



IBM Systems and Technology Group

Integrating z/VSE into your IT network



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WAVV 2005

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	S/390*	z/Architecture
	SNAP/SHOT*	z/VM
		z/VSE
		zSeries

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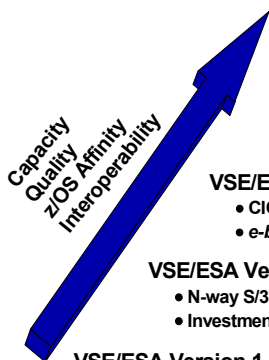
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z/VSE can execute in 31-bit mode only. It does not implement z/Architecture, and specifically does not implement 64-bit mode capabilities. z/VSE is designed to exploit selected features of IBM zSeries hardware.



z/VSE and VSE/ESA Roadmap



z/VSE V3.1 March 4, 2005

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



VSE/ESA V2.7 March 14, 2003

- Enhanced Interoperability
- ALS2 servers only



VSE/ESA V2.4 1999

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

VSE/ESA Version 2 1994

- N-way S/390 Servers
- Investment Protection - Year 2000

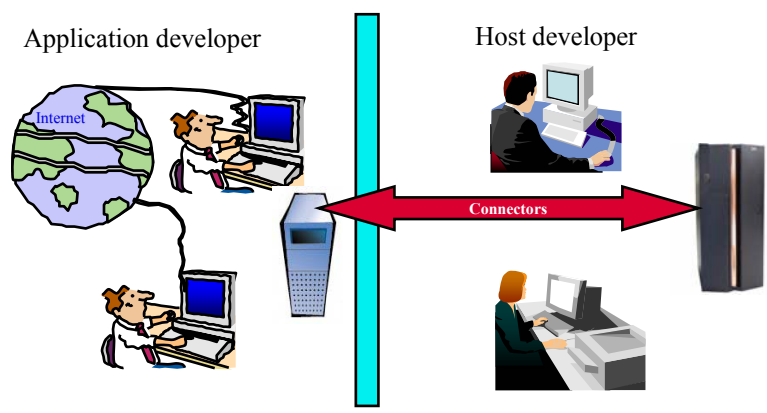
VSE/ESA Version 1 1990

- Constraint Relief
- ESA exploitation

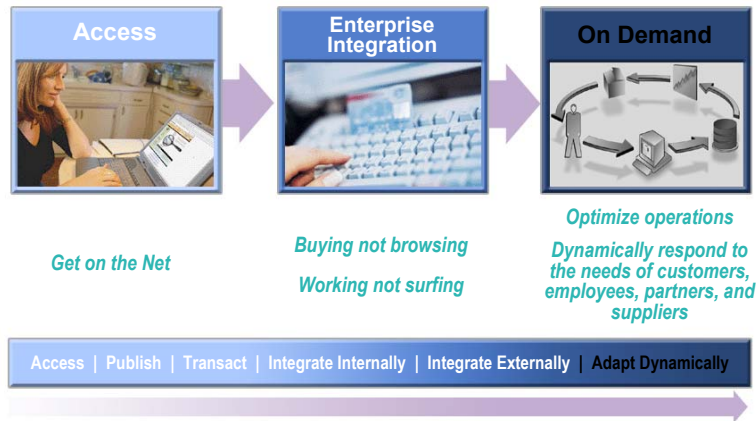


Challenges in today's IT

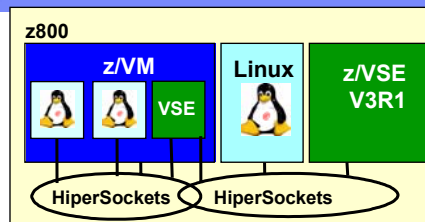
► Two Architectures, one solution



Evolution of e-business



z/VSE V3.1



▪ Network Support

- HiperSockets (the network in the box),
 - spanned channels that link LPARs or virtual servers (across multiple LCSSs)
- OSA Express and OSA Express2 (z890, z990),
 - Gigabit Ethernet and 10-Gigabit Ethernet supports QDIO mode only with full duplex operations.
 - For z/VSE 3.1 and TCP/IP for VSE/ESA, OSA-Express2 GbE compatible to OSA-Express).
- FICON Express and FICON Express2 (z890, z990)
- Cryptographic Assists, including CPACF Symmetric Encryption, PCICA SSL Encryption, Crypto Express2 Asymmetric Encryption
 - e-business Connectors contain support for DES and T-DES
- OSA Express Integrated Console Controller
 - eliminates the need for a non-SNA 3174 controller, and
 - replacement for existing 3174 or 2074 controllers.
 - 3270 emulation for console sessions supports TN3270E and Non-SNA DFT 3270.

