

zPL3034 - z/VSE latest news

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My blog: <https://www.ibm.com/developerworks/mydeveloperworks/blogs/vse/?lang=en>



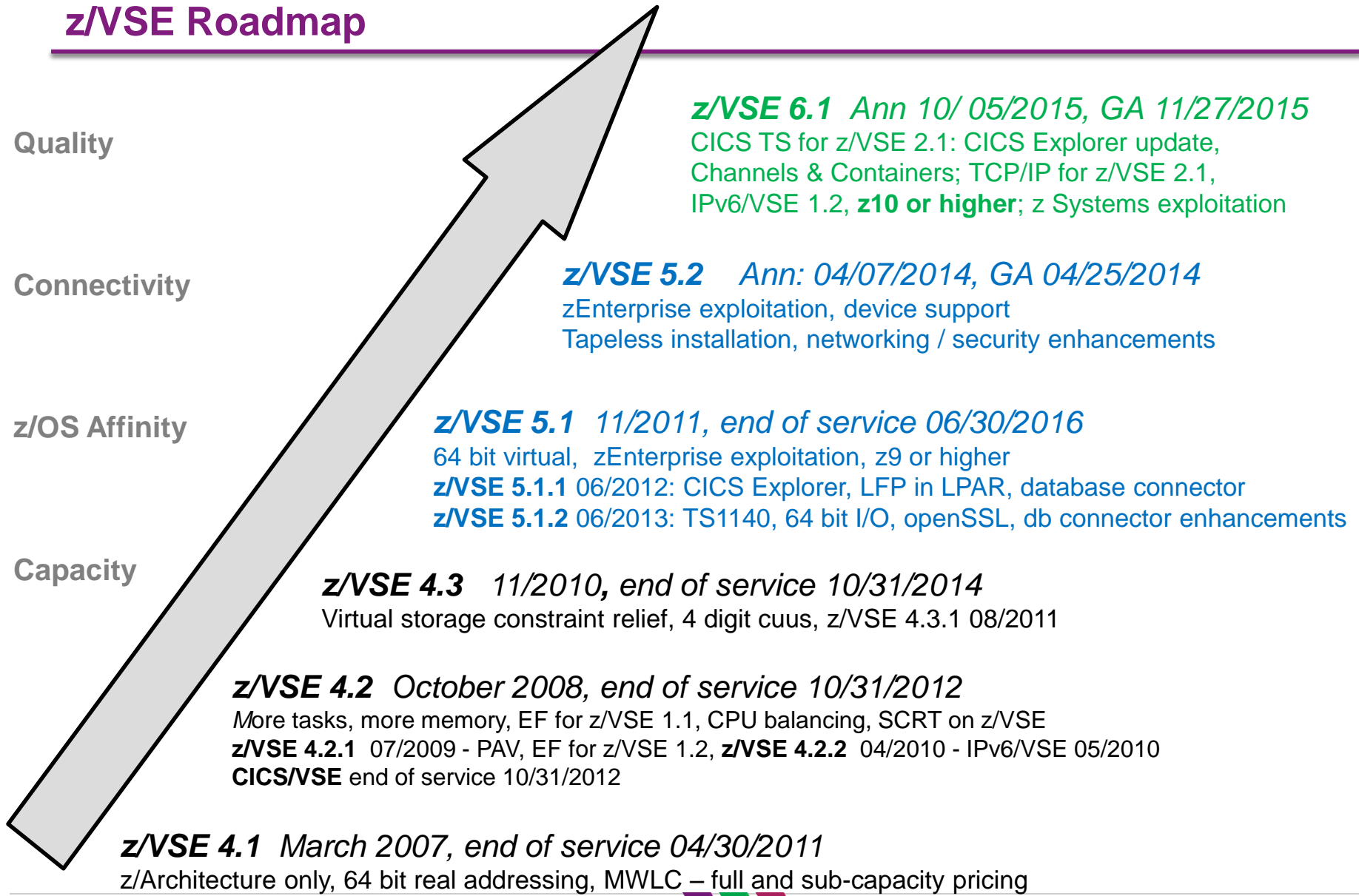
2015

IBM Systems Technical University

IBM z Systems • IBM Power Systems • IBM Storage

October 5–9 | Hilton Orlando, Florida

z/VSE Roadmap



z/VSE 5.1.2

- z/VSE 5.1.2 includes z/VSE V5.1 - Additional enhancements: Ann 03/02/2013, GA 06/14/2013
Latest Recommended Service Level (RSL): April 2015
z/VSE 5.1 End of Service: June 30, 2016
 - Support of z9, z10, z114, z196, zEC12, zBC12, z13
 - Configurable Crypto Express4S / Crypto Express5S
 - OSA Express4S / OSA Express5S (1000BASE-T)
 - Support of IBM System Storage
 - IBM System Storage TS1140 (3592 E07)
 - IBM System Storage TS7700 Virtualization Engine
 - IBM System Storage DS8870
 - IBM System Storage Storwize V7000
 - 64-bit input/output (I/O) processing for applications
 - HiperSockets configurable input buffers



z/VSE 5.1.2 ...

- z/VSE 5.1.2 includes z/VSE V5.1 - Additional enhancements ...
 - System dump support for memory objects
 - z/VSE Database connector enhancements
 - OpenSSL update
 - IPv6/VSE V1.1 enhancements
 - Secure Sockets Layer (SSL) for secure data transmission
 - Layer 2 support for OSA Express devices for IPv4 links

- Statement of general direction (SOD) of April 2013 announcement:
 - IBM intends
 - in the future to enhance IBM CICS Explorer for IBM CICS Transaction Server for VSE/ESA to provide updates to CICS resources.
 - to add functionality that allows initial installation of z/VSE without requiring a physical tape.

All statements regarding IBM's plans, directions, and intent are subject to change or withdrawal without notice.



z/VSE 5.2 – Quick Overview

- Announcement: 04/07/2014, GA: 04/25/2014
Latest Recommended Service Level (RSL): [April 2015](#)
- Hardware support
 - IBM z Systems support ([including z13](#))
 - Device support - Tape, ECKD and FCP-attached SCSI disks
- 64 bit virtual exploitation
 - Virtual disk in memory objects
- Networking enhancements
 - IPv6 support for selected z/VSE functions



z/VSE 5.2 – Quick Overview ...

