



VSE/ESA 2.5

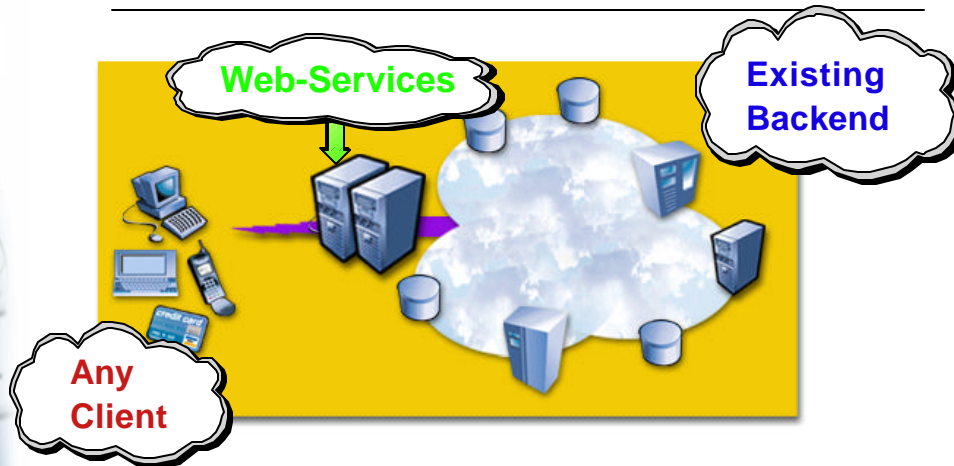
super connectors



Wilhelm Mild
@-business ambassador

e-business Infrastructure

VS@
e-business

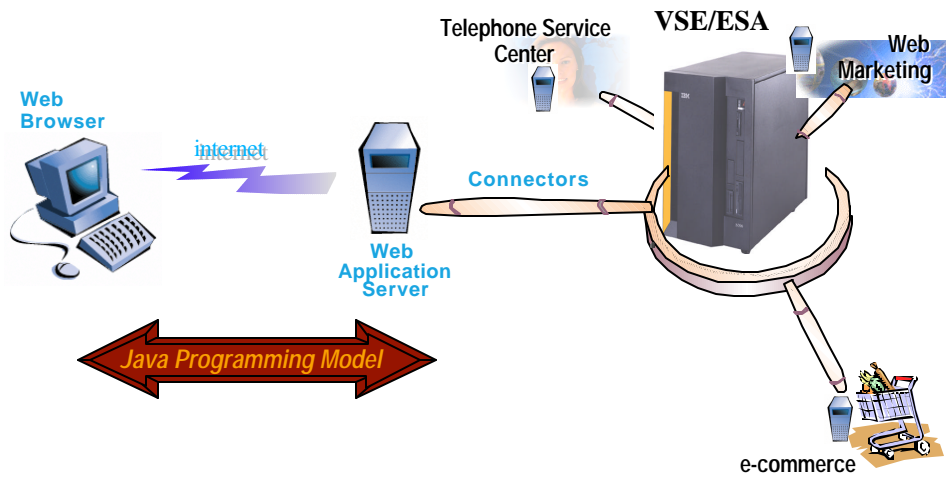


- Supports any client device
- Applications are built independent of deployment platforms
- Provides universal access to data and services across all types of networks
- Workload can be optimized across servers

Here's how we Build It . . .

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Java Programming Model

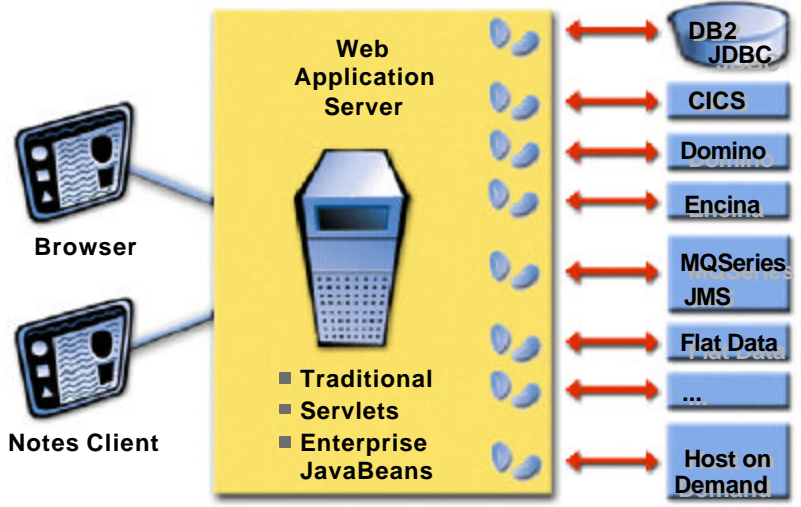
- ▶ Any User Device
- ▶ Any Server Platform
- ▶ Integration with Business Systems

...Use The Framework!

