEnterprise 114 (z114)
- IBM System z10 Enterprise Class (z10TM EC) and IBM System z10 Business Class (z10 BC)

z/VSE V6.1 can run in LPAR mode, or as a guest in any supported z/VM^(R) release. z/VSE V6.1 is the preferred follow-on VSE product for clients with z/VSE V5, z/VSE V4, z/VSE V3, or VSE/ESA installed. z/VSE V6.1 requires an initial installation. To ease the migration to z/VSE V6.1, z/VSE V5.2 will still be orderable after general availability of z/VSE V6.1 for a transition period.

In addition Migration Price Option (MPO) is available for customers migrating to z/VSE V6.1. For more information about MPO see the [Terms and conditions](#) section.

z/VSE V6.1 offers Midrange Workload License Charge (MWLC) pricing metrics, including a subcapacity option, for z13TM, z196, and System z10. 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, and z10 BC will be priced using z SystemsTM Entry License Charge (zELC) for their IBM monthly license charge software.

z/VSE V6.1 and CICS TS for z/VSE V2.1 fulfill the statements of direction in Software Announcement [214-074](#), dated April 7, 2014.

Key prerequisites

Refer to the [Hardware requirements](#) and [Software requirements](#) sections for details.

Planned availability date

November 27, 2015

Description

z/VSE V6.1 enhancements include:

Exploitation of innovative z13 technology

Configurable Crypto Express5S for data encryption and SSL acceleration

- z/VSE V6.1 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 V5.1 and z/VSE V5.2 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. To use a Crypto Express5S adapter in any LPAR of the system when running z/VSE V5.1 or z/VSE V5.2 requires the PTFs for APAR DY47586.

FICON Express16S - a new generation for FICON and FCP

- FICON Express16S supports a link data rate of 16 gigabits per second (Gbps) and autonegotiation to 4 or 8 Gbps for synergy with existing switches, directors, and storage devices.
- z/VSE V5.1 and later supports the FICON Express16S in two modes of operation:
 - CHPID type FC when utilizing FICON or Channel-to-Channel (CTC)
 - CHPID type FCP for use with FCP-attached SCSI disks

Support of enhanced IBM System Storage options

IBM System Storage TS7700 Virtualization Engine Release 3.3 (TS7700 R3.3)

- 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 V5.1 and later transparently supports the TS7700 Release 3.3.

IBM System Storage DS8870 Release 7.5 (ECKD and FCP-attached SCSI disks)

- IBM DS8870 Release 7.5 delivers expanded connectivity with support for 16 Gbps FCP/FICON host adapters and other enhancements. z/VSE V5.1 and later transparently supports DS8870 Release 7.5 for use with Extended Count Key Data (ECKD) and FCP-attached Small Computer System Interface (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 V5.1 and later transparently supports IBM FlashSystem V9000 for use with FCP-attached SCSI disks.

CICS TS for z/VSE V2.1

CICS TS for z/VSE V2.1 can only be used with z/VSE V6.1, and replaces CICS TS for VSE/ESA V1.1.1. It includes the functionality of CICS TS for VSE/ESA V1.1.1.

CICS TS for z/VSE V2.1 is designed to deliver new functionality, such as:

- CICS Explorer, which provides update and control capabilities:
 - CICS Explorer provides an intuitive, easy-to-use, and integrated way of accessing CICS resources. Support for CICS Explorer V1.1 was introduced with z/VSE V5.1 and CICS TS for VSE/ESA V1.1.1, and delivered read-only capabilities against CICS resources. The latest version of CICS Explorer, together with CICS TS for z/VSE V2.1, is enhanced to add update and control capabilities to manage selected CICS resources more efficiently.
 - Details on how to download CICS Explorer for CICS TS for z/VSE V2.1 are available on <http://www.ibm.com/systems/z/os/zvse/products/cics.html#cicsexplorer>
- A new API for growing CICS applications:
 - CICS TS for z/VSE V2.1 provides the EXEC CICS channels and containers API to enable the transfer of large amounts of data between CICS applications, to meet the needs of growing workloads and overcome the COMMAREA limitation*. The channels and containers API allows users to transfer any amount of data only limited by the storage that is available in the CICS partition. In addition, it is an easy and flexible mechanism to transfer structured data including data conversion specified by the CICS application, and thus fulfills the demands of modern online applications.
 - * Restricted to 32K of data passed between CICS applications.
 - The CICS channels and containers API is ported from CICS TS for z/OS^(R). CICS applications that use the channels and containers API with the functionality provided by CICS TS for z/VSE V2.1 are source code compatible with the latest release of CICS TS for z/OS. CICS TS for z/VSE V2.1 supports the channels and containers API for both local and remote CICS programs and transactions.
 - Language support is provided for C, COBOL, HLASM, and PL/I.
- Fulfillment of further user requirements, such as:
 - Cipher suites AES 128 and AES 256 for CICS web support to allow for enhanced Secure Sockets Layer (SSL) connectivity.
 - Millisecond option added to various EXEC CICS commands.
 - OSLEVEL option added to EXEC CICS INQUIRE SYSTEM command.

