zVM21

z/VSE Trends & Directions

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e-business logo*	IBM logo*	Resource Link	z/OS*
ECKD	IMS	RMF	z/VM*
Enterprise Storage Server*	Language Environment*	S/390*	z/VSE
ESCON*	MQSeries*	Sysplex Timer*	zSeries*
FICON*	Multiprise*	System z9	
GDPS*	NetView*	TotalStorage*	
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z/VSE Trends & Directions

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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.
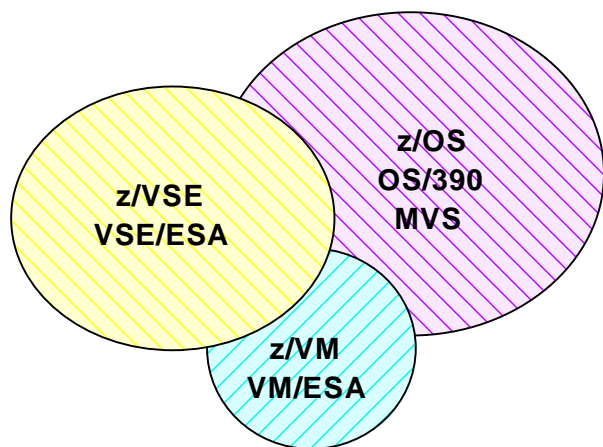
z/VSE Trends & Directions

Agenda

→ § **z/VSE Status & Support**

§ **z/VSE Strategy**

§ **z/VSE Modernization Options**

§ **z/VSE Reference Customers & Learning**

§ **z/VSE Functional Enhancements**
   - **z/VSE V5.1**
   - **z/VSE V5.1+**
   - **z/VSE V5.1++**

§ **Wrap-up**

z/VSE Trends & Directions

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Operating Systems on IBM System z

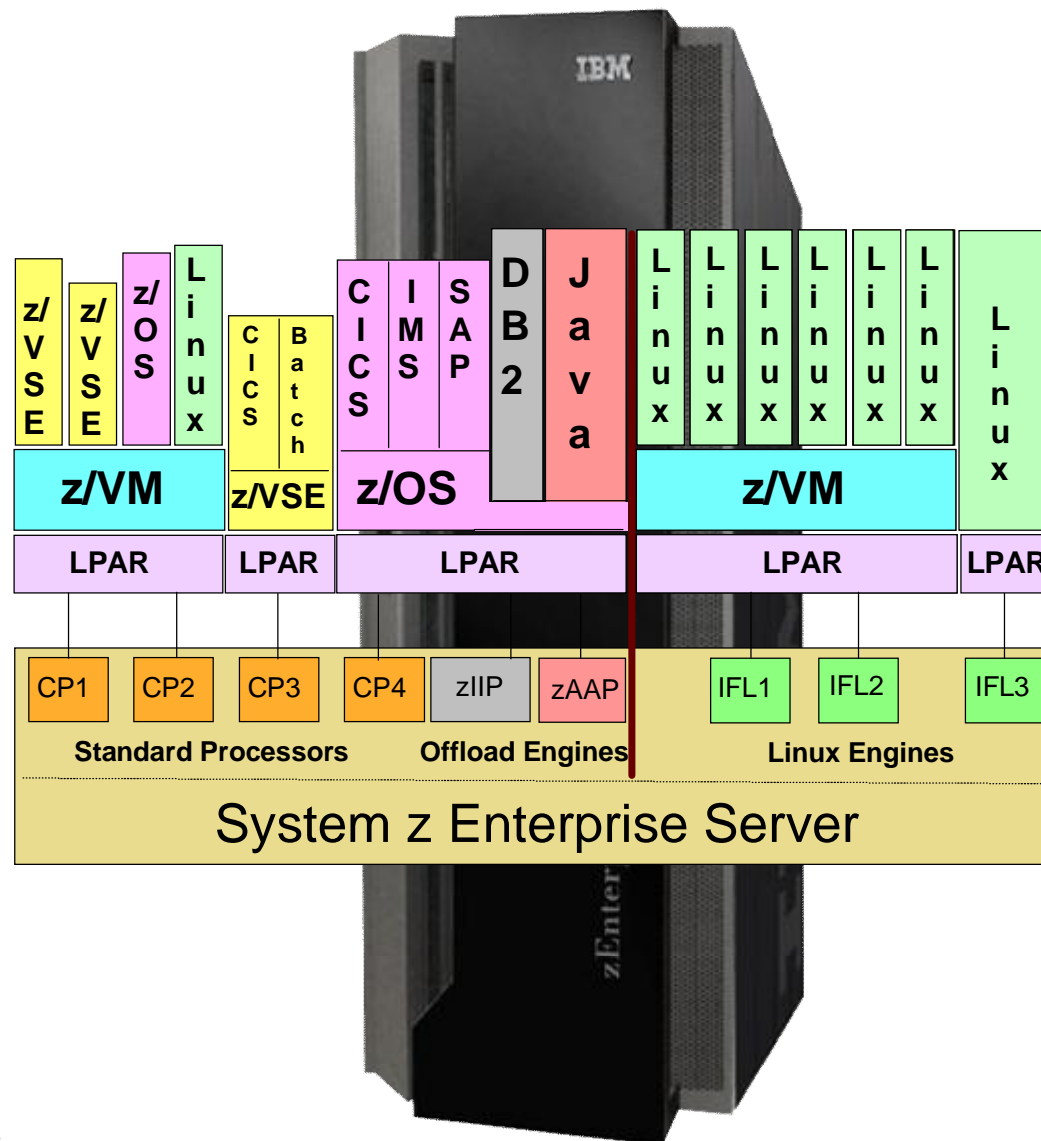§ **25% of worldwide System z servers have VSE* installed**

§ **VSE population is 40% in US, 40% in Europe, 20% in RoW**

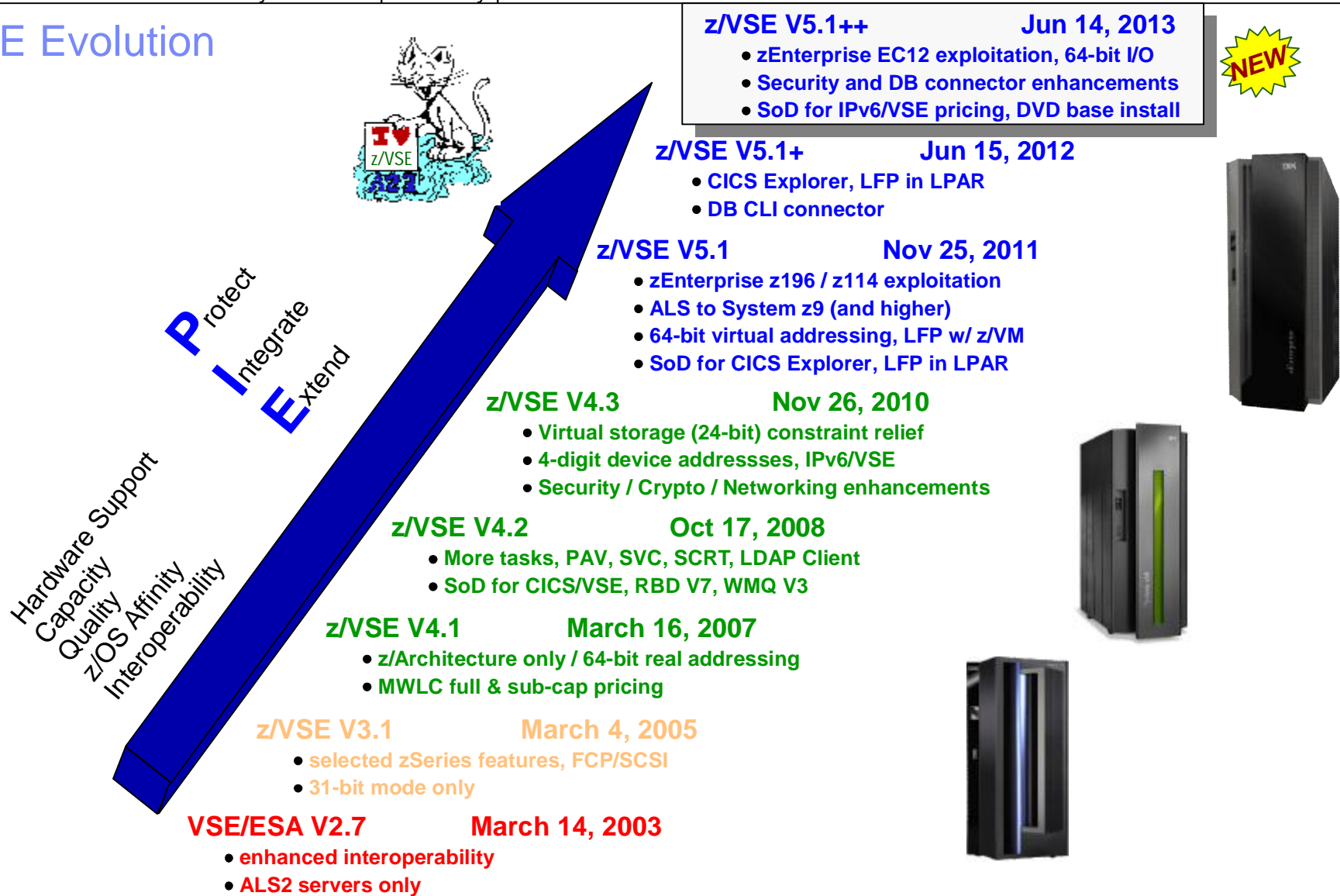§ **Worldwide 50% run VSE under z/VM, in Europe 90+% are VSE under z/VM**

§ **IFLs play an important role in VSE's strategy**

§ **zIIP/zAAP/ICF have no meaning to VSE**

(*) The term "VSE" stands for both, VSE/ESA and z/VSE.

z/VSE Trends & Directions

z/VSE Evolution

z/VSE V5.1++   **Jun 14, 2013**
- **zEnterprise EC12 exploitation, 64-bit I/O**
- **Security and DB connector enhancements**
- **SoD for IPv6/VSE pricing, DVD base install**

NEW

z/VSE V5.1+   **Jun 15, 2012**
- **CICS Explorer, LFP in LPAR**
- **DB CLI connector**

z/VSE V5.1   **Nov 25, 2011**
- **zEnterprise z196 / z114 exploitation**
- **ALS to System z9 (and higher)**
- **64-bit virtual addressing, LFP w/ z/VM**
- **SoD for CICS Explorer, LFP in LPAR**

z/VSE V4.3   **Nov 26, 2010**
- **Virtual storage (24-bit) constraint relief**
- **4-digit device addressses, IPv6/VSE**
- **Security / Crypto / Networking enhancements**

z/VSE V4.2   **Oct 17, 2008**
- **More tasks, PAV, SVC, SCRT, LDAP Client**
- **SoD for CICS/VSE, RBD V7, WMQ V3**

z/VSE V4.1   **March 16, 2007**
- **z/Architecture only / 64-bit real addressing**
- **MWLC full & sub-cap pricing**

z/VSE V3.1   **March 4, 2005**
- **selected zSeries features, FCP/SCSI**
- **31-bit mode only**

