z/VSE in an Elevator

Session ID: zEG02

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DB2 Connect	IBM eServer	Processor Resource/Systems Manager	WebSphere*
DirMaint	IBM e(logo)server*	RACF*	z/Architecture
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*
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Geographically Dispersed Parallel Sysplex	On demand business logo	Virtualization Engine	

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Notes:

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

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Objective

Learn

Everything

You needed to know about z/VSE

And tell others about it !
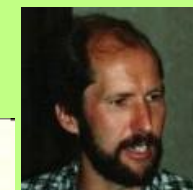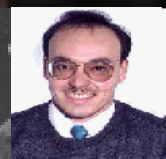
IBM Böblingen Research & Development Center
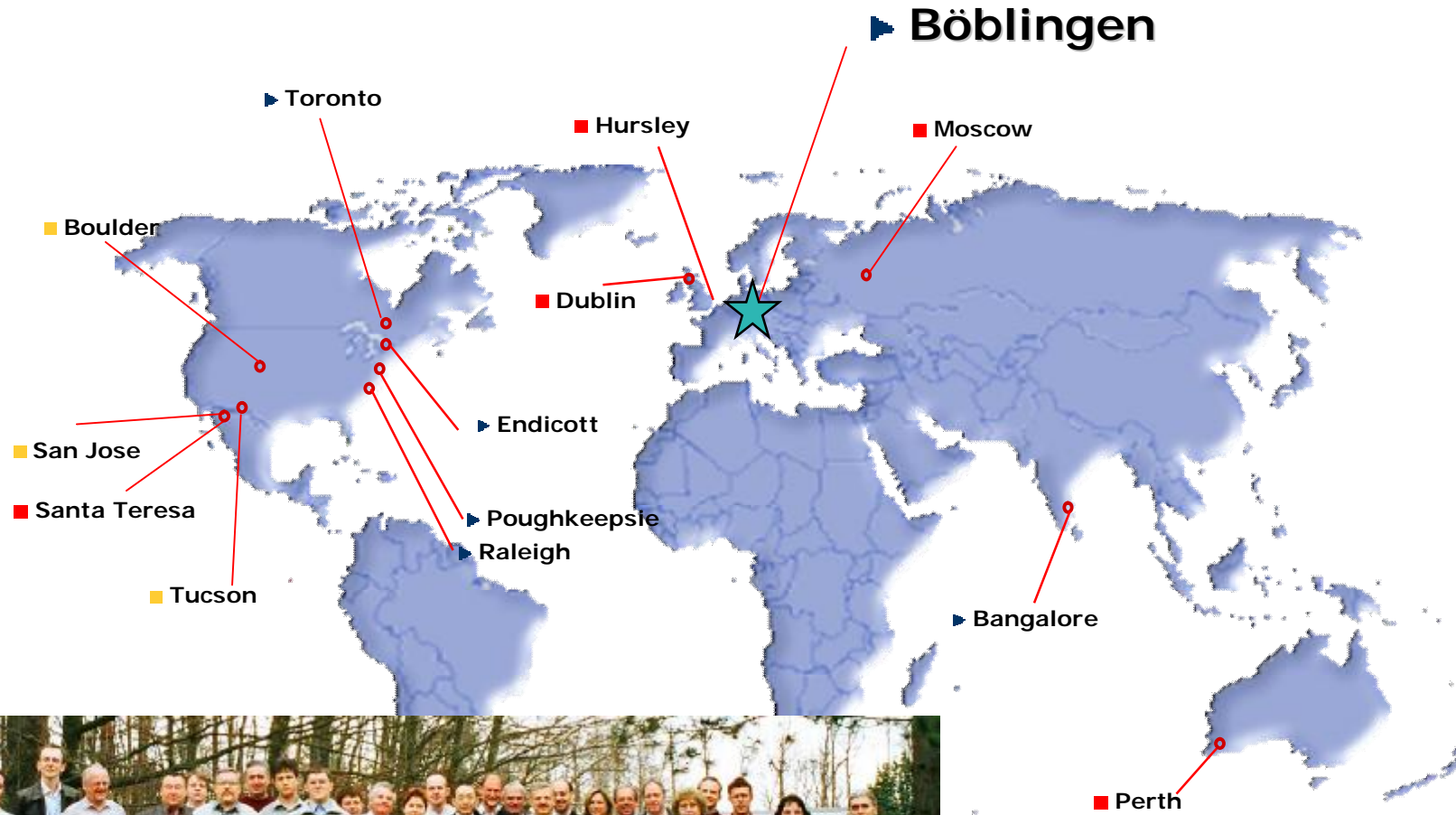## The Home of z/VSE and Linux on System z

The Difference between Perception …

IBM Systems

... and Reality: Your Friends, the z/VSE Team !

The most important z/VSE Centers, worldwide

Böblingen

Toronto

Hursley

Moscow

Boulder

Dublin

San Jose

Endicott

Santa Teresa

Poughkeepsie

Raleigh

Tucson

Bangalore

Perth

▲ Research

■ Hardware Development

■ Software Development

▶ Hardware and Software Development

zEG02 z/VSE in an Elevator

IBM Systems

45-Years of IBM Mainframe and z/VSE Heritage

§ S/360->S/370->4300->9370->ES9000->S/390->zSeries->System z

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

§ **S/360 Model 30**
  ► 30 <u>K</u>IPS (.03 MIPS)
  ► 16 – 64 <u>K</u>B

§ **System z10 BC/EC**
  ► 26-900+ <u>MIPS</u> (1-way)
  ► 4 <u>G</u>B – 1.5 <u>T</u>B

§ **DOS/360**
  ► 1 batch partition
  ► <u>basic, but lovable</u>

§ **z/VSE V4**
  ► Batch and OLTP
  ► SOA
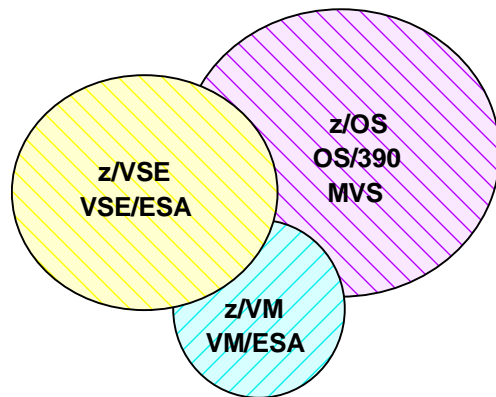 ► <u>still lovable</u>

1960s | 1970s | 1980s | 1990s | 2000s

Operating Systems on IBM System z

§ 33% of worldwide traditional mainframe operating system installs are z/VSE or VSE/ESA
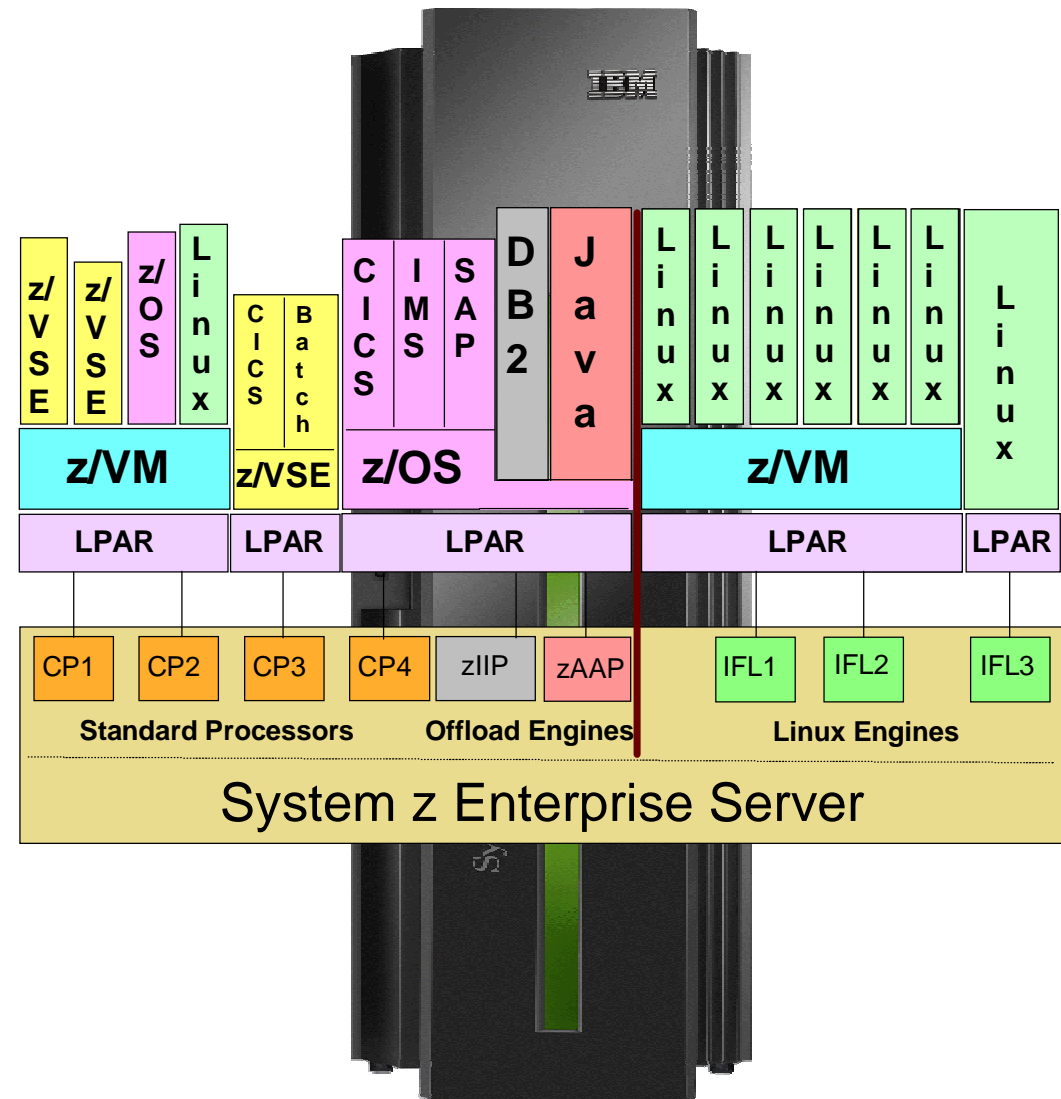

§ VSE* population is 40% in US, 40% in Europe, 20% in RoW

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

§ IFLs play an important role in VSE's strategy

§ zIIP/zAAP have no meaning to VSE

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

Typical VSE Customer

What is VSE?

