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E43 z/VSE 4.1 Update and Enterprise Modernization

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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
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		zSeries
		System z

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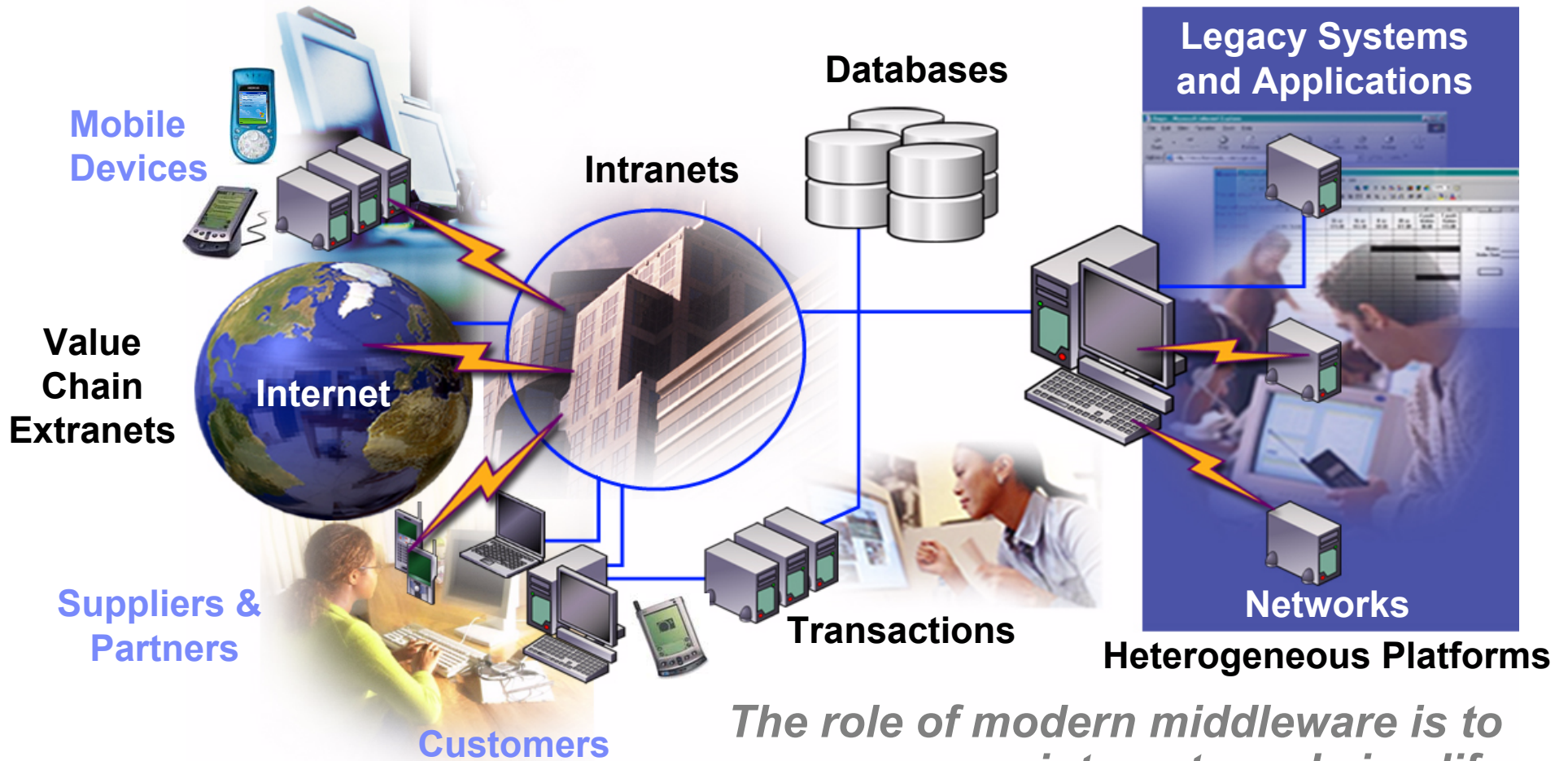UNIX is a registered Trademark of The Open Group in the United States and other countries.

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Today's IT Environment

IT environments are increasingly heterogeneous and complex

Mobile Devices

Value Chain Extranets

Internet

Suppliers & Partners

Customers

Intranets

Databases

Transactions

Legacy Systems and Applications

Networks

Heterogeneous Platforms

The role of modern middleware is to integrate and simplify

System z Operating Systems

Traditional Mainframe Operating Systems

z/VSE
VSE/ESA

z/OS
OS/390
MVS

z/VM
VM/ESA
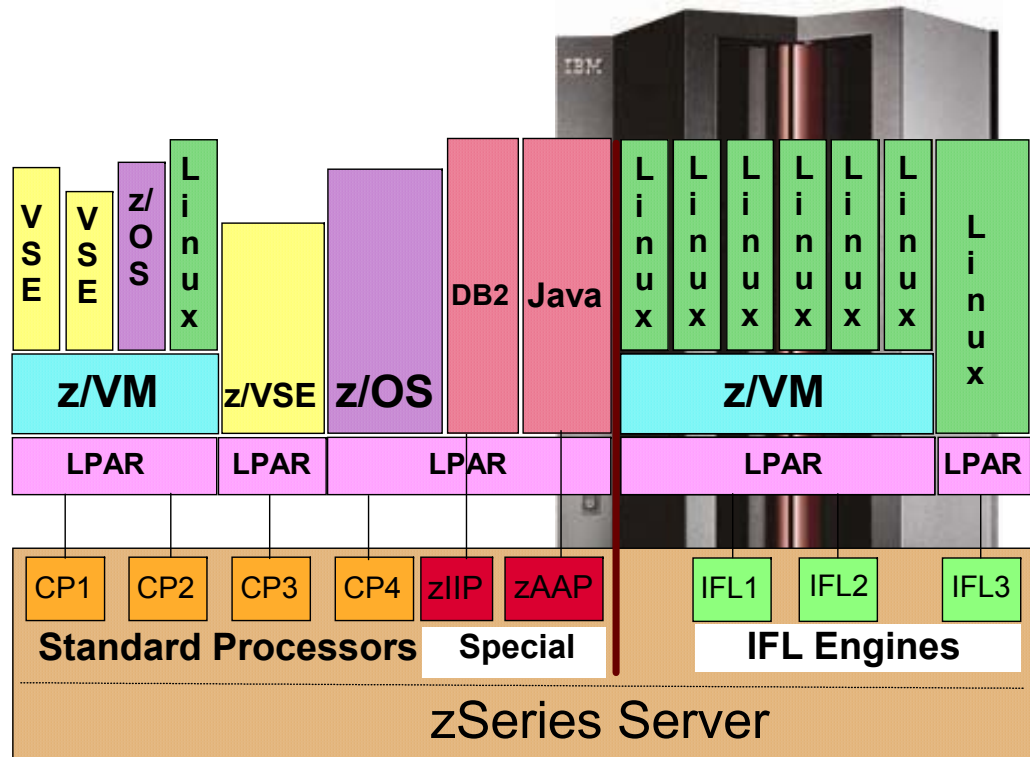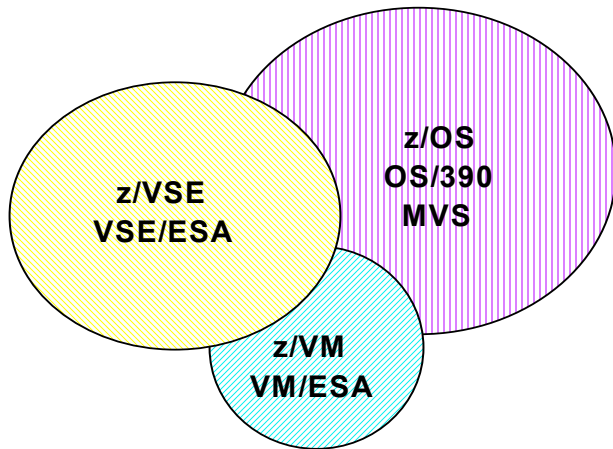
Standard Processors

- **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)

VSE | VSE | z/OS | Linux

z/VM | z/VSE | **z/OS** | DB2 | Java | Linux | Linux | Linux | Linux | Linux | Linux | **z/VM** | Linux

LPAR | LPAR | LPAR | LPAR | LPAR

CP1 | CP2 | CP3 | CP4 | zIIP | zAAP | IFL1 | IFL2 | IFL3

Standard Processors | Special | **IFL Engines**

zSeries Server

Agenda

→ ▪ **z/VSE V4 Announcement**   New

▪ **z/VSE Strategy**

▪ **z/VSE Enterprize Modernization scenarios**

VSE Roadmap
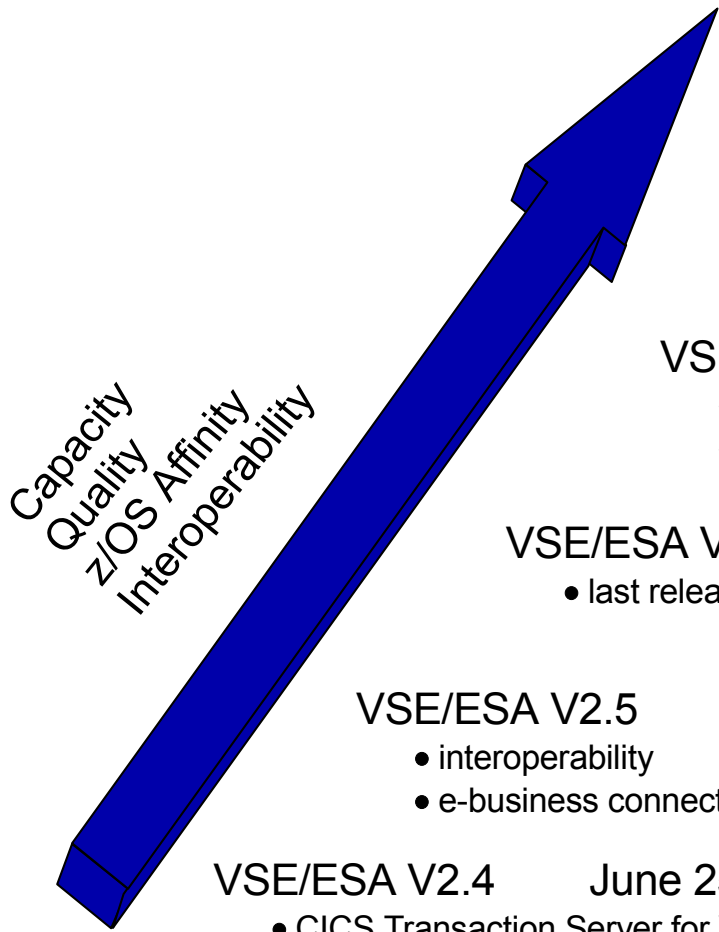
z/VSE V4 - GA 16. march 2007
- z/Architecture only
- 64-bit real addressing
- SOD for sub-cap pricing

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

Capacity
Quality
z/OS Affinity
Interoperability

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**
    - ● **Exclusive available to z9 EC and z9 BC**

z/VSE 4.1 - Interoperability

- **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
      - Reported on LISTCAT as FAT-3390

  - ▶ A VSAM volume list must be of 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
    - **Alternativelly, 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)**
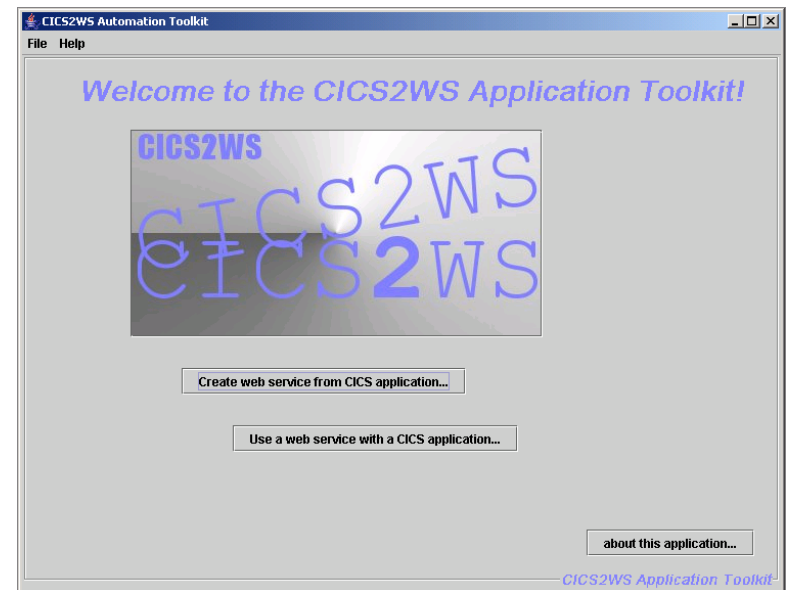
z/VSE 4.1 - Security

