IBM

VM WORKSHOP 2017 – Columbus, Ohio

z/VSE® - News - Announcements - Trends

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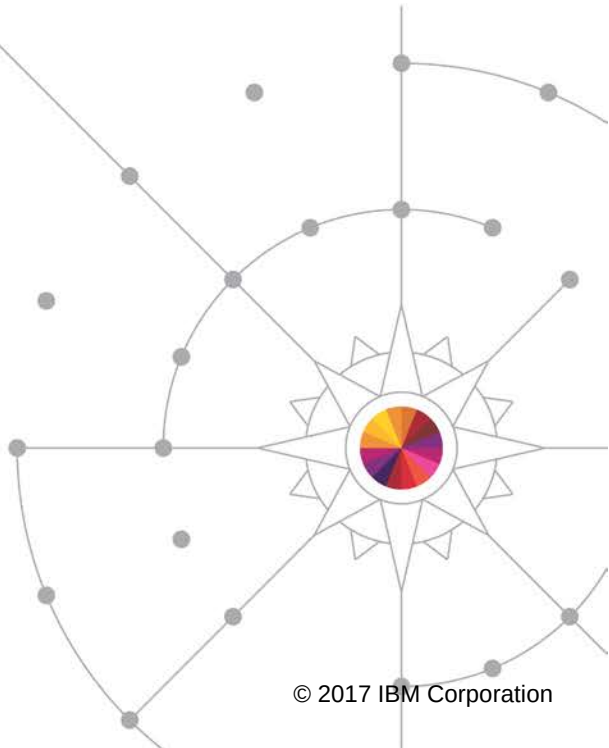
z/VSE



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Agenda

- **IBM z13s™**
- **Statements of Direction and Announcements**
- **z/VSE® V6.2 Preview**
- **Multi-Version Measurement**
- **z/VSE Strategy**
- **Summary**

IBM z13s™

z13s

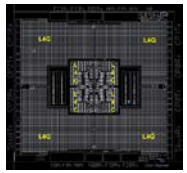
Machine Type: 2965

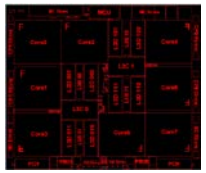
*2 Models: **N10** and **N20***

156 capacity settings
4 TB memory

Up to **6** CPs
Up to **20** IFLs

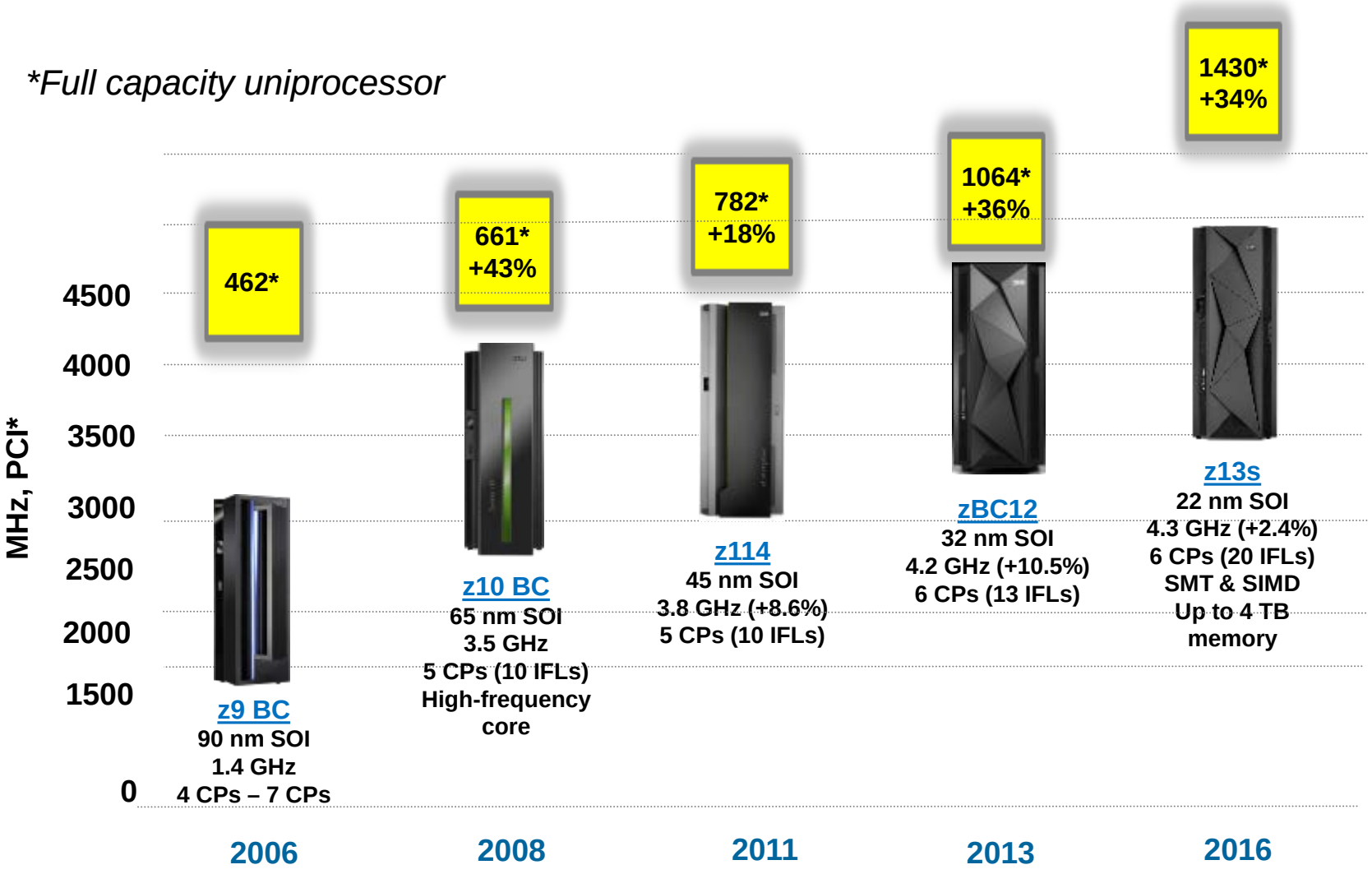
8x increase in memory
2x increase in cache
2x increase in channel speed
2.3x performance boost for cryptographic coprocessor





z13s continues the CMOS Mainframe Heritage

**Full capacity uniprocessor*



***NOTE: MIPS Tables are NOT adequate for making comparisons of z Systems processors in proposals**

z/VSE Support for IBM Mainframe Servers (as of June 2017)

IBM Servers	z/VSE V6.2	z/VSE V6.1	z/VSE V5.2	z/VSE V5.1 (out of service)	z/VSE V4.3 (out of service)
IBM z13® & z13s™	✔	✔	✔	✔	✔
IBM zEnterprise® EC12 & BC12	✔	✔	✔	✔	✔
IBM zEnterprise® 196 & 114	✔	✔	✔	✔	✔
IBM System z10® EC & z10 BC	✘	✔	✔	✔	✔
IBM System z9® EC & z9 BC	✘	✘	✔	✔	✔
zSeries® 990, 890	✘	✘	✘	✘	✔

z/VSE on IBM z13s

http://www.redbooks.ibm.com/redbooks.nsf/pages/z13?Open

IBM z13s Toleration / Exploitation:

- Benefit from newest z Systems technology
- **z/VSE**
  - Can run in **more LPARS (40)**
  - Higher single engine (PU) performance for z/VSE batch and online workloads
  - Faster encryption of data with the **Crypto Express5S**
  - supports **more than 16 domains** with the
  - Crypto Express5S
  - supports **FICON Express16S**
  - supports existing **OSA Express5S**
  - supports **newest version of SCRT**
  - **z/VSE Network Appliance**

z/VSE Network Appliance

Better communications between z/VSE and Linux on z

- Existing z/VSE Linux Fast Path (LFP) has provided for more direct communication between z/VSE applications and applications running on Linux on z Systems
- No-charge for z/VSE Network Appliance
- Runs in Secure Service Container LPAR
- No Linux license, No TCP/IP product,
- Supported on z/VSE V6.1, V5.2 and V5.1 and the z13 and z13s

