

z/VSE News

Ingolf Salm

salm@de.ibm.com

Ingolf's z/VSE Blog: <https://www.ibm.com/developerworks/mydeveloperworks/blogs/vse>

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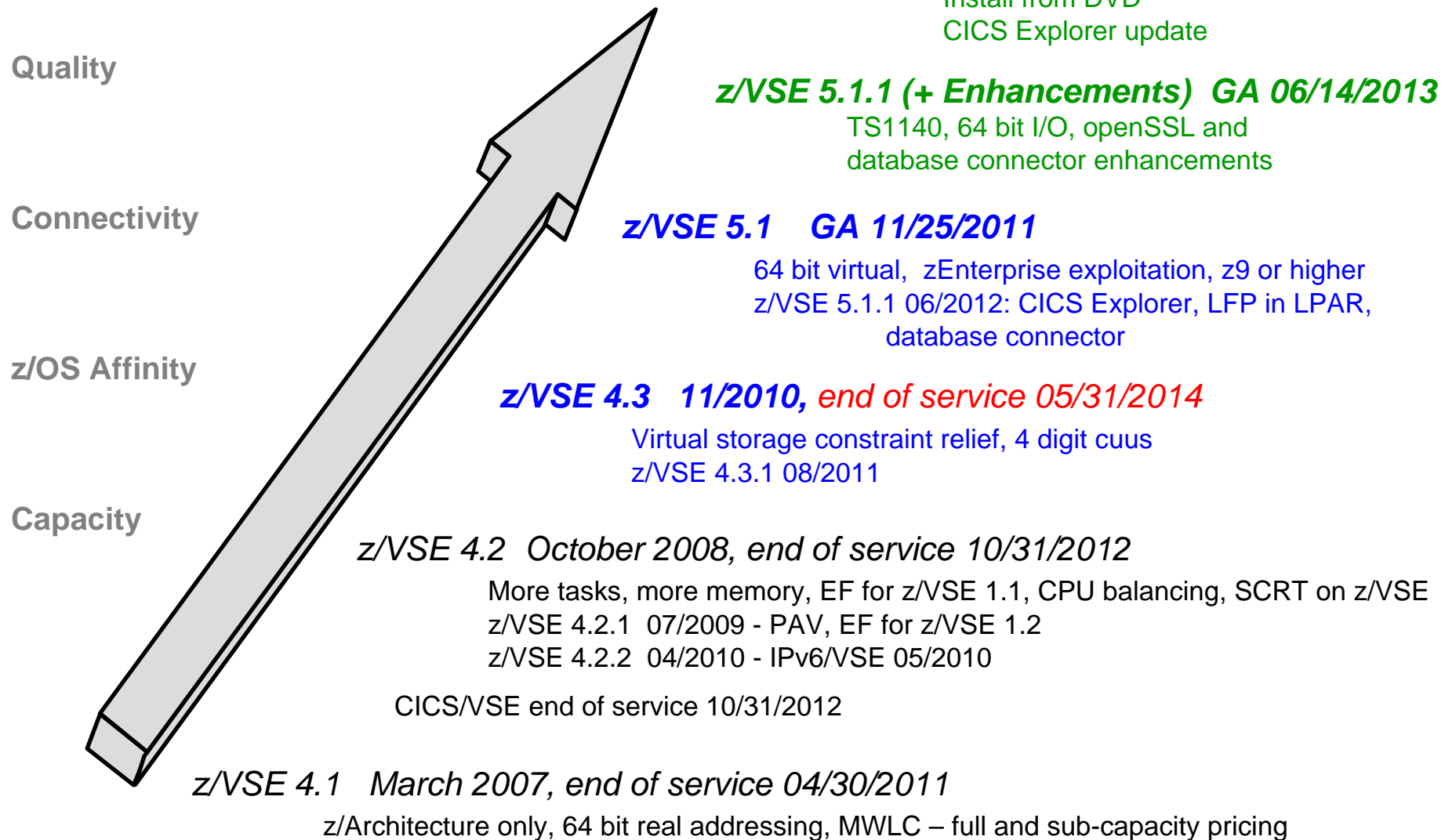
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Agenda

- Roadmap
- z/VSE 5.1 key functions
- z/VSE 5.1 additional enhancements
- CICS Explorer
- z/VSE 5.1 April 2013 announcement

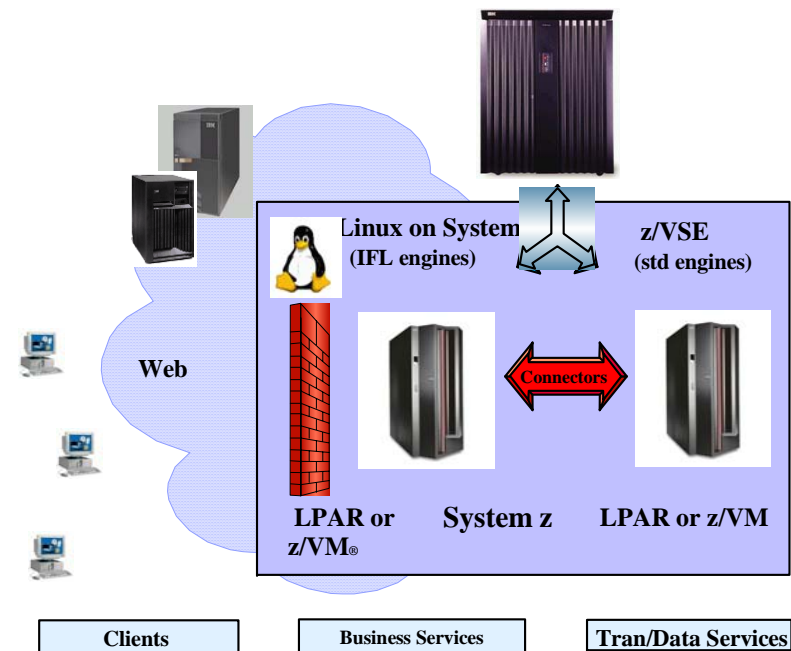
VSE Roadmap



VSE Strategy

- Helps **Protect** your existing investments in core VSE programs, data, equipment, IT skills, *plus* business processes, end user training, etc.
 - modernize, i.e. extend VSE resources to Web
 - exploit IBM servers, storage, and software
- **Integrate** VSE with the rest of your IT based on open and industry standards
 - (IBM) middleware
 - VSE connectors and web services
- **Extend** with Linux on System z
 - infrastructure consolidation/simplification
 - add new infrastructure and/or line-of-business applications

Why Not Think Inside the Box?



