



# E10

## New possibilities with VSE/ESA 2.7

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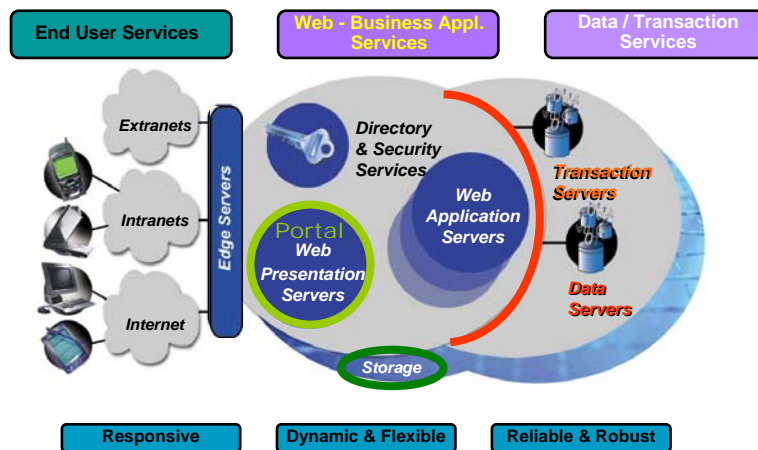
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## VSE plays well with others

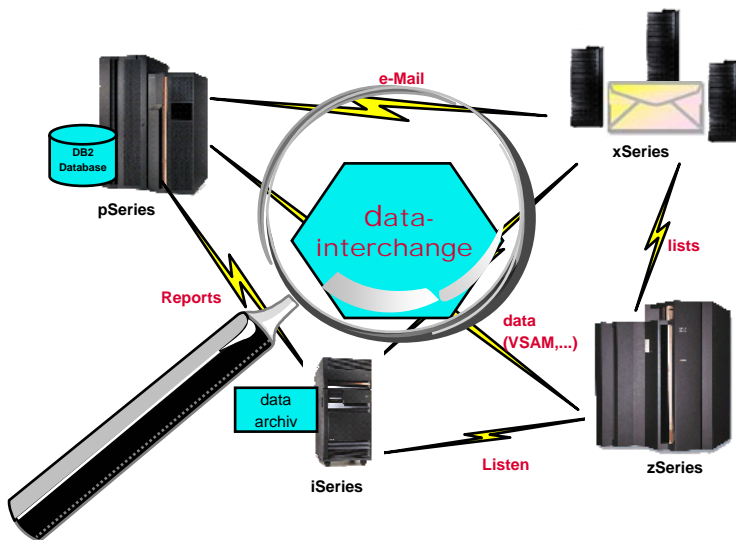


- Computing today means connectivity:
  - Universal access to data and applications
  - Platform independent data interchange, across networks

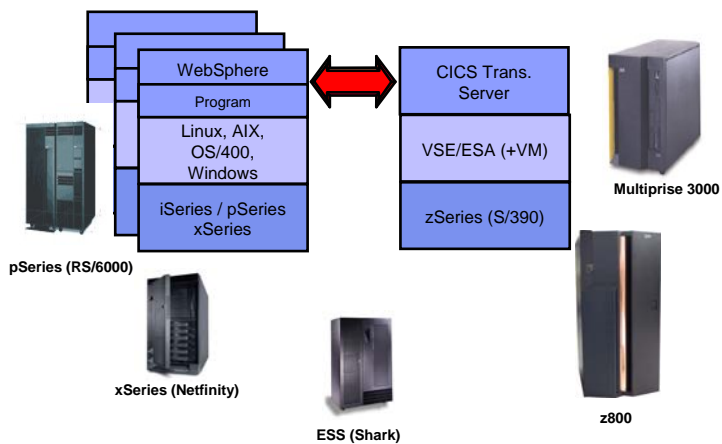
## Infrastructure



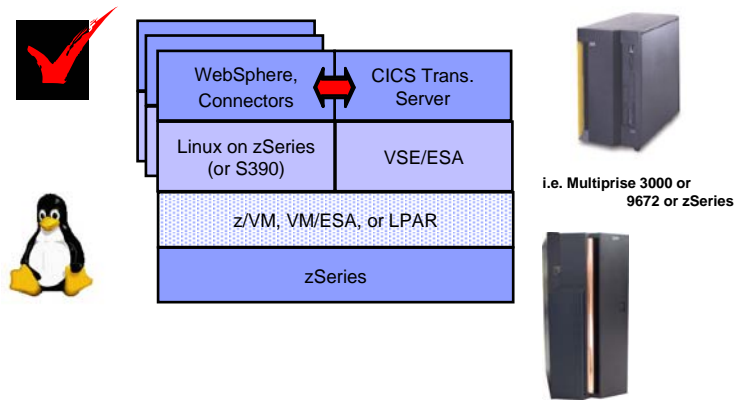
### Data interchange – actual need



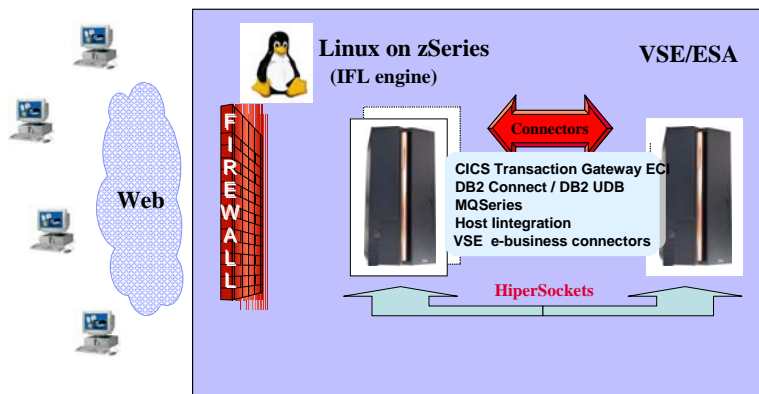
### VSE/ESA Flexibility – in a heterogeneous environment



