

VS01 - Migrationshinweise zu z/VSE

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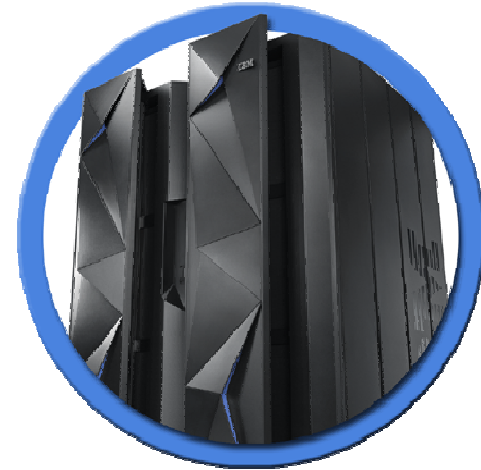
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- No other workload processing is authorized for execution on an SE.
- IBM offers SEs at a lower price than General Processors/Central Processors because customers are authorized to use SEs only to process certain types and/or amounts of workloads as specified by IBM in the AUT.

Overview

▪ Hardware Migration

- New z Systems box
- Add more capacity (processors, capacity setting)
IBM = Install Bigger Machine ☺
- New disks, tapes, cards, etc
- Move to a new datacenter



▪ Software Migration

- New z/VSE release or version
- New z/VM release or version
- New (homegrown or purchased) Application
- Add new or additional workload
- Update the service level (apply PTFs)



z/VSE & z/VM Release Status

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

Supported z/VSE releases				
Version.Release	Date available	Withdrawal from Marketing effective (1)	Withdrawal from Service effective	Minimum z/VM level (2)
→ z/VSE V6.1	11/27/2015 Announcement	TBD	TBD	z/VM V5.4
→ z/VSE V5.2	04/25/2014 Announcement	TBD	TBD	z/VM V5.4
→ z/VSE V5.1	11/25/2011 Announcement	05/23/2014 Announcement	06/30/2016 Announcement	z/VM V5.4



Note: z/VSE V6.1 requires an initial installation. To ease the migration to z/VSE V6.1, z/VSE V5.2 will still be orderable after general availability of z/VSE V6.1 for a transition period.

→z/VM: <http://www.vm.ibm.com/techinfo/lpmigr/vmleos.html>

VM End of Service Effective Dates (mm/dd/yyyy)				
z/VM Product	Release	EOS (mm/dd/yyyy)	GA Date	EOS Announced (mm/yyyy)
z/VM (5741-A07)	V6.3.0	12/31/2017	07/26/2013	02/03/2015
z/VM (5741-A07)	V6.2.0	06/30/2017	12/02/2011	Revised on February 2, 2016
z/VM (5741-A05)	V5.4.0	12/31/2016, or until the z9 EC and z9 BC are withdrawn from support, whichever is later.	09/12/2008	Revised on August 5, 2014. (Prior to this announcement EOS was 12/31/2014)



z/VSE Server Support

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

z/VSE server support			
IBM z Systems, IBM System z, zSeries and S/390 Server	z/VSE V6.1	z/VSE V5.2	z/VSE V5.1
IBM z13s (1,4)	Yes	Yes	Yes
IBM z13 (1,4)	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	Yes	Yes	Yes
IBM System z10 EC	Yes	Yes	Yes
IBM System z9 EC (formerly z9-109)	No	Yes	Yes
IBM System z9 BC	No	Yes	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

For older and unsupported release, please see here:
<http://www.ibm.com/systems/z/os/zvse/about/statusold.html#server>



Note (1): The z13s, z13, zEC12 and zBC12 allow to configure OSA-Express4S and later with **OSA/SF in HMC**. Starting with the zEC12, ESCON channels are no longer supported.

Note (2): z/VSE V6.1, V5.1 and V5.2 can participate in an IEDN through OSA-Express for zBX devices (LPAR or z/VM guests).

Note (3): z/VSE V6.1, V5.1 and V5.2 can transparently participate in an IEDN through a z/VM VSWITCH. This requires z/VM V6.1 or later.

Note (4): The Crypto Express5s is the only crypto adapter that can be used on a z13 or z13s.

Note: Before migrating your z/VSE system to a newer server, please order the corresponding [PSP bucket](#).

6 **Note:** Server names shown in red are no longer supported by IBM, or a end of support date has been announced.

z/VSE Storage Support



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

z/VSE storage support

IBM Disk Storage Systems	Attachment	z/VSE V6.1	z/VSE V5.2	z/VSE V5.1
IBM TotalStorage Enterprise Storage Server model 750, 800 and 800 Turbo	ECKD	Yes	Yes	Yes
	SCSI (FCP)	Yes	Yes	Yes
IBM System Storage DS6000 series	ECKD (1)	Yes	Yes	Yes
	SCSI (FCP)	Yes	Yes	Yes
IBM System Storage DS8000 series. This includes the DS8880 family (models DS8884 and DS8886) (2,3)	ECKD	Yes	Yes	Yes
	SCSI (FCP)	Yes	Yes	Yes
IBM System Storage SAN Volume Controller (SVC), IBM Storwize V7000, IBM Storwize V5000, IBM Storwize V3500, IBM Storwize V3700, IBM FlashSystem V840, IBM FlashSystem V9000	SCSI (FCP)	Yes	Yes	Yes
IBM XIV Storage System	SCSI (FCP)	Yes	Yes	Yes
Parallel Access Volume Feature (PAV)	ECKD	Yes	Yes	Yes

Note (1): IBM System Storage DS6000 does not offer ESCON connectivity.

Note (2): Full Disk Encryption is supported by z/VSE 4.1 and later.

Note (3): SSD (Solid State Disk) is supported by z/VSE 4.1 and later. For performance considerations refer to the [IBM Storage](#) home page.

z/VSE support for adapters and crypto

Adapter	z/VSE V6.1	z/VSE V5.2	z/VSE V5.1
OSA-Express, OSA-Express2, OSA-Express3, OSA-Express4S (1), OSA-Express5S (1)	Yes	Yes	Yes
FICON Express, FICON Express2, FICON Express4, FICON Express8, FICON Express8S, FICON Express16S	Yes	Yes	Yes
Crypto Express2, Crypto Express3, Crypto Express4S, Crypto Express5S (2)	Yes	Yes	Yes
CP Assist for Cryptographic Function (CPACF)	Yes	Yes	Yes

Note (1): The z13s, z13, zEC12 and zBC12 allow to configure OSA-Express4S and later with OSA/SF in HMC.

