VSE Connectors Workshop

E02 - Setup of
VSAM Redirector
on Windows

Connectors
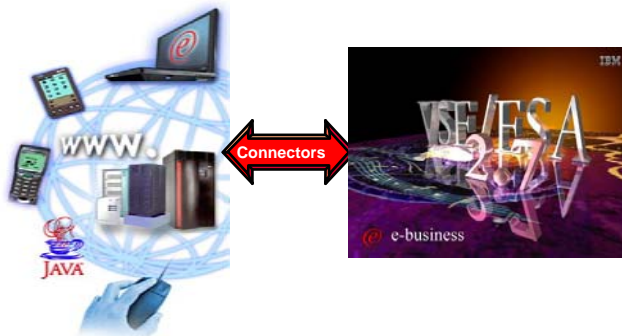
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Trademarks

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VSE/ESA 2.6/2.7
VSAM Redirector

The VSAM Redirector is a new VSE/ESA connector, introduced with VSE/ESA 2.6. The VSAM Redirector allows you to redirect all requests to a certain VSAM file into any other file system or database on any other (Java-enabled) platform. VSE/ESA is the client, while the server part runs on any other Java-enabled platform like Windows or Linux on zSeries.
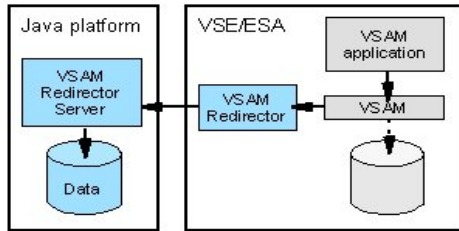
For example you could use the VSAM Redirector to synchronize a VSAM file with a DB2 database running on a Windows or Linux on S/390 or zSeries. By using the VSAM Redirector your existing VSAM programs doesn't require any revisions.

The VSAM Redirector makes use of a so called VSAM Data Access Exit (VDA). This exit intercepts all VSAM requests. The exit gets control at OPEN, CLOSE, and for all data requests (GET, PUT, INSERT,...).

A configuration table is used to define which VSAM files are being "redirected". The VSAM Redirector Client on VSE forwards all requests against a redirected file to the VSAM Redirector Server which then handles the request.

The VSAM Redirector Server is a Java application. It can run on any Java enabled platform.

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Setup in a VSAM Redirector environment
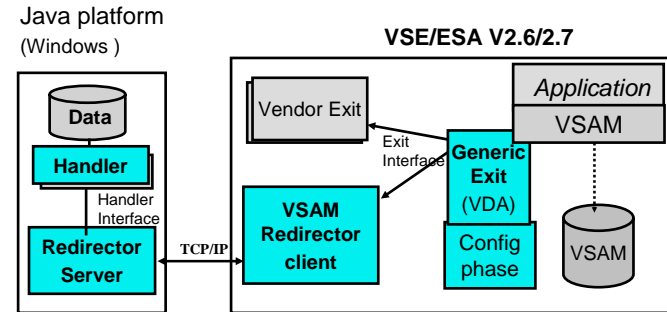
Java platform
(Windows)

VSE/ESA V2.6/2.7

The setup for a VSAM Redirector environment:

On Windows
- **Setup Redirector server**
- **Adjust the handler(s) for data manipulation**

On VSE:
 - **choose the VSAM files to be redirected**
 - **define the options in the Configuration phase**
         - **define the type of redirection**
                 - **local (Vendor Exit)**
                 - **remote (Redirector client)**
         - **for remote redirection choose**
                 - **Synchronization**
                 - **pure remote work**

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Workshop Objective

Redirect VSAM requests to a HTML page on Windows - Overview

Initial state:

→You have a VSAM file that contains data

FLIGHT.ORDERING.ORDERS

→You have applications that work with that VSAM file

(i.e. batch applications, CICS Application, tools like Ditto)

Goal:

→Redirect all VSAM INSERT requests to a HTML page on Windows

→This operation can be done with existing applications (without changing/touching them)

NOTE: The VSAM Redirector Server does NOT require the VSE Connector Client on Windows

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Chapter 1. Software prerequisites for Windows
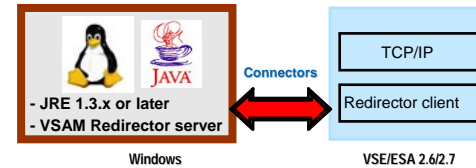
STEP1.1: Verification if Java environment installed
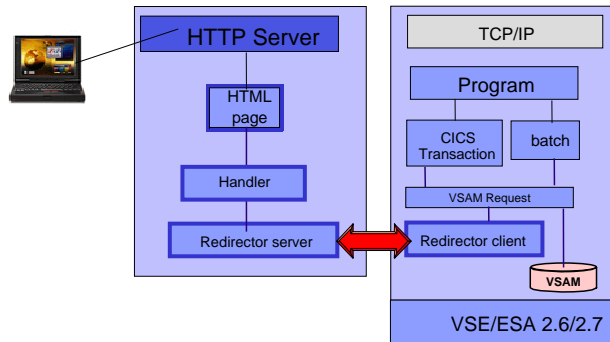
To install the VSE Connector Client, a Java Virtual Machine (JVM) must be installed in Windows.