## Linux for zSeries 3-tier logical / 2-tier physical



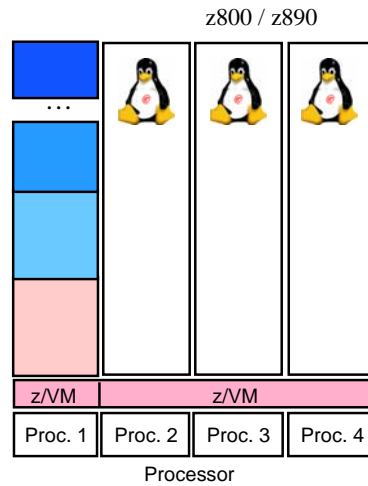
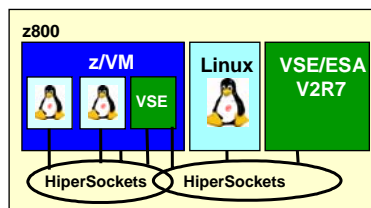
## Integration of VSE/ESA with Linux for zSeries



## Options with a zSeries machine

- Each IFL model has at least one 'Linux' Processor
- On a IFL Processor, no traditional op. system can IPL - only Linux on zSeries
- It's easy to upgrade or downgrade

### HiperSockets – The network in the box

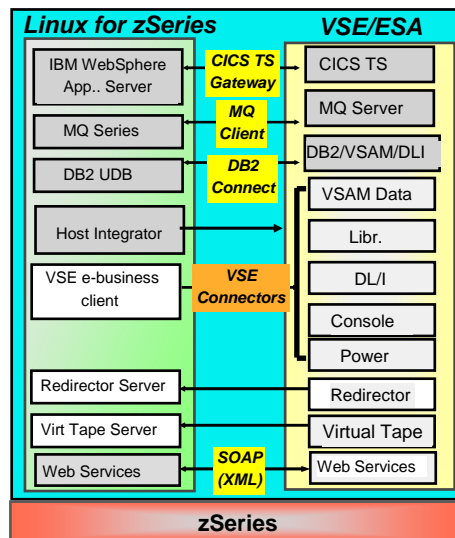


## Linux middleware relations to VSE/ESA

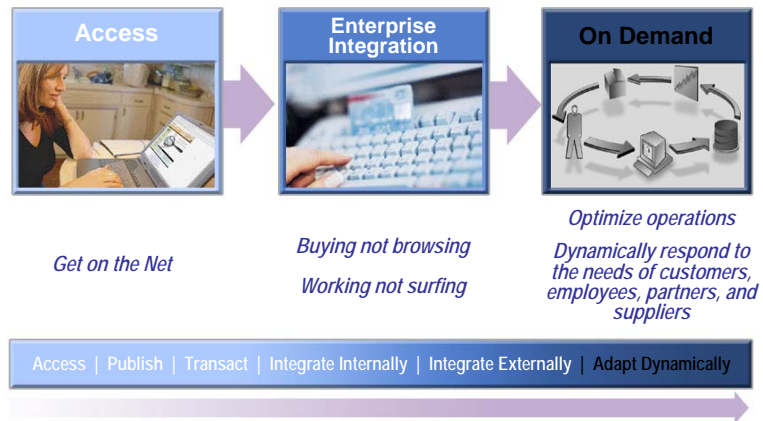
\*Modern applications with Linux for zSeries

\*Most modern technologies interact with VSE services

\*Modernisation using real time access to data



## Evolution of e-business

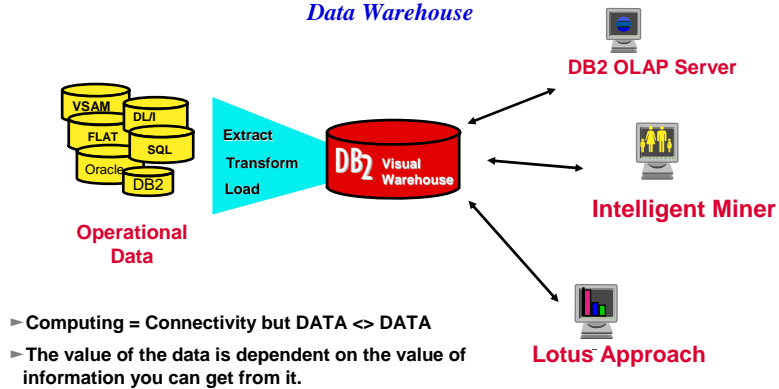


### Agenda: Optimization of operations

- (1) Business intelligence with VSE data
- (2) Web transaction processing
- (3) Application integration
- (4) Dynamic On demand business

**(1) Connectors enable Business Intelligence solutions with VSE/ESA data, the way for better and faster decisions**

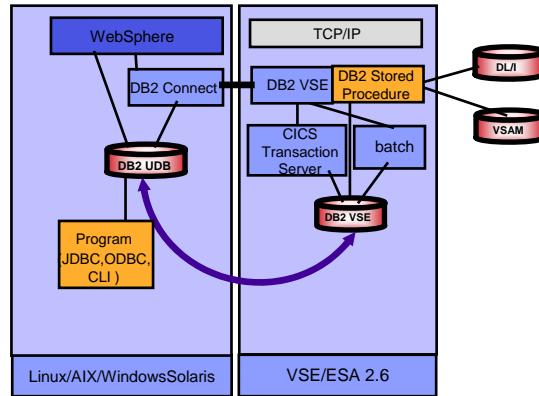
*Integration of different data to a intelligent Data Warehouse*