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

- A firewall shield helps to protect the z/VSE system from unauthorized access:
 - This function is a white-list-based firewall implementation which means that access is denied unless an IP address is explicitly allowed to communicate with the z/VSE system.
 - A configuration phase holds the valid IP addresses with allowed TCP or UDP ports, and ICMP (PING).
 - The firewall can be activated during TCP/IP startup. It can be operated in 'FAIL' or 'WARN' mode.

- When operating in 'FAIL' mode, any datagrams received from a remote IP address that is not defined in the firewall configuration phase will be discarded, and a violation message will be issued.
- When operating in 'WARN' mode, the same violation message will occur but the associated datagrams will not be discarded. This mode can be helpful for the initial setup to get information about IP addresses and ports.
- In addition, the new version contains internal processing improvements as well as many functional enhancements based upon user requests. These are:
 - External partition socket requests use cross memory services, which may improve performance and reduce system GETVIS requirements.
 - New utilities are provided to externalize applications for automation and TN3270 services. TN3270 services can now be processed outside the TCP/IP stack in an external TN3270 server. Multiple TN3270 servers can run at the same time. Of course, the TN3270 server within the TCP/IP partition can still be used.
 - The TLS/SSL cryptography has been enhanced to support RFC5746. This allows the usage of TLS extensions to prevent the handshake renegotiation security exposure.
- IBM TCP/IP for z/VSE V2.1 is a new level set that integrates all prior maintenance. It replaces IBM TCP/IP for VSE/ESA V1.5F.

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

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

- Firewall support to help secure the TCP/IP stack and thus protect the z/VSE system:
 - The firewall function 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.
 - A z/VSE library member holds the firewall rules. By default, the firewall is enabled. However, the default firewall rules allow all packets to be processed by the stack. When a packet is denied processing by the stack, it is dropped. This is usually referred to as 'stealth' mode or firewall stealth operation. No response to the packet is generated.
 - There are two methods for defining firewall rules. The first method is to allow only the types of traffic you want and deny everything else. The second method is to deny those types of packets you do not want and allow all the remaining traffic.
 - Firewall commands specifying IPv6 are ignored by the IPv4 stack, and vice versa.
- Automatic OSA-Express device failover using HOTSWAP devices for high availability:
 - Users can 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 TLS V1.2 and Diffie Hellman (DH)/Elliptic Curve Cryptography (ECC) sockets:
 - IBM IPv6/VSE V1.2 supports the latest updates in the IBM OpenSSL implementation, including support for TLS V1.2 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^(R) 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 LinuxTM, 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 WebSphere 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 HiperSocketsTM and OSA Express devices for improved TCP/IP throughput:

- Best performance can be achieved when data is always 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 V6.1 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 has been enhanced. Additional QDIO output buffers might require users to increase the size of the TCP/IP partition.

z/VSE V6.1 and CICS TS for z/VSE V2.1 fulfill the statements of direction in Software Announcement [214-074](#), dated April 7, 2014.

IBM z/VSE Version 6 product content

z/VSE Version 6 base programs

The following is a complete list of z/VSE Version 6 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.

Program name	Version/ Release/ Mod	Program number	Notes
z/VSE	6.01.00	5686-VS6	(1)
High Level Assembler for z/OS, z/VM, z/VSE	1.06.00	5696-234	(1)
VSE/EREP	3.05.00	5656-260	(2)
VSE/ICKDSF	1.17.00	5747-DS2	(2)
CICS Transaction Server for z/VSE	2.01.00	5655-VSE	
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 z/VSE	2.01.00	5686-CS1
GPS	1.05.00	5686-A04
IPv6/VSE	1.02.00	5686-BS1
DB2 Server for VSE and VM	7.05.00	5697-F42
- DataPropagator	7.04.01	
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.

z/VSE Version 6 optional programs

The following is a complete list of z/VSE Version 6 optional programs, including their release/modification levels.