The JVM can be installed in different flavors.

•To just run Java programs, the JRE 1.3.x or later is needed (Java Runtime Environment),

•to develop/compile Java programs, JDK 1.3.x or higher is needed (Java Developer Kit, which includes the JRE).

To verify if a Java Virtual Machine is installed, open a Command propmt and enter command:

```
java -version
```

You should see something like:

```
Java version "1.3.1"
Java(TM) 2 Runtime Environment, Standard Edition
```

If the messages above are shown go to *Chapter 2.*

STEP1.2 Install a Java Environment

If following message (or similar) is shown:

```
java' is not recognized as an internal or external command,
operable program or batch file.
```

then your system has no Java virtual machine (Runtime Environment) installed or it can not be found in the path.

To install a Java Virtual machine download the code from IBM:

http://www.ibm.com/developerworks/java/

or download a SUN Version from http://www.sun.com

Install the downloaded JDK 1.3.x. or later.

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Components in a VSAM Redirector environment
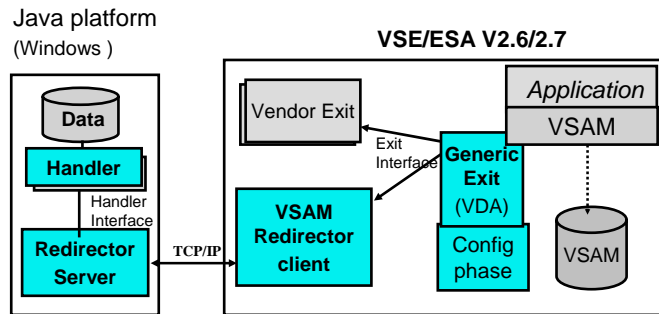
Java platform
(Windows)

VSE/ESA V2.6/2.7

The setup for a VSAM Redirector environment:

On Windows
- **Setup Redirector server**
- **Adjust the handler(s) for data manipulation**

On VSE:
- **choose the VSAM files to be redirected**
- **define the options in the Configuration phase**
    - **Synchronization**
    - **pure remote access**

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Chapter 2. Setup Redirector Sever on Windows
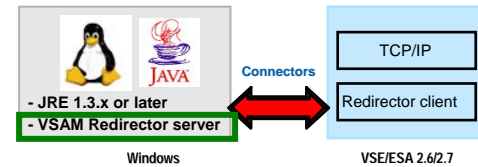
Download of Redirector server code

The download of VSAM Redirector server for this workshop was already done from the VSE homepage.
The Steps are described in **Appendix A**

STEP2.1: Install VSE Redirector Server

In a command prompt enter:
C:
cd C:\vsamredir
install.bat

This will guide you trough the installation process of the VSAM Redirector Server.

The VSAM Redirector Server consists of:
   •the VSAM Redirector Server code
   •a detailed HTML documentation about the functions and possibilities
   •two sample handlers, one for relational database DB2 and one for HTML
       •The HTML handler allows, to collect data inserted into a VSAM cluster, on a HTML page on Windows
       •The DB2 handler allows the synchronization of a VSAM cluster with a remote DB2 database or to redirect all VSAM requests to DB2
   •documentation how to develop own handlers.

NOTE: The VSE Redirector Server does NOT require the
            VSE Connector Client

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STEP2.2: Verify Redirector Server Documentation

To verify that the VSAM Redirector Server is installed properly,
 open the HTML Documentation:

START -> Programs -> VSAM Redirector -> Online Help

The Main HTML page will be opened.
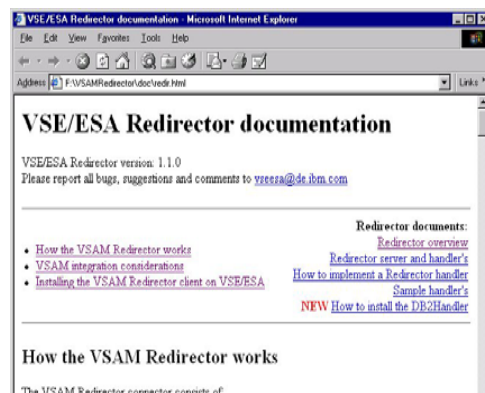
STEP2.3: Operations with VSAM Redirector server

To start the VSAM Redirector Server, in a command prompt enter:
C:
cd C:\vsamredir
run.bat

• Commands for Redirector server:
status - shows the status of the server
stop *x | all* - stop client with number 'x' (show in status) or stop all clients
quit - stop all clients and exit server

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STEP2.4: Handler specifications

To be able to work via the VSAM access method on VSE (EBCDIC) with data from another platform (ASCII), the most important component is the **Handler**.
Multiple handler can be invoked via the **Redirector server**.
The Redirector server and handler are Java components
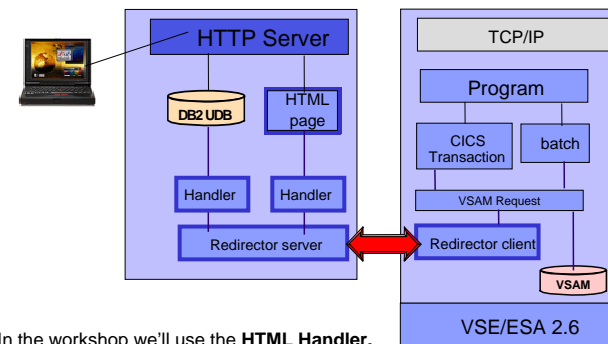
In the workshop we'll use the **HTML Handler.**
The description how to use Redirector with a DB2 database is described in Appendix D.