Linux on zSeries – Advantages for VSE Customers

- **Infrastructure simplification to help reduce cost**

- Consolidate existing distributed servers
- Possible TCO benefits of Linux and zSeries

- **Linux on zSeries applications based on IBM Middleware**

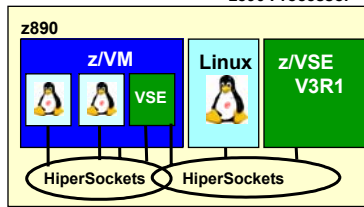
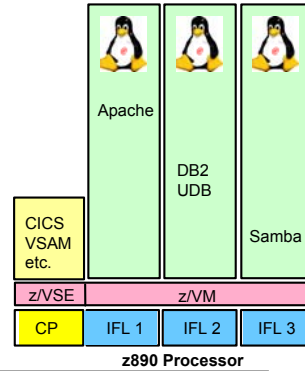
- WebSphere Application Server
- DB2 UDB
- Lotus® Domino™
- Communications Server
- Advanced application development tools

- **Linux-based open source and/or ISV applications**

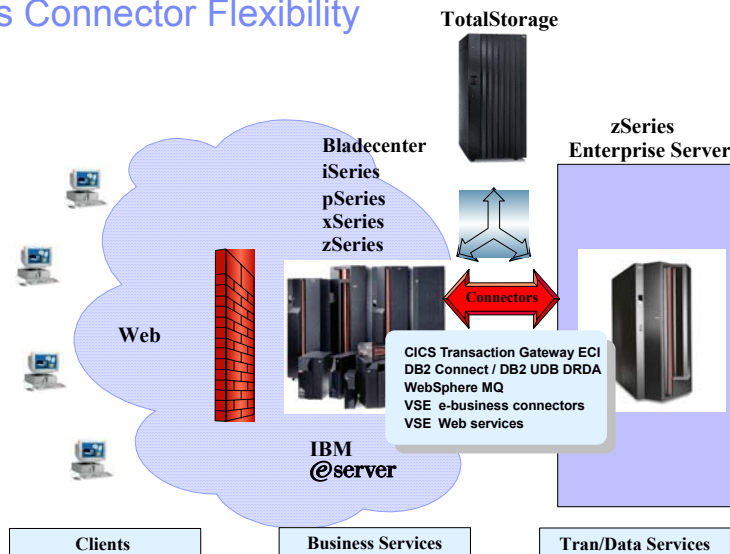
- Linux for zSeries to exploit zSeries 64-bit capabilities
- Complement 31-bit core VSE applications

- **Integrate Linux and VSE solutions**

- Linux access to VSE applications and data

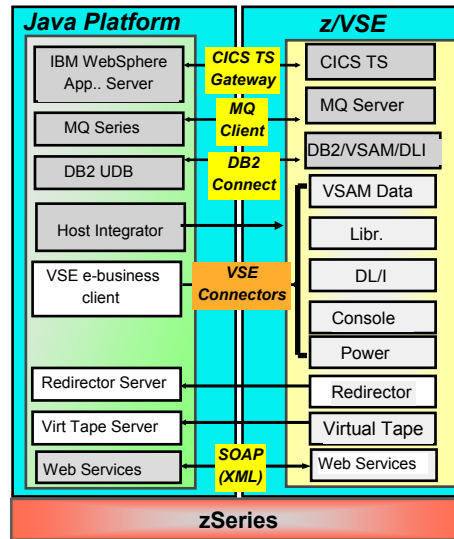


VSE's Connector Flexibility



Middleware Relations to z/VSE

- Modern Applications with Linux on zSeries
- Most modern Technologies interact with VSE Services
- Modernisation of IT Infrastructures using Real-time access to data



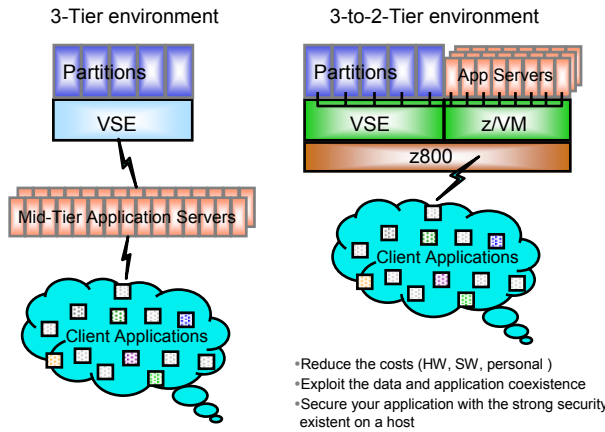
The fundamental VSE Strategy has not changed!