VSE/ESA V2.7   **March 14, 2003**
- **enhanced interoperability**
- **ALS2 servers only**

Protect **I**ntegrate **E**xtend

Hardware Support
Capacity
Quality
z/OS Affinity
Interoperability

[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

* IPv6/VSE is a registered trademark of Barnard Software, Inc.

z/VSE Support Status (as of June 2013)

VSE Version and Release	Marketed	Supported	End of Support
z/VSE V5.1	a	a	tbd
z/VSE V4.3	r	a	05/31/2014
z/VSE V4.2 incl CICS/VSE V2.3, DL/I V1.11	r	r	10/31/2012
z/VSE V4.1 [2]	r	r	04/30/2011
z/VSE V3.1 [1]	r	r	07/31/2009
VSE/ESA V2.7	r	r	02/28/2007

Service Extension Contracts available on request

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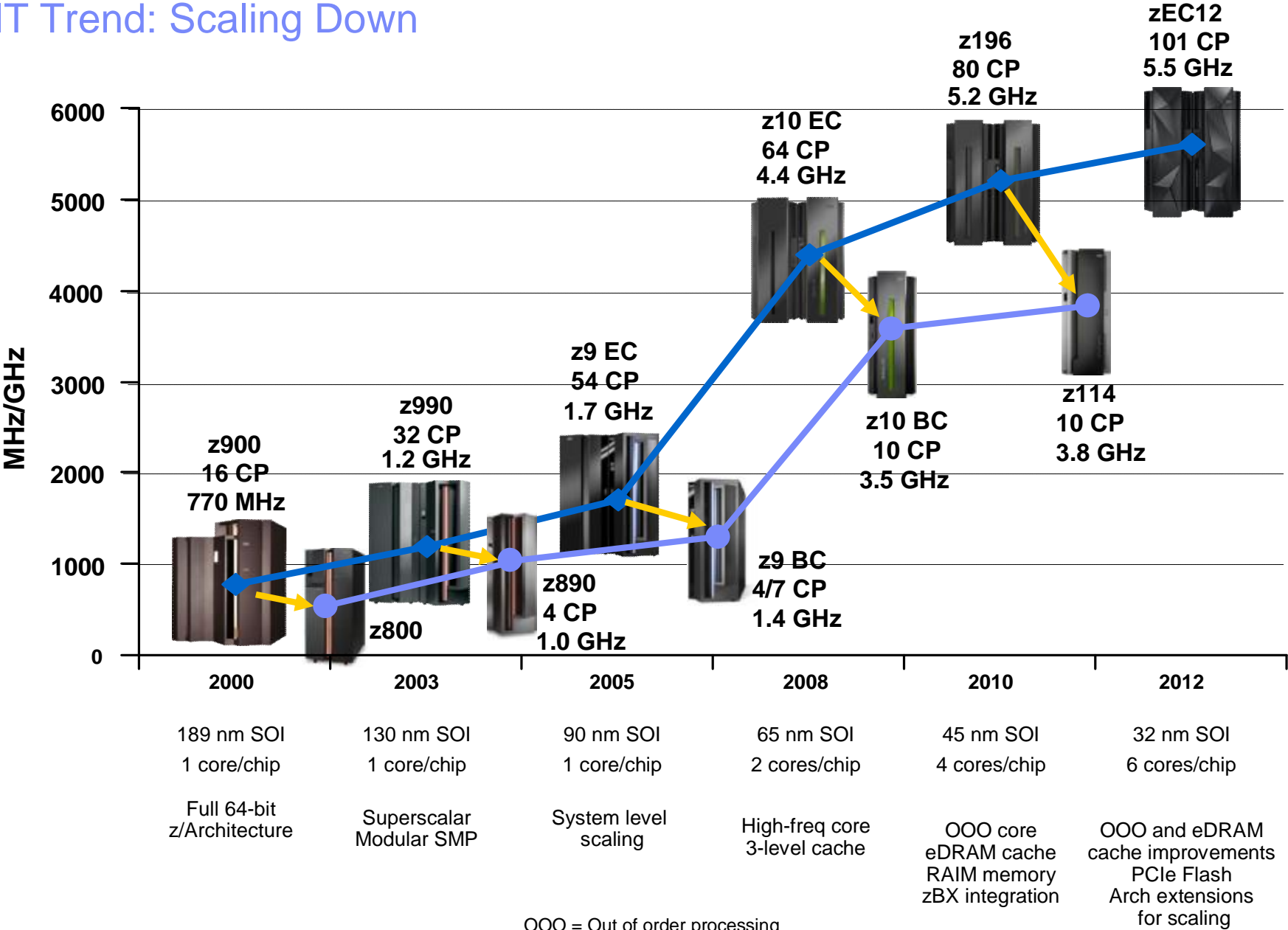
[2] z/VSE V4 is designed to exploit 64-bit real memory addressing, but will not support 64-bit virtual memory addressing

z/VSE Support for IBM Mainframe Servers (as of June 2013)

IBM Servers	z/VSE V5.1	z/VSE V4.3	z/VSE V4.2 (out of service)	z/VSE V4.1 (out of service)
IBM zEnterprise EC12	a	a	a	r
IBM zEnterprise 196 & 114	a	a	a	a
IBM System z10 EC & z10 BC	a	a	a	a
IBM System z9 EC & z9 BC	a	a	a	a
IBM eServer zSeries 990 & 890	r	a	a	a
IBM eServer zSeries 900 & 800	r	a	a	a

z/VSE Trends & Directions

IT Trend: Scaling Down

z900
16 CP
770 MHz

z800

z990
32 CP
1.2 GHz

z890
4 CP
1.0 GHz

z9 EC
54 CP
1.7 GHz

z9 BC
4/7 CP
1.4 GHz

z10 EC
64 CP
4.4 GHz

z10 BC
10 CP
3.5 GHz

z196
80 CP
5.2 GHz

z114
10 CP
3.8 GHz

zEC12
101 CP
5.5 GHz

MHz/GHz

	2000	2003	2005	2008	2010	2012
	189 nm SOI	130 nm SOI	90 nm SOI	65 nm SOI	45 nm SOI	32 nm SOI
	1 core/chip	1 core/chip	1 core/chip	2 cores/chip	4 cores/chip	6 cores/chip
	Full 64-bit z/Architecture	Superscalar Modular SMP	System level scaling	High-freq core 3-level cache	OOO core eDRAM cache RAIM memory zBX integration	OOO and eDRAM cache improvements PCIe Flash Arch extensions for scaling

OOO = Out of order processing

z/VSE Trends & Directions

z/VSE Support of IBM zEnterprise EC12 (zEC12)

§ z/VSE Release Support

- z/VSE supports the zEC12 with z/VSE V4.2, V4.3 and V5.1
    - No PTFs are required to run z/VSE on zEC12
    - For IOCP, EREP and HLASM PTFs, see PSP (subset 2827/ZVSE of 2827DEVICE)

§ Configurable Crypto Express4s – new with zEC12

- z/VSE toleration PTF required to use Crypto Express4s
    - Toleration PTF (DY47414) provided for z/VSE V5.1 only
- Crypto Express4s supported with existing z/VSE cryptographic functionality
    - Supported modes: (CCA) coprocessor and accelerator
    - PKCS #11 (EP11) coprocessor not supported

§ OSA-Express4s 1000BASE-T – new with zEC12
- No z/VSE PTF required
- 1000BASE-T supported with existing z/VSE functionality

§ SCRT – Subcapacity Pricing
- z/VSE 4.2 requires DY47111 (same as for z196, z114)

z/VSE Support of IBM zEnterprise 114

§ **z114 is supported by z/VSE V4.2, z/VSE V4.3 and z/VSE V5.1**
- Refer to z/VSE Preventive Service Planning (PSP) buckets
- z/VSE PTFs are required for subcapacity pricing customers and QVS (Query Virtual Server)

§ **Features / Functions**
- **Fast Path to Linux on System z in a z/VM-mode LPAR**
  - also available on z10 BC/EC
- **Fast Path to Linux on System z in an LPAR environment**
  - exclusively on zEnterprise
- **z/VSE z/VM IP Assist (VIA)**
  - exclusively on zEnterprise
- **Dynamic add of logical CPs**
  - also available on z10 BC/EC
- **Large page (1 MB frames) support for data spaces**
  - also available on z10 BC/EC
- **Dynamic add / remove of cryptographic processors**
  - also available on z10 BC/EC
- **Crypto Adjunct Processor (AP) Queue interrupt facility**
  - also available on z10 BC/EC
- **4096-bit RSA key support with configurable Crypto Express3**
  - also available on z10 BC/EC

§ **zBX environment**
- **z/VSE V5 provides native Intra Ensemble Data Network (IEDN) support**
  - z/VSE V4 can participate in an IEDN data network using z/VM's V6 VSWITCH support

Agenda

§ **z/VSE Status & Support**

§ **z/VSE Strategy**

§ **z/VSE Modernization Options**

§ **z/VSE Reference Customers & Learning**

§ **z/VSE Functional Enhancements**
  - **z/VSE V5.1**
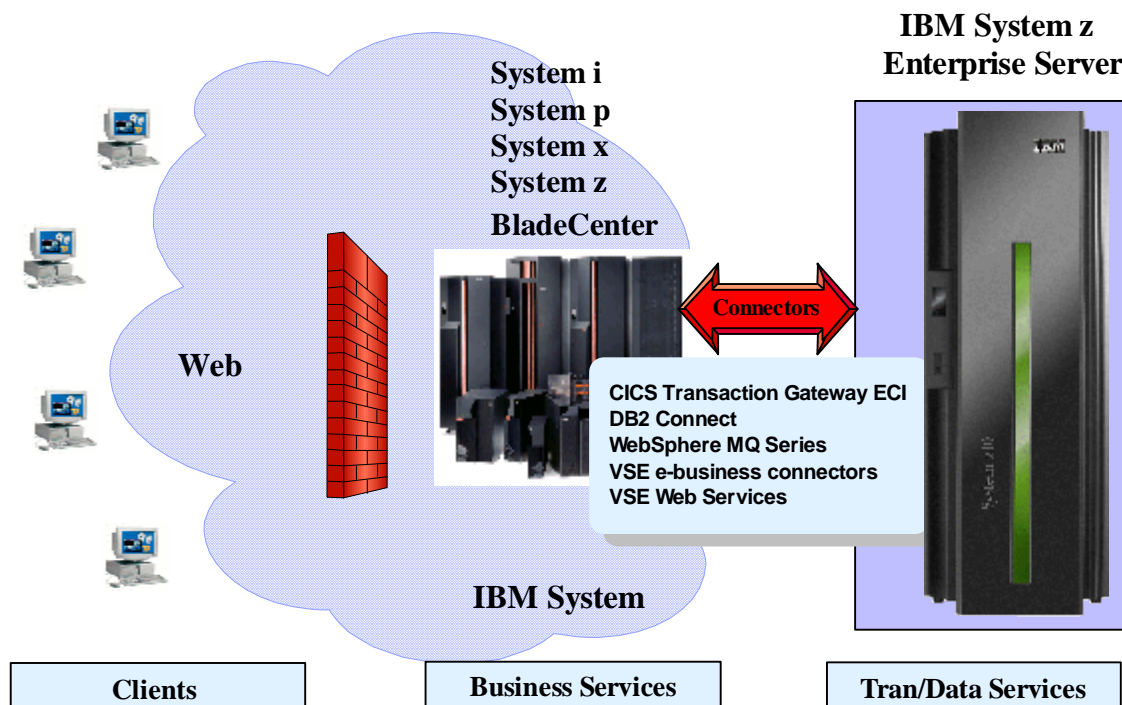 - **z/VSE V5.1+**
  - **z/VSE V5.1++**