§ Traditional mainframe operating system, similar to z/OS but smaller and simpler

§ Less capacity, availability, security; no Unix system services

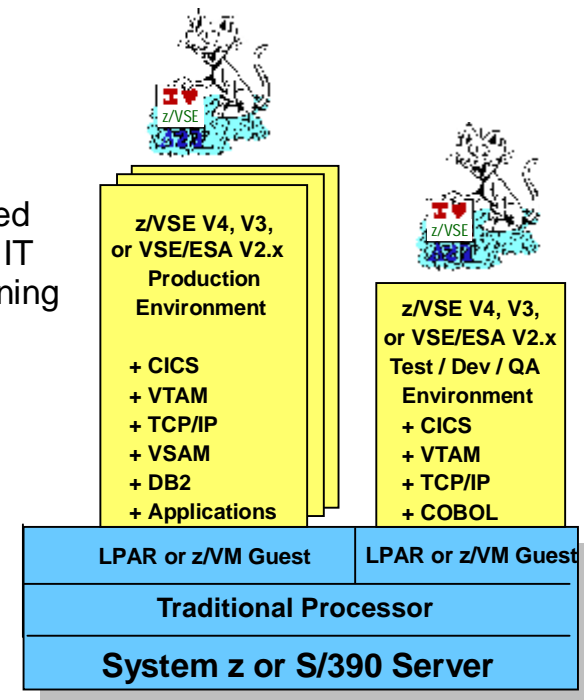§ Designed for smaller accounts with less demanding needs

Why do customers use VSE?

§ Cost-efficient, high performance, robust (almost no downtime)

§ Customers have a significant cumulative investment in proven, highly evolved homegrown core VSE application code (CICS and batch), data, equipment, IT skills, company & industry expertise, business processes, and end-user training

§ History – familiarity, comfort, confidence

What are VSE customer's biggest concerns?

§ **Applications!!** (no Java, WAS, Tivoli, Lotus, SAP, Oracle, etc.)

§ **Cost!!** (or at least the perception of high mainframe costs)

§ **Skills!** (especially availability of new mainframe skills)

§ **Future!** (vitality of VSE key components and products)

Why not just migrate to another platform?

§ Cost, time, risk, lost opportunity – not an easy task

§ z/OS: cost, skills, benefits perceived to be marginal

§ Unix, Linux, Windows, or i5/OS: complete redesign and rewrite of tailored, homegrown VSE CICS applications often required and/or packaged applications may be costly and not meet customer requirements

z/VSE V4, V3, or VSE/ESA V2.x
Production Environment

+ CICS
+ VTAM
+ TCP/IP
+ VSAM
+ DB2
+ Applications

z/VSE V4, V3, or VSE/ESA V2.x
Test / Dev / QA Environment
+ CICS
+ VTAM
+ TCP/IP
+ COBOL

LPAR or z/VM Guest | LPAR or z/VM Guest

Traditional Processor

System z or S/390 Server

Note: The term "VSE" stands for both, VSE/ESA and z/VSE.

