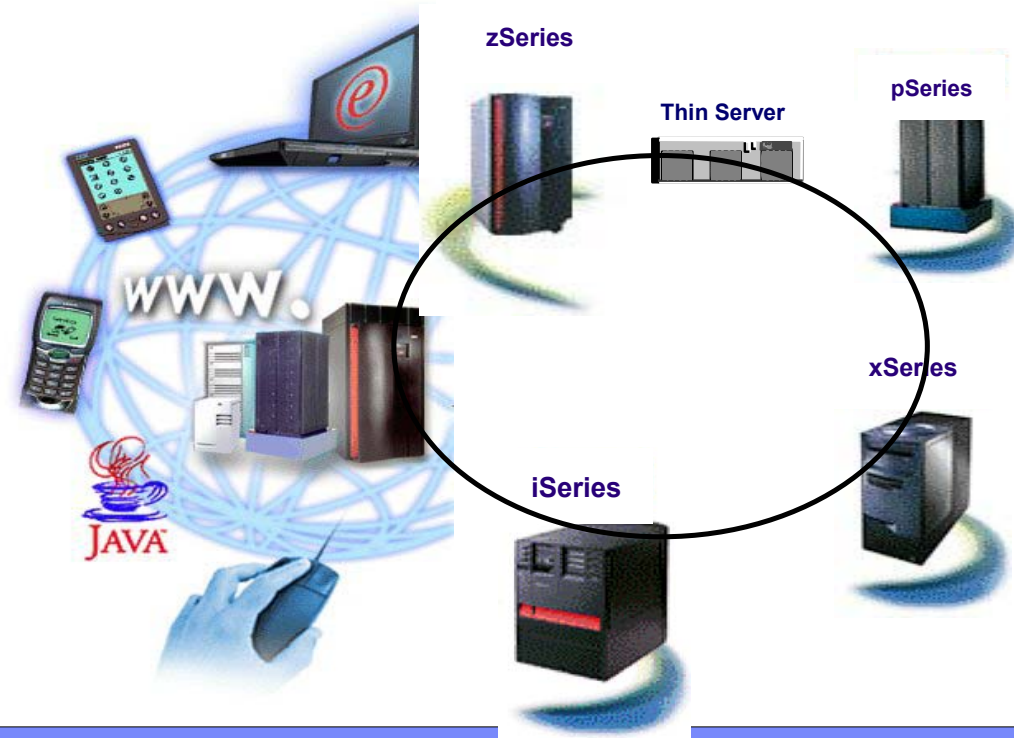




IBM Systems and Technology Group

z/VSE 4.1 Update and Enterprise Modernization

Wilhelm Mild
z/VSE Solution Architect
IBM Labor Böblingen



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DB2 Universal Database	Intelligent Miner	z/VSE
e-business logo*	Multiprise*	VisualAge*
Enterprise Storage Server	MQSeries*	VTAM*
HiperSockets	OS/390*	WebSphere*
	S/390*	xSeries
	SNAP/SHOT*	z/Architecture
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		zSeries
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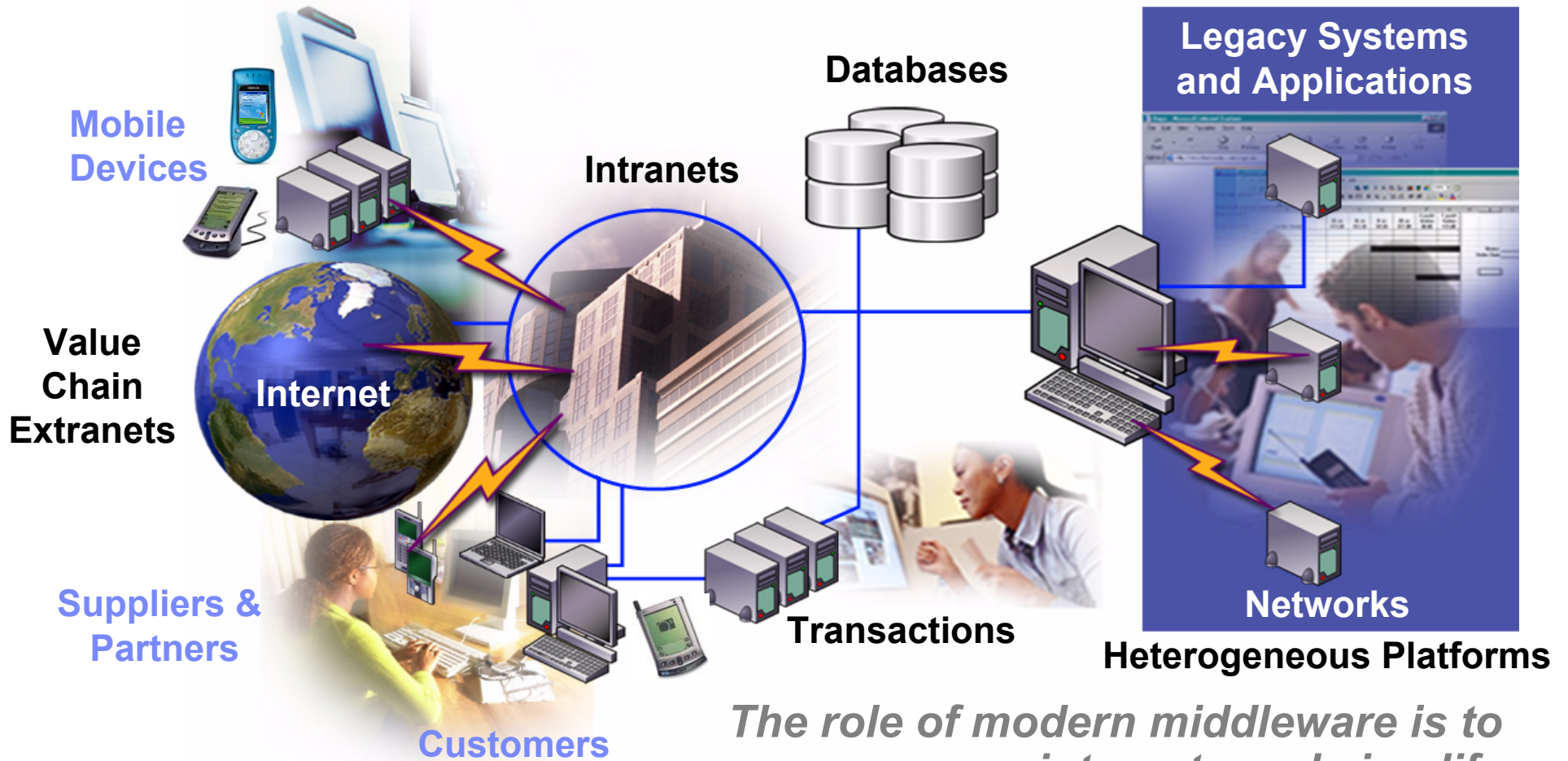
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Today's IT Environment

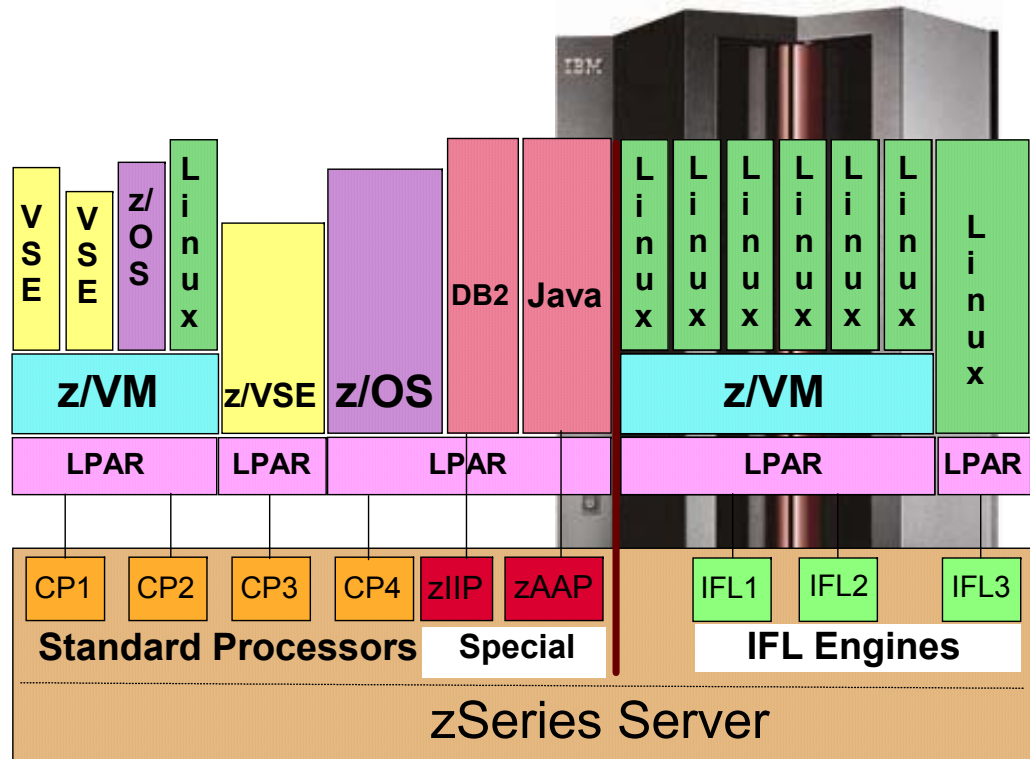
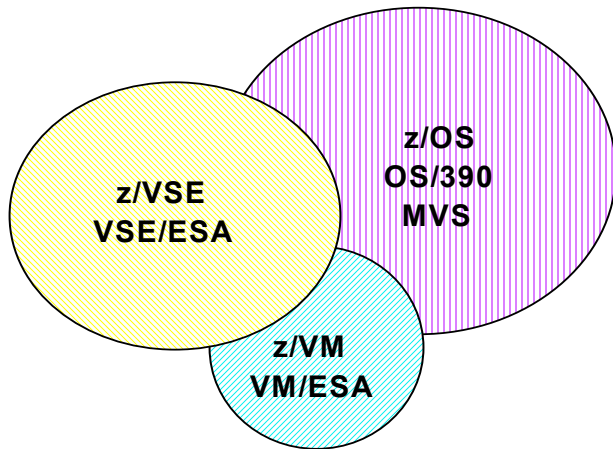
IT environments are increasingly heterogeneous and complex



The role of modern middleware is to integrate and simplify

System z Operating Systems

Traditional Mainframe Operating Systems



Standard Processors

- CP
 - For z/OS, z/VSE, z/VM workloads

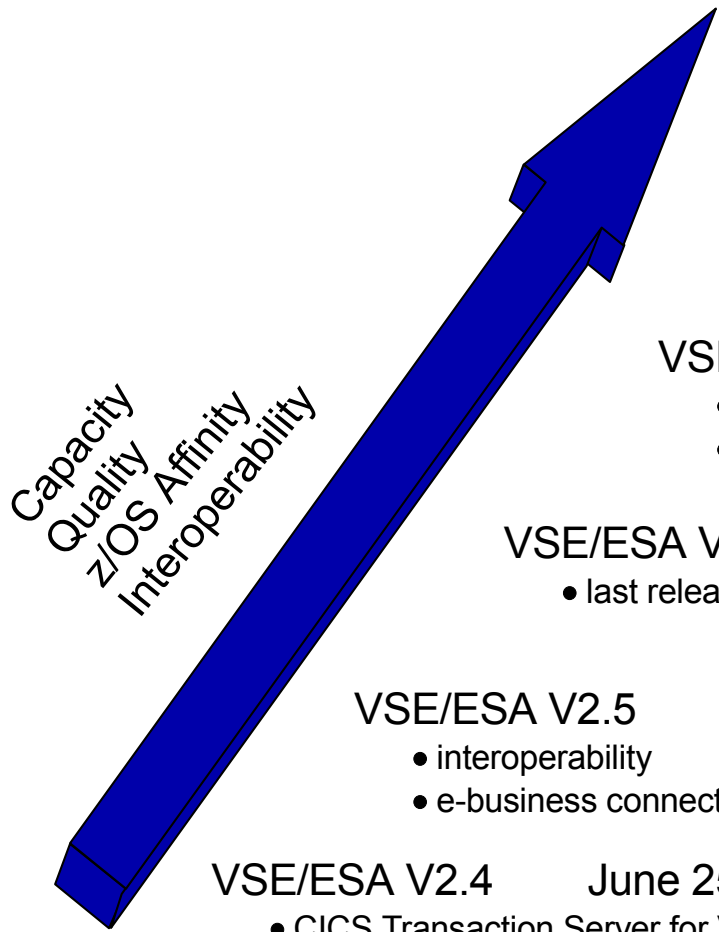
Special Processors

- CF (Coupling Facility)
 - For Parallel Sysplex with z/OS
- IFL (Integrated Facility for Linux)
 - For Linux and Linux applications
- zAAP (zSeries Application Assist Processor)
 - For offload of Java applications from z/OS
- zIIP (zSeries System z9 Integrated Information Processor)

Agenda

- ■ **z/VSE V4 Announcement** 
- **z/VSE Strategie**
- **z/VSE Enterprize Modernization scenarios**

VSE Roadmap



z/VSE V4 - announced

- z/Architecture only
- 64-bit real addressing
- SOD for sub-cap pricing



z/VSE V3.1 ***March 4, 2005***

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

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

- enhanced interoperability
- ALS2 servers only



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

- last release to support pre-G5 servers

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

- interoperability
- e-business connectors

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

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



z/VSE 4.1 – Announcements

- **z/VSE 4.1 preannouncement:**
 - ▶ **April 2006**

- **z/VSE 4.1 announcement**
 - ▶ **January 9. 2007**
 - ▶ **GA date announced for March 16. 2007**