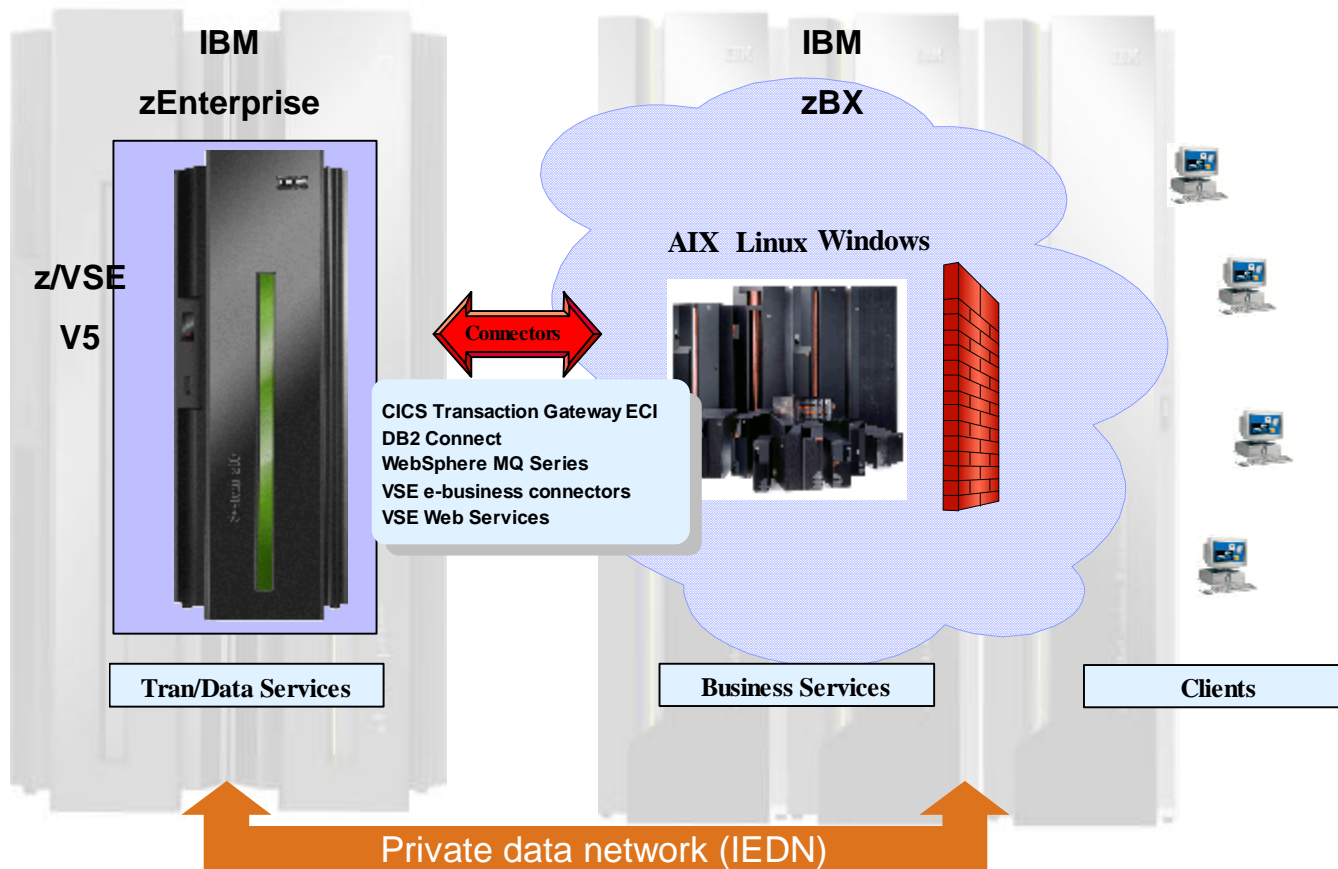§ **Wrap-up**

z/VSE Strategy - Invented in Year 2000

alias

§ 3-tier Strategy

§ **Hybrid Strategy**

§ Connector Strategy

§ Migration Strategy

§ Coexistence Strategy

§ Linux Surround Strategy

§ **PIE Strategy**

IBM System z Enterprise Server

System i
System p
System x
System z
BladeCenter

Web

Connectors

CICS Transaction Gateway ECI
DB2 Connect
WebSphere MQ Series
VSE e-business connectors
VSE Web Services

IBM System

Clients

Business Services

Tran/Data Services

Protect existing z/VSE investments

Integrate using middleware and z/VSE connectors

Extend with another platform to access new applications & solutions

z/VSE V5 Strategy with zEnterprise - More options, highly integrated

alias

- § 3-tier Strategy
- § **Hybrid Strategy**
- § Connector Strategy
- § Migration Strategy
- § Coexistence Strategy
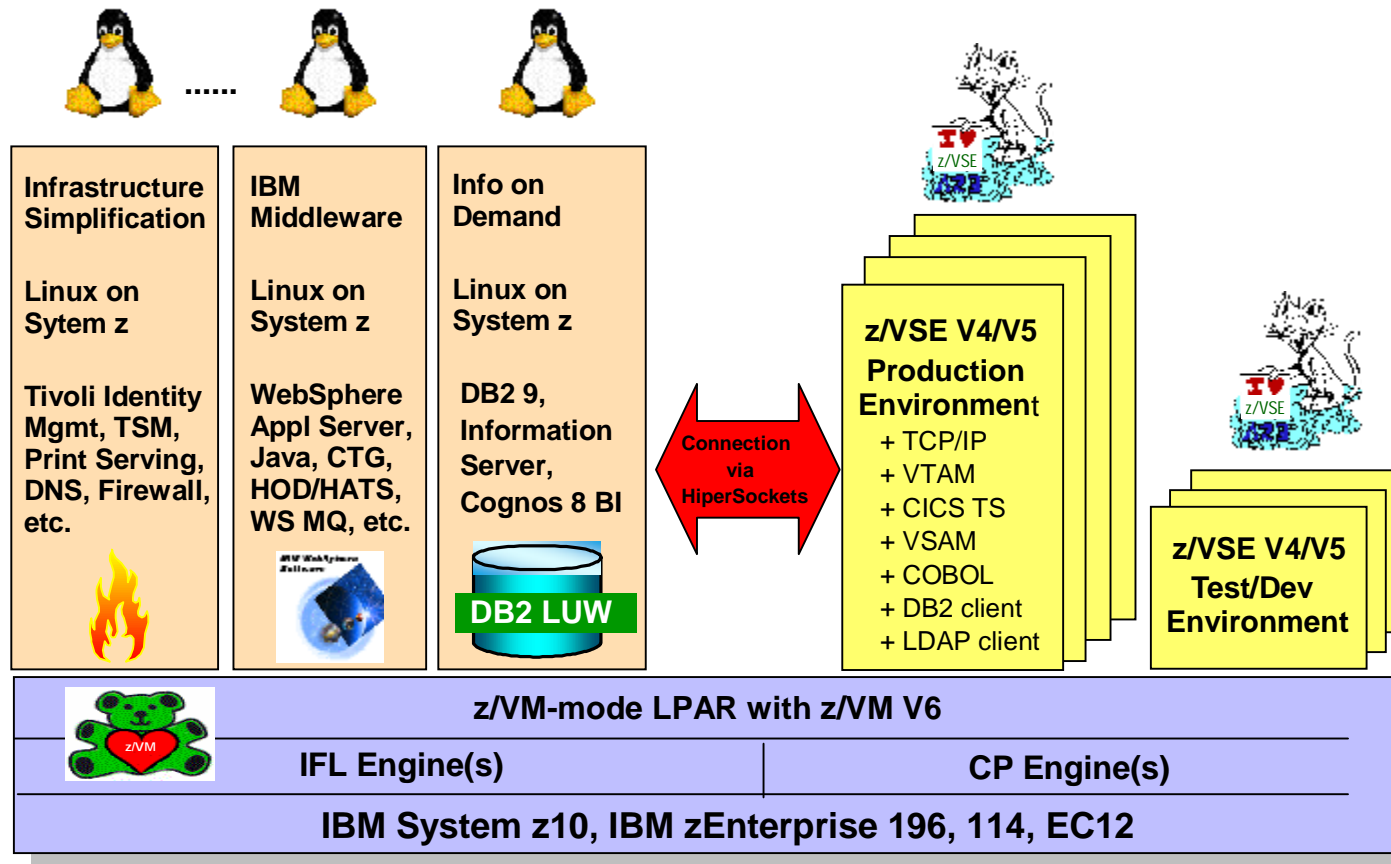- § Linux Surround Strategy
- § **PIE Strategy**

IBM zEnterprise

z/VSE V5

IBM zBX

AIX Linux Windows

Connectors

CICS Transaction Gateway ECI
DB2 Connect
WebSphere MQ Series
VSE e-business connectors
VSE Web Services

Tran/Data Services

Business Services

Clients

Private data network (IEDN)

Protect existing z/VSE investments

Integrate using middleware and z/VSE connectors

Extend with zBX or with Linux on z to access new applications & solutions

z/VSE Trends & Directions

z/VSE Strategy w/ Linux on System z

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

Protect existing VSE investments

Integrate using middleware and VSE connectors

**E**xtend with Linux on IBM System z technology & solutions

Infrastructure Simplification

Linux on Sytem z

Tivoli Identity Mgmt, TSM, Print Serving, DNS, Firewall, etc.

IBM Middleware

Linux on System z

WebSphere Appl Server, Java, CTG, HOD/HATS, WS MQ, etc.