The handler used is stored in directory:
C:\vsamredir\com\ibm\vse\htmlhandler
and is coded in **HtmlHandler.java**

The handler needs to know the structure (mapping) of the VSAM record which will be transferred with each request to it.
In the Lab, the VSAM Cluster **FLIGHT.ORDERING.ORDERS** and its map **ORDERS_MAP** will be used.

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In the HTML handler:

C:\vsamredir\com\ibm\vse\htmlhandler\HtmlHandler.java

the mapping for the VSAM record is hard coded.

The Record Layout of the **FLIGHT.ORDERING.ORDERS** cluster is defined as follows:

```
Offset Length Type     Key    Field Name     Description
-----------------------------------------------------------
0      20     STRING   no     FIRST_NAME     First Name
20     20     STRING   no     LAST_NAME      Last Name
40     4      UNSIGNED no     FLIGHT_NUMBER  Flight Number
44     4      UNSIGNED no     SEATS          Seats
48     1      BINARY   no     NON_SMOKE      Smoker 0=no
```

The **Record length** is **49 Bytes**

The handler will be used as it is shipped in the VSAM redirector package available for free download on the VSE home page.

The handler is a program that can be modified and adapted to your private needs. <u>Appendix C</u> shows how to change the HtmlHandler.

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<u>Chapter 3. VSE Setup to redirect VSAM requests</u>
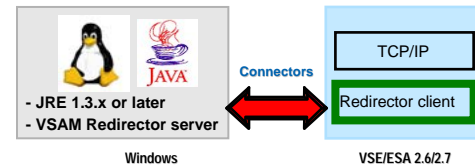
STEP3.1: Configuration for Redirector Client on VSE/ESA

The configuration on VSE is done for the VDA (VSAM Data Access) Exit in a Configuration member.
Based on these settings the Redirector client will be invoked or not.

Logon to your VSE system using the icon on your desktop:
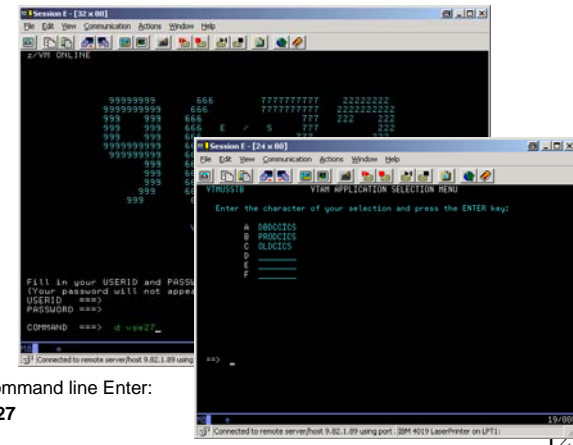
On Command line Enter:
d vse27
A

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On the CICS logon screen enter:
User: **LLxx**   (xx- is your team number 00 – 10)
Password: **linlabxx**
You are now in the **Interactive User Interface (IUI) of VSE.**

Enter: **51**   (to go into your primary development library)

Hit the **<enter>** key to see the member in your primary library.   13

We have to setup the Configuration phase (**IESRDCFG.PHASE**).
In this phase we have to define which VSAM cluster should be redirected to
which remote location, and optionally decide which requests.
For that a skeleton in ICCF Library 59 is shipped, called **SKRDCFG**
It was copied to your primary library.
The definitions for the redirected file were extracted into member
RDCFGxx were xx is your team ID
This was done to be able to build one phase with the settings from all
    attendees of this workshop.

We want to redirect the requests for the:
•   VSAM cluster: **FLIGHT.ORDERING.ORDERS.TEAMxx**
•   in VSAM catalog: **VSESP.USER.CATALOG**

Edit skeleton **RDCFGxx** and change the text in the configuration member.
Enter:
1 <enter>   (in the left margin of RDCFGxx)

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Enter **CASE M** in the command line to switch to mixed case mode before editing. Change the text as shown below. Please keep track of the mixed case format.

```
IESRDENT CATALOG='VSESP.USER.CATALOG',               X
     CLUSTER='FLIGHT.ORDERING.ORDERS.TEAMxx',        X
     EXIT='IESREDIR',                                X
     OWNER=REDIRECTOR,                               X
     IP='x.x.x.x',                                   X
     HANDLER='com.ibm.vse.htmlhandler.HtmlHandler',  X
     OPTIONS=''
```

Replace x.x.x.x with the IP address of your PC. Enter **ipconfig** in a command prompt to find out which IP address has been assigned to your PC.

