

z/VSE 6.2 Update

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z/VSE Roadmap



z/VSE releases in service

z/VSE 6.2 Continuous delivery
06/22/2018 - DL/I 1.12.1 partitioning

z/VSE 6.2 12/01/2017
z114 / z196 or higher, zHPF / SIMD support, Tapeless installation SCSI / ECKD, CICS TS for z/VSE 2.2, security and connector enhancements

z/VSE 6.1 11/2015, end of service 06/30/2019
z10 or higher, CICS TS for z/VSE 2.1: CICS Explorer update, Channels & Containers; TCP/IP for z/VSE 2.1, IPv6/VSE 1.2

Unsupported z/VSE releases

z/VSE 5.2 04/2014, end of service 10/31/2018
z9 or higher, IBM Z exploitation, device support, Tapeless installation, networking / security enhancements

z/VSE 5.1 11/2011, end of service 06/30/2016
z9 or higher, 64 bit virtual, IBM Z exploitation, CICS Explorer, LFP in LPAR, database connector, TS1140, 64 bit I/O, openSSL

z/VSE 4.3 11/2010, end of service 10/31/2014
Virtual storage constraint relief, 4 digit cuus

z/VSE 4.2 October 2008, end of service 10/31/2012
More tasks, more memory, EF for z/VSE 1.1, CPU balancing, SCRT on z/VSE, PAV, EF for z/VSE 1.2, IBM IPv6/VSE 05/2010, **CICS/VSE** end of service 10/31/2012

z/VSE 4.1 March 2007, end of service 04/30/2011
z/Architecture only, 64 bit real addressing, MWLC – full and sub-capacity pricing

IBM Z server support



- z/VSE 6.1 last release that supports z10 BC / EC
- z/VSE 6.2 supports z114 / z196 or higher

- z13 / z13s are the last IBM Z servers to support IPL in ESA/390 architecture mode

- z14 / z14 ZR1 and follow-on – IPL in z/Architecture mode only
 - In LPAR and z/VM 6.4 / 7.1 guest
 - z/VSE V6 and z/VSE 5.2
 - z/VSE 5.1 requires PTF

 - In z/VM 6.4 guest (ESA/390 – APAR VM65942)
 - z/VSE V4

 - Not possible to IPL z/VSE 3.1 or VSE/ESA releases

IBM Z server support – z/VSE

VSE Release	z800 / z900 z890 / z990	z9	z10	z196 / z114 / zEC12 zBC12 / z13 / z13s	z14 / z14 ZR1	VSE EoM	VSE EoS
z/VSE V6.2	No	No	No	Yes	Yes	tbd	tbd
z/VSE V6.1	No	No	Yes	Yes	Yes	12/01/2017	06/30/2019
z/VSE V5.2	No	Yes	Yes	Yes	Yes	03/13/2017	10/31/2018
z/VSE V5.1	No	Yes	Yes	Yes	Yes (PTF)	05/23/2014	06/30/2016
z/VSE V4.3	Yes	Yes	Yes	Yes	z/VM guest	06/25/2012	10/31/2014
z/VSE V4.2	Yes	Yes	Yes	Yes	z/VM guest	10/26/2010	10/31/2012
z/VSE V4.1	Yes	Yes	Yes	Yes	z/VM guest	10/17/2008	04/30/2011
z/VSE V3.1	Yes	Yes	Yes	Yes	no	05/31/2008	07/31/2009
VSE/ESA V2.7	Yes	Yes	Yes	Yes	no	09/30/2005	02/28/2007
VSE/ESA V2.6	Yes	Yes	Yes	Yes	no	03/14/2003	03/31/2006

z/VSE hardware and release status: <https://www.ibm.com/it-infrastructure/z/zvse-resources>

z/VSE on IBM z13, z13s, z14, z14 ZR1

- Toleration / Exploitation:
 - At processor GA toleration PTFs for z/VSE 6.2 will be delivered, see related Preventive Service Planning (PSP) buckets:
 - z13 : http://www-01.ibm.com/support/docview.wss?uid=isg1_2964DEVICE_2964-ZVSE
 - z13s: http://www-01.ibm.com/support/docview.wss?uid=isg1_2965DEVICE_2965-ZVSE
 - z14: http://www-01.ibm.com/support/docview.wss?uid=isg1_3906DEVICE_3906-ZVSE
 - z14 ZR1: http://www-01.ibm.com/support/docview.wss?uid=isg1_3907DEVICE_3907-VSE
 - z/VM z14 ZR1: http://www-01.ibm.com/support/docview.wss?uid=isg1_3907DEVICE_3907-ZVM
 - Latest z14 ZR1 enhancements available since December 4, 2018
 - z/VSE can run in any LPAR (85) and supports
 - the latest Crypto Express card: z/VSE supports more than 16 domains
 - the latest FICON Express card: ECKD and FCP-attached SCSI disks
 - the latest OSA-Express card: OSA-Express7S 25 GbE support (available since April 9, 2019)
 - newest version of SCRT required: <https://www-01.ibm.com/common/ssi/cgi-bin/ssialias?htmlfid=ZSL03435USEN>
- You may install z/VSE in LPAR from USB stick
- IBM Z LSPR ratings: <https://www-01.ibm.com/servers/resourceink/lib03060.nsf/pages/lspindex?OpenDocument>