**(1) Business intelligence with VSE**

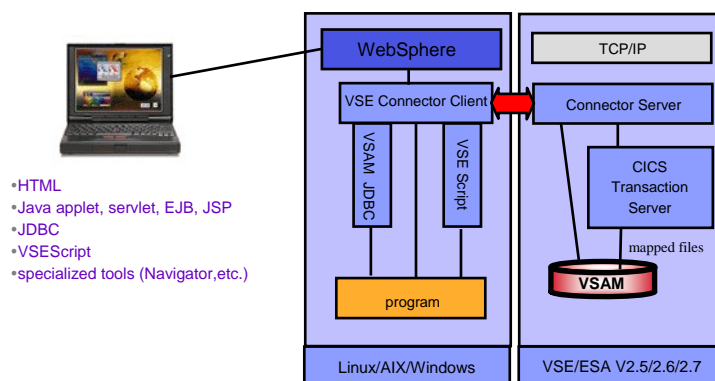
- ▶ DB2 data interchange - cross platform data stores
- ▶ Real time access to VSE/VSAM Data from remote systems via standard interfaces (Java, JDBC )
- ▶ Data propagation / synchronization from VSE to other platforms ( VSAM Redirector, MQ Series Virtual Tape Support)

## DB2 UDB and DB2 VSE data interchange



- ▶ Remote access of DB2 VSE via DB2 Connect
- ▶ Integration of non relational VSE data with DB2 logic via Stored Procedures
- ▶ Remote access of DB2 UDB from DB2 VSE via DB2 VSE Client functionality on VSE.

## Real time access to VSAM data from remote systems



- HTML
- Java applet, servlet, EJB, JSP
- JDBC
- VSEScript
- specialized tools (Navigator, etc.)

- ▶ real time access to mapped VSE/VSAM data from remote systems
  - ▶ i.e. READ in batch Mode and UPDATE via CICS
- ▶ samples and descriptions are in VSE Connector client online documentation
- ▶ **Mapping must be done prior to access VSAM data from remote**

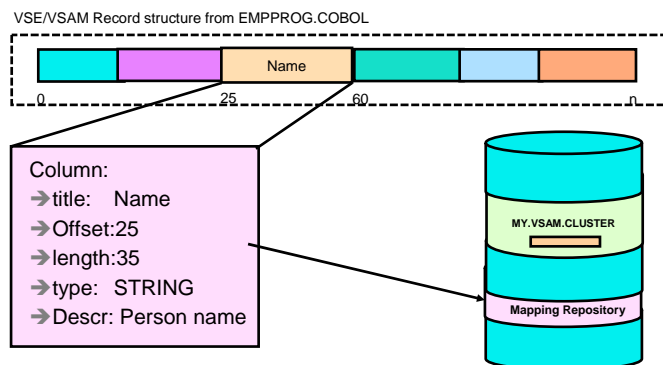


## Real time access to VSE data from remote systems

### Software Requirements

- ▶ VSE/ESA 2.5-2.7
- ▶ TCP/IP for VSE/ESA
  - ▶ Connector Server – to be started on VSE
  - ▶ Define maps for the VSAM files  
(with the standalone **MAPTOOL**, or **IDCAMS RECMAP**, or with a **Java program**, or **VSE Navigator** )
- ▶ Linux (AIX, Windows, any Java environment...)
  - ▶ VSE Connector Client Software on the Client or Requester machine (Java Class Library) – packaged with VSE
  - ▶ Program (In Java or Java callable Programming language) that will work with the data

## VSAM Record Mapping



### Mapping characteristics:

- ▶ No changes to VSAM data
- ▶ Mapping information stored in a repository in VSAM (VSE.VSAM.MAPPING.DEFS)
- ▶ Possible data types: STRING, binary, signed number, unsigned number, packed data
- ▶ Multiple maps and views (subset of map fields) supported

## Accessing VSAM data from remote systems

### using VSAM JDBC Driver

- Based on VSE Connector Client
- Translates SQL into VSE/VSAM calls
- Standard JDBC API
- Requires VSAM Record Mapping

Access VSAM via batch interface - read / (or SHAREOPTION 4 for write)

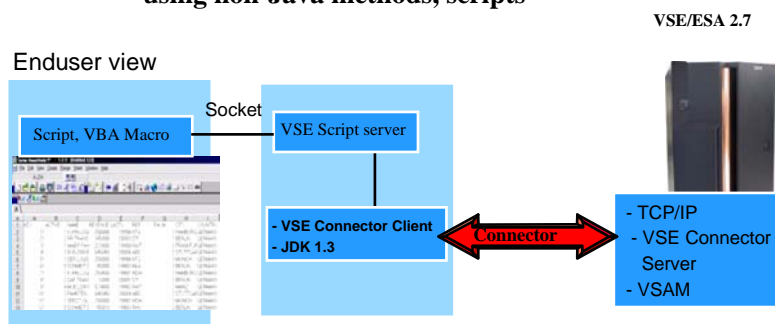
```
SELECT NAME,STREET,CITY FROM  
MY.USER.CATALOG\MY.VSAM.CLISTER\MY_MAP  
WHERE PERSNR=4711  
ORDER BY NAME
```

Access VSAM via CICS (DBDCCICS) – read/write

```
SELECT NAME,STREET,CITY FROM  
#VSAM.#CICS.DBDCCICS\CLUNAME\MY_MAP  
WHERE PERSNR=4711  
ORDER BY NAME
```

## Accessing VSAM data from remote systems

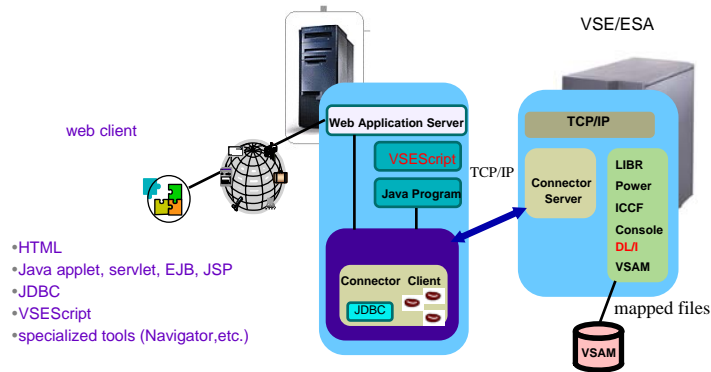
### using non-Java methods, scripts



#### Advantages:

- Individual requests (Statistics)
  - Security: Userid/Password for VSE
- Centralization, using macros from server
- Automation (automatically create Office files/reports)

## Real time access to VSE – Java –Based Connector



- HTML
- Java applet, servlet, EJB, JSP
- JDBC
- VSEScript
- specialized tools (Navigator, etc.)