The most important parameter is **OWNER:**
OWNER=VSAM means the READ requests will be done from the VSAM cluster and the INSERTS will be done to VSAM and to the remote site specified in IP. That means a synchronization takes place.
OWNER=REDIRECTOR means all requests are redirected to the remote site
The **HANDLER** parameter specifies the Java class that should be invoked for this VSAM cluster by the Redirector server on Windows.

Save the changes, enter: **PF3**

In the Primary library were you changed the member **RDCFGxx**
you have a skeleton to compile and check for errors for the settings done.
Edit your skeleton **SKRDCFG.**
Enter: **1 <CR>** if you want to edit it and look at it.
Hit: **PF3** (to save and exit)

Submit **SKRDCFG** and check for RC=0000 (this is only to test for errors)
Enter: **7 <CR>**   (in the left margin)
Enter: **RDC** to the *List queue prefix* field and hit **PF12** (look for your Team
      name in List queue)
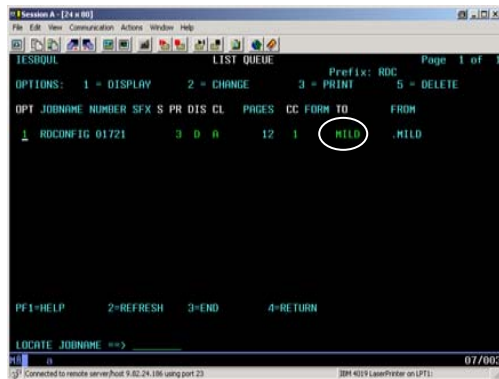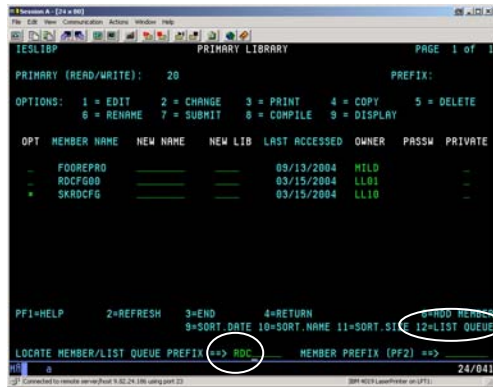
Enter **1** to display the member and **PF12** to go to bottom.
If the **RC=0** tell the instructor and he'll activate your definitions.

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Chapter 4. Use a standard program to redirect VSAM requests

STEP4.1: Copy the VSAM file to a remote file (HTML)
Make sure the Redirector server is started on your Windows PC (*STEP2.6*)

Use **IDCAMS REPRO** to copy the VSAM file to another VSAM file which is
      redirected to a remote location. The copy job will transfer all VSAM
      records to Windows and generate an HTML page via the HTMLHandler.
On the *main IUI Panel* enter:
(To get there hit PF3 until you see the screen title '*VSE/ESA function selection*')
51<Enter>
1 (Edit) for file **FOOREPRO**

Update the file name with your team number:
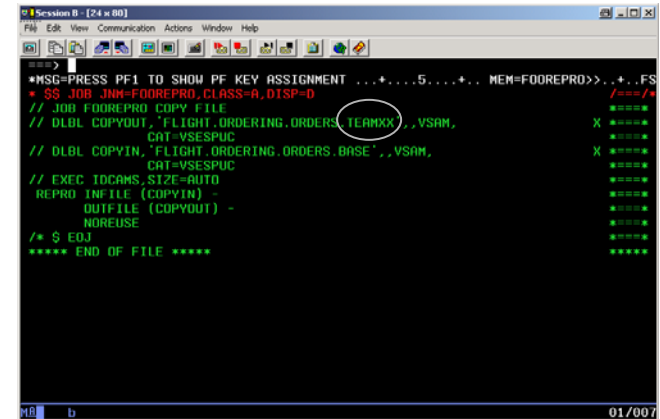
Enter:
PF3 (Exit and save)
7   (Submit the job)

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The Redirector Server Console on Windows should show some messages with the number of records processed and that the **output.html** page was created.

Open the HTML page in Windows to verify that the Copy function did transfer your Data from VSAM to Windows, translated them from EBCDIC to ASCII, and generated a HTML file.

In the Internet Explorer, open the file (File -> Open… -> Browse)
C:\vsamredir\output.html

You should see the records from your VSAM file:
FLIGHT.ORDERING.ORDERS.TEAMxx
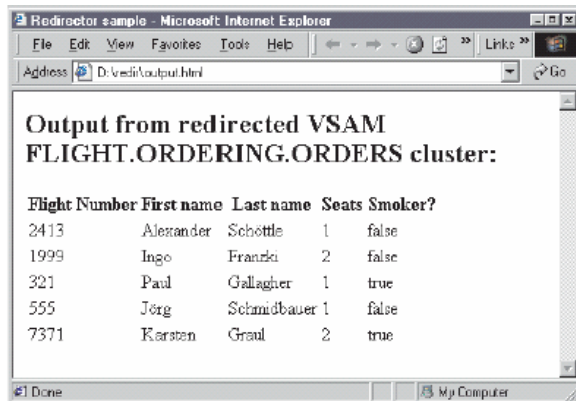
Similar to a batch program, the Redirector can work with a CICS transaction. The description for DITTO is in <u>Appendix B</u>.

