

Session E11

z/VSE Version 4 News and Views

G. M. (Jerry) Johnston

Senior Advisor – Boeblingen lab

p798000@us.ibm.com

IBM System z Expo

September 17-21, 2007

San Antonio, TX



Trademarks

Trademarks

The following are trademarks of the International Business Machines Corporation in the United States and/or other countries. For a complete list of IBM Trademarks, see www.ibm.com/legal/copytrade.shtml: AS/400, DBE, e-business logo, ESCO, eServer, FICON, IBM, IBM Logo, iSeries, MVS, OS/390, pSeries, RS/6000, S/30, VM/ESA, VSE/ESA, Websphere, xSeries, z/OS, zSeries, z/VM

The following are trademarks or registered trademarks of other companies

Lotus, Notes, and Domino are trademarks or registered trademarks of Lotus Development Corporation
 Java and all Java-related trademarks and logos are trademarks of Sun Microsystems, Inc., in the United States and other countries
 LINUX is a registered trademark of Linux Torvalds
 UNIX is a registered trademark of The Open Group in the United States and other countries.
 Microsoft, Windows and Windows NT are registered trademarks of Microsoft Corporation.
 SET and Secure Electronic Transaction are trademarks owned by SET Secure Electronic Transaction LLC.
 Intel is a registered trademark of Intel Corporation
 * All other products may be trademarks or registered trademarks of their respective companies.

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.

IBM hardware products are manufactured from new parts, or new and serviceable used parts. Regardless, our warranty terms apply.

All customer examples cited or described in this presentation are presented as illustrations of the manner in which some customers have used IBM products and the results they may have achieved. Actual environmental costs and performance characteristics will vary depending on individual customer configurations and conditions.

This publication was produced in the United States. IBM may not offer the products, services or features discussed in this document in other countries, and the information may be subject to change without notice. Consult your local IBM business contact for information on the product or services available in your area.

All statements regarding IBM's future direction and intent are subject to change or withdrawal without notice, and represent goals and objectives only.

Information about non-IBM products is obtained from the manufacturers of those products or their published announcements. IBM has not tested those products and cannot confirm the performance, compatibility, or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

Prices subject to change without notice. Contact your IBM representative or Business Partner for the most current pricing in your geography.

References in this document to IBM products or services do not imply that IBM intends to make them available in every country.

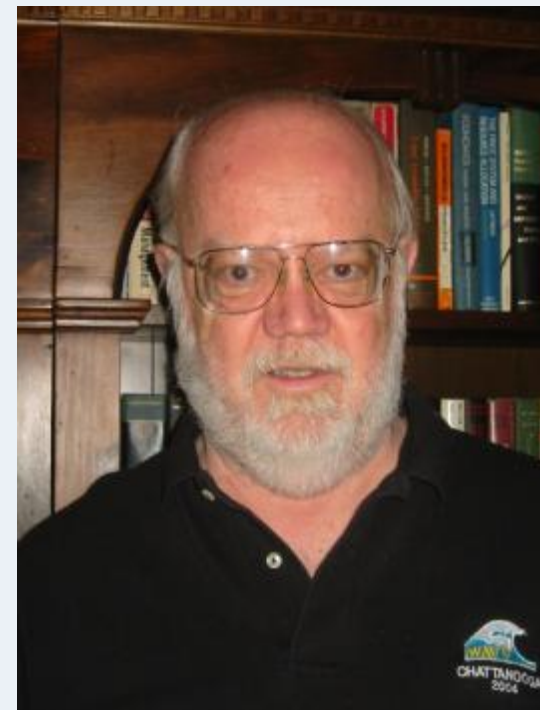
Any proposed use of claims in this presentation outside of the United States must be reviewed by local IBM country counsel prior to such use.

The information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.

Agenda

- **Heritage**
- **z/VSE Version 4 Release 1**
- **Midrange Workload License Charges (MWLC)**
- **IT Modernization/Solutions**
- **Wrap-up**
- **Q & A session**





Heritage

IBM Development Lab – Boeblingen, Germany



40+ Years of IBM Mainframe & VSE Evolution

- S/360->S/370->4300->9370->ES9000->S/390->zSeries->z9

§ **DOS/360** ->DOS/VS->DOS/VSE->(SSX)->VSE/SP
->VSE/ESA V1->VSE/ESA V2->z/VSE V3-> **zVSE V4**

- S/360 Model 30
 - 30 KIPS (.03 MIPS)
 - 16 - 64 KB

- DOS/360
 - 1 batch partition
 - basic, but lovable

- **System z9 BC**
 - 26-480 MIPS (1-way)
 - 8 - 64 GB
- **z/VSE V4.1**
 - Batch and OLTP
 - SOA
 - still lovable

1960s

1970s

1980s

1990s

2000s

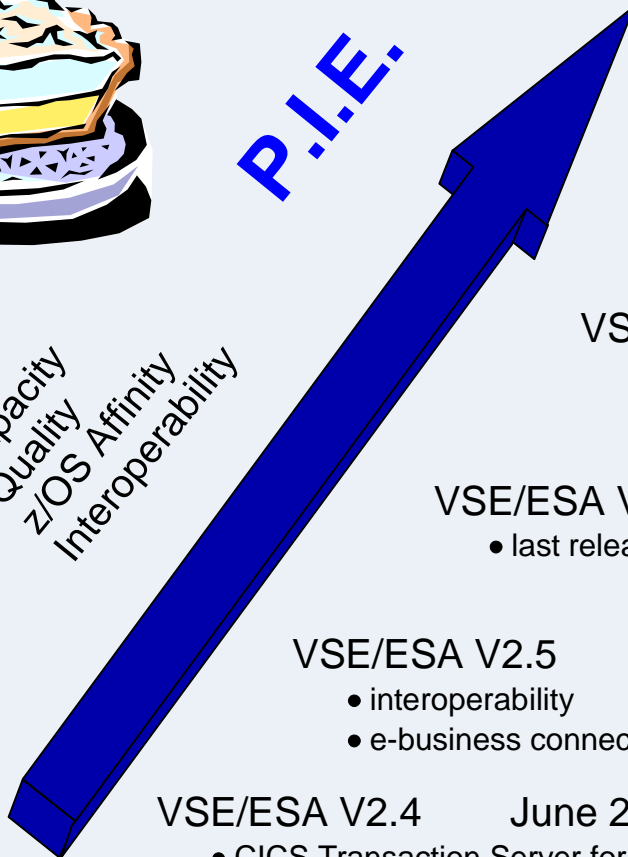


Recent Offerings



P.I.E.

Capacity
Quality
z/OS Affinity
Interoperability



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**

- zSeries features, FCP/SCSI
- 31-bit mode only

VSE/ESA V2.7 **March 14, 2003**

- enhanced interoperability
- ALS2 servers only



VSE/ESA V2.6 **Dec 14, 2001**

- last release to support pre-G5 servers

VSE/ESA V2.5 **Sept 29, 2000**

- interoperability
- e-business connectors

VSE/ESA V2.4 **June 25, 1999**

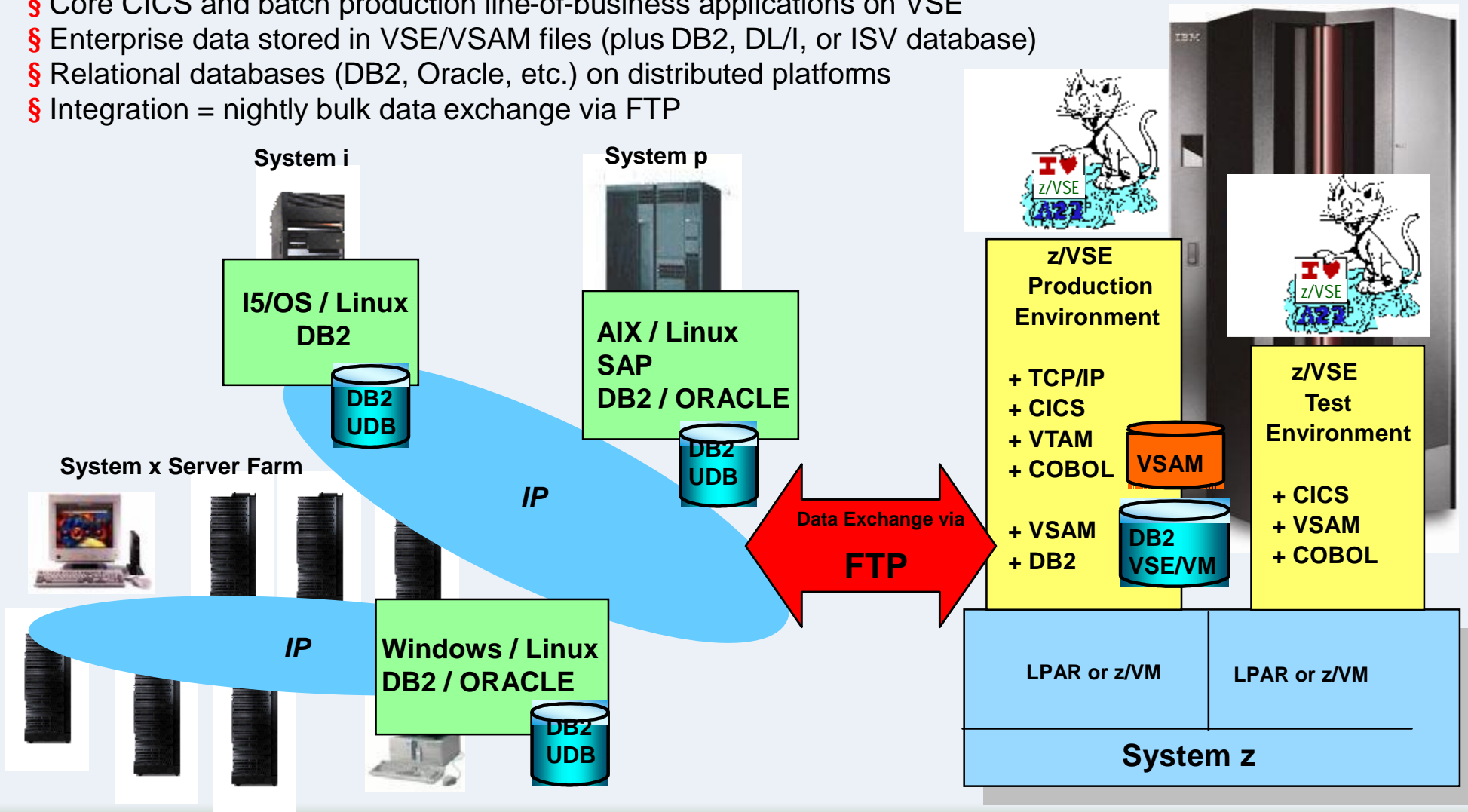
- CICS Transaction Server for VSE/ESA
- e-business



•Note: z/VSE V3 can operate in 31-bit mode only. It does not implement z/Architecture and specifically does not implement 64-bit mode capabilities. z/VSE V3 is designed to support selected features of IBM System z hardware.

Typical Environment

- § Multiple server platforms (System z, System p, System x, System i, and competitive)
- § Core CICS and batch production line-of-business applications on VSE
- § Enterprise data stored in VSE/VSAM files (plus DB2, DL/I, or ISV database)
- § Relational databases (DB2, Oracle, etc.) on distributed platforms
- § Integration = nightly bulk data exchange via FTP





z/VSE Version 4 Release 1

z/VSE Version 4 Release 1

- Preview 4/27/2006, Announce 1/9/2007
- **General Availability 3/16/2007**
- **z/Architecture mode only**
 - 64-bit *real* addressing (31-bit *virtual* addressing)
 - up to 8 GB real processor storage
 - IBM System z9 EC and z9 BC servers
 - IBM eServer zSeries 990, 890, 900, and 800 servers
- **Capacity Measurement Tool (CMT)**
 - fulfills SOD from July 2005
- **New MWLC pricing metrics (z9 EC and z9 BC only)**
 - Improved price/performance with full-capacity MWLC price points
 - Sub-capacity MWLC option for added price/performance
- **Encryption enhancements**
 - CPACF enhancements (AES-128)
 - Configurable Crypto Express2 (new accelerator option)
 - Secure FTP
 - TS1120 encrypting tape



z/VSE Version 4 Release 1 (cont.)

- **IBM System Storage**
 - TS1120 encrypting tape
 - *TS3400 Tape Library*
 - TS3500 Tape Library
 - TS7700 Virtualization Engine
 - DS6000/DS8000 64K cylinder ECKD volumes
- **TCP/IP for VSE/ESA V1.5 Service Pack E enhancements, including**
 - Improved TCP/IP stack
 - Performance
 - FTP
 - Security and SSL
 - SecureFTP
 - AES-128 (exploiting CPACF)
 - 2048-bit RSA keys (Crypto Express2 card required)
 - Message Logging
 - Telnet
 - eMail
 - BSE/C Socket API

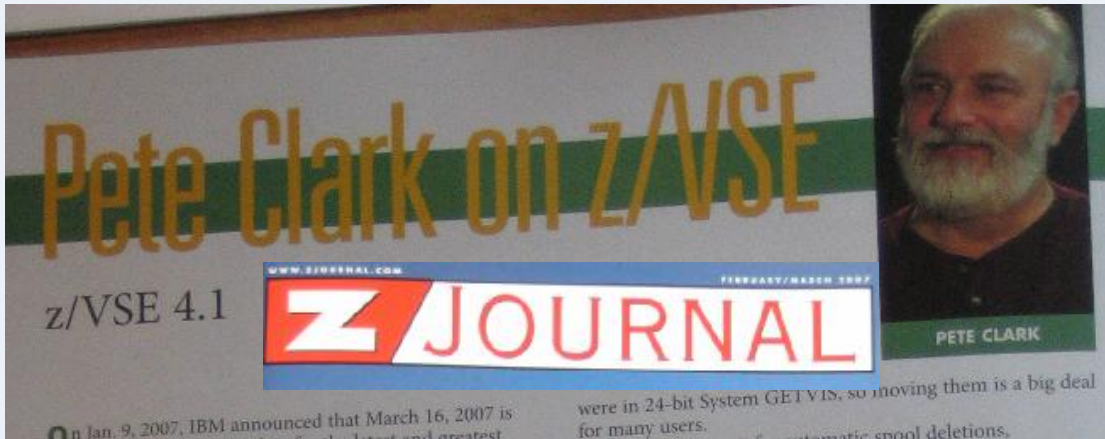


z/VSE Version 4 Release 1 (cont.)