Program name	Version/ Release/ Mod	Program number	Notes
Optional z/VSE Base Features:			
Encryption Facility for z/VSE	1.02.00	5686-VS6	
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:			
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	
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 z/VSE V7.5	7.05.00	5648-F66	
DOS/VS RPG II	1.03.00	5746-RG1	
Application Development:			
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	

Product positioning

The roots of z/VSE range back to DOS/360, introduced 50 years ago as the mainframe operating system with limited memory requirements.

Since then z/VSE has seen a lot of enhancements and extensions with a focus on protecting existing investments in clients' applications and data.

Today, specifically in combination with Linux on z Systems, z/VSE supports a modern environment including mobile and analytics capabilities, and more. Version 6.1 is the latest evolution addressing client needs and adding a new version of CICS TS for z/VSE.

Based on the maturity of 50 years of development and evolution, z/VSE continues the commitment to our clients in supporting their need to address today's and tomorrow's challenges.

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^(R) ID and password are required (use IBM ID).

[BP Attachment for Announcement Letter 215-202](#)

Statement of direction

Product Delivery of z/VSE on DVD/Electronic only:

IBM plans to deliver future upgrades of z/VSE on DVD or electronically only.

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 Services and Installation Services are not provided.

Reference information

Refer to:

- Software Announcement [215-109](#), dated May 11, 2015
- Software Announcement [215-362](#), dated October 5, 2015

Availability of national languages

Description	Availability date	Language
z/VSE V6.1	November 27, 2015	English

Program number

Program number	VRM	Program name
5609-VSE	1.1.0	z/VSE SDO
5686-VS6	6.1.0	z/VSE
5686-CS1	2.1.0	IBM TCP/IP for z/VSE
5686-BS1	1.2.0	IBM IPv6/VSE

Technical information

Specified operating environment

Hardware requirements

z/VSE V6.1 operates on:

IBM z Systems server	LPAR Mode	Guest under z/VM (1)
IBM z13	x	x
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

x: supported

(1) Supported z/VM release required.

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

- Crypto Express5S (in either coprocessor or accelerator mode) on a z13.
- Crypto Express4S (in either coprocessor or accelerator mode) on a zEC12 or zBC12.
- Crypto Express3 (in either coprocessor or accelerator mode) on a z196, z114, z10 EC, or z10 BC.
- Crypto Express2 (in either coprocessor or accelerator mode) on a z10 EC or z10 BC.

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

Hardware-assisted symmetric key encryption requires the CPACF feature.

z13, zEC12, zBC12, z196, or z114 is required for:

- Fast Path to Linux on z Systems function in an LPAR environment
- z/VSE - z/VM IP Assist function (z/VSEVIA^(R))
- IntraEnsemble Data Network (IEDN) support
- Static power save mode (z13, zEC12, z196 only)

To support new functions and features, the appropriate machine change levels (MCLs) of z Systems servers are required. Descriptions of the MCLs are available through

<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. z/VSE clients who choose to run one or more z/VSE 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, go 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 z Systems images to exploit the potential of Integrated Facility for Linux (IFL) speciality engines
- Both z/VSE and Linux on z Systems to extend the z/VSE capabilities with Linux on z Systems

A z/VM mode logical partition (LPAR) allows clients to run z/VSE images on standard CPs and Linux on z Systems images on IFLs, all in the same z/VM LPAR for enhanced staff productivity and resource efficiency. For details see

<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 on

<http://www.ibm.com/systems/z/os/zvse/products/cics.html#cicsexplorer>

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

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

Compatibility

Compatibility aspects include:

Products and features:

- CICS TS for z/VSE V2.1 is the only CICS version that can be used with z/VSE V6.1. It replaces CICS Transaction Server for VSE/ESA V1.1.1.
- CICS Distributed Data Management (CICS/DDM) is not supported with CICS TS for z/VSE V2.1.
- 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 V6.1.
- Starting with z/VSE V4.3, DL/I VSE 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 VSE V1.12 cannot be used with CICS/VSE V2.3.
- IBM TCP/IP for z/VSE V2.1 replaces IBM TCP/IP for VSE/ESA V1.5F.