Info on Demand

Linux on System z

DB2 9, Information Server, Cognos 8 BI

DB2 LUW

Connection via HiperSockets

z/VSE V4/V5 Production Environment
+ TCP/IP
+ VTAM
+ CICS TS
+ VSAM
+ COBOL
+ DB2 client
+ LDAP client

z/VSE V4/V5 Test/Dev Environment

z/VM-mode LPAR with z/VM V6

IFL Engine(s) **CP Engine(s)**

IBM System z10, IBM zEnterprise 196, 114, EC12

z/VSE Trends & Directions

Leveraging the successful z/VSE Strategy to build a Smarter Planet

Protect existing investments

Legacy applications and data on z/VSE

Key Capabilities

- 64-bit virtual addressing to reduce memory constraints through exploitation of data in memory
- Exploitation of selected zEnterprise functions and features as well as IBM System Storage options
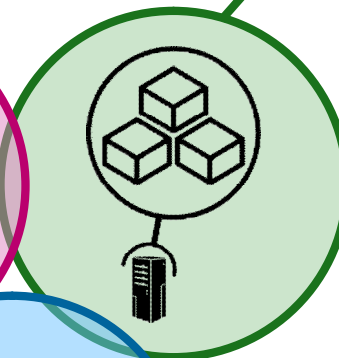
Integrate with other Systems

Connect to, and run backend System z applications

Build mobile applications

Key Capabilities

- z/VSE Connectors to Java capable clients, SOAP (Web Service), DRDA
- New DBCLI API for database connections
- Linux Fast Path

Extend for new workloads

Use the combination of Linux on System z and z/VSE

Key Capabilities

- Leverage Linux on System z for
  - Information on demand
  - IBM middleware
  - Infrastructure simplification

IBM Worklight – System z Implementation Topology
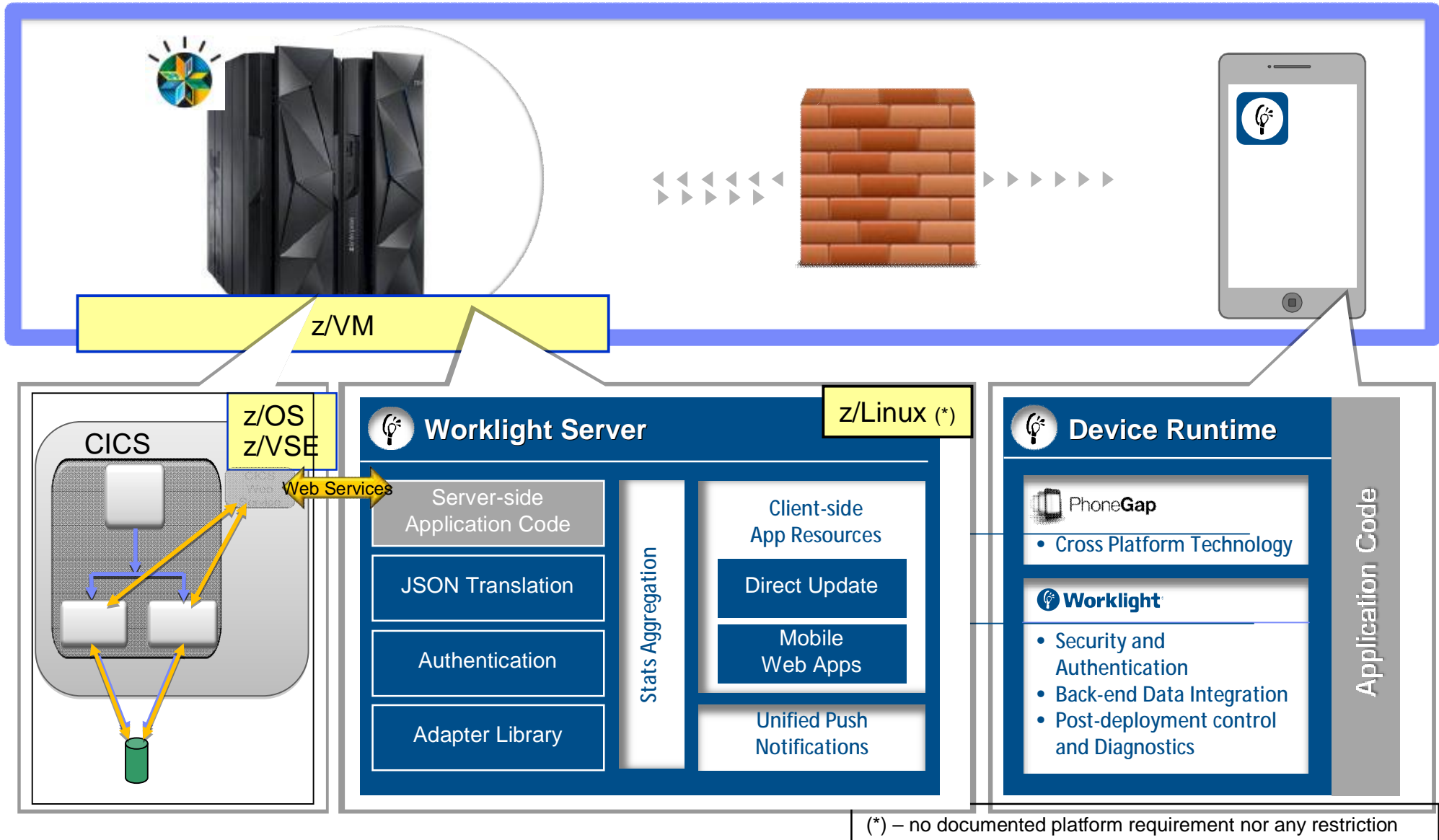
z/VM

z/OS
z/VSE

CICS

Web Services

z/Linux (*)

Worklight Server

Server-side
Application Code

JSON Translation

Authentication

Adapter Library

Stats Aggregation

Client-side
App Resources

Direct Update

Mobile
Web Apps

Unified Push
Notifications

Device Runtime

PhoneGap
- Cross Platform Technology

Worklight
- Security and
Authentication
- Back-end Data Integration
- Post-deployment control
and Diagnostics

Application Code

(*) – no documented platform requirement nor any restriction

Agenda

§ **z/VSE Status & Support**

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➡ § **z/VSE Modernization Options**

§ **z/VSE Reference Customers & Learning**

§ **z/VSE Functional Enhancements**
  – **z/VSE V5.1**
  – **z/VSE V5.1+**
  – **z/VSE V5.1++**

§ **Wrap-up**

z/VSE SOA and Interoperability

Connector Functions	z/VSE V5.1	z/VSE V4.3	z/VSE V4.2	z/VSE V4.1
z/VSE Connectors (no additional charge)				
VSAM, POWER, Librarian, ICCF lib, console	Yes	Yes	Yes	Yes
VSAM Redirector	Yes	Yes	Yes	Yes
SOA Web Services, i.e. SOAP and XML	Yes	Yes	Yes	Yes
z/VSE Script and DL/1	Yes	Yes	Yes	Yes
DB2 Stored Procedures for VSAM and DL/1	Yes	Yes	Yes	Yes
VTAPE interface to IBM Tivoli Storage Manager (TSM)	Yes	Yes	Yes	Yes
LDAP client (LDAP server on another platform required)	Yes	Yes	Yes	
SNMP agent	Yes	Yes		
Linux Fast Path from z/VSE to Linux TCP/IP in z/VM-mode LPAR	Yes	Yes		
z/VSE z/VM IP Assist (VIA)	Yes			
GDPS client	Yes			
Linux Fast Path via zEnterprise HiperSockets Completion Queues	Yes			
DBCLI connector	Yes			
IBM Middleware (priced)				
CICS Transaction Gateway ECI	Yes	Yes	Yes	Yes
Host on Demand / Host Application Transformation	Yes	Yes	Yes	Yes
DB2 Connect / DB2 UDB (DB2 Server for z/VSE V7.5 Client)	Yes	Yes	Yes	Yes
WebSphere MQ (z/VSE Client no charge)	Yes	Yes	Yes	Yes

z/VSE Trends & Directions

The No1 scenario, worldwide: DB2 LUW for z/VSE Customers
Data consolidation & data warehouse solutions with DB2 UDB on System z