Connector definition

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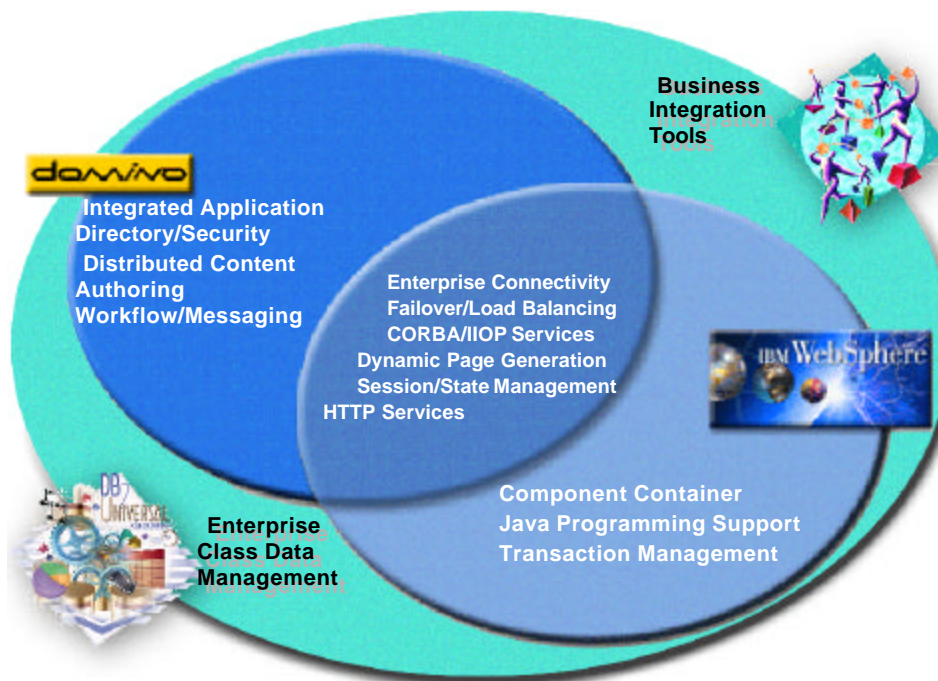


- Allows native connection to back-end systems from within a Web application
- No changes to back-end application required
- Consistent developer interface (Java)

Web Application Servers



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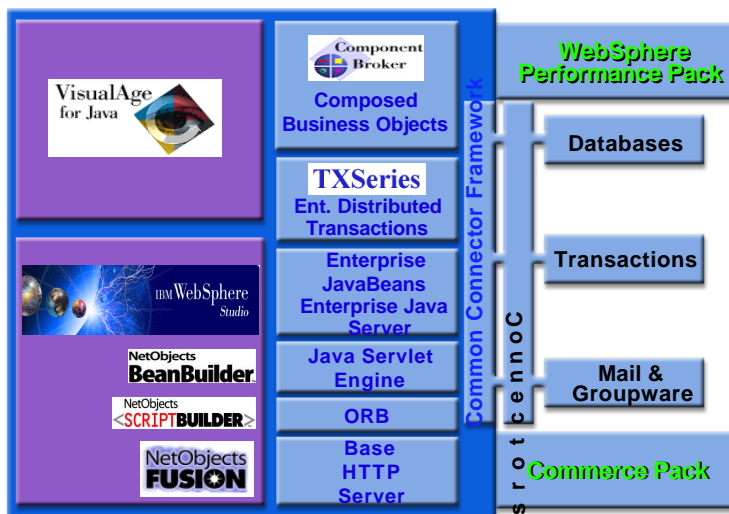


WebSphere

Application Server



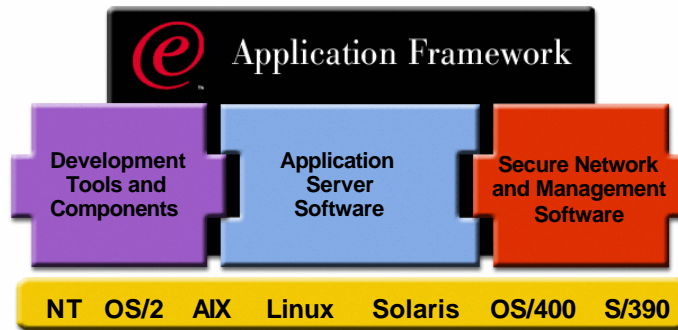
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Application Framework for e-business

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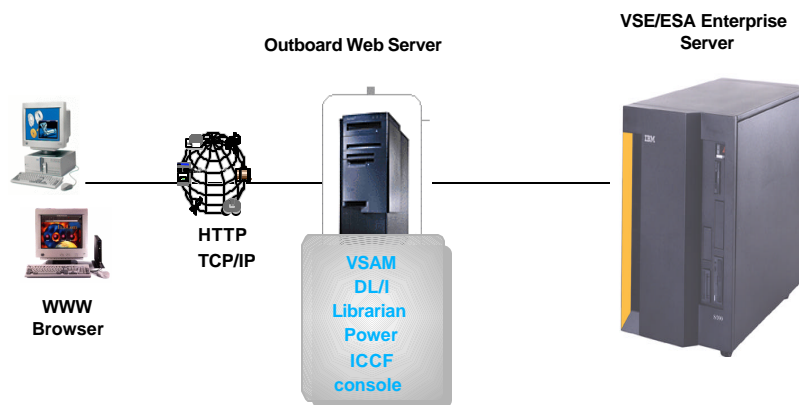


- A framework for building e-business applications:
- Simplifies through the use of Java
- Fully supported by IBM products
- Rapid application development
- Leverage existing applications into the world of e-business
- Flexibility of multi-platform standards (Java, Internet, OMG)

