VSE Connectors a solution for

NEFEC Data Needs.

1

- Where is the Data Currently in our Orginizations?
  - VSE Mainframe.
- What access do the users have to the Data?
  - VSE Mainframe.
- Who can view the Data and What Applications can access the Data?
  - VSE Users. CICS Programs on VSE Mainframe.
- Flexibility for Data thru Internet or Third Party Software?
  - Cobol program must be written to move specific data from VSE to Flat File on FTP Server. Scripts written to move data from Flat Files to Microsoft SQL for access by Internet or Third Party Software.
- Currently VERY time consuming to move data for access by programs running on systems other than VSE.

2

Current trends are for more Data Analysis tools and easy access to information for users.

This can easily be accomplished if the data resides on a SQL server.

Resolution: Have data readily available on SQL but still entered and maintained on Legacy system.

Options:

1. Third Party Software to access VSAM Data.
2. Use existing Cobol programs.
3. Use IBM Connector Software to load VSAM Data.

Option 1 was to costly for a small Educational based computer shop.

Option 2 is time consuming and if you include programmer time still expensive.

Option 3 is free from IBM and can be automated once it is setup on server.

Choice: FREE (Option 3, IBM Connectors.)

After talking with IBM at several WAVV conferences it was determined that the Connector Software would load Databases directly from VSAM.

Problem: The connector software would only update IBM DB2 or Oracle Databases.

Solution: During this past few months we have worked with IBM development to update and test the Connector Software with Microsoft SQL.

The current version of Connectors will Bulk load MS SQL with 2 different Java Based tools – the "old" JDATAMIG and a new RunLoader with file "filtering" capabilities. The VSAM REDIRECTOR will also allow you to replicate the VSAM data to MS SQL as it is updated on the Legacy side, keeping the 2 different systems in sync.

We are currently using Connectors to Bulk Load data from Mapped VSAM files directly to Microsoft SQL Server.

Allow easy access to Mainframe Data with Internet Web Servers.

We are also accessing this data with Report Generating Programs such as Crystal Reports. This allows report customization that can be outputted in several formats, such as PDF, MS Excel and others.

Another School district (Alachua County Schools in Fla) offloads SAS reporting from their tServer mainframe (a very CPU intensive process) to PC Servers accessing MS SQL; significantly reducing CPU usage and providing a much better presentation for the analyzed data. They also track students in a much easier way than via VSAM programs.

We have tested the Redirector Server to keep VSAM and MS SQL in sync, but are currently not using it because of our SQL server performance and because filters (available in batch) have not been made available for the Redirector Server yet (scheduled for availability sometime after WAVV.) 5

We have the IBM Navigator loaded in several places on our network.
1. System Programmer uses navigator for diagnosing system using graphical system tools.
2. Using Navigator to display VSE Power Queues in "Explorer" format, to allow ease of fast access to Queues.
3. Programmers use Navigator to test Maps after generating them.
4. Programmers also use Navigator to Download quick samples of data. (Navigator allows use of filters on data – soon to be available with Redirector.)

These are just some of the uses that we have found for just one of the IBM provided tools that use the Connector Server.

6

To setup the use of connectors to Bulk Load Data to MS SQL
was very straight forward.

There are a few steps but taken 1 at a time it is convent to use.

Quick Summary of Steps to Setup VSAM Data on MS SQL.

1. Define VSAM File Mapping. (All files to be accessed must be mapped.)
2. Create SQL Databases. (IBM supplies Java program to create tables based on the generated Maps – CURRENTLY, the only issue is when generating a table with fields containing decimals. These fields must be manually modified after the table has been created; before the table can be loaded. (Automatic generation will be available sometime after WAVV.)
3. Create Configuration file on Server.
4. Run Java program "RunLoader" to put data into MS SQL.

Done.

To setup the use of connectors for Redirector Data to MS SQL
was also straight forward.

There are a few steps but taken 1 at a time it is convent to use.

Quick Summary of Steps to Setup VSAM Data on MS SQL.

1. Define VSAM File Mapping. (All files to be accessed must be mapped.)
2. Update Mainframe Configuration Table using a Temporary file to be Redirected.
3. Create SQL Databases. (IBM supplies Java program to create tables (remember issue of fields with decimal points).)
4. Load Temporary file using IDCAMS. (This will initially load all records in VSAM file to MS SQL.)
5. Close Production file.
6. Update Mainframe Configuration Table with file to be Redirected. Remove Temp file.
7. Open Production file.

Done.

Comparison of Redirector vs Batch Load of Data

- Although both the Batch Load (using JDATAMIG or RunLoader) **AND** loading via the Redirector will allow you to initially load data to the MS SQL server, using the batch process for the initial load is much faster and more efficient. If the Redirector is then desired, you can "pick up" with bullet 5 on the previous foil.

9

The Use of the Connectors to move data is much faster and easier than having to write a program each time you want to move data from the mainframe.

The Batch Load process to create a Data Warehouse of the VSAM data can be fully automated once you have all of the configuration files built. This allows the server to assist in the workload. If you are using a program on the VSE system - all of the work is done by VSE. By using the connectors you are assisting the VSE system by using the Server to take some of the workload.

Having access to the Legacy data with modern GUI Tools opens many new doors, while still keeping the security and Business Rules of the current system available.

10

VSE Mainframe Connectors

- What are VSE Connectors?

- What pieces are there to Connectors?

- What are the tools to work with Connectors?

- What can it do for me?

- **What are VSE Connectors?**

- JAVA based Connector used to access VSE Mainframe resources from remote systems.
- VSE Connectors consists of 2 parts:
  - VSE Connector Server (Which runs on the Mainframe).
  - VSE Connector Client (Which runs on an Intel Server).
- Connectors use TCP/IP to communicate between the Connector Server and the Connector Client.
- The VSE Connecter Client is a JAVA Class Library.
  - The Connector JAVA Class Library will allow you to access VSE Resources from your desktop.
  - You will have access to:
    - VSE Power Queues.
    - VSE VSAM Data files.
    - ICCF Library.
    - And other VSE Resources.