- **New Pricing announcement for z/VSE 4.1**
 - ▶ **January 9. 2007**

- **Sub Capacity Pricing announcement for z/VSE 4.1**
 - ▶ **January 9. 2007**



VSE Server Support

IBM Servers	z/VSE V4.1	z/VSE V3.1	VSE/ESA V2.7
IBM System z9 Enterprise Class	Yes	Yes	Yes
IBM System z9 Business Class	Yes	Yes	Yes
zSeries 990, 890, 900, 800	Yes	Yes	Yes
S/390® Parallel Enterprise Server™ G5/G6	No	Yes	Yes
S/390® Multiprise® 3000	No	Yes	Yes
S/390® Parallel Enterprise Server™ G1/2/3/4	No	No	No
S/390® Multiprise® 2000	No	No	No
S/390® Integrated Server	No	No	No
P/390 and R/390	No	No	No
ES/9000 – 9221, 9121, 9021	No	No	No

VSE Service & Support Status

VSE Version and Release	Marketed	Supported	End of Support
z/VSE V4.1	from 03/2007	from 03/2007	tbd
z/VSE V3.1	Yes	Yes	tbd
VSE/ESA V2.7	No	Yes	02/2007
VSE/ESA V2.6	No	No	03/2006

z/VSE 4.1 – Base enhancements (1)

- **z/Architecture mode only**
- **64-bit real addressing for selected system functions**
 - ▶ **Designed to exploit up to 8GB of processor storage**
- **Up to 60 LPARS**
 - ▶ **30 LPARS on z9 BC**
 - ▶ **60 LPARS on z9 EC**
- **z/VSE 4.1 64-bit Enhancements**
 - ▶ **Power**
 - ▶ **IUI**
 - ▶ **Dump tools**

z/VSE 4.1 – Base enhancements (2)

- **OSA-Express2 OSN (Open System Adapter for NCP) support**
 - ▶ **The IBM Communication controller for Linux on System z emulates 3745 devices**

- **N_Port ID Virtualization (NPIV)**
 - ▶ **Designed to allow sharing of a single physical FCP channel among operating system images (in LPAR or VM)**

- **FCP point-to-point attachments**
 - ▶ **A FICON feature configured as CHIPID type FCP can directly attach to storage devices**

- **Program-directed re-IPL:**
 - ▶ **Operating systems running natively in an LPAR to trigger re-IPL**
 - **Exclusiv available to z9 EC and z9 BC**

z/VSE 4.1 - Interoperability

- **VSAM supports more than 1500 cluster per catalog**

- **VSAM FAT-BIG DASD support**
 - ▶ **Small DASD: (normal)** which has less than 64K tracks per volume
 - reported on LISTCAT as 3390 device.

 - ▶ **Large DASD:** . The "Large DASD" will now have two subtypes:
 - **Big DASD:** the capacity of more than 64K tracks per volume
 - reported on LISTCAT as BIG-3390. VSAM can support up to 10017 cylinders on this device.

 - **Fat DASD:** which has up to 64K cylinders. – breaking barriers
 - VSAM is now breaking this barrier by introducing a new type of device which is called
 - Reported on LISTCAT as FAT-3390

 - ▶ All volumes of a volume list must have the same DASD type and cannot be mixed.

z/VSE 4.1 - Interoperability

■ VSAM to relational with VSAM Redirector

▶ Normalizing Database handler

- Store VSAM data in a normalized form into a relational database

▶ VSAM Capture Exit

- part of the VSAM Redirector. It captures all changes done in a VSAM cluster.
- creates a delta record in another VSAM cluster (that is a “delta file”)
- the delta record/message contains the data of the changed record and information about when (timestamp) and by whom (partition, phase name, origin value, etc.) the record was changed.
- **These data can be processed asynchronous by another program or system.**
 - for example using the VSE Connectors can be used to read the delta cluster and process the records
- **Alternatively, the Capture Exit can be used to create a MQ Message**

z/VSE 4.1 - Interoperability

- **WebSphere 6 compliant**
 - ▶ Support for newest Java Version
 - ▶ Support for newest Java Connector Architecture (JCA)

- **SOA**
 - ▶ Graphical Configuration Tool
 - ▶ SOAP Proxy Code Generator
 - ▶ Copybook Parser (COBOL, HLASM, PLI)



z/VSE 4.1 - Security

- **Security**
 - ▶ **Client Authentication: BSM Base**
 - ▶ **Client Authentication: Resource Protection**
- **Backup Concepts**
 - ▶ **Integration with Tivoli Storage Manager**
- **z/VSE Upgrde via FSU from VSE/ESA 2.7 and z/VSE 3.1**
- **Crypto**
 - ▶ **New CPACF ciphers supported with the IBM System z9 processor**
 - ▶ **Accelerator mode support for Crypto Express2 (CEX2A)**
 - ▶ **2048-bit support for Crypto Express2**
- **Encrypting tape drive - IBM System Storage TS1100 tape drive family**
 - ▶ **Standard feature on all TS1120 Tape Drives**
 - ▶ **Chargeable upgrade feature for existing TS1120 Tape Drives**
- **New pricing for z/VSE V4.1 and a Subcapacity Pricing Option**

IBM TS1120 Tape Drive Encryption

The industry's first comprehensive end-to-end tape encryption solution

- **First encrypting tape drive - IBM System Storage TS1100 tape drive family**
 - ▶ Standard feature on all TS1120 Tape Drives
 - ▶ Chargeable upgrade feature for existing TS1120 Tape Drives
- **A new, innovative IBM Encryption Key Manager component for the Java platform™ component supported on a wide range of systems including:**
 - ▶ z/OS, i5/OS, AIX, HP, Sun, Linux (incl System z), and Windows
- **Integration with IBM tape systems, libraries**
- **Enhancements to Tivoli Storage Manager to exploit TS1120 encryption**
- **Integration with System z encryption key, policy management, security and cryptographic capabilities**
- **Complements existing System z Encryption Facility for z/OS program product**
- **New services and consulting for tape data encryption and key management**



TS1120
500 GB
100 MB/sec

**Encryption Key
Manager**



IBM TS1120 Tape Drive Encryption – SOD for z/VSE

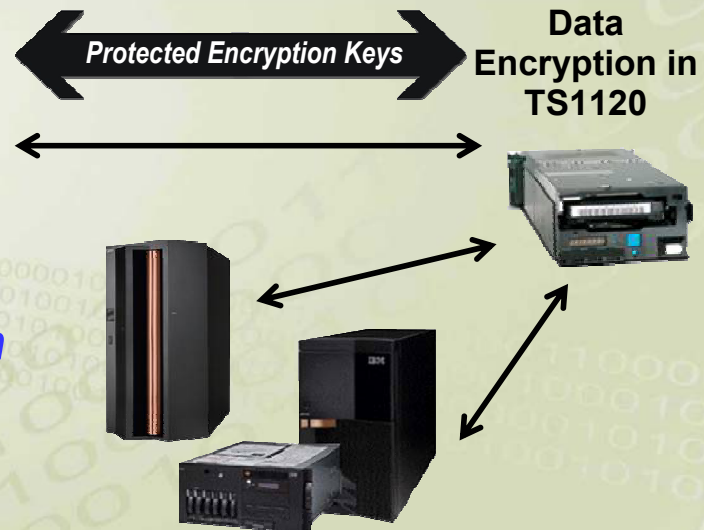
SOD*: “z/VSE V3.1 support of the TS1120 Tape Drive with encryption is planned for first half 2007. It is also IBM's intent to support z/VSE V4.1 (when made available) using Systems Managed Encryption with the TS1120. z/VSE support will require the Encryption Key Manager component running on another operating system other than z/VSE using an out-of-band connection.”

Centralized key management

- Help protect and manage encryption keys
 - Highly secure and available key data storage
 - Long term key management
 - Disaster recovery capabilities
- Single point of control
 - Non-VSE, Java-based platform
 - TCP/IP connection to tape control unit



**Data Encryption
in the Server**



- Highly secure
- High performance archive encryption
- Transparent to existing processes and applications
- Can help provide audit compliance

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

z/VSE – comparison


■ Current Product: z/VSE 3.1

- ▶ z/VSE V3.1 (GA 3/2005)
- ▶ ESA/390 (31-bit) mode only
 - up to 2 GB real processor storage
- ▶ supports
 - System z9 EC *and* z9 BC
 - eServer zSeries 990, 890, 900, 800
 - **Multiprise 3000 & S/390 G5/G6**
- ▶ HiperSockets
- ▶ CPACF
- ▶ Crypto Express2 (configurable)
- ▶ FCP/SCSI disks & NPIV
 - DS8000, DS6000, ESS
- ▶ FICON Express2 & 4
- ▶ OSA Express2
- ▶ 31-bit buffers for ACF/VTAM
- ▶ SOD for TS1120 encrypting tape

■ Future Product: z/VSE 4.1

- ▶ z/VSE V4.1 (announced GA 16/3/2006)
- ▶ z/Architecture (64-bit) mode only
 - up to 8 GB real processor storage
- ▶ supports
 - System z9 EC *and* z9 BC
 - eServer zSeries 990, 890, 900, 800
- ▶ New pricing (MWLC)
- ▶ Subcapacity pricing option (z9 only)
- ▶ HiperSockets
- ▶ CPACF + **enhancements**
- ▶ Crypto Express2 (configurable)
- ▶ FPC/SCSI disk & NPIV + **point-to-point**
 - DS8000, DS6000, ESS
- ▶ FICON Express2 & 4
- ▶ OSA Express2
- ▶ 31-bit buffers for ACF/VTAM
- ▶ TS1120 encrypting tape

Agenda

- **z/VSE V4 Announcement** 
- ■ **z/VSE Strategie**
- **z/VSE Enterprize Modernization scenarios**

z/VSE Strategy 'easy as P I E'