New e-business connectors

VS@

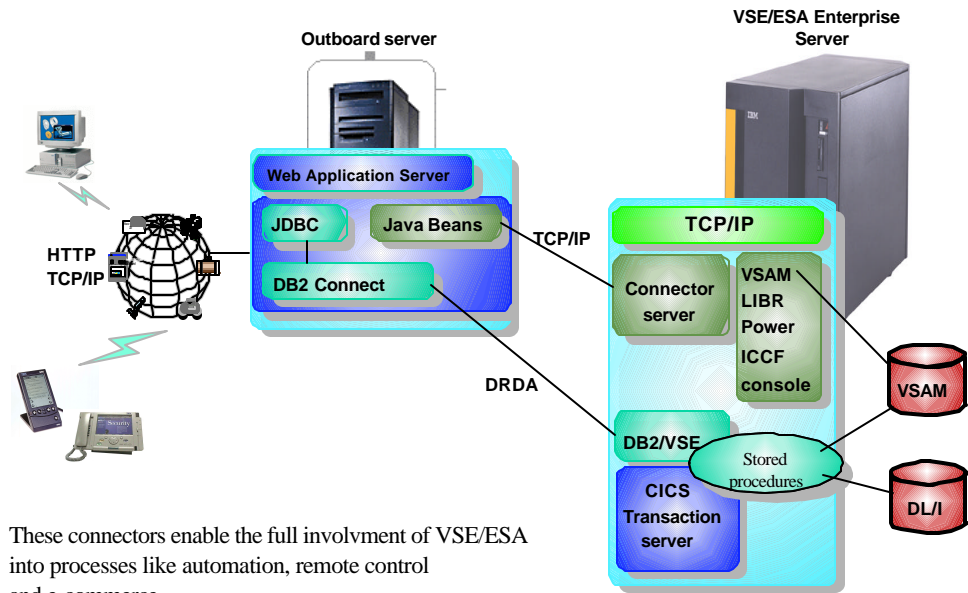
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New VSE/ESA connectors

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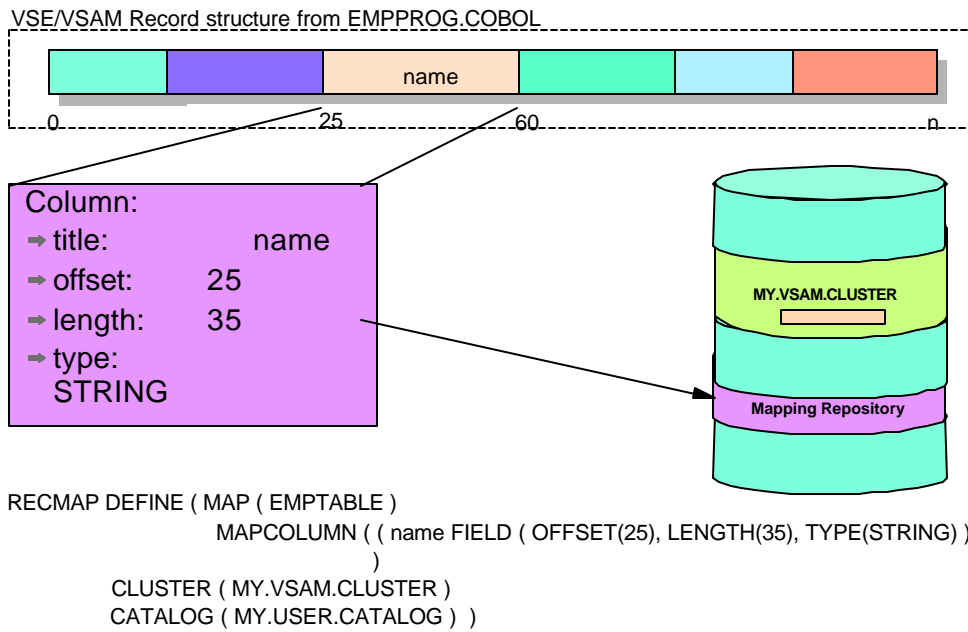
These connectors enable the full involvement of VSE/ESA into processes like automation, remote control and e-commerce.

IBM

Record Mapping

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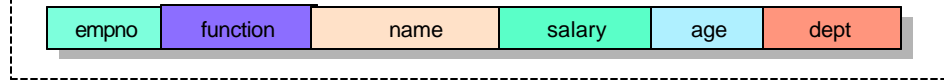
IBM

VSAM data in a relational View



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VSE/VSAM Record structure from
EMPPROG.COBOL



↓ mapping

MY.USER.CATALOG / MY.VSAM.CLUSTER /
EMPTABLE

empno	function	name	salary	age	dept
4711	Manager	Mike Jonathan	8000 \$	42	1234
4712	Programmer	Jane Smith	6500 \$	35	1234
4713	Designer	Steve Miller	7000 \$	34	5678
4714	Secretary	Charly Brown	3500 \$	28	7256

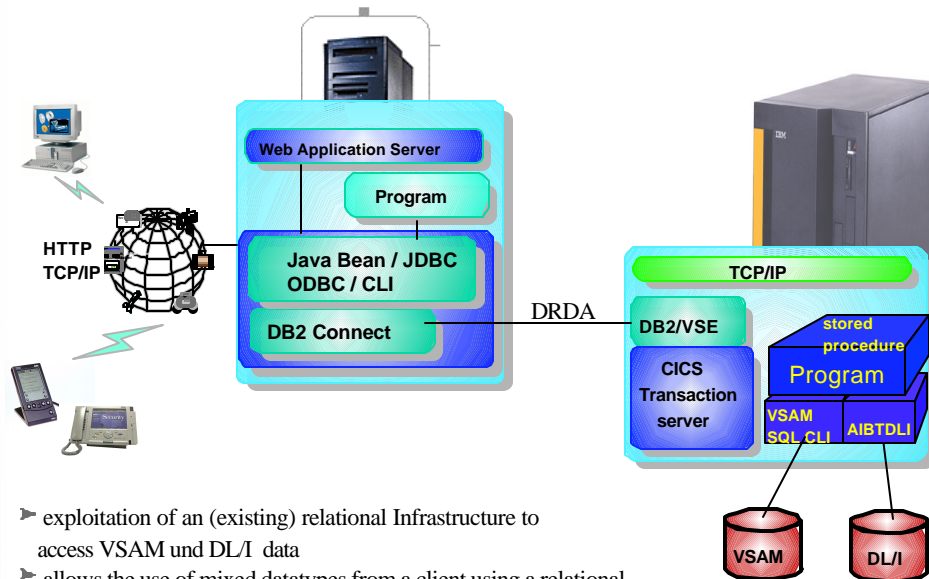


SELECT name age FROM table WHERE empno = 12

DB2-based Connectors



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- exploitation of an (existing) relational Infrastructure to access VSAM und DLI data
- allows the use of mixed datatypes from a client using a relational interface





