



WAVV 2009

z/VSE in an Elevator

The longer ride version!

Klaus Goebel
z/VSE Systems Manager
kgoebel@de.ibm.com



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e-business logo*	IBM logo*	Resource Link	z/OS*
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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.

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Objective

**Learn
Everything
You needed to know about z/VSE**

And tell others about it !



IBM Böblingen Research & Development Center

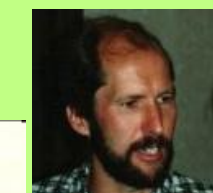
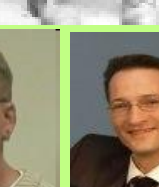
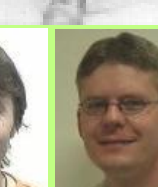
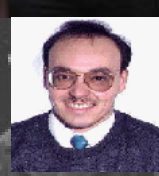
The Home of z/VSE and Linux on System z



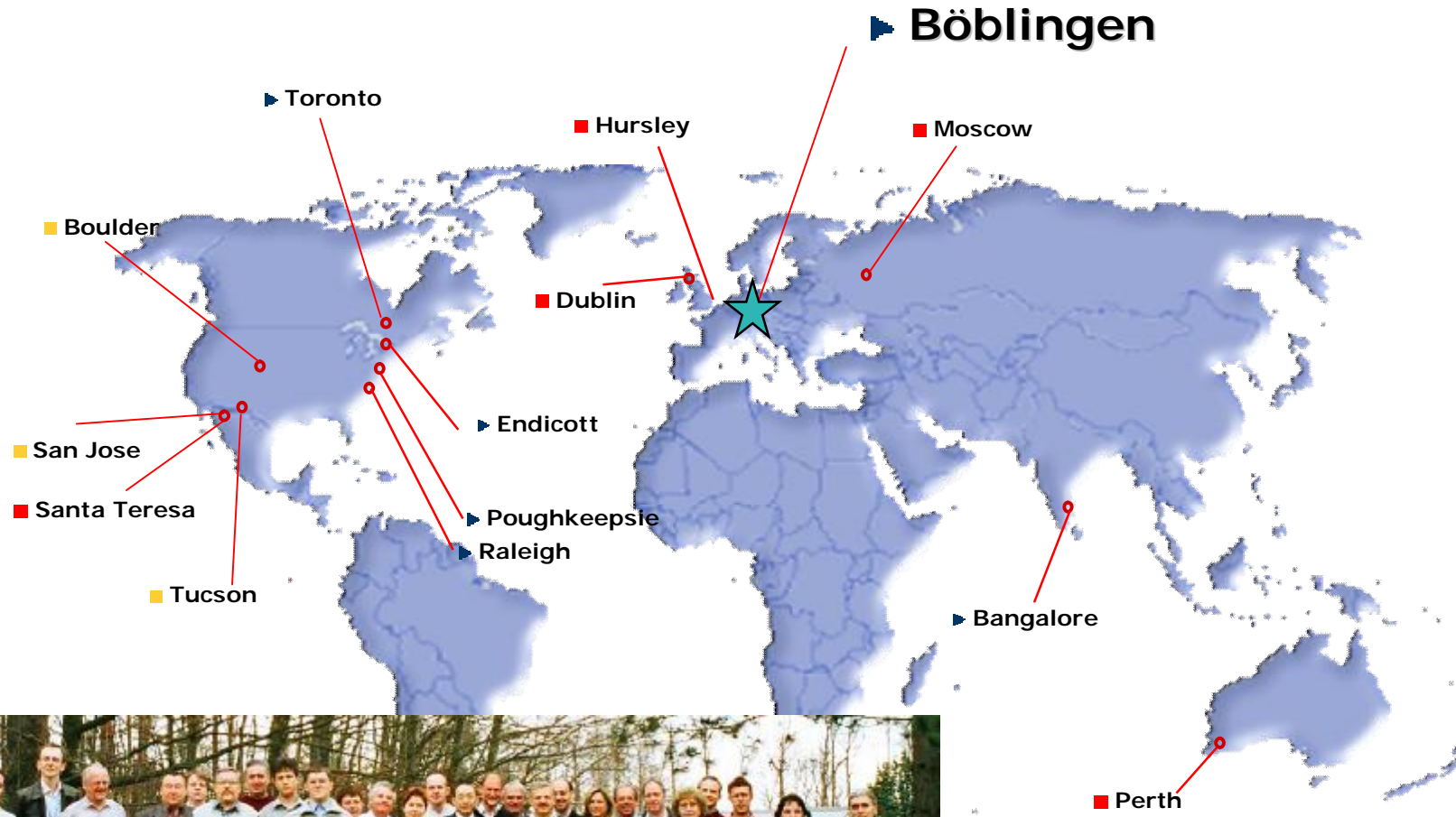
The Difference between Perception ...



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



The most important z/VSE Centers, worldwide



- ▲ Research
- Hardware Development
- Software Development
- ▶ Hardware and Software Development



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 KIPS (.03 MIPS)
- ▶ 16 – 64 KB

§ **DOS/360**

- ▶ 1 batch partition
- ▶ basic, but lovable

§ **System z10 BC**

- ▶ 26-673 MIPS (1-way)
- ▶ 4 – 248 GB

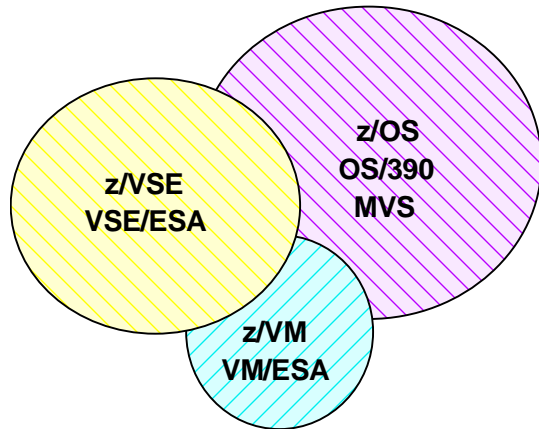
§ **z/VSE V4**

- ▶ Batch and OLTP
- ▶ SOA
- ▶ still lovable



Operating Systems on IBM System z

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



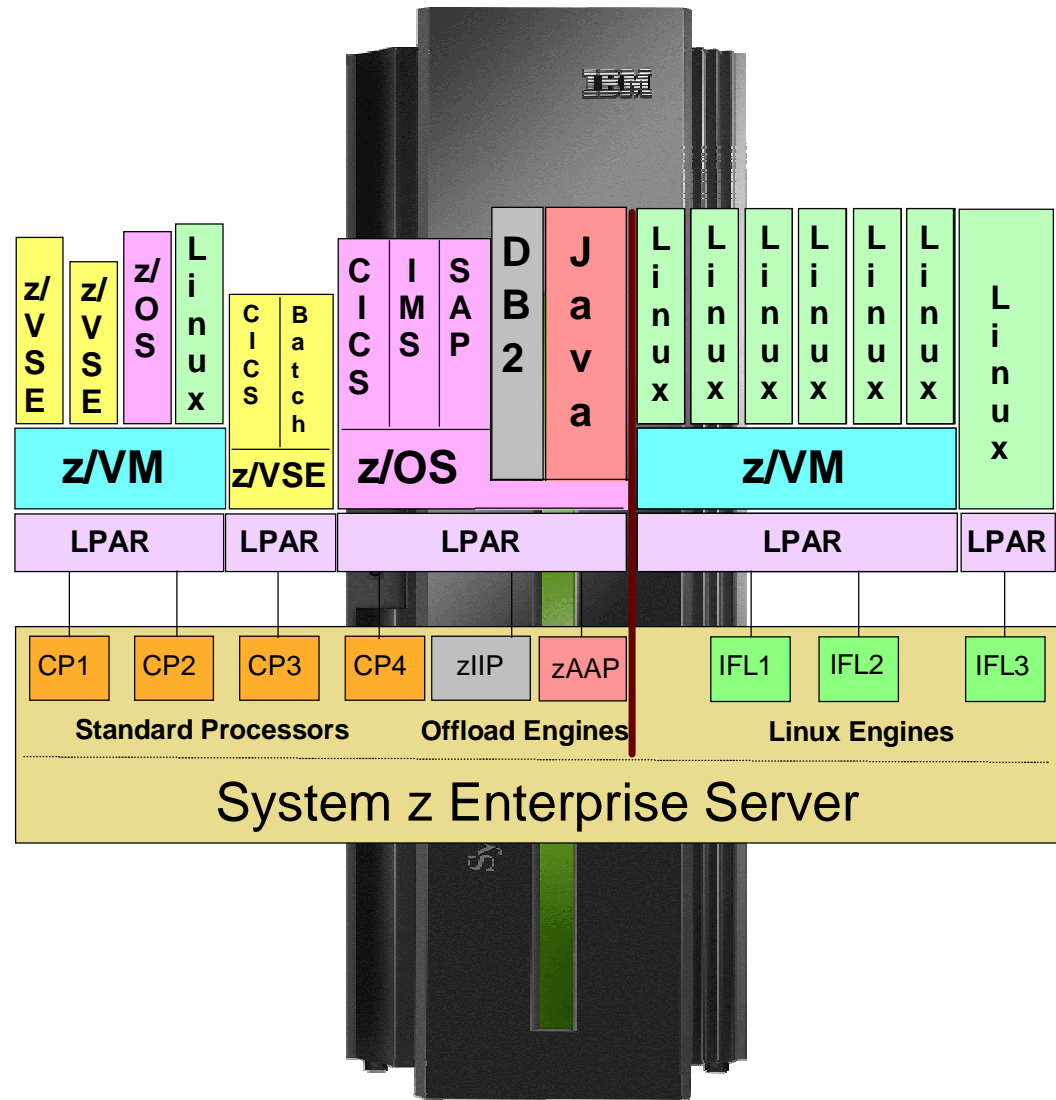
§ VSE* population is 40% in US, 40% in Europe, 20% in RoW

§ 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?

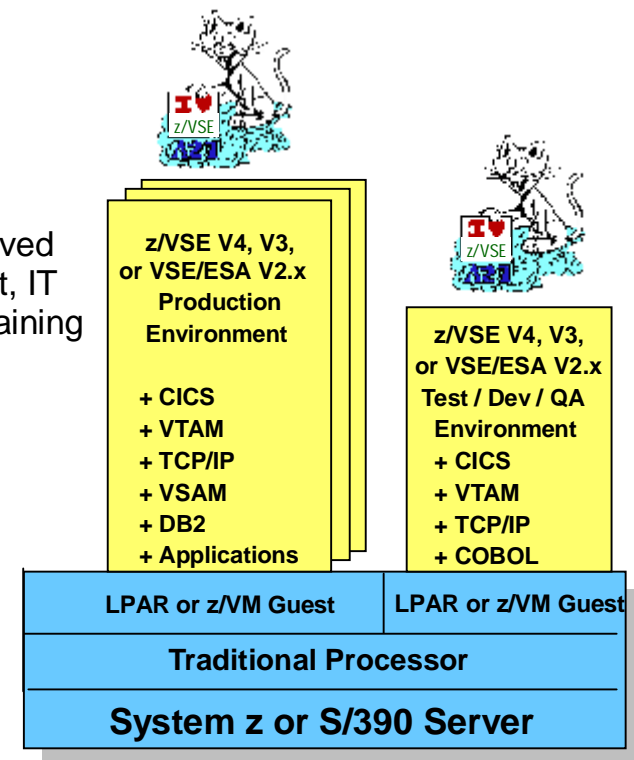
- § Cost-efficient, high performance, robust (almost no downtime)
- § Customers have a significant cumulative investment in proven, highly evolved homegrown core VSE application code (CICS and batch), data, equipment, IT skills, company & industry expertise, business processes, and end-user training
- § 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



