z/VSE Live Virtual Class


# z/VSE Mid-year Update

**G. M. (Jerry) Johnston**
*p798000@us.ibm.com*
Senior Advisor – Boeblingen Lab

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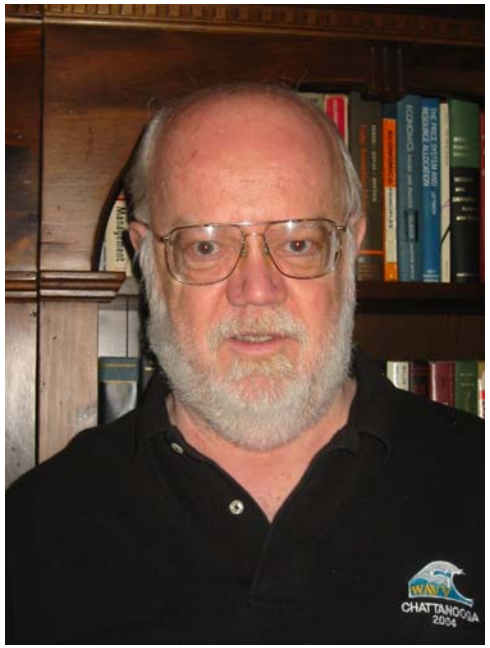
# Agenda

- **Recent Changes**
- **z/VSE Strategy**
- **z/VSE Version 4 Release 2 (z/VSE V4.2)**
- **Modernization Options**
- **Review MWLC Pricing**
- **Wrap-up**




**G. M. (Jerry) Johnston**

# Recent Changes

# Evolution

**z/VSE V4.2 planned Oct 17, 2008**
- **More tasks, PAV, LDAP Client, SVC**
- **SoD for CICS/VSE**

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

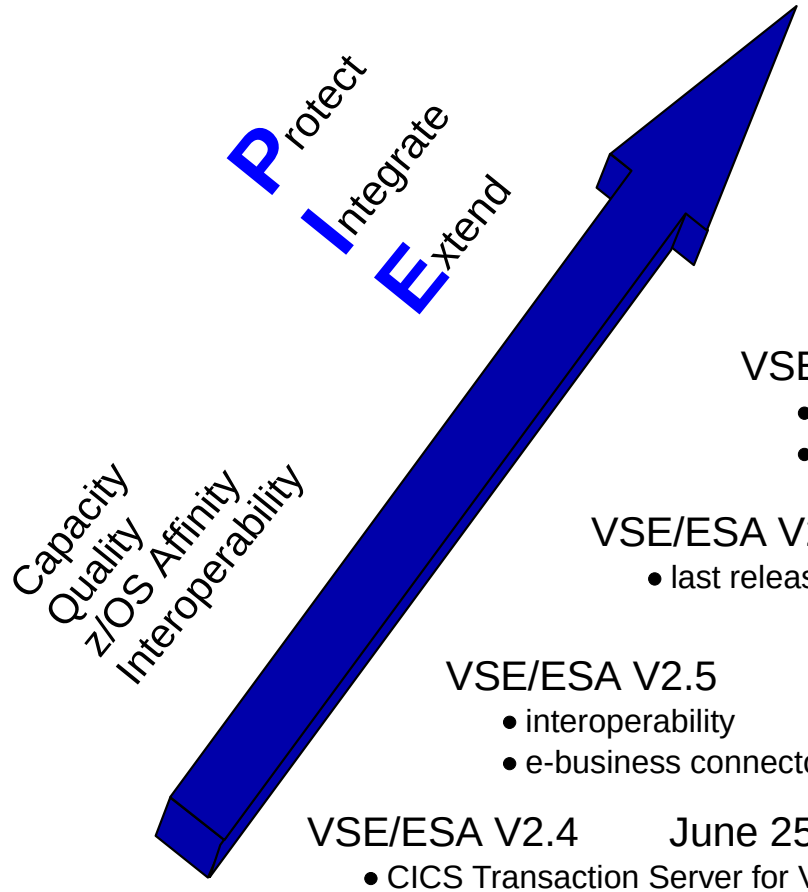
z/VSE V3.1* March 4, 2005
- selected zSeries features, FCP/SCSI
- 31-bit mode only