- **SOA and Interoperability**
 - VTAPE interface to Tivoli® Storage Manager (TSM) to backup VSE data
 - VSAM Capture Exit
 - upgrade to JDK 1.5 (Java5) standard
- **Component changes**
 - ACF/VTAM V4.2 31-bit buffers
 - BSM security logging and reporting
 - VSE/POWER enhancements
 - LE/VSE enhancements and z/OS affinity
- **Miscellaneous**
 - Single Supervisor
 - SDAID
 - VSAM tools
- **FSU from z/VSE V3.1 and VSE/ESA V2.7**
- **Requires z/VM V5.2 (or later) if running under VM**



Press and Analyst Statements



VSE users receive an offer they can't refuse

Most of the activity in the IBM mainframe world not surprisingly focuses on the z/OS environment, but there is still a sizeable population of users running systems based on VSE, often in conjunction with the VM hypervisor.

Many of these sites are slow growers with limited in-house technical skills and a reluctance to upgrade their hardware or software even in exchange for significant cost savings. As a result their relationship with IBM (and with other ISVs supporting their applications) is a difficult one.

In its recent announcement of z/VSE 4.1, IBM has shown some of the 'carrot and stick' tactics that often characterize its product developments in this part of the market.

The latest version of the operating system offers many attractions for small mainframe users, including some important enhancements to SOA/web service support and tape encryption. Moreover the software is accompanied by a new pricing scheme (Midrange Workload License Charge), which can bring sub-capacity benefits and very significant savings to VSE users. But to get the savings they need to upgrade to a z9 BC or EC.

Even for VSE users, it is becoming increasingly difficult to make a cost case for avoiding an upgrade to the latest hardware, and the months ahead are likely to witness a steady stream of VSE-base upgrades to the z9 BC.

IBM VSE mainframe operating system gets upgrade

By Mark Fontecchio, News Writer
21 Mar 2007 | SearchDataCenter.com

RSS FEEDS: [IT infrastructure news](#)



IBM has upgraded the VSE mainframe operating system to include storage, security and networking improvements, as well as introduced pricing schemes that can lower mainframe software licensing costs.

Source: SearchDataCenter.com, March 2007

IBM Systems

Features

Print

Ahead of the Pack

July 2007

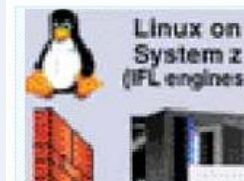


Figure 1

Although z/OS* is correctly regarded as the flagship OS for the IBM* System z* platform, z/VSE* remains an important part of IBM's mainframe portfolio and a viable option for many satisfied IBM customers. At the risk of oversimplification, z/VSE is similar to z/OS but relatively smaller, simpler and less capable. z/VSE is designed for smaller IBM mainframe clients with somewhat less demanding requirements. For z/VSE users, many of whom have been using it for decades, z/VSE is robust enough without additional applications found in z/OS, and comes

with a lower TCO than z/OS. However, both z/OS and z/VSE are equally committed to product quality and customer service that are second to none.

Heritage

z/VSE V4 has a long tradition that spans more than four decades. DOS/360 was launched in 1965 along with the famed IBM System/360*. Originating as a basic alternative to OS/360*, a distant ancestor of z/OS, DOS/360 quickly became a workhorse OS, especially for the popular S/360 Model 30. In the 1970s and '80s,

Source: Systems Magazine, July/August 2007

z/VSE support for IBM System Storage

Flashcopy
Global Mirror (PPRC)

<p>New Standard in Pricing and Packaging</p> 		<p>New Standard in Functionality, Performance, TCO</p> 
<p>IBM TotalStorage DS6000</p>	<p>ESS 750 / 800</p>	<p>IBM TotalStorage DS8000</p>

IBM System Storage	DS6000	ESS 750, 800, 800Turbo	DS8000. DS8000 Turbo
ESCON	Not Avail	Yes	Yes
FICON	Yes	Yes	Yes
FCP/SCSI	Yes	Yes	Yes

IBM TS1120 Tape Drive Encryption

- **IBM System Storage TS1120 - first encrypting tape drive**
 - Standard feature on new TS1120 tape drives
 - Supports “traditional” and “encrypted” modes of operation
 - encryption “disabled” unless otherwise specified
 - Implements data encryption using AES-256 encryption
 - Data is automatically compressed *then* encrypted – no change in media utilization
 - Encryption performed with minimal (< 1% data rate performance impact)

- **Systems Managed Encryption with z/VSE V4.1 & V3.1**

- **IBM Encryption Key Manager (EKM) for Java platform™**
 - EKM stores and manages *labels* and *key encrypting keys*
 - runs on z/OS, AIX, Linux (incl System z), i5/OS, HP, Sun, & Windows
 - Secure TCP/IP connection between EKM and TS1120
 - ESM supplies data encrypting keys to TS1120 on request
 - TS1120 encrypts files using data encrypting key
 - TS1120 stores *encrypted* data encrypting key on cartridge
 - data encryption key can be encrypted using two different *key encryption keys*

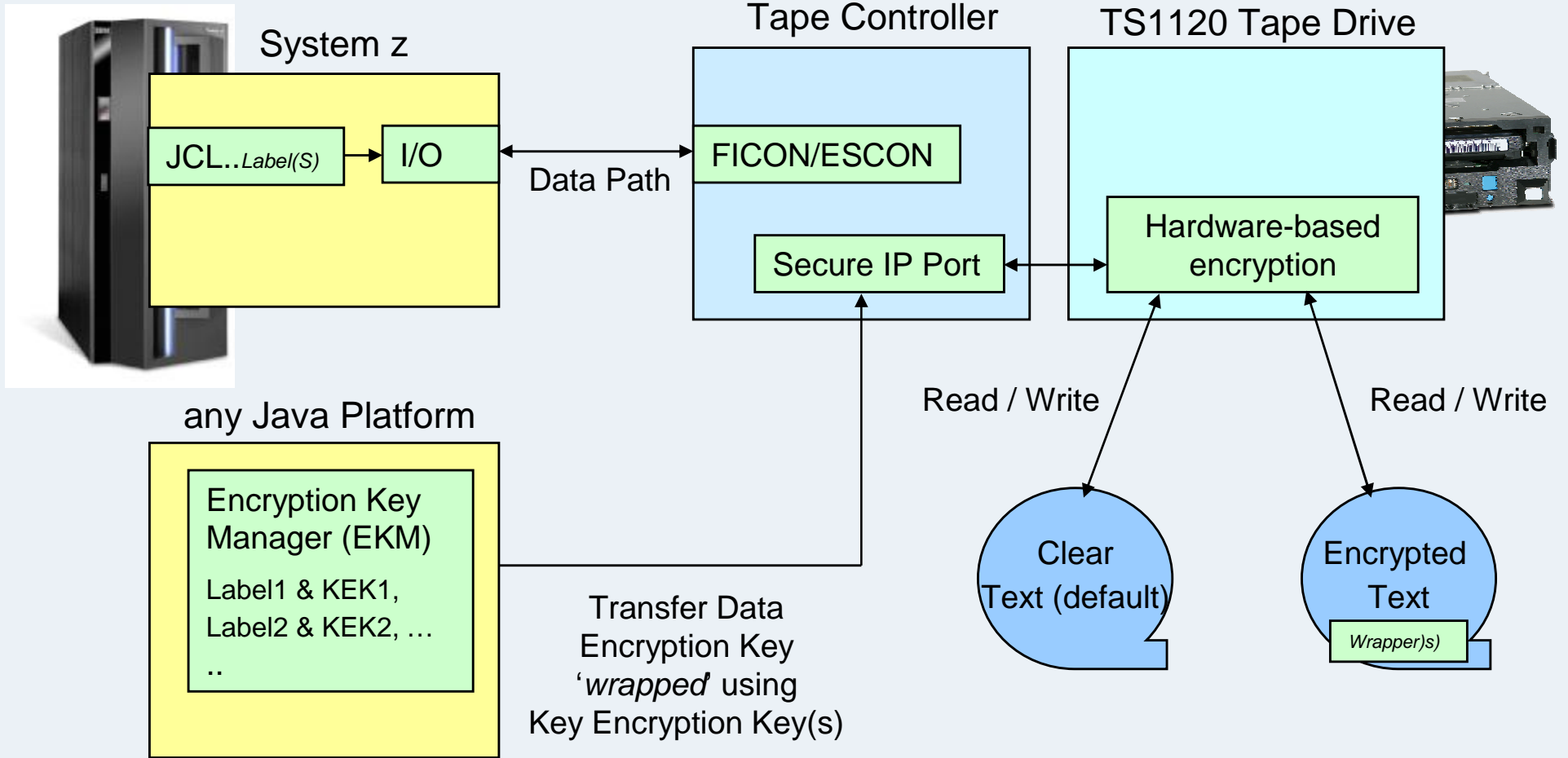


TS1120
500 GB
100 MB/sec

**Encryption Key
Manager**



IBM Tape Encryption – TS1120



z/VSE Comparison

- z/VSE V3.1* (GA 3/2005)
 - **ESA/390 (31-bit) mode only**
 - up to 2GB real processor storage
 - System z9 EC *and* z9 BC
 - zSeries 990, 890, 900, 800
 - **Multiprise 3000 & S/390 G5/G6**
 - GMLC, GOLC, zELC, TWLC, etc.
 - HiperSockets
 - CPACF
 - Crypto Express2 (configurable)
 - FCP/SCSI disks & NPIV
 - DS8000, DS6000, ESS
 - FICON Express2 & 4
 - OSA Express2
 - 31-bit buffers for ACF/VTAM (via PTF)
 - TS1120 encrypting tape
- z/VSE V4.1 (GA 3/2007)
 - z/Architecture (64-bit) mode only
 - **up to 8 GB real processor storage**
 - System z9 EC *and* z9 BC
 - zSeries 990, 890, 900, 800
 - MWLC Pricing Metric (z9 only)
 - **Full-capacity and sub-capacity mode**
 - HiperSockets
 - CPACF + **enhancements**
 - Crypto Express2 (configurable)
 - FPC/SCSI disk & NPIV + **point-to-point**
 - DS8000. DS6000, ESS
 - FICON Express2 & 4
 - OSA Express2
 - 31-bit buffers for ACF/VTAM
 - TS1120 encrypting tape

Note 1: z/VSE V3 can operate in 31-bit mode only. It does not implement z/Architecture and specifically does not implement 64-bit mode capabilities. z/VSE V3 is designed to support selected features of IBM System z hardware

z/VSE Support for Mainframe Servers

IBM Servers	z/VSE V4.1	z/VSE V3.1 (Note 1)
IBM System z9 Enterprise Class (z9 EC, formerly z9-109)	Yes	Yes
IBM System z9 Business Class (z9 BC)	Yes	Yes
IBM eServer zSeries 990, 890, 900, 800	Yes	Yes
S/390® Parallel Enterprise Server™ G5/G6	No	Yes
S/390® Multiprise® 3000	No	Yes
S/390® Parallel Enterprise Server™ G1/2/3/4	No	No
S/390® Multiprise® 2000	No	No

Note 1: z/VSE V3 can operate in 31-bit mode only. It does not implement z/Architecture and specifically does not implement 64-bit mode capabilities. z/VSE V3 is designed to support selected features of IBM System z hardware.

IBM System z9 Exploitation

Functions	z/VSE V4.1	z/VSE V3.1 (Note 1)
z/Architecture mode	Yes	No
64-bit <i>real</i> addressing (up to 8 GB proc storage)	Yes	No
Fibre Channel Protocol (FCP) for SCSI Disks	Yes+	Yes
CP Assist for Cryptographic Function (CPACF)	Yes+	Yes
Crypto Express2 (SSL clear key encryption assist)	Yes+	Yes
HiperSockets™ (including spanned HiperSockets)	Yes	Yes
FICON Express2™ & FICON Express4™	Yes	Yes
OSA Express2 (incl 10Gb and Gb ethernet)	Yes	Yes
OSA Integrated Console Controller (OSA-ICC)	Yes	Yes
Up to 60 LPARs and 4 LCSSs	Yes	Yes

z/VSE Status

VSE Version and Release	Marketed	Supported	End of Support
z/VSE V4.1	Yes	Yes	tbd
z/VSE V3.1	Yes... until 5/31/2008	Yes	tbd
VSE/ESA V2.7	No	No	02/28/2007