- ▶ real time access to VSE resources from remote systems
- ▶ new possibilities for leveraging VSE/ESA investment

## Java-based Connector

### ■ Benefits:

Real-time access to VSE data

- ❖ Web Applications (WebSphere)
  - Servlets, EJBs, JSPs, Applets, ...
- ❖ Standalone Programs (Tools)
  - VSE Navigator, Tool, JConVSE, ...

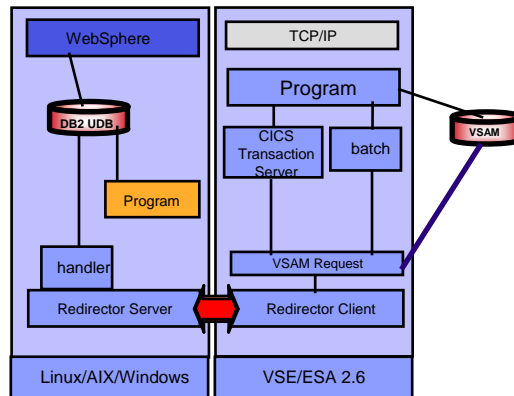
### ■ Requirements

- ▶ VSE/ESA 2.5 - 2.7
  - VSE Connector Server
- ▶ TCP/IP for VSE/ESA
- ▶ Java (Version 1.1.8 / 1.3x – 1.4x)

## Data propagation / synchronization from VSE

### VSE/VSAM Redirector

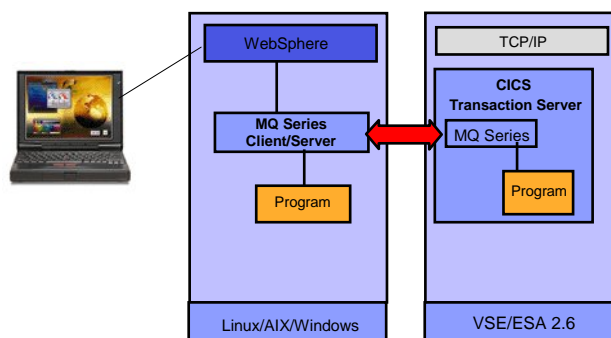
- ▶ Existing applications transparently access remote data
- ▶ No changes to the existing VSE applications



- ▶ 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/ESA 2.6/2.7)

## Asynchronous data propagation

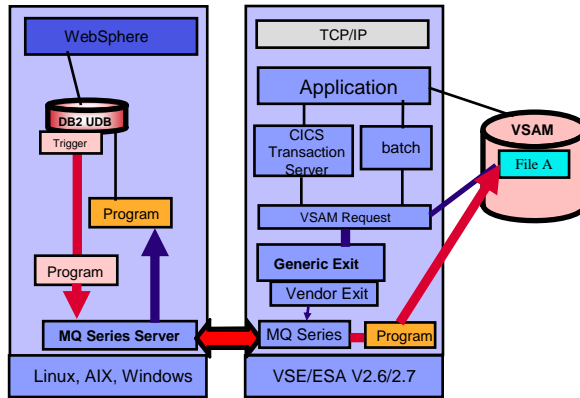
### MQ Series - Implementation



- ▶ asynchronous data exchange using message queuing
- ▶ guaranteed and 'only once' delivery
- ▶ integration into Web Application servers (WebSphere)

### Integration of VSE Application with DB2 UDB and MQ Series for asynchronous synchronization and VSAM Redirector

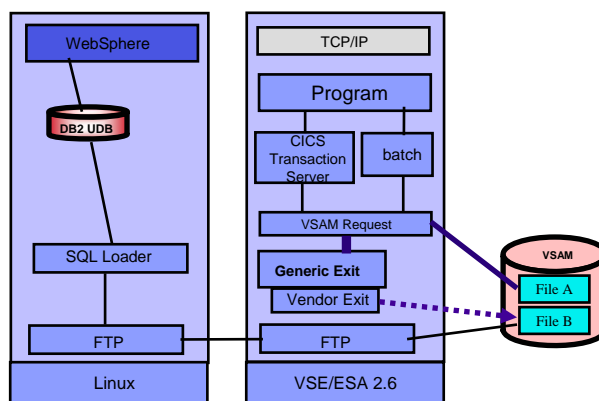
- ▶ Existing applications transparently propagate data
- ▶ No changes to the existing VSE applications



### Incremental data transfer / backup

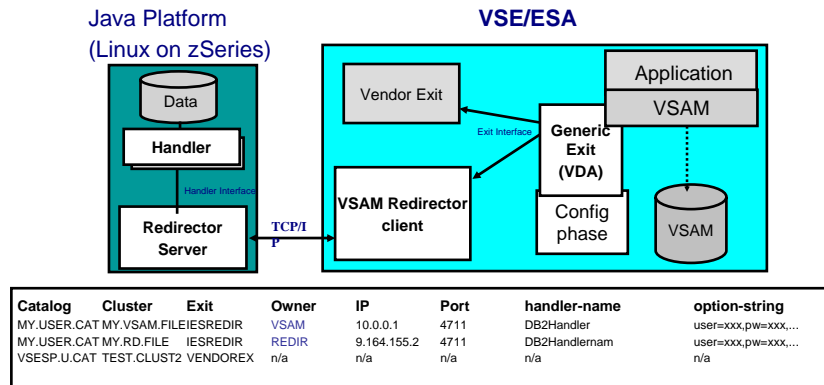
Reduce network traffic, save time

- ▶ 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)

## VSAM Redirector – functional view



A mechanism for VSE programs working with VSAM data:

- ☞ gain transparent access to remote data (from batch or CICS applications)
- ☞ synchronize VSAM files with remote data stores
- ☞ without any changes to VSE programs

## Transparent access from VSE programs to remote systems and data

### Software requirements

- ▶ For VSE/ESA :
  - ▶ VSE/ESA 2.6/2.7
    - ▶ enable VSAM Redirector function
    - ▶ Vendor Exit phase if local processing used
    - ▶ Enable the redirection of VSAM Cluster to remote
- ▶ On remote system
  - ▶ Java environment
    - ▶ Redirector server (delivered with VSE)
    - ▶ Setup of a Handler – responsible for data manipulation

## Agenda: Optimization of operations

(1) Business intelligence with VSE data

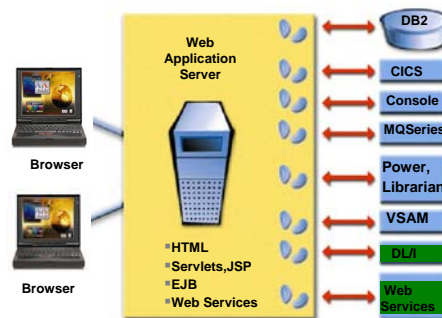
(2) Web transaction processing

(3) Application integration

(4) Dynamic On demand business

## (2) Web Transaction processing

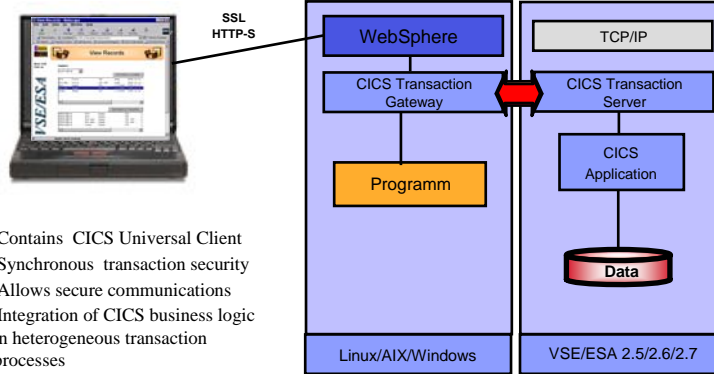
(using the Websphere Software Platform and Connectors for VSE/ESA )



- ▶ Enable the access to core applications with web technologies
- ▶ No change to the core applications required
- ▶ Consistent development interfaces (Java based)

## Integration of VSE/ESA transaction processes

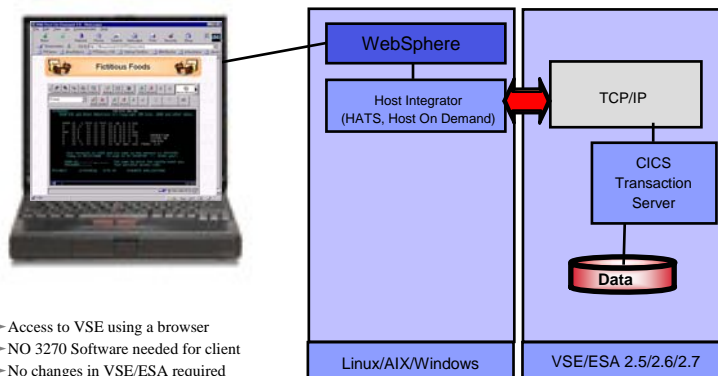
### IBM CICS Transaction Gateway



- Contains CICS Universal Client
- Synchronous transaction security
- Allows secure communications
- Integration of CICS business logic in heterogeneous transaction processes

## General access to VSE/ESA via browser

### Host Access transformation Server (HATS) and Host on Demand

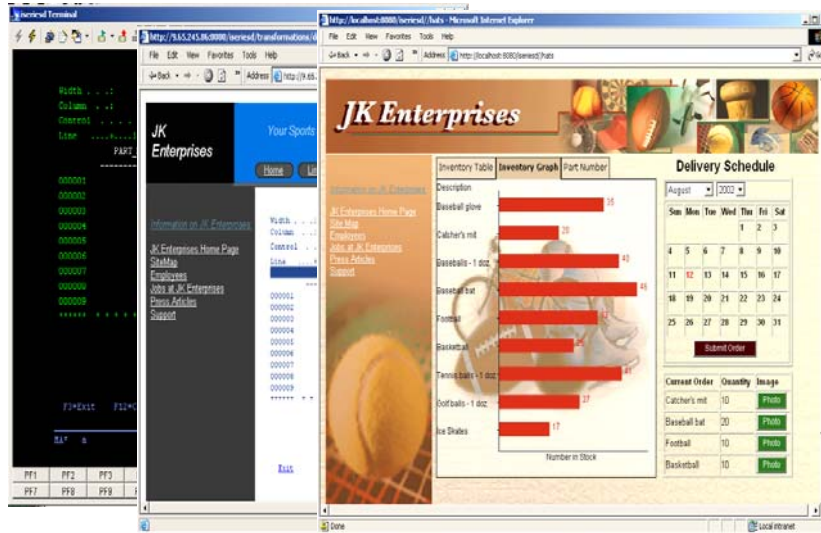


- Access to VSE using a browser
- NO 3270 Software needed for client
- No changes in VSE/ESA required