Top Concerns of VSE* Customers

→ **1. Applications**
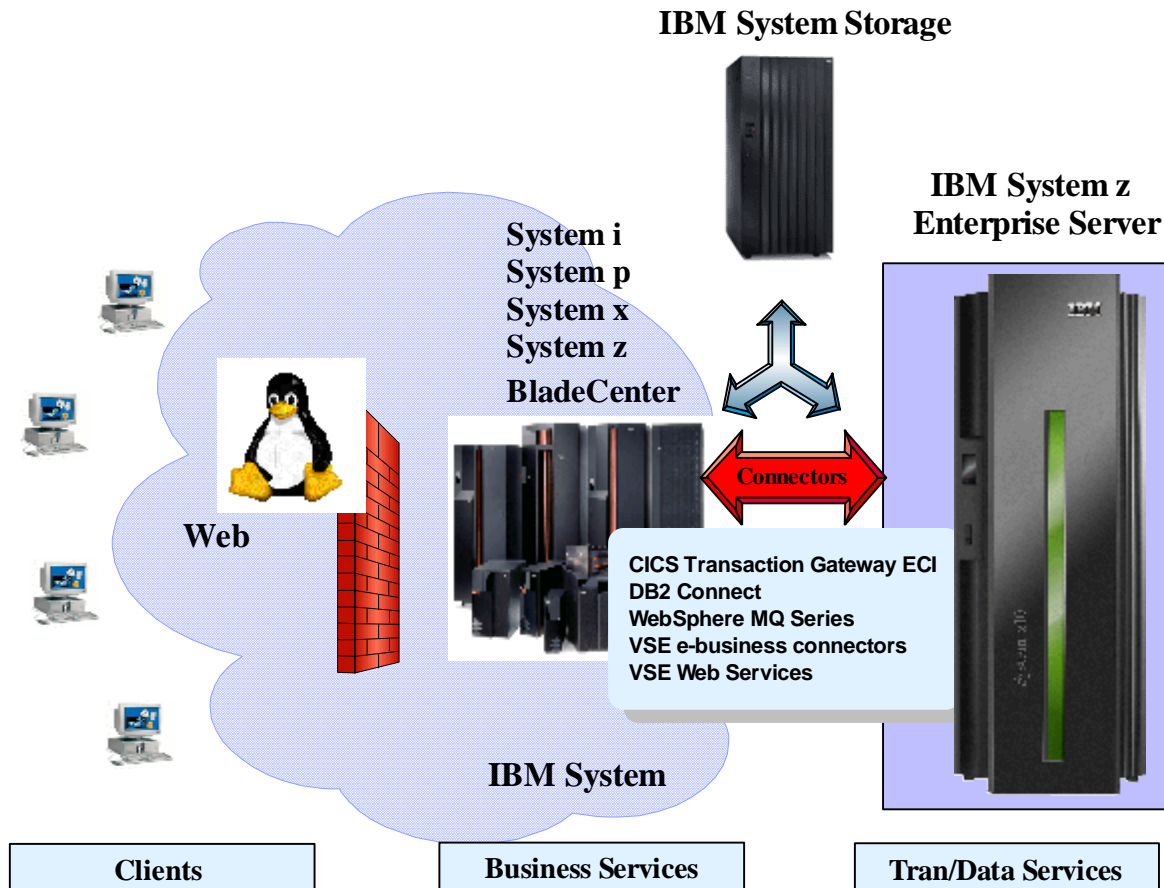
2. Cost

3. Skills

4. Future

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

z/VSE Strategy
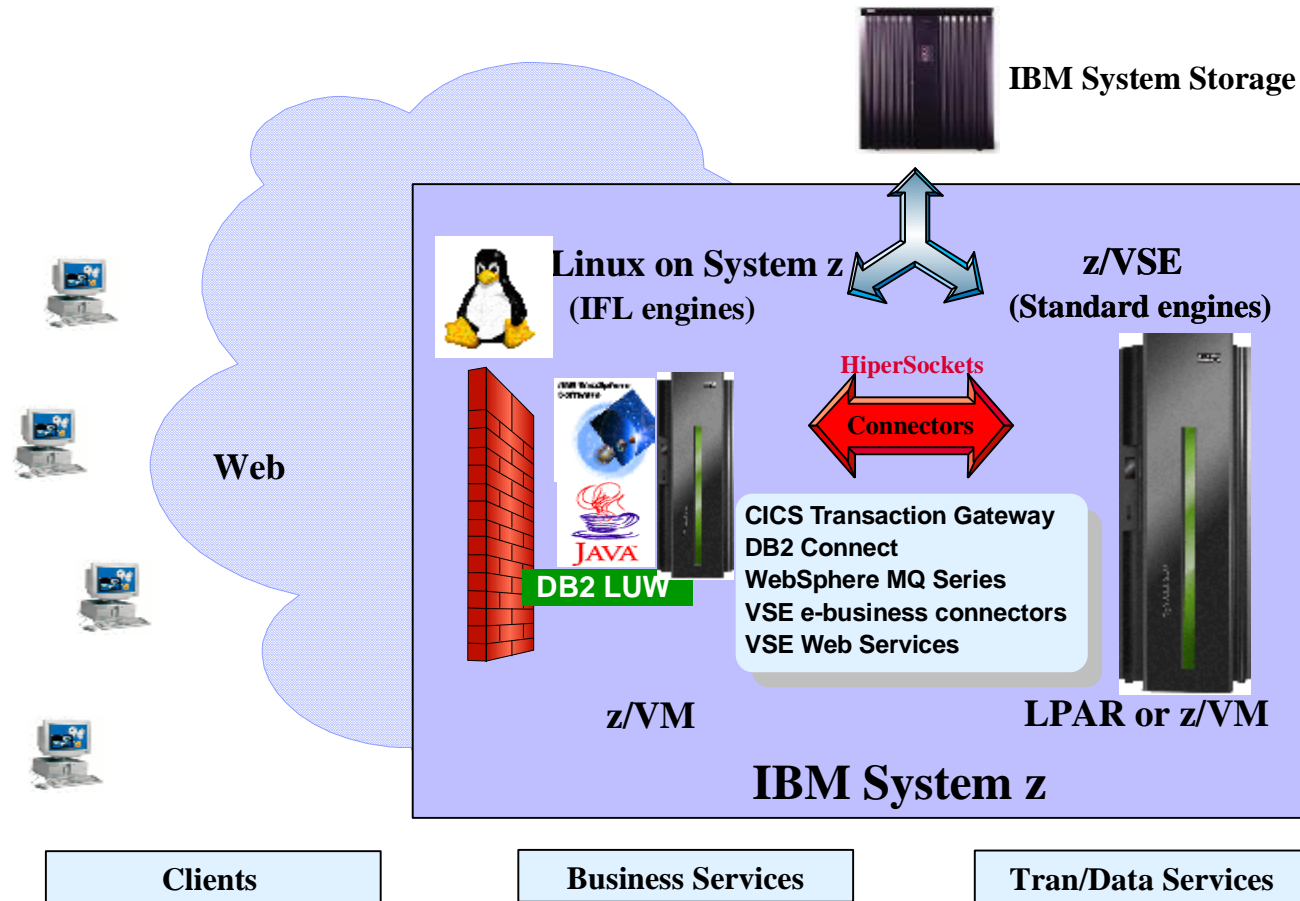
IBM System Storage

IBM System z Enterprise Server

alias

§ 3-tier Strategy

§ Hybrid Strategy

§ Connector Strategy

§ Migration Strategy

§ Coexistence Strategy

§ Linux Strategy

§ **PIE Strategy**

Web

System i
System p
System x
System z
BladeCenter

Connectors

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

IBM System

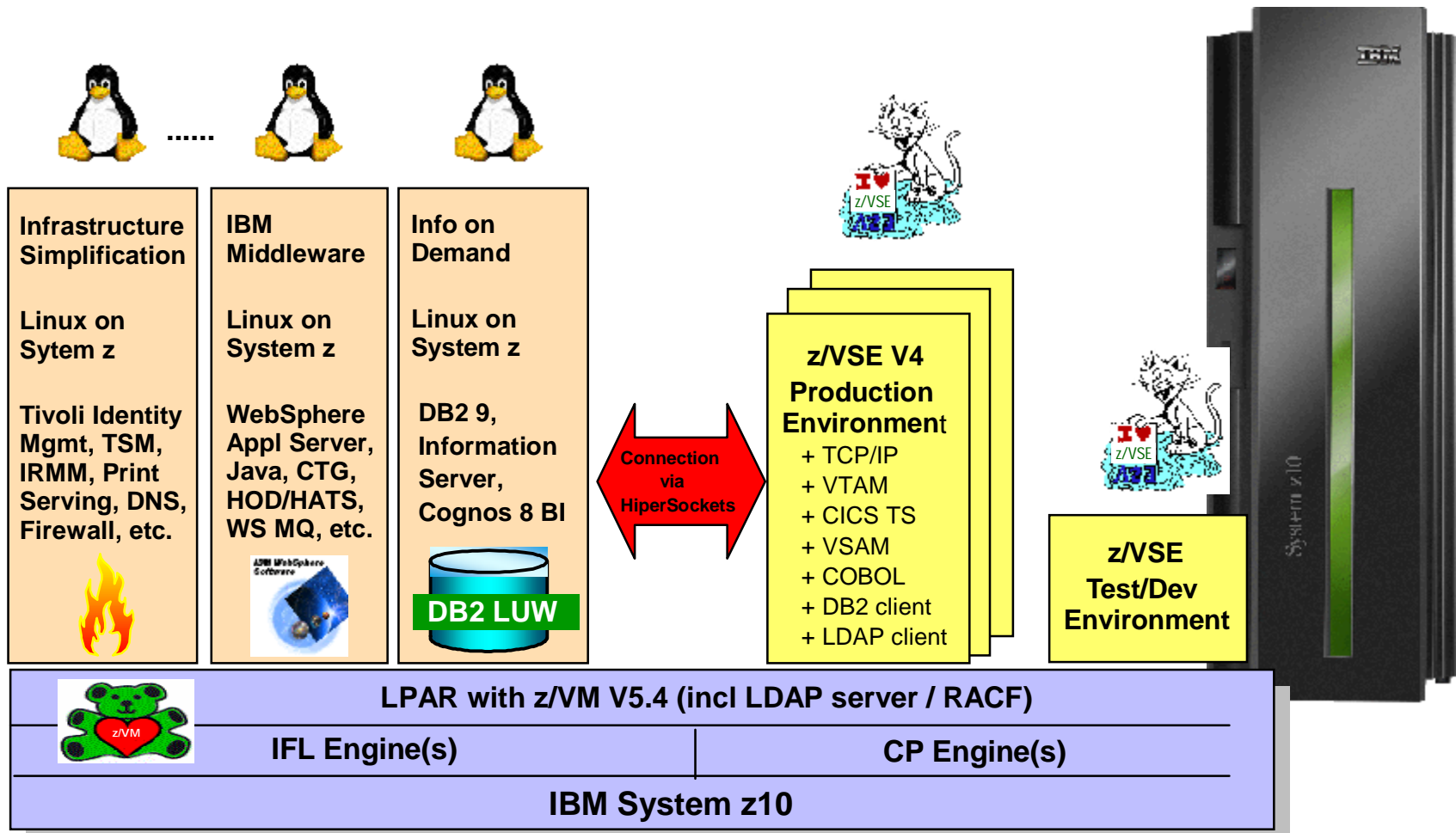| Clients | Business Services | Tran/Data Services |

Protect existing VSE investments

Integrate using middleware and VSE connectors

Extend with Linux on IBM System z technology & solutions

z/VSE Strategy with Linux on System z

IBM System Storage

Linux on System z
(IFL engines)

z/VSE
(Standard engines)

HiperSockets

Connectors

DB2 LUW

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

Web

z/VM

LPAR or z/VM

IBM System z

Clients

Business Services

Tran/Data Services

IBM

z/VSE Vision:

Hybrid Environment leveraging z/VSE V4, z/VM V5, Linux on System z

Protect existing VSE investments

Integrate using middleware and VSE connectors

Extend with Linux on IBM System z technology & solutions

...

Infrastructure Simplification

Linux on Sytem z

Tivoli Identity Mgmt, TSM, IRMM, 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 Production Environment
+ TCP/IP
+ VTAM
+ CICS TS
+ VSAM
+ COBOL
+ DB2 client
+ LDAP client

z/VSE Test/Dev Environment

LPAR with z/VM V5.4 (incl LDAP server / RACF)

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

IBM System z10

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z/VSE Reference Customers

- **Wessels & Müller, Germany**
  - z9 BC, z/VSE V4, IFL, DB2 UDB
- **Häfele, Germany**
  - z9 BC, z/VSE V4, ESS
- **Bau Rechenzentrum, Germany**
  - z9 BC, z/VSE V4, DS6000
- **WM Gruppe, Germany**
  - z9 EC, z/VSE V4, DB2, DL/1
- **Hypo Real Estate Systems, Germany**
  - z9 BC, z/VSE V4, DS8000, TSM
- **Peter Hahn, Germany**
  - z9 BC, z/VSE V4, IFL, DB2, SVC
- **Scheidt & Bachmann, Germany**
  - z9 BC, z/VSE V4, DS6000, IFL
- **Rheinland Versicherung, Germany**
  - z9 BC, z/VSE V4, IFL, DB2, Oracle
- **Edeka Rhein-Ruhr, Germany**
  - z9 BC, z/VSE V4, IFL, DB2 UDB
- **Brunata, Germany**
  - z9 BC, z/VSE V4, IFL, DB2 UDB

- **Supreme Court of Virginia, USA**
  - 2x z10 BC, z/VSEV4, 10x IFL, WAS, DB2 UDB
- **American Stock Transfer & Trust, USA**
  - z9 BC, z/VSE V4, DB2 UDB
- **Calkins Media, USA**
  - z10 BC, z/VSE V4, ESS, HATS
- **Alabama Judical Datacenter, USA**
  - z9 BC, z/VSE V4
- **Olio Carli, Italy**
  - z10 BC, z/VSE V4, IFL, RHEL, DB2 UDB
- **GE Money Bank, Switzerland**
  - z890, z/VSE V4, AFP, Macro4
- **Pulsen, Sweden**
  - z10 BC, z/VSE V4, 2x IFL, DB2 UDB
- **Securex, Belgium**
  - z9 EC, z/VSE V4, 2x IFL, DB2 UDB, BEA Weblogic, WebSphere MQ
- **Alcad, Slovenia**
  - z9 BC, z/VSE V4, IFL, DB2 UDB, SOA, RAD, WDz, WAS, WS Process Server

Supreme Court of Virginia
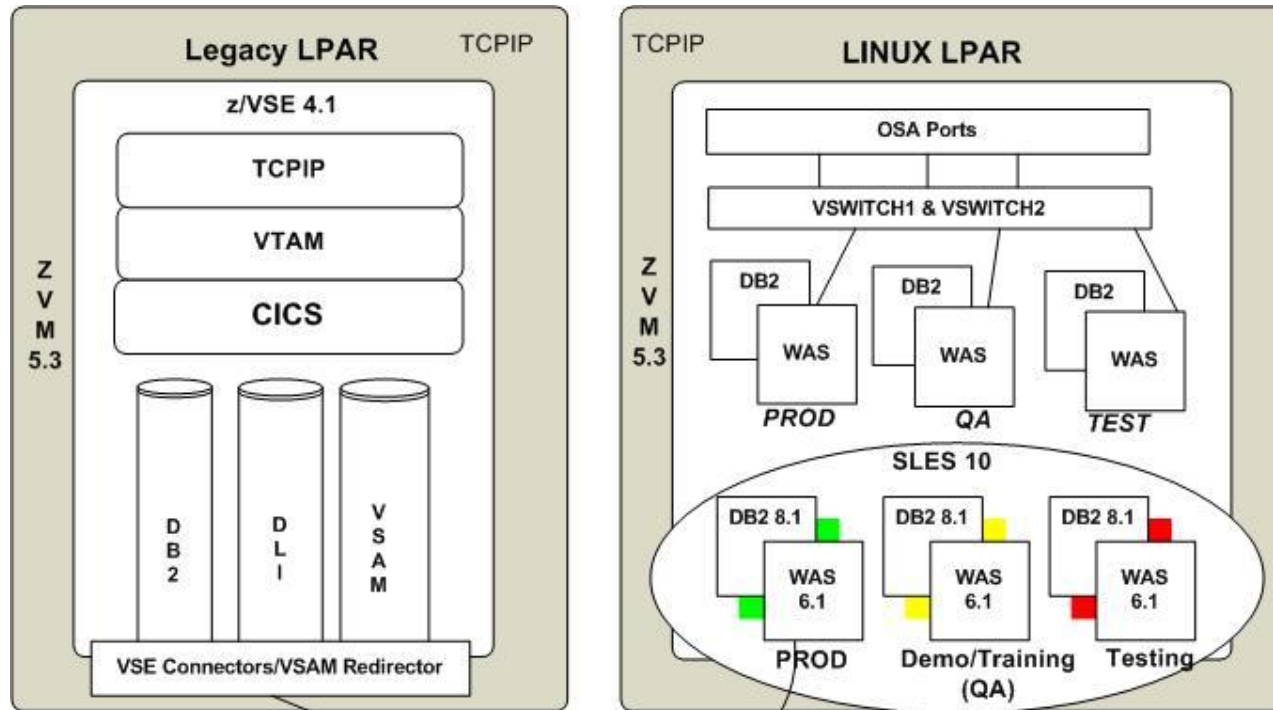
- ▶ **1 + 1 z10 BC**
- ▶ **2 + 2 CPs**
- ▶ **5 + 5 IFLs**
- ▶ **48 + 32 GB memory**
- ▶ **2 + 2 z/VM V5 LPARs**
- ▶ **7 + 4 z/VSE V4 guests**
- ▶ **41 + 14 SLES 10 guests**

§ **z10 BC for Court System (internal)**

- ▶ **Serves 325 courts, 5.000+ users, 4 million cases (2007)**
- ▶ **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 for Internet**

- ▶ **eCommerce application integrating z/VSE and WebSphere appls**

IBM

Wessels+Müller AG
Improves application response times and cuts operating costs with an IBM System z mainframe

Business challenge:

Wessels+Müller had migrated many of its key business systems to an IBM zSeries® 890 mainframe. And, while it was pleased with the platform, it found that the IBM hardware was unable to keep pace with the company's growing processing demands. With the system operating at 80 percent just to handle day-to-day operations, the business was concerned about peak processing periods when high volumes of data need to be analyzed.

Solution:

Working with IBM Business Partner Becom, Wessels+Müller migrated its business systems to an IBM System z9® Business Class mainframe. The IBM hardware, leveraging the IBM z/VSE™ operating platform, supports multiple Linux® virtual machines that host the client's online parts ordering and information management systems as well as an IBM DB2® data server containing part information.