z/VSE 5.1 Migration Considerations

- Migrate to z/VSE 5.1.1 + Recommended Service Level (RSL) of February 2013
- VSE/VSAM
 - Migration of VSAM catalogs
 - Don't use Fastcopy to migrate VSAM catalogs
 - Flashcopy all VSAM volumes allocated to a VSAM catalog
 - Migrate all recoverable VSAM catalogs to standard VSAM catalogs
 - o **Before** the migration to z/VSE 4.3 or z/VSE 5.1
 - o PTF for “automatic” migration
- CICS/VSE
 - CICS Coexistence Environment removed
 - DL/I 1.12 replaces DL/I VSE 1.11 and DL/I DOS/VS 1.10
 - CICS/VSE 2.3
 - No DL/I support for CICS/VSE on z/VSE 4.3
 - No longer on base tapes
 - Not supported on z/VSE 5.1
 - End of service 10/31/2012

z/VSE V5.1

- z/VSE 5.1: Preview 04/12/2011, Announcement 10/12/2011, GA 11/25/2011
- z/VSE 5.1.1: GA 06/15/2012

- 64-bit virtual addressing

- Introduces Architectural Level Set (ALS) that requires System z9 or later

- IBM zEnterprise 196 (z196), IBM zEnterprise 114 (z114), IBM zEnterprise EC12 (zEC12)
 - Support Static Power Save Mode for MWLC clients with subcapacity option (z196, zEC12 only)
 - 4096-bit RSA keys with Crypto Express3 for enhanced security
 - Support of OSA-Express for zBX (CHPID OSX) to participate in an Intra Ensemble Data Network (IEDN) in z/VM guest or LPAR

- Exploitation of IBM System Storage options
 - Copy Export function of TS7700 Virtualization Engine for disaster recovery
 - Multi-Cluster Grid support of the TS7700 Virtualization Engine Series (TS7700)
 - IBM Storwize V7000 Midrange Disk System (z/VSE 4.2 and later)
 - IBM XIV (z/VSE 4.2 and later)

- Fast Service Upgrade (FSU) from z/VSE 4.2 and z/VSE 4.3

- Pricing
 - Midrange Workload License Charge (MWLC) pricing with sub-capacity option
 - z114: Advanced Entry Workload License Charge (AEWLC) pricing with sub-capacity option

z/VSE V5.1

- Networking enhancements
 - IPv6 support for Linux Fast Path
 - z/VSE z/VM IP Assist (VIA) exploitation
 - TCP/IP communication using Layer 2 (Data Link Layer)
 - Virtual Local Area Network (VLAN) support for OSA Express and Hipersockets
 - Global VLAN supported by TCP/IP for VSE/ESA and IPv6/VSE
 - General VLAN supported by IPv6/VSE

- IPv6/VSE
 - Large TCP window support, can increase throughput
 - 64 bit virtual exploitation, large TCP window storage allocated above the bar
 - Layer 2 support (OSA Express, IPv6 only)
 - VLAN support

- System management enhancements
 - SNMP Trap Client Extension monitoring – API

- High availability and disaster recovery enhancements
 - Copy Export function of TS7700 Virtualization Engine for disaster recovery
 - Multi-Cluster Grid support of the TS7700 Virtualization Engine Series (TS7700)
 - GDPS (Geographically Dispersed Parallel Sysplex) client (in a z/VM guest)
 - z/VSE supports heartbeat only
 - GDPS K-system can only monitor z/VSE
 - GDPS K-system can manage z/VM and therefore can manage z/VSE indirectly

z/VSE V5.1 ...

▪ System enhancements

- Language Environment enhancements
 - PL/I multitasking enhancements
 - C run-time socket API to include IPv6 related functions
 - Callable service sample for programs
 - Additions to system programmer C samples
 - Updated LE/C support for Librarian Members, and updates to the CEETRACE utility.
- E-business connector enhancements
 - VSE Script Connector to support LIBR access
- VSE/POWER
 - Token as new job attribute to address spooled output
- VTAPE enhancements
 - VTAPE Auto Close at EOJ dependent on new SCOPE keyword
 - SCOPE= SYSTEM or JOB
- TAPE UNLOAD at EOJ (TAPE UNL=EOJ)

z/VSE 5.1 Additional Enhancements 2012

- IBM z/VSE V5.1 - Additional enhancements: Announced 04/03/2012, GA 06/15/2012
- CICS Explorer for z/VSE
- Linux Fast Path in LPAR
- Linux Fast Path via z/VSE z/VM IP Assist (z/VSE VIA)
- z/VSE database connector
- VSE/POWER enhancement to ease job output handling (IPWSEGM to generate duplicates)
- IBM System Storage Tape Controller 3592 Model C07
- New symbolic parameter IJBVMID containing the z/VM userid if running on z/VM)
- PTFs: GA 4Q/2012
 - 64-bit input/output (I/O) processing for applications
 - IPv6/VSE V1.1 enhancements
 - Secure Sockets Layer (SSL) for secure data transmission
 - Layer 2 support for OSA Express devices for IPv4 links



VSE Support for System z

VSE Release	z800 / z900	z890 / z990	System z9 / z10 / z196 / z114 / zEC12	VSE EoS
z/VSE V5.1	No	No	Yes	tbd
z/VSE V4.3	Yes	Yes	Yes	05/31/2014
z/VSE V4.2	Yes	Yes	Yes	10/31/2012
z/VSE V4.1	Yes	Yes	Yes	04/30/2011
z/VSE V3.1	Yes	Yes	Yes	07/31/2009
VSE/ESA V2.7	Yes	Yes	Yes	02/28/2007
VSE/ESA V2.6	Yes	Yes	Yes	03/2006
VSE/ESA V2.5	Yes	No	No	12/2003
VSE/ESA V2.4	Yes	No	No	06/2002
VSE/ESA V2.3	No	No	No	12/2001

IBM zEnterprise exploitation

- 64 bit real addressing - up to 32 GB (System z)
- 64 bit virtual virtual addressing – up to 90 GB (System z)

- Large page support (z10, zEnterprise)
- Dynamic add / remove of logical CPs (z10, zEnterprise)

- Linux Fast Path (LFP) in z/VM mode LPAR (z10, zEnterprise)
- Exploitation of the z/VSE z/VM IP Assist (zEnterprise)

- 4096-bit RSA key support with configurable Crypto Express3 (z10, zEnterprise)

- zEnterprise and zEnterprise BladeCenter Extension (zBX) support
 - “native” Intra Ensemble Data Network (IEDN)
 - Virtual LAN support
 - Layer 2 support
 - IEDN communication using the z/VM VSWITCH

- HiperSockets Completion Queue on z196, z114, zEC12 (z/VSE 5.1.1)

- Static power save mode supported for SCRT (z196, zEC12)

- zEC12 does not support ESCON channels

Encryption Facility for z/VSE

- Optional priced feature for VSE Central Functions
- Supports the use of SAM files, VSE/VSAM files, VSE library members, tapes, virtual tapes as input or output
- Requires CP Assist for Cryptographic Function (CPACF)
 - no charge feature, only on z890, z990, z9, z10, z114, z196, **zEC12** servers
- Extends affinity between z/VSE and z/OS
 - Function roughly equivalent to EF for z/OS 1.1
 - Compatible with EF for z/OS V1.1 (Encryption Facility System z format)
 - EF for z/VSE tapes can be read by EF for z/VSE, EF for z/OS, EF for z/OS Java Client, and Decryption Client for z/OS,
 - EF for z/OS V1.1 and EF for z/OS Java client tapes can be read by EF for z/VSE
- EF for z/VSE 1.2
 - Supports z/VSE 4.2 and later
 - Supports openPGP standard
 - **OpenPGP exploits 4096-bit RSA keys (z10, zEnterprise)**