**NEW!: Available for Linux for zSeries**



## Interaction with VSE/ESA via browser using (HATS)



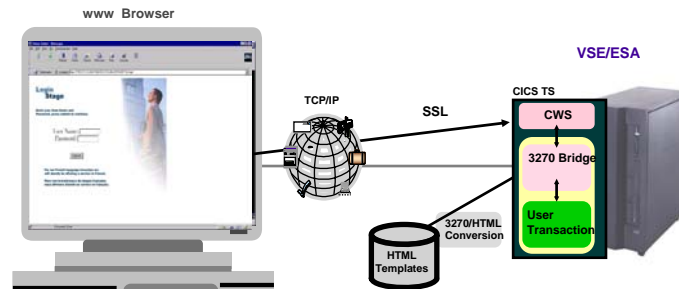
## Host Access Transformation Server

- functional characteristics
  - ▶ access to VSE/ESA via browser
  - ▶ the access is similar with a local access via 3270 emulator
  - ▶ can be used in Intranet or Internet and /or
  - ▶ integrated with WebSphere Application Server
  - ▶ support for secured connections (SSL) to the HostOnDemand Server and a redirector to mask the real IP addresses
    - ▶ Host Access Transformation Server – for 3270 screen scraping
    - ▶ Host Publisher - a bean generator to create the Java Beans (Integration Objects), to provide legacy access for new Web applications.
- Requirements
  - ▶ WebSphere Host Integration products on middle tier
  - ▶ NO additional software on VSE/ESA required

**Benefit: Easily extend existing applications to the web**

## Direct access to VSE/ESA transactions via browser

### IBM CICS Web Support - Components



- ▶ direct access to VSE/ESA transactions via web Browser
- ▶ Without the need of a web server on VSE/ESA

## IBM CICS Web Support

- functional characteristics
  - ▶ direct access to VSE CICS transactions via a simple web browser
  - ▶ transaction security for the called transaction
  - ▶ secured connections (SSL) with VSE/ESA 2.6
- requirements
  - ▶ VSE/ESA 2.5 and higher

## Agenda: Optimization of operations

(1) Business intelligence with VSE data

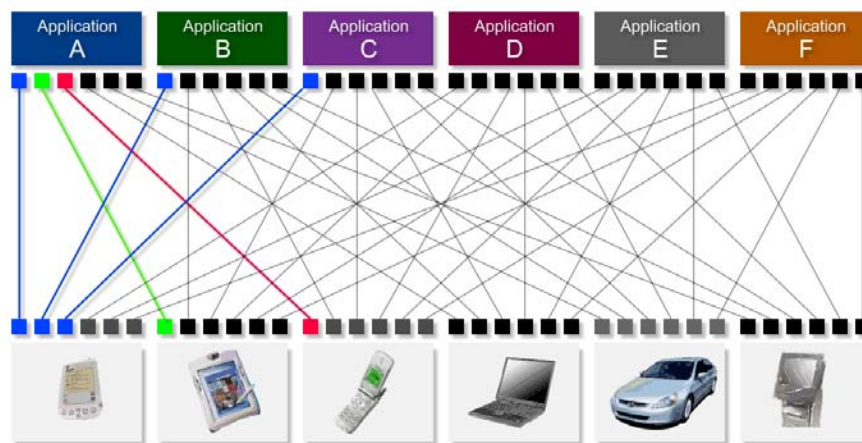
(2) Web transaction processing

(3) Application integration

(4) Dynamic On demand business

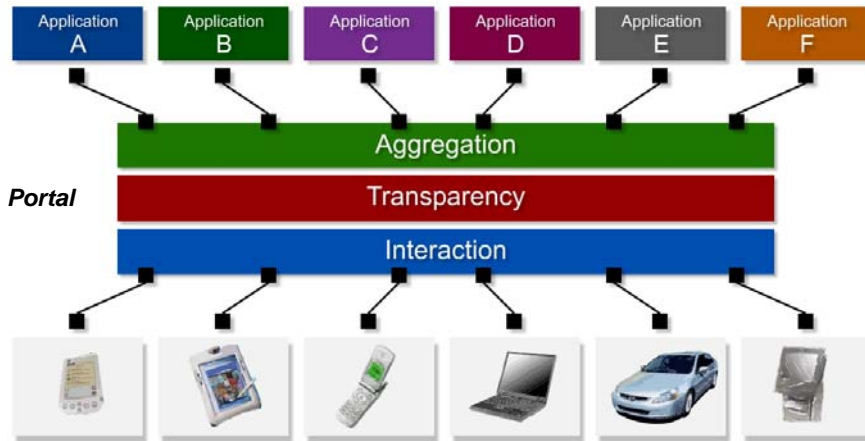
## (3) Application integration and Enterprise Modernization

