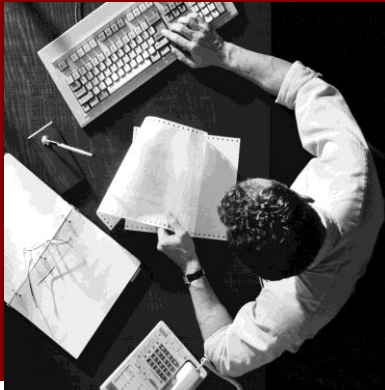


SAP NetWeaver 7.31



SAP NetWeaver
Process Integration
Simple Use Cases for
Integration Flow
Using De-central
Adapter Engine

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Integration Flow - Simple Use Cases for Decentral Adapter Engine.

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1 Preface

Constraints

The texts, references, and graphics contained in this manual have been compiled with utmost care; nevertheless, it is impossible to guarantee that they are fully without error. SAP cannot assume any responsibility for the correctness or completeness of the following documentation; the user alone is responsible for verifying the information contained therein.

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Definition

This manual describes simple application cases for the de-central adapter engine for process integration and all the configuration steps that are necessary to execute the application cases on the basis of SAP NetWeaver 7.31.

Intended Audience

This manual is intended to be used by both technology and application consultants.

Structure

The structure of this document follows the sequence of steps required to configure and run the use cases.

Additional Documentation

List of related documentation

Documentation	Purpose
SAP NetWeaver Library documentation: Demo Examples	Introduction to demo examples and description of the process integration scenarios
SAP NetWeaver Documentation Simple Use Cases	Introduction to Simple Use Cases and description of the simple use case scenarios for Process Integration

This document is updated on a regular basis in SAP Developer Network (SDN) and is available as *Integration Flow - Simple Use Cases for Decentral Adapter Engine*.

2 Introduction and Prerequisites

2.1 Introduction

Use cases are based on simple examples that enable you to learn the main features of SAP NetWeaver Process Integration. These instructions will enable you to understand, configure, and execute simple scenarios (that are based on fundamental communication patterns), as well as check that the scenarios are executed correctly. The prerequisite for this document is that you have a general understanding of SAP NetWeaver Process Integration.

The following use case variants for the de-central adapter engine are available at present:

Variant	Description
Variant 1: One sender and one receiver	Represents message exchange between one sender and one receiver on the de-central adapter engine. The message processing is done locally on the de-central

	adapter engine.
Variant 2: One sender and two receivers	Represents message exchange between one sender and two receivers. The message processing is done locally on the de-central adapter engine.
Variant 3: One sender and two receivers – with routing condition	Represents message exchange between one sender and two receivers in which the way the message is forwarded to the receivers is determined by routing conditions. The message processing is done locally on the de-central adapter engine.
Variant 4: One sender and two receivers – with mapping	Represents message exchange between one sender and two receivers. A mapping is executed when the message is forwarded to one of the two receivers. The message processing and mapping are done locally on the de-central adapter engine.

You can aim to learn about the following with the use cases:

- Working with the Enterprise Services Browser perspective in NWDS – Enterprise Services Repository: Understanding existing design objects
- Working with the Process Integration Designer in NWDS: Configuring simple scenarios and understanding created configuration objects
- Working with the runtime: Executing the use cases and checking the results by using the monitoring tools

SAP provides the required design objects and files for these learning targets. This document contains a complete set of instructions that enable you to configure and execute the use cases without any additional special prerequisites.



SAP NetWeaver Process Integration must be installed and configured, and be error free. In this respect, note the information under 2.2.1.

Within the scenarios file directories on the host of the SAP system on which the de-central Adapter Engine is installed serve as the senders and receivers of messages. The use cases rely on file directories (and therefore the file/FTP adapter) to keep the technical prerequisites as simple as possible.

In variants 1 to 4 the messages are sent directly from the sender adapter to the receiver adapter without using the ABAP IS runtime to show the possibility of using the Advanced Adapter Engine.


This document assumes that you will configure the variants **in succession**, in the order specified.