- IBM TCP/IP for VSE/ESA V1.5F cannot be used with z/VSE V6.1.

z/VSE V6.1 delivery

- Starting with z/VSE V5.1, z/VSE is no longer delivered on CD-ROM, but on DVD.
- Starting with z/VSE V6.1, the z/VSE system is delivered as an English version only.

Configuration:

- After initial installation, the ACF/VTAM 31-bit I/O buffer support is enabled. It might be necessary to increase the number of copy blocks.
- 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.

Limitations

- z/VSE V6.1 requires an initial installation.
- Fast Service Upgrade to z/VSE V6.1 is not possible.
- Starting with z/VSE V6.1, the z/VSE system is delivered as an English version only.

Performance considerations

The overall performance of z/VSE V6.1 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 V6.1 is similar to that of z/VSE V5.2. This applies as long as the same environment is used without exploitation of new functions. Actual user experience may vary.

For more information on z/VSE V6.1 performance, see

<http://www.ibm.com/systems/z/os/zvse/documentation/performance.html>

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:

RFE 28883	Support for Channel and Containers
RFE 33118	Add support for EXEC CICS INQUIRE SYSTEM OSLEVEL
RFE 30241	Add millisecond option to EXEC CICS FORMATIME
RFE 30243	Add millisecond option to EXEC CICS ASKTIME
RFE 28890	Add cypher suites (AES128/AES256) to CICS web Support

Planning information

Customer responsibilities

Status of z/VSE V5.1: End of service will be effective June 30, 2016.

Status of z/VSE V4.3: End of service is effective since October 31, 2014.

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

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 V5 and z/VSE V6.1 can be found on the z/VSE website

<http://www.ibm.com/systems/z/os/zvse/about/status.html>

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 V6.1:

- 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^(R) Generator Server V1.2. (The replacement product is IBM Rational^(R) 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.)

Products not orderable with z/VSE V6.1:

- 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

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

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

Software key management

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

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

IBM IPv6/VSE V1.2

IPv6/VSE V1.2 (IPv6/VSE) is shipped with the z/VSE V6.1 Base tape and is installed during initial installation of z/VSE V6.1.

Clients who do not wish to use IBM IPv6/VSE are requested to run a product delete job, which is provided with z/VSE V6.1, to delete the product from their system.

IPv6/VSE requires a unique user access key. IPv6/VSE can be used for 30 days after activation without a key.

IBM TCP/IP for z/VSE V2.1

TCP/IP for z/VSE V2.1 is shipped with the z/VSE V6.1 Base tape and is installed during initial installation of z/VSE V6.1.

Clients who do not wish to use IBM TCP/IP for z/VSE are requested to run a product delete job, which is provided with z/VSE V6.1, to delete the product from their system.

TCP/IP for z/VSE requires a unique user access key. The GPS feature is installed with the TCP/IP for z/VSE product, but requires its own unique user access key.

TCP/IP for z/VSE is shipped enabled for demonstration mode only. This mode is not suited for production purposes. If you run TCP/IP for z/VSE in demonstration mode, you cannot use the SSL support.

DB2^(R) 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 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 Sw License Team
Plaza Cronos 1
Madrid, M 28037
Spain

Telephone: Call our non-toll-free number +44 2392 289880

Email: wwwskeys@dk.ibm.com

Installability

z/VSE V6.1 requires initial installation. Fast Service Upgrade to z/VSE V6.1 is not possible.

Initial installation of z/VSE V6.1 supports these disk types:

- 3380
- 3390
- FBA (including FCP-attached SCSI disks)

Packaging

Depending on the order, z/VSE V6.1 is packaged and delivered either:

- On three tape volumes (of type 3590 or 3592) containing:
 - z/VSE Base
 - 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
 - z/VSE Extended Base
 - Installation files for tapeless initial installation
- Through electronic delivery (via Shopz) to be downloaded, containing:
 - z/VSE Base
 - 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 tape volumes or DVDs with the ordered z/VSE V6.1 optional programs.

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 V6.1* has the IBM form number GI11-9706-00.