13

- **What are the Pieces to Connectors?**

- VSE Connector Server.
  - VSE Application running in partition R1 which provides secure access to VSE Resources through TCP/IP.

- VSE Connector Client.
  - JAVA Based Application on desktop/server that extends JAVA commands to include VSE Access. Using the Connector Client you can program JAVA applications on the Desktop to use data or other resources from the VSE Mainframe. IBM provides several programs that we will use; as well as many samples that we will look at as to how to use the connector client to access the Mainframe.

14

- **What are the Tools to Work with Connectors?**

  - **MAP TOOL**: IBM Supplied tool to help create VSAM Maps from COBOL Copybooks.

  - **NAVIGATOR**: IBM Supplied tool to help explore and exploit VSE Connectors.

  - **JDATAMIGR/RunLoader**: IBM Supplied tool to help move Mapped VSAM files into Comma Separated files or Supported Database on a server or desktop.

  - **REDIRECTOR SERVER**: IBM Supplied tool to help move Mapped VSAM files into a Database. IBM DB/2, Oracle or Microsoft SQL.

  - There are many other tools available from IBM and Others.
  - You can also create your own tools with JAVA.

15

- **Getting access to VSAM Data through Connectors.**

  - To get access to a VSAM dataset you must tell the Connector Server what the fields are in the VSAM file that you want access to. You can specify all fields of a file or specific fields.

  - IBM created a new command in IDCAMS to create and maintain the VSAM Maps. IDCAMS RECMAP is now available on release 2.5 and above. You can create the maps with IDCAMS but there are much easier ways to do this.

  - IBM supplies 2 tools that will allow you to create Maps and Views for VSAM data Sets.
  - MAPTOOL: Standalone JAVA app for Mapping VSAM.
  - NAVIGATOR: JAVA app that exploits most of Connectors VSE capabilities.

16

IBM Maptool

MAPTOOL is a JAVA application that you can run from your desktop to allow you to create and update VSAM Maps.

MAPTOOL will allow you to key a Map from scratch or import a source document. You can either update an existing Map or import a COBOL Copybook as your starting point.

Startup MapToolGui

Please choose:

○ Create new map

● Import a map from

    ○ VSAM map on VSE host

    ○ XML file

    ● Cobol copybook

    ○ PLX file

    ☐ Skip Control Chars

    Start   Exit
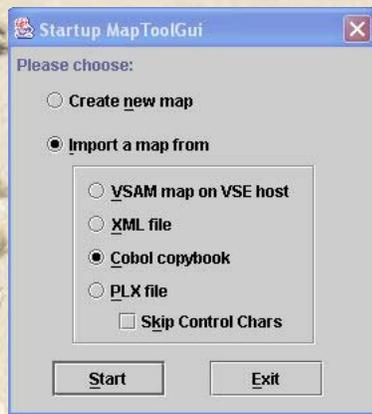
The COBOL Copybook must be accessible to the computer that you are running MAPTOOL on, this can be a mapped drive or on the same computer.

After you select the Copybook, you are presented with a
window that will show you the original Copybook in the
bottom of the window. This will allow you to verify that
you have the Copybook that you want to work with.
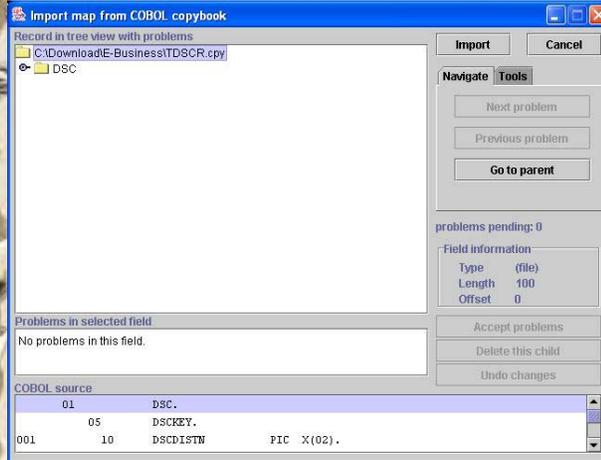
After you have the
correct Copybook
selected, you can
click on Import at
the top of the
screen and
MAPTOOL will
bring the Copybook
into an edit area for
you to work with.

After you import the Copybook you are presented with a table
view of the file. You can now make any changes you wish
before creating the Map for VSAM.
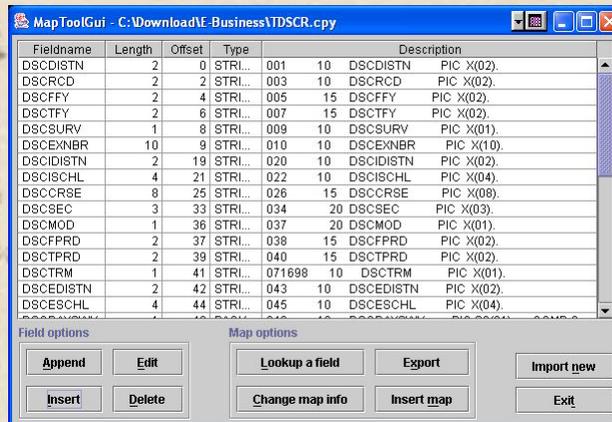
You can change
field names or
descriptions.

The description
will default to
the entire line in
the original
Copybook.

This is also the
time to verify
any fields that
are packed to
make sure they
are in the
correct place.

You can insert a new field if you wish. Why? You may want to combine several original fields into one before you create the Map. To do this just add the new field and update the offset and length, then delete the original fields.

You may also need to add a field that will contain the entire VSAM Key.

This field may be needed later in adding the data to a Database.

After you have made all changes to the layout, you can then generate the VSAM Map. To do this just click on Export. You will be presented with a box to choose how to export.