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

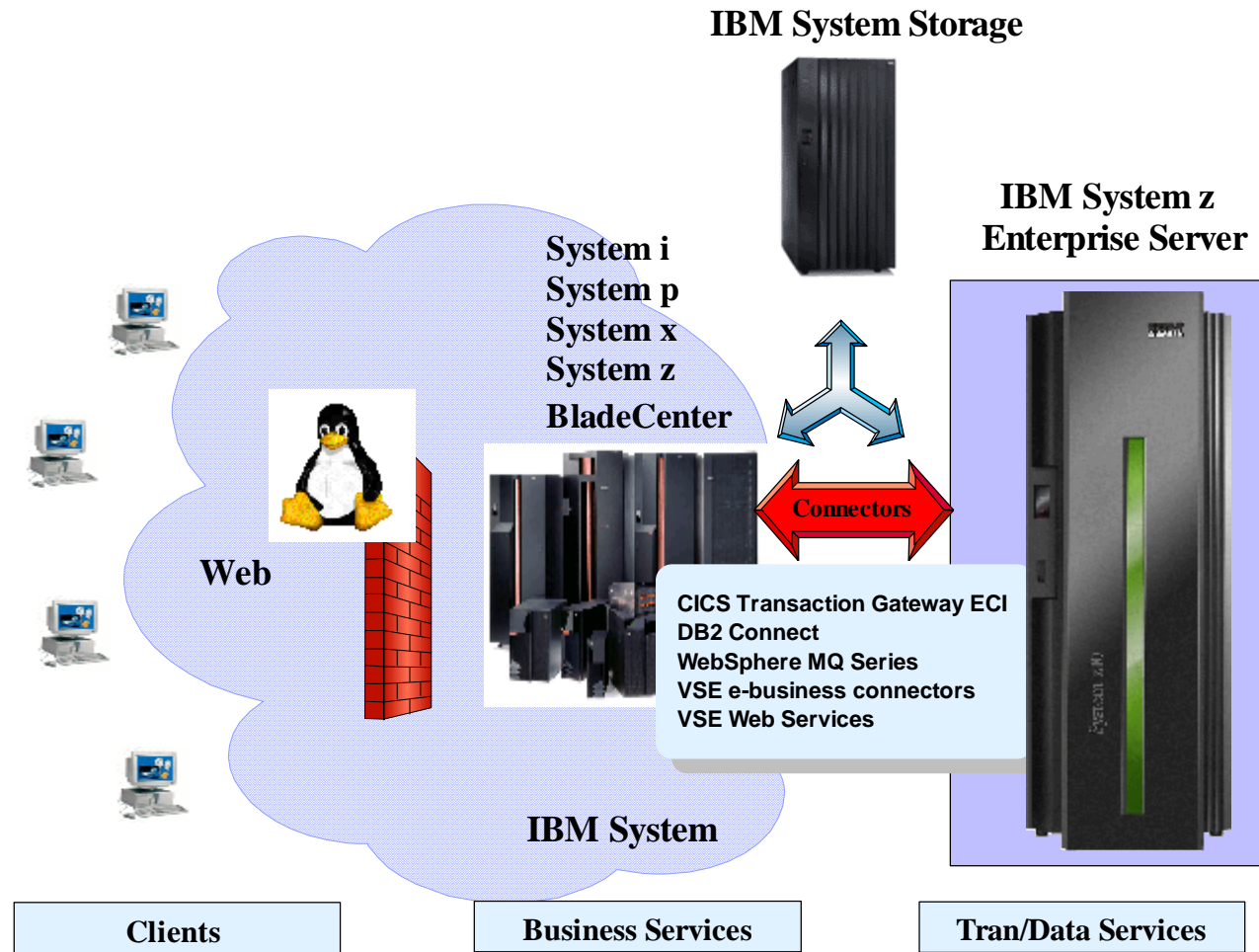


(*) The term "VSE" stands for both, VSE/ESA and z/VSE.

z/VSE Strategy

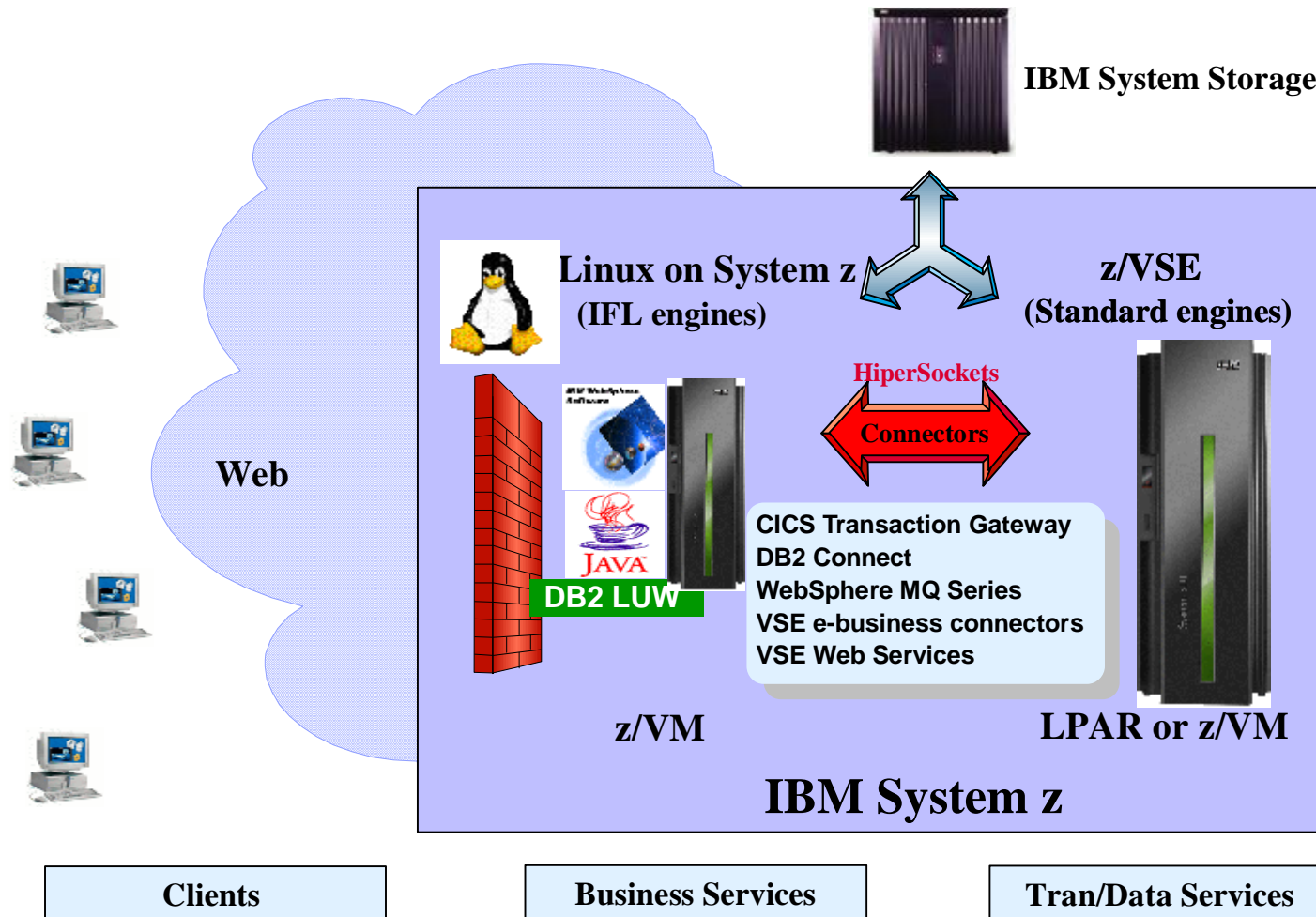
alias

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



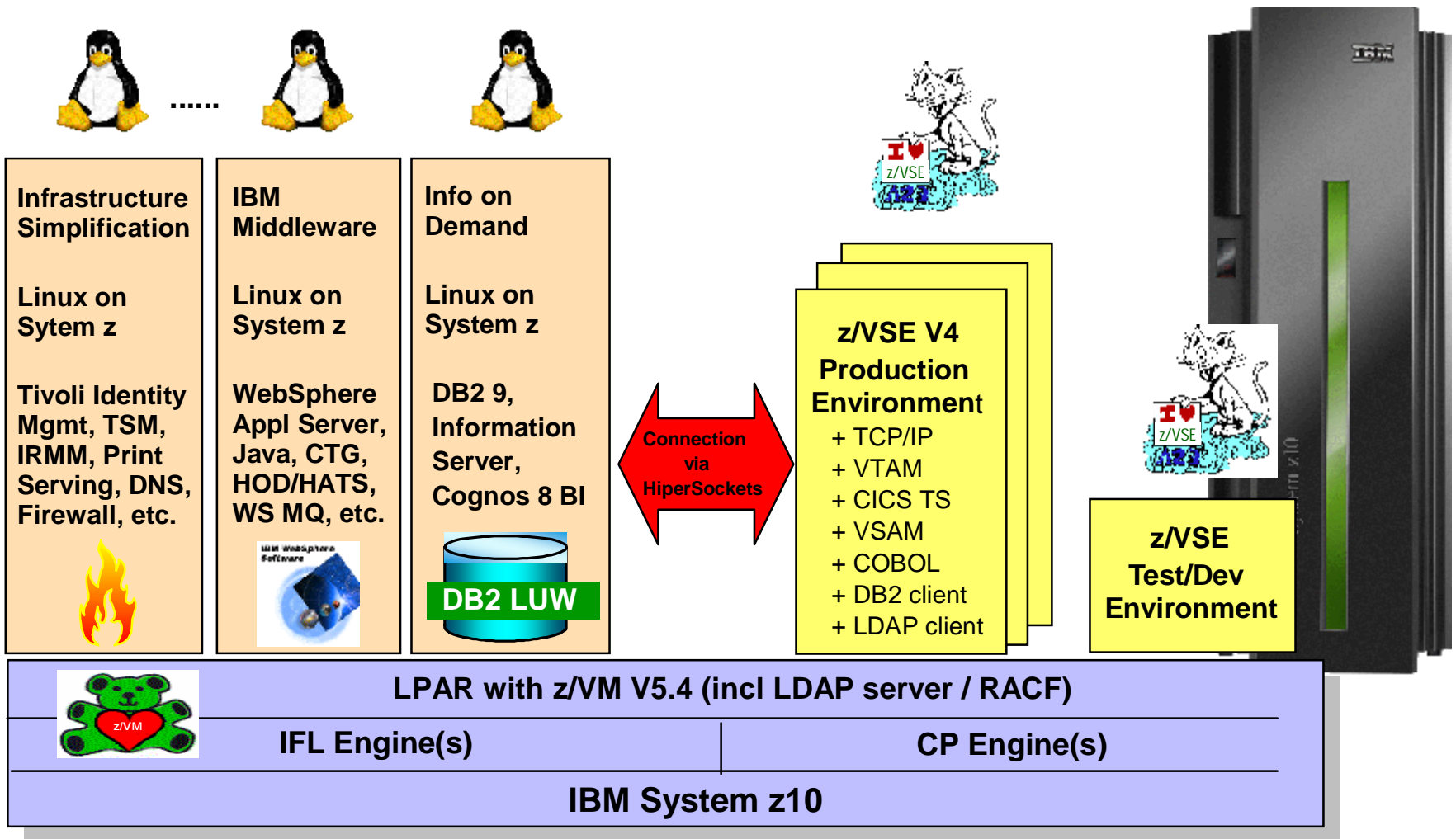
Protect existing VSE investments
Integrate using middleware and VSE connectors
Extend with Linux on IBM System z technology & solutions