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

Shopz provides an easy way to plan and order z Systems software upgrades. This now includes VM and VSE. Using Shopz, you can quickly generate orders for VM SDOs and VSE SIPOs. Additionally, Shopz will ensure your order is technically correct (that is, ensures any co-req or pre-req or incompatibility conditions are resolved to ensure timely order placement and processing). Shopz is available in the United States and several countries in Europe. In countries where Shopz is not available yet, contact your IBM representative (or IBM Business Partner) to handle your order via the traditional IBM ordering process. For more details and availability, visit the Shopz website

<http://www.ibm.com/software/ShopzSeries>

New licensees

Orders for new z/VSE licenses will be accepted from November 24, 2015.

When z/VSE V6.1 is available, z/VSE V5.2 will continue to be orderable until End of Marketing of z/VSE V5.2 is announced and effective at a later date.

Registered customers can access IBMLink for ordering information and charges. Shipment will not occur before the availability date.

New users of z/VSE V6.1 should specify:

Type:	5609	Model:	VSE	(SDO)
Type:	5686	Model:	VS6	(VSE)
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:	CS1	(TCP/IP)
Type:	5686	Model:	BS1	(IPv6)
Type:	5655	Model:	VSE	(CICS)
Type:	5697	Model:	F42	(DB2)

Note: IBM TCP/IP for z/VSE V2.1 (5686-CS1) and IBM IPv6/VSE V1.2 (5686-BS1) are part of the z/VSE V6.1 base package. Both products provide a TCP/IP stack for z/VSE.

Graduated or processor-based charges: Not applicable

Advanced Entry Workload License Charges (AEWLC) basic license

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

Entitlement identifier	Description	License option/Pricing metric
S017VB7	z/VSE VSE V6.1	Basic MLC, AEWLC
S017VB6	Encryption Facility for z/VSE V1.2	Basic MLC, AEWLC
S01613M	IPv6/VSE V1.2	Basic MLC, AEWLC
S017VB5	TCP/IP for z/VSE V2.1	Basic MLC, AEWLC

Note:

- AEWLC is the only price metric available for z/VSE V6, IPv6/VSE V1.2, and TCP/IP for z/VSE V2.1 on zBC12* and z114* machines. FWLC and TWLC are not available for z/VSE V6, IPv6/VSE V1.2, and TCP/IP for z/VSE V2.1.
- Sub-capacity AEWLC pricing is available only to clients agreeing to the terms of the Attachment for IBM System z^(R) Advanced Entry Workload License Charges (Z125-8755).

* zELC is the only pricing metric for the z10 BC capacity setting A01, the z114-A01, and the zBC12-A01.

z Systems entry license charge (zELC)

To order zELC software, specify the zELC monthly license option.

Entitlement identifier	Description	License option/ Pricing metric
S017VB7	z/VSE V6.1	Basic MLC, zELC
S017VB6	Encryption Facility for z/VSE V1.2	Basic MLC, zELC

Entitlement identifier	Description	License option/ Pricing metric
S01613M	IPv6/VSE V1.2	Basic MLC, zELC
S017VB5	TCP/IP for z/VSE V2.1	Basic MLC, zELC

zELC is the only pricing metric for the z10 BC capacity setting A01, the z114-A01, and the zBC12-A01.

Single version charging

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

Basic machine-readable material

Orderable Supply ID	Description	Language
S017V24	z/VSE V6.1	US English
S017V23	Encryption Facility for z/VSE V1.2	US English
S01617N	IPv6/VSE V1.2	US English
S017VB4	TCP/IP for z/VSE V2.1	US English

Distribution media: Electronic delivery, DVD, and 3590 or 3592 tape cartridges.

Midrange Workload License Charges (MWLC) in IBM z/VSE V6 ordering information

MWLC is a monthly license charge price metric that applies to z/VSE V6 and key VSE middleware programs.