VSE VSAM Map: Go directly to VSE and place MAP Definition on System.

XML file: Create XML file to export to system later.

JAVA source: Create JAVA source code to create Map through Connectors.

IDCAMS: Create Job stream to send to VSE later.

When you export a Map directly to VSE you will need to enter some information to allow connectors to place the Map information in the VSAM file that contains all Mapping information.
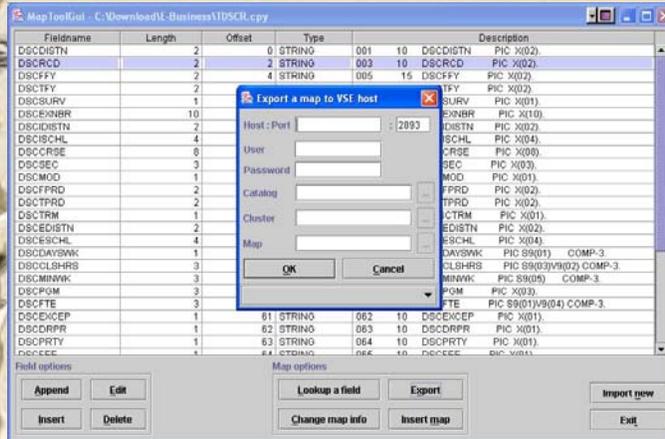
Host IP number.

Valid VSE USERID and PASSWORD.

Catalog that the file is in on VSE.

Cluster name in VSE.

Map name you are giving new Map.

23

Your Map can now be accessed through Connectors.

You can access the data from a user written JAVA program.

You can use an IBM supplied program like JDataMigr or RunLoader to move the data from VSE/VSAM to a comma delimited file on the desktop, so you can access it with desktop tools.

Redirector Server can also be used to move data directly into Database Tables from VSAM. IBM DB2, Oracle and Microsoft SQL.

You can use the IBM supplied program NAVIGATOR to verify and download the data into a more usable format.

Navigator and the Batch Load function of Redirector Server can be used to filter records as they are loaded from VSAM. JDataMigr will only load the entire VSAM Dataset. RunLoader will allow filtering to load a specific part (or all) of a VSAM Dataset. Redirector Server will load/update/delete each VSAM record as it is updated in the VSAM Dataset.

24

Microsoft SQL Server JAVA

25

If you are going to load data directly from VSAM to Microsoft SQL you will need to have JAVA access to the SQL Server.
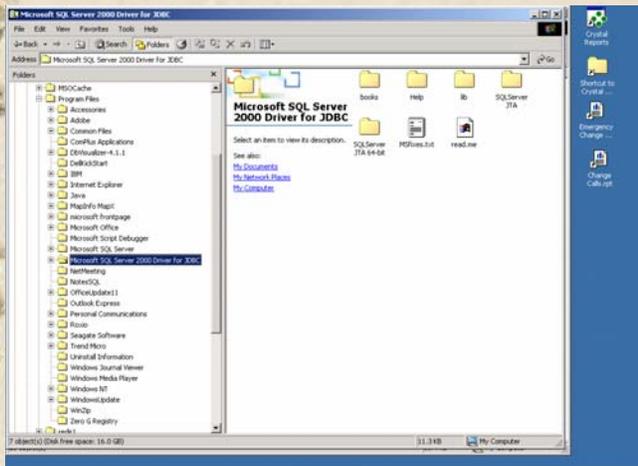
You can download the SQL JDBC Drivers directly from Microsoft.

After you have this loaded on your Microsoft SQL server you will have JDBC access to the SQL Server. You can use this JDBC access with Connectors or other Java based programs.

26

Here is a screen shot from DB Visualizer to show the JDBC connection to the Microsoft SQL Server.
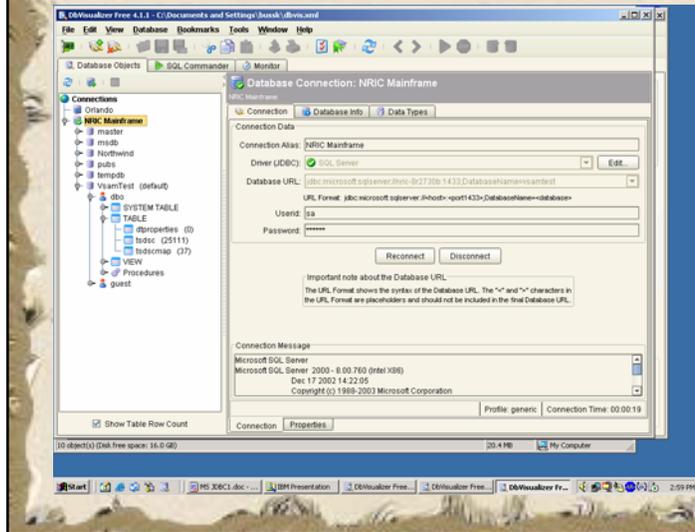
You will need to update the server information before you can have access to data on the SQL Server. You will need to have the Server Name, SQL userid, SQL password and other information.

27

IBM Navigator

28

After you install NAVIGATOR, you will need to set up the NRIC Mainframe connection. This will allow NAVIGATOR to use the Connectors to get to the Mainframe.
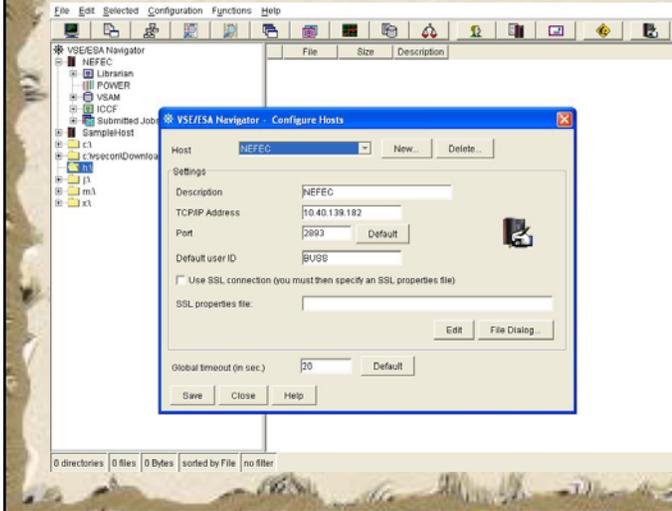
The NRIC Mainframe is inside the Firewall and is not accessible from the outside using connectors.

