



How To... Move Integration Scenarios (ESR/ID Objects) from PI 7.0 to PI 7.1

Applicable Releases:

SAP NetWeaver PI 7.1

SAP NetWeaver PI 7.0

SAP NetWeaver XI 3.0

Topic Area:

SOA Middleware

Capability:

Service Bus

Version 1.0

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Document History

Document Version	Description
1.00	First official release of this guide

Typographic Conventions

Type Style	Description
<i>Example Text</i>	Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options. Cross-references to other documentation
Example text	Emphasized words or phrases in body text, graphic titles, and table titles
Example text	File and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools.
Example text	User entry texts. These are words or characters that you enter in the system exactly as they appear in the documentation.
<Example text>	Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system.
EXAMPLE TEXT	Keys on the keyboard, for example, F2 or ENTER.

Icons

Icon	Description
	Caution
	Note or Important
	Example
	Recommendation or Tip

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1. Business Scenario

SAP NetWeaver Process Integration 7.1 (PI 7.1) introduced many feature and performance enhancements, which provide PI developers with greater flexibility, options and increased design/configuration speed, in addition to increased runtime performance. This document provides the reader with a comprehensive overview of the steps required to upgrade the Integration Repository and Integration Directory objects from SAP NetWeaver Exchange Infrastructure 3.0 (XI 3.0) or SAP NetWeaver Process Integration 7.0 (PI 7.0) to PI 7.1.

2. Background Information

The target audiences for this how-to guide are administrators, project leads and PI developers.

Although the how-to guide discusses the complete upgrade process, it focuses, in detail, the moving of Integration Repository (IR) objects in XI 3.0 or PI 7.0 to Enterprise Service Repository (ESR) in PI 7.1, and the moving of Integration Directory (ID) objects from XI 3.0 or PI 7.1 to PI 7.1.

When moving the objects, it is assumed that a separate new PI 7.1 system is available. If the XI 3.0 or PI 7.0 system is to be upgraded in-place to PI 7.1, the IR and ID objects will continue to be available after the upgrade, therefore, no move is necessary.

3. Prerequisites

This how-to guide is not considered as a replacement for the official update or upgrade documentation. Therefore it is very important that you make yourself familiar with the update or upgrade process by reading the official documentation.

There are two options for the upgrade process:

1. Upgrade XI 3.0 or PI 7.0, in-place, to PI 7.1.
2. Install a new PI 7.1 system. Then, move the IR and ID objects from XI 3.0 or PI 7.0 to PI 7.1.

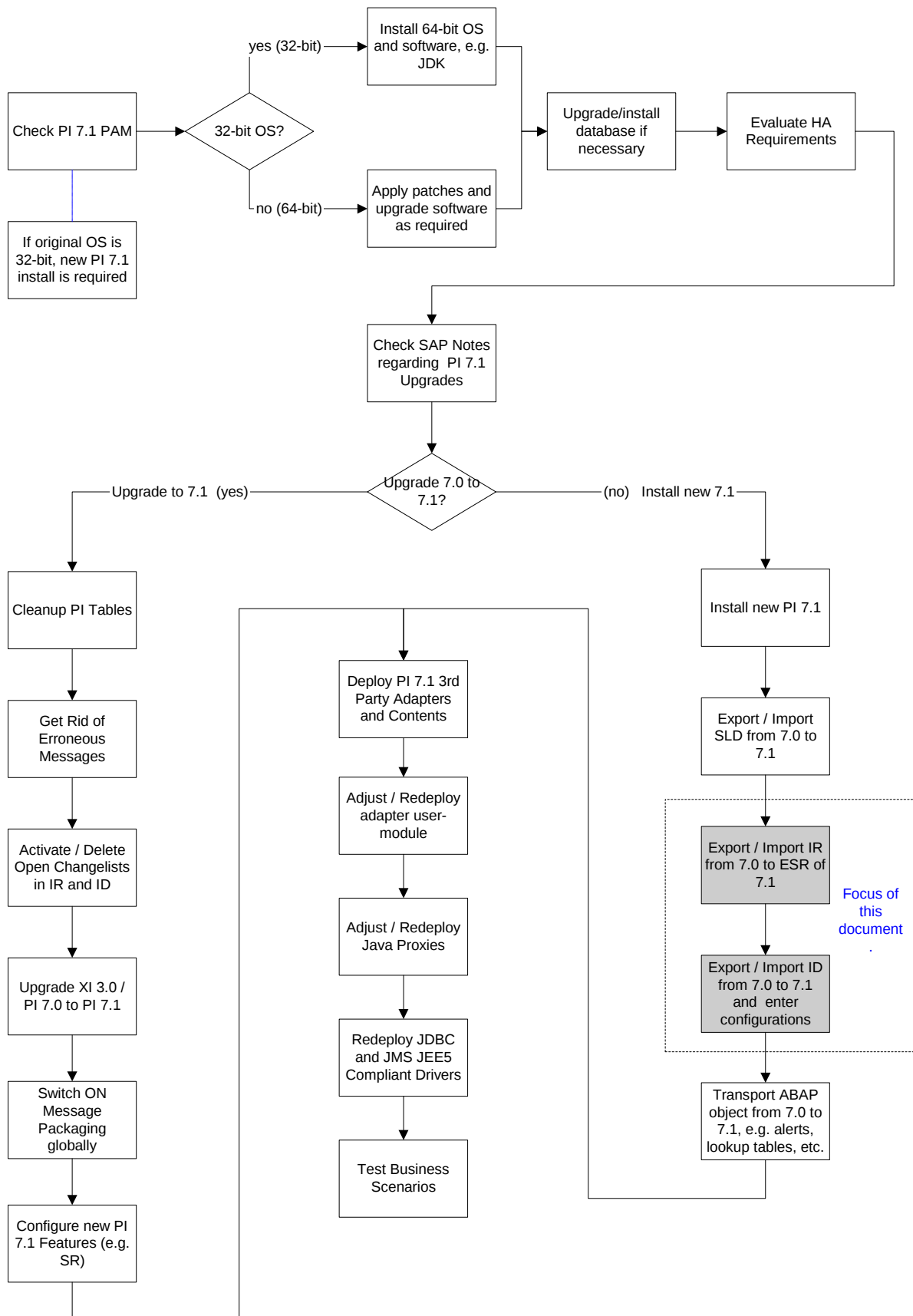
Important

SAP NetWeaver 7.1 can only be installed on a 64-bit OS. If the current XI 3.0 or PI 7.0 is on a 32-bit OS, then you must install a new 64-bit system and move the IR and ID objects.

This how-to document focuses on option 2 above.

3.1 Upgrade Overview Steps

Which option to select depends on many criteria, from both business and technology perspectives. Below contains the recommended steps when the option has been decided.



3.2 PI 7.1 Upgrade Reference Documents

Below contains some of the relevant documentations which might be useful during the upgrade process:

1. Check PI 7.1 PAM / Sizing for hardware requirements:
 - a. SDN: <https://www.sdn.sap.com/irj/scn/go/portal/prtroot/docs/library/uuid/80800e7d-da0e-2b10-9e8c-b85181ad8fac>
 - b. SAP Service Marketplace: <http://service.sap.com/pam>
2. Evaluate HA setup for your landscape:
 - a. High Availability for SAP Applications based on SAP NetWeaver:
 - i. <https://www.sdn.sap.com/irj/scn/go/portal/prtroot/docs/media/uuid/e0fd0398-2a6d-2a10-2899-b2855fc7d397>
 - b. Process Integration 7.1 - High Availability SAP Note Number: 1052984
 - i. https://www.sdn.sap.com/irj/servlet/prt/portal/prtroot/com.sap.km.cm.docs/oss_notes/sdn_oss_bc_xi/~form/handler{5f4150503d30303230303638323530303030303031393732265f4556454e543d444953504c4159265f4e4e554d3d31303532393834}
 - c. High Availability:
http://help.sap.com/saphelp_nwpi71/helpdata/en/72/cd1e4261ea5433e10000000a155106/frameset.htm
3. Check important requirements and SAP Notes for upgrade:
 - a. Solution Manager needs to be on latest SP level (e.g. minimum version 7.0 SP16)
 - b. Please consider following SAP Notes for additional information and limitations:
 - i. SAP Note 1135704: SAP NetWeaver PI 7.1 Composite Note
 - ii. SAP Note 1004107: Release Restrictions for SAP NetWeaver PI 7.1
 - iii. SAP Note 1061649: Upgrade to SAP NetWeaver Process Integration 7.1
 - iv. SAP Note 1154961: Checks to be executed before ESR/PI Upgrade to 7.1
 - v. SAP Note 1138877: PI 7.1 : How to Deploy External Drivers JDBC/JMS Adapters
4. Install PI 7.1 development system:
 - a. Decision-making Factors when moving to SAP NetWeaver Process Integration 7.1 - Upgrade or New Installation with Phase out:
 - i. <https://www.sdn.sap.com/irj/scn/go/portal/prtroot/docs/library/uuid/40328fc8-4844-2b10-b7a2-8930c16df2ba>
 - b. How to Plan, Strategize, and Upgrade to SAP NetWeaver PI 7.1 SOA Middleware:
 - i. <https://www.sdn.sap.com/irj/scn/go/portal/prtroot/docs/media/uuid/6011d10a-0875-2b10-6ab8-d57ec4138011>

- c. SAP NetWeaver PI 7.1 Composite Note - SAP Note Number: 1135704
 - i. https://www.sdn.sap.com/irj/servlet/prt/portal/prtroot/com.sap.km.cm.docs/oss_notes/sdn_oss_bc_xi/~form/handler{5f4150503d30303230303638323530303030303031393732265f4556454e543d444953504c4159265f4e4e554d3d31313335373034}
- d. SMP - PI 7.1: <https://websmp103.sap-ag.de/instguidesNW>
- 5. Create/Transfer communication users from application systems to PI 7.1:
 - a. Service Users for Internal Communication:
 - i. http://help.sap.com/saphelp_nwpi71/helpdata/en/9f/d12940cbf2195de10000000a1550b0/frameset.htm
 - b. Transporting Authorization Components
 - i. http://help.sap.com/erp2005_ehp_04/helpdata/EN/52/6716d2439b11d1896f000e8322d00/frameset.htm
- 6. Consider and configure CTS:
 - a. Enhanced CTS for PI - Use Case:
<https://www.sdn.sap.com/irj/scn/go/portal/prtroot/docs/library/uuid/c04b3127-c1f6-2910-c39c-c439b2169747>
 - b. How To ... Configure Enhanced CTS for SAP NetWeaver Process Integration 7.1 SP06: <https://www.sdn.sap.com/irj/scn/go/portal/prtroot/docs/library/uuid/20ccd0ec-2839-2b10-0097-828fcd8ed809>
- 7. Optional: Setup new SLD 7.1 on PI 7.1 system:
 - a. SAP NetWeaver PI 7.1 and SLD - Upgrade Strategy:
 - i. <https://www.sdn.sap.com/irj/scn/go/portal/prtroot/docs/library/uuid/300e3ca7-31cd-2a10-a6ba-87c7447d5fd7>
 - b. User Manual System Landscape – Directory NW 7.1:
<https://www.sdn.sap.com/irj/scn/go/portal/prtroot/docs/library/uuid/b09fe69e-46be-2a10-9fb0-9c11aeaa3557>
- 8. Transport selected SLD content from XI 3.0/PI 7.0 to PI 7.1 SLD:
 - a. Tasks in the System Landscape Directory:
http://help.sap.com/saphelp_nwpi71/helpdata/en/fe/39ae3d47afd652e10000000a114084/frameset.htm
 - b. Administrating the SLD:
http://help.sap.com/saphelp_nwpi71/helpdata/en/45/ac18ce74372733e10000000a155369/frameset.htm
 - c. Performing Regular Administrative Tasks:
http://help.sap.com/saphelp_nwpi71/helpdata/en/42/3a420910af11d6999400508b6b8b11/frameset.htm
 - d. Exporting and Backing Up Your SLD Information:
http://help.sap.com/saphelp_nwpi71/helpdata/en/a2/706851b7e62a4b9e697bce3ede967a/frameset.htm

9. Transport selected Integration Repository content from XI 3.0/PI 7.0 to PI 7.1 ESR
 - a. Software Logistics for XI Objects (7.0):
http://help.sap.com/saphelp_nw70/helpdata/en/94/c461bd75be534c89b5646b6ddc0aff/frameset.htm
 - b. Transporting XI Objects (7.0):
http://help.sap.com/saphelp_nw70/helpdata/en/93/a3a74046033913e10000000a155106/frameset.htm

 **Note**
 XI 3.0/PI 7.0 metadata needs to be available in IR as well.
 - c. Organization of ESR Content (7.1):
http://help.sap.com/saphelp_nwpi71/helpdata/en/80/41d6fab68dca439063d16e7a1875dc/frameset.htm
 - d. Transferring Design Objects:
http://help.sap.com/saphelp_nwpi71/helpdata/en/e8/e8573ba5f13048be50532fc3cea9c/frameset.htm
10. Transport selected Integration Directory content from XI 3.0 to PI 7.1 Integration Directory (Option: Create Integration Directory objects manually):
 - a. Software Logistics for XI Objects (7.0):
http://help.sap.com/saphelp_nw70/helpdata/en/94/c461bd75be534c89b5646b6ddc0aff/frameset.htm
 - b. Transporting XI Objects (7.0):
http://help.sap.com/saphelp_nw70/helpdata/en/93/a3a74046033913e10000000a155106/frameset.htm

 **Note**
 XI 3.0/PI 7.0 metadata needs to be available in IR as well
11. Transport selected basic and operations relevant configuration (for example Alert configuration, interface archiving settings, ABAP transports, etc):
 - a. Transporting Alert Categories:
http://help.sap.com/erp2005_ehp_04/helpdata/DE/7f/e5d37530e049c2aa82b3546ec4c523/frameset.htm
12. Deploy JEE5 compliant JDBC/JMS drivers (if used):
 - a. PI 7.1 : How to Deploy External Drivers JDBC/JMS Adapters. SAP Note Number: 1138877
https://www.sdn.sap.com/irj/servlet/prt/portal/prtroot/com.sap.km.cm.docs/oss_notes/sdn_oss_bc_xi/~form/handler{5f4150503d3030323030363832353030303030303031393732265f4556454e543d444953504c4159265f4e4e554d3d31313338383737}
13. Re-deploy certified 3rd-party adapters and 3rd-party content (if used):
 - a. SAP NetWeaver SOA Middleware –Adapters and Adapter Modules for SAP NWPI 7.1: <https://www.sdn.sap.com/irj/scn/go/portal/prtroot/docs/library/uuid/e0205c42-5e86-2b10-b183-afc655b07f3f>
 - b. Partner Information Center: Search
<http://www.sap.com/ecosystem/customers/directories/SearchSolution.epx>

14. Adjust and re-deploy adapter modules and Java Proxies (if used):
 - a. Adjust your PI 7.0 Adapter Modules for PI 7.1 in 15 minutes:
<https://www.sdn.sap.com/irj/scn/weblogs?blog=/pub/wlg/11835>
15. After upgrade, the following activities are recommended:
16. Execute functional testing of redirected interfaces in Dev system
17. Repeat installation for Test and Production system.
18. Transport ESR/Directory content to PI Test and Production System (PI 7.1).