Protect

existing investment

Integrate

with IBM middleware using connectors

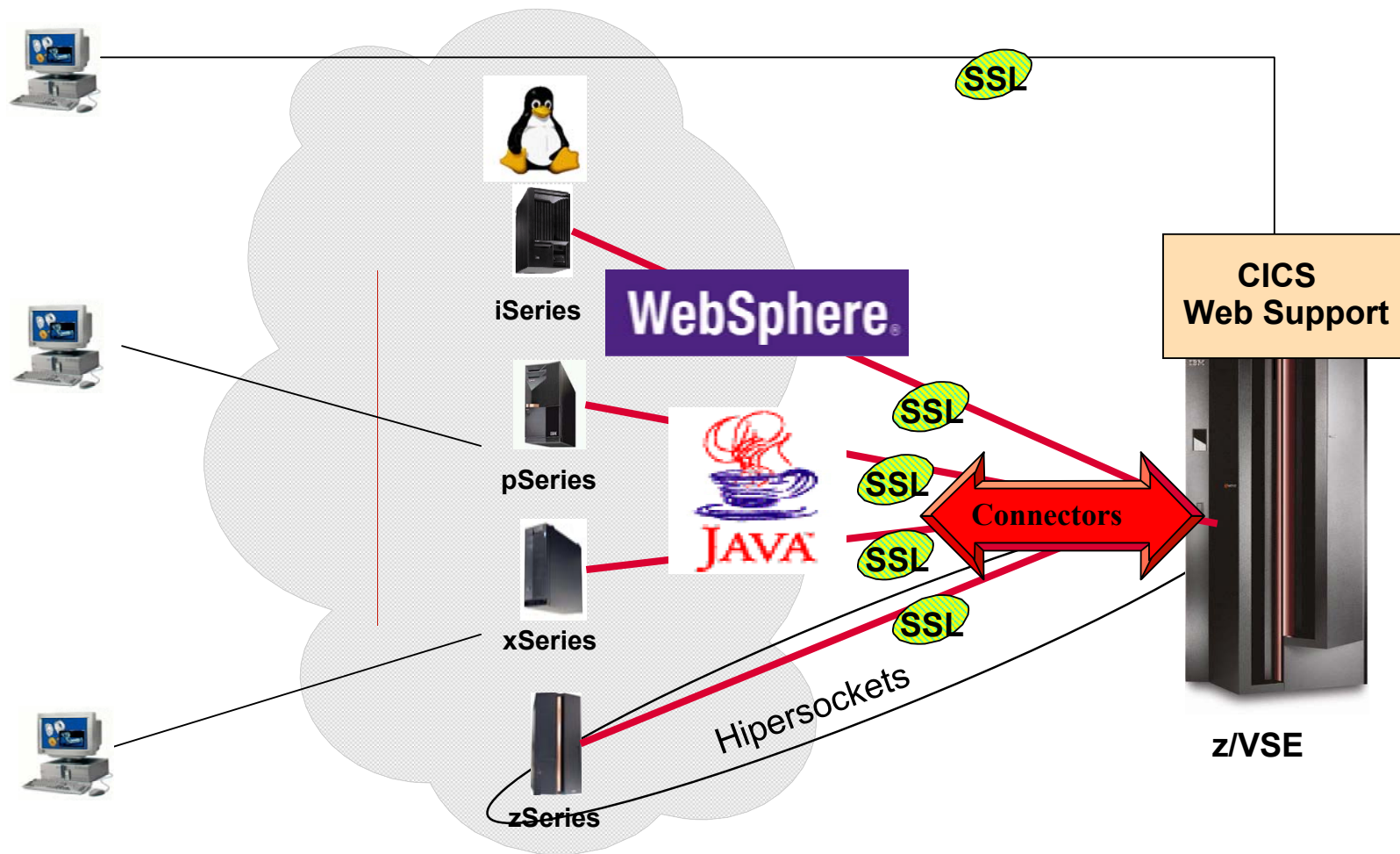
Extend

with Linux on System z

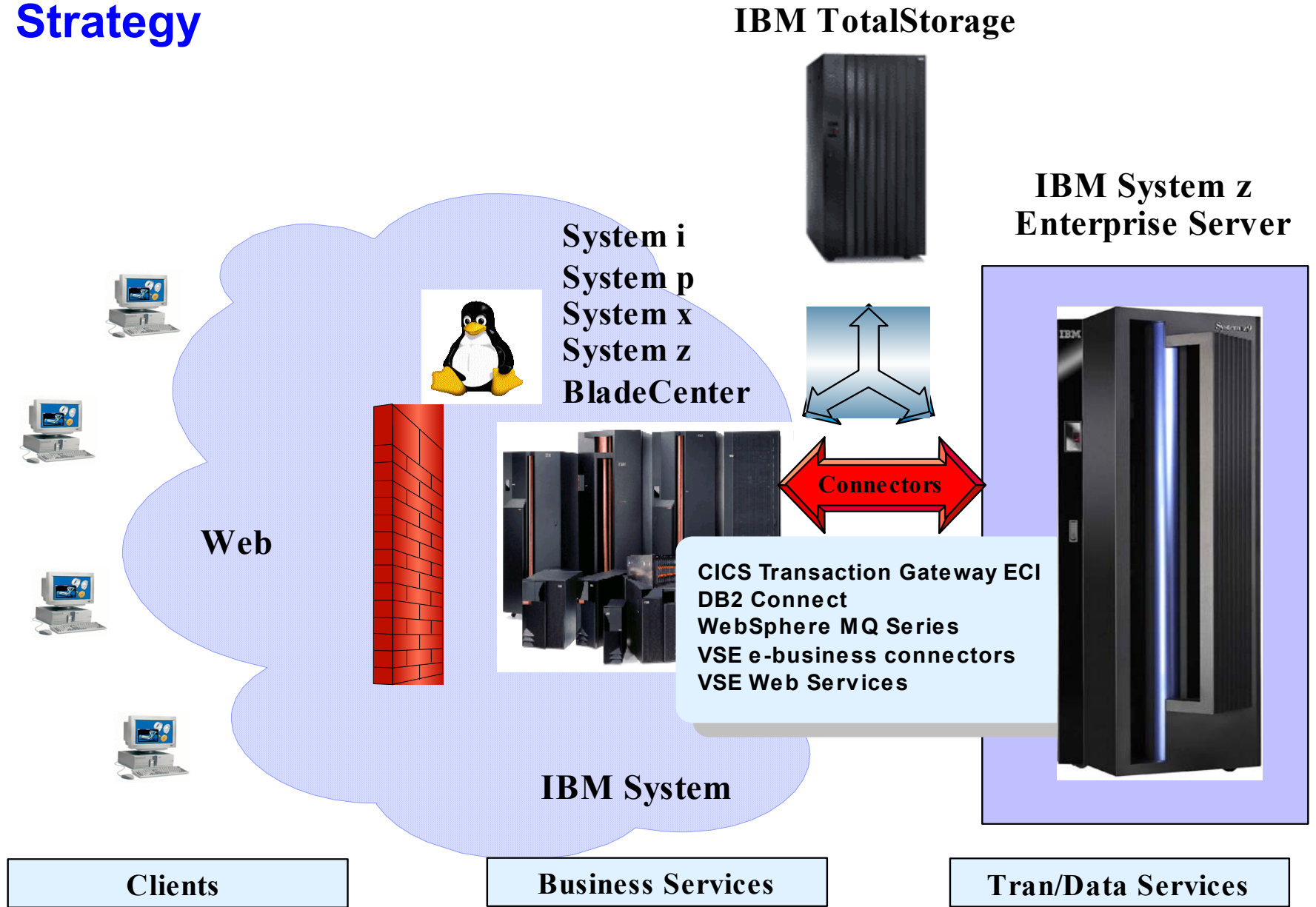
- Existing core applications continue to run unchanged
- Continuous follow-on development for HW and SW
 - from S/390 via zSeries to IBM System z9
 - from VSE/ESA to z/VSE
- z/VSE is the platform of choice for transaction oriented core applications with CICS
- Excellent support from IBM Lab in Boeblingen
 - z/VSE worldwide development is located in Boeblingen --> deep skills available
 - PoC – Proof of Concept (customer individual)
 - Briefings (customer individual)
- Integration of VSE into heterogeneous environments
- z/VSE is a very stable operating system that can easily be connected to open systems (Linux)
 - access to external data (e.g. on Linux) or programs (e.g. Java) via standard connectors or via free of charge VSE specific connectors
 - exploitation of HiperSockets within the server – no physical network outside the box
- Extension of existing solutions with Linux on System z
- Cooperation and coexistence with Linux on System z and z/VM
- z/VSE is open and connectable to various different client/server platforms



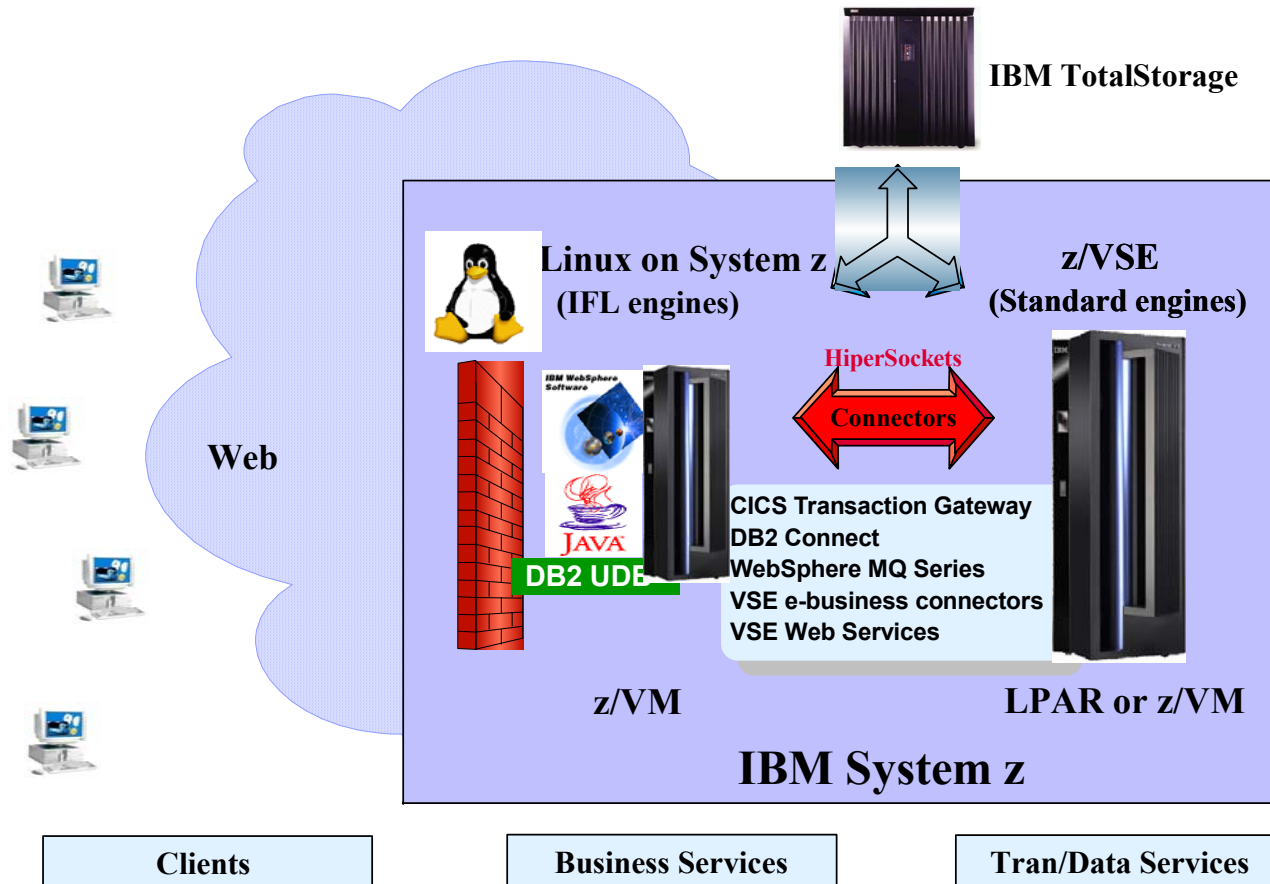
VSE's interoperability is open for various platforms !




VSE Strategy



VSE Strategy with Linux on System z

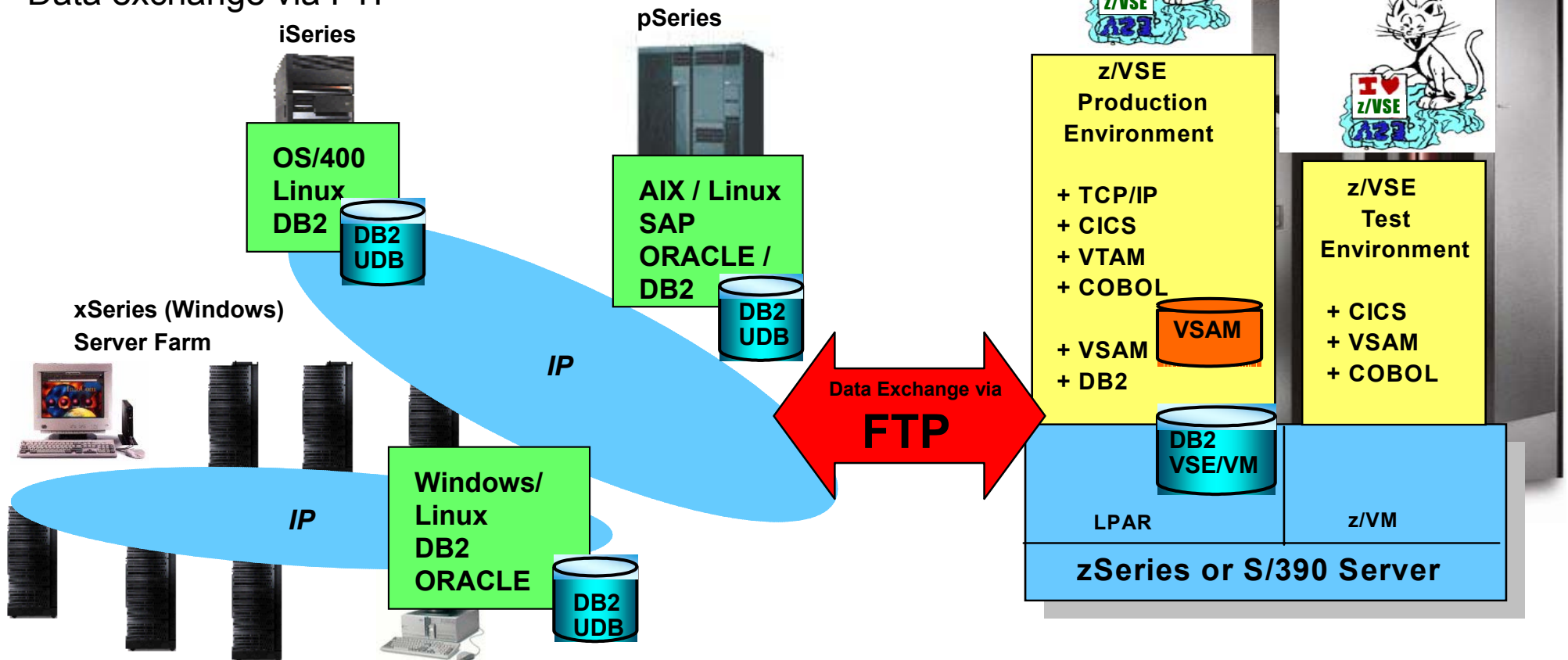


Agenda

- **z/VSE V4 Announcement** 
- **z/VSE Strategie**
- ■ **z/VSE Enterprize Modernization scenarios**

Typical VSE Customer Environment

- Various servers (System z, System p, System i, System x, and competitive)
- CICS and batch programs on VSE
- VSAM data on VSE (plus some DB2 and/or DL/I installations)
- Relational data bases (DB2, Oracle) on distributed platforms
- Data exchange via FTP

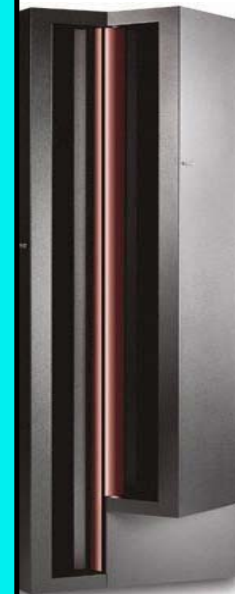
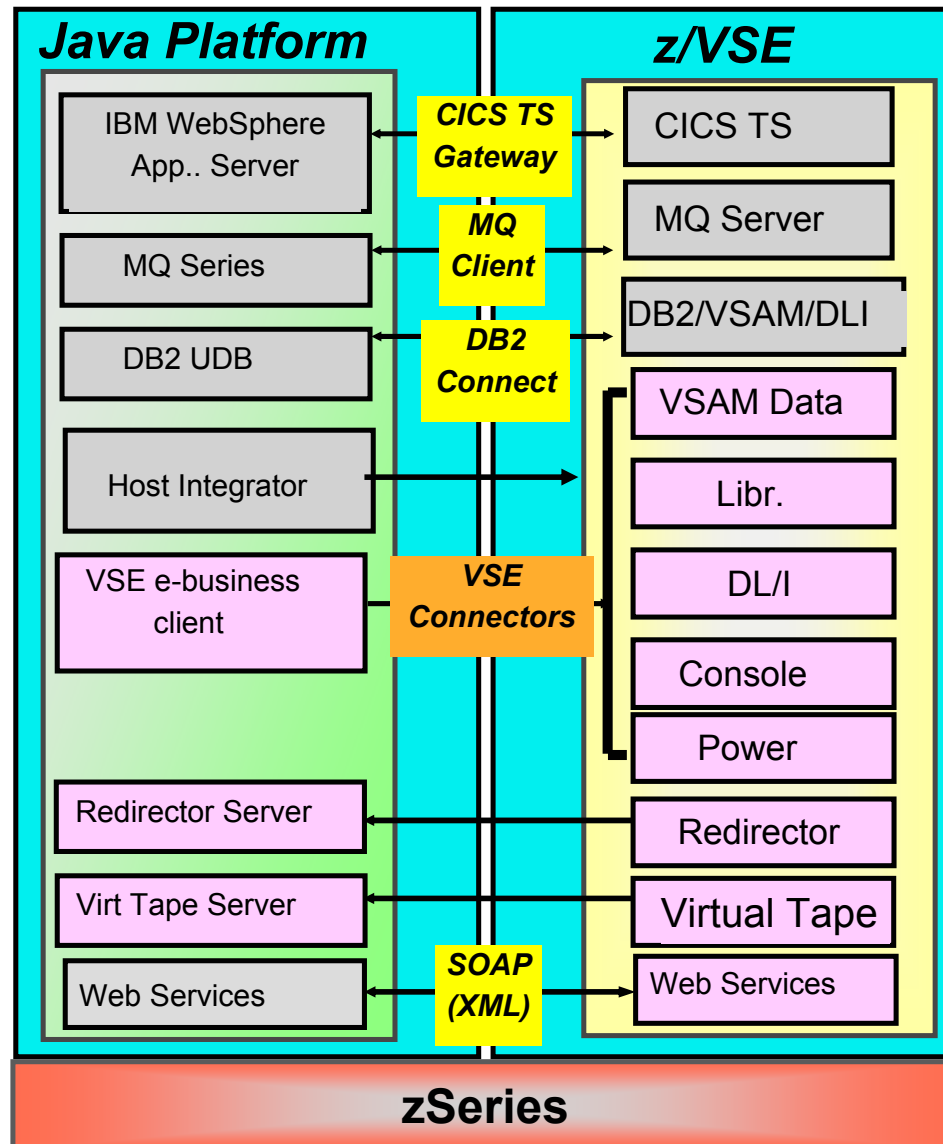


Most important requirement: Access to new applications!

