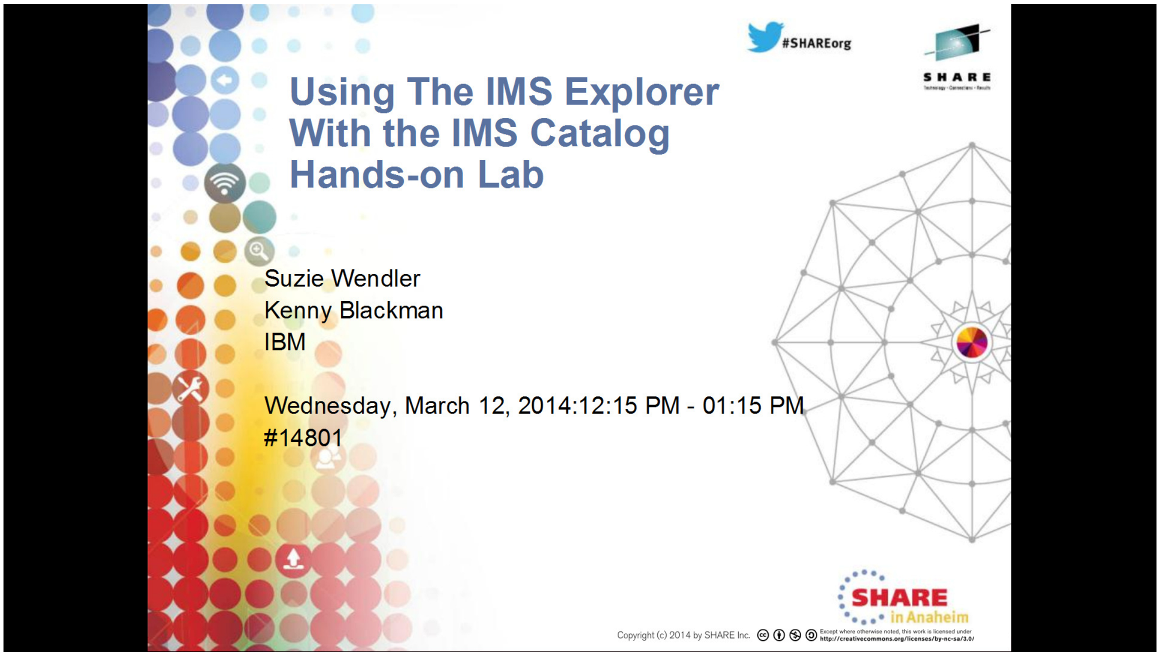

Using The IMS Explorer With the IMS Catalog Hands-on Lab

Suzie Wendler
Kenny Blackman
IBM

Wednesday, March 12, 2014:12:15 PM - 01:15 PM
#14801

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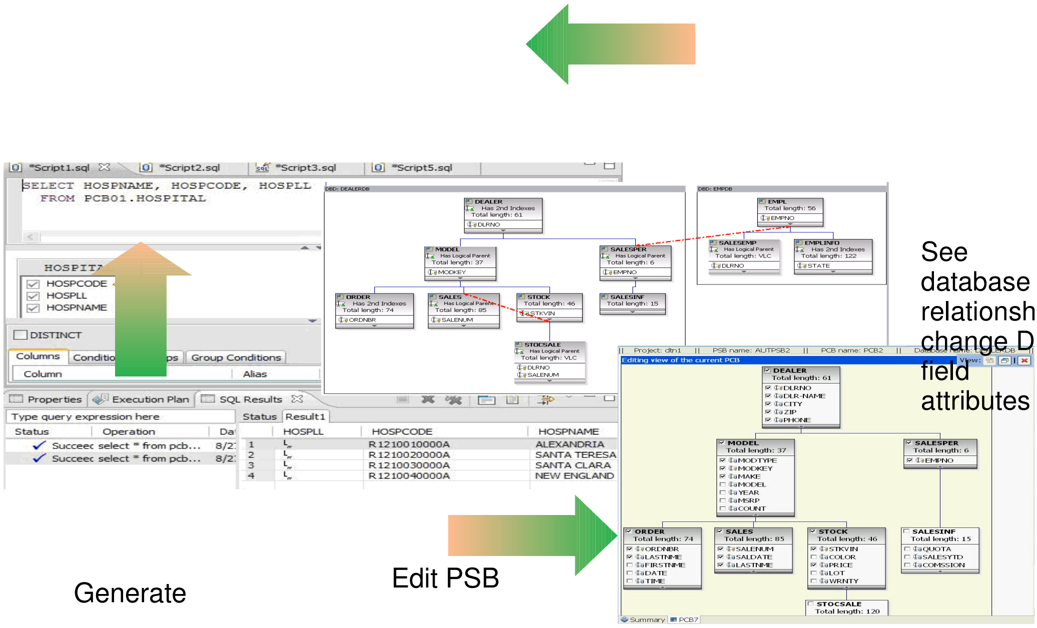
This hands-on lab provides the opportunity to access IMS databases from a distributed runtime environment provided by IBM's IMS Enterprise Suite Explorer for Development.

This lab focuses on the use of the IMS Catalog , IMS 12 and IMS 13.

The IMS Enterprise Suite Explorer for Development

The IMS Enterprise Suite Explorer for Development is an Eclipse-based integrated development environment (IDE) for IMS application developers and database architects

- It can also be integrated with other IBM Eclipsed based tools (RAD, RDz, Optim Data Studio)
- Provides end-to-end application development cycle
- Graphical editors are used for development and visualization of
- Program Specification Blocks (PSBs)
- Database Descriptions (DBDs)



```
SELECT HOSPNAME, HOSPCODE, HOSPLL
  FROM PCB01.HOSPITAL
```

Status	Operation	Da
✓ Succeec	select * from pcb…	8/2
✓ Succeec	select * from pcb…	8/2

	HOSPLL	HOSPCODE	HOSPNAME
1	L	R1210010000A	ALEXANDRIA
2	L	R1210020000A	SANTA TERESA
3	L	R1210030000A	SANTA CLARA
4	L	R1210040000A	NEW ENGLAND

See database relationships change DBD field attributes

Generate SQL to access IMS data

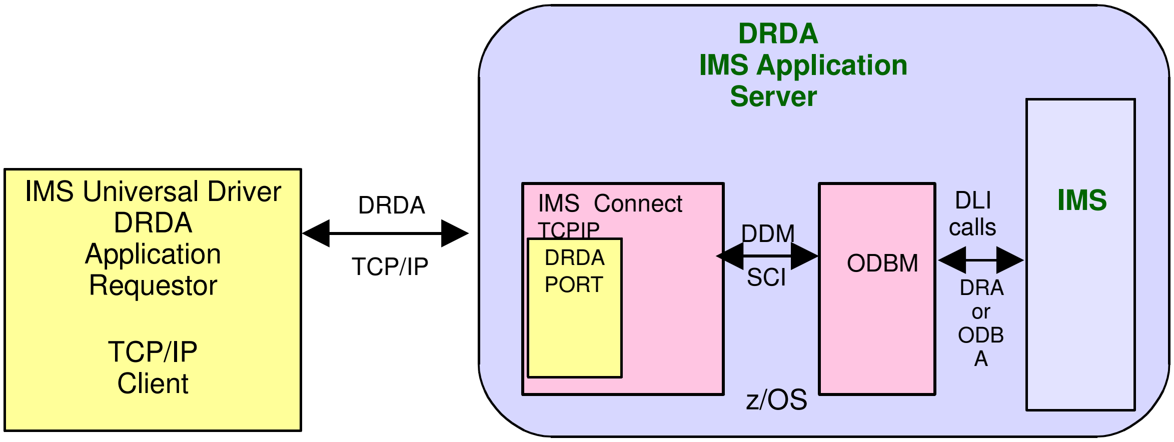
Edit PSB sensitive segments and attributes

IMS Universal JDBC driver type-4 connectivity provides:

- Relational view of IMS data
- Graphical assistance to build SQL statements
- New support which incorporates the DLIModel Utility and the IMS 12 Catalog functionality:
- Provides migration support of existing DLIModel Utility projects
- Provides Metadata source for update to IMS Catalog
- Provides Metadata access from the IMS Catalog

Distribution of the IMS Explorer is through a download capability IMS Enterprise Suite V3.1 at http://www.ibm.com/ims

IMS Connect and Open Database Manager



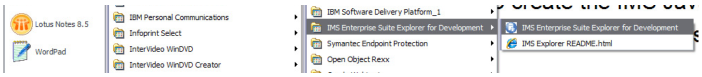
- Open Database Manager (ODBM) is a Common Service Layer component
  - Receives database connection requests from IMS Connect
  - Translates incoming database requests from the DDM protocol into DLI calls expected by IMS
  - Translates responses to the client into the DDM protocol
  - Manages connections to IMS DB
    - Implements the DRA interface

IMS Enterprise Suite Explorer for Development

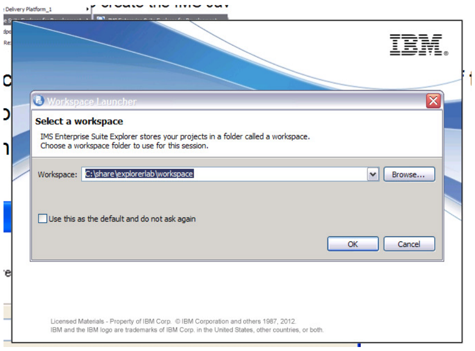
In this part of the lab, the IMS Explorer is used to create the IMS Java Database View metadata by parsing the IMS PART Database PSB and DBD sources.

1. **Start IMS Explorer**

   Click on Start **>** All Programs **>** IMS Enterprise Suite for Development **>** IMS Enterprise Suite for Development


Lotus Notes 8.5
WordPad
IBM Personal Communications
Infoprint Select
InterVideo WinDVD
InterVideo WinDVD Creator
IBM Software Delivery Platform_1
IMS Enterprise Suite Explorer for Development
Symantec Endpoint Protection
Open Object Rexx
IMS Enterprise Suite Explorer for Development
IMS Explorer README.html

You may be prompted to select a workspace. A workspace is a directory that stores all of the files for the projects. You can select your own directory, e.g., **C:\share\explorerlab\workspace** or any name you choose.



Select a workspace

IMS Enterprise Suite Explorer stores your projects in a folder called a workspace.
Choose a workspace folder to use for this session.

Workspace: C:\share\explorerlab\workspace

□ Use this as the default and do not ask again

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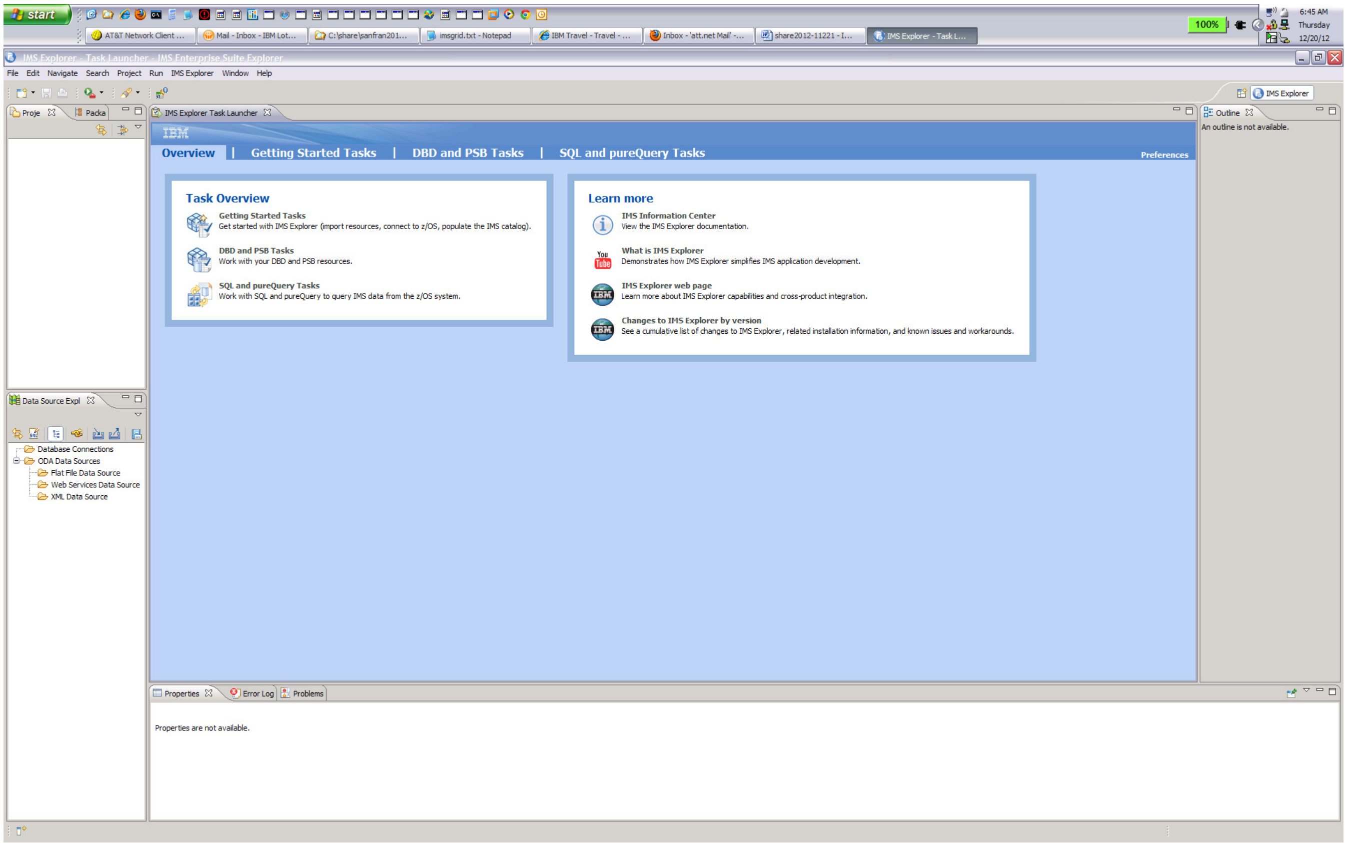
When Explorer startup is complete, you may be shown the Welcome Screen. If so, close the Welcome page (x the tab at the top of the screen on the left).



An outline is not available.

Task Overview

Getting Started Tasks
Get started with IMS Explorer (import resources, connect to z/OS, populate the IMS catalog).

DBD and PSB Tasks
Work with your DBD and PSB resources.

SQL and pureQuery Tasks
Work with SQL and pureQuery to query IMS data from the z/OS system.

Learn more

IMS Information Center
View the IMS Explorer documentation.

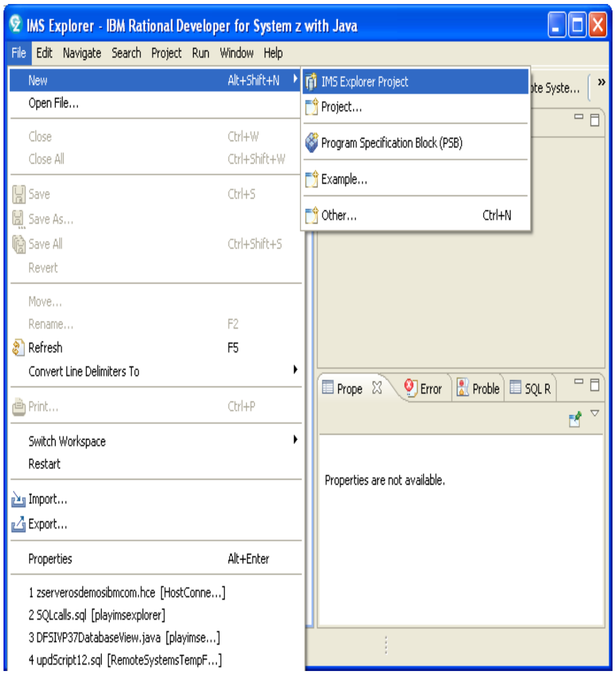
What is IMS Explorer
Demonstrates how IMS Explorer simplifies IMS application development.

IMS Explorer web page
Learn more about IMS Explorer capabilities and cross-product integration.

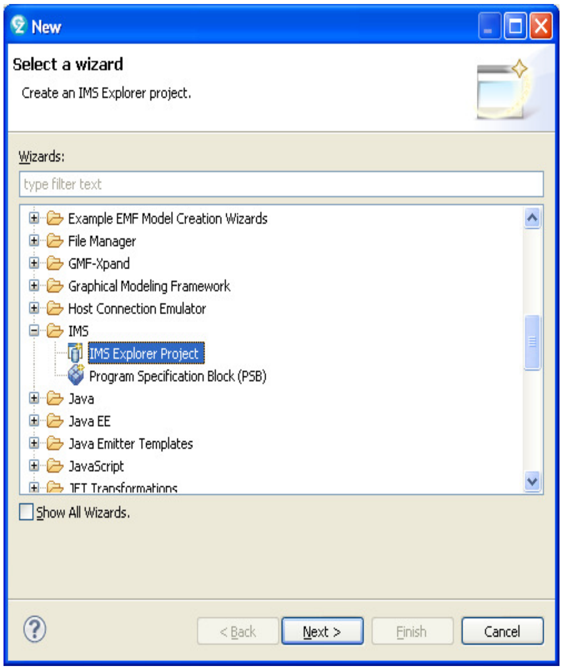
Changes to IMS Explorer by version
See a cumulative list of changes to IMS Explorer, related installation information, and known issues and workarounds.

Properties are not available.

2. Click on **File** > **New** > **IMS Explorer Project.** **(**If you don't see "IMS Explorer Project" as a choice then click on File > New > Other and open the IMS folder and select IMS Explorer Project)


IMS Explorer - IBM Rational Developer for System z with Java
File Edit Navigate Search Project Run Window Help
New Alt+Shift+N
Open File...
Close Ctrl+W
Close All Ctrl+Shift+W
Save Ctrl+S
Save As...
Save All Ctrl+Shift+S
Revert
Move...
Rename... F2
Refresh F5
Convert Line Delimiters To
Print... Ctrl+P
Switch Workspace
Restart
Import...
Export...
Properties Alt+Enter
1 zserverosdemosibmcom.hce [HostConne...]
2 SQLcalls.sql [playimsexplorer]
3 DFSIVP37DatabaseView.java [playimse...]
4 updScript12.sql [RemoteSystemsTempF...]
IMS Explorer Project
Project...
Program Specification Block (PSB)
Example...
Other... Ctrl+N
ote Syste...
Prope
Error
Proble
SQL R

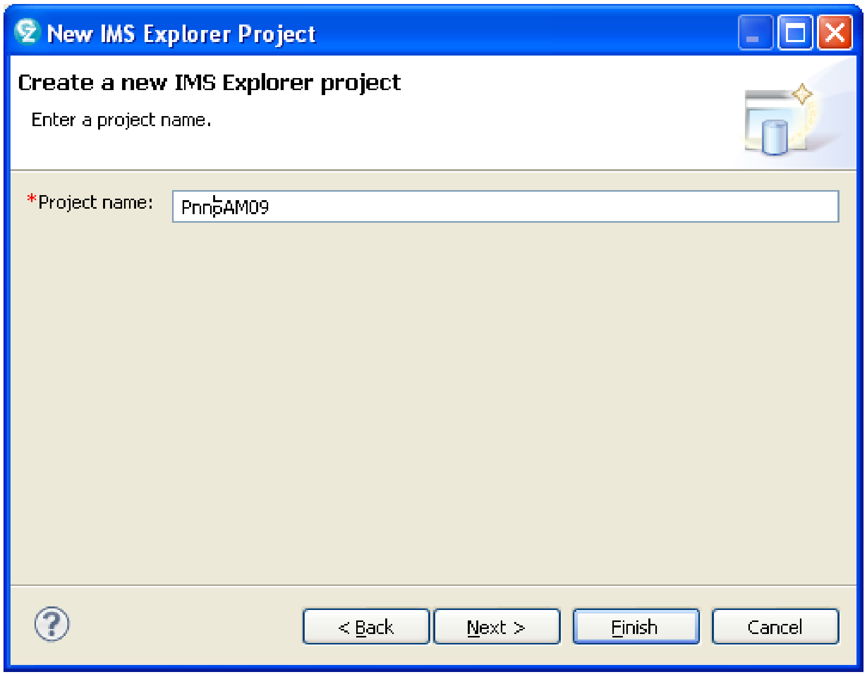
Properties are not available.



Select a wizard

Create an IMS Explorer project.

3. Define a Project Name, e.g., P***nn***SAM09 where ***nn*** is your team number.


New IMS Explorer Project

Create a new IMS Explorer project

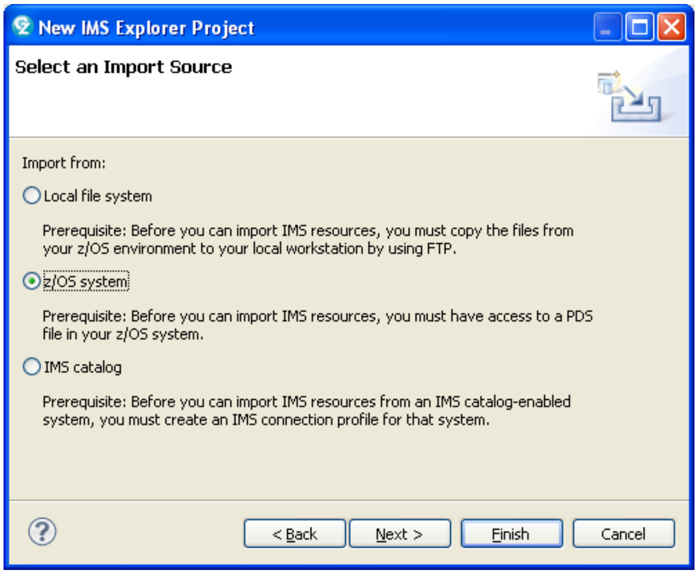
Enter a project name.

*Project name: PnnpAM09

Click **Next.**

On the **Select an Import Source** window you can: (a) Use a Local file system if you have previously downloaded the source PSB and DBD files to your workstation, (b) Select a z/OS system and connect directly to where your DBDs/PSBs are stored, or (c) If your IMS is at Version 12 with the Catalog function enabled, you can obtain the Metadata directly from the IMS Catalog. **For this lab (Part 1) we will use a connection to the z/OS system and download source from z/OS to create the Metadata**.

4. Select z/OS system to obtain the source.



New IMS Explorer Project

Select an Import Source

Import from:

○ Local file system

Prerequisite: Before you can import IMS resources, you must copy the files from your z/OS environment to your local workstation by using FTP.

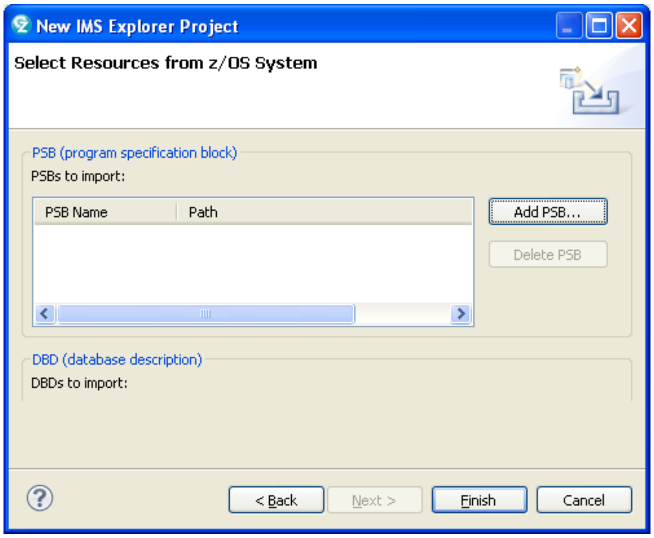
● z/OS system

Prerequisite: Before you can import IMS resources, you must have access to a PDS file in your z/OS system.

○ IMS catalog

Prerequisite: Before you can import IMS resources from an IMS catalog-enabled system, you must create an IMS connection profile for that system.

Click **NEXT.**



New IMS Explorer Project

Select Resources from z/OS System

PSB (program specification block)

PSBs to import:

PSB Name	Path

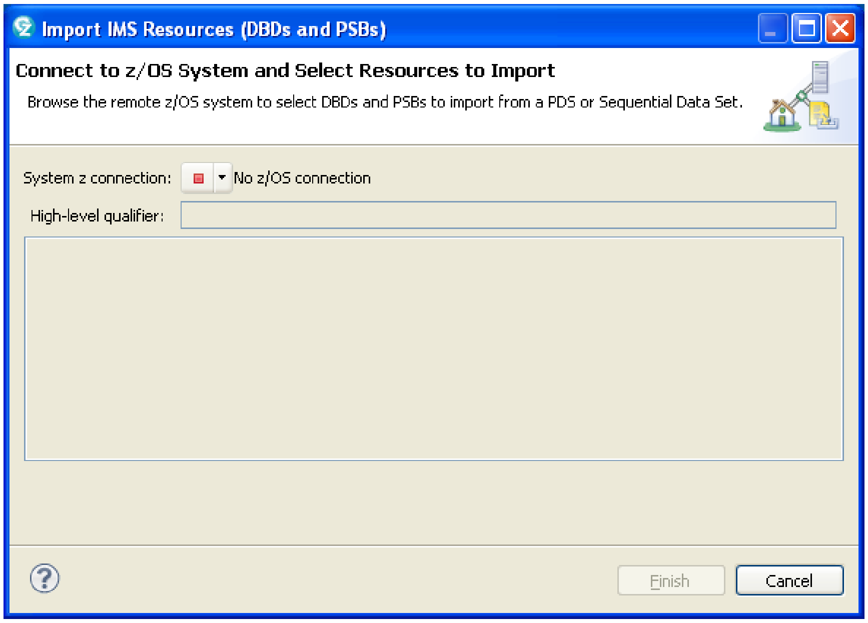
DBD (database description)

DBDs to import:

Select the **Add PSB** button.

You will be asked to provide the z/OS connection information.

5. On the **Connect to z/OS System and Select Resources to Import** screen, click on the **No z/OS connection** to open the Connections box.


Import IMS Resources (DBDs and PSBs)

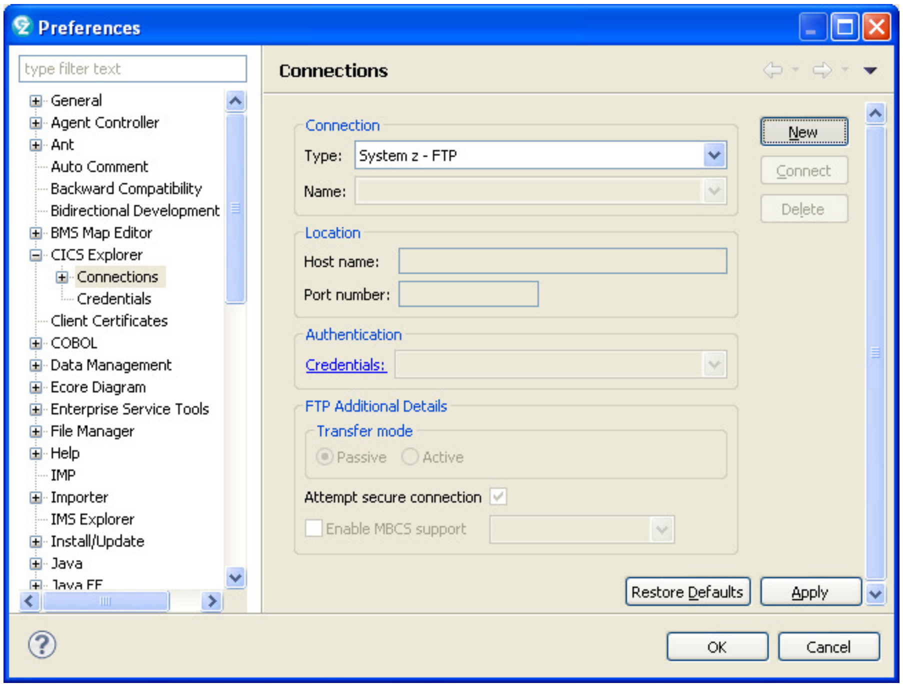
Connect to z/OS System and Select Resources to Import

Browse the remote z/OS system to select DBDs and PSBs to import from a PDS or Sequential Data Set.

System z connection: No z/OS connection

High-level qualifier:

Select **New.**


Preferences

Connections

Connection

Type: System z - FTP

Name:

Location

Host name:

Port number:

Authentication

Credentials:

FTP Additional Details

Transfer mode

○ Passive ○ Active

Attempt secure connection ☑

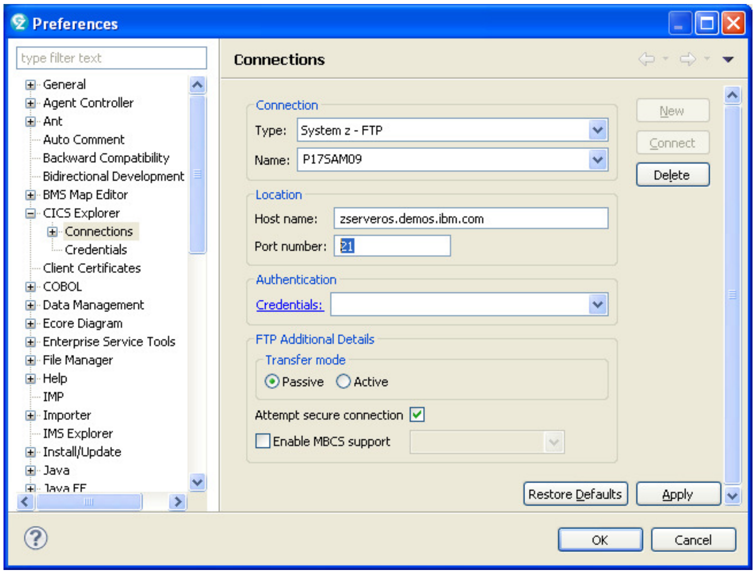
□ Enable MBCS support

In the **Name** field enter P***nn***SAM09 where ***nn*** is your team number

In the **Host name** field enter **zserveros.demos.ibm.com**

Keep the **Port Number** as 21 (FTP port) and **Transfer mode** as Passive.

Click **Apply** and then **OK.**



Connection
Type: System z - FTP
Name: P17SAM09

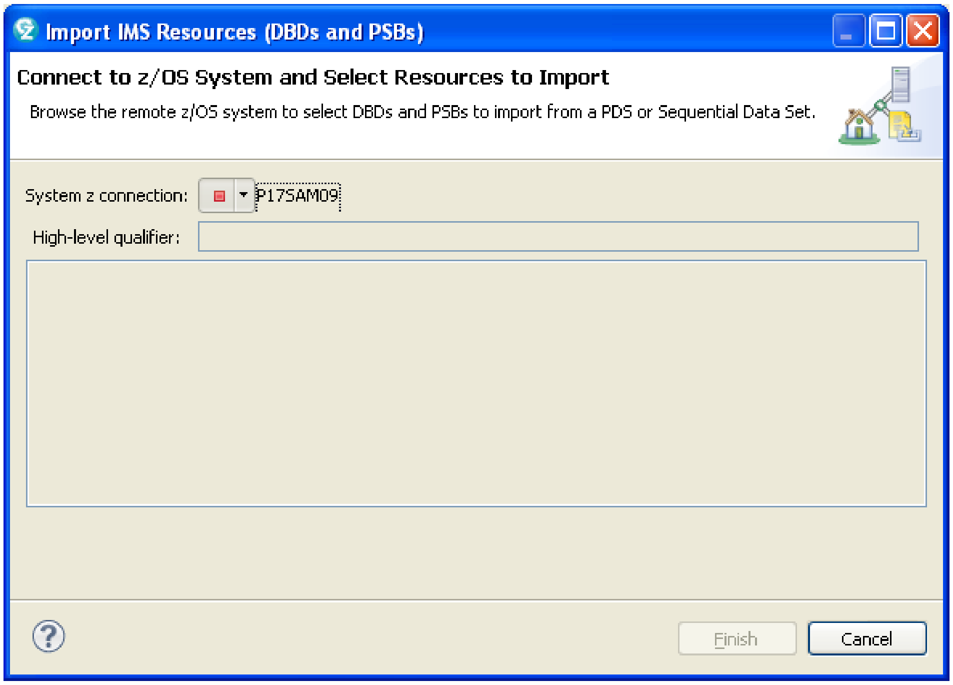
Location
Host name: zserveros.demos.ibm.com
Port number: 21

Authentication
Credentials:

FTP Additional Details
Transfer mode
● Passive ○ Active
Attempt secure connection ☑
□ Enable MBCS support

You will return to the **Connect to z/OS System and Select Resources to Import**

box which now has your connection name.

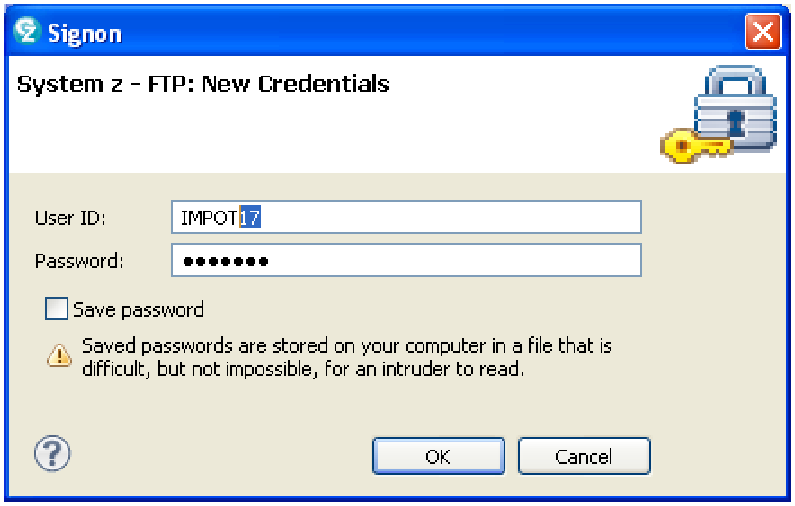


Connect to z/OS System and Select Resources to Import

Browse the remote z/OS system to select DBDs and PSBs to import from a PDS or Sequential Data Set.