 Note

After first Integration Directory transport to Test or Production system communication channels have to be changed manually

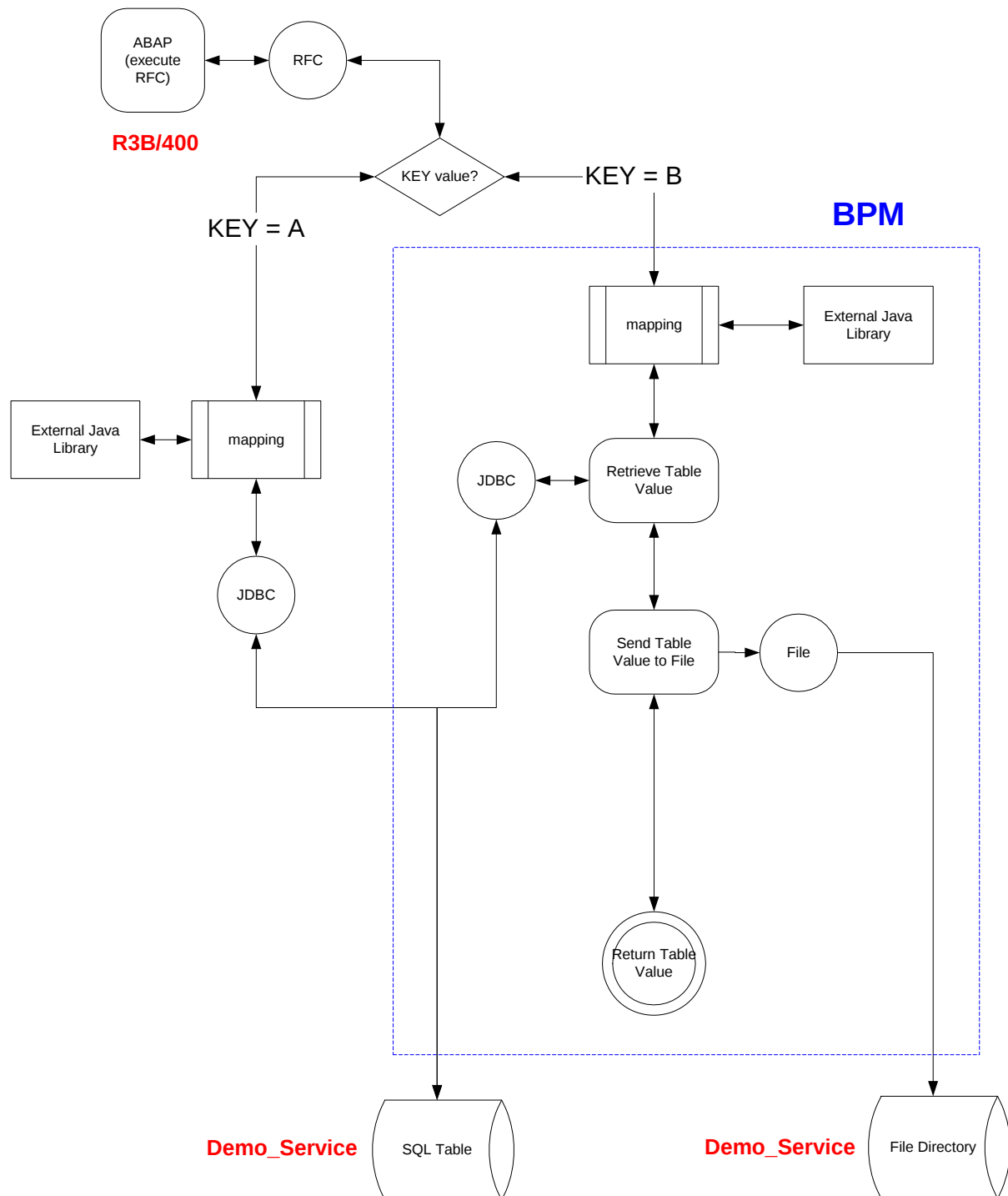
19. Testing the business scenarios in Test system.

4. Step-by-Step Procedure

This chapter contains the step-by-step guide of moving the IR and ID objects from XI 3.0 or PI 7.0 to PI 7.1.

The PI 7.0 system is XR9. The PI 7.1 system is XLI. The same steps should also apply when moving from an XI 3.0 system.

The following scenario is used as our exercise of moving the objects:



The scenario contains the following features:

- Synchronous and asynchronous interfaces
- ccBPM and non-ccBPM interfaces
- Dynamic receiver determination based on message payload value
- Imported archive of java library to be used in mapping

Basic message processing steps:

1. RFC executed in ABAP to send a message to PI
2. In PI, the payload of the message is examined:
 - a. In the message, if the key is "A", then the message will be sent to a database to select a value from a table based on the key. The value will be returned to the RFC in ABAP.
 - b. In the message, if the key is "B", then the message will be sent to a ccBPM:
 - i. Via a synchronous message interface to ccBPM, the received message will be sent to an asynchronous-synchronous gateway to a database to retrieve a value from a table based on the key.
 - ii. The response message containing the value will be written to a file.
 - iii. The response message containing the value will be returned to the RFC in ABAP.

4.1 Importing Objects into the System Landscape Directory (SLD)

The Integration Repository (IR) and the Integration Directory (ID) have dependencies on the contents of the SLD. Specifically, the IR objects must be contained in SWCVs and the ID's communication channels may be dependent on business systems in the SLD. Therefore, both SWCV and Business Systems must already exist in PI 7.1's SLD before we can start to move the objects from PI 7.0 to PI 7.1.



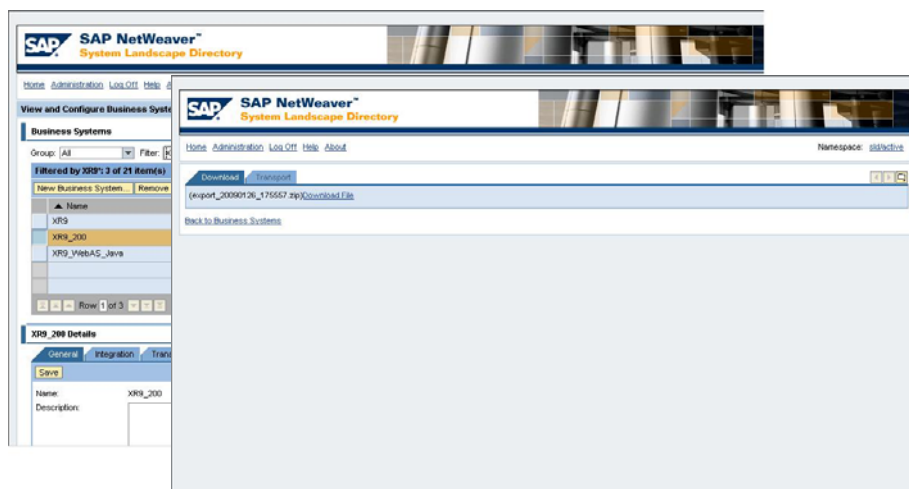
CAUTION

The SWCVs must be exported and imported from PI 7.0 to PI 7.1. We must not create the SWCVs manually on PI 7.1, even though the same names are used. The SWCV GUIDs used by the SLD to point to the names are different; therefore, using the same SWCV names does not mean the objects will be imported properly.

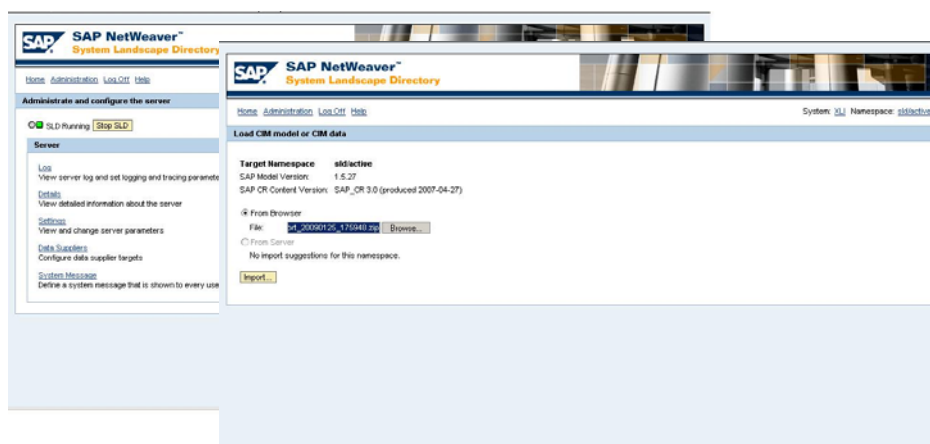
Below contains the procedures to export and import the SLD objects between PI 7.0 and PI 7.1:

1. Transport Business System
Note that exports typically contain associations to objects not being exported themselves (called "external references"). For example, a business system export does not include the underlying technical system. Thus external references cannot be imported if referenced objects are missing in the target system. You may repair this loss of data by transporting or creating missing objects and repeating the import. In the example below, you have to import the technical system first if it does not exist in the target SLD yet.

- a. To export the business system, go to your source SLD, choose 'Business Systems', select the respective Business System that you want to transport and choose 'Export'. Download the file.



- b. To import the Business System to your target SLD, choose 'Administration', 'Content /Upload and download CIM models and data'. Import (either from Browser or Server) the Business System zip-file that you exported and saved in the previous step.



- c. Assign Business System to target Integration Server (Group)
You have to manually change the 'Related Integration Server/Group' to the respective 'Related Integration Sever/Group' of your target landscape.

⚠ CAUTION

This is a very important step in the overall upgrade; if you skip it, the transport of Integration Directory objects will not work because the Business Systems would not be recognized as local systems during the import into the target Integration Directory.

View and configure business systems for use in Process Integration (PI)

Business Systems

Group: All (11) Filter: Go

New Business System... Remove Export Refresh

Name	Technical System	Client
SYS2	XLI on nspah227	003 of XLI
WC1_800	WC1 on nvpah196	800 of WC1.SystemNumber.0020106486.SystemHome.nvpah196
XBA_105	XBA on pwwt2655	105 of XBA.SystemNumber.0120021077.SystemHome.pwwt2655
XLI_Java	XLI on nspah227	
XRS_200	XRS on nspah391	200 of XRS.SystemNumber.0020106486.SystemHome.nspah391

XRS_200 Details

General Integration Transport Installed Software

Save

Role: Application System

Related Integration Server: INTEGRATION_SERVER_... [INTEGRATION_SERVER_XLI](#)

Group: PI71

Technical System: XRS on nspah391 [Change](#)

Client: 200 of XRS.SystemNumber.0020106486.SystemHome.nspah391

Logical System Name:

Configuration URL:



Tip

Please keep in mind transaction: TA: LCRSERVADDR.

2. Transport SWC definition

Note that manually creating the same software component or the same XI business system in another SLD will create a different GUID. As a result, these objects are not identical even though their names are the same.

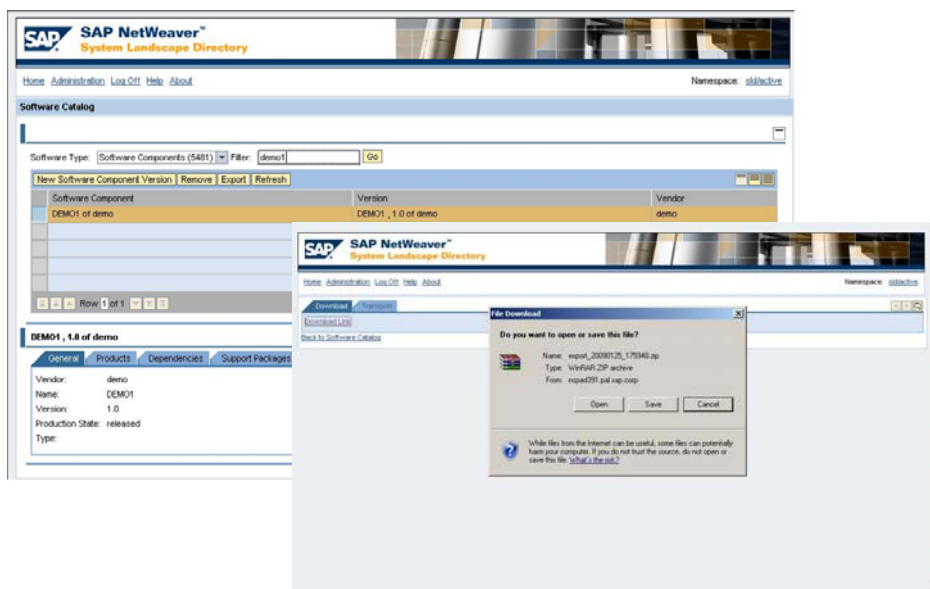


Tip

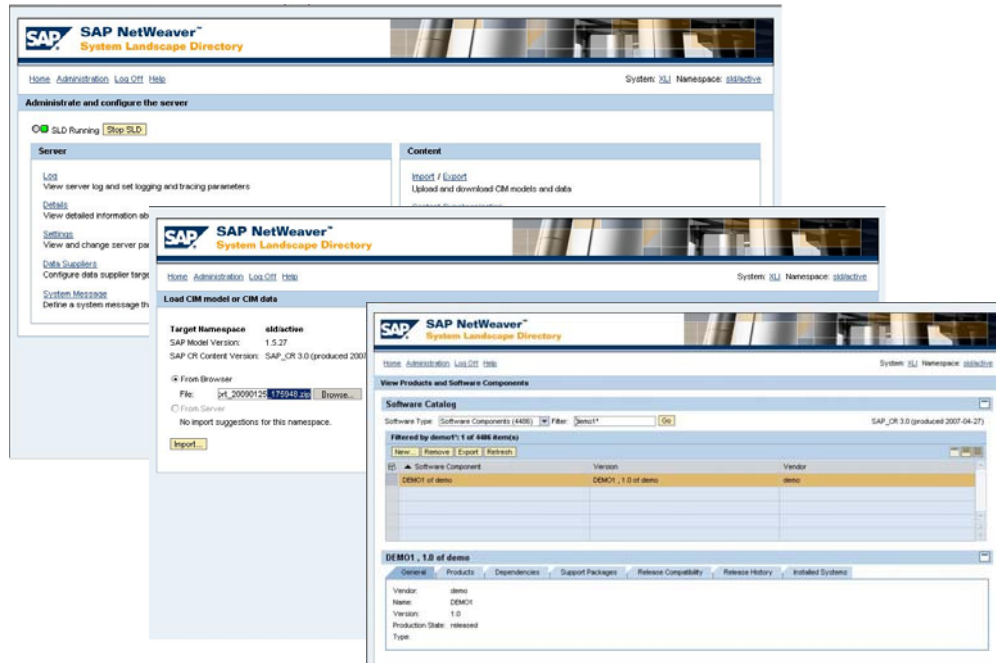
SAP Online Help - Exporting and Backing Up Your SLD Information:

http://help.sap.com/saphelp_nwpi71/helpdata/en/a2/706851b7e62a4b9e697bce3ede967a/frameset.htm

- a. To export the SWC definition (here: DEMO1), go to your source SLD, choose 'Software Components', select the respective SWC that you want to transport and choose 'Export'. Note that the SWC export includes transport of the associated product as well.

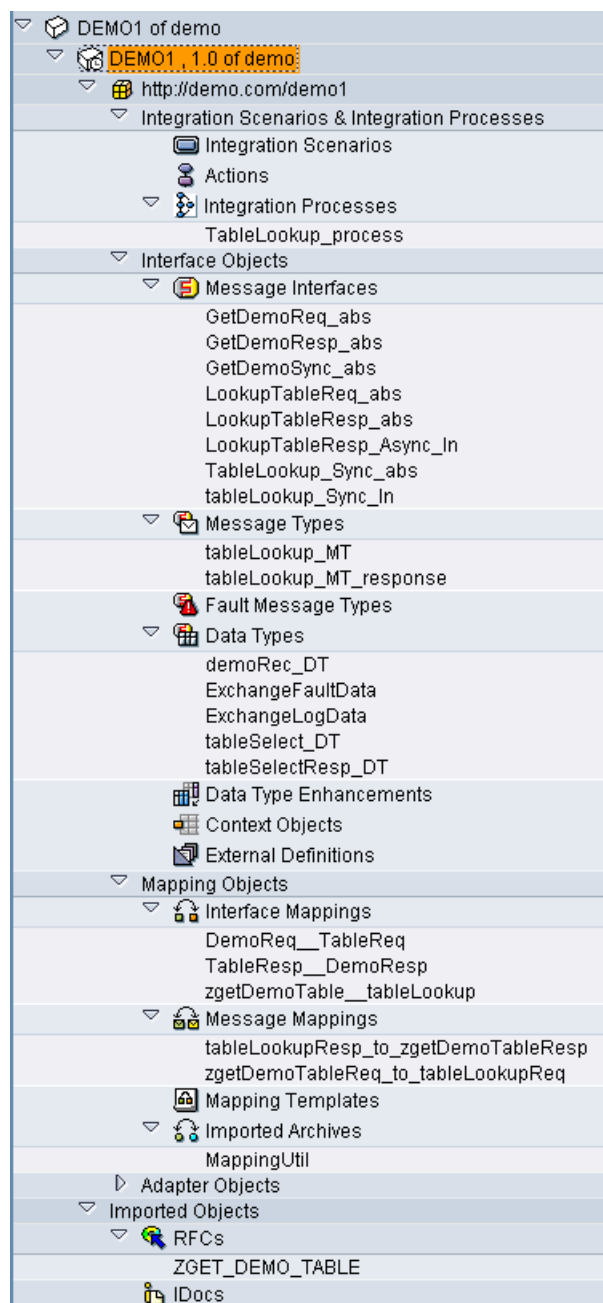


- b. Save the SWC zip-file.
- c. To import the SWC definition, go to your target SLD, choose 'Administration', 'Content /Upload and download CIM models and data'. Import the SWC zip-file that you exported and saved in the previous step.