Planned end of service dates

- z/VSE 6.1 end of service (eos) is planned for June 30, 2019.
 - The affected products are:
 - z/VSE 6.1
 - CICS TS for z/VSE 2.1
 - IBM IPv6/VSE 1.2
 - IBM TCP/IP for z/VSE 2.1
 - eos announcement:
<https://www-01.ibm.com/common/ssi/cgi-bin/ssialias?subtype=ca&infotype=an&apname=iSource&supplier=897&letternum=ENUS918-004>
- DL/I 1.12.0
 - End of service is planned for September 30, 2019.



z/VSE 6.2

- Preview: 04/11/2017, GA announcement: 10/10/2017, GA: 12/01/2017
- z/VSE 6.2 Recommended Service Level (RSL) with cutoff date January 10, 2019

- Hardware support
 - Architectural Level Set to IBM zEnterprise 114 (z114) or IBM zEnterprise 196 (z196) or later
 - IBM Z exploitation
 - High Performance FICON (zHPF)
 - Vector Facility (Single Instruction Multiple Data - SIMD)
 - Elliptic Curve Cryptography (ECC) accelerated with CryptoExpress card exploited by openSSL

 - FlashCopy Space Efficient (SE) for Extent Space Efficient (ESE) volumes configured in an DS8880
 - DS888F all flash disk (rack mounted storage system)

 - TS7700 R4.2 (tape virtualization)
 - As standalone system or in a multicluster grid environment
 - COPY EXPORT function

 - Tapeless initial installation using SCSI or FBA disks
 - Support for stand-alone dump on SCSI disks

High Performance FICON support

- High Performance FICON (zHPF) for ECKD devices only
 - Channel programs are translated to zHPF commands
 - Multiple channel commands are sent as a single entity to the control unit
 - May reduce overhead and increase I/O rates on the channel
 - Available on all z/VSE 6.2 supported servers

- z/VSE
 - Supports zHPF implementation phase 1
 - Translates a subset of CCW commands (define extent, locate record, TIC, ...)
 - I/O APIs will not change, translation occurs at low level I/O interfaces

 - If transport mode I/O results in an I/O error, the request will be retried in command mode
 - LPAR and z/VM guests supported (z/VM APAR may be required)
 - z/VM full-pack minidisks only

High Performance FICON support ...

- Interfaces
 - SYSDEF SYSTEM command extended to start / stop the zHPF support
 - SYSDEF SYSTEM,ZHPF=START
 - SYSDEF SYSTEM,ZHPF=STOP
 - zHPF support may be started, stopped or restarted any time
 - Can be used to verify, if the workload benefits from z/VSE's zHPF support
 - The SIR SMF command shows the I/O counters

- Benefits
 - Transparent to applications
 - May improve I/O performance
 - Highly dependent on workload characteristics



Vector Facility support

- Vector Facility also called Single Instruction Multiple Data (SIMD)
 - New set of vector instructions described in the z/Architecture Principles of Operation
 - Vector instructions work on 32 128-bit registers
 - Vector registers are partially shared with floating point registers
 - Available on z13 / z13s / z14 / z14 ZR1

- z/VSE
 - Instructions can be exploited by assembler applications
 - z/VSE uses 31-bit vector register save area to save / restore status
 - Application has to activate / deactivate vector register support via VECTOR macro
 - Activate allocates save area for task / partition, deactivate frees save area virt. storage
 - To save 31-bit virtual storage, if vector registers are not used

 - LPAR and z/VM guests supported (z/VM APAR may be required)

- Benefits for applications, that exploit vector instructions
 - May improve performance
 - Highly dependent on workload characteristics

SCSI device support enhancements

- Tapeless installation
 - **ECKD** support: available since z/VSE 5.2
 - Tools provided to create an installation disk (supported for LPAR and z/VM guest)
 - Installation disk
 - Contains a boot program and the z/VSE base tape in AWS file format
 - 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
 - **FCP-attached SCSI devices**: tapeless installation enhanced for installation disk with z/VSE 6.2
 - Installation on ECKD, FBA and FCP-attached SCSI disks supported
 - Supports initial installation only
- Stand-alone dump
 - Can be created on tape or disk device
 - Currently only stand-alone dump to ECKD or FBA disks are supported
 - z/VSE 6.2 will support stand-alone dump to SCSI disk

CICS TS for z/VSE 2.2 – CICS Explorer

- CICS Explorer
 - Monitoring with z/VSE V5, monitoring and update with z/VSE V6
 - System management framework for CICS TS
 - Consists of CICS Explorer client and a CICS TS server extension
 - CICS Explorer client
 - 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 TS for z/VSE 2.2 CICS Explorer enhancements
 - Definition of new CICS resources (programs, files, transactions)
 - Change / delete existing CICS resources
 - Definition view of client for selected CICS resources