- Security enhancements
 - Basic Security manager (BSM) and VSE/POWER audit enhancements

- Ease of use
 - Tapeless installation from ECKD devices
 - Stacking tape support

- Fast Service Upgrade (FSU) from z/VSE 4.3 and z/VSE 5.1

- Pricing
 - z9, z10, z196, zEC12, z13: Midrange Workload License Charge (MWLC) pricing with sub-capacity option
 - z114, zBC12: Advanced Entry Workload License Charge (AEWLC) pricing with sub-capacity option



z/VSE 5.2 – Hardware Support



Hardware support

- Support for IBM zEnterprise EC12, IBM zEnterprise BC12, IBM z13
 - Configurable Crypto Express4S feature (zEC12, zBC12), Crypto Express5S (z13)
 - OSA-Express5S features
 - HMC based configuration for OSA-Express4 and OSA-Express5S (OSA/SF)

- Support for IBM System Storage
 - Tape support
 - Systems Managed Encryption with IBM System Storage TS1140
 - IBM System Storage TS7700 Virtualization Engine Release 3.3

 - ECKD / FCP-attached SCSI disk support
 - IBM System Storage DS8870 Release 7.5
 - Upgrade of the z/VSE support for the Parallel Access Volume (PAV) feature (ECKD)

 - FCP-attached SCSI disk support
 - IBM Storwize V5000 Midrange Disk
 - IBM Storwize V3700 Entry Disk



z Systems / z/VM support

- z/VSE V5 and V6 support IBM z Systems servers:
 - IBM z13
 - IBM zEnterprise EC12 (zEC12)
 - IBM zEnterprise BC12 (zBC12)
 - IBM zEnterprise 196 (z196)
 - IBM zEnterprise 114 (z114)
 - IBM System z10 (z10 EC, z10 BC)
- z/VSE V5 supports IBM z Systems servers:
 - IBM System z9 (z9 EC, z9 BC)

... and z/VSE V5 and V6 can run in an LPAR or as a z/VM guest on all supported z/VM releases
... in uni- or multiprocessor mode

- **z/VM V5.4 support:**
 - z/VM 5.4 withdrawn from service December 31, 2016 or until z9 processors are withdrawn from support, whichever is later. Replacement product: z/VM V6 (August 5, 2014 announcement).
 - z/VM 5.4 not supported on z13.

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z Systems support

VSE Release	z800 / z900	z890 / z990	z9	z10 / z196 / z114 / zEC12 / zBC12 / z13	VSE EoS
z/VSE 6.1 (GA 11/27/2015)	No	No	No	Yes	tbd
z/VSE V5.2	No	No	Yes	Yes	tbd
z/VSE V5.1	No	No	Yes	Yes	06/30/2016
z/VSE V4.3	Yes	Yes	Yes	Yes	10/31/2014
z/VSE V4.2	Yes	Yes	Yes	Yes	10/31/2012
z/VSE V4.1	Yes	Yes	Yes	Yes	04/30/2011
z/VSE V3.1	Yes	Yes	Yes	Yes	07/31/2009
VSE/ESA V2.7	Yes	Yes	Yes	Yes	02/28/2007
VSE/ESA V2.6	Yes	Yes	Yes	Yes	03/2006
VSE/ESA V2.5	Yes	No	No	No	12/2003
VSE/ESA V2.4	Yes	No	No	No	06/2002
VSE/ESA V2.3	No	No	No	No	12/2001

z/VSE release / Hardware status: <http://www-03.ibm.com/systems/z/os/zvse/about/status.html>



z Systems exploitation

- 64 bit real addressing - up to 32 GB (System z), 64 bit virtual addressing – up to 90 GB
- Large page support for data spaces (z10 and higher)
- Dynamic add / remove of logical CPs (z10 and higher)
- OSA-Express 3, OSA-Express 4, OSA-Express 5S support
- HiperSockets Completion Queue on z196, z114, zEC12, zBC12, z13 (z/VSE 5.1.1 and higher)
- Linux Fast Path (LFP) in z/VM mode LPAR (z10 and higher)
- Exploitation of the z/VSE z/VM IP Assist (VIA - zEnterprise, z13)
- zEnterprise and zEnterprise BladeCenter Extension (zBX) support
 - Intra Ensemble Data Network (IEDN)
 - Virtual LAN support, Layer 2 support
 - IEDN communication using the z/VM VSWITCH
- 4096-bit RSA key support with configurable Crypto Express3 (z10, zEnterprise)
.... Crypto Express4S (zEC12, zBC12) and Crypto Express5S (z13)
- Static power save mode supported for SCRT (z196, zEC12, z13)
- **zEC12 / zBC12 / z13 do not support ESCON channels**