Benefits:

§ Improved application speeds and reduced response times—even during peak processing periods

§ Increased staff productivity with a more responsive environment

§ Reduced operating costs by simplifying the infrastructure

"This System z mainframe has reaffirmed our confidence in IBM's hardware. Not only does the server offer more power but more control over the environment as well."
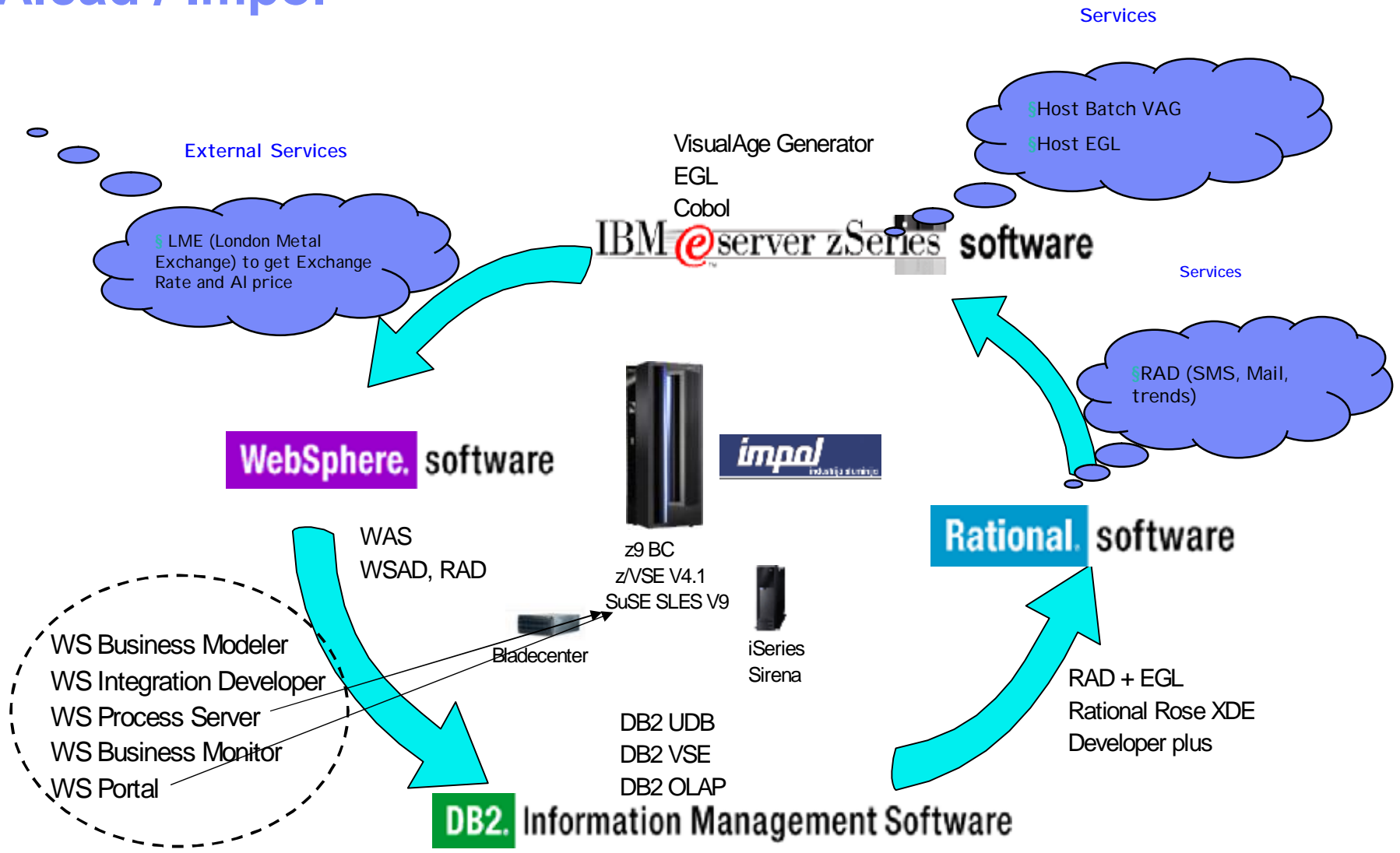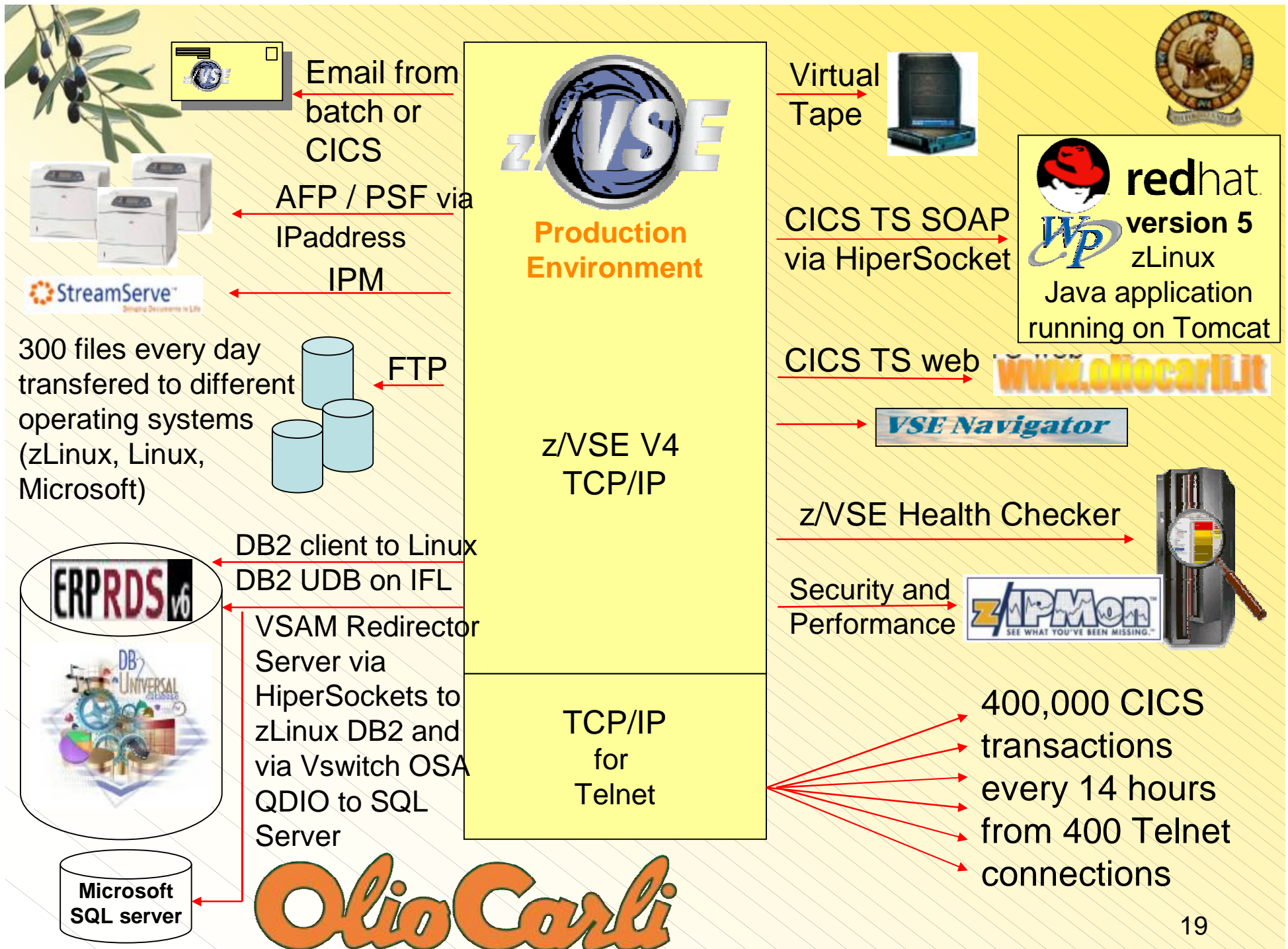
— *Wessels+Müller AG*

Solution components:

§ IBM System z9 Business Class (BC) mainframe

§ IBM DB2 data server

GK12-4361-00

IBM Systems

Alcad / Impol

Services

External Services

§Host Batch VAG

§Host EGL

VisualAge Generator
EGL
Cobol

IBM @server zSeries software

§ LME (London Metal Exchange) to get Exchange Rate and AI price

Services

WebSphere. software

§RAD (SMS, Mail, trends)

impol

z9 BC
z/VSE V4.1
SuSE SLES V9

WAS
WSAD, RAD

Rational. software

WS Business Modeler
WS Integration Developer
WS Process Server
WS Business Monitor
WS Portal

Bladecenter

iSeries
Sirena

DB2 UDB
DB2 VSE
DB2 OLAP

RAD + EGL
Rational Rose XDE
Developer plus

DB2. Information Management Software

IBM Systems

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 V4 TCP/IP

TCP/IP for Telnet

Virtual Tape

CICS TS SOAP via HiperSocket

redhat **version 5** zLinux Java application running on Tomcat

CICS TS web

www.oliocarli.it

VSE Navigator

z/VSE Health Checker

Security and Performance

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

19

the leading producer of premium olive oil sold directly to consumers

Top Concerns of VSE* Customers

1. Applications

2. Cost

3. Skills

4. Future

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

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IBM Systems

MWLC – Midrange Workload License Charge

Price for typical z/VSE stack

MP2000, G4, G5, G6, z900, z990

MP3000, z800, z890

MWLC

z/VSE V4 stack only

z9, z10

60

50

40

35

32

31

30

28

PG=25

z89

z890-110

MSU

GMLC

GOLC
(MP3000)

zELC
(z800)