A New Price Metric for z/VSE V4

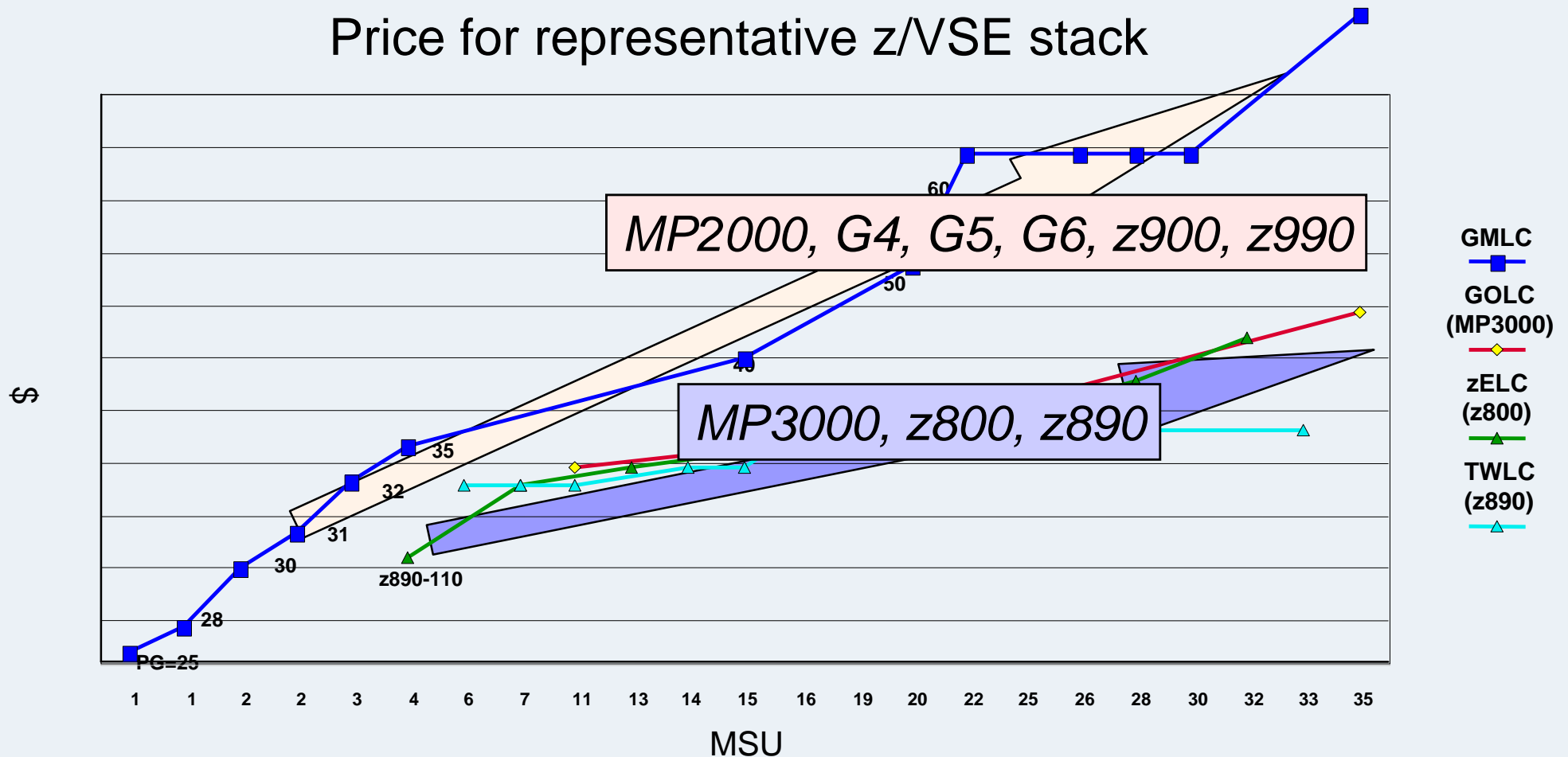
Traditional VSE Software Price Metrics

IBM Servers	z/VSE V3 (Note 1)	VSE/ESA V2
IBM System z9 Enterprise Class – z9 EC (formerly z9-109)	GMLC, ELC, flat WLC	GMLC, ELC, flat WLC
IBM System z9 Business Class – z9 BC	TWLC (A01 is zELC)	TWLC (A01 is zELC)
IBM eServer zSeries 990 and 900	GMLC, ELC, flat WLC	GMLC, ELC, flat WLC
IBM eServer zSeries 890	TWLC (110 is zELC)	TWLC (110 is zELC)
IBM eServer zSeries 800	zELC	zELC
S/390® Parallel Enterprise Server™ G5/G6	GMLC, ELC, flat WLC	GMLC, ELC, flat WLC
S/390® Multiprise® 3000	GOLC	GOLC

Note 1: z/VSE V3 can operate in 31-bit mode only. It does not implement z/Architecture and specifically does not implement 64-bit mode capabilities. z/VSE V3 is designed to support selected features of IBM System z hardware.

Traditional VSE Price/Performance

Price for representative z/VSE stack



z/VSE stack used consists of z/VSE CF, CICS TS, VTAM, TCP/IP, DB2

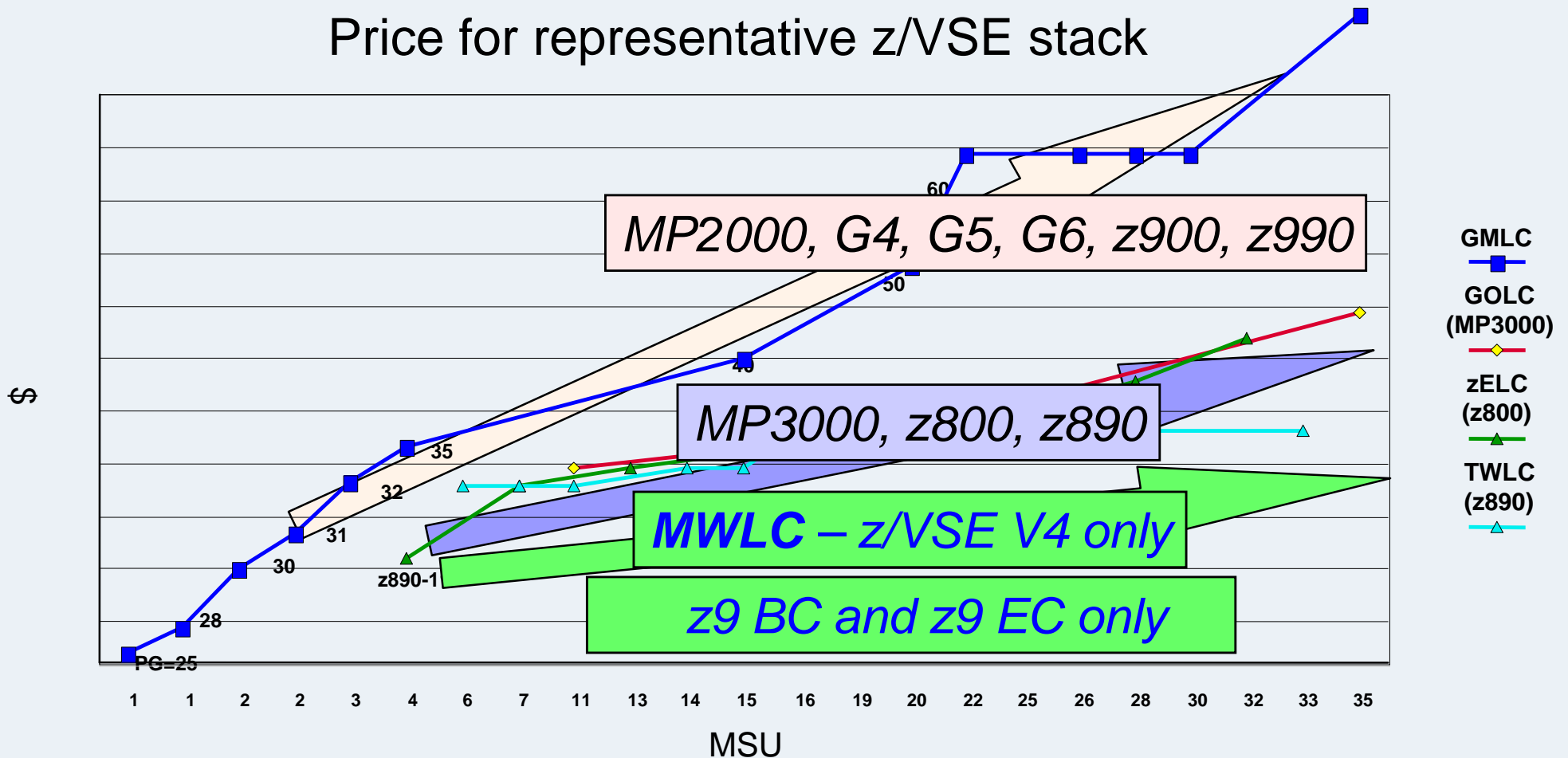
Summary of VSE Software Price Metrics

IBM Servers	z/VSE V4	z/VSE V3 (Note 1)	VSE/ESA V2
IBM System z9 Enterprise Class – z9 EC (formerly z9-109)	MWLC (may be flat WLC)	GMLC, ELC, flat WLC	GMLC, ELC, flat WLC
IBM System z9 Business Class – z9 BC	MWLC (A01 is zELC)	TWLC (A01 is zELC)	TWLC (A01 is zELC)
IBM eServer zSeries 990 and 900	GMLC, ELC, flat WLC	GMLC, ELC, flat WLC	GMLC, ELC, flat WLC
IBM eServer zSeries 890	TWLC (110 is zELC)	TWLC (110 is zELC)	TWLC (110 is zELC)
IBM eServer zSeries 800	zELC	zELC	zELC
S/390 [®] Parallel Enterprise Server [™] G5/G6	not applicable	GMLC, ELC, flat WLC	GMLC, ELC, flat WLC
S/390 [®] Multiprise [®] 3000	not applicable	GOLC	GOLC

Note 1: z/VSE V3 can operate in 31-bit mode only. It does not implement z/Architecture and specifically does not implement 64-bit mode capabilities. z/VSE V3 is designed to support selected features of IBM System z hardware.

Price/Performance with MWLC

Price for representative z/VSE stack



z/VSE stack used consists of z/VSE CF, CICS TS, VTAM, TCP/IP, DB2

Midrange Workload License Charge (MWLC)

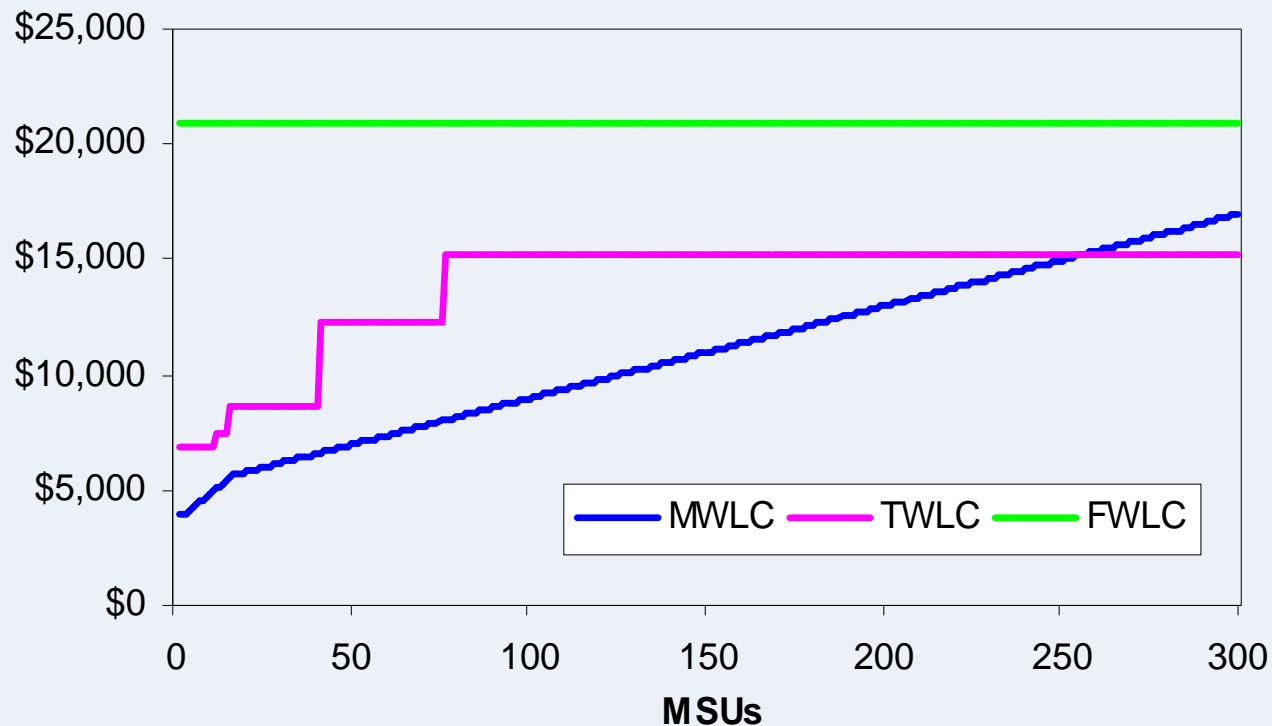
- Requires current hardware (IBM System z9 EC or z9 BC) & software (z/VSE V4)
 - exception: z9 BC Capacity Setting A01 remains zELC
- VSE Central Functions + 12 IBM middleware products are eligible

– 5686 CF8	VSE Central Functions		
– 5696 234	HLASM	– 5686 068	IBM COBOL for VSE/ESA
– 5648 054	CICS TS for VSE/ESA V1	– 5686 A01	IBM C for VSE/ESA
– 5686 065	ACF/VTAM® VSE/ESA V4	– 5686 069	IBM PL/1 for VSE/ESA
– 5686 A04	TCP/IP for VSE/ESA V1.5	– 5746 SM3	IBM DFSORT/VSE V3
– 5648 099	DITTO/ESA® for VSE	– 5746 XX1	DL/I VSE
– 5697 F42	DB2 Server for VSE & VM	– 5686 A06	MQSeries® for VSE/ESA

- Full-capacity and sub-capacity MWLC options
 - full-capacity mode offers improved price/performance compared to GOLC, zELC, and TWLC alternatives
 - additional price/performance possible through sub-capacity option
- Structured to help address new growth opportunities



MWLC Sample Stack vs. TWLC and FWLC



- Customers may choose between MWLC/TWLC or MWLC/FWLC as appropriate to their machine
- Additional price/performance may be possible with sub-capacity mode

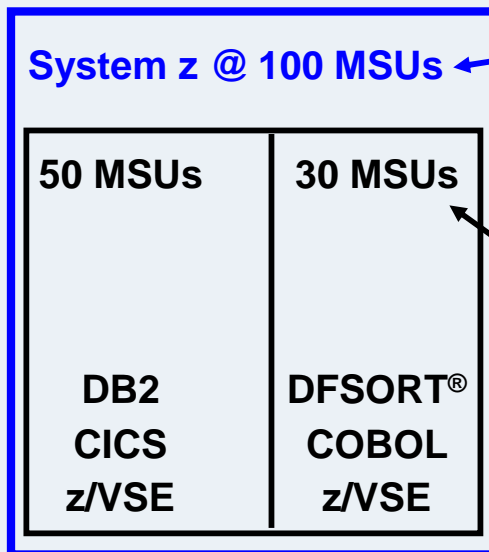
*Sample software stack includes: VSE CF V8, HLASM, VTAM, DITTO, COBOL

*Prices subject to change without notice; all prices shown in USD

What is sub-capacity?



Full-Capacity Pricing Metric relies on the total rated capacity (measured in MSUs) of the MACHINE where a product executes.



