Traditional customer scenarios with VSE/ESA
and the possibilities to modernize them

WAVV 04/2003

Wilhelm Mild
IBM Boeblingen Laboratory

mildw@de.ibm.com

IBM @server. For the next generation of e-business.

Trademarks

VSE/ESA plays well with others

VS@
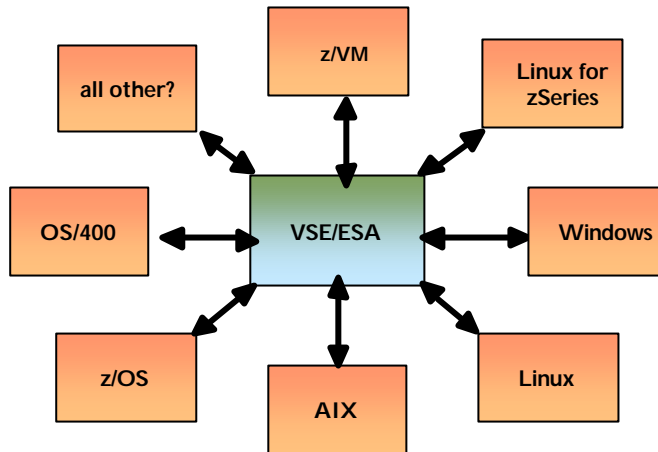
IBM @server. For the next generation of e-business.

VSE/ESA Flexibility – in a heterogeneous environment

VS@
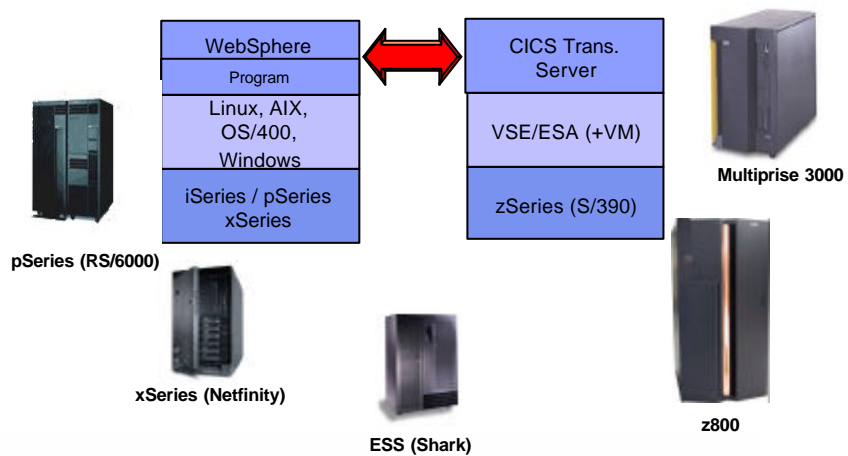
IBM @server. For the next generation of e-business.

Linux for zSeries

3-tier logical / 2-tier physical

WebSphere	CICS Trans. Server
Linux for zSeries (or S390)	VSE/ESA
z/VM, VM/ESA, or LPAR	
zSeries	
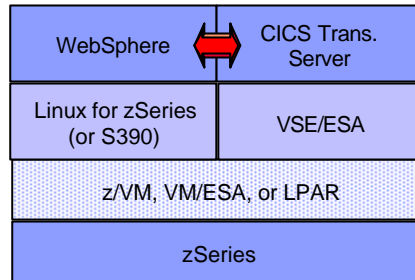
i.e. Multiprise 3000 or 9672 or zSeries

IBM @server. For the next generation of e-business.

VSE/ESA integrated Connectors

VSE/ESA V2.5/2.6 - VSE as Server
  ƒ **remote access to VSE Resources**
    ƒ **e-business Connectors**
VSE/ESA V2.6 - VSE as Client
  ƒ **access to remote data from VSE programs**
    ƒ **VSAM Redirector**
    ƒ **Virtual Tape Support**
VSE/ESA V2.7 - VSE Web Services
  ƒ **Access VSE transactions as Web Service**
  ƒ **Access Web Services from VSE Transactions**
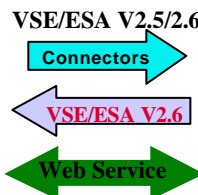
New

VSE/ESA V2.5/2.6
Connectors ➡
⬅ **VSE/ESA V2.6**
Web Service

IBM @server. For the next generation of e-business.