System z connection: P17SAM09
High-level qualifier:

To establish a connection, **click the orange box** (choose the connection you created) to open the **System z –FTP New Credentials** box.



Signon

System z - FTP: New Credentials

User ID: IMPOT17

Password: ●●●●●●●

□ Save password

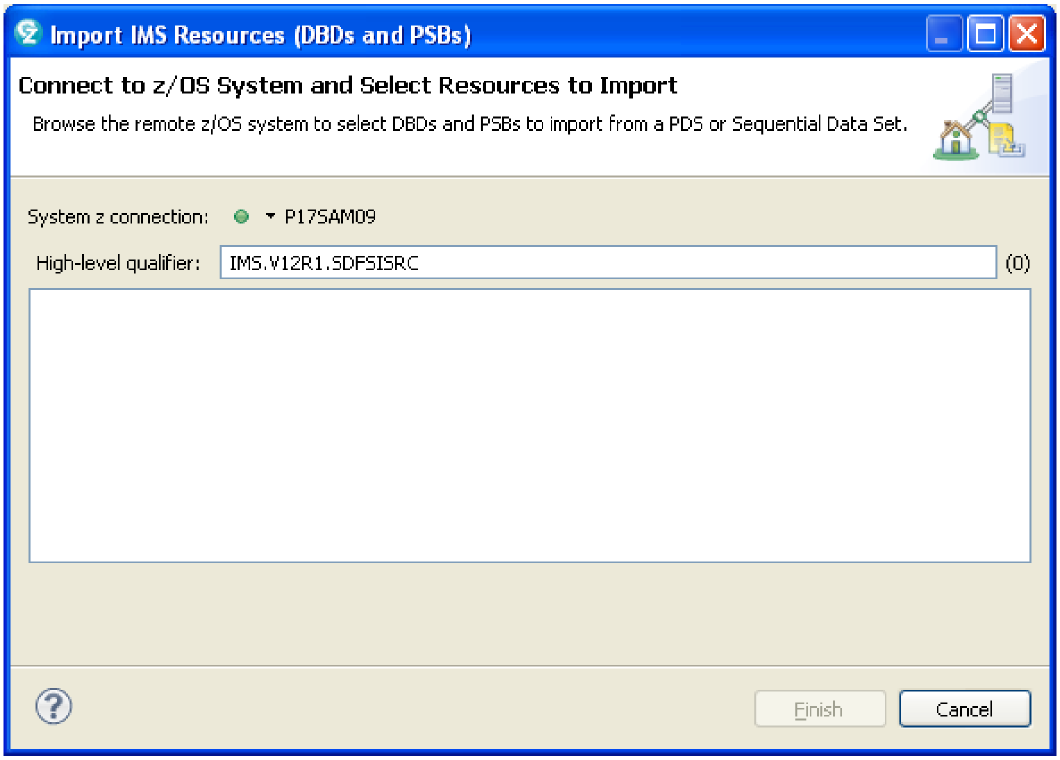
Saved passwords are stored on your computer in a file that is difficult, but not impossible, for an intruder to read.

In the userid field enter IMPOT***xx*** where xx is your team number.

In the password field enter value provided by lab instructor.

Click **OK** to establish the connection.

6. You are now ready to retrieve your IMS resources.



Import IMS Resources (DBDs and PSBs)

Connect to z/OS System and Select Resources to Import

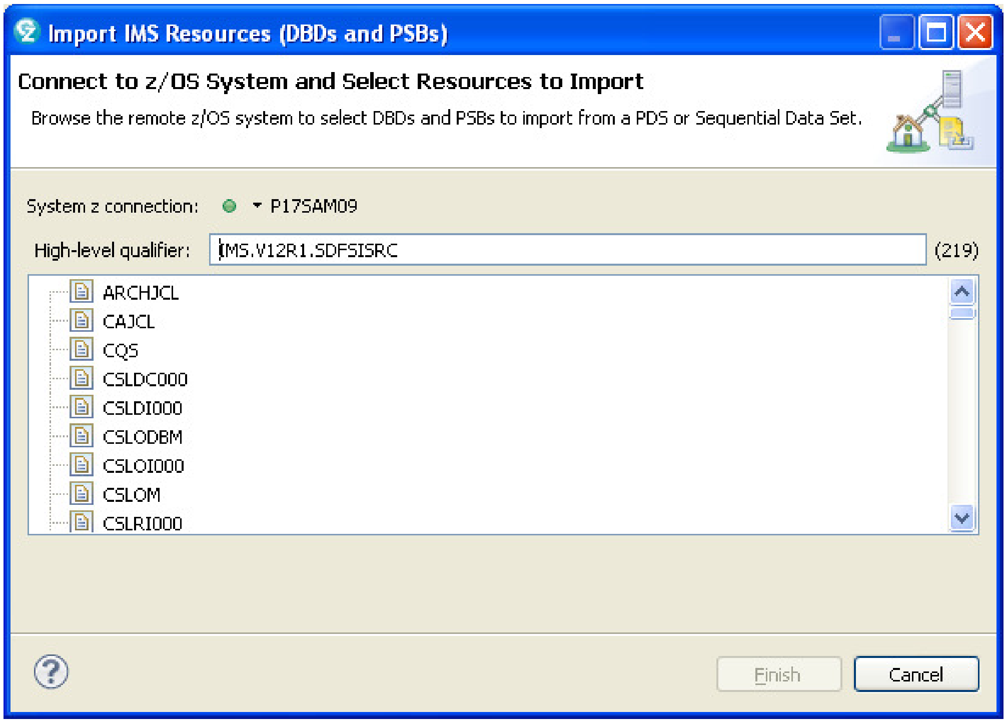
Browse the remote z/OS system to select DBDs and PSBs to import from a PDS or Sequential Data Set.

System z connection: ● P17SAM09

High-level qualifier: IMS.V12R1.SDFSISRC (0)

Change the **High-Level qualifier** field to **IMS.V12R1.SDFSISRC** and hit **Enter** on your

PC keyboard.



Import IMS Resources (DBDs and PSBs)

Connect to z/OS System and Select Resources to Import

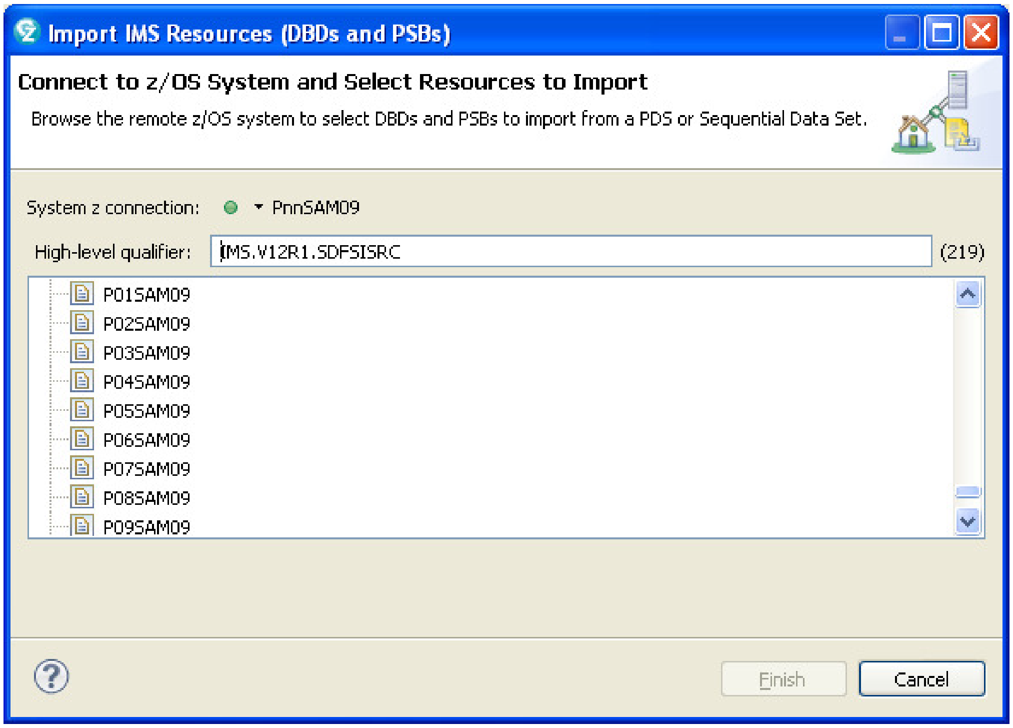
Browse the remote z/OS system to select DBDs and PSBs to import from a PDS or Sequential Data Set.

System z connection: P17SAM09

High-level qualifier: IMS.V12R1.SDFSISRC (219)

- ARCHJCL
- CAJCL
- CQS
- CSLDC000
- CSLDI000
- CSLODBM
- CSLOI000
- CSLOM
- CSLRI000

Scroll down the list and select your PNNSAM09 PSB



Import IMS Resources (DBDs and PSBs)

Connect to z/OS System and Select Resources to Import

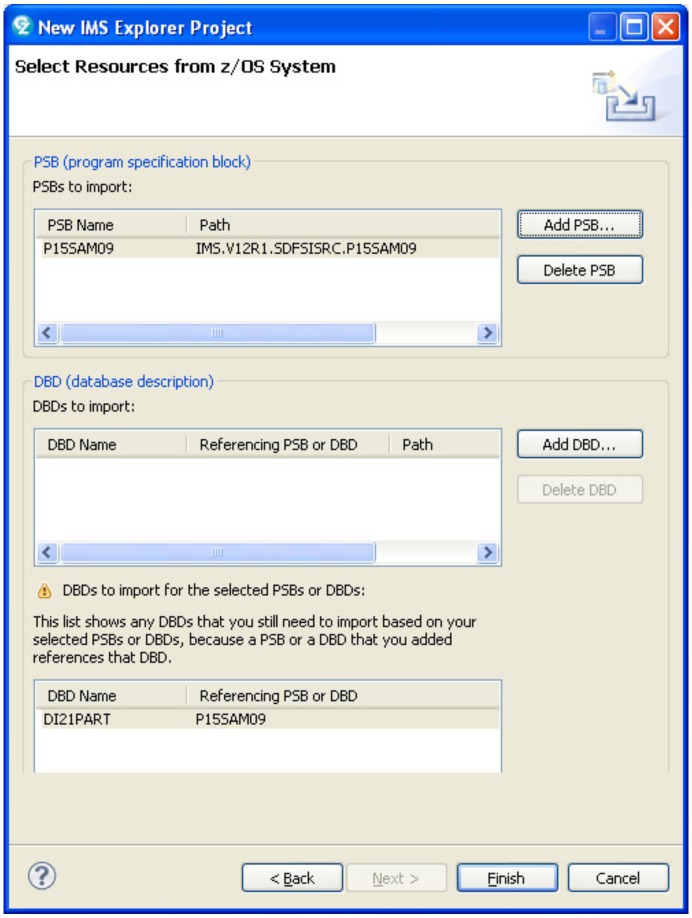
Browse the remote z/OS system to select DBDs and PSBs to import from a PDS or Sequential Data Set.

System z connection: PnnSAM09

High-level qualifier: IMS.V12R1.SDFSISRC (219)

- P01SAM09
- P02SAM09
- P03SAM09
- P04SAM09
- P05SAM09
- P06SAM09
- P07SAM09
- P08SAM09
- P09SAM09

Click **Finish** to activate the parsing of the PSB and DBD.



Select Resources from z/OS System

PSB (program specification block)

PSBs to import:

PSB Name	Path
P15SAM09	IMS.V12R1.SDFSISRC.P15SAM09

DBD (database description)

DBDs to import:

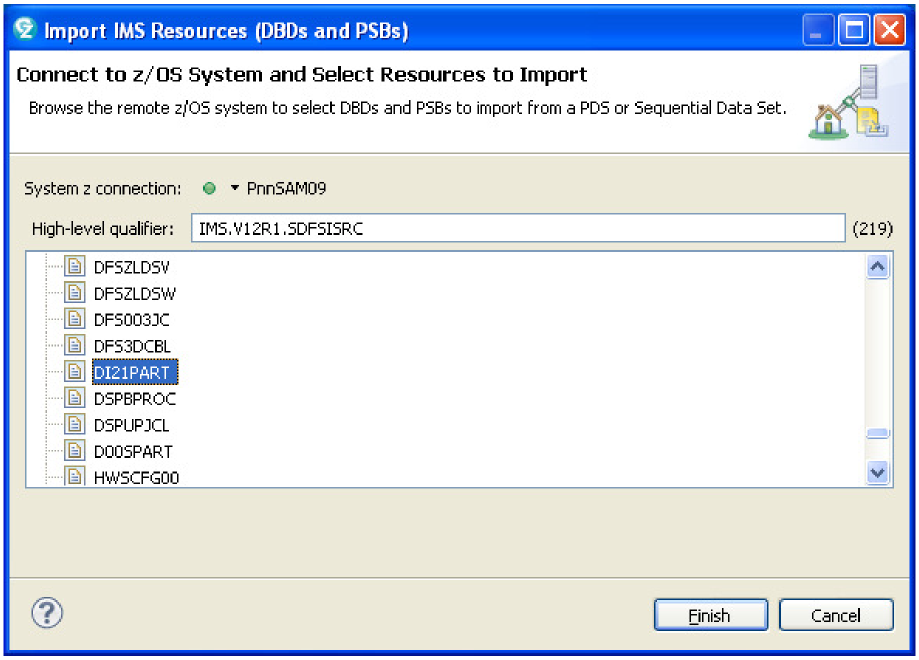
DBD Name	Referencing PSB or DBD	Path

⚠ DBDs to import for the selected PSBs or DBDs:

This list shows any DBDs that you still need to import based on your selected PSBs or DBDs, because a PSB or a DBD that you added references that DBD.

DBD Name	Referencing PSB or DBD
DI21PART	P15SAM09

Note you will be prompted to add the DBD DI21PART. Select the **ADD DBD** button and then scroll and then select **DI21PART** Click **FINISH**.



Connect to z/OS System and Select Resources to Import

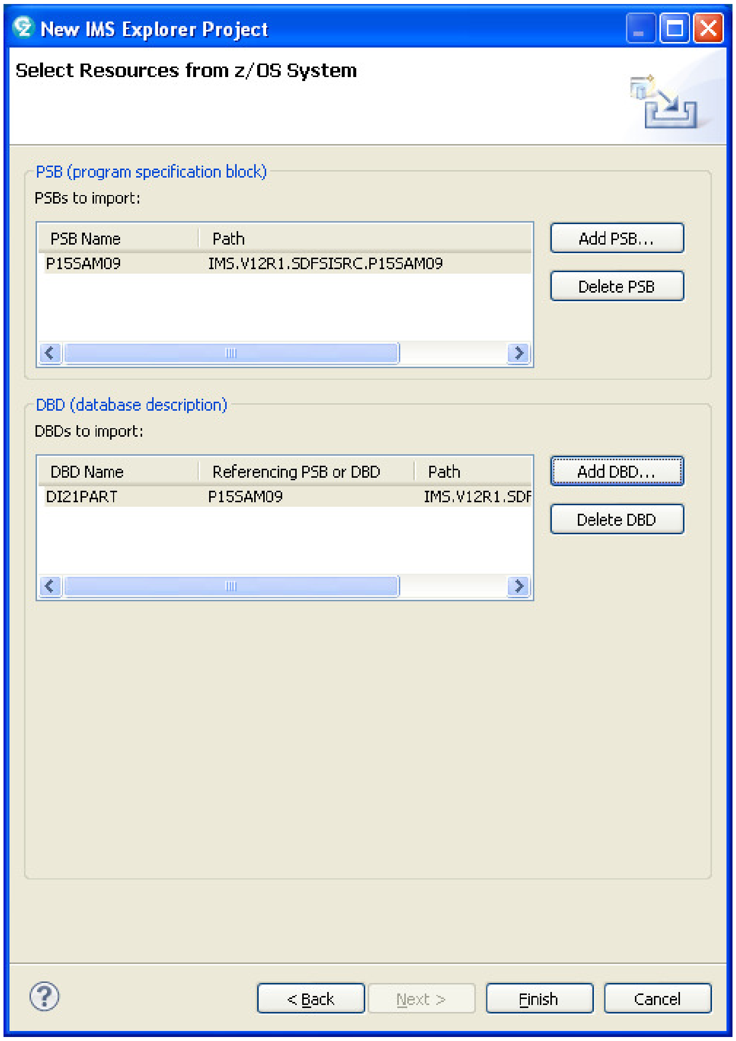
Browse the remote z/OS system to select DBDs and PSBs to import from a PDS or Sequential Data Set.

System z connection: ● PnnSAM09

High-level qualifier: IMS.V12R1.SDFSISRC (219)

- DFSZLDSV
- DFSZLDSW
- DFS003JC
- DFS3DCBL
- DI21PART
- DSPBPROC
- DSPUPJCL
- D00SPART
- HWSCFG00

After parsing completes, your project is created.



New IMS Explorer Project

Select Resources from z/OS System

PSB (program specification block)

PSBs to import:

PSB Name	Path
P15SAM09	IMS.V12R1.SDFSISRC.P15SAM09

DBD (database description)

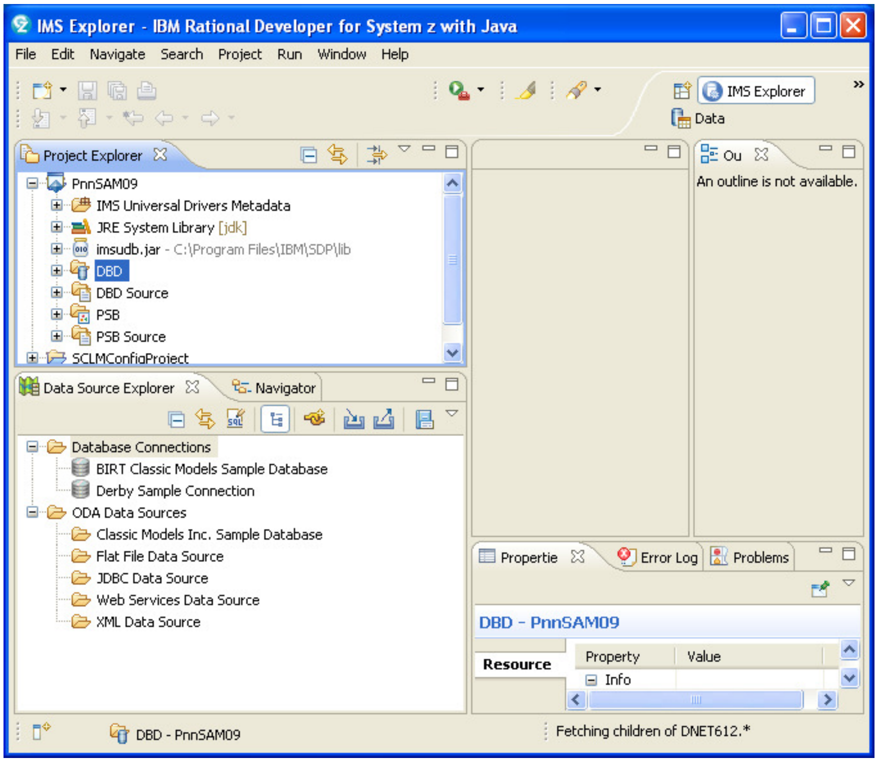
DBDs to import:

DBD Name	Referencing PSB or DBD	Path
DI21PART	P15SAM09	IMS.V12R1.SDF

Click on **Finish.**

Now it is time to add the fields to the segments that were not defined in the DBD but are available in a Cobol Copybook.

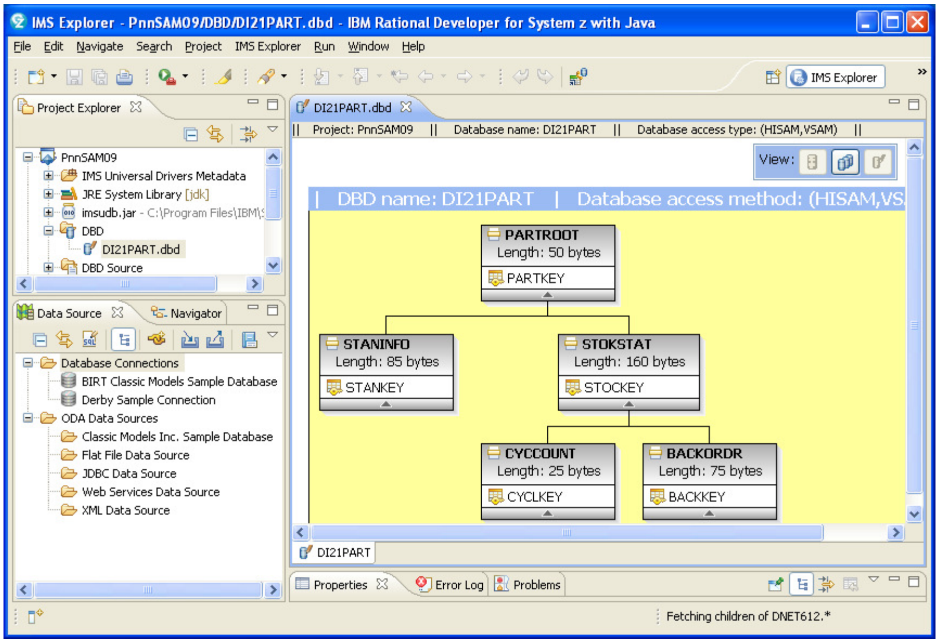
7. In the **Project Explorer** box, click the + to open your P***nn***SAM09 project and navigate to the DBD folder.



An outline is not available.

Fetching children of DNET612.*

To open the basic view double click on DI21PART.



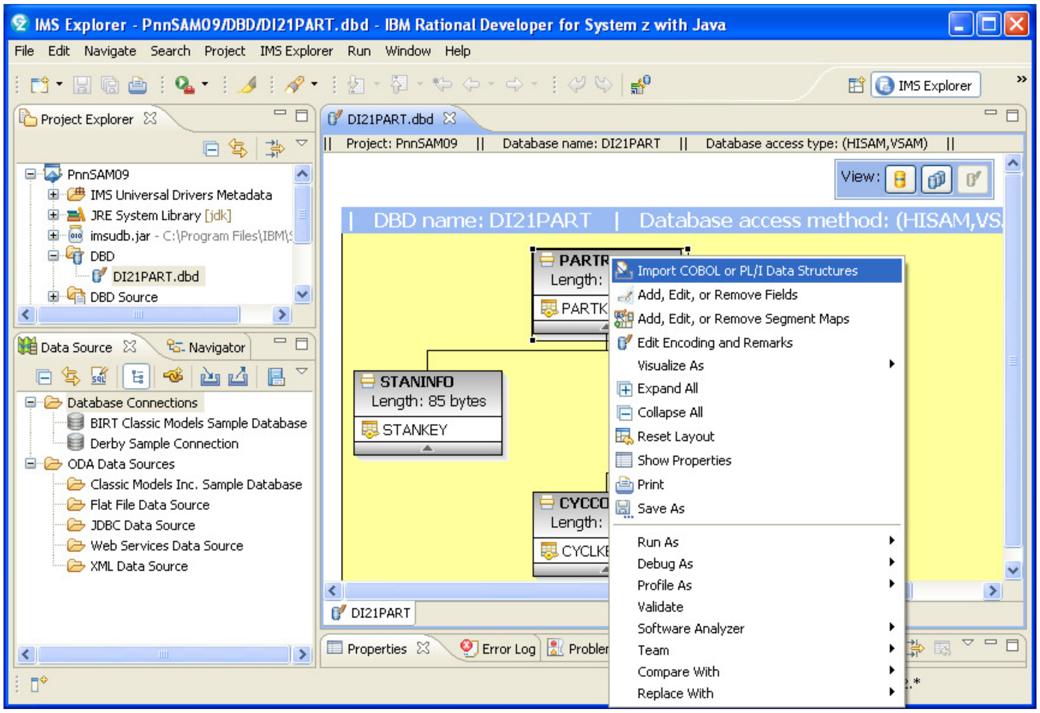
Project: PnnSAM09 || Database name: DI21PART || Database access type: (HISAM,VSAM) ||

DBD name: DI21PART | Database access method: (HISAM,VS

Fetching children of DNET612.*

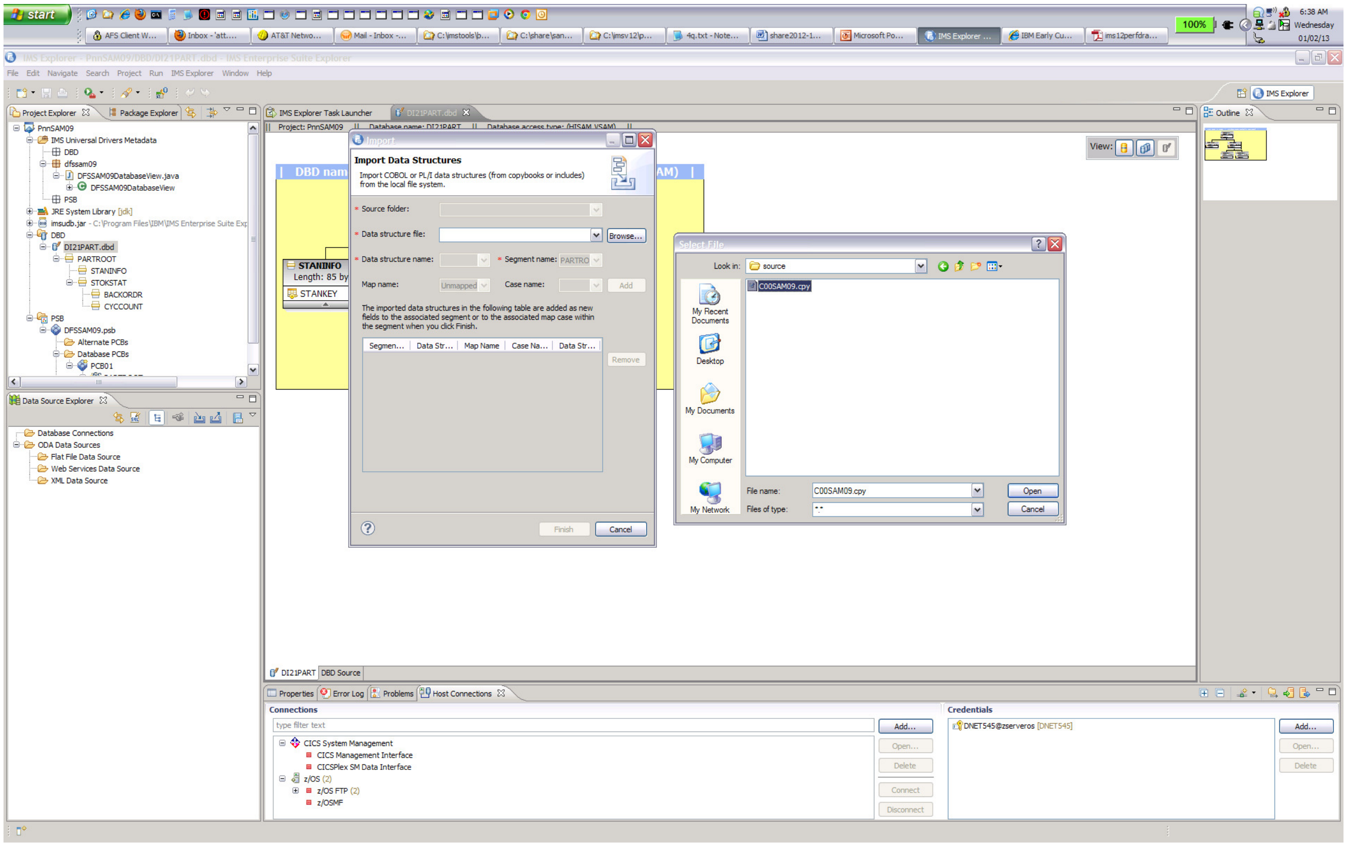
You will see a graphical representation of the database.

The Manage Fields function is used to add more fields to the segment since only the key fields are defined. Right click on PARTROOT and select **Import COBOL or PL/I Structures.**


IMS Explorer - PnnSAM09/DBD/DI21PART.dbd - IBM Rational Developer for System z with Java
File Edit Navigate Search Project IMS Explorer Run Window Help
IMS Explorer
Project Explorer
PnnSAM09
IMS Universal Drivers Metadata
JRE System Library [jdk]
imsudb.jar - C:\Program Files\IBM\
DBD
DI21PART.dbd
DBD Source
Data Source
Navigator
Database Connections
BIRT Classic Models Sample Database
Derby Sample Connection
ODA Data Sources
Classic Models Inc. Sample Database
Flat File Data Source
JDBC Data Source
Web Services Data Source
XML Data Source
DI21PART.dbd
Project: PnnSAM09 || Database name: DI21PART || Database access type: (HISAM,VSAM) ||
View:
| DBD name: DI21PART | Database access method: (HISAM,VS
PARTR
Length:
PARTK
STANINFO
Length: 85 bytes
STANKEY
CYCCO
Length:
CYCLKE
DI21PART
Properties
Error Log
Probler
Import COBOL or PL/I Data Structures
Add, Edit, or Remove Fields
Add, Edit, or Remove Segment Maps
Edit Encoding and Remarks
Visualize As
Expand All
Collapse All
Reset Layout
Show Properties
Print
Save As
Run As
Debug As
Profile As
Validate
Software Analyzer
Team
Compare With
Replace With

The **Import Data Structures** box opens. You will need to import the COBOL structures. The copybook was previously downloaded to your workstation. Select the **Browse** button and look for the following directory **C:\share\anaheim2014\lab\source.**

Select **C00SAM09** and click **Open.**



Import Data Structures

Import COBOL or PL/I data structures (from copybooks or includes) from the local file system.

The imported data structures in the following table are added as new fields to the associated segment or to the associated map case within the segment when you click Finish.

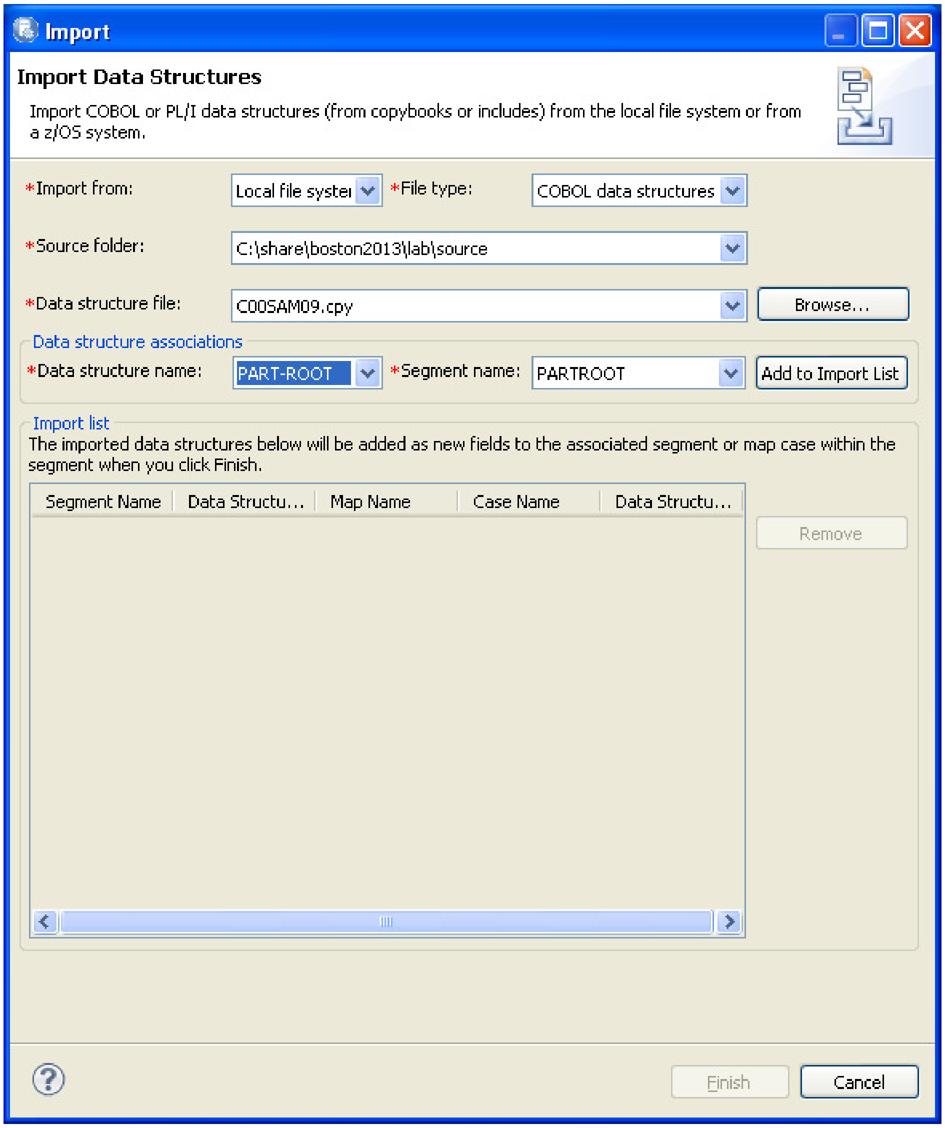
Segment name: PARTRO

Look in: source

File name: C00SAM09.cpy

Files of type: *.*

Use the Drop down list to specify the structure for the PARTROOT segment.