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VSAMSQL CLI Functions

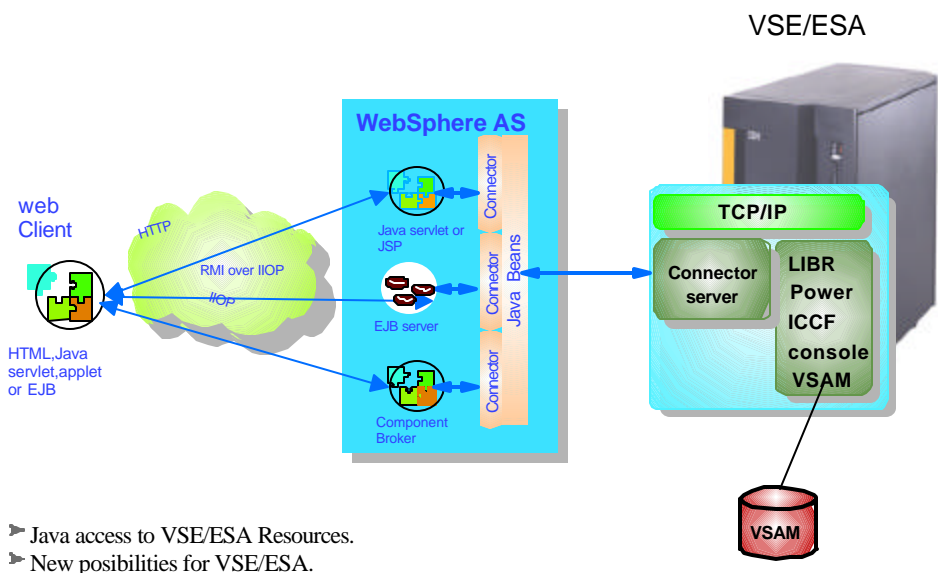
VSAMSQLAllocConnect	Allocate Connection Handle
VSAMSQLAllocEnv	Allocate Environment Handle
VSAMSQLAllocHandle	Allocates Environment, Connection, Statement, or Descriptor Handles
VSAMSQLAllocStmnt	Allocate a Statement Handle
VSAMSQLBindCol	Bind a Column to an Application Variable
VSAMSQLBindParameter	Bind A Parameter Marker to a Buffer
VSAMSQLCloseTable	Close a specified table (Cluster)
VSAMSQLExecDirect	Execute a Statement Directly
VSAMSQLExecute	Execute a Statement
VSAMSQLFetch	Fetch Next Row
...	...



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Java based Connectors



- Java access to VSE/ESA Resources.
- New possibilities for VSE/ESA.

VSE/ESA Java beans Class Library



Generated Documentation (Untitled) - Netscape

File Edit View Go Communicator Help

Back Forward Reload Home Search Netscape Print Security Stop

Bookmarks Location file:///C:/vsecon/conn/doc/index.html

Package com.ibm.vse.connector

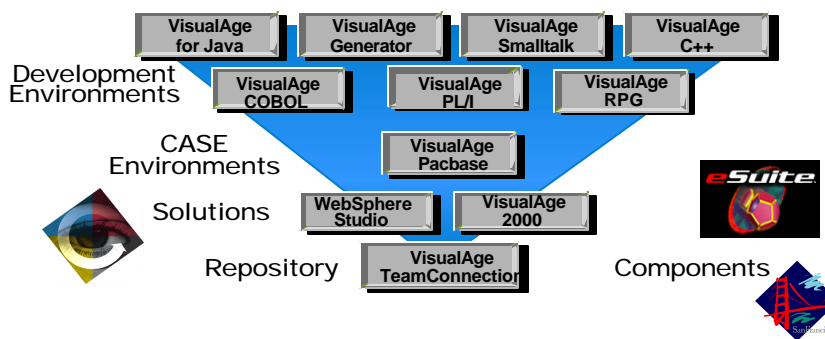
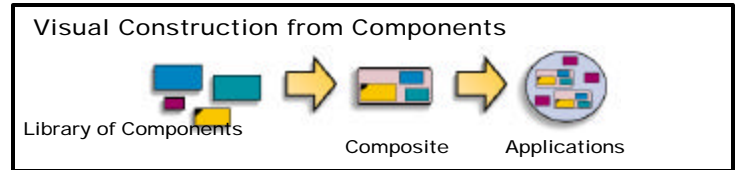
Interface Summary

VSEConnectorTrace	This interface must be implemented by any Trace-Class.
VSEResourceListener	This interface must be implemented by any VSEResourceListener.