z/VSE Strategy with Linux on System z



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

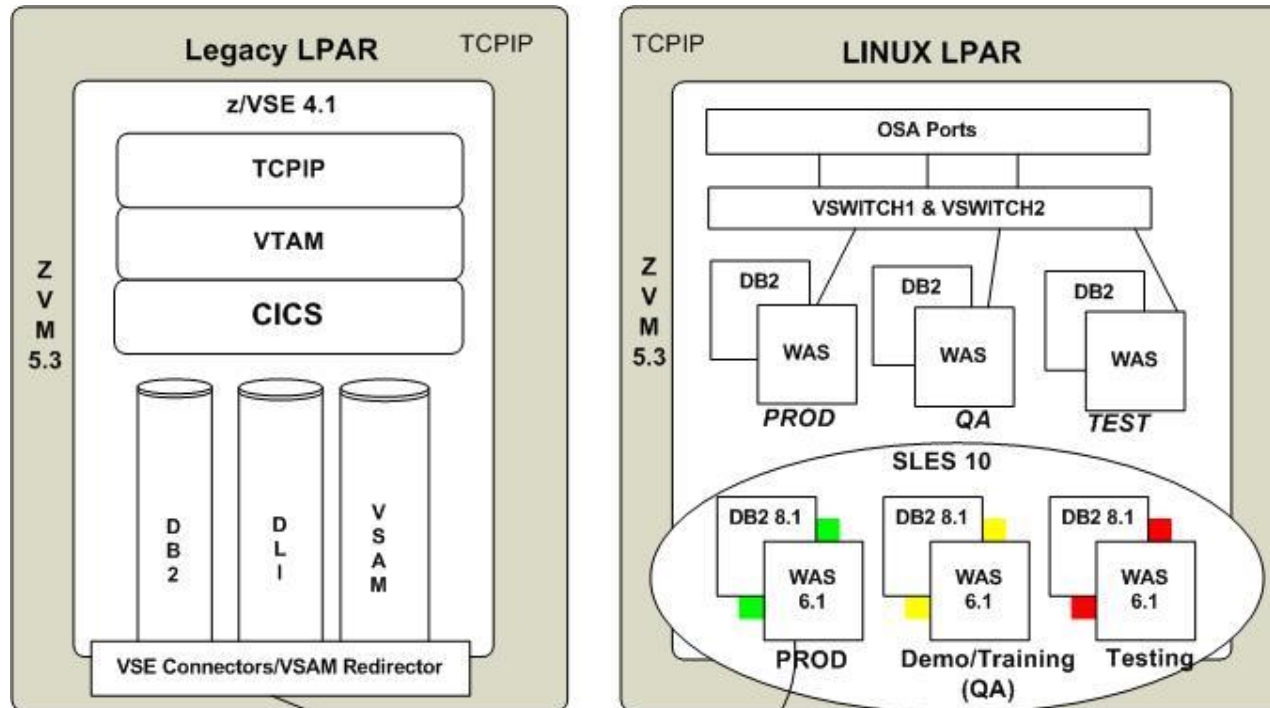
- P**rotect existing VSE investments
- I**ntegrate using middleware and VSE connectors
- E**xtend with Linux on IBM System z technology & solutions



z/VSE Reference Customers

- **Wessels & Müller, Germany**
 - z9 BC w/ z/VSE V3, IFL, DB2 UDB
- **Häfele, Germany**
 - z9 BC w/ z/VSE V4, ESS
- **Bau Rechenzentrum, Germany**
 - z9 BC w/ z/VSE V4, DS6000
- **WM Gruppe, Germany**
 - z9 EC w/ z/VSE V3, DB2, DL/1
- **Hypo Real Estate Systems, Germany**
 - z9 BC w/ z/VSE V3, DS8000, TSM
- **Peter Hahn, Germany**
 - z9 BC w/ z/VSE V4, IFL, DB2, SVC
- **Scheidt & Bachmann, Germany**
 - z9 BC w/ z/VSE V4, DS6000, IFL
- **Rheinland Versicherung, Germany**
 - z890 w/ z/VSE V3, IFL, DB2, Oracle
- **Edeka Rhein-Ruhr, Germany**
 - z9 BC w/ z/VSE V3, IFL, DB2 UDB
- **Brunata, Germany**
 - z9 BC w/ z/VSE V4, IFL, DB2 UDB
- **Supreme Court of Virginia, USA**
 - z9 BC w/ z/VSE V4, IFL, WAS, DB2 UDB
- **American Stock Transfer & Trust, USA**
 - z9 BC w/ migration from DB2 on VSE/ESA to DB2 UDB on Linux
- **Calkins Media, USA**
 - z890 w/ z/VSE V4, ESS, HATS
- **Fratelli Carli, Italy**
 - z9 BC w/ z/VSE V4, IFL, RHEL, DS8000, DB2 UDB
- **GE Money Bank, Switzerland**
 - z890 w/ z/VSE V3, AFP, Macro4
- **Pulsen, Sweden**
 - z9 BC w/ z/VSE V3, 2xIFL, DB2 UDB
- **Securex, Belgium**
 - z9 BC w/ z/VSE V3, IFL, DB2 UDB, BEA Weblogic, WebSphere MQ
- **Alcad, Slovenia**
 - z9 w/ z/VSE V4, IFL, DB2 UDB, SOA, RAD, WDz, WAS, WS Process Server

Supreme Court of Virginia



- ▶ 1 + 1 z9 BC
- ▶ 2 + 2 CPs
- ▶ 5 + 5 IFLs
- ▶ 48 + 32 GB memory
- ▶ 2 + 2 z/VM 5.3 LPARs
- ▶ 7 + 4 z/VSE 4.1 guests
- ▶ 41 + 14 SLES 10 guests

§ z9 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*

§ z9 BC for Internet

- ▶ eCommerce application integrating z/VSE and WebSphere apps



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.”

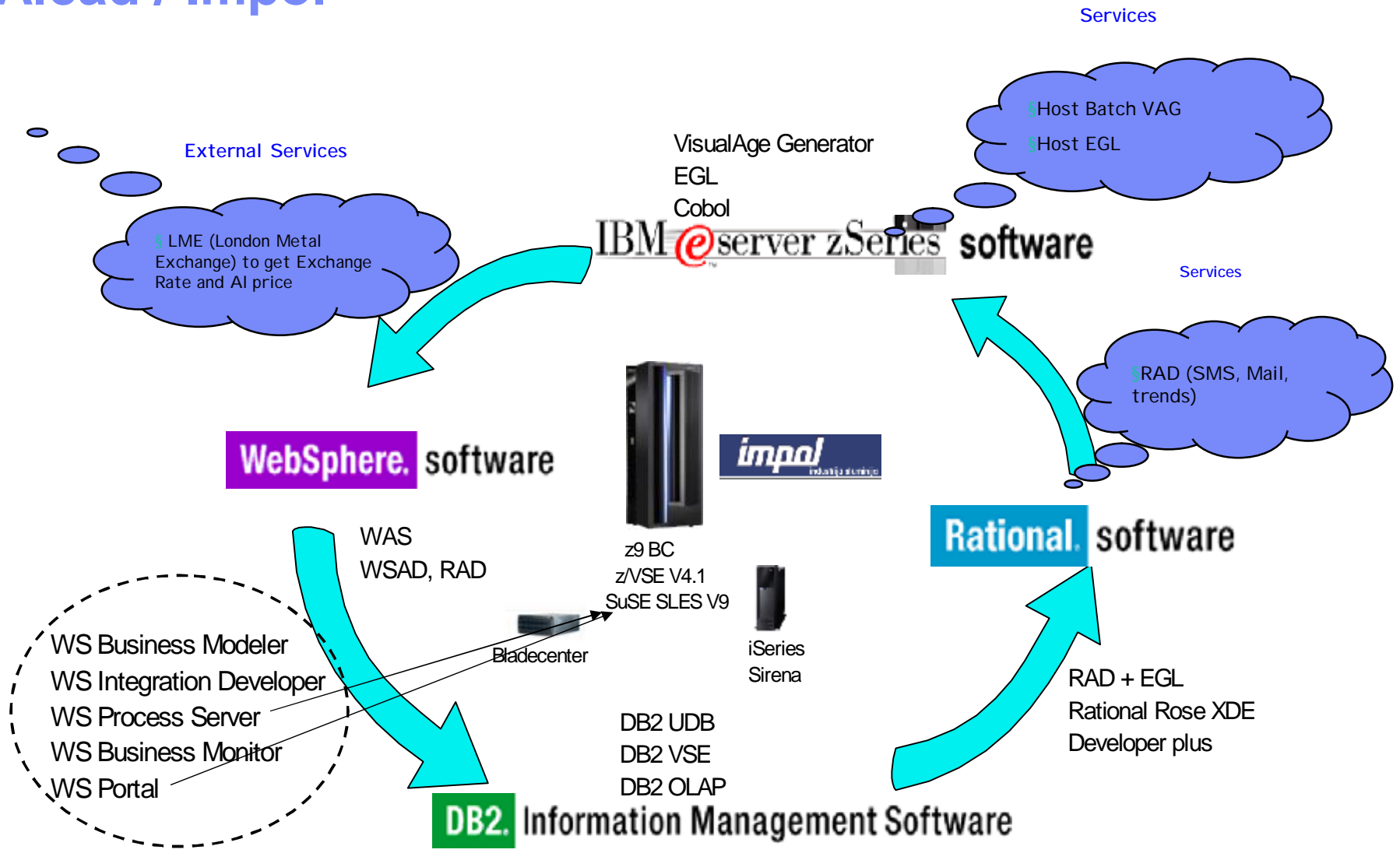
— Wessels+Müller AG

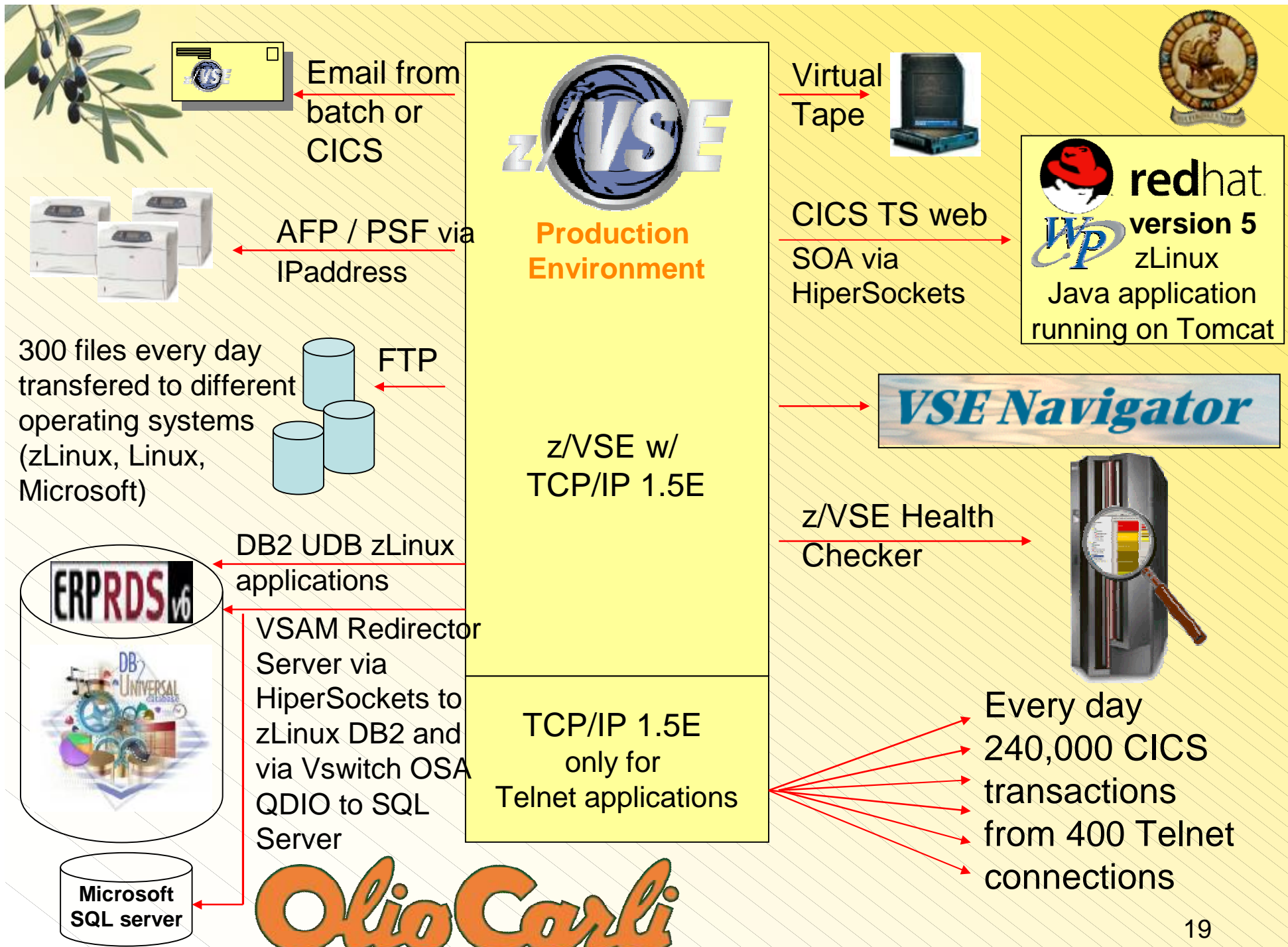
Solution components:

- § IBM System z9 Business Class (BC) mainframe
- § IBM DB2 data server



Alcad / Impol





Top Concerns of VSE* Customers

1. Applications



2. Cost



3. Skills



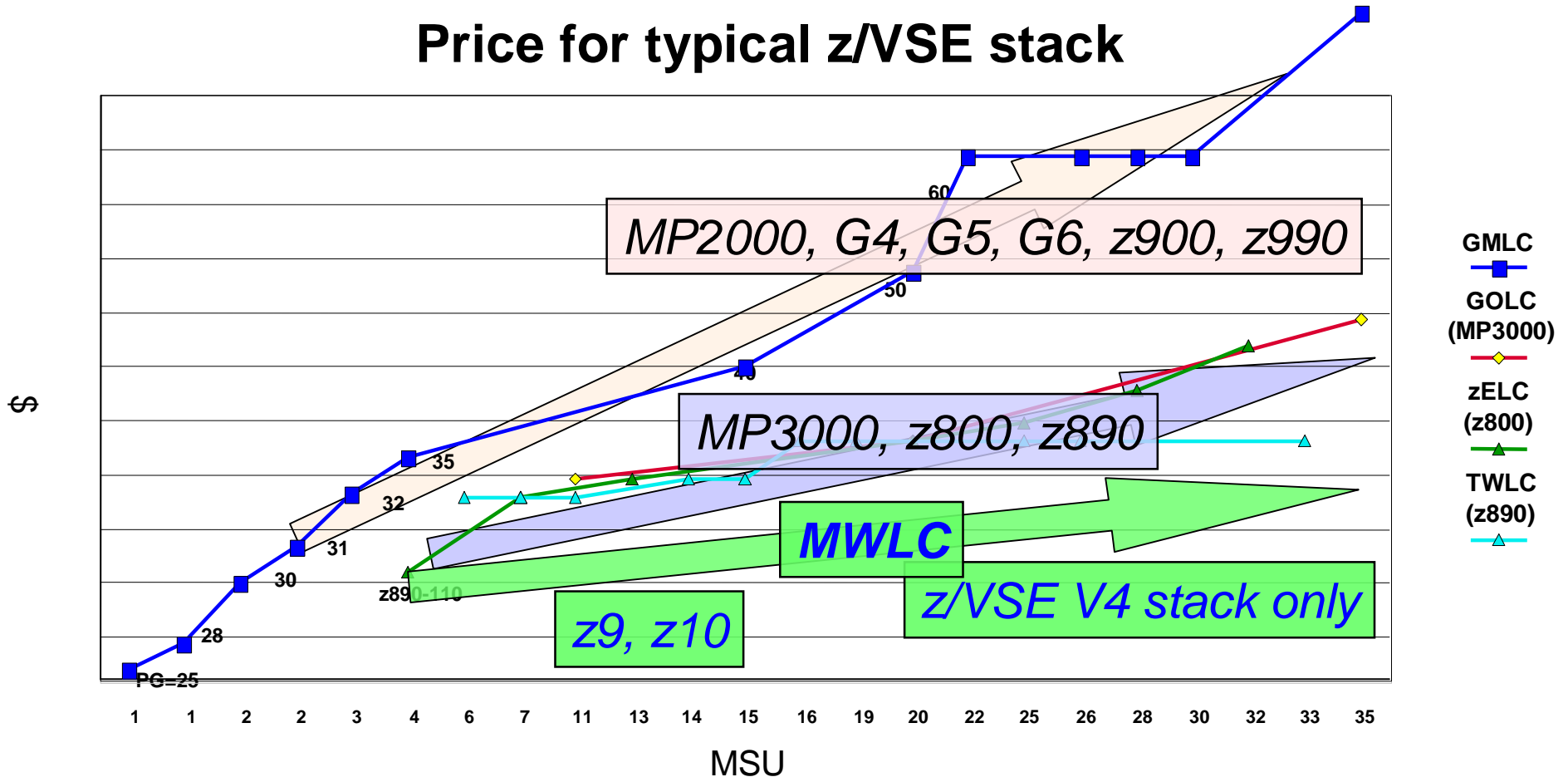
4. Future



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

MWLC – Midrange Workload License Charge

Price for typical z/VSE stack

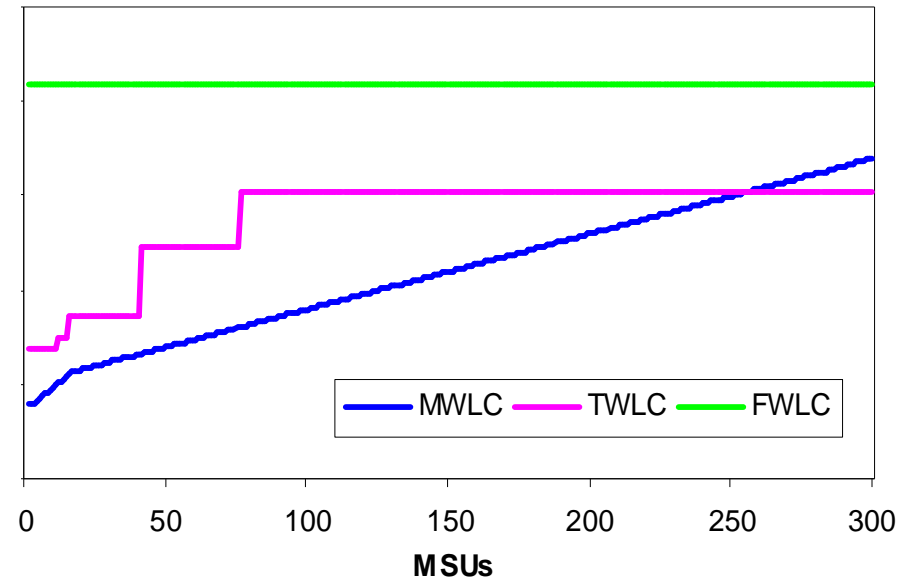


§ “I just got our April software bill from IBM for the first month on our z9 under z/VSE 4.1 and MWLC. We were paying \$22,965 per month on our z800 under z/VSE 3.1.2. The April bill is for the same software and it is \$12,318: a difference of \$10,647 per month.”
Mike Moore, IT Manager, Alabama Judicial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

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

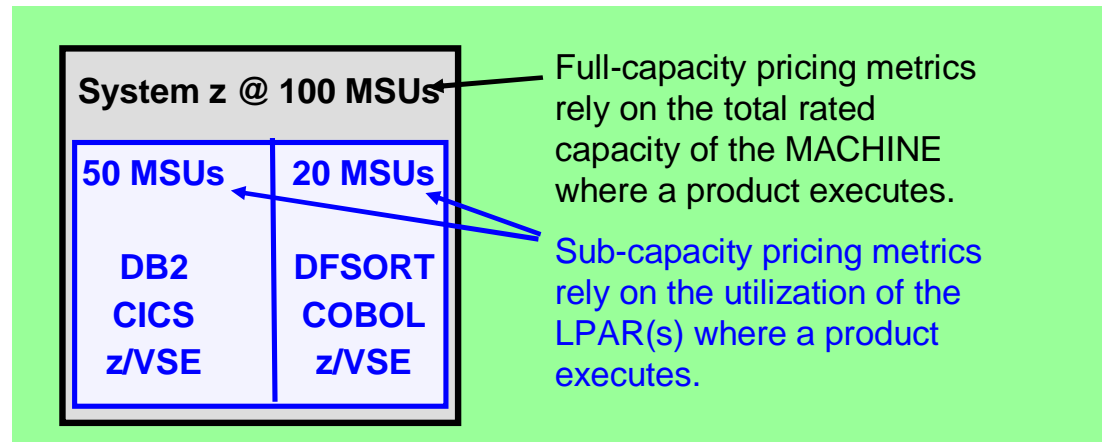
§ z/VSE price/performance through new pricing metric

- ▶ Midrange Workload License Charge (MWLC)
- ▶ MWLC requires current HW (z9* or z10*) and z/VSE V4



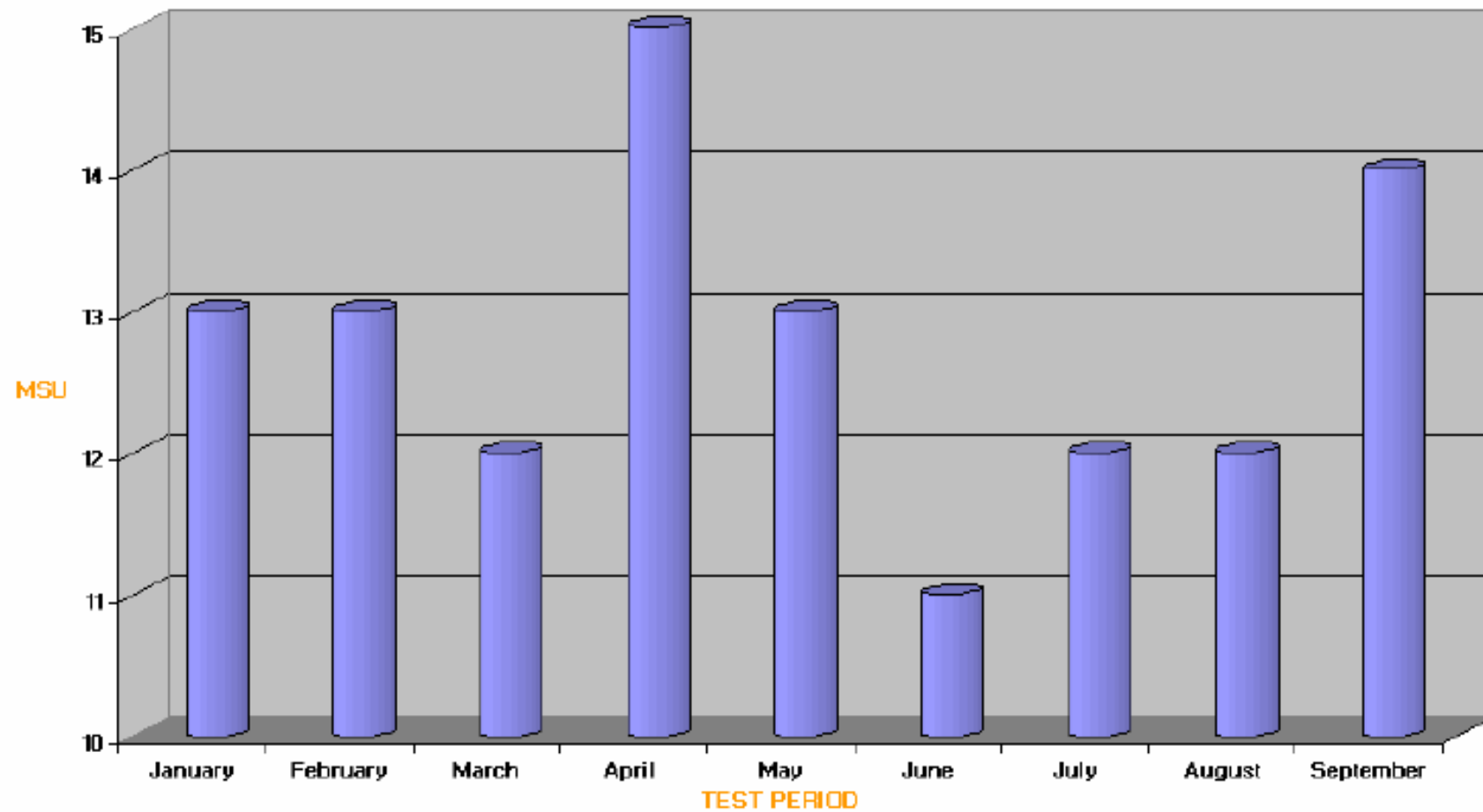
§ Additional price/performance through sub-capacity option