- Help **Protect** your extensive investments in VSE programs, data, equipment, and IT skills, plus business processes, end user training, etc.
 - modernize – i.e. extend core CICS® TS VSE applications to the Web
 - exploit IBM servers, storage, and software
 - z/OS affinity
- Help **Integrate** VSE with the rest of your IT - based on open and industry standards
 - IBM Middleware
 - VSE e-business connectors and web services
- Help **Extend** your VSE system with Linux on IBM eServer™ zSeries® where appropriate
 - infrastructure simplification
 - new infrastructure and/or line-of-business applications

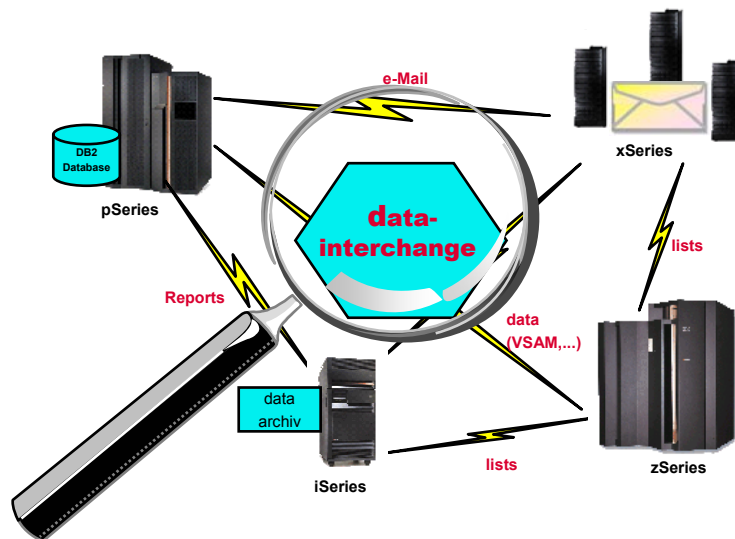
Leverage your VSE investment
– without being limited by it



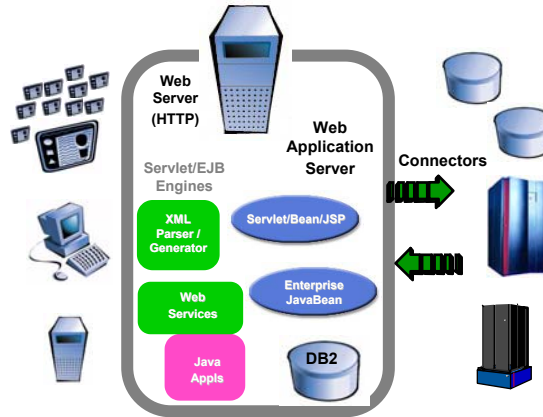
3-tier software architecture to 2-Tier hardware



Data interchange – actual need

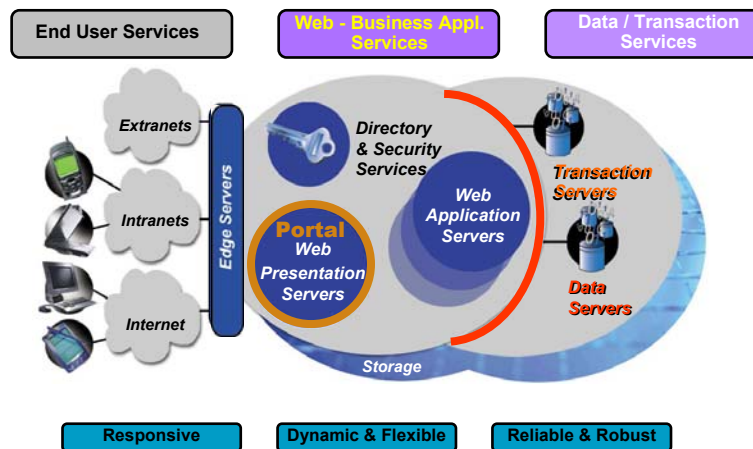


WebSphere Application Model



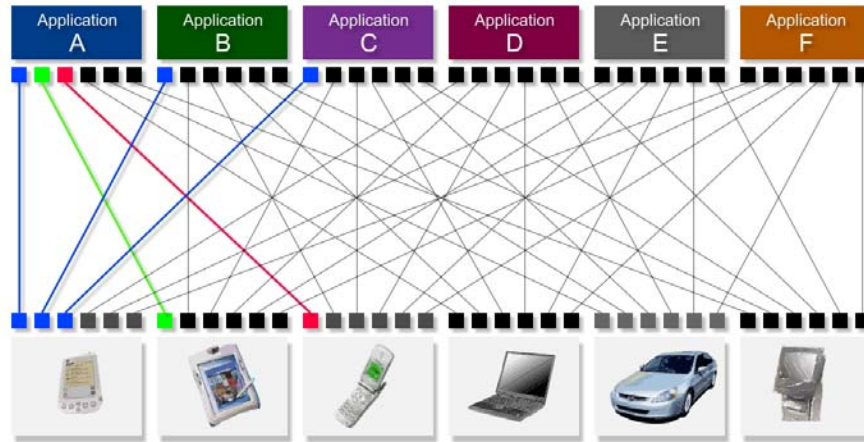
► The VSE Connectors are compliant with the WebSphere Architecture