2.2 Prerequisites

2.2.1 General Prerequisites

To configure and execute the use cases, SAP NetWeaver with usage type Process Integration must be correctly installed and configured. The following table lists the prerequisites and the relevant guides:

List of required steps

Step	Documentation
1. You have installed SAP NetWeaver 7.31.	You can find the corresponding guides on SAP Service Marketplace in the Implementation Documentation Center for SAP NetWeaver 7.3 and SAP NetWeaver 7.3 including Enhancement Package 1
2. You have imported the content for the Enterprise Services Repository corresponding to the latest support package/patch.	SAP Note 836200  The simple use cases are located in the Enterprise Services Repository in the software component <i>SAP BASIS</i> , software component version <i>SAP BASIS 7.31</i> , in the namespaces http://sap.com/xi/XI/System/Patterns .
3. You have configured SAP NetWeaver Process Integration.	Configuration of SAP NetWeaver Process Integration
4. You have configured the System Landscape Directory (SLD).	Configuring, Working with and Administering System Landscape Directory
5. You have installed NetWeaver Developer Studio (NWDS)	You can find the corresponding guides on SAP Service Marketplace at https://service.sap.com/installnw73 → Under Installation - Standalone Engines and Clients → Installation – Clients → Inst. and Update - SAP NetWeaver Developer Studio 7.3 EHP1.



Note that you set up the use cases in your development or test system, but **not** in your productive system.

2.2.2 Providing the necessary User and Authorizations

To log on to the AEX system to configure the simple use cases, you have to create a user *XIDEMO* with the following roles in the Advanced Adapter Engine Extended:

- SAP_XI_ADMINISTRATOR
- SAP_XI_CONFIGURATOR
- SAP_XI_MONITOR

2.2.3 Setting Up the File Directories

The variants are based on a very simple system landscape that comprises various different file systems (on the host of the SAP system on which the de-central Adapter Engine is

installed). When the use cases are executed, files are moved between file directories. Only then can you access the directories during configuration in the Integration Directory.

Perform the steps below to create the required directories on the host of the SAP system on which the de-central Adapter Engine is installed.

1. Using Windows Explorer, open the file directory of the SAP system on which the de-central Adapter Engine is installed.
2. Create a directory in which you can save files temporarily and create the sub directory XiPatterns in it.



A work directory already exists on many computers that can be used for this purpose and under which you can create the required directories.

3. Create three further sub directories in the sub directory XiPatterns_iFlow. Suggested names: XiPattern1, XiPattern2, XiPattern3.



You must have authorization to access this directory to be able to test the process integration scenario. Bear this in mind when you define the directory, and, if applicable, contact your system administrator.

4. Copy the following three files to directory *XiPattern1*

- *ZXiPatternSenderFile1.xml*
- *ZXiPatternSenderFile2.xml*
- *ZXiPatternSenderFile3.xml*



These files are provided by SAP in a ZIP file. The ZIP file for 7.31 containing also the EOIO test files is available in SAP Developer Network (SDN) and can be found using the direct link [EHP 1 for SAP NetWeaver Process Integration 7.3 – Test Files for Simple Use Cases](#).

2.2.4 Creating the Technical and Business Systems in the System Landscape Directory

Perform the following steps to create the required technical and business systems in the System Landscape Directory (SLD):

1. If not done yet, open the *SAP Process Integration Designer* perspective and connect as previously described.
2. To call the System Landscape Directory from the NWDS, open the *PI Explorer* view and on the context menu (right click anywhere on the back-ground) choose *Import Business System* and click on *Create in SLD*.
3. Log on using the XIDEMO user you created in 2.2.2.
4. On the initial screen of the SLD, choose *Technical Systems*.
5. Create a new technical system. To do so, choose *New Technical System*.
6. Select the type *Third-Party* by choosing the appropriate radio button.
7. Choose *Next*.
8. On the *Technical System Wizard - System Details* screen, enter the following information about the technical system:

- *Technical System Identification*: Enter a name according to the following naming convention: <SID>_FileSystem. In this case, <SID> is the **system ID of the de-central Adapter Engine**.
 - *System Host Name*: Enter the **host name of the de-central adapter engine**, for example `pwdf2638`.
9. Select *SAP EHP1 FOR SAP NETWEAVER 7.3* as Product Name and *SAP BASIS 7.31* as Component Name
 10. Choose *Finish*.
 11. Now create five new business systems. To create the first business system, on the SLD start page, choose *Business Systems*.
 12. Choose *New Business System*.
 13. Select the type *Third-Party* by selecting the appropriate radio button.
 14. Choose *Next*.
 15. Select the technical system that you defined previously (dropdown list box in field *System*).
 16. Choose *Next*.
 17. Enter the name <SID>_iFlow_dAAE_FileSystem_XiPattern1. <SID> is the system ID of the de-central adapter engine.
 18. Choose *Next*.
 19. Specify the Advanced Adapter Engine Extended System as Integration Server (field *Related Integration Server*).
 20. Choose *Finish*.
 21. Following the same procedure, create business systems with the following names:
 - <SID>_iFlow_dAAE_FileSystem_XiPattern2
 - <SID>_iFlow_dAAE_FileSystem_XiPattern3

2.2.5 Importing the Business Systems from SLD into SAP Process Integration Designer.

Please refer to the section 2.3 for setting up the connection and opening views on the NWDS. Perform the following steps to import the Business Systems:

1. Using the *SAP Process Integration Designer* perspective, on the menu select *Process Integration → Change Preferences*. The Preferences Window will appear.
2. Under *PI Tools configuration* select *Tool-Specific*.
3. Under *Update Local Cache Status* click the button *Update* to Refresh the SLD cache.
4. Click on *OK* button to close the window. The cache update will run on the background and on the right bottom corner of NWDS the label “Updating cache” will appear & it will show the status progress.
5. On the Systems Entry in PI Explorer in the context menu select *Import Business System* to import the Business Systems into NWDS. A Window showing all available Business Systems in SLD will open.
6. Select the created Business Systems and click *Finish*.

2.3 Working with NWDS

2.3.1 Setting Connection Parameters

If not done yet, open the SAP NetWeaver Developer Studio.

Set the connection data for accessing the Integration Directory under the menu *Process Integration* → *Change Preferences*. The connection details to the Advanced Adapter Engine Extended System have to be maintained using URL or AEX-Host and AEX-Port, click on “test connection” to verify if the connection is successful. Click on Apply for saving changes.

On the same menu (*Process Integration* → *Change Preferences*), under the following path: *Web Services* → *Enterprise Services Browser*, set the connection details for the ESR System using ESR-Host and ESR-Port. Once done, click on *Apply* and exit the menu by clicking on *OK*.

2.3.2 Opening Perspectives and Views

For creating iFlows, the *Process Integration Designer* perspective is needed.

To call the SAP *Process Integration Designer* perspective follow the menu path:

Window → *Open Perspective* → *Other* → *SAP Process Integration Designer*.

Please note that not all views of this perspective (shown as tabs on the left side of the NWDS) will be opened by default. If missing you can manually open them by using the *Show view* icon located on the bottom-left corner of the NWDS. After selecting one view you can change its tab position using drag & drop with the mouse. You will need at least the following views: *PI Explorer*, *Enterprise Services Browser*, *PI Runtime Explorer* and *Change Lists*.


Optionally, you can also call the “Enterprise Services Repository” Perspective:

To call the Enterprise Service Browser in the SAP NetWeaver Developer Studio follow the menu path *Window* → *Open Perspective* → *Other* → *Enterprise Services Repository*.

Once done, you can quickly switch between perspectives by selecting the desired one on the top-right corner of the NWDS.

2.3.3 Connecting to the Systems

Before proceeding to connection ensure that you have set the connection parameters as described previously.

On the *SAP Process Integration Designer* perspective connect to the systems using the common logon option by clicking the connect icon located on the top toolbar ().

Provide your credentials on the pop-up window. This will connect automatically to both, the AEX and the ESR systems.