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

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



# Changes in 2007 and 2008

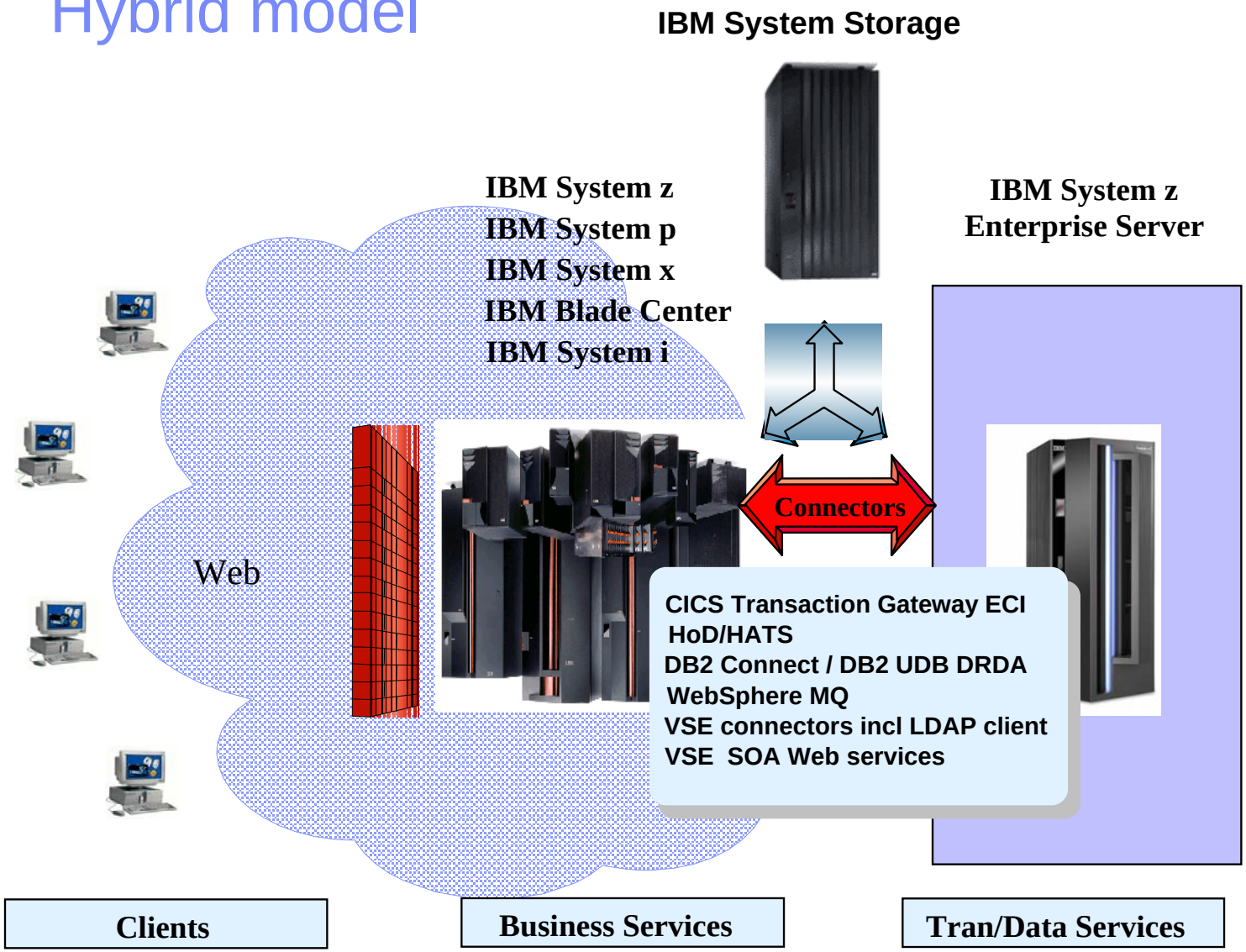

- 02/28/2007 - End-of-Service for VSE/ESA V2.7 effective
- 03/16/2007 - z/VSE V4.1 General Availability
- 03/16/2007 - SecureFTP PTF available
- 05/18/2007 - IBM TS1120 encrypting tape PTF available for z/VSE V4.1
- 06/18/2007 - IBM TS1120 encrypting tape PTF available for z/VSE V3.1
- 06/29/2007 - z/VM V5.3 General Availability
- 07/10/2007 - IBM TS3400 Tape Library attachment to System z
- 08/07/2007 - End-of-Service for z/VSE V3.1 announced (effective 7/31/2009)
- 08/09/2007 - DL/1 enhancement (up to 10 datasets for HD databases) available
- 10/09/2007 - z/VSE V4.2 Preview
- 10/09/2007 - Encryption Facility for z/VSE V1.1 announced (available 11/30/2007)
- 10/10/2007 - SCRT V14.2 available for z/VSE V4.1
- 11/14/2007 - IBM DB2 Server for VSE & VM V7.5 announced (available 11/30/2007)
- 11/30/2007 - z/VSE V4.1.1 available
- **01/18/2008 - z/VSE V3.1.3 available**
- **02/26/2008 - IBM System z10 Enterprise Class (z10 EC) announced**
- **05/31/2008 - End-of-Marketing for z/VSE V3.1 effective**
- **06/13/2008 – z/VSE V4.1.2 available**
- **06/24/2008 – HLASM for z/OS, z/VM, and z/VSE V1.6 announced**
- **08/05/2008 - z/VSE V4.2 (planned GA 10/17/2008) and z/VM V5.4 (planned GA 9/12/2008) announced**