- **Security**
  - ► **Client Authentication: BSM Base**
  - ► **Client Authentication: Resource Protection**

- **Backup Concepts**
  - ► **Integration with Tivoli Storage Manager**

- **z/VSE Upgrade 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

<u>**SOD*:**</u> *"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 sto**

  - **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

Protected Encryption Keys

Data Encryption in TS1120

TS1120 encryption
Enterprise scope

- **Highly secure**

- **High performance archive encryption**

- **Transparent to existing processes and applications**

- **Can help provide audit compliance**

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 (GA 16/3/2006)**
- ► **z/Architecture (64-bit) mode <u>only</u>**
  - ● **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** New

→ - **z/VSE Strategy**

- **z/VSE Enterprize Modernization scenarios**

z/VSE Strategy 'easy as P I E'

Protect
existing investment

- Continue to run existing core applications 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)

Integrate
with IBM middleware using connectors

- 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

Extend
with Linux on System z

- Extension of existing solutions with Linux on System z

- Cooperation and coexistance with Linux on System z and z/VM

- z/VSE is open and connectable to various different client/server platforms

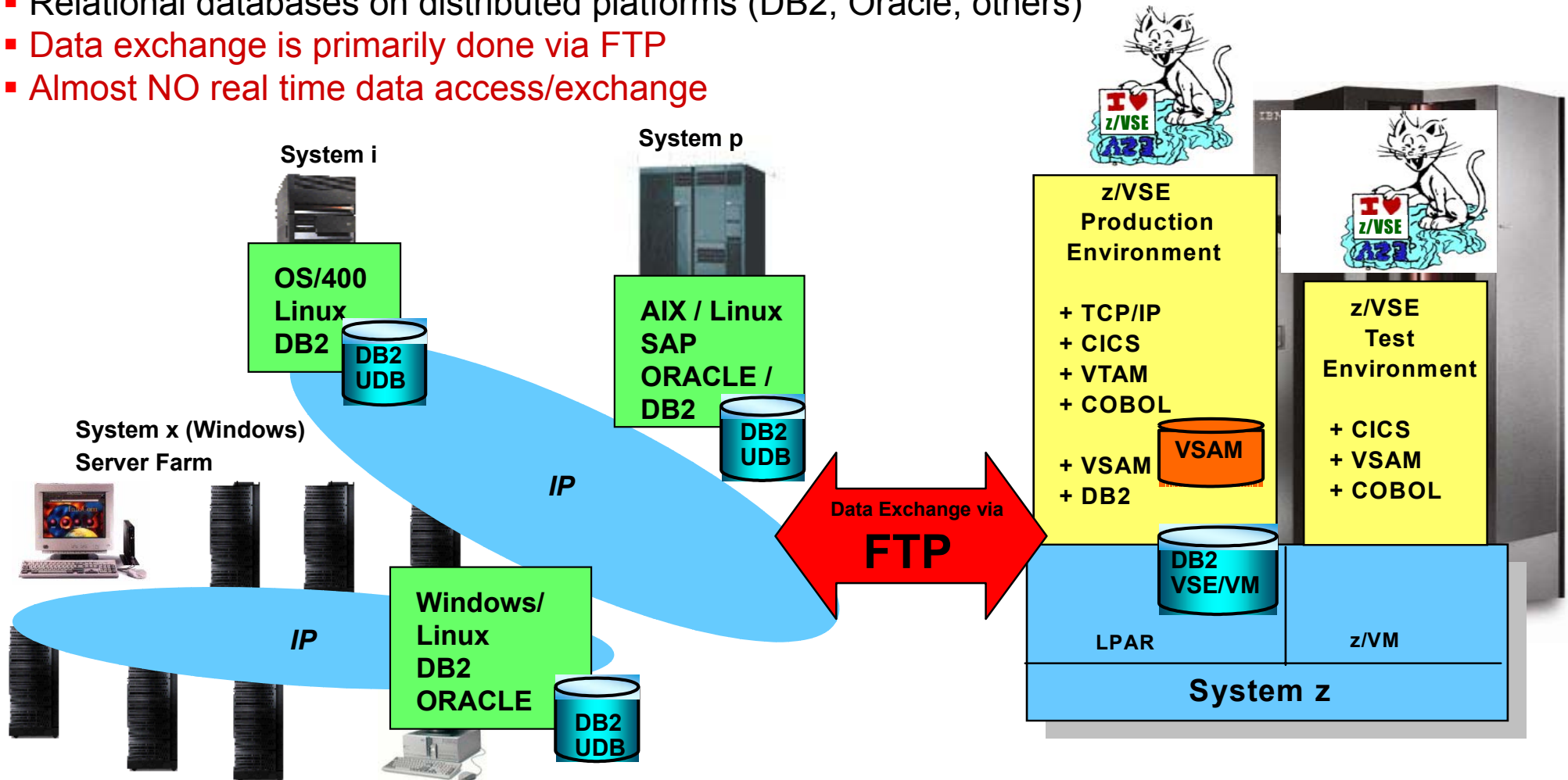# VSE's interoperability is open for various platforms !

VSE Strategy

IBM TotalStorage

IBM System z Enterprise Server

System i
System p
System x
System z
BladeCenter

Web

Connectors

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

IBM System

| Clients | Business Services | Tran/Data Services |
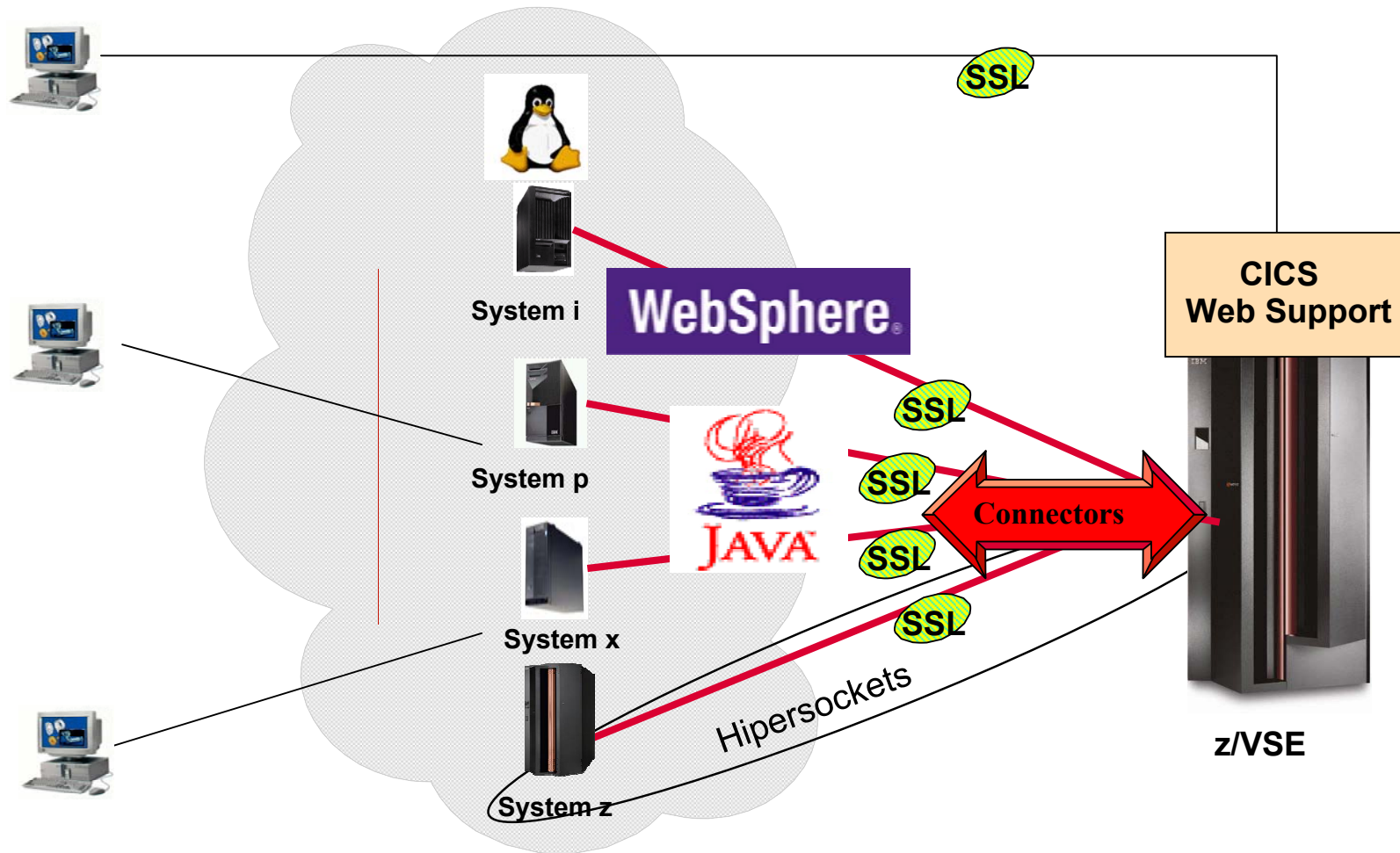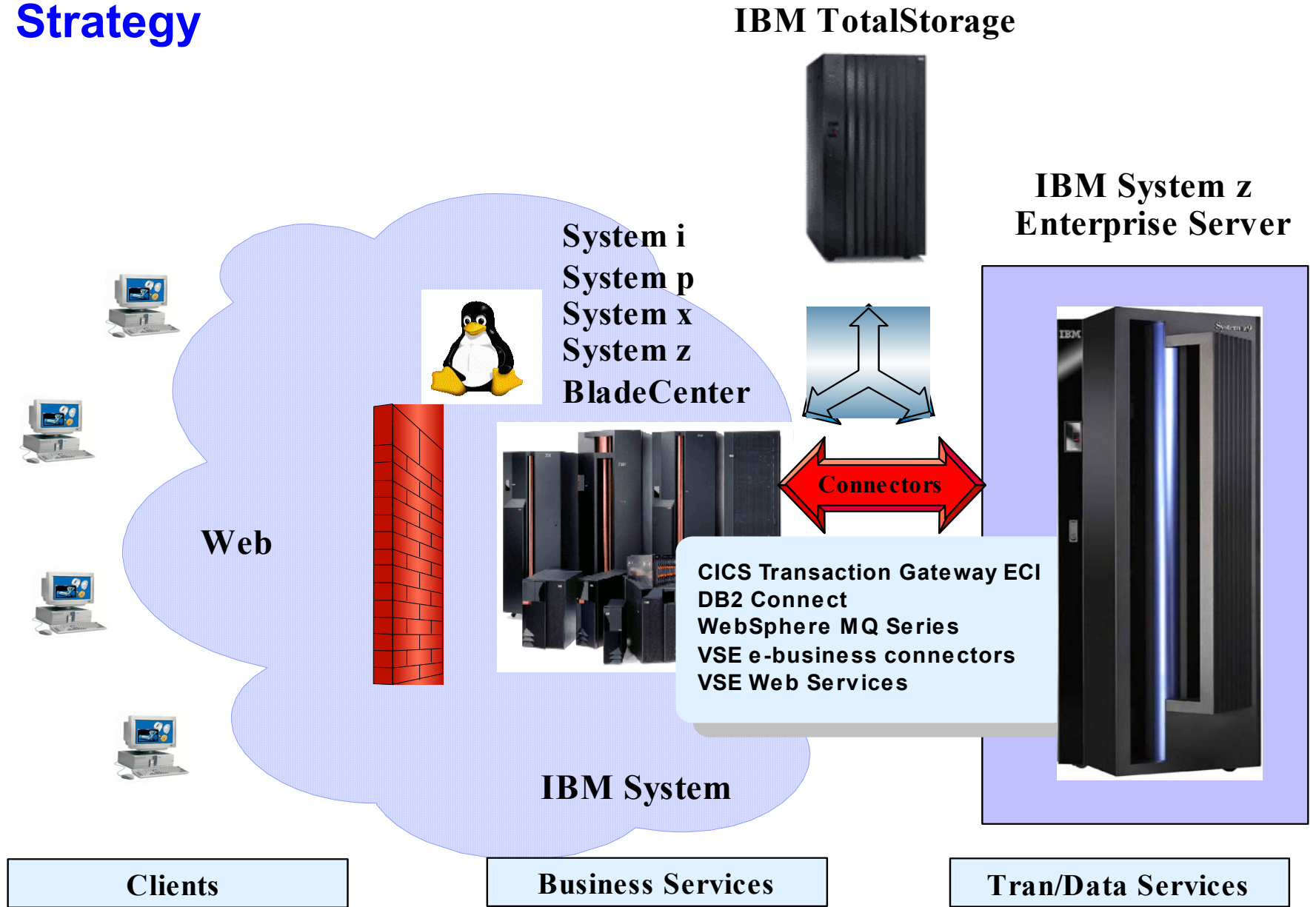
VSE Strategy with Linux on System z