 - Monitor, control or update
 - Dynamic storage areas
 - Global temporary storage queue statistics

- CICS Explorer 5.5 available since December 14, 2018
- CICS Explorer 5.3 end of support planned for April 30, 2020
- See blog entry: https://www.ibm.com/developerworks/community/blogs/vse/entry/New_IBM_announcements_z14_LinuxONE_CICS_Explorer?lang=en

CICS TS for z/VSE 2.2 – Channels & Containers

- Channel and container enhancements
 - Support UTF-8 and UTF-16 in code page conversion
On PUT CONTAINER and GET CONTAINER as source and target code page
 - Add the APPEND parameter for PUT CONTAINER
to append the specified data to existing data in a container
 - Add the BYTEOFFSET parameter for GET CONTAINER
to retrieve data beginning at a specified offset in a container

CICS TS for z/VSE 2.2 - HTTP 1.1 support

- Upgrade of CICS Web Support (CWS)
- Ported from CICS TS for z/OS 3.1, CICS acting as a server
- Supports latest web browsers and applications
- TCPIP SERVICE PROTOCOL(HTTP|ECI|USER) for port 80 / 443

- Improves performance and security
 - Persistent connections
 - Keeps connections open (SOCKETCLOSE hmmmss)
 - Avoids overhead for open / close connection
 - Pipelining
 - Sends multiple requests without waiting for response
 - Response must be returned in the same sequence as request was received
 - Chunking
 - Messages send in chunks each with its own size and data

- Support for
 - OPTIONS method - To get capabilities of the server without requesting a resource
 - TRACE method - Client can see what the other end received

More CICS TS for z/VSE 2.2 enhancements

- Relative addressing instructions in Assembler programs (without base register)
 - New operands added to DFHEIENT and DFHEIRET macros
 - Beneficial for translated programs that are greater than 4095 bytes

- Common date and time stamp formats used on the internet
 - Define correct date and time stamp in HTTP header
 - New CONVERTTIME command and new option for FORMATTIME

- Language Environment (LE) MAIN for Assembler applications
 - New translator option LEASM to enable LE functions and setup LE environment
 - Assembler programs translated with LEASM can be used as task-related user exits (TRUEs) or global user exits (GLUEs)

- New SIT parameter: MAXSOCKETS
 - Specifies the maximum number of IP sockets, that can be handled by CICS

Pervasive Encryption with z/VSE

- Exploitation of IBM z14 / z14 ZR1
 - CPACF instructions as provided by z/Architecture
 - CryptoExpress cards

- Encryption at rest
 - Encryption Facility for z/VSE
 - Tape encryption (TS1120 – TS1140)
 - Disk encryption (DS8000)

- Encryption in flight, exploited by
 - openSSL
 - All EZA API users
 - EZA Multiplexer
 - Connector server
 - TCP/IP for z/VSE
 - IPv6/VSE
 - ...

Security enhancements

- OpenSSL enhancements
 - Upgraded to openssl 1.0.2h (newer SSL/TLS functions)
 - Elliptic Curve Cryptography (ECC) hardware acceleration with CryptoExpress5S / 6S
 - If hardware not available, ECC software implementation will be used
 - CICS Web Support : SSL/TLS support of openssl or SSL of TCP/IP for z/VSE stack
 - Does not need LE environment
- EZA Multiplexer and EZA openssl support
 - EZA multiplexer
 - Need to be activated (via // SETPARM or on EZA API)
 - Can be configured to use interface phase for given TCP/IP stack
 - OpenSSL may be used independent of the TCP/IP stack
 - Similar to the LE/C TCP/IP socket API multiplexer (always active)
- SSL/TLS connection to secure remote VTAPE network transfer
- Operator interface for crypto device driver when BSM is not used

Security enhancements ...

- Basic Security Manager (BSM) ...
 - Repositories for online and batch security (VSE / BSM control file, DTSECTAB)
 - Batch resources protected via DTSECTAB phase
 - z/VSE 6.2 provides a common interface for online and batch resources via IUI dialogs
 - New resource classes to generate the DTSECTAB (dialog 2-8-6)

- LDAP sign-on enhancements provide
 - RESET option for LDAP user mapping tool to clear cached user password hash
 - Forces full LDAP sign-on at next user sign-on
 - Wildcard support for CHANGE and DELETE commands of user mapping tool

Connector enhancements

- z/VSE SOAP Engine to exploit channels and containers
 - Additional option to use channels and containers instead of CICS COMMAREA
 - z/VSE as SOAP client
 - SOAP engine detects automatically, if it was called with COMMAREA or channels & containers
 - z/VSE as SOAP server
 - COMMAREA or channels and containers use dependent on
 - New option passed with message or a flag inside the rules (rules to be created with CICS2WS tool)
 - Default is COMMAREA

Connector enhancements ...