# z/VSE Strategy

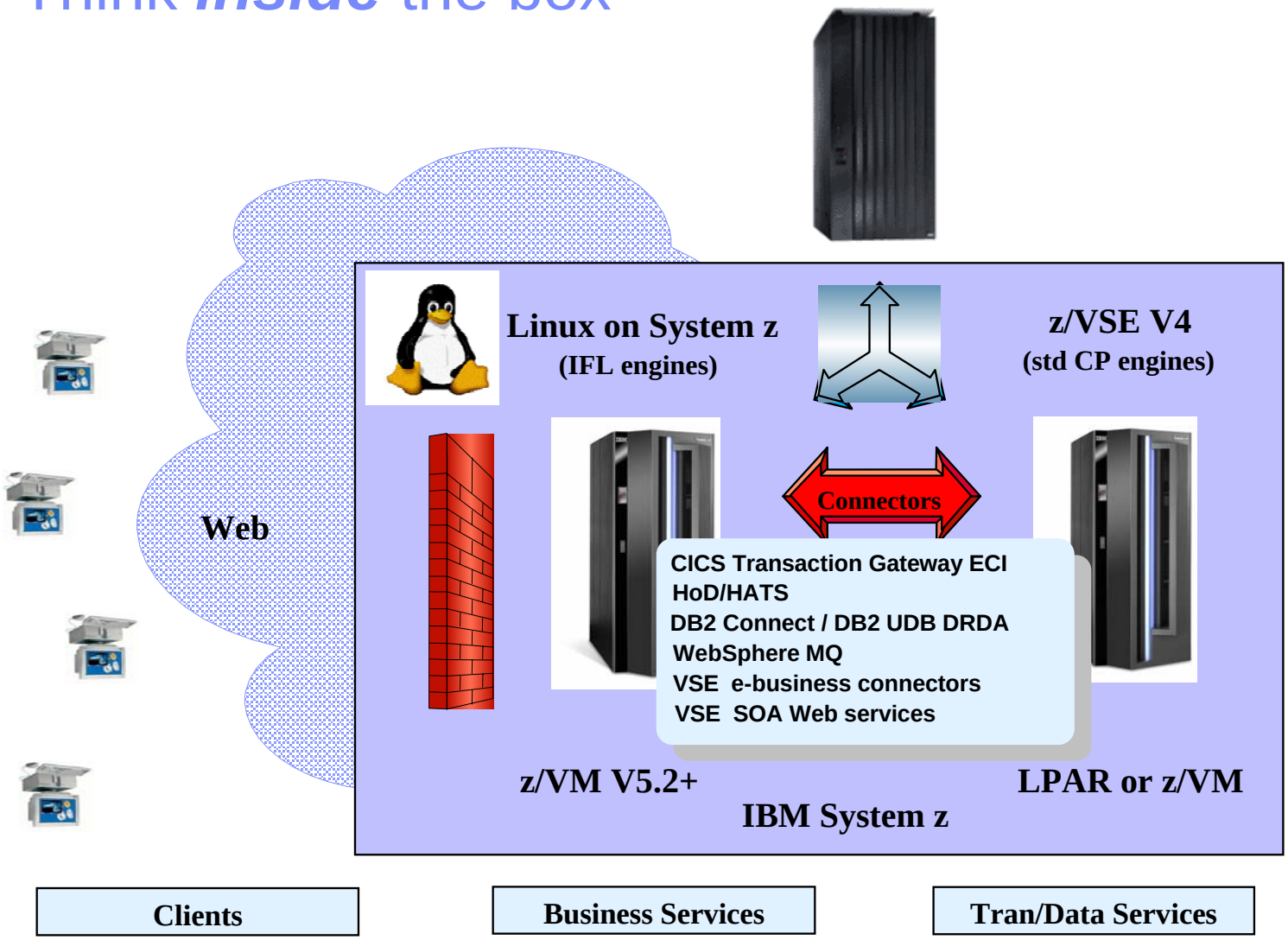
# z/VSE "PIE" Strategy

- Help **P** rotect existing customer investments in core z/VSE programs, data, equipment, IT skills, *plus* business processes, end user training
  - Grow and modernize (i.e. extend z/VSE resources to Web)
  - Exploit IBM servers, storage, middleware, security/encryption, & related technology
  - z/OS affinity
  - IBM academic initiative
- 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
  - Preferred platform for new workloads
    - leverage existing core VSE investments
    - low cost, low risk, fast time-to-market for new solutions
    - new line-of-business applications
  - Low TCO and infrastructure simplification