TCP/IP Connectivity for z/VSE

- TCP/IP connectivity for IPv4 communication
 - TCP/IP for VSE/ESA 1.5 – licensed from CSI International
 - IPv6/VSE – licensed from Barnard Software, Inc. (BSI)
 - Linux fast path (LFP)
 - EZA socket interface, new function calls
 - LE/C socket API

- TCP/IP connectivity for IPv6 communication
 - IPv6/VSE
 - EZA socket interface, new function calls
 - **Linux Fast Path (z/VSE 5.1)**

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

- z/VM queue-I/O assist for real networking devices
 - Performance assist for OSA-Express adapters and HiperSockets

IPv6/VSE

- Announced: 04/06/2010, GA 05/28/2010, **updated**

- Full function IPv4 and IPv6 stack with applications
 - MWLC with sub-capacity option for IPv6/VSE product
 - Supported releases: z/VSE 4.2 plus PTFs, z/VSE 4.3 or z/VSE 5.1
 - Optional Product of z/VSE 4.3 and z/VSE 5.1

- IPv6 solution for z/VSE
 - Includes the IPv6 stack, IPv6 APIs and IPv6-enabled applications
 - IBM's EZA Assembler interfaces support IPv4 and IPv6 communication
 - Extends 32 bit addresses (used in IPv4) to 128 bit addresses
 - To meet requirements of governmental agencies for products

- z/VSE 5.1 enhancements
 - Large TCP window support, can increase throughput
 - 64 bit virtual exploitation, large TCP window storage allocated above the bar
 - Layer 2 (data link layer, OSA Express devices for IPv6 only) and Layer 3 (IP layer) support
 - VLAN support
 - On extended base tape

- **z/VSE 5.1 additional enhancements (available as PTF)**
 - **Secure Sockets Layer (SSL) for secure data transmission**
 - **Layer 2 support for OSA Express devices for IPv4 links**

z/VSE 5.1 Networking Enhancements

- Layer 3 (IP layer)
 - TCP/IP stack uses IP packets that include IP addresses
 - Default mode for OSA Express and HiperSockets
 - Supported by TCP/IP for VSE/ESA and IPv6/VSE
 - Used on z/VSE 5.1 and prior releases

- Layer 2 (data link layer) support
 - TCP/IP stack uses Ethernet frames with MAC addresses
 - Device driver supports IPv4 and IPv6 communication, HiperSockets and OSA Express devices
 - Required for IPv6 communication through the z/VM VMSWITCH
 - Supported by IPv6/VSE (OSA Express only)
 - Can be used on z/VSE 5.1 only

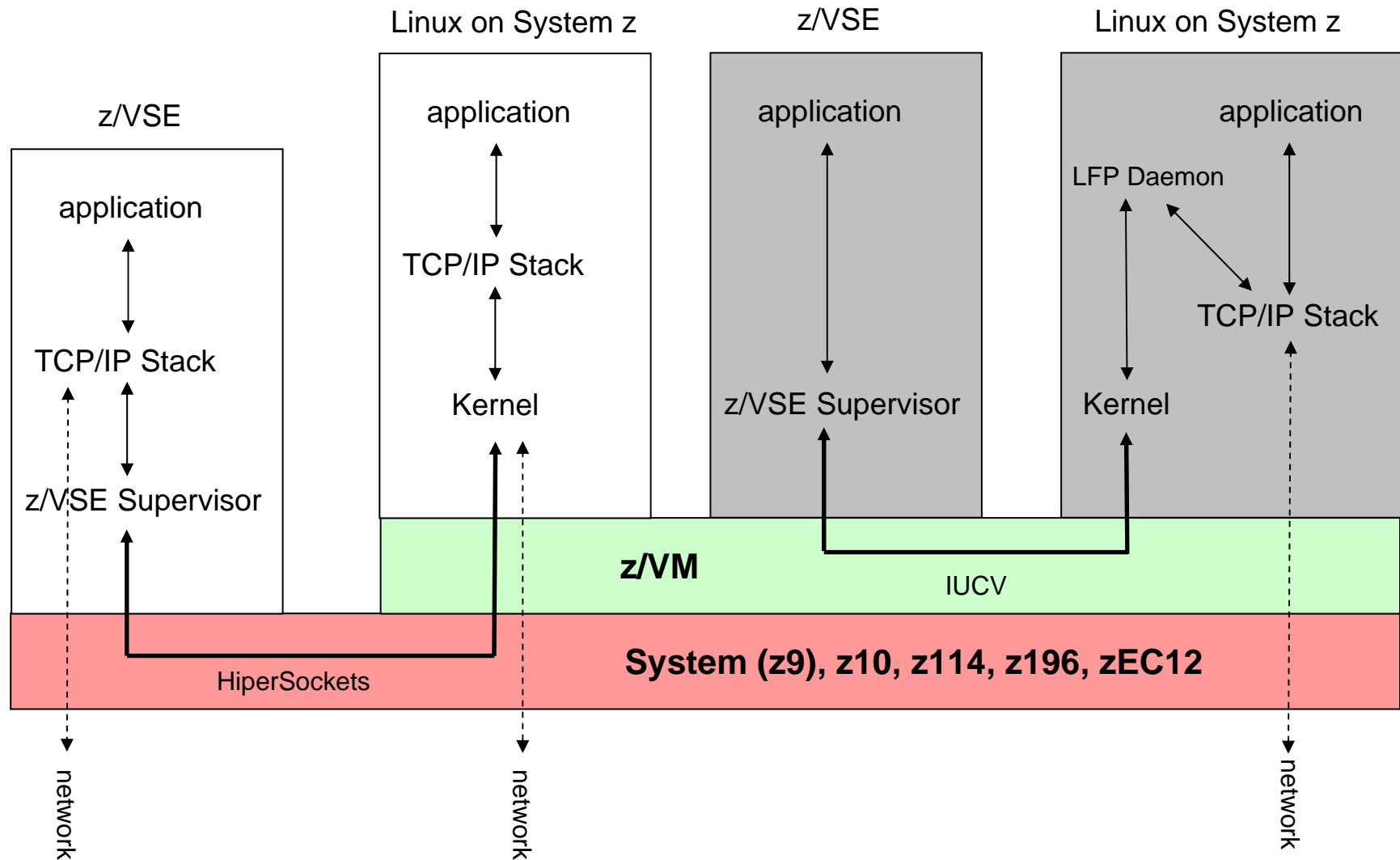
- Virtual LAN (VLAN) support
 - Allows to divide a physical network into separate logical networks
 - For OSA Express and HiperSocket devices
 - Layer 3: VLANs can be transparently used by TCP/IP for VSE/ESA and IPv6/VSE
 - Layer 2: VLANs can be used by IPv6/VSE only