Linux
on
System z
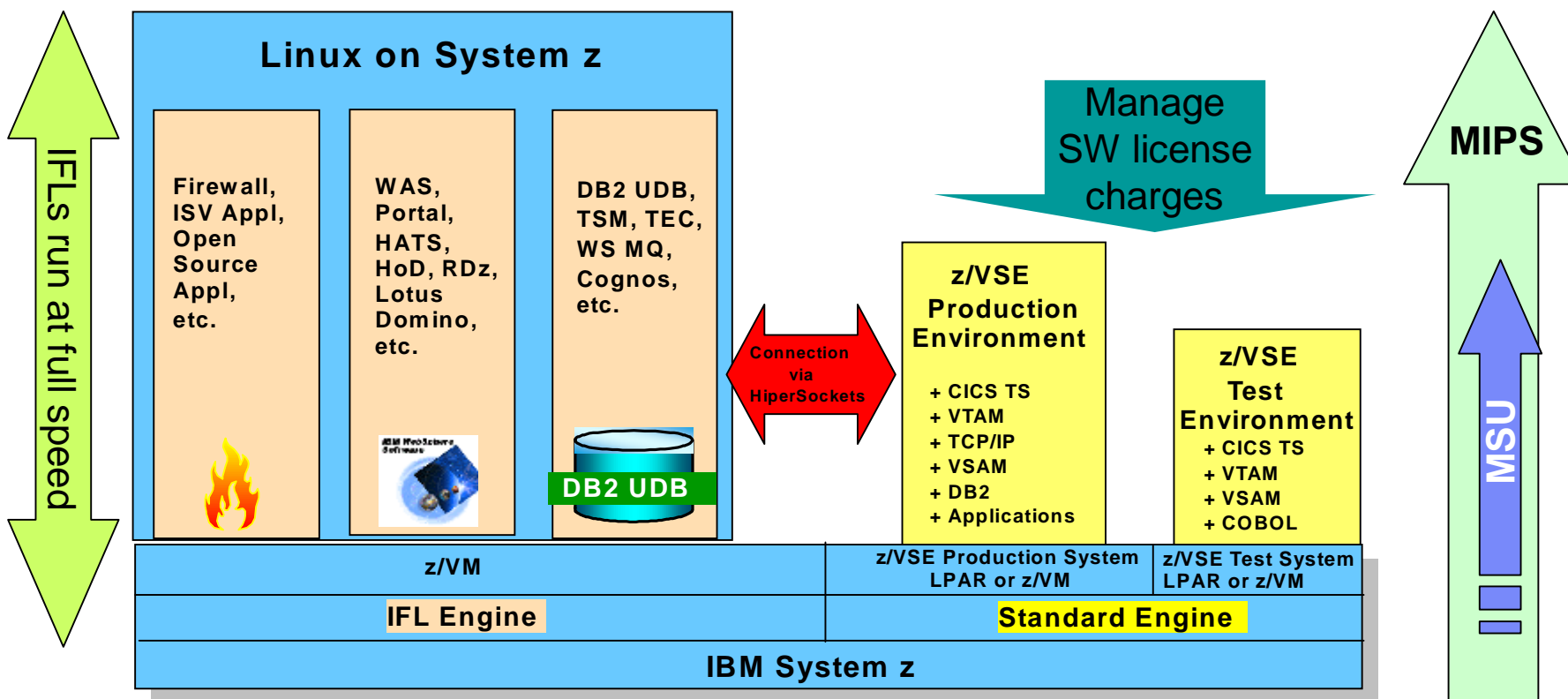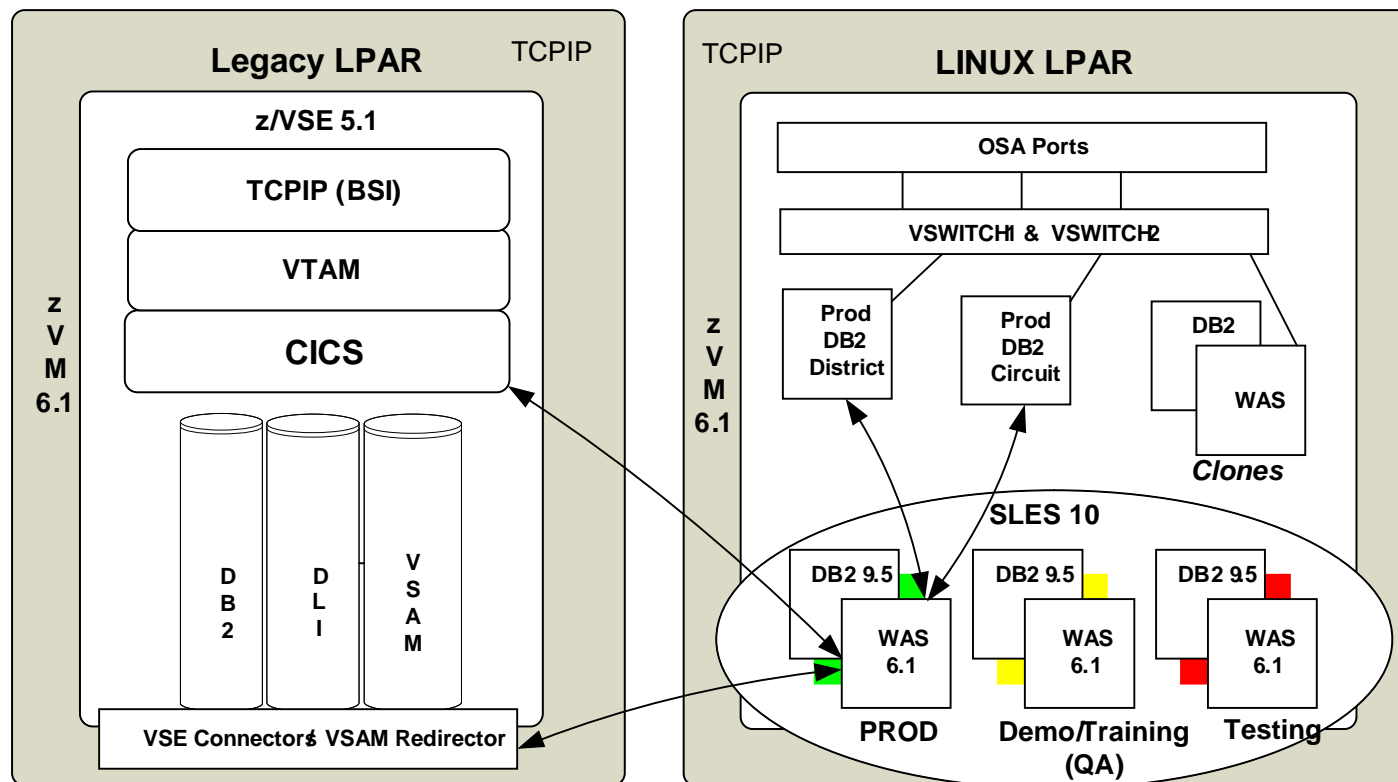
Cognos

DB2   UDB
(64-bit)

DB2 UDB

VSAM

DB2
VSE/VM

Connection
via
HiperSockets

z/VSE
Production
Environment

+ CICS
+ TCP/IP
+ VSAM
+ COBOL
+ DB2 Client
+ VSAM Redir.

z/VSE
Test
Environment

+ CICS
+ VSAM
+ COBOL

z/VSE

z/VSE

LPAR or z/VM

z/VSE Production System
LPAR or z/VM

z/VSE Test System
LPAR or z/VM

z/VM

IFL Engine

Standard Engine

IBM System z

z/VSE Trends & Directions
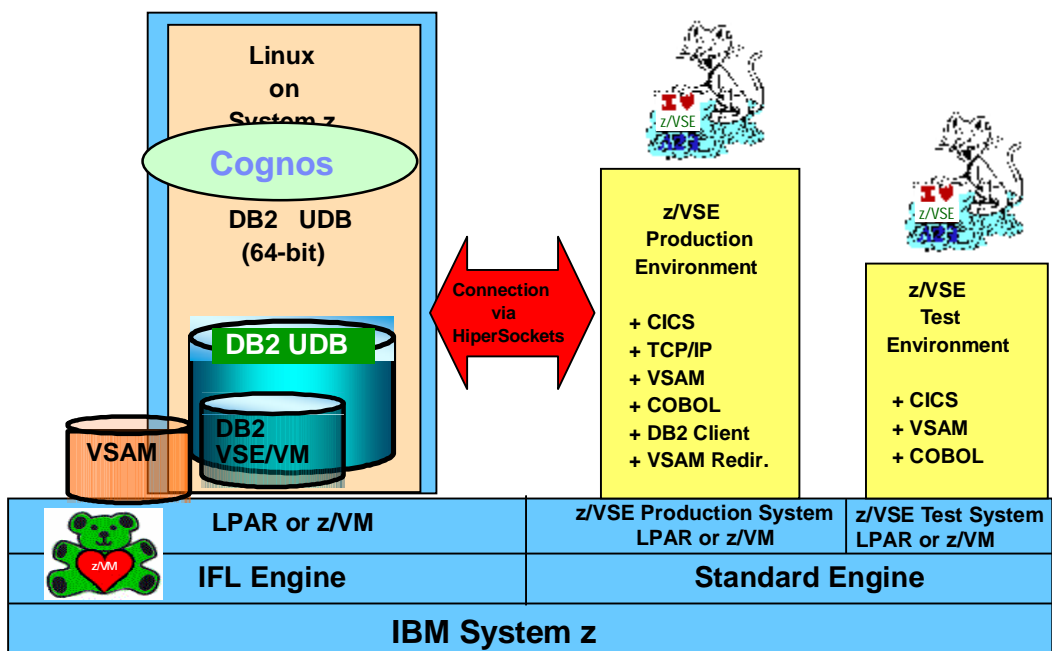
Evolving usage scenario: Backup / Restore Concept for z/VSE
Integrate z/VSE with TSM on Linux on System z

Backup

**Linux
on
System z**

**Tivoli
Storage
Manager**

Tivoli

**Connection
via
HiperSockets**

**z/VSE
Production
Environment**

+ CICS
+ TCP/IP
+ VSAM
+ COBOL
+ Virtual Tape

**z/VSE
Test
Environment**

+ CICS
+ VSAM
+ COBOL

LPAR or z/VM	z/VSE Production System LPAR or z/VM	z/VSE Test System LPAR or z/VM
IFL Engine	**Standard Engine**	

IBM System z
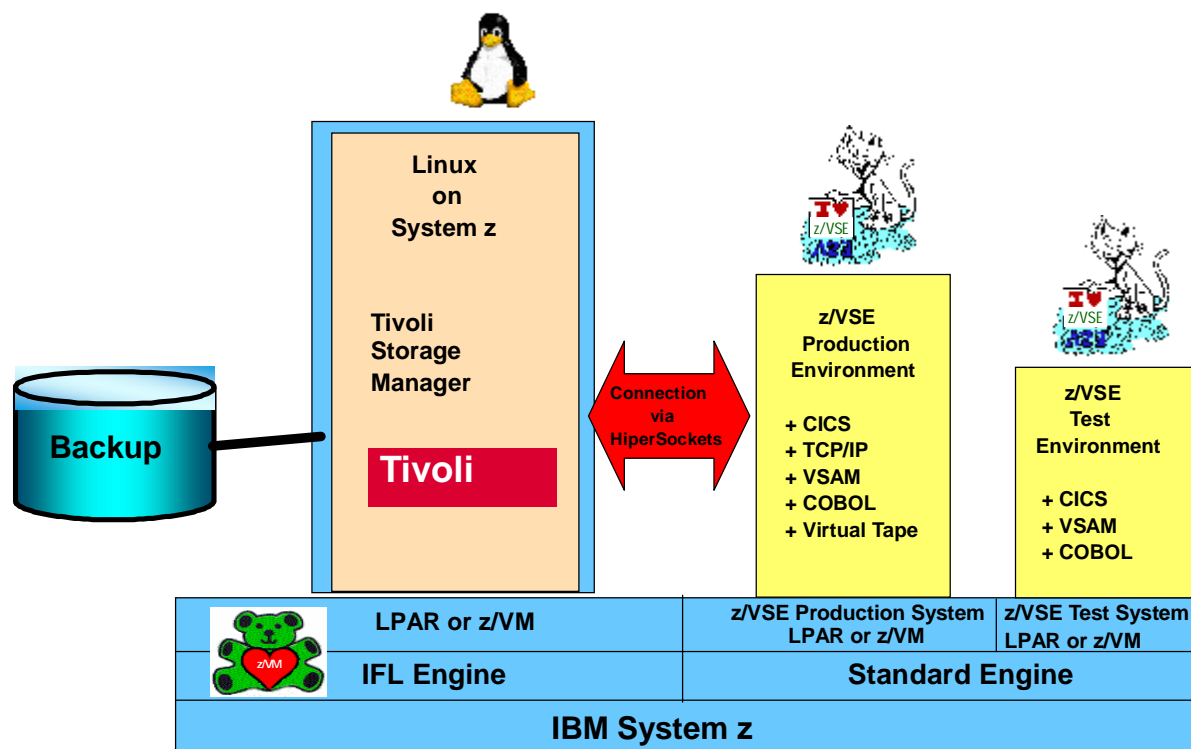
Combine the Scenarios, Manage Software Cost

Protect existing z/VSE investments

Integrate using middleware and z/VSE connectors

Extend with Linux technology and new solutions

IFLs run at full speed

Linux on System z

Firewall, ISV Appl, Open Source Appl, etc.

WAS, Portal, HATS, HoD, RDz, Lotus Domino, etc.

DB2 UDB, TSM, TEC, WS MQ, Cognos, etc.