Infrastructure



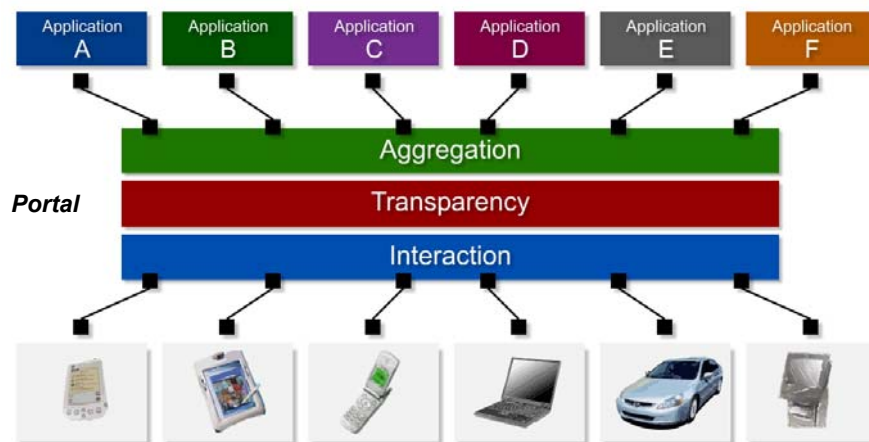
Example: Mobile Infrastructure Challenge

M applications...



N devices *How do you solve an expanding "M x N" matrix?*

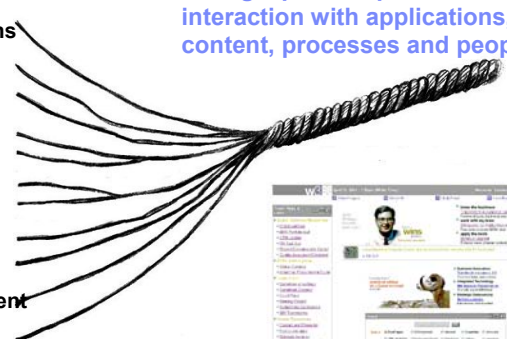
A Mobile Application Platform Defined



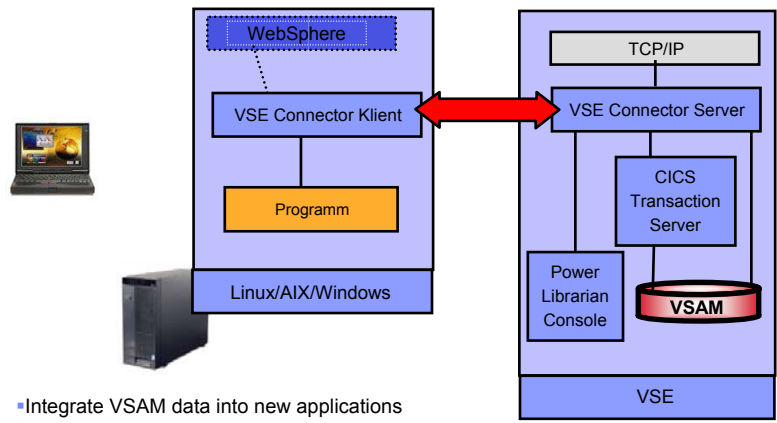
What is a Portal?

A single point of personalized interaction with applications, content, processes and people

- Enterprise Applications
- Messaging
- Search
- Collaboration
- E-meetings
- Web Content
- People Finder
- Knowledge Management
- Business Intelligence
- Document management
- Host systems

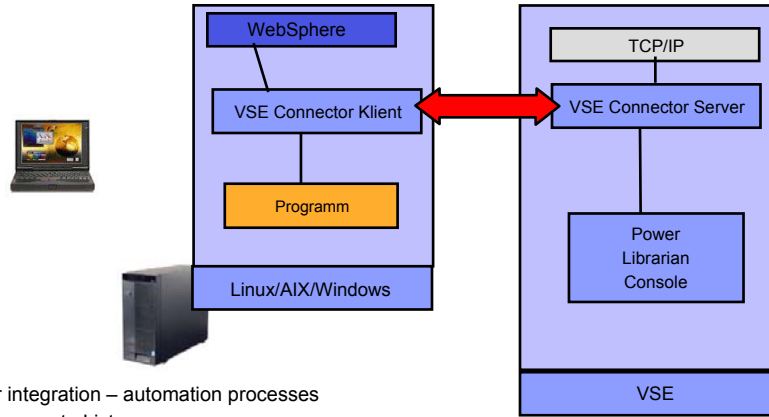


Scenario 1 - 'Pull' (VSE as data server)