Class Summary

VSEConnectionSpec	This class is ConnectionSpec used for the Common Connector Framework (CCF).
VSEConsole	This class represents the Librarian of a VSE System
VSEConsoleExplanation	This inner class represents Explanation text
VSEConsoleMessage	This inner class represents Extent Informations of a VSELibrary
VSEIccf	This class represents the Iccf Library of a VSE System
VSEIccfLibrary	This class represents a Iccf Library of a VSE System
VSEIccfMember	This class represents a Iccf member of a VSE System
VSELibrarian	This class represents the Librarian of a VSE System
VSELibrary	This class represents the Library of a VSE System
VSELibraryExtent	This inner class represents Extent Informations of a VSELibrary

The VisualAge Family



Visual Age Generator Overview



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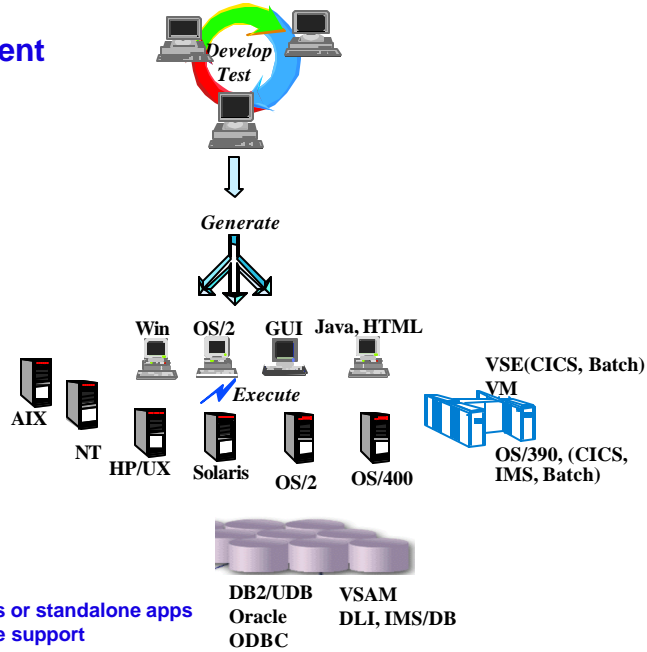
RAD Development

Generation

- Cobol , C++ , Java

Execution

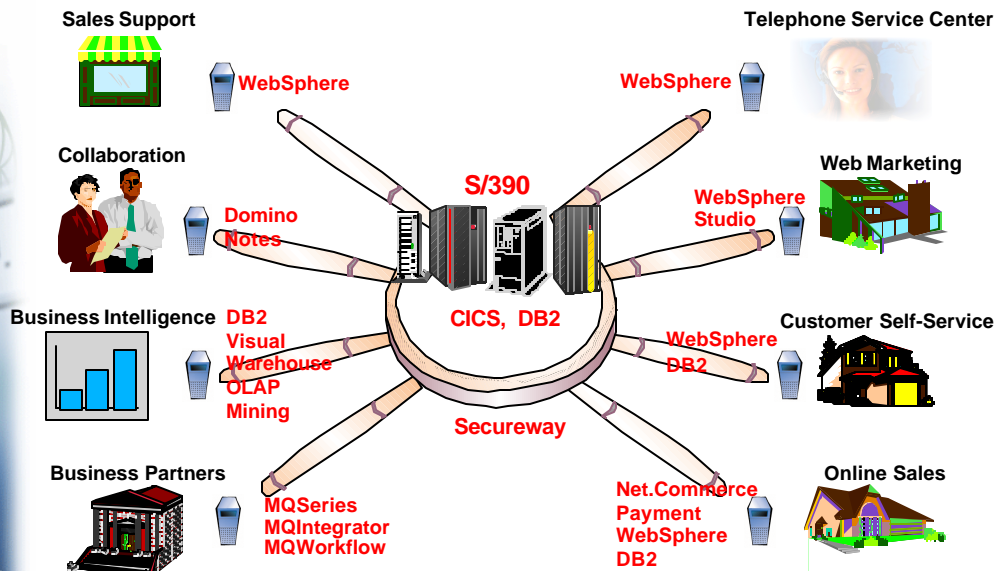
- Multiple platforms
- Stand-alone or C/S
- Java applets/servlets or standalone apps
- Multiple database/file support



The IBM Application Framework is Fully Supported by IBM Products



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VSE/ESA 2.5



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The next pages contain some screen shots shown in the demo at **WAVV** on 10/2000 **Colorado Springs**.

The screen shots show part of the documentation and the samples within Connector Client, which is shipped with VSE/ESA 2.5.

VSE Connector Client



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VSE/ESA e-business Connectors

Overview

VSE/ESA provides a framework of connectors for accessing VSE data from various Java client programs over TCP/IP. In the following we talk about

- **Connectors**, that are programs which allow client applications to connect to a VSE host. Information is provided for MQSeries, CICS Transaction Gateway, DB2 Stored Procedures, and VSE Java Beans.
- **Environments**, that reflect the way, how computers are connected. We will talk about 2-tier (Client/Server) environments and 3-tier environments, where a middle-tier platform serves as a gateway between clients and the VSE host.
- **Programming Concepts**, that reflect the programming model of your application. There are examples of Java applications, Java applets, Java Servlets, Java Server Pages (JSPs), Enterprise Java Beans (EJBs), and DB2 Stored Procedures. In addition to these possibilities of writing Java programs, this framework also includes information of how to exploit the TCP/IP socket interface using REXX.

If your browser supports frames, you will find corresponding links in the left frame. Otherwise, please refer to the links at the bottom of this page.

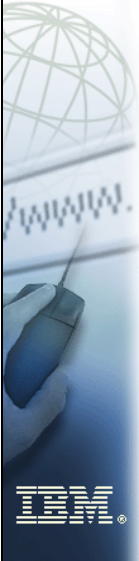
Included in VSE/ESA 2.5 and contains:

- VSE Java Beans (java class library)
- Online Dokumentation (Reference and javadoc)
- Samples

Sample Applet: VSAM Space Usage



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Display VSAM Space Usage

IP address: 9.164.155.95

User ID: jsch

Password: *****

Catalogs

- VSAM.MASTER.CATALOG
- VSESP.USER.CATALOG

Free space Accumulate values

VSAM Space Usage for VSESP.USER.CATALOG

Dataspace	Volume	Devtype	Datasets	Total Tracks	Used	Free
SYSWK1	3380	5	2715	2505	210	
DOSRES	3380	11	2725	2677	48	
DOSRES	3380	1	120	120	0	
SYSWK1	3380	1	2820	2820	0	

Got max RC = 0 from LISTCAT.

