z/VSE Release Migration

Ingo Franzki

z/VSE 5.2

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Notes:
Performance is in Internal Throughput Rate (ITR) ratio based on measurements and projections using standard IBM benchmarks in a controlled environment. The actual throughput that any user will experience will vary depending upon considerations such as the amount of multiprogramming in the user's job stream, the I/O configuration, the storage configuration, and the workload processed. Therefore, no assurance can be given that an individual user will achieve throughput improvements equivalent to the performance ratios stated here.
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Agenda

- **Overview**
- **Status information**
  - z/VSE, z/VM
  - Server & storage support
- **Hardware upgrades & migration**
- **z/VSE service terms**
- **Service deliverables**
- **Ordering products and service**
  - How to find available APARs / PTFs
  - How to apply electronic PTFs
- **Migration tasks**
  - Planning
  - Fast Service Upgrade (FSU)
  - Initial Installation
  - Post migration tasks
- **Data migration after upgrade**
- **Service recommendation**
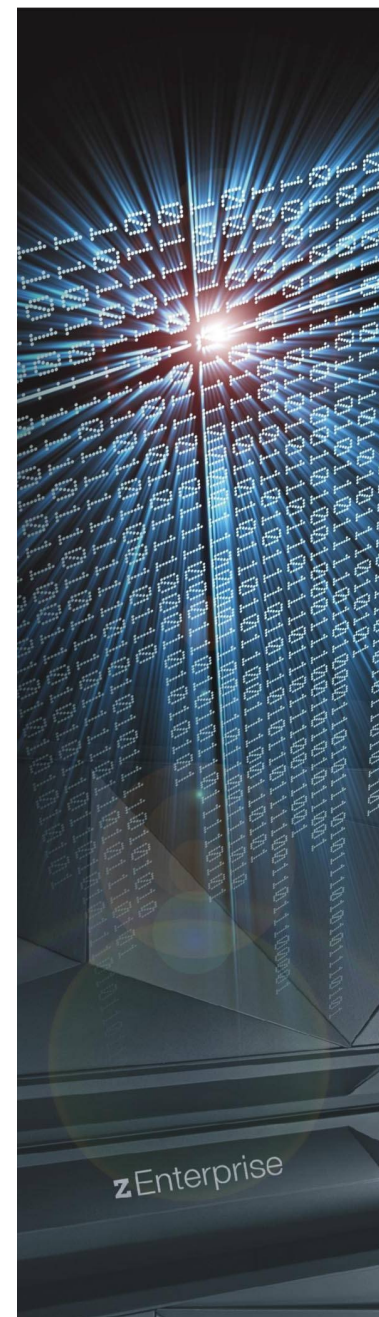
Overview

- **Hardware Migration**
  - New System z box
  - Add more capacity (processors, capacity setting)
    IBM = Install Bigger Machine ☺
  - New disks, tapes, cards, etc
  - Move to a new datacenter
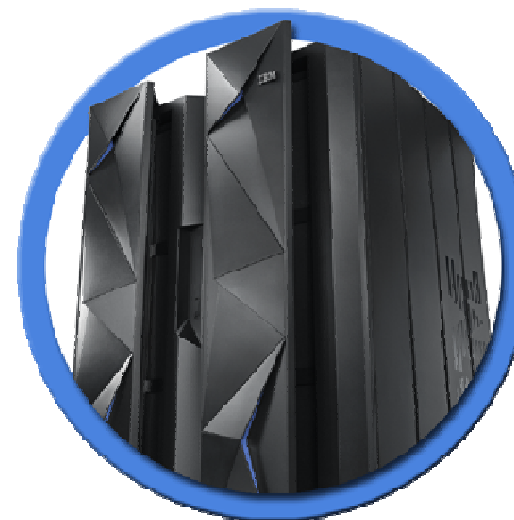
- **Software Migration**
  - New z/VSE release or version
  - New z/VM release or version
  - New (homegrown or purchased) Application
  - Add new or additional workload
  - Update the service level (apply PTFs)

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	Withdrawal from Service effective	Minimum z/VM level (1)
→ z/VSE V5.2	04/25/2014 Announcement	TBD	TBD	z/VM V5.4
→ z/VSE V5.1	11/25/2011 Announcement	04/25/2014 Announcement	TBD	z/VM V5.4
→ z/VSE V4.3	11/26/2010 Announcement	06/25/2012 Announcement	10/31/2014 Announcement	z/VM V5.2

Note (1): The minimum z/VM level applies when z/VSE is running as a guest under z/VM. In some cases, the minimum level of z/VM may not be supported. For information on the service status of z/VM, please refer to the z/VM web site.