TWLC
(z890)
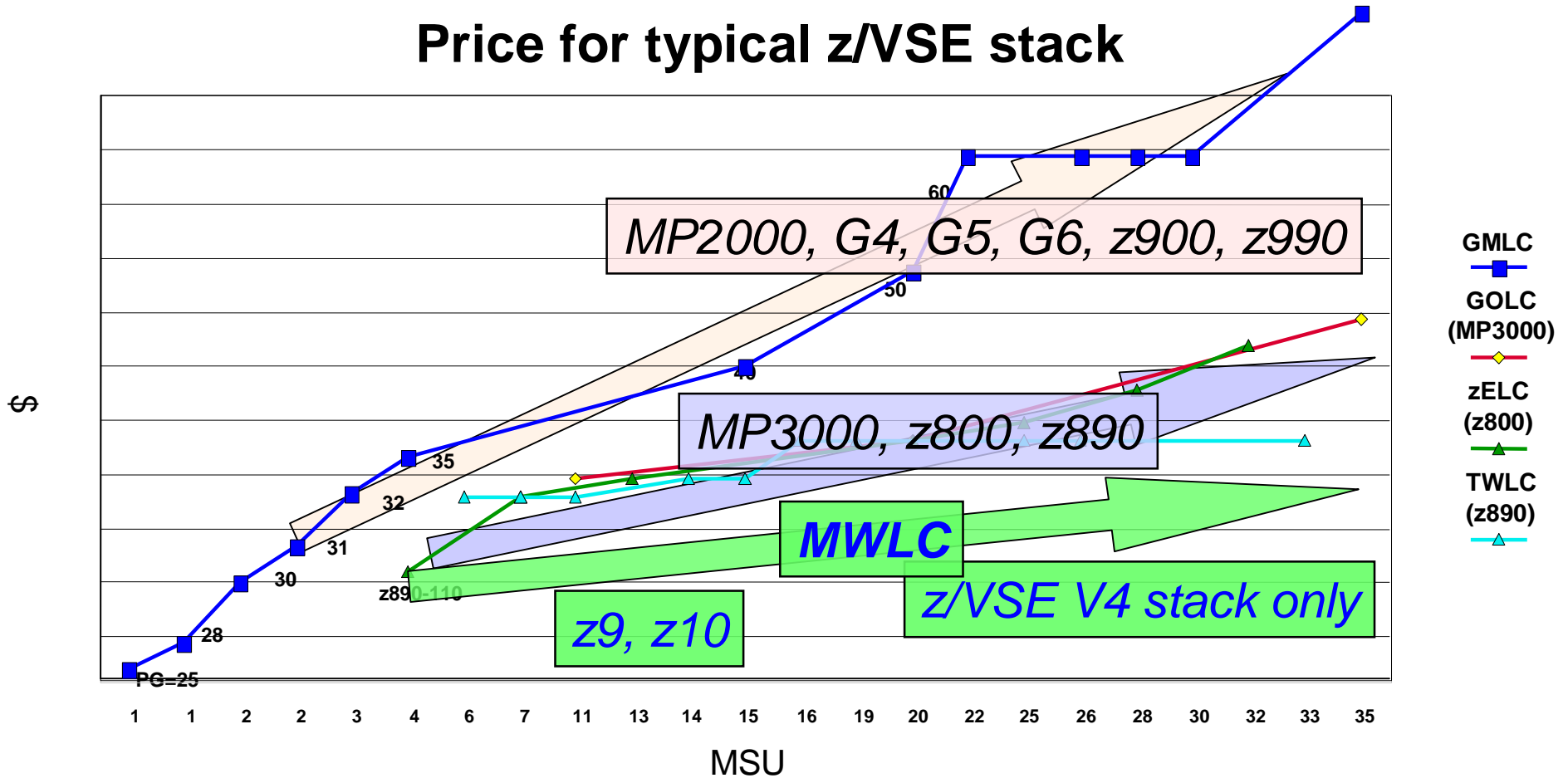
§ *"I just got our April software bill from IBM for the first month on our z9 under z/VSE 4.1 and MWLC. We were paying $22,965 per month on our z800 under z/VSE 3.1.2. The April bill is for the same software and it is $12,318: a difference of $10,647 per month."*
Mike Moore, IT Manager, Alabama Judical Datacenter, Alabama

Improved TCO through new Pricing Metric and Sub-Capacity Pricing with z/VSE V4

§ **z/VSE price/performance through new pricing metric**

► **Midrange Workload License Charge (MWLC)**

► **MWLC requires current HW (z9* or z10*) and z/VSE V4**
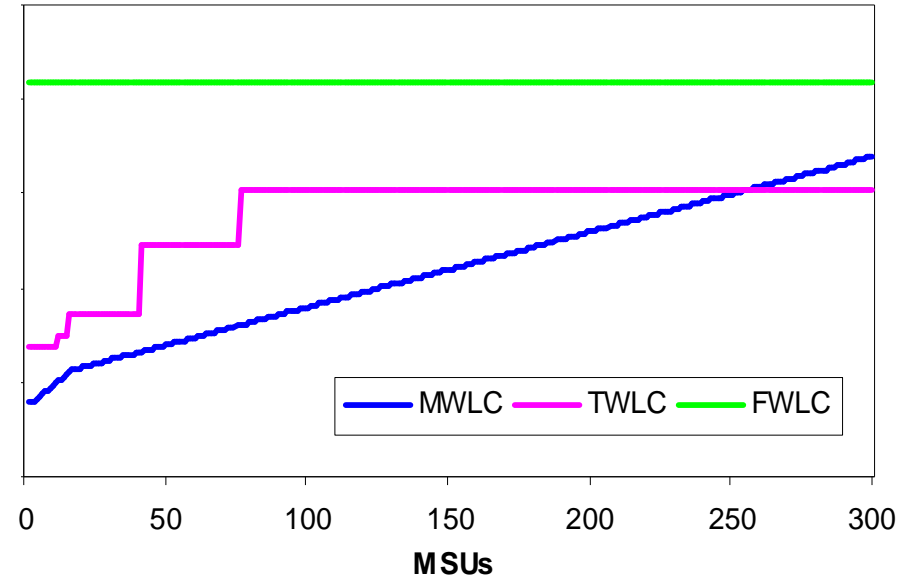
§ **Additional price/performance through sub-capacity option**

► **Some hardware footprint consolidations more attractive now**

► **Presence of z/VSE V3 or VSE/ESA™ forces full-capacity pricing**
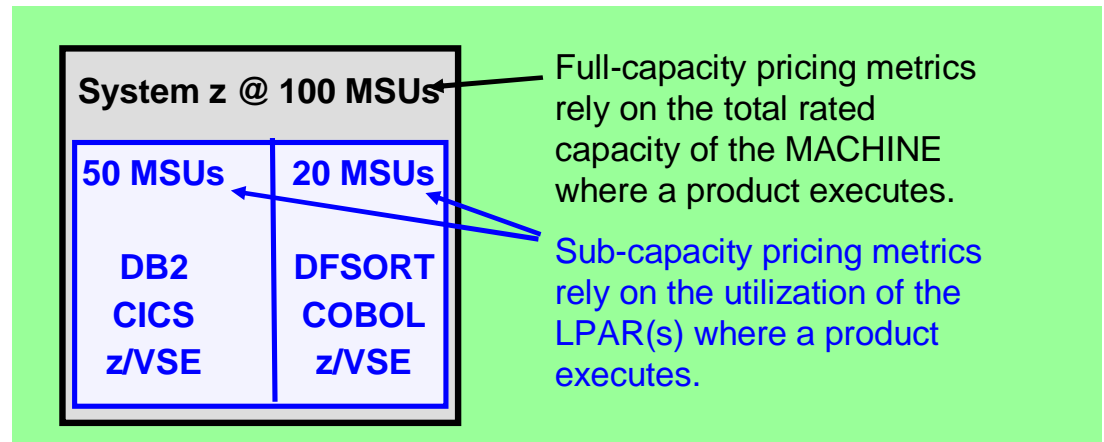
* z9 BC A01 and z10 BC A01 are priced zELC, not MWLC.

Full-capacity pricing metrics rely on the total rated capacity of the MACHINE where a product executes.

Sub-capacity pricing metrics rely on the utilization of the LPAR(s) where a product executes.

Sub **C**apacity **R**eporting **T**ool: Sample Report

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IBM Systems
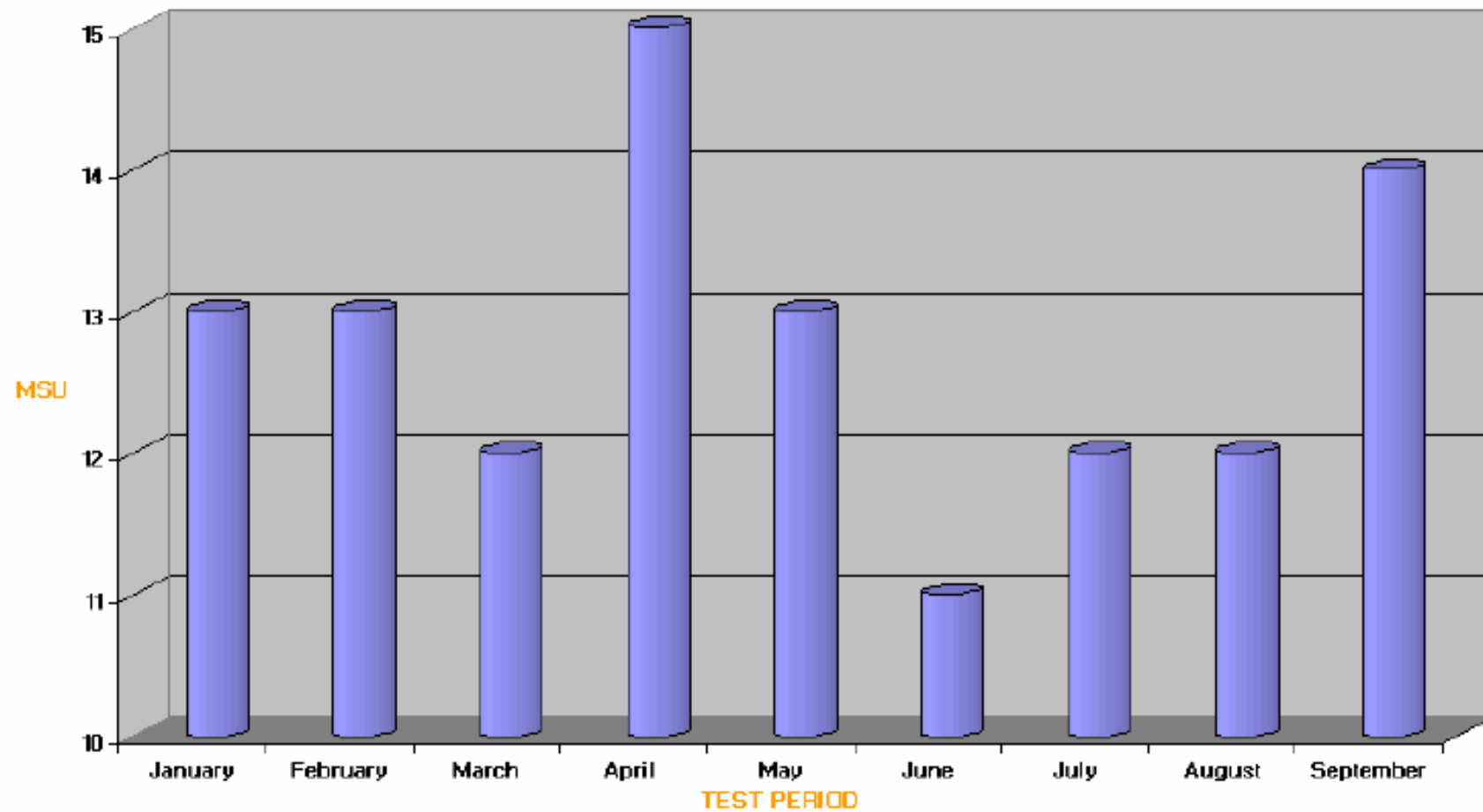
Press on z/VSE Cost Savings