DB2 UDB

Connection via HiperSockets

Manage SW license charges

z/VSE Production Environment
+ CICS TS
+ VTAM
+ TCP/IP
+ VSAM
+ DB2
+ Applications

z/VSE Test Environment
+ CICS TS
+ VTAM
+ VSAM
+ COBOL

MIPS

MSU

z/VM

z/VSE Production System LPAR or z/VM

z/VSE Test System LPAR or z/VM

IFL Engine

Standard Engine

IBM System z

z/VSE Trends & Directions

Additional Options with zEnterprise (Example: Oracle e-Business Suite)

Supported as native port

Applications not certified on LoZ can be run on AIX blades

System z Hardware Management Console z(HMC) with Unified Resource Manager

System z Host

z/OS z/TPF z/VSE

Oracle DB and FMW

Oracle EBS Mid-Tier

Oracle DB and FMW

Linux

Linux

Linux

z/VM

System z PR/SM

z HW Resources

Support Element

IBM Power7 Blades

Oracle Enterprise Manager

Oracle supported app

Oracle supported app

Oracle supported app

AIX

AIX

AIX

AIX

Power

Power

PowerVM

PowerVM

Blade HW Resources

zBX - **Optional Factory-Packaged Blades and Accelerators**

Private Data Network

Customer Network

Customer Network

Ensemble Management Firmware

Private Management Network

Private High Speed Data Network

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  – **z/VSE V5.1++**

§ **Wrap-up**

z/VSE Trends & Directions

Customer Example: Supreme Court of Virginia

Legacy LPAR — TCPIP

z/VM 6.1

z/VSE 5.1

- TCPIP (BSI)
- VTAM
- CICS

DB2 | DLI | VSAM

VSE Connectors & VSAM Redirector

LINUX LPAR — TCPIP

z/VM 6.1

OSA Ports

VSWITCH1 & VSWITCH2

Prod DB2 District | Prod DB2 Circuit | DB2 — WAS — *Clones*

SLES 10

DB2 9.5 — WAS 6.1 — **PROD**
DB2 9.5 — WAS 6.1 — **Demo/Training (QA)**
DB2 9.5 — WAS 6.1 — **Testing**

Right sidebar:
- 1 + 1 z10 BC L02
- 2 + 2 CPs
- 5 + 5 IFLs
- 112 + 112 GB memory
- 2 + 2 z/VM V6.1 LPARs
- 8 + 4 z/VSE V5.1 guests
- 73 + 24 SLES 10 SP2 guests
- WAS V6.1, DB2 V8.2, DB2 V9

§ **z10 BC L02 for Court System (internal)**
- Serves 325 courts, 5.000+ users, 4.2 million new cases in 2009
- Integrating z/VSE, DB2/UDB and WebSphere applications
- eMagistrate* system serves 125 locations, 2.800 trans per day
  2007 ComputerWorld Honors Program Laureate

§ **z10 BC L02 for Internet**
- eCommerce application integrating z/VSE and WebSphere appls

z/VSE Trends & Directions

Email from batch or CICS

AFP / PSF via IPaddress

IPM

300 files every day transfered to different operating systems (zLinux, Linux, Microsoft)

FTP

DB2 client to Linux DB2 UDB on IFL

VSAM Redirector Server via HiperSockets to zLinux DB2 and via Vswitch OSA QDIO to SQL Server

Microsoft SQL server

Production Environment

z/VSE

TCP/IP for Telnet

Virtual Tape

CICS TS SOAP via HiperSocket

CICS TS web

VSE Navigator

z/VSE Health Checker

Security and Performance

redhat version 5 zLinux Java application running on Tomcat

400,000 CICS transactions every 14 hours from 400 Telnet connections

the leading producer of premium olive oil sold directly to consumers

Peter Hahn

IBM Systems enrich performance, availability and flexibility

Business challenge:

Peter Hahn, a European clothier, was growing rapidly and needed to improve data availability. With call centers operating 24/7, they could not accommodate any downtime. They also faced challenges with database performance and downtime required for backups.

Solution:

With the help of IBM and IBM Premier Business Partner COMPAREX, Peter Hahn upgraded their legacy IBM eServer™ zSeries® mainframe to IBM System z9. Peter Hahn then migrated their IBM DB2 database with IBM z/VSE® applications to a Linux environment. To enable automated backups, they installed IBM System Storage DS8100, connected to the company network by IBM System Storage SAN Volume Controller.

Benefits:

§ Improves availability and performance of the IT environment

§ Provides flexibility and capacity for the DB2 database

§ Reduces risk by enabling automated backups with zero downtime

"The change was like switching to a Porsche without having to modify our applications for this purpose."

– Holger Schönenmann, department manager of the computer center at Peter Hahn

Solution components:

§ IBM System z9 with Integrated Facility for Linux

§ IBM System Storage DS8100

§ IBM SAN Volume Controller

§ IBM DB2

z/VSE Trends & Directions

AutoData Norge AS

Success Story

AutoData Norge AS

AutoData Norge AS runs SUSE® Linux Enterprise Server for System z* alongside z/VSE on an IBM* zEnterprise* z114 mainframe. The SUSE operating system provides a lower-cost and more flexible platform for creating new web-based applications, helping AutoData to expand its offerings in an efficient manner.

Automotive Spare Parts Distributor AutoData Norge AS added SUSE® Linux Enterprise Server to existing IBM® mainframe running z/VSE® for IBM System z®

Reliable and flexible environment for serving customers

Reduced software maintenance cost by running new workloads on an Integrated Facility for Linux while keeping all licensed MIPS available for z/VSE

Combined
Reliability and long standing experience on z/VSE with Simplicity, support and agility of Linux on System z

"Everything we do is driven by our customers, and SUSE Linux Enterprise Server for System z allows us to be much more responsive to their needs.„ Stein Sandvold Chief Operating Officer AutoData Norge AS

www.suse.com/success/stories/autodata-norge-as.html

NWK – Converted all z/VSE Applications onto SLES on System z

SUSE.
We adapt. You succeed.

Success Story
Enterprise Linux Servers

NWK

Seeking to boost the flexibility and reliability of its mainframe environment, agricultural service provider NWK chose to migrate its entire z/VSE mainframe workload to SUSE. Linux Enterprise Server for System z. The company is using one IFL on its new IBM zEnterprise 114 server, improving processing speeds by more than 70 percent compared with the old platform and gaining a stable, reliable platform for running its most important financial applications and business systems.

Overview
NWK Limited is a leading agricultural service provider, operating in the North Western Province of South Africa since 1909. The organisation provides both independent farmers and large-scale producers with a variety of products and services, as well as expert advice and financing. NWK employs more than 2,000 people and reported revenue of more than $200 million in 2012. The company's activities include retail trading, grain storage and marketing, the production of day-old broilers, feed production, transport and food processing.

Challenge
With an extensive network of operational outlets and subsidiaries, ensuring the continued growth and profitability of NWK's operating segments requires tight control over business systems and financial processes. To achieve this, the company has custom-developed a broad suite of financial applications for managing a full

spectrum of processes from credit control to general ledger.

For the past 18 years, NWK has trusted in the reliability and stability of the IBM mainframe platform to support these vital business systems. The company previously ran all of its applications under the IBM z/VSE operating system, but a growing need for greater flexibility and support prompted the IT team to consider alternative options.

Solution
Linux quickly emerged as the front runner in NWK's search for a new operating system, its flexibility giving the company considerable scope for embracing a more open infrastructure model.

After evaluating the different distributions of Linux available on the mainframe, NWK chose to deploy SUSE Linux Enterprise Server for IBM System z—a decision that was strongly guided by the platform's reliability and the close collaboration between SUSE and IBM.

NWK at a glance:
A leading supplier of agricultural products and services, NWK has been operating in the North West Province of South Africa for more than 100 years

- **Industry and Location**
  Agriculture, Lichtenburg, South Africa
- **Products and Services**
  SUSE Linux Enterprise Server for System z
- **Results**
  + Improves processing speeds and reduces database backup window by more than five times
  + Offers strong reliability for key financial applications and business systems
  + Supports a more open and flexible infrastructure model

After evaluating the different distributions of Linux® available on the mainframe, NWK chose to deploy SUSE Linux Enterprise Server for IBM System z®—a decision that was strongly guided by the platform's reliability and the close collaboration between SUSE and IBM.

"We have been running SUSE Linux Enterprise Server on the IBM zEnterprise® 114 (z114) for a few months now and everything has been operating very smoothly," says Eddie Leighton.

"We support around 450 users on one IFL with an average CPU usage of 60 to 70 percent, and so far performance has been excellent, even when running at 100 percent utilization."

The z114 running SUSE Linux Enterprise Server for System z offers 600 MIPS versus the 172 MIPS of NWK's previous mainframe, which translates into significantly faster processing for a number of key tasks.

SUSE Linux Enterprise Server provides NWK with solid performance, and a reliable platform for running its most important workloads.

"The IBM z114 is a fantastic server and SUSE Linux Enterprise Server for System z really helps us to get the most out of it. The solution has met all of our requirements in terms of performance and stability."

- EDDIE LEIGHTON, Technology Manager, NWK

www.suse.com/success/stories/nwk.html

z/VSE and z/VM-Linux Customer Conferences in 2013

§ **WAVV in Covington (Kentucky),
April 7-10, 2013**

§ **German GSE in Leipzig (Germany),
April 22-24, 2013**

§ **IBM System z Technical University in Munich (Germany),
June 10-14, 2013**

§ **GSE European Working Group in Hamburg (Germany),
Sep 30 – Oct 2, 2013**

§ **IBM System z Technical University in Orlando (Florida),
Oct 21-25, 2013**

z/VSE Trends & Directions

z/VSE Live Virtual Classes (Webcasts)

§ **June 2013**
  – z/VSE Security Enhancements

§ **April 2013**
  – Important Update on z/VSE Enhancements

§ **March 2013**
  – z/VSE Release Migration Considerations - Part 2

§ **February 2013**
  – z/VSE Release Migration Considerations - Part 1

§ **December 2012**
  – System z Hardware Exploitation in z/VSE

§ **October 2012**
  – VSE/POWER – all the News since z/VSE 4.2

§ **September 2012**
  – Securing Data Transfers using IPv6/VSE

§ **July 2012**
  – The New z/VSE Database Connector (DBCLI)

§ **May 2012**
  – IPv6 in z/VSE

§ **March 2012**
  – Monitoring Principles and z/VSE Monitoring Options

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

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www.linkedin.com

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www-304.ibm.com/connections/blogs/systemz/

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www.youtube.com/user/IBMSystemZ

z/VSE Trends & Directions

z/VSE Quick Reference App for Android – Available as Beta now!
ftp://public.dhe.ibm.com/eserver/zseries/zos/vse/download/zVSEQuickReferenceBeta.apk

Agenda

§ **z/VSE Status & Support**

§ **z/VSE Strategy**

§ **z/VSE Modernization Options**

§ **z/VSE Reference Customers & Learning**

→ § **z/VSE Functional Enhancements**

  – **z/VSE V5.1**
  – **z/VSE V5.1+**
  – **z/VSE V5.1++**

§ **Wrap-up**

z/VSE Trends & Directions

z/VSE V5.1 - General Availability since Nov-25-2011

§ **Introduction of an Architectural Level Set (ALS) that requires System z9 (or later)**
  – z/VSE V5 will run on System z9 BC/EC, z10 EC/BC, zEnterprise z196/z114, and zEC12