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Summary

Major Steps to install VSAM Redirector Server on any Java Platform
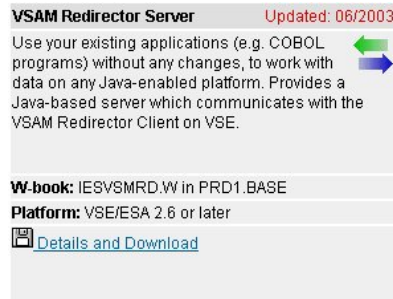
✓install Java Runtime Environment (JRE) or
✓Java Developer Kit (JDK)
  ✓free download from SUN or IBM
    ✓version 1.3.x or later
      http://www.ibm.com/developerworks/java/

✓download VSAM Redirector Server
http://www-1.ibm.com/servers/eserver/zseries/os/vse/support/vseconn/redir.html

✓install VSAM Redirector Server
  ✓in a command prompt run: install.bat

✓Configure the VSAM clusters to be redirected on the VSE side using skeleton SKRDCFG from ICCF lib 59.

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Appendix A: Download from the Internet

Open the VSE Homepage with a web browser:
http://www-1.ibm.com/servers/eserver/zseries/os/vse/
Click on "Service and Support" on the left side
and then on "e-business connectors and utilities".

The page opened contains the VSE Connector Client and other tools and
Add-Ons that can be downloaded for free, like VSAM Redirector
server.

Navigate to the **VSAM Redirector Server** which
represents the remote component of the VSAM Redirector function.

VSAM Redirector Server   Updated: 06/2003

Use your existing applications (e.g. COBOL
programs) without any changes, to work with
data on any Java-enabled platform. Provides a
Java-based server which communicates with the
VSAM Redirector Client on VSE.

W-book: IESVSMRD.W in PRD1.BASE
Platform: VSE/ESA 2.6 or later
📥 Details and Download

Click on:
Details and Download
The page explains the most important functions of the
VSAM Redirector Server and the communication with VSE.
It also mentions that a **Java** environment is needed.

To Download latest Code. Cick on:
 redir270-pq74694.zip (VSE 2.6 and 2.7).
The file name may vary since it contains an APAR number. Please make
sure you have applied the corresponding APAR on your VSE system.

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Appendix B. Use standard program to redirect VSAM requests

Access the VSAM file with Ditto
**Similar to a batch program (Chapter 4), the Redirector can
work with a CICS transaction. Here the description how
to use DITTO to write to a HTML page on Windows.**
Make sure the Redirector server is started on your Windows PC (*STEP2.7*)
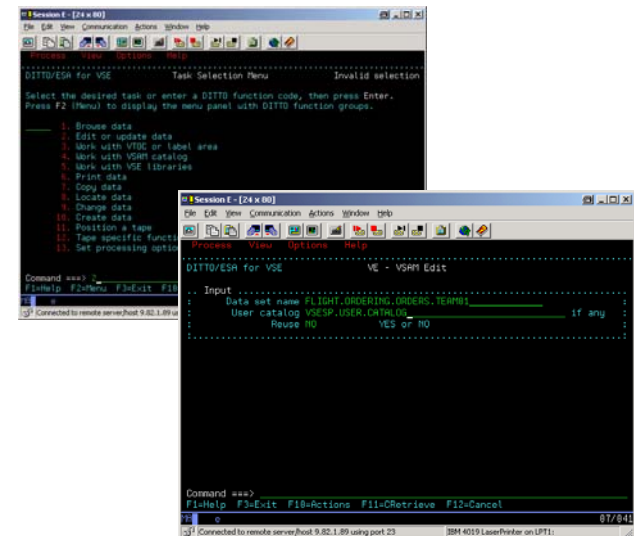
Use **Ditto** to edit a VSAM file. All inserts, and only the inserts, that will be done
in VSAM, will be also redirected into a HTML page in Windows.
On the main IUI Panel enter:
(To get there hit PF3 until you see the screen title '*VSE/ESA function selection*')
PF6
ditto

Enter:
2   (Edit or update data)
1   (Edit VSAM data)
Enter the VSAM cluster name: **FLIGHT.ORDERING.ORDERS.TEAMxx**
Enter the catalog name: **VSESP.USER.CATALOG**

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Monitor the Redirector server console on Windows and press **<ENTER>**
On the Ditto window.
You have to see the connection messages.

On VSE :
You should see the preloaded records from VSAM file (OWNER=VSAM).
The effect of your previous **<ENTER>** caused:
 - OPEN of the VSAM file FLIGHT.ORDERING.ORDERS.TEAMxx
 - check with the Configuration phase if requests for this file shouldbe redirected
 - in our case YES, therefore further check of the OWNER(OWNER=VSAM),
   therefore the VSAM file was read and is shown to you.
1. Enter 1 in the line Top of data
2. Make sure Ditto works in **CHAR** mode (upper right corner)
3. **Insert** in the first **40 (0-39)** characters of the record (first name, last name)

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---

4. Change the mode Ditto works in **HEX** (upper right corner)
5. Now from position **39** you can key in the numeric fields
    (two times 4 byte numbers and a binary field that can be 00 or 01 – as the
    map describes them in *STEP1.8)*

Add as much records as you want and then save the changes.
At the command line hit **save** or press **PF3**
The Redirector Console on Windows should show a message that the **output.html**
page was created.