IBM TotalStorage

Linux on System z
(IFL engines)

z/VSE
(Standard engines)

Web

IBM WebSphere Software

JAVA

DB2 UDB

HiperSockets

Connectors

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

z/VM

LPAR or z/VM

IBM System z

| **Clients** | **Business Services** | **Tran/Data Services** |
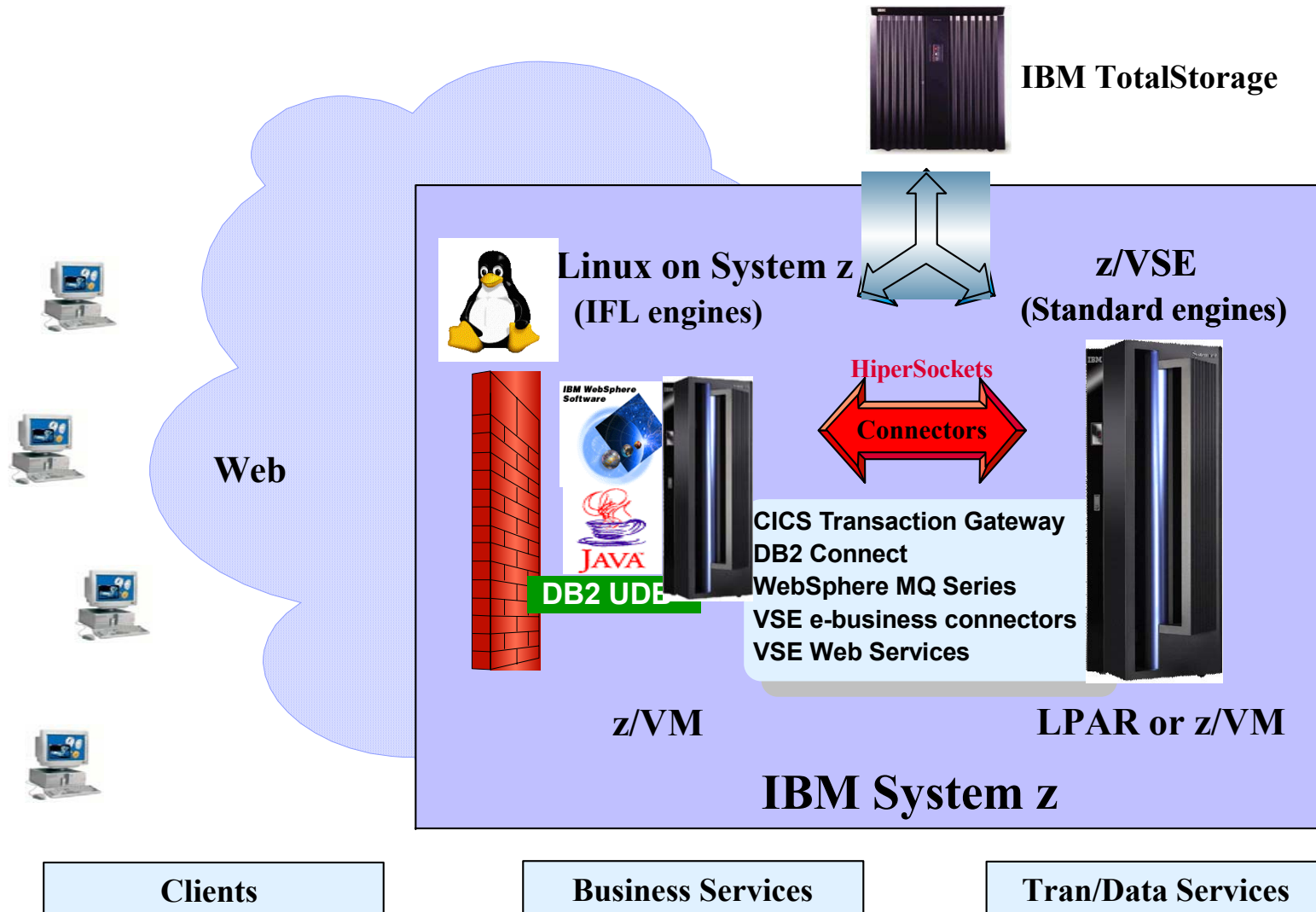
Agenda

- **z/VSE V4 Announcement** New

- **z/VSE Strategy**

→ - **z/VSE Enterprize Modernization scenarios**

Typical VSE Customer Environment

- Various different servers (System z, System p, System i, System x, and others)
- VSAM data on VSE (some DB2 environments, some other databases)
- Relational databases on distributed platforms (DB2, Oracle, others)
- Data exchange is primarily done via FTP
- Almost NO real time data access/exchange

System i

OS/400
Linux
DB2

DB2 UDB

System p

AIX / Linux
SAP
ORACLE /
DB2

DB2 UDB

System x (Windows) Server Farm

IP

Windows/
Linux
DB2
ORACLE

DB2 UDB

IP

Data Exchange via FTP

z/VSE
Production
Environment

+ TCP/IP
+ CICS
+ VTAM
+ COBOL

+ VSAM
+ DB2

VSAM

z/VSE
Test
Environment

+ CICS
+ VSAM
+ COBOL

DB2 VSE/VM

LPAR   z/VM

System z

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

Java Platform

| IBM WebSphere App.. Server |
| MQ Series |
| DB2 UDB |
| Host Integrator |
| VSE e-business client |
| Redirector Server |
| Virt Tape Server |
| Web Services |

z/VSE

| CICS TS |
| MQ Server |
| DB2/VSAM/DLI |
| VSAM Data |
| Libr. |
| DL/I |
| Console |
| Power |
| Redirector |
| Virtual Tape |
| Web Services |

- CICS TS Gateway
- MQ Client
- DB2 Connect
- VSE Connectors
- SOAP (XML)

zSeries
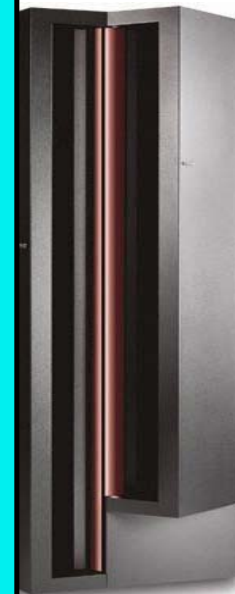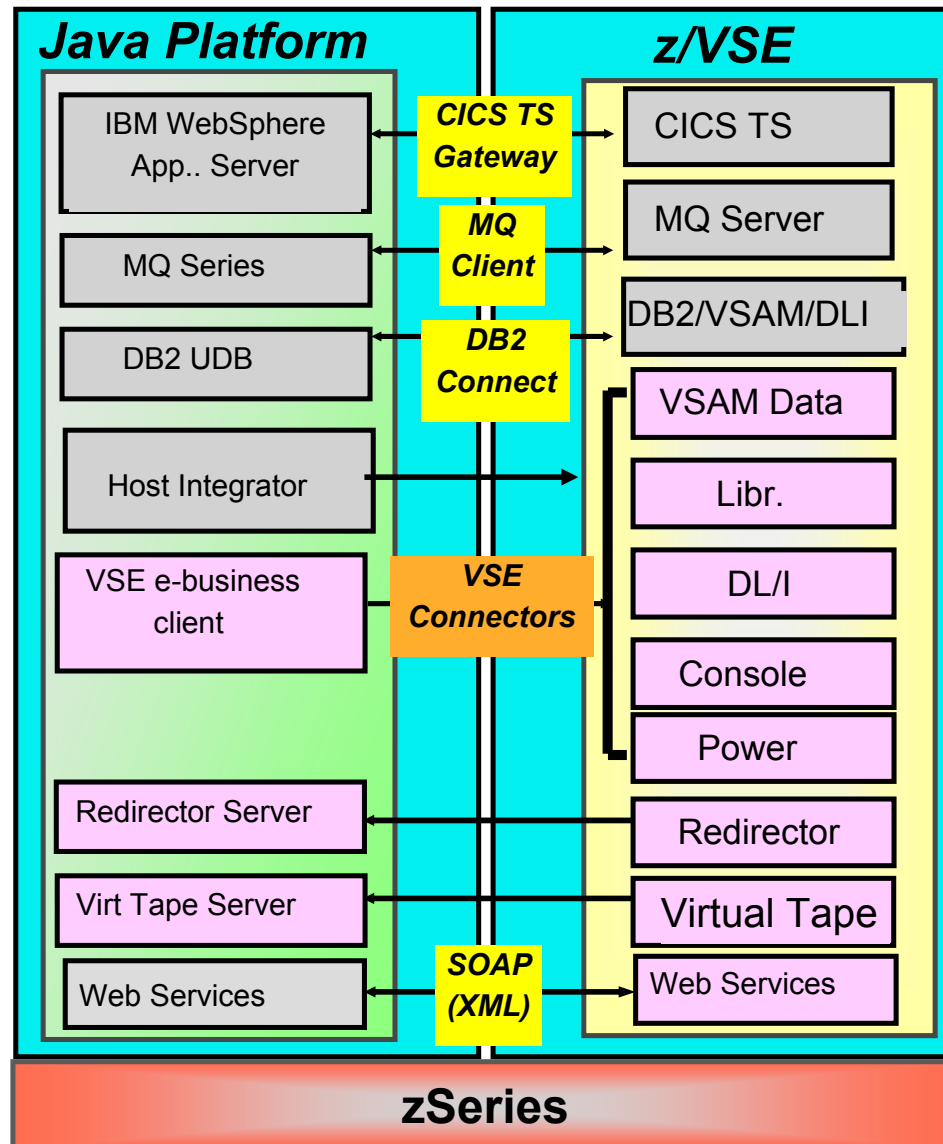
Scenario 1: DB2 UDB (64-bit) for VSE Customers
Data consolidation and data warehouse solutions with DB2 UDB on System z

Linux on System z

DB2 UDB V8.2 (64-bit)

DB2 UDB

VSAM

DB2 VSE/VM

Connection via HiperSockets

z/VSE V3.1 Production Environment

+ CICS
+ TCP/IP
+ VSAM
+ COBOL
+ DB2 Client
+ VSAM Redir.

z/VSE V3.1 Test Environment

+ CICS
+ VSAM
+ COBOL

LPAR or z/VM	z/VSE Production System LPAR or z/VM	z/VSE Test System LPAR or z/VM
IFL Engine	Standard Engine	