→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	04/30/2017	07/26/2013	07/23/2013
z/VM (5741-A07)	V6.2.0	12/31/2016	12/02/2011	Revised on February 4, 2014 (Prior to this announcement EOS was 04/30/2015)
z/VM (5741-A05)	V5.4.0	12/31/2014, or until the z9 EC and z9 BC are withdrawn from support, whichever is later.	09/12/2008	Revised on August 7, 2012 (prior to this announcement, EOS was 09/30/2013)

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z/VSE Server Support

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

z/VSE server support		−
IBM System z, zSeries and S/390 Server	**z/VSE V5.1**	**z/VSE V4.3**
IBM zEnterprise BC12 (1)	Yes	Yes
IBM zEnterprise EC12 (1)	Yes	Yes
IBM zEnterprise 114	Yes	Yes
IBM zEnterprise 196	Yes	Yes
IBM zEnterprise BladeCenter Extension (zBX) - IEDN Support	Yes (2,3)	Yes (3)
IBM System z10 BC	Yes	Yes
IBM System z10 EC	Yes	Yes
IBM System z9 EC (formerly z9-109)	Yes	Yes
IBM System z9 BC	Yes	Yes
zSeries 990, 890	No	Yes
zSeries 900, 800	No	Yes
S/390 Parallel Enterprise Server G5/G6	No	No
S/390 Multiprise 3000	No	No

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

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

Note (3): V4.3 and V5.1 can transparently participate in an IEDN through a z/VM VSWITCH. This requires z/VM V6.1 or later.

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

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

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

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z/VSE Storage Support

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

IBM Disk Storage Systems	Attachment	z/VSE V5.1	z/VSE V4.3
IBM TotalStorage Enterprise Storage Server model 750, 800 and 800 Turbo	ECKD	Yes	Yes
	SCSI (FCP)	Yes	Yes
IBM System Storage DS6000 series	ECKD (1)	Yes	Yes
	SCSI (FCP)	Yes	Yes
IBM System Storage DS8000 series (2,3)	ECKD	Yes	Yes
	SCSI (FCP)	Yes	Yes
IBM System Storage SAN Volume Controller (SVC), IBM Storwize V7000, IBM Storwize V5000	SCSI (FCP)	Yes	Yes
IBM XIV Storage System	SCSI (FCP)	Yes	Yes
Parallel Access Volume Feature (PAV)	ECKD	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 System Storage home page.

Adapter	z/VSE V5.1	z/VSE V4.3
OSA-Express, OSA-Express2, OSA-Express3, OSA-Express4S (1), OSA-Express5S (1)	Yes	Yes
FICON Express, FICON Express2, FICON Express4, FICON Express8, FICON Express8s	Yes	Yes
Crypto Express2, Crypto Express3	Yes	Yes
Crypto Express4S	Yes	No
PCICA, PCIXCC	Yes	Yes
CP Assist for Cryptographic Function (CPACF)	Yes	Yes

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

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 V5.1	z/VSE V4.3
TS1140 (3592 Model E07) Encryption capable	C07, C06	Yes (4)	No
TS1130 (3592 Model E06) Encryption capable	C07, C06	Yes	Yes
TS1120 (3592 Model E05) Encryption capable	C07, C06, J70	Yes	Yes
3592 Model J1A	C06, J70	Yes	Yes
TS3400 Tape Library (Autoloader) containing up to two TS1120 tape drives	C06	Yes	Yes
3590 Model H, E and B	A50, A60	Yes	Yes
3490E	A10, A20	Yes	Yes
3490	A01, A02	Yes	Yes
3480	A22	Yes	Yes

Note (4): Additional PTFs are required.