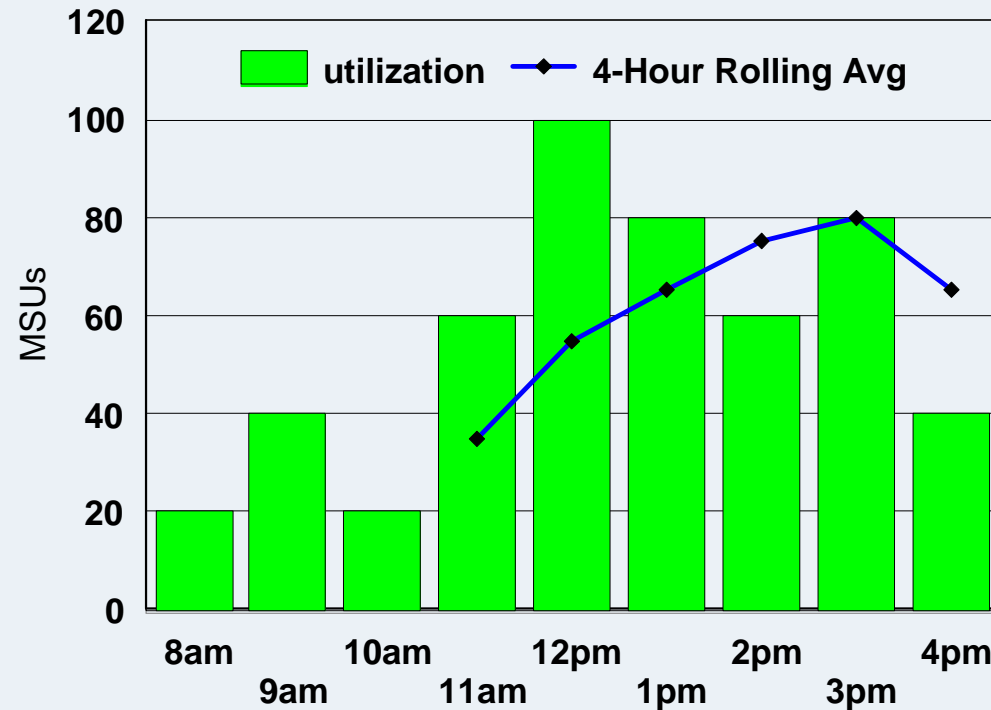
Sub-Capacity Pricing Metric relies on the utilization (based on peak 4-hour rolling average each month) of the LPAR(s) or guest virtual machines where an eligible product executes.

Sub-Capacity Concept: Rolling 4-Hour Average

Capture the 4-hour rolling average of utilization for each interval in the month

4-Hour Rolling Average

11 am (8,9,10,11): 35 MSUs
12 pm (9,10,11,12): 55 MSUs
1 pm (10,11,12,1): 65 MSUs
2 pm (11,12,1,2): 75 MSUs
3 pm (12, 1, 2, 3): 80 MSUs
4 pm (1, 2, 3, 4): 65 MSUs



Midrange Price/Performance

Customer Software Stack Example – over time

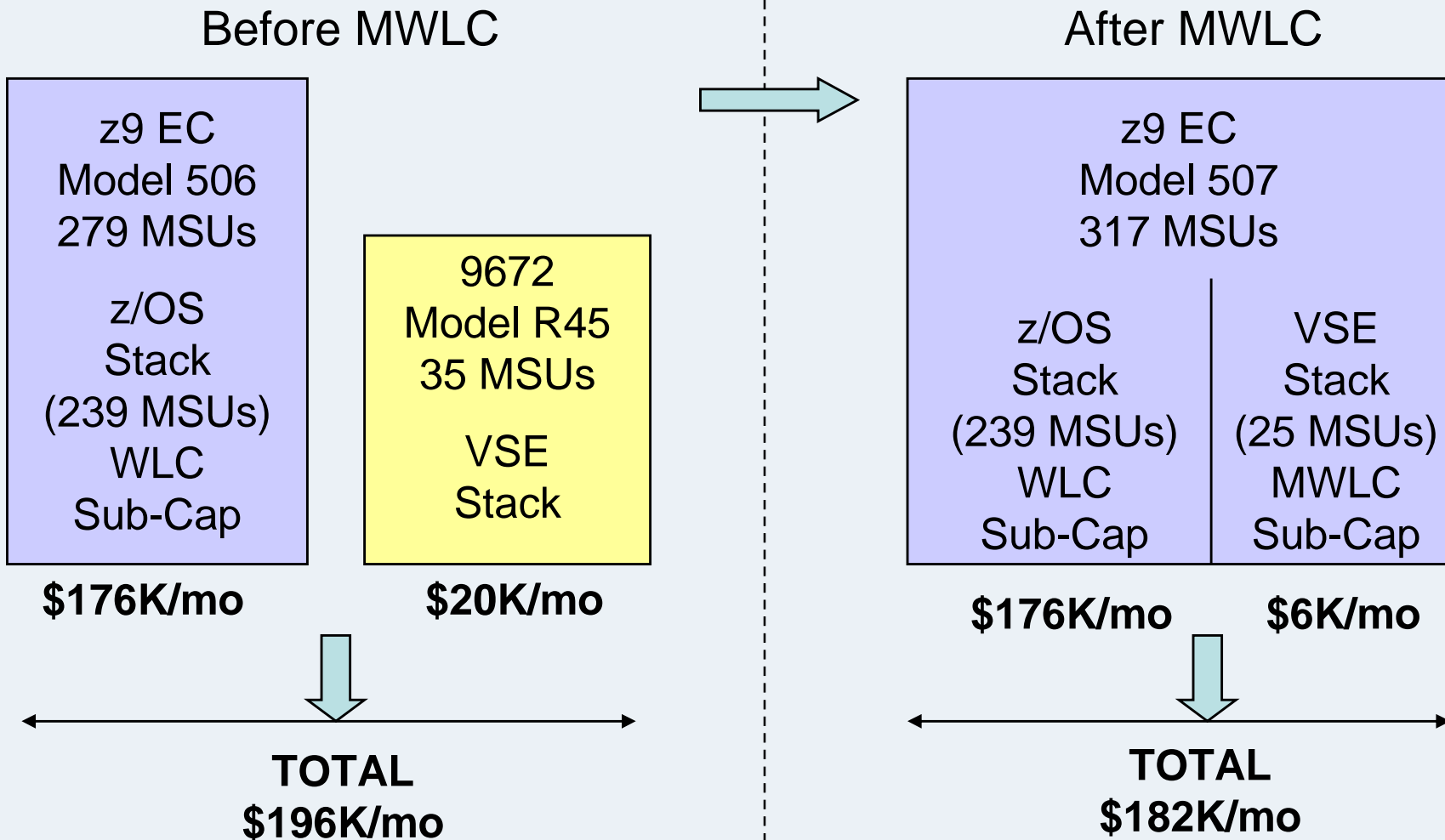
32 MSUs VSE Stack 9672 GMLC	32 MSUs VSE Stack z800 zELC	32 MSUs VSE Stack z890 TWLC	32 MSUs z/VSE V4 Stack z9 BC MWLC full cap	32 MSU z/VSE V4 Stack z9 BC MWLC sub cap (with 30% “White Space”)
\$240K/yr	\$120K/yr	\$96K/yr	\$76K/yr	\$71K/yr



*Sample software stack includes: VSE CF V8, HLASM, VTAM, DITTO, COBOL

*Prices subject to change without notice; all prices shown in USD

Server Consolidation Example



*Sample software stack includes: VSE CF V8, HLASM, VTAM, DITTO, COBOL

*Prices subject to change without notice; all prices shown in USD

New Opportunities with MWLC



- **More MSUs for less IBM software \$**
 - **More capacity** for future growth, workload spikes, seasonal factors, emergencies, etc.
 - disconnect hardware growth from software charges
 - grow into installed capacity gradually with a 1 MSU level of granularity
 - **Use a portion of the savings to add IFL(s) and IBM Linux-based middleware to the mix for new or enhanced workloads**
- **Pick the server that best meets your needs**
 - High end and midrange **IBM System z9 servers** no longer priced differently
- **Server consolidation in large accounts**
 - **Consolidate** remote, vulnerable VSE systems onto LPARs on System z9 EC servers primarily running z/OS at HQ
- **Same MSUs for lower IBM software \$**

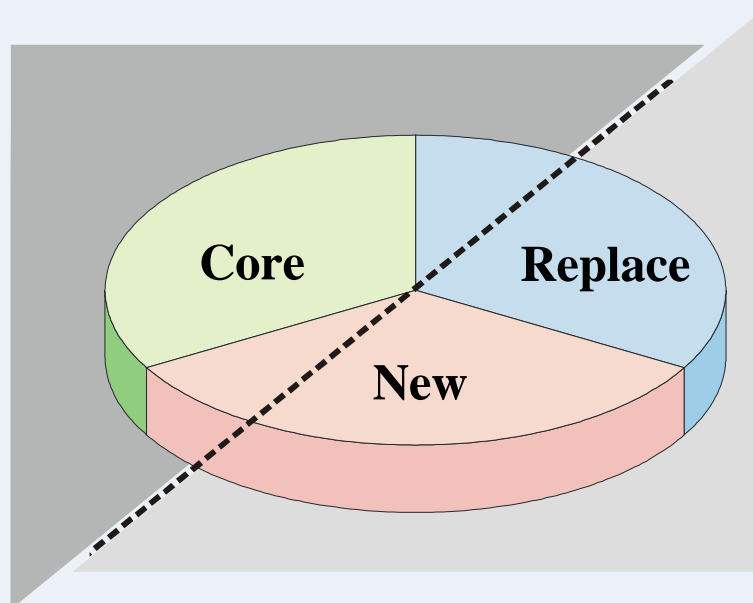


IT Modernization/Solutions

Application Portfolio

Traditional Mainframe

CICS
 COBOL
 VSAM files
 3270 text-based Interface



Platform specific

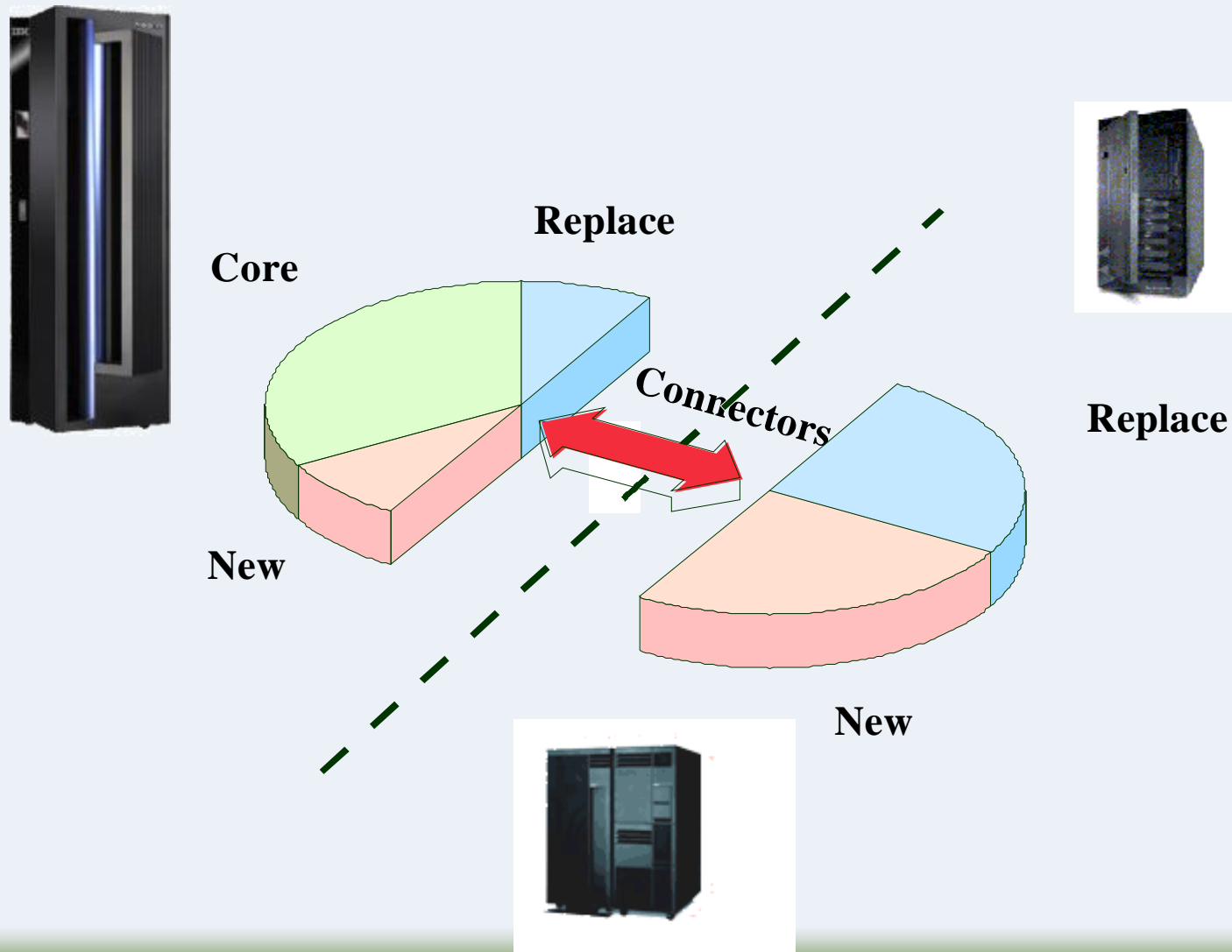
'Client/Server'
 C or C++
 Relational database
 Graphical 'GUI' Interface

Modern platforms

WebSphere Application Server
 Java
 Relational database
 Web browser-based interface

Note: The pie was arbitrarily divided into equal piece parts, just for visualization purposes. Actual percentages in each category differ a lot between different customers.