# Hybrid model



# Think ***inside*** the box




# z/VSE Version 4 Release 2

# z/VSE V4.2 Contents

- **Servers**
  - IBM System z10 Enterprise Class (z10 EC)
  - IBM System z9 Enterprise Class (z9 EC) and z9 Business Class (z9 BC)
  - IBM eServer zSeries 990, 890, 900, and 800
- **Scalability**
  - 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 Volumes (PAV)
  - IBM System Storage DS8000 SE Flashcopy
- **Security**
  - Lightweight Directory Access Protocol (LDAP) sign-on support using a new 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 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)

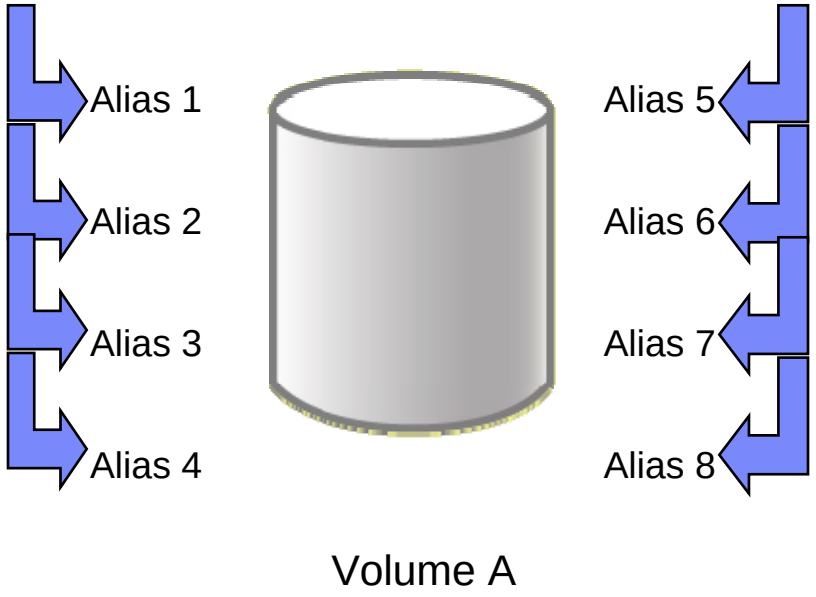
- **Enhanced storage options**
  - IBM System Storage SAN Volume Controller (SVC) access to FCP-attached SCSI disks
  - IBM System Storage TS3400 Tape Library and TS7700 Virtualization Engine Release 1.4
- **Pricing**
  - MWLC (full capacity or sub capacity options) eligible on z10 EC, z9 EC, and z9 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 VM
- **Statement of Direction (SOD)**
  - z/VSE V4.2 will be the last version/release of VSE to ship CICS/VSE V2.3
- **Planned General Availability**
  - 10/17/2008

# Enhancement 1: Additional Tasks

- Up to 512 concurrent VSE tasks
  - 2X prior limit of 255
    - maximum 32 tasks per partition remains
  - long standing requirement from both customers and ISVs
  - optional
  - default remains 255
    - activate additional tasks system-wide using SYSDEF command
    - SYSDEF can be overwritten with JCL
- Potential benefits
  - enables growing z/VSE workloads
    - more CICS and batch partitions can run in parallel
    - more workload in a single VSE image
  - simplify environment
    - consolidate multiple VSE images
  - may ease migration from CICS/VSE to CICS Transaction Server VSE/ESA
  - opens additional opportunities
    - new IBM middleware
    - new ISV product offerings