Open the HTML page
with the Internet Explorer
C:\vsamredir\output.html

You should see your inserted records only.
If the **OWNER** in the configuration phase on VSE is changed to **REDIRECTOR** and
you'll see each time you open in Ditto the cluster, it's empty – because it will not
read from VSAM anymore.   24

Appendix C. Change the handler on Windows

STEPC.1: Change Handler to read the entire VSAM record as string.

Exit Ditto on VSE (**PF3**).
Stop the Redirector server on Windows using command **Quit** in the Redirector console window.

To avoid the complexity with Ditto to enter hex values, we'll change the HtmlHandler on **Windows**.
That would allow to use string fields in Ditto for the entire VSAM record.

Use a Windows command prompt and **Notepad** to edit the handler:
C:
cd C:\vsamredir*com\ibm\vse\htmlhandler*
Notepad HtmlHandler.java

Make following changes:
1. Change the HTML header tag to create an HTML page that will refresh itself all 5 seconds.
```
<html><head><title>VSE/ESA Redirector sample</title>
        <meta http-equiv=refresh content=5></head>
```

2. Change the lines in the source as below to read a string of 49 char.
   - Define all fields as String:
   String firstname, lastname, flightnumber, seats, smoker;
   - Make the changes below in the source code (it's in the last 3-rd)
```
        firstname = requestInfo.getString(0, 20);
        lastname  = requestInfo.getString(20, 20);
        flightnumber = requestInfo.getString(40, 4);
        seats = requestInfo.getString(44, 4);
        smoker = reqeustInfo.getString(48, 1);
//      smoktmp = requestInfo.getString(48, 1);
//      if(smoktmp.length > 0)
//              if( smoktmp[0] == 0 )
//                      smoker = false;
//              else
//                      smoker = true;
        htmloutput.newLine();
        htmloutput.flush();
```

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STEPC.2: Save and recompile the changed handler

To be able to compile it we have to update the CLASSPATH temporary.
In *a Windows command prompt* enter:
set CLASSPATH=VsamRedir.jar;.;%CLASSPATH%
C:
cd C:\vsamredir
javac com\ibm\vse\htmlhandler\HtmlHandler.java

STEPC.3: Activate the changed handler

Restart the Redirector server on Windows.
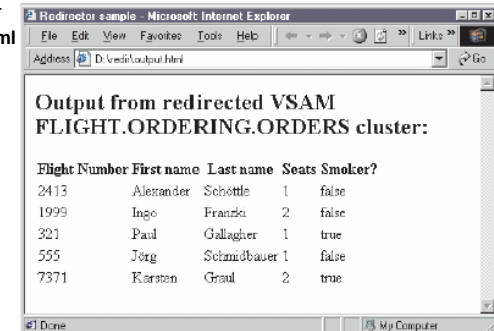In *the command prompt* enter:
run.bat

In VSE repeat *STEP4.1*
Use Ditto again, in **CHAR** mode (right upper corner) add some records with 49 characters each. SAVE the changes you made in VSE.
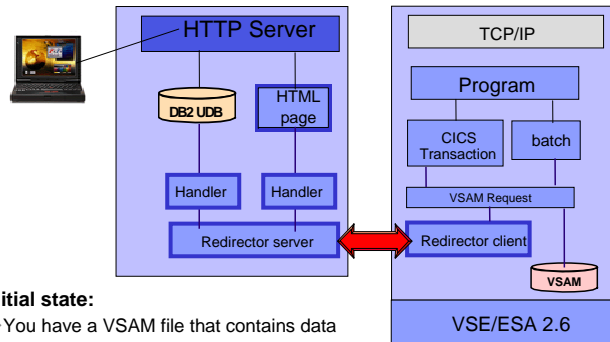
Open the HTML page
with the Internet Explorer
C:\vsamredir\output.html

Now the **output.html** should refresh itself each 5 seconds and show the inserted records.

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Appendix D: Redirect VSAM requests to a DB2 UDB on Windows

Initial state:

→You have a VSAM file that contains data
(i.e. FFSTORES.DEMO.CLUSTER)

→You have applications that work with that VSAM file
(i.e. FFST a CICS Transaction accessing FFSTORES)

Goal:

→Redirect all VSAM requests to DB2 UDB on Windows

→Access the data with existing applications (without changing them)

NOTE: The VSAM Redirector Server does NOT require the VSE Connector Client on Windows

STEP D.1: Define a map

Relational databases have columns with specific characteristics.

To move VSAM data into a database, we must know the internal structure and format of the records. Therefore we need a mapping containing all fields of a VSAM record including their offset in the record, length and type. Easiest a map can be created with the Maptool or VSE Navigator.