IBM Tape Library Systems	Controllers	z/VSE V5.1	z/VSE V4.3
TS7680 ProtecTIER Deduplication Gateway	C06, tape drives: virtual 3592 J1A	Yes	Yes
TS7700 Virtualization Engine (5)	See info for tape drives.	Yes	Yes
Copy Export Function		Yes	No
Multi-Cluster Grid Support		Yes	No
3494 Virtual Tape Server (VTS)	See info for tape drives.	Yes	Yes
TS3500/3584 UltraScalable Tape Library	J70, C06	Yes	Yes
3494 TotalStorage Tape Library	J70, C06, A60	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) <u>before</u> 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**
    - z/VSE with the latest service level supports concurrent microcode upgrade for IBM tape and ECKD storage
    - z/VSE does not support concurrent microcode upgrade for Fibre-Channel-attached SCSI disks
    - Please consult your device documentation for details

- **Recommendation 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 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

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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 System z (zPCR)**
  - It is designed to provide capacity planning insight for IBM System z processors running various workload environments
  - Capacity results are based on IBM's LSPR data supporting all IBM System z processors
  - Large System Performance Reference: http://www.ibm.com/systems/z/advantages/management/lspr/
  - For VSE use z/VSE workloads Batch, Online or Mixed
  - http://www.ibm.com/support/techdocs/atsmastr.nsf/WebIndex/PRS1381
  - 'As is', no official support, e-mail to zpcr@us.ibm.com

- **A z/VSE Capacity Planning Offering is now 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

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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

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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

frequency

Corrective Service

temp. Fixes

Individual PTFs

PSP Buckets & RSLs

Fast Service Upgrade

Release Installation

Preventive Service
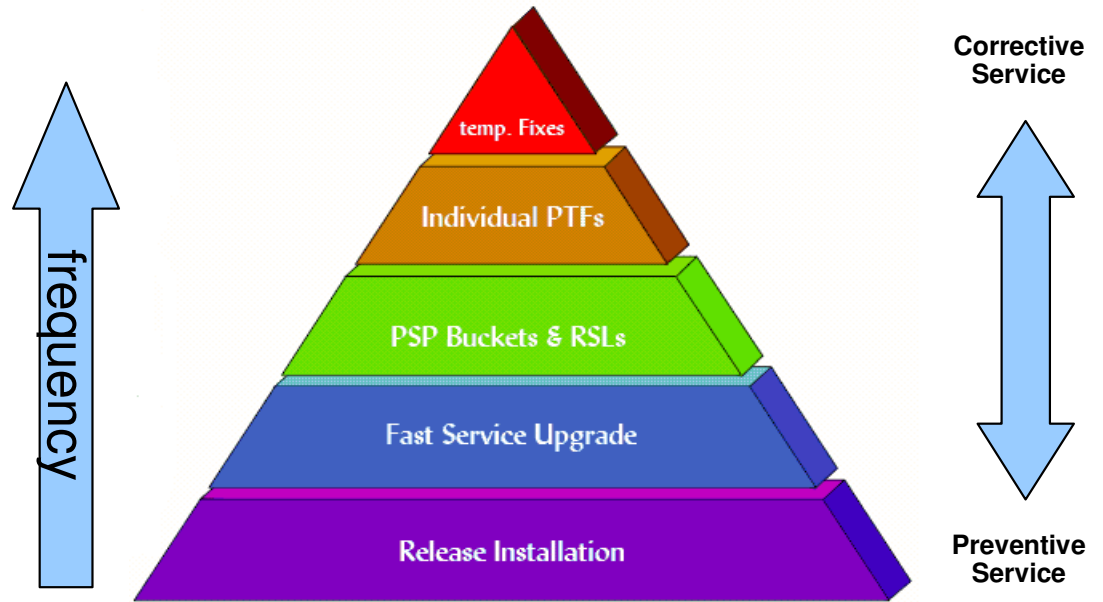
	Refresh	RSL	PSP	PTF
What is it	Complete Product (includes all PTFs)	List of ALL PTFs at a cut off day	List of selected PTFs (HIPER)	Official Fix for a code problem (APAR)
When is it available	Every 6-12 Month, usually for the newest release	Every 2-3 Month	Is constantly kept up to date	Will be created 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

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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.ibm.com/software/shopzseries

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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 V5.1	z/VSE V4.3	Unsupported releases