VS@ Requirements for todays distributed processes with VSE/ESA

- FTP data transfer between platforms

- VSE applications need access to remote data

- synchronisation of data on different platforms

- access VSE applications from remote platforms

- access remote applications from VSE

IBM @server. For the next generation of e-business.

VS@ Additional functions needed for VSE/ESA in heterogeneous Processes

- Incremental Backup
- Journaling possibilities independent of applications
  – protocols for changes
- Work with VSE data from the workstation with the security of VSE
  – via standalone programs
  – with Office environments
  – via browser interfaces

IBM @server. For the next generation of e-business.

VS@

FTP – the daily mass data transfer

FTP advantages

ƒ the use of FTP is wide spread

ƒ it's a fast data transfer

ƒ present on all platforms

ƒ data transfer can be initiated from both sites

ƒ nearly no additional software needed

IBM @server. For the next generation of e-business.

VS@

FTP – the daily mass data transfer

FTP disadvantages

ƒ each time the whole file will be transferred – even if an average of 10% is changed

ƒ therefore – high traffic on the network

ƒ the protocol doesn't guarantee data integrity and there is no guarantee that all data are transferred

ƒ the data are never actual

ƒ FTP is mostly an interim step before the data will be extracted and changed on remote systems, prior to be inserted in another data format (i.e. in relational databases)

IBM @server. For the next generation of e-business.

VS@

FTP – the daily mass data transfer

FTP alternatives

ƒ Methods to avoid the transfer of the whole file

ƒ Real time synchronization of data

ƒ Real time access – to just needed data

ƒ For all cases:
   ƒ The best performance is achieved with VSE/ESA 2.7 and hipersockets and Linux for zSeries on a zSeries hardware

IBM @server. For the next generation of e-business.

VS@

VSE/ESA Version 2 Release 7

New

z800

z/VM

VSE

Linux

VSE/ESA

HiperSockets   **HiperSockets**

IBM @server. For the next generation of e-business.

VS@
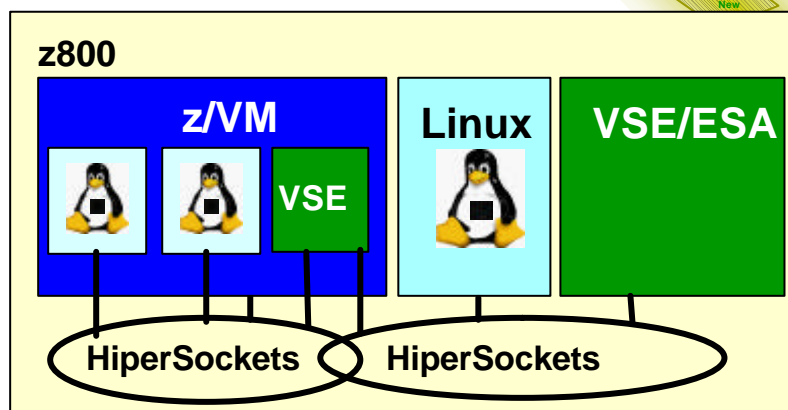
FTP – the daily mass data transfer

Methods to avoid the transfer of the whole file

Advantages:

ƒ Time-saving

ƒ Significant reduce of network traffic

ƒ Faster Recovery in case of errors

IBM @server. For the next generation of e-business.

VS@

Incremental FTP

Linux	VSE/ESA 2.6
WebSphere	TCP/IP
DB2 UDB	Programm
	CICS Transaction Server / batch
	VSAM Request
SQL Loader	Generic Exit / Vendor Exit
FTP	FTP

VSAM — File A — File B

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

IBM @server. For the next generation of e-business.