- Global VLAN support
 - One global VLAN per link
 - Global VLANs defined in IJBOCONF – to be used OSX devices
 - IEDN requires OSA Express for zBX devices (OSX)

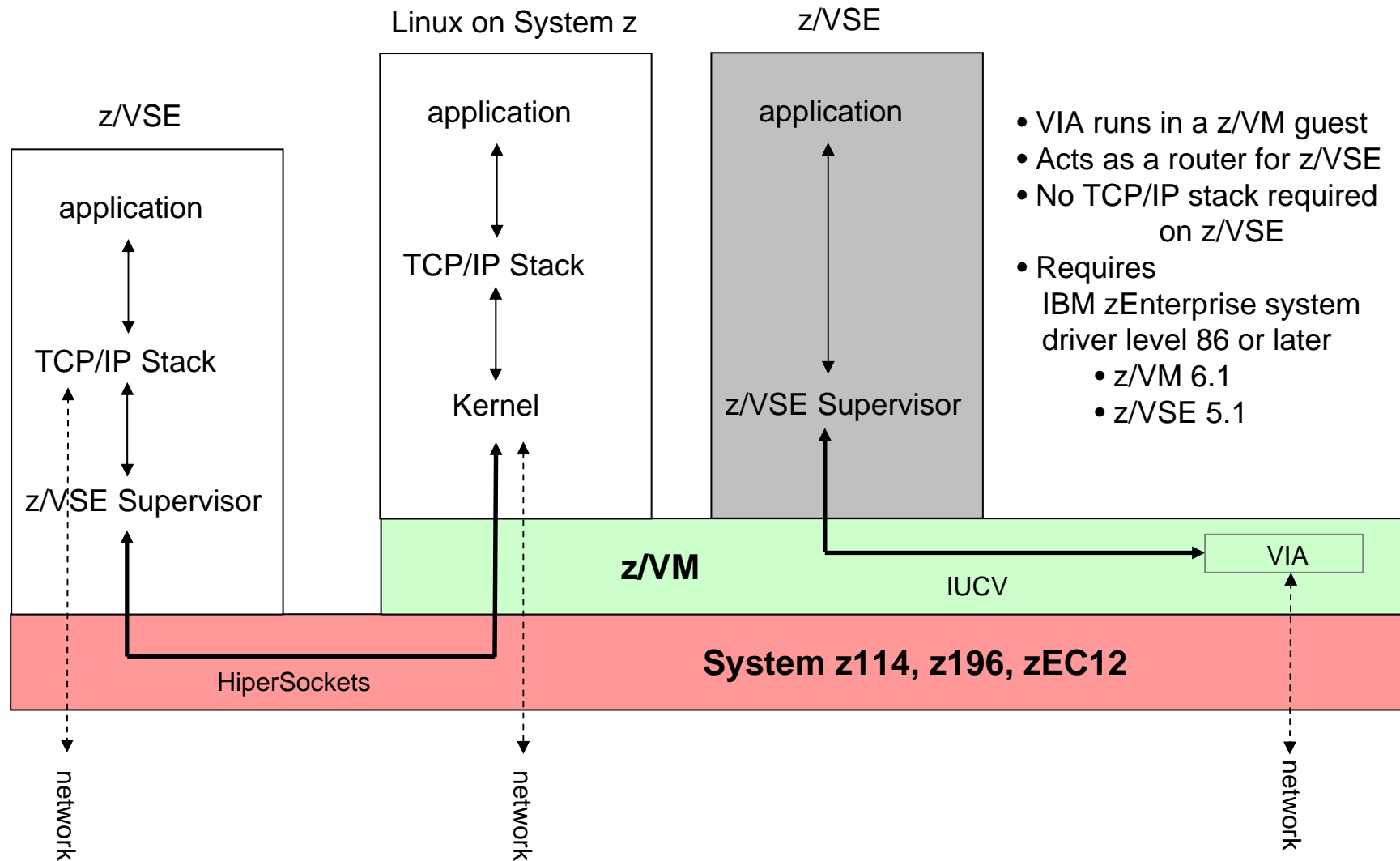
Linux Fast Path (LFP)

- Routes IPv4 or IPv6 socket request to Linux on System z without using the local TCP/IP stack
- LFP on z/VM (z/VSE 4.3 or higher)
 - Uses an IUCV connection between z/VSE and Linux on System z
 - Both – z/VSE and Linux – need to be z/VM guests of the same z/VM
 - LFP daemon on Linux forwards the socket request to the Linux TCP/IP stack
 - Will run best in **z/VM mode LPAR** (z/VM 5.4 or higher, z10 or higher)
 - Linux on System z on IFL, z/VSE on standard processors
 - System requirements: z/VM 5.4 or higher, Linux on System z distribution (RHEL, SLES)
- Linux Fast Path using z/VSE z/VM IP Assist (VIA – z/VSE 5.1)
 - Both – z/VSE and Linux – need to be z/VM guests of the same z/VM
 - System requirements: z114 or z196 or zEC12, z/VM 6.1 or later
- Linux Fast Path in LPAR (z/VSE 5.1 + enhancements – GA 06/15/2012)
 - LFP daemon on Linux forwards the socket request to the Linux TCP/IP stack
 - System requirements: z114 or z196 or zEC12, Linux on System z distribution (RHEL, SLES)
- LFP is transparent to IBM socket APIs
 - Supported APIs: LE/C socket API, EZA socket / EZASMI interface, ...
 - Transparent to IBM applications (DB2 client, Connectors, Power PNET)
 - No standard TCP/IP applications (Telnet, FTP, ...) provided
 - IPv6/VSE: TCP/IP applications can exploit LFP
- Provided with the z/VSE base product – no additional charge