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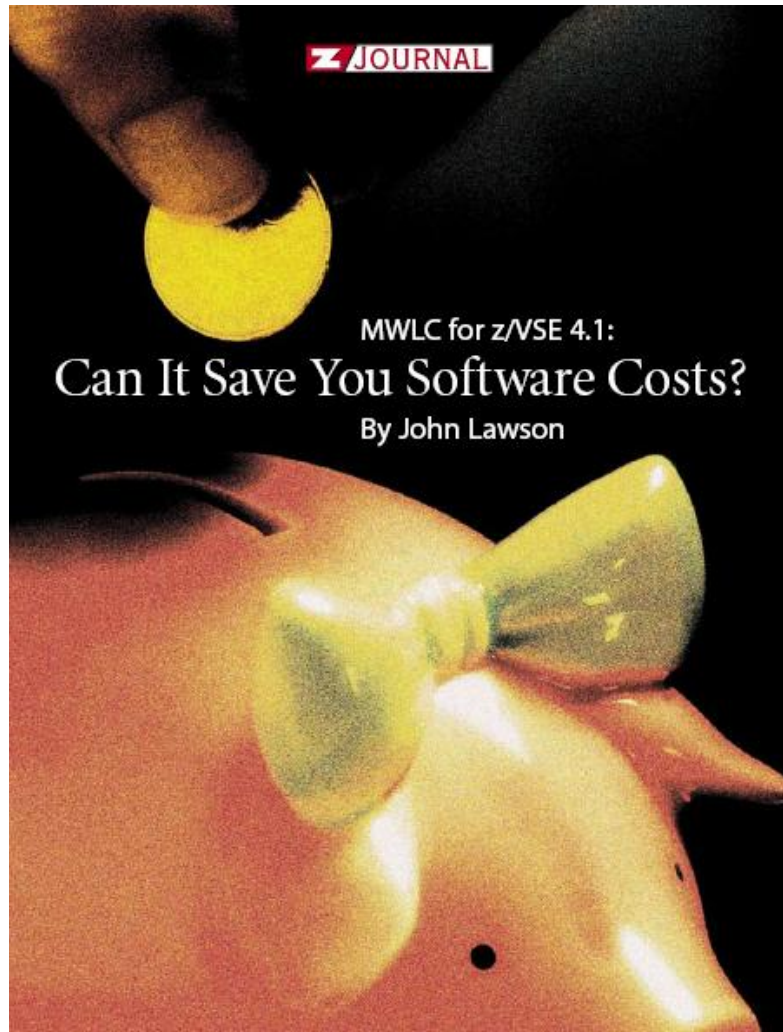
Most of the activity in the IBM mainframe world not surprisingly focuses on the z/OS environment, but there is still a sizeable population of users running systems based on VSE, often in conjunction with the VM hypervisor.

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.

© Arcati Limited, 2007

Source: The Arcati Mainframe Yearbook 2007   33

z/VSE: A Roadmap For Cost savings and Exploiting Technology

Prepared for:
IBM Corporation

By:
Sine Nomine Associates
43596 Blacksmith Square
Ashburn, VA 20147

IBM-2007-04569-E-01
August, 2007
SNA Proprietary – Confidential

z/VSE Roadmap
6 September 2007

z JOURNAL

MWLC for z/VSE 4.1:
Can It Save You Software Costs?
By John Lawson

Source: z/Journal, April / May 2007
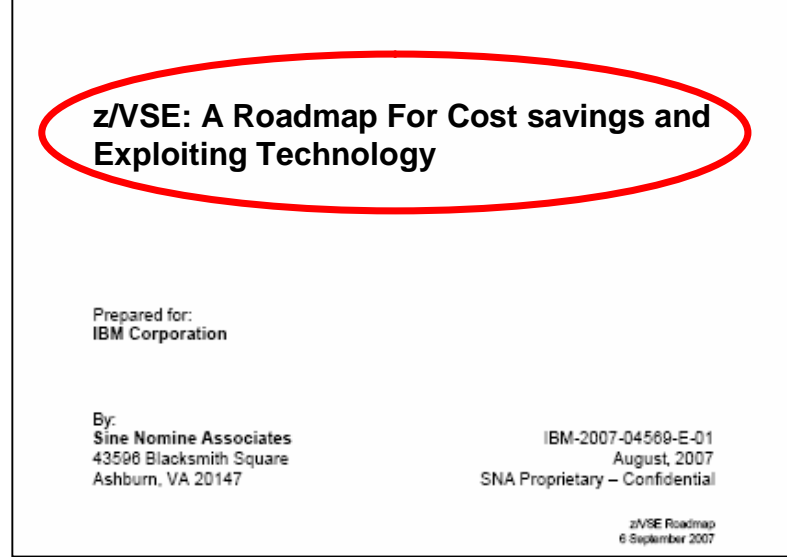
Source: Sine Nomine Associates, August 2007

MWLC is driving z9/z10 Adoption with z/VSE V4

z9/z10 CECs with z/VSE V4
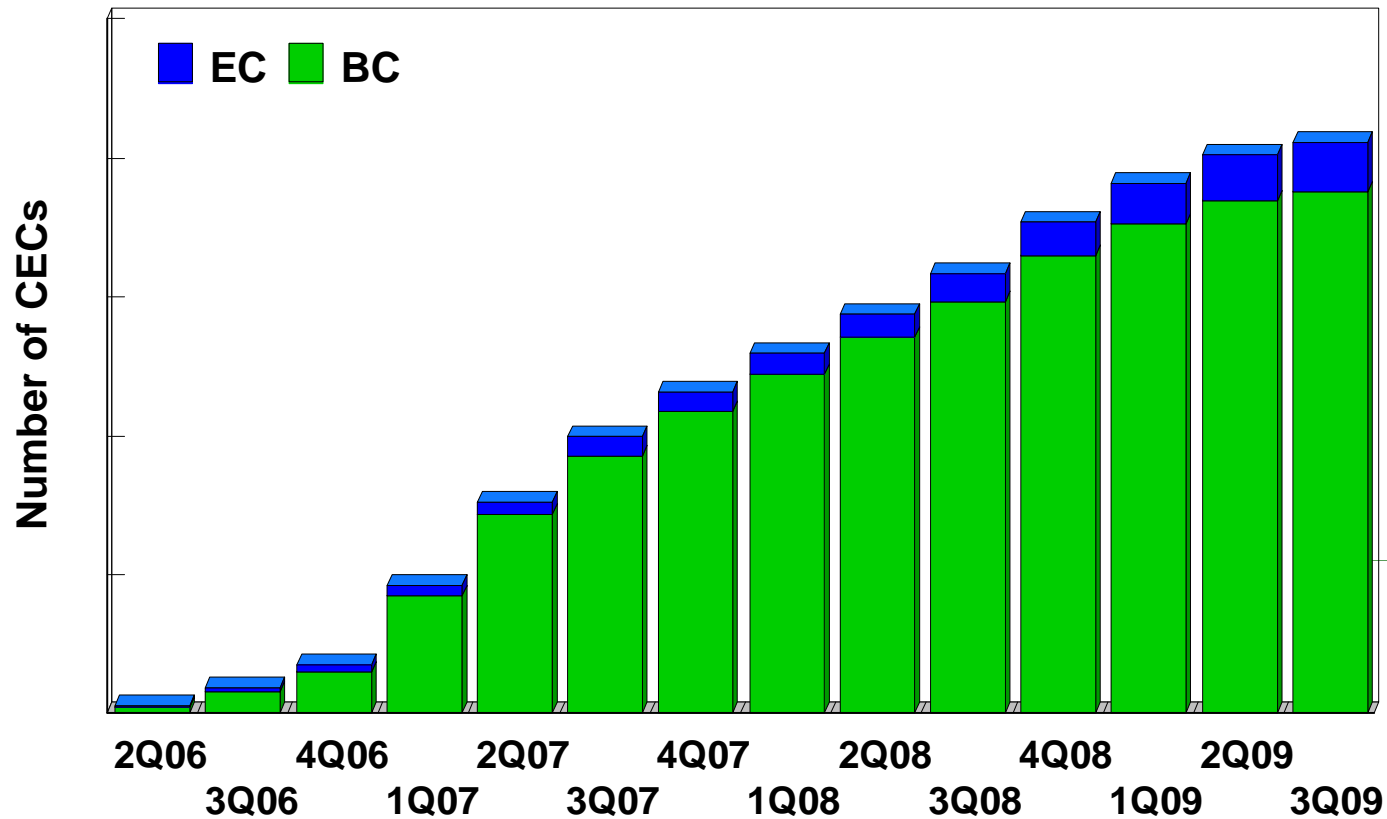
Top Concerns of VSE* Customers

1. **Applications**

2. **Cost**

3. **Skills**

4. **Future**

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

IBM Systems

Building Mainframe Skills for the Community

Growing Academic Initiative
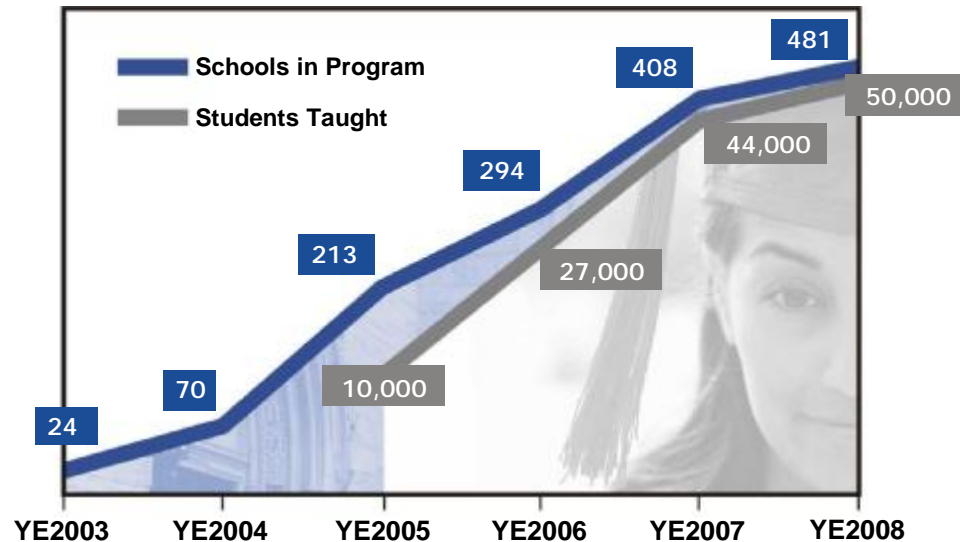
§ **IBM Academic Initiative System z by the numbers:**
  - ► Web site: **www.ibm.com/university/systemz**
  - ► Participation – 481 schools registered, 50,000 students attended mainframe education
  - ► Courses – 29+ Courses (plus more under development) & Mastery Exam Certification
  - ► Resources – Access to Mainframes worldwide for teaching (6 Univ hubs)
  - ► Student MF Contests – 10 contests with 8,630 students, 1,167 schools…more planned
  - ► Assist Professors – Seminars, Faculty awards, education coupons
  - ► zCommunity – Roundtable events with Clients / Schools / ISVs / Business Partners
  - ► IBM zSkills (**zskills@us.ibm.com**) + over 300 IBM Mainframe ambassadors
  - ► Collateral / WW Analyst & Press events / Corporate PR Campaign

… including courses on z/VM, Linux on System z and z/VSE

Professors are starting to get it …………

Enterprise Systems and Large Systems Thinking

"The U.S. Department of Labor is predicting that the US will need 1.5 million more computing professionals in this decade,"**Professor Haiduk** said.

"With the support of IBM's z Academic Initiative, we can actively prepare students to be better qualified for all of the promising and exciting jobs we see in today's computing professions, particularly pertaining to large-scale systems."