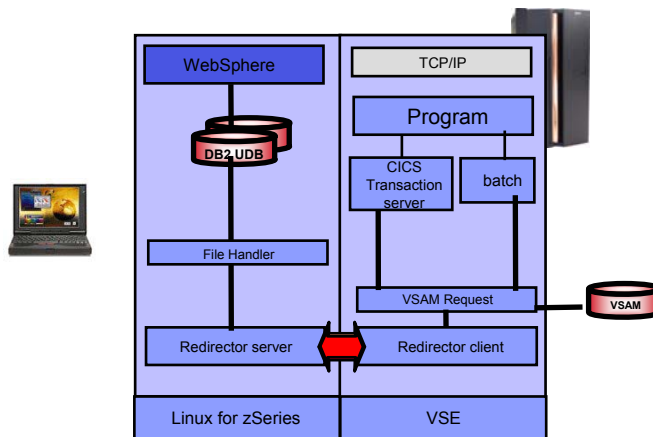
- Integrate VSAM data into new applications
- VSAM 24 X 7 access (no need for CICS)
- Access VSE resources from remote platforms

Scenario 1 - 'Pull' (VSE as data server)



- Power integration – automation processes
 - access to List queues
 - automatic transfer using AUTOFTP and AUTOEMAIL
- Console automation
 - Message driven, time driven actions possible

Scenario 2 - 'Push' (VSE as data client / initiator)

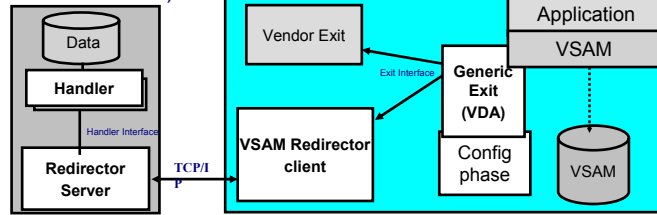


- VSE access to DB2 UDB (or other db and file systems) on a remote platform (i.e. Linux)
- Synchronize DB2 UDB on Linux with VSAM on VSE / Reduce FTPs

VSAM Redirector – functional view

Java Platform
(Linux on zSeries)

z/VSE

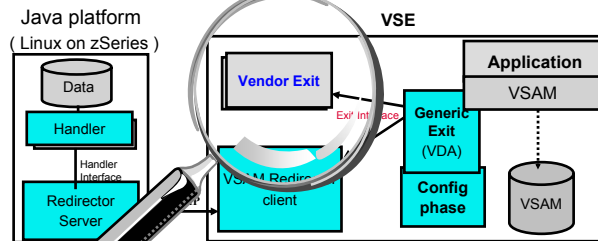


Catalog	Cluster	Exit	Owner	IP	Port	handler-name	option-string
MY.USER.CAT	MY.VSAM.FILE	IESREDIR	VSAM	10.0.0.1	4711	DB2Handler	user=xxx,pw=xxx,...
MY.USER.CAT	MY.RD.FILE	IESREDIR	REDIR	9.164.155.2	4711	DB2Handlernam	user=xxx,pw=xxx,...
VSESP.U.CAT	TEST.CLUST2	VENDOREX	n/a	n/a	n/a	n/a	n/a

- Redirection of VSAM Requests to a local phase or any remote system without changes to VSE applications
- Synchronization, migration or remote operation with data on remote systems
- transparent for Batch or CICS

VSE/VSAM Redirector - Components

Vendor Exit

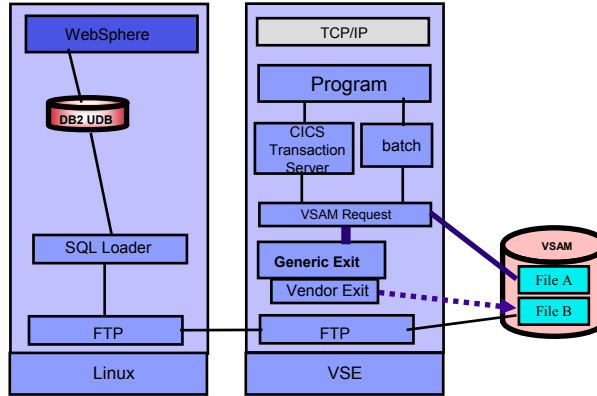


- Vendor Exit
 - user (vendor) written phase for data collection/transformation
 - has to comply with the documented Exit Interface