After you have set up the connection you will now be presented with a connection panel for the NRIC Mainframe, named in this example 'NEFEC'.
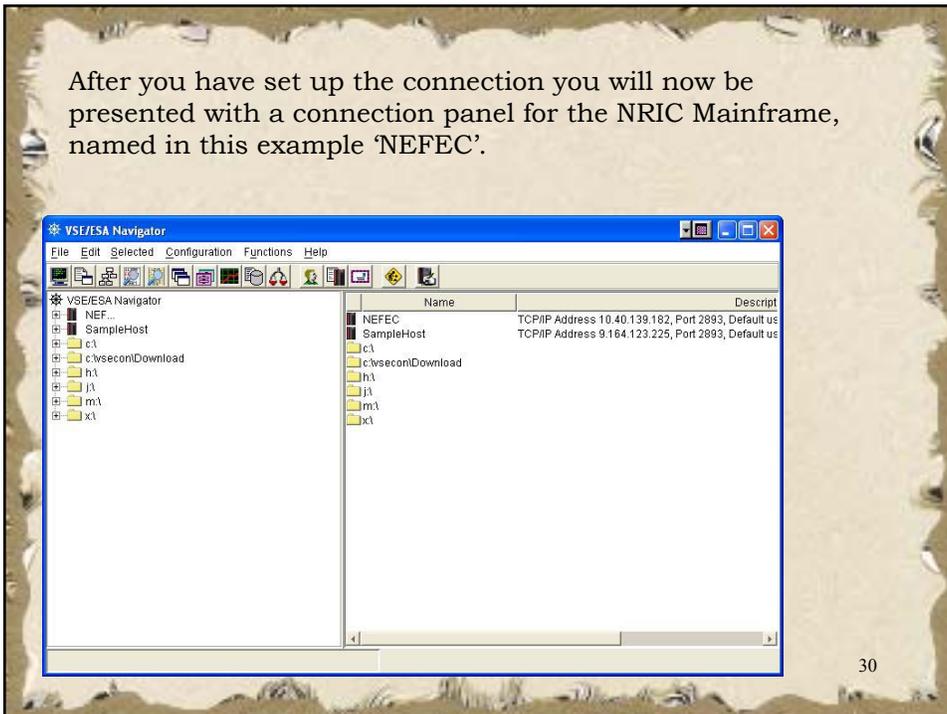
When you click on the NEFEC Icon, you will be given a basic list of what commands are available through NAVIGATOR.

Librarian, POWER, VSAM, ICCF and submitted jobs.
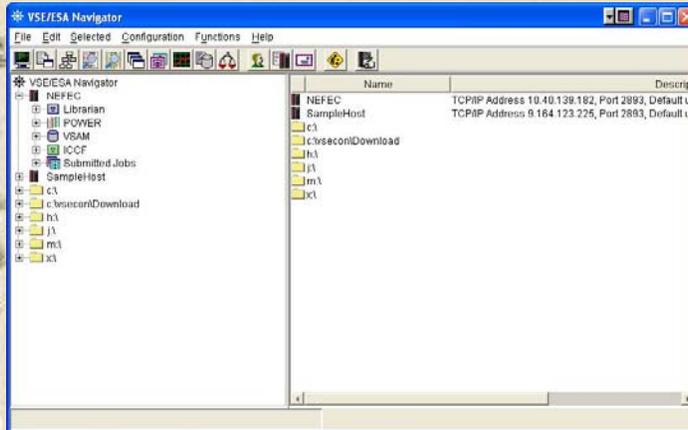
Librarian: Object libraries.

POWER:

VSE POWER Queues.

VSAM:

Catalogs and VSAM files.

ICCF:

ICCF Libraries.

31

When you click on a resource, you will be presented with a Sign-on Panel if you have not signed on to the VSE system through NAVIGATOR. This is the same USERID and PASSWORD that you use with the VSE system. You can log onto the VSE and NAVIGATOR with the same USERID at the same time.
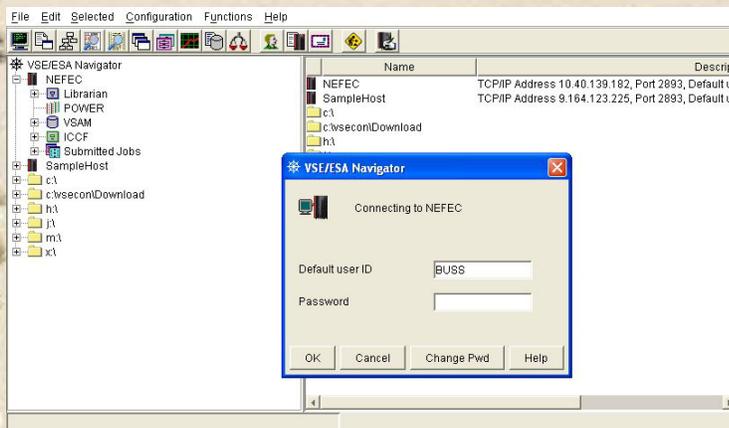
32

When you click on the VSAM icon, you will be given a list of all the catalogs that are defined to the VSE System.