- ▶ Some hardware footprint **consolidations** more attractive now
- ▶ Presence of z/VSE V3 or VSE/ESA™ forces full-capacity pricing

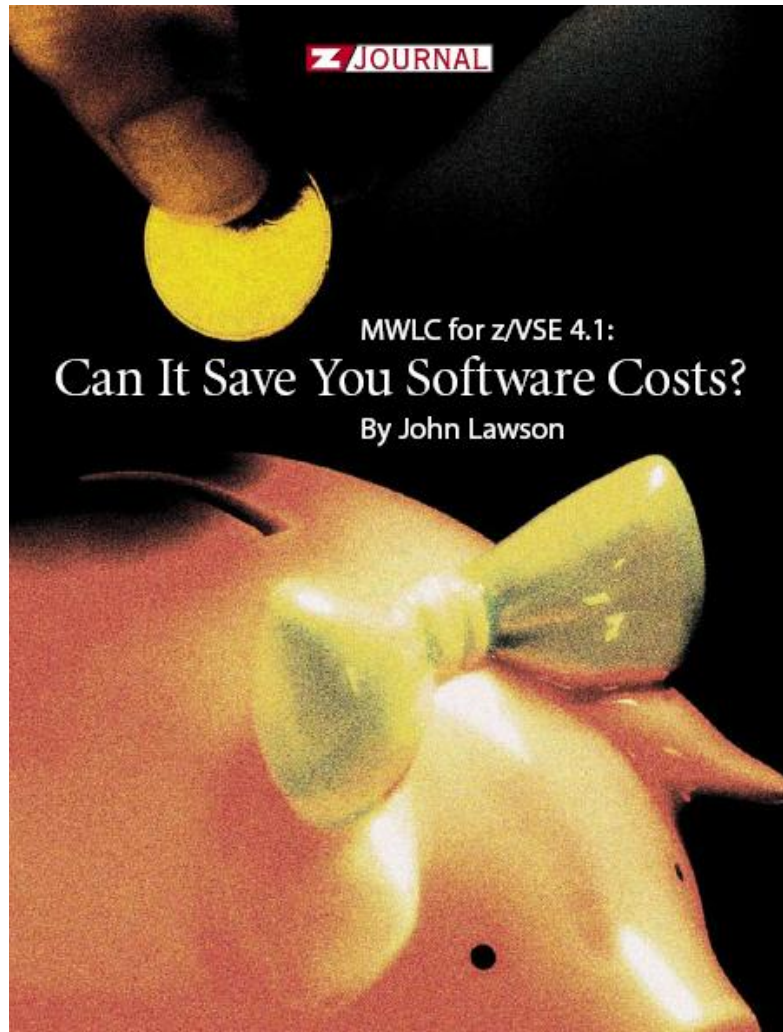


* z9 BC A01 and z10 BC A01 are priced zELC, not MWLC.

Sub Capacity Reporting Tool: Sample Report



Press on z/VSE Cost Savings VSE users receive an offer they can't refuse



Source: z/Journal, April / May 2007

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.

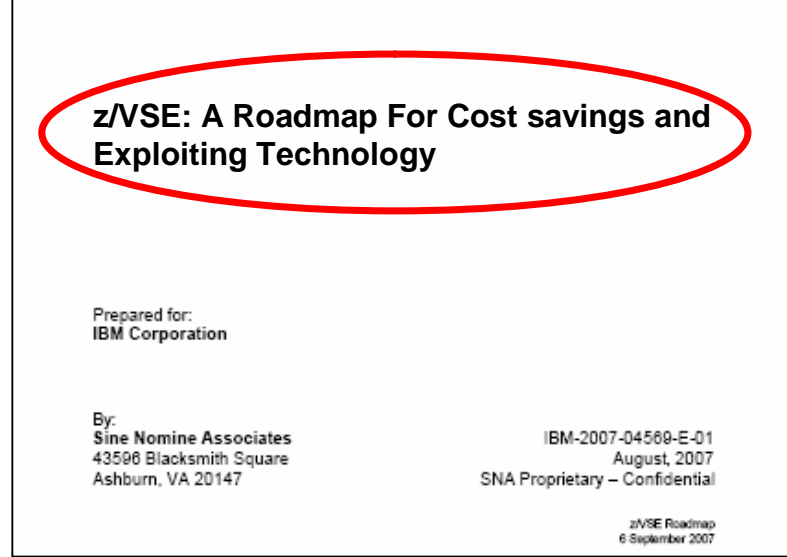
Many of these sites are slow growers with limited in house technical skills and a reluctance to upgrade their hardware or software even in exchange for significant cost savings. As a result their relationship with IBM (and with other ISVs supporting their applications) is a difficult one.

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.

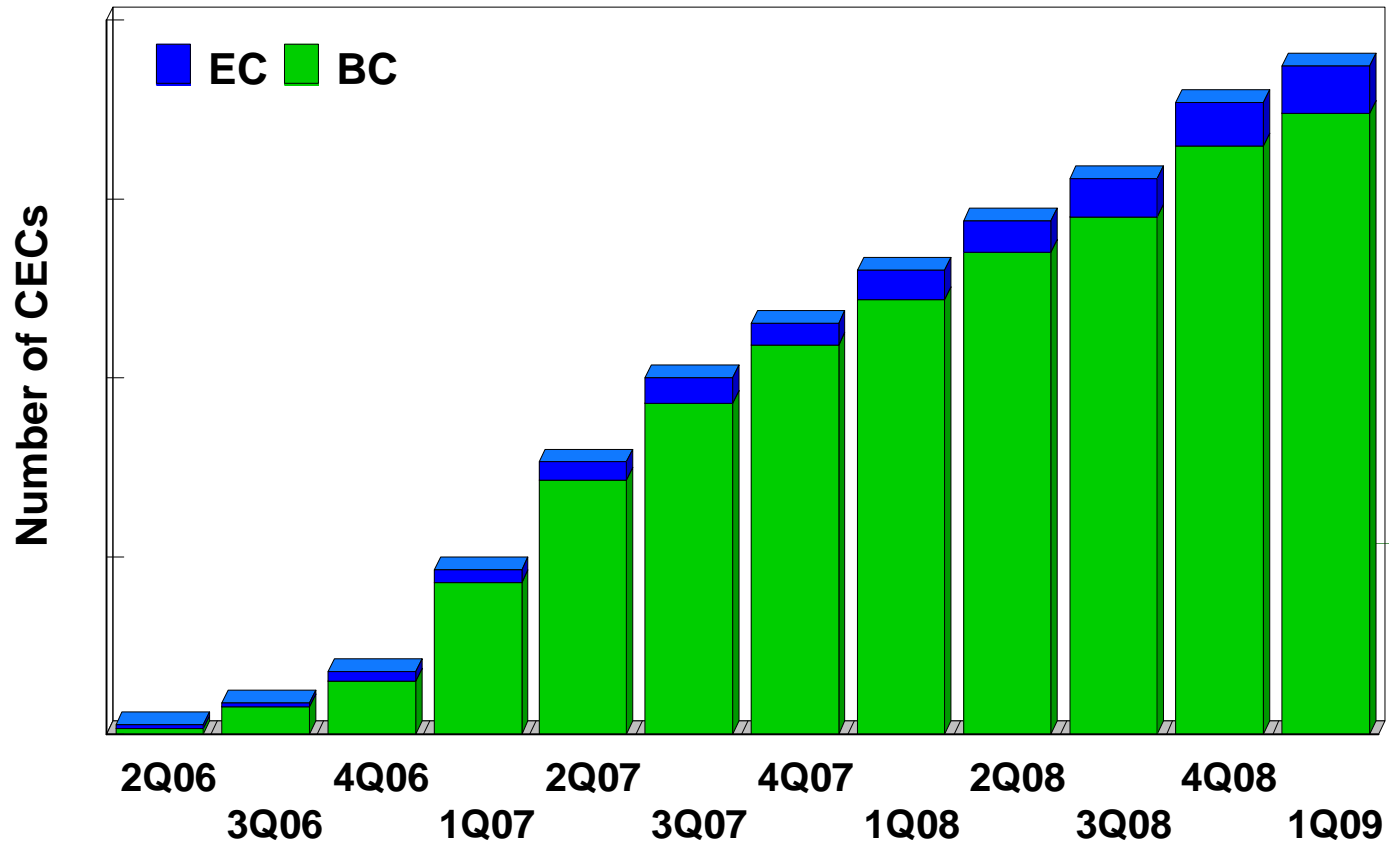
© Arcati Limited, 2007 Source: The Arcati Mainframe Yearbook 2007 33



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



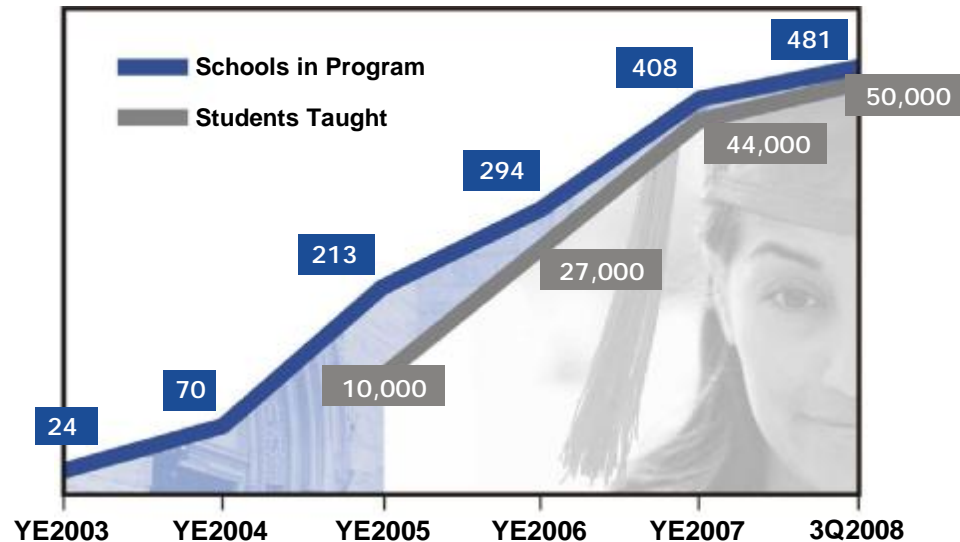
4. Future



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

Building Mainframe Skills for the Community

Growing Academic Initiative

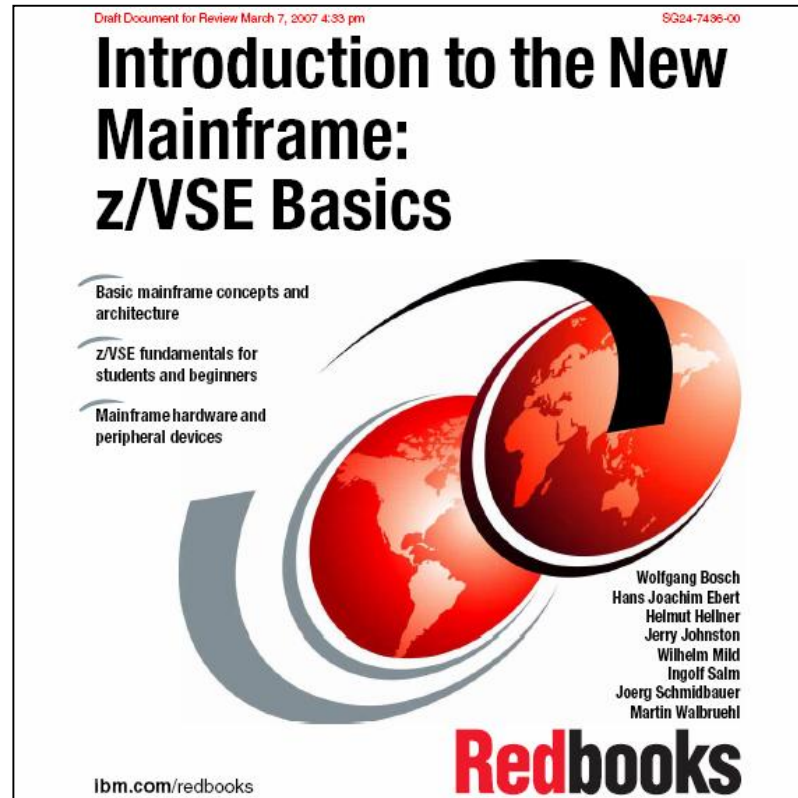


§ IBM Academic Initiative System z by the numbers:

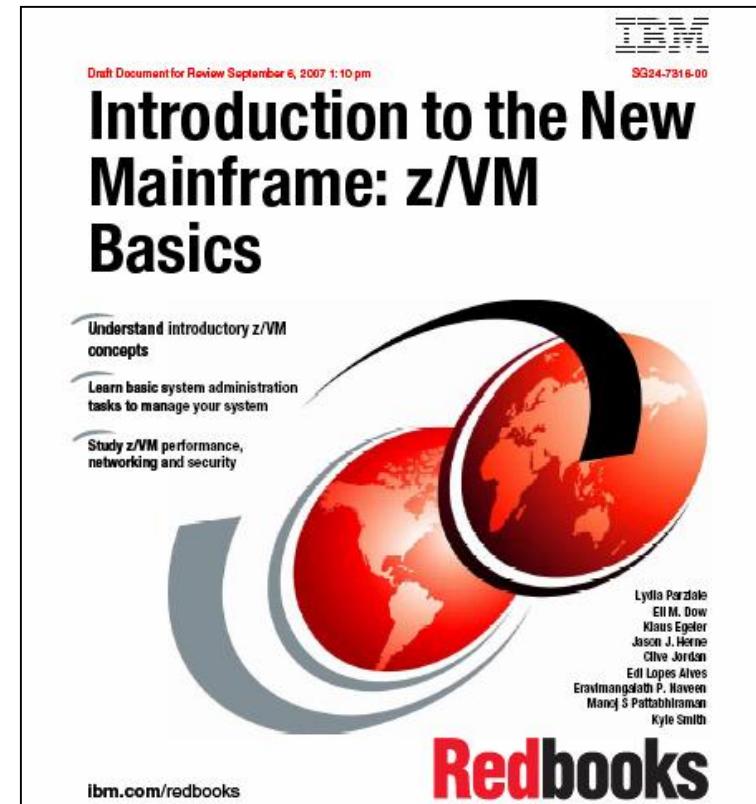
- ▶ Web site: www.ibm.com/university/systemz
- ▶ Participation – 481 schools registered, 50,000 students attended mainframe education
- ▶ Courses – 29+ Courses (plus more under development) & Mastery Exam Certification
- ▶ Resources – Access to Mainframes worldwide for teaching (6 Univ hubs)
- ▶ Student 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

z/VSE and z/VM Beginner's Education



SG24-7436-00



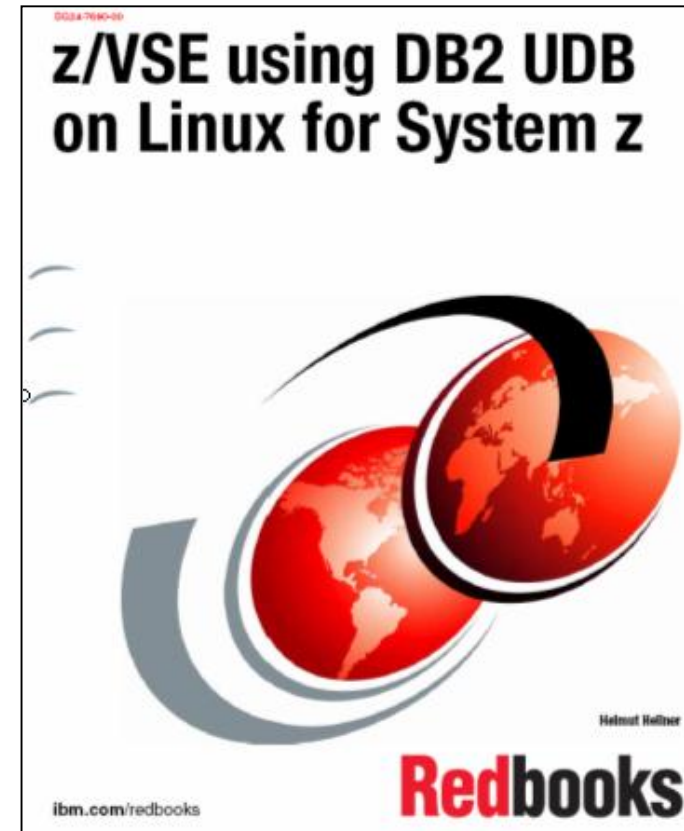
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z/VSE Navigator: Windows-like VSE Interface

File Edit Selected Configuration Functions Help

VSE Navigator

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

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

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 and Solutions
- § VSAM Enhancements in z/VSE V4.2
- § + 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 Technical Conference 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



§ 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



- HOME
- NEWS
- MARKETS
- MY PORTFOLIO
- TECHNOLOGY
- JOBS
- PERSONAL FINA

<http://money.cnn.com/news/newsfeeds/articles/marketwire/0317343.htm>

IBM Continues the Evolution of Its z/VSE Mainframe Operating System

October 19, 2007: 08:01 AM EST

IBM (NYSE: IBM) today announced that the z/VSE mainframe operating system address customer needs for scalability, security and integration. z/VSE mainframe applications and drive stronger investment protection.

"Many customers are beginning to put new Linux applications on the mainframe, and also runs their production z/VSE applications. This integrated approach leverages the robust data serving capabilities of z/VSE, and the potential for low cost z9 mainframe," said Dr. Klaus Goebel, Development Executive Project Manager. "IBM's powerful mainframe virtualization system, z/VM, is fundamental to help customers get the most from their Linux and z/VSE application business growth."

Previewed at a special international meeting of the GUIDE SHARE Europe earlier this week, z/VSE enhancements include a range of new features, especially important to modern applications, such as on-line commerce. Capabilities include:

- More z/VSE tasks and more real storage designed to improve scalability

and many more, e.g.	§ Wall Street Journal
§ yahoo.com	§ news.moneycentral.msn.com
§ pressebox.de	§ marketwatch.com
§ verivox.de	§ businessweek.com
§ boerse-go.de	§ smartmoney.com, etc. etc.

The New York Times
Sunday, October 21, 2007
Research
WORLD U.S. N.Y. / REGION BUSINESS TECHNOLOGY SCIENCE
MEDIA & ADVERTISING WORLD BUSINESS SMALL BUSINESS YOUR MONEY

International Business Machines IBM price \$112.26 + \$0.10
Data 10/19/2007 ASX: My Path 10/19/2007 04:00 PM
After Hours \$112.10 -0.10 -0.16% 10/19/2007 04:00 PM

Overview Profile Ratings Summary History Competition Filings Financials

IBM Continues the Evolution of Its z/VSE Operating System

INFRASTRUKTUR & KOMMUNIKATION
IBM-Manager Göbel: Bankkunden fordern integrierte Verschlüsselung
„Anwender wollen ihr System z/VSE nicht mehr aufgeben“

Seit zehn Jahren hat Klaus Göbel die weltweite Verantwortung für IBM's Mainframe Betriebssystem z/VSE, dessen Entwicklung hauptsächlich in Stuttgart stattfindet. Obwohl z/VSE weit in den Hintergrund auf dem Markt rückt und Big Blue es nicht weiter unterstützen wollte, wird es ständig weiterentwickelt.

CE – Was ist der Grund, z/VSE zu entwickeln? Die Kunden wollen das System weiterentwickeln, um die Integration von Linux und z/VSE zu ermöglichen. Die Kunden wollen das System weiterentwickeln, um die Integration von Linux und z/VSE zu ermöglichen.

CE – Was ergibt dabei die Verbesserung von z/VSE? Die Kunden wollen das System weiterentwickeln, um die Integration von Linux und z/VSE zu ermöglichen.

CE – Und wie sieht sich dieses Problem? Die Kunden wollen das System weiterentwickeln, um die Integration von Linux und z/VSE zu ermöglichen.

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Arkeia Software präsentiert seine ...
news 19.10.2007 16:37
IBM verspricht Weiterentwicklung von z/VSE
Immer mehr Anwender der IBM-Mainframes setzen nicht nur Linux ein, sondern lassen ihre Linux-Anwendungen in einer virtuellen Maschine auf dem Großrechner laufen. Diesen Trend zur Konsolidierung sieht jedenfalls Dr. Klaus Göbel, Leiter des z/VSE-Produktentwicklungsteams. Darum soll die für das vierte Quartal 2008 erwartete nächste Version des Betriebssystems mehr parallele VSE-Tasks und mehr Hauptspeicher unterstützen. Zudem will man Linux-Anwendungen besseren Zugriff auf z/VSE-Daten ermöglichen, etwa auf die des Datenbanksystems DB2 UDB.

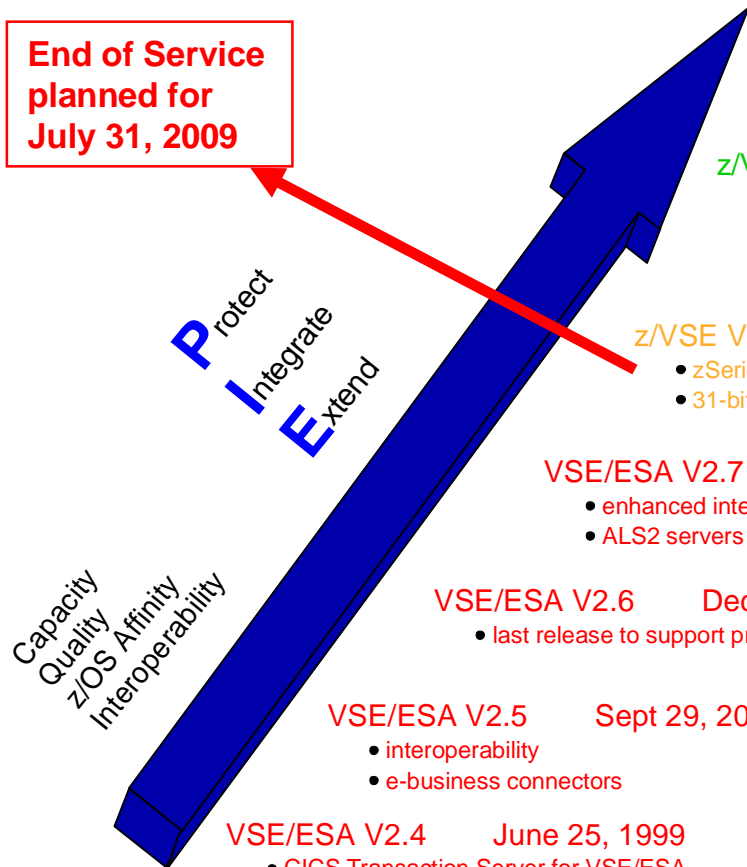
CE – Das bringt großes Risikopotenzial ...
CE – Was ergibt dabei die Verbesserung von z/VSE?
CE – Und wie sieht sich dieses Problem?