Note: No chaining of Vendor Exit with VSAM Redirector client supported

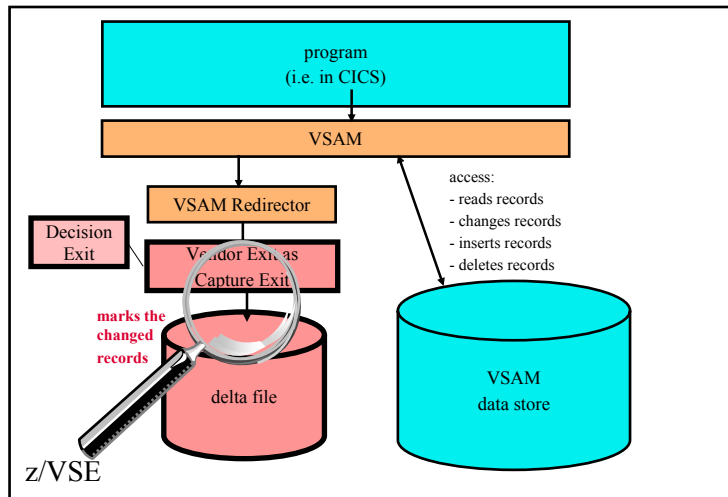
Incremental data interchange / backup Reduce network traffic, save time

- ▶ accumulation of changes of a file
- ▶ Incremental processing
- ▶ Transparent Journaling of data changes

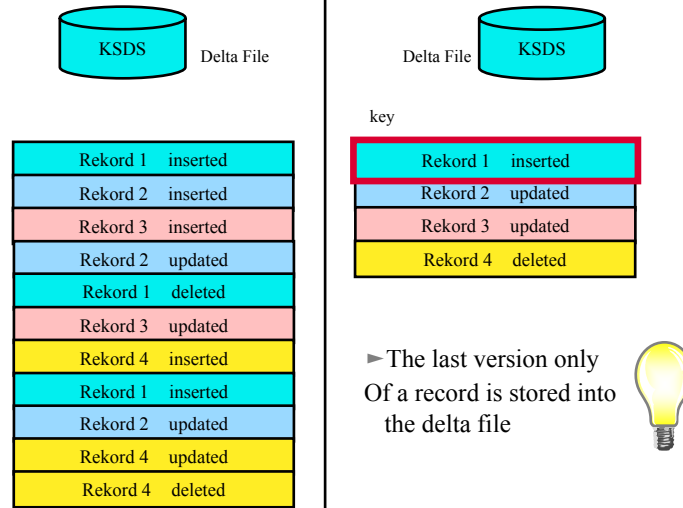


- ▶ Collect the changed records in a separate VSAM file
 - ▶ Possibility of cleansing
- ▶ FTP – as before, with a much smaller file
 - ▶ (The VSAM Redirector is part of VSE/ESA 2.6 and newer)

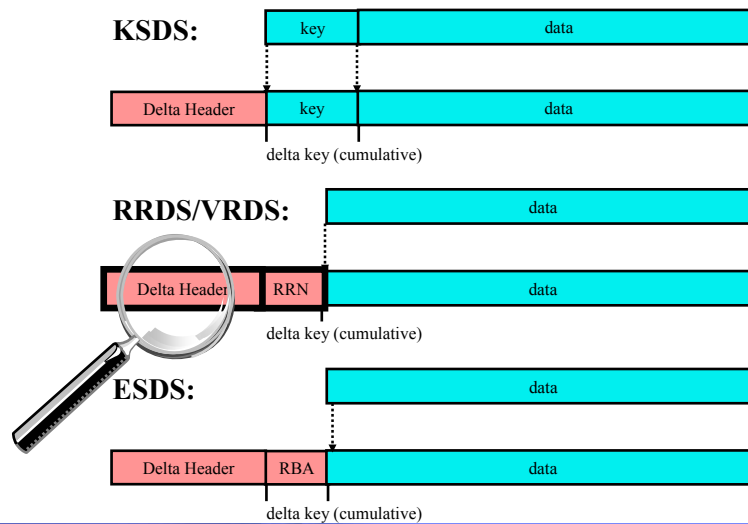
Technical look



Journaling or cumulative



Delta Record



Delta Header (28/32 Bytes)



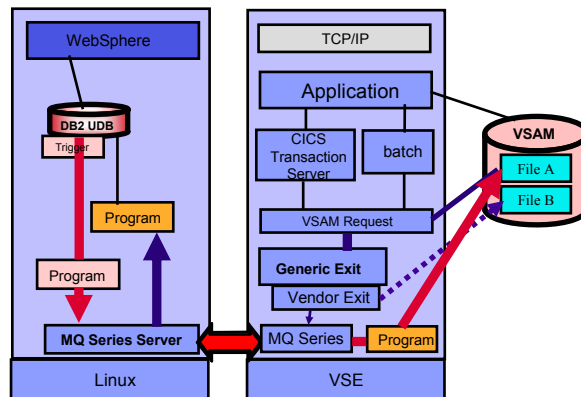
Offset	Parameters	Length	Description
0	TODCLOCK	8	Time of change
8	JobName	8	Job name
16	PHASEName	8	Phase name
24	Origin	8	String from Config or file Label
32	PartID	2	Partition ID (i.e. F2)
34	OpCode	1	I=Insert, D=Delete, U=Update
35	Flags	1	X'01'=RRN/RBA follows
36	RRN/RBA	4	RRN/RBA (RRDS/VRDS/ESDS)