This is a dynamic list of all catalogs.
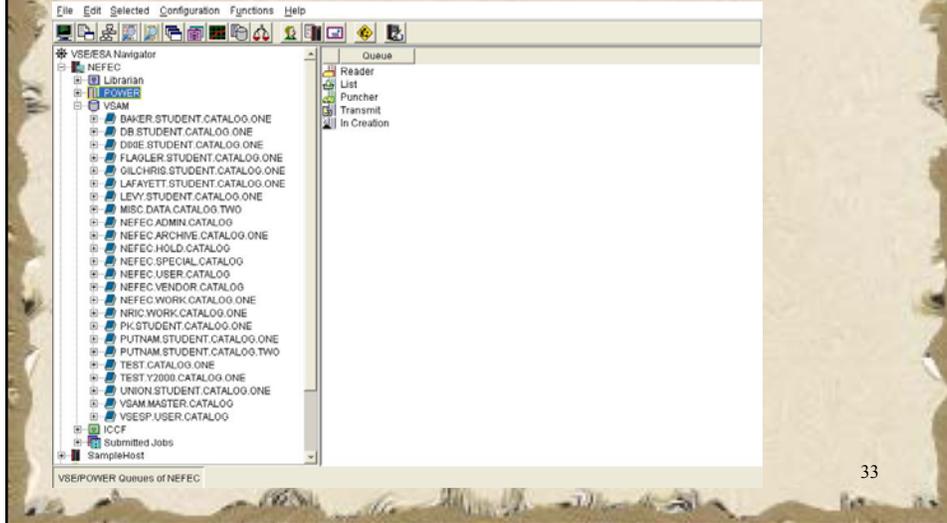
If you click on a file name you will be shown what Maps and/or Views are available for that file.

If no names appear under the file there are no Maps defined.
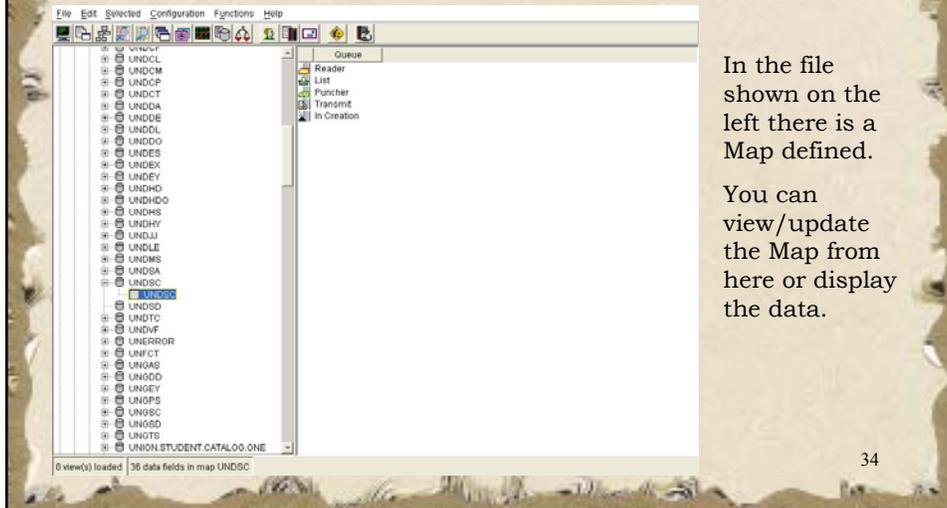
In the file shown on the left there is a Map defined.

You can view/update the Map from here or display the data.

If you want to change the Map definition you can update the fields on the Map as well as the description.
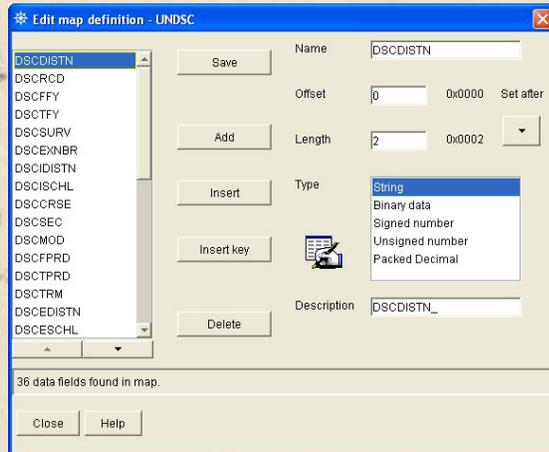
The Connector Server will automatically update from Packed EBCDIC to Numeric ASCII for you.

The translation from EBCDIC to ASCII is done on all fields for you.

If you need to define a field that does not translate you can set it to Binary and it will not be translated.

You can use NAVIGATOR to view the data in a VSAM data set.

Right click on the Map and select "Display VSAM data".

This will allow you to view the VSAM data in Notepad.
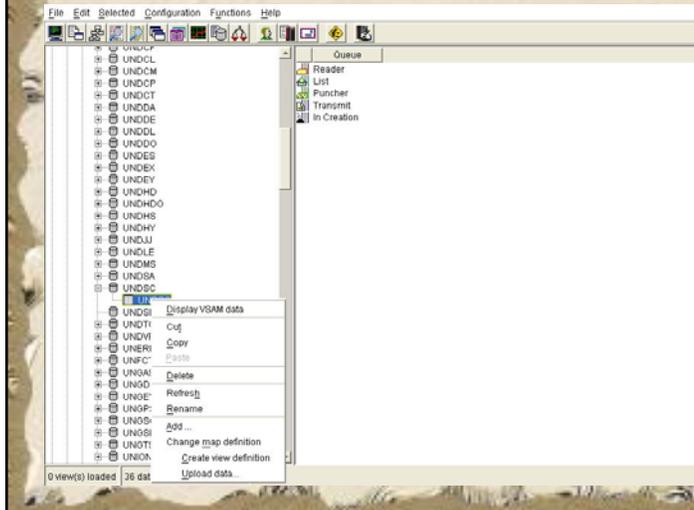
After you have clicked to display the VSAM data, you will be presented with a screen to create filters to select only some of the records you wish to see.

In the example to the left we are using FY 0304 and Survey 3 as our filters.