Access DL/I data via DB2-based Connector



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JDBC Example Applet that access DL/I using the DB2-based connector - Netscape

Database Name: sqldshw

User ID: db2a

Password: *****

Server Name: ebusvse

Port Number: 6789

Root segments from inventory DG:

000100	INTEGRATED CIRCUIT	0000
000400	Res The radio set	0000
000500	PHONE	0000
000200	Translator	100
000222	Diode Transist	9999

Update a segment

Item Number: (1= 000300) 000200

Part Description: (max. 25 chars)

Quantity on Hand: (max. 6 digits) 1000

Quantity on Order: (max. 6 digits)

Unit Cost in \$: 8

Applet DB2DUCConnectorIDBApplet running

Access VSAM data via DB2-based connector

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The screenshot shows a Netscape browser window displaying a JDBC applet. The applet title is "JDBC Example Applet that access VSE/VSAM using the DB2-based connector". It includes a form for database connection details and a table of records from a view named OFFER.

Database Name: sqidsbw
User ID: db2a
Password: *****
ServerName: ebusvse
PortNumber: 6789

Records from view OFFER:

1	Volkswagen	New Beetle
2	Buick	GT 2
3	Ford	Taurus
4	Copeler	E220
5	Mercedes	E220
6	Porsche	Roadster
7	Ford	Logan

An "Update a record" dialog box is open, showing fields for Affilens (6), Manufacturer (max 19 chars), Car Type (max 19 chars) (B11), Car Model (max 19 chars) (convertable), HorsePower (HP) (150), Displacement (2000), Cylinders (16), Colour (max 19 chars) (black), Features (max 19 chars), and Price.

VSE/ESA Navigator

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The screenshot shows the VSE/ESA Navigator application. The left pane displays a tree view of system components, including:

- VSEWMI
- Librarian
- USYSRS
- PRD1
- PRD2
- PRIMARY
- POWER
 - Reader
 - List
 - Puncher
 - Transmit
- VSAM
 - DB2.USER.CATALOG
 - VSAM.MASTER.CATALOG
 - VSAM.COMPRESS.CONTROL
 - VSAM.DEMO.CLUSTER.KSDS
 - VSAM.MASTER.CATALOG
 - VSE.MESSAGES.ONLINE
 - VSE.PROD1.LIBRARY
 - VSE.PROD2.LIBRARY
 - VSESP.USER.CATALOG
- ICCF
- Submitted Jobs

The right pane shows a list of files:

Name
VSEWMI
F:\vsatvsecon\Download

At the bottom, the status bar reads: "VSE/ESA Navigator Function, Release 1.1.0 (Beta) Build Date : 14 Feb 2000".

- A complex sample of using the java-based connectors (can be downloaded from VSE/ESA home page)

Operator Console via Navigator



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VSE/ESA Navigator - Console on VSEWMI

Console window | Console properties

```
map
AR 0015 SPACE AREA      V-SIZE  GETVIS  V-ADDR  UNUSED  NAME
AR 0015  5  SUP          600K    1604K   AA000   128K    11A150PT
AR 0015  8  SVA-24       1684K   1604K   AA000   128K    11A150PT
AR 0015  0  P0 V          1200K   4864K   400000  24576K
AR 0015  1  P1 V           700K    612K    400000  0K      PGMSTART
AR 0015  2  P2 V          2048K   28672K  400000  0K      CICSICCP
AR 0015  3  P3 V           600K    5544K   400000  0K      VIAMSTRT
AR 0015  4  P4 V           768K    256K    400000  0K
AR 0015  5  P5 V           768K    256K    400000  0K
AR 0015  6  P6 V           256K    256K    400000  0K
AR 0015  7  P7 V          1024K   11264K  400000  0K      TCPIDPO
AR 0015  8  P8 V          3584K   27136K  400000  0K      CICS2
AR 0015  0  P9 V          2560K   17020K  400000  0K      AP1861GB
AR 0015  A  PA V           256K    256K    400000  0K
AR 0015  B  PB V           256K    256K    400000  0K
AR 0015  E  SVA-31       7096K   7240K   220000  0K      SECSEBY
AR 0015  F  PF V           256K    256K    400000  0K
```

Command: map

Auto text function: Enter text that will be set to the command field after sending a command. Use % to indicate the initial position of the cursor. For e.g.: 0 1d subit=%

Close Help

System Activity display



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Display System Activity - Host VSEFRAN 09/10/1999 12:57:31 (Interval = 12 sec.)

CPU Utilization

No. of CPUs	1	% CPU time	28
Active CPUs	1	% Wait time	72
IO rate/sec.	122		0% 100%

System Paging Activity

Total page outs	8365	Page out rate/sec.	16
Total page ins	6922	Page in rate/sec.	8

CICS Task/Storage Data

Max. no. tasks (MXT)	20	Max task accumulation	15
Max. transactions	7	No. Active Tasks/Trans	1149
No. of times at MXT	0	CICS tasks per sec.	6
Times at trans. limit	0	CICS tasks active	0
Current task count	13	CICS tasks suspended	4

Static partitions... Dynamic classes... Devices... Turbo dispatcher...

Measuring process running ... (Press Stop button to stop process.)