Contains information about:

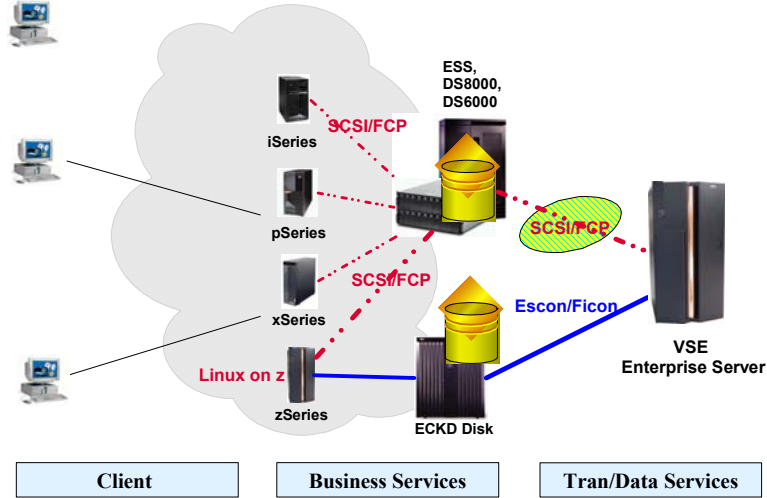
- when changes took place (TODCLOCK)
- who did the changes (Job/Phase/Partition)
- request type of change (Insert/Delete/Update)
- which record was affected (key/RRN/RBA)

Integration of VSE Application with DB2 UDB

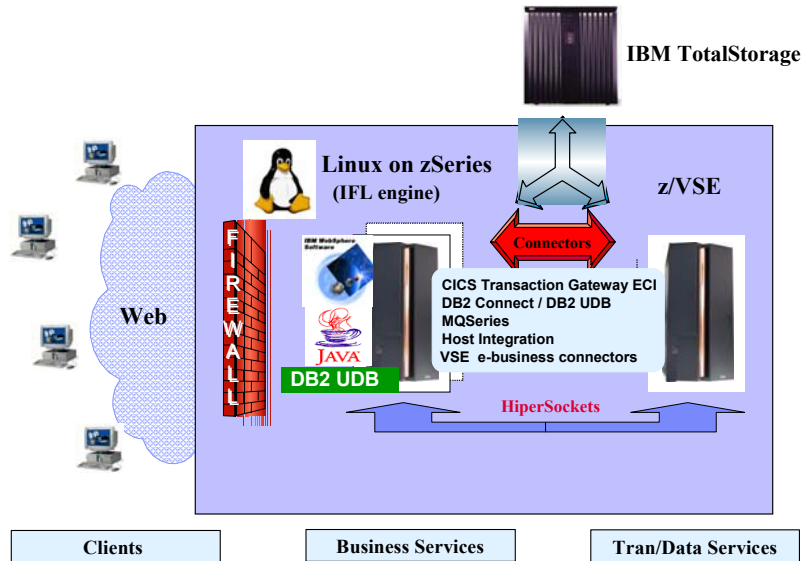
- ▶ enablement for MQ Series w/o changing existing applications.
- ▶ Bidirectional processing
- ▶ Guaranteed processing using asynchronous data transfer method MQ



z/VSE V3.1 – March 2005 integration with Storage



Integration of z/VSE with Linux on zSeries



First Steps

Information to get started :

z/VSE home page -> solutions

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

High potential of modernisation exists but is unused because of:

- **insufficient communication between departments of different platforms**
- **management structure inhibits to establish projects in distributed environments**
- **lack of information about new possibilities**
- **first Steps are unclear (see solutions)**

First Steps

Identify a process for modernisation – i.e interface modernisation

- ✓ **identify processes where business logic and user interface can be separated**
- ✓ **Service Oriented architecture have multiple flavors**
- ✓ **proof of concepts can easily identify critical parts in a project and can help in decisions for multiple solutions**
- ✓ **alternatives should be discussed based on a proof of concept and not based on unknown thoughts and feelings**

First Steps

Identify process for modernisation – i.e data transfer

- ✓ **identify the files that will be involved in the process**
- ✓ **which side is the initiator of the data transfer**
 - ✓ VSE or the remote platform
- ✓ **Type of data flow or program communication**
 - ✓ Access VSE data and resources from remote platforms
 - ✓ access VSE applications from remote platforms
 - ✓ access remote applications from VSE
- ✓ **exact description of data structures**

Software Offering for Linux on zSeries

▪ **OPTION 1: Entry Package - 'Webify'**

Value Proposition: Web-Enable existing applications through an Internet or Intranet Front-End

Products:

1. WebSphere Application Server for Linux on zSeries
 2. WebSphere Host Access Transformation Services (HATS)
 3. WebSphere Host On-Demand
 4. CICS Transaction Gateway (CTG)
- Minimum Configuration: Customers have to choose WebSphere Application Server plus at least 1 other product from the product list above