You can filter on any field defined to the Map.

After your filter is applied, the data will be returned to you in a window. This is only the data that matched your filter.

This process may take a minute or two depending on the size of the file and the filter being applied.

After you have the data displayed in the window matching the filter you applied, you can save this "Set of Data" to a file on your desktop. Just right click on the map and select "Export displayed data".

When you select export you will presented with a window to specify the file name as well as any field separators and string delimiters that you are going to use.

You can use this process to save a set of data on your desktop in a format that can be opened with a spreadsheet program.

You can also use NAVIGATOR to look at and download ICCF members to your Desktop. You will need to add which ICCF libraries you will work with to your NAVIGATOR Settings.

After you have set up the ICCF libraries that you are working with, just click on the library you wish to see the members in and they will be displayed on the right of the screen. Using NAVIGATOR you can only view ICCF members; you cannot upload members to ICCF with NAVIGATOR.

You can open the ICCF members with Notepad or some other editor and save it to your Desktop. You cannot display or edit compressed ICCF members.

You can use this facility to download the Copybooks to import to MAPTOOL.

IBM JDataMigr

JDataMigr is a JAVA program written by IBM to move data from VSAM to other platforms. The output that is supported by JDataMigr is IBM DB2, Oracle and Microsoft SQL Databases, Comma Delimited CSV and XML Packets.

Once you have the VSAM Maps defined you can set up a batch JDataMigr job that will run on your desktop or SQL server and will copy data from your VSE System to the destination platform in the format you request.

JDataMigr will only pull entire Datasets from VSE. There is no selection of records (filters) during the data transfer. IBM has included the JAVA source code with this product and we can modify it to meet our needs if necessary.

You will need to customize a .CFG file for each dataset you are going to download. If you wish to be able to download a dataset in more that 1 format you will need additional .CFG files for that dataset.

There are 2 parts to running the JDataMigr a

.CFG file that holds the VSAM Mapping information as well as the format of the downloaded data.

.CMD file that is executed to actually download the data to the Desktop.

JDataMigr must first be set up with the type of output you want and which Map you are going to use on the VSE side.

```
# action-config
# 1 = VSAM -> Database (DB/2, Oracle or MS SQL Server)
# 2 = VSAM -> CSV-File
# 3 = VSAM -> Plaintext-Block-File
# 4 = VSAM -> XML
action=1

# vse-config5
vse.host=10.40.139.182
vse.user=conn
vse.pwd=java

# Database-config
# Driver to use:
# 1 = DB2 App-Driver; needed is db, user, pwd
# 2 = DB2 Net-Driver; needed is host, port, db, user & pwd
# 3 = Oracle Thin Driver; ; needed is db, user & pwd
# 4 = Oracle OCI Driver; ; needed is db, user & pwd
# 5 = MS SQL Server Driver; ; needed is host, port, db, user & pwd
db.driver=5
db.database=vsamtest
db.user=sa
db.pwd=nricxx
db.host=nric-8r2730b
db.port=1433
db.table=TSDSC
```

The Action-Config portion is used to specify what data format you are using.

In this case 1 -> MS SQL Server

Before you can load data to a MS SQL Table with JDataMigr make sure that you have build the tables on the MS Server. IBM provides a facility to do this for you from the MAPS that you have generated.

You will need to update the Database information in the CFG file. This is done in the #Database-config area.

JDataMigr must first be set up with the type of output you want and which Map you are going to use on the VSE side.

The Action-Config portion is used to specify what data format you are using.

In this case 2 -> CSV.

```
# action-config
# 1 = VSAM -> Database (DB/2, Oracle or MS SQL Server)
# 2 = VSAM -> CSV-File
# 3 = VSAM -> Plaintext-Block-File
# 4 = VSAM -> XML
action=2

# vse-config5
vse.host=10.40.139.182
vse.user=conn
vse.pwd=java
```

The VSE-Config5 portion is used to specify what VSE machine you are connecting to and what USERID and PASSWORD you are using.

47

Next, we will look at what file names and what delimiters are being used.

```
# csv-config
csv.filename=f2fba.csv
csv.delimiter=,
csv.usequotes=0
csv.useheader=1
```

The CSV-Config portion is used to assign what file name you are using for the dataset. You also use this are to update any delimiters or if you want headings in the file.

0 = No

1 = Yes

48

The last area that we look at is the Map name and VSAM information.

```
# migration-config
vsam.catalog=TEST.Y2000.CATALOG.ONE
vsam.cluster=TSDSC
vsam.map=TSDSC

# migration-options
# write a extended log-file?
options.writelog=true
# only valid for db: should we create the table ?
options.createtable=false
# is it allowed to kill the table/file, if it exists
options.droptable=false
# only valid for db: if not dropping the table, is it allowed
to clear it?
options.cleartable=true
```

Note: VSAM Cluster name in the above example really is "TSDSC". That is the name we use for the 44 character fileid in our environment.

The Migration-Config portion is used to tell what VSAM Map you are using to pull data from.

You will also need to update the Catalog and Cluster names. The Catalog Name, Cluster Name, and Map name must match the VSE Map definition that you have on your VSE system.

When using Microsoft SQL you can have JDataMigr Clear the table of data before you load new data. You will need to set the cleartable=true.

49

The .CMD file is used to execute the JDataMigr program. This is where you tell JDataMigr what .CFG file you are using. Below is an example of a .CMD file that is using the F2Fba.CFG file.

When you execute this CMD file from your desktop you will get a window that will show the number of records being transferred. The JDataMigr program is a JAVA application that will pull all records in the VSAM Cluster down to the Desktop.

```
echo off
REM * **************************************** *
REM * Data Migration from VSE to a CSV File    *
REM * **************************************** *
set CLASSPATH=.;vseconnector.jar;cci.jar;ibmjsse.jar;datamig_1.0.3.jar
java com.ibm.redbook.datamig.cmdline.JDataMig -f f2fba.cfg -batch
pause
```

50

IBM Redirector Server

There are a number of steps needed to load data directly from VSAM to Microsoft SQL.