IBM System z
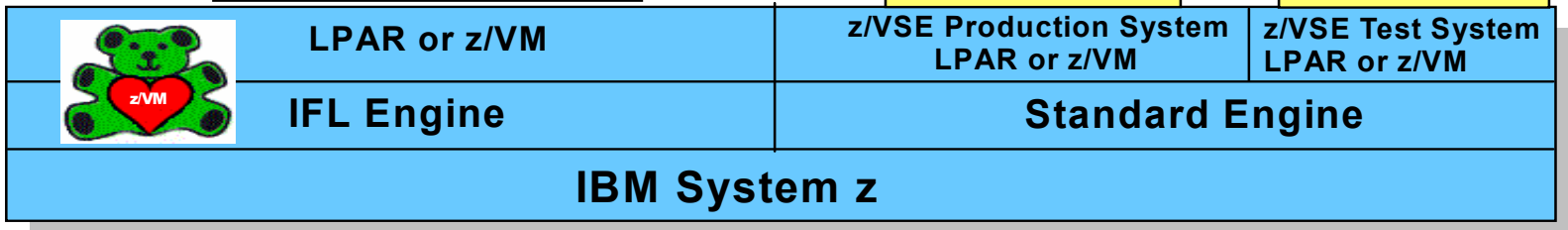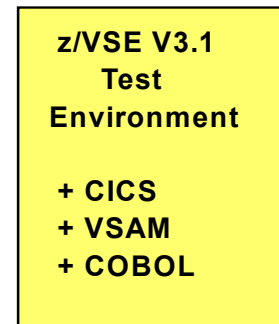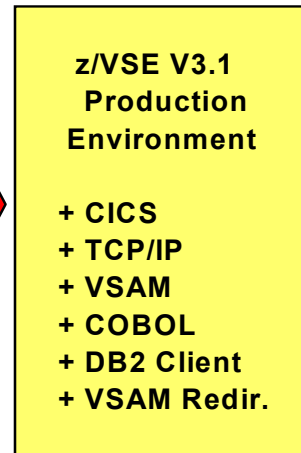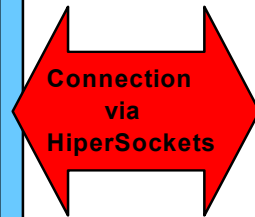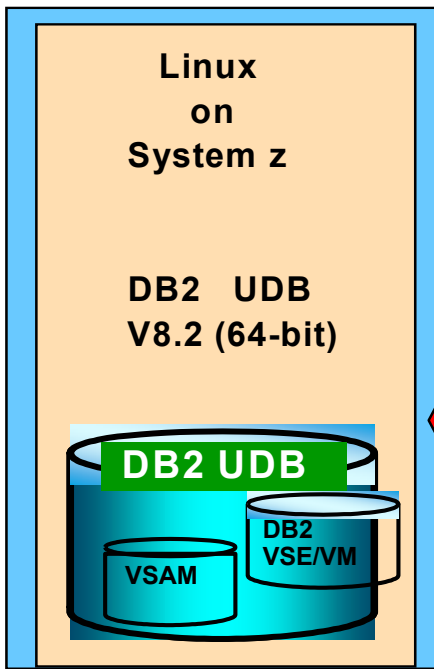
DB2 Scenarios – with DB2 UDB on Linux
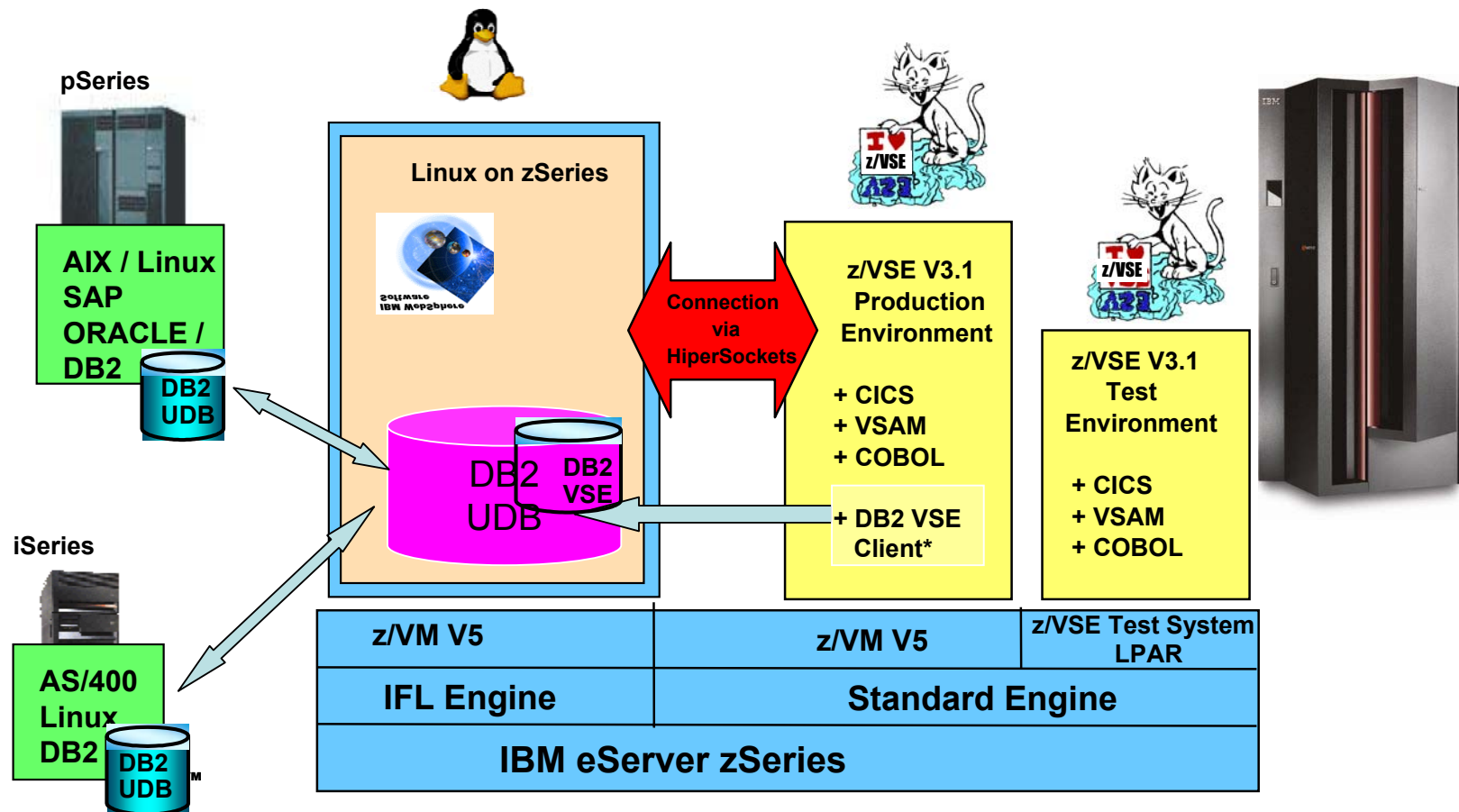
(*) DB2 VSE Client – the client functionality only, can be obtained with PRPQ P10154

Common Data Store – Transparent Work of VSAM Programs with DB2 UDB on Linux on System z
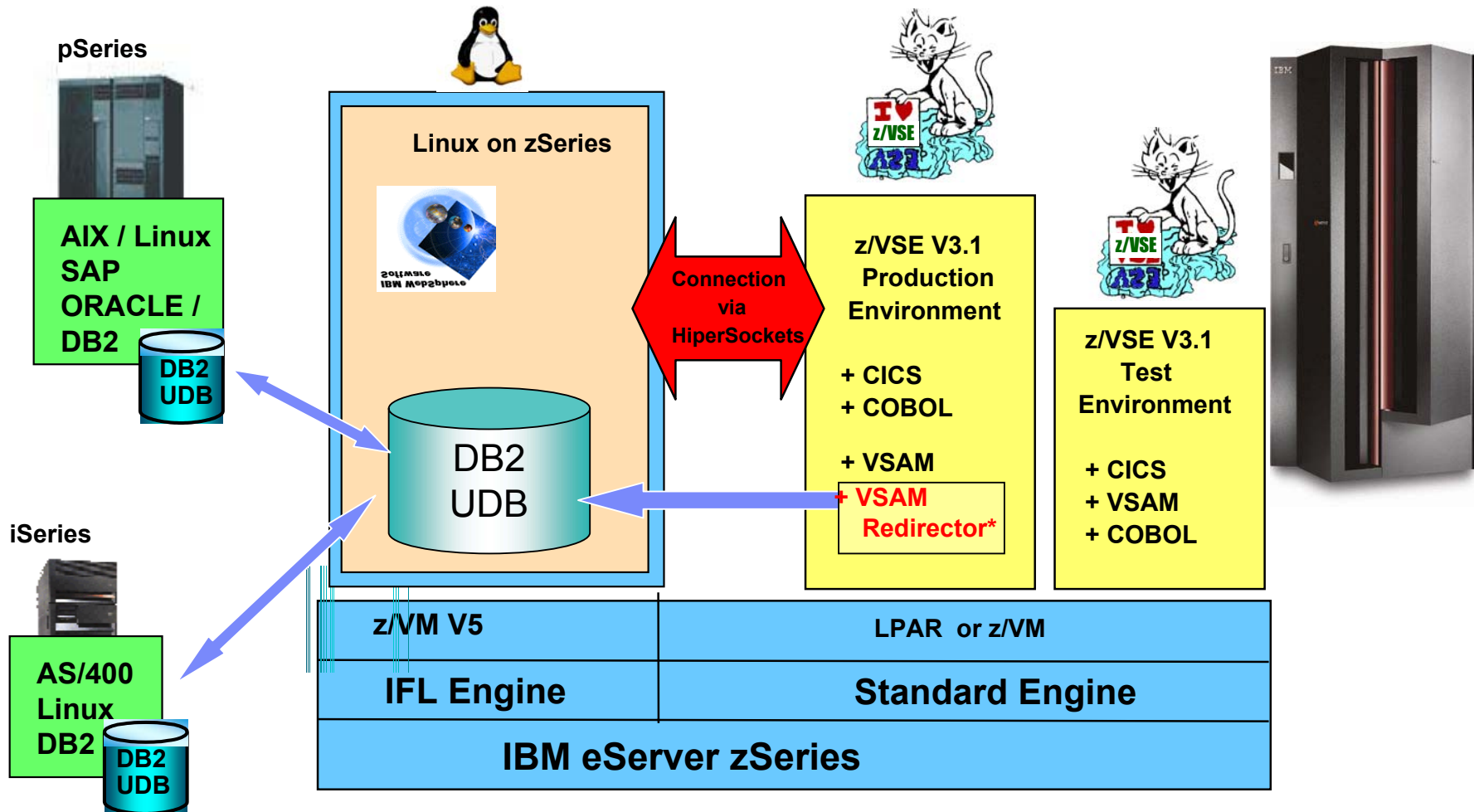
pSeries

AIX / Linux SAP ORACLE / DB2

DB2 UDB

Linux on zSeries

DB2 UDB

Connection via HiperSockets

z/VSE V3.1 Production Environment

+ CICS
+ COBOL

+ VSAM
+ VSAM Redirector*

z/VSE V3.1 Test Environment

+ CICS
+ VSAM
+ COBOL

iSeries

AS/400 Linux DB2

DB2 UDB

z/VM V5	LPAR or z/VM
IFL Engine	**Standard Engine**
IBM eServer zSeries	

(*) VSAM Redirector – Common data store solution – with DB2 on Linux on zSeries Solutions without changes to VSAM programs

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 .**
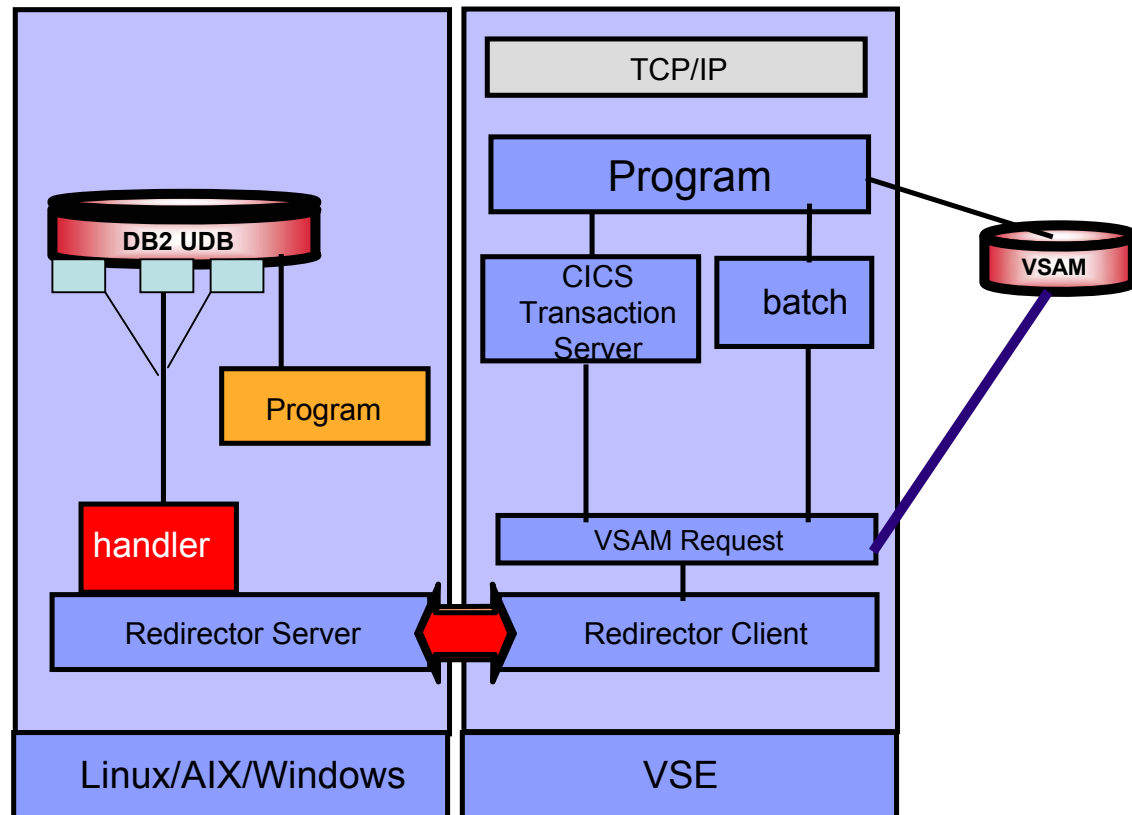
►Applications on VSE should be able to access DB2 data on Linux

►Synchronization of DB2 UDB on Linux with VSAM using VSAM Redirector. (VSAM Redirector is part of VSE)