z/VSE 5.2 – 64 bit virtual exploitation

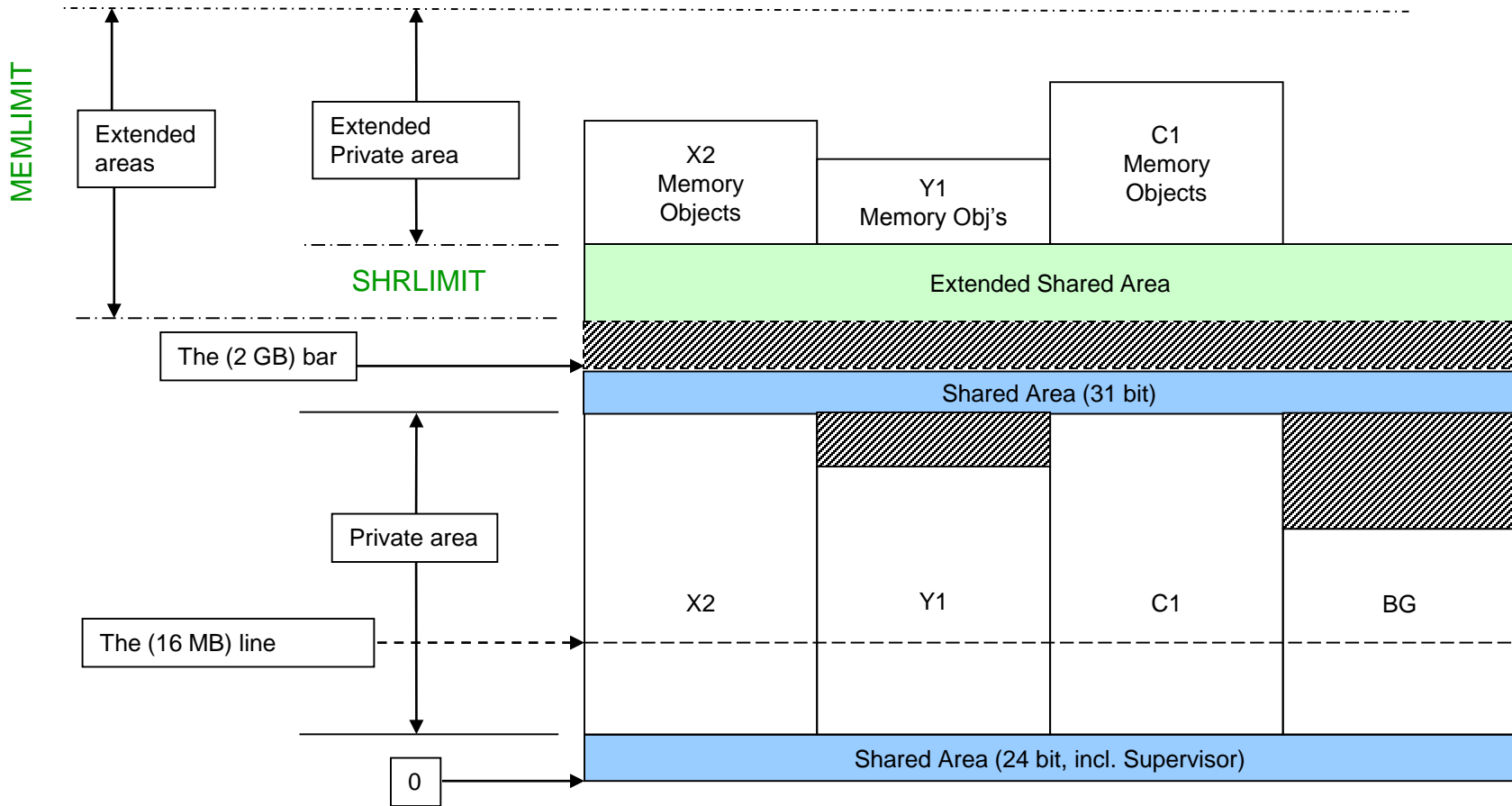


64 bit virtual

- Introduced with z/VSE 5.1
- Support 64 bit virtual addressing
- 64 bit area can be used for **data only**
 - No instruction execution above the bar
- **z/OS affinity:** APIs (IARV64 services) - to manage memory objects – compatible with z/OS
 - Private memory objects for use in one address space
 - Shared memory objects to be shared among multiple address spaces
- Maximum VSIZE still limited to 90 GB
- Advantages:
 - Eases the access of large amounts of data, e.g. compared to data spaces
 - Reduces complexity of programs, data contained in primary address space
 - Chosen design has no dependencies to existing APIs, minor impact on existing system code



64 bit virtual - Address Space Layout



64 bit virtual I/O for applications

- Available with z/VSE 5.1.2, z/VSE 5.2 and z/VSE 6.1

- I/O buffers
 - Can now be created above the bar (above 2 GB)
 - Supported in **private memory objects** supported only

- Interfaces
 - SYSCOM bit IJBIO64E in IJBIOFL1, if 64 bit virtual I/O support available
 - CCB macro with a new parameter: IDAW=FORMAT2
 - CCB points to a Format-0 or Format-1 CCW
 - CCW with IDA-flag and data address point to a single Format-2 IDAW containing a 64 bit virtual address.
 - I/O control blocks to be allocated below the bar (in 31 bit storage)
 - I/O buffer will be TFIXed by I/O Supervisor, not necessary to PFIX the I/O buffer

- Supported for ECKD devices only
 - Not supported for FBA / SCSI / tape devices, LIOCS



Virtual Disk in Shared Memory Objects

- A Virtual Disk
 - is emulating a FBA disk device;
 - may be used for temporary data, such as
 - temporary files, libraries, VSE/VSAM space and user catalogs
 - „lives“ until the next IPL
 - has to fit into the available virtual storage (VSIZE)

- A Virtual Disk may be created in
 - a Data Space or a shared memory object (z/VSE 5.2)

- If there is enough space available in the extended shared area, the Virtual Disk will be created in a shared memory object; otherwise in a data space.

- Maximum Virtual Disk size, if allocated in
 - Data space: up to 2 GB;
 - Shared memory object: up to 4 GB

- Virtual Disks are defined with the VDISK command



Memory Objects enhancements

System Dump

- System dump may be taken in case of abnormal termination dependent on JCL options
 - New JCL option MODUMP, NOMODUMP
- If program running in 64 bit mode and registers hold 64 bit addresses
 - The dump routine will take 4K on either side of this address
- Partitions dumps will be written to dump library or SYSLST dependent on OPTIONS
- May be processed with IUI Storage Dump dialog

Standalone Dump

- New standard option: STDOPT SADMPSMO=YES|NO
 - Controls, if standalone dump should include **shared memory objects**
- (Standard) option STDOPT SADUMP=(n,m,o)
 - Controls, if standalone dump should include **private memory objects (o)**
(n= priority of partitions, m= priority of data spaces)

IUI dialog Display Storage Layout

- Displays system values MEMLIMIT and SHRLIMIT



z/VSE 5.2 – Ease of Use



Tapeless installation

- Initial installation of z/VSE from physical tape or bootable installation disk
- z/VSE provides tools to create an installation disk
- Installation disk is supported
 - for LPAR and z/VM guest environments
 - on ECKD devices, not on FBA / SCSI devices
 - for initial installation only
- Installation disk
 - Contains the **z/VSE base tape** in AWS format, a boot program and the VTOC
 - Created on LPAR may be used by a z/VM guest or vice versa
 - LPAR: create installation disk by using the DVD with the HMC or SE Load function
- Installation from installation disk possible on ECKD, FBA and FBA-SCSI
- Files required for the creation of the installation disk delivered on DVD or via the Internet



Tapeless installation ...

- System requirements
 - Installation disk space
 - LPARs and z/VM guest: 500 cylinders on 3390 disk device
 - z/VM guest: additional 400 cylinders (CMS disk) in addition for the tools and AWS file
 - Minimum processor storage
 - 64 MB (general z/VSE 5.2 requirement)
 - LPAR: 512 MB to create the installation disk



Stacking Tape Support

- Standard labeled tape of type 3592, where several tape images (files) can be stored
- Based on z/VSE's Virtual Tape (VTAPE) support
- Contains multiple virtual tape files

- Job Control VTAPE command extended to support stacking tape
- Writing to a stacking tape
 - VTAPE INIT to initialize a stacking tape
 - VTAPE START with WRITE opens a new tape file
 - VTAPE STOP closes the tape file
- VTAPE function LIST to list the contents of a stacking tape
- VTAPE START with READ positions to the requested tape file



Stacking Tape Support ...