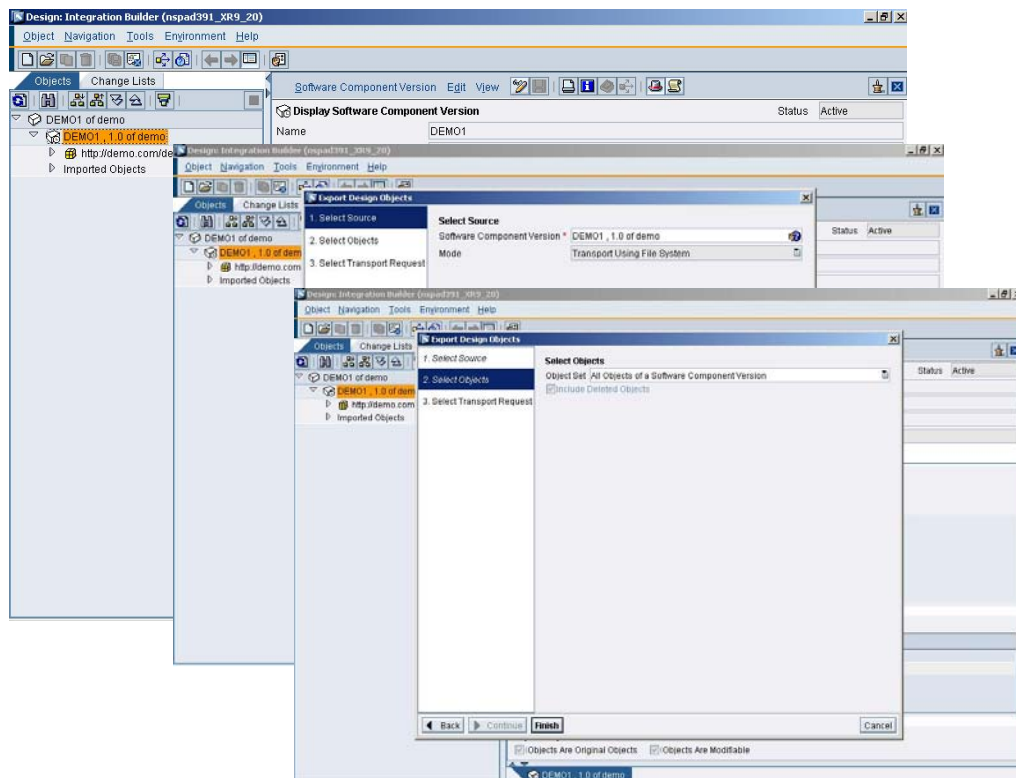


4.2 Move Integration Repository (IR) Objects

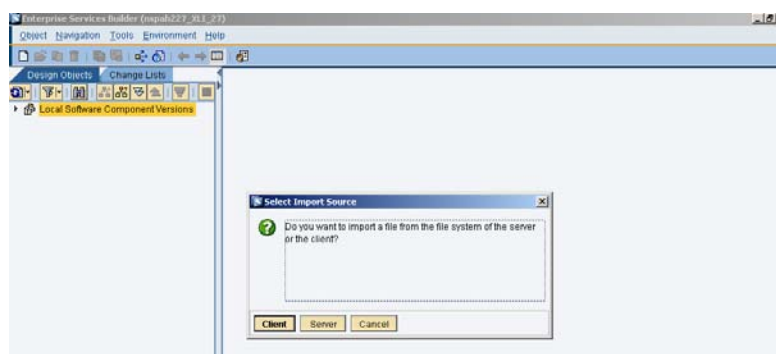
In the Integration Repository, we have the following objects in XR9's SWCV Demo1:



1. Transport SWC from source-IR to target-ESR:
 - a. After all SLD transports are completed, you can transport the SWC from the source-IR (PI 7.0) to your target-ESR (PI 7.1). Go to the Integration Repository, choose 'Tools/Export Design Objects' and export the respective SWC (here: DEMO1) – note that you can also export by right-mouse click on your SWC and choosing 'Export' from the menu.



- b. The Software Component is exported to the respective export directory of your source system (...\\sapmnt\\XR9\\SYS\\global\\xi\\repository_server\\export). You need to move this file (here: XI3_0_DEMO1_1.0_of_demo.tpz) to the import directory of your target system (...\\sapmnt\\XLI\\SYS\\global\\xi\\repository_server\\import).
 - c. Now you can import the SWC to your target-ESR. Go to the ESR (Enterprise Services Repository/ES Builder), choose 'Tools/Import Design Objects' and import the respective SWC (here: DEMO1).



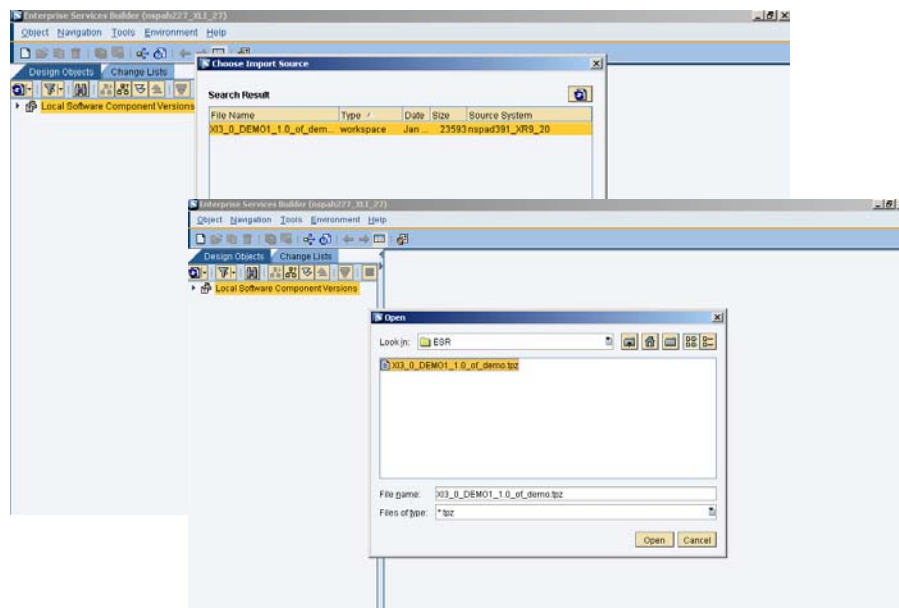
- d. The ES Builder provides the file system as a simple tool for the transport of ESR content. You can choose between two alternatives (as of PI 7.1) when importing and exporting:
- Server - the export file is saved in a server directory and the import file is loaded from a server directory.
 - Client - the export file is saved in a directory on your local PC and the import file is loaded from a directory on your local PC.



Tip

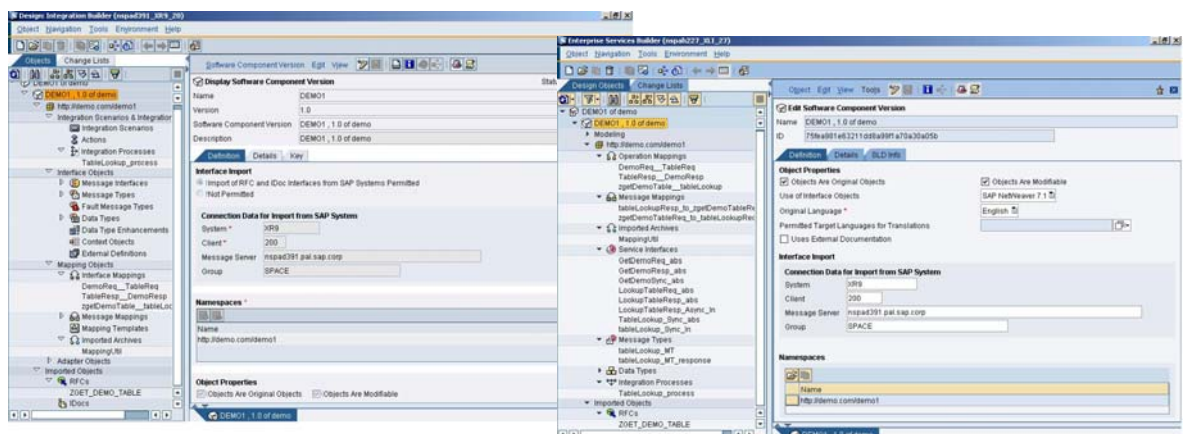
SAP Online Help - Transporting ESR Content using the File System:

http://help.sap.com/saphelp_nwpi71/helpdata/en/a8/5e56006c17e748a68bb3843ed5aab8/frameset.htm

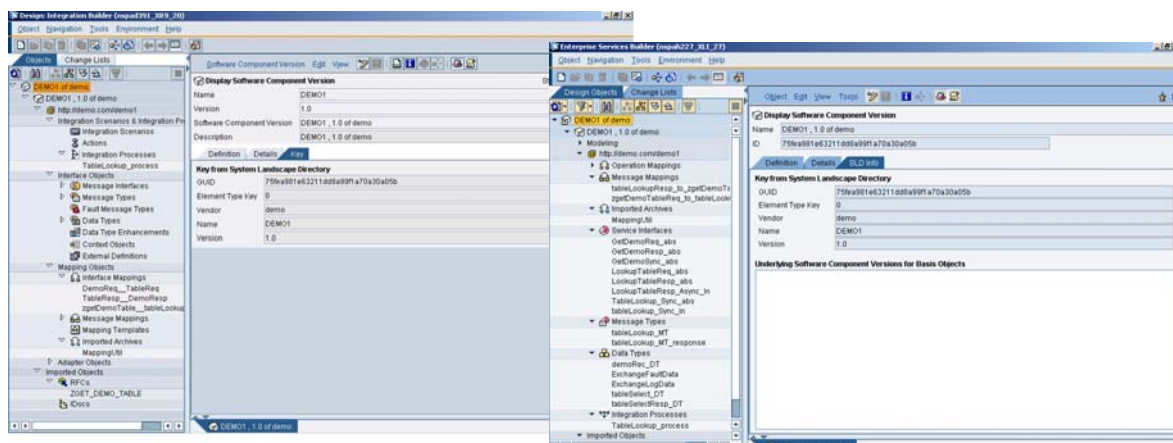


The SWC 'DEMO1' has been successfully imported into the target-ESR.

Let's compare IR-content (left side) and ESR-content (right side). You still need to maintain some information on the 'Definition' tab of your SWC such as an 'Original Language' and the 'Connection Data for the Import from SAP System' for Interface Imports.



As mentioned above, if you had manually created the same SWC definition in the target-SLD again, you would have created a different GUID. Since you transported the SWC, both GUID are the same.



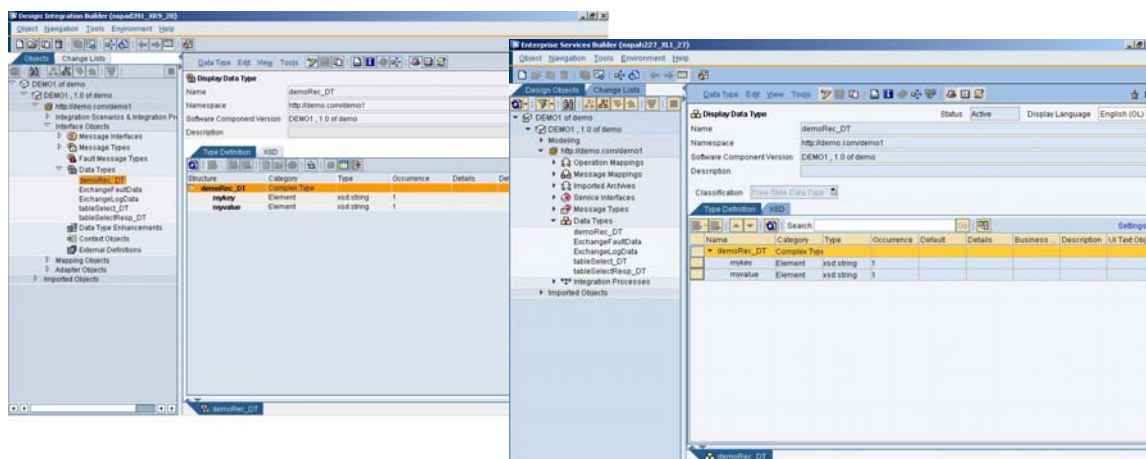
Notice that ESR objects such as Data Types and Interfaces look slightly different from their IR counterparts, for example ESR Data Types are classified as 'Free-style'.



Tip

SAP Online Help - Developing Data Types:

http://help.sap.com/saphelp_nwpi71/helpdata/en/45/607415b5b33bdbe1000000a1553f7/frameset.htm



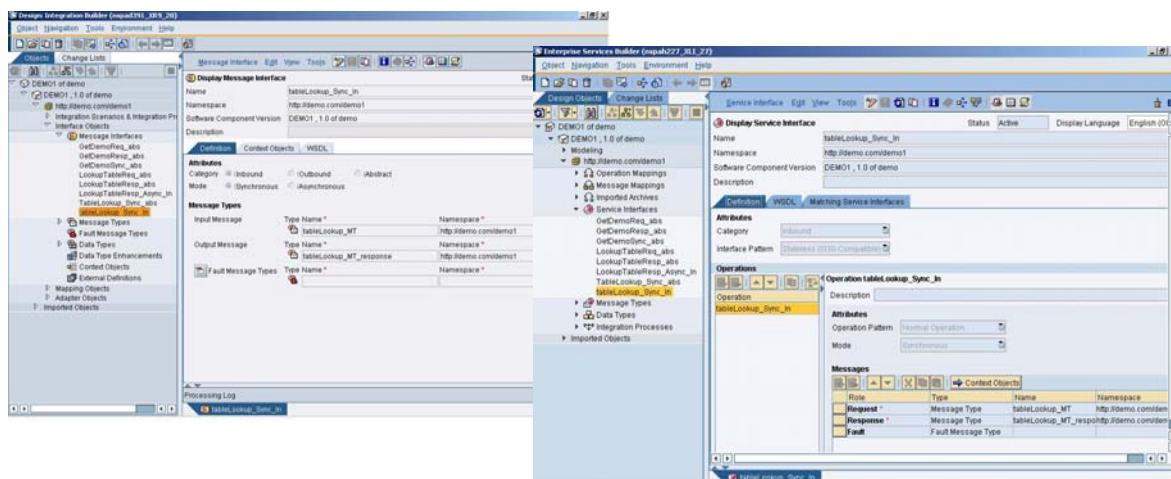
IR-Message Interfaces are replaced by ESR-Service Interfaces with the Interface Pattern for Stateless Communication (XI 3.0-Compatible). With this Interface Pattern, you can continue to use all existing protocols (up to SAP NetWeaver 2004s) in the back end that were developed on the basis of Message Interfaces. Message Interfaces from the IR are migrated to Service Interfaces in the ESR and are assigned this Interface Pattern.



Tip

SAP Online Help - Developing Service Interfaces:

http://help.sap.com/saphelp_nwpi71/helpdata/en/3f/01623c4f69b712e10000000a114084/frameset.htm

**Tip**

You can find more details and useful information about Interface Patterns in the following document available on SDN:

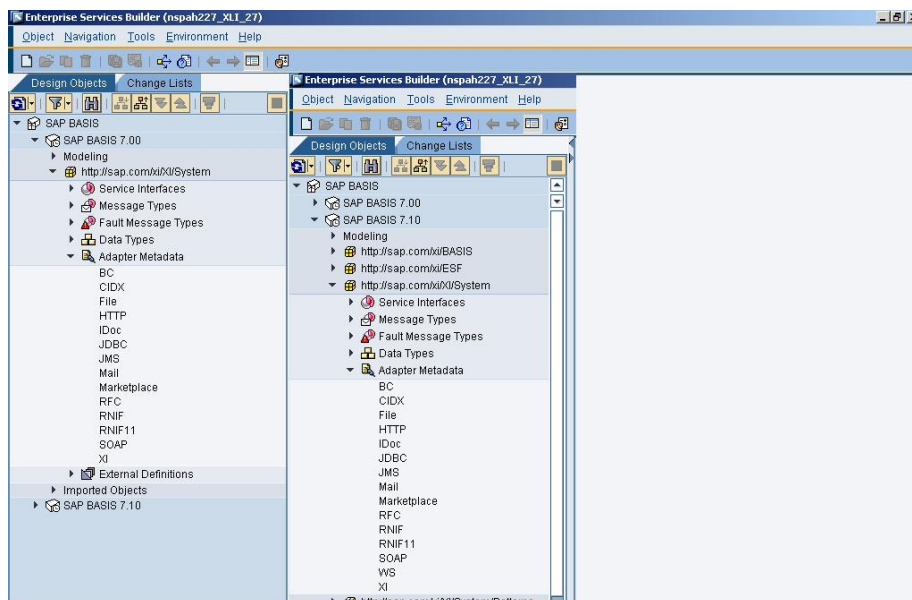
<https://www.sdn.sap.com/irj/scn/go/portal/prtroot/docs/library/uuid/409ecd00-6171-2b10-3d99-a9efa9c3c6a9>

**Recommendation**

It is possible that during the export/import processes, if the number of objects in the Software Component Version is large, there is a possibility that the export or import may produce errors. When this occurs, the objects can be divided into groups to reduce the number of objects to be exported or imported, thereby reducing the possibility of errors.