Note (2): The Crypto Express5s is the only crypto adapter that can be used on a z13 or z13s.

Note: z/VSE supports selected functions or modes. For details please refer to the [z/VSE Planning](#) manual or to the related [announcement letters](#). Additional PTFs might be required.

IBM Tape Storage Systems

	Controllers	z/VSE V6.1	z/VSE V5.2	z/VSE V5.1
TS1140 (3592 Model E07) Encryption capable	C07, C06	Yes	Yes	Yes (4)
TS1130 (3592 Model E06) Encryption capable	C07, C06	Yes	Yes	Yes
TS1120 (3592 Model E05) Encryption capable	C07, C06, J70	Yes	Yes	Yes
3592 Model J1A	C06, J70	Yes	Yes	Yes
TS3400 Tape Library (Autoloader) containing up to two TS1120 tape drives	C06	Yes	Yes	Yes
3590 Model H, E and B	A50, A60	Yes	Yes	Yes
3490E	A10, A20	Yes	Yes	Yes
3490	A01, A02	Yes	Yes	Yes
3480	A22	Yes	Yes	Yes

IBM Tape Library Systems

	Controllers	z/VSE V6.1	z/VSE V5.2	z/VSE V5.1
TS7680 ProtecTIER Deduplication Gateway	C06, tape drives: virtual 3592 J1A	Yes	Yes	Yes
TS7700 Virtualization Engine (5)	See info for tape drives.	Yes	Yes	Yes
Copy Export Function		Yes	Yes	Yes
Multi-Cluster Grid Support		Yes	Yes	Yes
3494 Virtual Tape Server (VTS)	See info for tape drives.	Yes	Yes	Yes
TS3500/3584 UltraScalable Tape Library	J70, C06	Yes	Yes	Yes
3494 TotalStorage Tape Library	J70, C06, A60	Yes	Yes	Yes

Note (5): When using the TS7700 tape library with z/VM's VGS (VSE Guest Support) you need to install z/VM APAR [VM64657](#)/PTF UM32727 (DFSMS/VM).

Note: For more information about supported devices please see the [z/VSE Planning](#) manual.

Hardware Upgrades & Migrations

- **Order related PSP (Preventive Service Package) before migrating to the new hardware**

→ <http://www.ibm.com/systems/z/os/zvse/support/preventive.html#psp>

– e.g. search for “2827DEVICE” (2827 = zEC12):

1.	Upgrade 2827DEVICE, Subset 2827/ZOS DEVICE 2827	2013-03-13
2.	Upgrade 2827DEVICE Upgrade 2827DEVICE	2013-03-13
3.	Upgrade 2827DEVICE, Subset 2827/ZVM DEVICE 2827	2013-03-07
4.	Upgrade 2827DEVICE, Subset 2827/ZVSE DEVICE 2827	2012-12-07

	DATE	APAR	PTF	VOLID	COMMENTS
6	12/10/26	PM70045	UK82199	1000	OSA/SF VSE IOAC139E AT OSA/SF ST
5	12/10/26	PM73907	UK82285	1000	OSA/SF VSE IOAC139E AT OSA/SF ST
4	12/09/10	PM66334	UK81559	1000	NEW FUNCTION - 42325
3	12/09/07	PM49761	UK81532	1000	NEW FUNCTION 45033
2	12/08/31	DY47406	UD53875	1000	NEW FUNCTION
1	12/08/31	DY47404	UD53871	1000	NEW FUNCTION

- **Concurrent microcode upgrade for IBM System Storage**

- **ECKD disks:** z/VSE recommends to shutdown the z/VSE system prior to the microcode upgrade.
- **FCP-attached SCSI disks:** z/VSE does not support concurrent microcode upgrade for FCP-attached SCSI disks.

- **Recommendation for IBM Tape Storage:**

- z/VSE with the latest service level supports concurrent microcode upgrade for IBM Tape Storage
- z/VSE recommends to take the tape units offline (z/VSE OFFLINE command) prior to the microcode upgrade or use the next maintenance window
- Once the upgrade completed, take the tape units online again (z/VSE ONLINE command)
- Please check with your software vendors (e.g. tape management systems), if they support concurrent microcode upgrade.

Hardware Upgrades & Migrations

- **New processor**

- At first IPL on new processor, you will see ‘**OVERLAP ON UNEXPIRED FILE**’ messages

- Page dataset
 - Label area (old systems only, newer systems use VDISK)

- Enter **DELETE** to let it reformat the page dataset

- For a shared system

- Make sure CPUID is changed in ASIPROC
 - Check DLF NCPU parameter is still sufficient

- **OSA/SF for SNA configuration**

Adapter	OSA/SF in HMC	OSA/SF (latest PTFs)
OSA Express 3	No	Yes
OSA Express 4S	Yes	Yes
OSA Express 5S	Yes	No

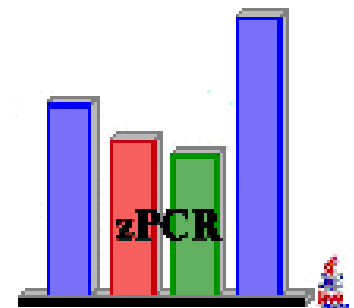
Hardware Sizing and Capacity Planning

- **Sizing a system for z/VSE is different from sizing a system for z/OS**
 - In general, a faster single CPU is better than multiple smaller CPUs

- **IBM Processor Capacity Reference for z Systems (zPCR)**
 - It is designed to provide capacity planning insight for IBM z Systems processors running various workload environments
 - Capacity results are based on IBM's LSPR data supporting all IBM z Systems processors
 - Large System Performance Reference: <https://www-304.ibm.com/servers/resourceink/lib03060.nsf/pages/lsprindex?OpenDocument>
For VSE use z/VSE workloads Batch, Online or Mixed
 - <http://www.ibm.com/support/techdocs/atmastr.nsf/WebIndex/PRS1381>
 - 'As is', no official support, e-mail to zpcr@us.ibm.com

- **A z/VSE Capacity Planning Offering is available**
 - Available for Business Partners and Customers
 - Performance data collection is based on a new version of the CPUMON Tool
 - Analysis is done using zCP3000

 - Contact techline@us.ibm.com and ask for z/VSE Capacity Planning Support



Some Terms and Definitions

▪ **Version / Release / Modification Level**

- z/VSE 5.1.2 = Version 5, Release 1, Modification Level 2
- Version and Release start counting at 1
- Modification Level starts counting at 0
 - At GA of a new Version or Release, the Modification Level is zero
 - z/VSE 5.2 GA = z/VSE 5.2.0



▪ **Refresh or Refresh Level**

- Same as a new Modification Level
 - e.g. z/VSE 5.1.1 is a Refresh of z/VSE 5.1(.0)
- When you order z/VSE you always get the newest Refresh Level
- SPE = Small Programming Enhancement (usually as part of a Refresh)

▪ **GA Version (GA = Globally Available)**

- The service level at the time the Version or Release becomes available
- Usually no PTFs applied (vanilla system)

▪ **PTF-1**

- A set of PTFs that are already available at the time of GA
- Fixes problems that have been found between shipment to the distribution centers, and GA
- It is strongly recommended to order and apply those PTFs right after or during migration!