- Reasons to use stacking tape support:
 - Useful for tape migration of older tapes, such as 3480 and 3490
 - Exploit the capacity of modern tape volumes, such as TS1140
 - May reduce cost
 - ...

- Restrictions
 - No alternate tape support,
 - Tape file can not be accessed via MTC command,
 - Concurrent tape file access not supported,
 - Existing tape files can not be deleted, modified or replaced
However, new tape files can be appended



z/VSE 5.2 – Networking



TCP/IP Connectivity for z/VSE

- TCP/IP stacks are provided by ISVs

- TCP/IP connectivity for IPv4 communication
 - TCP/IP for VSE – licensed from CSI International
 - IPv6/VSE – licensed from Barnard Software, Inc. (BSI)
 - Linux fast path (LFP)

- TCP/IP connectivity for IPv6 communication
 - IPv6/VSE
 - Linux Fast Path

- All TCP/IP stacks can run concurrently within one z/VSE system



TCP/IP Connectivity for z/VSE – New with z/VSE 5.2

- IPv6 support in for z/VSE components, such as
 - z/VSE Connectors
 - Virtual Tape (VTAPE), Connector server & client, script server & client,
 - VSAM Redirector, HTTP & SOAP client, LDAP client, Monitoring agent & trap client
- CICS listener
 - Enhanced listener support, IPv6 support
 - Configuration dialog enhancements (selection: TCP/IP stack, standard / enhanced listener)
- LE/C multiplexer
 - Controls access to TCP/IP C-socket API depending on SYSID
 - New parameter: SSLPHASE allows to select openSSL independent on TCP/IP stack
- IPv6/VSE V1.1 enhancements
 - Secure Sockets Layer (openSSL) for secure data transmission, provided since z/VSE V5
- IBM TCP/IP for VSE/ESA in separate AF sublibrary PRD2.TCPIPC



Linux Fast Path (LFP)

- Does not require a TCP/IP stack on z/VSE
- Routes IPv4 or IPv6 socket request from z/VSE applications to Linux on z Systems
- LFP daemon (small program) on Linux forwards the socket request to the Linux TCP/IP stack
- LFP belongs to the z/VSE base product – no additional charge
 - No standard TCP/IP applications (Telnet, FTP, ...) provided
- Customer has to provide
 - System resources (IFL, disk space, ...)
 - Linux distribution (non-firmware solution)
- Benefits
 - z/VSE customers may
 - save a TCP/IP license
 - better balance system resources (offload CPU cycles to Linux)
 - improve performance for some applications



Linux Fast Path (LFP) ...

- LFP on z/VM
 - IUCV based communication between z/VSE and Linux on z Systems
 - Both – z/VSE and Linux – need to be z/VM guests of the same z/VM
 - Linux distribution provided by the customer

- LFP using z/VSE z/VM IP Assist (VIA)
 - IUCV based communication between z/VSE and VIA (Linux on z Systems)
 - Both – z/VSE and Linux – need to be z/VM guests of the same z/VM
 - Linux and LFP daemon provided by firmware

- LFP in LPAR
 - HiperSockets based communication between z/VSE and Linux on z Systems
 - z/VSE and Linux in LPARs
 - Linux distribution provided by the customer



z/VSE 5.2 – Security



OpenSSL

- openssl support for z/VSE is available since z/VSE 5.1
- openssl code level: openssl 1.0.1e (updated)
 - Supports Transport Layer Security (TLS) 1.2
- z/VSE supports a subset of openssl functions
- IPv6/VSE and Linux Fast Path exploit openssl
- z/VSE supports the GSK (z/OS SSL API) and openssl API
- New APAR available since July 2015: APAR DY47613
z/VSE 5.1 PTF UD54122, z/VSE 5.2 UD54123



Security enhancements

- Basic Security Manager (BSM) / IUI enhancements
 - Separation of auditor from administration function
 - New user type AUDITOR
 - Extension of IUI security dialog for MQ classes
 - Unique group (GRP) and user id (UID) names ensured

- Key store conversion to manage multiple key stores
- (openSSL) LE multiplexer to separate SSL function from TCP/IP API

- LDAP batch tools to support search, add, modify, delete

- Monitoring agent security enhancement through IP filter support
 - Checks if incoming source IP / packet matches the information in the configuration file

- VSAM IDCAMS security
 - IDCAMS protected via RACROUTE



z/VSE 5.2 – Further Enhancements



z/VS E Component Enhancements

■ VSE/VSAM

- Chaining VSAM requests (chained RPL support) – reduces system overhead
 - Whole RPL chain released when error detected
- Remove duplicate VOLSERs on DEFINE CLUSTER
 - Eliminates duplicate VOLSERs automatically
- SHOWCB macro enhancements
- New catalog management trace
- CISIZE definition on DLBL statement for VSAM files
- VSAM IDCAMS security

■ VSE/POWER

- Extended generation messages (XEM)
 - Generated for created, altered or deleted Q-entries
 - May be retrieved by SAS users
- Delete SLI member after reading (DEL=YES/NO keyword in SLI statement)



z/VSE Component Enhancements

- z/VSE Connectors
 - SOAP enhancements
 - VSE/POWER XEM messages may be retrieved by Java applications
 - DDNAME support for redirector SNAP trace
- Language Environment
 - Easy activation of Run-unit work area (RUWA) tracing (CRUT transaction)
 - Can help to debug and monitor CICS program storage requirements
- IUI dialogs
 - Display VTOC dialog – sort by VOLID
 - Updated device information dialog
- Base install without VTAM terminals (with TCP/IP terminal instead)
- Duplicate volumes are detected during installation and set to device down
- FCOPY performance improvements
 - new OPTIMIZE=5 parameter to read 15 tracks per I/O



z/VSE 5.2 – Statement of Direction (SOD)



z/VSE Statement of Direction (SOD) - in z/VSE 5.2 Announcement

April 2014

- 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.

All statements regarding IBM's plans, directions, and intent are subject to change or withdrawal without notice.



z/VSE 6.1 GA Announcement

- Preview: May 11, 2015, GA ann.: 10/05/2015, planned for GA 11/27/2015

- Hardware support
 - Architectural Level Set to IBM System z10 or later
 - IBM z13 support
 - Configurable Crypto Express5S
 - More than 16 cypto domain support
 - FICON Express16S for ECKD, channel to channel or FCP-attached SCSI
 - 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.