Common Data Store – Transparent Work of VSAM Programs with DB2 UDB on Linux on System z
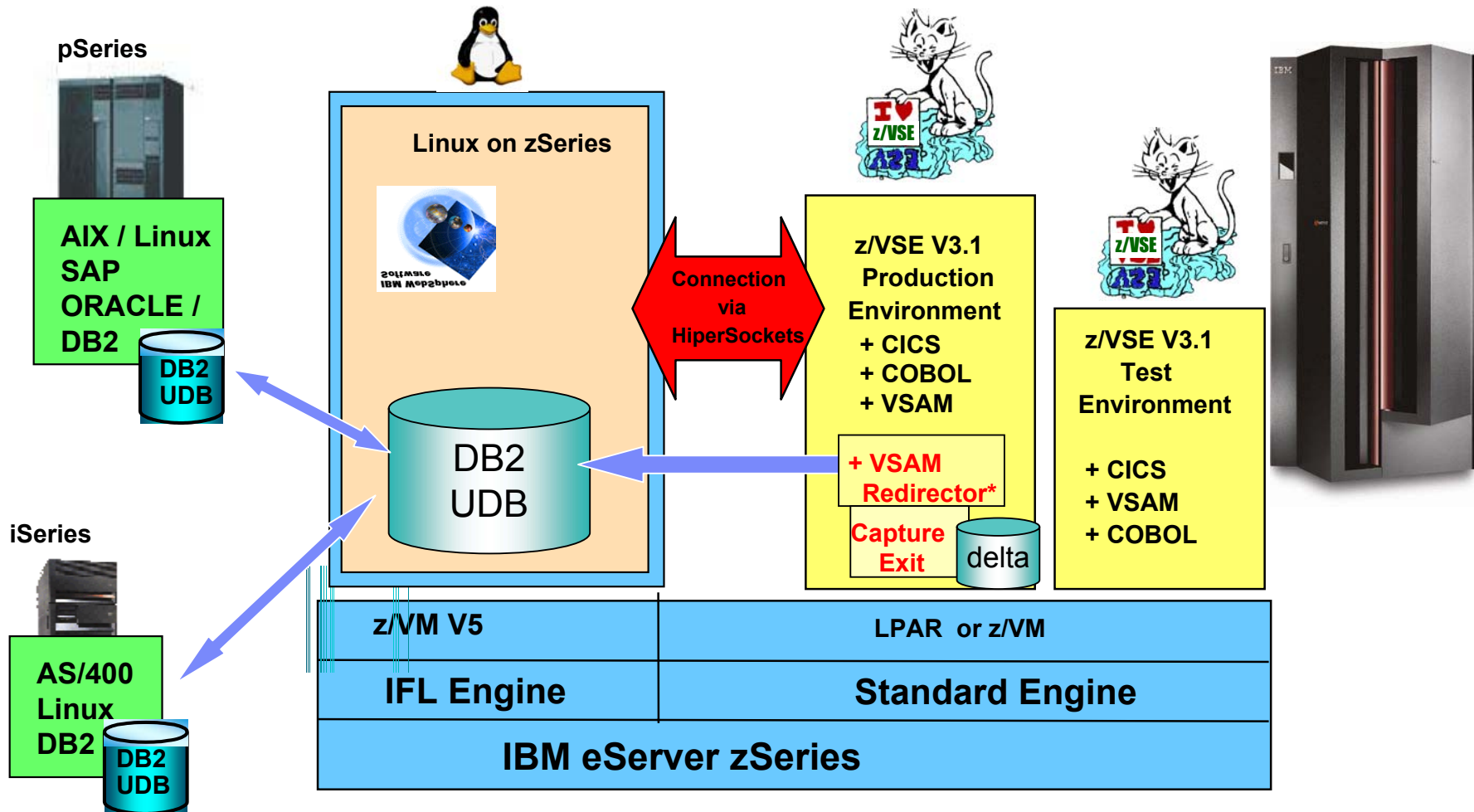
pSeries

AIX / Linux SAP ORACLE / DB2

DB2 UDB

Linux on zSeries

Software IBM WebSphere

DB2 UDB

Connection via HiperSockets

z/VSE V3.1 Production Environment + CICS + COBOL + VSAM

+ VSAM Redirector*

Capture Exit

delta

z/VSE V3.1 Test Environment

+ CICS + VSAM + COBOL

iSeries

AS/400 Linux DB2

DB2 UDB

z/VM V5	LPAR or z/VM
IFL Engine	**Standard Engine**

IBM eServer zSeries

(*) VSAM Redirector – Common data store solution – with DB2 on Linux on zSeries Solutions without changes to VSAM programs

Redirector Capture.
Architectural View

New in z/VSE 4.1

Application
(i.e. in CICS or batch)

VSAM

VSAM Redirector

Decision Exit

Vendor Exit as Capture Exit

access:
- reads records
- changes records
- inserts records
- deletes records

marks the changed records

VSAM delta file

VSAM data store
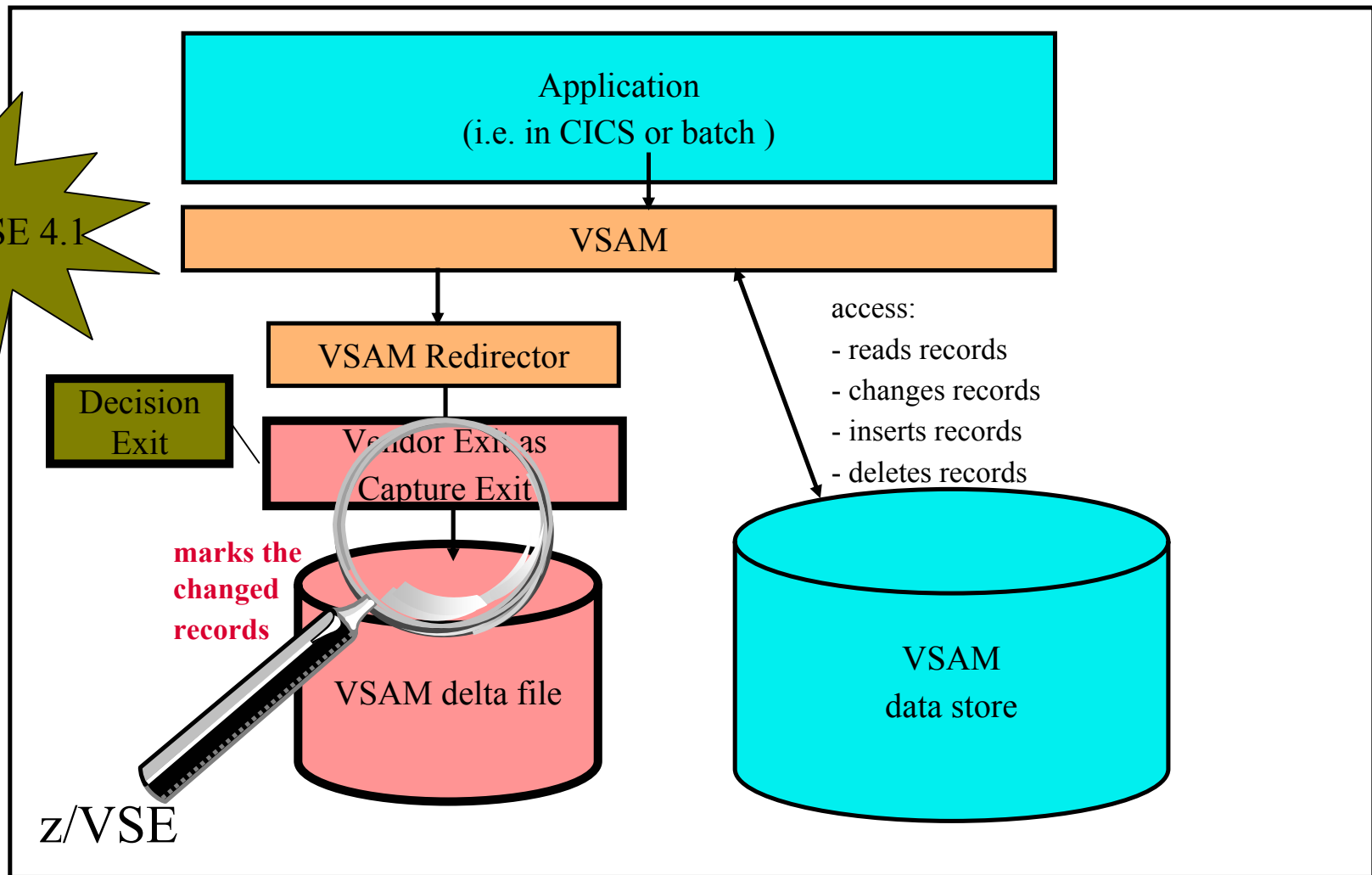
z/VSE

Solution with z/VSE 4.1
Incremental, Linux driven updates

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

►The changes are processed asynchronously and not influenting the production system

WebSphere

DB2 UDB

SQL Loader

Connector client

Linux

TCP/IP

Program

CICS Transaction Server | batch

VSAM Request

Generic Exit

Capture Exit

Conn. server

VSE

VSAM

File A

File B
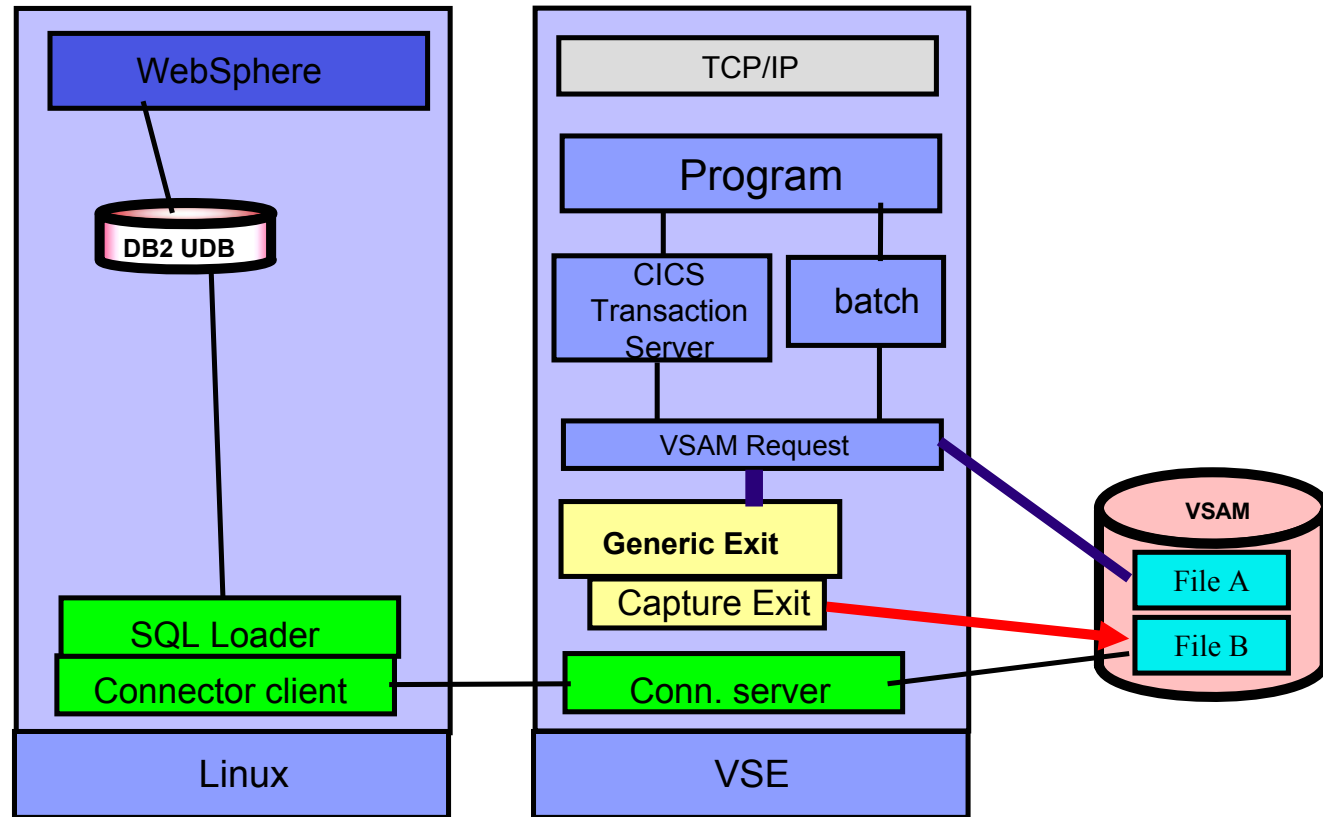
►Collect the changed records in a separate VSAM file
   ►Possibility of cleansing
►Process them – with the VSE Connectors

VSAM Redirector Capture

z/VSE 4.1

Application
(CICS or batch)

VSAM

Redir Exit

VSAM Redirector
(Generic Exit)

Vendor Exit
(Customer developed)

access:
- reads records
- changes records
- inserts records
- deletes records

Capture Exit
(MQ Series)

Decision
Exit

Capture Exit
(Journaled, Cumulative)