Import Data Structures

Import COBOL or PL/I data structures (from copybooks or includes) from the local file system or from a z/OS system.

*Import from: Local file syste
*File type: COBOL data structures
*Source folder: C:\share\boston2013\lab\source
*Data structure file: C00SAM09.cpy

Data structure associations

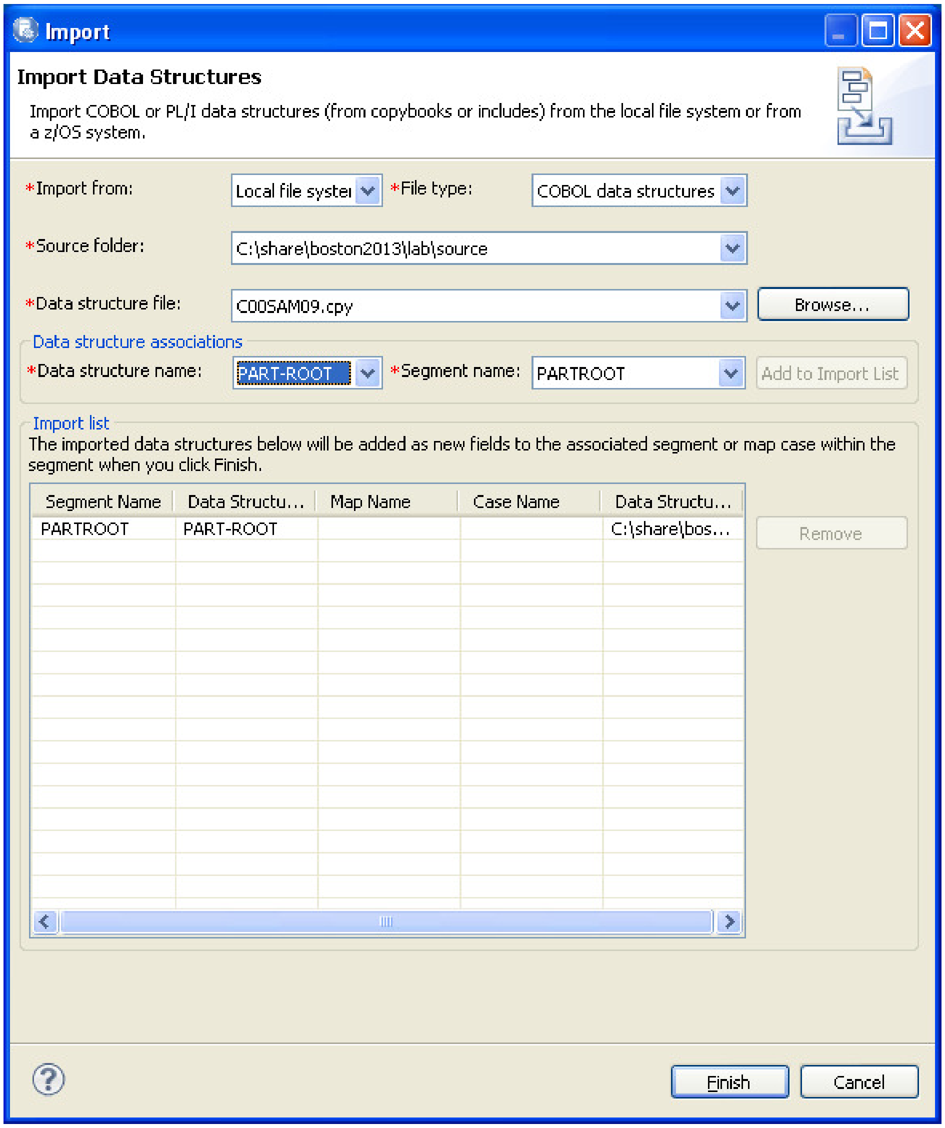
*Data structure name: PART-ROOT
*Segment name: PARTROOT

Import list

The imported data structures below will be added as new fields to the associated segment or map case within the segment when you click Finish.

Segment Name	Data Structu...	Map Name	Case Name	Data Structu...

Select **Add to Import List** button.



Import Data Structures

Import COBOL or PL/I data structures (from copybooks or includes) from the local file system or from a z/OS system.

*Import from: Local file systei

*File type: COBOL data structures

*Source folder: C:\share\boston2013\lab\source

*Data structure file: C00SAM09.cpy

Data structure associations

*Data structure name: PART-ROOT

*Segment name: PARTROOT

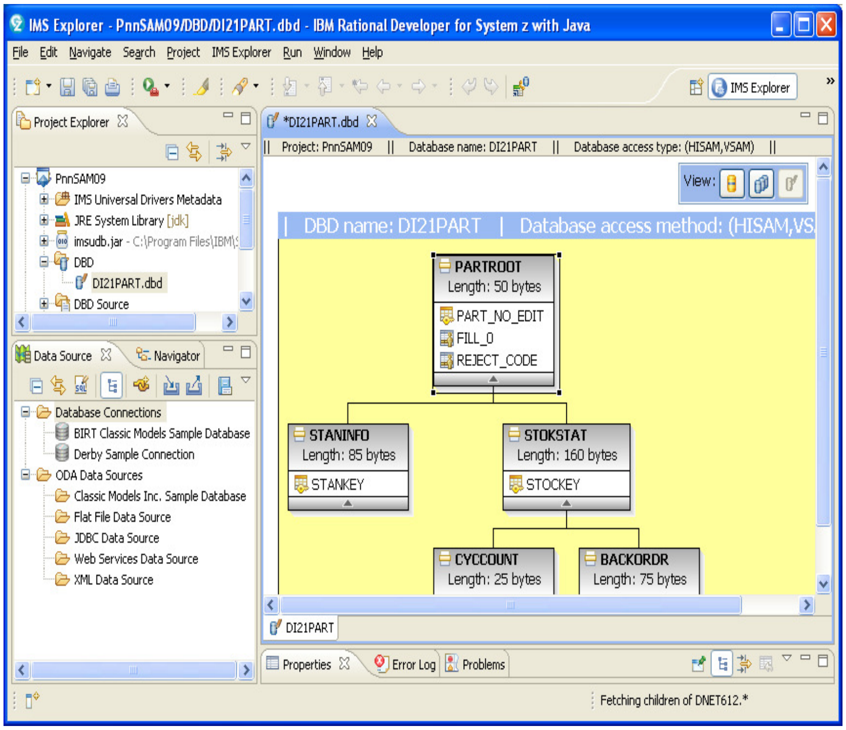
Import list

The imported data structures below will be added as new fields to the associated segment or map case within the segment when you click Finish.

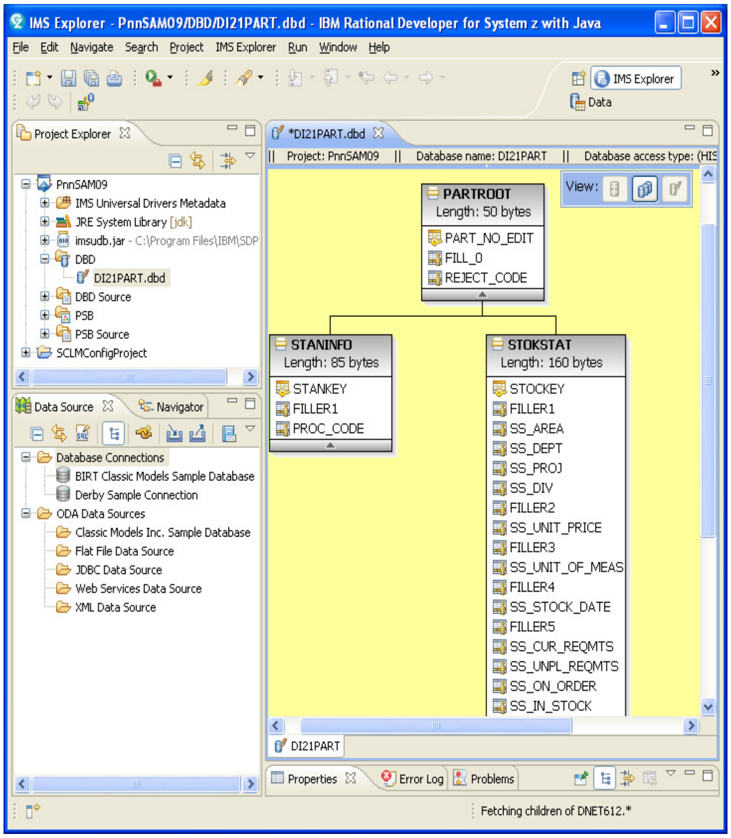
Segment Name	Data Structu...	Map Name	Case Name	Data Structu...
PARTROOT	PART-ROOT			C:\share\bos...

Click **Finish** to complete the import process.

The PARTROOT segment (table) will now have all the fields (columns).



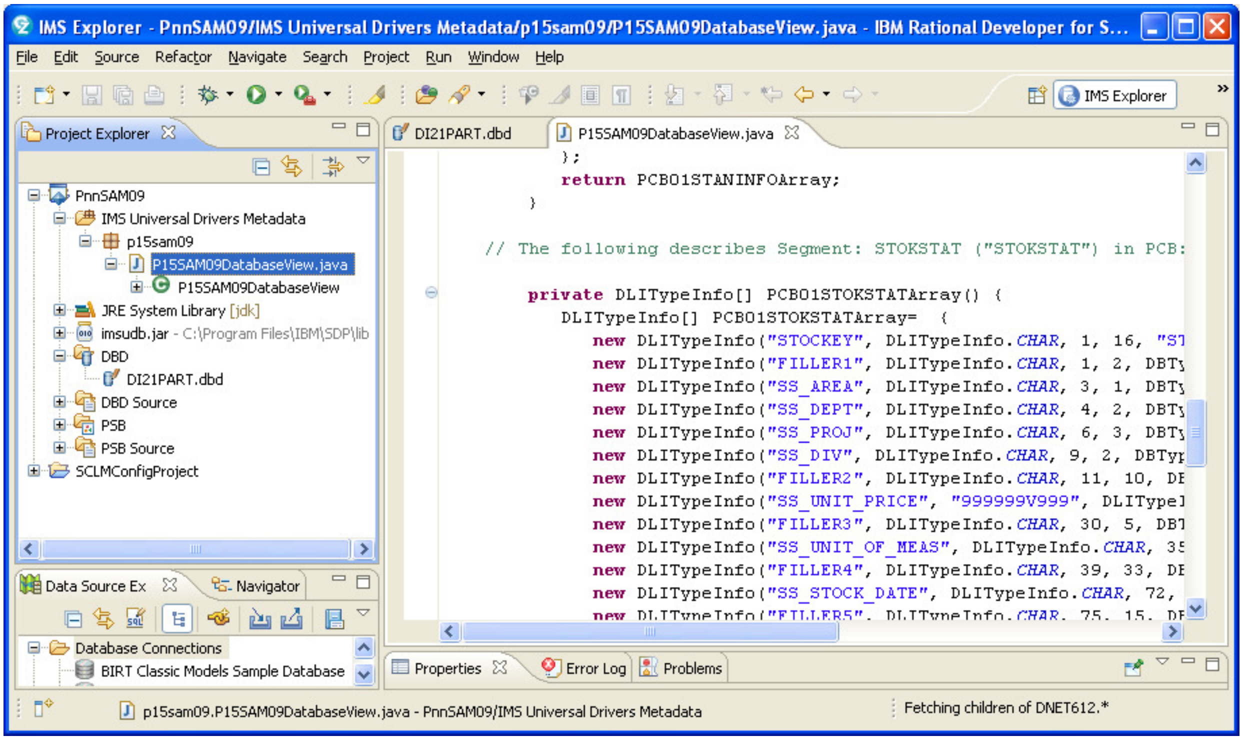
Repeat the above process for the other segments.



This completes the field definitions.

Use **Ctrl-S** to save the changes or just use the **x** tab to close the view.

In the **Project Explorer** box, Follow the path **IMS Universal Drivers Metadata** > P***nn***sam09 and double-click P***nn***SAM09DatabaseView.java to view the updates to the metadata.


IMS Explorer - PnnSAM09/IMS Universal Drivers Metadata/p15sam09/P15SAM09DatabaseView.java - IBM Rational Developer for S...
File Edit Source Refactor Navigate Search Project Run Window Help
IMS Explorer
Project Explorer
PnnSAM09
IMS Universal Drivers Metadata
p15sam09
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P15SAM09DatabaseView
JRE System Library [jdk]
imsudb.jar - C:\Program Files\IBM\SDP\lib
DBD
DI21PART.dbd
DBD Source
PSB
PSB Source
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Properties
Error Log
Problems
p15sam09.P15SAM09DatabaseView.java - PnnSAM09/IMS Universal Drivers Metadata
Fetching children of DNET612.*

```
            };
            return PCB01STANINFOArray;
        }

    // The following describes Segment: STOKSTAT ("STOKSTAT") in PCB:

        private DLITypeInfo[] PCB01STOKSTATArray() {
            DLITypeInfo[] PCB01STOKSTATArray=  {
                new DLITypeInfo("STOCKEY", DLITypeInfo.CHAR, 1, 16, "ST
                new DLITypeInfo("FILLER1", DLITypeInfo.CHAR, 1, 2, DBTy
                new DLITypeInfo("SS_AREA", DLITypeInfo.CHAR, 3, 1, DBTy
                new DLITypeInfo("SS_DEPT", DLITypeInfo.CHAR, 4, 2, DBTy
                new DLITypeInfo("SS_PROJ", DLITypeInfo.CHAR, 6, 3, DBTy
                new DLITypeInfo("SS_DIV", DLITypeInfo.CHAR, 9, 2, DBTyp
                new DLITypeInfo("FILLER2", DLITypeInfo.CHAR, 11, 10, DE
                new DLITypeInfo("SS_UNIT_PRICE", "999999V999", DLITypeI
                new DLITypeInfo("FILLER3", DLITypeInfo.CHAR, 30, 5, DBT
                new DLITypeInfo("SS_UNIT_OF_MEAS", DLITypeInfo.CHAR, 35
                new DLITypeInfo("FILLER4", DLITypeInfo.CHAR, 39, 33, DE
                new DLITypeInfo("SS_STOCK_DATE", DLITypeInfo.CHAR, 72,
                new DLITypeInfo("FILLER5", DLITypeInfo.CHAR, 75, 15, DE
```

This completes the building of the metadata.

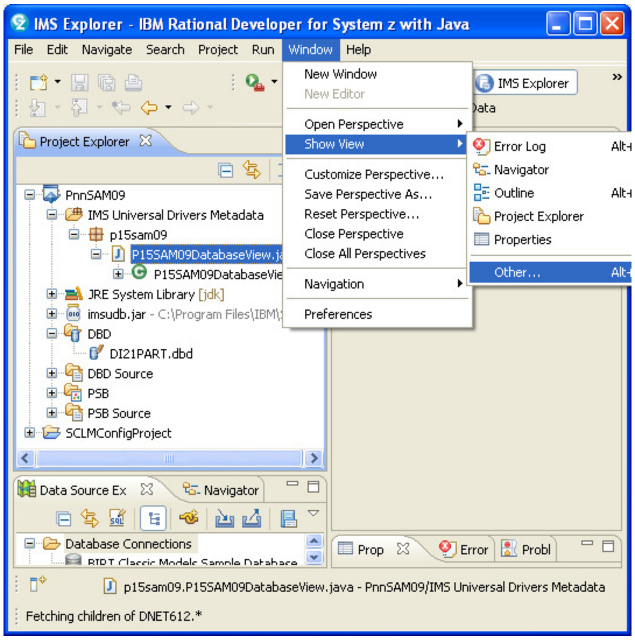
8. You are now ready to use the Data Store Explorer (DSE) to access the IMS PART database using the metadata you just created.

To connect to an IMS database use the **New Connection** wizard to create a connection profile, so that you can connect to an IMS database and browse existing data objects.

If you already have the **Data Source Explorer** box open at the bottom of your IMS Explorer window then you can skip the following instructions.

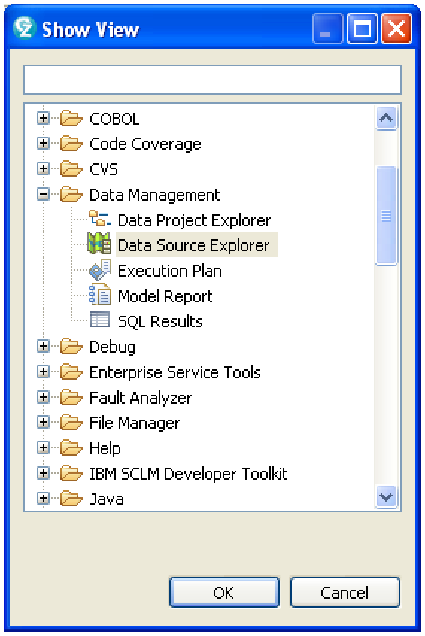
If you do not have the **Data Source Explorer** box then click on the **Window** tab at

the top of the IMS Explorer tool and follow the path: **Show View > Other.** In the **Show View** > **Other** box, click **+ Data Management,** select **Data Source Explorer** and click **OK.**

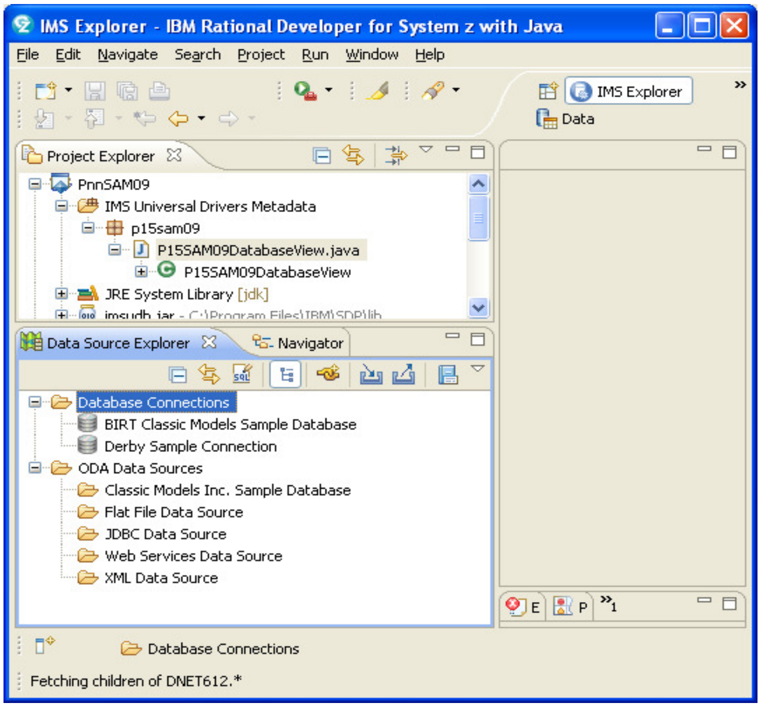


p15sam09.P15SAM09DatabaseView.java - PnnSAM09/IMS Universal Drivers Metadata

Fetching children of DNET612.*

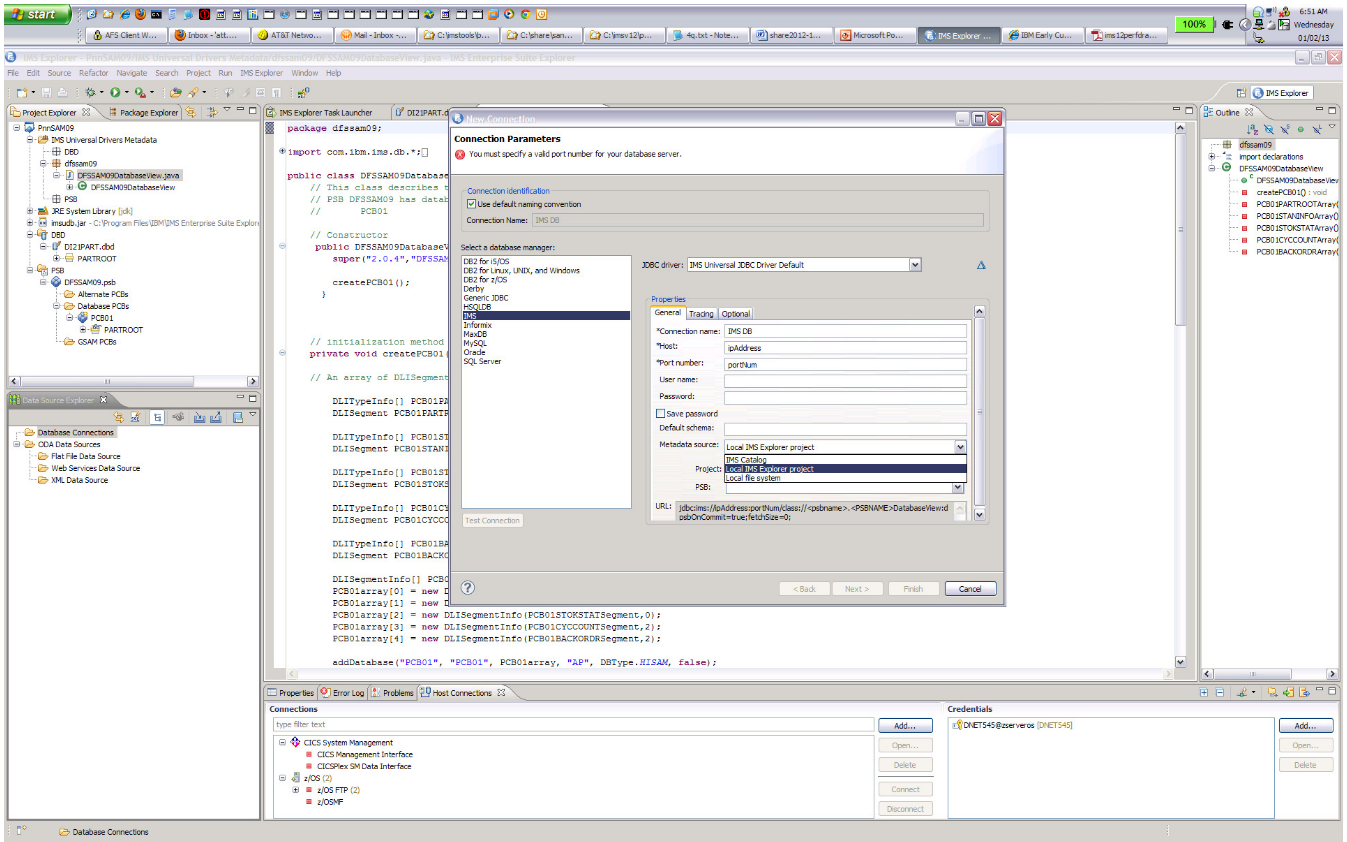


In the **Data Source Explorer**, right-click the **Database Connections** folder, and click **New**.



Fetching children of DNET612.*

The **New Connections** box opens up. Select **IMS** as the database manager and the driver name **IMS Universal JDBC Drive**r as the JDBC driver.



Connection Parameters

You must specify a valid port number for your database server.

Connection identification

☑ Use default naming convention

Connection Name: IMS DB

Select a database manager: IMS

JDBC driver: IMS Universal JDBC Driver Default

Properties — General

*Connection name: IMS DB

*Host: ipAddress

*Port number: portNum

User name:

Password:

□ Save password

Default schema:

Metadata source: Local IMS Explorer project

Project:

PSB:

URL: jdbc:ims://ipAddress:portNum/class://<psbname>.<PSBNAME>DatabaseView:dpsbOnCommit=true;fetchSize=0;

```
package dfssam09;

import com.ibm.ims.db.*;

public class DFSSAM09Database
    // This class describes t
    // PSB DFSSAM09 has datab
    //        PCB01

    // Constructor
     public DFSSAM09DatabaseV
        super("2.0.4","DFSSAM

        createPCB01();
      }

    // initialization method
    private void createPCB01(

    // An array of DLISegment

        DLITypeInfo[] PCB01PA
        DLISegment PCB01PARTR

        DLITypeInfo[] PCB01ST
        DLISegment PCB01STANI

        DLITypeInfo[] PCB01ST
        DLISegment PCB01STOKS

        DLITypeInfo[] PCB01CY
        DLISegment PCB01CYCCO

        DLITypeInfo[] PCB01BA
        DLISegment PCB01BACKO

        DLISegmentInfo[] PCB0
        PCB01array[0] = new D
        PCB01array[1] = new D
        PCB01array[2] = new DLISegmentInfo(PCB01STOKSTATSegment,0);
        PCB01array[3] = new DLISegmentInfo(PCB01CYCCOUNTSegment,2);
        PCB01array[4] = new DLISegmentInfo(PCB01BACKORDRSegment,2);

        addDatabase("PCB01", "PCB01", PCB01array, "AP", DBType.HISAM, false);
```

Under Properties General tab

In the **Connection Name** field enter **IMPOT**xx where *xx* is your team number

In the **HOST** field enter **zserveros.demos.ibm.com**

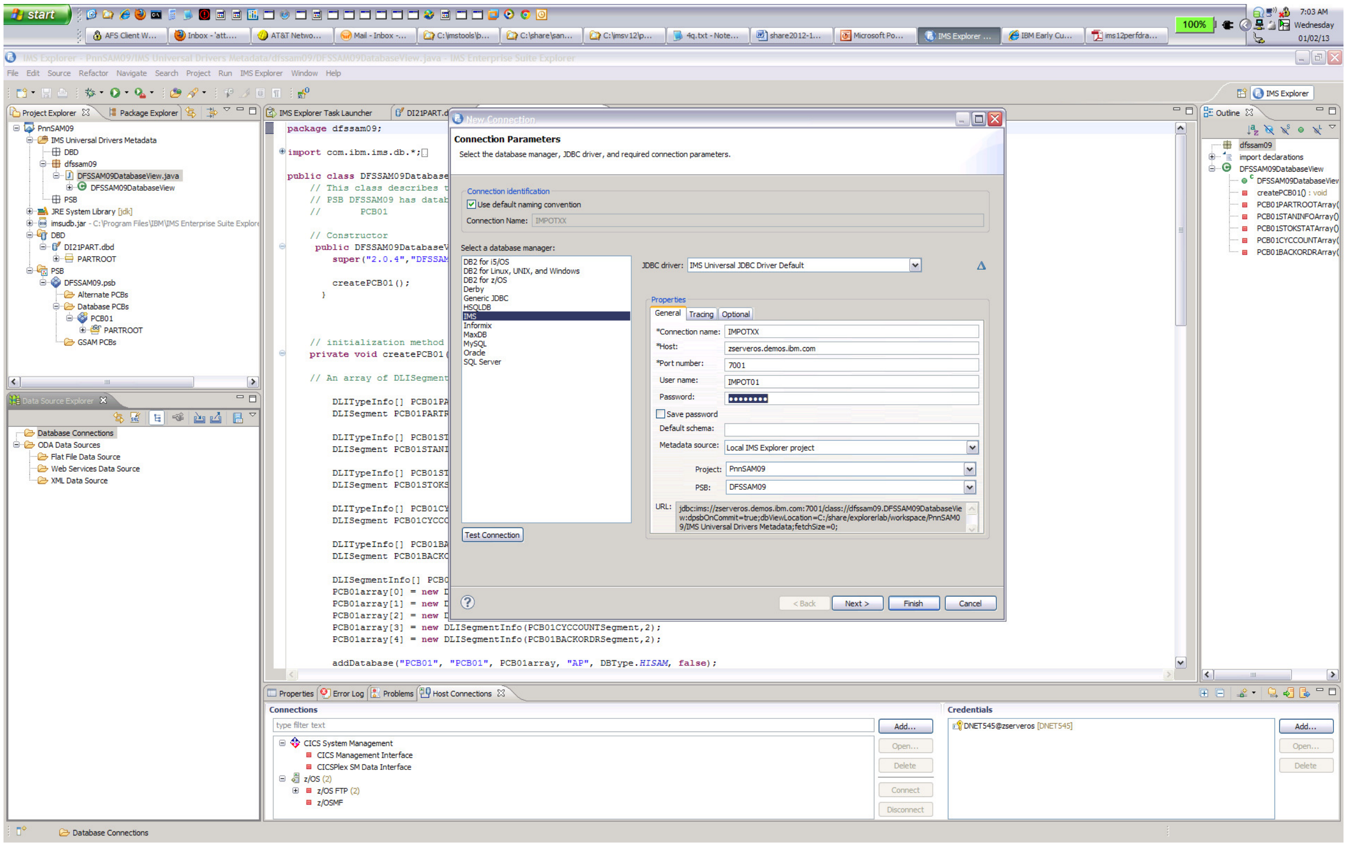
In the **Port number** field enter **7013**

In the **userid** field enter **IMPOT**xx where *xx* is your team number

In the password field enter value provided by lab instructor

In the Metadata source drop down list select **Local IMS Explorer project**

From the **Project** drop down list, select your project, e.g., P***nn***SAM09



New Connection

Connection Parameters

Select the database manager, JDBC driver, and required connection parameters.

Connection identification

☑ Use default naming convention

Connection Name: IMPOTXX

Select a database manager:

DB2 for i5/OS
DB2 for Linux, UNIX, and Windows
DB2 for z/OS
Derby
Generic JDBC
HSQLDB
IMS
Informix
MaxDB
MySQL
Oracle
SQL Server

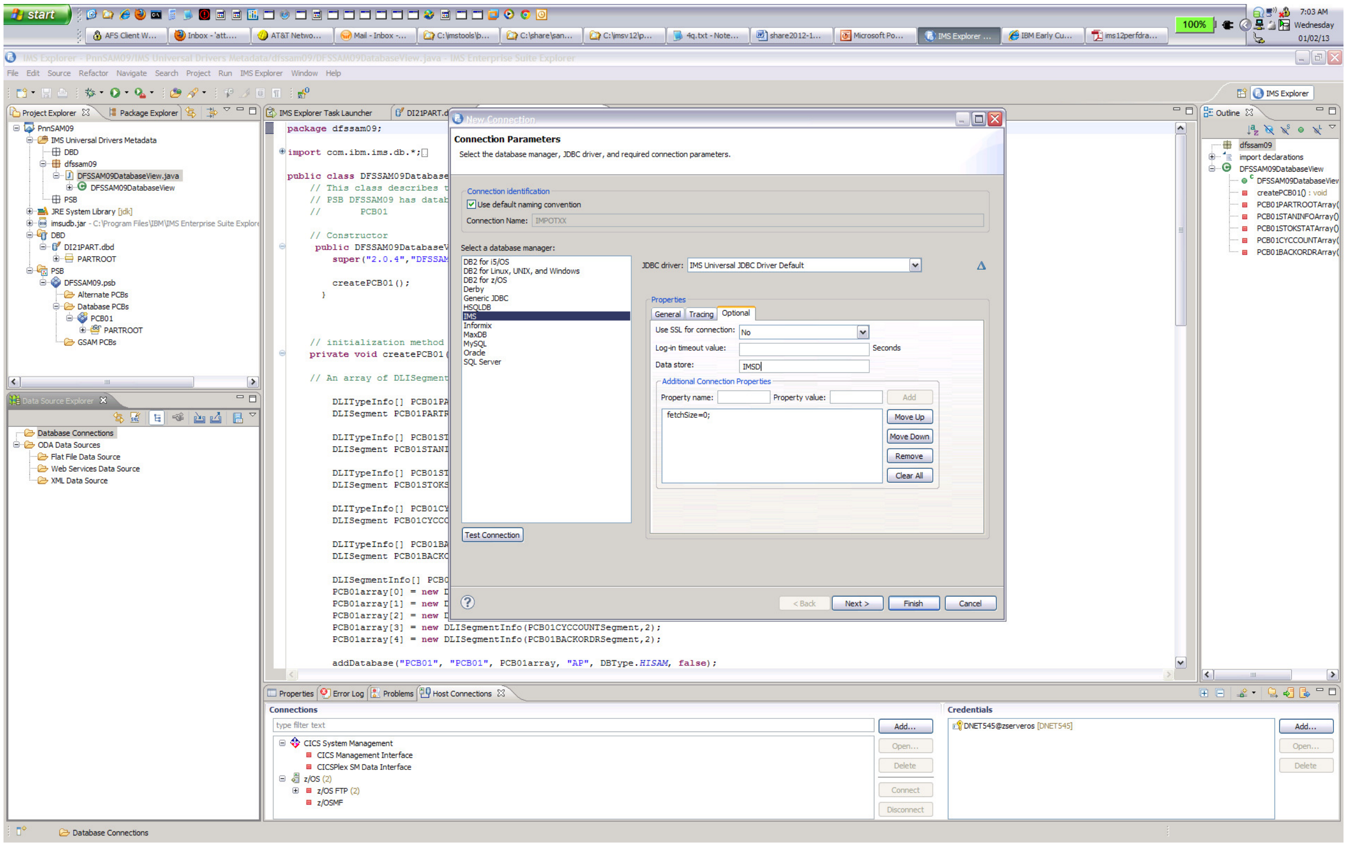
JDBC driver: IMS Universal JDBC Driver Default

Properties

General | Tracing | Optional

*Connection name: IMPOTXX
*Host: zserveros.demos.ibm.com
*Port number: 7001
User name: IMPOT01
Password: ●●●●●●●●
□ Save password
Default schema:
Metadata source: Local IMS Explorer project
Project: PnnSAM09
PSB: DFSSAM09
URL: jdbc:ims://zserveros.demos.ibm.com:7001/class://dfssam09.DFSSAM09DatabaseView:dpsbOnCommit=true;dbViewLocation=C:/share/explorerlab/workspace/PnnSAM09/IMS Universal Drivers Metadata;fetchSize=0;

Under Properties select Optional tab



New Connection

Connection Parameters

Select the database manager, JDBC driver, and required connection parameters.