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

Latest VSE/AF 9.1 APARs for z/VSE V5.1

Last update: Feb 24, 2014

APAR Date	PTF	Contents
DY47516 2014/02/18	UD54005-51S	Security fixes for OpenSSL
DY47501 2014/02/10	UD54002-51C UD54003-51G UD54004-51J	Prevents AR hang with PAV active. PAV enhancements.
DY47512 2014/01/28	UD53997-51C	MSG0S39I Reason=0049 for a TCP/IP hipersockets link

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

Technical help database

for System z

Search

Search for: [   ] 🔍

Sort by: Newest first ▾   Hits per doc type: 10

→ Search tips   → Start a new search

Document types

☑ All

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

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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"

1-10 of 41 results	Next →		Modified
1.	Upgrade ZVSE510, Subset IBMLANG/51K LE/VSE BASE Version 1, Release 4, Modification 8		2013-02-22
2.	Upgrade ZVSE510 VERSION 5, RELEASE 1, MODIFICATION LEVEL 0 of z/VSE		2013-02-22
3.	Upgrade ZVSE510, Subset ZVSE/51C VSE Central Functions Version 9, Release 1, Modification 0		2013-02-21

	DATE	SUBSET ALTERED	COMMENTS		
34	13/02/22	IBMLANG/51K	SECTION 4, ADDED ITEM 9	PM81989	UK91611
33	13/02/21	ZVSE/51C	SECTION 4, ADDED ITEM 24	DY47454	UD53929
		ZVSE/51C	SECTION 4, ADDED ITEM 25	DY47454	UD53928
32	13/02/08	ZVSE/51C	SECTION 4, ADDED ITEM 23	DY47452	UD53927
31	12/12/21	ZVSE/51C	SECTION 4, ADDED ITEM 21	DY47447	UD53922
		ZVSE/51C	SECTION 4, ADDED ITEM 22	DY47446	UD53921
30	12/12/11	ZVSE/51C	SECTION 4, ADDED ITEM 20	DY47391	UD53846
29	12/11/30	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 5.1.2	Base Products	→ PTFs 512B	Jan 31, 2014
	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 01/31/14

z/VSE base Products - 512

DITTO/ESA VERSION 1.3.0
UK94927

EREP 3.5.0
UD53961

ICKDSF 1.17.0
UI12894 UK94832

- 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

Ordering PTFs using IBM Shopz

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

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

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

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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 from VSE/ESA 2.3 and earlier.
  - Change of system disk architecture, like switching from ECKD to FBA SCSI.
  - Change of the system language (actually only Japanese and English is supported)
  - Change of environment like change to C (big). However this can be switched manually after FSU.

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# Performing a Fast Service Upgrade (FSU)
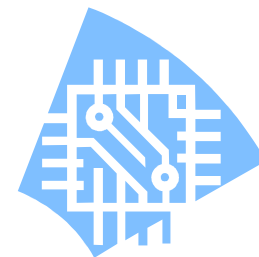
- **FSU requires a z/VSE base tape**
  - On physical cartridge
  - As VSAM VTAPE (use FTP to upload AWS file into a VSAM ESDS cluster)

- **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

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Performing a Fast Service Upgrade (FSU) - continued
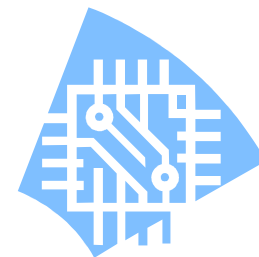
- **FSU Installation**
  - **Stage 1:**
    - IJSYSRS onto SYSWK1 including NLS parts
    - PRD1.MACLIB
    - PRD2.GEN1 (optional will be cleared if not selected)
    - Prepare JCL for Stage 2
    - At the end of Stage1 generate POWER phase
  - **Re-IPL from SYSWK1**
    - Using a special FSU JCL and 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
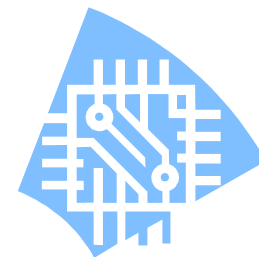
- **Post FSU tasks**
  - Update your default selection panels and your default application profiles
  - Shutdown the system and re-IPL from DOSRES
  - Re-catalog or recompile your modified configuration members using the new skeletons
    - Startup procedures
    - VTAM books
    - CICS tables
    - 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

