VM Workshop 2020

z/VSE Update

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Introduction

Natalie Speiser

Joined the z/VSE development team in 2008

Became SME for Memory Management & I/O

Maternity leave in 2017

Became z/VSE Development Team Lead

Took over hardware planning for z/VSE

Now: z/VSE Technical lead

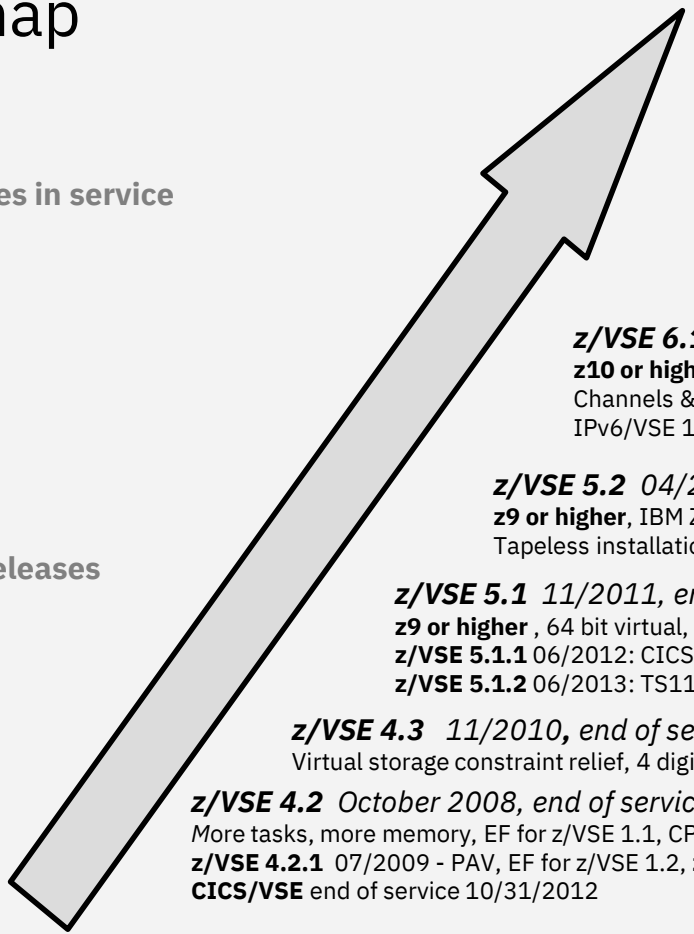
What about Ingolf?

z/VSE 6.2

z/VSE Roadmap

z/VSE releases in service

Unsupported z/VSE releases



Continuous Delivery
DL/I 1.12.1 partitioning, PAV Support for ICKDSF FlashCopy, Crypto Services Update

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, IBM Z exploitation

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,
z/VSE 5.1.1 06/2012: CICS Explorer, LFP in LPAR, database connector
z/VSE 5.1.2 06/2013: TS1140, 64 bit I/O, openSSL, db connector enhancements

z/VSE 4.3 *11/2010, end of service 10/31/2014*
Virtual storage constraint relief, 4 digit cuus, z/VSE 4.3.1 08/2011

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
z/VSE 4.2.1 07/2009 - PAV, EF for z/VSE 1.2, **z/VSE 4.2.2** 04/2010 - IPv6/VSE 05/2010
CICS/VSE end of service 10/31/2012

z/VSE 6.2 Release Content

GA: 12/01/2017

Architectural Level Set to IBM z114 or z196 or later

Provides:

- HW support (e.g. zHPF, Vector Facility support)
- CICS TS for z/VSE enhancements
- Connector enhancements
- Security enhancements
- DL/I 1.12 enhancements

Related Products:

- CICS TS for z/VSE 2.2
- IBM IPv6/VSE 1.3
- IBM TCP/IP for z/VSE 2.2

For details: [z/VSE 6.2 Release Guide]

z/VSE Hardware Support

IBM z15

z/VSE 6.2 supports z15 GA1 + 1.5

z/VSE provides toleration support

z/VSE 6.2 supports the latest Crypto, OSA and FICON adapters

PTF is required for IOCP batch utility (APAR DY47809)

IBM z15 Model T01

FICON Express16SA
CHPID-type FC, FCP

OSA-Express7S
CHPID-type OSC,OSE,OSD

Crypto Express7S
CCA Coprocessor &
Accelerator mode

IBM z15 Model T02

FICON Express16S+
CHPID-type FC, FCP

OSA-Express6S/7S
OSA-Express6S 1/10GbE,
1000BASE-T
OSA-Express7S 25GbE

Crypto Express7S
CCA Coprocessor &
Accelerator mode

Transparent Features

Support for IBM Fibre Channel Endpoint Security
- Server authentication and data encryption
- Transparent to z/VSE

z/VSE guests can benefit from z/VSE System Recovery Boost
- Accelerates the restoration of service from outages
- Transparent to z/VSE
- No z/VM guest support
- z/VM 7.1: APAR VM66283