- New CICS version: CICS TS for z/VSE 2.1 - fullfills Statement of Direction (SOD)



z/VSE 6.1 GA Announcement ...

- Networking enhancements
 - IPv6/VSE 1.2 – new release
 - TCP/IP for z/VSE 2.1 – new version
- Connectors
 - MQ Client Trigger Monitor
- z/VSE 6.1 requires an initial installation, Fast Service Upgrade (FSU) from z/VSE V5 not supported
- z/VSE 6.1 will be delivered in English only
- z/VSE Central Functions renamed to z/VSE
- Statement of direction:
IBM plans to deliver future upgrades of z/VSE on DVD or electronically only.

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CICS TS for z/VSE 2.1

- A new CICS TS version for z/VSE - The first major CICS TS update since 1999
 - GA Announcement 10/05/2015, GA 11/27/2015
 - Based on CICS TS for VSE/ESA 1.1.1
 - A complete new build of CICS TS
 - Fully compatible with CICS TS for VSE/ESA 1.1.1
 - No recompile or re-link of CICS applications required
 - New APIs described in CICS Enhancements Guide
 - Migration considerations described in migration white paper available at z/VSE 6.1 GA

- Only available for z/VSE 6.1 and later, replaces CICS TS for VSE/ESA 1.1.1
 - CICS TS for VSE/ESA 1.1.1 still delivered with z/VSE Version 5



CICS TS for z/VSE 2.1 - Enhancements

- CICS Explorer update capability
- Channel & Container support - Lifts the 32K Commarea limitation
- CICS requirements
 - More current cypher suites (AES128/256) to CICS Web Support
 - Support for EXEC CICS INQUIRE SYSTEM OSLEVEL
 - Millisecond support in EXEC CICS ASKTIME
 - Millisecond option to EXEC CICS FORMATTIME
- CICS DDM (CICS Distributed Data Management) not supported



CICS Explorer

- Announced 04/03/2012, GA 06/15/2012, new enhancements in CICS TS for z/VSE 2.1

- CICS Explorer monitoring in z/VSE Version 5
 - System management framework for CICS TS
 - Consists of CICS Explorer client and a CICS TS server extension
 - CICS Explorer client
 - Read-only capabilities; Eclipse-based user interface on workstation
 - Connects to CICS TS via TCP/IP - Communication via HTTP requests
 - One CICS Explorer client for z/VSE and z/OS
 - CICS Explorer server extension
 - Delivered as PTF for CICS TS for VSE/ESA 1.1.1

- Integrated into CICS TS for z/VSE 2.1 (**z/VSE 6.1**)
 - CICS Explorer server extension integrated into CICS TS for z/VSE 2.1
 - Provides updates to CICS resources
 - Update and control CICS resources as you would do with transactions on your CICS terminal
 - Enable / disable CICS resources, change selected CICS definitions, ...



CICS Explorer ...

IBM CICS Explorer - C:/CICS-Work

File Edit Projekt Operations Definitions - Suchen Window Help

ISC/MRO Con TCP/IP Serv Terminal Programs Transactions TS Queues Transaction Cl Tasks Files TD Queues

CNX0211I Context: PRODCICS. Resource: PROGRAM. 1.603 records collected at 28.09.2012 18:04:08

Region	Name	Status	Use Count	Concurrent Us...	Language	Share Status	CEDF Status	NEWCOPY Status
PRODCICS	\$EDCTCPM	✓ ENABLED	0	0	C	N/A	CEDF	NOTREQUIRED
PRODCICS	\$EDTCPV	✓ ENABLED	0	0	C	N/A	CEDF	NOTREQUIRED
PRODCICS	ARXITCPU	✓ ENABLED	0	0	ASSEMBLER	N/A	CEDF	NOTREQUIRED
PRODCICS	BSTADMII	✓ ENABLED	0	0	ASSEMBLER	N/A	CEDF	NOTREQUIRED
PRODCICS	CEEBINT	✓ ENABLED	1	1	ASSEMBLER	N/A	CEDF	NOTREQUIRED
PRODCICS	CEEBNATX	✓ ENABLED	0	0	ASSEMBLER	N/A	CEDF	NOTREQUIRED
PRODCICS	CEECBLDY	✓ ENABLED	0	0	ASSEMBLER	N/A	CEDF	NOTREQUIRED
PRODCICS	CEECICS	✓ ENABLED	1	1	ASSEMBLER	N/A	CEDF	NOTREQUIRED
PRODCICS	CEECDATX	✓ ENABLED	0	0	ASSEMBLER	N/A	CEDF	NOTREQUIRED
PRODCICS	CEECMI	✓ ENABLED	0	0	ASSEMBLER	N/A	CEDF	NOTREQUIRED
PRODCICS	CEECOPT	✓ ENABLED	1	1	ASSEMBLER	N/A	CEDF	NOTREQUIRED
PRODCICS	CEECRHP	✓ ENABLED	0	0	ASSEMBLER	N/A	CEDF	NOTREQUIRED
PRODCICS	CEECXITA	✓ ENABLED	1	1	ASSEMBLER	N/A	CEDF	NOTREQUIRED
PRODCICS	CEECXTAN	✓ ENABLED	1	1	ASSEMBLER	N/A	CEDF	NOTREQUIRED
PRODCICS	CEECZST	✓ ENABLED	0	0	ASSEMBLER	N/A	CEDF	NOTREQUIRED
PRODCICS	CEEDATE	✓ ENABLED	0	0	ASSEMBLER	N/A	CEDF	NOTREQUIRED
PRODCICS	CEEDATM	✓ ENABLED	0	0	ASSEMBLER	N/A	CEDF	NOTREQUIRED
PRODCICS	CEEDAYS	✓ ENABLED	0	0	ASSEMBLER	N/A	CEDF	NOTREQUIRED
PRODCICS	CEEDCOD	✓ ENABLED	0	0	ASSEMBLER	N/A	CEDF	NOTREQUIRED
PRODCICS	CEEDSHP	✓ ENABLED	0	0	ASSEMBLER	N/A	CEDF	NOTREQUIRED
PRODCICS	CEEDYWK	✓ ENABLED	0	0	ASSEMBLER	N/A	CEDF	NOTREQUIRED
PRODCICS	CEENV	✓ ENABLED	0	0	ASSEMBLER	N/A	CEDF	NOTREQUIRED
PRODCICS	CEEEV000	✓ ENABLED	0	0	NOTDEFINED	N/A	CEDF	REQUIRED
PRODCICS	CEEEV001	✓ ENABLED	0	0	NOTDEFINED	N/A	CEDF	REQUIRED
PRODCICS	CEEEV002	✓ ENABLED	0	0	NOTDEFINED	N/A	CEDF	REQUIRED
PRODCICS	CEEEV003	✓ ENABLED	1	1	ASSEMBLER	N/A	CEDF	NOTREQUIRED
PRODCICS	CEEEV004	✓ ENABLED	0	0	NOTDEFINED	N/A	CEDF	REQUIRED
PRODCICS	CEEEV005	✓ ENABLED	1	1	ASSEMBLER	N/A	CEDF	NOTREQUIRED
PRODCICS	CEEEV006	✓ ENABLED	0	0	NOTDEFINED	N/A	CEDF	REQUIRED
PRODCICS	CEEEV007	✓ ENABLED	0	0	NOTDEFINED	N/A	CEDF	REQUIRED
PRODCICS	CEEEV008	✓ ENABLED	0	0	NOTDEFINED	N/A	CEDF	REQUIRED
PRODCICS	CEEEV009	✓ ENABLED	0	0	NOTDEFINED	N/A	CEDF	REQUIRED
PRODCICS	CEEEV010	✓ ENABLED	1	1	ASSEMBLER	N/A	CEDF	NOTREQUIRED
PRODCICS	CFFV011	✓ FNARI FD	0	0	NOTDEFINED	N/A	CEDF	REQUIRED