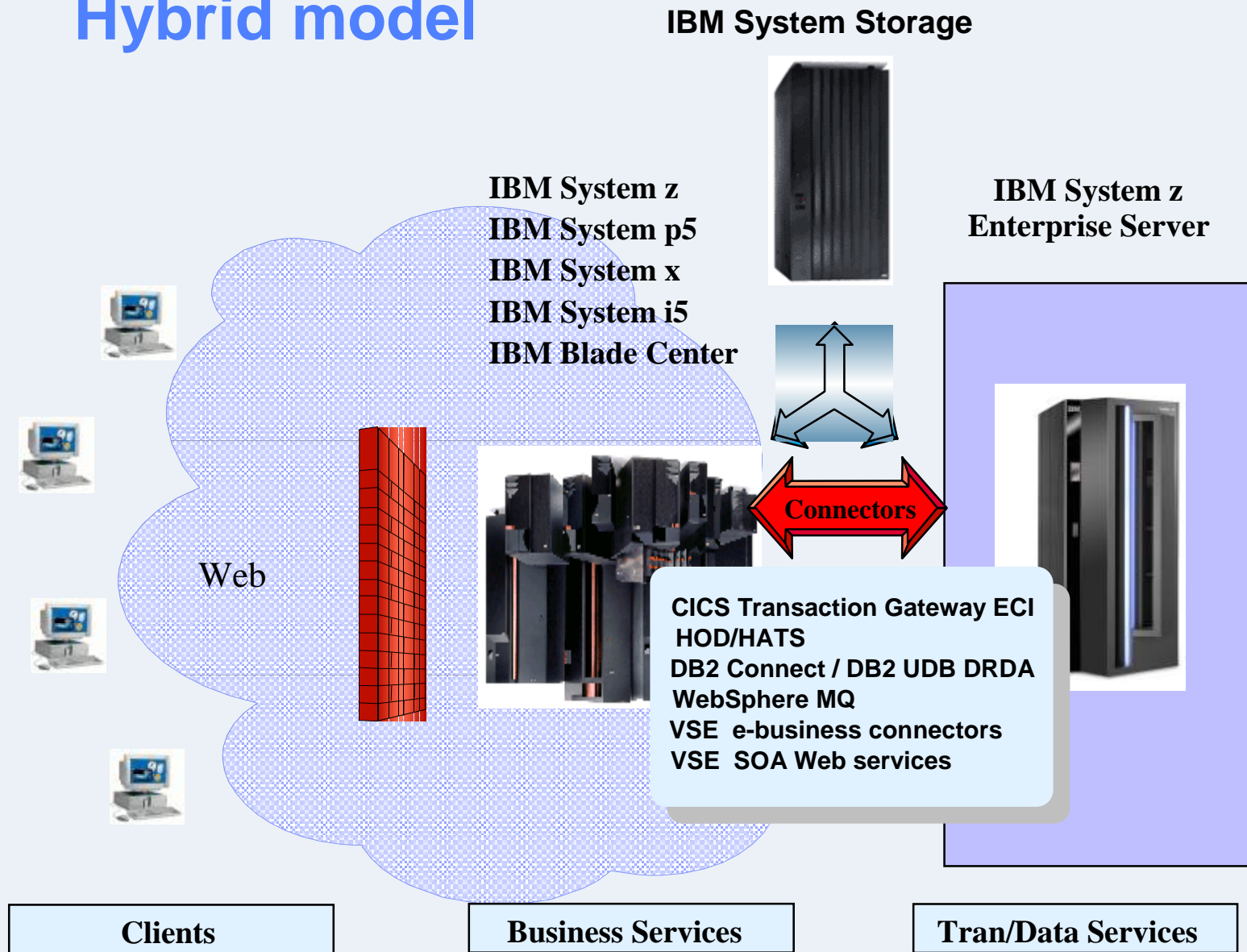
Integrate z/VSE into total IT environment



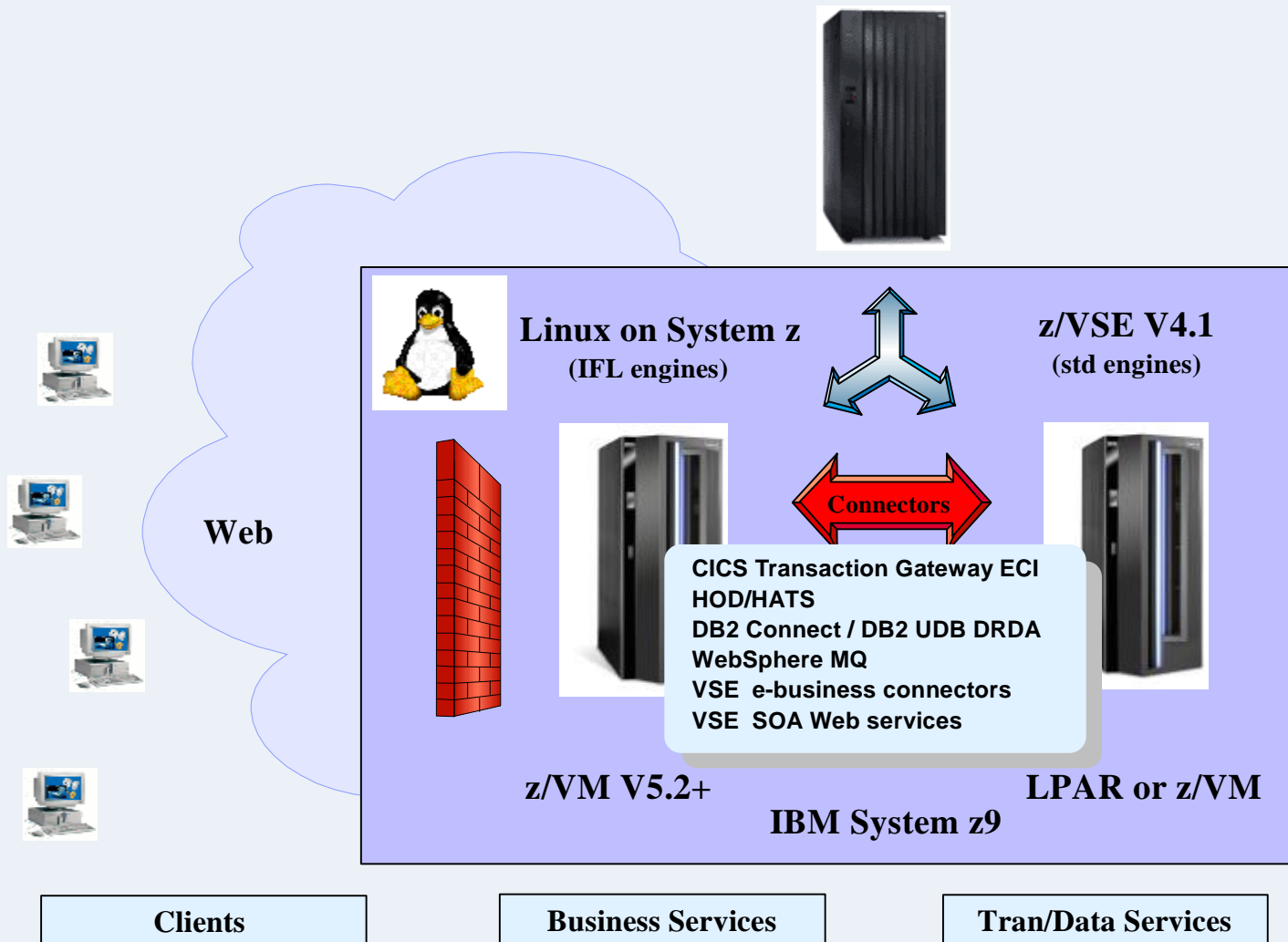
z/VSE SOA and Interoperability

Connector Functions	z/VSE V4.1	z/VSE V3.1 (Note 1)
VSE Connectors (no additional charge)		
SOA Web Services, i.e. SOAP and XML	Yes	Yes
VSAM, POWER, Librarian, ICCF lib, console	Yes	Yes
VSAM Redirector	Yes	Yes
VSE Script and DL/1	Yes	Yes
DB2 Stored Procedures for VSAM and DL/1	Yes	Yes
IBM Middleware (priced)		
CICS Transaction Gateway ECI	Yes	Yes
Host on Demand / Host Application Transformation	Yes	Yes
DB2 Connect/DB2 UDB (DB2 Server for VSE PRPQ)	Yes	Yes
WebSphere MQ (VSE Client no charge)	Yes	Yes

Hybrid model

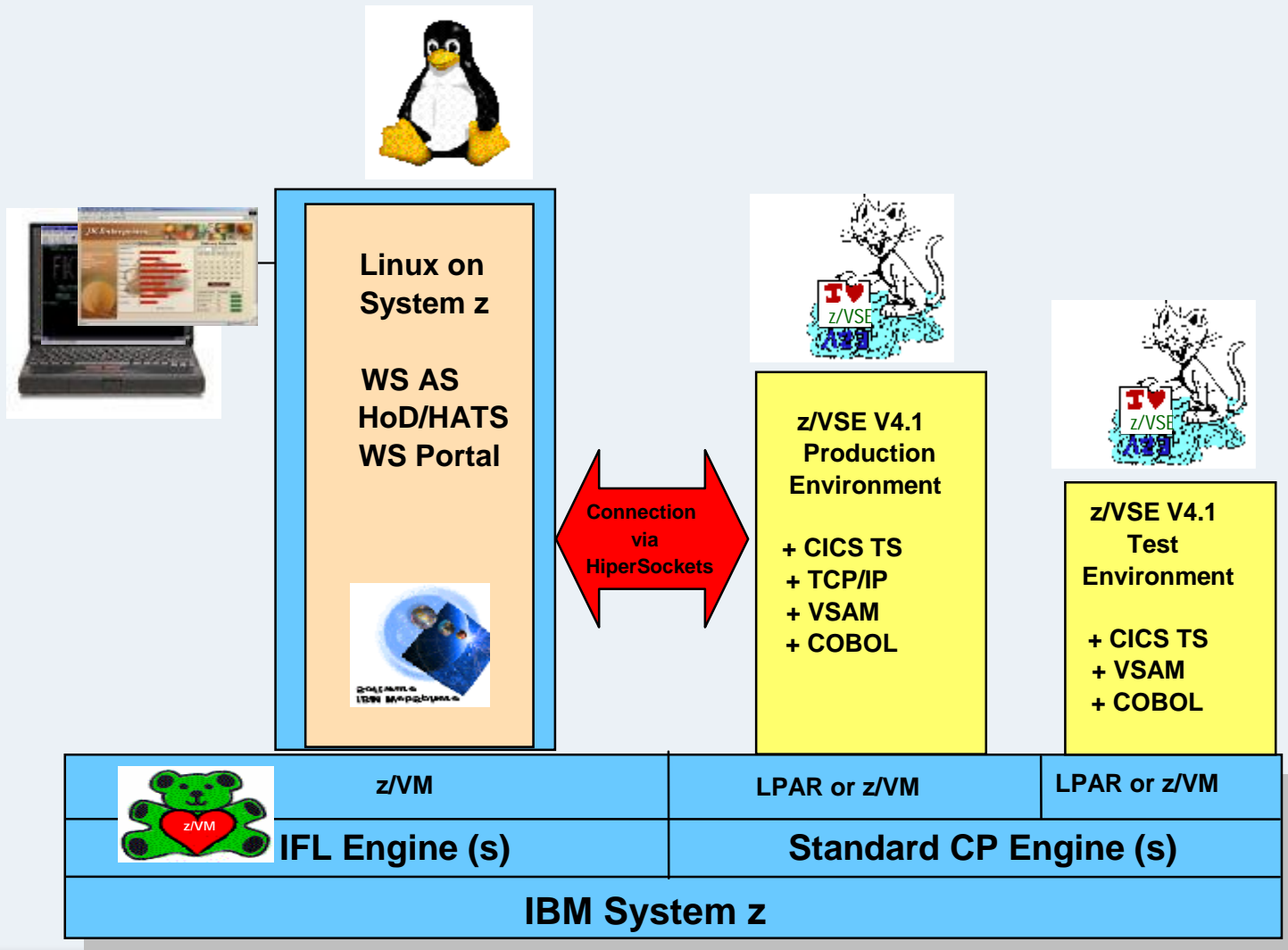


Think *inside* the box



Scenario 1: Enhance Core VSE Applications

Web enable, improve interface, simplify, extend existing application function



Host Access Transformation Server (HATS)

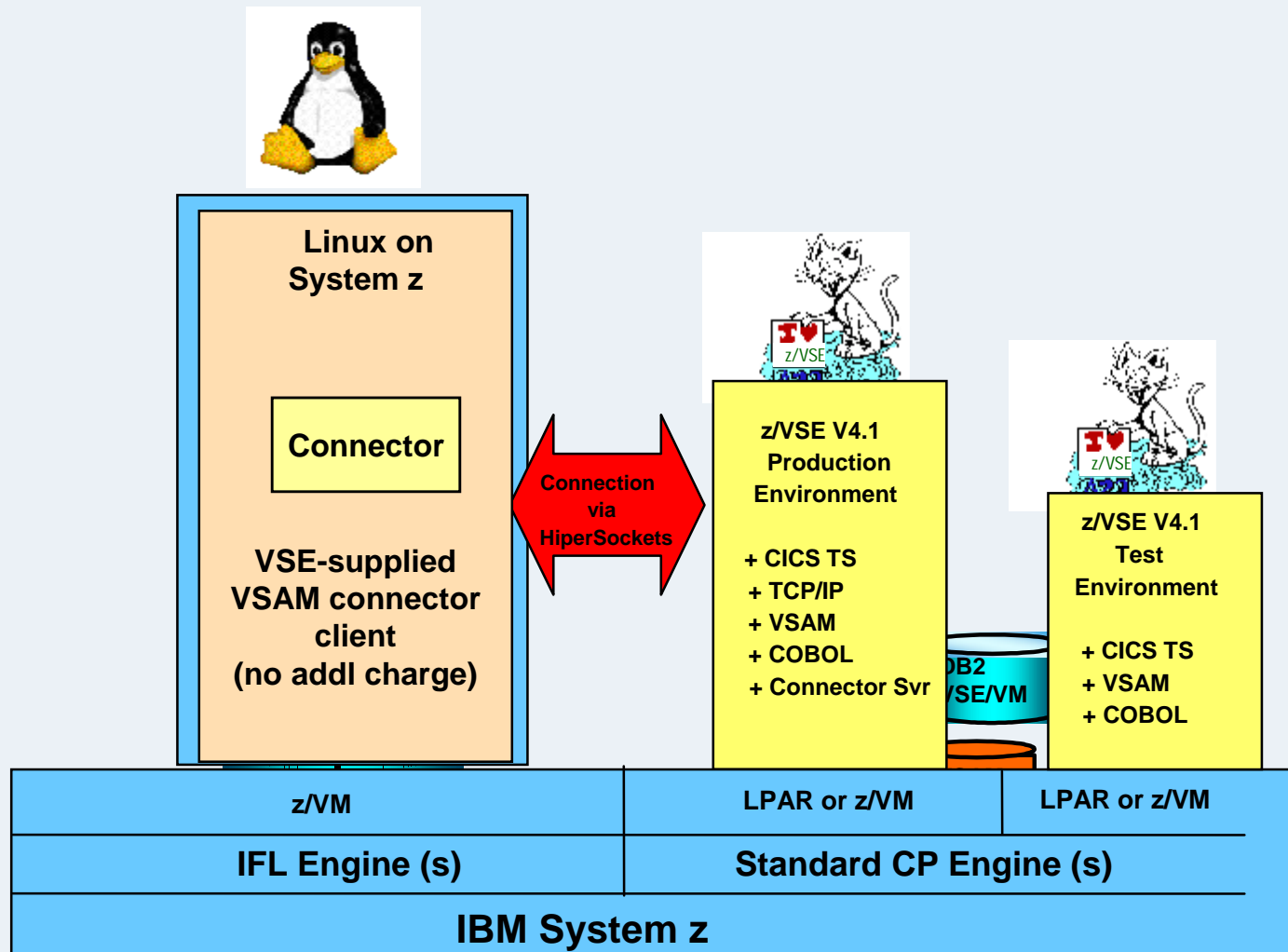
- A Web-to-host HTML emulator, with ...
- rules-based transformation engine, application integration hat...
- converts green screens to graphical user interfaces
- improves ease-of-use of host applications.