**M applications...**

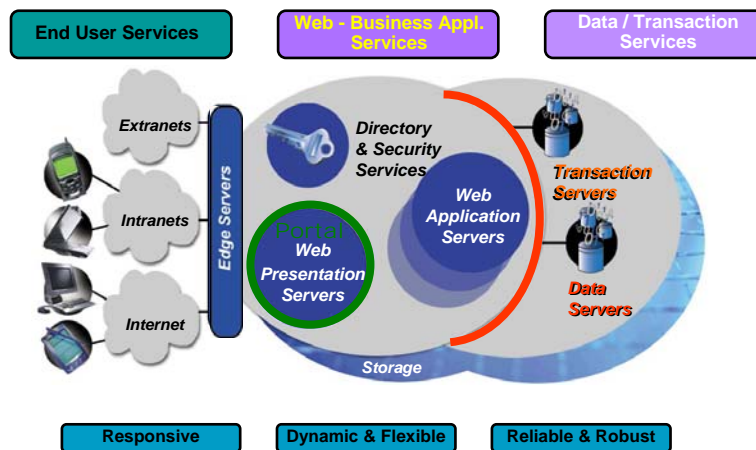


**N devices** *How do you solve an expanding "M x N" matrix?*

## A Mobile Application Platform Defined



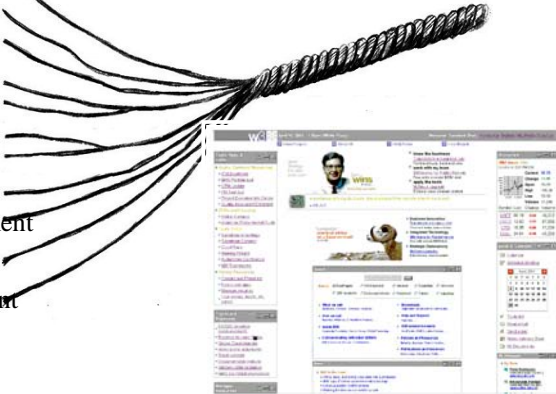
## Infrastructure



# 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

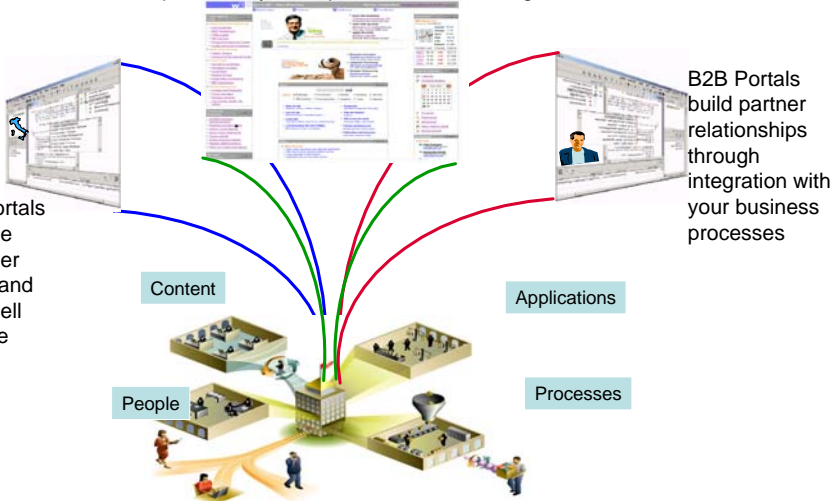


# Where Portals are used in today's IT's

B2E Portals improve employee productivity and speed decision making

B2B Portals build partner relationships through integration with your business processes

B2C Portals increase customer loyalty and cross-sell revenue



Common portal framework reduces costs and meets changing requirements

## Agenda: Optimization of operations

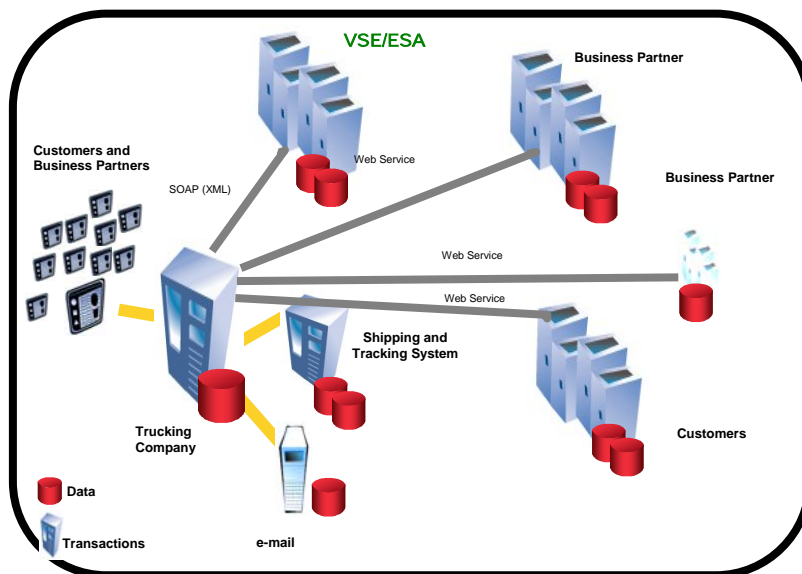
(1) Business intelligence with VSE data

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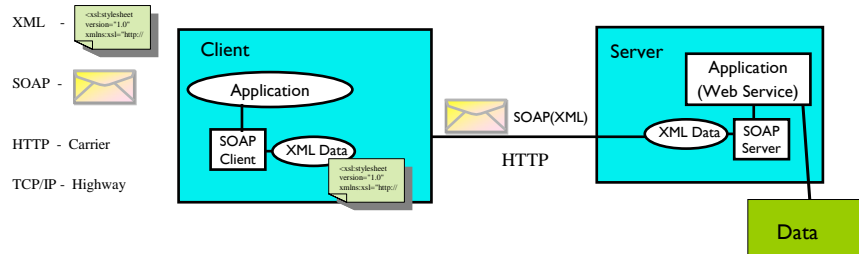
(4) Dynamic On demand business

### (4) Dynamic On demand business with VSE/ESA using Web Services



## Web Services

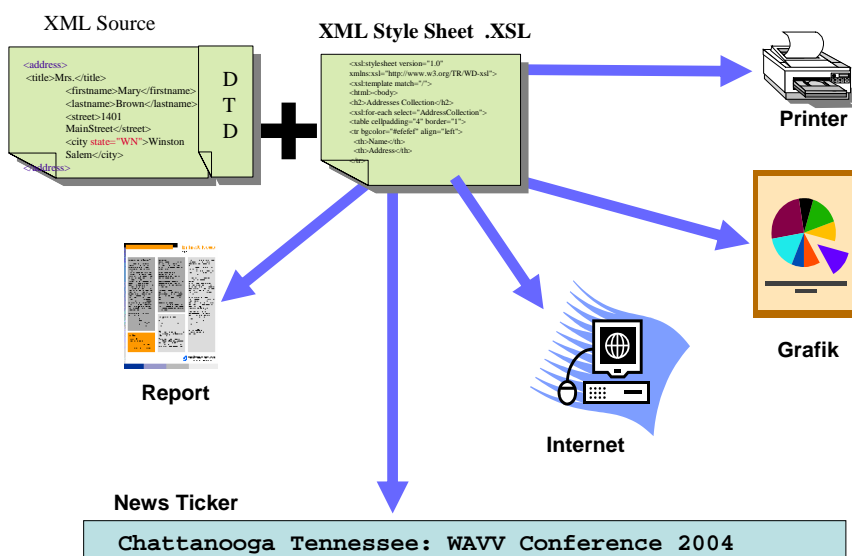
XML Document + SOAP Protocol = Web Services