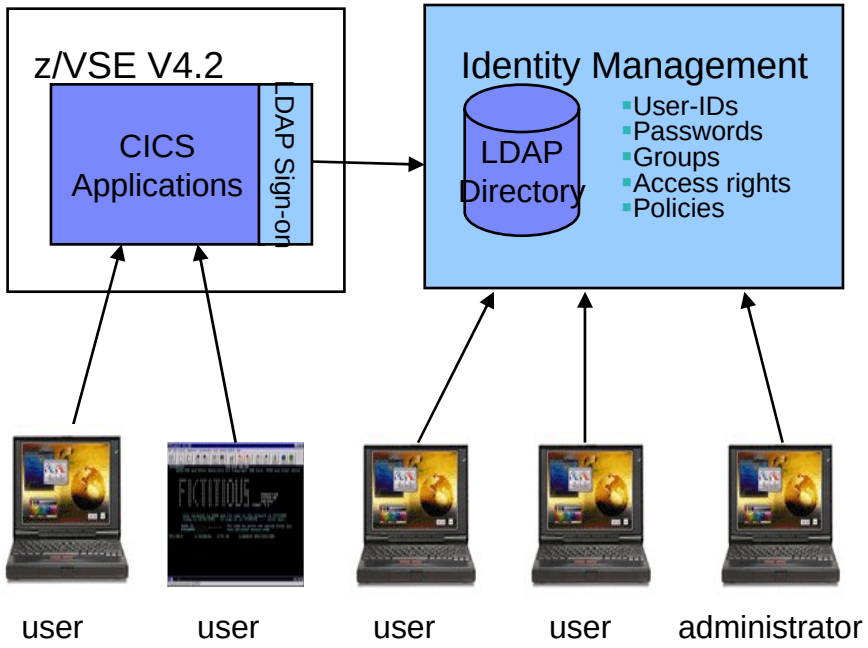
# Enhancement 2: Parallel Access Volumes (PAV)

- 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, DS6000, and ESS (Shark)
  - 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*



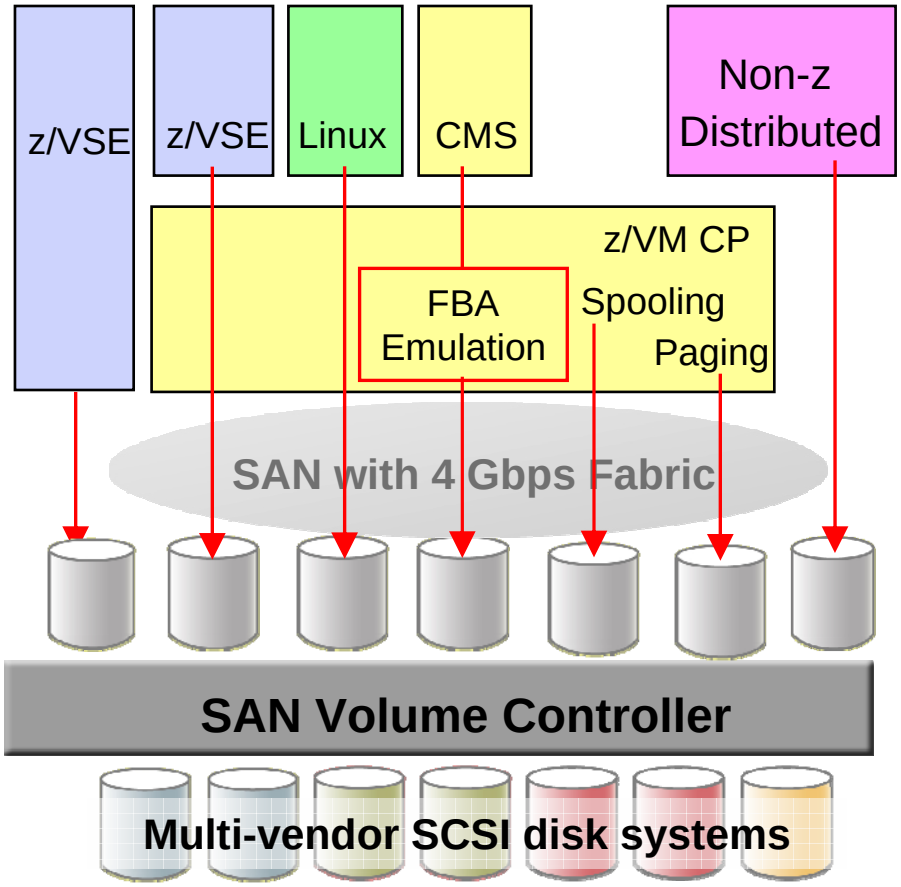
# Enhancement 3: LDAP Client

- Enables users to sign on z/VSE using a single, comprehensive, corporate-wide 'Identity Management' systems (i.e. IBM Tivoli Identity Manager, etc.)
- LDAP user-IDs and passwords can be up to 64 characters. Helps overcome VSE internal limits
  - 4 character VSE/ICCF user-IDs
  - 4 and 8 character CICS user-IDs
  - up to 8 character Passwords
- LDAP sign on sits on top of existing z/VSE security manager (i.e. BSM, ESM, etc.)
- z/VSE LDAP client can work with common LDAP servers
  - IBM Tivoli Directory server
  - z/VM LDAP server (with optional RACF repository)
  - Microsoft Active Directory, OpenLDAP, Apache Directory server, Novell eDirectory, and many others.
- Potential benefits include improved protection, consistent access rules, ease of use for end-users