- z/VSE web services enhancements
 - New z/VSE REST Engine with JavaScript Object Notification (JSON) support
 - z/VSE implements Representational State Transfer (REST) engine
 - Allows clients to provide RESTful web services running in a CICS environment
 - JSON and XML supported

- z/VSE database connector DBCLI (Database Call Level interface) enhancements
 - Supports languages Assembler, COBOL, PL/I, C and REXX

 - Batch query tool - // EXEC IESDBCLI
 - Allows to connect to a database, execute query commands and retrieve results
 - Interactive query tool via CICS transaction IDBT
 - CICS REXX support for DBCLI

Connectivity to MQ Server

- WebSphere MQ Server for z/VSE 3.0 service ended September 2015
- You may use the MQ Client for VSE and the MQ Trigger Monitor instead
 - Download provided as is <https://www.ibm.com/it-infrastructure/z/zvse-downloads>
- You may also use z/VSE's RESTful web services to connect to a MQ server
- IBM MQ for Multiplatforms supports REST APIs
 - Is enabled by default since MQ 9.0.4
 - To send and receive MQ messages
 - E.g. Applications can issue an HTTP POST to send a message to the MQ server
 - How to develop REST applications with MQ is described in the IBM Knowledge Center.
 - MQ 9.1.2 provided connection pooling to improve performance, available since March 21, 2019
- See blog entry for details: https://www.ibm.com/developerworks/community/blogs/vse/entry/z_VSE_Access_to_MQ_server_via_REST?lang=en
- New white paper: How to use REST support on z/VSE for access to IBM MQ REST API".
https://www.ibm.com/support/knowledgecenter/SSB27H_6.2.0/technical_articles_and_whitepapers.html

Networking enhancements

- IBM IPv6/VSE 1.3
 - New FTP server security interface
 - FTP access to z/VSE file system may be protected by Basic Security Manager (BSM) or External Security Manger (ESM) using the resource class FACILITY
 - SSH copy facility
 - Uses a Linux pass-through image for a SSL connection to a remote host
 - Secure file transfer via SSH to and from z/VSE
 - Compatible with IBM TCP/IP for z/VSE, LFP, z/VM IP Assist (VIA) and VNA
 - TXT2PDF generation facility
 - Based on open source txt2pdf
 - Converts a text file into a Portable Document Format (PDF) file

Networking enhancements ...

- IBM TCP/IP for z/VSE 2.2
 - Enhanced security with TLS 1.1 and TLS 1.2 support
 - Latest service level Service Pack 2.2.5 – APAR PH05864
 - New DATAPORT settings, for details see blog entries
https://www.ibm.com/developerworks/community/blogs/vse/entry/TCP_IP_for_z_VSE_new_DATAPORT_settings_impact_on_AutoFTP?lang=en
https://www.ibm.com/developerworks/community/blogs/vse/entry/TCP_IP_for_z_VSE_new_DATAPORT_settings?lang=en

- z/VSE Linux Fast Path (LFP) enhancements
 - LFP running as z/VM guest can communicate with with a TCP/IP stack in LPAR or the z/VSE Network Appliance (VNA)

More enhancements

- Allow JCL return code on cancel
 - New JCL standard option (STDOPT) and OPTION parameter to set return code
 - New SET parameter to specify last or maximum return code
- Parameter for LPAR name provides LPAR name of z/VSE system
- VOLUME and QT command
 - New parameters to limit the console output
DISK, VDISK, ECKD, FBA (and SCSI), TAPE, VTAPE or USED / UNUSED
- Enhanced dataspace: free MB frames, when releasing a dataspace
- Librarian program to read input from SYSLNK
- SDAID: print TRACE command at start of trace records (if OUTDEV set to printer)
- High Level Assembler (HLASM): new sub-options (TRUNC, LONGER, SIGNED) with APAR PH06572
More details in blog entry https://www.ibm.com/developerworks/community/blogs/vse/entry/New_suboptions_for_High_Level_Assembler_HLASM?lang=en

New Library Control Table parameter

- The new IPL SYS SUBLIB parameter specifies how many LIBDEF statements can be active.
 - To avoid message L159D - LIBRARY CONTROL TABLE <table id> OVERFLOW.
 - Library Control Tables:
 - LOT - Library Offset Table
 - LDT - Library Definition Table
 - SDT - Sublibrary Definition Table
 - EDT - Extent Definition Table
 - DDT - Device Definition Table
- SIR LIBR provides number of active control tables

```
sir libr
AR 0015 LIBRARY      ENTRIES: 00000050  ACTIVE: 00000005
AR 0015 SUBLIBRARY  ENTRIES: 00000100  ACTIVE: 00000028
AR 0015 LIB-EXTENT  ENTRIES: 00000164  ACTIVE: 00000028
AR 0015 LIB-DEVICE  ENTRIES: 00000008  ACTIVE: 00000001
AR 0015 LIB-LOT     ENTRIES: 00000585  ACTIVE: 00000053
AR 0015 1140I     READY
```