Connection identification

☑ Use default naming convention

Connection Name: IMPOTXX

Select a database manager:

- DB2 for i5/OS
- DB2 for Linux, UNIX, and Windows
- DB2 for z/OS
- Derby
- Generic JDBC
- HSQLDB
- IMS
- Informix
- MaxDB
- MySQL
- Oracle
- SQL Server

JDBC driver: IMS Universal JDBC Driver Default

Properties: General | Tracing | Optional

Use SSL for connection: No

Log-in timeout value: Seconds

Data store: IMSD

Additional Connection Properties

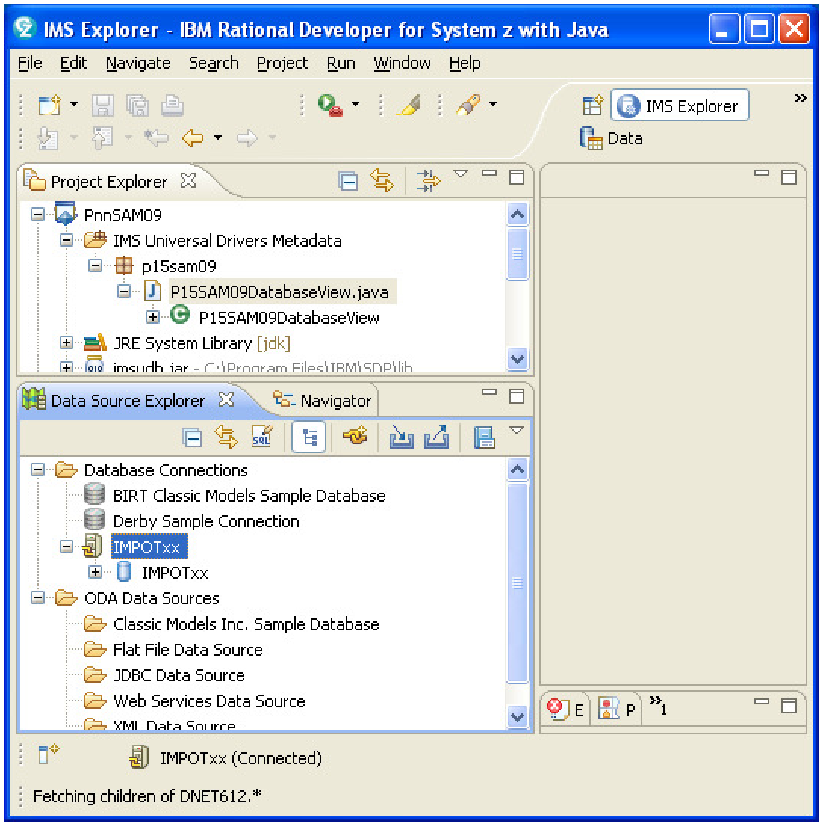
Property name: Property value:

fetchSize=0;

In the **Data store:** field enter leave blank

Click **Finish**.

The connection is displayed in the Data Source Explorer.


IMS Explorer - IBM Rational Developer for System z with Java
File Edit Navigate Search Project Run Window Help
IMS Explorer
Data
Project Explorer
PnnSAM09
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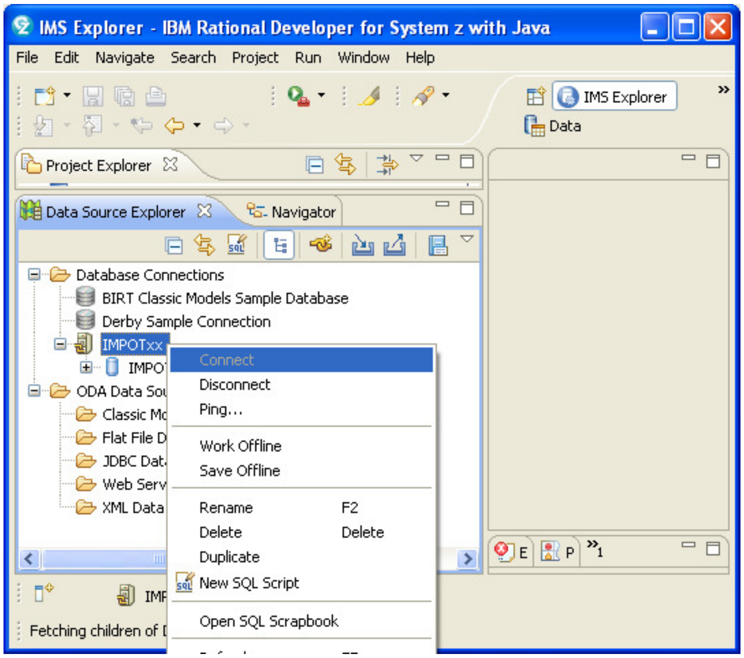
p15sam09
P15SAM09DatabaseView.java
P15SAM09DatabaseView
JRE System Library [jdk]
imsudb.jar - C:\Program Files\IBM\SDP\lib
Data Source Explorer
Navigator
Database Connections
BIRT Classic Models Sample Database
Derby Sample Connection
IMPOTxx
IMPOTxx
ODA Data Sources
Classic Models Inc. Sample Database
Flat File Data Source
JDBC Data Source
Web Services Data Source
XML Data Source
E
P
»1

IMPOTxx (Connected)

Fetching children of DNET612.*

The preceding picture shows that the connection is active. If you need to disconnect or re

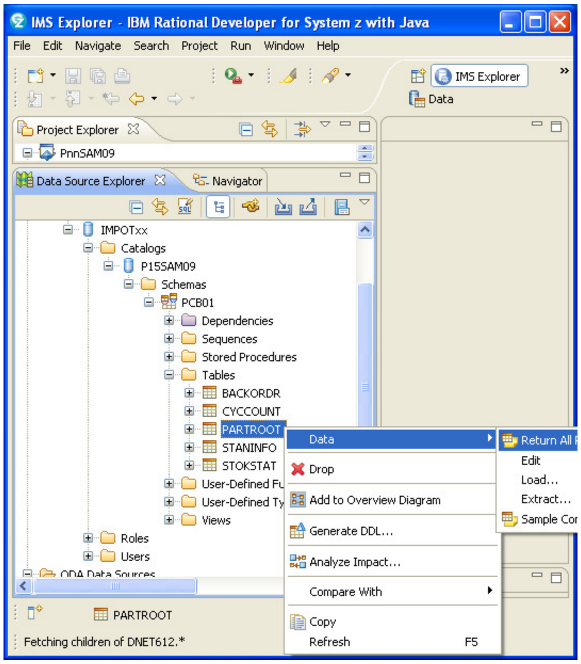
Connect, all you have to do is right click on the connection name and choose your action.



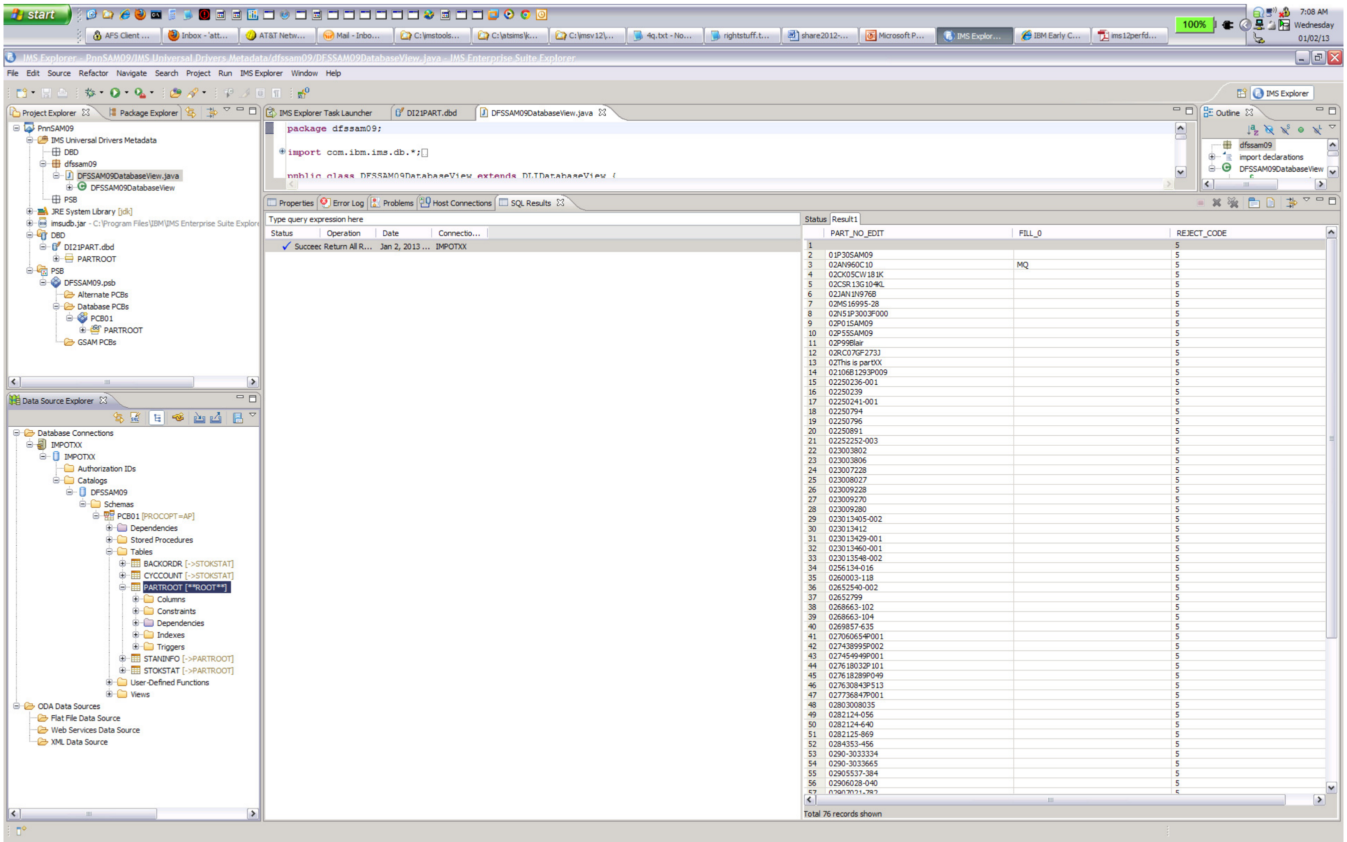
Fetching children of [

To test the connection in the **Data Source Explorer** section under **Database Connections**, right click on the connection name you defined, e.g., **IMPOT***xx*.

Expand the path until you can select PARTROOT. Right click and select **Data** then click on R**eturn All Rows** to return data.



The results will be available in the box on the right under **SQL Results**.



```
package dfssam09;

import com.ibm.ims.db.*;

public class DFSSAM09DatabaseView extends DLIDatabaseView {
```

Status	Operation	Date	Connectio...
✓ Succeec	Return All R...	Jan 2, 2013 ...	IMPOTXX

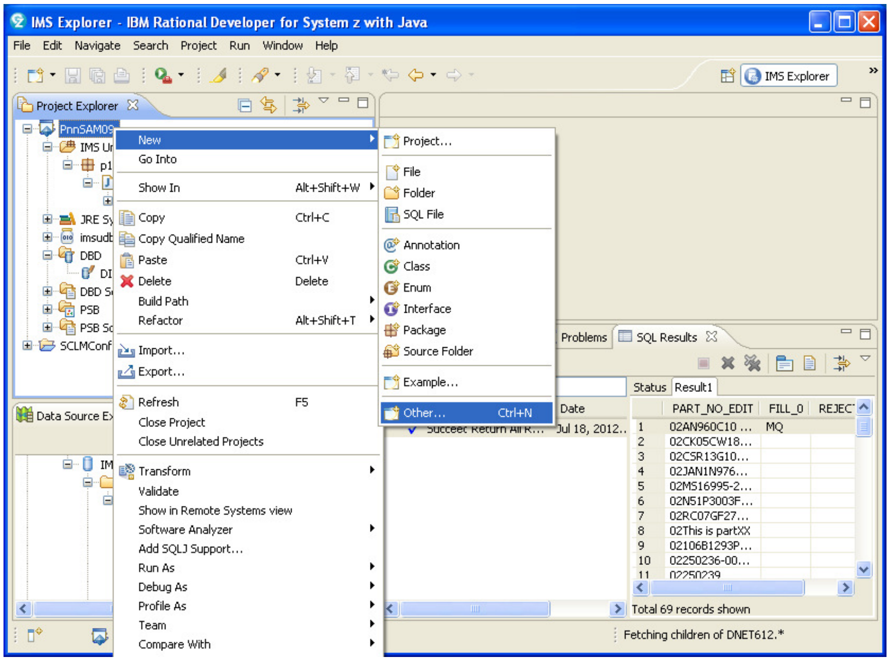
	PART_NO_EDIT	FILL_0	REJECT_CODE
1			5
2	01P30SAM09		5
3	02AN960C10	MQ	5
4	02CK05CW181K		5
5	02CSR13G104KL		5
6	02JAN1N976B		5
7	02MS16995-28		5
8	02N51P3003F000		5
9	02P01SAM09		5
10	02P55SAM09		5
11	02P99Blair		5
12	02RC07GF273J		5
13	02This is partXX		5
14	02106B1293P009		5
15	02250236-001		5
16	02250239		5
17	02250241-001		5
18	02250794		5
19	02250796		5
20	02250891		5
21	02252252-003		5
22	023003802		5
23	023003806		5
24	023007228		5
25	023008027		5
26	023009228		5
27	023009270		5
28	023009280		5
29	023013405-002		5
30	023013412		5
31	023013429-001		5
32	023013460-001		5
33	023013548-002		5
34	0256134-016		5
35	0260003-118		5
36	02652540-002		5
37	02652799		5
38	0268663-102		5
39	0268663-104		5
40	0269857-635		5
41	027060654P001		5
42	027438995P002		5
43	027454949P001		5
44	027618032P101		5
45	027618289P049		5
46	027630843P513		5
47	027736847P001		5
48	02803008035		5
49	0282124-056		5
50	0282124-640		5
51	0282125-869		5
52	0284353-456		5
53	0290-3033334		5
54	0290-3033665		5
55	02905537-384		5
56	02906028-040		5
57	02907021-782		5

Total 76 records shown

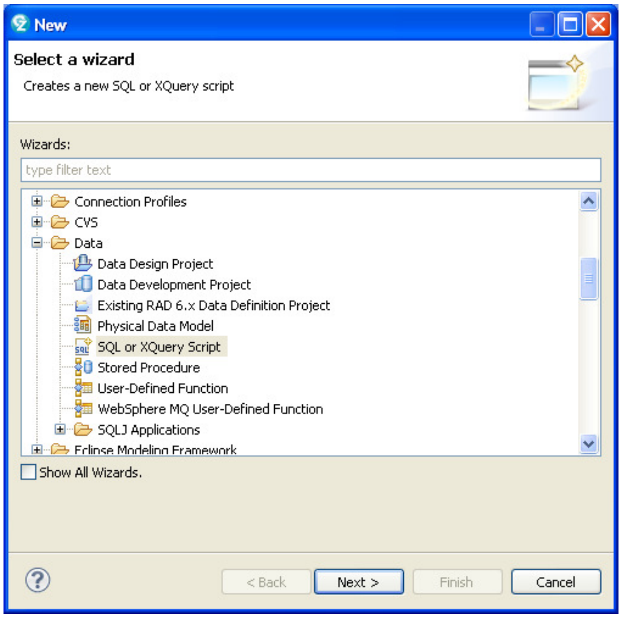
You can now also issue additional queries. In between queries, you might need to disconnect/reconnect the connections. Try looking at other tables/columns.

9. You can also try creating SQL calls using the **SQL Query Builder**.

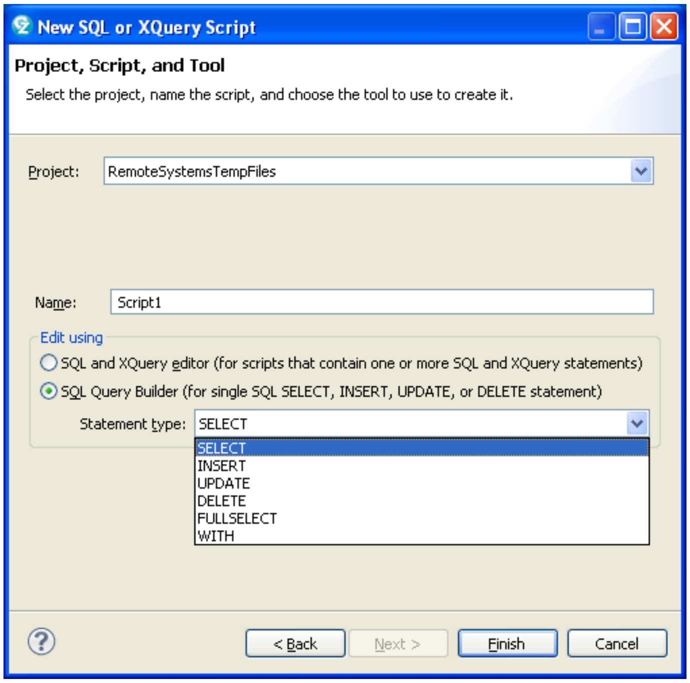
   In the **Project Explorer** box, select your project e.g., P***nn***SAM09.
   Right click **New > Other**



In the **Select a Wizard** box expand the **Data** folder and select **SQL or XQuery Script** then click **Next**.



You will see the **New SQL or Xquery Script** box change **Name** to **SelectScript1.** Choose your **Project** P***nn***SAM09 from the dropdown list. Under the radio button **SQL Query Builder** note that you can choose your Statement type. The default is **Select.**



New SQL or XQuery Script

Project, Script, and Tool

Select the project, name the script, and choose the tool to use to create it.

Project: RemoteSystemsTempFiles

Name: Script1

Edit using

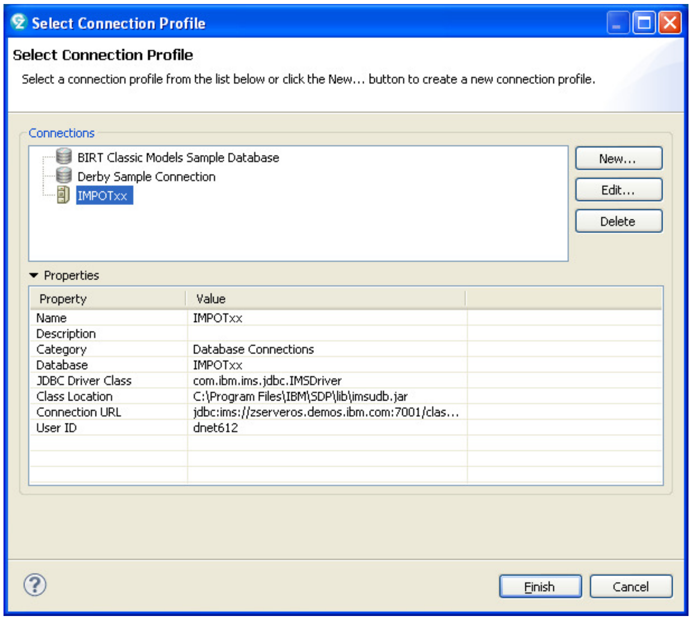
○ SQL and XQuery editor (for scripts that contain one or more SQL and XQuery statements)

● SQL Query Builder (for single SQL SELECT, INSERT, UPDATE, or DELETE statement)

Statement type: SELECT

When you have changed the values, click **Finish.**

You will need to select a connection profile for the database you want to access. Choose the one you created earlier, e.g., **IMPOT***xx.* Click **Finish.**



Select Connection Profile

Select Connection Profile

Select a connection profile from the list below or click the New... button to create a new connection profile.

Connections

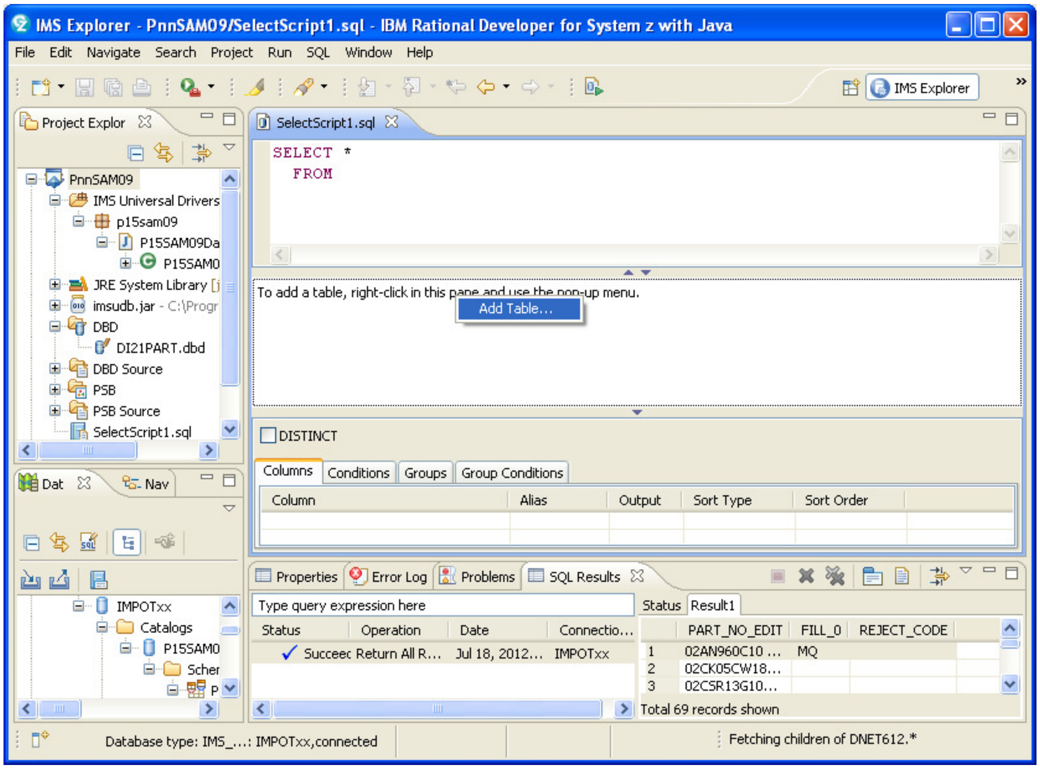
- BIRT Classic Models Sample Database
- Derby Sample Connection
- IMPOTxx

Properties

Property	Value
Name	IMPOTxx
Description	
Category	Database Connections
Database	IMPOTxx
JDBC Driver Class	com.ibm.ims.jdbc.IMSDriver
Class Location	C:\Program Files\IBM\SDP\lib\imsudb.jar
Connection URL	jdbc:ims://zserveros.demos.ibm.com:7001/clas...
User ID	dnet612

The SQL Query Builder Box opens upl

In the **Add a table** window right click and select **Add Table.**



```
SELECT *
  FROM
```

To add a table, right-click in this pane and use the pop-up menu.

□ DISTINCT

Column	Alias	Output	Sort Type	Sort Order

Type query expression here

Status	Operation	Date	Connectio...
✓ Succeec	Return All R...	Jul 18, 2012...	IMPOTxx

Status | Result1

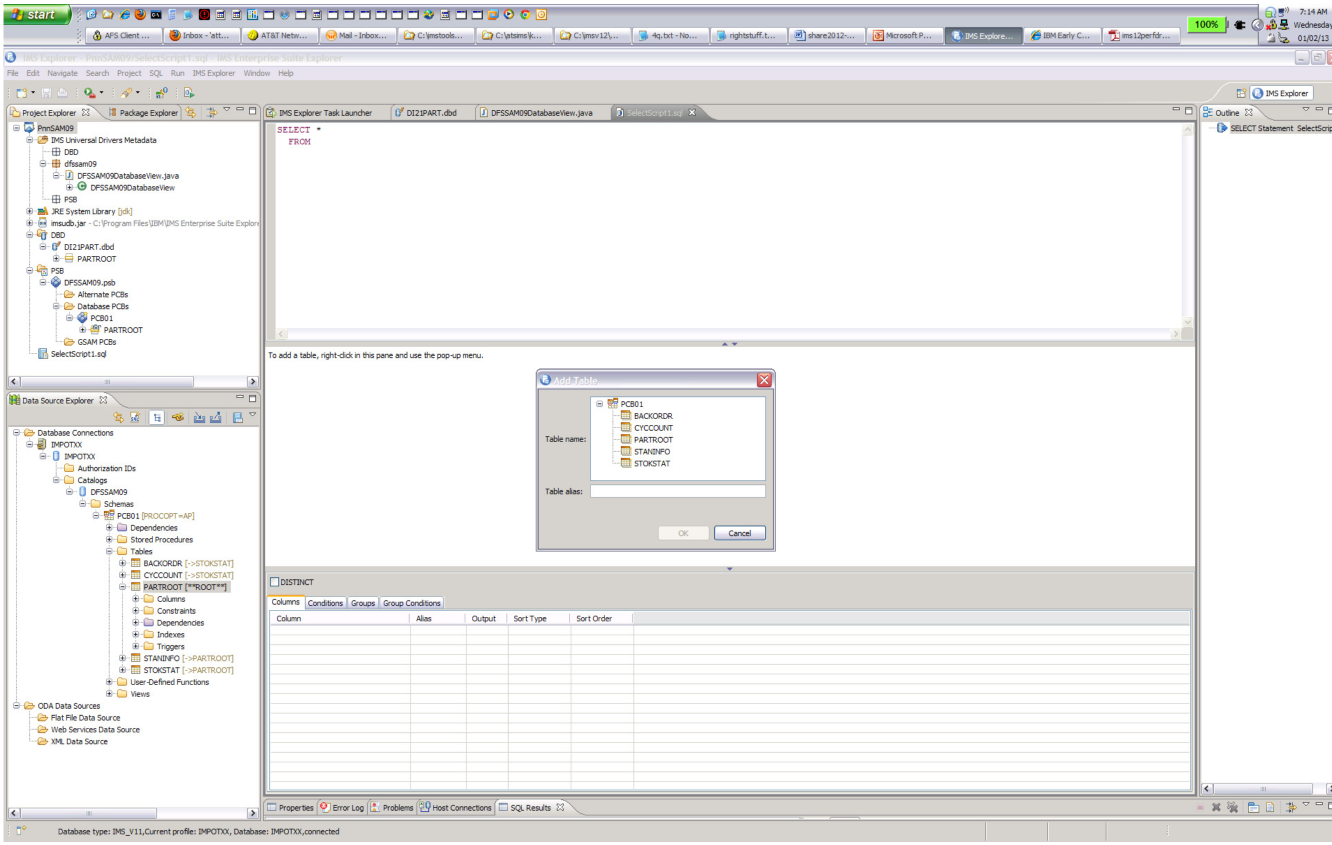
	PART_NO_EDIT	FILL_0	REJECT_CODE
1	02AN960C10 ...	MQ	
2	02CK05CW18...		
3	02CSR13G10...		

Total 69 records shown

Database type: IMS_...: IMPOTxx,connected

Fetching children of DNET612.*

Use the drop down list to specify segments (tables)



```
SELECT *
  FROM
```

To add a table, right-click in this pane and use the pop-up menu.

Table name:
- PCB01
  - BACKORDR
  - CYCCOUNT
  - PARTROOT
  - STANINFO
  - STOKSTAT

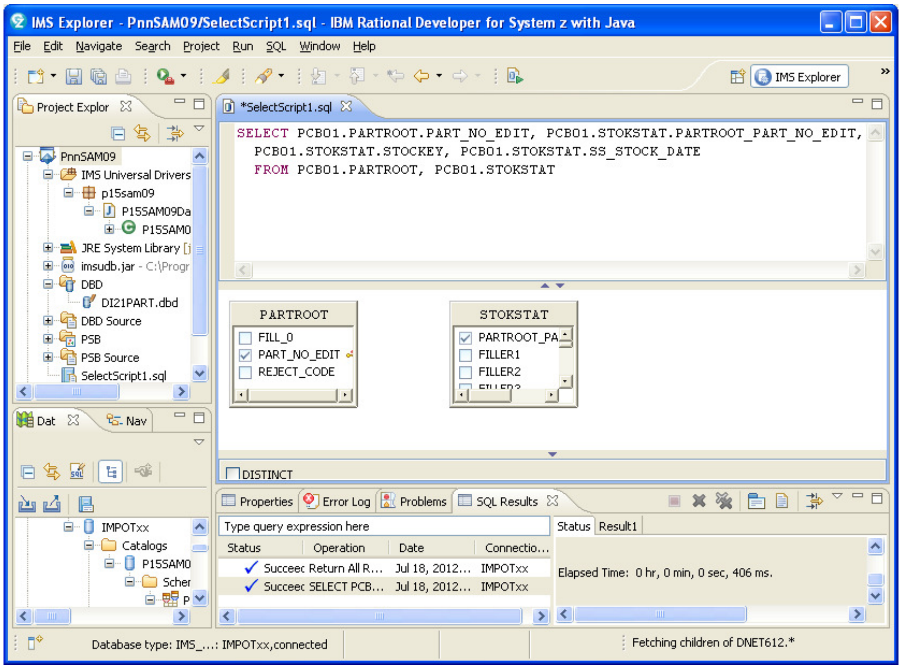
Table alias:

□ DISTINCT

Column	Alias	Output	Sort Type	Sort Order

Database type: IMS_V11,Current profile: IMPOTXX, Database: IMPOTXX,connected

You will be able to choose which tables to add, and check which columns to include.



```
SELECT PCB01.PARTROOT.PART_NO_EDIT, PCB01.STOKSTAT.PARTROOT_PART_NO_EDIT,
  PCB01.STOKSTAT.STOCKEY, PCB01.STOKSTAT.SS_STOCK_DATE
  FROM PCB01.PARTROOT, PCB01.STOKSTAT
```

PARTROOT
☐ FILL_0
☑ PART_NO_EDIT
☐ REJECT_CODE

STOKSTAT
☑ PARTROOT_PA
☐ FILLER1
☐ FILLER2

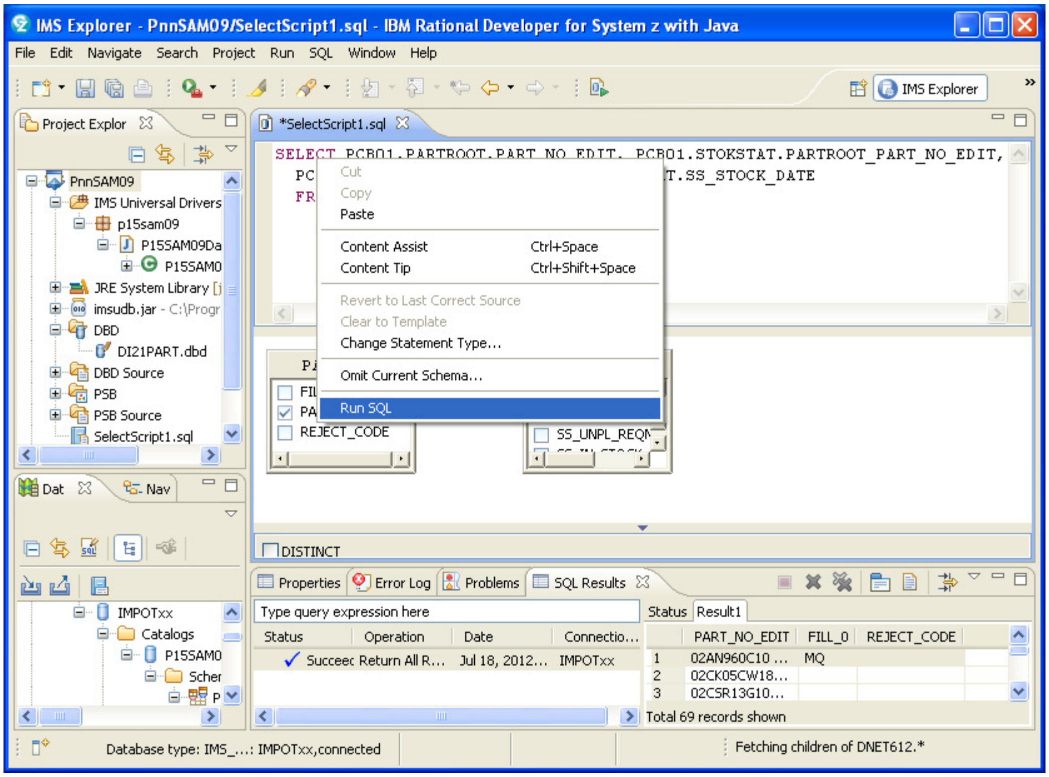
☐ DISTINCT

Status	Operation	Date	Connectio...
✓ Succeec	Return All R...	Jul 18, 2012...	IMPOTxx
✓ Succeec	SELECT PCB...	Jul 18, 2012...	IMPOTxx

Elapsed Time: 0 hr, 0 min, 0 sec, 406 ms.

Note how the script is built.

When you are done, position your cursor to the upper box, right click on the **Select** statement that was built and choose the **Run SQL** option.