Migration Considerations

Customers should collect reference information before migration

E.g. performance data, CPU utilization, I/O activity, elapsed times
Required to size z15 and compare workload characteristics
For details: z/VSE Release and Hardware Upgrade

Apply PTFs for latest processor

PSP (Preventive Service Planning) bucket for z15, z/VSE and z/VM PSPs list PTFs
http://www14.software.ibm.com/webapp/set2/psearch/search?domain=psp
Apply required PTFs for IBM and vendor software
z/VSE 6.2 – APAR DY47809 (PTF UD54358) required for IOCP batch utility
z/VSE 6.1 (unsupported) – PTFs required for Crypto Express6S/7S

Compatibility Issues/Requirements

Only z/VSE V5 and later can IPL on z15 in LPAR or z/VM guest environment
z/VSE V4 can IPL in z/VM guest only

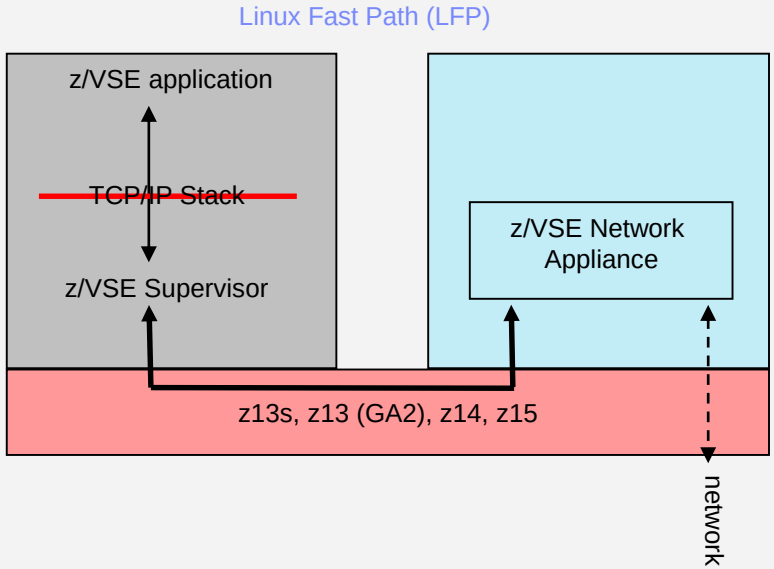
z/VSE Service

z/VSE Network Appliance

z/VSE Network Appliance (VNA) GA: 06/30/2016

Network access without requiring a TCP/IP stack in native z/VSE systems

TCP/IP application uses Linux Fast Path (LFP) & connects through HiperSockets to VNA



End of Marketing: 10/14/2019

End of Service: 12/31/2019

Performance Improvements

Available since Q4/2019

Provides significant reduction in CPU time for some workloads

May help to reduce job duration in fully utilized environments, especially on low capacity models

If CSI's FAQS/ASO Fast Transient Load (FTL) is enabled, zap BF53258 is required

Implemented APARS:

DY47814 – $$A$SUPI Supervisor

DY47815 – $IJBDISPT Turbo Dispatcher

DY47824 - $$A$SUPI Supervisor

z/VSE Continuous Delivery

Crypto Services Update

OpenSSL provides a crypto library and a toolkit for SSL/TLS protocols

OpenSSL on z/VSE provides support for TLS 1.2 and encryption in Galois Counter Mode (GCM) for highest available security

Unique in z/VSE

- z/OS-compatible SSL programming interface
- Support for IBM Z cryptographic hardware

OpenSSL on z/VSE will now be upgraded using OpenSSL 1.1.1d

Update is available for z/VSE V6.2 with APAR DY47825

For details: z/VSE TCP/IP Support

Statement of Direction

"In the future, IBM intends to deliver native z/VSE exploitation of System Recovery Boost, which is expected to enable restoration of service from, and catch up after, both planned and unplanned outages faster than on any prior Z machine."