Parallel Access Volume (PAV) support for ICKDSF

- Available since September 25, 2018
- Customer requirement Allow backup using ICKDSF while PAV is active Request for Enhancement: RFE 67101
https://www.ibm.com/developerworks/rfe/execute?use_case=viewRfe&CR_ID=101196
- Implemented in 2 APARs: z/VSE 6.2 APAR DY47803. ICKDSF APAR PI99282
 - ICKDSF will use the base address for PAV devices when using CONTROL or FLASHCPY command
- No longer necessary to stop PAV support to use above ICKDSF commands
- A few words on PAV:
 - PAV is an optional licensed feature on the IBM System Storage
 - z/VSE PAV support on ECKD devices only
 - z/VSE supports one base and up to 7 alias devices
 - With PAV active z/VSE can access such PAV devices in parallel with more than one I/O operation to a single device
 - Dependent on the workload, this may give significant performance benefits.

DL/I partitioning

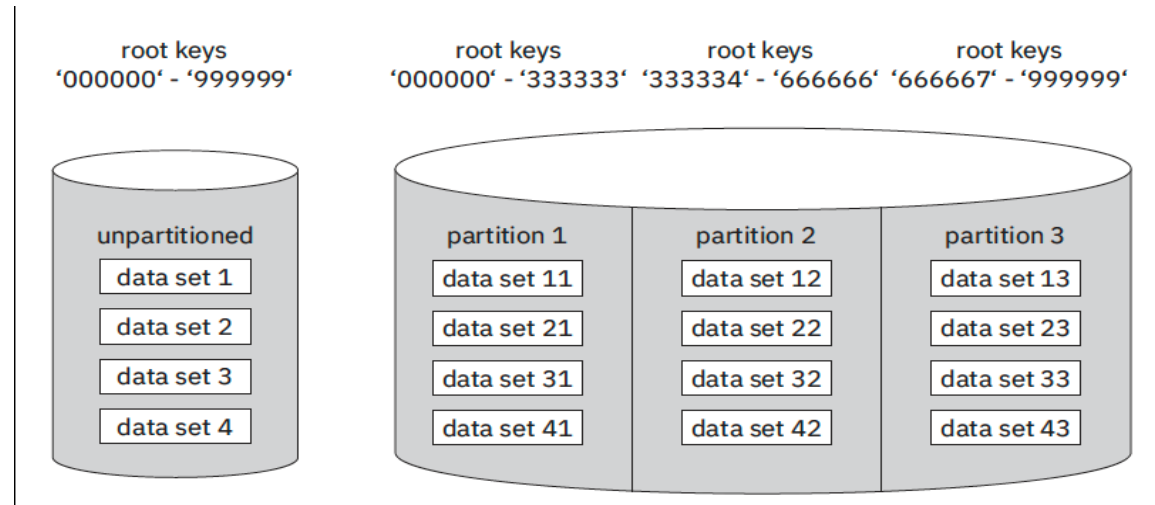
- DL/I 1.12.1 can run on z/VSE 6.2 only, available since June 22, 2018
 - Partitioning only supported on z/VSE 6.2
- DL/I 1.12.0 is also supported on z/VSE 6.2.
 - end of service planned for **September 30, 2019** on all z/VSE releases
- Upgrade options
 - DL/I 1.12.0 can still be used on z/VSE 6.2, the upgrade may be later
 - Upgrade to DL/I 1.12.1 together with the z/VSE 6.2 upgrade
- DL/I 1.12.1 is upward compatible to DL/I 1.12.0
 - Easy upgrade to DL/I 1.12.1
 - No need to change DL/I online and batch applications
 - Online users need to re-assemble and recreate the DL/I nucleus
 - LIBDEF statements may need to be updated

DL/I partitioning ...

- For hierarchical direct (HD – HDAM / HIDAM) databases.
- Up to 128 partitions (sections) are supported (new NPARTS parameter in DBD macro)
- Allows users to increase the database storage capacity
This eliminates the current limitation of 4 GB for DL/I segment types.
- Partitioning function splits a DL/I segment type into partitions (VSAM datasets)
- Exit provided, that selects the correct partition for the records to be retrieved.
- Each dataset can be up to about 4 GB in size.
- For sequential reading
 - A partitioned HDAM database, records may be returned in different order.
 - A partitioned HIDAM database, records are returned as before
- Transparent to user applications

DL/I partitioning ...

- Example:



- Each partition owns the number of datasets as defined in the DBD (Database Descriptor) via DATASET statements.
- The database name (DD1) can be up to
 - 6 characters, if up to 16 partitions are defined suffix 1, 2, 3, ..., G
 - 5 characters, if more than 16 partitions are defined
 - suffix 11, 12, 13, ... 1G for 1st 16 partitions
 - suffix 21, 22, 23, ... 2G for 2nd 16 partitions
 - ...
 - suffix 81, 82, 83, ... 8G for the last 16 partitions of the 128 partitions

DL/I partitioning ...