Close Stop Save Open... Help

Display VTOC



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Display VTOC Utility

General Information | File Identifiers | Extent/VSAM | Free Space

Filename	Location
* DOS.LABEL.FILE.FF0820009672.AREA1	C 210,T11,R 4
* DOS.PAGING.FILE.FF0820009672	C 210,T11,R 5
* VSE.POWER.QUEUE.FILE	C 210,T11,R 6
* VSE.SYSRES.LIBRARY	C 210,T11,R 3
* VSE.SYSTEM.HISTORY.FILE	C 210,T11,R 7
* Z9999992.VSAMDSPC.TB184FF9.T35CE170	C 210,T11,R 9
* Z9999992.VSAMDSPC.TB184FF9.T628B215	C 210,T11,R10
* Z9999996.VSAMDSPC.TB184FF9.T25DB20B	C 210,T11,R 8

Details...

Close Help

DOS.PAGING.FILE.FF0820009672 - Details

File details

Location C 210,T11,R 5
 Creation date 09/07/1999
 Expiration Date Never
 System ID IBMDOSVS
 Number of extents 2
 ISAM key length -
 ISAM block size -
 ISAM RCD -

Extent Information

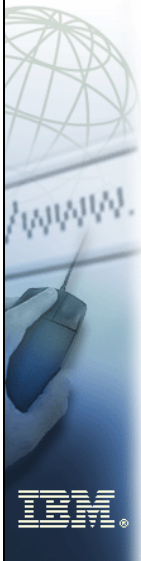
Sequence	Type	Low	High
0	PRIME	414 0	457 14
1	PRIME	458 0	841 14

OK Help

Display product service



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Retrace Products and PTFs

Customer information | Products list | PTF list

Product Number	Date	Product Name and Release
A04T1P	07/07/99	VSE/ESA 2.4
DS21G0	07/07/99	VSE/ESA 2.4
054A0P	12/18/98	VSE/ESA 2.4
054A0R	12/18/98	VSE/ESA 2.4
065FE6	07/07/99	VSE/ESA 2.4
0664G7	07/07/99	VSE/ESA 2.4
06645C	07/07/99	VSE/ESA 2.4
06645D	07/07/99	VSE/ESA 2.4
06645G	07/07/99	VSE/ESA 2.4
06645I	07/07/99	VSE/ESA 2.4
06645J	08/30/99	VSE/ESA 2.4
0941DS	07/07/99	VSE/ESA 2.4

Details...

26 of 26 products

Data was retrieved from the host.

Close Refresh Help

Retrace Products and PTFs

Customer information | Products list | PTF list

PTF Number	Date	Component ID	Product Number
UQ29092	07/07/99	5686-09408-1F2	0941F2
UQ29093	07/07/99	5686-06601-45C	06645C
UQ29380	07/07/99	5686-06601-45C	06645C
UQ29634	07/07/99	5686-06601-45C	06645C
UQ29864	07/07/99	5686-06601-45C	06645C
UQ30758	07/08/99	5686-A0400-1IP	A041IP
UQ30925	08/09/99	5686-06601-45C	06645C
UQ31433	07/08/99	5686-09408-1F2	0941F2
UQ32704	07/26/99	5686-A0400-1IP	A041IP
UQ32767	07/26/99	5686-A0400-1IP	A041IP
UQ32767	07/26/99	5686-A0400-1IP	A041IP

Details...