West Texas A&M University
MEDIA RELEASE

IBM Customers are starting to see results

Charlotte-based **Bank of America Corp.**, for example, **works with three universities offering the System z program and "leverages the program's student base in its recruiting efforts**, says B.J. Smith, vice president of engineering and operations management.

"It addresses the increasing risk to the industry of the aging workforce and the potential loss of intellectual capital within our technology groups," Smith says
.

"The program is essentially, developing the next generation of mainframe technicians".

IBM

Examples – For a complete list of schools world wide teaching mainframes, see: ibm.com/university/systemz

Illinois State University (US)
Enterprise Computing
Major

University of Arkansas (US)
Into Linux on z
Enterprise Transaction Sys
University HUB

Olso University (Sweden)
4 years running Enterprise
Mainframe Courses

Stevens Institute (US)
Undergraduate and
Graduate Programs

Marist College (US)
On-Demand with Enterprise
Systems Certificate program

Tongji University (China)
Mainframe Concentration
Partnerships with Banks

Republic Polytechnic (Singapore)
Enterprise Computing
Learning Center
Teaches mainframe classes

Southampton University (UK)
Partner with IBM Customers and
Teaches System z Course

West Texas A&M
Undergraduate CS
Mainframe Concentration

z/VSE and z/VM Beginner's Education
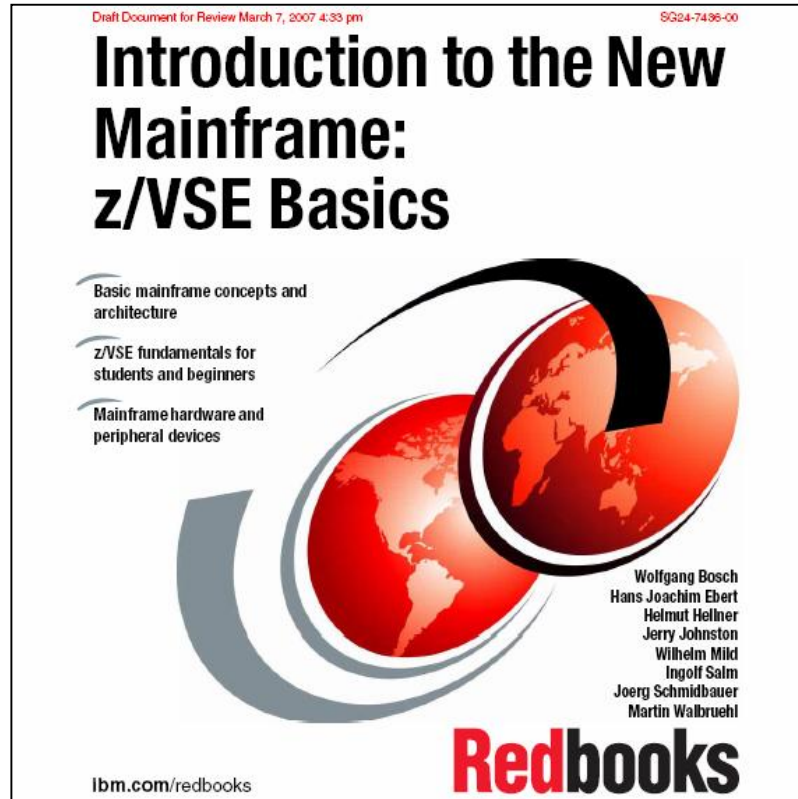
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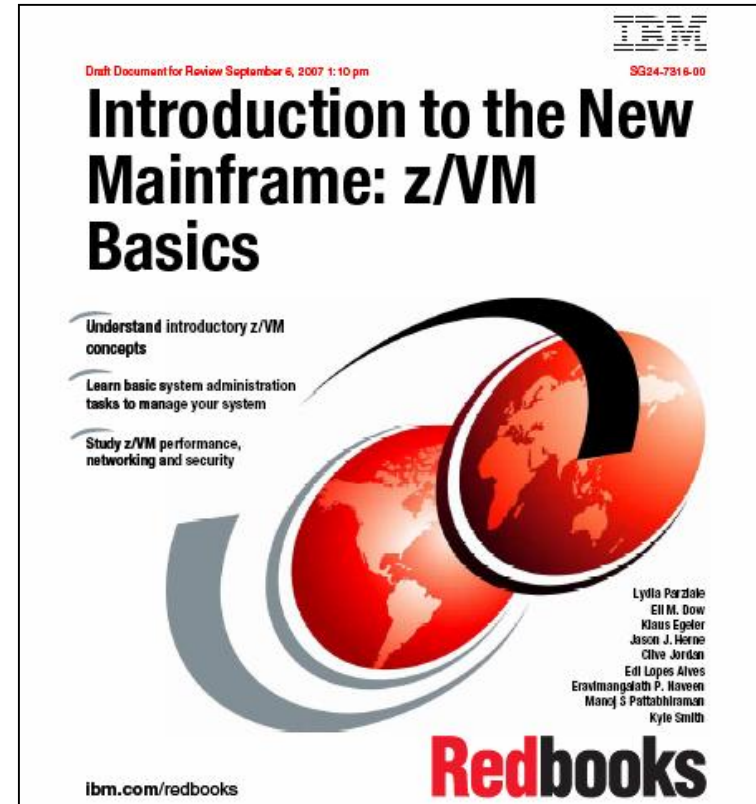
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IBM Systems

Enhance Skills with IBM Red Books

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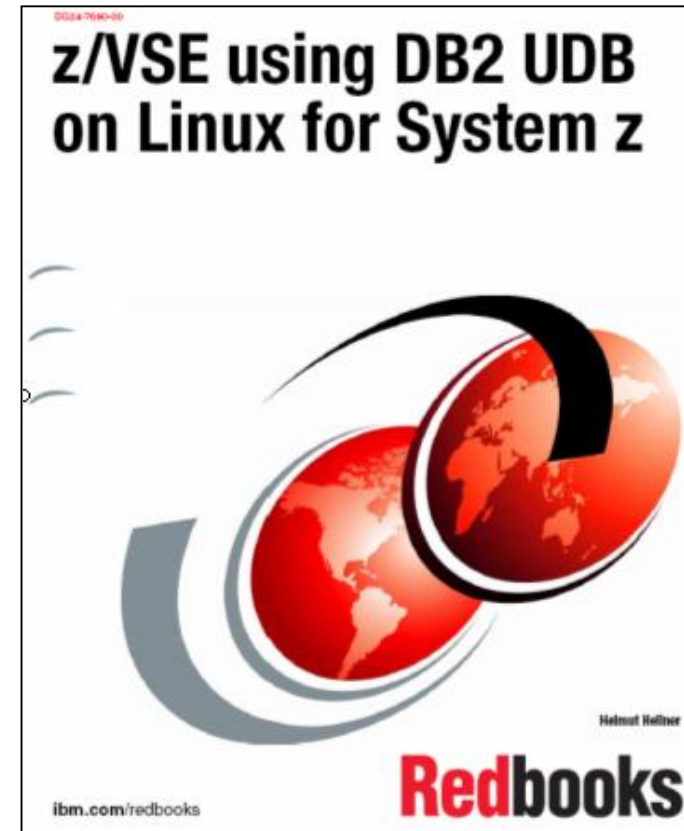
SG24-7690-00
planned for 2010

www.redbooks.ibm.com

IBM Systems

z/VSE Navigator: Windows-like VSE Interface

File   Edit   Selected   Configuration   Functions   Help

KEY	FIRMA	TEXT	PLZ
TST010	<------------------NEW RECORD	10------------------	-----
00001	Stinnes-Data-Service GmbH	3	45472
00003	GUILLEAUME-WERK GmbH	5	53229
00004	Zuger Kantonalbank	2	6301
00009	Württembergische Bau BG	4	71032
00013	A.V.U.S. GmbH	3	80339
00014	prego services GmbH	4	66121
00015	Flora Frey GmbH	3	42653
00018	E.ON AG	5	40479
00020	ZF Getriebe GmbH	4	66117
00027	Brunata Wärmemesser GmbH & Co	3	81379
00030	Stadlbauer GesmbH & Co.KG	2	4600
00031	Markenverlag GmbH	4	50968
00037	EnBW Ostwürttemb. DonauRies AG	3	73479
00039	Ravensburger AG	4	88214
00044	SCHNEIDER electronics GmbH		86842
00050	Franz Wiltmann GmbH & Co.KG	5	33775
00051	D M W Datenservice GmbH	4	81377
00053	BG-PHOENICS GmbH	5	80335
00058	Bremer Tageszeitungen AG	3	28195
00060	Steigenberger Rechenzentrum	1	60528
00062	STI	5	36341
00064	Ludwig Schokolade GmbH & Co.KG	5	51469
00066	Motorenfabrik Hatz		94099
00067	Stadtverwaltung Pirmasens	2	66953
00079	Stadtwerke Saarbrücken AG	3	66117
00082	Heidelberger Medien Gestaltung	4	69117

VSE Navigator
- VSE260_Flexes
  - Librarian
  - POWER
  - VSAM
    - #VSAM.#CICS.CICSESA3
    - #VSAM.#CICS.CICSTEST
    - #VSAM.#CICS.DBDCCICS
    - UCAT206
    - UCAT220
      - ASF.CLL.PROD
      - BESTAND.NOTA
      - CICSF5.CPGWRK1
      - CICSF5.CPGWRK2
      - CPBESD
      - CPGAFA
      - CPGANL
      - CPGESD
      - CPGKDN
      - CPGKRB
      - CPGKRS
      - CPGKSD
        - CPGKSD_MAP
        - EMIL
        - HUGO
      - CPGKSD.FTP
      - CPGKSD2
      - CPGLKY

153 row(s) received

CPGQWK

Refresh
Rename
Add ...

0 view(s) loaded   8 data fields in map

z/VSE Live Virtual Class

§ z/VSE V4 and MWLC Announcement Overview
§ Midrange Workload License 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
§ Bringing You up to Date with z/VSE V4
§ z/VSE Wellness
§ Encryption Facility for z/VSE
§ DB2 for z/VM and z/VSE V7.5
§ Modern Application Development for z/VSE
§ Live Demo of WebSphere Developer for System z
§ z/VSE V4.2
§ z10 BC for VSE customers
§ Using the new LDAP client in z/VSE
§ WebSphere MQ for z/VSE V3 Exploitation & Solutions
§ VSAM Enhancements in z/VSE V4.2
§ z/VSE Update

§ + more planned …

§ typically set for Wednesday or Thursday, 11:00 am – Noon EST

Note: Charts are 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 and z/VM-Linux Customer Conferences in 2009

§ **GSE in Dortmund (Germany), April 27-29, 2009**

§ **IBM System z TC in Brussels (Belgium), May 4-8, 2009**

§ **WAVV in Orlando (Florida), May 15-19, 2009**

§ **IBM System z EXPO in Orlando (Florida), Oct 5-9, 2009**

§ **IBM Server Systems TC in Mannheim (Germany), Oct 19-23, 2009**

§ **GSE European Working Group in Dresden (Germany), Oct 26-28, 2009**

Top Concerns of VSE* Customers

1. **Applications**

2. **Cost**

3. **Skills**

4. **Future**

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

Press on z/VSE Future

IBM Systems

IBM

z/VSE Evolution
and z/VSE Success Factors

NEW

z/VSE V4.2.1   July 17, 2009
- **Delivering on SoD**
- **Additional enhancements**

Future

z/VSE V4.2   Oct 17, 2008
- **More tasks, more memory, LDAP client**
- **PAV, SVC, EF, SCRT on z/VSE**
- **SoD** for CICS/VSE, RBD V7 extension, WMQ V3**

**End of Service
effective since
July 31, 2009**

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

Pricing

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

Rebranding

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

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

Capacity Quality z/OS Affinity Interoperability

VSE/ESA V2.5   Sept 29, 2000
- interoperability
- e-business connectors

Strategy

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.