Middleware Relations to z/VSE

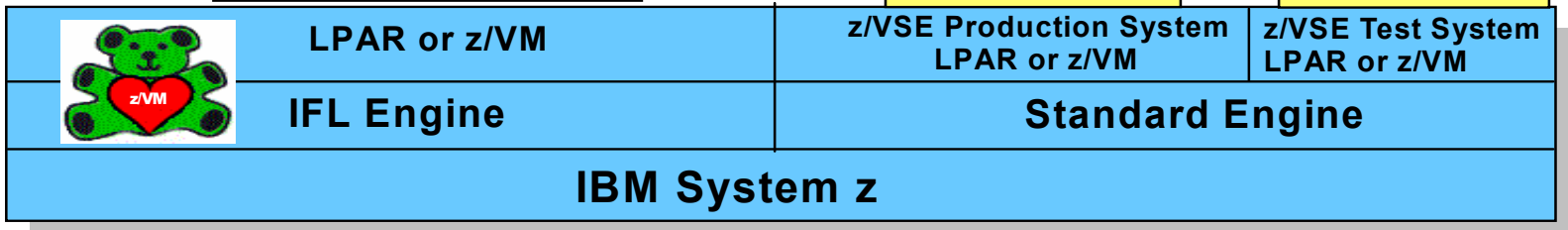
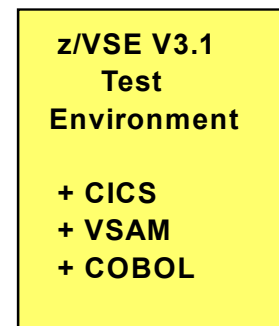
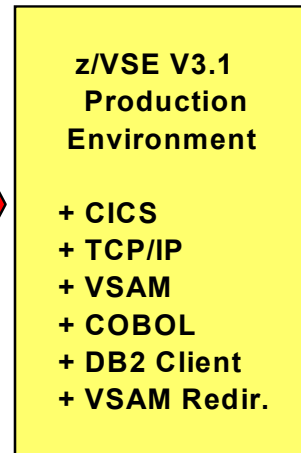
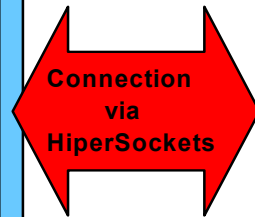
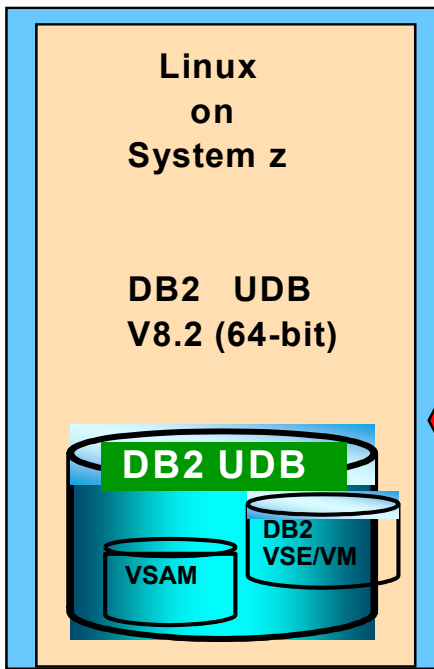
- Modern Applications with Linux on zSeries
- Most modern Technologies interact with VSE Services
- Modernisation of IT Infrastructures using Real-time access to data

 - part of VSE



Scenario 1: DB2 UDB (64-bit) for VSE Customers

Data consolidation and data warehouse solutions with DB2 UDB on System z



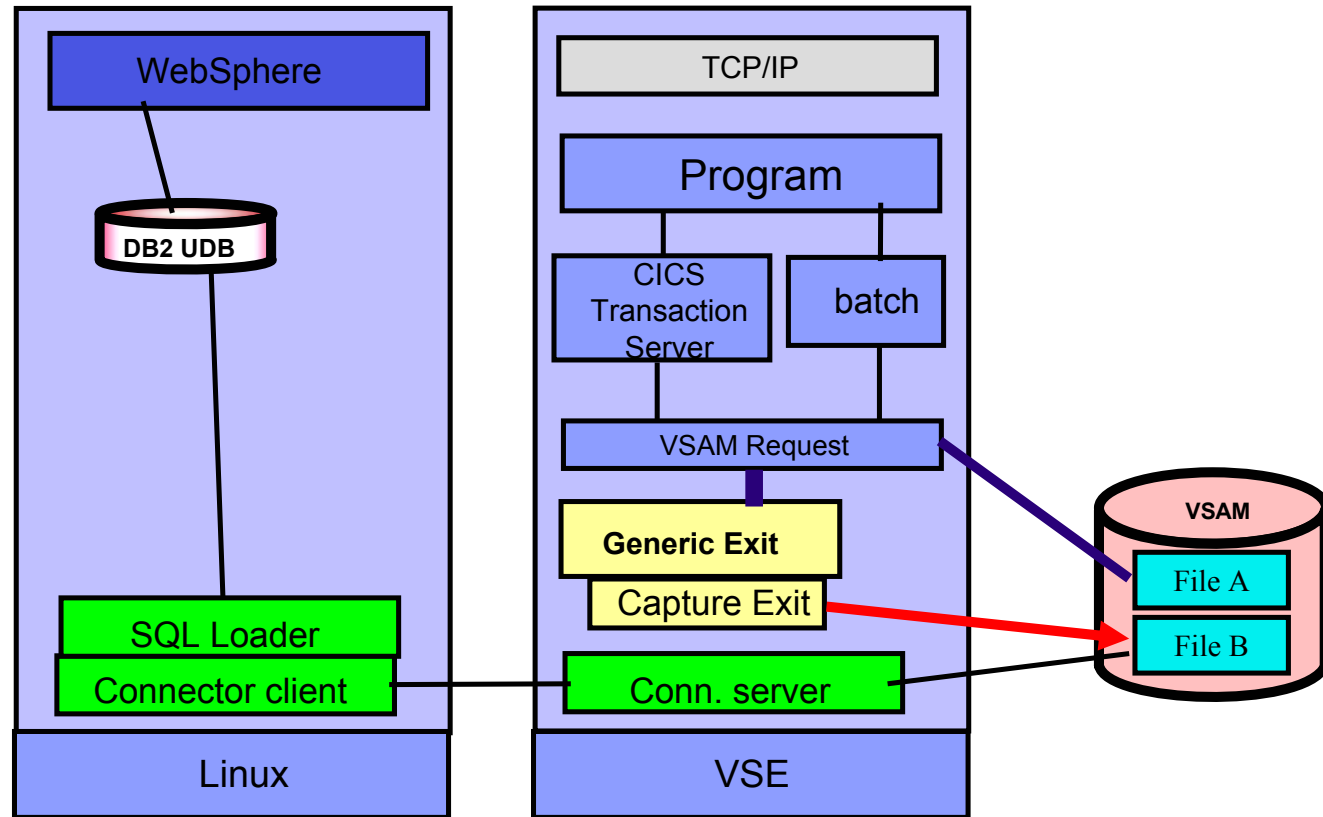
Solution with z/VSE 4.1

Incremental, Linux driven updates

❑ Energy supplier – Germany

▶ With VSAM Capture – the performance of the VSE production system protected

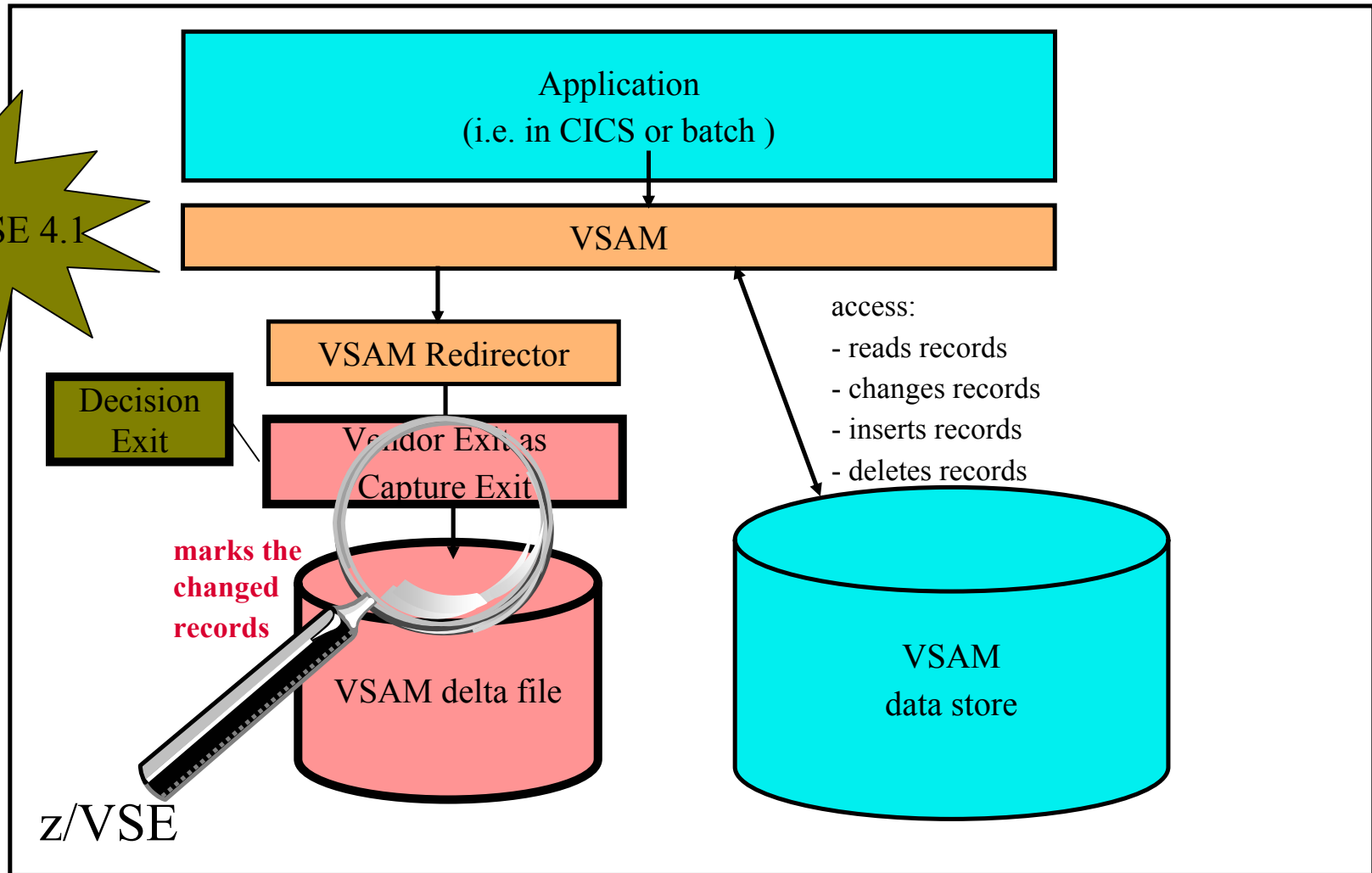
▶ The changes are processed asynchronously and not influencing the production system



- ▶ Collect the changed records in a separate VSAM file
 - ▶ Possibility of cleansing
- ▶ Process them – with the VSE Connectors