IMS Explorer - PnnSAM09/SelectScript1.sql - IBM Rational Developer for System z with Java
File Edit Navigate Search Project Run SQL Window Help
IMS Explorer
Project Explor
*SelectScript1.sql
Cut
Copy
Paste
Content Assist Ctrl+Space
Content Tip Ctrl+Shift+Space
Revert to Last Correct Source
Clear to Template
Change Statement Type...
Omit Current Schema...
Run SQL
Properties
Error Log
Problems
SQL Results
Dat
Nav

```
SELECT PCB01.PARTROOT.PART_NO_EDIT, PCB01.STOKSTAT.PARTROOT_PART_NO_EDIT,
  PC                                 T.SS_STOCK_DATE
  FR
```

Type query expression here

Status	Operation	Date	Connectio...
✓ Succeec	Return All R...	Jul 18, 2012...	IMPOTxx

Status | Result1

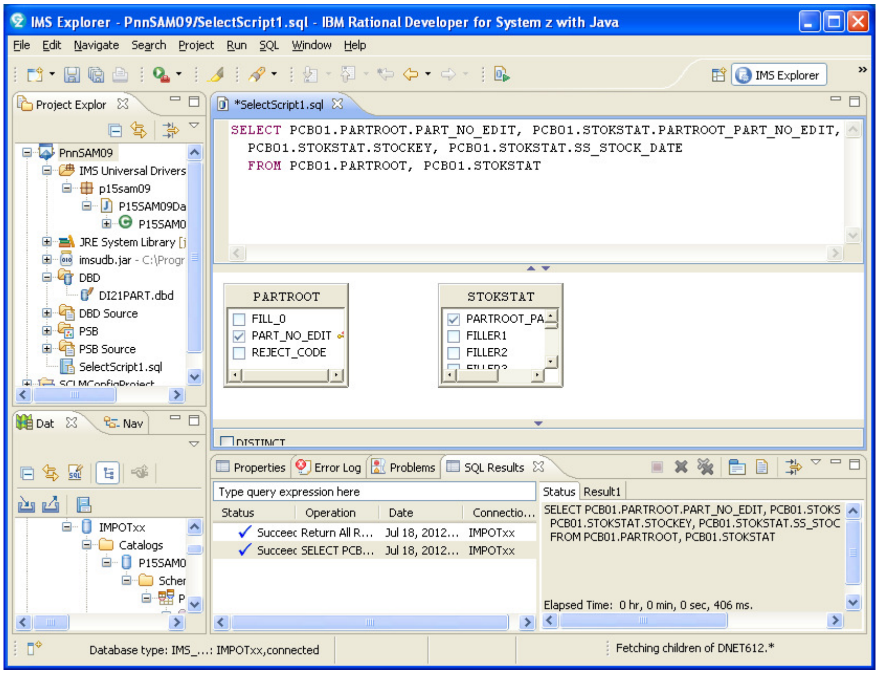
	PART_NO_EDIT	FILL_0	REJECT_CODE
1	02AN960C10 ...	MQ	
2	02CK05CW18...		
3	02CSR13G10...		

Total 69 records shown

Database type: IMS_...: IMPOTxx,connected

Fetching children of DNET612.*

The results can be viewed in the bottom box.



```
SELECT PCB01.PARTROOT.PART_NO_EDIT, PCB01.STOKSTAT.PARTROOT_PART_NO_EDIT,
  PCB01.STOKSTAT.STOCKEY, PCB01.STOKSTAT.SS_STOCK_DATE
  FROM PCB01.PARTROOT, PCB01.STOKSTAT
```

Type query expression here

Status	Operation	Date	Connectio...
✓ Succeec	Return All R...	Jul 18, 2012...	IMPOTxx
✓ Succeec	SELECT PCB...	Jul 18, 2012...	IMPOTxx

Status | Result1

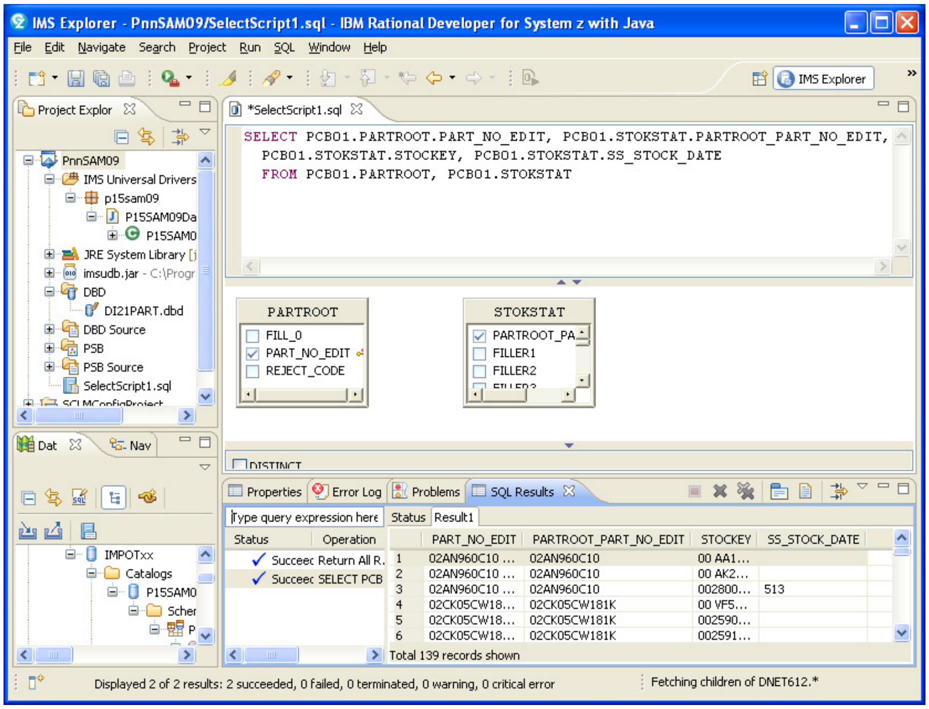
```
SELECT PCB01.PARTROOT.PART_NO_EDIT, PCB01.STOKS
 PCB01.STOKSTAT.STOCKEY, PCB01.STOKSTAT.SS_STOC
 FROM PCB01.PARTROOT, PCB01.STOKSTAT

Elapsed Time:  0 hr, 0 min, 0 sec, 406 ms.
```

Database type: IMS_...: IMPOTxx,connected

Fetching children of DNET612.*

Note that there are two tabs. One for **Status** and one for **Results.**



IMS Explorer - PnnSAM09/SelectScript1.sql - IBM Rational Developer for System z with Java

*SelectScript1.sql

```
SELECT PCB01.PARTROOT.PART_NO_EDIT, PCB01.STOKSTAT.PARTROOT_PART_NO_EDIT,
  PCB01.STOKSTAT.STOCKEY, PCB01.STOKSTAT.SS_STOCK_DATE
  FROM PCB01.PARTROOT, PCB01.STOKSTAT
```

Status	Operation
✓ Succeec	Return All R.
✓ Succeec	SELECT PCB

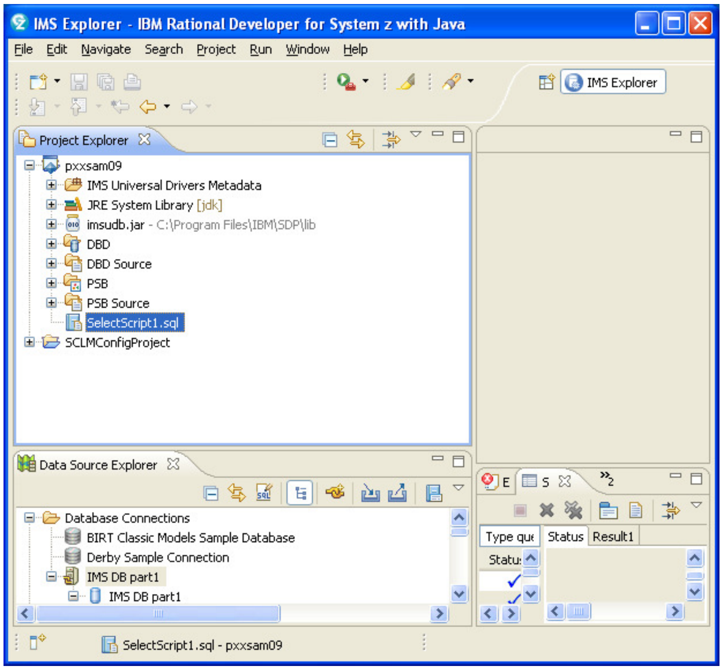
	PART_NO_EDIT	PARTROOT_PART_NO_EDIT	STOCKEY	SS_STOCK_DATE
1	02AN960C10 ...	02AN960C10	00 AA1...	
2	02AN960C10 ...	02AN960C10	00 AK2...	
3	02AN960C10 ...	02AN960C10	002800...	513
4	02CK05CW18...	02CK05CW181K	00 VF5...	
5	02CK05CW18...	02CK05CW181K	002590...	
6	02CK05CW18...	02CK05CW181K	002591...	

Total 139 records shown

Displayed 2 of 2 results: 2 succeeded, 0 failed, 0 terminated, 0 warning, 0 critical error

Fetching children of DNET612.*

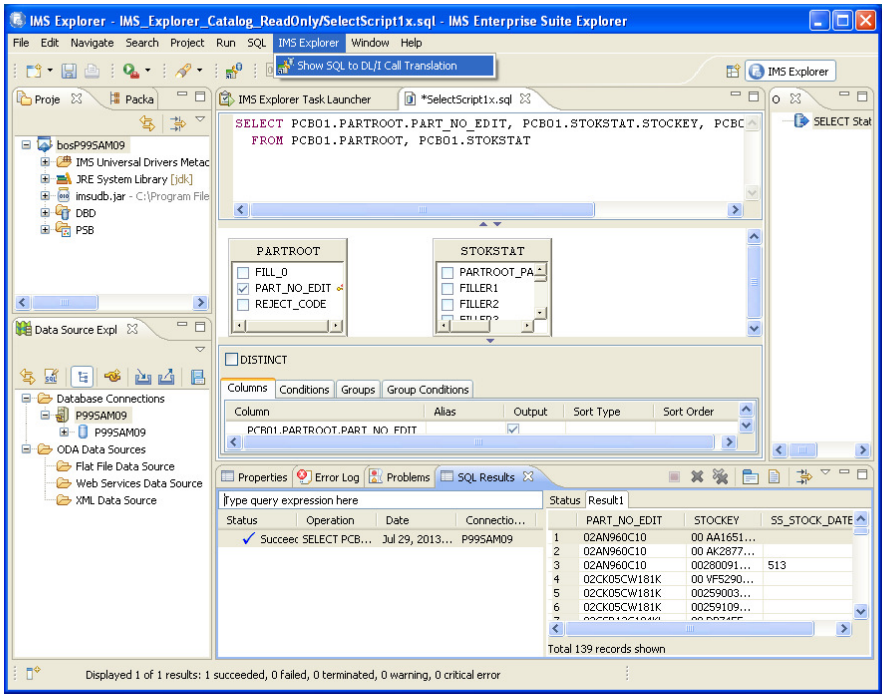
Save the **SelectScript1.sql** script you created by issuing Ctrl-s .



IMS Explorer - IBM Rational Developer for System z with Java

SelectScript1.sql - pxxsam09

You can also review the DL/I calls that were generated to support the SQL request. Keeping the SelectScript1.sql window open, go to the top of the IMS Explorer window, click on **IMS Explorer** and then on **Show SQL to DLI call translation** tabs.



```
SELECT PCB01.PARTROOT.PART_NO_EDIT, PCB01.STOKSTAT.STOCKEY, PCBC
  FROM PCB01.PARTROOT, PCB01.STOKSTAT
```

☐ DISTINCT

Columns | Conditions | Groups | Group Conditions

Column	Alias	Output	Sort Type	Sort Order
PCB01.PARTROOT.PART_NO_EDIT		☑		

Type query expression here

Status	Operation	Date	Connectio...
✓ Succeec	SELECT PCB...	Jul 29, 2013...	P99SAM09

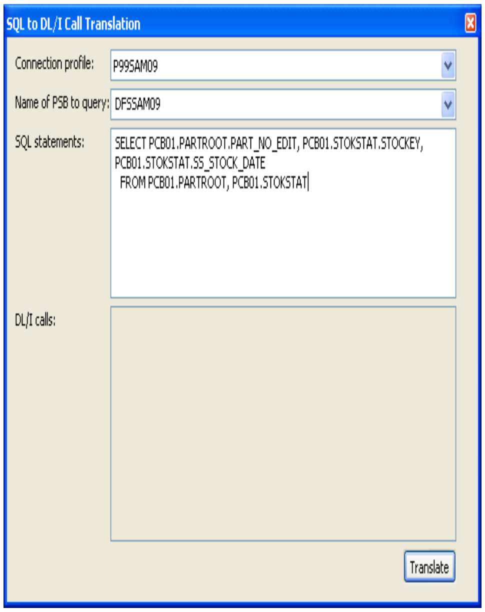
Status | Result1

	PART_NO_EDIT	STOCKEY	SS_STOCK_DATE
1	02AN960C10	00 AA1651...	
2	02AN960C10	00 AK2877...	
3	02AN960C10	00280091...	513
4	02CK05CW181K	00 VF5290...	
5	02CK05CW181K	00259003...	
6	02CK05CW181K	00259109...	

Total 139 records shown

Displayed 1 of 1 results: 1 succeeded, 0 failed, 0 terminated, 0 warning, 0 critical error

The **SQL to DL/I Call translation** window opens up. Fill in the **Connection profile** with the P**nn**SAM09 value you have been using and a PSB value of **DFSSAM09.** Cut and paste the SQL statement from the SelectScript1.sql window and hit the **Translate** tab.



SQL to DL/I Call Translation

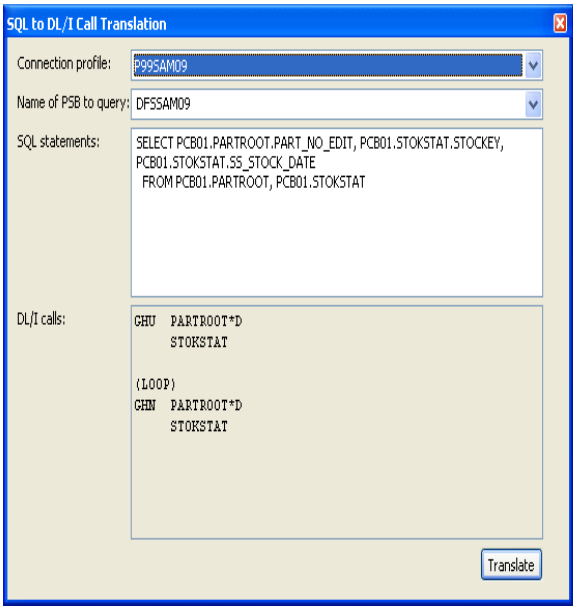
Connection profile: P99SAM09

Name of PSB to query: DFSSAM09

SQL statements:

```
SELECT PCB01.PARTROOT.PART_NO_EDIT, PCB01.STOKSTAT.STOCKEY,
PCB01.STOKSTAT.SS_STOCK_DATE
 FROM PCB01.PARTROOT, PCB01.STOKSTAT
```

DL/I calls:



SQL to DL/I Call Translation

Connection profile: P99SAM09

Name of PSB to query: DFSSAM09

SQL statements:

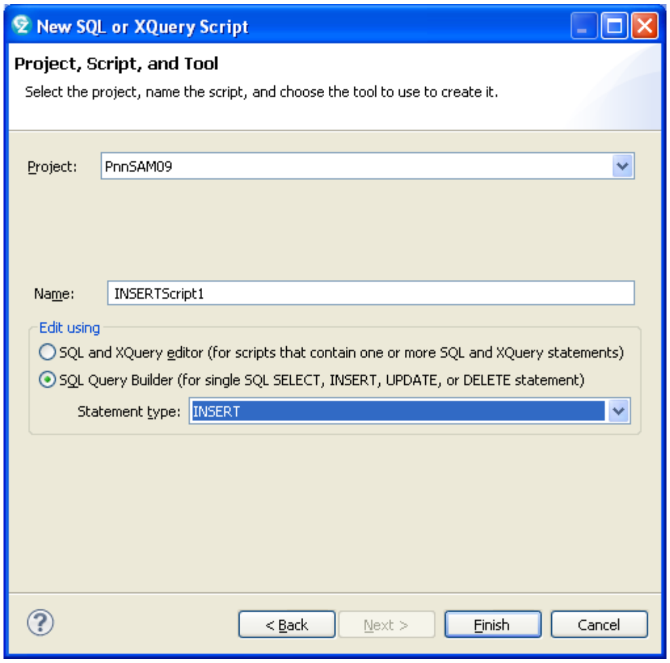
```
SELECT PCB01.PARTROOT.PART_NO_EDIT, PCB01.STOKSTAT.STOCKEY,
PCB01.STOKSTAT.SS_STOCK_DATE
 FROM PCB01.PARTROOT, PCB01.STOKSTAT
```

DL/I calls:

```
GHU  PARTROOT*D
     STOKSTAT

(LOOP)
GHN  PARTROOT*D
     STOKSTAT
```

Take the time now to continue using the same wizard to **INSERT** a new PARTROOT e.g., Use 02P***nn***SAM09 (where ***nn*** is your team number) for the partkey value.



Project, Script, and Tool

Select the project, name the script, and choose the tool to use to create it.

Project: PnnSAM09

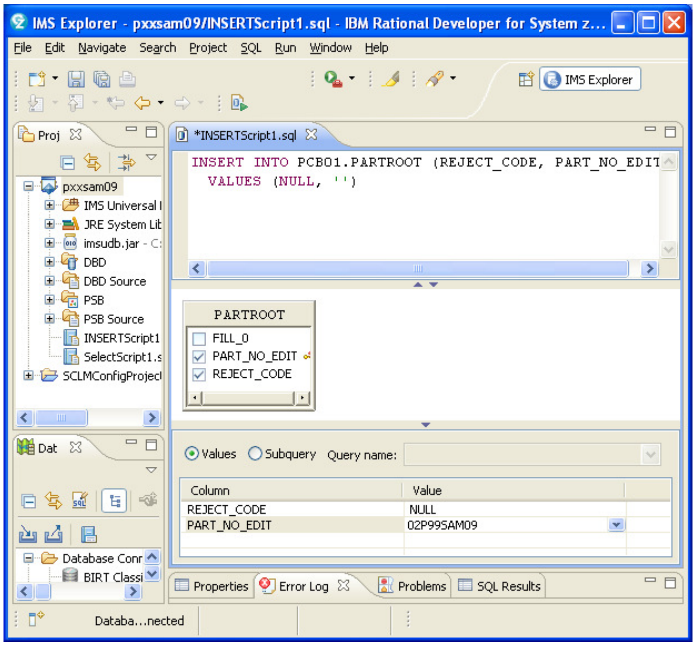
Name: INSERTScript1

Edit using

○ SQL and XQuery editor (for scripts that contain one or more SQL and XQuery statements)

● SQL Query Builder (for single SQL SELECT, INSERT, UPDATE, or DELETE statement)

Statement type: INSERT



```
INSERT INTO PCB01.PARTROOT (REJECT_CODE, PART_NO_EDIT
  VALUES (NULL, '')
```

PARTROOT

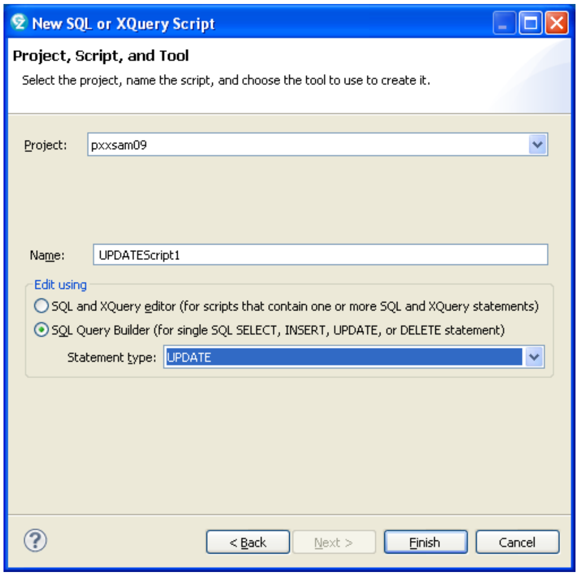
- □ FILL_0
- ☑ PART_NO_EDIT
- ☑ REJECT_CODE

● Values ○ Subquery Query name:

Column	Value
REJECT_CODE	NULL
PART_NO_EDIT	02P99SAM09

Run the SQL statement when you are done. Check the SQL Results at the bottom tab to make sure it ran to successful completion.

You can also try an UPDATE.



Project, Script, and Tool

Select the project, name the script, and choose the tool to use to create it.

Project: pxxsam09

Name: UPDATEScript1

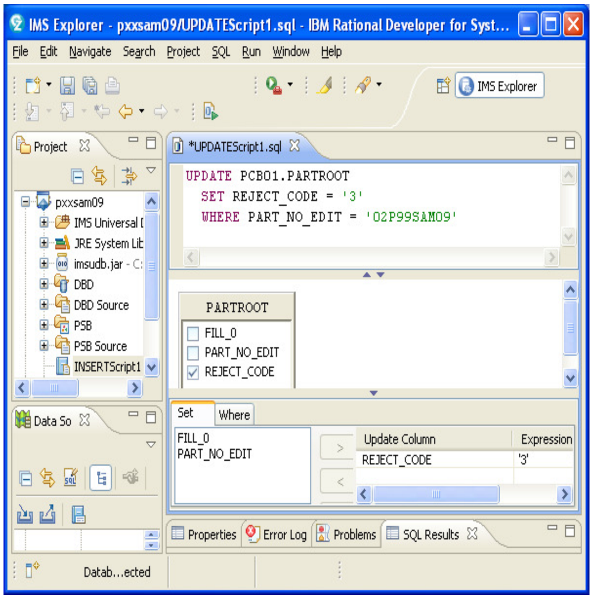
Edit using

○ SQL and XQuery editor (for scripts that contain one or more SQL and XQuery statements)

● SQL Query Builder (for single SQL SELECT, INSERT, UPDATE, or DELETE statement)

Statement type: UPDATE

Note for an UPDATE you will need to use the **Set** and **Where** tabs in the box that allows you to choose your tables. For example you can specify a different value for the REJECT_CODE and qualify the call using the partkey PART_NO_EDIT = 02P***nn***SAM09.

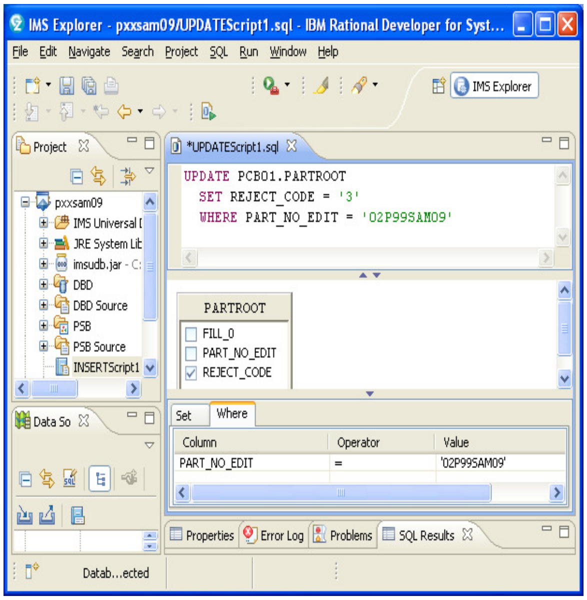


```
UPDATE PCB01.PARTROOT
  SET REJECT_CODE = '3'
  WHERE PART_NO_EDIT = '02P99SAM09'
```

PARTROOT

□ FILL_0
□ PART_NO_EDIT
☑ REJECT_CODE

Update Column	Expression
REJECT_CODE	'3'



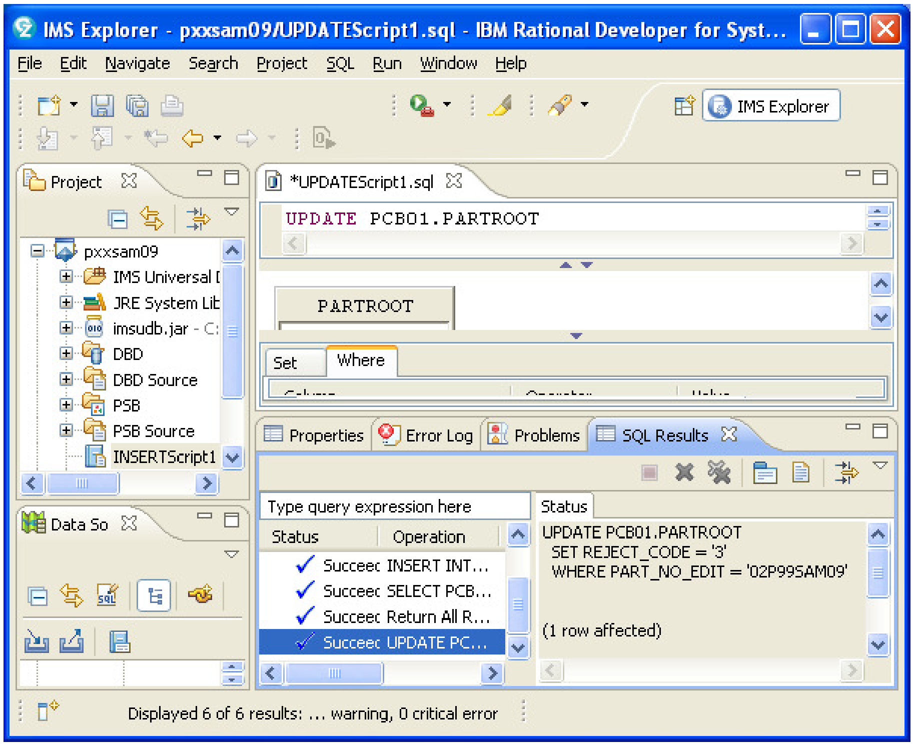
IMS Explorer - pxxsam09/UPDATEScript1.sql - IBM Rational Developer for Syst...

```
UPDATE PCB01.PARTROOT
  SET REJECT_CODE = '3'
  WHERE PART_NO_EDIT = '02P99SAM09'
```

PARTROOT
- ☐ FILL_0
- ☐ PART_NO_EDIT
- ☑ REJECT_CODE

Column	Operator	Value
PART_NO_EDIT	=	'02P99SAM09'

Check the SQL Results tab at the bottom of the window.



IMS Explorer - pxxsam09/UPDATEScript1.sql - IBM Rational Developer for Syst...

```
UPDATE PCB01.PARTROOT
```

Status	Operation
✓ Succeec	INSERT INT...
✓ Succeec	SELECT PCB...
✓ Succeec	Return All R...
✓ Succeec	UPDATE PC...

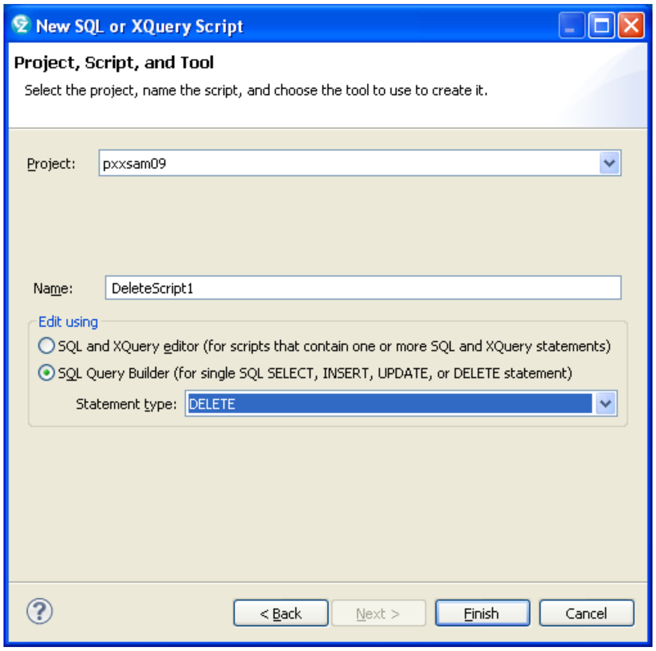
Status

```
UPDATE PCB01.PARTROOT
  SET REJECT_CODE = '3'
  WHERE PART_NO_EDIT = '02P99SAM09'

(1 row affected)
```

Displayed 6 of 6 results: ... warning, 0 critical error

Finally, try the DELETE and remove the 02P***nn***SAM09 part that you previously created.



New SQL or XQuery Script

Project, Script, and Tool

Select the project, name the script, and choose the tool to use to create it.

Project: pxxsam09

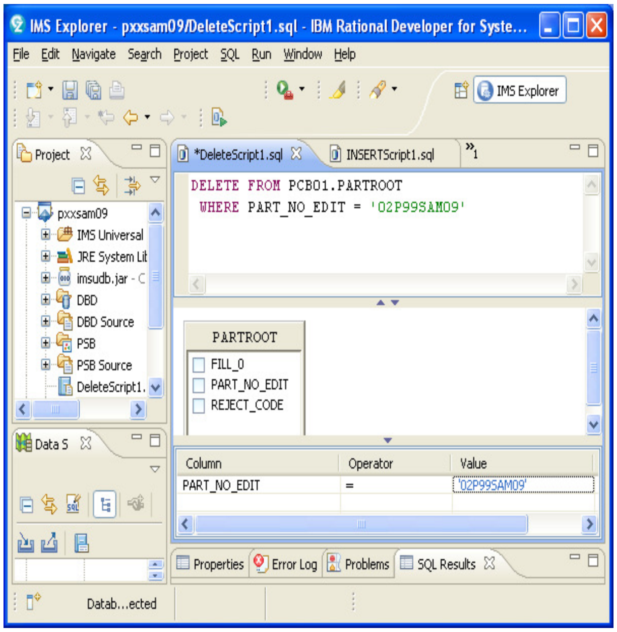
Name: DeleteScript1

Edit using

○ SQL and XQuery editor (for scripts that contain one or more SQL and XQuery statements)

● SQL Query Builder (for single SQL SELECT, INSERT, UPDATE, or DELETE statement)

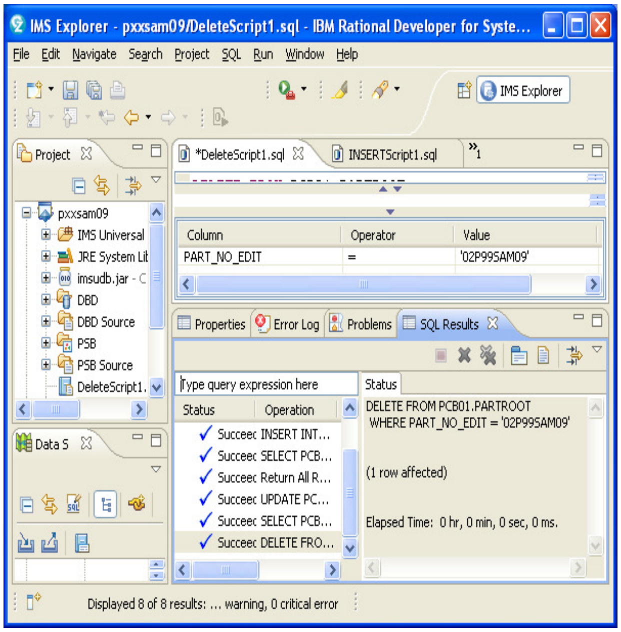
Statement type: DELETE



IMS Explorer - pxxsam09/DeleteScript1.sql - IBM Rational Developer for Syste...

```
DELETE FROM PCB01.PARTROOT
 WHERE PART_NO_EDIT = '02P99SAM09'
```

Column	Operator	Value
PART_NO_EDIT	=	'02P99SAM09'



Column	Operator	Value
PART_NO_EDIT	=	'02P99SAM09'

Status	Operation
✓ Succeec	INSERT INT...
✓ Succeec	SELECT PCB...
✓ Succeec	Return All R...
✓ Succeec	UPDATE PC...
✓ Succeec	SELECT PCB...
✓ Succeec	DELETE FRO...

Status

```
DELETE FROM PCB01.PARTROOT
 WHERE PART_NO_EDIT = '02P99SAM09'

(1 row affected)

Elapsed Time:  0 hr, 0 min, 0 sec, 0 ms.
```

Displayed 8 of 8 results: ... warning, 0 critical error

Accessing IMS data using SQL (with IMS catalog enabled)

Create a JDBC connection.

In the Data Source Explorer, right-click Database Connections folder, and click New.

Select IMS as the database manager and the IMS Universal JDBC driver as the JDBC driver.