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NACHRICHTEN
Totgesagte leben länger: IBM entwickelt VSE weiter
19.10.2007 um 15:59 Uhr
Der Investitionsschutz lebe hoch: IBM hat angekündigt, das "Legacy"-Großrechnerbetriebssystem z/VSE weiterzuentwickeln.
Die neue Version z/VSE 4.2 ist eine IBM-Pressemitteilung allerdings erst in rund einem Jahr (Q4/2008) generell verfügbar. Sie soll dann mehr Tasks und realen Storage unterstützen, eine Verschlüsselungseinrichtung (Encryption Facility) beinhalten und last, but not least Integration mit Linux auf System z bieten. Damit sollen Kunden z/VSE-Produktionsdaten in neuen Linux-Anwendungen - etwa Data Warehouses mit DB2 UDB - übernehmen können. Vorgestellt wurden die Verbesserungen in dieser Woche auf einer internationalen Tagung der Mainframe-Usergroup Guide Share Europe (GSE). (tc)

z/VSE Evolution and z/VSE Success Factors

End of Service planned for July 31, 2009



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, RDB V7 extension, WMQ V3

Pricing

z/VSE V4.1 March 16, 2007

- z/Architecture only
- 64-bit real addressing
- MWLC full & subcapacity pricing

Rebranding

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

Strategy

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.

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

z/VSE V4.2 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 SE 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 V1.1** as an optional priced feature (also available for z/VSE V4.1)

z/VSE V4.2 Contents (continued)



§ Enhanced storage options

- ▶ IBM System Storage **SAN Volume Controller (SVC)** access to FCP-attached SCSI disks
- ▶ IBM System Storage TS3400 Tape Library and TS7700 Virtualization Engine Release 1.4
- ▶ IBM System Storage TS1130 Tape Drive

§ Pricing

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

§ Migration

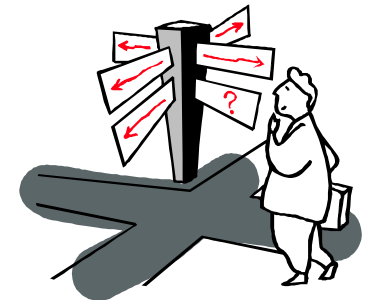
- ▶ Fast Service Upgrade (FSU) from z/VSE V4.1 and z/VSE V3.1

§ Virtualization

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

§ Statement of Direction (SoD)**

- ▶ z/VSE V4.2 will be the **last version/release of z/VSE to ship CICS/VSE V2.3**
- ▶ New Enterprise Generation Language (**EGL**) extension to Rational Business Developer
- ▶ New version of **WebSphere MQ for z/VSE**



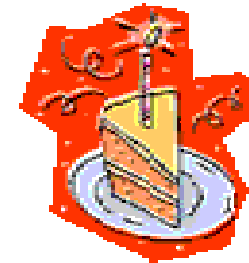
** All statements regarding IBM's plans, directions, and intent are subject to change or withdrawal without notice.

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 V4.2 Additional Enhancements

Planned availability: July 17, 2009



- § **Parallel Access Volume (PAV)** feature of IBM System Storage series DS8000 and DS6000
 - ▶ I/O performance improvements

- § **IBM DS8000 Full Disk Encryption**
 - ▶ Highest security for business-critical data

- § **IBM Virtualization Engine TS7700 Release 1.5** including support for the **TS7720 virtual tape system**
 - ▶ Support includes disk-only virtual tape systems with up to 70 TB of disk cache

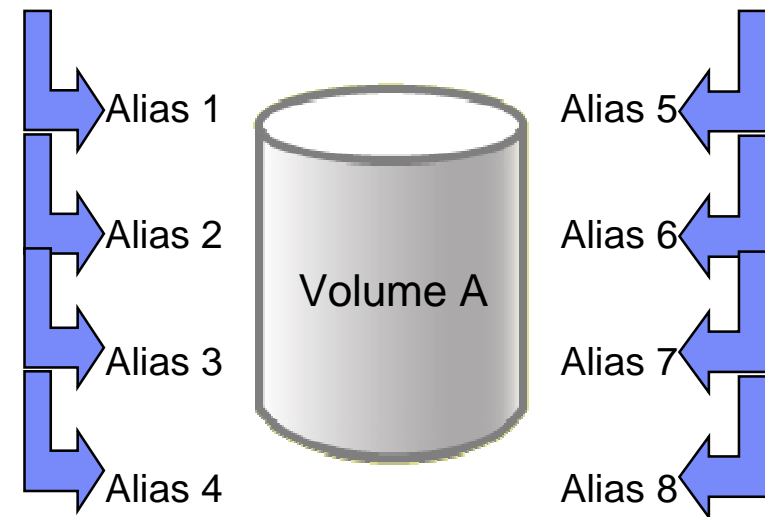
- § **Encryption Facility for z/VSE V1.2** supporting the **OpenPGP** format
 - ▶ Flexible and highly secure data exchange with business partners and peers

- § **IBM Rational COBOL Runtime** for z/VSE V7.5
 - ▶ Execute modern **Enterprise Generation Language (EGL)** developed with **Rational Business Developer**

- § **IBM WebSphere MQ** for z/VSE V3.0
 - ▶ Improved interoperability on distributed and mainframe platforms

Parallel Access Volume (PAV)

- § **Allows a z/VSE V4.2 host to access a single ECKD disk volume with multiple concurrent requests**
 - ▶ multiple addresses (alias) to a single logical device
 - ▶ enables more than one I/O operation to a single logical device
 - ▶ may reduce device queue delays
 - ▶ volume sharing – not file sharing
- § **PAV is an optional, licensed feature of IBM DS8000 and DS6000**
 - ▶ no changes needed for application programs
- § **Examples of PAV candidates**
 - ▶ VSAM catalogs, shared clusters, libraries
 - ▶ spool files, work files, log files
- § **Potential benefits include possibility of improved performance/throughput**
 - ▶ multiple jobs, multiple partitions, CICS
 - ▶ gains are *highly dependent on workload*



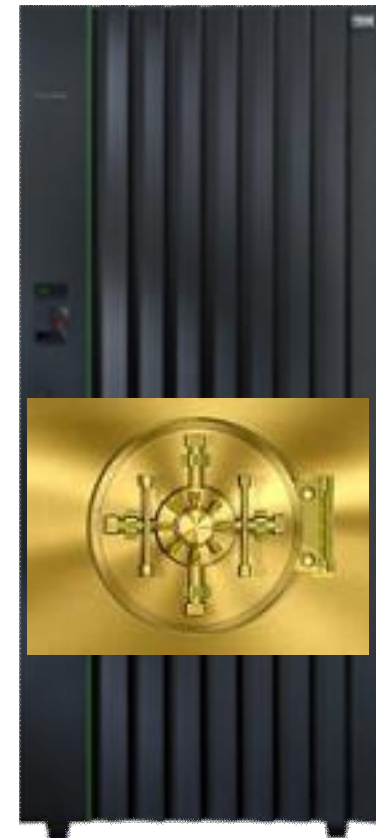
Full Disk Encryption on DS8000

§ Encrypted data on DS8000 series storage controller

- ▶ Capability to install encrypted 146 GB, 300 GB, and 450 GB 15,000 rpm Fibre Channel drives
- ▶ Full Disk Encryption drive sets are optional to DS8000 series
- ▶ Available only as plant order
- ▶ Transparent to applications
- ▶ Can be used by z/VSE V3.1 or later

§ Helps to mitigate the threat of

- ▶ Theft
- ▶ Mis-management
- ▶ Loss of critical data



IBM System Storage TS7700 Virtualization Engine Release 1.5

§ TS7720 is a new member of IBM's family of virtualization products

- ▶ Virtual tape system designed for use in a mainframe environment
- ▶ Tape Volume Cache capacity up to 70 TB but without a physical tape library for back-end processing

§ TS1130 Model E06 and Model EU6 Tape Drive support

The TS7700 Virtualization Engine tape solution is well suited for

- ▶ Disaster recovery
- ▶ Data consolidation
- ▶ Data protection
- ▶ Data sharing



Encryption Facility for z/VSE V1.2 (EF)

§ OpenPGP

- ▶ Complies with selected OpenPGP standard (RFC 4880) requirements
- ▶ Encryption of SAM files, VSE/VSAM files, VSE library members, tapes, or virtual tapes

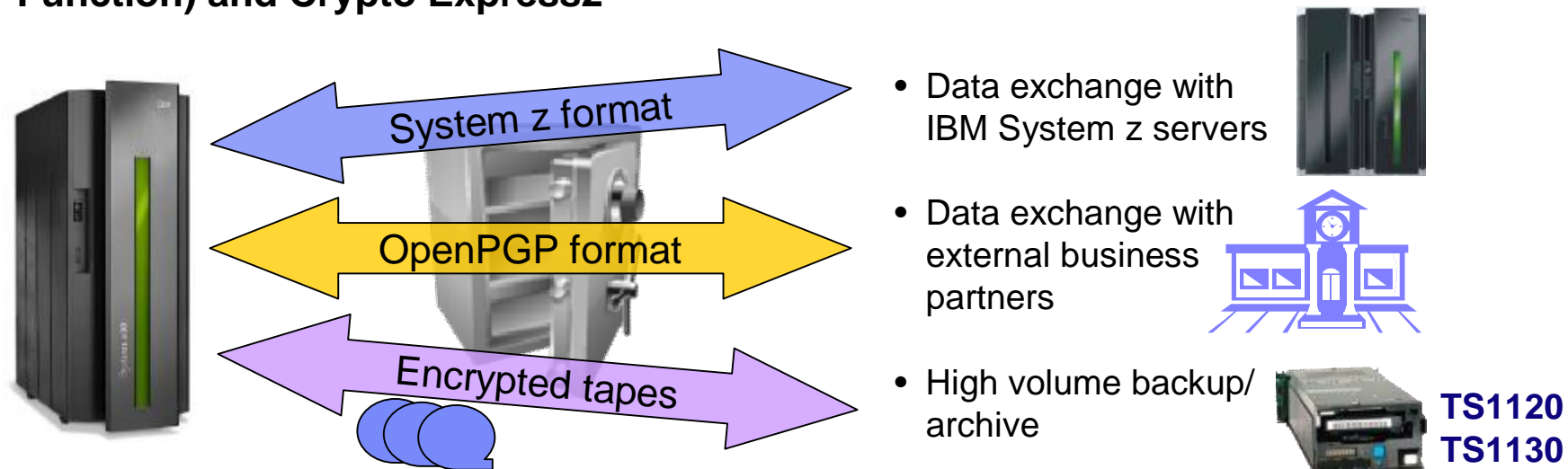
§ Choice of two formats:

- ▶ System z format (introduced with EF for z/VSE V1.1) - compatible with EF for z/OS
- ▶ OpenPGP - compatible with other products that are OpenPGP-compliant

§ EF is an optional priced feature for VSE Central Functions V8

- ▶ Requires z/VSE V4.1 or later
- ▶ MWLC-eligible

§ Exploits hardware encryption technology: CPACF (CP Assist for Cryptographic Function) and Crypto Express2