Redirector Capture. Architectural View

New in z/VSE 4.1

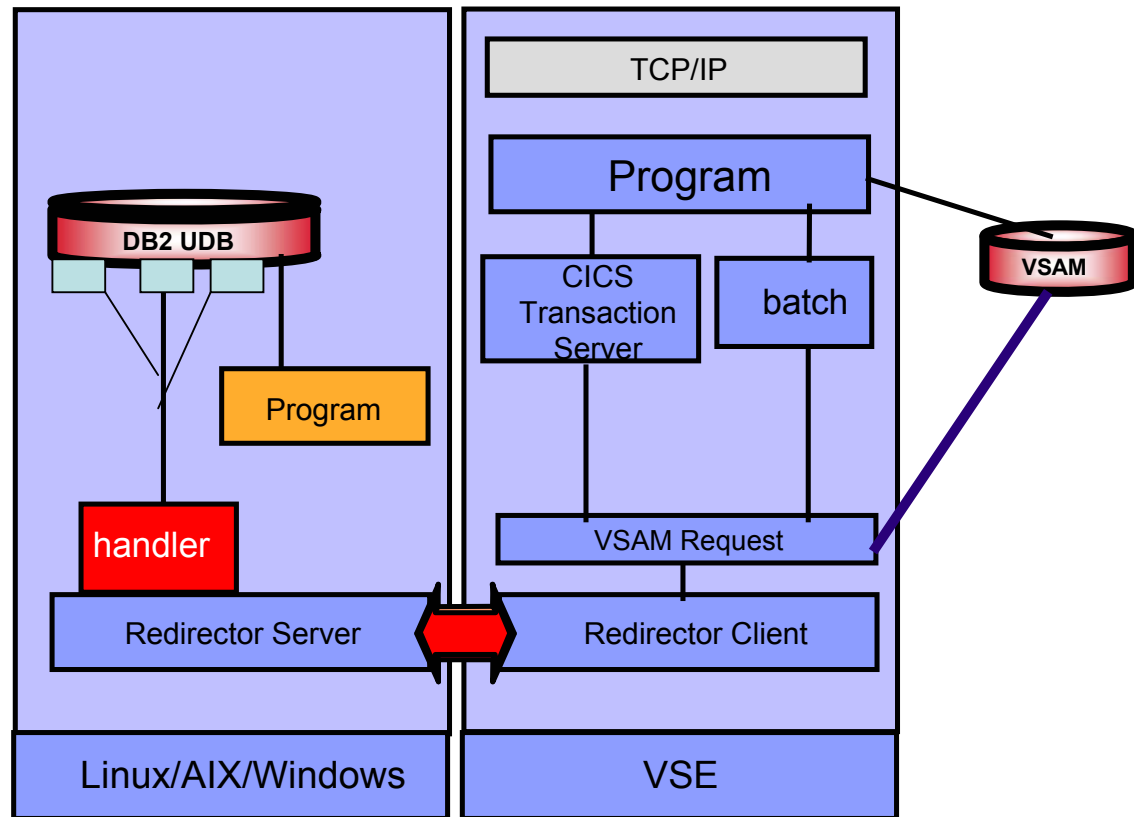


Data propagation / synchronization from VSE

VSE/VSAM Redirector can use normalized VSAM data

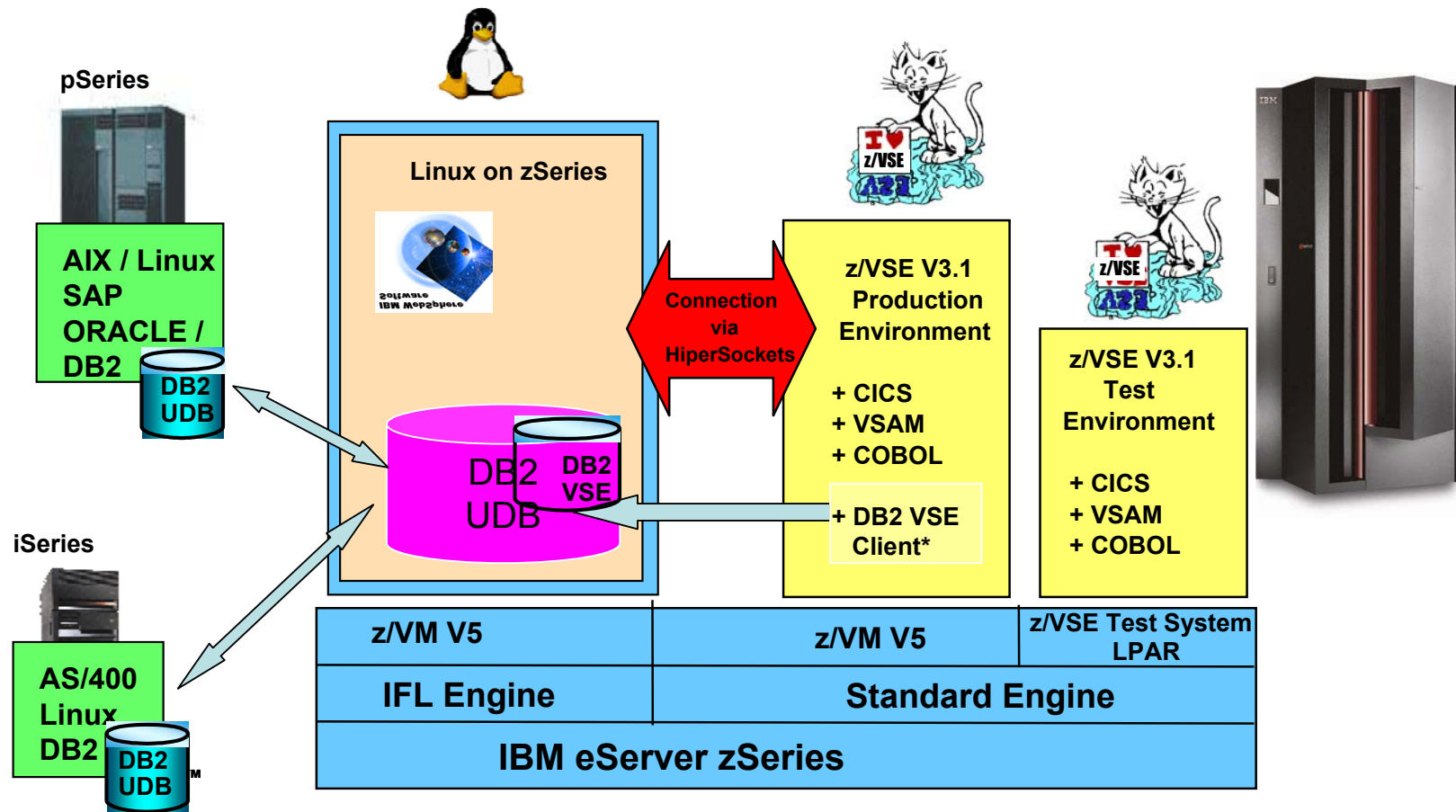
▶ No changes to the existing VSE applications

▶ **The new Redirector Handler in z/VSE 4.1 can store/retrieve 'VSAM' data in multiple DB Tables .**



- ▶ Applications on VSE should be able to access DB2 data on Linux
- ▶ Synchronization of DB2 UDB on Linux with VSAM using VSAM Redirector.
(VSAM Redirector is part of VSE)

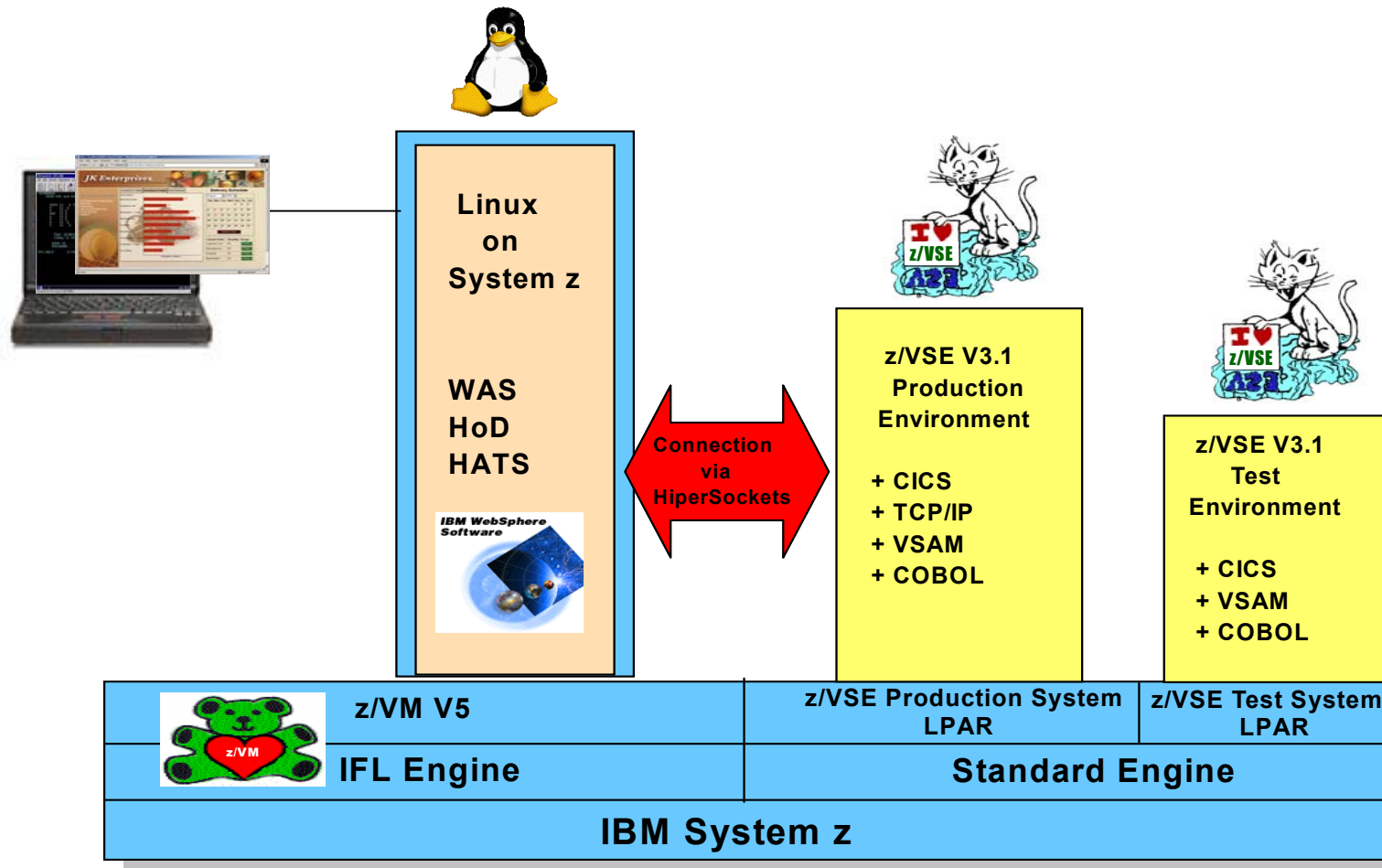
DB2 Scenarios – with DB2 UDB on Linux



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

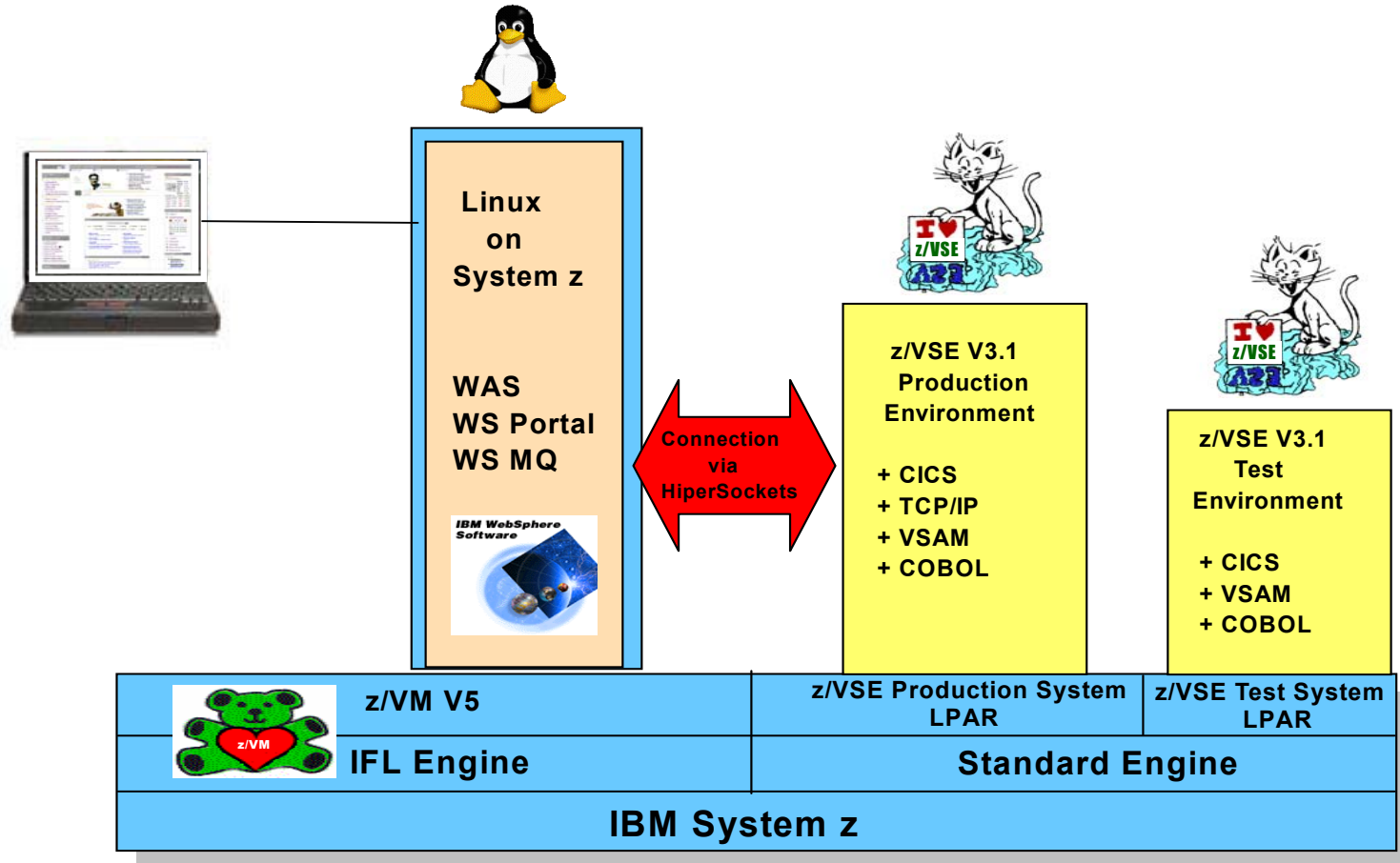
Scenario 2: „Webification“ for VSE Applications