FTP – the daily mass data transfer

VS@

Methods to avoid the transfer of the whole file

Additional possibilities:
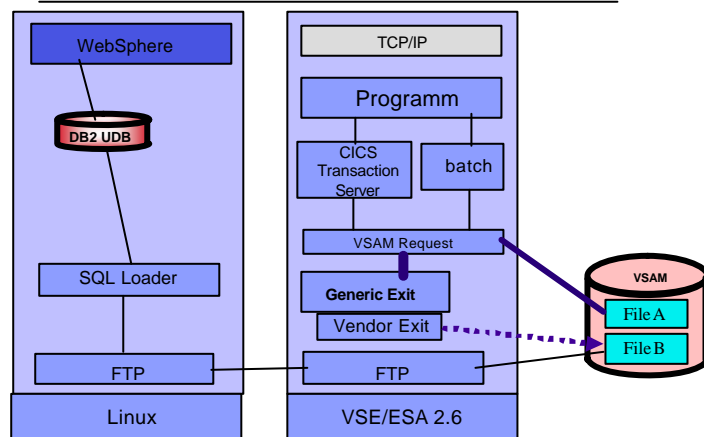
ƒ Change/add information (i.e. timestamp) before storing the data

ƒ Possibility of journaling

ƒ Possibility of incremental Backup

ƒ This process is similar to the capture function for relational data and can be stored separately without touching the original ('base') data

ƒ In some cases it would be very helpful to save in this mode the index part only – to know very fast which record did change in a certain time.

IBM @server. For the next generation of e-business.

FTP – the daily mass data transfer

VS@

Real time synchronization of data

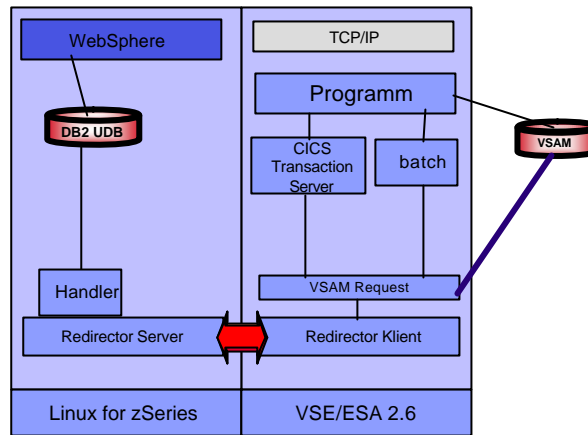ƒ Very helpful and recommendable for Online application

ƒ For a single, secure delivery in a real distributed environment MQ Series can be used (VSAM Redirector with MQ Series can be used to leave VSE applications unchanged)

ƒ In a virtual network – i.e. z800 with Hipersockets (in VSE/ESA 2.7, or Z/VM) the use of the VSAM Redirector function is recommended

IBM @server. For the next generation of e-business.

Real time synchronization of data

VS@

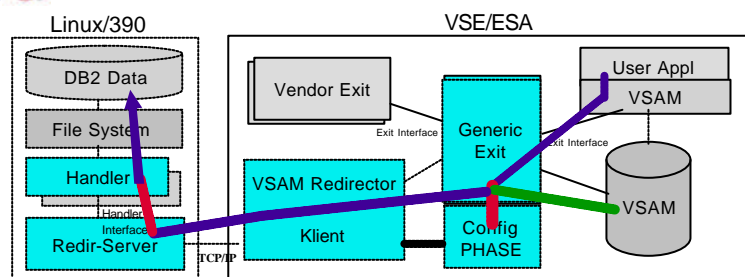| WebSphere	TCP/IP
DB2 UDB	Programm
	CICS Transaction Server / batch
	VSAM
Handler	VSAM Request
Redirector Server	Redirector Klient
Linux for zSeries	VSE/ESA 2.6

ƒ Synchronization of DB2 UDB in Linux with VSAM, using VSAM Redirector.
(The VSAM Redirector is part of VSE/ESA 2.6)

IBM @server. For the next generation of e-business.