IZE0100I Connected user SYSA to host l...m1.boeblingen.de.ibm.com on port 27283

Inx



Channels and Containers

- z/VSE ported channel and container APIs from CICS TS for z/OS 3.1

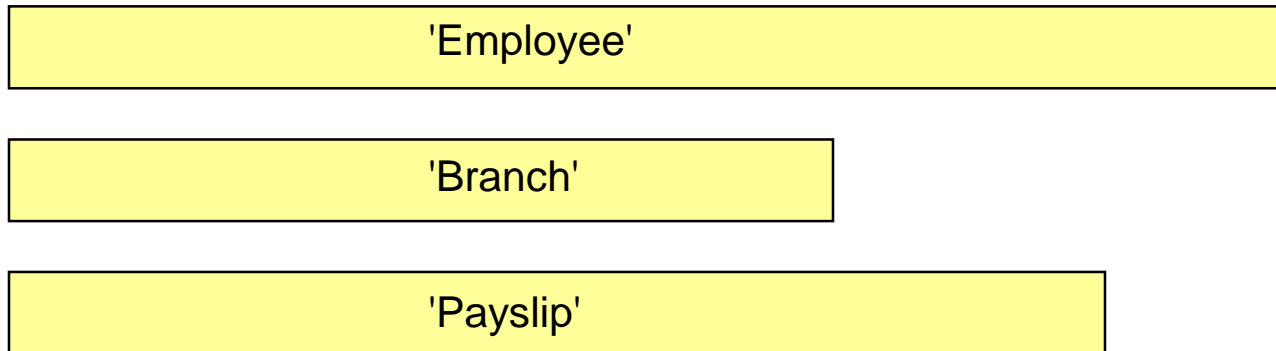
- Channels and containers lift the 32K Commarea limitation
 - Applicable for both LINK and XCTL, Distributed Program Link (DPL)
 - Affects the exchange of data between CICS tasks
 - Local and transaction routing
 - START with data

- Language support is provided for C, COBOL, HLASM, and PL/I.

- Channels and Containers limitations
 - In 31 bit virtual storage only
 - No support for
 - External CICS Interface (EXCI), External Call Interface (ECI), CICS Web Support (CWS)
 - Business Transaction Services (BTS)



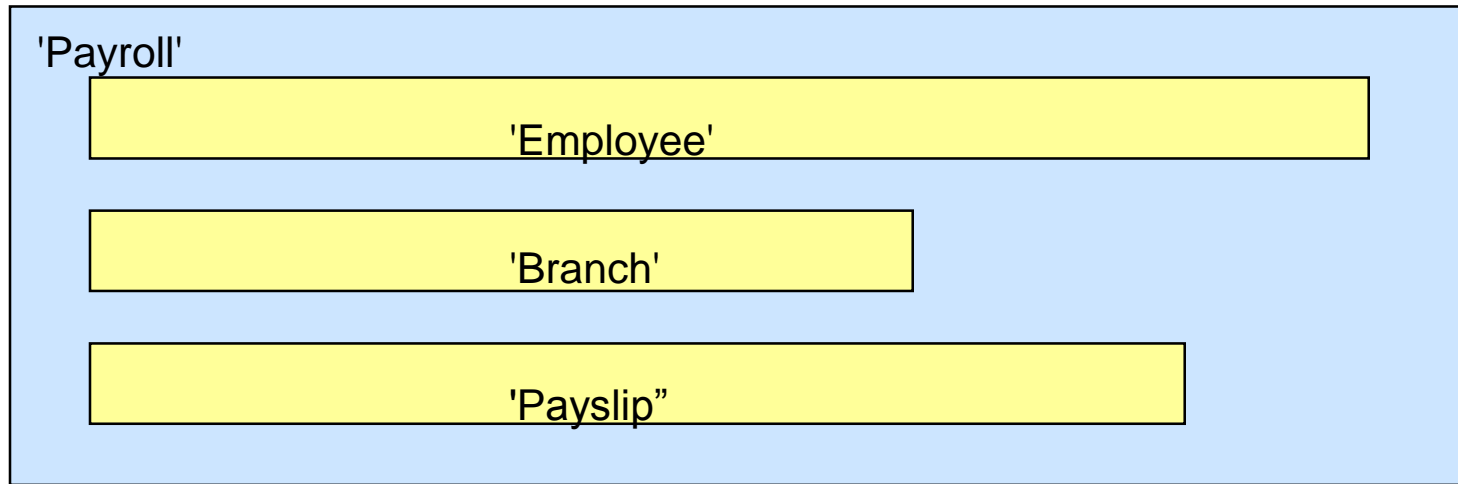
Containers



- To solve the 32K Commarea problem a new construct will be provided
- Named block of data designed for passing information between programs
 - Like named COMMAREAs
- CONTAINER API
 - Created using (EXEC CICS) PUT CONTAINER, defines the size of the container
 - Read using (EXEC CICS) GET CONTAINER
 - Delete using (EXEC CICS) DELETE CONTAINER, to free storage, if no longer required
- No CICS enforced size limitation
 - Containers are stored within the CICS EDSA (31 bit partition virtual storage)