Modern Development Environment with RDB

§ Continued 4GL support for z/VSE is available

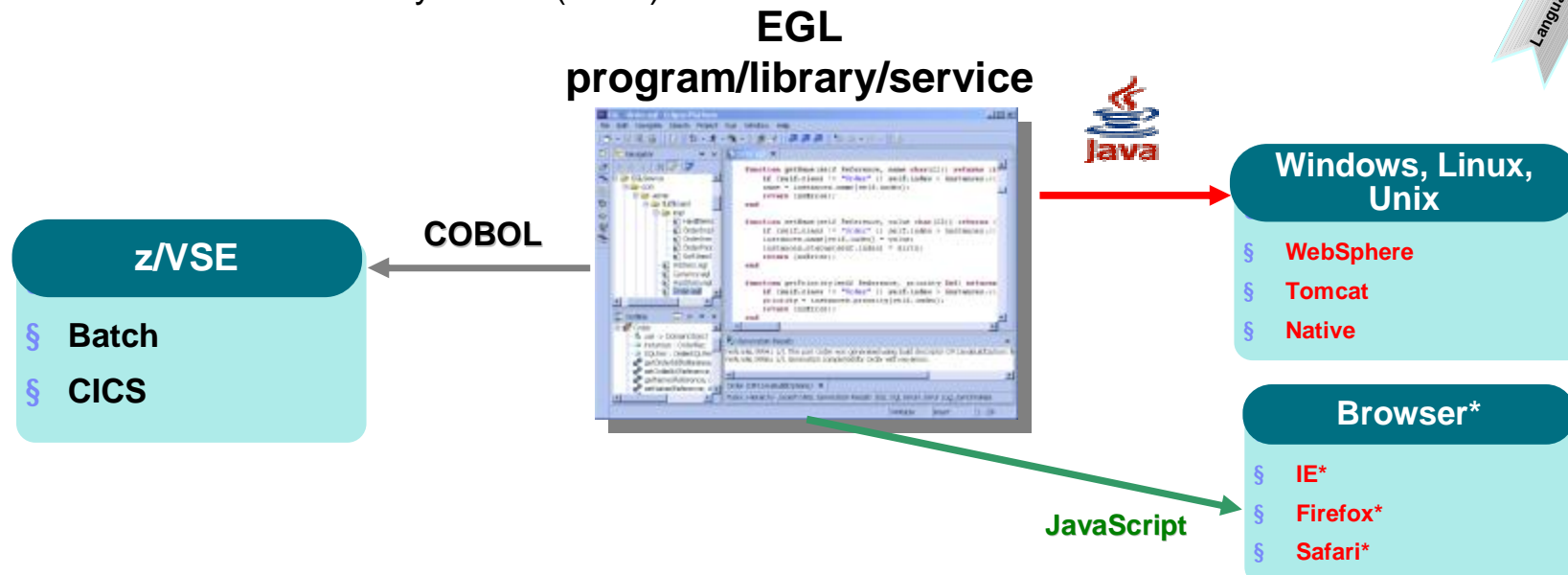
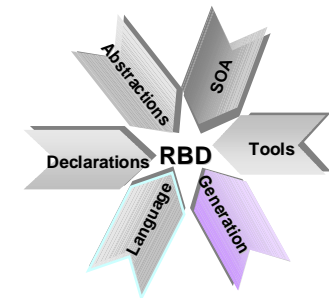
1. z/VSE host component: **IBM Rational COBOL Runtime for z/VSE V7.5**

▶ Replaces the VisualAge Generator Server for VSE

2. PC tool for development: **IBM Rational Business Developer (RBD) V7.5.1** and the associated components

▶ **IBM Rational Business Developer Extension for z/VSE V7.5.1**

- COBOL Code generation for z/VSE
- Generation for System z (z/OS)



IBM WebSphere MQ for z/VSE V3.0

§ Enhanced manageability, currency, and performance

§ Improved interoperability on both distributed and mainframe platforms

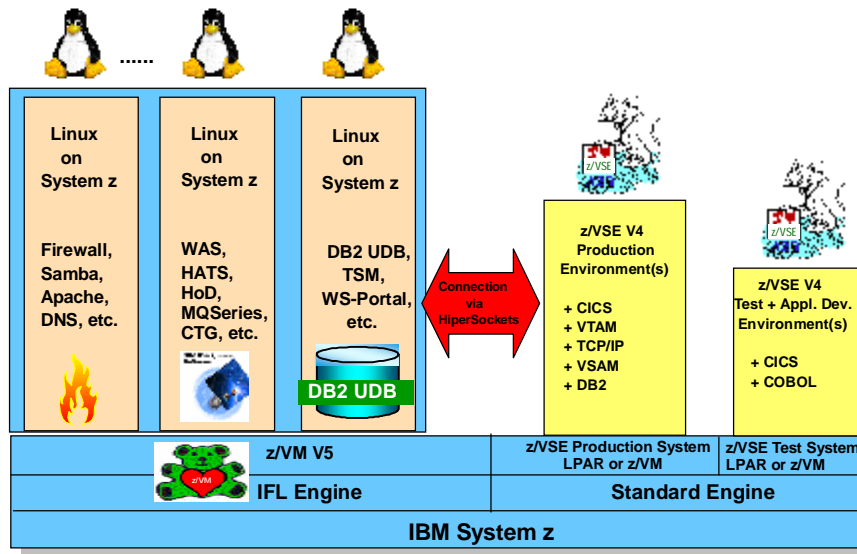
- ▶ API crossing exits – supports a chain of up to 8 API exits
- ▶ Chained message exit – supports a chain of up to 8 send, receive, and message exits
- ▶ WebSphere MQ Explorer interface enhanced to support remote administration
- ▶ Channel batch interval – performance in batch processing
- ▶ Miscellaneous performance enhancements: MQI operation, reduced logic paths and use of resources for improved message throughput
- ▶ Server and requester channels – allows accumulation of messages until needed by queue manager

IBM WebSphere MQ for

- Reliable application connectivity
- SOA connectivity with a proven messaging backbone
- Universal, multipurpose data transport



z/VSE V4.2.1 - Delivering on our Strategy



§ Protect

- ▶ PAV
- ▶ DS8000 Full Disk Encryption
- ▶ TS7720 support

§ Integrate

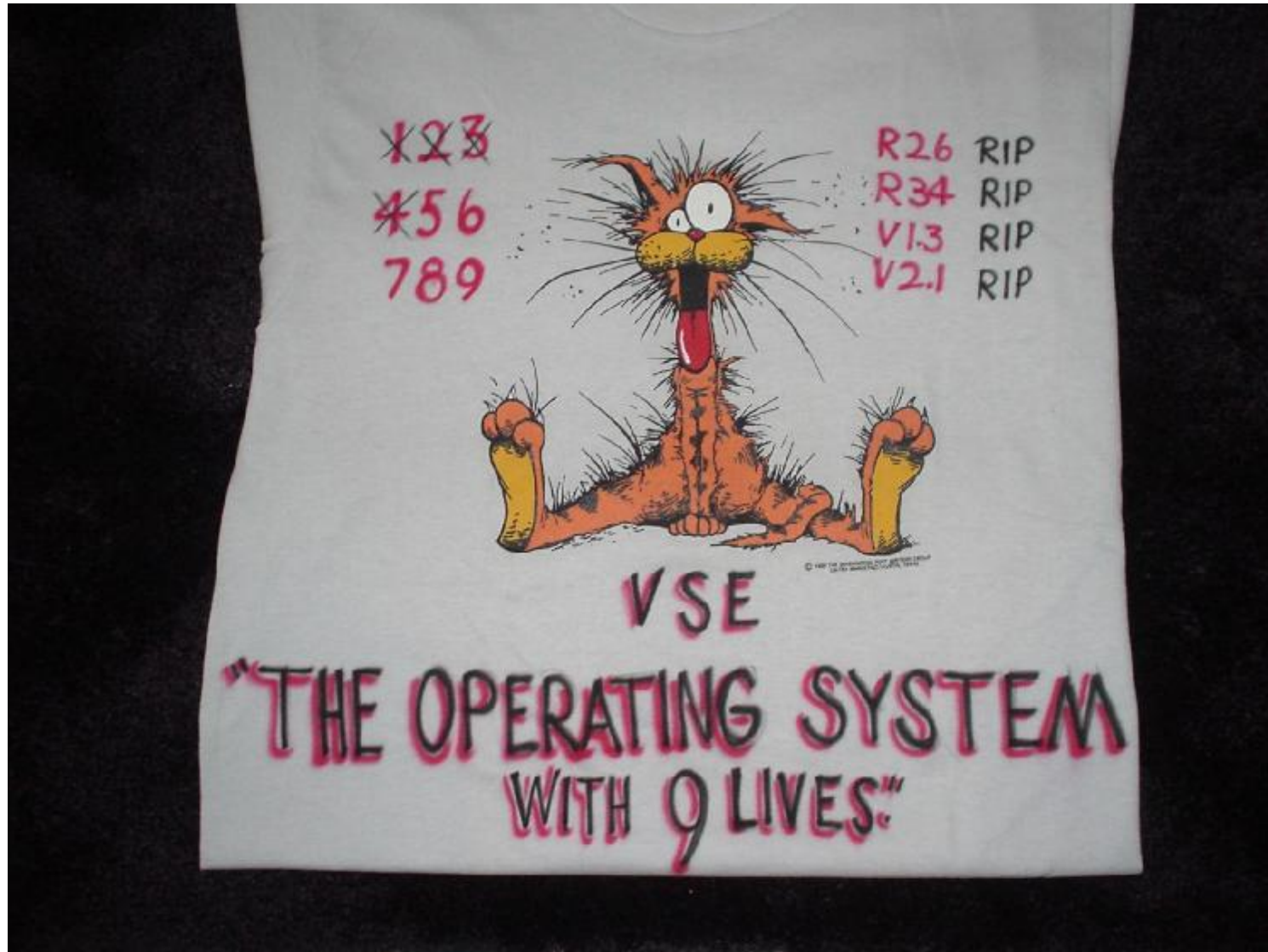
- ▶ Rational Business Developer
- ▶ Rational COBOL Runtime
- ▶ WebSphere MQ

§ Extend

- ▶ EF with OpenPGP



One more time: The Difference between Perception ...



.... and Reality



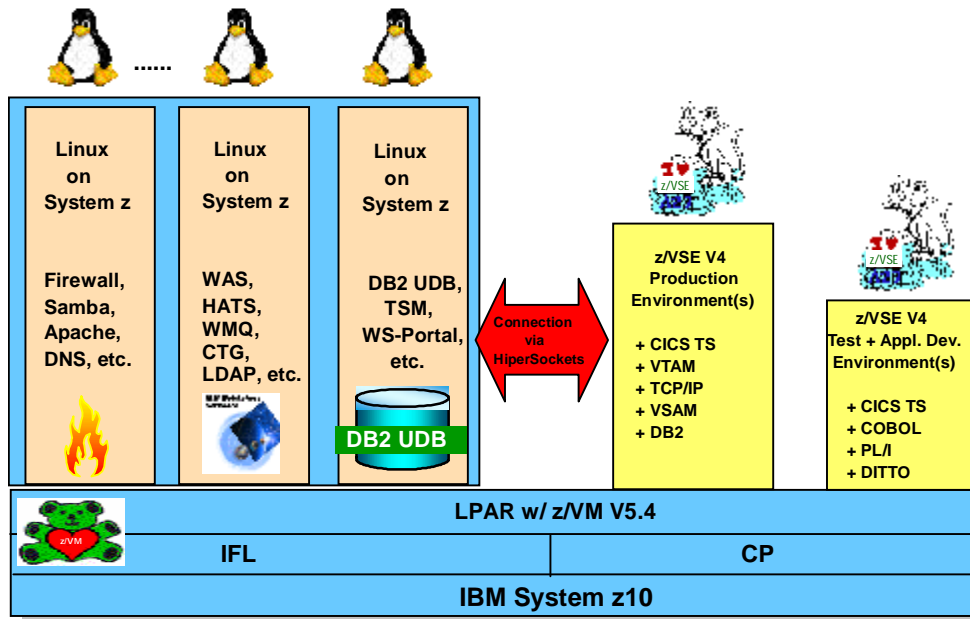
Survived the 25th anniversary, celebrated the 40th birthday

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

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

Preparing for the Half Century Anniversary Party in 2015 !

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



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

IBM: z/VSE Operating System - Mozilla Firefox: IBM Edition

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z/VSE

z/VSE is designed to help provide robust, cost-effective solutions for customers with a wide range of capacity needs, in most industries, worldwide. z/VSE is built on a heritage of ongoing refinement and innovation that spans four decades. It brings the value of innovative IBM System z and IBM System Storage technology to VSE clients.

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Announcing

Announcing z/VSE V4.2

Built on a heritage of ongoing refinement and innovation that spans four decades

z/VSE V4.2 Availability Announced

z/VSE Version 4 Release 2 (z/VSE V4.2) is the latest in the ongoing evolution of z/VSE. z/VSE V4.2 continues the z/VSE focus on scalability, security, interoperability, and service-oriented architecture. It is designed to help protect and leverage existing investments in VSE information assets.

z/VSE V4.2 supports IBM System z servers:

- IBM System z10 Enterprise Class (z10 EC)
- IBM System z9 EC and z9 Business Class (z9 BC)
- IBM eServer zSeries 990, 890, 900, and 800

z/VSE V4.2 is designed to support:

- Scalability enhancements
 - Up to 512 VSE tasks (two times the 255 limit in z/VSE V4.1)

Related links

- [Linux on IBM System z](#)
- [z/OS](#)
- [z/VM](#)
- [IBM Storage](#)

Done

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