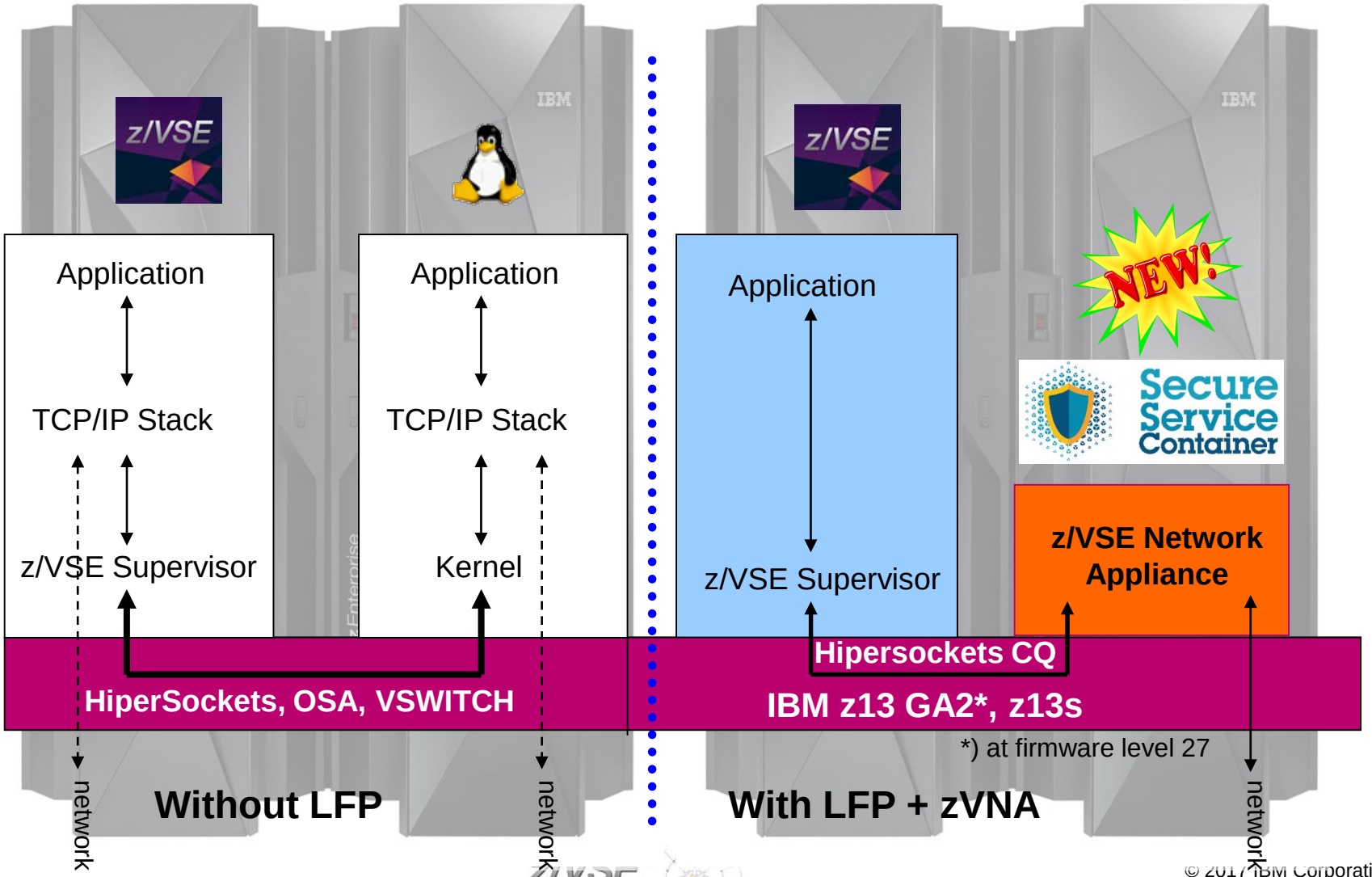
Typical Client Use Cases:

- For heavy loaded environments can free up z/VSE and CICS resources with elimination of TCP/IP stack
- For clients running z/VSE under z/VM ®, an equivalent LFP functionality is available using z/VSE z/VM IP Assist (VIA)

* Based on IBM measurements with high FTP workload
** IBM measurements: averaged value based on FTP and socket application use, bi-directional (z/VSE → Linux & Linux → z/VSE)
Actual results are heavily workload dependent and may vary for individual environments

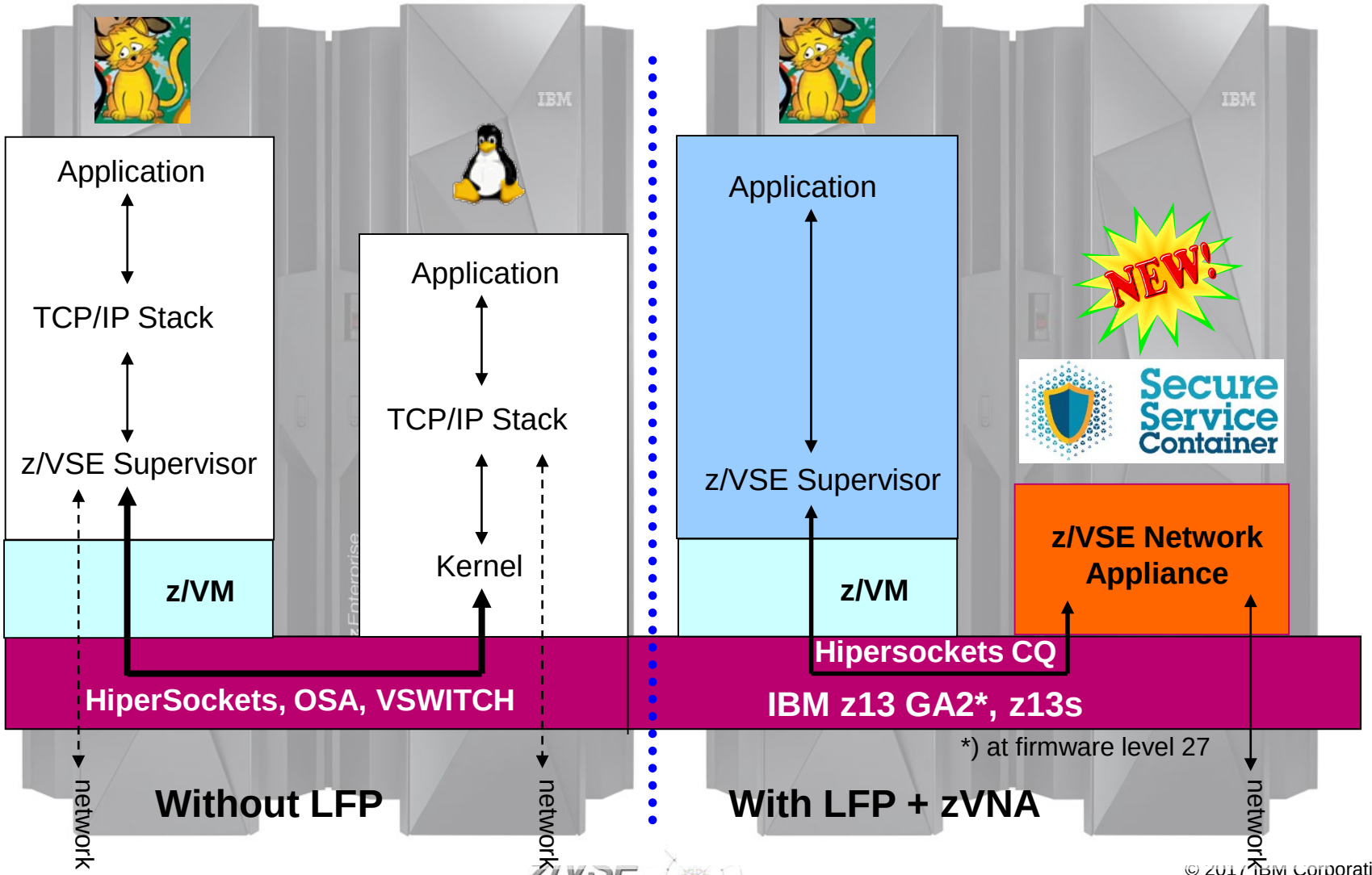
New: z/VSE Network Appliance (VNA)