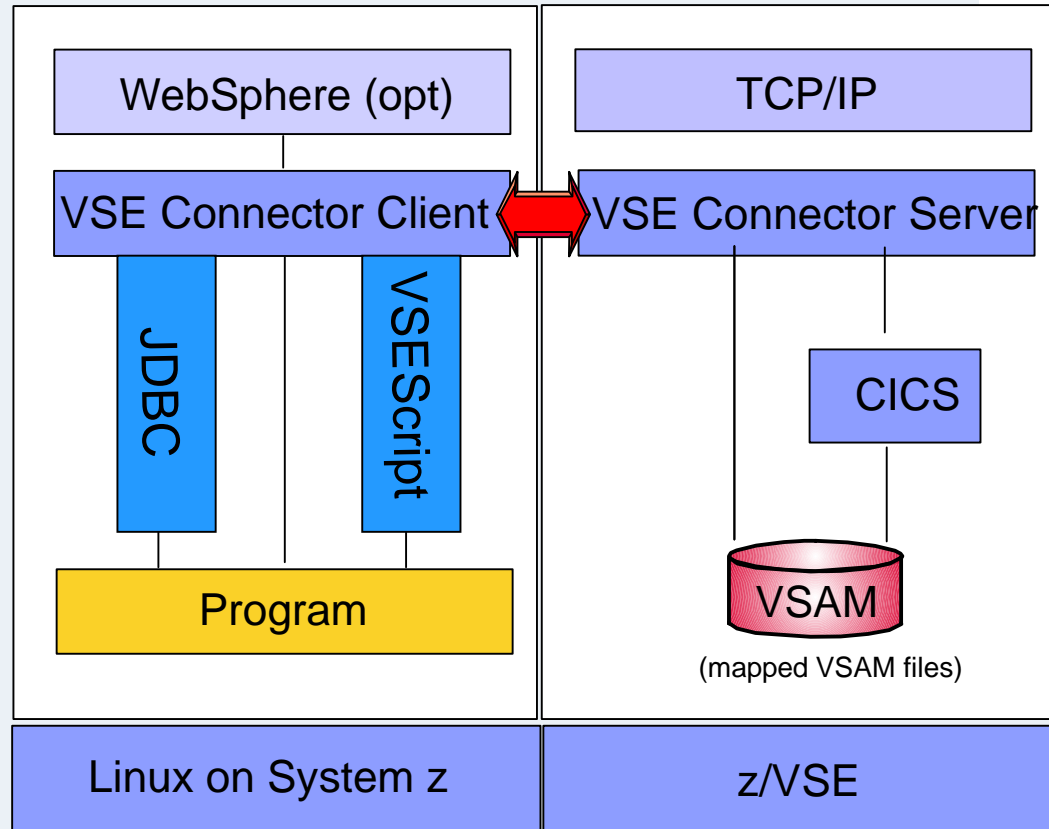
Benefit: web enable, improve interface, simplify, extend existing application function

Scenario 2: Integrate – Leverage VSE Data

Leverage VSE/VSAM data using VSAM Connectors on Linux on System z

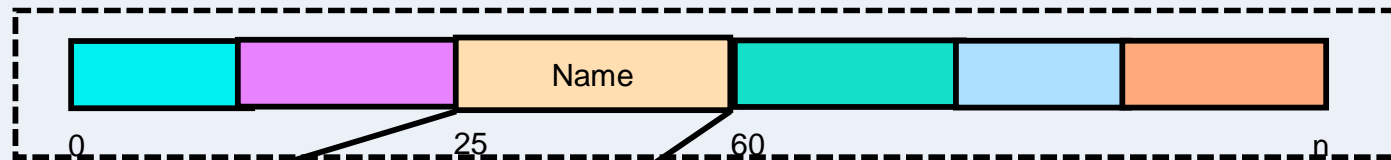


VSAM Connector

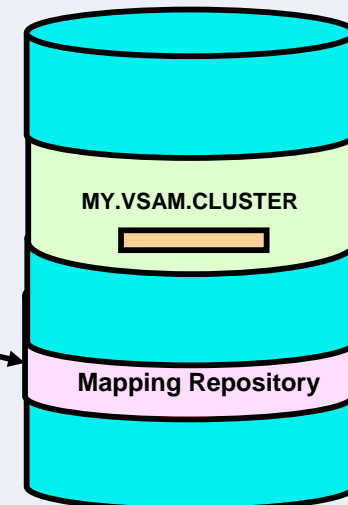


VSAM Record Mapping

VSE/VSAM Record structure from EMPPROG.COBOL



Column:
 è title: Name
 è Offset:25
 è length:35
 è type: STRING
 è Descr: Person name

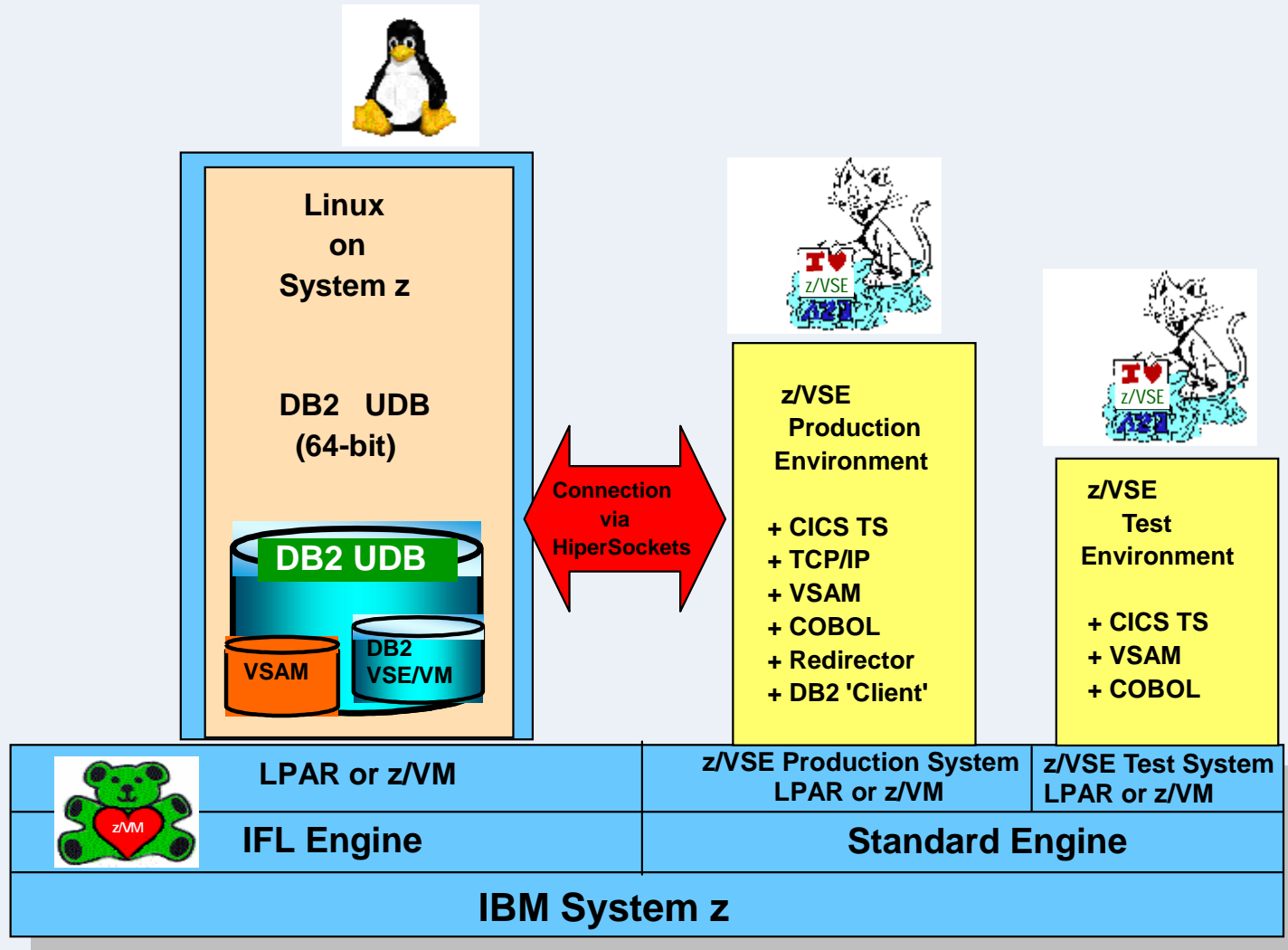


Mapping characteristics:

- f* **No changes to VSAM data**
- f* Mapping information stored in a repository in VSAM (VSE.VSAM.MAPPING.DEFS)
- f* Possible data types: STRING, binary, signed number, unsigned number, packed data
- f* Multiple maps and views (subset of map fields) supported
- f* **Tools available to import copy books and generate MAP (MapTool, Navigator, IDCAMS RECMAP)**

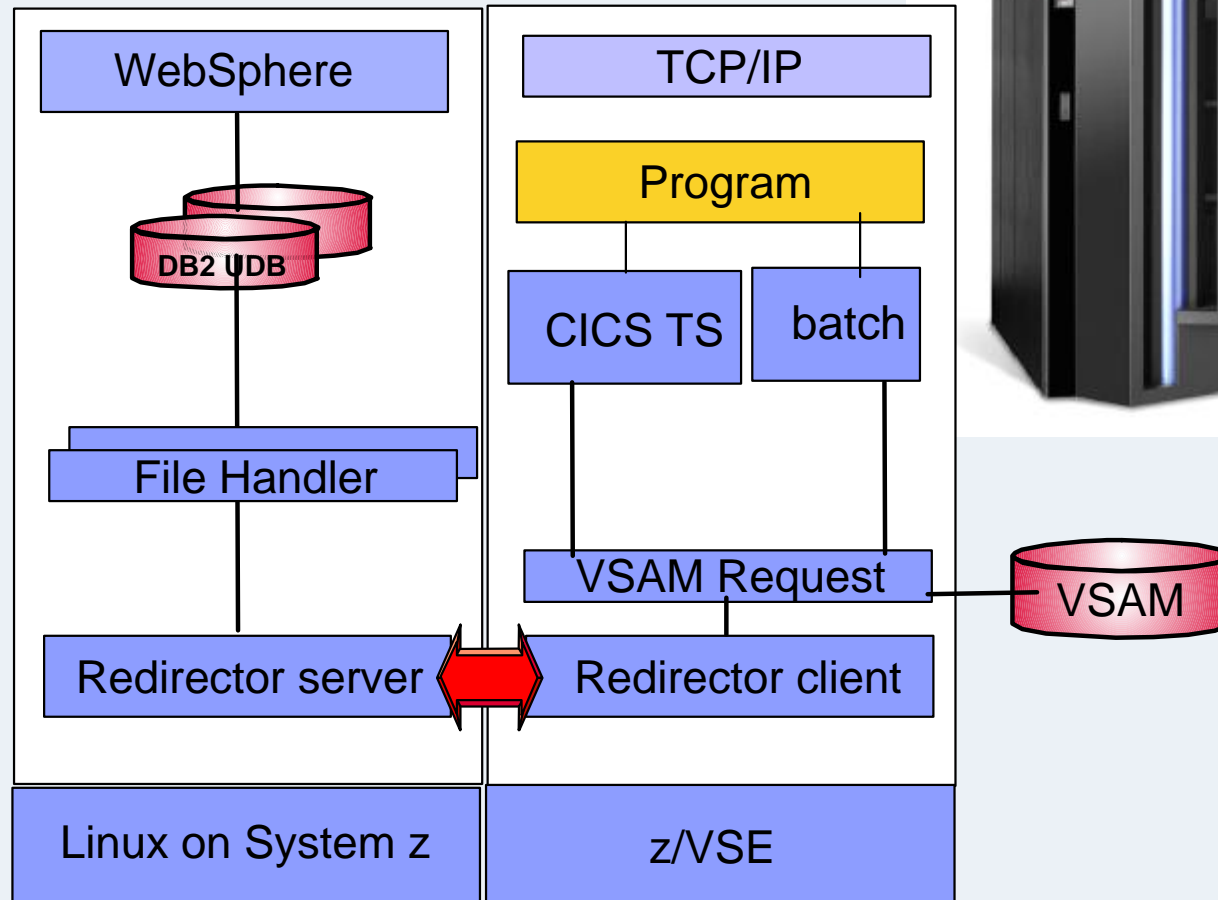
Scenario 3: Integrate – Leverage VSE Data