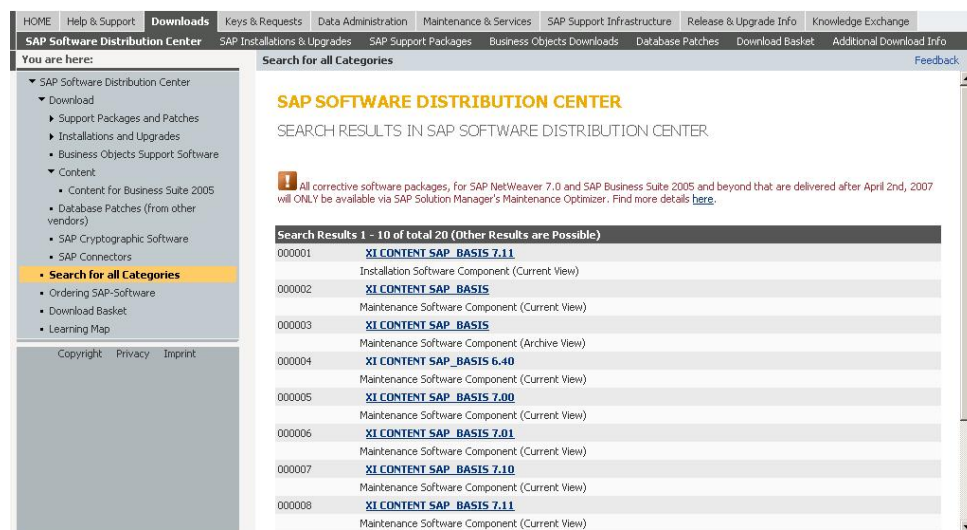
2. Adapter Metadata

After the installation of PI 7.1, Adapter Metadata is available for PI 7.1 only. You can see the Adapter Metadata in ESR-Software Component 'SAP BASIS', version 'SAP BASIS 7.10'.



Adapter Metadata/SWC versions for previous releases 'SAP BASIS 7.00' and older are available as well - you need PI 7.0 Adapter Metadata to successfully import and activate Integration Directory objects such as Communication Channels into PI 7.1 – see next chapter. You can either export/import the respective SWC from your PI 7.0 system, or download it from

SAP Service Marketplace (use alias 'swdc' to go to the Software Distribution Center). Search for all categories with the term 'XI content SAP BASIS' and select 'XI Content SAP BASIS 7.00'.



Once uploaded to ESR, all Adapter Metadata versions are visible in Integration Directory Communication Channels and can be selected.

4.3 Move Integration Directory (ID) Objects

To facilitate and simplify the process, it is best to create a Configuration Scenario on the PI 7.0's ID. Then, include all the objects related to the scenario into the Configuration Scenario. This way, we will only need to export the configuration scenario instead of selecting the individual objects. In our case, we created a Configuration Scenario named Demo1.



Important

After importing the objects into the SLD, it is important to clear the cache in the ID. By clearing the cache, the ID will be forced to retrieve the new objects from the SLD. Without doing so, it is possible that the import process some Business Systems may not be found and cause the import to fail.



Tip

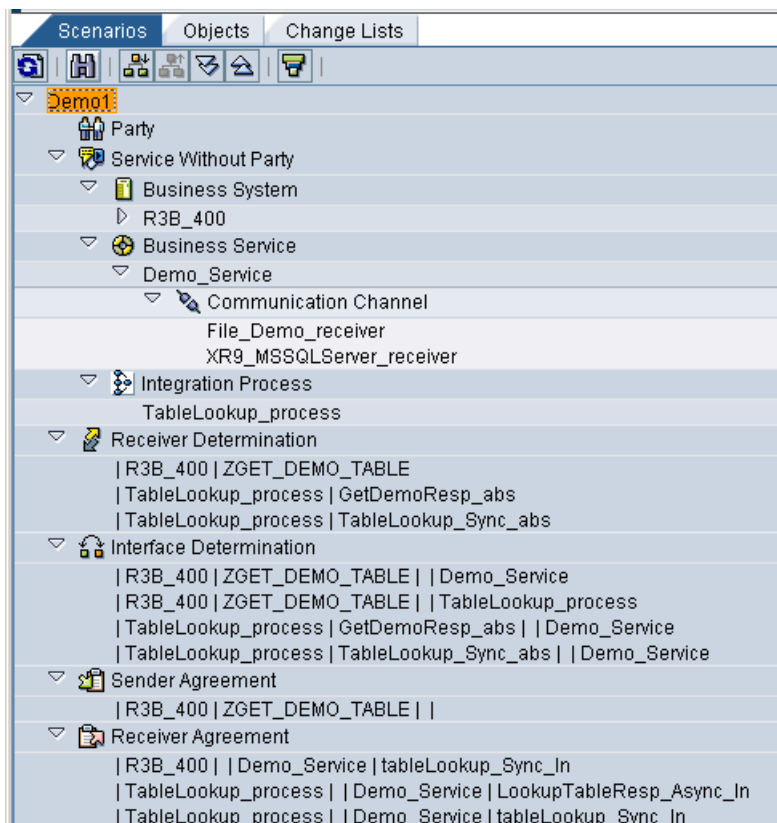
SAP Online Help – Transporting Configuration Objects of the Integration Directory:
http://help.sap.com/saphelp_nwpi71/helpdata/en/44/2c38d8afdf4674ae1adc1364f4d454/frameset.htm



Tip

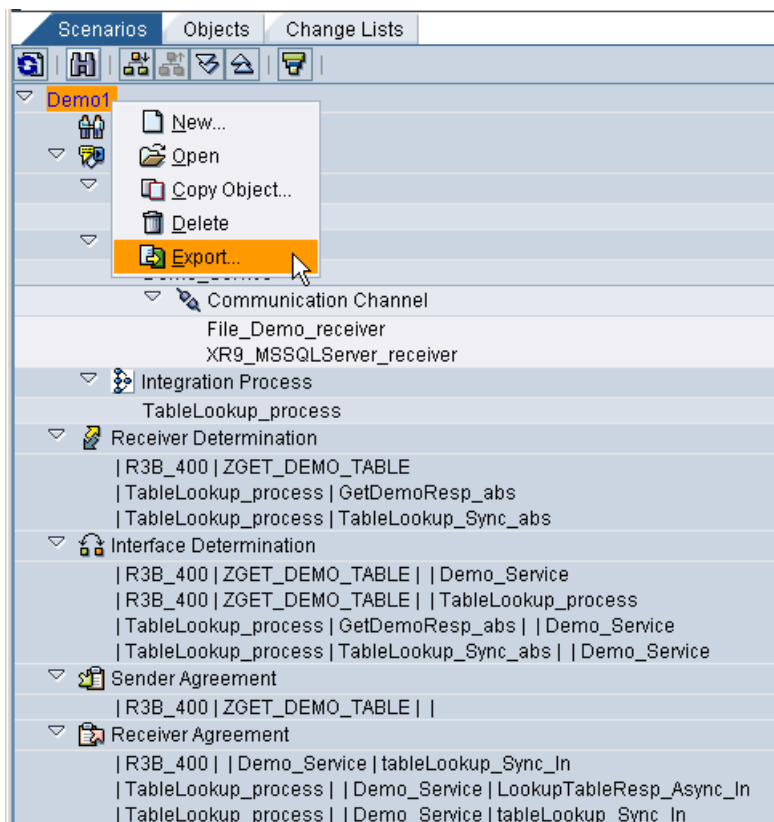
This section does not include the transport of Value Mappings. For moving of Value Mappings from PI 7.0 to PI 7.1, please reference the following Section 4.4.

In the Integration Directory, we will be moving the objects in XR9's configuration scenario Demo1:

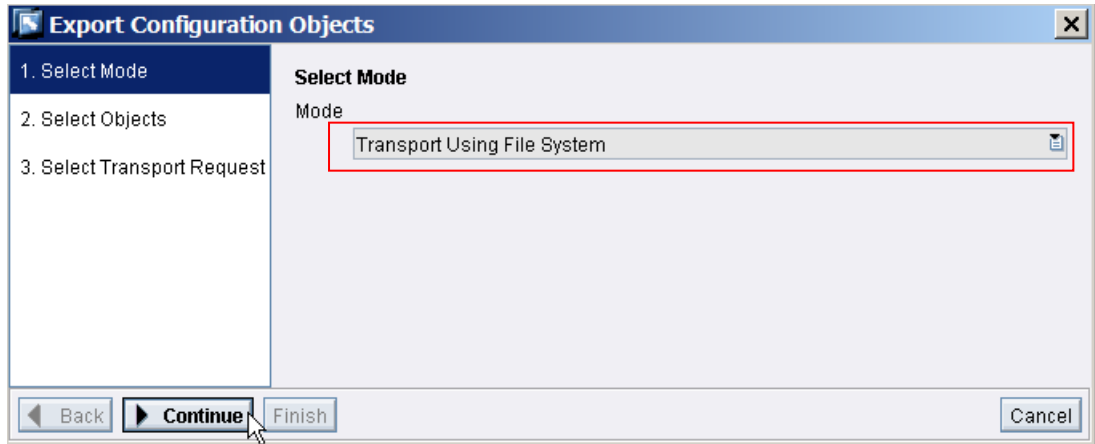


1. Export the scenario: Demo1

- a. Right-click on scenario Demo1 and select "Export" in the menu:

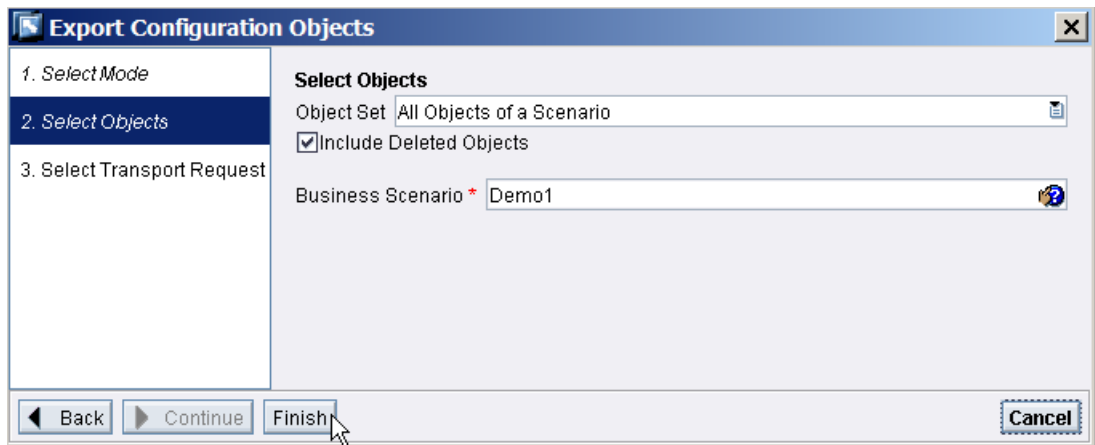


- b. Click on “Continue”. It is easiest to use the file system for the transport. This way we can avoid the configuration of CMS or CTS+.



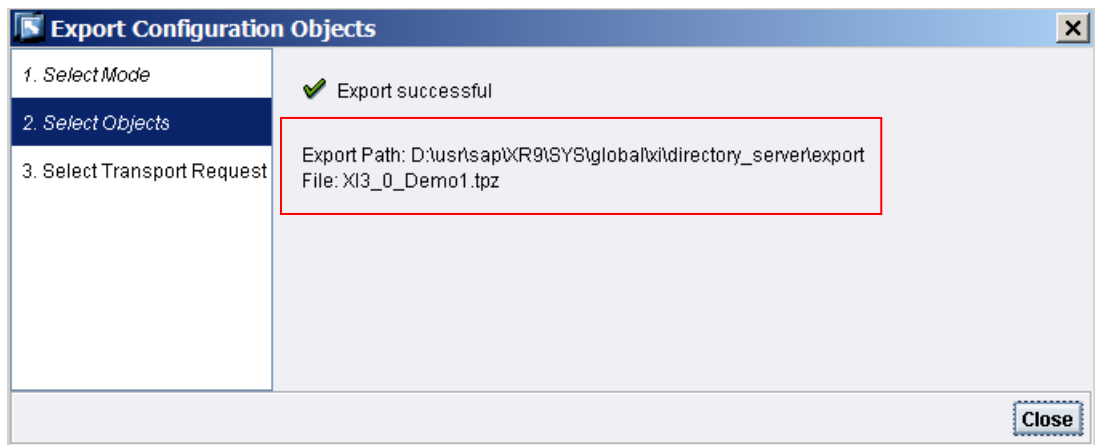
The screenshot shows the 'Export Configuration Objects' dialog box. On the left, a sidebar lists three steps: '1. Select Mode', '2. Select Objects', and '3. Select Transport Request'. The main area is titled 'Select Mode' and contains a 'Mode' dropdown menu with 'Transport Using File System' selected. At the bottom, there are four buttons: 'Back', 'Continue', 'Finish', and 'Cancel'. A mouse cursor is pointing at the 'Continue' button.

- c. Click on “Finish”. There is no change the default settings.



The screenshot shows the 'Export Configuration Objects' dialog box at the 'Select Objects' step. The sidebar on the left now highlights '2. Select Objects'. The main area is titled 'Select Objects' and contains three fields: 'Object Set' with 'All Objects of a Scenario', a checked 'Include Deleted Objects' checkbox, and 'Business Scenario' with 'Demo1'. At the bottom, the 'Finish' button is highlighted with a mouse cursor.

- d. After export, you will get the following screen:



The screenshot shows the 'Export Configuration Objects' dialog box after a successful export. The sidebar on the left highlights '2. Select Objects'. The main area displays a green checkmark and the text 'Export successful'. Below this, a red box highlights the export details: 'Export Path: D:\usr\sap\XR9\SYS\global\wi\directory_server\export' and 'File: XI3_0_Demo1.tpz'. At the bottom right, there is a 'Close' button.