Exploits the IBM Secure Service Container introduced on the z13 platform

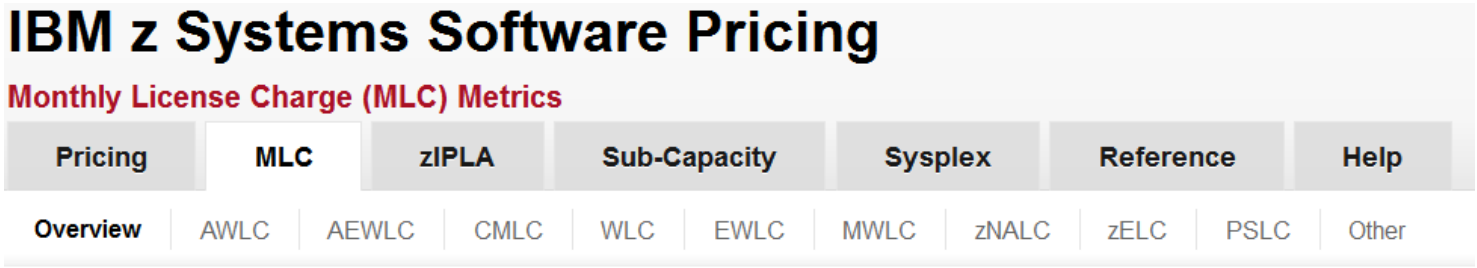


New: z/VSE Network Appliance (VNA) with z/VSE (V6.2) under z/VM

Exploits the IBM Secure Service Container introduced on the z13 platform



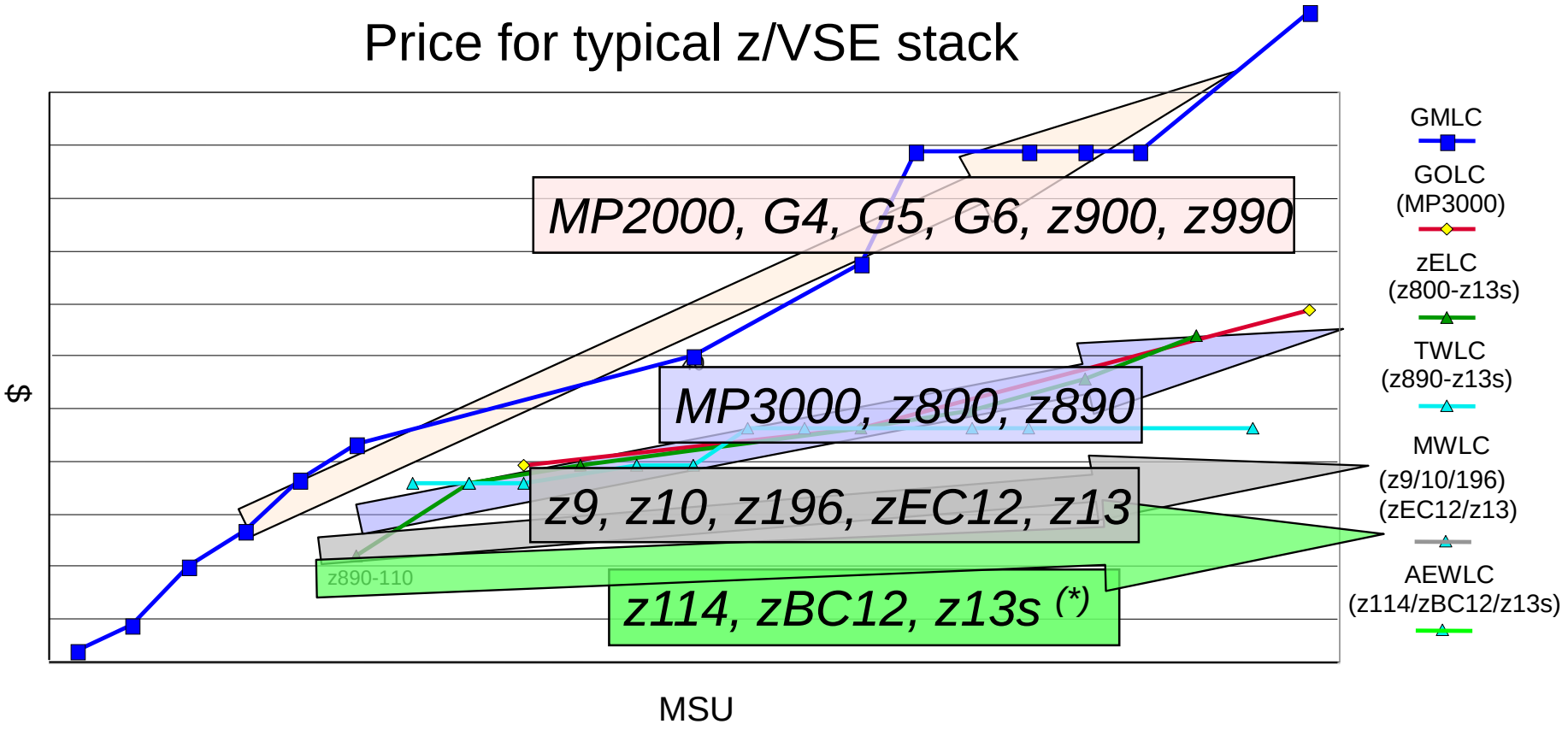
https://www-03.ibm.com/systems/z/resources/swprice/mlc/index.html



Pricing Metrics	z13	z13s	zEC12	zBC12	z196	z114	z10EC	z10BC
MWLC	✓		✓		✓		✓ ★	✓ ★
AEWLC		✓ ★		✓ ★		✓ ★		
zELC (capacity setting A01 only)		✓		✓		✓		✓
Sub-Capacity	✓	✓ ★	✓	✓ ★	✓	✓ ★	✓ ★	✓ ★