Leverage DB2 data using shared DB2 UDB on Linux on System z



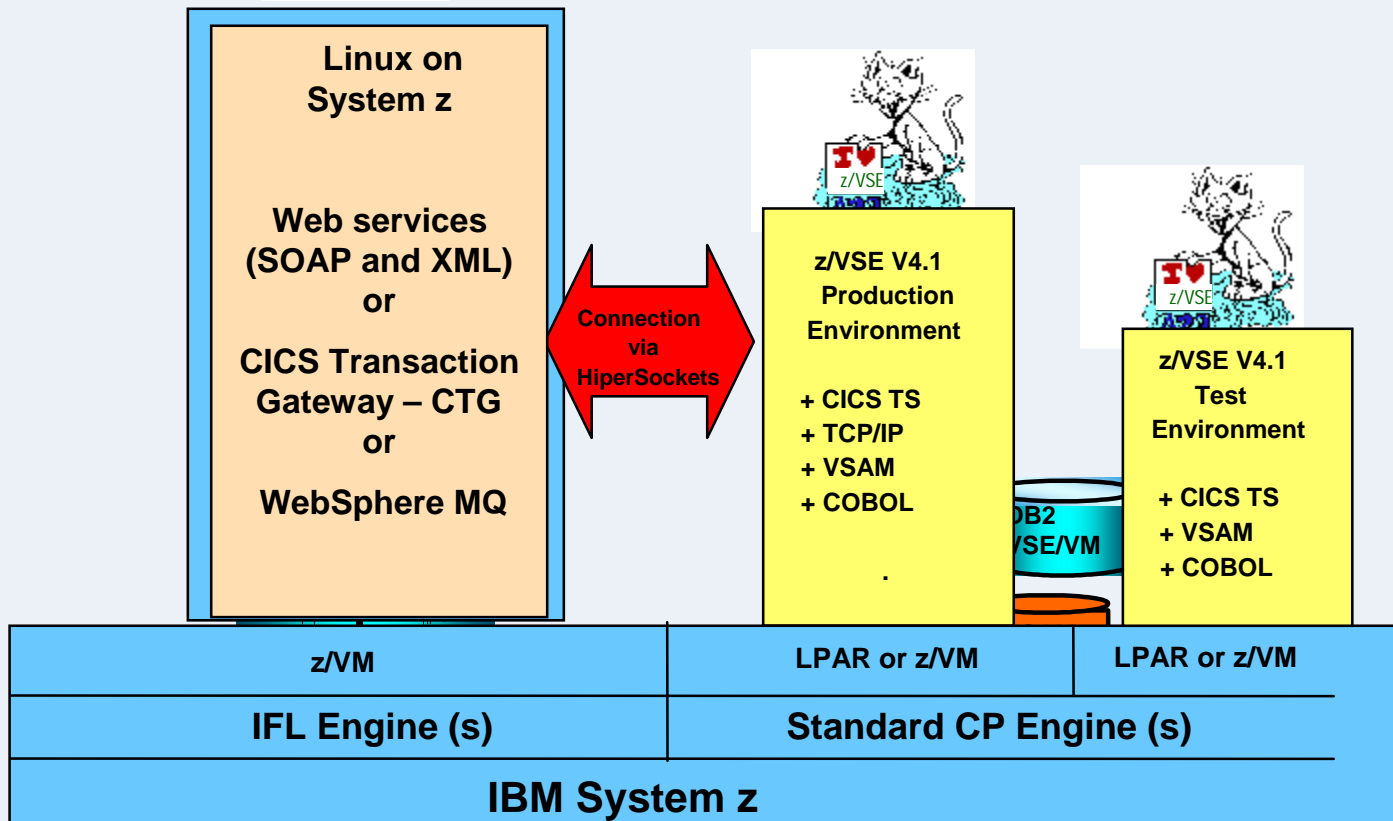
(*) DB2 VSE Client – the client functionality only, can be obtained with [PRPQ P10154](#)

VSE/VSAM Redirector



Scenario 4: Integrate – Leverage VSE Applications

Leverage VSE application logic using SOA, CTG, or MQ on Linux on System z

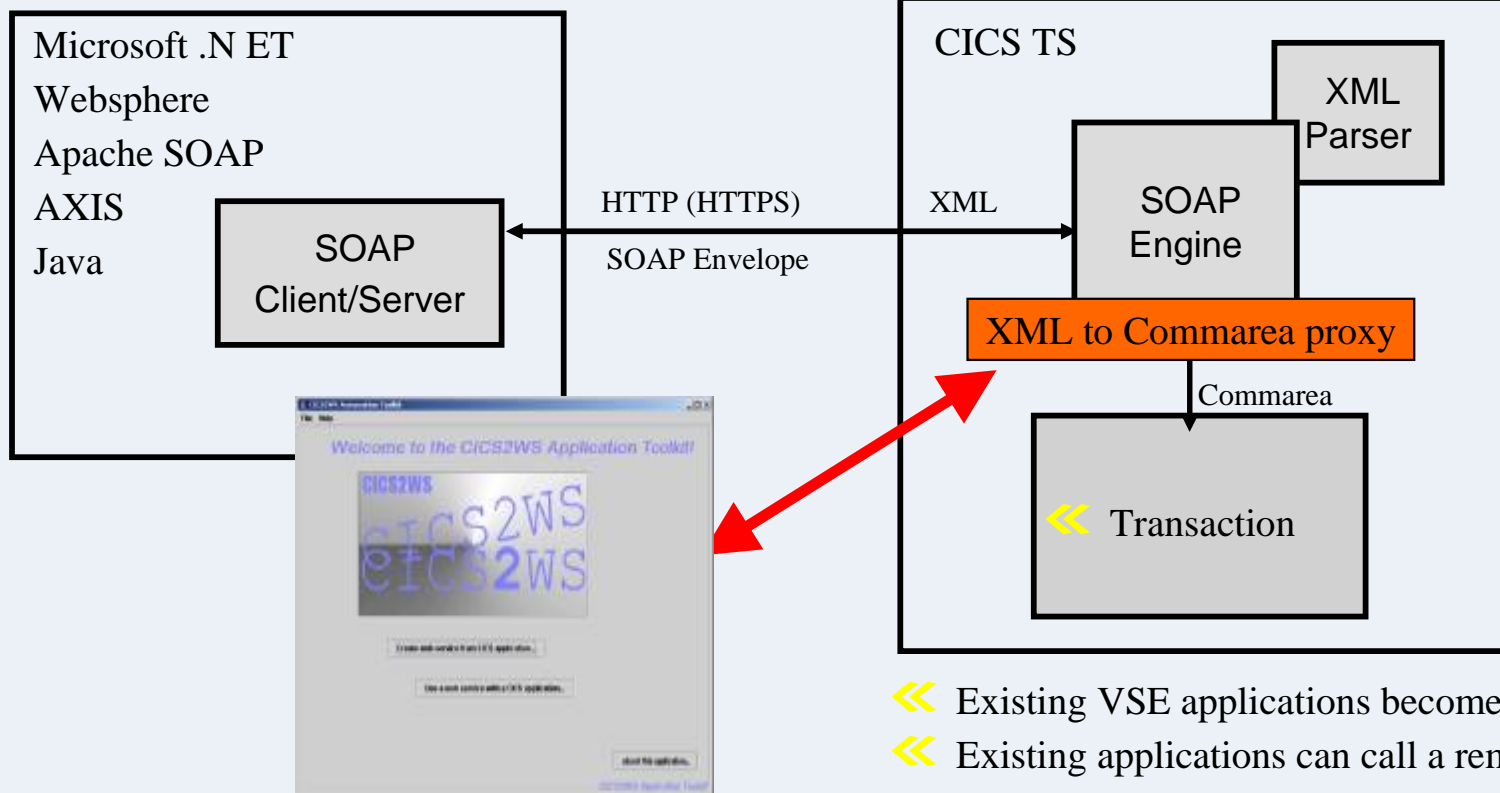


Web Services with z/VSE

XML data interchange with CICS transactions

any standard Platform

z/VSE



No Charge Tool to generate the Proxy code

- ⏪ Existing VSE applications become a Web Service
- ⏪ Existing applications can call a remote Web Service

SOA – Service Oriented Architecture

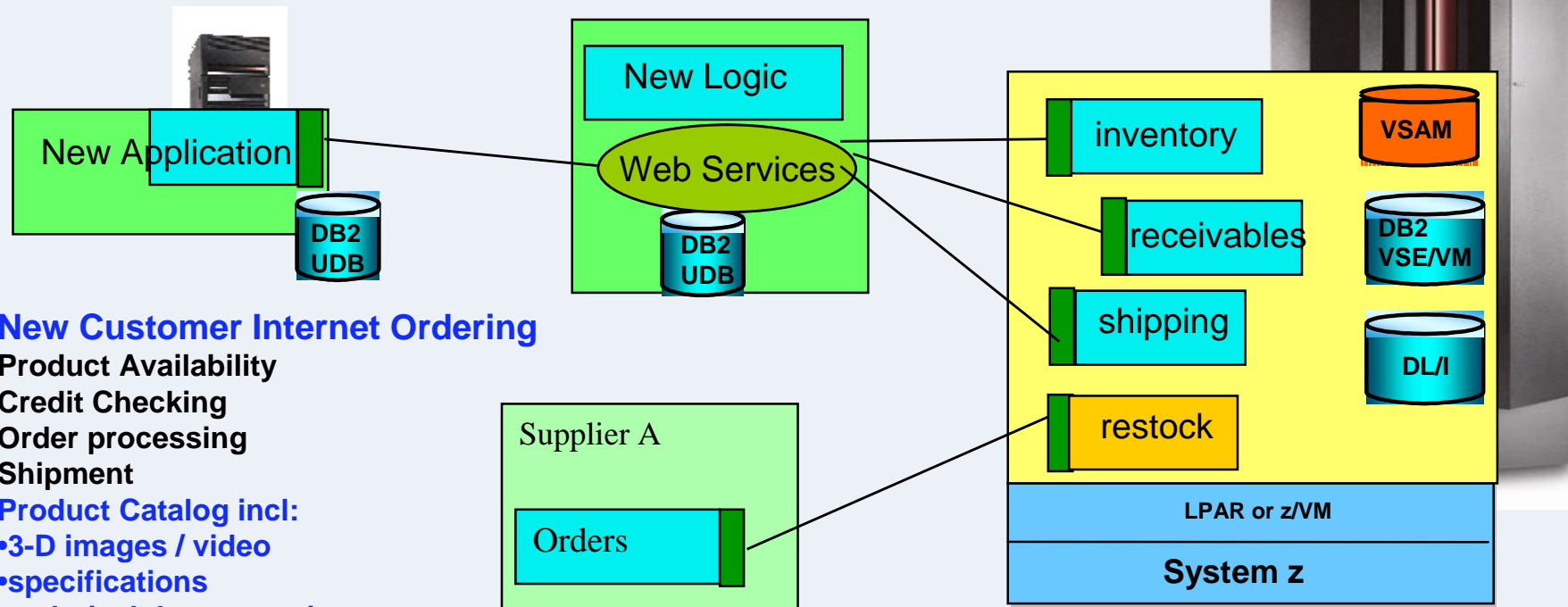
§Platform Neutral

§z/VSE looks the same as any other platform *to any* platform,

§any platform looks the same as any other platform *to z/VSE*

§Core applications can be enhanced (independent of language - COBOL, PL/I, C, HLASM)

§New business logic can be built reusing existing business logic



New Customer Internet Ordering

Product Availability

Credit Checking

Order processing

Shipment

Product Catalog incl:

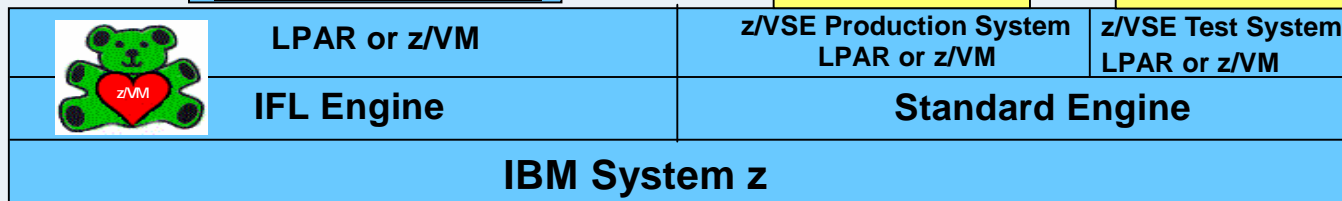
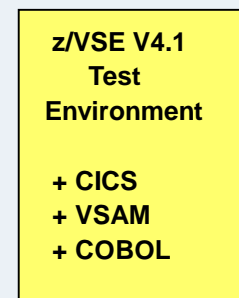
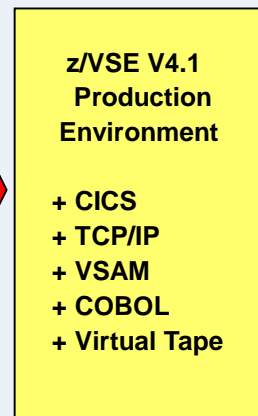
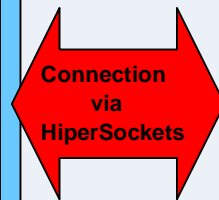
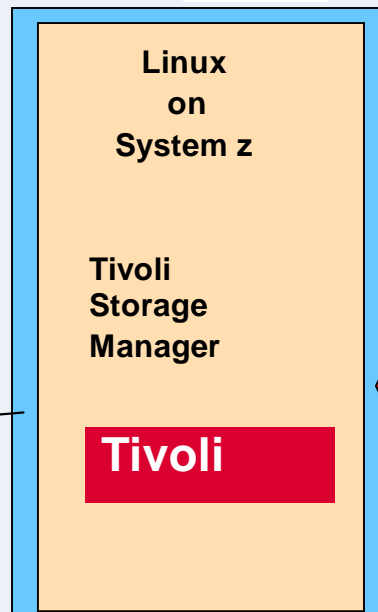
- 3-D images / video
- specifications
- technical documentaion
- marketing materials
- reviews/testimonials

Integration of Processes

Reuse existing business logic

Scenario 5: Common Backup/Restore

Integrate z/VSE with TSM on Linux on System z



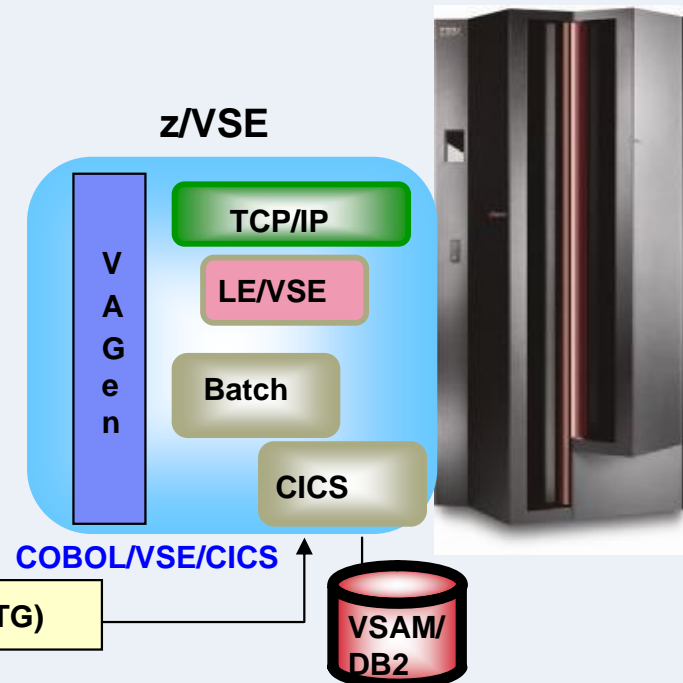
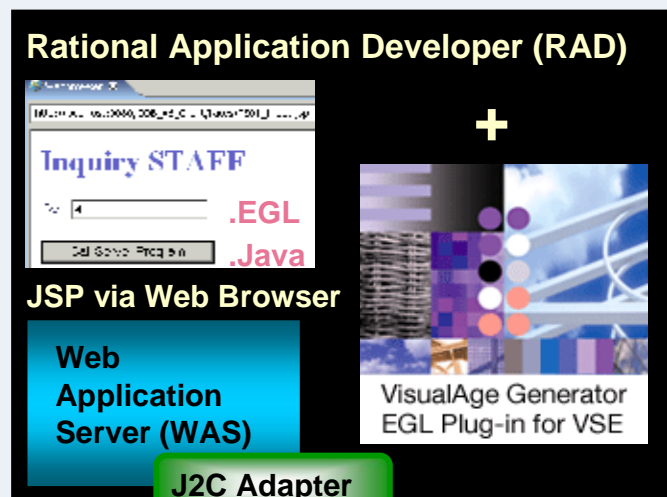
Scenario 6: Application Development for z/VSE