Linux Fast Path (LFP) - Linux Fast Path on z/VM



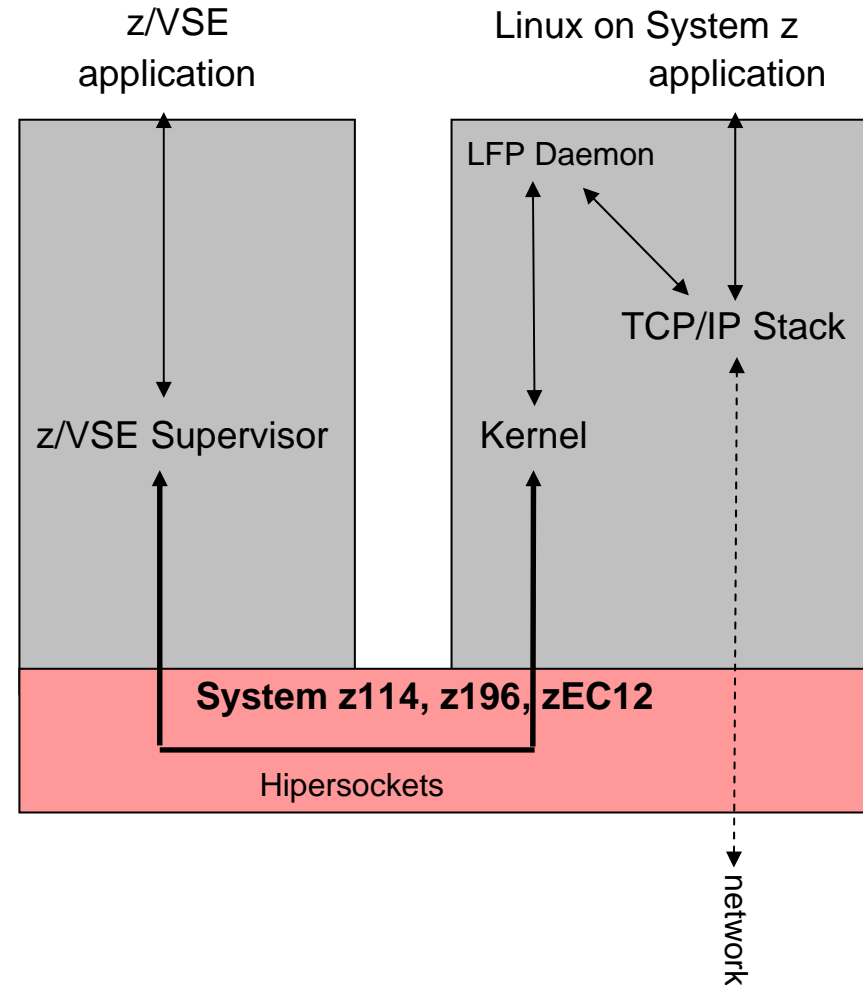
LFP - z/VSE z/VM IP Assist (VIA) – z/VSE 5.1



- VIA runs in a z/VM guest
- Acts as a router for z/VSE
- No TCP/IP stack required on z/VSE
- Requires IBM zEnterprise system driver level 86 or later
 - z/VM 6.1
 - z/VSE 5.1

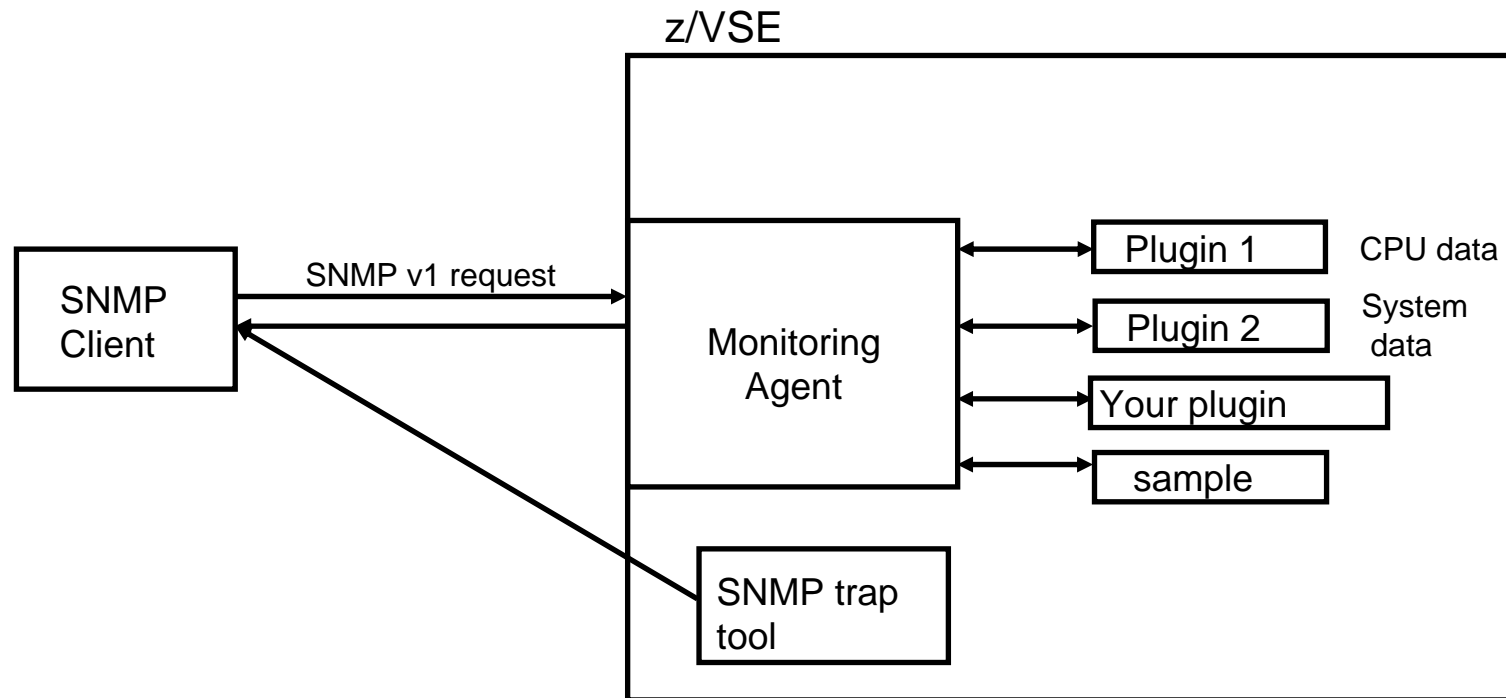
Linux Fast Path (LFP) – Linux Fast Path in LPAR

- No TCP/IP stack required on z/VSE
- System requirements
 - Supported on zEnterprise
 - Exploits HiperSockets completion queue
 - Linux on System z distribution (RHEL, SLES)
 - Available with z/VSE 5.1.1 (z/VSE 5.1 + PTF)