★ Not applicable for capacity setting A01

z/VSE Software Pricing Metrics

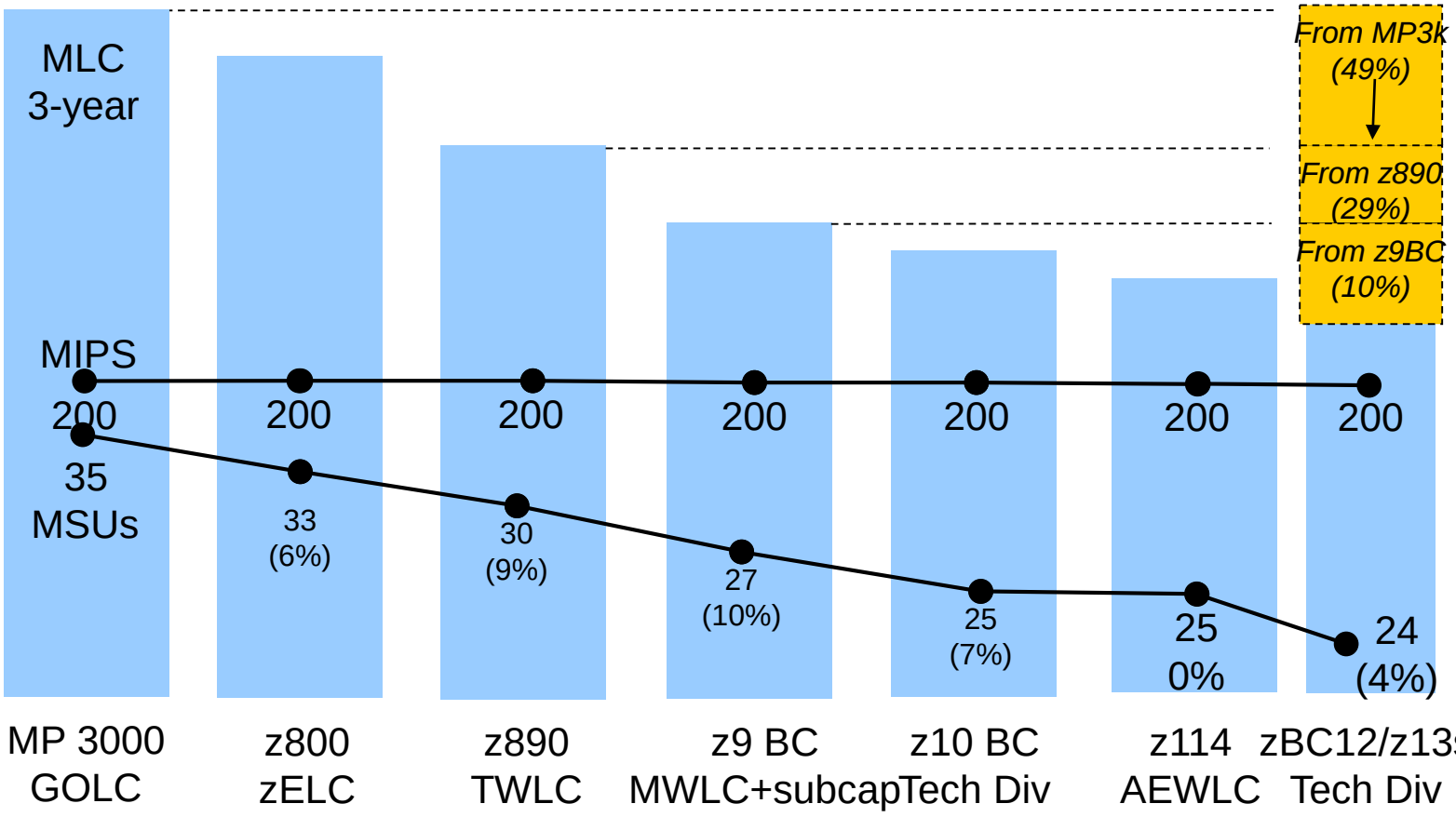


(*) The entry models of these servers, capacity settings A01, are priced using zELC.

Typical z/VSE stack consists of z/VSE Operating System, LE, CICS TS, VTAM, TCP/IP, DB2

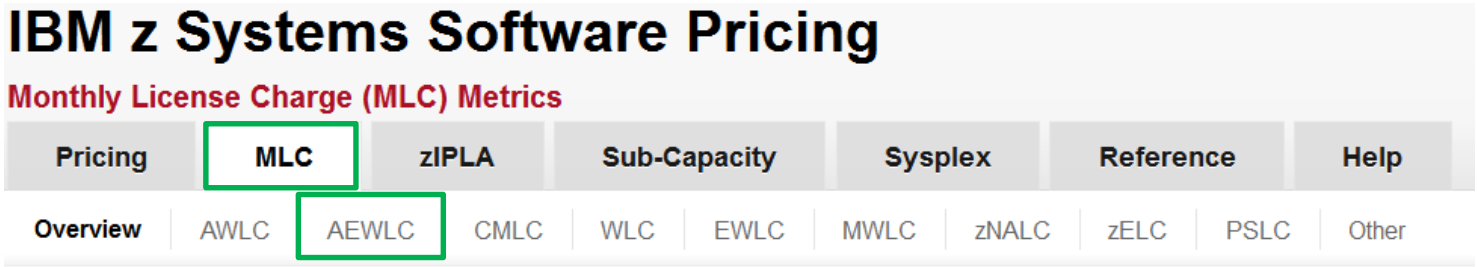
z/VSE MLC Price Performance across Hardware Generations

- **This example shows a typical z/VSE software stack at 200 MIPS**



* A typical z/VSE stack includes z/VSE Base, CICS TS, VTAM, TCP/IP, DB2, Ditto, Cobol, HLASM
* MLC savings will vary significantly by customer - actual customer configuration must be priced out to be accurate.

https://www-03.ibm.com/systems/z/resources/swprice/mlc/aewlc.html



- **Advanced Entry Workload License Charge - continued**
- **Technology Update Pricing for z13s (TU4)**
  - For stand-alone **z13s** servers
  - AEWLC **pricing reduction up to 13%**
  - For more details, see announcement link
- **Technology Update Pricing for zBC12 (TU2)**
  - For stand-alone **zBC12** servers
  - AEWLC **pricing reduction up to 5%**
  - For more details, see announcement link

MSUs: Quantity of z13s Full Capacity MSUs for a stand-alone server	Reduction in Monthly AEWLC for z13s (TU4)	Reduction in Monthly AEWLC for zBC12 (TU2)
1-10 MSUs	13.0%	5.0%
11-17 MSUs	13.0%	5.0%
18-30 MSUs	13.0%	5.0%
31-45 MSUs	10.0%	5.0%
46-87 MSUs	9.0%	4.0%
88-175 MSUs	9.0%	4.0%
176-260 MSUs	9.0%	4.0%
261-315 MSUs	9.0%	4.0%
316-390 MSUs	9.0%	4.0%
391 - more MSUs	9.0%	4.0%

- **Reduces AEWLC pricing on z13s as compared to AEWLC on IBM zEnterprise® BC12 (zBC12) and IBM z114**
- **Offers sub-capacity or full-capacity implementation**

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Exploitation of IBM z Systems

Increased performance using the High Performance FICON for z Systems (zHPF) protocol

- z/VSE intends to transparently exploit the zHPF protocol for selected user applications. Input/output intensive applications may especially benefit from a FICON Express16S in an IBM z13 or z13s with the zHPF protocol and IBM DS8880 storage.

Elliptic Curve Cryptography (ECC) support in z/VSE's OpenSSL implementation

- ECC hardware acceleration with Crypto Express5S in CCA coprocessor mode will be transparently used.

- SOD launched in 4/2016
- Fulfilled with z/VSE V6.2 in 4Q2017
- Better performance and security with z/VSE V6.2

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Ease of use functionality for SCSI systems

Tapeless initial installation using a SCSI installation disk

- IBM intends to support initial installation using a SCSI installation disk.

- SOD launched in 4/2016
- Fulfilled with z/VSE V6.2 in 4Q2017

- Allows the installation disk to be on a SCSI device

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IBM CICS Transaction Server for z/VSE

CICS Explorer® enhancements are planned to:

- Define new and change or delete existing CICS resources, such as programs, files, and transactions
- Monitor and control or update dynamic storage areas and global temporary storage queue statistics
- Use the "definitions views" for selected CICS resources

- SOD launched in 4/2016
- Fulfilled with z/VSE V6.2 in 4Q2017

- Manage CICS resources using the CICS Explorer

IBM CICS Transaction Server for z/VSE

Channels and containers enhancements are planned to:

- Support UTF-8 and UTF-16 in code page conversion using Channels and Containers
- 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

- SOD launched in 4/2016
- Fulfilled with z/VSE V6.2 in 4Q2017

- z/OS affinity

Enhancements related to CICS Transaction Server for z/VSE

z/VSE SOAP Engine to exploit Channels and Containers

- The existing z/VSE Simple Object Access Protocol (SOAP) implementation integrates z/VSE CICS applications in a heterogeneous environment using web services. User programs utilizing the z/VSE SOAP Engine are currently restricted by the COMMAREA and its 32K limitation. To meet the needs of applications with growing data, z/VSE intends to exploit the CICS Channels and Containers API for the SOAP Engine.

- SOD launched in 4/2016
- Fulfilled with z/VSE V6.2 in 4Q2017

- Satisfies demand for growing data in a z/VSE SOAP environment

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Enhancements related to CICS Transaction Server for z/VSE

New z/VSE REST Engine with JSON support

- Representational State Transfer (REST) is a software architecture style consisting of guidelines and best practices for creating web services. RESTful systems typically communicate over the Hypertext Transfer Protocol (HTTP), using JavaScript™ Object Notation (JSON) or XML for the payload. z/VSE intends to provide a REST Engine that allows clients to provide RESTful web services running in a CICS environment. The REST Engine will support various payload types including JSON and XML.