- Partition selection routine
 - provided by user, called by DL/I
 - calculates the partition number for root segment based on the passed key value of that root
 - partition selection control area (PSCA), which holds the following information:
 - Input:
 - name of partition selection module
 - database name
 - root key length-1
 - entry point of partition selection module
 - address of first byte of root key
 - number of partitions defined
 - Output:
 - calculated number of partition
- Sample partition selection routine provided (member DLZPSL10)

z/VSE 6.2 Compatibility

- Architectural Level Set (ALS) to z114 / z196
- Tape delivery dropped with z/VSE 6.2
 - z/VSE will be delivered on DVD or electronically via Shopz
- z/VSE 6.2 can not be installed on 3380 disks (or 3390 in 3380 track compatibility mode)
 - 3380 disks still supported as data disks
- Upgrade to z/VSE 6.2 via initial installation or Fast Service Upgrade (FSU)
 - FSU from z/VSE 6.1 to z/VSE 6.2 only
 - FSU not supported from z/VSE V5 or if system disks are on 3380
 - z/VSE 6.2 upgrade will fail, if z/VSE not on z114 / z196 or higher
- z/VSE 6.2 system layout changed
 - More VSAM space required for PRD1 and PRD2 libraries

z/VSE 6.2 Compatibility ...

- CICS TS for z/VSE 2.2
 - Replaces CICS TS for z/VSE 2.1 (not supported on z/VSE 6.2)
 - SIT need to be recompiled
 - Recommendation: Recompile / relink CICS tables from earlier releases
 - TCPIP SERVICE need to be redefined
- CICS transactions no longer protected via DTSECTXN table
 - DTSECTXN table entries to be migrated to Basic Security Manager (BSM) control file
- IBM IPv6/VSE 1.3 replaces IBM IPv6/VSE 1.2 (not supported on z/VSE 6.2)
- IBM TCP/IP for z/VSE 2.2 replaces IBM TCP for z/VSE 2.1 (not supported on z/VSE 6.2)
- Starting with z/VSE V6.1, z/VSE is shipped as English version only.

z/VSE Version 6: TCP/IP upgrade

- TCP/IP products (IBM TCP/IP for z/VSE, IBM IPv6/VSE) are preinstalled
 - If you order z/VSE V6, you need to select the TCP/IP product you want to use
 - Please delete the TCP/IP product, you don't have a license for.
Run the delete jobs (DELTCPIP, DELIPV6) located in ICCF lib 59
- New **IBM IPv6/VSE** release (z/VSE 6.1: IBM IPv6/VSE 1.2, z/VSE 6.2: IBM IPv6/VSE 1.3)
 - Separate license key required for each processor
 - IBM IPv6/VSE is installed in sublibrary PRD2.TCPIPB
- New **IBM TCP/IP for z/VSE** Version 2
 - A new version requires a new license key for the Application Pak and the GPS feature
 - To be requested from the IBM Key Center, cover letter holds contact information
 - IBM TCP/IP for z/VSE is installed in sublibrary PRD2.TCPIPC
- Please verify the LIBDEF chain of your TCP/IP startup job. It has to include the sublibrary
 - The sublibrary of the TCP/IP product and the sublibrary with the customer information and license key
E.g. for IBM TCP/IP for z/VSE, that is the CUSTDEF.PHASE and PRODKEYS.PHASE
 - Otherwise message: IPN110E Product key validation failed for Stack reason=GETKNFNB and the job terminates.
 - Customer number in CUSTDEF.PHASE has to match with the customer number of your key order.



z/VSE Service & Support: New service tool to open PMRs (cases)

- New Support site to replace the IBM Service Request Tool and Retain
- IBM Z software products will migrate to the new Support site this summer. IBM Z hardware later.
- New Support site provides
 - Improved product selection
 - Simplified search
 - Greater visibility into the status of your support cases
 - New Support site URL: <http://www.ibm.com/mysupport>
- You won't be able to open cases (today called PMRs) until the migration of IBM Z software products is complete.
- Recommendation: Attend Q/A webinars: <https://www-01.ibm.com/support/docview.wss?uid=ibm10888373>
- Replays: https://mediacenter.ibm.com/media/t/1_3lexsp7e
- Please visit my blog for any news: <https://www.ibm.com/developerworks/community/blogs/vse/?lang=en>

z/VSE Resources - status

- z/VSE release on <https://www.ibm.com/it-infrastructure/z/zvse-resources>
 - Supported z/VSE release, PDF includes supported hardware
 - z/VSE adapters and crypto
 - IBM storage
 - IBM Z servers