Some Terms and Definitions - continued

- **HIPER = High Impact or Pervasive APAR**
 - An APAR that was flagged as especially important
 - Data loss, integrity
 - Device or hardware specific

- **PSP bucket = Preventive Service Planning**
 - PSP buckets contain [all HIPER PTFs](#)
 - For a specific set of products or components
 - On a given z/VSE refresh level
 - <http://www14.software.ibm.com/webapp/set2/psearch/search?domain=psp>

- **RSL = Recommended Service Level**
 - Fills the gap between z/VSE refresh levels and the HIPER service (PSP buckets)
 - An RSL consists of a list of ALL APAR/PTF numbers, not only the HIPER service.
 - which are available at specific cutoff dates
 - RSLs are updated more frequently than refreshes
 - <http://www-03.ibm.com/systems/z/os/zvse/support/preventive.html#rsl>

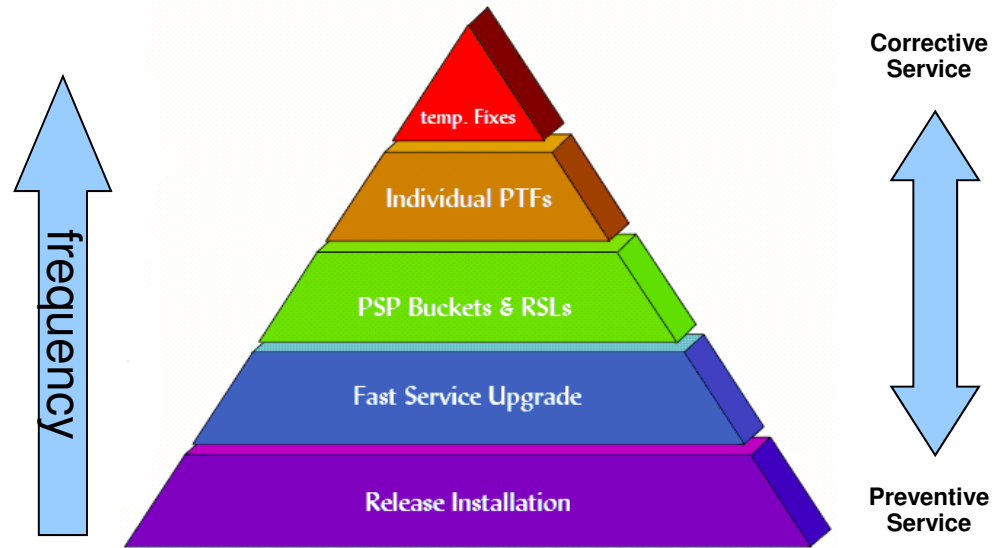
- **Installed Software Report Tool (ISR Tool)**
 - To be used with Shopz service orders
 - Report contains a list of products and PTFs that are already installed on your system
 - MSHP RETRACE PRODUCT and RETRACE PTFS
 - Allows Shopz to ship only those PTFs that are not applied



z/VSE Service Deliverables

Priority 1: Stay on a supported level

- Make sure that your system is always on a **supported level** to get help and support from IBM when you need it
- Plan ahead sufficient time for release or version upgrade and for PTF installation
- Consult your **software vendors** for upgrades and specific information



	Refresh	RSL	PSP	PTF
What is it	Complete Product (includes all PTFs)	List of ALL PTFs at a cut off day	List of selected PTFs (HIPER)	Official Fix for a code problem (APAR)
When is it available	Every 6-12 Month, usually for the newest release	Every 2-3 Month	Is constantly kept up to date	Will be created when a fix is available
When should it be installed	For base install or Fast Service Upgrade (FSU)	Preventive to stay on an current level	After a refresh installation and preventive to avoid HIPER problems	To fix a certain problem



Ordering Products and Service

▪ Order a new z/VSE System or a Refresh

- You get 2 (or 3) tapes (as AWS images)
 - z/VSE Base Tape
 - z/VSE Extended Base Tape
 - (DB2 Help Texts)
- For Base Install
- Or Fast Service Upgrade (FSU)

▪ Order Optional Products

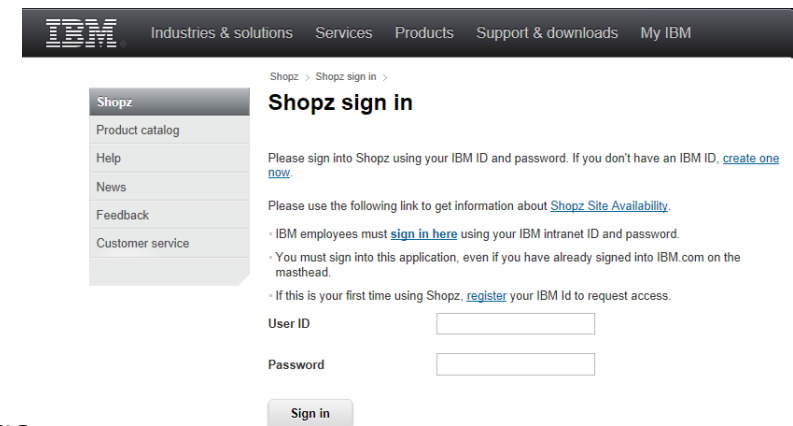
- You get 1 to N stacked tapes (as AWS images)
- To be installed through Interactive Interface dialogs

▪ Order APARs, PTFs, RSLs, PSPs

- You get a set of PTFs
- As binary file with LRECL 80 (most likely zipped to save download time)
- Apply via Interactive Interface dialogs
 - Through PTF.FILE (IJSYSPF)
 - Or VTAPE

IBM Shopz:

http://www-304.ibm.com/software/shopzseries/ShopzSeries_public.wss



Shopz > Shopz sign in >

Shopz sign in

Please sign into Shopz using your IBM ID and password. If you don't have an IBM ID, [create one now](#).