- SOD launched in 4/2016
- Fulfilled with z/VSE V6.2 in 4Q2017

- Support of RESTful web services as an alterantive to SOAP

Security enhancements

Basic Security Manager (BSM) enhancement

- The z/VSE Basic Security Manager distinguishes between repositories for online and batch security definitions. The repository to protect batch resources is the phase DTSECTAB. To simplify the administration of batch resources, z/VSE intends to provide a common interface for both online and batch resources. An Interactive User Interface (IUI) dialog will be offered that builds a DTSECTAB with the resources specified.

- SOD launched in 4/2016
- Fulfilled with z/VSE V6.2 in 4Q2017

- Ease of use – new user interface – DTSECTAB administration

Product delivery of z/VSE on DVD and electronically only

IBM plans to deliver future upgrades of z/VSE on DVD and electronically only.

- SOD launched in 2015
- Fulfilled with z/VSE V6.2 in 4Q2017

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Announcement on July 19,2016

The GPS Feature of IBM TCP/IP for z/VSE V2.1 is available for z/VSE V6 customers.

- Customers using the GPS Feature of IBM TCP/IP for z/VSE on z/VSE V6.1, require a new license for the new version of the feature when ordering z/VSE V6.1.
- As of July 22, only V2.1 of the GPS Feature is available for ordering with z/VSE V6.1.
- IBM TCP/IP for z/VSE - GPS V2.1 is eligible for Migration Pricing Option (MPO).

Announcement on February 7,2017

Effective October 31, 2018, IBM z/VSE V5.2, TCPIP for VSE/ESA V1, IPv6/VSE V1.1 and CICS Transaction Server for VSE/ESA V1.1.1 will be withdrawn from service.

- End of Service announced for z/VSE V5.2 and related products.

Announcement on February 14,2017

Multi-Version Measurement replaces Single Version Charging for eligible z/OS and z/VSE software programs.

This Announcement introduces Multi-Version Measurement (MVM), which will replace Single Version Charging (SVC) and Migration Pricing Option (MPO) effective June 1, 2017.

- New Pricing Metrics to replace SVC and MPO.

Announcement on April 11,2017

Preview: IBM z/VSE V6.2
For more information please see the Announcement letter

New Release - z/VSE V6.2 to become available in 4Q 2017

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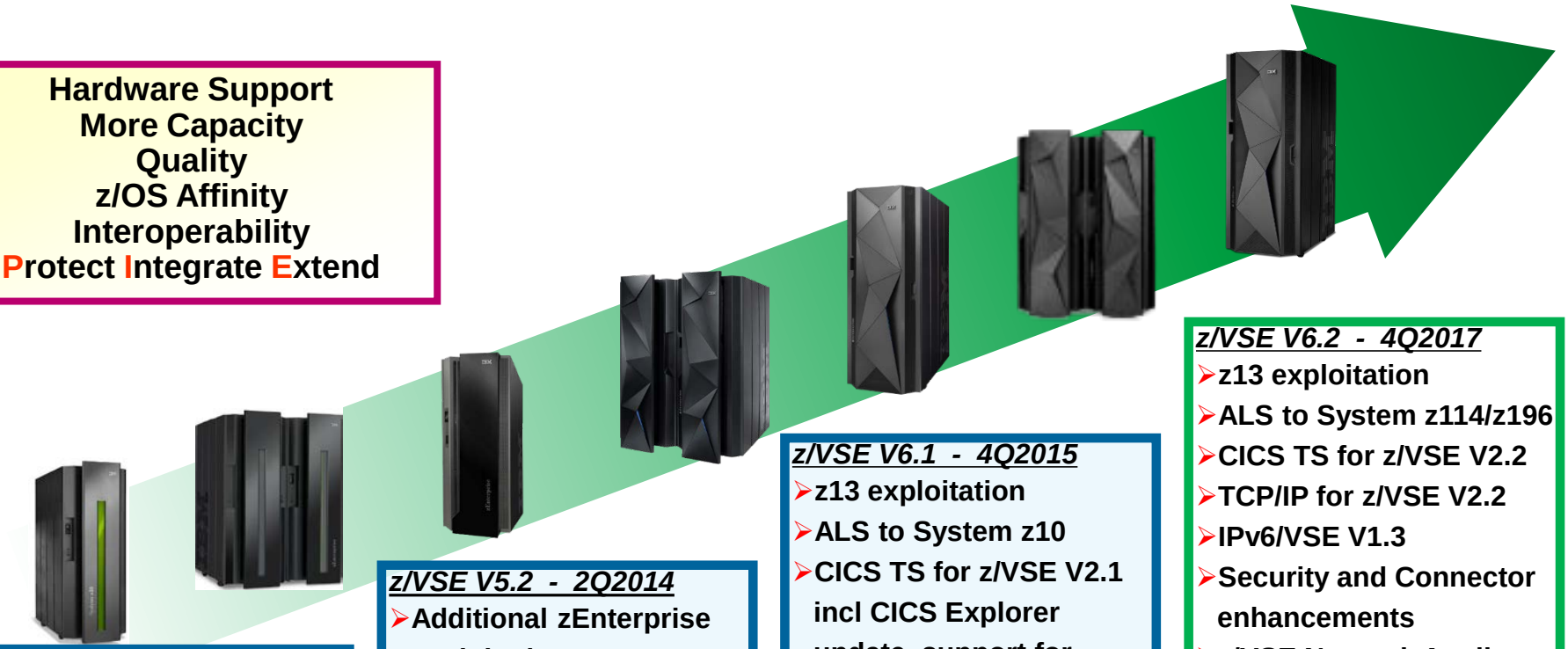
z/VSE Roadmap

Hardware Support
More Capacity
Quality
z/OS Affinity
Interoperability
Protect Integrate Extend



z/VSE V5.1 - 4Q2011
- zEnterprise exploitation
- IEDN connection to zBX
- 64-bit virtual memory objects
- ALS to System z9
- z/VSE z/VM IP Assist (VIA)

+ SoD: CICS Explorer, LFP in LPAR

z/VSE V5.2 - 2Q2014
- Additional zEnterprise exploitation
- DVD install
- Networking and security enhancements

+ SoD: New version of z/VSE, ALS to System z10, support for channels & containers in CICS TS for z/VSE

z/VSE V6.1 - 4Q2015
- z13 exploitation
- ALS to System z10
- CICS TS for z/VSE V2.1 incl CICS Explorer update, support for channels & containers
- TCP/IP for z/VSE V2.1
- IPv6/VSE V1.2

+ SoD: Secure z/VSE Software Delivery

Announced on May 11, 2015

z/VSE V6.2 - 4Q2017
- z13 exploitation
- ALS to System z114/z196
- CICS TS for z/VSE V2.2
- TCP/IP for z/VSE V2.2
- IPv6/VSE V1.3
- Security and Connector enhancements
- z/VSE Network Appliance

Announced on Apr 11, 2017

z/VSE Support for IBM Mainframe Servers (as of June 2017)

IBM Servers	z/VSE V6.2	z/VSE V6.1	z/VSE V5.2	z/VSE V5.1 (out of service)	z/VSE V4.3 (out of service)
IBM z13 & z13s	✔	✔	✔	✔	✔
IBM zEnterprise EC12 & BC12	✔	✔	✔	✔	✔
IBM zEnterprise 196 & 114	✔	✔	✔	✔	✔
IBM System z10 EC & z10 BC	✘	✔	✔	✔	✔
IBM System z9 EC & z9 BC	✘	✘	✔	✔	✔
zSeries 990, 890	✘	✘	✘	✘	✔

z/VSE Support Status (as of June 2017)

VSE Version and Release	Marketed	Supported	End of Support
z/VSE V6.2 requires z114/z196 or higher	4Q2017	4Q2017	tbd
z/VSE V6.1 requires z10 or higher	✔	✔	tbd
z/VSE V5.2 requires z9 or newer system	03/13/2017	✔	10/31/2018
z/VSE V5.1 requires z9 or newer system	✘	✘	06/30/2016
z/VSE V4.3 requires z900 or newer system	✘	✘	10/31/2014
z/VSE V4.2 incl CICS/VSE V2.3, DL/I V1.11	✘	✘	10/31/2012
z/VSE V4.1[2)]	✘	✘	04/30/2011
z/VSE V3.1[1)]	✘	✘	07/31/2009

[1)] z/VSE V3 is 31-bit mode only. It does not implement z/Architecture, and specifically does not implement 64-bit mode capabilities. z/VSE is designed to exploit select features of IBM System z10, System z9, and zSeries hardware.