Web enable existing applications with Inter/Intranet frontend



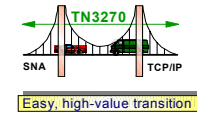
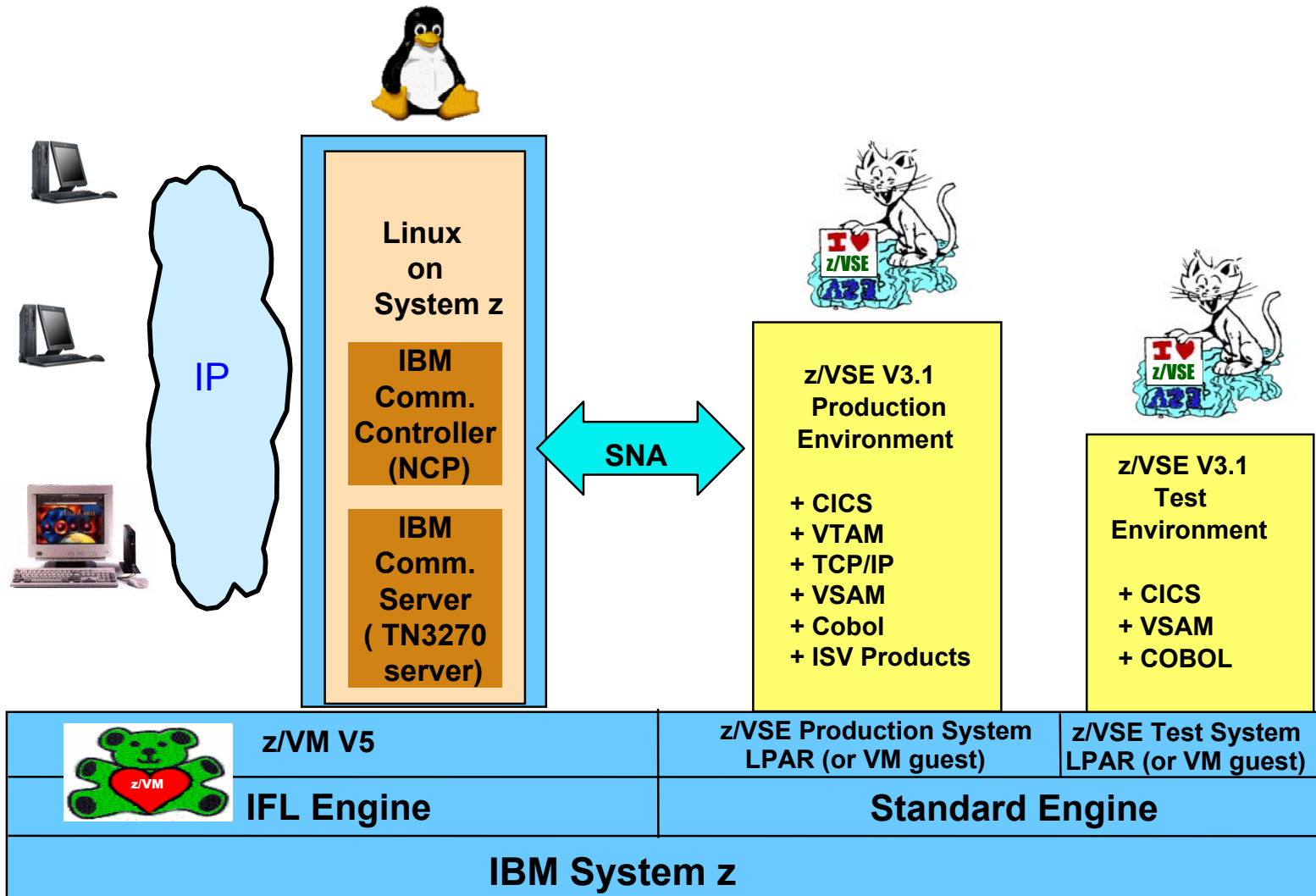
Scenario 3: WebSphere Portal for VSE Customers

A portal for administration and integration of applications for employees / customers / providers



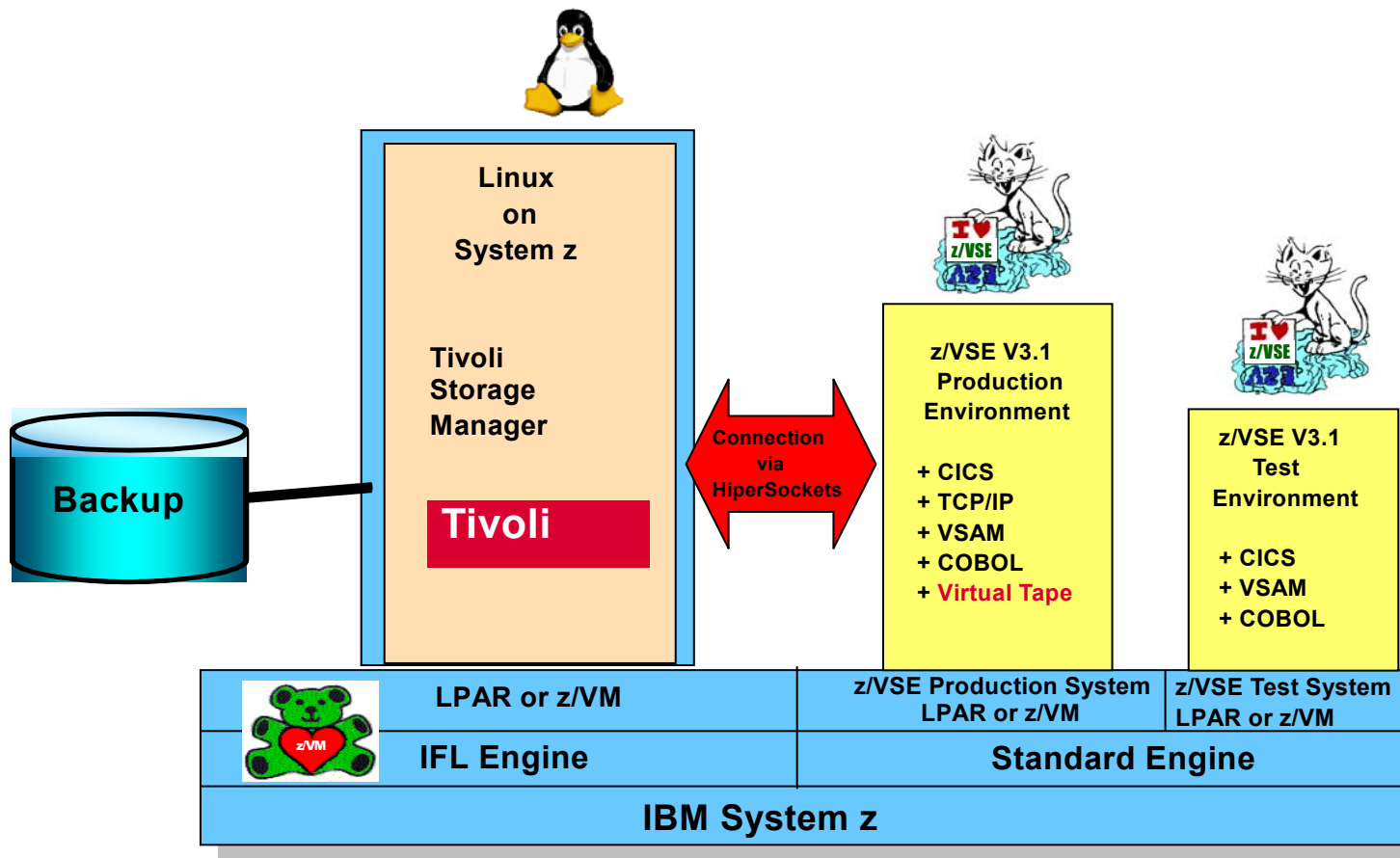
Scenario 4: Network Infrastructure Simplification

3745/46 (NCP) and TN3270 replacement with Linux on System z



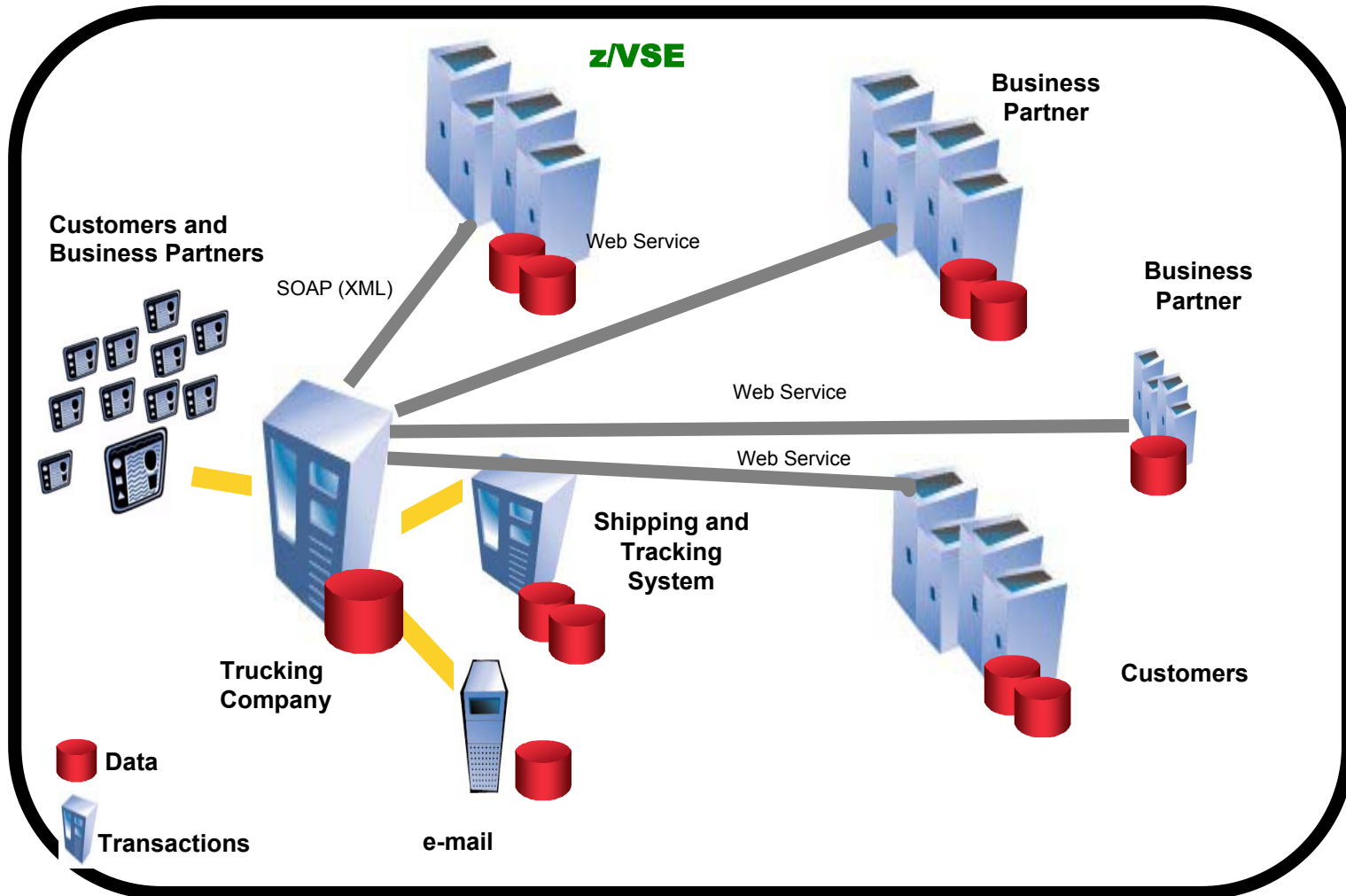
Scenario 5: Backup/Restore Concepts for VSE