VSAM Redirector – functional view

VS@

Linux/390 — VSE/ESA

DB2 Data
File System
Handler
Handler Interface
Redir-Server
TCP/IP

Vendor Exit
Exit Interface
Generic Exit
VSAM Redirector
Klient
Config PHASE
User Appl
VSAM
Exit Interface
VSAM

Config PHASE:

Catalog	Cluster	OWNER	IP	Port	Handler-Name	option-string
MY.USER.CAT	MY.VSAM.FILE	REDIR	19.164.155.2	4711	DB2Handler	user=xxx,pw=xxx,...
VENDOR.CAT	VENDOR.CLUSTER	VENDEXIT	n/a	n/a	n/a	n/a
USER.CAT	KSDS.CLUSTER	VSAM	12.100.121.1	1211	HTMLHandler	n/a

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

IBM @server. For the next generation of e-business.

9

VS@

FTP – the daily mass data transfer

Real time access – to just needed data

Advantages:
- ƒ Constantly real time data

- ƒ No need for a full file transfer
    - ƒ Low network traffic

- ƒ Advantage for spontaneous needed data
    - ƒ Faster decisions possible

- ƒ Very good Integration possibilities in heterogeneous environments

- ƒ With Java technologies or with VSE/ESA 2.7 using scripts (i.e. Visual Basic)

IBM @server. For the next generation of e-business.

VS@

Real time access – to just needed data

WebSphere		TCP/IP

VSE Connector Klient ⟷ VSE Connector Server

Programm

CICS Transaction Server

Power Librarian Console

VSAM

Linux/AIX/Windows

VSE/ESA 2.5/2.6
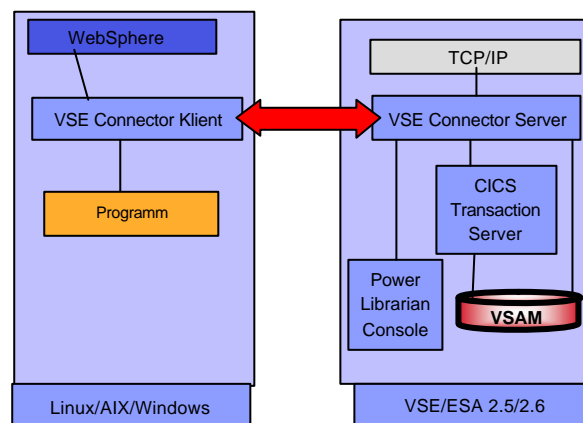
ƒ real time integration of VSE resources

IBM @server. For the next generation of e-business.

Access VSE resources from Office products using scripts

VS@

VSE/ESA 2.7

Enduser view

Script, VBA Macro — Socket — VSE Script server

- VSE Connector Client
- JDK 1.3

← Konnector →

- TCP/IP
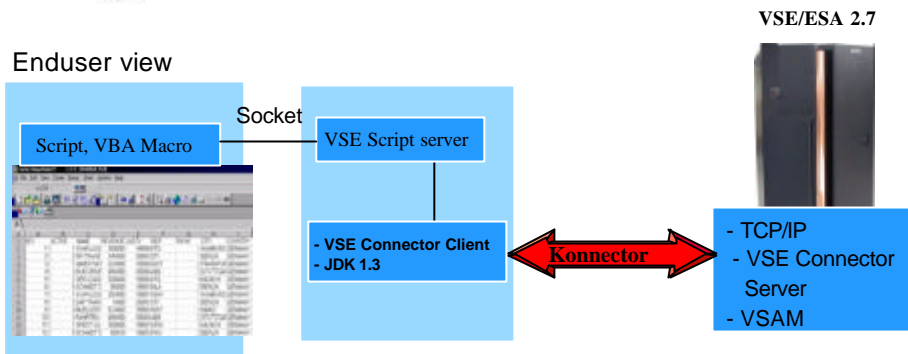- VSE Connector Server
- VSAM

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

IBM @server. For the next generation of e-business.