[2)] z/VSE V4 is designed to exploit 64-bit real memory addressing, but will not support 64-bit virtual memory addressing

z/VSE 6.2

- **Prev. Announcement April 11th, full Announcement and GA 4Q 2017**
- **All previous SoDs are planned to be included, and more features…**
- **Hardware support**
  - Delivery of **future upgrades of z/VSE on DVD and electronically only**
  - Architecture Level Set requiring **z196 / z114 or later**
  - **Latest available** z Systems Server and Storage (Tape, ECKD, SCSI) Server **support**
  - Support for the **IBM z13 Vector Facility (SIMD)** for user applications
  - **High Performance FICON (zHPF)** support
  - **FlashCopy Space Efficient (SE) support for Extent Space Efficient (ESE)** volumes with IBM DS8880 R8.1 Storage Family
  - **Elliptic Curve Cryptography (ECC)** support
- **Ease of use functionality for SCSI-only systems**
  - **Tapeless initial installation using a SCSI installation disk** added
  - **Standalone dump to SCSI device** added

z/VSE 6.2

- **CICS Transaction Server for z/VSE V2.2**
  - Upgraded **CICS Web Support (CWS) to HTTP 1.1** for improved performance and security and to support the latest web browsers and applications
    - Features include: **persistent connections, pipelining and chunking**
  - **CICS Explorer** enhancements
  - **Channel and container** enhancements
  - Support for **standard date and time stamp** format
  - Support for Language Environment **(LE) MAIN for Assemble applications**
- **Security**
  - **OpenSSL** (part of z/VSE Cryptographic Services) upgraded to **v1.0.2h** for newer SSL/TLS functions and **enabled for CICS Web Support and EZA interface**
  - **SSL/TLS** support for **remote VTAPEs**
  - **LDAP sign-on** support for **RESET option** (clearing cached password) and **wildcard** support for **CHANGE and DELETE commands**
  - **Basic Security Manager (BSM) enhancement**

z/VSE 6.2

- **z/VSE Connectors enhancements**
  - **z/VSE SOAP Engine to exploit Channels and Containers**
  - **z/VSE REST Engine with JSON support**
  - **z/VSE database connector DBCLI** enhanced **providing a batch and an interactive interface to perform queries**, without an application. **CICS REXX support added**

- **Networking**
  - New release of IBM **IPv6/VSE V1.3** with various enhancements
  - New release of IBM **TCP/IP for z/VSE V2.2** with various enhancements
  - **LFP running as a z/VM** guest **allows also to connect to a TCP/IP Stack in an LPAR or** with the **z/VSE Network Appliance**

Agenda

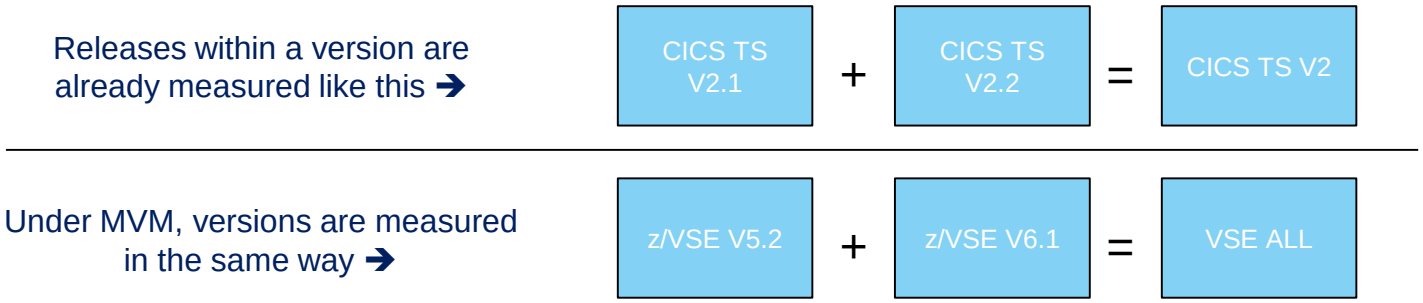
- **IBM z13s**
- **Statements of Direction and Announcements**
- **z/VSE V6.2 Preview**
- **Multi-Version Measurement**
- **z/VSE Strategy**
- **Summary**

Introducing Multi-Version Measurement

- **On Feb 14, 2017, IBM formally announced:**
  - The replacement of Single Version Charging (SVC) & Migration Pricing Option with Multi-Version Measurement (MVM) for eligible z/OS and z/VSE software programs.
- **Key MVM billing dates:**
  - **June 1, 2017**, is the earliest billing effective date for programs under MVM terms.
  - By Year End 2017, all eligible products will be billed using MVM terms.
- **What Multi-Version Measurement does:**
  - Removes all the time limit restrictions associated with SVC and MPO
  - Dramatically simplifies pricing by replacing completely different pricing policies with one single, more flexible, standard policy.

How Multi-Version Measurement works

- **Multiple versions will be treated like multiple releases within a version**
  - All versions and releases are reported and charged as though they were a single version.
  - The price point applied will be that of the latest version licensed.
  - Identical to how multiple releases within a version are charged today.



  - Identical to how the Operating System (All) MSUs are currently reported and charged under MPO (the only difference being that there is no longer a time limit).

- **What Programs are eligible for MVM:**
  - Full lists of products reported by SCRT available and will be maintained at: http://ibm.com/systems/z/swprice/reference/exhibits/mlc.html

What happens next..

- **Sub-capacity clients must take action to ensure conversion**
  - Sub-capacity clients must submit an SCRT report using SCRT V24.2.0 (Classic) or SCRT V24.11.0 (Java), available since 10 April 2017.
  - Use one of these new SCRT releases to generate SCRT Report with April data, submit it May 2 – 9, then Sub-Capacity MVM will go into effect with 1 June bill.
  - Until SCRT V24.2.0 reports are submitted, previous pricing rules apply.
- **Full-capacity SVC and MPO clients will be converted automatically**
  - Full-capacity clients will have SVCs and MPOs converted to MVM on 1 June 2017.
  - Other Full-capacity clients must take action to start conversion to MVM
- **Detailed information on MVM web page:**
  - http://ibm.com/systems/z/swprice/mvm.html

Licensing and Using IPv6/VSE and TCP/IP for z/VSE

VSE: zVSE Base Products

Select		Product	Description	Version	Language	Notes
☐	●◆	[5648-099]	DITTO/ESA FOR VSE rel.3	1.03.00	English (US)	ⓘ
☐	●◆	[5655-VSE]	CICS TS for z/VSE	2.01.00	English (US)	ⓘ
☐	○◆	[5686-065]	ACF/VTAM VSE Client Server	4.02.00	English (US)	ⓘ
☐	●◆	[5686-065]	ACF/VTAM VSE Multi Domain	4.02.00	English (US)	ⓘ
☐	○◆	[5686-065]	ACF/VTAM VSE Inter Enterpr	4.02.00	English (US)	ⓘ
☐	●◆	[5686-BS1]	IPv6/VSE	1.02.00	English (US)	ⓘ
☐	●◆	[5686-CS1]	TCP/IP for z/VSE	2.01.00	English (US)	ⓘ
☐	○◆	[5686-CS1]	TCP/IP for z/VSE GPS	2.01.00	English (US)	ⓘ
☐	●◆	[5697-F42]	DB2 Server VSE	7.05.00	English (US)	ⓘ
☐	○◆	[5697-F42]	Client Edition for VSE	7.05.00	English (US)	ⓘ

A Standalone TCP/IP or IPv6/VSE orders will NOT deliver any code, but provide you with a „Memo to Licencees“ describing how to obtain the needed product licence keys.