630 of 630 PTFs

Filter by PTF *

Lookup APAR

Lookup PTF Uq31

Lookup member

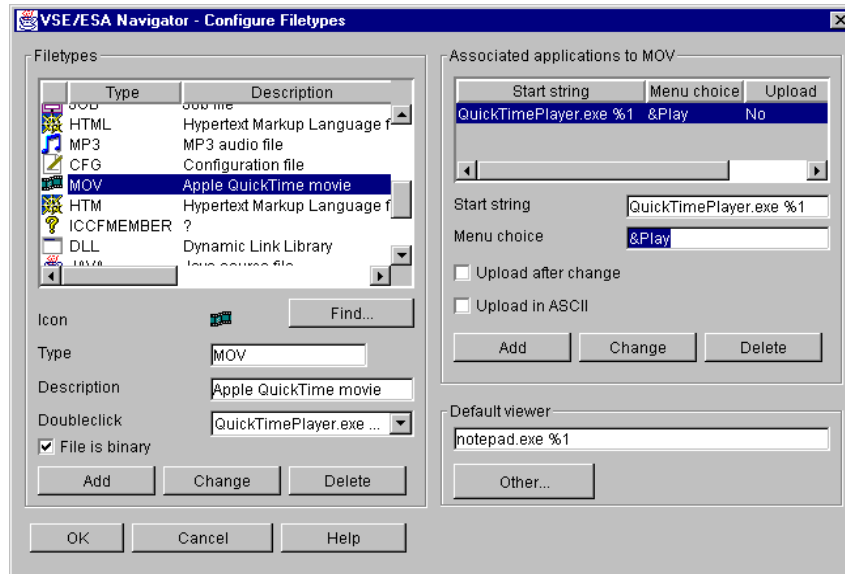
Filter by comp. ID *

Close Refresh Help

Configure Files Dialog



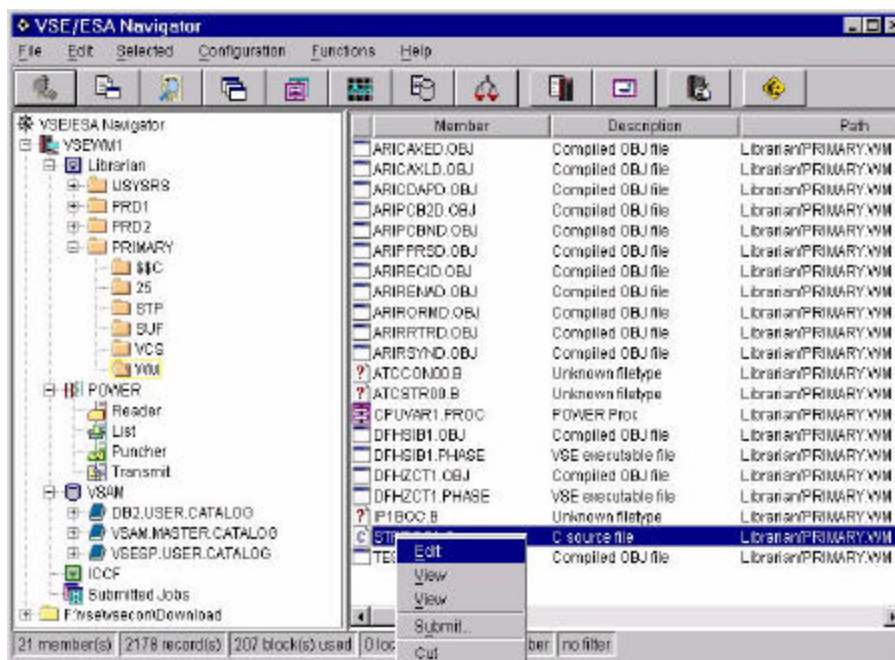
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Edit host member on PC



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Display mapped VSAM data (1)

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The screenshot shows the VSE/ESA Navigator interface. On the left, a tree view displays a hierarchy of libraries and datasets. The 'VSAM' section is expanded, showing various datasets. A context menu is open over the 'FILE' dataset, with 'Display VSAM data' selected. On the right, a 'Display filter...' dialog box is displayed, allowing users to define filters for the data display. The dialog includes fields for 'Available columns' (KEY2, NAME, STREET, ZIP, CITY, COUNTRY), 'Value', 'Type', and 'Operation' (AND, OR, NOT, etc.).

Display mapped VSAM data (2)

VS@

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The screenshot shows the VSE/ESA Navigator interface displaying a table of mapped VSAM data. The table has columns for KEY2, NAME, STREET, ZIP, and CITY. The data is sorted by KEY2. The 'FILEAMA1' dataset is selected in the tree view on the left.

KEY2	NAME	STREET	ZIP	CITY
006102	HEINI MUSTERMANN	HAUPTSTR. 22	86531	ROENDWJO
006103	Donald Duck	Hauptstr	12345	Entenhausen
006104	PAULA MUSTERFRAU	NEBENSTR. 23	86532	NROENDWJO
006106	FRIENDLY FOOD ZENT	SACHERSTR. 1	12345	WIEN
006111	A. SCHWARZENEGGER	SCHLUCHTENAE01	23456	LIENZ
006762	TERRENCE HILL	BERGSTR. 46	87690	INNSBRUCK
006983	H. L. L. CALL	WASHINGTON DC	34512	WASHINGTON
001222	J.R. REYNOLDS	STADTGRABENSTR. 10	71032	BOEHLINGEN
001781	HAROLD JAMES	NETTBACHSTR. 25	71067	SINDELINGEN
003214	HUBERT C HERBERT	KONIGROAD 174	45670	SUNNY VALLEY, FL
003980	PHILIPPE SMITH, JR	RUE DE LA MER 1	98673	NICE
004904	STAN SMITH	SIDENWALK (LEFT)	11711	DUBLIN
004445	FRAN LA DOUCE	RUE ST. DENIS	11110	PARIS
004878	JIM NOBODY	UNKNOWN	21213	NOWHERE, TX
005905	J. S. LAYERENCE	LAKE BLVD. 107	00010	SAN FRANCISCO
006444	POPE PAUL	LATERAN	10001	ROME
005581	RENE CLOCHARD	LES HALLES	00001	PARIS
006816	DR W. NEHRU	CENTER RD	98687	NEW DELHI
006670	ANDY BUSHMAN	BUSH 9	98989	CALAHARY
006968	D. CONRAD	WARROAD	46783	WARWICK
007907	BRIITTE ECRIN	KOENIGSTR. 43	70311	STUTTGART
007248	B. C. WILLIAMSON	CEDER 87	94563	REDWOOD CITY, CA
007779	MRS. W. WELCH	SILICON VALLEY	83674	SAN JOSE, CA
100000	G. HEADS	FALLS 8	72139	TORONTO, ONTARIO
111111	C. NEARS	RUE EST 6	84194	OTTAWA, ONTARIO
200000	A. BONFIELD	SOUTH ROAD	56789	GLASGOW
212222	J. WEBERS	FRESSGASSE 5	87653	FRANKFURT
300000	K. TRENCHARD	5TH AVENUE	37692	NEW YORK
313333	D. MYRINO	HARBOUR ROAD	24073	CARDIFF WALES
400000	W. TANNER	VIA VENEZIA	12345	MIAN
444444	A. FISHER	LAKE BLVD.	98765	CALAHARY
500000	J. DENFORD	FRADO 5	85298	MADRID
555555	C. JARDINE	FISHHILL ROAD	78653	KINGSTON, N.Y.
600000	F. HUGHES	CHURCH STR 8	86678	DUBLIN, IRELAND
700000	A. MACALLA	SOUTH FORK FARM	59991	DALLAS, TEXAS
717777	D. PRIKE	MOUNTAIN STREET 6	46039	WILLIAMSBURG, VA



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Additional Information

- ✦ VSE/ESA Home Page
<http://www.s390.ibm.com/vse>
- ✦ e-business for VSE/ESA customers
<http://www.s390.ibm.com/vse/ebus/home.html>

Redbooks:

- ✦ Servlet and JSP Programming
SG24-5755
- ✦ e-business Solutions for VSE/ESA
SG24-5662
- ✦ Linux Web Hosting with Websphere, DB2, and Domino
SG24-6007

We appreciate your comments at :

VSEESA@de.ibm.com