Integrate z/VSE with TSM on Linux on System z



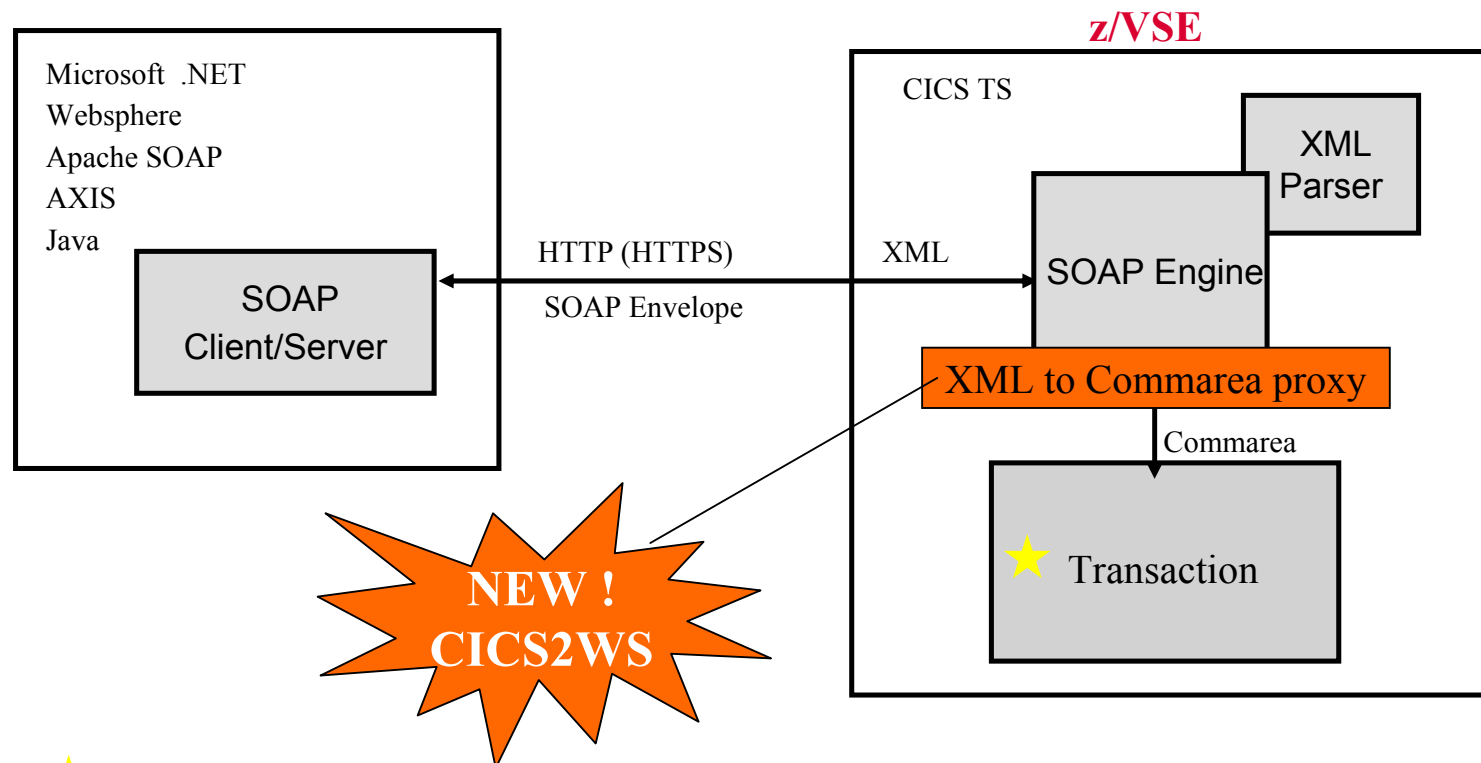
Scenario 6: SOA and Web Services with z/VSE

Application integration



Web Services with z/VSE

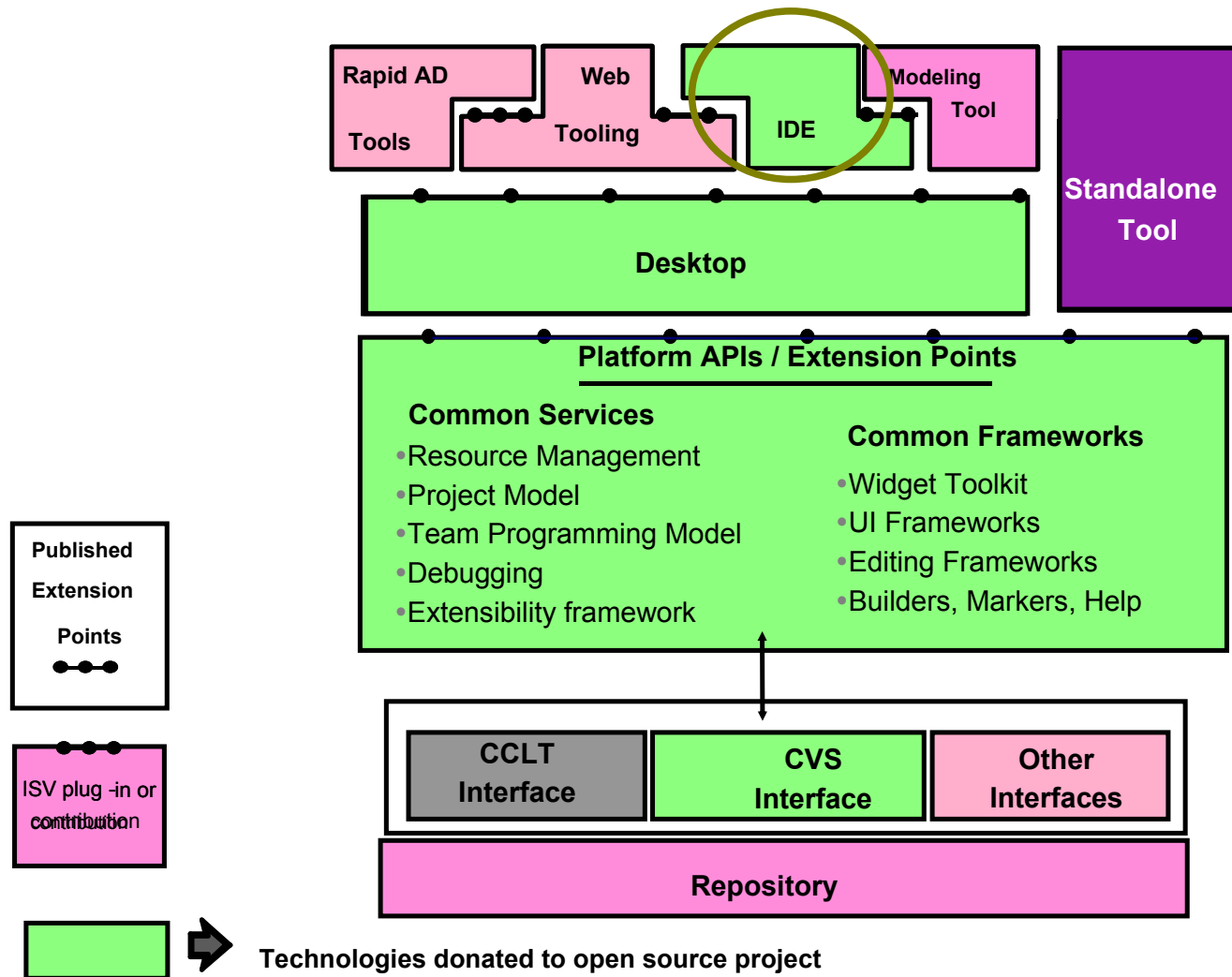
SOA and XML data interchange with CICS transactions



★ VSE Transactions as Web Service – generated with the tool CICS2WS

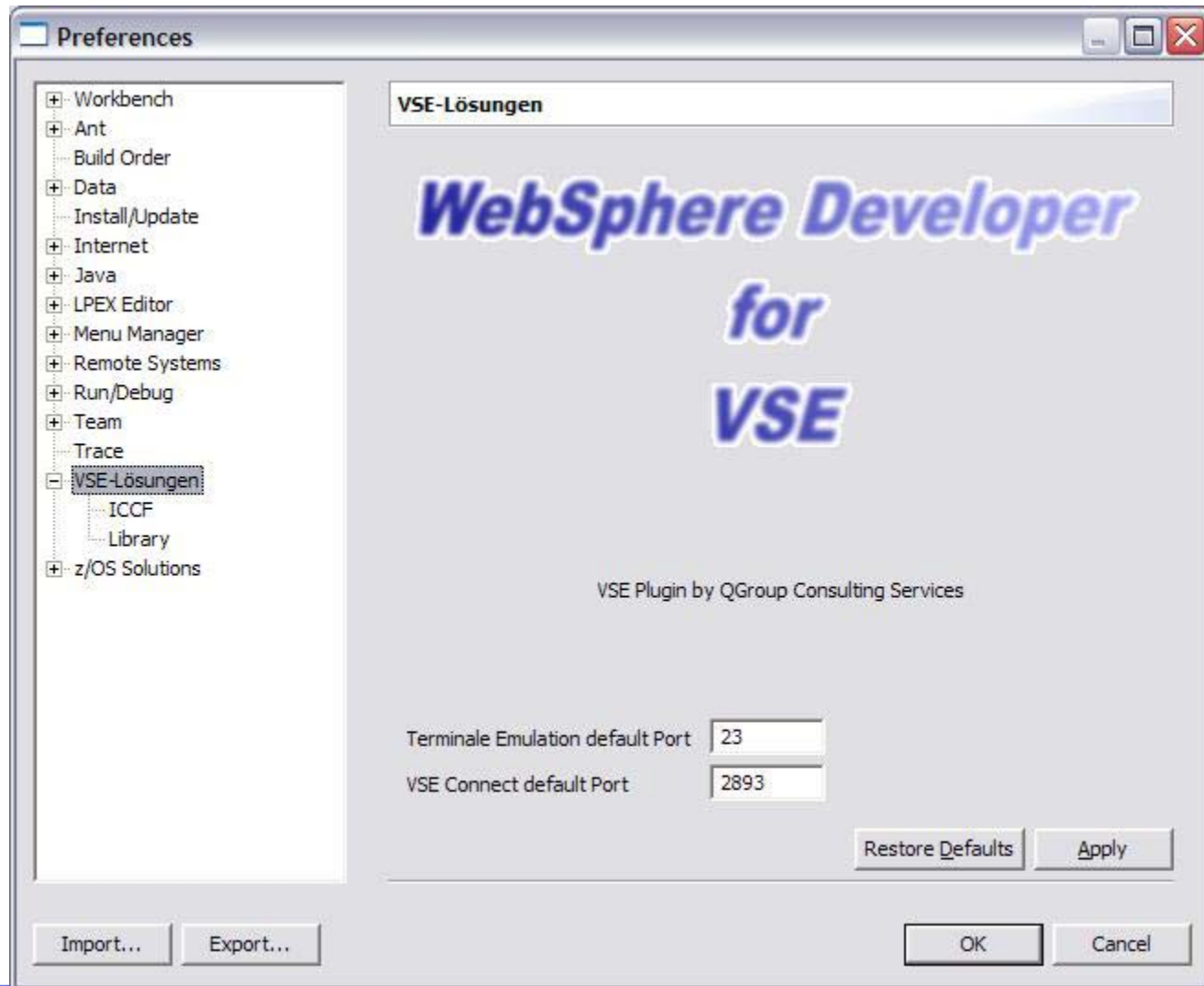
Application development for VSE

(1) Use of modern development environments !



(1) Cross Platform Integrated Development Environment Approach with WebSphere Developer for System z (*)

(*) In development.



The screenshot shows the IBM VSE (Virtual Storage Executive) software interface. The main window displays a terminal session with the following text:

```

TSSAIMSO1          VSE/ESA ONLINE
5609-2V3 and Other Materials (C) Copyright IBM Corp. 2004 and other dates

      ++
      ++  WV  WV  SSSSS  EEEEEEE
      ++  WV  WV  SSSSSSS  EEEEEEE
***** ++  WV  WV  SS  EE
***** ++  WV  WV  SSSSSS  EEEEEEE
** ++  WV  WV  SSSSSS  EEEEEEE
** ++  WV  WV  SS  EE
***** ++  WVWV  SSSSSSS  EEEEEEE
***** ++  WV  SSSSS  EEEEEEE

Your terminal is A001 and its name in the network is D1080001
Today is 01/26/2007 To sign on to DEDCCICS -- enter your:

USER-ID.....= The name by which the system knows you.
PASSWORD..... Your personal access code.

PF1=HELP      2=TUTORIAL      4=REMOTE APPLICATIONS
                          10=NEW PASSWORD
USE ONLY THE ENTER KEY OR ONE OF THE KEYS LISTED ABOVE.
    
```

Below the terminal window is a keyboard layout with function keys (PF1-PF12), Enter, Clear, PA1, PA2, Attn, SysReq, NewLir, and NextP.

On the right side, the 'VSE System View' pane shows a tree structure:

- VSE SYSTEM
 - DEMOVSE
 - Librarian
 - All
 - Cobol
 - Power
 - Reader
 - List
 - Punch
 - Transmit
 - VSAM
 - VSAM.MASTE
 - DB2.USER.CA
 - VSESP.USER.
 - #VSAM.#CIC
 - ICCF
 - 1 Demo
 - 2
 - 10
 - 11
 - 12
 - 14
 - 20
 - 21
 - 22

The bottom of the interface includes a 'Remote Error List' table and a Windows taskbar with the system clock showing 4:29 PM on Friday, 1/26/2007.

ID	Message	Se...	Line	Location	Host Name	Date

The screenshot shows the IBM VSE IDE interface. The main editor displays a COBOL program with the following code:

```

Line 40      Column 81      Insert
--*A-1-B-----2-----3-----4-----5-----6-----7--|-----8
02 Condition-Token-Value.
COPY CEEIGZCT.
03 Case-1-Condition-ID.
04 Severity PIC S9(4) BINARY.
04 Msg-No PIC S9(4) BINARY.
03 Case-2-Condition-ID
REDEFINES Case-1-Condition-ID.
04 Class-Code PIC S9(4) BINARY.
04 Cause-Code PIC S9(4) BINARY.
Case-Sev-Ctl PIC X.
Facility-ID PIC XXX.
Info PIC S9(9) BINARY.
VI SION.
S TO ARG1RS.
ESSLOG' USING ARG1RS, FC, RESLTRS.
*****

```

A context menu is open over the error message in the Problems view:

- Run
- Debug
- Team
- Compare With
- Replace With
- VSE**
 - RemoteCompile
 - Info
 - Upload
- Host Connection Emulator Support
- Local Syntax Check
- Nominate as Entry Point(B)
- Open Welcome Page(Q)
- Properties(Z)

The Problems view shows the following error:

Page	Se...	Line	Location	Host Name	Date	
1		2	40	/DEMOVSE/IGZTMATH...	Local	Jan 26, 2007 4:39:27 PM

The VSE System View on the right lists various system components:

- CEEIGZCT.C
- CEEIGZDT.C
- CEEIGZLC.C
- CEEIGZNM.C
- CEEIGZTD.C
- EDCCCB.C
- EDCCCB2.C
- EDCCICS.C
- EDCCMI.C
- EDCCPL.C
- EDCCRHP.C
- EDCCSIG.C
- EDCCWIN.C
- EDCCZST.C
- EDCDATE.C
- EDCDATM.C
- EDCDAYS.C
- EDCDCOD.C
- EDCDIVX.C
- EDCDIVZ.C
- EDCDSHP.C
- EDCDT1.C
- EDCDT2.C
- EDCDT3.C
- EDCDT4.C

The Windows taskbar at the bottom shows the Start button, system tray icons, and the date/time: 4:40 PM, Friday, 1/26/2007.