Please use the following link to get information about [Shopz Site Availability](#).

- IBM employees must [sign in here](#) using your IBM intranet ID and password.
- You must sign into this application, even if you have already signed into IBM.com on the masthead.
- If this is your first time using Shopz, [register](#) your IBM Id to request access.

User ID

Password

Ordering z/VSE 6.1

A new license is required for the new versions of IBM TCP/IP for z/VSE V2.1 and CICS TS for z/VSE V2.1 on z/VSE V6.1

- Customers using IBM TCP/IP for VSE/ESA V1.5 on z/VSE V5, require a new license for the new version of IBM TCP/IP for z/VSE V2.1 when ordering z/VSE V6.1.
- Customers using CICS TS for VSE/ESA V1.1.1, require a new license for the new version of CICS TS for z/VSE V2.1 when ordering z/VSE V6.1.
- In order to ensure licensing for the new TCPIP and CICS TS product versions, you need to **select the product(s) applicable when ordering z/VSE V6.1 in Shopz**, or by placing an additional order for either of the products, if you have ordered z/VSE V6.1 already.
- z/VSE V6.1 only supports CICS TS for z/VSE V2.1 and IBM TCP/IP for z/VSE V2.1. Older versions of these 2 products are not supported with z/VSE V6.1.



Information about APARs and PTFs



→ <http://www.ibm.com/systems/z/os/zvse/support/corrective.html>

Service and support

Introduction Preventive service **Corrective service**

z/VSE V6.1 z/VSE V5.2 z/VSE V5.1 Unsupported releases

- General
- **Advanced functions (AF)**
- VSAM
- POWER
- Interactive interface & ICCF
- Language Environment (LE)
- z/VSE Connectors
- CICS Transaction Server
- TCP/IP for z/VSE
- IPv6/VSE
- DL/I
- REXX
- z/VSE VTAPE

Latest VSE/AF 9.3 APARs for z/VSE V6.1

Last update: Mar 03, 2016

APAR Date	PTF	Contents
DY47647 2016/02/17	UD54168-61C	QVS enhancement D/T2964 and D/T2965
DY47644 2016/01/22	UD54158-61C UD54159-61J	Hardwait FFF due to addr. exception in RELPAG service I
DY47640 2015/12/17	UD54153-61C UD54154-61J	Hardwait FEC during IPL
DY47638 2015/12/14	UD54153-61C UD54154-61J	Hardwait FED after CDDELETE.
DY47634 2015/12/07	UD54148-61C	Message 0S23I DUMP ROUTINE CANCELED. CANCEL CODE = X'20'.

<http://www14.software.ibm.com/webapp/set2/psearch/search?domain=sysz>

Technical help database

for System z

Search

Search for:

Sort by: Hits per doc type:

- [Search tips](#)
- [Start a new search](#)

Document types

- All
- APARs
- FAQs
- Product information
- Education
- Technotes
- Flashes
- Preventive service planning
- Redbook abstracts
- Solutions
- White papers

Recommended Service Levels and PSP Buckets



PSP Buckets

- <http://www.ibm.com/systems/z/os/zvse/support/preventive.html#psp>
- e.g. search for “ZVSE510” or “ZVSE431”

	Modified	DATE	SUBSET ALTERED	COMMENTS
1-10 of 41 results Next →				
1. Upgrade ZVSE510. Subset IBMLANG/51K LE/VSE BASE Version 1, Release 4, Modification 8	2013-02-22	34 13/02/22	IBMLANG/51K	SECTION 4, ADDED ITEM 9 PM81989 UK91611
2. Upgrade ZVSE510 VERSION 5, RELEASE 1, MODIFICATION LEVEL 0 of z/VSE	2013-02-22	33 13/02/21	ZVSE/51C	SECTION 4, ADDED ITEM 24 DY47454 UD53929
3. Upgrade ZVSE510. Subset ZVSE/51C VSE Central Functions Version 9, Release 1, Modification 0	2013-02-21	32 13/02/08	ZVSE/51C	SECTION 4, ADDED ITEM 25 DY47454 UD53928
		31 12/12/21	ZVSE/51C	SECTION 4, ADDED ITEM 23 DY47452 UD53927
		30 12/12/11	ZVSE/51C	SECTION 4, ADDED ITEM 21 DY47447 UD53922
		29 12/11/30	IBMLANG/51K	SECTION 4, ADDED ITEM 22 DY47446 UD53921
			IBMLANG/51K	SECTION 4, ADDED ITEM 20 DY47391 UD53846
			IBMLANG/51K	SECTION 4, ADDED ITEM 6 PM74318 UK82386
			IBMLANG/51K	SECTION 4, ADDED ITEM 7 PM73473 UK82153
			IBMLANG/51K	SECTION 4, ADDED ITEM 8 PM73461 UK82432

Recommended Service Levels (RSLs)

- <http://www.ibm.com/systems/z/os/zvse/support/preventive.html#rsl>

Service recommended for	PTF Order List	Cutoff Date
z/VSE 6.1.0	Base Products → PTFs 610B	Jan 15, 2016
	Optional Prod. → PTFs 610O	
z/VSE 5.2.0	Base Products → PTFs 520B	Jan 15, 2016
	Optional Prod. → PTFs 520O	
z/VSE 5.1.2	Base Products → PTFs 512B	Jan 15, 2016
	Optional Prod. → PTFs 512O	
z/VSE 5.1.1	Base Products → PTFs 511B	April 9, 2013
	Optional Prod. → PTFs 511O	
z/VSE 5.1.0	Base Products → PTFs 510B	Apr 26, 2012
	Optional Prod. → PTFs 510O	

Recommended service levels

PTF numbers 15/01/16

z/VSE base Products - 6.1.0

CICS Transaction Server for z/VSE 2.1

none

DITTO/ESA VERSION 1.3.0

UI29161 UI32441

EREP 3.5.0

none

- Copy & Paste the entire PTF order list into ShopZ
 - Don't worry about the text around, ShopZ will filter out anything that's not a PTF number

IBM Subscription Services

→ Get notified when APARs are closed

<https://www-947.ibm.com/systems/support/myview/subscription/css.wss/folders?methodName=listMyFolders>

The screenshot displays the 'My notifications' page for IBM technical support. A central modal window is open for the APAR 'DY474'. The modal contains the following information:

- Header:** 'My notifications for IBM technical support' with tabs for 'My subscriptions', 'Subscribe', and 'My defaults'.
- Message:** 'A fix is available' for APAR tracking (Component ID: 5686CF906 - VSE/AF MACROS).
- Options:**
 - Subscription name: * z/VSE family
 - Component ID: 5686CF906
 - Notify me by: Email, Daily email, Weekly email, Plain text email, HTML email
 - Save in existing or new folder: Existing folder name: * Migrated APAR Subscriptions
 - Delivery to this folder:
 - Delivery via syndication feed (RSS, Atom): [What is this?](#)
 - Desired severity: * Notify me on all changes, Highly Pervasive (HIPER), PTF in Error (PE)
- Buttons:** 'Notify me via email', 'Subscribe', 'Submit', and 'Cancel'.