** All statements regarding IBM's plans, directions, and intent are subject to change or withdrawal without notice.

z/VSE V4.2 and z/VSE V4.2.1 Contents

§ **Servers**

  ► IBM System z10 Enterprise Class (z10 EC) and z10 Business Class (z10 BC)

  ► IBM System z9 Enterprise Class (z9 EC) and z9 Business Class (z9 BC)

  ► IBM eServer zSeries 990, 890, 900, and 800

§ **Scalability**

  ► Up to 512 tasks (2x z/VSE V4.1)

  ► Up to 32 GB real processor storage (4x z/VSE V4.1)

  ► Turbo dispatcher enhancements (CP balancing)

  ► Parallel Access Volume (PAV) feature of IBM System Storage DS8000 and DS6000 series

  ► IBM System Storage DS8000 Space Efficient Flashcopy

§ **Security**

  ► Lightweight Directory Access Protocol (LDAP) sign-on support using a z/VSE LDAP client

  ► IBM System z10 extensions to CP Assist for Cryptographic Function (CPACF)

  ► SOA Message Layer and Transport layer security

  ► IBM System Storage TS1130 and TS1120 're-keying' function

  ► Basic Security Manager (BSM) improvements

  ► Encryption Facility for z/VSE V1.2 as an optional priced feature supporting OpenPGP format

z/VSE V4.2 and z/VSE V4.2.1 Contents ...

§ **Enhanced storage options**

- ► IBM System Storage SAN Volume Controller (SVC) access to FCP-attached SCSI disks
- ► IBM System Storage TS3400 Tape Library
- ► IBM System Storage TS1130 Tape Drive
- ► DS8000 Full Disc Encryption
- ► IBM Virtualization Engine TS7700 Release 1.5
  - • including support for IBM System Storage TS7720 Virtual Tape System

§ **Interoperability**

- ► IBM Rational COBOL Runtime for z/VSE V7.5
- ► IBM WebSphere MQ for z/VSE V3.0

§ **Pricing**

- ► MWLC (full- or sub-capacity options) eligible on z10 EC, z10 BC, z9 EC, and z9 BC
- ► 'Traditional' price metrics for other servers

§ **Migration**

- ► Fast Service Upgrade (FSU) from z/VSE V4.1 and z/VSE V3.1

§ **Virtualization**

- ► Requires z/VM V5.2 or later if running under z/VM

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z/VSE V4.2 Statement of Direction (SoD)*

§ **Delivering on the SoD:**

  ► New Enterprise Generation Language (EGL) extension to Rational Business Developer

  ► New version of WebSphere MQ for z/VSE

§ **Reemphasizing the SoD:**

  ► z/VSE V4.2 will be the last release to offer CICS/VSE V2.3

    ● CICS/VSE V2.3 and DL/I V1.10 will not be included in any future version or release of z/VSE

§ **For planning purposes:**

  ► Expect any future version or release of z/VSE not sooner than second half of 2010

* All statements regarding IBM's plans, directions, and intent are subject to change or withdrawal without notice.

z/VSE Evolution

z/VSE V4.2.1   July 17, 2009
- Delivering on SoD
- Additional enhancements

z/VSE V4.2   Oct 17, 2008
- **More tasks, more memory, LDAP client**
- **PAV, SVC, EF, SCRT on z/VSE**
- **SoD** for CICS/VSE, RBD V7 extension, WMQ V3**

z/VSE V4.1   March 16, 2007
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- CICS Transaction Server for VSE/ESA
- e-business

Protect
Integrate
Extend

Capacity
Quality
z/OS Affinity
Interoperability

...the story continues....

Stay tuned!

- 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.
 ** All statements regarding IBM's plans, directions, and intent are subject to change or withdrawal without notice.

IBM System z10 can do IT all - Smart, Cool, Affordable
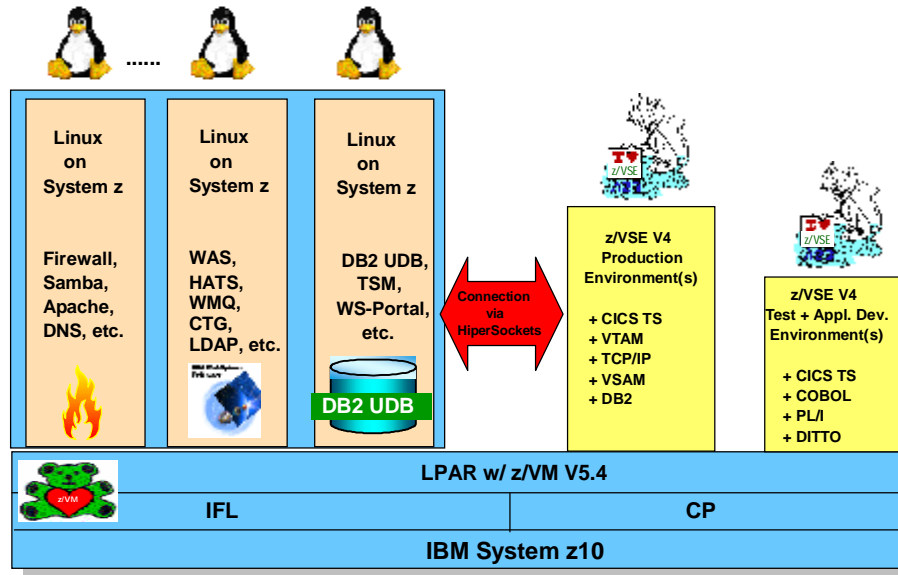
§ **z/VSE V4**

► Protect core IT investments thru PIE

► Robust, secure enterprise server

► Cost-effective solutions

► Interoperability with network / servers

► Highly improved price / performance

§ **z/VM V5**

► Highly flexible, industrial strength

► Advanced virtualization

► Multiple z/VSE and Linux images

► Designed to exploit System z9 and z10

§ **Linux on System z**

► Large portfolio of new applications

► Platform for IBM middleware

► Infrastructure Simplification

► Massive scalability and consolidation

One more time: The Difference between Perception ...

zEG02 z/VSE in an Elevator

IBM Systems
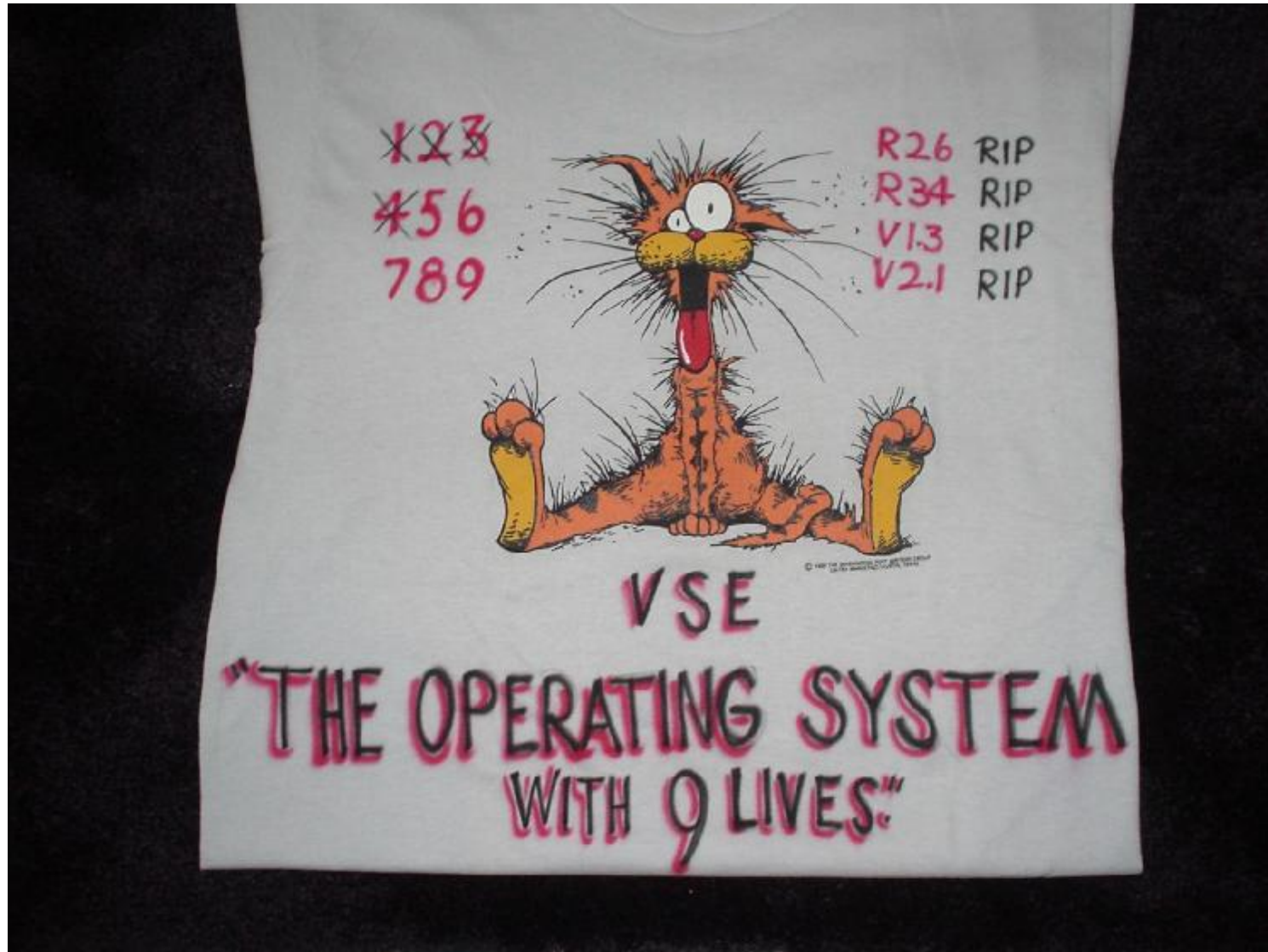
.... and Reality

Survived the 25th anniversary, celebrated the 45th birthday

Offers very modern functionality, e.g. SOA, XML, SCSI, SVC, XIV, PAV, LDAP, EF, SSL

... and lots more - to be announced in the **NEAR** future !

Preparing for the Half Century Anniversary Party in 2015 !

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

zEG02 z/VSE in an Elevator

IBM Systems