Modern 4th Generation Language Application Development

VisualAge Generator EGL Plug-in for VSE *



PC/Workstation

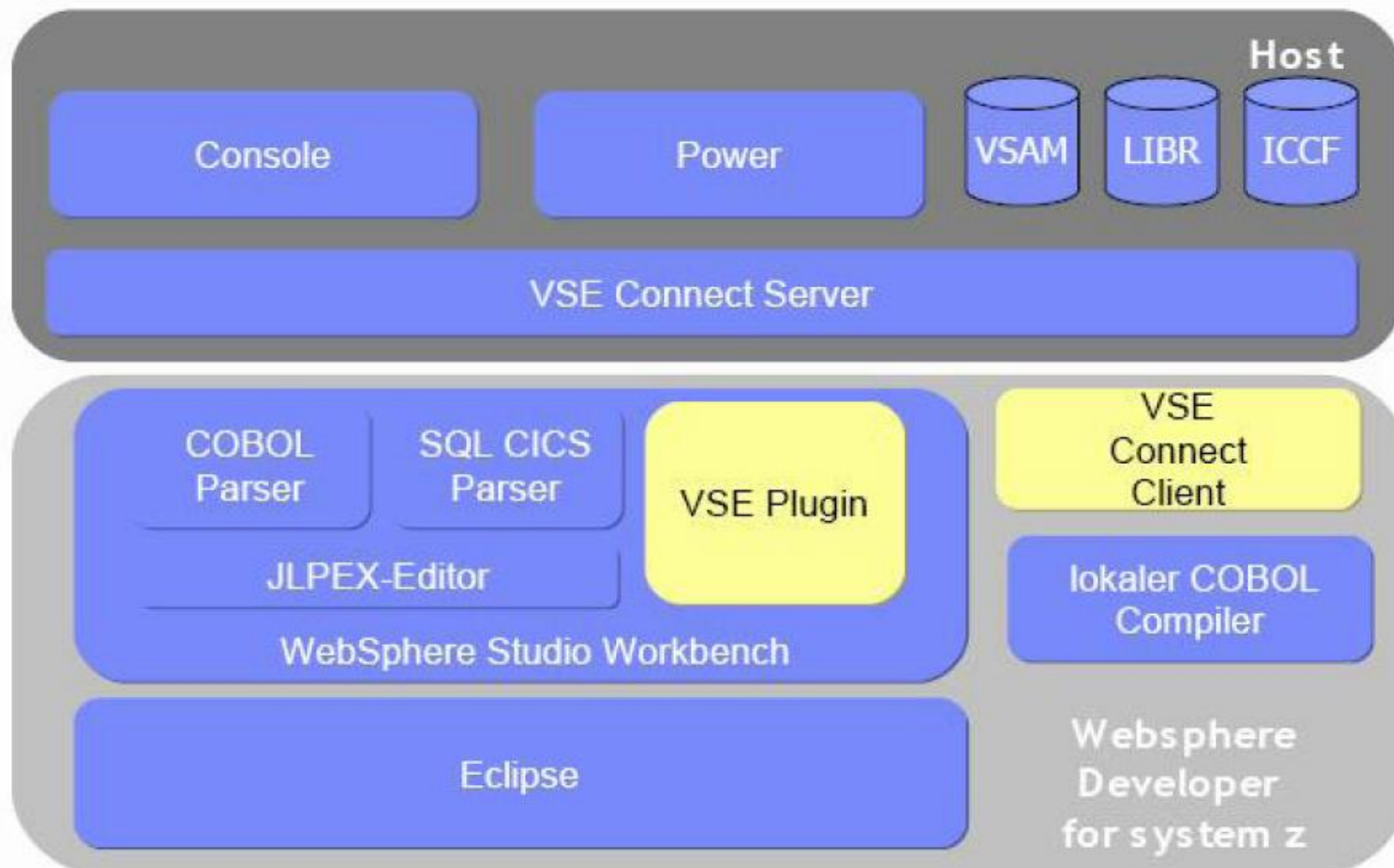


- § WebSphere Application Server – the integration platform
- § Enterprise Generation Language (EGL), Visual Age Generator
- § Java™ 2 Platform, Enterprise Edition (J2EE) connection Architecture (J2C/JCA)
- § Java Server Pages (JSP), as Front-End representation technology

Scenario 6: Application Development (cont.)

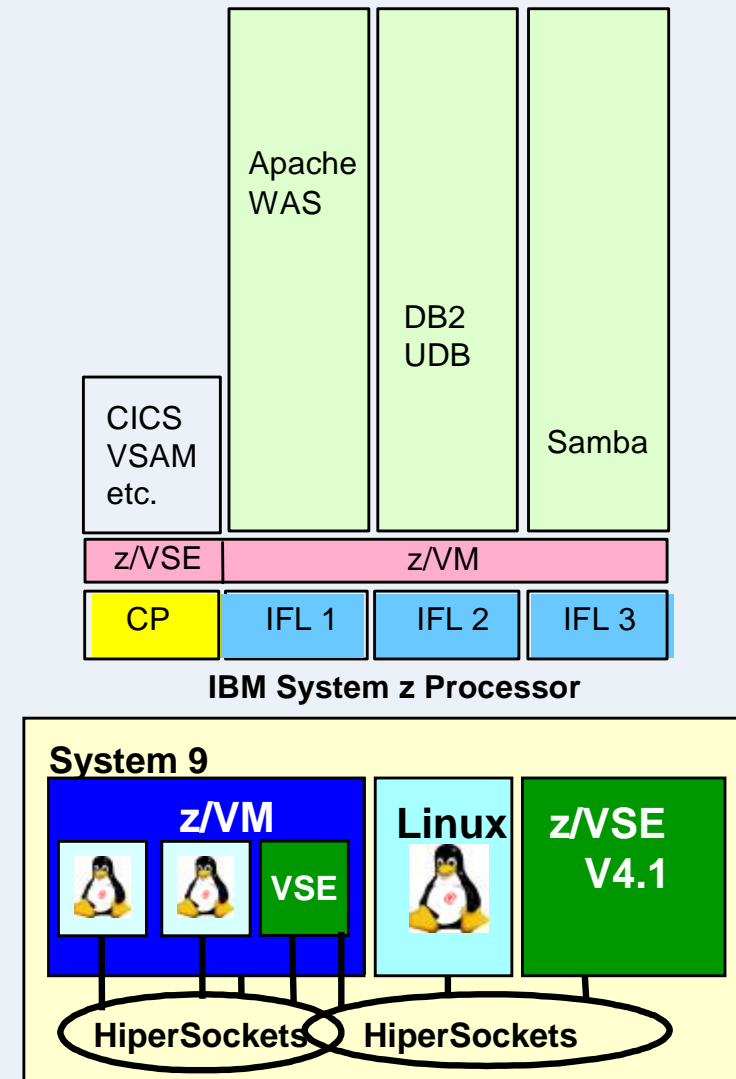
Eclipse based VSE Plug-in from QGroup

z/VSE Plug-in for WDz (Overview)



Linux on System z Advantages for z/VSE Customers

- **New applications based on Linux Middleware**
 - WebSphere Application Server
 - DB2 UDB
 - Lotus® Domino™
 - advanced Application Development tools
- **Linux-based open source or ISV tools and applications**
 - Linux on System z exploits 64-bit capabilities
 - Complement 31-bit core VSE applications
- **Integrate Linux and z/VSE to create new solutions with low cost, low risk, and fast time-to-market**
 - Linux leverage core z/VSE applications and data
 - z/VSE access to new Linux applications and data
- **Infrastructure simplification for low TCO**
 - Consolidate existing distributed servers
 - TCO benefits of Linux and System z
 - Communications Server (IBM 3745 replacement)





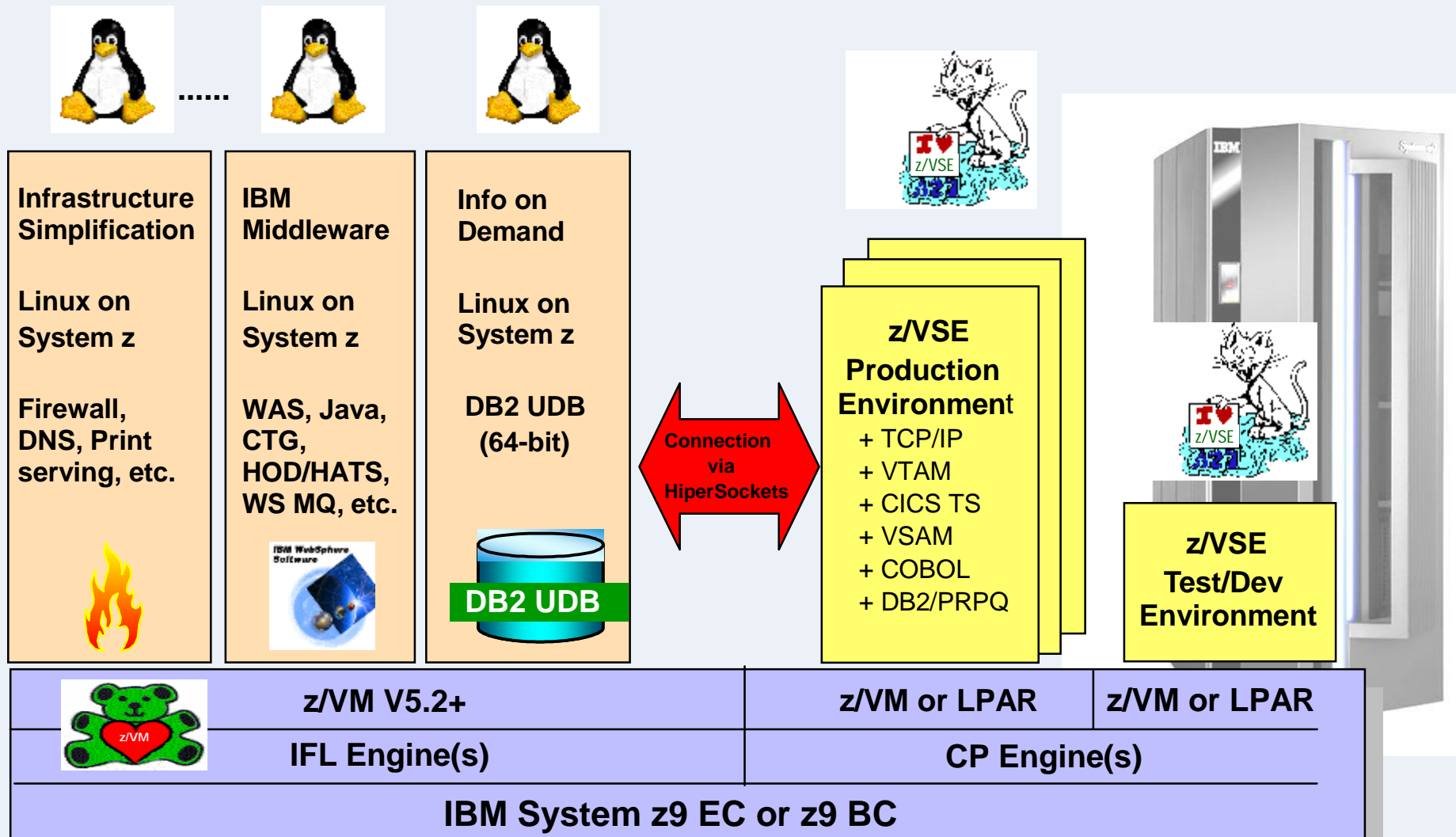
Wrap-up

z/VSE “PIE” Strategy

- Help **P**rotect existing customer investments in core z/VSE programs, data, equipment, business & IT skills, *plus* business processes, end user training
 - Modernize, i.e. extend z/VSE resources to Web
 - Exploit IBM servers, storage, and software
 - z/OS affinity
- Help **I**ntegrate z/VSE with the rest of IT, based on open and industry standards
 - VSE connectors and SOA Web services
 - IBM middleware
- Help **E**xtend solutions with Linux on System z
 - Linux as a preferred platform for new workloads
 - leverage existing core VSE investments
 - low cost, low risk, fast time-to-market
 - New line-of-business applications
 - Low TCO and infrastructure simplification



z/VSE V4 and Linux on System z



z/VSE Learning Opportunities

- **z/VSE V4.1 Live Virtual Classes**

- z/VSE and MWLC Announcement Overview
- Midrange Workload Licence Charges (MWLC)
- z/VSE V4.1 Solutions based on SOA and DB2
- z/VSE Security
- z/VSE V4.1 User Experience
- IBM System z Hardware
- **New VSAM Tools (coming August 29)**
- **more planned**

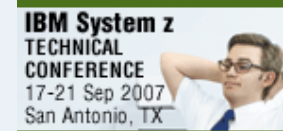
Note: Charts available on the z/VSE web site the day following each call. Replay available approximately one week later. For more information, please see the z/VSE web site at:

<http://www-03.ibm.com/servers/eserver/zseries/zvse/>

- **z/VSE-related Events**

- **US IBM 2007 System z Expo -** featuring z/OS, z/VM, z/VSE, and Linux on System z

- September 17 – 21
- San Antonio, TX



- **2007 GSE Conference -** featuring z/VM, z/VSE, and Linux on System z

- October 15 - 17
- Boeblingen



- **2008 WAVV Conference -** featuring z/VM, z/VSE, and Linux on System z

- April 18 - 22
- Chattanooga, TN



For more information, please see the z/VSE web site:
<http://www-03.ibm.com/servers/eserver/zseries/zvse/>



**Thanks for listening -
*and thanks for your business!***



Your friends, the VSE development team