– Start the VSE Navigator, connect to the VSAM host, and navigate to the VSAM cluster FFSTORES.DEMO.CLUSTER.

– Right click the Cluster, choose "Create map definition". Enter a name for the map, e.g. "FFMAP"

– Right click on the map, choose "Change map definition":

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Insert the definitions based on the mapping information below.

Mapping of FFSTORES.DEMO.CLUSTER:

Field name	Type	Offset	Length
STOREID	STRING	0	6
STORENAME	STRING	6	25
LOCSTREET	STRING	31	25
LOCCITY	STRING	56	25
LOCZIP	STRING	81	10
LOCCOUNTRY	STRING	91	25
LOCREP	STRING	116	20
STOREN1	UNSIGNED	136	4
STOREN2	UNSIGNED	140	4
LDATE	STRING	144	10
WEBPIC1	STRING	154	20
WEBPIC2	STRING	174	20
ACODE	STRING	194	10

To verify the mapping, use the VSE Navigator to display the VSAM data.

Right click on the map, choose "Display VSAM Data". On the "Display Filter" dialog box, press "OK" to display all records (no filter).

Note: If the structure definition of the VSAM record exists in a Cobol Copy book or PL/I structure, use **MAPTOOL** to import the definitions and generate the map

STEP D.2: **Export the mapping to a XML File**

The VSAM Redirector "*Create DB2 Tables*" tool reads the mapping from a XML file. Therefore we export the definitions from Navigator into XML form.

Right click on the map and choose "Export map to XML". Enter a filename (e.g. ffstores.xml). This file is needed in the next step.

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STEP D.3: **Create the tables in the DB2 database**

To continue with the next steps
–you must have installed a database management system (i.e. DB2).
–you must have a JDBC Driver for it (i.e. db2java.zip in <db2>\java\).
–you must be able to connect to the database (userid/password)
Make sure the JDBC driver is in the utility CLASSPATH. You may have to edit the **create.bat/create.cmd/create.sh** batch files as well as the **run.bat/run.cmd/run.sh** batch files and add the JDBC Driver Archive to the classpath:

```
 set CLASSPATH=.;xerces.jar;<db2>\java\db2java.zip;
                             %CLASSPATH%
```

Also the path must setup to contain the DB2 libraries.
Start the "Create DB2 Tables" utility (**create.bat/create.sh** or START - Programs - VSAM Redirector - Create DB2 Tables).
Enter following parameters when prompted by the tool:
–**XML Filename**: name of the XML File you exported before (i.e. ffstores.xml)
–**DB url**: the JDBC URL for your database, i.e. jdbc:db2:sample
–**DB user:** a user id you use for accessing the database
–**DB password:** db users password
–**DB table name**: name of the data table, i.e. FFSTORES. This table will contain the VSAM data later on.
–**Map table name:** Enter the name of the table that contains the mapping information, (structure of VSAM record) i.e. FFSTORES_MAP. You can use the same map table for several clusters.
–**Map name:** Enter the name of the map, that will be the selection key in the '*Map table*' i.e. FFSTORES. This name is independent from the map defined with the VSE Navigator.
–**DB system**: Enter 1 for DB/2, 2 for Oracle.
–The tool now imports the XML file and connects to the database.
–Next, the map info table is created (FFSTORES_MAP).
 Enter **Yes** to continue.
–The data table is created (FFSTORES).
 Enter **Yes** to continue.
–**Cluster Type**: Enter **1** (KSDS without AIX).
–**Primary key field:** Enter the name of the key field: **STOREID**.
 Press enter to create the table and indexes.

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Before we can work with data in that database, we have to load/migrate once the whole data from VSAM into the database. To do this we define a 'twin' cluster, with the same characteristics as the one with the data, redirect this cluster and copy (repro) the original cluster into the redirected one.

STEP D.4: Define 'twin' cluster FFSTORES.REPRO.CLUSTER

Define it with the same attributes as FFSTORES.DEMO.CLUSTER:
–KSDS
–Max/Avg. record length: 210
–Key Position: 0, Keylength: 6

STEP D.5: Configure the Redirector for FFSTORES.REPRO.CLUSTER:

Copy skeleton SKRDCFG from ICCF Library 59 to your primary library.
Edit/add an entry to the configuration table. Enter CASE M in the command line to switch to mixed case mode before editing.

```
IESRDENT CATALOG='VSESP.USER.CATALOG',                  X
      CLUSTER='FFSTORES.REPRO.CLUSTER',                 X
      EXIT='IESREDIR',                                  X
      OWNER=REDIRECTOR,                                 X
      IP='<ip-addr>',                                   X
      HANDLER='com.ibm.vse.db2handler.DB2Handler',      X
      OPTIONS='dburl=jdbc:db2:<db>;dbuser=<userid>;     X
              maptable=FFSTORES_MAP;map=FFSTORES;       X
              dbpassword=<password>;dbtable=FFSTORES'
```

–let the job load IESRDCFG into the SVA (Step 2)
–let the job copy IESVEX01 to IKQVEX01 in PRD2.CONFIG (Step 3)
–let the job load IKQVEX01 into the SVA (Step 4)
–let the job load IESRDANC into the SVA, if not already done (Step 5)
–let the job execute IESRDLDA to register the new configuration (Step 6)
–submit and check for RC=0000