Supported z/VSE releases

Version.Release	Date available	Withdrawal from Marketing effective (1)	Withdrawal from Service effective	Minimum z/VM level (2)
→ z/VSE V6.2	12/01/2017 Announcement	TBD	TBD	z/VM V5.4
→ z/VSE V6.1	11/27/2015 Announcement	12/01/2017 Announcement	06/30/2019 Announcement	z/VM V5.4
→ z/VSE V5.2	04/25/2014 Announcement	03/13/2017 Announcement	10/31/2018 Announcement	z/VM V5.4



z/VSE Resources - status ...

z/VSE server support			
IBM z Systems, IBM System z, zSeries and S/390 Server	z/VSE V6.2	z/VSE V6.1	z/VSE V5.2
IBM z14 ZR1 (1)	Yes	Yes	Yes (4)
IBM z14 (1)	Yes	Yes	Yes (4)
IBM z13s (1)	Yes	Yes	Yes
IBM z13 (1)	Yes	Yes	Yes
IBM zEnterprise BC12 (1)	Yes	Yes	Yes
IBM zEnterprise EC12 (1)	Yes	Yes	Yes
IBM zEnterprise 114	Yes	Yes	Yes
IBM zEnterprise 196	Yes	Yes	Yes
IBM zEnterprise BladeCenter Extension (zBX) - IEDN Support	Yes (2,3)	Yes (2,3)	Yes (2,3)
IBM System z10 BC	No	Yes	Yes
IBM System z10 EC	No	Yes	Yes
IBM System z9 EC (formerly z9-109)	No	No	Yes
IBM System z9 BC	No	No	Yes
zSeries 990, 890	No	No	No
zSeries 900, 800	No	No	No
S/390 Parallel Enterprise Server G5/G6	No	No	No
S/390 Multiprise 3000	No	No	No



z/VSE Resources - status ...

- z/VSE unsupported releases on <https://www.ibm.com/it-infrastructure/z/zvse-resources>
 - Supported z/VSE release, PDF includes supported hardware

Unsupported releases may run on these servers at user's risk							
IBM z Systems, IBM System z, zSeries and S/390 Server	z/VSE V5.1 (1)	z/VSE V4.1, V4.2 and V4.3 (1)	z/VSE V3.1 (1, 5)	VSE/ESA V2.7 and V2.6 (1)	VSE/ESA V2.5 (1)	VSE/ESA V2.4 (1)	VSE/ESA V2.3 (1)
IBM z14 ZR1 (7)	Yes (8)	LPAR: No z/VM: Yes (6, 9)	No	No	No	No	No
IBM z14 (7)	Yes (8)	LPAR: No z/VM: Yes (6, 9)	No	No	No	No	No
IBM z13s (7)	Yes	Yes (6)	Yes (4)	Yes (4)	No (2)	No (2)	No (2)
IBM z13 (7)	Yes	Yes (6)	Yes (4)	Yes (4)	No (2)	No (2)	No (2)
IBM zEnterprise BC12 (7)	Yes	Yes (6)	Yes (4)	Yes (4)	No (2)	No (2)	No (2)
IBM zEnterprise EC12 (7)	Yes	Yes (6)	Yes (4)	Yes (4)	No (2)	No (2)	No (2)
IBM zEnterprise 114	Yes	Yes (6)	Yes (4)	Yes (4)	No (2)	No (2)	No (2)
IBM zEnterprise 196	Yes	Yes (6)	Yes (4)	Yes (4)	No (2)	No (2)	No (2)
IBM System z10 EC	Yes	Yes (6)	Yes (6)	Yes (4)	Yes (4)	No (2)	No (2)
IBM System z10 BC	Yes	Yes	Yes (4)	Yes (4)	No (2)	No (2)	No (2)
IBM System z9 EC (formerly z9-109)	Yes	Yes	Yes (4)	Yes (4)	No (2)	No (2)	No (2)
IBM System z9 BC	Yes	Yes	Yes (4)	Yes (4)	No (2)	No (2)	No (2)



z/VSE Requirements

- You may submit requirements at conferences (GSE, zUniversity, 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
 - *Brand = Servers and System Software*
 - *Product family = z Systems Software*
 - *Product = z/VSE*
 - *Component = General, z/VSE, VSE/AF, VSE/VSAM, VSE/POWER, VSE Unique Code, ...*
 - *Operating system = IBM z/VSE*
 - *Source = Share, IBM user group, IBM Conference, ..., Other*

- 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 = Servers and Systems Software*
 - *Product family = Transaction Processing*
 - *Product = CICS Transaction Server*
 - *Component = Runtime or Explorer*
 - *Operating system = IBM z/VSE*

Documentation related to z/VSE & z/VM

- z/VSE Collection Kit
 - Available for download in IBM Publication Center: <https://www-05.ibm.com/e-business/linkweb/publications/servlet/pbi.wss>
 - Electronic only, not on physical DVD
 - z/VSE 6.2 Collection Kit: SK3T-8348-15

- z/VM documentation: <http://www.vm.ibm.com/library/>

- z/VM & z/VSE documentation on z/OS Internet library (indexed Adobe PDF collections)
<https://www-01.ibm.com/servers/resourceLink/svc00100.nsf/pages/zosInternetLibrary?OpenDocument>

- z/VSE Knowledge Center: http://www.ibm.com/support/knowledgecenter/SSB27H/zvse_welcome.html
 - Link to PDF library (z/VSE documentation)

- z/VM Knowledge Center: <https://www.ibm.com/support/knowledgecenter/SSB27U>

- CICS TS for z/VSE Knowledge Center: <https://www.ibm.com/support/knowledgecenter/SSECAB>



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

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Version 1.1.1

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<https://www.ibm.com/support/knowledgecenter/SSECAB>

Documentation related to z/VSE ...