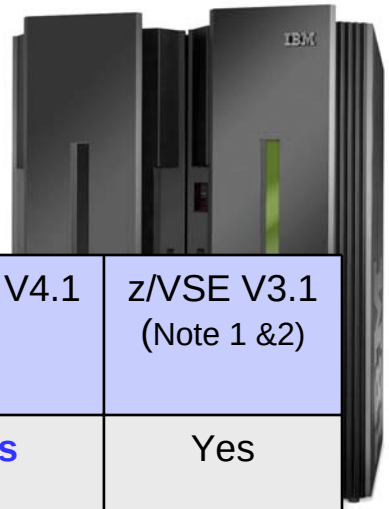
# Enhancement 4: SAN Volume Controller

- SAN Volume Controller (SVC) creates a single pool of SCSI disk capacity
- Disk storage options include IBM DS8000, DS6000, ESS, DS4000, etc. plus qualified systems from various non-IBM vendors
- SVC *platform* includes both hardware and software components:
  - SVC 'nodes' provide redundant components plus cache
  - Systems Storage Productivity Center (SSPC) software provides administrative and copy services
- Also supported in z/VM V5.3 and later, as well as Linux on System z
- Potential benefits include a simpler, more flexible, less costly disk storage infrastructure




Learn more at: **ibm.com**/storage/support/2145

# z/VSE Support for Mainframe Servers



| IBM Servers | z/VSE V4.2 | z/VSE V4.1 | z/VSE V3.1 (Note 1 &2) |
|---|---|---|---|
| **IBM System z10 Enterprise Class (z10 EC)** | **Yes** | **Yes** | Yes |
| **IBM System z9 Enterprise Class (z9 EC, formerly z9-109)** | **Yes** | **Yes** | Yes |
| **IBM System z9 Business Class (z9 BC)** | **Yes** | **Yes** | Yes |
| IBM eServer zSeries 990, 890, 900, 800 | Yes | Yes | Yes |
| S/390® Parallel Enterprise Server™ G5/G6 | No | No | Yes |
| S/390® Multiprise® 3000 | No | No | Yes |

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.
Note 2: z/VSE V3 support ends 7/31/2009;

# z/VSE Status

| VSE Version and Release | Marketed | Supported | End of Support |
|---|---|---|---|
| **z/VSE V4.2** | **Yes…** after 10/17/2008 | **Yes…** after 10/17/2008 | **tbd** |
| z/VSE V4.1 | **Yes ..** EoM 10/17/2008 | **Yes** | **tbd** |
| z/VSE V3.1 | No | **Yes** … until 7/31/2009 | **07/31/2009** |
| VSE/ESA V2.7 | No | No | 02/28/2007 |

# z/VSE Modernization Options

# z/VSE SOA and Interoperability

| Connector Functions | z/VSE V4.2 | z/VSE V4.1 | z/VSE V3.1 (Note 1 & 2) |
|---|---|---|---|
| VSE Connectors (no additional charge) | | | |
| VSAM, POWER, Librarian, ICCF lib, console | Yes | Yes | Yes |
| VSAM Redirector | Yes | Yes | Yes |
| SOA Web Services, i.e. SOAP and XML | Yes | Yes | Yes |
| VSE Script and DL/1 | Yes | Yes | Yes |
| DB2 Stored Procedures for VSAM and DL/1 | Yes | Yes | Yes |
| VTAPE interface to IBM Tivoli Storage Manager (TSM) | Yes | Yes | Yes |
| LDAP client (LDAP server on another platform required) | Yes | | |
| IBM Middleware (priced) | | | |
| CICS Transaction Gateway ECI | Yes | Yes | Yes |
| Host on Demand / Host Application Transformation | Yes | Yes | Yes |
| DB2 Connect/DB2 UDB (DB2 Server for VSE V7.5 Client) | Yes | Yes | Yes |
| WebSphere MQ (VSE Client no charge) | Yes | Yes | Yes |