Decision
Exit

VSAM
data store

MQ Message
Queue

VSAM delta
file
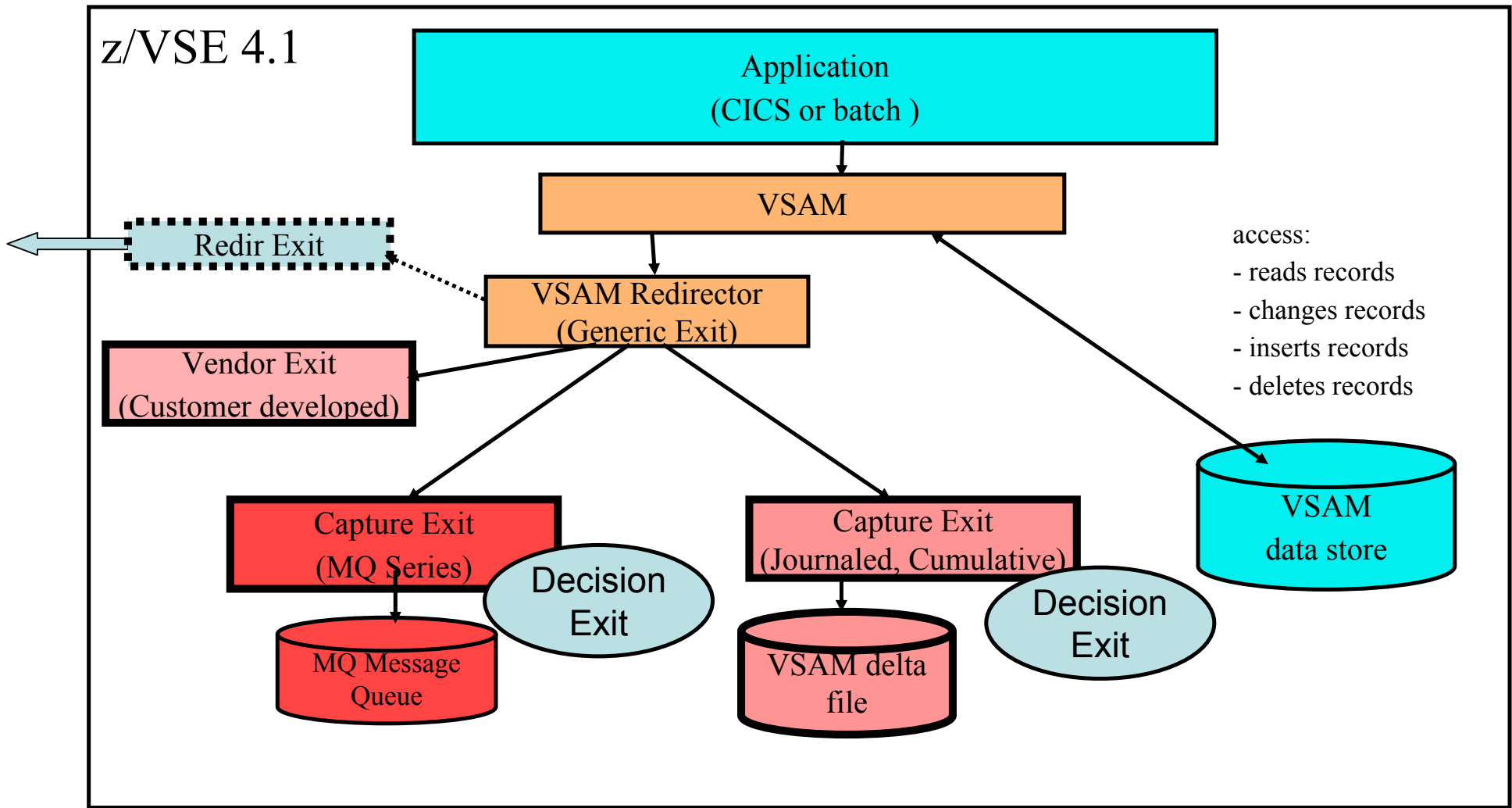
WebSphere MQ Series Solutions with z/VSE

pSeries

AIX / Linux
SAP
ORACLE /
DB2
MQ

iSeries

AS/400
Linux
DB2
MQ

Linux on zSeries

Software
IBM WebSphere

WebSphere
MQ Series
server

DB2
UDB

z/VM V5

IFL Engine

Connection
via
HiperSockets

z/VSE V3.1
Production
Environment

+ CICS
+ COBOL
+ VSAM

+ VSAM
Redirector*
+ WebSphere MQ
Client for VSE**

z/VSE V3.1
Test
Environment

+ CICS
+ VSAM
+ COBOL

LPAR or z/VM

Standard Engine

IBM eServer zSeries

(*) **VSAM Redirector + Redirector MQ Exit** allows MQ Solutions without changes to VSAM programs
(**) **WebSphere MQ Client for VSE** is brand-new and free of charge

Scenario 2: „Webification" for VSE Applications
Web enable existing applications with Inter/Intranet frontend

Linux
on
System z

WAS
HoD
HATS

IBM WebSphere
Software

Connection
via
HiperSockets

z/VSE V3.1
Production
Environment

+ CICS
+ TCP/IP
+ VSAM
+ COBOL

z/VSE V3.1
Test
Environment

+ CICS
+ VSAM
+ COBOL

z/VM V5	z/VSE Production System LPAR	z/VSE Test System LPAR
IFL Engine	Standard Engine	
IBM System z		
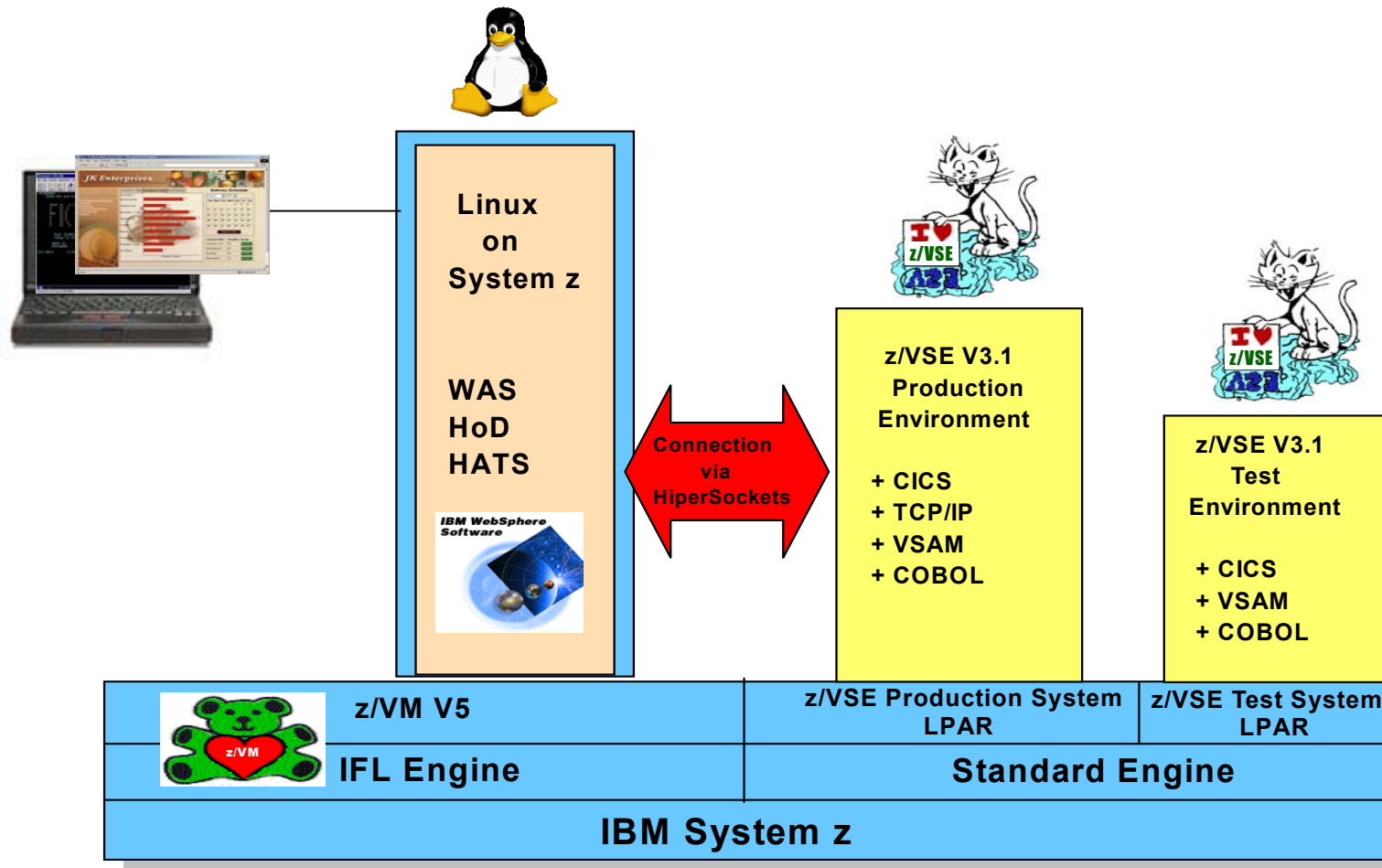
Scenario 3: WebSphere Portal for VSE Customers
A portal for administration and integration of applications for employees / customers / providers

Linux on System z

WAS
WS Portal
WS MQ

IBM WebSphere Software

Connection via HiperSockets

z/VSE V3.1 Production Environment

+ CICS
+ TCP/IP
+ VSAM
+ COBOL

z/VSE V3.1 Test Environment

+ CICS
+ VSAM
+ COBOL

I ♥ z/VSE

z/VM V5

z/VSE Production System LPAR

z/VSE Test System LPAR

z/VM

IFL Engine

Standard Engine

IBM System z
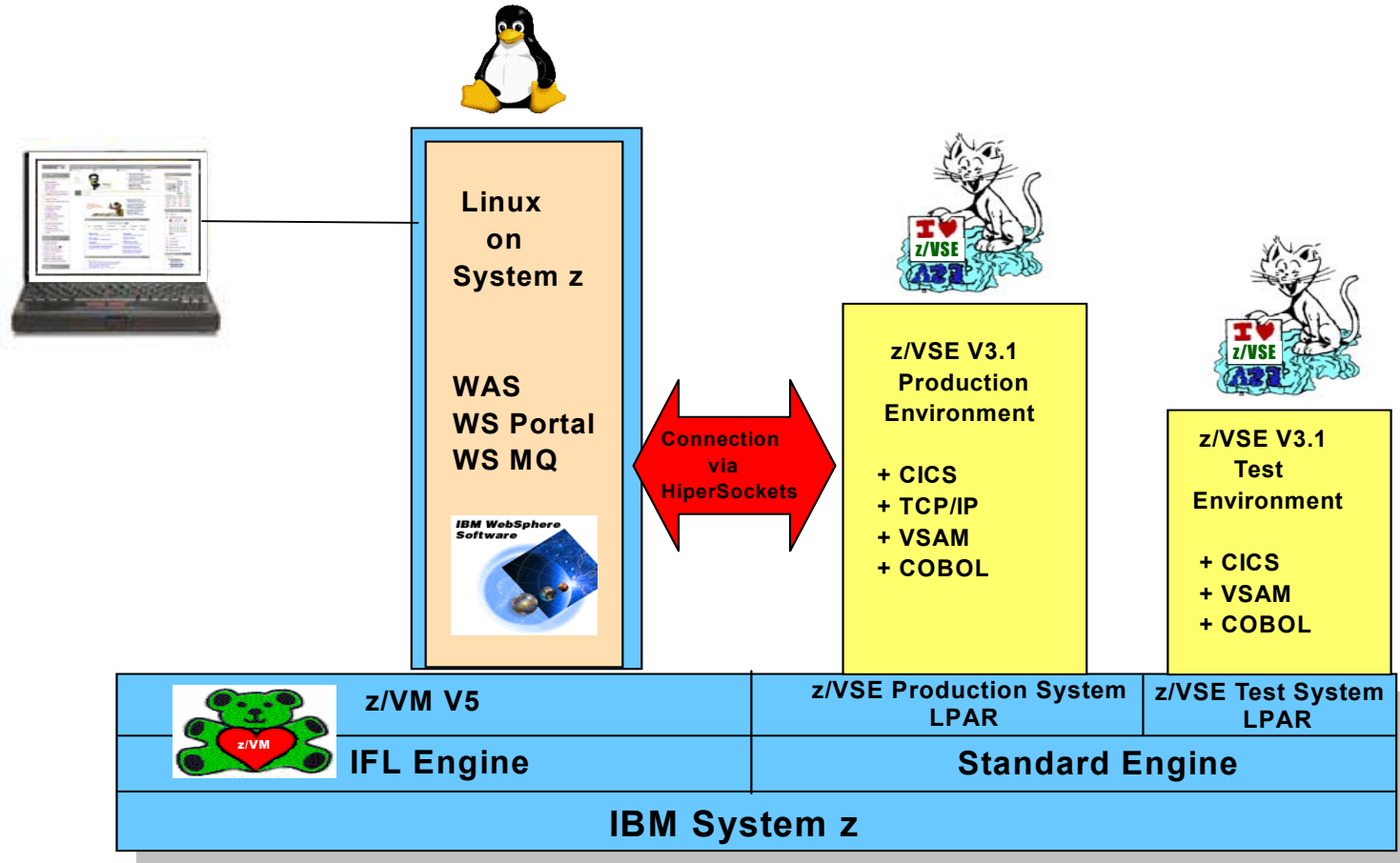
Scenario 4: Network Infrastructure Simplification