The background interface shows a sidebar with 'My subscriptions' and 'Folders' (Migrated, z/VSE), and a main content area with a list of systems (System z, PureFlex, BladeCent, Power, System i, System p, System x, System z, System B, IntelliStat, IBM Monit, IBM Syste, Older Sys (Netfinity), Other hard) and point-of-sale options (Smarter Cities, Virtualization software, IBM i 7.1, IBM i 6.1, IBM i 5.4).

Ordering PTFs using IBM Shopz

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

The screenshot illustrates the final steps of ordering PTFs on the IBM Shopz website. It shows a multi-step process with 'Step 5 of 5 Review and submit' highlighted. A 'Download Director' window is open, showing the download of a ZIP file named 'VSE PTF Envelope for Order# B1715902'. A callout bubble points to the file, stating: 'ZIP file contains Shipptfs.bin (BINARY, LRECL 80 MSHP PTF data)'. Below the download window, an 'Order contents' summary is visible, listing PTFs UK76430 and UK78943, and indicating that 'Include requisites' is set to 'Yes'.

Step 5 of 5 Review and submit

Download U01211917 - My Test Order

Download Director - Windows Internet Explorer
https://steamboat.boulder.ibm.com/d...
VSE PTF Envelope for Order# B1715902
File: D:\Temp\A1590216.ZIP
Size: 1,020,235 bytes 100%
Download complete 1019 KB/sec
Buttons: Pause, Setup, Details, Cancel

ZIP file contains Shipptfs.bin (BINARY, LRECL 80 MSHP PTF data)

Order contents

PTFs	UK76430 UK78943
Include requisites	Yes

Applying electronic PTFs

→ <http://www.ibm.com/systems/z/os/zvse/documentation/edelivery.html#eptf>



▪ Using upload (TCP/IP FTP or IN\$FILE)

- Upload this file into PTF.FILE (IJSYSPF) in BINARY with LRECL 80
- Apply service using the Interactive Interface dialog (1423)
 - Service Medium is DISK

▪ Using VTAPE

- Rename Shiptfs.bin to Shiptfs.[ptf](#)
- Apply service using the Interactive Interface dialog (1423)
 - Service Medium is TAPE
 - Select to use virtual tape
 - On panel UTL\$VTA2 specify the IP address or hostname of your PC or workstation (where the VSE Virtual Tape Server runs)
 - Also specify the full qualified path and file name of the shiptfs.ptf file where it resides on your PC or workstation

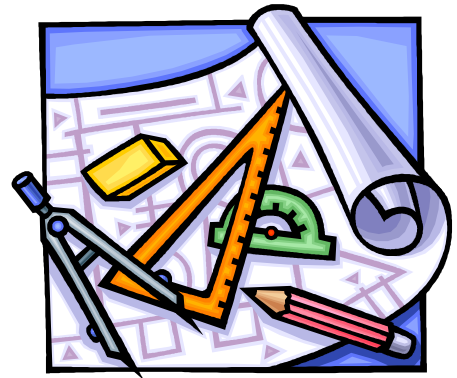
▪ PTF files should **NOT** be transferred directly to the z/VSE system (POWER reader), because

- PRE- and CO-requirements may not be fulfilled due to wrong order of PTFs, CO-requirements will not work at all
- POWER JECL included in the data part of the PTFs will be processed while running the job
 - This leads to modified contents of the PTF and also might cause the code to be incomplete
- Missing POWER JECL in the PTF file causes POWER to extract VSE JOB cards, this also leads to modified contents of the PTF and may also be incomplete due to job termination
- No indirect application possible

Migration tasks

▪ Planning for a migration

- Order latest updates, Products, PTFs, RSLs, PSPs, etc
- Order latest Vendor products and updates
- Consider system layout changes (if needed)
- Performance
 - Activate a performance monitor
 - Keep monitor data from old and new system for an extended time frame
- Testing
 - Make sure test systems are available to test the migration first
 - Plan for an extended testing phase
 - Test your applications, your data, performance
 - Test with high load, with lots of users, lots of data, etc
- Plan for final cutover
 - Data migration (reorganization, reformat, etc)
 - Keep an old system just in case (as backup or live)
- Plan for fallback
 - Make sure you have a proper backup available
 - Migrating data back might be tricky, if new features have been used on new system



Migration tasks - continued

▪ **Fast service Upgrade (FSU)**

- FSU will update IBM provided parts like
 - System Libraries
 - ICCF members
 - System Files (e.g. Online Message Explanation (OME))
- But keep all user data, applications and products installed



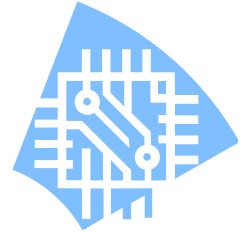
▪ **Initial Installation**

- Initial Installation will just establish the z/VSE system
- User data, applications and additional products need to be reestablished
- Usually Initial Installation is done on a test system (LPAR or VM guest)

▪ **Situations when an Initial Installation is required:**

- Previous system is too old, In general FSU allows to upgrade only two releases/versions.
- No FSU to z/VSE 6.1.
- No FSU from VSE/ESA 2.3 and earlier.
- Change of system disk architecture, like switching from ECKD to FBA SCSI.
- Change of the system language
- Change of environment like change to C (big). However this can be switched manually after FSU.