TCP/IP is already shipped as part of the z/VSE Base
BUT
to use the product you need to order and licence it via shopz.

Memo to Licensees

IBM

To: Licensees of IBM TCP/IP for z/VSE Version 2 GPS Feature, Program # 5686-CS1

Subject: Memo to Licensees providing information to obtain license keys for IBM TCP/IP for z/VSE V2 GPS Feature

Dear Customer, thank you for ordering IBM TCP/IP for z/VSE V2 GPS Feature

The new version of TCP/IP software has already been delivered to you as part of the z/VSE Base Code on physical Tape or DVD Media or alternatively via electronic download.

In order to unlock the new TCP/IP software code you should complete the customer information section below and email the completed form to IBM to have the IBM Key Centre issue your unique software license key.

In case you have already requested and received a software licence key for IBM TCP/IP for z/VSE V2 GPS Feature, no further action is required.

Program #	5686-CS1
Program Name	TCP/IP for z/VSE Version 2 GPS Feature
Customer ID	
Customer Name	
Customer Email	

Email Request to **WWSWKEYS@dk.ibm.com**

For any other z/VSE related information, please visit the z/VSE web page
http://www.ibm.com/systems/z/os/zvse/

GI11-9713-00

Product Keys & Passwords

- **The following Products require Product Keys or Passwords**
  - IBM IPv6/VSE
  - IBM TCP/IP for z/VSE V2
    - Application Pak Feature
    - GPS Feature
  - IBM TCP/IP for VSE/ESA V1
    - Application Pak Feature (Out of Marketing)
    - GPS Feature (Out of Marketing)
    - ~~NFS Feature~~ (Out of Service and Marketing)
    - ~~Base Pak Feature~~ (Out of Service and Marketing)
  - VTAM (Password)
  - DB2 Server and Client Edition for VSE
- **To request - Contact the IBM Key Center**
  - World Wide wwswkeys@dk.ibm.com

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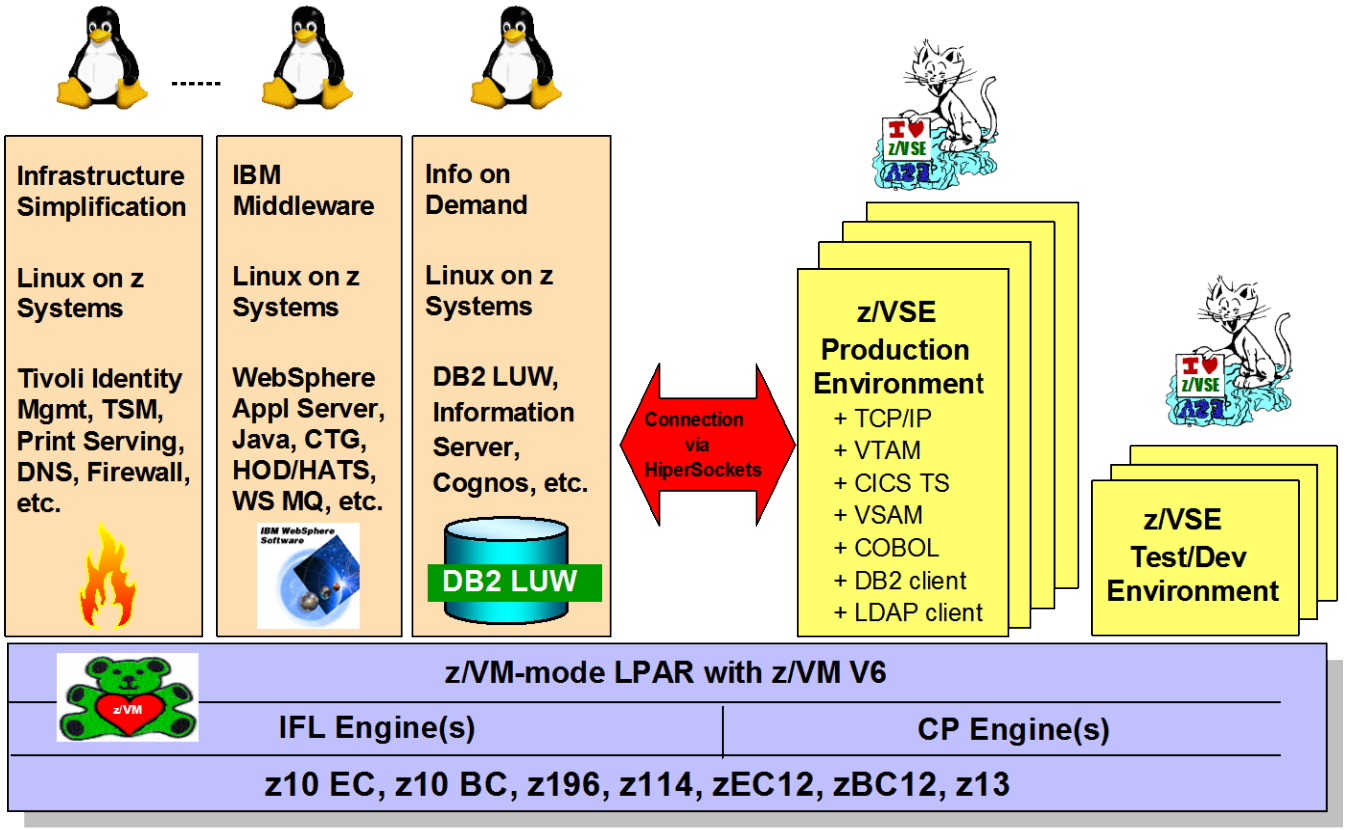
z/VSE strategy with Linux on z Systems

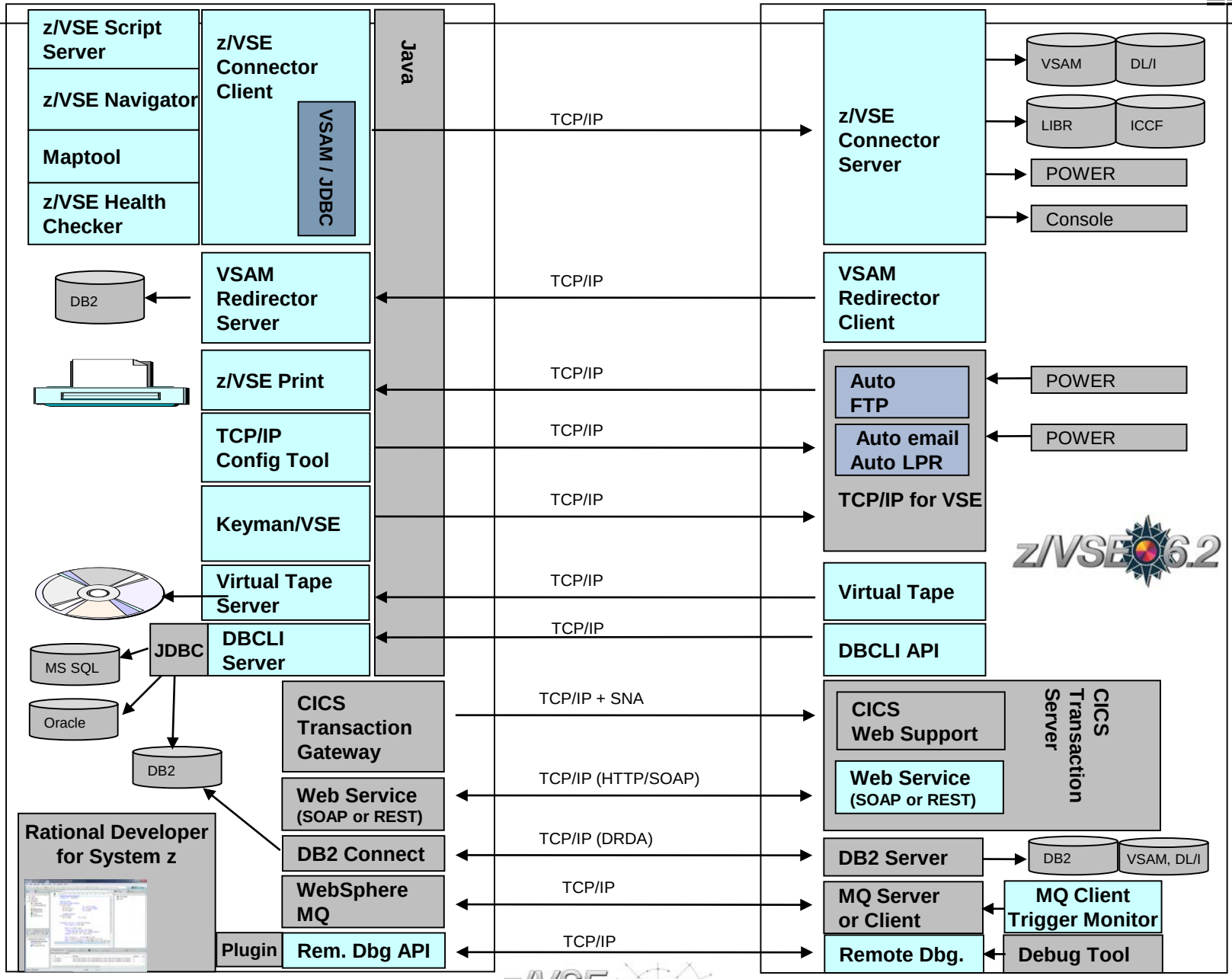
Hybrid Environment leveraging
z/VSE, z/VM, and Linux on z Systems