§ **64-bit virtual addressing for growing / future workloads**
  – Keep 'more data in memory' to benefit from increased processor storage
  – Built upon 64-bit real addressing, compatible API with z/OS

§ **IBM zEnterprise exploitation**
  – Support Static Power Save Mode for MWLC clients with subcapacity option on z196 and zEC12
  – 4096-bit RSA keys with Crypto Express3 for enhanced security
  – Support of OSA-Express for zBX (CHPID OSX) to participate in an Intra Ensemble Data Network (IEDN)
  – z/VSE z/VM IP Assist (VIA)

§ **Exploitation of IBM System Storage options**
  – Copy Export function of TS7700 Virtualization Engine for disaster recovery
  – IBM Storwize V7000 Midrange Disk System

§ **Networking enhancements**
  – IPv6 support added to Linux Fast Path connector
  – GDPS client for high availability in z/VSE

§ **Statement of Direction**
  – CICS Explorer capabilities for CICS TS for VSE/ESA to deliver additional value
  – Allow the Linux Fast Path function to be used in an LPAR environment

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z/VSE V5.1+ aka V5.1.1 - General Availability since June-15-2012

§ **Support IBM CICS Explorer – the new face of CICS Transaction Server**
  – Add value to CICS TS for VSE/ESA
  – New systems management framework for CICS TS (consists of client and server part)
  – Client part of CICS Explorer common for z/OS and z/VSE, server part requires CICS TS and z/VSE V5.1
  – *Fulfills SOD in z/VSE V5.1 Preview Announcement (RFA54520), 04/12/2011*

§ **Fast Path to Linux on System z (LFP) in LPAR**
  – Allows TCP/IP applications to communicate with TCP/IP stack on Linux w/o using a TCP/IP stack on z/VSE
  – LFP in a z/VM guest environment available since z/VSE V4.3 – now LPAR support is added
  – LFP in LPAR requires HiperSockets Completion Queue function of zEnterprise
  – *Fulfills SOD in zEnterprise Announcement (RFA54727), 07/12/2011*
  – *Fulfills SOD in z/VSE V5.1 Announcement (RFA55492), 10/12/2011*

§ **z/VSE database connector for z/VSE applications**
  – Allows to utilize a new Call Level Interface (CLI) to advanced database functions
  – Flexibility to use a database server on a platform other than z/VSE (for example in a zBX environment)

z/VSE support for IBM CICS Explorer
The new face of CICS Transaction Server for VSE/ESA

CICS Explorer

§ New systems management framework for CICS TS

§ Consists of client and server part

§ Based on the Eclipse Rich Client Platform (RCP)

§ Provides integration platform

§ Scalable and intuitive way to monitor CICS systems

§ Can be extended via plug-ins

§ Client part of CICS Explorer common for z/OS and z/VSE

§ Server part requires CICS TS and z/VSE V5.1
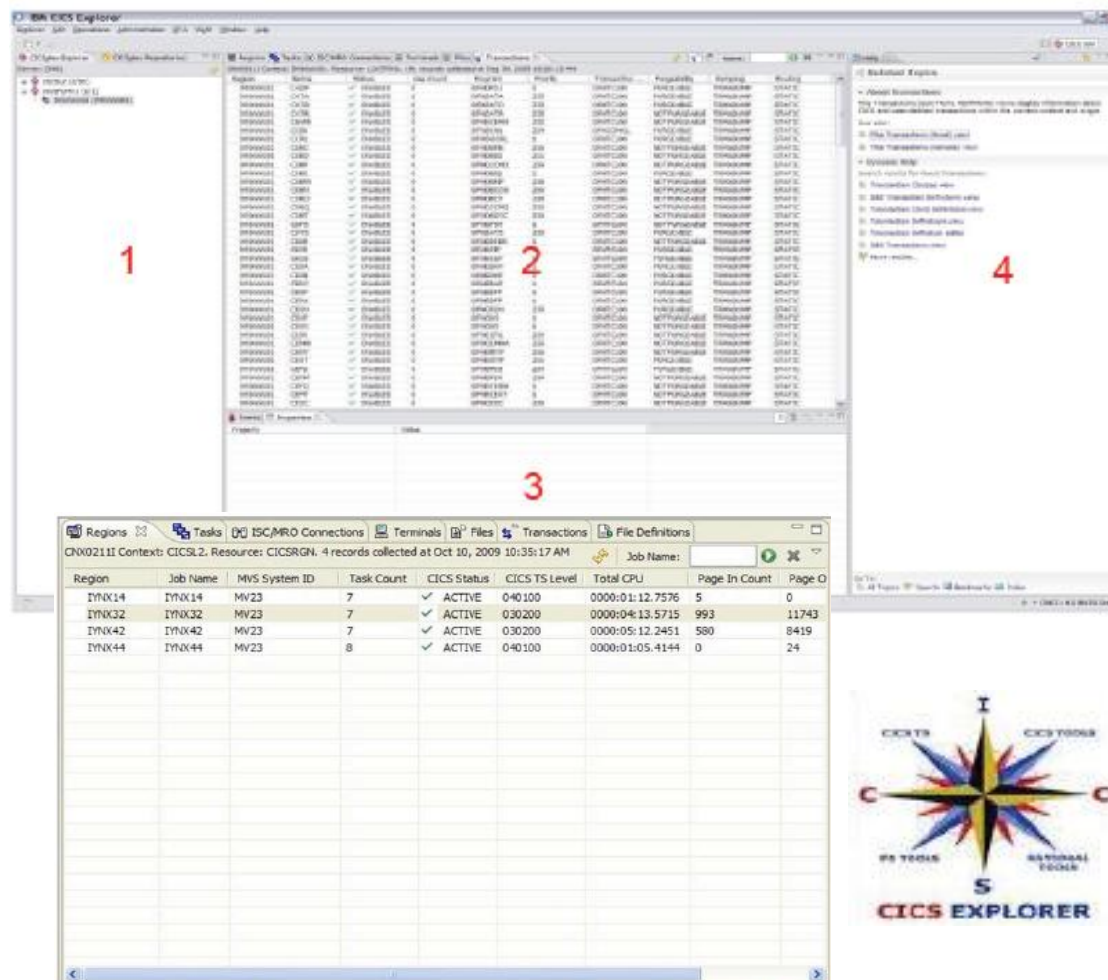
Fulfills Statement of Direction:
"IBM intends to provide CICS Explorer capabilities for CICS TS for VSE/ESA, to deliver additional value."

Linux Fast Path in an LPAR environment with z/VSE V5.1+

Faster communication between z/VSE and Linux applications

à Exploits the HiperSockets Completion Queue support of IBM zEnterprise

Without LFP

With LFP in LPAR

*) Driver level 93 or later.

z/VSE Trends & Directions
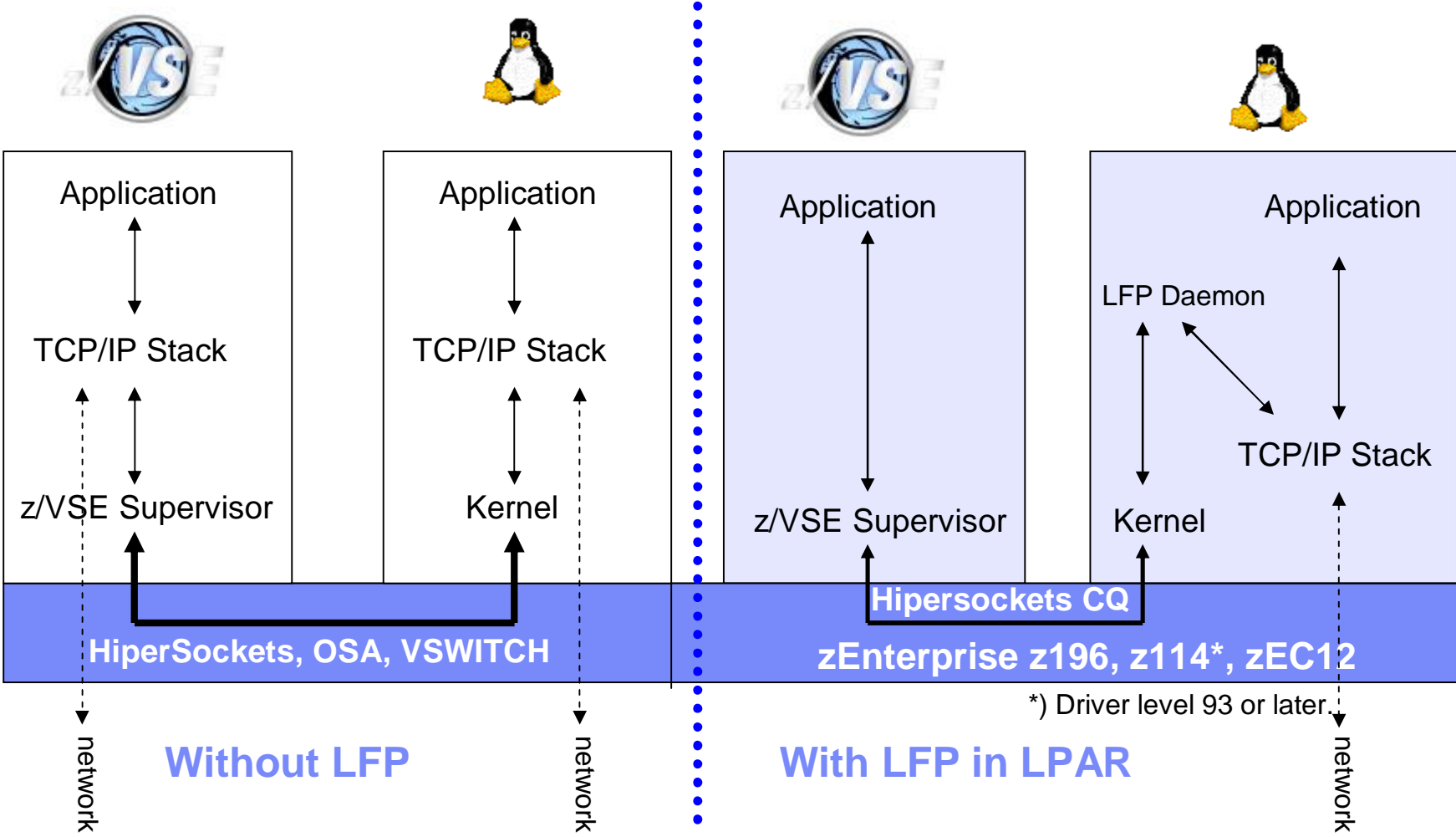
z/VSE Data Base Call Level Interface (DBCLI) with z/VSE V5.1+
z/VSE universal data base connector

§ Allows z/VSE applications to access a relational database on any suitable database server
  – IBM DB2, IBM Informix, Oracle, MS SQL Server, MySQL, etc.
    à *The database product must provide a JDBC driver that supports JDBC V3.0 or later*
§ Utilize advanced database functions and use SQL statements
§ Flexibility to use a database server on a platform other than z/VSE
  – for example, zBX environment