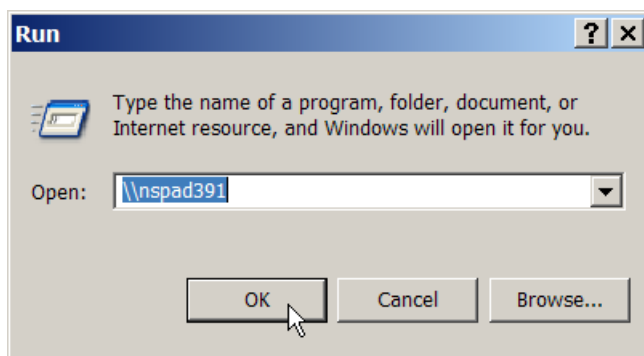
 Note

The location of the exported file:

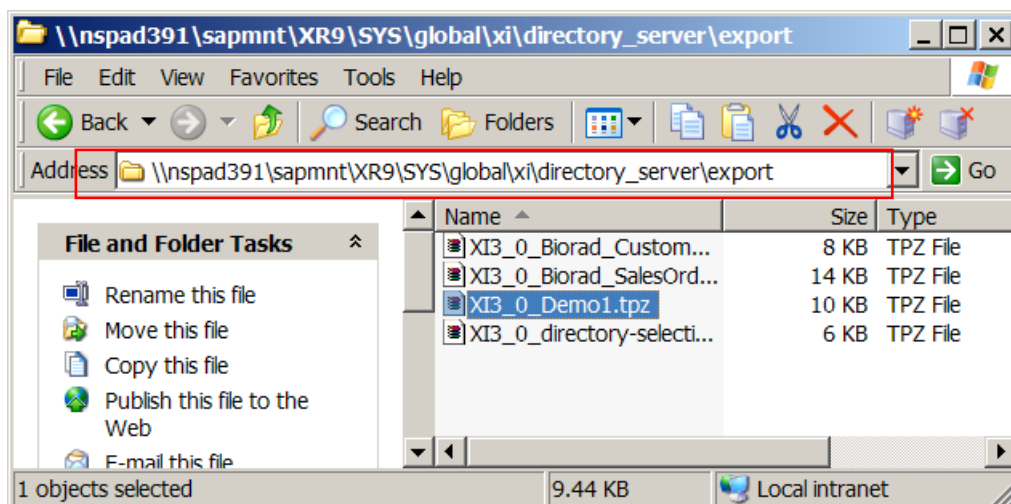
Export Path: D:\usr\sap\XR9\SYS\global\wi\directory_server\export

File: XI3_0_Demo1.tpz

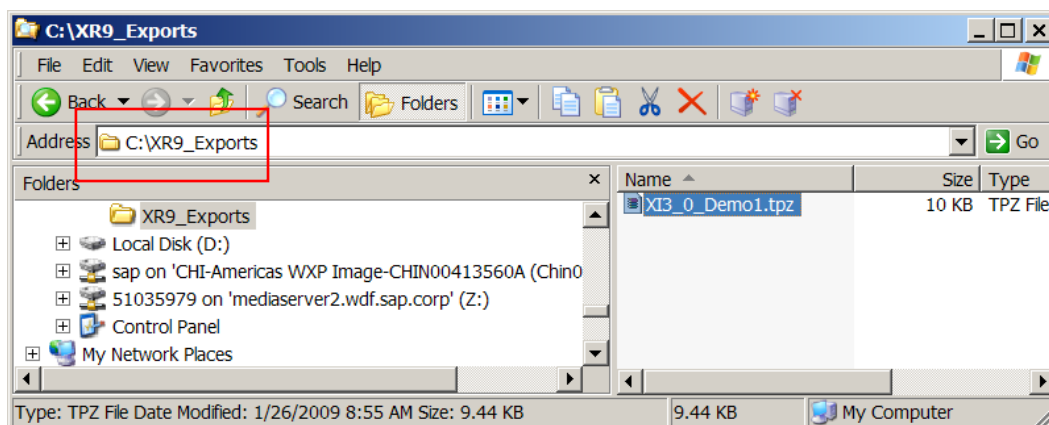
2. Retrieve the exported file.
3. The export path of the file is on the PI 7.0 server. Therefore, access to the OS file system will be required. If OS file system access is not available, then the system administrator will have to be contacted to send you the file.
 - a. The following steps are for a Windows system. The equivalent file system access will be required for Unix systems.
 - b. In the “Run...” command text box, enter the PI 7.0 server name and click “OK”:



- c. Traverse to the directory as indicated in the “Export Path” above, and copy the file to your local file system:

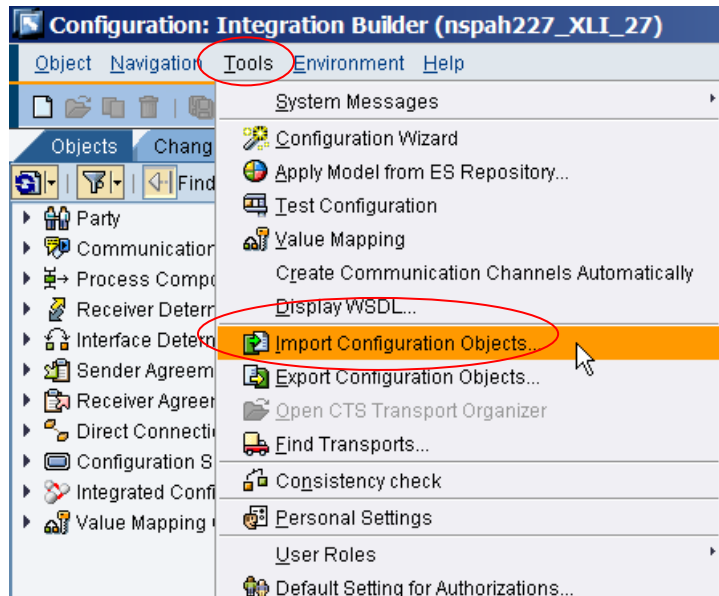


- d. The file is copied to the local computer's file system:

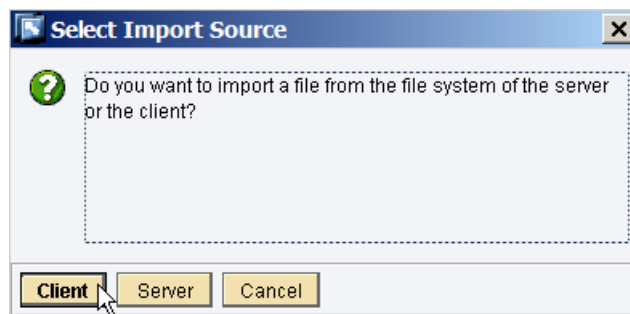


4. Import the file into the PI 7.1 system:

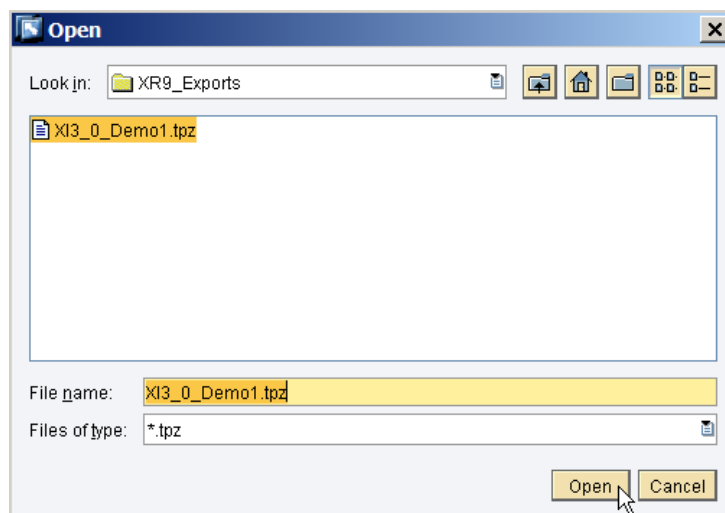
- a. With PI 7.1, we have a choice of importing the objects from the server or local file system. Since we copied the exported file to our local file system in the above step, we will use the local file system for our import.
- b. On the top menu bar, click on: Tools ⇒ Import Configuration Objects...



- c. Select "Client" to use the local file system:



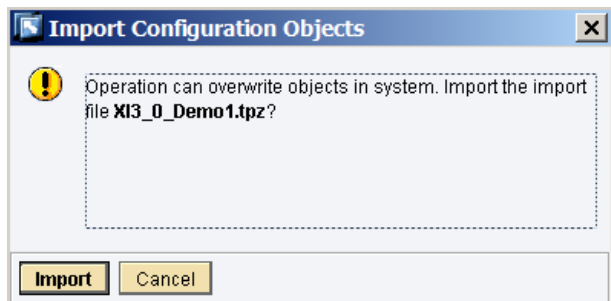
- d. Navigate to the directory and select the exported file and click "Open":



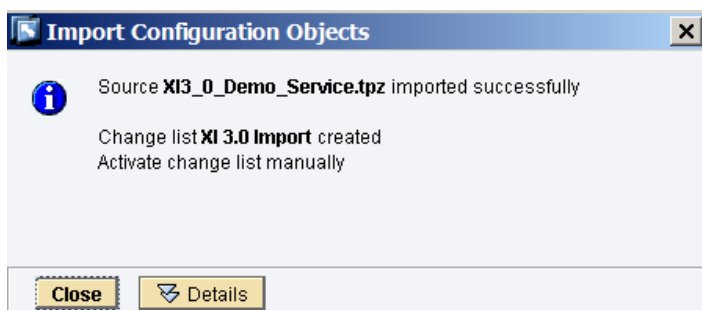
- e. Click "Import" to proceed:



If you have another Configuration Scenario of the same name, then the contents will be added and/or written over.

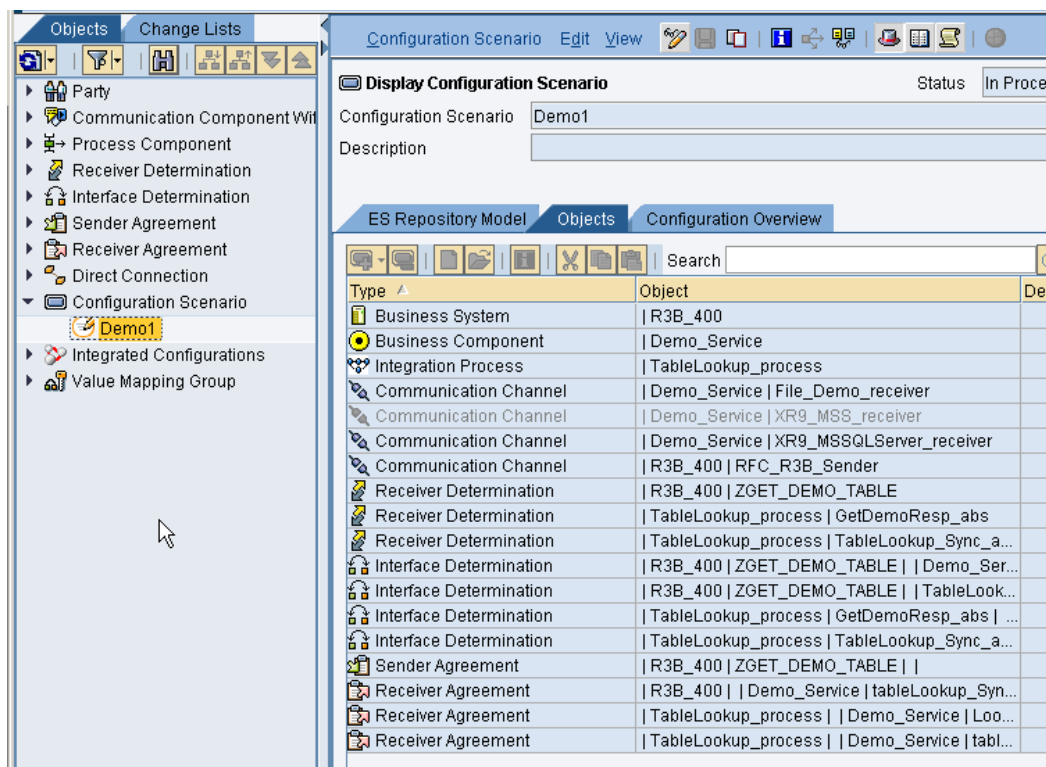


- f. The following will confirm the import:



In order for the transport to execute successfully, the Business Systems must exist and they must be assigned to the Integration Server group.

After import, we will see something like the following:

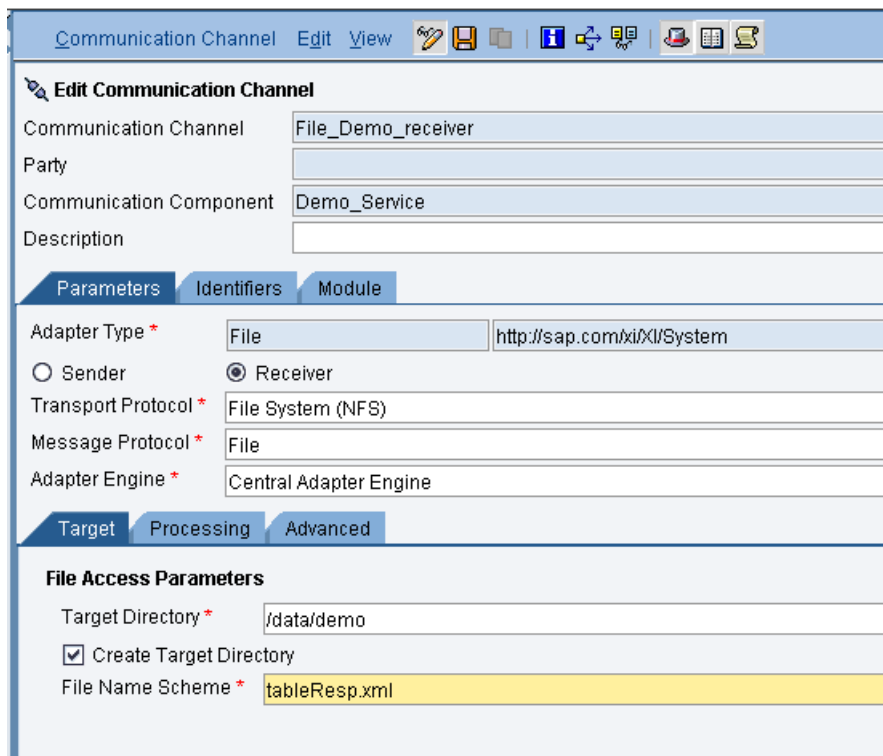


 Note

If you notice, we no longer have a “Scenarios” tab as in PI 7.0. With PI 7.1 EhP1, we will get another optional view, which will be similar to that of PI 7.0.

5. Adjust communication channel configurations:

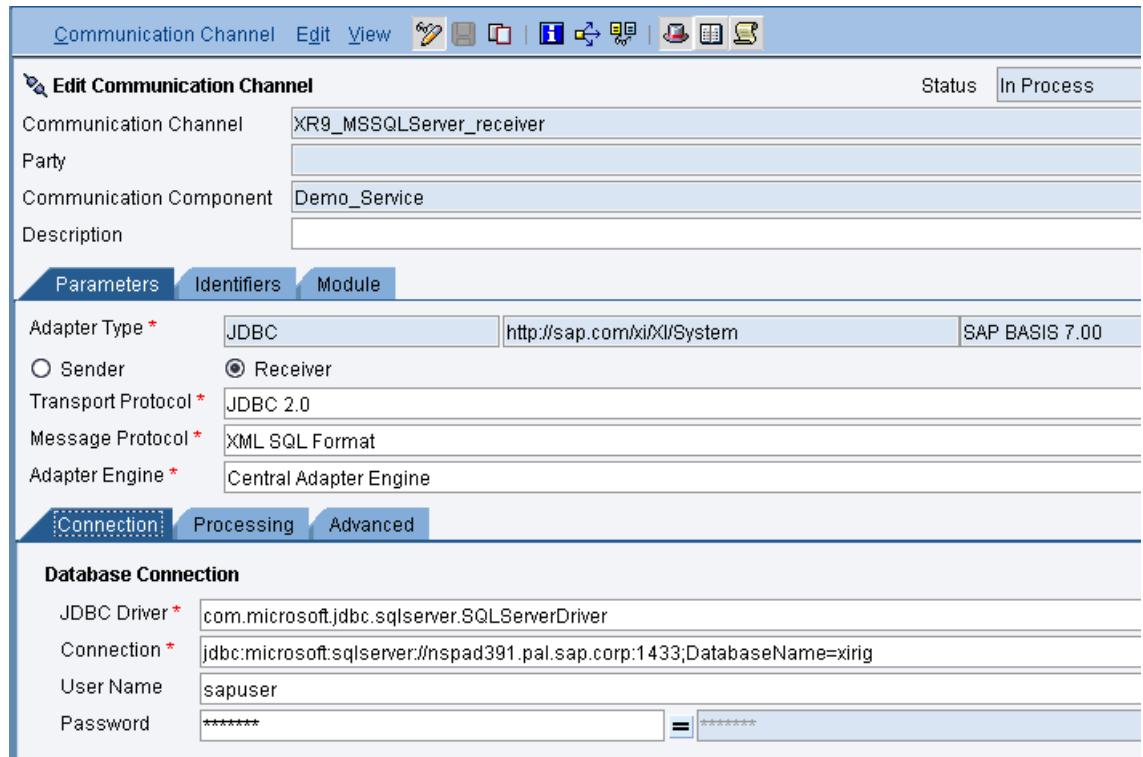
- a. After the transport, communication channel configurations are re-set to the default (or initial) values. We will need to configure them before proceeding.
- b. Communication Channel: File_Demo_receiver



The screenshot shows the 'Edit Communication Channel' dialog in SAP. The 'Communication Channel' is 'File_Demo_receiver'. The 'Party' field is empty. The 'Communication Component' is 'Demo_Service'. The 'Description' field is empty. The 'Parameters' tab is selected, showing the 'Adapter Type' as 'File' with the URL 'http://sap.com/xi/XI/System'. The 'Sender' radio button is unselected, and the 'Receiver' radio button is selected. The 'Transport Protocol' is 'File System (NFS)', the 'Message Protocol' is 'File', and the 'Adapter Engine' is 'Central Adapter Engine'. The 'Target' sub-tab is selected, showing 'File Access Parameters' with 'Target Directory' as '/data/demo', 'Create Target Directory' checked, and 'File Name Scheme' as 'tableResp.xml'.