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Performing an Initial Installation

- **Initial Installation requires a physical z/VSE base tape on cartridge (IPL'able)**
  - VTAPE is not supported
  - You may need to copy the base tape from AWS (VTAPE) onto a physical tape
 - z/VSE 5.2: Tapeless installation using installation disk

- **IPL the z/VSE base tape**
  - 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
  - DTSFILE (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
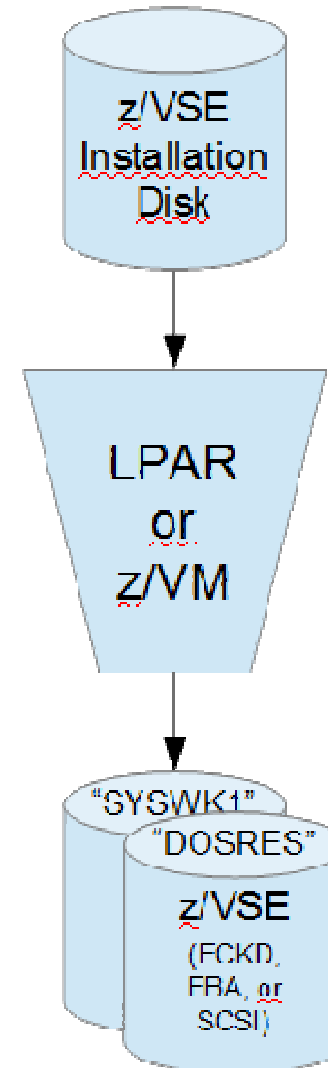 - Generate SA Dump disk or tape

z/VSE 5.2: Tapeless Initial Installation

Step 1: Create a z/VSE Installation Disk

Step 2: Install from Disk

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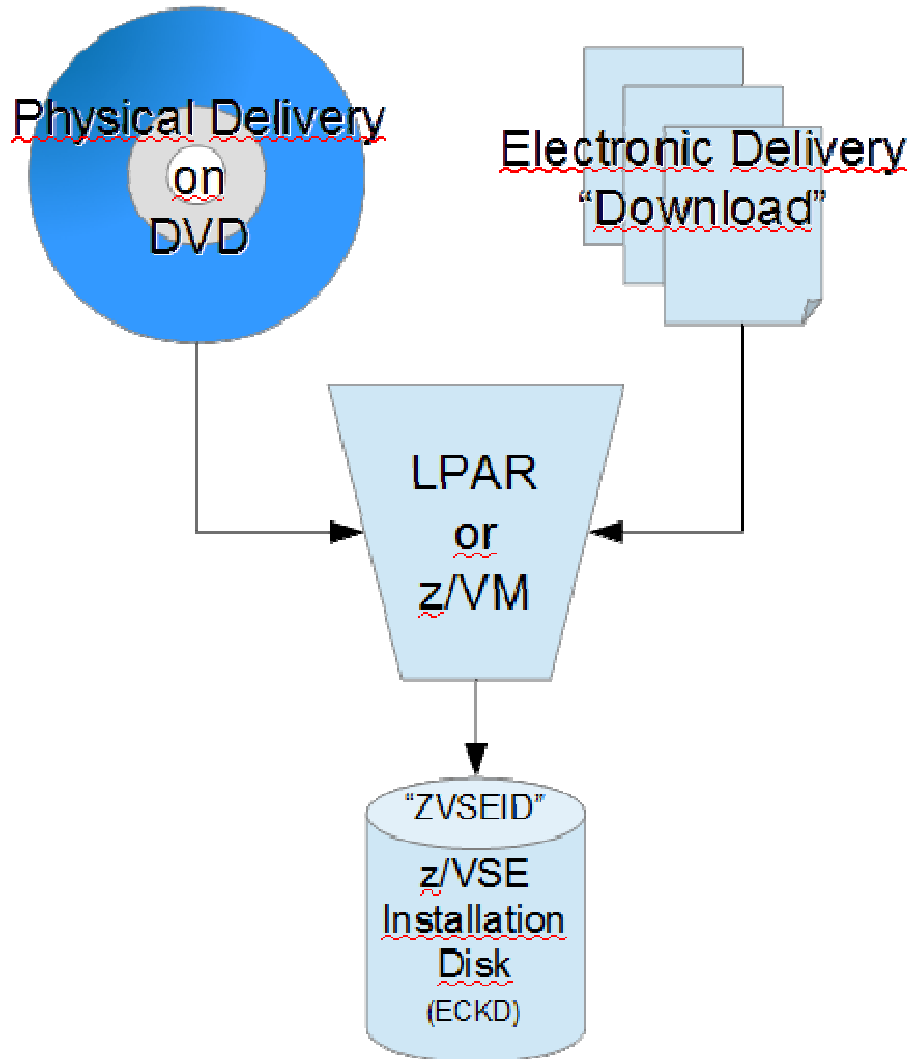
Post Migration Tasks