Protect existing z/VSE investments

Integrate using middleware and z/VSE connectors

Extend with Linux on IBM z Systems technology & solutions





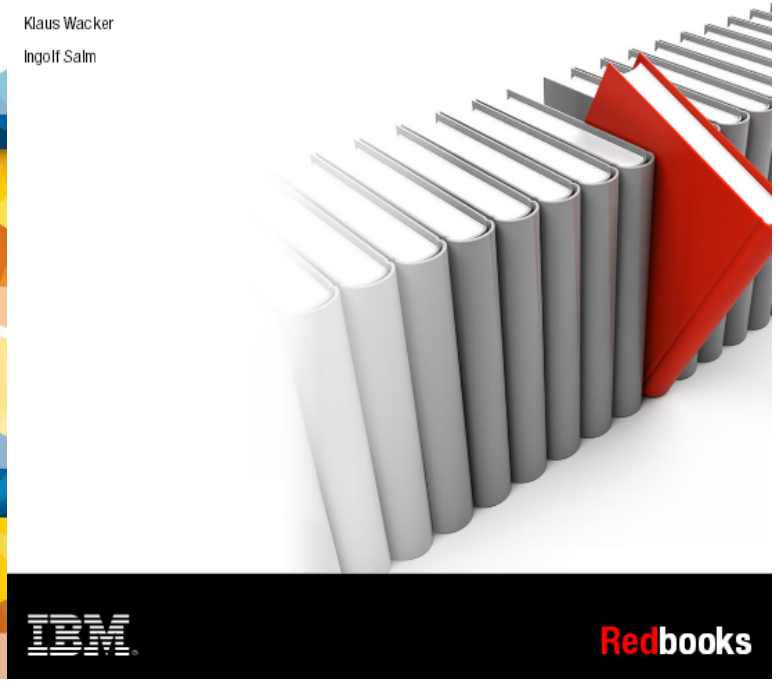
IBM

Hints and Tips for z/VSE 6.1

Hints and Tips:
http://www.ibm.com/zvse/documentation/index.html#hints

Redbooks
ibm.com/redbooks

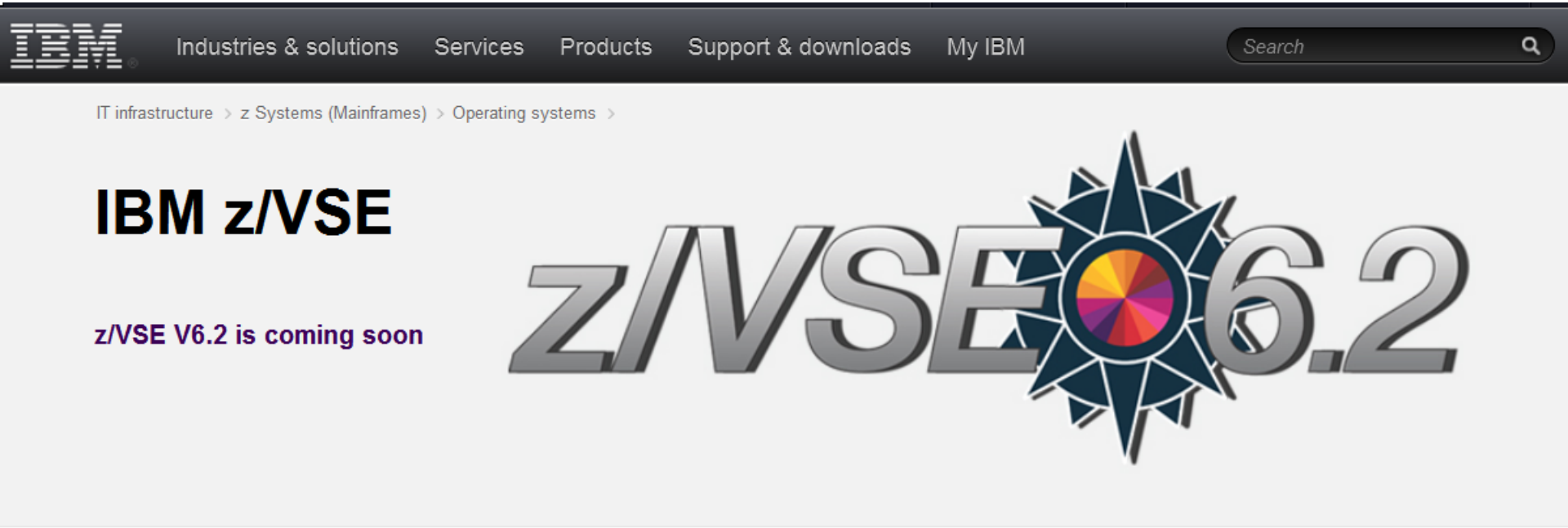
Migration to IBM CICS Transaction Server for z/VSE



IBM Redbooks:
http://www.redbooks.ibm.com/Redbooks.nsf/RedbookAbstracts/sg248390.html?Open

For more information, please see the z/VSE web site:

http://www.ibm.com/zvse/



z/VSE Messages & Codes on your Apple Device

IBM Doc Buddy

View More by This Developer

By IBM

Open iTunes to buy and download apps.

Description

Do you look up error messages to resolve technical issues? Would you like to retrieve message documentation on your mobile devices? It is time for a new information experience!

IBM Web Site ▸ IBM Doc Buddy Support ▸ ...More

What's New in Version 1.3.0

This release includes major search enhancements:

https://itunes.apple.com/us/app/ibm-doc-buddy/id1121244571?mt=8

z/VSE Live Virtual Classes (Webcasts)

Replays available!

Dates and replays @
http://www.ibm.com/zvse/education/

z/VSE Latest News & z/VSE V6.2 Preview (April 11, 2017)

z/VSE Latest News & z/VSE V6.2 Preview (PDF, 310KB)
Ingolf Salm, IBM

Listen to the playback of this session

CSI TCP/IP for VSE Update (January 17, 2017)

CSI TCP/IP for VSE Update (PDF, 400KB)
Don Stoever, CSI International

Listen to the playback of this session

IBM IPv6/VSE 1.2 What's New! (December 6, 2016)

IBM IPv6/VSE 1.2 What's New! (PDF, 110KB)
Jeffrey Barnard, Barnard Software, Inc.

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z/VSE exploitation of IBM z Systems hardware and IBM Storage (August 2, 2016)

z/VSE exploitation of IBM z Systems hardware and IBM Storage (PDF, 750KB)
Ingolf Salm, IBM

Listen to the playback of this session

Live Demo: Tape-less z/VSE installation (July 12, 2016)

Live Demo: Tape-less z/VSE installation (PDF, 3.8MB)
Marco Kroll, IBM

Listen to the playback of this session

z/VSE

50 years of innovation

IBM