Edit Communication Channel	
Communication Channel	File_Demo_receiver
Party	
Communication Component	Demo_Service
Description	
Parameters Identifiers Module	
Adapter Type *	File http://sap.com/xi/XI/System
☐ Sender	☒ Receiver
Transport Protocol *	File System (NFS)
Message Protocol *	File
Adapter Engine *	Central Adapter Engine
Target Processing Advanced	
File Access Parameters	
Target Directory *	/data/demo
☒ Create Target Directory	
File Name Scheme *	tableResp.xml

c. Communication Channel: XR9_MSSQLServer_receiver



The screenshot shows the 'Edit Communication Channel' window for the channel 'XR9_MSSQLServer_receiver'. The status is 'In Process'. The configuration is divided into three tabs: 'Parameters', 'Identifiers', and 'Module'. The 'Parameters' tab is active, showing the following settings:

Field	Value
Communication Channel	XR9_MSSQLServer_receiver
Party	
Communication Component	Demo_Service
Description	
Adapter Type *	JDBC
Transport Protocol *	JDBC 2.0
Message Protocol *	XML SQL Format
Adapter Engine *	Central Adapter Engine
Sender/Receiver	☐ Sender ☒ Receiver
URL	http://sap.com/xi/XI/System
System	SAP BASIS 7.00

Below the 'Parameters' tab is the 'Connection' tab, which is also active. It shows the 'Database Connection' settings:

Field	Value
JDBC Driver *	com.microsoft.jdbc.sqlserver.SQLServerDriver
Connection *	jdbc:microsoft:sqlserver://nspad391.pal.sap.corp:1433;DatabaseName=xirig
User Name	sapuser
Password	*****

d. Communication Channel: RFC_R3B_Sender

Edit Communication Channel Status

Communication Channel: RFC_R3B_Sender

Party:

Communication Component: R3B_400

Description:

Parameters Identifiers Module

Adapter Type * RFC http://sap.com/xi/XI/System SA

☒ Sender ☐ Receiver

Transport Protocol * RFC

Message Protocol * RFC (RFC XML)

Adapter Engine * Central Adapter Engine

Source Advanced

RFC Server Parameter

Application Server (Gateway) * cdphl233.phl.sap.corp

Application Server Service (Gateway) * sapgw00

Program ID * **XI_R3B2XLI**

☐ SNC

☒ Unicode

Initial Connections 1

Maximum Connections 1

☐ Advanced Mode

RFC Metadata Repository Parameter

☐ Load Balancing

Application Server * cdphl233.phl.sap.corp

System Number * 00

Authentication Mode * Use Logon Data for SAP System

Logon User * liwi

Logon Password * *****

Logon Language * EN

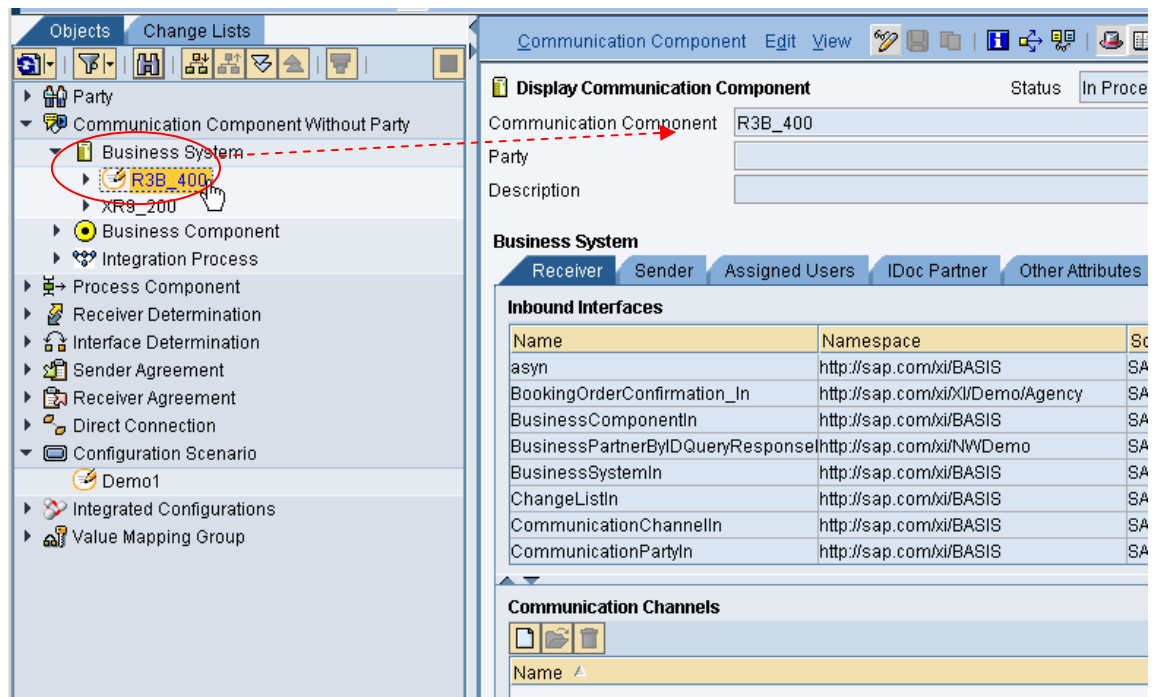
Logon Client * 400

Important

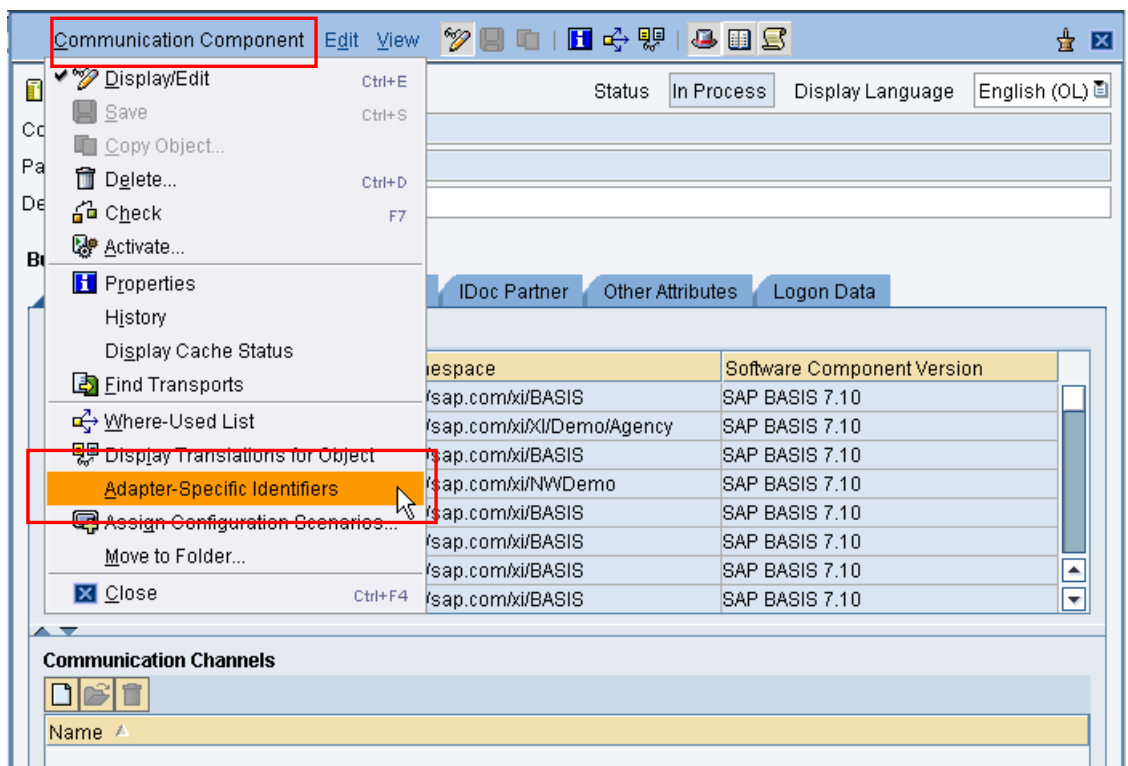
Do not forget to create another RFC destination on R3B for the Program ID! In our case, we created another RFC destination, XI_R3BXLI.

6. Check the “adapter-specific identifier” of the Business System, R3B_400:

a. Double-click to open the business system:



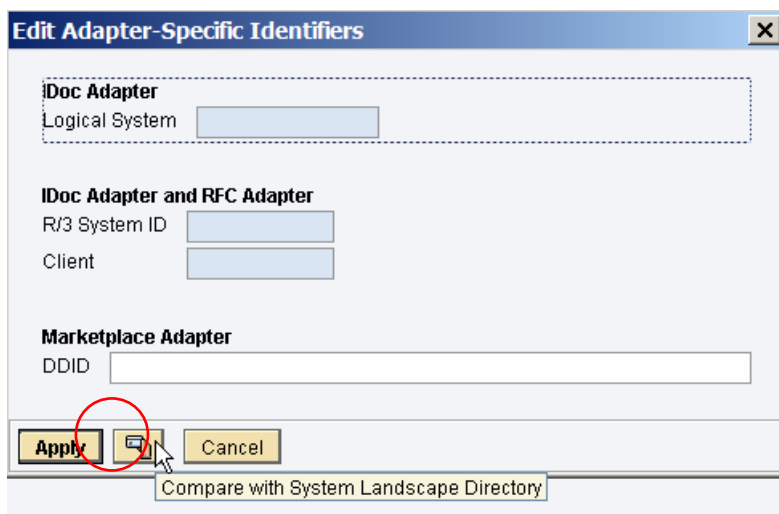
b. Toggle to “Change” mode and on the top menu bar, click on: Communication Component ⇌ Adapter-Specific Identifiers



The “Edit Adapter-Specific Identifiers” text box will appear:

The contents are empty. It will have to be sync'd up with the SLD. This is required when using RFC and IDoc adapters.

- c. Click on: Compare with System Landscape Directory



Edit Adapter-Specific Identifiers

IDoc Adapter
Logical System

IDoc Adapter and RFC Adapter
R/3 System ID
Client

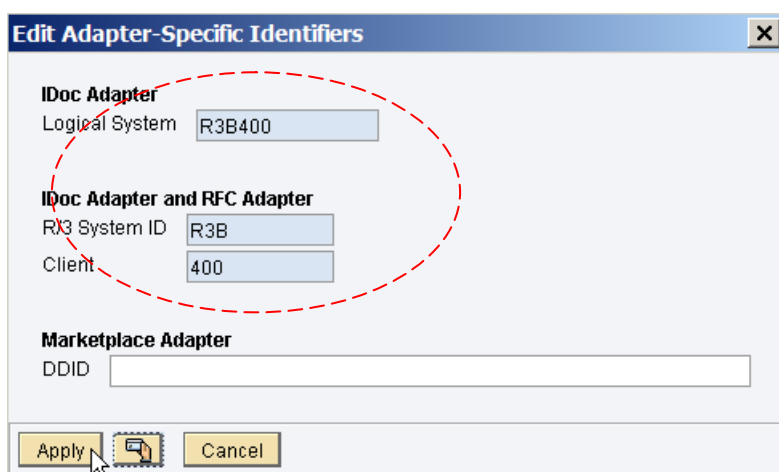
Marketplace Adapter
DDID

Apply  **Cancel**

Compare with System Landscape Directory

The following information from the SLD will be transferred:

- d. Click on: Apply



Edit Adapter-Specific Identifiers

IDoc Adapter
Logical System

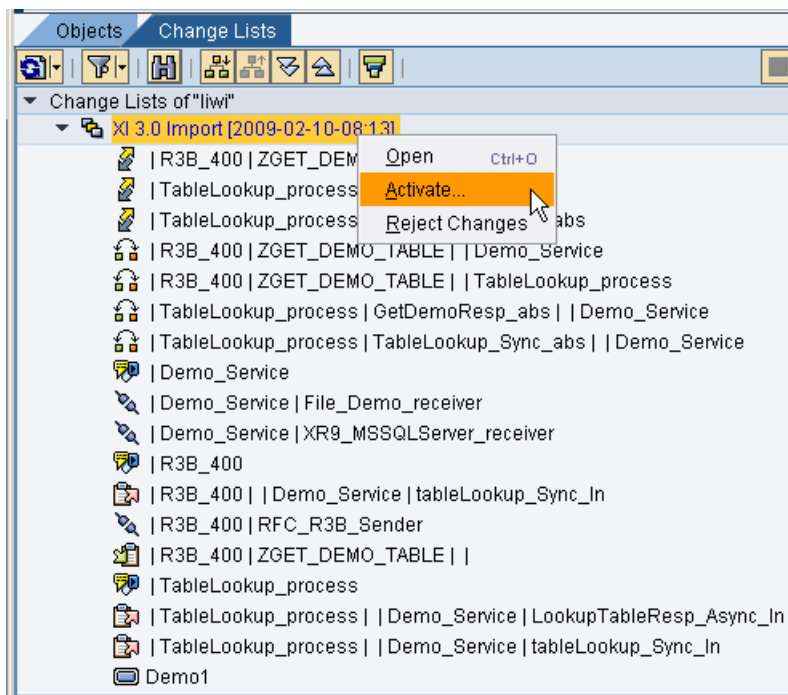
IDoc Adapter and RFC Adapter
R/3 System ID
Client

Marketplace Adapter
DDID

Apply  **Cancel**

- e. Save the Business System object when done.

7. Activate the change list:

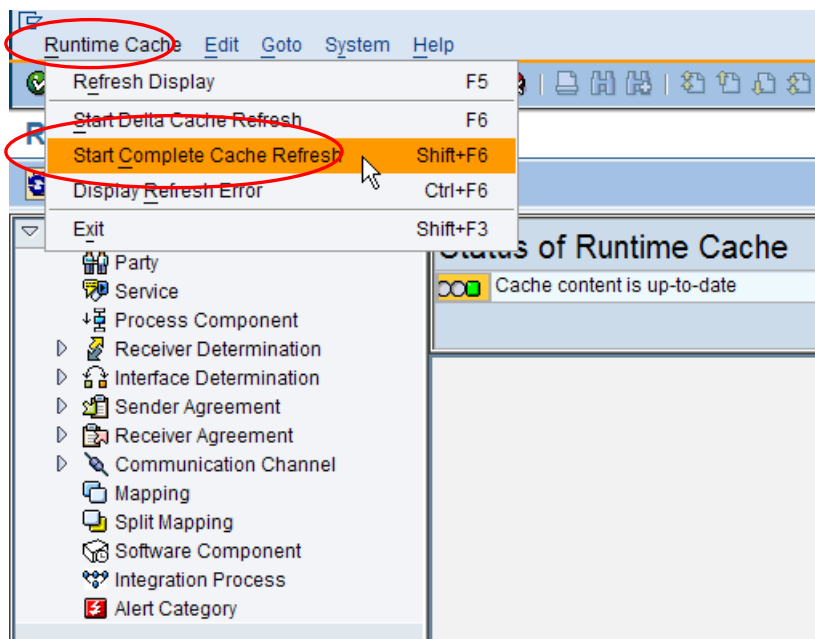


8. Perform full-refresh of the PI caches on both ABAP and Java:

a. ABAP cache refresh:

On the PI server, enter tx:SXI_CACHE

On the top menu bar, click on: Runtime Cache a Start Complete Cache Refresh



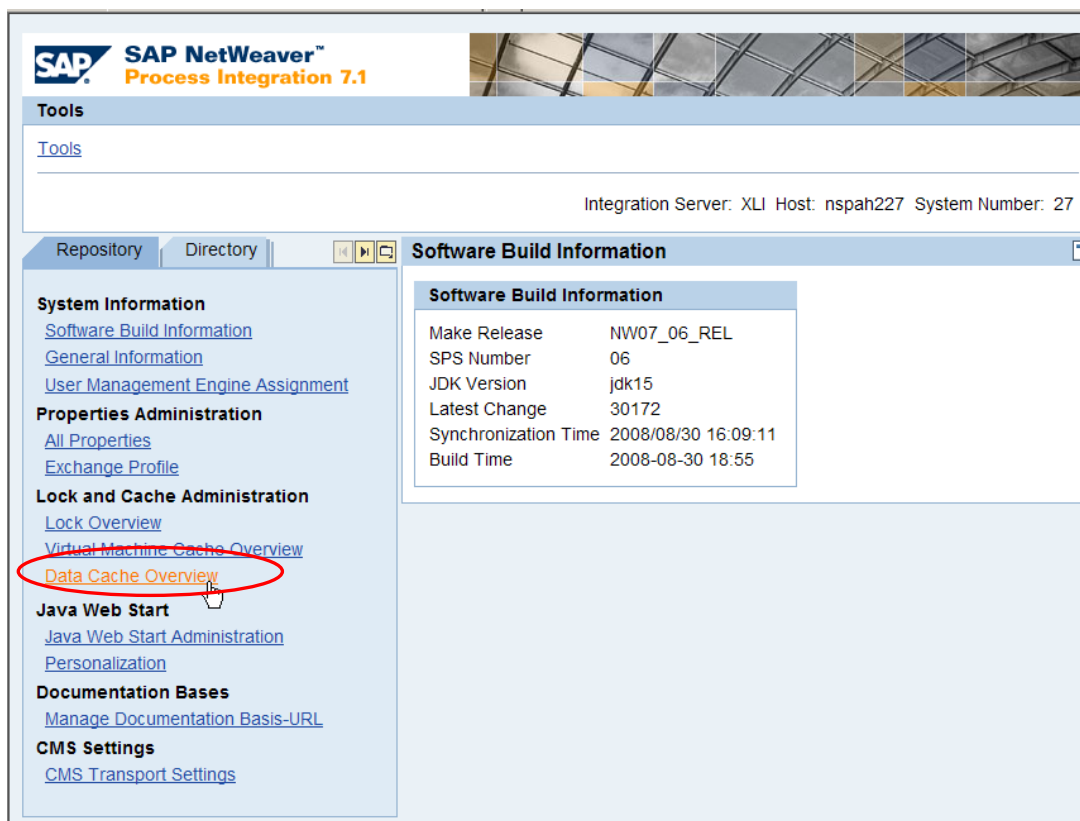
b. Java cache refresh:

From the Integration Tools menu, click on the link: Administration



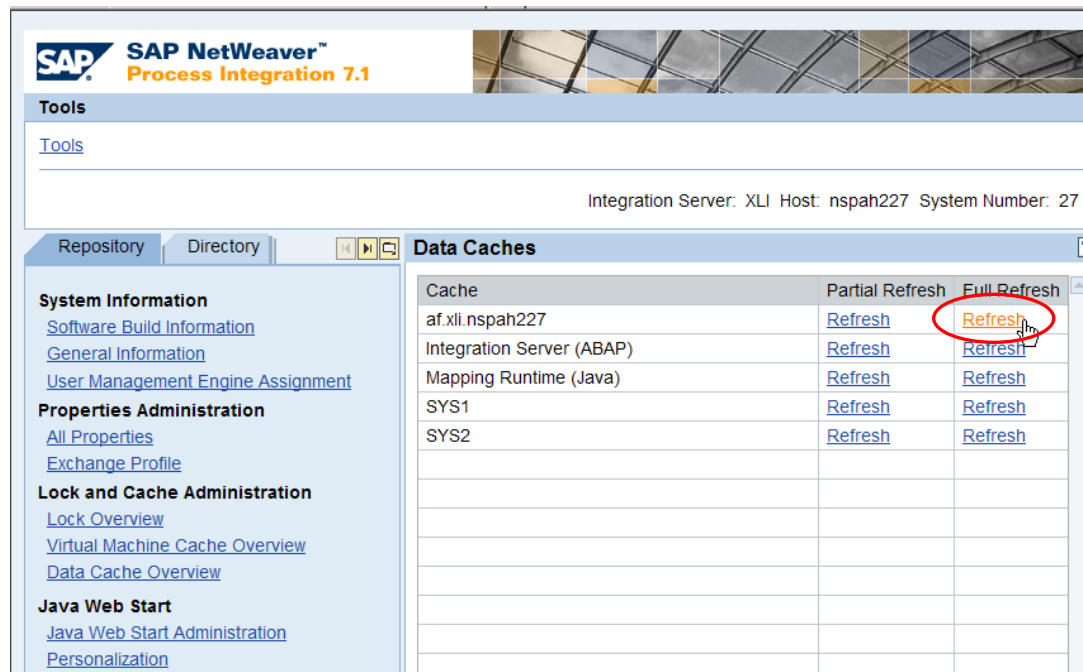
c. After the required logon, the following screen will be started:

Click on the link: Data Cache Overview



- d. The following screen will appear:

Click on: Full Refresh for the "af" (adapter framework) cache



Note

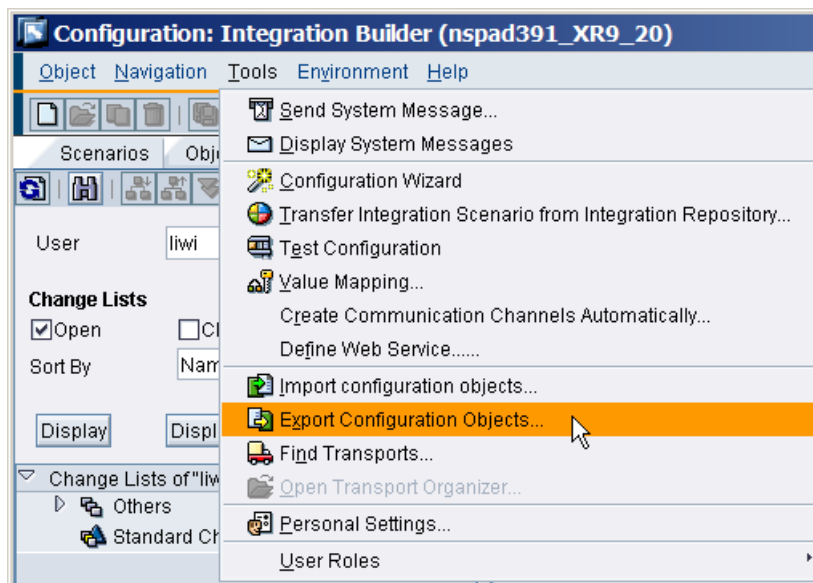
To perform the refresh, logon using the PIDIRUSER is required. Users with the same roles as that of PIDIRUSER can also be used.

4.4 Move Value Mappings between PI 7.0 and PI 7.1

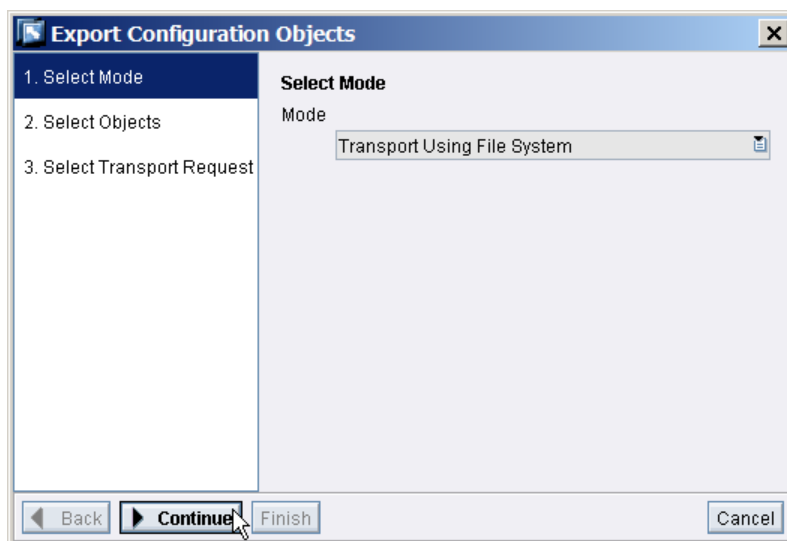
The transporting of Value Mappings is through the use of Value Mapping groups.

4.4.1 Export Value Mapping Group from PI 7.0

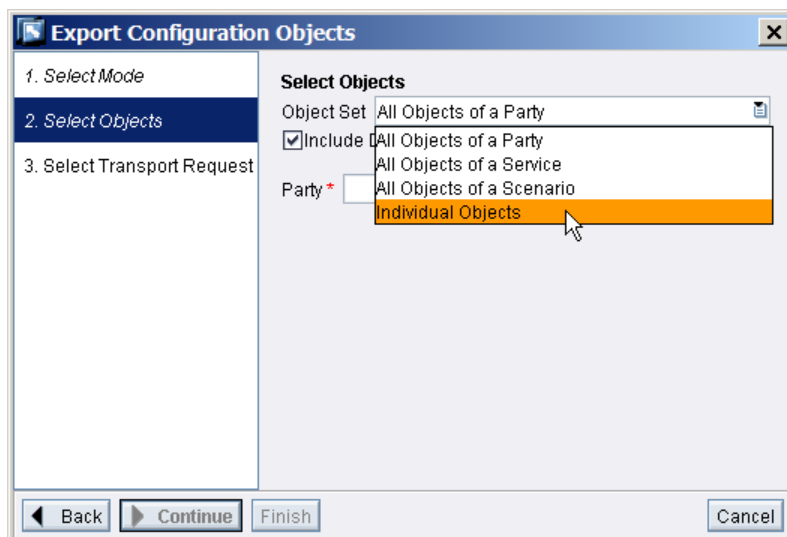
- 1 In the PI 7.0's Integration Directory, use the Export Tool wizard:



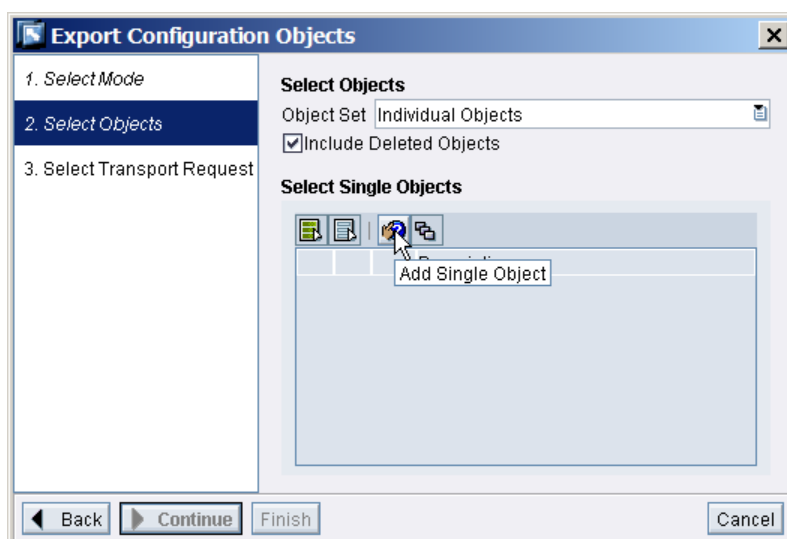
- 2 Select the transport mode:



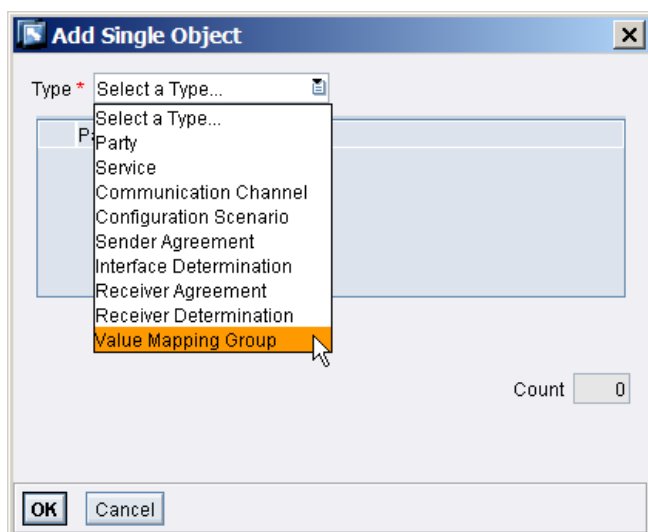
- 3 Select "Individual Objects":



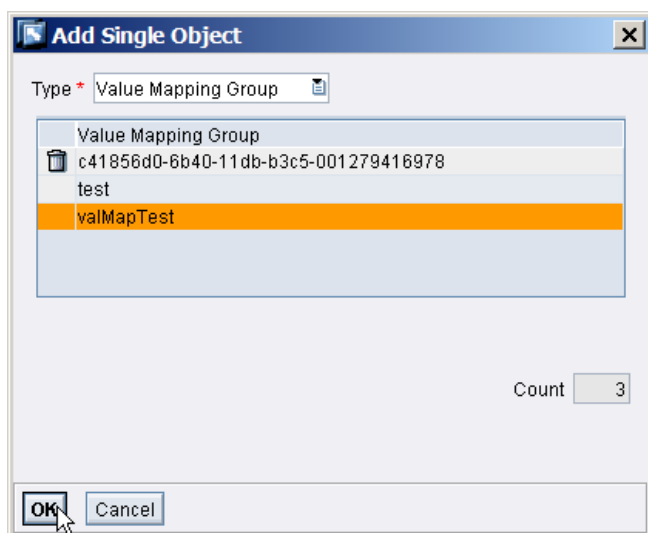
- 4 Click: Add Single Objects



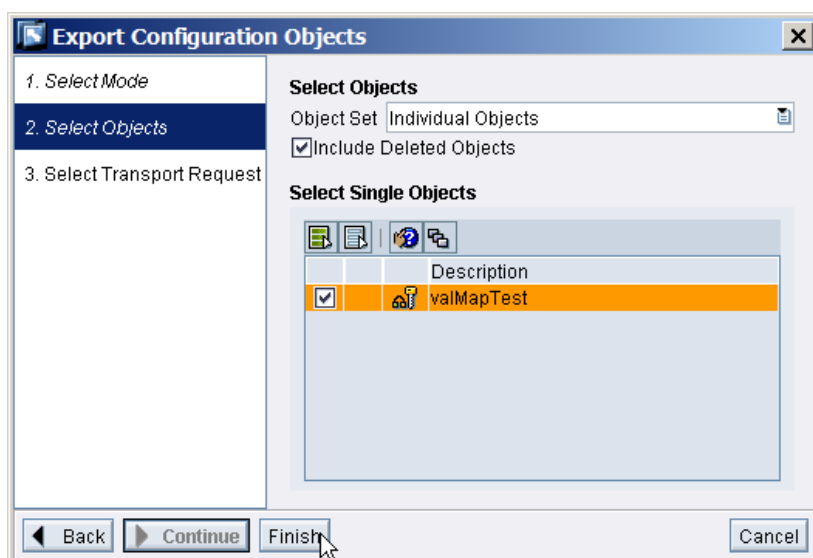
5 Select the type: Value Mapping Group



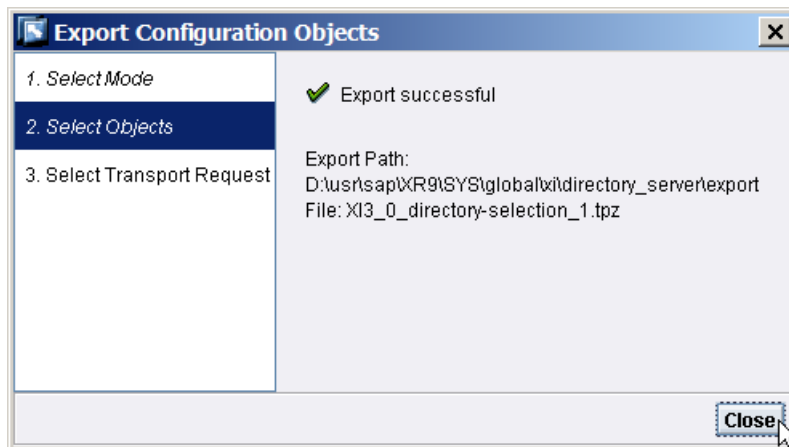
6 Select the Value Mapping Group to transport:



7 Click "Finish" to start the export:

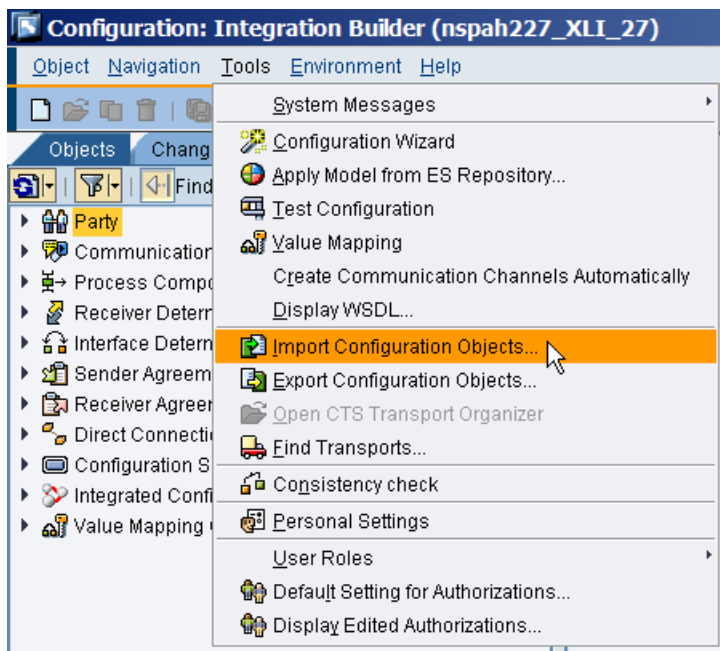


- When done, please note the file name created. Copy the file to the local computer.