Performing a Fast Service Upgrade (FSU)



▪ FSU requires a z/VSE base tape

- On physical cartridge
- As VSAM VTAPE (use FTP to upload AWS file into a VSAM ESDS cluster)

▪ Checklist for FSU

- PRD2.SAVE contains all current startup procedures, label procedures, current DTSECTAB
 - especially procedures with same name as shipped procedures
- PRD2.CONFIG contains all configurable files like CICS tables, TCPIP configuration, VTAM startup
- Check if own POWER phase and allocation
 - specify accordingly in FSU dialog. DTRPOWR.PROC refers to all POWER files? Run POWER generation at the end of Stage 1
- Consider to establish startup with separate JCL procedures without activating vendor software, especially with external security manager

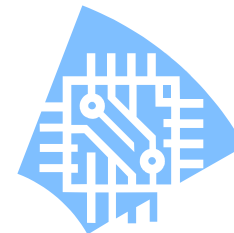
▪ Downlevel Check

- This is an installation check showing service to be re-installed after FSU
- Does not change the system
- Makes no sense in case of a release/version upgrade, but important for installing a refresh

▪ FSU Preparation

- This step is very important!
- Establishes the new FSU code and enables it on the old system
- **AFTER Preparation has been completed, generate the FSU job stream**
 - If you generate it before, then it will not work

Performing a Fast Service Upgrade (FSU) - continued



▪ FSU Installation

– Stage 1:

- IJSYSRS onto SYSWK1 including NLS parts
- PRD1.MACLIB
- PRD2.GEN1 (optional will be cleared if not selected)
- Prepare JCL for Stage 2
- At the end of Stage1 generate POWER phase

– Re-IPL from SYSWK1

- Using a special FSU JCL and normal IPL procedure
- OEM products are not started

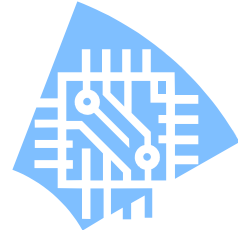
– Stage 2:

- Restore ICCF parts, base and NLS (IBM libraries only)
- Install of PRD2.SCEEBASE (LE) and PRD1.BASE (CICS, VTAM, etc)
- Refresh OME
- Refresh Text Repository File, upgrade CSD
- Clear local and global catalog for a so called ice-cold start of CICS
- Install DB2 (optional)
- Reorganize DTSFILE (optional)
- Copy back IJSYSR1

– Stage 2 runs without CICS, TCPIP, VTAM

- at the end basic CICS and VTAM are started

Performing a Fast Service Upgrade (FSU) - continued



▪ **Post FSU tasks**

- Update your default selection panels and your default application profiles
- Shutdown the system and re-IPL from DOSRES
- Re-catalog or recompile your modified configuration members using the new skeletons
 - Startup procedures
 - VTAM books
 - CICS tables
 - LE/VSE runtime options CEEDOPT and CEEWCOPT
 - Node error and auto install programs
 - etc.
- Re-install optional and extended base products
- Re-install vendor products or install service
- Install RSL and PSP
- Generate SA Dump disk or tape
- Migrate to the new Security concept (if not already done)

▪ **For additional information please see**

- System Upgrade and Service manual
- Program Directory

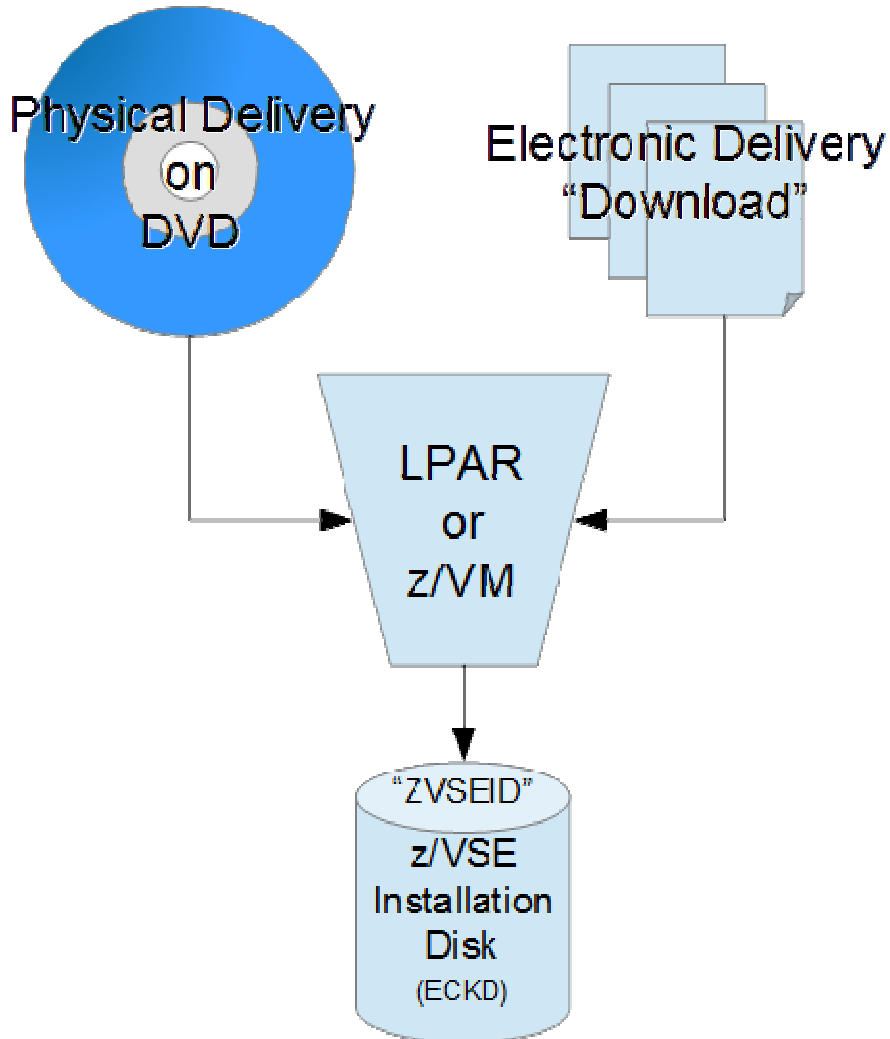
Performing an Initial Installation

- **Initial Installation requires a physical z/VSE base tape on cartridge**
 - VTAPE is not supported
 - You may need to copy the base tape from AWS (VTAPE) onto a physical tape
- **... or an installation disk**
 - Tapeless installation using installation disk
- **IPL the z/VSE base tape, or the installation disk**
 - Initial Installation will start
 - Choose automatic install and enter required information
 - Remaining process runs mainly automatic
- **After Initial Installation, optional and vendor products must be installed**
 - Startup procedures and hardware must be configured
 - VSAM catalogs and data must be established
 - POWER Files must be loaded
 - CSD File needs to be updated
 - DTSCFILE (ICCF) user libraries restore
 - DB2 and DLI data if available, install and restore database
 - Security setup (IESCNTL and BSTCNTL)
 - Other data must be restored or imported
 - Generate SA Dump disk or tape