1. Build SQL Tables. IBM has provided a JAVA program to "Create" the Microsoft SQL Tables needed for Redirector.

    > You will need to know the Map name, Database User and Password. You will also need to have the XML output from Maptool as input to the Create program.

2. Update the SQL Tables. You will need to make some changed to the table definitions when there are numeric or decimal numbers in the table.

    > Any columns in the SQL Table that hold numeric data will need to be updated at the SQL level. There is a list converters that are provided by IBM to display the data properly in SQL.

There are 2 ways to user Redirector Server.

A. You can use Redirector Server to load each record in the
    SQL Table as it is loaded to the VSAM Data. This will allow
    you to have current data on the SQL Server.

B. You can use Redirector to "Batch Load" the VSAM Data
    into SQL, this will allow you to update SQL Databases on a
    scheduled basis. You can also use filters to select only
    certain records from the VSAM file.

53

 If you are using the Redirector Server to keep your VSAM
and SQL server current. You will need to make some
updates to the Mainframe System Tables to allow the VSAM
Connectors to identify which files are to be updated and
records copied to the SQL Server.

```
   IESRDCFG CSECT
   IESRDCFG AMODE ANY
   IESRDCFG RMODE ANY
   *
           IESRDENT CATALOG='VSESP.USER.CATALOG',                      X
                CLUSTER='MY.TEST.CLUSTER1',                            X
                EXIT='IESREDIR',                                       X
                OWNER=REDIRECTOR,                                      X
                IP='10.0.0.1',                                         X
                HANDLER='com.ibm.vse.db2handler.DB2Handler',           X
                OPTIONS='db2url=jdbc:db2:redir;db2user=hugo;           X
                    db2password=hugospw;db2table=mydata'
   *
           IESRDENT CATALOG='TEST.Y2000.CATALOG.ONE',                  X
                CLUSTER='TSDSC',                                       X
                EXIT='IESREDIR',                                       X
                OWNER=VSAM,                                            X
                PUTREQONLY=YES,                                        X
                IP='10.40.174.62',                                     X
                HANDLER='com.ibm.vse.db2handler.DB2Handler',           X
                OPTIONS='maptable=tsdscmap;map=tsdsc;                  X
                dburl=jdbc:microsoft:sqlserver://nric-8r2730b:1433;databX   54
```

To load the VSAM data using Redirector Server to keep the
VSAM Data current you have several steps to follow.

- Build Mainframe Configuration file for Work cluster matching definition to the Master file you are trying to Redirect.
- Use IDCAMS to copy file from Master to this Work cluster. (This will load the records that are in the Master file to the SQL Database.)
- Close Master file. Update Mainframe Configuration file from Work cluster to Master Cluster.
- Open Master file.

At this point any records written to the VSAM file will automatically be
added to the SQL Database. You will need to keep the Redirector
Server running on the SQL Server anytime you want to access
these Redirected Files. Keeping the Redirector Server running at
any time you access the VSAM files will keep the two systems in
sync.

55

If you are using the Redirector Server to "Batch Load" data
on a scheduled time. Then you will only need to setup
configuration files on the Server. You will need to update
the Mainframe and server information in each .CFG file.

```
VSEHOST=10.40.139.182
TRACE=no
VSEUSER=conn
VSEPASSWORD=java
VSAMCATALOG=test.y2000.CATALOG.one
VSAMCLUSTER=tsdsc
DBHANDLER=com.ibm.vse.db2handler.DB2Handler
DBOPTIONS="dburl=jdbc:microsoft:sqlserver://nric-
8r2730b:1433;databasename=vsamtest;dbuser=sa;dbpassword=??????;
maptable=tsdscmap;map=tsdsc;dbtable=tsdsc;allowreuse=yes;commit
put=1000"
#MAX-PREFETCH-COUNT=2500
#FILTER-OFFSET=8
#FILTER-LENGTH=1
#FILTER-OPERATION="="
#FILTER-VALUE="3"
#INSERT-THREADS=2
```

56

To load the VSAM data using Redirector Server Batch facility.

After you setup the configuration file for the "RunLoader" facility you are ready to download data from VSAM to the SQL Server.

```
C:\vsamredir>runloader redirloader.cfg
C:\vsamredir>set vsecon=c:\vsecon
C:\vsamredir>set classpath=.;VsamRedir.jar;msutil.jar;mssqlserver.jar;msbase.j
;c:\vsecon\VSEConnector.jar;c:\vsecon\cci.jar;c:\vsecon\ibmjsse.jar;c:\vsecon\
mpkcs.jar;c:\program files\Microsoft SQL Server 2000 Driver for JDBC\lib\msbas
jar;c:\program files\Microsoft SQL Server 2000 Driver for JDBC\lib\msutil.jar;
\program files\Microsoft SQL Server 2000 Driver for JDBC\lib\mssqlserver.jar;c
vsamredir\vsamredir.jar
C:\vsamredir>java com.ibm.vse.redirloader.RedirLoader redirloader.cfg
Mar 8, 2005 3:25:00 PM - ---------------------------------------------------
Mar 8, 2005 3:25:01 PM - Reading configuration from file redirloader.cfg
Mar 8, 2005 3:25:01 PM - ---------------------------------------------------
Mar 8, 2005 3:25:01 PM - VSEHOST = 10.40.139.182
Mar 8, 2005 3:25:01 PM - TRACE = no
Mar 8, 2005 3:25:01 PM - VSEUSER = conn
Mar 8, 2005 3:25:01 PM - VSEPASSWORD = ????
Mar 8, 2005 3:25:01 PM - VSAMCATALOG = test.y2000.CATALOG.one
Mar 8, 2005 3:25:01 PM - VSAMCLUSTER = tsdsc
Mar 8, 2005 3:25:01 PM - DBHANDLER = com.ibm.vse.db2handler.DB2Handler
Mar 8, 2005 3:25:01 PM - DBOPTIONS = dburl=jdbc:microsoft:sqlserver://nric-8r2
0b:1433;databasename=vsamtest;dbuser=sa;dbpassword=nricxx;maptable=tsdscmap;ma
tsdsc;dbtable=tsdsc;allowreuse=yes;commitput=1000
Mar 8, 2005 3:25:01 PM - ---------------------------------------------------
Mar 8, 2005 3:25:01 PM - Initializing
Mar 8, 2005 3:25:01 PM - ---------------------------------------------------
```