In the **Connection Name** field enter **IMPOT**xx where *xx* is your team number

In the **HOST** field enter **zserveros.demos.ibm.com**

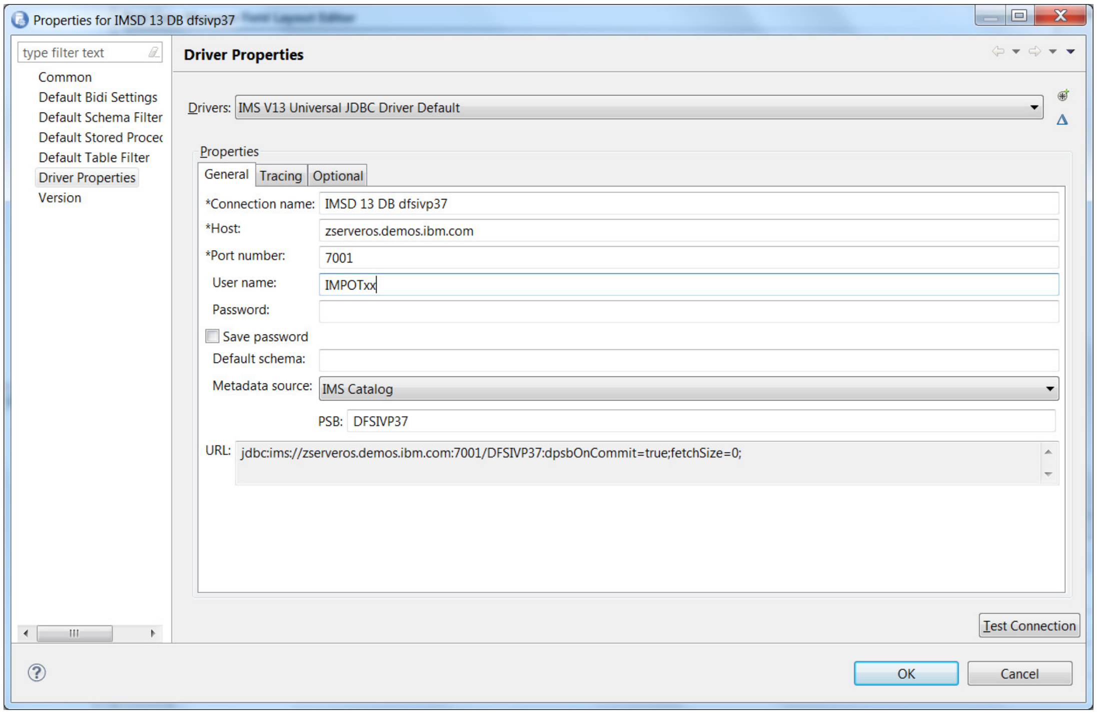
In the **Port number** field enter **7001**

In the **userid** field enter **IMPOT**xx where *xx* is your team number

In the password field enter value provided by lab instructor

Select IMS catalog as your Metadata source in the connection wizard.

Specify DFSIVP37 as the PSB name.



Properties for IMSD 13 DB dfsivp37

Driver Properties

Drivers: IMS V13 Universal JDBC Driver Default

*Connection name: IMSD 13 DB dfsivp37

*Host: zserveros.demos.ibm.com

*Port number: 7001

User name: IMPOTxx

Password:

□ Save password

Default schema:

Metadata source: IMS Catalog

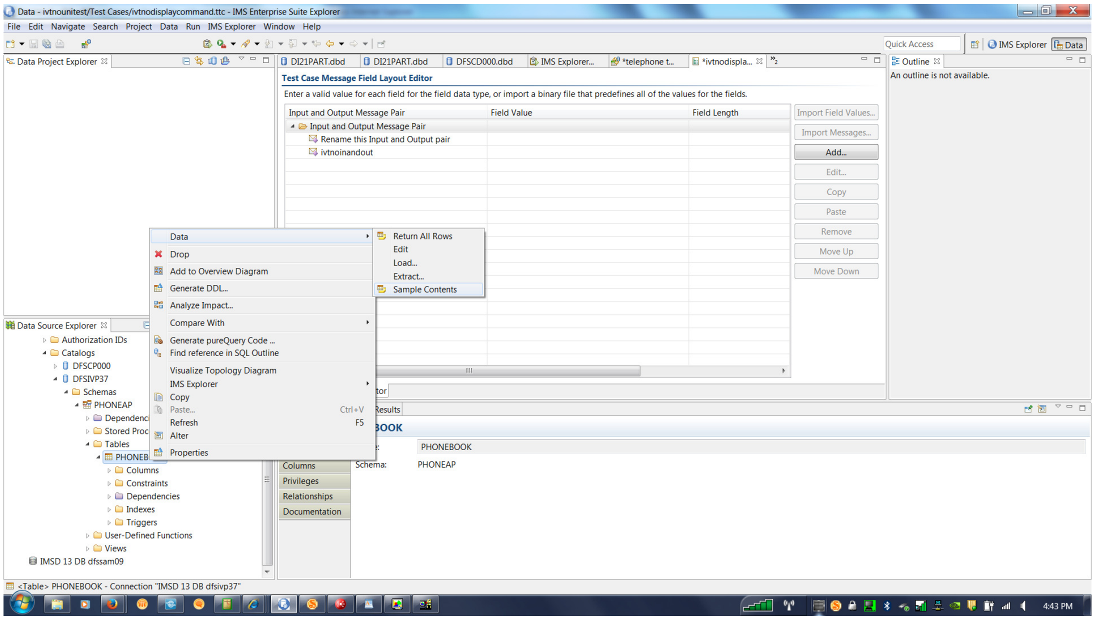
PSB: DFSIVP37

URL: jdbc:ims://zserveros.demos.ibm.com:7001/DFSIVP37:dpsbOnCommit=true;fetchSize=0;

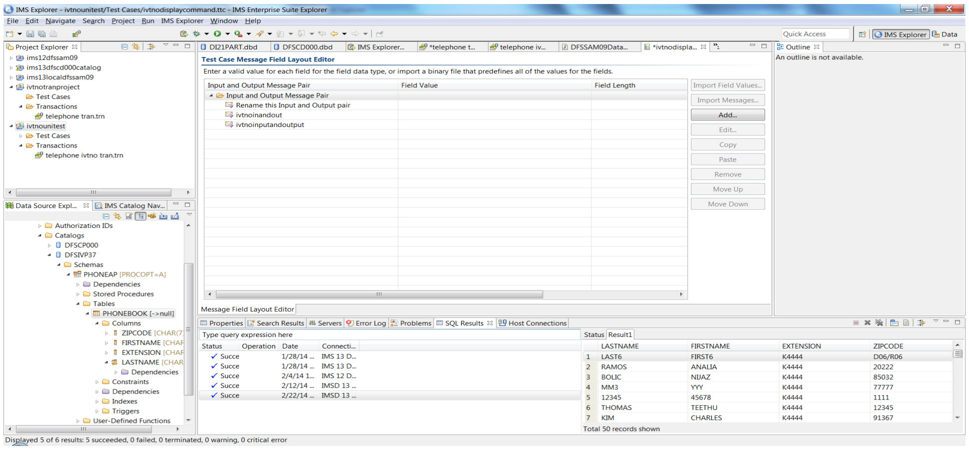
Click Finish.

To test the connection and return data

right click on the Connection and click Connect
open folders until you get to Phonebook right click select Data then Sample Contents



this completes **Accessing IMS data using SQL (with IMS catalog enabled)**



Status	Operation	Date	Connecti...
✓ Succe		1/28/14 ...	IMS 13 D...
✓ Succe		1/28/14 ...	IMS 13 D...
✓ Succe		2/4/14 1...	IMS 12 D...
✓ Succe		2/12/14 ...	IMSD 13 ...
✓ Succe		2/22/14 ...	IMSD 13 ...

Status Result1

	LASTNAME	FIRSTNAME	EXTENSION	ZIPCODE
1	LAST6	FIRST6	K4444	D06/R06
2	RAMOS	ANALIA	K4444	20222
3	BOLIC	NIJAZ	K4444	85032
4	MM3	YYY	K4444	77777
5	12345	45678	K4444	1111
6	THOMAS	TEETHU	K4444	12345
7	KIM	CHARLES	K4444	91367

Total 50 records shown

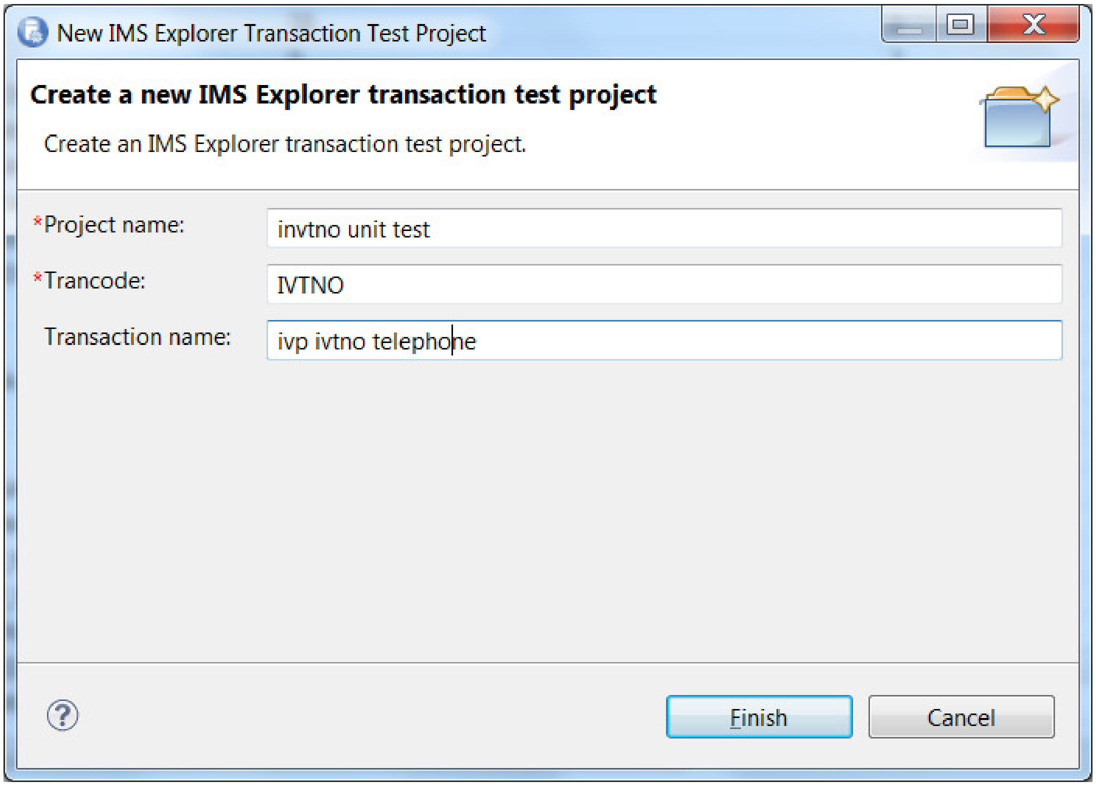
Displayed 5 of 6 results: 5 succeeded, 0 failed, 0 terminated, 0 warning, 0 critical error

Creating and running a unit test case for application debugging

You can create unit test cases and provide input message data in human readable format for debugging. After you create a unit test case, you can create variations of it with different input message data, to easily exercise different code paths in the IMS transaction.

Create a transaction test project by

clicking File > New > IMS Explorer Transaction Test Project.



New IMS Explorer Transaction Test Project

Create a new IMS Explorer transaction test project

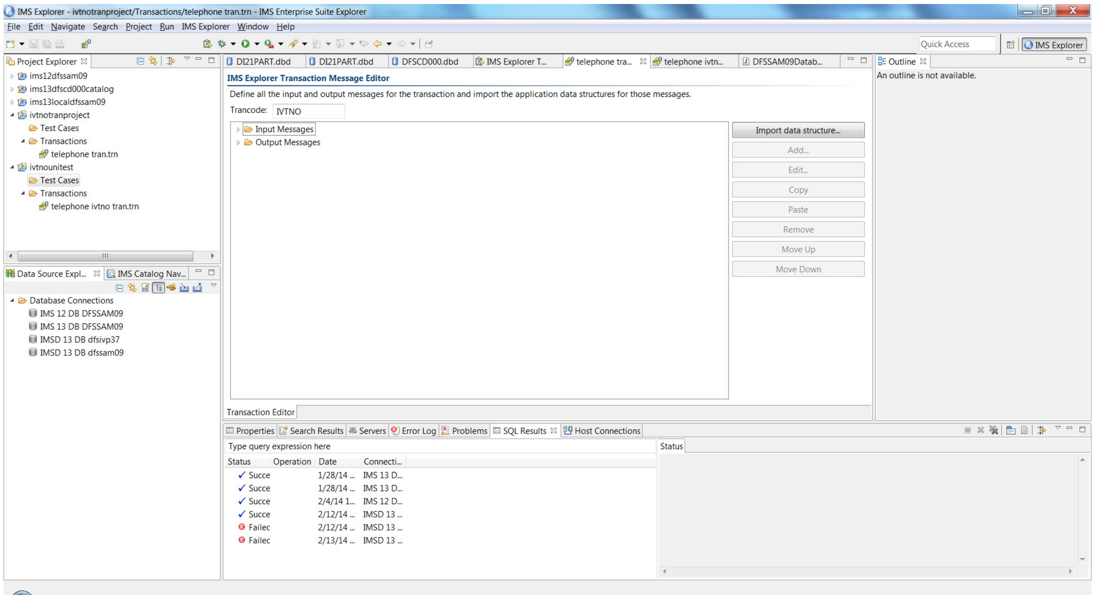
Create an IMS Explorer transaction test project.

*Project name:	invtno unit test
*Trancode:	IVTNO
Transaction name:	ivp ivtno telephone

in the Project name field enter ivtno unit test
in Trancode field enter IVTNO
in Transaction name field enter ivp ivtno telephone

click Finish

After you create the Test Project you can use Import Data Structures to define the Transaction Input and Output message structures.



IMS Explorer - ivtnotranproject/Transactions/telephone tran.trn - IMS Enterprise Suite Explorer

IMS Explorer Transaction Message Editor

Define all the input and output messages for the transaction and import the application data structures for those messages.

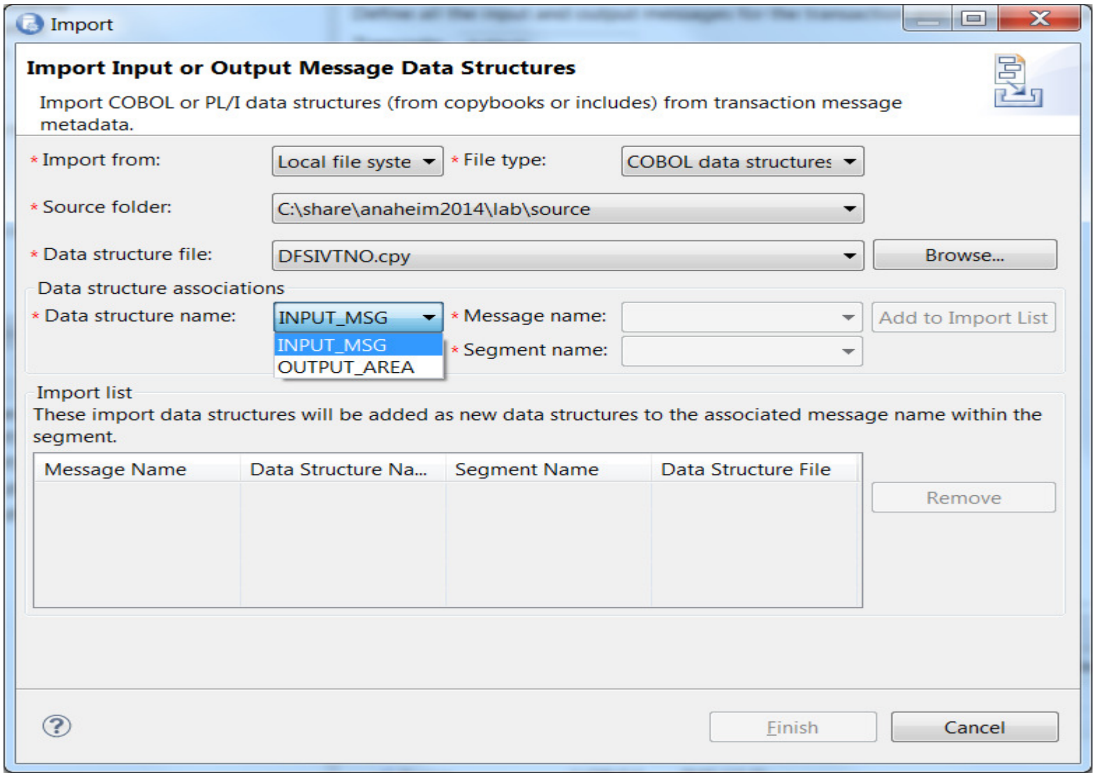
Trancode: IVTNO

An outline is not available.

Status	Operation	Date	Connecti...
✓ Succe		1/28/14 ...	IMS 13 D...
✓ Succe		1/28/14 ...	IMS 13 D...
✓ Succe		2/4/14 1...	IMS 12 D...
✓ Succe		2/12/14 ...	IMSD 13 ...
⊗ Failec		2/12/14 ...	IMSD 13 ...
⊗ Failec		2/13/14 ...	IMSD 13 ...

Use the browse tab to find DFSIVTNO.cpy local file in C:\share\anaheim\lab\source folder:

In the Data structure name: drop down list select INPUT_MSG



Import

Import Input or Output Message Data Structures

Import COBOL or PL/I data structures (from copybooks or includes) from transaction message metadata.

* Import from: Local file syste

* File type: COBOL data structures

* Source folder: C:\share\anaheim2014\lab\source

* Data structure file: DFSIVTNO.cpy

Data structure associations

* Data structure name: INPUT_MSG

* Message name:

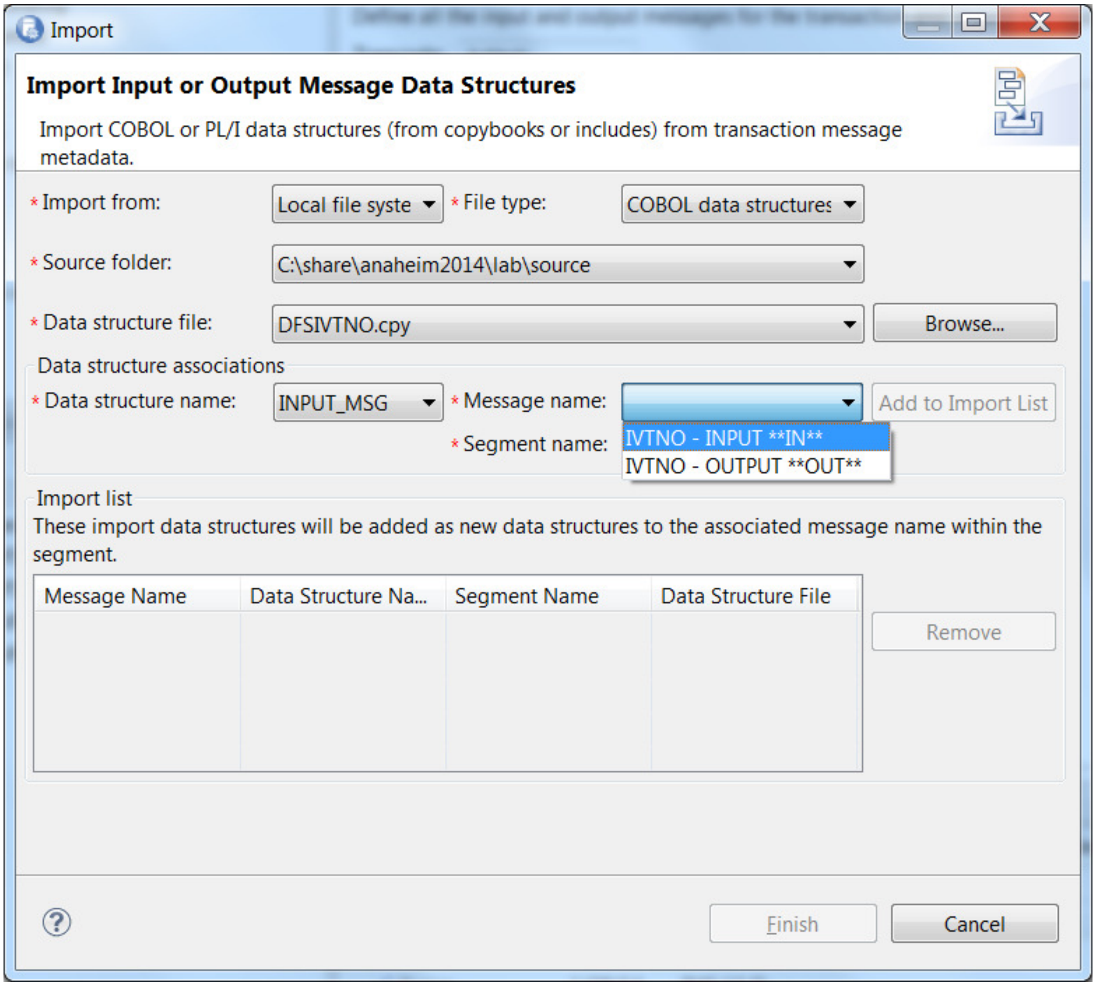
* Segment name:

Import list

These import data structures will be added as new data structures to the associated message name within the segment.

Message Name	Data Structure Na...	Segment Name	Data Structure File

and in Message name: drop list select IVTNO-INPUT**IN**



Import

Import Input or Output Message Data Structures

Import COBOL or PL/I data structures (from copybooks or includes) from transaction message metadata.

* Import from:	Local file syste	* File type:	COBOL data structures
* Source folder:	C:\share\anaheim2014\lab\source		
* Data structure file:	DFSIVTNO.cpy		

Data structure associations

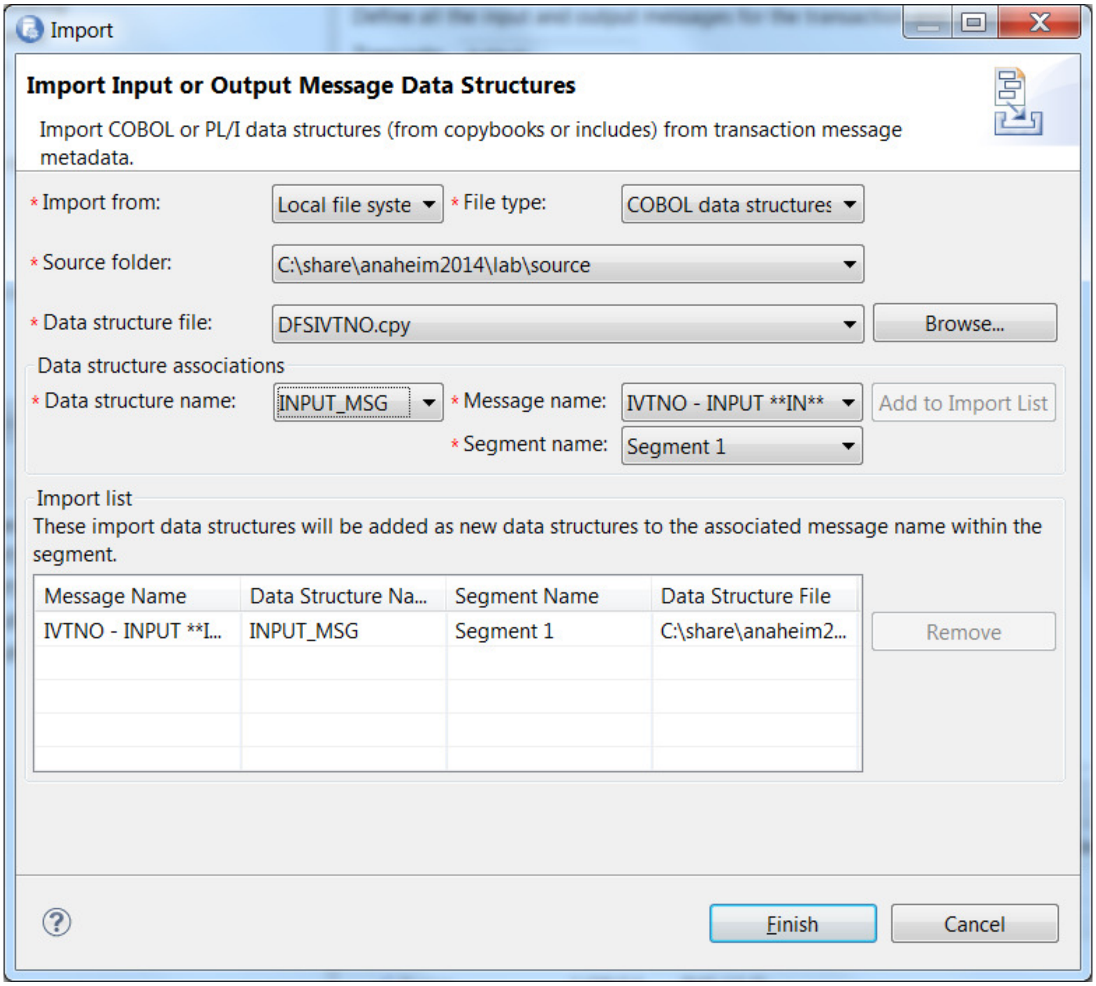
* Data structure name:	INPUT_MSG	* Message name:	
		* Segment name:	

IVTNO - INPUT **IN**
IVTNO - OUTPUT **OUT**

Import list

These import data structures will be added as new data structures to the associated message name within the segment.

Message Name	Data Structure Na...	Segment Name	Data Structure File



Import

Import Input or Output Message Data Structures

Import COBOL or PL/I data structures (from copybooks or includes) from transaction message metadata.

- * Import from: Local file syste
- * File type: COBOL data structures
- * Source folder: C:\share\anaheim2014\lab\source
- * Data structure file: DFSIVTNO.cpy

Data structure associations

- * Data structure name: INPUT_MSG
- * Message name: IVTNO - INPUT **IN**
- * Segment name: Segment 1

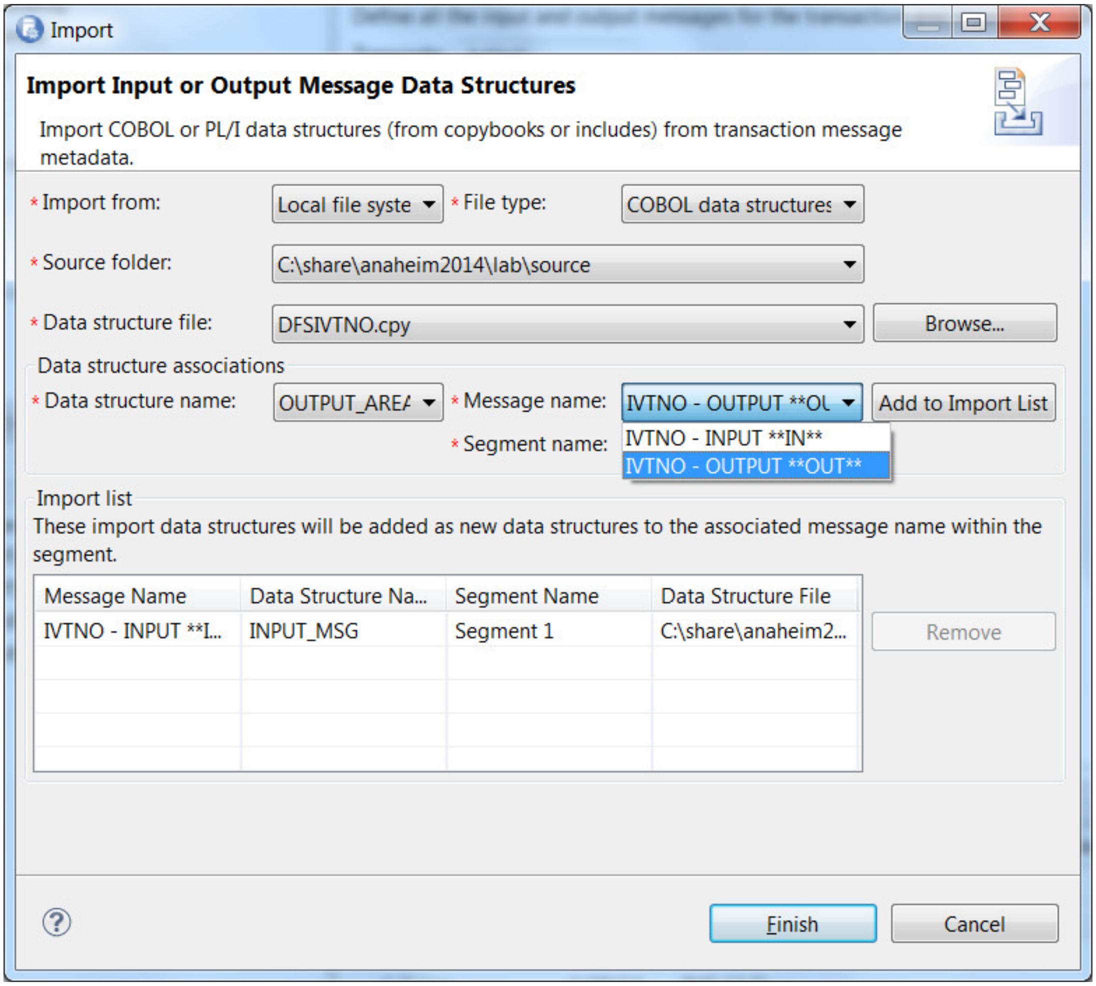
Import list

These import data structures will be added as new data structures to the associated message name within the segment.

Message Name	Data Structure Na...	Segment Name	Data Structure File
IVTNO - INPUT **I...	INPUT_MSG	Segment 1	C:\share\anaheim2...

and then select the Add to Import List tab

to import the output message structure change the Data structure name: drop down list to OUTPUT_Area, Message name drop list to IVTNO-OUTPUT**OUT** and select Add to Import List tab



Import Input or Output Message Data Structures

Import COBOL or PL/I data structures (from copybooks or includes) from transaction message metadata.

* Import from: Local file syste

* File type: COBOL data structures

* Source folder: C:\share\anaheim2014\lab\source

* Data structure file: DFSIVTNO.cpy

Data structure associations

* Data structure name: OUTPUT_AREA

* Message name: IVTNO - OUTPUT **OU

- IVTNO - INPUT **IN**
- IVTNO - OUTPUT **OUT**

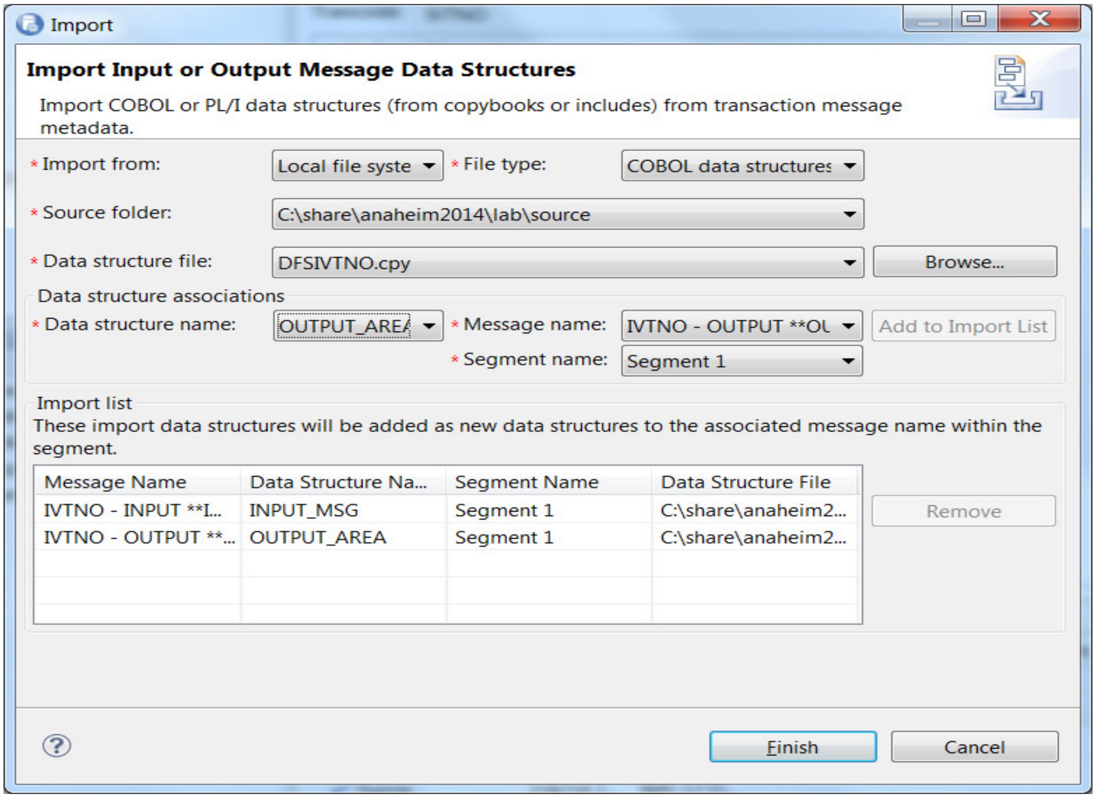
* Segment name:

Import list

These import data structures will be added as new data structures to the associated message name within the segment.

Message Name	Data Structure Na...	Segment Name	Data Structure File
IVTNO - INPUT **I...	INPUT_MSG	Segment 1	C:\share\anaheim2...

the following is the completed list



Import Input or Output Message Data Structures

Import COBOL or PL/I data structures (from copybooks or includes) from transaction message metadata.