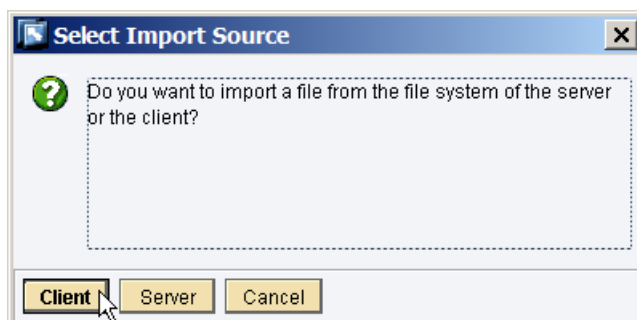


4.4.2 Import Value Mapping Group into PI 7.1

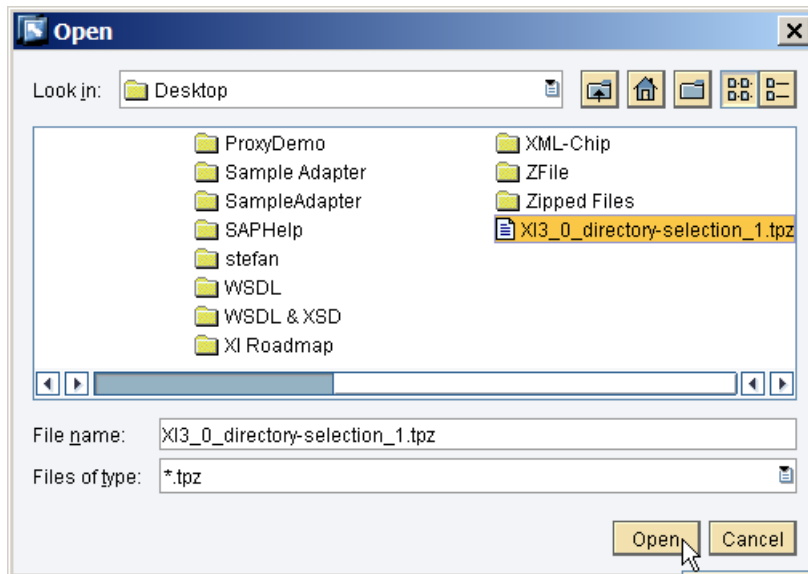
- In the PI 7.1's Integration Directory, use the Import Tool wizard:



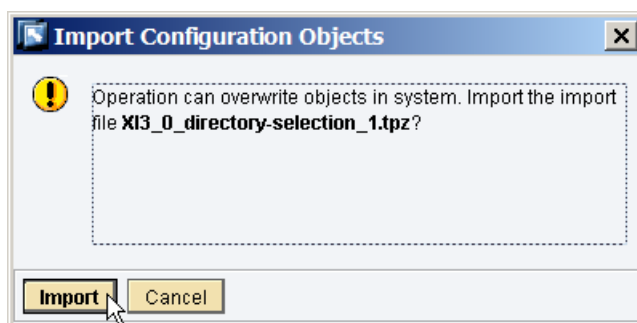
- Select the import source. In this case, we have the file on our local computer, which is the "Client".



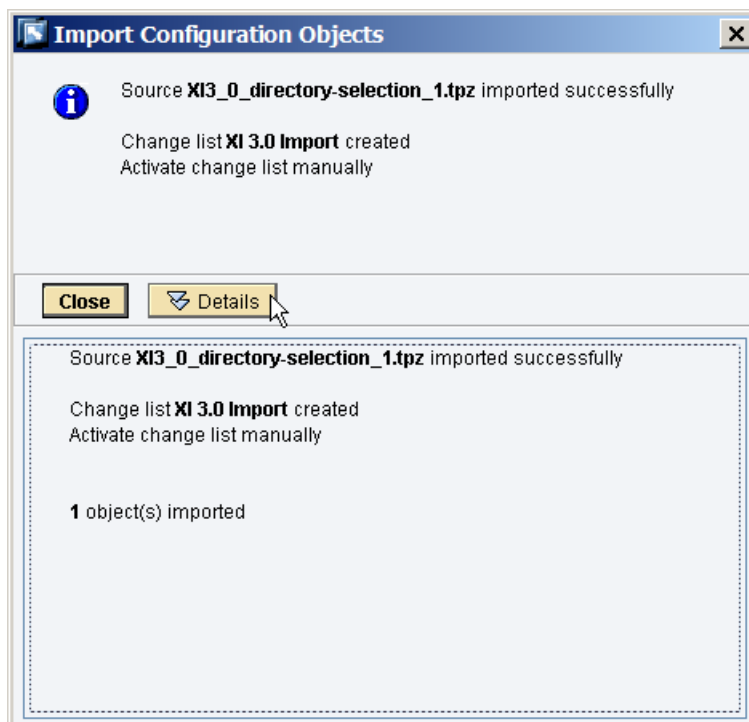
- 3 Select the local file and click on “Open”:



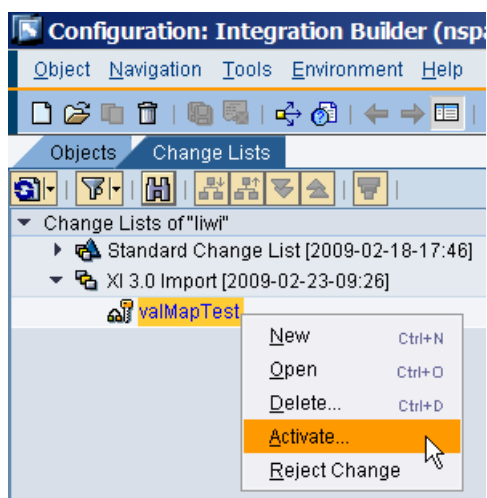
- 4 Click: Import



- 5 The following message will be displayed when complete:



6 Activate the object:



5. Testing

Below is a summary of everything we did:

1. Export/imported the SWCVs, Technical and Business Systems from PI 7.0's SLD to PI 7.1's SLD.
2. Adjusted the business systems as necessary, e.g. assign them to the Integration Server group.
3. Imported the PI 7.0 adapter metadata into the PI 7.1 system's ESR.
4. Export/imported the ESR and ID objects.
5. Adjust the business system's Adapter Specific Attributes for RFC and IDoc adapters.
6. Adjust all the communication channels.
7. Fully refreshed the caches in ABAP and Java.

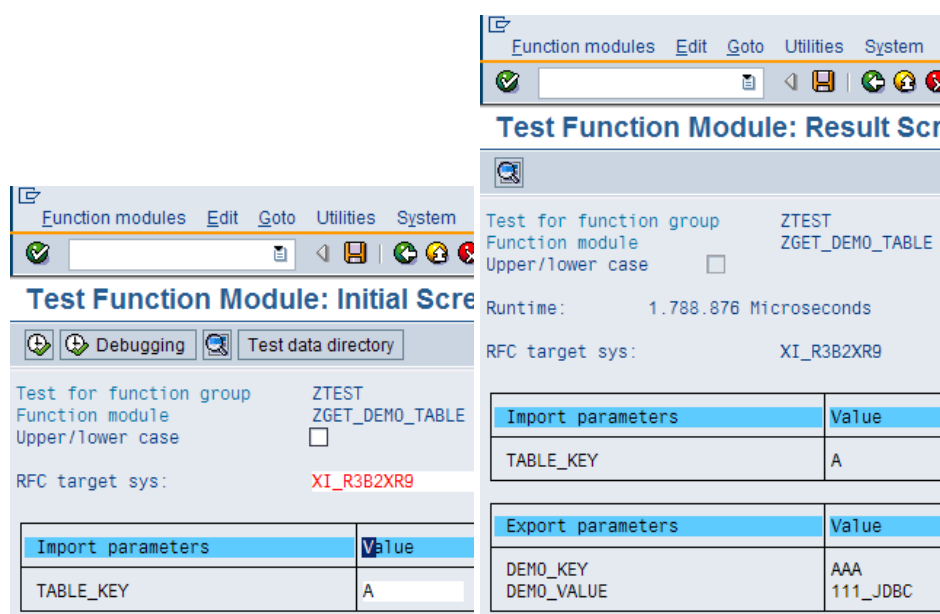
For our scenario, a message is sent from R3B client 400's RFC.

- If the message contains an "A", then the message is sent to a synchronous JDBC interface with a response coming back to the RFC.
- If the message contains a "B", then the message is sent to a synchronous ccBPM process. Within the ccBPM process, an asynchronous-synchronous bridge is used with a JDBC synchronous interface. The response from the JDBC will be written to a file and also returned back to the requesting RFC call.
- For testing, we will execute the scenario going through the PI 7.0 system. Then, we will repeat the testing going through the PI 7.1 system.

Testing going through PI 7.0 (XR9)

1. An RFC Destination going to XR9 is used: XI_R3B2XR9
2. The RFC Destination is used in the RFC call.

No ccBPM:



Test Function Module: Initial Screen

Test for function group: ZTEST
 Function module: ZGET_DEMO_TABLE
 Upper/lower case: ☐
 RFC target sys: XI_R3B2XR9

Import parameters	Value
TABLE_KEY	A

Test Function Module: Result Screen

Test for function group: ZTEST
 Function module: ZGET_DEMO_TABLE
 Upper/lower case: ☐
 Runtime: 1.788.876 Microseconds
 RFC target sys: XI_R3B2XR9

Import parameters	Value
TABLE_KEY	A

Export parameters	Value
DEMO_KEY	AAA
DEMO_VALUE	111_JDBC

With ccBPM:

Test Function Module: Initial Screen

Test for function group: ZTEST
 Function module: ZGET_DEMO_TABLE
 Upper/lower case: ☐
 RFC target sys: XI_R3B2XR9

Import parameters	Value
TABLE_KEY	B

Test Function Module: Result Screen

Test for function group: ZTEST
 Function module: ZGET_DEMO_TABLE
 Upper/lower case: ☐
 Runtime: 6.020.525 Microseconds
 RFC target sys: XI_R3B2XR9

Import parameters	Value
TABLE_KEY	B

Export parameters	Value
DEMO_KEY	BBB
DEMO_VALUE	222_JDBC

3. SXI_MONITOR log:

Monitor for Processed XML Messages

Display Error Information Referencing Messages Restart Expand Expand All Messages

Status	Ack. Status	Executed From	StartTime	EndTime	Sender Service	Sender Namespace	Sender Interface	R
		02/10/2009	11:01:41	11:01:46	R3B_400	urn:sap-com:document:sap:rf	ZGET_DEMO_TABLE	T
		02/10/2009	11:01:43	11:01:43	Demo_Service			
		02/10/2009	11:01:43	11:01:43	TableLookup_process	http://demo.com/demo1	TableLookup_Sync_abs	D
		02/10/2009	11:01:44	11:01:45	TableLookup_process	http://demo.com/demo1	GetDemoResp_abs	D
		02/10/2009	11:01:46	11:01:46	TableLookup_process	http://demo.com/demo1	GetDemoSync_abs	R

XR9 (1) 100 nspad391 INS

Testing going through PI 7.1 (XLI)

1. An RFC Destination going to XLI is used: XI_R3B2XLI
2. The RFC Destination is used in the RFC call.

No ccBPM:

The screenshots show the SAP Test Function Module interface for ZTEST. The 'Initial Screen' on the left shows the 'RFC target sys' as XI_R3B2XLI. The 'Result Screen' on the right shows the runtime as 1.440.152 Microseconds and the RFC target sys as XI_R3B2XLI. The 'Import parameters' table has one row: TABLE_KEY with value A. The 'Export parameters' table has two rows: DEMO_KEY with value AAA and DEMO_VALUE with value 111_JDBC.

Import parameters	Value
TABLE_KEY	A

Export parameters	Value
DEMO_KEY	AAA
DEMO_VALUE	111_JDBC

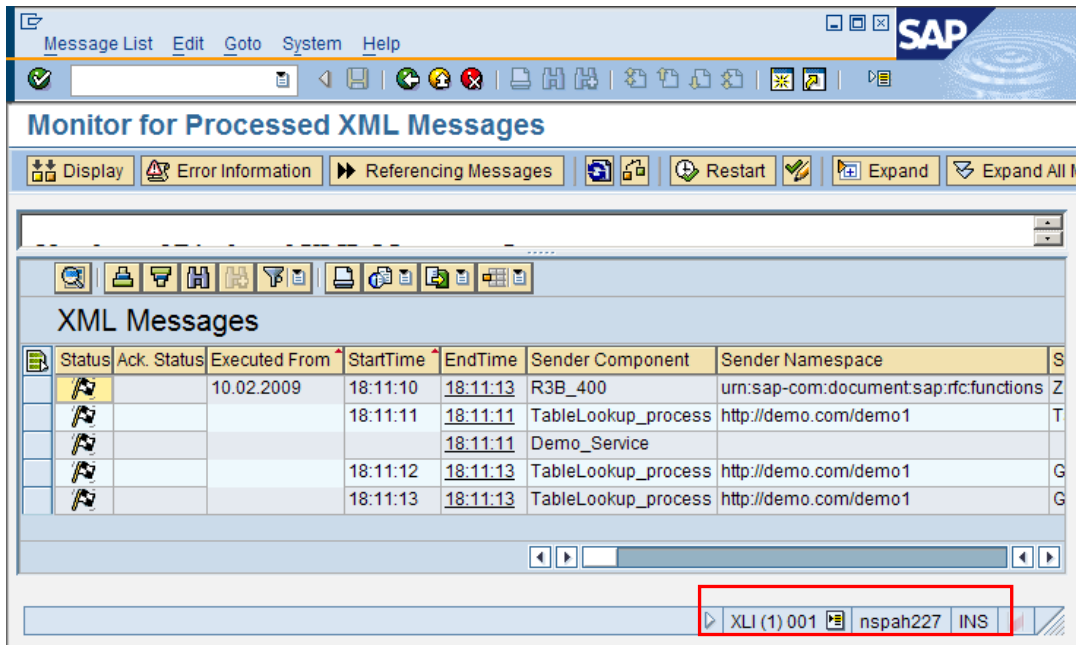
With ccBPM:

The screenshots show the SAP Test Function Module interface for ZTEST. The 'Initial Screen' on the left shows the 'RFC target sys' as XI_R3B2XLI. The 'Result Screen' on the right shows the runtime as 4.444.061 Microseconds and the RFC target sys as XI_R3B2XLI. The 'Import parameters' table has one row: TABLE_KEY with value B. The 'Export parameters' table has two rows: DEMO_KEY with value BBB and DEMO_VALUE with value 222_JDBC.

Import parameters	Value
TABLE_KEY	B

Export parameters	Value
DEMO_KEY	BBB
DEMO_VALUE	222_JDBC

3. SXI_MONITOR log:



Message List Edit Goto System Help

Monitor for Processed XML Messages

Display Error Information Referencing Messages Restart Expand Expand All

XML Messages

Status	Ack. Status	Executed From	StartTime	EndTime	Sender Component	Sender Namespace	
		10.02.2009	18:11:10	18:11:13	R3B_400	urn:sap-com:document:sap:rfc:functions	S
			18:11:11	18:11:11	TableLookup_process	http://demo.com/demo1	Z
				18:11:11	Demo_Service		T
			18:11:12	18:11:13	TableLookup_process	http://demo.com/demo1	G
			18:11:13	18:11:13	TableLookup_process	http://demo.com/demo1	G

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