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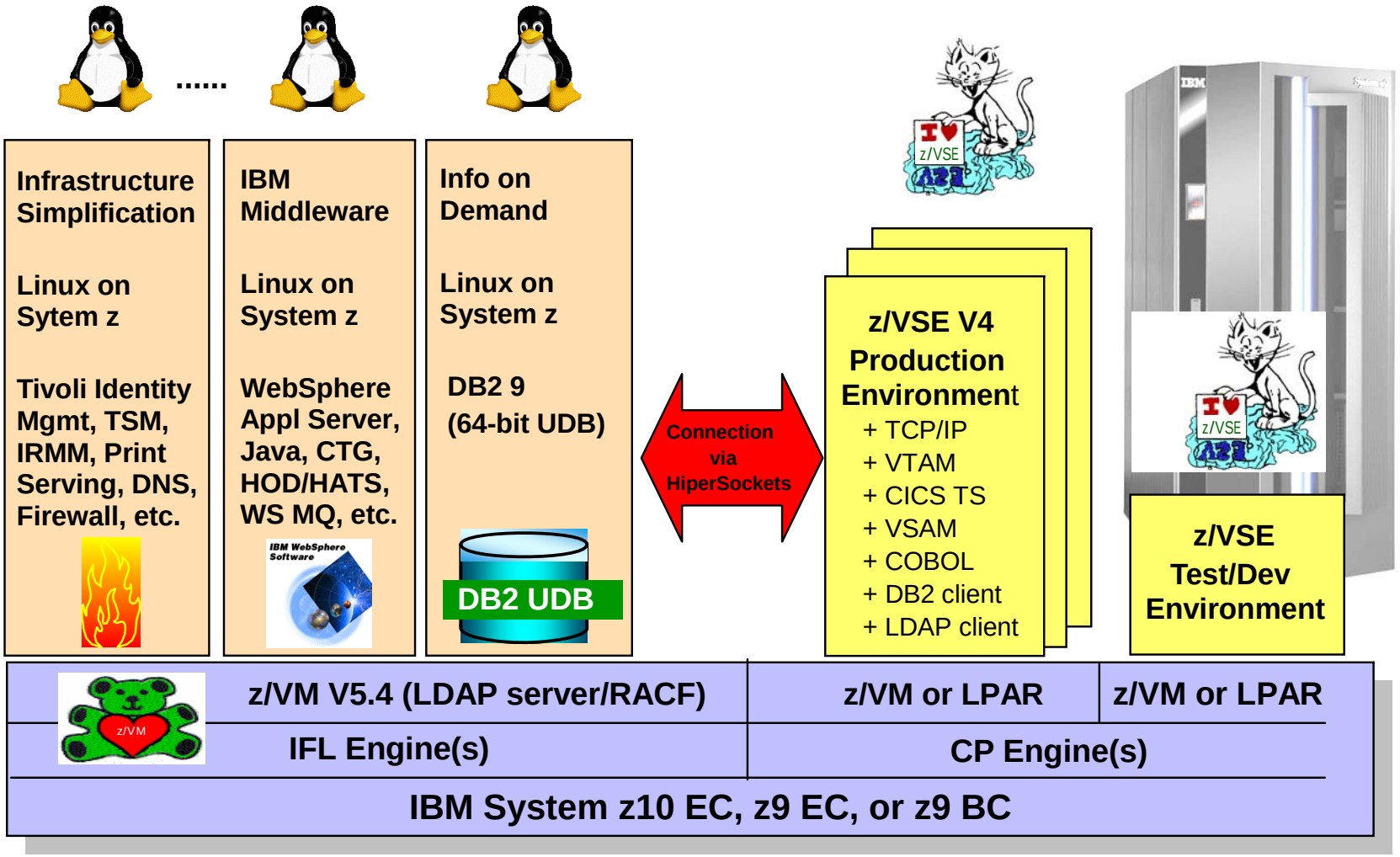
Note 2: z/VSE V3 service ends 7/31/2009