### A web service

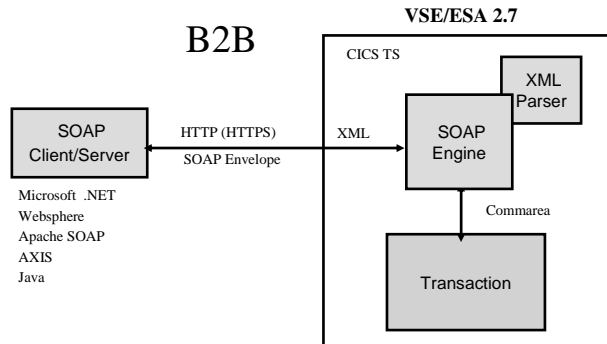
- ☞ implements a business, application or system functionality
- ☞ is intended for application communication
- ☞ is useable in internet, intranet, extranet
- ☞ is useable for browser-based solutions up to the B2B integration between companies
- ☞ uses only standard internet technologies

## XSL – formatting of XML documents



## Web Services with VSE/ESA 2.7

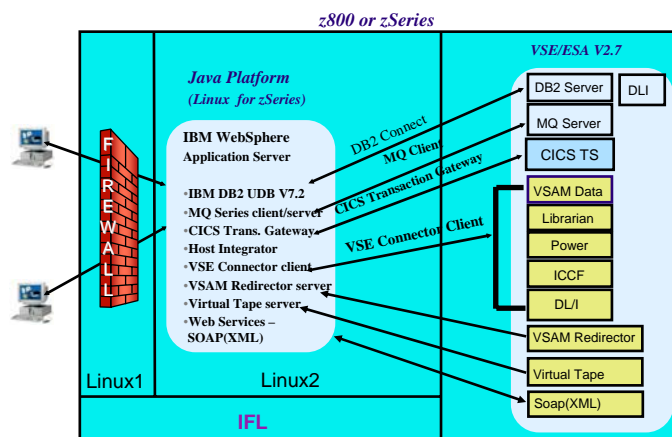
XML data interchange with CICS transactions



★ VSE/ESA Transactions as Web Service

►NEW: Also with VSE/ESA 2.6 + UQ81044

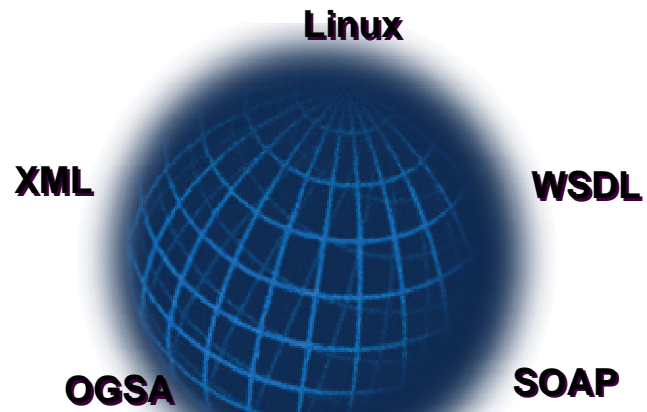
## VSE/ESA Connections





## On Demand Operating Environment

**Requirement: Open Standards**



## On Demand Operating Environment

**Requirement: Integration**



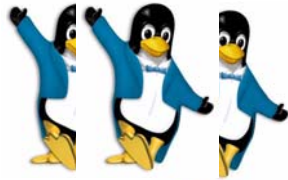
## On Demand Operating Environment Requirement: Virtualized



### Modernisation possibilities for today's distributed processes with VSE/ESA

- ✓ 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
  - ✓ CICSTransaction Gateway, Web Services
- ✓ access remote applications from VSE
  - ✓ Web Services via SOAP(XML)

**VSE + Linux, a happy pair with the stability of a dinosaur and support from a bear .**



Linux for zSeries



z/VSE



**z/VM – a platform, were pinguins can multiply like rabbits.**



IBM eServer zSeries

### VSE Tools and utilities on the VSE/ESA home page

The screenshot shows a Mozilla browser window displaying the IBM website for VSE/ESA e-business connectors and utilities. The page features a navigation menu on the left with options like 'VSE/ESA Software', 'News', 'Solutions', 'Service and support', 'Downloads', 'Library', 'Education', 'e-business', 'Customer', 'Partners', 'How to buy', and 'Site map'. The main content area is titled 'e-business connectors and utilities' and includes an overview of downloadable connectors and utilities, a list of sections (Connector components, Utilities, Online books), and information about APARs and PTFs. A table lists specific connector components, including the VSE Connector Client and VSE/VSAM JDBC Driver.

<http://www-1.ibm.com/servers/eserver/zseries/os/vse/support/vseconn/>

## Electronic support and Ordering

PTF orders via internet:

Electronic support for zSeries and VSE/ESA:

- Order your PTF's via the internet:

URL:

<http://www-1.ibm.com/servers/eserver/support/zseries/>




ShopZSeries:

With ShopzSeries you can:

- order tailored product and service packages for z/OS, z/OS.e and OS/390
- order tailored product packages for z/VM, VM/ESA and VSE/ESA
- review your software licenses in all of these environments
- plan for future upgrades.
- URL:  
<https://www14.software.ibm.com/webapp/ShopzSeries/ShopzSeries.jsp>

### **Additional Information**

- VSE/ESA Home Page  
<http://www.ibm.com/servers/eserver/zseries/os/vse/>
- VSE/ESA e-business Connectors and Utilities  
<http://www-1.ibm.com/servers/eserver/zseries/os/vse/support/vseconn/conmain.htm>
- e-business Connectors User's Guide SC33-6719  
<http://www-1.ibm.com/servers/eserver/zseries/os/vse/pdf/ieswue10.pdf>
-  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
- **NEW: Linux on zSeries: Connectors to z/OS and VSE SG24-7042 (April 2004)**



We appreciate your comments at : [VSEESA@de.ibm.com](mailto:VSEESA@de.ibm.com)