57

After you have run the "RunLoader" command to load the Database with the VSAM Data, you will be given a some statistical information that will allow you to customize the parameters in the CFG file to optimize the download for your equipment.

```
Mar 8, 2005 3:31:43 PM - Using 1 insert thread(s).
Mar 8, 2005 3:31:43 PM - ---------------------------------------------------
Mar 8, 2005 3:31:43 PM - Starting load process
Mar 8, 2005 3:31:43 PM - ---------------------------------------------------
Mar 8, 2005 3:32:14 PM - *************************************
Mar 8, 2005 3:32:14 PM - *** VSEConnector transfer finished ***
Mar 8, 2005 3:32:14 PM - *************************************
Mar 8, 2005 3:36:40 PM - *********************************
Mar 8, 2005 3:36:40 PM - *** InserterThread 1 finished ***
Mar 8, 2005 3:36:40 PM - *********************************
Mar 8, 2005 3:36:40 PM - ---------------------------------------------------
Mar 8, 2005 3:36:40 PM - Load process finished.
Mar 8, 2005 3:36:41 PM - Inserted records:  25111
Mar 8, 2005 3:36:41 PM - Duplicate records: 0
Mar 8, 2005 3:36:41 PM - Other errors:      0
Mar 8, 2005 3:36:41 PM - Overall duration:  296.972 seconds
Mar 8, 2005 3:36:41 PM - Overall speed:     84 records/second
Mar 8, 2005 3:36:41 PM - Transfer duration: 30.926 seconds
Mar 8, 2005 3:36:41 PM - Transfer speed:    811 records/second
Mar 8, 2005 3:36:41 PM - ---------------------------------------------------
C:\vsamredir>
```

58

You can use the "RunLoader" facility to filter the records in the VSAM file. This will allow you to only download the records to SQL that you need to access.

If you are building a Data Warehouse to use with a third party reporting product such as Crystal Reports, this will allow you to only update the records that you need on the reports.

By having the Mainframe Legacy data accessible thru SQL you can now use the power of the Mainframe to keep the data secure and updated with out altering any business logic, but sill get full use of the Data for Ad Hoc reporting and Informational Web sites.

59

Directions for Connectors.

After VSAM Maps have been created you can use the following to get data connections to a Desktop Application.

Current

Using JDataMigr, RunLoader or NAVIGATOR to move data from VSAM Maps to Comma Delimited files for upload to other Third Party Software programs.

JDataMigr, RunLoader or Redirector Server will load directly to IBM DB/2 Oracle or Microsoft SQL Tables.

Programs written in JAVA to access VSAM Maps directly.

NOTE: RunLoader and Redirector with filters is in final stages of development and will be available shortly after the WAVV conference.

60

How to get Connector/Redirector Components from www.ibm.com/vse
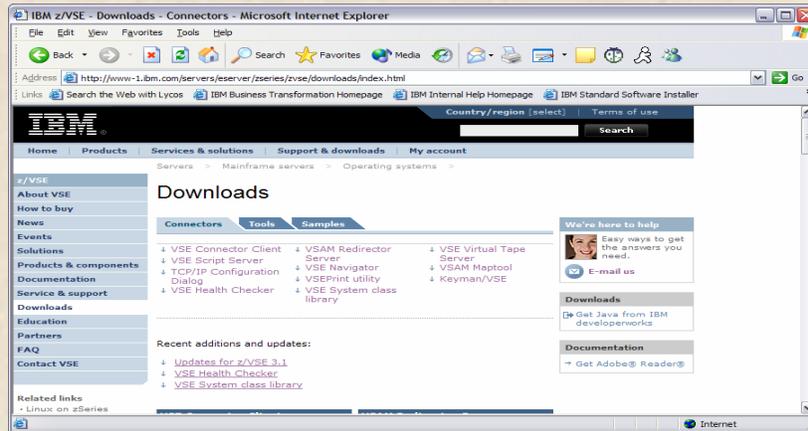
61

Problems/Issues/Requirements???

- There are 2 types of components here that we have discussed
  1. Components that are part of the *Technology* of Connectors and the Redirector and,
  2. Tools which run on other platforms – like the Redirector Handler, Maptool, JDataMig and the soon-to-be-available RunLoader.

62

Problems/Issues/Requirements???

1. If you feel you have a problem with the *Technology* of Connectors or the Redirector, contact IBM via the Support Center Structure (800-IBM-SERV (800-426-7378)) and open a PMR.

2. If your problem is with one of the tools (Redirector Handler, Maptool, JDataMig, etc.) then report the problem via email to zVSE@de.ibm.com .

3. If you have a requirement or an enhancement or anything you would like to discuss with the development team, use the zVSE@de.ibm.com address to communicate.

4. You can also contact the developers from the IBM VSE Web Page – www.ibm.com/vse . Select **Contact VSE** on the bottom left menu, then select the tab **Send Questions or Comments** or **Submit a requirement**. The IBM Development team is always interested in your ideas and needs.

63

Problems/Issues/Requirements???

64

THANK YOU

- Contact Information for this presentation
  - Kevin Buss (North East Florida Educational Consortium (NEFEC))
    BussK@nefec.org
  - George Wilcox (IBM Corporation)
    GAWilcox@us.ibm.com
  - IBM Development team
    zVSE@de.ibm.com