Software Offering for Linux on zSeries

▪ **OPTION 2: Development Package**

Value Proposition: Enhance application development on zSeries

Products:

1. WebSphere Application Server for Linux on zSeries
2. CICS Transaction Gateway (CTG)
3. WebSphere Studio Application Developer (WSAD)
4. WebSphere Studio Enterprise Developer (WSED)

- Minimum Configuration: Customers have to choose WebSphere Application Server plus at least 1 other product from the product list above

Software Offering for Linux on zSeries

OPTION 3: Portal and Data Base Package

Value Proposition: A portal solution for effective administration and integration of employees, customers and/or suppliers.

▪ Products:

1. WebSphere Portal for Multi-Platforms
2. WebSphere Application Server for Linux on zSeries
3. CICS Transaction Gateway (CTG)
4. DB2 Connect Unlimited
5. DB2 Universal Database (DB2 UDB)
6. WebSphere MQ for Linux on zSeries
7. WebSphere Host Access Transformation Services (HATS)
8. WebSphere Host On-Demand

- Minimum Configuration: Customers have to choose WebSphere Portal for Multi-Platforms plus at least 1 other product from the product list above, or DB2 UDB plus at least 1 other product from the product list above.

Modernisation possibilities for today's distributed processes with z/VSE

- ✓ **data exchange via FTP**
 - ✓ VSAM Redirector- modernized FTP (incremental, cleansing)
- ✓ **VSE Applications need access to remote data**
 - ✓ VSAM Redirector
- ✓ **synchronisation of data on different platforms**
 - ✓ Incremental FTP, VSAM Redirector
- ✓ **Access VSE data and resources from remote platforms**
 - ✓ Java-Based Connector, VSE Script
- ✓ **access VSE applications from remote platforms**
 - ✓ CICS Transaction Gateway, Web Services
- ✓ **access remote applications from VSE**
 - ✓ Web Services via SOAP(XML)

A happy pair with the stability of a dinosaur and support from a bear.



Linux for zSeries



z/VSE



z/VM – a platform, where penguins can multiply like rabbits.



IBM eServer zSeries

IBM Systems and Technology Group IBM

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

Links: IBM Business Transformation Homepage

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Servers > Mainframe servers > Operating systems >

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 eServer zSeries and IBM TotalStorage technology to VSE clients.

Learn more

- [About VSE](#)
- [ESAs](#)
- [History of VSE](#)

Announcing z/VSE V3.1
Built on a heritage of ongoing refinement and innovation that spans four decades

Redesigned z/VSE homepage
You may have already noticed that the z/VSE home page has changed. We've redesigned the entire web site and included additional information. The objective is to provide you with a more useful business tool, as well as to offer you a more enjoyable experience. We encourage you to use, or to simply explore, the enhanced z/VSE web site. If you have questions, suggestions, or comments, please contact the [VSE team](#).

z/VSE Version 3 Release 1
z/VSE Version 3 Release 1 (z/VSE V3.1) is designed to support:

- IBM eServer zSeries 890 and 990 (31-bit mode only)
- SCSI disks attached to zSeries FCP channels
- CSE-Express and FICOM FICExpress adapters
- SCSI Express and CP Assist for Cryptographic Function (CPACF)
- IBM TotalStorage 3496 Virtual Tape Server
- improved support for IBM 3494 Tape Library
- IBM TotalStorage DS8000 and DS5000 series Storage Servers
- enhanced Advanced Copy support

z/VSE is designed to enable network integration and infrastructure

Related links

- Linux on zSeries
- z/OS
- z/VM
- IBM Storage
- IBM eServer Systems

We're here to help

Easy ways to get the answers you need.

E-mail us

Mark your calendar

Guide Share Europe
April 18-20, 2005
Berlin, Germany

Register

WAVV World Alliance

WAVV conference
May 20-24, 2005
Colorado Springs, Colorado, USA

Catch the WAVV

Spotlights

- IBM eServer zSeries
- Infrastructure simplification
- VSE Recommended Service Level

Middleware

- WebSphere software
- Information management software

New Web presence: ibm.com/servers/eserver/zseries/zvse

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Additional Information

- z/VSE Home Page
<http://www.ibm.com/servers/eserver/zseries/zvse/>
- z/VSE Solutions
<http://www-1.ibm.com/servers/eserver/zseries/zvse/solutions/>

Redbooks

- e-business Solutions for VSE/ESA SG24-5662
- e-business Connectivity for VSE/ESA SG24-5950
- CICS Transaction Server for VSE/ESA
CICS Web Support SG24-5997-00
- WebSphere V5 for Linux on zSeries Connectivity Handbook SG24-7042

 Are you ready for e-business?

We appreciate your comments at : zVSE@de.ibm.com

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