* Import from: Local file syste

* File type: COBOL data structures

* Source folder: C:\share\anaheim2014\lab\source

* Data structure file: DFSIVTNO.cpy

Data structure associations

* Data structure name: OUTPUT_AREA

* Message name: IVTNO - OUTPUT **OU

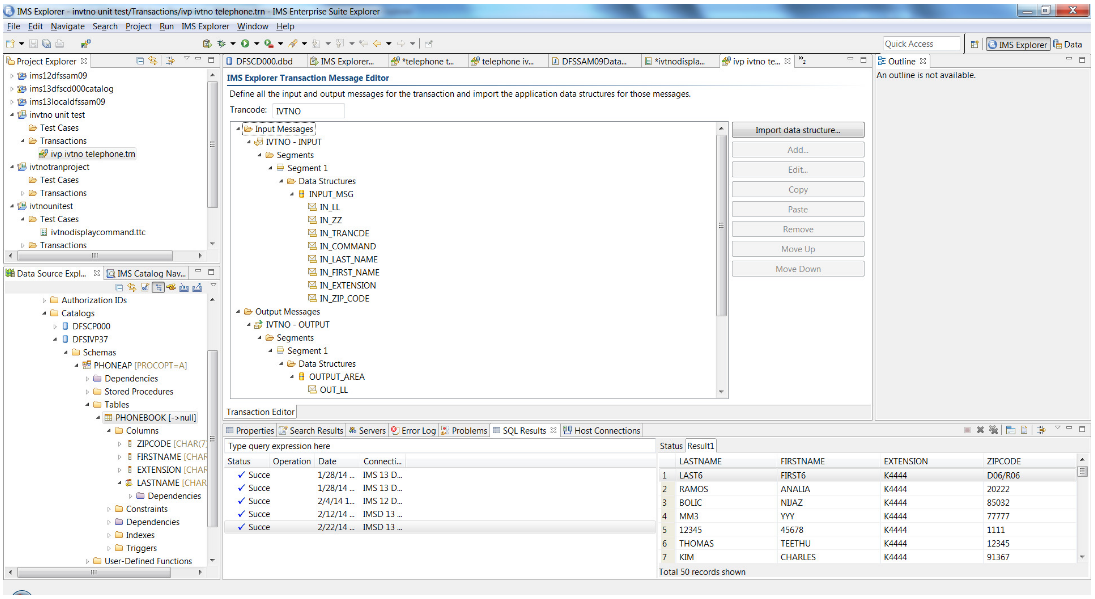
* Segment name: Segment 1

Import list

These import data structures will be added as new data structures to the associated message name within the segment.

Message Name	Data Structure Na...	Segment Name	Data Structure File
IVTNO - INPUT **I...	INPUT_MSG	Segment 1	C:\share\anaheim2...
IVTNO - OUTPUT **...	OUTPUT_AREA	Segment 1	C:\share\anaheim2...

select the Finish tab to complete the definition.



IMS Explorer - ivtno unit test/Transactions/ivp ivtno telephone.trn - IMS Enterprise Suite Explorer

IMS Explorer Transaction Message Editor

Define all the input and output messages for the transaction and import the application data structures for those messages.

Trancode: IVTNO

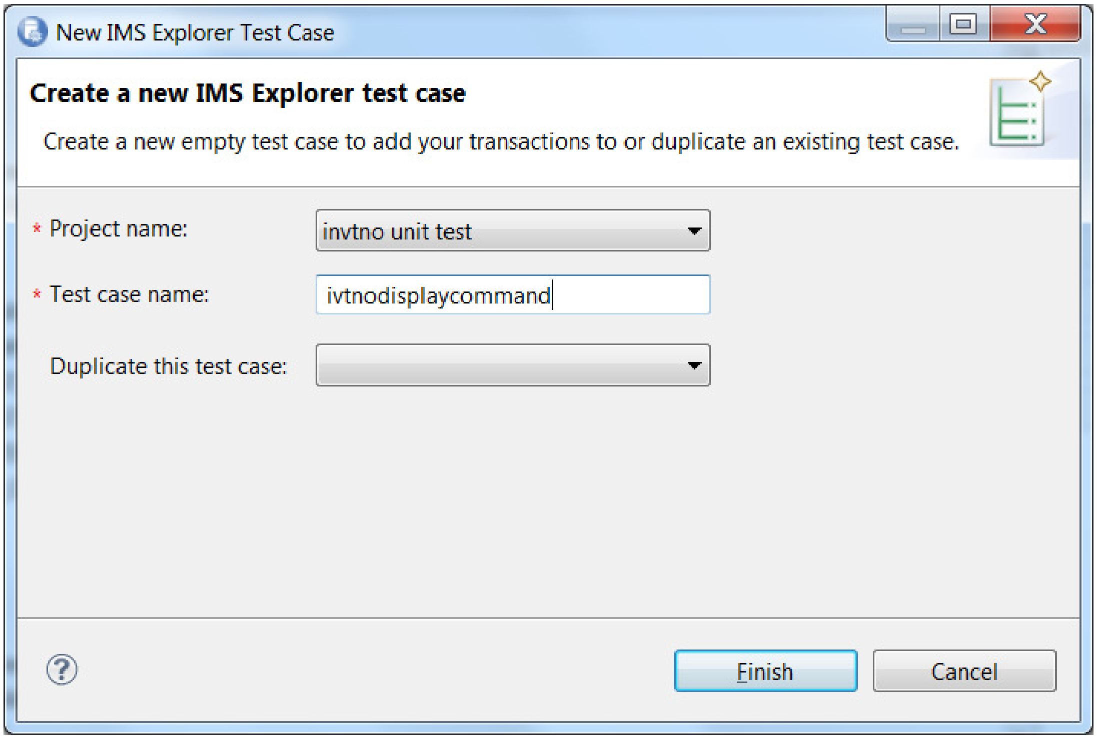
Status	Operation	Date	Connecti...
✓ Succe		1/28/14 ...	IMS 13 D...
✓ Succe		1/28/14 ...	IMS 13 D...
✓ Succe		2/4/14 1...	IMS 12 D...
✓ Succe		2/12/14 ...	IMSD 13 ...
✓ Succe		2/22/14 ...	IMSD 13 ...

Status Result1

	LASTNAME	FIRSTNAME	EXTENSION	ZIPCODE
1	LAST6	FIRST6	K4444	D06/R06
2	RAMOS	ANALIA	K4444	20222
3	BOLIC	NIJAZ	K4444	85032
4	MM3	YYY	K4444	77777
5	12345	45678	K4444	1111
6	THOMAS	TEETHU	K4444	12345
7	KIM	CHARLES	K4444	91367

Total 50 records shown

The next step is to create a test case.
Select your project and right mouse click then select New>IMS Transaction Test Case



New IMS Explorer Test Case

Create a new IMS Explorer test case

Create a new empty test case to add your transactions to or duplicate an existing test case.

* Project name: invtno unit test

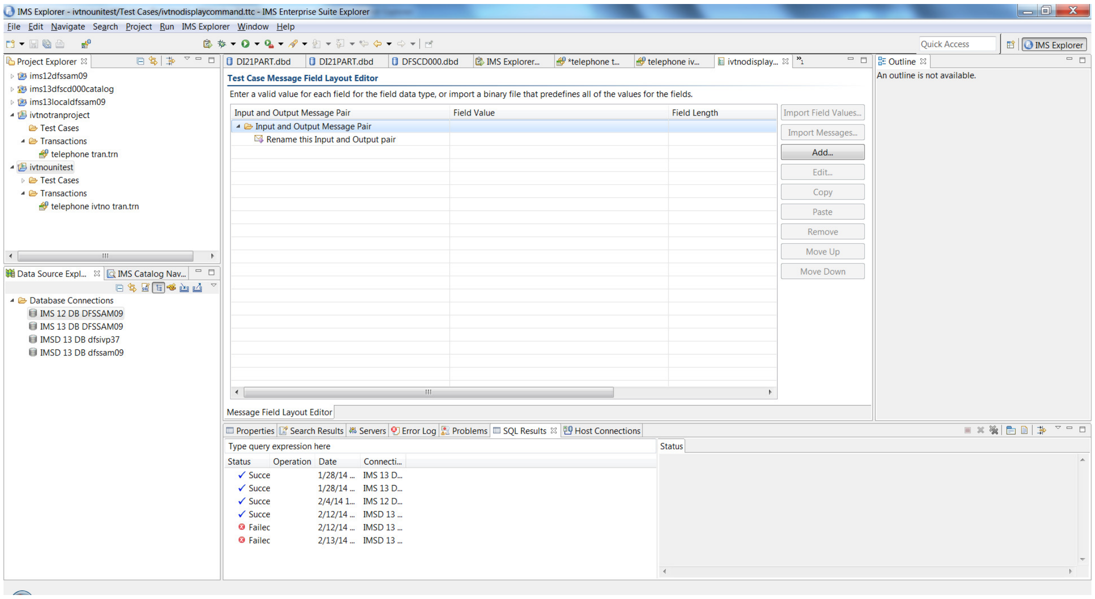
* Test case name: ivtnodisplaycommand

Duplicate this test case:

in the test case panel verify your Project name is ivtno unit test and in the

Test case name field enter ivtnodisplaycommand
and select Finish

this opens the Test Case Message Field Layout editor panel.
Select **Rename this Input and Output pair**
and use the **Remove** button to delete this pair
Select the Add tab to build IVTNO tran message pair.



Test Case Message Field Layout Editor

Enter a valid value for each field for the field data type, or import a binary file that predefines all of the values for the fields.

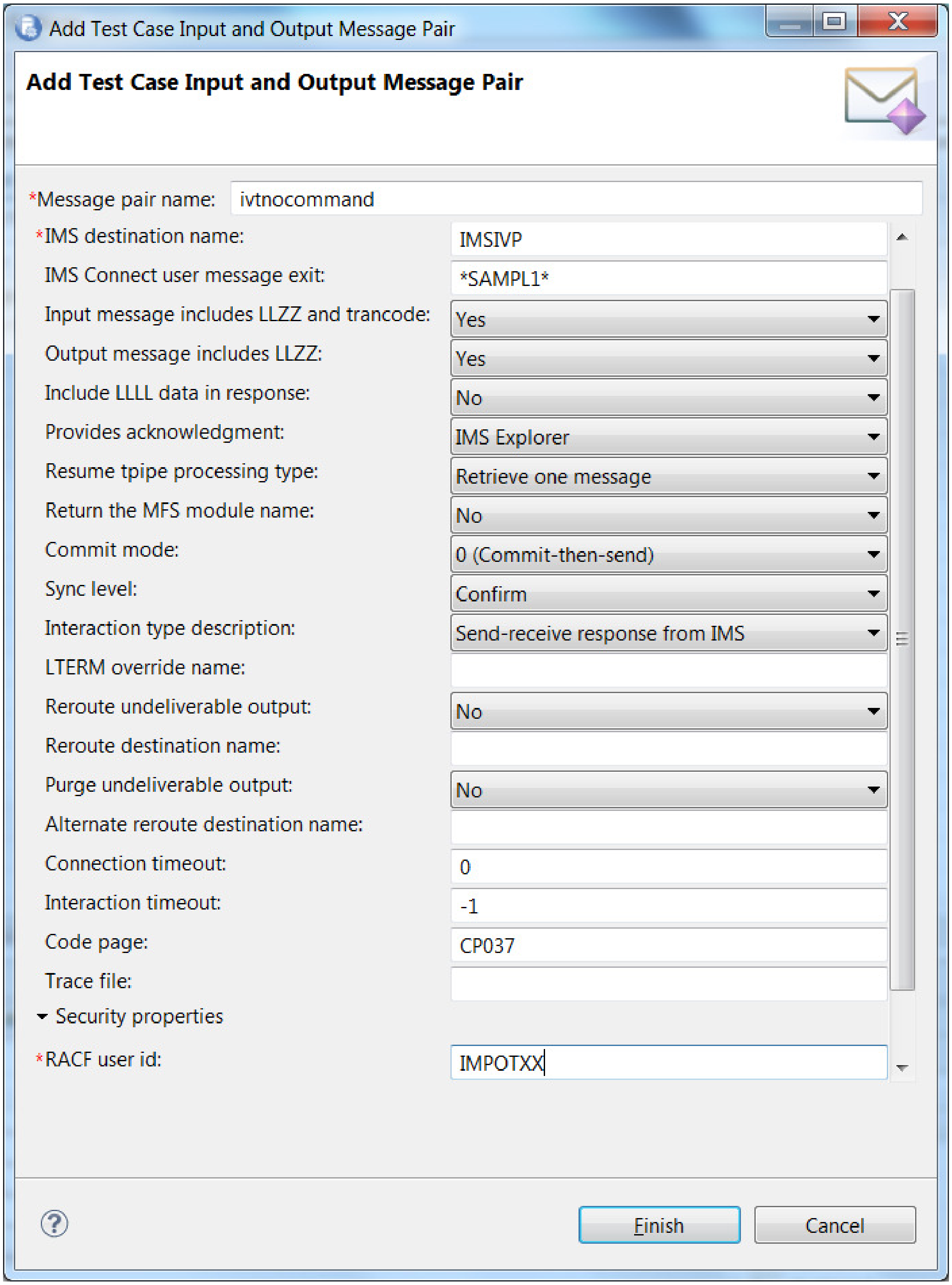
Input and Output Message Pair	Field Value	Field Length
Input and Output Message Pair		
Rename this Input and Output pair		

Type query expression here

Status	Operation	Date	Connecti...
✓ Succe		1/28/14 ...	IMS 13 D...
✓ Succe		1/28/14 ...	IMS 13 D...
✓ Succe		2/4/14 1...	IMS 12 D...
✓ Succe		2/12/14 ...	IMSD 13 ...
✗ Failec		2/12/14 ...	IMSD 13 ...
✗ Failec		2/13/14 ...	IMSD 13 ...

Status

This opens the Add Test Case Input and Output Message pair panel.



Add Test Case Input and Output Message Pair

*Message pair name:	ivtnocommand
*IMS destination name:	IMSIVP
IMS Connect user message exit:	*SAMPL1*
Input message includes LLZZ and trancode:	Yes
Output message includes LLZZ:	Yes
Include LLLL data in response:	No
Provides acknowledgment:	IMS Explorer
Resume tpipe processing type:	Retrieve one message
Return the MFS module name:	No
Commit mode:	0 (Commit-then-send)
Sync level:	Confirm
Interaction type description:	Send-receive response from IMS
LTERM override name:	
Reroute undeliverable output:	No
Reroute destination name:	
Purge undeliverable output:	No
Alternate reroute destination name:	
Connection timeout:	0
Interaction timeout:	-1
Code page:	CP037
Trace file:	

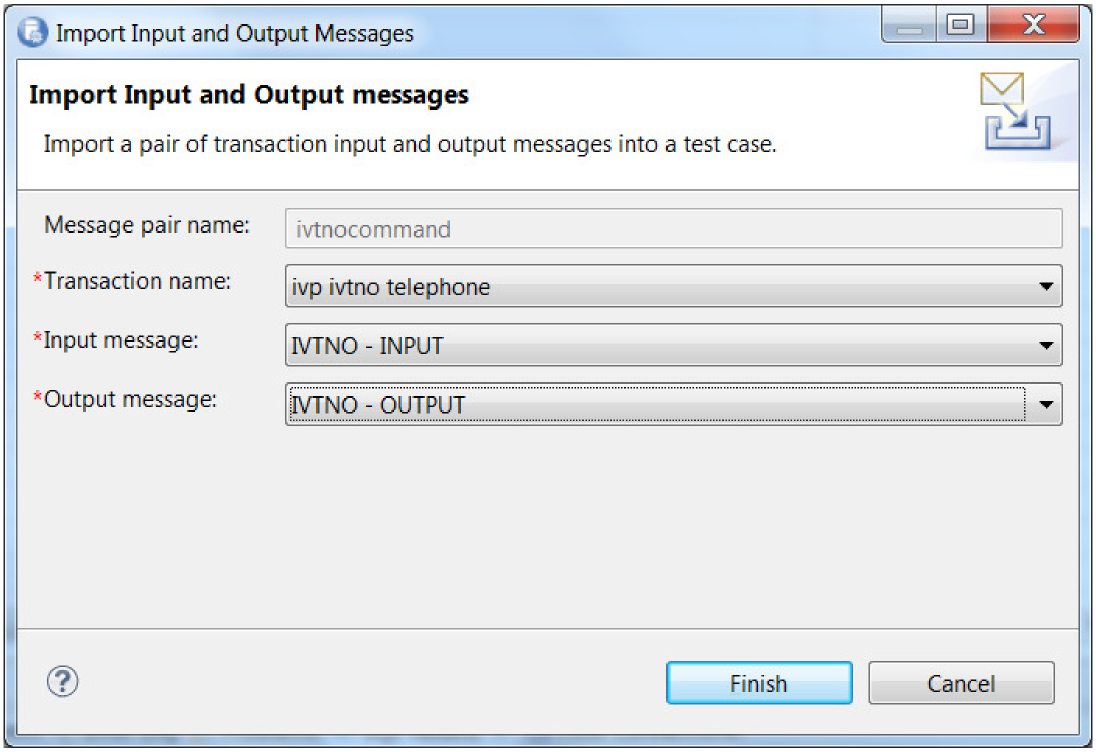
Security properties

*RACF user id:	IMPOTXX

In the Message pair name field enter ivtnocommand
In the IMS Destination Name field use enter IMSD the IMS Data Store value
In the RACF user id field enter IMPOT***xx*** where xx is your team number.

Clear RACF group name: and RACF application name: fields   click Finish

The Test Case Message layout editor is used to specify the message pair to be used. Select ivtnocommand and then select import message



Import Input and Output Messages

Import Input and Output messages

Import a pair of transaction input and output messages into a test case.

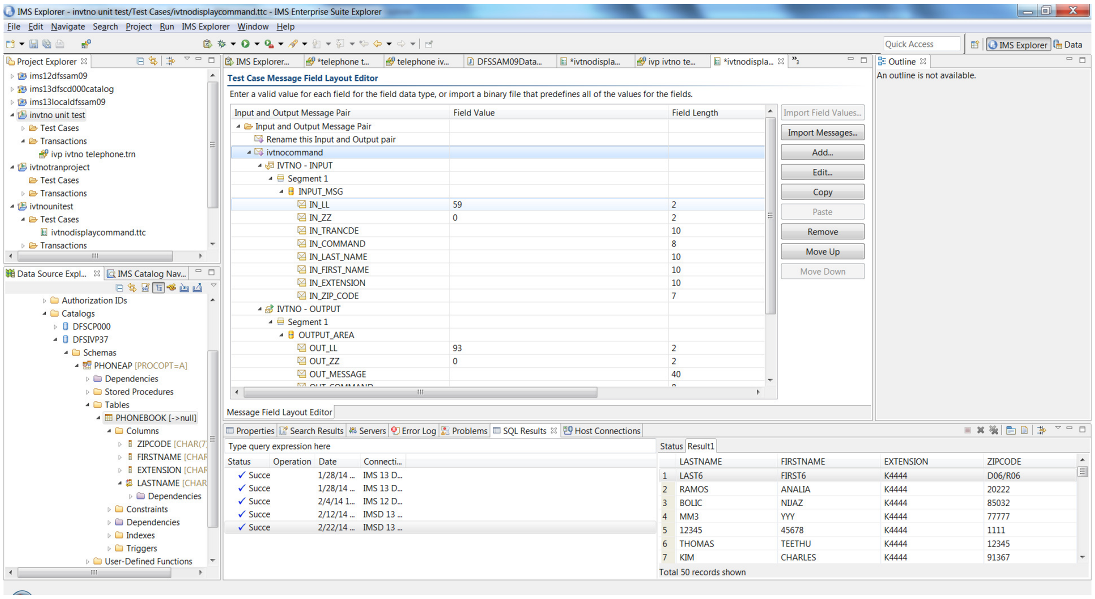
Message pair name: ivtnocommand

*Transaction name: ivp ivtno telephone

*Input message: IVTNO - INPUT

*Output message: IVTNO - OUTPUT

in the import input and output messages panel verify message pair name is ivtnocommand
in transaction name drop down list use ivp ivtno telephone
in input message drop down list use IVTNO-INPUT
in output message drop down list use IVTNO-OUTPUT
select Finish



IMS Explorer - invtno unit test/Test Cases/ivtnodisplaycommand.ttc - IMS Enterprise Suite Explorer

Test Case Message Field Layout Editor

Enter a valid value for each field for the field data type, or import a binary file that predefines all of the values for the fields.

Input and Output Message Pair	Field Value	Field Length
Input and Output Message Pair		
Rename this Input and Output pair		
ivtnocommand		
IVTNO - INPUT		
Segment 1		
INPUT_MSG		
IN_LL	59	2
IN_ZZ	0	2
IN_TRANCDE		10
IN_COMMAND		8
IN_LAST_NAME		10
IN_FIRST_NAME		10
IN_EXTENSION		10
IN_ZIP_CODE		7
IVTNO - OUTPUT		
Segment 1		
OUTPUT_AREA		
OUT_LL	93	2
OUT_ZZ	0	2
OUT_MESSAGE		40

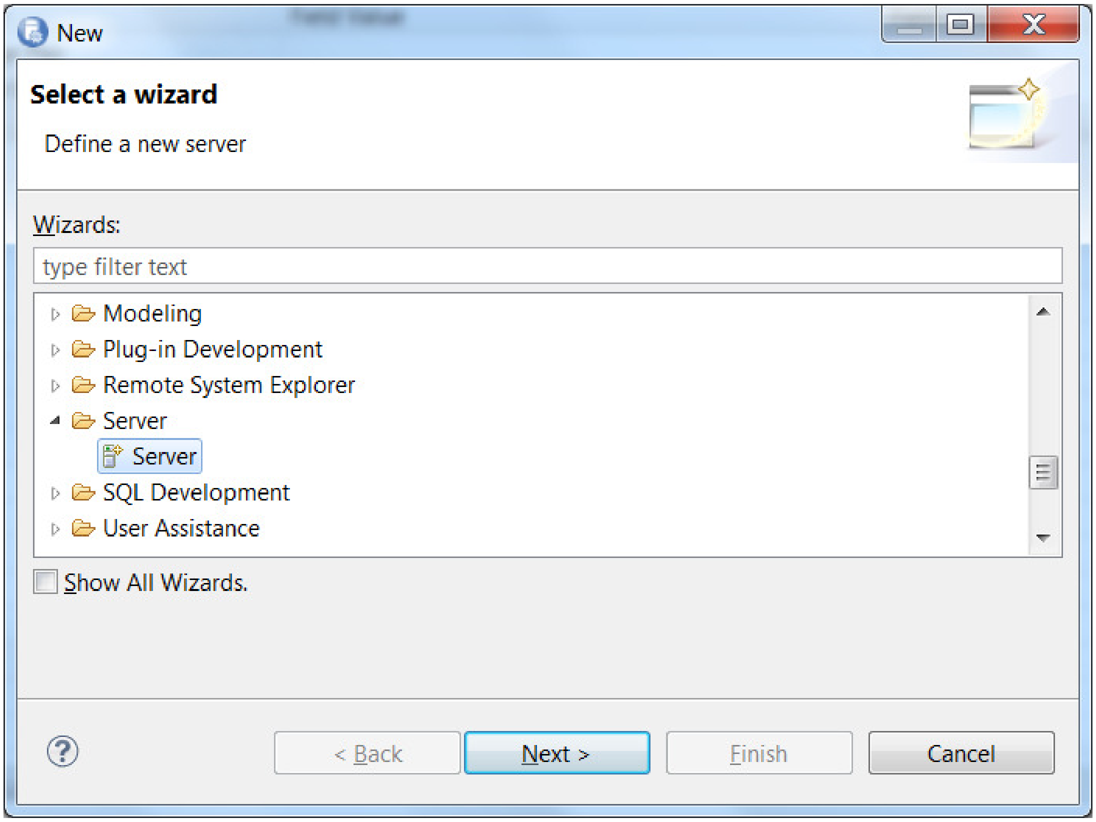
Type query expression here

Status	Operation	Date	Connecti...
✓ Succe		1/28/14 ...	IMS 13 D...
✓ Succe		1/28/14 ...	IMS 13 D...
✓ Succe		2/4/14 1...	IMS 12 D...
✓ Succe		2/12/14 ...	IMSD 13 ...
✓ Succe		2/22/14 ...	IMSD 13 ...

	LASTNAME	FIRSTNAME	EXTENSION	ZIPCODE
1	LAST6	FIRST6	K4444	D06/R06
2	RAMOS	ANALIA	K4444	20222
3	BOLIC	NIJAZ	K4444	85032
4	MM3	YYY	K4444	77777
5	12345	45678	K4444	1111
6	THOMAS	TEETHU	K4444	12345
7	KIM	CHARLES	K4444	91367

Total 50 records shown

Define a new IMS transaction server connection by clicking New > Server.



New

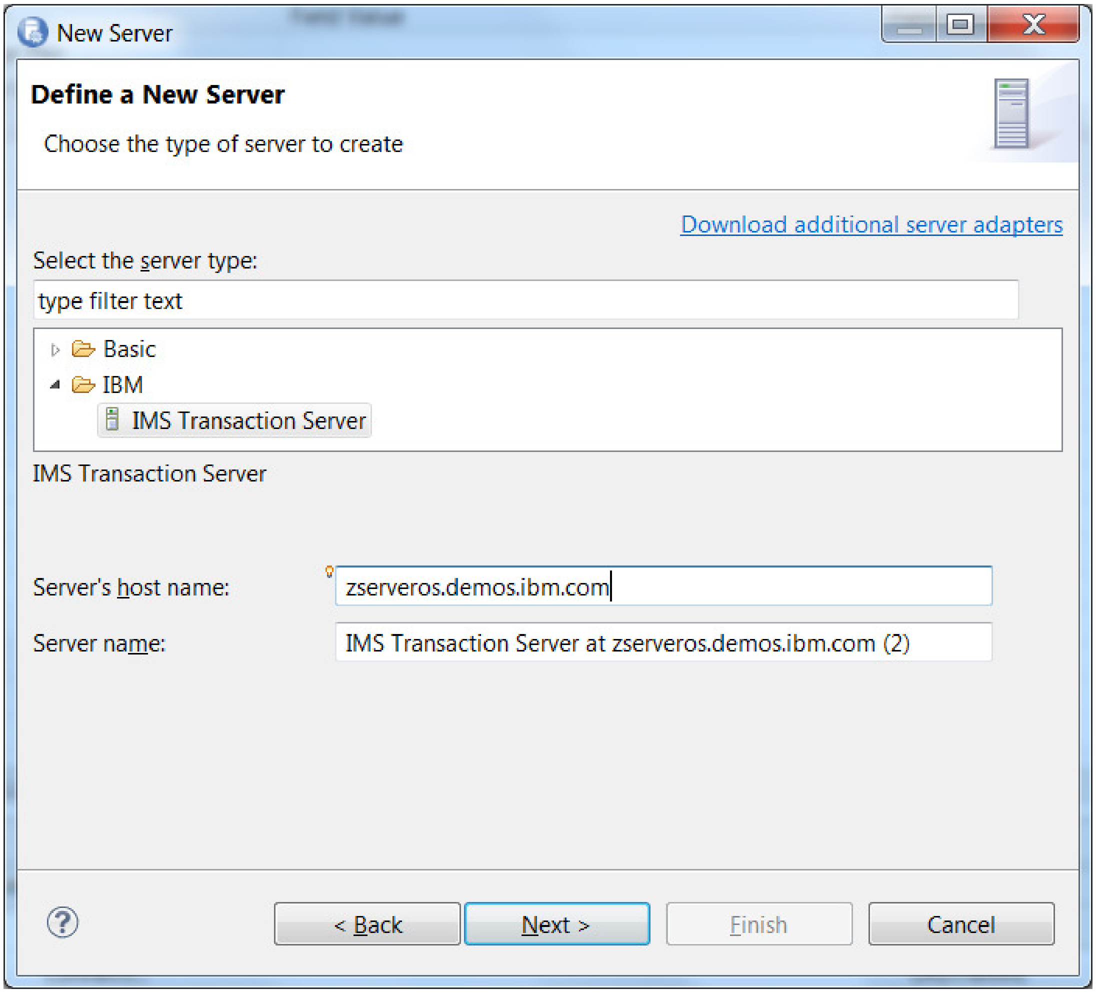
Select a wizard

Define a new server

Wizards:

type filter text

Select Next



Define a New Server

Choose the type of server to create

Select the server type:

type filter text

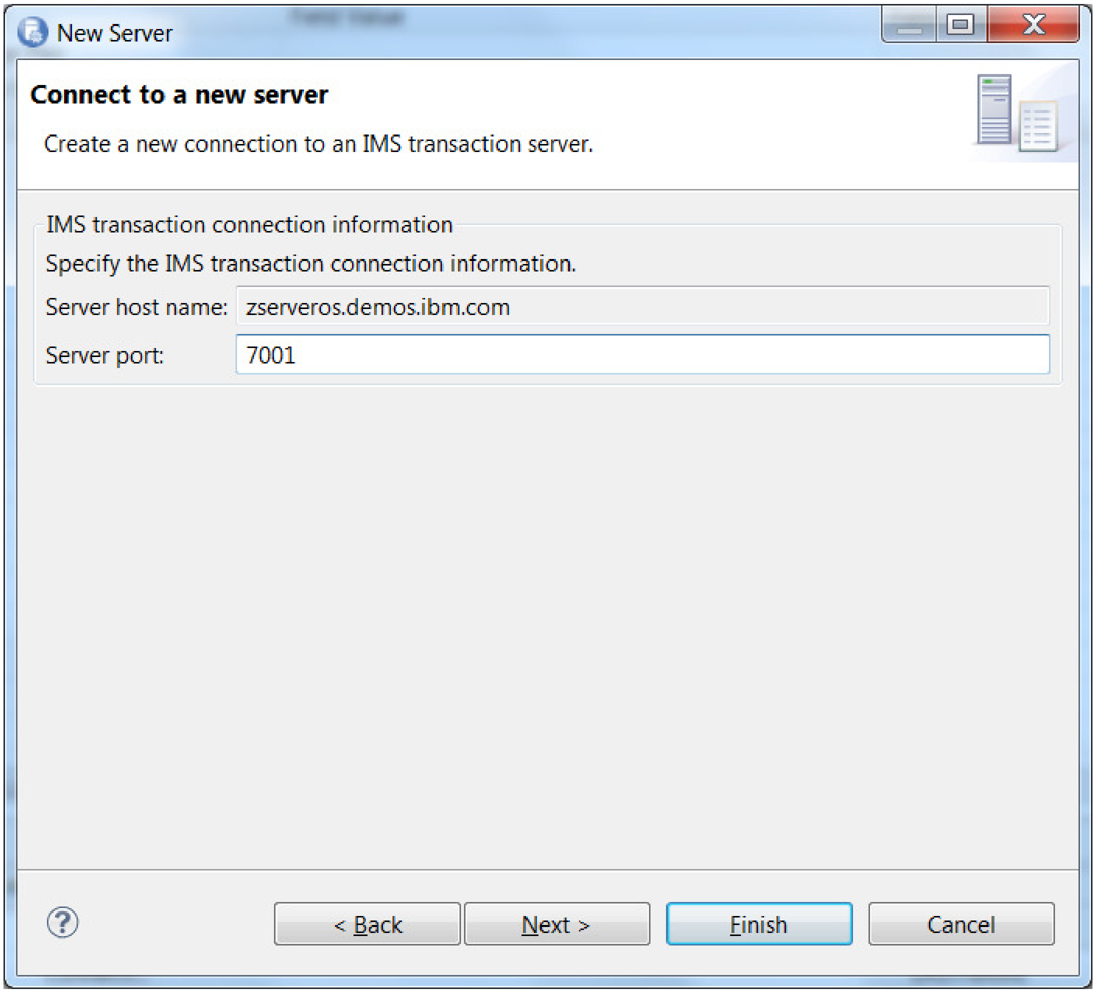
IMS Transaction Server

Server's host name: zserveros.demos.ibm.com

Server name: IMS Transaction Server at zserveros.demos.ibm.com (2)

In the New Server wizard, click IBM > IMS Transaction Server.
In Server's host name field enter zserveros.demos.ibm.com

select next



Connect to a new server

Create a new connection to an IMS transaction server.

IMS transaction connection information

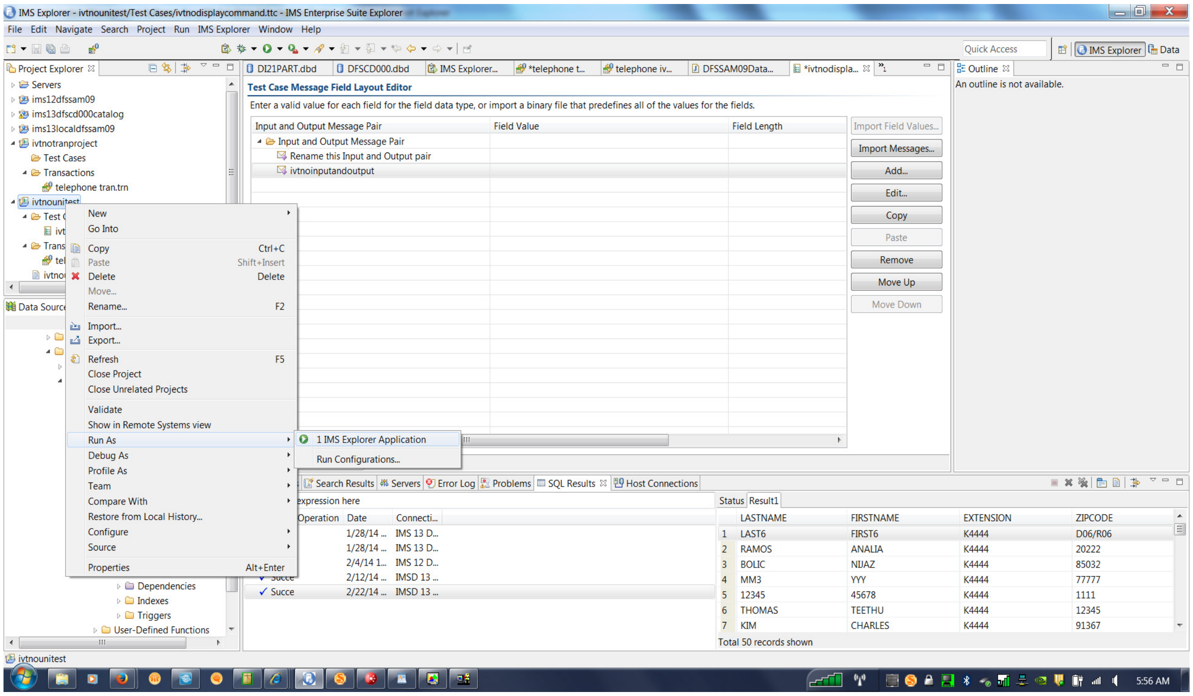
Specify the IMS transaction connection information.