- **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
  - Space is allocated in master catalog
  - Space allocation is dependent on environment selected
  - FSU will not move, if wished, moving 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
  - Check VSAM catalogs using the catalog checker
  - Test applications

Data Migration after Upgrade
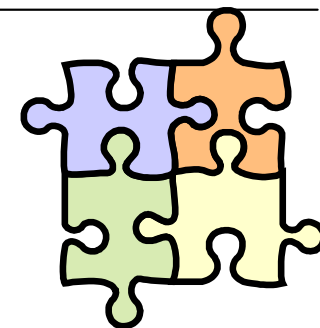
- **VSAM (not required for FSU, but recommended)**
  - VSAM Backup/Restore
  - VSAM catalogs with EXPORT-DISCONNECT and IMPORT-CONNECT
  - Please carefully check definition of models used for workfiles on other disks than DOSRES or SYSWK1
  - Entire catalogs can also be copied using Flashcopy
    - For 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

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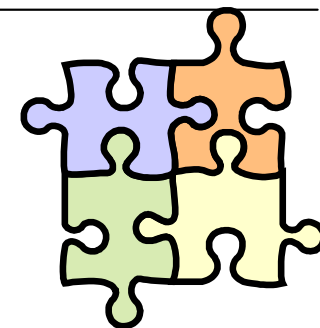
- **POWER**
  - Migration with POFFLOAD on a tape (VTAPE)
  - Shared Spool
    - Conversion of POWER files is not recommended, POFFLOAD and cold start from the master system is recommended

- **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

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Data Migration after Upgrade - continued
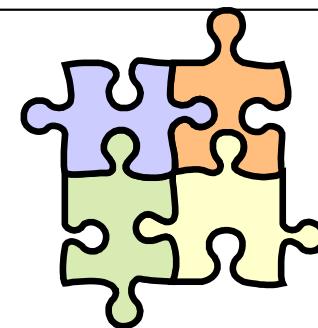
- **ICCF and DTSFILE**
  - FSU will update IBM libraries only (1, 2, 50-69)
    - User libraries are untouched
  - After Initial Installation user libraries need to be restored
    - Do not migrate IBM libraries !

- **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
    - After IESBLDUP job, use PF6=GROUPS in dialog „Maintain User Profiles" to update BSTCNTL with user definition

- **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

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Things that should <u>NOT</u> 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 vie 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

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Service Recommendations

→ **It is essential to have a preventive maintenance strategy**

- **Install the latest refresh**
  - About every 12 Month

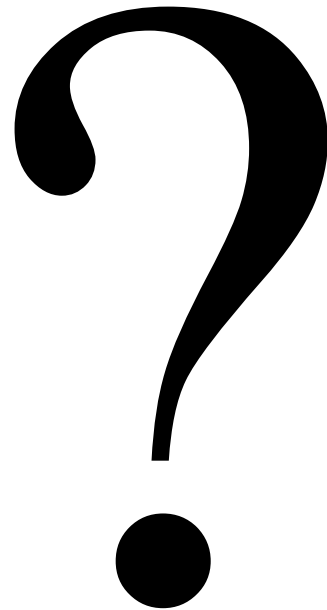- **If you are on a current refresh level**
  - Install the newest RSL
    - About every 6 Month
  - Install the newest PSP Bucket
    - About every 3 Month
    - Also order the hardware bucket when you install new hardware

- **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

Questions ?

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