# z/VSE Vision

## hybrid environment leveraging z/VSE V4, z/VM V5, and Linux on System z



# Review MWLC Pricing

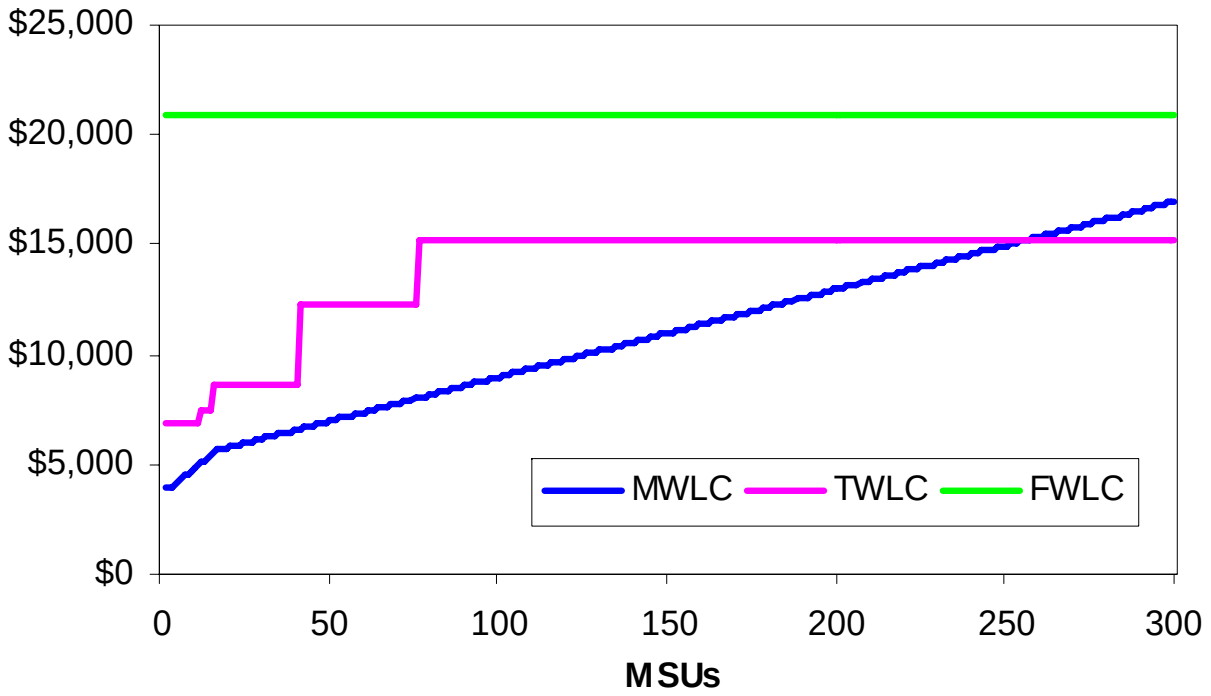
# Midrange Workload License Charge (MWLC)

- Requires current servers (IBM System **z10 EC**, z9 EC, 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 |
| 5686 CF8 | Encryption Facility for z/VSE feature |
| 5696 234 | HLASM |
| 5648 054 | CICS TS for VSE/ESA V1 |
| 5686 065 | ACF/VTAM® VSE/ESA V4 |
| 5686 A04 | TCP/IP for VSE/ESA V1.5 |
| 5648 099 | DITTO/ESA® for VSE |
| 5697 F42 | DB2 Server for VSE & VM |
| 5686 068 | IBM COBOL for VSE/ESA |
| 5686 A01 | IBM C for VSE/ESA |
| 5686 069 | IBM PL/1 for VSE/ESA |
| 5746 SM3 | IBM DFSORT/VSE V3 |
| 5746 XX1 | DL/I VSE |
| 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 may be possible through sub-capacity option
    - **SCRT V14.2 available for z/VSE (as of 10/10/2007)**
- Structured to help address new growth opportunities
  - attractive full-capacity prices
  - option to pay for measured utilization
  - new opportunities for consolidation

# 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
MWLC prices based on full-capacity option
*Prices subject to change without notice; all prices shown in USD

# Wrap-up

# Additional Information

## z/VSE 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
- Bringing You up to Date with z/VSE V4
- z/VSE Wellness
- Using Encryption Technology with z/VSE
- DB2 Server for VSE & VM V7.5
- *Modern Application Dev for z/VSE*
- *z/VSE Application Development Demo*
- *z/VSE Tools – An Overview*
- *z/VSE Midyear Update – z/VSE V4.2*
- *….. more planned – watch z/VSE web site*

Note: Charts are available on the z/VSE web site the day prior to the call. Replay usually available the day after the call. For more information, please see the z/VSE web site at:

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

## z/VSE-related Events

- **2008 US IBM System z Expo -**
  featuring z/OS, z/VM, z/VSE, and Linux on System z
  - Las Vegas, NV
  - October 13 – 17


- **2008 European IBM/GSE Conf -**
  featuring z/VSE, z/VM, and Linux on System z
  - Leipzig, Germany
  - October 27 - 29

- **2009 WAVV Conference -**
  featuring z/VSE, z/VM, and Linux on System z
  - Orlando, FL
  - May 15 – 19, 2009

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

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

# Thanks for listening

Your friends, the VSE development team