On the connection pop-up window, you can select the check-box “Use common credentials for directory and repository” if your credentials are the same for both systems.

Alternatively, you can also use the common logon using the Menu *Process Integration* → *Connect*

There is also the possibility of connecting to the ESR only. If you would like to connect only to the ESR, use the connect icon located on the *Enterprise Service Browser* view.

2.4 Design Objects Used



This section explains all the design objects that are used for describing the variants.

The subsequent description of each variant will refer to the description in this section; the relevant design objects will only be listed briefly in each case.

Interface Objects

Interface objects describe the communication mode (e.g. synchronous or asynchronous) and the data structure for exchanging messages. Interface objects comprise service interfaces, message types, and data types, which you can open by means of forward navigation, starting with the Service Interfaces.

Mapping Objects

If the interfaces at the sender and receiver are different, a mapping is required.

The specific design objects will be listed in the specific variants below.

2.4.1 Accessing the Enterprise Service Browser

There are two possibilities to learn more about the design objects, the Enterprise Services Builder and the Enterprise Service Browser.

1. Open the Enterprise Service Browser view. For information about how to do it, please refer to the section 2.3.2.
2. In the navigation area, open the software component *SAP BASIS*, software component version *SAP BASIS 7.31*, and namespace *http://sap.com/xi/XI/System/Patterns*.
3. Open the nodes *Service Interfaces*, *Message Types* and *Operation Mappings* to find the objects used in the scenarios.



All the design objects can also be checked directly in the Enterprise Services Builder. To call it call the Process Integration Tools Page: `http(s)://<AEX-host>:<AEX-port>/dir`, and from there open the Enterprise Services Builder.

All objects for this scenario are linked from the component view `File2File_NoMapping`.

3 Variant 1: One Sender and One Receiver using the de-central Advanced Adapter Engine

This variant enables you to configure and execute the simplest kind of message exchange:

One sender (file directory *XiPattern1*) sends a message to one receiver (file directory *XiPattern2*). Hereby, the message is exchanged between sender and receiver adapter by

using one single de-central Adapter Engine without using the integration server runtime. No mapping is executed between the outbound and inbound interface in this variant.



There are two possibilities to learn more about the design objects, the Enterprise Services Builder and the Enterprise Service Browser. For information about how to navigate to the Enterprise Service Browser see 2.4.1

All objects for this scenario are linked from the component view File2File_NoMapping.

3.1 Summary of Design Objects Used

The design objects used are summarized in the following table.

Design Objects Used

Object Type (Name)	Description
Service Interface (<i>XiPatternInterface1</i>)	Specifies the communication mode (asynchronous) and references the message type used.
Message Type (<i>XiPatternMessage1</i>)	Describes the message sent at runtime and references the data type used.
Data Type (<i>XiPatternDataType1</i>)	Describes the data structure of the message
Communication Channel Templates for Sender and Receiver (<i>XiPatternChannel_FileSender</i> , <i>XiPatternChannel_FileReceiver</i>)	Specifies the sender (and receiver) adapter configuration details, which are defined at design time. Communication channel templates enable a communication channel to be preconfigured at design time.

3.2 Configuring the Process Integration Scenario

In configuration, you use the design objects in the process integration scenario for the actual system landscape. You have already described the system landscape in the SLD. The communication components you defined earlier enable you to address the involved business systems as senders/receivers of messages from the Process Integration Designer.

You perform the following configuration steps in the SAP Process Integration Designer for the Advanced Adapter Engine Extended.

Calling the Process Integration Designer

If not done yet, open the SAP NetWeaver Developer Studio, connect to the systems and open the *SAP Process Integration Designer* perspective as described on the Prerequisites section.

Selecting the Process Integration Scenario

Perform the following steps to select the process integration scenario that you want to configure from the Enterprise Services Repository. Also, enter the name of the *scenario* (Folder) in which you want to group the configuration objects.

1. To call the model Configurator, right click (context menu) in PI Explorer view (anywhere on the white background) → *Generate Integration Flows* → *Process Integration Scenario*.