FTP – the daily mass data transfer

VS@

End to end integration with SOAP(XML)

Most modern solution:
  ƒ Instead of:
    ƒ Initiation of FTP process
    ƒ Wait until whole file is transferred
    ƒ Kickoff the application to cleans/transform data on remote
    ƒ Insert data in the new data store (i.e. relational database)

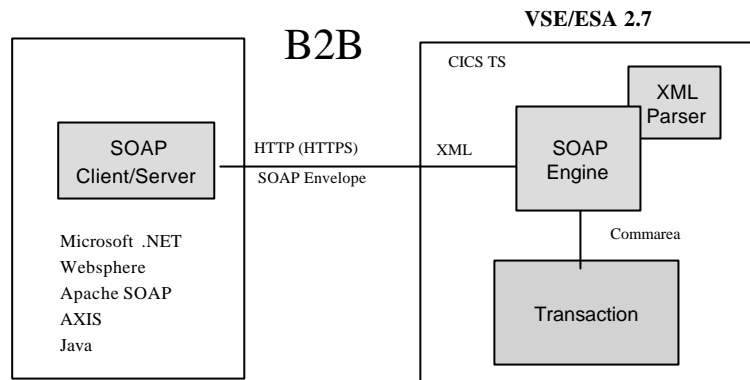 ƒ Use of Internet technology – Web Services
    ƒ Applications can communicate to each other
    ƒ (i.e. VSE application with the 'SQL Load' application on the remote platform)
    ƒ Only needed data will be send over the net – in XML format
    ƒ Standard applications can be used for manipulation
    ƒ Service can be initiated from both sites

IBM @server. For the next generation of e-business.

VS@

VSE/ESA 2.7 – Integration of
CICS Transactions as Web Services
(XML data interchange with SOAP)

VSE/ESA 2.7

B2B

CICS TS

| SOAP Client/Server | HTTP (HTTPS) | XML | SOAP Engine | XML Parser |

SOAP Envelope

Microsoft .NET
Websphere
Apache SOAP
AXIS
Java

Commarea

Transaction

⭐ VSE/ESA Transactions as Web Service

IBM @server. For the next generation of e-business.

VS@ Requirements for todays distributed
processes with VSE/ESA

✓ data exchange via FTP
  ✓ modernized (incremental, cleansing)
✓ VSE Applications need access to remote data
  ✓ VSAM Redirector
✓ synchronisation of data on different platforms
  ✓ Modernized FTP, VSAM Redirector
✓ access VSE applications from remote platforms
  ✓ CICSTransaction Gateway, Web Services
✓ access remote applications from VSE
  ✓ Web Services via SOAP(XML)

IBM @server. For the next generation of e-business.

VSE/ESA 2.7 Integrated Connectors

Host

- SSL Client Auth.
- DL/I Plugin — VSE Connector Server
- Redirector Client
- Virtual Tape
- AutoFTP
- CICS
- XML Parser
- SOAP Client/Server

Client / middle-tier

- Nav. Plugin
- DL/I Plugin
- VSAM Maptool
- JDataMig
- JConVSE
- VSE Navigator
- VSEScript Server
- Keyman/ VSE
- VSAM Redirector Server
- Virtual Tape Server
- VSEPrint
- SOAP Client/Server
- DL/I Beans — VSE Java Beans — JDBC
- JDK 1.3 / 1.4

IBM @server. For the next generation of e-business.

An always happy pair !

VS@

IBM @server. For the next generation of e-business.

VS@

Additional Information

●**VSE/ESA Home Page**
    http://www.ibm.com/servers/eserver/zseries/os/vse/

●**Connectors for VSE/ESA**
    http://www.ibm.com/servers/eserver/zseries/os/vse/support/vseconn/

●**e-business Connectors User's Guide**   **SC33-6719**
    http://www.ibm.com/servers/eserver/zseries/os/vse/support/vseconn/

Redbooks

●**e-business Connectivity for VSE/ESA**   **SG24-5950**

●**e-business Solutions for VSE/ESA**   **SG24-5662**

●**Servlet and JSP Programming**   **SG24-5755**

●**Linux Web Hosting with WebSphere,**   **SG24-6007**
    DB2, and Domino

VSEESA@de.ibm.com

Are you ready for e-business?

IBM @server. For the next generation of e-business.