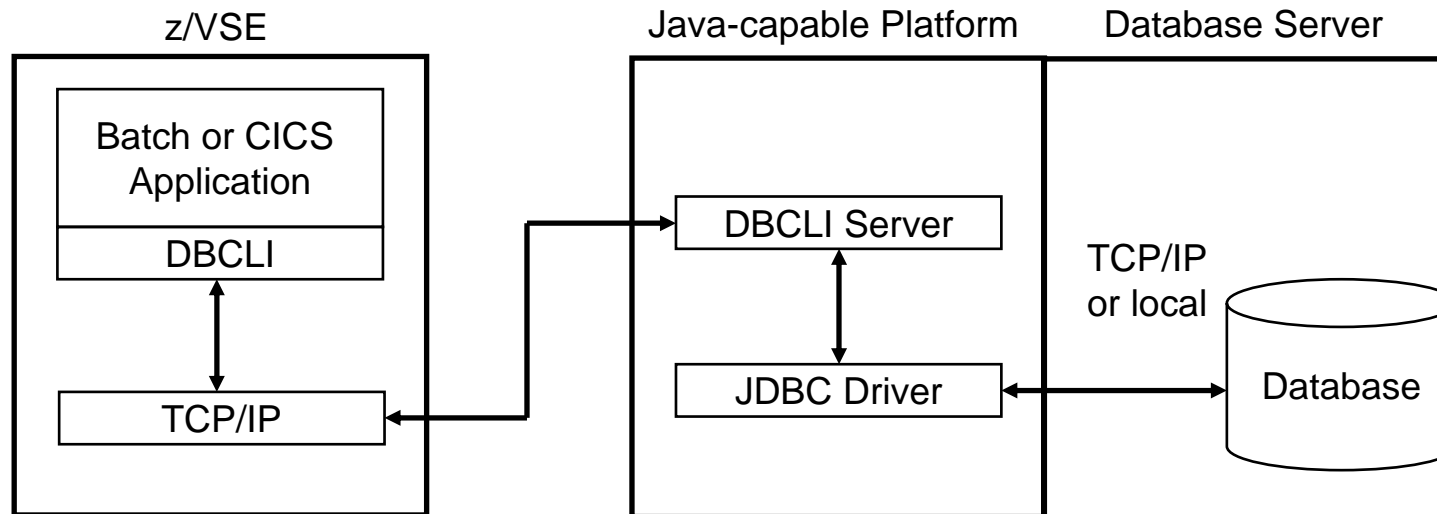
Connectors

- SNMP Connector
 - SNMP (Simple Network Management Protocol) V1 protocol
 - Allows to monitor system events on a network
 - Clients can retrieve z/VSE specific system and performance data
 - Performance monitors may collect the data for planning purposes
 - **SNMP Trap Client Extension monitoring – API**



Data Base Connector

- Available since June 15, 2012
- Provides a database call level interface (DBCLI)
 - For HLASM, COBOL, PL/I, C or REXX applications
- Connects to a remote database
- Consists of
 - DBCLI client on z/VSE
 - DBCLI server on any Java-capable platform



z/VSE 5.1: 64 bit virtual

- 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. instead of using and managing 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 – Define System Limits

SYSDEF statement to define the limits for memory objects

- Before IARV64 macro can be used.
- SYSDEF MEMOBJ,MEMLIMIT=,SHRLIMIT=,LFAREA=,LF64ONLY
 - MEMLIMIT – maximum virtual storage available for memory objects
 - o Theoretical maximum value is VSIZE.
 - SHRLIMIT – maximum virtual storage available for shared memory objects
 - = size of extended area, included in MEMLIMIT
 - LFAREA – maximum real storage to fix private memory objects
 - LF64ONLY – YES|NO – memory objects are fixed in 64 bit frames only

– Example:

```
sysdef memobj, memlimit=1g, shrlimit=500m, lfarea=10m
AR 0015 1140I  READY
```


64 bit virtual – Display Memory Object Information

- QUERY command to retrieve memory object information
 - QUERY MEMOBJ displays
 - Effective settings of MEMLIMIT, SHRLIMIT; LFAREA, LF64ONLY
 - Summary information: virtual storage consumption of private / shared memory objects
 - QUERY MEMOBJ,ALL displays
 - Additional statistic information
 - Virtual storage consumption of shared memory objects
 - Virtual storage consumption of private memory objects per partition

– Example

```
query memobj
AR 0015          LIMITS      USED          HWM
AR 0015 MEMLIMIT:  1024M      0M           1M
AR 0015 SHRLIMIT:   500M      0M           0M
AR 0015 LFAREA:     10M        OK           OK
AR 0015 LF64ONLY:  NO
AR 0015 1I40I  READY
```

IARV64 Macro

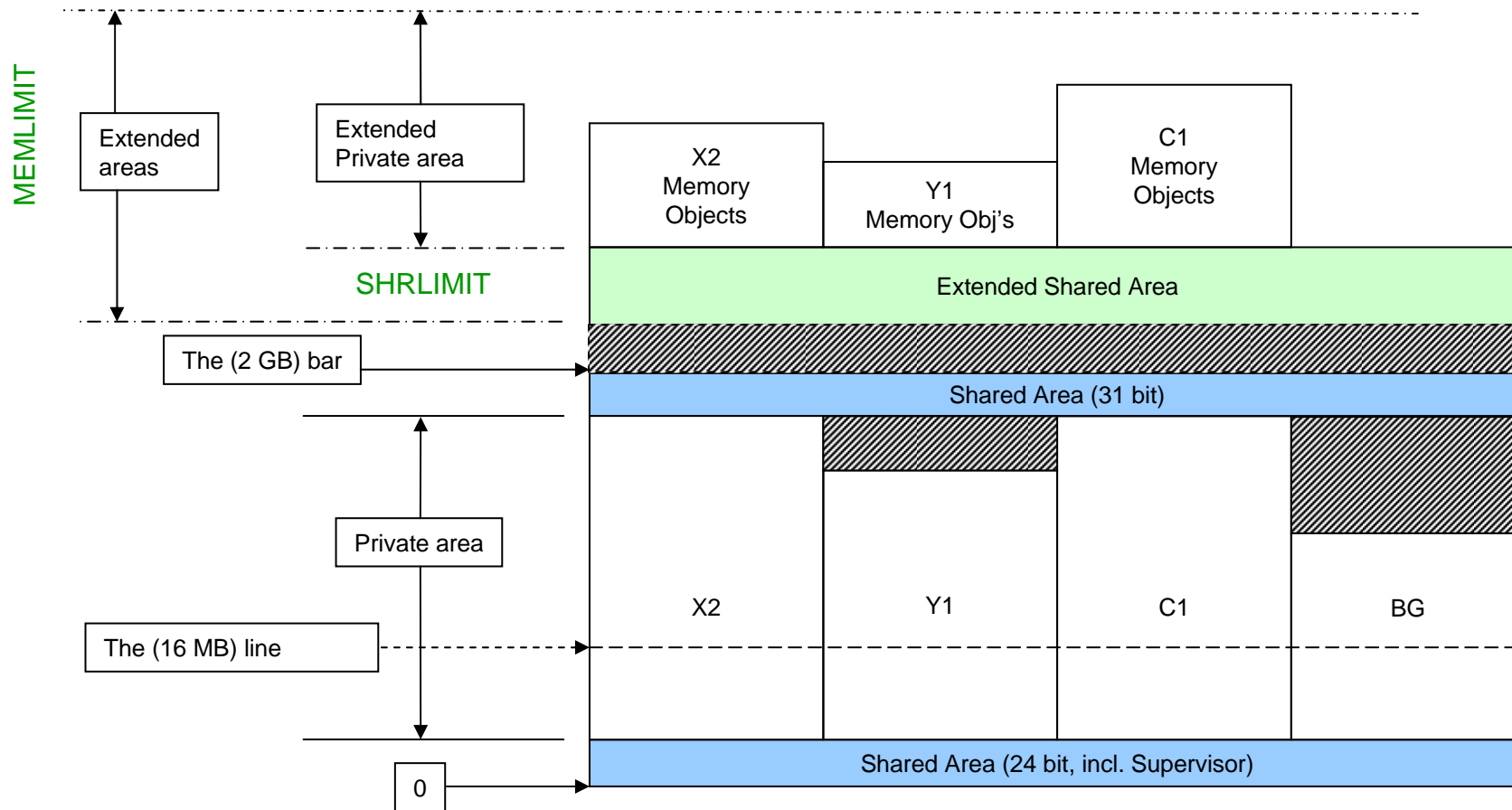
- IARV64 macro - ported from z/OS – provides services to
 - Creates and frees storage areas above the bar
 - Manage the physical frames behind the storage