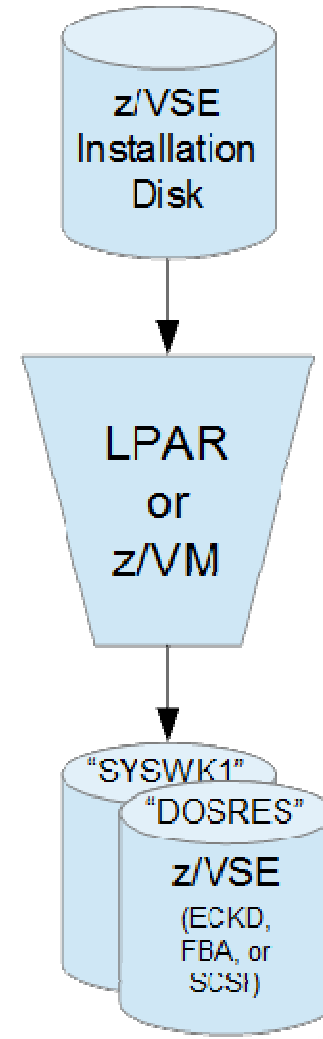


Tapeless Initial Installation

Step 1: Create a z/VSE Installation Disk



Step 2: Install from Disk



Create an Installation Disk **under z/VM**

1. Upload VSEIDISK.EXEC, VSEIDISK.HELPCMS, and VSEIDISK.MODULE together with the z/VSE installation tape image (e.g. VSE520EN.AWS or VSE520KA.AWS) in *binary transfer mode* to *variable block* CMS/SFS files using e.g.:
 - 3270 IND\$FILE file transfer
 - FTP
 - BINARY
 - [QUOTE] SITE VARrecfm
2. Deblock the VSEIDISK files in CMS:
 - PIPE < VSEIDISK MODULE A | DEBLOCK CMS | > VSEIDISK MODULE A
 - PIPE < VSEIDISK EXEC A | DEBLOCK CMS | > VSEIDISK EXEC A
 - PIPE < VSEIDISK HELPCMS A | DEBLOCK CMS | > VSEIDISK HELPCMS A
3. Create a z/VSE installation disk (e.g. on DASD 600) using the z/VSE Installation Disk Utility:
 - VSEIDISK VSE520EN AWS A 600 (VOLID=ZVSE52

Create an Installation Disk under z/VM

```
vseidisk vse520en aws a 600 (volid=zvse52
IDSK151D REPLY 'CONTINUE' TO ALTER DASD 600, ELSE 'CANCEL'
continue
IDSK141I FORMATTING Z/VSE INSTALLATION DISK ...
[...]
ICK03091I EXISTING VOLUME SERIAL READ = MYWORK
[...]
ICK00002I ICKDSF PROCESSING COMPLETE. MAXIMUM CONDITION CODE WAS 0
IDSK143I CREATING Z/VSE INSTALLATION DISK ...
IDSK000I Z/VSE INSTALLATION DISK TOOL 5.2.0
IDSK009I VALIDATING TAPE IMAGE VERSION AND RELEASE ...
IDSK009I EXTRACTING BOOT PHASE AND WRITING IT TO DISK ...
IDSK009I GENERATING BOOT RECORDS AND WRITING THEM TO DISK ...
IDSK009I WRITING TAPE IMAGE TO DISK ...
IDSK009I Z/VSE INSTALLATION DISK CREATED SUCCESSFULLY
Ready; T=0.08/0.18 14:37:49
```

Create an Installation Disk in LPAR

- LPAR with at least 512 MB of central storage
- Use the HMC/SE task “Load from Removable Media or Server

From CD/DVD:

hmcctx: Load from Removable Media or Server - Mozilla Firefox: IBM Editi...

https://hmcctx.boeblingen.de.ibm.com/hmc/content?taskId=1123&refresh=2282

Load from Removable Media, or Server - POL1:POLLP04

Use this task to load operating system software or utility programs from a CD / DVD-ROM or a server that can be accessed using FTP.

Select the source of the software:

Hardware Management Console CD / DVD-ROM

FTP Source

Host computer:

User ID:

Password:

Account (optional):

File location (optional): /vse520en

OK Cancel Help

From FTP server:

hmcctx: Load from Removable Media or Server - Mozilla Firefox: IBM Editi...

https://hmcctx.boeblingen.de.ibm.com/hmc/content?taskId=1123&refresh=2282

Load from Removable Media, or Server - POL1:POLLP04

Use this task to load operating system software or utility programs from a CD / DVD-ROM or a server that can be accessed using FTP.

Select the source of the software:

Hardware Management Console CD / DVD-ROM

FTP Source

Host computer: vsedevftp.boeblingen.de.ibm.com

User ID: jremus

Password: ●●●●●●

Account (optional):

File location (optional): /vse520en

OK Cancel Help

hmcctx: Load from Removable Media or Server - Mozilla Firefox: IBM Edition

https://hmcctx.boeblingen.de.ibm.com/hmc/wcl/T7c15

Load from Removable Media or Server - Select Software to Install - POL1:POLLP04

Select the software to install.

Select	Name	Description
<input checked="" type="radio"/>	/vse520en/VSE520EN.INS	Install z/VSE 5.2.0 ENGLISH
<input type="radio"/>	/vse520en/VSE520END.INS	Install z/VSE 5.2.0 ENGLISH (Debug)
<input type="radio"/>	/vse520en/VSE520ENI.INS	Install z/VSE 5.2.0 ENGLISH (Integrated Console)
<input type="radio"/>	/vse520en/VSE520ENID.INS	Install z/VSE 5.2.0 ENGLISH (Integrated Console & Debug)

OK Cancel Help

Create an Installation Disk in LPAR

- A standalone version of z/VSE IPLs and creates the installation disk
- The z/VSE console will show the following:

```
BG-0000 SI40D ENTER VOLID OF THE INSTALLATION DISK. DEFAULT IS 'ZVSEID'  
0 zvse52  
BG-0000 SI41D ENTER PCUU OF ZVSE52  
0 431  
BG-0000 SI45D DO YOU WANT TO CONTINUE WITH CREATION OF INSTALLATION DISK  
PCUU=0431, CURRENT VOLID=MYWORK (YES/NO) ?  
0 yes  
BG 0000 SI20I FORMATTING OF ZVSE52 IN PROGRESS  
BG 0000 IDSK000I Z/VSE INSTALLATION DISK TOOL 5.2.0  
BG 0000 IDSK009I VALIDATING TAPE IMAGE VERSION AND RELEASE ...  
BG 0000 IDSK009I EXTRACTING BOOT PHASE AND WRITING IT TO DISK ...  
BG 0000 IDSK009I GENERATING BOOT RECORDS AND WRITING THEM TO DISK ...  
BG 0000 IDSK009I WRITING TAPE IMAGE TO DISK ...  
BG 0000 IDSK009I Z/VSE INSTALLATION DISK CREATED SUCCESSFULLY  
BG 0000 SA17W ***** END OF STAND ALONE PROCESSING *****
```

Post Migration Tasks



- **z/VSE 6.1 and CICS TS 2.1**
 - You **MUST** re-generate all CICS tables on new system (SIT, JCT, etc.)