Midrange Workload License Charge (MWLC) for z/VSE V6

Basic license structure

Entitlement identifier	Description	License option/ Pricing metric
S017VB7	z/VSE V6.1	Basic MLC, MWLC
S017VB6	Encryption Facility for z/VSE V1.2	Basic MLC, MWLC
S01613M	IPv6/VSE V1.2	Basic MLC, MWLC
S017VB5	TCP/IP for z/VSE V2.1	Basic MLC, MWLC

Note:

- MWLC is the only price metric available for z/VSE V6, IPv6/VSE V1.2, and TCP/IP for z/VSE V2.1 on the following machines: z13, zEC12, z196, z10 EC, z10 BC*. FWLC and TWLC are not available for z/VSE V6, IPv6/VSE V1.2, and TCP/IP for z/VSE V2.1.
- Sub-capacity MWLC pricing is available only to clients agreeing to the terms of the Attachment for IBM System z Midrange Workload License Charges (Z125-7452).

* zELC is the only pricing metric for the z10 BC capacity setting A01, the z114-A01, and the zBC12-A01.

Clarification of software pricing for z/VSE V5:

- FWLC is not available, but TWLC remains available for z/VSE V5 on selected machines.

Unlicensed documentation

Product documentation

z/VSE V6 documentation is provided in two ways:

- Online, through IBM Knowledge Center
- Downloadable PDF manuals, from IBM Publications Center

Online information in IBM Knowledge Center

Online documentation for z/VSE V6.1 is hosted in IBM Knowledge Center. IBM Knowledge Center provides information for over 2,500 IBM products. The information that was previously provided in product Information Centers is in IBM Knowledge Center. IBM Knowledge Center provides integrated tools for finding, filtering, customizing, saving, and sharing information.

Benefits include:

- Consolidation: IBM Knowledge Center is one place to go to find information about all IBM products.
- Consistency: There were differences in the presentation and function of Information Centers between products. IBM Knowledge Center provides the same set of functions for all product information.
- Customization: Clients can use IBM Knowledge Center filtering capabilities to select the information that is most relevant to them, and build that information into customized collections for viewing online or in PDF. IBM updates to the information are automatically reflected in such collections.

For more information about the features of IBM Knowledge Center, go to

<http://www.ibm.com/support/knowledgecenter/>

For CICS TS for z/VSE V2.1, product documentation is available in IBM Knowledge Center after general availability.

Refer to the IBM Knowledge Center

<http://www.ibm.com/support/knowledgecenter/SSB2JE/welcome.html>

Manuals in PDF format:

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).

Refer to the IBM Publications Center

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

The IBM Publications Center is a worldwide central repository for IBM product publications and marketing material. Extensive search facilities are provided. Furthermore, a large number of publications are available online and can currently be downloaded.

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

Agreement

IBM Customer Agreement

Variable charges apply

No

Indexed monthly license charge (IMLC) applies

No

Location license applies

No

Educational allowance available

Yes, a 15% education allowance applies to qualified education institution customers.

Volume orders

Not applicable.

Single Version Charging (SVC) is applicable only when running on standard engines and the maximum time for which it applies is 12 months. The SVC offering is valid only while both the predecessor product and the replacement product are:

- Both running on the same CPU
- Licensed under the same IBM customer number
- In the process of being migrated from the older product to the newer one by the customer
- Providing the same function

Replaced programs		Replacement programs	
Program number	Program name	Program number	Program name
5686-CF9	z/VSE Central Functions V9	5686-VS6	z/VSE V6.1
5686-CF8	z/VSE Central Functions V8	5686-VS6	z/VSE V6.1
5686-CF7	z/VSE Central Functions V7	5686-VS6	z/VSE V6.1
5686-066	VSE Central Functions V6	5686-VS6	z/VSE V6.1
5686-094	LE/VSE V1.4	5686-VS6	z/VSE V6.1
5686-028	VSE/SP Unique Code V5	5686-VS6	z/VSE V6.1
5686-032	VSE/AF V5	5686-VS6	z/VSE V6.1
5686-033	VSE/POWER V5	5686-VS6	z/VSE V6.1
5686-034	VSE/Fast Copy V2	5686-VS6	z/VSE V6.1
5686-036	VSE/ICCF V3	5686-VS6	z/VSE V6.1
5686-037	VSE/VSAM V2	5686-VS6	z/VSE V6.1
5686-058	REXX/VSE	5686-VS6	z/VSE V6.1
5688-022	VS COBOL II Library only	5686-VS6	z/VSE V6.1
5736-LM4	DOS PL/I Resident Library	5686-VS6	z/VSE V6.1
5736-LM5	DOS PL/I Transient Library	5686-VS6	z/VSE V6.1
5746-LM4	DOS/VS COBOL Library	5686-VS6	z/VSE V6.1

Migration Price Option (MPO):

The Migration Price Option enables the combining of z/VSE V5 (and/or z/VSE prior versions) and z/VSE V6 MSUs to calculate z/VSE V6 billable charges on the same machine. Customers pay for the combined MSUs at the z/VSE V6 price. All Customers are eligible for the MPO while migrating to z/VSE V6. The eligibility period is 18 months from the date of licensing z/VSE V6. Eligibility ends at the completion of migration or 18 months, whichever occurs first.