Server host name: zserveros.demos.ibm.com

Server port: 7001

in Server port field enter 7000
select Finish

From the test project, right-click and click Run As > IMS Explorer Application



Test Case Message Field Layout Editor

Enter a valid value for each field for the field data type, or import a binary file that predefines all of the values for the fields.

Input and Output Message Pair	Field Value	Field Length
Input and Output Message Pair		
Rename this Input and Output pair		
ivtnoinputandoutput		

expression here

Operation	Date	Connecti...
	1/28/14 ...	IMS 13 D...
	1/28/14 ...	IMS 13 D...
	2/4/14 1...	IMS 12 D...
✓ Succe	2/12/14 ...	IMSD 13 ...
✓ Succe	2/22/14 ...	IMSD 13 ...

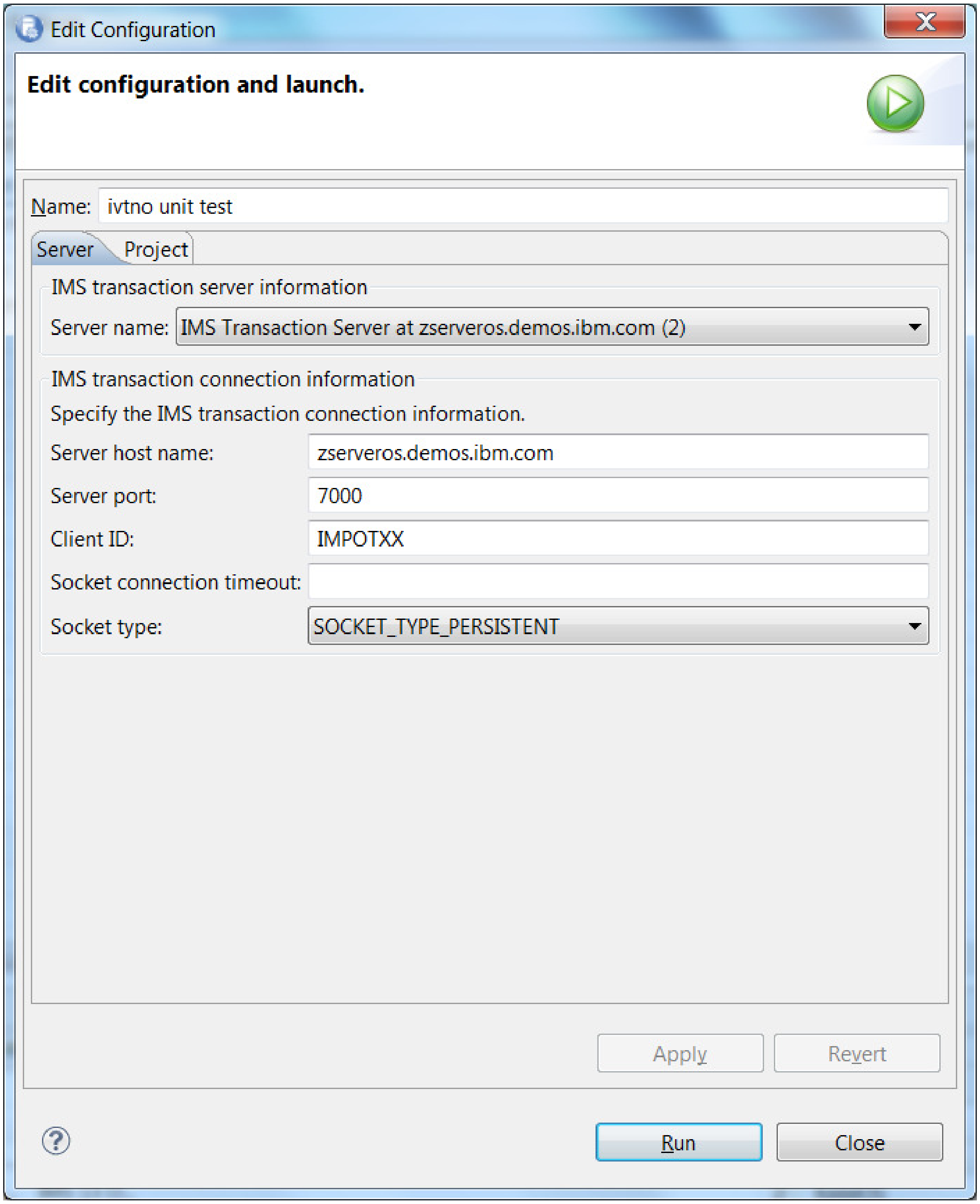
Status Result1

	LASTNAME	FIRSTNAME	EXTENSION	ZIPCODE
1	LAST6	FIRST6	K4444	D06/R06
2	RAMOS	ANALIA	K4444	20222
3	BOLIC	NIJAZ	K4444	85032
4	MM3	YYY	K4444	77777
5	12345	45678	K4444	1111
6	THOMAS	TEETHU	K4444	12345
7	KIM	CHARLES	K4444	91367

Total 50 records shown

ivtnounitest

in the Edit configuration and launch panel
verify Name is ivtno unit test
in the Server name drop down list select the server you just created
Server port 7000
Client ID IMPOTxx



Edit Configuration

Edit configuration and launch.

Name: ivtno unit test

Server | Project

IMS transaction server information

Server name: IMS Transaction Server at zserveros.demos.ibm.com (2)

IMS transaction connection information

Specify the IMS transaction connection information.

Server host name: zserveros.demos.ibm.com

Server port: 7000

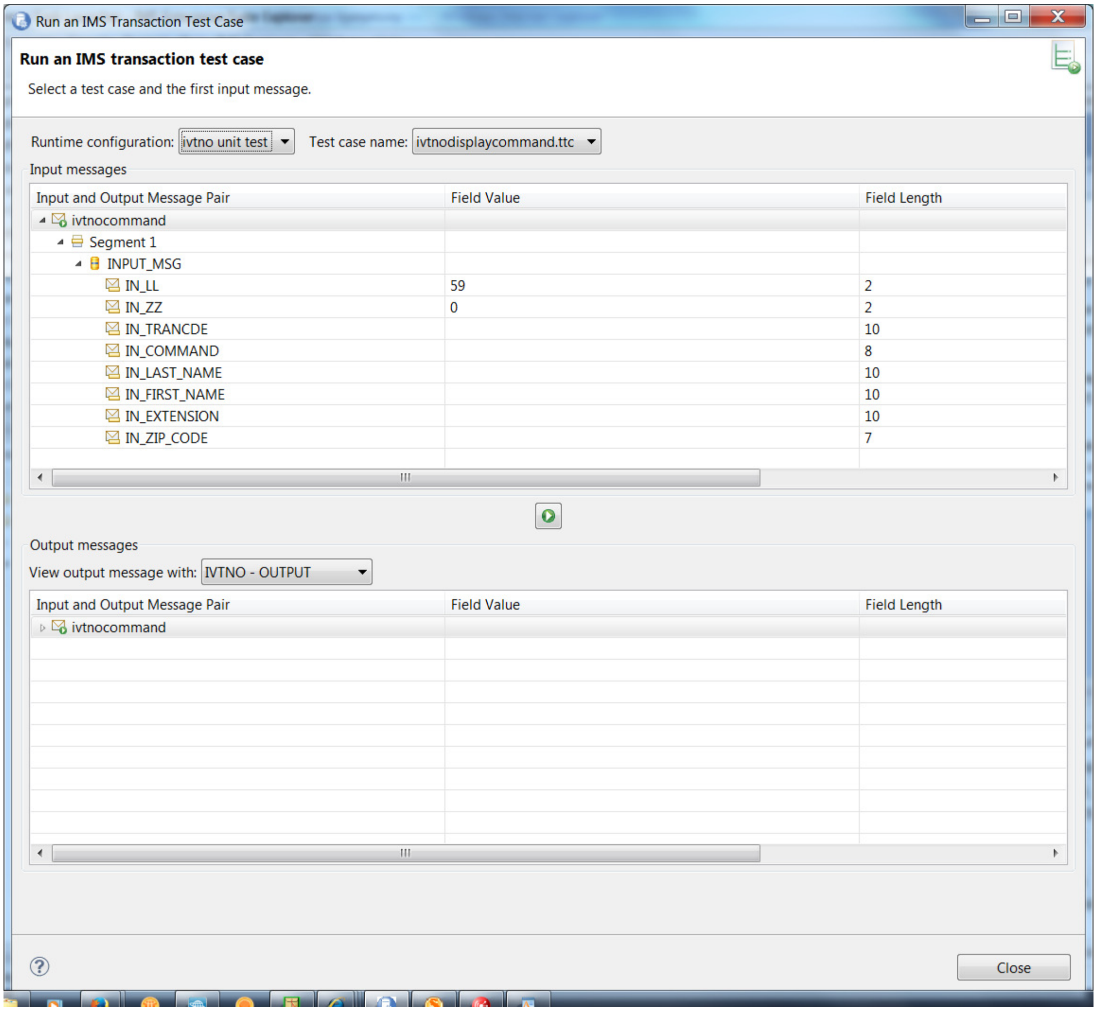
Client ID: IMPOTXX

Socket connection timeout:

Socket type: SOCKET_TYPE_PERSISTENT

select Apply and then select Run

The Run an IMS transaction test case panel opens



Run an IMS Transaction Test Case

Run an IMS transaction test case

Select a test case and the first input message.

Runtime configuration: ivtno unit test

Test case name: ivtnodisplaycommand.ttc

Input messages

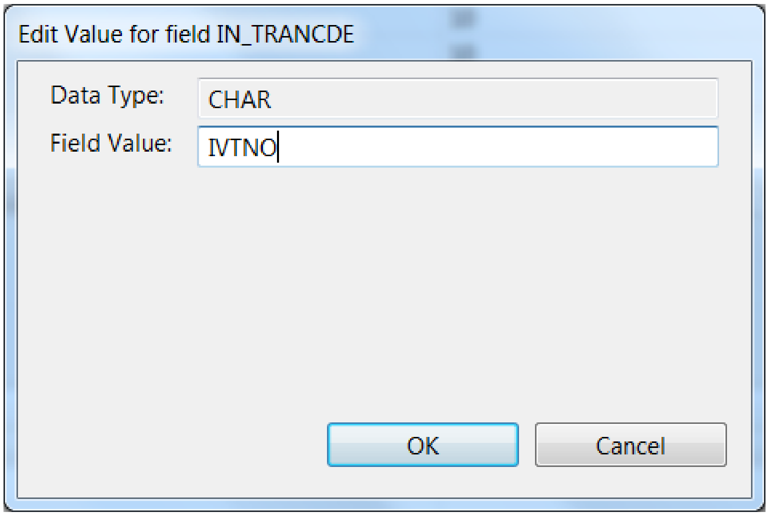
Input and Output Message Pair	Field Value	Field Length
ivtnocommand		
Segment 1		
INPUT_MSG		
IN_LL	59	2
IN_ZZ	0	2
IN_TRANCDE		10
IN_COMMAND		8
IN_LAST_NAME		10
IN_FIRST_NAME		10
IN_EXTENSION		10
IN_ZIP_CODE		7

Output messages

View output message with: IVTNO - OUTPUT

Input and Output Message Pair	Field Value	Field Length
ivtnocommand		

double click IN_TRANCDE Field value to edit the field



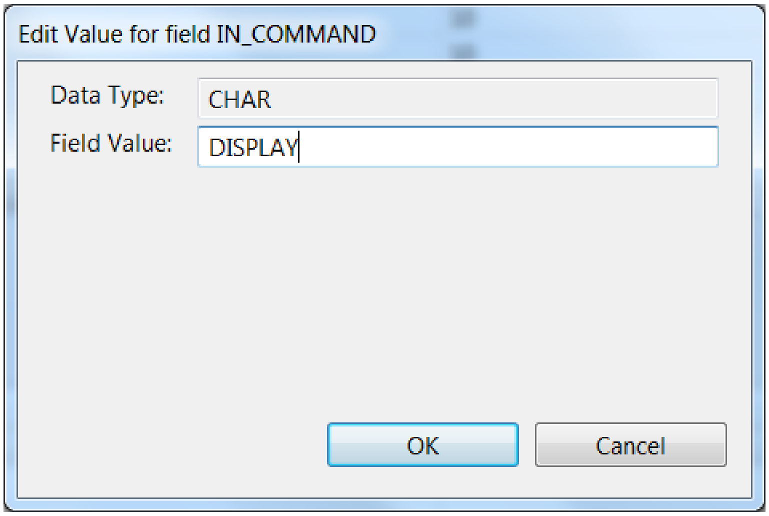
Edit Value for field IN_TRANCDE

Data Type: CHAR

Field Value: IVTNO

enter IVTNO and select ok

double click on IN_COMMAND field and enter DISPLAY click ok

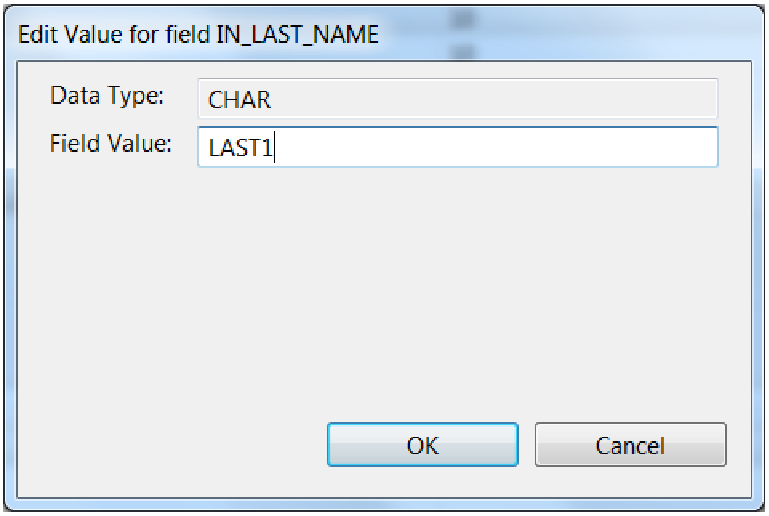


Edit Value for field IN_COMMAND

Data Type: CHAR

Field Value: DISPLAY

double click on IN_LAST_NAME field enter LAST1 click ok

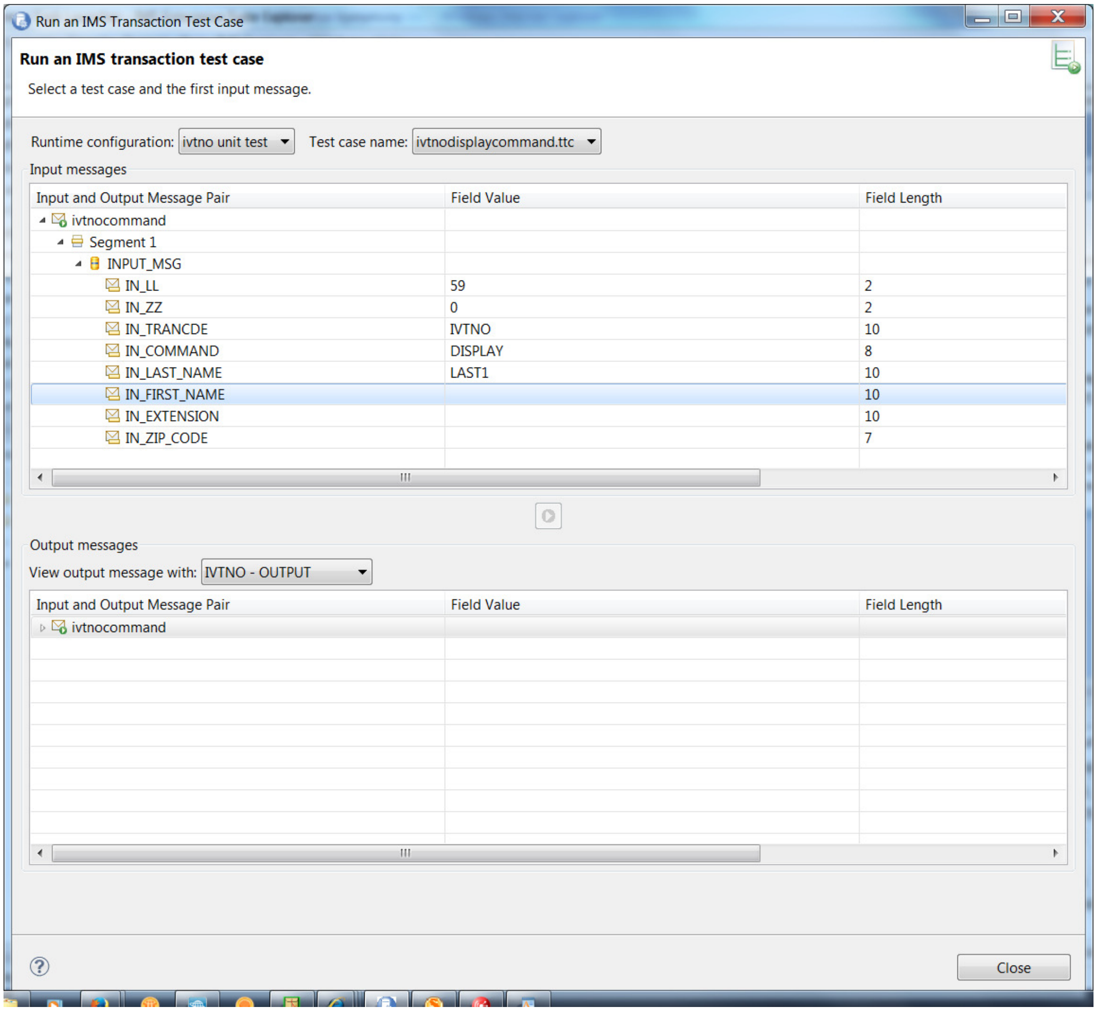


Edit Value for field IN_LAST_NAME

Data Type: CHAR

Field Value: LAST1

This completes building the input message



Run an IMS transaction test case

Select a test case and the first input message.

Runtime configuration: ivtno unit test

Test case name: ivtnodisplaycommand.ttc

Input messages

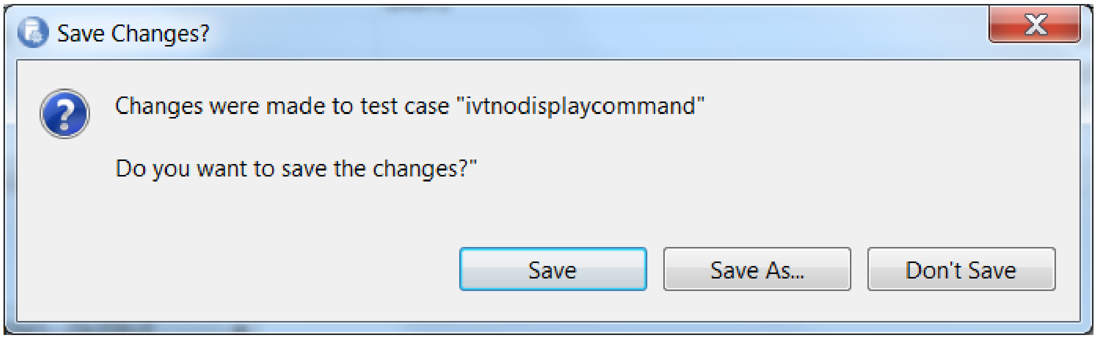
Input and Output Message Pair	Field Value	Field Length
ivtnocommand		
Segment 1		
INPUT_MSG		
IN_LL	59	2
IN_ZZ	0	2
IN_TRANCDE	IVTNO	10
IN_COMMAND	DISPLAY	8
IN_LAST_NAME	LAST1	10
IN_FIRST_NAME		10
IN_EXTENSION		10
IN_ZIP_CODE		7

Output messages

View output message with: IVTNO - OUTPUT

Input and Output Message Pair	Field Value	Field Length
ivtnocommand		

select Close tab and save the changes

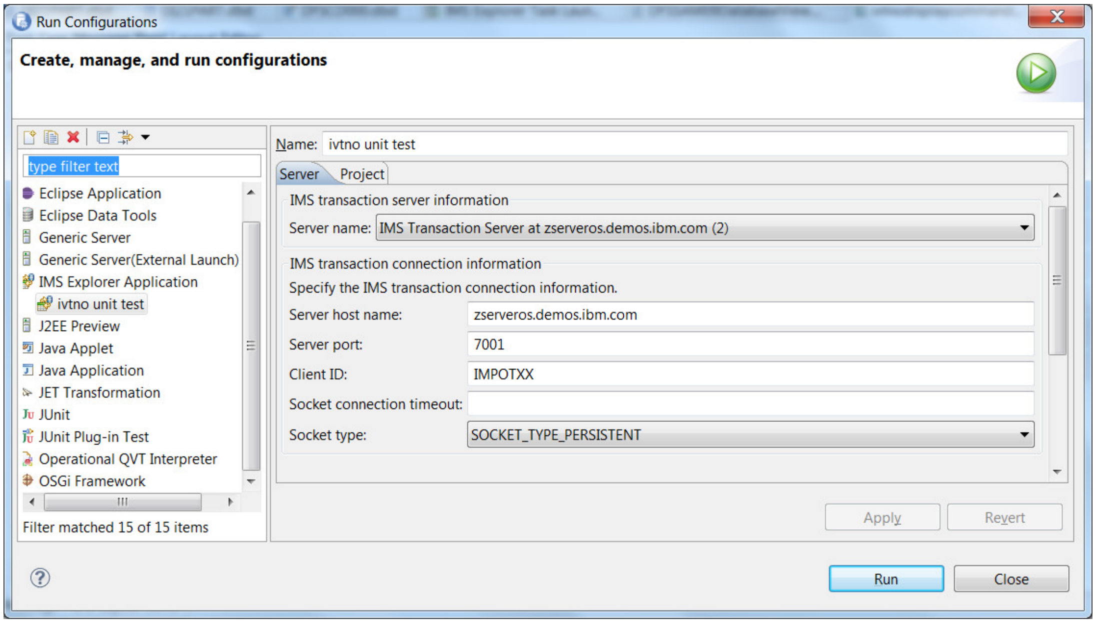


Changes were made to test case "ivtnodisplaycommand"

Do you want to save the changes?"

in ivtno unit test > Test cases right mouse click ivtnodisplaycommand.ttc and select Run

the Run configuration panel
verify the server configuration



Name: ivtno unit test

IMS transaction server information

Server name: IMS Transaction Server at zserveros.demos.ibm.com (2)

IMS transaction connection information

Specify the IMS transaction connection information.

Server host name: zserveros.demos.ibm.com

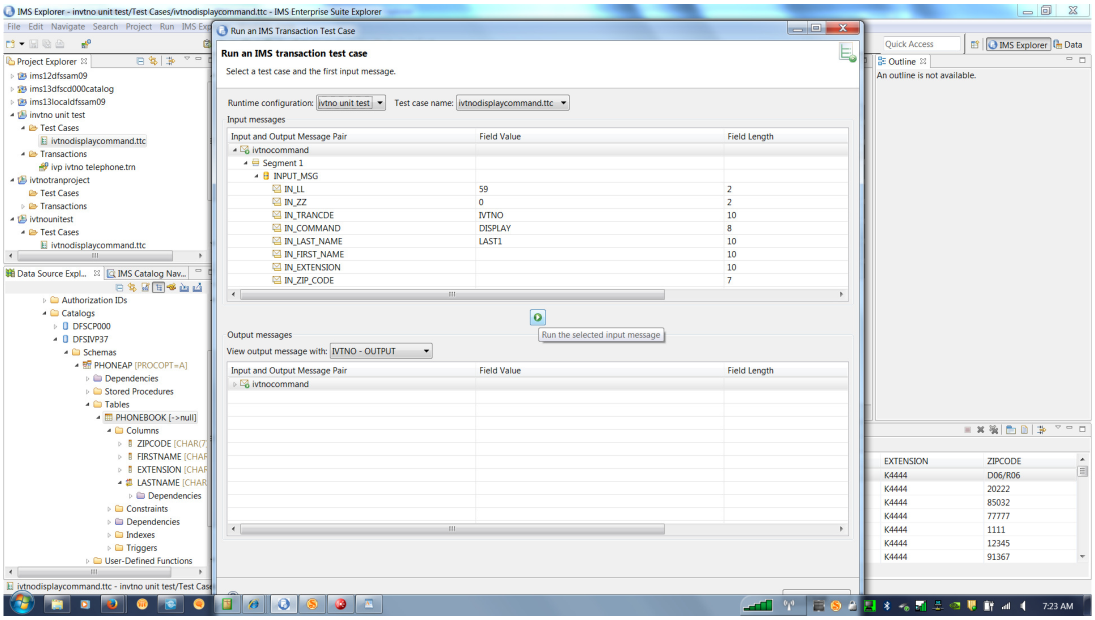
Server port: 7001

Client ID: IMPOTXX

Socket connection timeout:

Socket type: SOCKET_TYPE_PERSISTENT

select Run tab to



IMS Explorer - invtno unit test/Test Cases/ivtnodisplaycommand.ttc - IMS Enterprise Suite Explorer

Run an IMS Transaction Test Case

Run an IMS transaction test case

Select a test case and the first input message.

Runtime configuration: ivtno unit test   Test case name: ivtnodisplaycommand.ttc

Input messages

Input and Output Message Pair	Field Value	Field Length
ivtnocommand		
Segment 1		
INPUT_MSG		
IN_LL	59	2
IN_ZZ	0	2
IN_TRANCDE	IVTNO	10
IN_COMMAND	DISPLAY	8
IN_LAST_NAME	LAST1	10
IN_FIRST_NAME		10
IN_EXTENSION		10
IN_ZIP_CODE		7

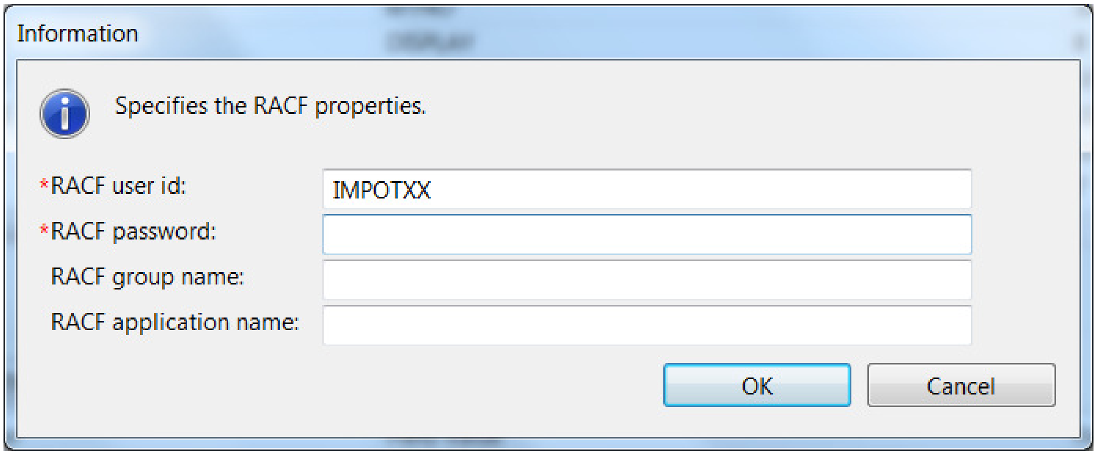
Run the selected input message

Output messages

View output message with: IVTNO - OUTPUT

Input and Output Message Pair	Field Value	Field Length
ivtnocommand		

in the middle of the panel select green button



Information

Specifies the RACF properties.

*RACF user id: IMPOTXX

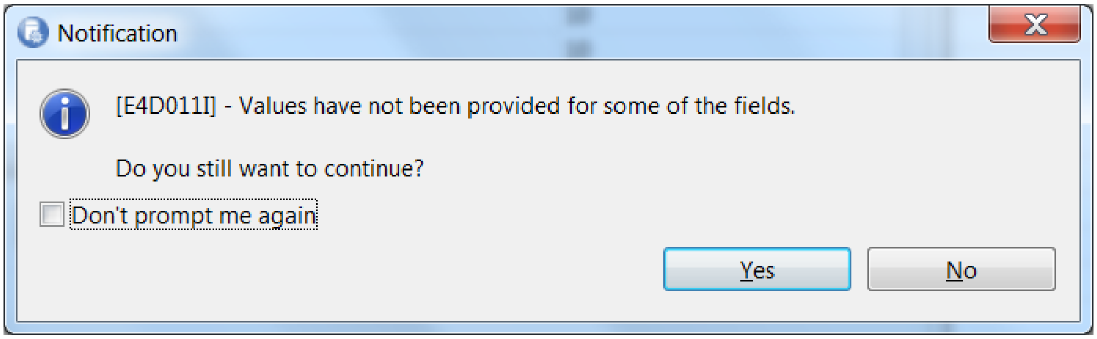
*RACF password:

RACF group name:

RACF application name:

in the RACF properties panel enter your user id and password click ok

you may get the following message



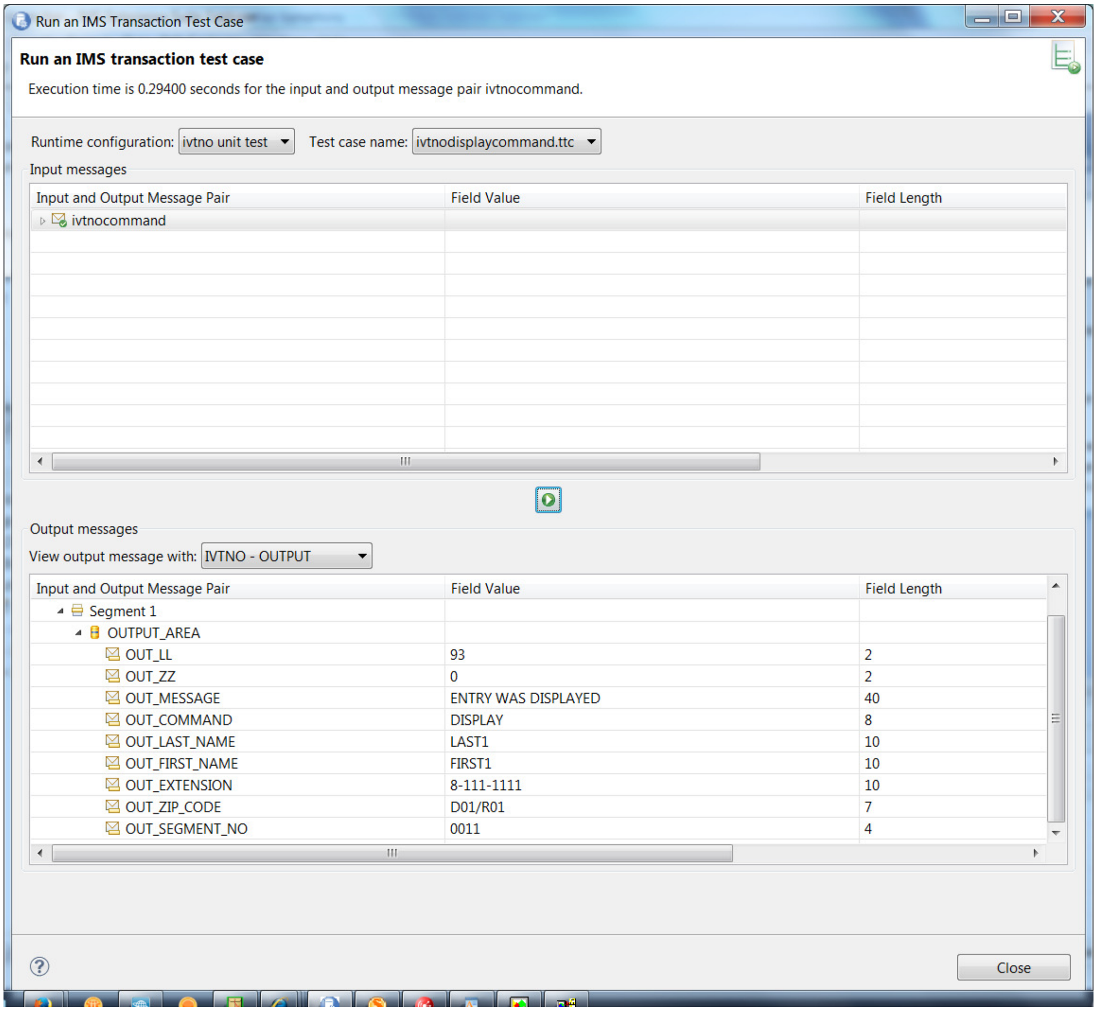
Notification

[E4D011I] - Values have not been provided for some of the fields.

Do you still want to continue?

□ Don't prompt me again

select Yes



Run an IMS Transaction Test Case

Run an IMS transaction test case

Execution time is 0.29400 seconds for the input and output message pair ivtnocommand.

Runtime configuration: ivtno unit test   Test case name: ivtnodisplaycommand.ttc

Input messages

Input and Output Message Pair	Field Value	Field Length
ivtnocommand		

Output messages

View output message with: IVTNO - OUTPUT

Input and Output Message Pair	Field Value	Field Length
Segment 1		
OUTPUT_AREA		
OUT_LL	93	2
OUT_ZZ	0	2
OUT_MESSAGE	ENTRY WAS DISPLAYED	40
OUT_COMMAND	DISPLAY	8
OUT_LAST_NAME	LAST1	10
OUT_FIRST_NAME	FIRST1	10
OUT_EXTENSION	8-111-1111	10
OUT_ZIP_CODE	D01/R01	7
OUT_SEGMENT_NO	0011	4

This completes the lab.