- IBM Redbooks - <http://www.redbooks.ibm.com/>
 - Redbook page with new / updated IBM Z mainframe Redbooks
 - zEC12 / zBC12 / z13 / z13s / z14 / z14 ZR1 Technical Guides
 - IBM System z Connectivity Handbook, SG24-5444
 - 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/abstracts/sg247691.html?Open>
 - z/VSE Using DB2 on Linux for System z: <http://www.redbooks.ibm.com/abstracts/sg247690.html?Open>
 - Enhanced Networking on IBM z/VSE: <http://www.redbooks.ibm.com/Redbooks.nsf/RedpieceAbstracts/sg248091.html?Open>
 - Migration to CICS TS for z/VSE: <http://www.redbooks.ibm.com/Redbooks.nsf/RedbookAbstracts/sg248390.html?Open>

Documentation related to z/VSE ...

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<http://www.redbooks.ibm.com/Redbooks.nsf/RedbookAbstracts/sq248390.html?Open>

Documentation related to z/VSE ...

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<http://www.redbooks.ibm.com/abstracts/sg247691.html?Open>

Documentation related to z/VSE ...

- Technical articles, white papers and Hints & Tips:
https://www.ibm.com/support/knowledgecenter/SSB27H_6.2.0/technical_articles_and_whitepapers.html
 - Using SCRT (Java Version) with z/VSE – Best Practices
 - z/VSE release & hardware upgrade
 - z/VSE SCSI Support and Migration Options
 - z/VSE z/VM IP assist
 - Parallel Access Volume (PAV) white paper
 -
 - New: z/VSE 6.2 Supervisor Reference Manual (DRM)
 - New: Hints and Tips for z/VSE 6.2: <http://www.ibm.com/systems/z/os/zvse/documentation/#hints>

- Sample code: Transfer SCRT89 records via the Host Transfer File
 - Link in PDF: ftp://public.dhe.ibm.com/eserver/zseries/zos/vse/pdf3/zVSE_Samples.pdf

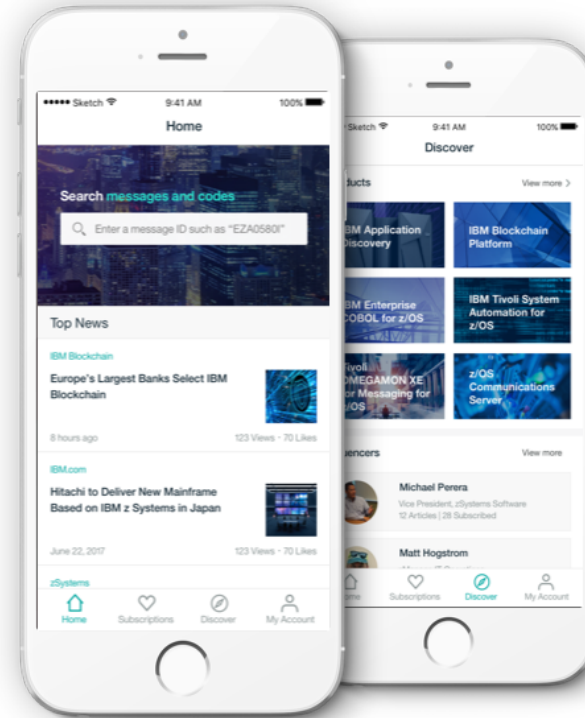
z/VSE Education

- See web page: <https://www.ibm.com/it-infrastructure/z/zvse-events>
- Training provided by
 - Datatrain Mainframe Training
 - The Fillmore Group
 - Guide Share Europe (GSE)
 - IBM Skills Gateway
 - IBM worldwide events,
 - Illustro
 - Lattwein GmbH
 - WDR Training and Consultancy
 - Interskill Learning
 - New / updated courses
 - z/VSE curriculum
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More Information

- z/VSE Homepage: www.ibm.com/vse
- z/VSE Knowledge Center: https://www.ibm.com/support/knowledgecenter/en/SSB27H/zvse_welcome.html
- IBM Redbooks (search for z/VSE): <http://www.redbooks.ibm.com>
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 - Use „Tags“ to search for topics
- VSE-L discussion list: <https://groups.google.com/forum/?fromgroups#!forum/bit.listserv.vse-l>

2019 VM Workshop

Thank you!



Questions ?

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