- Programs use the IARV64 macro to obtain memory objects

- Services (IARV64 REQUEST=):
 - GETSTORE – create a private memory object
 - GETSHARED – create a memory object that can be shared across multiple address spaces
 - SHAREMEMOBJ – request that the specified address space be given access to a shared memory object
 - DETACH – free one or more memory objects
 - PAGEFIX – fix pages within one or more private memory objects
 - PAGEUNFIX – unfix pages within one or more private memory objects

 - GETSTORE / GETSHARED KEY parameter (default key = key of caller)
 - Unauthorized caller can set key 9 (all tasks can run in key 9)
 - Authorized callers can set any key

64 bit virtual - Address Space Layout



64 bit virtual - Considerations

- Memory objects can be allocated **for data only**.
 - Instruction execution above the bar (RMODE 64) not supported

- High Level Assembler support only.
 - High level languages (COBOL, PL/I, C, RPG, ...) do not support 64 bit registers or 64 bit mode.
 - AMODE 64 attribute should not be used.

- AMODE 64 is not supported by
 - LOAD / CDLOAD and the linkage editor
 - z/VSE system services (Supervisor, VSAM, BAM, DL/I, ...)
 - Space switching Program Calls (ss-PCs)
 - Data areas for system services including **I/O buffers** to be allocated below the bar.

- Services in online environment do not support 64 bit registers or AMODE 64
 - ICCF pseudo partitions

- CICS considerations
 - CICS services do not save / restore the high order half of 64 bit registers
 - The program must save them before invoking a CICS service and restore them afterwards
 - The program has to switch into AMODE 31 or 24 before invoking a CICS service

CICS

- CICS/VSE 2.3
 - No longer in the z/VSE 4.3 base
 - **Not supported on z/VSE 5.1**
 - End of service: 10/31/2012
 - Recommendation: Migration to CICS TS on z/VSE 4.2 or earlier

- DOS/VS RPG II compiler support for CICS TS
 - Allows RPG programs implemented for CICS/VSE V2.3 to run with CICS TS
 - Will be available on z/VSE 4.2 (z/VSE 4.1) via PTF (see Info. APAR II4447)

- New DL/I VSE 1.12 release since z/VSE 4.3
 - Optional product of z/VSE 4.3 and z/VSE 5.1 (the only DL/I release)
 - Provides constraint release (DL/I resources moved above the 16 MB line)
 - Replaces DL/I VSE 1.11 and DL/I DOS/VS 1.10
 - Does not support CICS/VSE 2.3
 - No DL/I support for CICS/VSE on z/VSE 4.3

CICS Explorer for z/VSE

- Announced 04/03/2012, GA 06/15/2012

- CICS Explorer – The new face to CICS
 - New 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
 - CICS Explorer server extension
 - Delivered as PTF for CICS TS for VSE/ESA 1.1.1
 - z/VSE 5.1 only

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: TERMLN. 62 records collected at 28.09.2012 18:02:25

Region	Name	Network Name	Acquire Status	Service Status	ATI Status	TTI Status	Session Status	User ID	Transaction ID
PRODCICS	-AAA	TMPLATE1	RELEASED	INSERVICE	ATI	TTI	NOCREATE	CICSUSER	
PRODCICS	-AAB	TMPLATE1	RELEASED	INSERVICE	ATI	TTI	CREATE	CICSUSER	
PRODCICS	-AAC	TMPLATE1	RELEASED	OUTSERVICE	ATI	TTI	CREATE	CICSUSER	
PRODCICS	-AAD	TMPLATE1	RELEASED	OUTSERVICE	ATI	TTI	CREATE	CICSUSER	
PRODCICS	-AAE	TMPLATE1	RELEASED	OUTSERVICE	ATI	TTI	CREATE	CICSUSER	
PRODCICS	-AAF	TMPLATE1	RELEASED	OUTSERVICE	ATI	TTI	CREATE	CICSUSER	
PRODCICS	-AAG	TMPLATE1	RELEASED	OUTSERVICE	ATI	TTI	CREATE	CICSUSER	
PRODCICS	-AAH	TMPLATE1	RELEASED	OUTSERVICE	ATI	TTI	CREATE	CICSUSER	
PRODCICS	-AAI	TMPLATE1	RELEASED	OUTSERVICE	ATI	TTI	CREATE	CICSUSER	
PRODCICS	-AAJ	TMPLATE1	RELEASED	OUTSERVICE	ATI	TTI	CREATE	CICSUSER	
PRODCICS	-AAK	TMPLATE1	RELEASED	OUTSERVICE	ATI	TTI	CREATE	CICSUSER	
PRODCICS	-AAL	TMPLATE1	RELEASED	OUTSERVICE	ATI	TTI	CREATE	CICSUSER	
PRODCICS	-AAM	TMPLATE2	RELEASED	INSERVICE	ATI	TTI	CREATE	CICSUSER	
PRODCICS	-AAN	TMPLATE3	RELEASED	INSERVICE	ATI	TTI	NOCREATE	CICSUSER	
PRODCICS	-AAO	TMPLATE3	RELEASED	INSERVICE	ATI	TTI	CREATE	CICSUSER	
PRODCICS	-AAP	TMPLATE3	RELEASED	OUTSERVICE	ATI	TTI	CREATE	CICSUSER	
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PRODCICS	-AAS	TMPLATE3	RELEASED	OUTSERVICE	ATI	TTI	CREATE	CICSUSER	
PRODCICS	-AAT	TMPLATE3	RELEASED	OUTSERVICE	ATI	TTI	CREATE	CICSUSER	
PRODCICS	-AAU	TMPLATE3	RELEASED	OUTSERVICE	ATI	TTI	CREATE	CICSUSER	
PRODCICS	-AAV	TMPLATE3	RELEASED	OUTSERVICE	ATI	TTI	CREATE	CICSUSER	
PRODCICS	-AAW	TMPLATE3	RELEASED	OUTSERVICE	ATI	TTI	CREATE	CICSUSER	
PRODCICS	-AAX	TMPLATE3	RELEASED	OUTSERVICE	ATI	TTI	CREATE	CICSUSER	
PRODCICS	-AAY	TMPLATE3	RELEASED	OUTSERVICE	ATI	TTI	CREATE	CICSUSER	
PRODCICS	CBRF	CBRF	RELEASED	INSERVICE	ATI	TTI	NOCREATE	CICSUSER	
PRODCICS	CERR		NOTAPPLIC	INSERVICE	NOATI	TTI	NOTAPPLIC	CICSUSER	
PRODCICS	CNSL		NOTAPPLIC	INSERVICE	ATI	TTI	NOTAPPLIC	CNSL	
PRODCICS	CO01		NOTAPPLIC	INSERVICE	ATI	TTI	NOTAPPLIC	CNSL	
PRODCICS	CO02		NOTAPPLIC	INSERVICE	ATI	TTI	NOTAPPLIC	CNSL	
PRODCICS	CO03		NOTAPPLIC	INSERVICE	ATI	TTI	NOTAPPLIC	CNSL	
PRODCICS	CO04		NOTAPPLIC	INSERVICE	ATI	TTI	NOTAPPLIC	CNSL	
PRODCICS	CO05		NOTAPPLIC	INSERVICE	ATI	TTI	NOTAPPLIC	CNSL	
PRODCICS	CO06		NOTAPPLIC	INSERVICE	ATI	TTI	NOTAPPLIC	CNSL	
PRODCICS	CO07		NOTAPPLIC	INSERVICE	ATI	TTI	NOTAPPLIC	CNSL	
PRODCICS	CO08		NOTAPPLIC	INSERVICE	ATI	TTI	NOTAPPLIC	CNSL	
PRODCICS	CO09		NOTAPPLIC	INSERVICE	ATI	TTI	NOTAPPLIC	CNSL	
PRODCICS	CO10		NOTAPPLIC	INSERVICE	ATI	TTI	NOTAPPLIC	CNSL	
PRODCICS	CO11		NOTAPPLIC	INSERVICE	ATI	TTI	NOTAPPLIC	CNSL	
PRODCICS	CO12		NOTAPPLIC	INSERVICE	ATI	TTI	NOTAPPLIC	CNSL	
PRODCICS	CO13		NOTAPPLIC	INSERVICE	ATI	TTI	NOTAPPLIC	CNSL	