VSE - IGZTMATH.cbl -

File Edit Navigate Search Project Run Window Help

z/OS Projects

- .TmpVseRemote
- DEMOVSE
 - build
 - BuildOutput
 - jd
 - .project
 - CEEIGZCT.cbl
 - IGZTMATH.cbl

DEMOVSE.hce IGZTMATH.cbl

VSE System View

- CEEIGZCT.C
- CEEIGZDT.C
- CEEIGZLC.C
- CEEIGZNM.C
- CEEIGZTD.C
- EDCCCB.C
- EDCCCB2.C
- EDCCICS.C
- EDCCMI.C
- EDCCPL.C
- EDCCRHP.C
- EDCCSIG.C
- EDCCWIN.C
- EDCCZST.C
- EDCDATM.C
- EDCDAYS.C
- EDCDCOD.C
- EDCDIVX.C
- EDCDIVZ.C
- EDCDSHP.C
- EDCDT1.C
- EDCDT2.C
- EDCDT3.C
- EDCDT4.C

```

Line 40      Column 81      Insert
--*A-1-B-+-+---2-+-+---3-+-+---4-+-+---5-+-+---6-+-+---7-+-+---8
02 Condition-Token-Value.          00027000
COPY CEEIGZCT.                    00028000
03 Case-1-Condition-ID.            00029000
04 Severity PIC S9(4) BINARY.      00030000
04 Msg-No PIC S9(4) BINARY.        00031000
03 Case-2-Condition-ID            00032000
   REDEFINES Case-1-Condition-ID.  00033000
04 Class-Code PIC S9(4) BINARY.    00034000
04 Cause-Code PIC S9(4) BINARY.    00035000
03 Case-Sev-Ctl PIC X.             00036000
03 Facility-ID PIC XXX.            00037000
02 I-S-Info PIC S9(9) BINARY.      00038000
                                   00039000
PROCEDURE DIVISION.                00040000
                                   00041000
PARA--MTHSLOG.                     00042000
                                   00043000
   MOVE 5.65 TO ARG1RS.             00044000
   CALL 'CEESSLOG' USING ARG1RS, FC, 00045000
   RESLTRS.                         00046000
*****
    
```

Remote Error List Problems Tasks

Filter matched 3 of 3 messages

ID	Message	Se...	Line	Location	Host Name	Date
IGYPS2106	IGYPS2106-S "DIVI" was found in the "VALUE" stat...	2	40	/DEMOVSE/IGZTMATH...	Local	Jan 26, 2007 4:39:27 PM
IGYOS4027	THE SYSTEM OPTION "SYM" IS INTERPRETED AS "...	0	-1	IGZTMATH.C	DEMOVSE	Jan 26, 2007 4:41:09 PM
IGYPS2106	"DIVI" WAS FOUND IN THE "VALUE" STATEMENT. ...	2	40	IGZTMATH.C	DEMOVSE	Jan 26, 2007 4:41:09 PM

z/OS LPEX Editor is active

start | Address | DE 98% | 4:44 PM Friday 1/26/2007

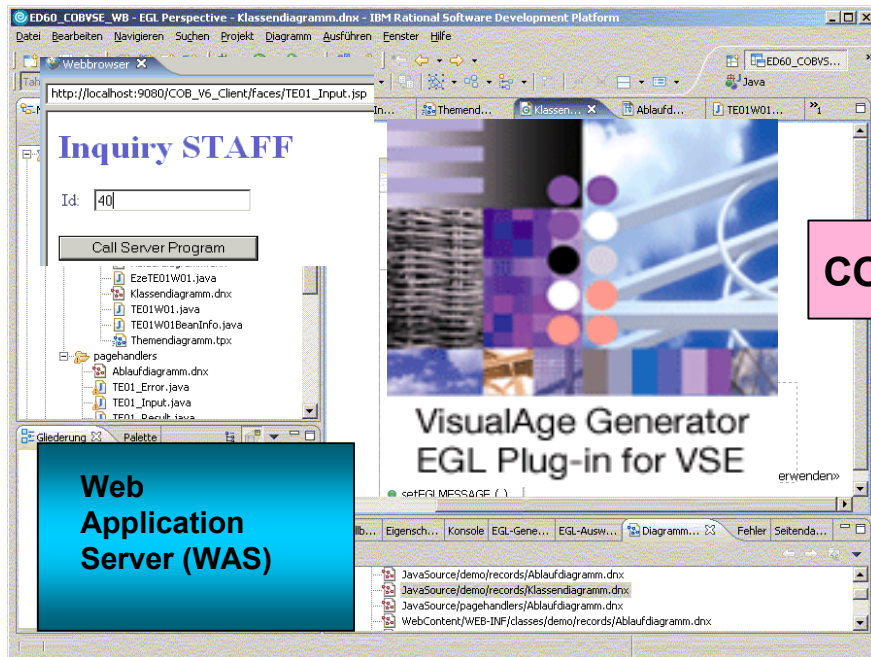
Command Prompt | Plug-in Development ... | VSE - IGZTMATH.cbl | untitled - Paint

(2) Cross Plattform Solution development Approach with VisualAge Generator

* **New:** VisualAge Generator EGL Plug-in for VSE *

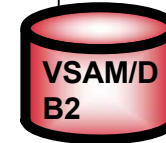
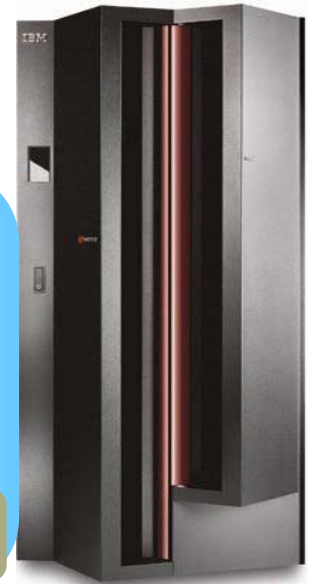
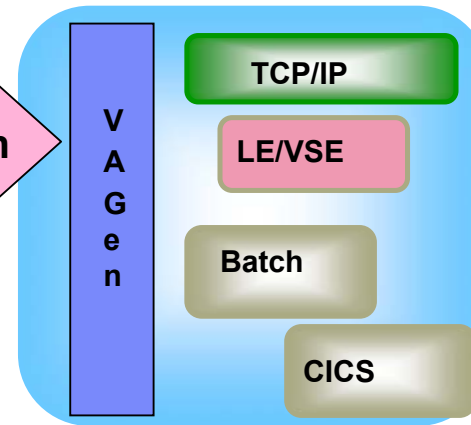
Rational Application Developer (RAD)

z/VSE Server



„Generate“

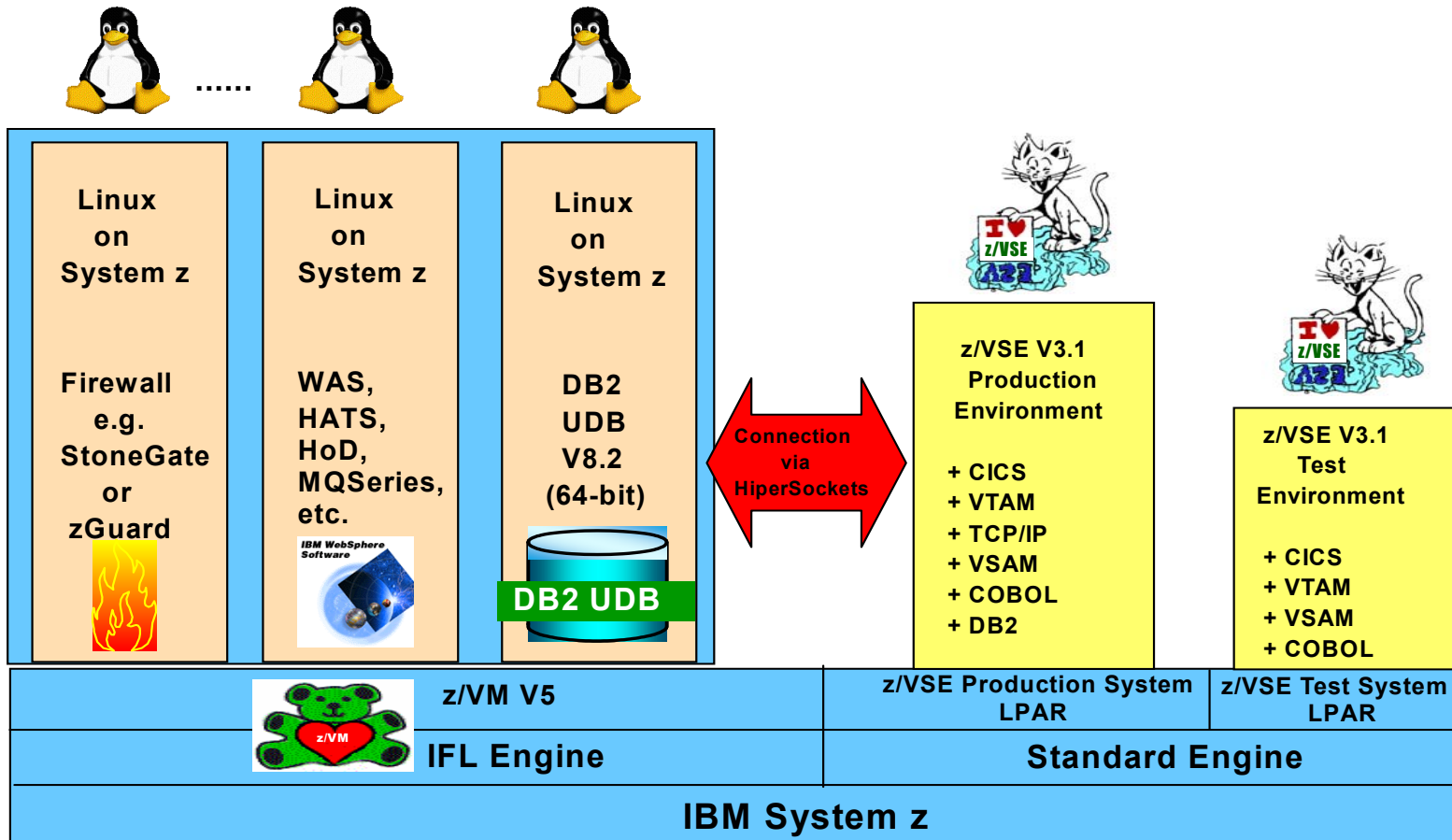
COBOL/CICS/batch



- Enterprise Generation Language (EGL)
- Java™ 2 Platform, Enterprise Edition (J2EE) connection Architecture (J2C/JCA)
- Java Server Pages (JSP), dynamic result page known by the Web Application Server (WAS)

Modernization / Growth Scenarios with VSE and Linux

Combine the scenarios, make use of synchronicity offerings from IBM and Novell.



Die neue Web Seite von z/VSE

z/VSE Solutions



The screenshot shows the IBM z/VSE website interface. The address bar displays `http://www.ibm.com/servers/eserver/zseries/zvse/`. The navigation menu includes **Home**, **Products**, **Services & solutions**, **Support & downloads**, and **My account**. The left-hand navigation menu lists various options, with **Solutions** highlighted by a red oval. The main content area features a header for **z/VSE** and a description: "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." Below this is a banner for **Announcing z/VSE V3.1** with the text "Built on a heritage of ongoing refinement and innovation that spans four decades" and a graphic that says "z/VSE 40 YEARS". A section titled **Redesigned z/VSE homepage** explains the website changes. A **z/VSE Version3 Release 1** section lists supported hardware and software configurations. The right-hand sidebar contains sections for "We're here to help", "Mark your calendar" (with events like "Guide Share Europe" and "WAVV conference"), "Spotlights", and "Middleware".

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

Tools available in the VSE download area

- z/VSE/ESA Home Page – downloads for **FREE**
<http://www.ibm.com/servers/eserver/zseries/zvse/downloads>

- System management:
 - VSE CPU Monitoring tool
 - VSE Installed Software Report tool
 - TCP/IP Configuration
 - IP Trace tool
 - Keyman/VSE (SSL)
 - VSE Health Checker
 - Multi Instant Logic analyser for VSAM
 - JCalc, JLink, JRun (/LE VSE)

- Connector tools
 - *VSE Connector Client*
 - *VSE Navigator*
 - *VSE Maptool*
 - *VSEPrint*
 - *CICS2WS (SOA, WebServices)*

- *Connector Components*
 - *VSE Connector Client*
 - *VSE Redirector server*
 - *VSE Virtual Tape server*
 - *VSE Script server*

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

z/VSE internal and Customer events planned

- Announcement Event (german - Stuttgart) february 15

- Live Virtual Classes (LVC)
 - z/VSE Announcement Overview february 1
 - z/VSE 4.1 – new Pricing february 22
 - z/VSE – Solutions march 15

- GSE Spring (german –Berlin) march 26-28

- System z Tech Conf (Munich) april 16-20

- WAVV (Green Bay, WS) may 18-22

- System z Tech Conf (Austin,Texas) september 17-21

- GSE Fall (German) tbd

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

Additional Information

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



- 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 Handbook (Connectors to z/OS and VSE)*** ***SG24-7042***

z/VSE Contact : zvse@de.ibm.com