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STEP D.6: Copy FFSTORES.DEMO.CLUSTER into
FFSTORES.REPRO.CLUSTER:

Use the IDCAMS REPRO function to copy the contents of
FFSTORES.DEMO.CLUSTER into the redirected
FFSTORES.REPRO.CLUSTER:

```
* $$ JOB JNM=REPRO,CLASS=A,DISP=L
// JOB REPRO COPY FILE
// DLBL COPYIN,'FFSTORES.DEMO.CLUSTER',,VSAM,CAT=VSESPUC
// DLBL COPYOUT,'FFSTORES.REPRO.CLUSTER',,VSAM,CAT=VSESPUC
// EXEC IDCAMS,SIZE=AUTO
 REPRO INFILE (COPYIN) -
       OUTFILE (COPYOUT) -
       NOREUSE
/*
/&
* $$ EOJ
```

During the copy process, the VSAM Redirector Client will get control (at open
time of FFSTORES.REPRO.CLUSTER) and will connect to the VSAM
Redirector Server and to the database. In case this fails, a VSAM open error
message will be displayed.

To verify the data in the DB/2 table, issue the following SQL statement in a
DB2 command window, or use the DB/2 Control Center:

SELECT * FROM FFSTORES

UNIQRBAC...	STOREID	STORENA...	LOCSTREET	LOCCITY	LOCZIP	LOCCOUN...	LOCREP	STOREI
0	000001	Frechdax ...	Elbeplatz 2...	Boeblinge...	71032	Germany ...	Hiller	3(
1	000002	Cafe Kees...	Reeperbah...	Hamburg	20000	Germany ...	Domina ...	3(
2	000003	Hotel Sach...	Hauptstr. 1...	Wien	11111	Austria ...	Arnold S ...	3(
3	000004	Cafe Frech...	Postplatz 3...	Boeblinge...	71032	Germany ...	Hiller	3(
4	000005	Cafe Frech...	Seestrass...	Boeblinge...	71032	Germany ...	Hiller	3(
5	000006	Cafe Frech...	Schoenaic...	Boeblinge...	71032	Germany ...	Hiller	3(
6	000007	Cafe Frech...	Blumenstr...	Boeblinge...	71034	Germany ...	Hiller	3(
7	000008	Cafe Frech...	Dahlienstr...	Boeblinge...	71034	Germany ...	Hiller	3(
8	000009	Cafe Frech...	Rosenstra...	Boeblinge...	71034	Germany ...	Hiller	3(
9	000010	Cafe Muell...	Marienplatz...	Munich	0000080000	Germany ...	Hiller	3(
10	000011	McDonalds...	Main Street...	Melbourne ...	20000	Australia ...	Hiller	3(
11	000012	Cafe Howa...	Harbor Ro...	Sydney ...	10000	Australia ...	Hiller	3(
12	000013	McDonlads...	Main Street...	Perth	30000	Australia ...	Hiller	3(

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STEP D.7: Configure the Redirector for FFSTORES.DEMO.CLUSTER:

Edit skeleton SKRDCFG:
Change the previously created entry in the configuration table.
Enter **case m** in the command line to switch to mixed case mode before editing.
 Change FFSTORES.**REPRO**.CLUSTER to FFSTORES.**DEMO**.CLUSTER

```
IESRDENT CATALOG='VSESP.USER.CATALOG',                     X
     CLUSTER='FFSTORES.DEMO.CLUSTER',                      X
     EXIT='IESREDIR',                                      X
     OWNER=REDIRECTOR,                                     X
     IP='<ip-addr>',                                       X
     HANDLER='com.ibm.vse.db2handler.DB2Handler',          X
     OPTIONS='dburl=jdbc:db2:<db>;dbuser=<userid>;         X
          maptable=FFSTORES_MAP;map=FFSTORES;              X
          dbpassword=<password>;dbtable=FFSTORES'
```

−let the job load IESRDCFG into the SVA (Step 2)
−let the job copy IESVEX01 to IKQVEX01 in PRD2.CONFIG (Step 3)
−let the job load IKQVEX01 into the SVA (Step 4)
−do NOT let the job load IESRDANC into the SVA, because it has already be done
 (Step 5)
−let the job execute IESRDLDA to register the new configuration (Step 6)
−submit and check for RC=0000

STEP D.8: Reopen the file in CICS and start applications.

You have to reopen the VSAM file in CICS, since the VSAM Redirector configuration
 becomes active at open time.
You can now work with your VSAM applications which will transparently access DB2
 data and think they are working with VSAM data .

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Additional Information

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

- **e-business Connectors User's Guide**
  - **SC33-6719**
  - **http://www-1.ibm.com/servers/eserver/zseries/os/vse/pdf/ieswue21.pdf**

- **e-business connectors tools**
  - **http://www.ibm.com/servers/eserver/zseries/os/vse/ebus/home.html**

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, DB2, and Domino	**SG24-6007**

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Are you ready for e-business?

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