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

TN3270
SNA   TCP/IP
Easy, high-value transition

IP

Linux on System z

IBM Comm. Controller (NCP)

IBM Comm. Server (TN3270 server)

SNA

z/VSE V3.1 Production Environment

\+ CICS
\+ VTAM
\+ TCP/IP
\+ VSAM
\+ Cobol
\+ ISV Products

z/VSE V3.1 Test Environment

\+ CICS
\+ VSAM
\+ COBOL

z/VM V5

z/VSE Production System LPAR (or VM guest)

z/VSE Test System LPAR (or VM guest)

IFL Engine

Standard Engine

IBM System z
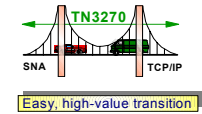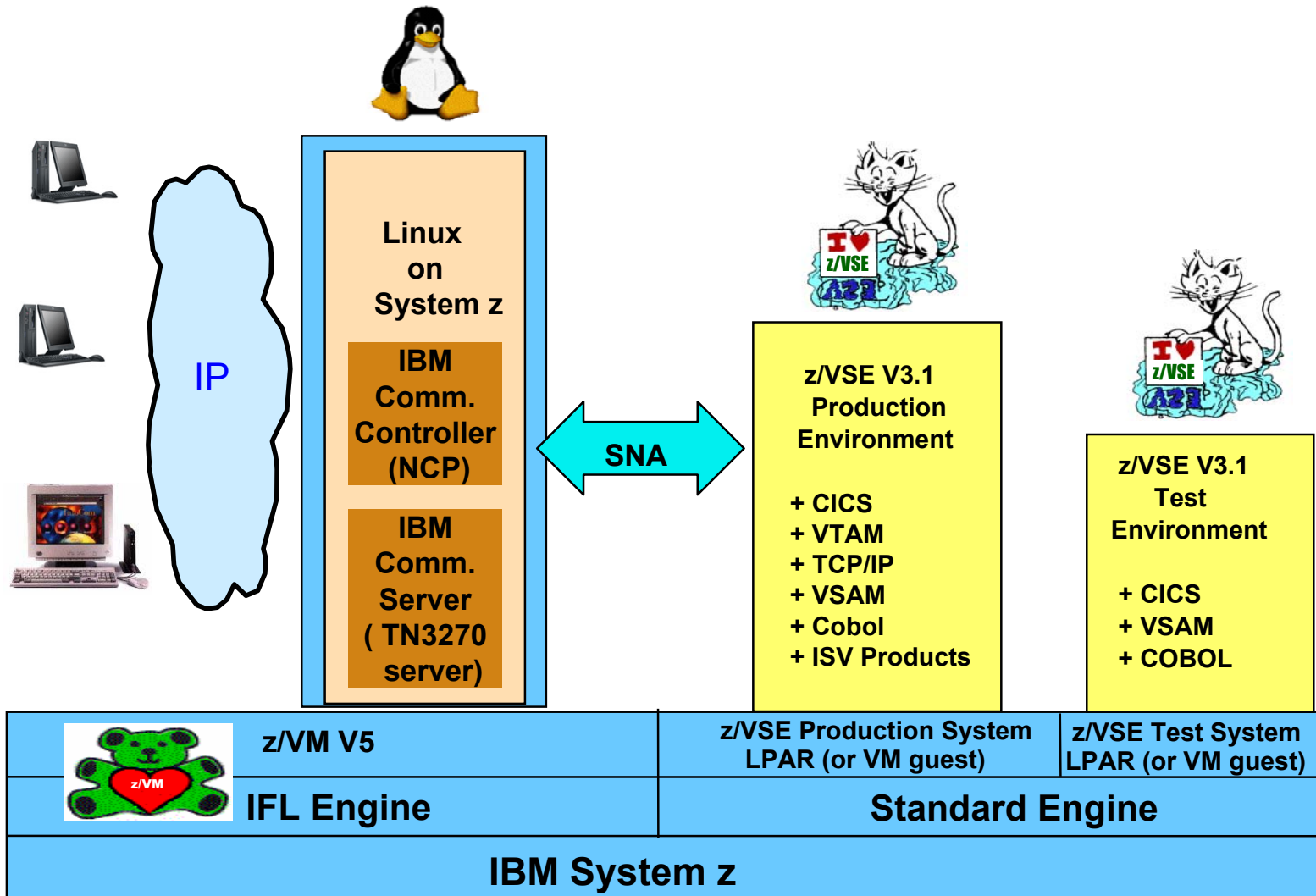
Scenario 5: Backup/Restore Concepts for VSE

Integrate z/VSE with TSM on Linux on System z
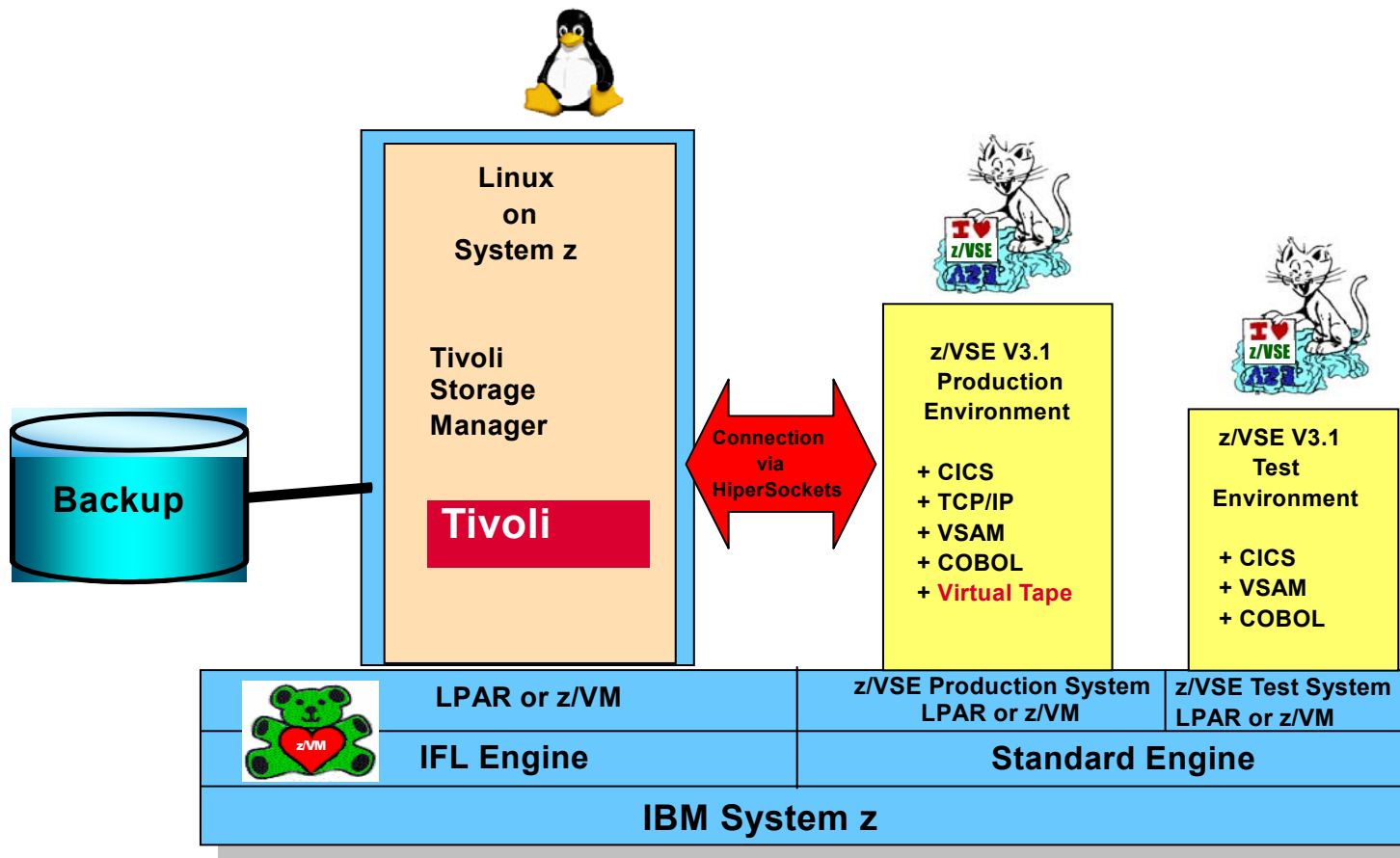
Scenario 6: SOA and Web Services with z/VSE
Application integration

z/VSE

Business Partner

Customers and Business Partners

Web Service

SOAP (XML)

Business Partner

Web Service

Web Service

Shipping and Tracking System

Trucking Company

Customers

Data

Transactions

e-mail
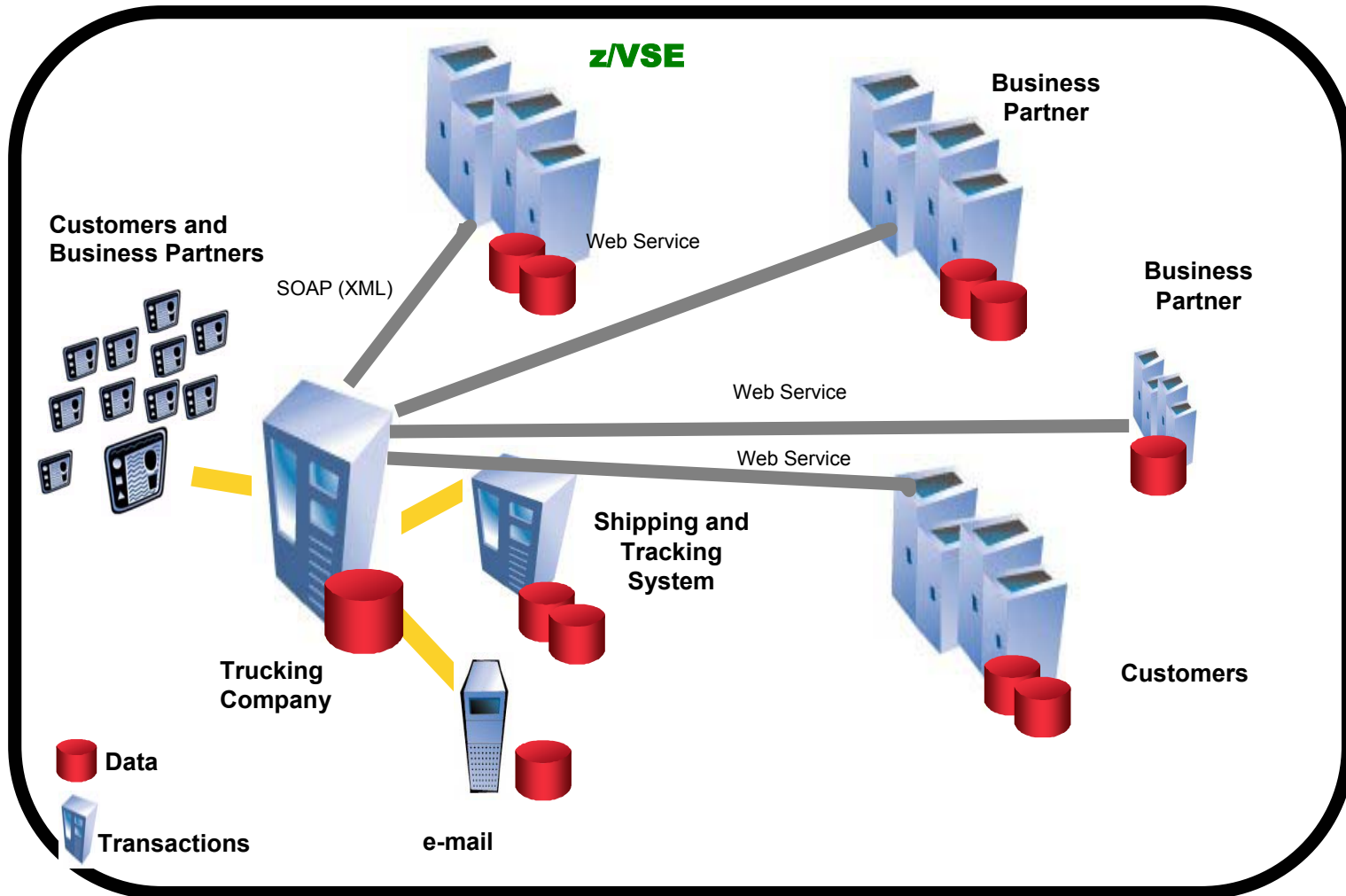
Web Services with z/VSE

SOA and XML data interchange with CICS transactions

z/VSE

Microsoft .NET
Websphere
Apache SOAP
AXIS
Java

SOAP
Client/Server

HTTP (HTTPS)