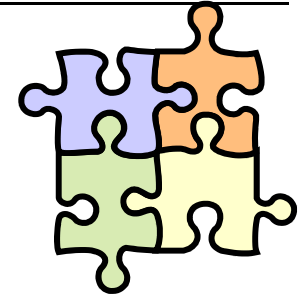
- **SA Dump**
 - Generate SA dump to disk (recommended) or tape
 - IUI dialog fast path 461 or 462

- **Dump Library**
 - Dump library is now a VSAM library (since z/VSE 5.1), which is more flexible in space
 - FSU will not move it. If you want, the move to VSAM can be done using skeleton SKDMPEXT

- **Install latest PTFs, RSLs, PSPs, Vendor product updates, etc.**

- **Verification and Test**
 - Check your security setup
 - User Profiles
 - Test applications

Data Migration after Upgrade



▪ **VSAM (not required for FSU, but recommended)**

- VSAM Backup/Restore
- VSAM catalogs with EXPORT-DISCONNECT and IMPORT-CONNECT
- Please carefully check definition of models used for workfiles on other disks than DOSRES or SYSWK1
- Entire catalogs can also be copied using Flashcopy
 - For each catalog, all disks where it owns space has to be flashed
 - Be aware that disks have to have same model type, e.g. 3390-3.

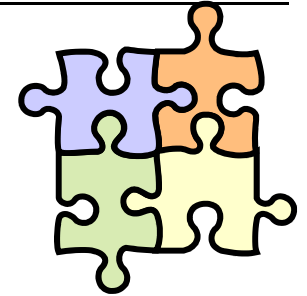
▪ **Other data**

- Entire disks can be copied using:
 - FCOPY
 - IXFP Flashcopy
 - DDR

▪ **Copy of system disks**

- For the two system disk, make sure in case of DDR that the system is down
- For FCOPY standalone-FCOPY is recommended for the system packs
- If the master catalog or VSESPUC catalog have storage on disks other than DOSRES or SYSWK1, these volumes also have to be saved

Data Migration after Upgrade - continued



▪ **POWER**

- Migration with POFFLOAD on a tape (VTAPE)
- Shared Spool
 - Conversion of POWER files is not recommended, POFFLOAD and cold start from the master system is recommended

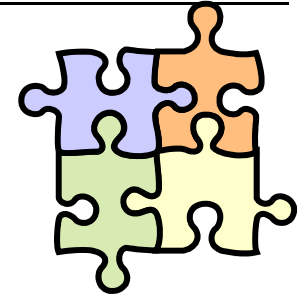
▪ **CICS CSD File**

- FSU and Initial Installation will update/establish IBM provided groups
- User definitions might have to be migrated

▪ **Databases**

- DLI
 - Take data base backups
 - Data base can also be migrated
 - Be aware of different releases, DLI 1.10 on CICS/VSE and DL/I 1.11 are no longer supported (z/VSE 4.3.x and higher). Migration to DL/I 1.12 is required.
 - Do not use disk copies (DDR or FCOPY) while data base is in use
- DB2
 - Use DB2 Data Restore feature

Data Migration after Upgrade - continued



▪ **ICCF and DTSFILE**

- FSU will update IBM libraries only (1, 2, 50-69)
 - User libraries are untouched
- After Initial Installation user libraries need to be restored
 - Do not migrate IBM libraries !

▪ **User profiles**

- No change to VSE Control File (IESCNTL) during FSU
- Migration with IESBLDUP utility after Initial Installation
 - All user profiles, user defined selections and application definitions will be migrated
 - The VSE Control File of the original System and a Backup of the ICCF DTSFILE is needed

▪ **Security Files (BSM Control File and DTSECTAB)**

- FSU Stage 2 will run without batch security
 - original DTSECTAB phase if saved in PRD2.SAVE is re-established.
 - BSTCNTL is updated (transaction security) by FSU
- Initial installation will establish a fresh BSM Control File
 - all user specific security settings must be migrated using skeleton SKBSTSAV
 - Don't copy this file using VSAM REPRO or similar
 - DTSECTAB has to be re-established

Things that should NOT be changed

- Don't change library structure – IJSYSRS, PRD1, PRD2, SYSDUMP
- Don't change catalog layout, especially storage for master and user catalog VSESP.USER.CATALOG (VSESPUC)
- Control files IESCNTL and BSTCNTL must be unique in the system and accessible by BSM (FB partition) and each CICS with IUI (DBDCCICS and PRODCICS)
 - These files should not be shared between VSE systems
 - Especially BSTCNTL do not copy via VSAM REPRO services, use logical backup/restore via SKBSTSAV in ICCF 59
- It is not recommended to change allocation of IJSYSRS and IJSYSR1
- Use STDLABEL procedure to implement your DLBLs (BAM), STDLABUP and IESVCLUP program for VSAM DLBLs, STDLABUS for user labels
- Do not change volids DOSRES and SYSWK1
- History file, work history file, job manager file, text repository file, text repository work file and PTF file
 - If changed, reflect change in dialog 141 - Verify Location of Involved Serviced Files



Summary

▪ When migrating to a new z/VSE release or version:

- Order and install the **latest refresh level**
 - Don't use a tape that you already have on the shelf for a long time
- Order and install the **newest RSLs and PSP buckets** for this refresh
- **Optional Products** should be **re-ordered and re-installed** after upgrade
- Products on the **Extended Base tape** should be **re-installed**
- Also consult your **Software Vendors** for their corresponding service levels
- Check **Release Guide** and **Planning** manuals as well as the z/VSE web page for additional considerations
- Have a testing period to make sure everything runs well as it did before
- Order and install the **newest PSP bucket again 2-3 weeks before production** cutover
- Before production cutover **have a fallback plan** in place



→ **Whitepaper: z/VSE Release and Hardware Upgrade**

<http://www-03.ibm.com/systems/z/os/zvse/documentation/documents.html#articles>

Questions ?



THANK YOU