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

Inx

IBM CICS Explorer - C:/CICS-Work

File Edit Projekt Operations Definitions - Suchen Window Help

ISC/MRO Con TCP/IP Servic Terminals 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	\$EDTCPM	✓ 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	CEECCICS	✓ 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	CEEENV	✓ 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	CFFFV011	✓ FNARI FD	0	0	NOTDEFINFD	N/A	CEDF	RFOLIRFD

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

lnx

z/VSE 5.1 Announcement (04/02/2013)

- IBM z/VSE V5.1 - Additional enhancements - **GA planned for June 14, 2013**

– Announcement content:

- Support of zEC12
 - Configurable Crypto Express4S
 - OSA Express4S 1000BASE-T
- Support of IBM System Storage
 - **IBM System Storage TS1140 (3592 E07)**
 - IBM System Storage TS7700 Virtualization Engine Release 3.0
 - IBM System Storage DS8870
 - IBM System Storage Storwize V7000 Release 6.4
- 64-bit input/output (I/O) processing for applications
- HiperSockets configurable input buffers

z/VSE 5.1 Announcement (04/02/2013) ...

– Announcement content

- System dump support for memory objects
- z/VSE Database connector enhancements

- OpenSSL update
- IPv6/VSE V1.1 enhancements
 - o Secure Sockets Layer (SSL) for secure data transmission
 - o Layer 2 support for OSA Express devices for IPv4 links

– Statement of general direction (SOD):

- IBM intends
 - o in the future to enhance IBM CICS Explorer for IBM CICS Transaction Server for VSE/ESA to provide updates to CICS resources.
 - o to add functionality that allows initial installation of z/VSE without requiring a physical tape.

- It is planned to reduce the AEWLC and MWLC list price of IPv6/VSE V1.1.

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

64 bit virtual I/O for applications

- Available with z/VSE 5.1 APAR DY47419
- SYSCOM bit IJBIO64E in IJBIOFL1, if 64 bit virtual I/O support available

- I/O buffers can now be created above the bar (above 2 GB)
- I/O buffers in **private memory objects** supported only
- I/O control blocks to be allocated below the bar (in 31 bit storage)

- Supported for ECKD devices

- 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 buffer will be TFIxed by I/O Supervisor, not necessary to PFIx the I/O buffer

- Not supported for
 - FBA / SCSI devices
 - Tape devices
 - LIOCS

System Dump support for Memory Objects

- 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
- Memory object dumps are written to SYSLST only
 - Partitions dumps will be written to dump library or SYSLST dependent on OPTIONS

- 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**

HiperSockets Configurable input buffers

- Available as APAR DY47394

- QDIO input queue buffers were set to 8 before

- More QDIO input buffers can improve performance
- In z/VSE you may increase the number of buffers to up to 64
- With a new configuration option you may select 8 (default), 16, 32 or 64 in the configuration file (IJBONCONF.PHASE)

- QDIO input buffers are allocated in 31 bit partition GETVIS space
- The buffers are to be PFIxed.
 - The limit for PFIx storage has to be defined with the JCL SETPFIx command

- QDIO input buffers are available for HiperSockets and OSA Express (CHPID OSD)

OpenSSL Update

- openssl support for z/VSE is available since z/VSE 5.1
- November 2012 updated with APAR DY47397

- openssl code level: openssl 1.0.0d
- 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

z/VSE Database Connector (DBCLI) Enhancement

- DBCLI connection pooling
 - Connection pooling of database connections for DBCLI applications on CICS TS
 - Pooling and reusing existing connection
 - Instead to establish a new connection
 - CICS DBCLI application can request to use a connection pool by setting a new DBCLI environment variable
 - SSL connections are not supported

- If connection pooling is enabled
 - CONNECT function will first check if a matching connection is available (same host name/IP address, port, DB name, user-ID, password, ...)
 - If available, the connection will be reused
 - If no active connection available, a new connection is established
 - During DISCONNECT the connection is put back to the connection pool

z/VSE Statement of Direction (SOD)

- IBM CICS Explorer to provide updates to CICS resources
 - Update resources as you would do with transactions on your CICS terminal
 - Enable / disable CICS resources
 - Change selected CICS definitions
 -

- Initial installation of z/VSE without requiring a physical tape
 - Use an install image on a DVD or download it from the web (Shopz)
 - Create an installation disk
 - Base install z/VSE from installation disk

z/VSE Requirements

- You may submit requirements at conferences (WAVV, GSE, ...)

- ... or via our z/VSE requirements page:
 - <https://www-03.ibm.com/systems/z/os/zvse/contact/requirement.html>

- ... or you may enter **CICS Transaction Server** requirements via the
 - Request for Enhancement (RFE) database:
 - <http://www.ibm.com/developerworks/rfe/>
 - Please select the following for z/VSE-CICS requirements:
 - *Brand = WebSphere*
 - *Product family = Transaction Processing*
 - *Product = CICS Transaction Server*
 - *Component = Runtime or Explorer*
 - *Operating system = IBM z/VSE*

More Information

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

- Ingolf's z/VSE blog: <https://www.ibm.com/developerworks/mydeveloperworks/blogs/vse>
- **Hints and Tips for z/VSE 5.1:**
 - <http://www.ibm.com/systems/z/os/zvse/documentation/#hints>
- 64 bit virtual information:
 - IBM z/VSE Extended Addressability, Version 5 Release 1
 - IBM z/VSE System Macro Reference, Version 5 Release 1
- 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>
 - Security on IBM z/VSE – updated
<http://www.redbooks.ibm.com/Redbooks.nsf/RedbookAbstracts/sg247691.html?Open>
 - z/VSE Using DB2 on Linux for System z
<http://www.redbooks.ibm.com/abstracts/sg247690.html?Open>