The Migration Price Option should be requested when ordering z/VSE V6 when that will be replacing z/VSE V5 (and/or z/VSE prior versions) on the same Machine.

The Migration Price Option is available:

- While z/VSE V5 (and/or z/VSE prior versions) and z/VSE V6 are running on the same machine and Licensed under the same IBM customer number.
- During migration to z/VSE V6 and not to exceed 18 months from the date of licensing z/VSE V6.

When z/VSE V5 (and/or z/VSE prior versions) and z/VSE V6 are eligible for Sub-Capacity pricing, z/VSE V6 is charged at the combined concurrent peak MSUs for both versions, reported as z/VSE (ALL) on the customer's Sub-Capacity Report. The calculated MSUs apply for a period not to exceed 18 months from the date of licensing of z/VSE V6.

When full capacity charges apply, charges for z/VSE V5 (and/or z/VSE prior versions) and z/VSE V6 are based on the MSU value at Full-Machine Capacity and billed at the z/VSE V6 price for a period not to exceed 18 months from the date of licensing z/VSE V6.

The usage of a set of Programs, subject to the waiver, would be limited by terms of an IBM agreement such that the qualifying customers will be allowed to run only one SW application (either "from" or "to" Program) in a single production LPAR.

By accepting these special terms, Customer agrees that IBM has the right to verify Customer's usage data relating to Customer's use of IBM programs and Customer's compliance with other terms of this Agreement at all sites and for all environments in which Customer installs or uses IBM programs for any purpose. IBM may use an independent auditor to assist with such verification provided IBM has a written confidentiality agreement in place with such auditor.

Customer agrees to create, retain, and provide to IBM and its auditors written records, system tools outputs, and other system information sufficient to provide auditable verification that Customer's installation and use of IBM programs complies with the Agreement terms, including IBM's applicable licensing and pricing terms. The rights and obligations in this section remain in effect during the period any IBM programs are licensed to Customer and for two years thereafter.

IBM will notify Licensee in writing if any such verification indicates that Licensee has used any Program in excess of its authorized use or is otherwise not in compliance with the terms of this Agreement. Customer agrees to promptly pay directly to IBM the charges that IBM specifies in an invoice for 1) any such excess use, 2) support for such excess use for the lesser of the duration of such excess use or two years, and 3) any additional charges and other liabilities determined as a result of such verification.

Warranty applies

Yes

Licensed program materials availability

Restricted Materials of IBM:	Some
Non-Restricted Source Materials:	Some
Object Code Only (OCO):	Some

Program services

Available until discontinued:

12 months' written notice

Statement of good security practices

IT system security involves protecting systems and information through prevention, detection, and response to improper access from within and outside your enterprise. Improper access can result in information being altered, destroyed, or misappropriated or can result in misuse of your systems to attack others. Without a comprehensive approach to security, no IT system or product should be considered completely secure and no single product or security measure can be completely effective in preventing improper access. IBM systems and products are designed to be part of a comprehensive security approach, which will necessarily involve additional operational procedures, and may require other systems, products, or services to be most effective. IBM does not warrant that systems and products are immune from the malicious or illegal conduct of any party.

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^(R) 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, go 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 is designed to securely transmit via either the Internet (HTTPS or VPN) or modem to provide customers a single point of exit from their site. Communication is one way. Activating Electronic Service Agent does not enable IBM to call into a customer's system.

For additional information, please refer to IBM Electronic Service Agent

<http://www-01.ibm.com/support/esa/>

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 on

<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 go to

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

Prices

For all local charges, contact your IBM representative.

Order now

To order, contact your Americas Call Centers, local IBM representative, or your IBM Business Partner. To identify your local IBM representative or IBM Business Partner call 800-IBM-4YOU (426-4968). For more information, contact the Americas Call Centers.

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^(R) 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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