Channels



- A group of Containers
 - No limit on the number of Containers in a Channel
- A Channel is a sort of program interface
 - Passed on LINK, XCTL, pseudoconversational RETURN, and START commands
- Non-persistent
 - Non-recoverable resource similar to commareas



A Simple Example

PROGA

```

PUT CONTAINER('Employee') CHANNEL('Payroll') FROM(emp-data)
PUT CONTAINER('Branch') CHANNEL('Payroll') FROM(branch-data)

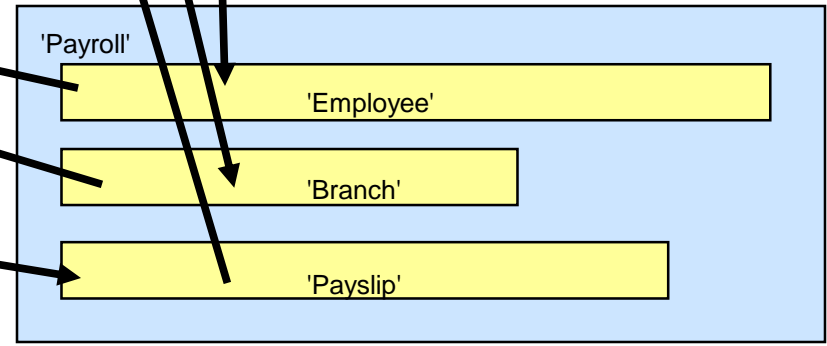
LINK PROGRAM('PROGB') CHANNEL('Payroll')

GET CONTAINER('Payslip') CHANNEL('Payroll') INTO(pay-data)
    
```

PROGB

```

GET CONTAINER('Employee') INTO(emp-data)
GET CONTAINER('Branch') INTO(branch-data)
...
PUT CONTAINER('Payslip') FROM(pay-data)
    
```



z/VSE 6.1 – IBM TCP/IP for z/VSE 2.1

- A new version of CSI's TCP/IP stack – only supported on z/VSE 6.1
 - Levelset based on TCP/IP for VSE 1.5F / 1.5G
 - Replaces IBM TCP/IP for VSE/ESA 1.5F on z/VSE 6.1

- New white-list firewall
 - Access denied unless an IP address is specifically allowed to communicate with the VSE system.
 - Firewall shield loaded during TCP/IP startup (in fail or warn mode - for logging only)
 - Configuration phase contains a list of IP addresses
 - To each IP address range you may specify VSE ports (TCP or UDP) and if ICMP (Ping) is allowed



z/VSE 6.1 – IBM TCP/IP for z/VSE 2.1 ...

- Cross memory services for external partition socket requests
 - Socket requests allocated in partition GETVIS instead of system GETVIS
- New utilities for automation and TN3270 services
 - TN3270 improved recovery, external TN3270 server
Multiple TN3270 servers can run at the same time
- Enhanced TLS/SSL cryptography
 - RFC5746 implemented to allow usage of
TLS extensions to prevent the handshake renegotiation security exposure
- Internal processing improvements



z/VSE 6.1 – IBM IPv6/VSE 1.2

- A new release of BSI's TCP/IP stack – only supported on z/VSE 6.1

- New (basic) firewall
 - Examines IPv4 packets and IPv6 Ethernet frames
 - Source IP address, packet protocol, TCP or UDP port, ICMP can be accepted / denied
 - VSE Librarian member contains the firewall rules table
 - Default firewall rules allow all packets to be processed by the stack
 - Only Inbound (IN) rules are processed
 - Enabled by default



z/VSE 6.1 – IPv6/VSE 1.2 ...

- Automated OSA Express failover using hot swap devices for high availability
 - Automatically recover from OSA Express device failures by using a backup device

- Improved SSL support including TLS 1.2 and Diffie Hellman (DH) / Elliptic Curve Cryptography (ECC) sockets
 - Update to the latest openssl implementation
 - Support to establish up to 16 SSL sockets concurrently, can 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 devices
 - Multiple IP addresses can be defined for a single network interface
 - Virtual network interfaces share a single OSA Express device

- Improved stack CPU optimization



z/VSE 6.1 – Network enhancements

- Configurable output buffers for HiperSockets and OSA Express devices
 - May improve TCP/IP performance, if z/VSE sends faster than OSA card can transfer
 - Up to 64 QDIO (Queued Direct I/O) output buffers
 - To be configured in configuration file (IJBICONF.PHASE)
 - Requires PFIxed partition 31 bit GETVIS space
 - For OSA-Express (CHPID OSD, OSX), HiperSockets (CHPID IQD)

- Configurable input buffers for HiperSockets and OSA Express devices (since z/VSE 5.1)
 - May improve TCP/IP performance
 - Up to 64 QDIO output buffers
 - To be configured in configuration file (IJBICONF.PHASE)
 - Requires PFIxed partition 31 bit GETVIS space
 - The limit for PFIx storage has to be defined with the JCL SETPFIx command



z/VSE 6.1 – Connector enhancements

- MQ trigger monitor
 - Extends the IBM WebSphere MQ Client for VSE functionality
 - It monitors an IBM WebSphere MQ server running on any platform.
 - If a message arrives on a WebSphere MQ server queue, the trigger monitor may start a CICS program.

- IBM WebSphere MQ for z/VSE V3.0 withdrawn from service by September 30, 2015
 - Service extensions possible
 - The WebSphere MQ Client for VSE together with the MQ trigger monitor can be used as an alternative.



Migration to a supported z/VSE release

- Please migrate to a supported z/VSE release to get the latest software service, hardware exploitation and functionality

- The only supported releases by 11/27/2015 are z/VSE 5.1, 5.2, 6.1
 - z/VSE 5.1, 5.2 require z9 or higher
 - **z/VSE 5.1 end of service effective June 30, 2016.**
 - z/VSE 5.2 can still be ordered after z/VSE 6.1 GA, end of marketing not announced yet
 - Fast Service Upgrade (FSU) to z/VSE 5.1, 5.2 supported
 - z/VSE 6.1 requires an initial installation

- Consider the Single Version Charging (SVC) requirements ... and for z/VSE 6.1 Migration Price Option (MPO – see next page).

- IBM System z software pricing:
<http://www-03.ibm.com/systems/z/resources/swprice/reference/>

- Migration white paper will be provided at z/VSE 6.1 GA



Migration Price Option (MPO)

- The Migration Price Option is available (see z/VSE 6.1 announcement letter for more details)::
 - 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**.
- 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.