SOAP Envelope

CICS TS

XML
Parser

XML

SOAP Engine

XML to Commarea proxy

Commarea
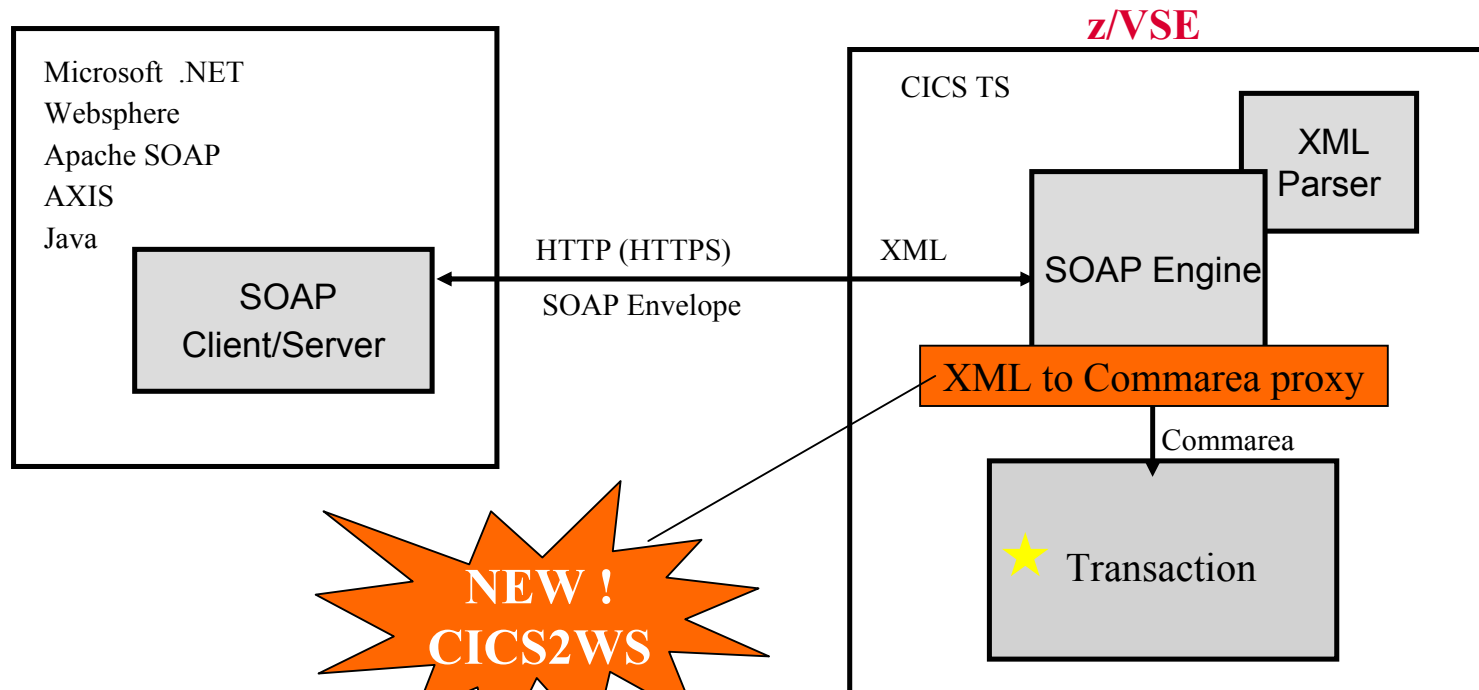
★ Transaction

**NEW !
CICS2WS**

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

Application development for VSE
(1) Use of modern development environments !

Rapid AD **Tools**	**Web** **Tooling**	**IDE**	**Modeling** **Tool**	**Standalone Tool**

Desktop

Platform APIs / Extension Points

Common Services
- Resource Management
- Project Model
- Team Programming Model
- Debugging
- Extensibility framework

Common Frameworks
- Widget Toolkit
- UI Frameworks
- Editing Frameworks
- Builders, Markers, Help

CCLT Interface	CVS Interface	Other Interfaces

Repository

Published

Extension

Points

● ● ●

ISV plug -in or
contribution

Technologies donated to open source project

www.eclipse.org

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

(*) In development.

NEW !

(2)Cross Plattform Solution development
Approach with VisualAge Generator

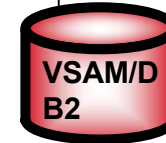* New: VisualAge Generator EGL Plug-in for VSE *

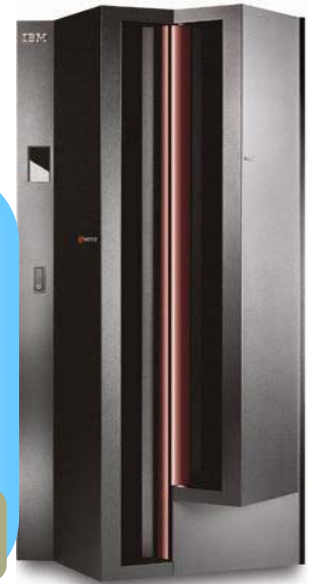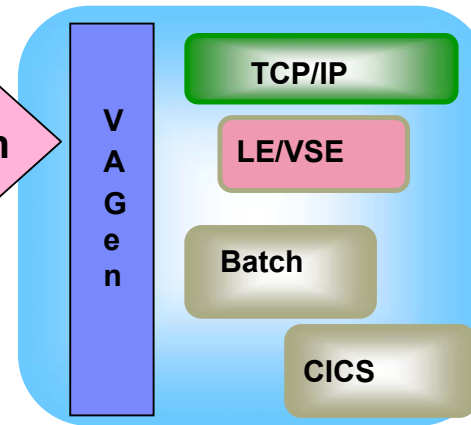**Rational Application Developer (RAD)**

z/VSE Server
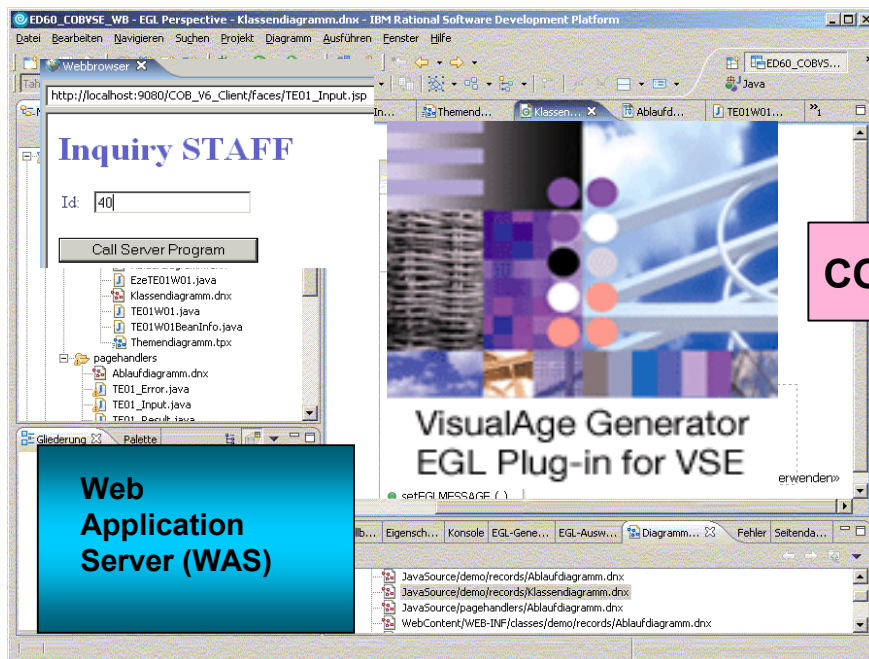
„Generate"

COBOL/CICS/batch

VAGen

TCP/IP

LE/VSE

Batch

CICS

VSAM/DB2

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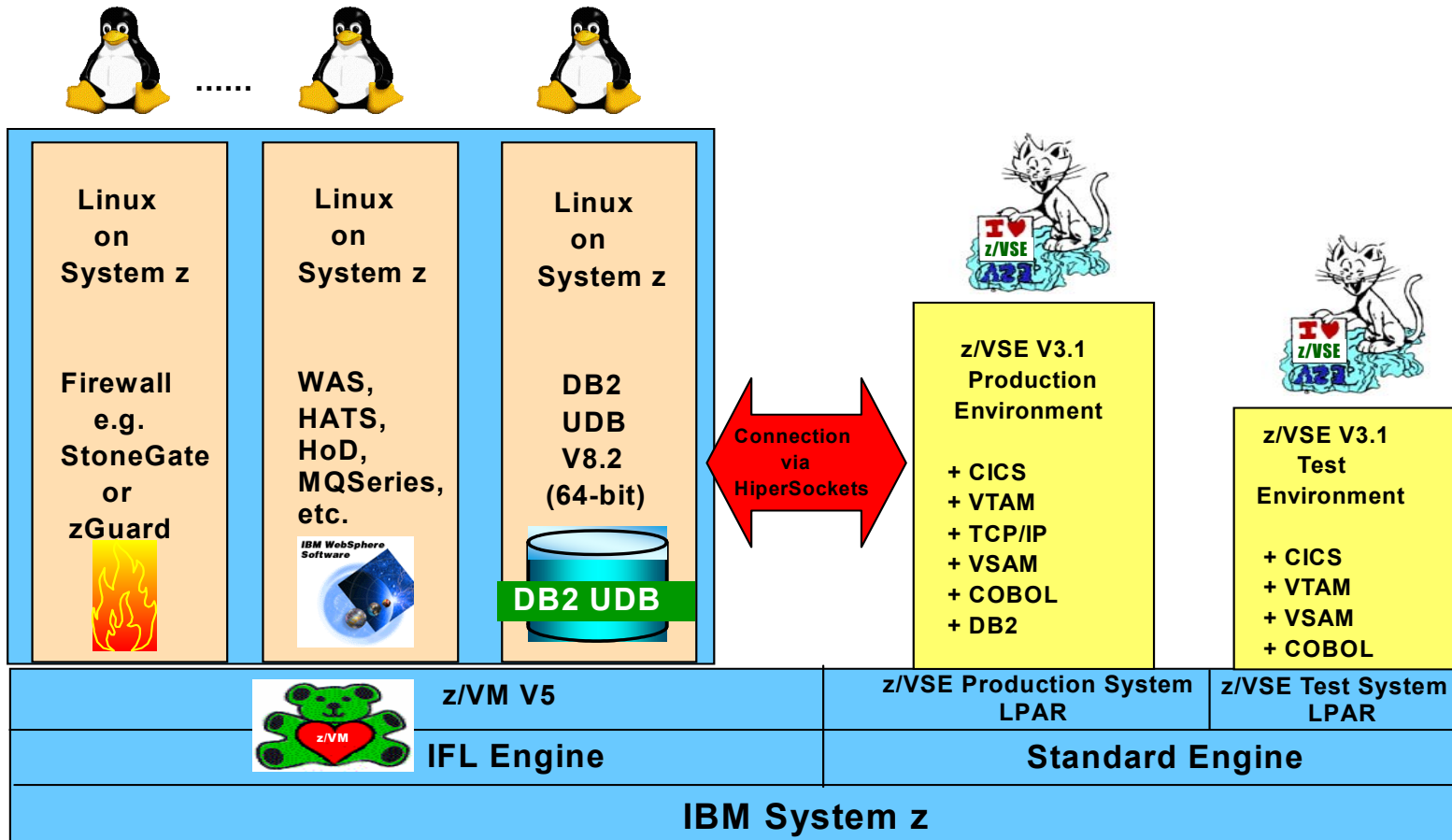
- Enterprise Generation Language (EGL)
- Java™ 2 Platform, Enterprise Edition (J2EE) connection Architecture (J2C/JCA)
- Java Server Pages (JSP), dynamic result page known by the Web Application Server (WAS)

Modernization / Growth Scenarios with VSE and Linux

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

Linux on System z	Linux on System z	Linux on System z
Firewall e.g. StoneGate or zGuard	WAS, HATS, HoD, MQSeries, etc.	DB2 UDB V8.2 (64-bit) DB2 UDB

Connection via HiperSockets

z/VSE V3.1 Production Environment
+ CICS
+ VTAM
+ TCP/IP
+ VSAM
+ COBOL
+ DB2

z/VSE V3.1 Test Environment
+ CICS
+ VTAM
+ VSAM
+ COBOL

z/VM V5	z/VSE Production System LPAR	z/VSE Test System LPAR
IFL Engine	Standard Engine	

IBM System z

Visit the z/VSE Web Site

z/VSE Solutions

☞ **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 (international – www.gsenet.de)

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/

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

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