System Recovery Boost

System Recovery Boost (SRB) is a key feature of z15

SRB provides faster recovery from planned and unplanned outages, including stand-alone dump process

SRB will work for sub-capacity models only

Especially beneficial for low capacity models

No z/VM guest support

SRB Support in z/VSE

z/VSE provides new functionality as PTF based on the continuous delivery model

SRB support for z/VSE 6.2 will be available soon

z/VSE will automatically start (opt-in) the boost period at early IPL time

The IPL boost will last 60 minutes

There will new commands to stop the boost period and to initiate the shutdown boost

The shutdown boost will last 30 minutes

The system can opt-in only twice, during IPL and once at shutdown

SRB will also be activated for 60 minutes during the standalone-dump process

z/VSE Blog

New z/VSE Blog

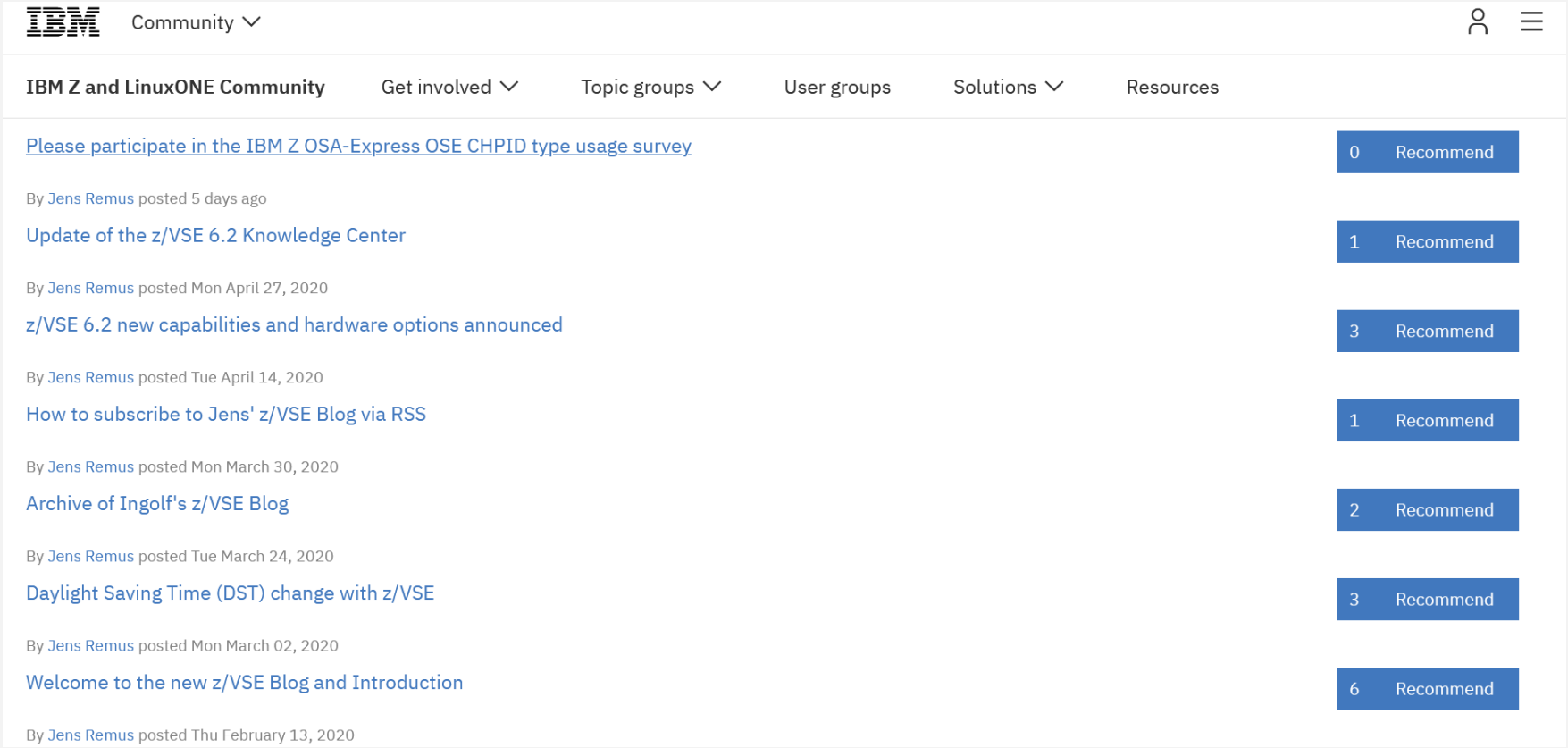
The z/VSE Blog is hosted on the IBM Community Platform within the IBM Z and LinuxOne Community

An archive containing Ingolf's blog entries can be found on the z/VSE homepage

New author is Jens Remus

Subscription via RSS possible

Community Layout



More Information

z/VSE homepage: www.ibm.com/vse

z/VSE Knowledge Center:
https://www.ibm.com/support/knowledgecenter/SSB27H_6.2.0/zvse_welcome_6.2.0.html

IBM Redbooks: http://www.redbooks.ibm.com/

VSE-L discussion list: https://groups.google.com/forum/?fromgroups#!forum/bit.listserv.vse-l