End of marketing announcements

- IBM Advanced Communication Function/Network Control Program (**ACF/NCP**) 7.8.1 5648-063 withdrawn from marketing September 8, 2014

- IBM Advanced Communication Function/System Support Program (**ACF/SSP**) for VSE/ESA 4.8.1, withdrawn from marketing September 7, 2015.
 - Replacement product: none.

- IBM Overlay Generation Language/370 (**OGL/370**) 1.0.0 withdrawn from marketing September 2, 2015.
 - Replacement product: none.

- **IBM 3592 Tape Controller Model C07** and select features will be withdrawn from marketing effective on November 13, 2015.



End of service announcements

- **z/VSE 5.1** withdrawn from service June 30, 2016.
 - Replacement product: z/VSE 5.2.
- **WebSphere MQ for z/VSE 3.0** withdrawn from service September 30, 2015.
 - Replacement product: none.
 - Individual service extension contracts can be requested for service beyond September 30, 2015 for a period of at least 3 years.
 - The WebSphere MQ Client for VSE continues to be available.
- **Emulation Program (EP) 1.14** withdrawn from service December 31, 2015.
- **z/VM 5.4** withdrawn from service December 31, 2016 or until z9 processors are withdrawn from support, whichever is later.
 - z/VM V5.4 not supported on z13; Replacement product: z/VM V6.
- **IBM Advanced Communication Function/System Support Program (ACF/SSP)** for VSE/ESA 4.x.x 5686-064 to be withdrawn from service on September 30, 2016
- IBM TCP/IP for VSE/ESA 1.5.0 5686-A04 Feature S001G2C - **NFS** for IBM TCP/IP for VSE/ESA to be withdrawn from service on September 30, 2016



New: z/VSE Knowledge Center

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z/VSE welcome page

This page provides an entry point to product information about z/VSE. Use the links in the Table of Contents to find documentation for specific versions and editions of this product family. Generated links to developerWorks, Redbooks, and white papers are also provided when articles about the product are available. On this page, you can find entry points to sites that help you learn more about this product and other IBM products. There are also links to web sites that help you find support and stay current.

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- z/VSE Home Page: General information about z/VSE
- z/VSE products and components: General information about z/VSE products and components
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- IBM Support Portal
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- Status Page: Detailed information on supported z/VSE releases and hardware

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- IBM z/VSE technical articles

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- Service Management Connect IBM z/VSE: A community site with a vast amount of z/VSE information for IT professionals
- Contact z/VSE

http://www-01.ibm.com/support/knowledgecenter/SSB27H/zvse_welcome.html

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CICS Transaction Server for VSE/ESA 1.1.1

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CICS Transaction Server for VSE/ESA Version 1 Release 1

The CICS Transaction Server for VSE/ESA (CICS TS for VSE/ESA) belongs to the CICS Transaction Server family, supports large transaction volumes with fast, consistent response times and provides high availability and scalability at a low cost per transaction. CICS TS for VSE/ESA provides direct access to CICS applications from the web. The CICS Explorer can be used to monitor the usage of resources on CICS TS for VSE/ESA.

Documentation for the IBM CICS Transaction Server for VSE/ESA is provided as downloadable PDF manuals from the [IBM Publications Center](#).



Learn more

- Product documentation
- CICS Transaction Server for VSE/ESA 1.1 product information
- CICS Transaction Server for VSE/ESA 1.1 announcement letter
- IBM RedBooks
- developerWorks
- CICS showcase



Hot topics in this release

- Enhancements Guide



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IBM z/VSE
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z/VSE is a widely used mainframe operating system. z/VSE is designed to offer a stable, secure, and continuously available environment for applications running on the mainframe (IBM System z). z/VSE today is the result of nearly five decades of technological advancement. z/VSE evolved from a simple operating system that could process a single program at a time to a sophisticated operating system that can handle many programs and interactive users concurrently.

What it does for you:
z/VSE is designed to take advantage of the z/Architecture. It supports the latest IBM System z processors (mainframe) and IBM System Storage (ECKD, SCSI disks and tape systems).
More information is on the [z/VSE home page](#)

Beta program
For our z/VSE release in development we are looking for z/VSE users that want to run some tests with their workload. Please → [contact us](#) for details. The next beta test period may start in September 2014.

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z/VSE Requirements

- You may submit requirements at conferences (GSE, zUniversity (Edge), VM Workshop, ...)
- **z/VSE** requirements via the Request for Enhancements (RFE) database:
 - <http://www.ibm.com/developerworks/rfe/>
 - Please select the following for z/VSE requirements
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 - *Operating system = IBM z/VSE*
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- **CICS Transaction Server** requirements via the Request for Enhancement (RFE) database:
 - <http://www.ibm.com/developerworks/rfe/>
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z/VSE in the internet

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- Ingolf's z/VSE blog: www.ibm.com/developerworks/mydeveloperworks/blogs/vse/
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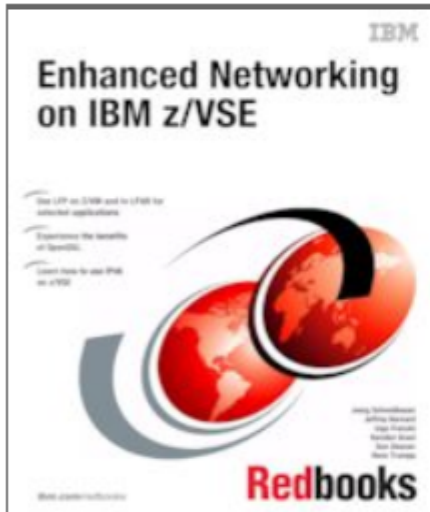
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More Information

... on VSE home page: <http://ibm.com/vse>

- Ingolf's z/VSE blog: <https://www.ibm.com/developerworks/mydeveloperworks/blogs/vse>
- **New:** Hints and Tips for z/VSE 5.2:
 - <http://www.ibm.com/systems/z/os/zvse/documentation/#hints>
- 64 bit virtual information: IBM z/VSE Extended Addressability
- CICS Explorer: <http://www.ibm.com/software/htp/cics/explorer/>
- IBM Redbooks:
 - Introduction to the New Mainframe: z/VSE Basics
<http://www.redbooks.ibm.com/abstracts/sg247436.html?Open>
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or me – Ingolf Salm – salm@de.ibm.com – for any questions



Questions ?



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*Winners will be notified Thursday morning. Prizes must be picked up at registration desk, during operating hours, by the conclusion of the event.



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