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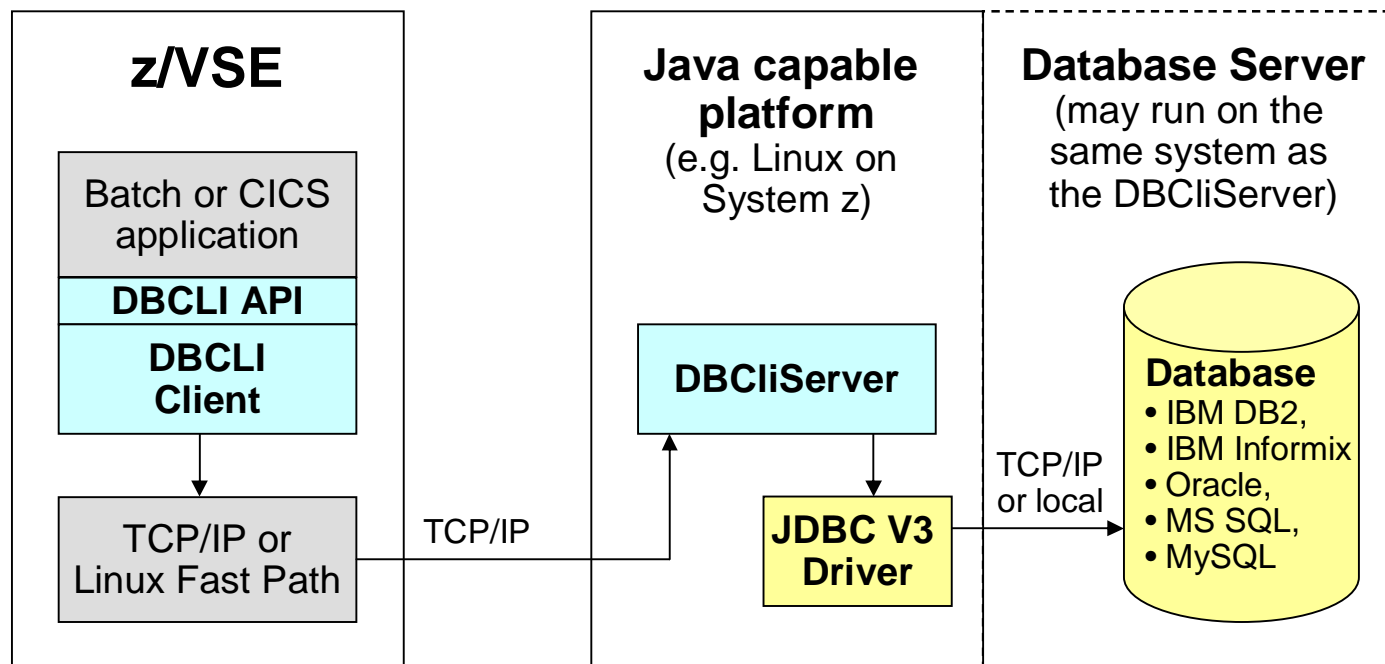
z/VSE V5.1++ aka V5.1.2
Announced April-2-2013, General Availability planned for June-14-2013

§ **Support innovative zEnterprise EC12 technology**

  – Configurable Crypto Express4S

  – OSA-Express4S 1000BASE-T

§ **Support enhanced IBM System Storage options**

  – TS1140 tape drive (with encryption capabilities)

  – TS7700 Virtualization Engine Release 3.0 (includes disk-based encryption)

  – DS8870 (for use with both, ECKD and FCP-attached SCSI disks)

  – Storwize V7000 Release 6.4 (for use with FCP-attached SCSI disks)

§ **64-bit Input / Output processing for applications**

  – Enhances 64-bit virtual support by allowing to use 64-bit virtual storage also for I/O buffers

  – Benefits from increased processor storage of latest zEnterprise servers

§ **Extend z/VSE connectivity and networking options in heterogeneous environments**

  – z/VSE database connector connection pooling – performance improvement

  – Configurable HiperSockets buffers – for improved throughput to Linux on System z

  – IPv6/VSE: Layer-2 support for IPv4 links in addition to IPv6 links – more flexibility in mixed z/VSE, z/VM, Linux on System z configurations

§ **Provide IPv6/VSE security enhancements**

  – Secure Sockets Layer (SSL) support – secure transmission of data to and from remote systems

  – Exploits hardware-assisted encryption with System z cryptographic adapters and CPACF

# Three new Statements of Direction, announced on April-2-2013

§ IBM intends to add functionality that **allows initial installation of z/VSE without requiring a physical tape.**
  – Clients who use a tape for initial installation only, may no longer be forced to include a tape in the z/VSE configuration.
  – With this ease of use function IBM will fulfill client requirements.

§ IBM intends in the **future to enhance IBM CICS Explorer** for IBM CICS Transaction Server for VSE/ESA to provide updates to CICS resources.

§ It is planned to **reduce** the AEWLC and MWLC **list price of IPv6/VSE** V1.1.
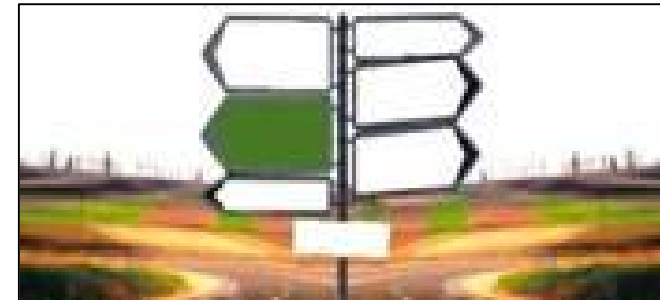
Note: IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion. Information regarding potential future products is intended to outline our general product direction and it should not be relied on in making a purchasing decision. The information mentioned regarding potential future products is not a commitment, promise, or legal obligation to deliver any material, code, or functionality. Information about potential future products may not be incorporated into any contract. The development, release, and timing of any future features or functionality described for our products remains at our sole discretion.

z/VSE Trends & Directions

Agenda

§ **z/VSE Status & Support**

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§ **z/VSE Modernization Options**

§ **z/VSE Reference Customers & Learning**

§ **z/VSE Functional Enhancements**
  – **z/VSE V5.1**
  – **z/VSE V5.1+**
  – **z/VSE V5.1++**

➡ § **Wrap-up**

z/VSE Trends & Directions

z/VSE continues to demonstrate IBM's commitment

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

z/VSE V5.1+ - 2Q2012

Ø**CICS Explorer Monitoring**

Ø**Universal database connector**

Ø**Linux Fast Path in LPAR**

z/VSE V5.1++ - 2Q2013

Ø**64-bit I/O for applications**

Ø**Networking enhancements**

Ø**Security enhancements**

+ SoD: CICS Explorer Update, DVD Install, Price Reduction IPv6/VSE

z/VSE V5.1 - 4Q2011

Ø**zEnterprise exploitation**

Ø**IEDN connection to zBX**

Ø**64-bit virtual memory objects**

Ø**ALS to System z9 (+ higher)**

Ø**z/VSE z/VM IP Assist (VIA)**

+ SoD: CICS Explorer, LFP in LPAR

z/VSE V4.3 - 4Q2010

Ø**z196 toleration / exploitation**

Ø**4-digit device addresses**

Ø**24-bit virtual storage constraint relief**

Ø**IPv6/VSE as optional product**

Ø**Linux Fast Path with z/VM**

+ SoD: 64-bit virtual support

z/VSE 5.1+ and ++ denote enhancements made available via PTF

z/VSE Trends & Directions

For more information, please see the z/VSE web site:
http://www.ibm.com/zvse/

IBM z/VSE V5.1 - Additional enhancements

Additional enhancements announced on April 2nd, 2013. In addition to function already available with z/VSE V5.1, you get supplemental enhancements that are designed to:

- Support innovative IBM zEnterprise EC12 technology
  - Configurable Crypto Express4S
  - OSA-Express4S 1000BASE-T
- Support enhanced IBM System Storage options
  - IBM System Storage TS1140
  - IBM System Storage TS7700 Virtualization Engine Release 3.0
  - IBM System Storage DS8870
  - IBM Storwize V7000 Release 6.4
- Allow 64-bit Input/Output (I/O) processing for applications
- Extend the z/VSE connectivity and networking options in heterogeneous environments
- Provide IPv6/VSE V1.1 security enhancements

For more information, please see the announcement letter.

Statements of Direction included in this announcement:
IBM intends to add functionality that allows initial installation of z/VSE without requiring a physical tape. IBM intends in the future to enhance IBM CICS Explorer for IBM CICS Transaction Server for VSE/ESA to provide updates to CICS resources. It is planned to reduce the AEWLC and MWLC list price of IPv6/VSE V1.1.

Note: IBM's statements regarding its plans, directions, and intent are subject to change or withdrawal without notice at IBM's sole discretion.

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Live Virtual Classes

z/VSE Security Overview and Update

This session provides an introduction and best practices to the basic security concepts of z/VSE. It includes CICS and batch security, plus connector and network security. It will also cover z/VSE security concepts in an open and heterogeneous world where z/VSE may connect to anyone and everyone. This session will also show you how to exploit z/VSE security features like Encryption Facility for z/VSE and SSL (Secure Socket Layer). In addition, it will describe IBM mainframe cryptographic technology, including Crypto Express and CP Assist for Cryptographic Function (CPACF).

Speaker: Ingo Franzki, IBM
Date: Tuesday, June 4, 2013
Time: US & Europe: 11:00 AM New York, 04:00 PM London, 05:00 PM Boeblingen, 15:00 UTC
Or: Europe & AP: 04:00 PM Japan, 07:00 UTC, 03:00 AM New York, 08:00 AM London, 09:00 AM Boeblingen
Duration: 60 Minutes

Note: For most US & European locations Daylight Saving Time (DST) ↦ is in effect. Please select your time zone on the top right corner on the registration web page.

↪ Register for the US & Europe event (11:00 AM New York, 04:00 PM London, 05:00 PM Boeblingen, 15:00 UTC)

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Mark your calendar

2013 IBM System z Technical University (Europe)
June 10-14, 2013, Munich, Germany
→ Enroll now!

2013 IBM System z Technical University (Americas)
at EnterpriseSystems2013
October 21-25, 2013, Orlando, FL, USA
→ Enroll now!

European GSE/IBM Technical University for z/VSE, z/VM and Linux on System z
September 30-October 2, 2013, Hamburg, Germany
↪ Enroll now!

→ Other z/VSE events

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- Digital Edition of #Enterprise Executive May/June 2013 just arrived: http://t.co/HMfLU1GaoR #Systemz #zLinux #SystemzSW
  NaN days ago
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October 14 – 18, 2013 | Berlin, Germany

2013 IBM Power Systems Technical University
November 4 – 8, 2013 | Athens, Greece

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November 12 - 14, 2013 | Dubai, United Arab Emirates

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