This calls a wizard, which you use to select a model (in this case, a process integration scenario) and create a Folder & Integration Flow(s) in Eclipse/NWDS.



Alternatively, the wizard can be opened via menu Process Integration → Generate Integration Flow.

2. Search & select the process integration scenario *XiPatternOneStepScenario* (software component version *SAP BASIS 7.31*, namespace *http://sap.com/xi/XI/System/Patterns*)
3. Choose *Next*.

Selecting the Component View

1. Select the component view *File2File_NoMapping* in the dropdown *Component View*.

Assigning Communication Components

You perform the following steps to assign communication components to the application components of the process integration scenario. You use the business system components that you created before (see 2.2.5).

1. In the table below, select the Application component “Sender”. The button “Assign System(s)” will be enabled. Click on it & assign `<SID>_iFlow_dAAE_FileSystem_XiPattern1`.
2. Assign the communication component `<SID>_iFlow_dAAE_FileSystem_XiPattern2` to the application component *Receiver*. Follow the same procedure as when assigning the communication component to the application component *Sender*.
3. Choose *Next*.
4. Enter the name of the scenario as: *XiPatternOneStepScenario_dAAE*. (A Folder with this name will be created.)
5. Enter “*XiPatterniFlowScenario_dAAE*” as *Integration Flow Name* in the edit box under the column “*Integration Flow Name*”.
6. Choose *Finish*. The wizard will start creating the objects & will update the log details
7. Once done click on *Ok*. It will close the wizard.
8. As a result a folder with the Scenario name & Integration Flow with the given name are created. There will be an entry of the Integration Flow – “*XiPatterniFlowScenario_dAAE*” in the *My Changes* view as it is inactive.



You can change to the “*Configuration Scenario*” view mode so that you see all items grouped by their respective Scenario. To do this, click on the *Group by* icon located on the top-right corner under the *PI Explorer* view:



Select *Group By* → *Configuration Scenario*

On this view mode, only generated content is shown.



By selecting the Scenario “*XiPatternOneStepScenario_dAAE*”, the properties tab will be shown (on the bottom of the NWDS) which shows details to the scenario like ID, Name, etc. You can also select the iFlow and see its details on the same tab.

9. Double click on the generated Integration Flow – “*XiPatterniFlowScenario_dAAE*” & open it in the graphical editor.

Selecting the de-Central Adapter Engine

1. Go to the “Properties” tab located under the graphical editor and under “General”, select the de-Central Adapter Engine on the “Adapter Engine” drop-down box. In case the “Properties” tab is not visible, click anywhere on the background of the graphical editor.


Manual Editing

In the following steps, you edit the generated configuration objects manually and enhance the configuration settings made during generation.

1. In the graphical editor, right-click on channel for the sender component. Select *Configure Channel*. The Channel editor screen will open.
2. In tab Adapter Specific under *File Access Parameter* in the *Source Directory* field, enter the path in the file directory that you defined previously (see 2.2.3). In the case of the sender communication channel, enter the whole path for the file directory *XiPattern1*. Example: `C:/<selected path>/XiPatterns_iFlow/XiPattern1`
3. As File Name `XiPatternSenderFile*.xml` should be set automatically.
4. Similarly edit the receiver communication channel. Enter the path for the file directory *XiPattern2* with as file name set `XiPatternReceiverFile.xml`.

Saving and Activating the Configuration Objects

In the following steps, you save the integration flow with all its objects and activate it for the runtime.

1. Save the Integration Flow by pressing the save button ().
2. Use the *Activate* entry in the context menu of the integration flow *XiPatterniFlowScenario_dAAE* to activate the configuration.
3. Use the *Deploy* entry in the context menu of the integration flow *XiPatterniFlowScenario_dAAE* to deploy it in the runtime.

3.3 Executing the Use Case

You perform the following steps to check that the use case is executed without errors.

1. On the host of the Advanced Adapter Engine Extended, open the file directory *XiPattern1*.
2. Rename the file `ZXiPatternSenderFile1.xml` as `XiPatternSenderFile1.xml`.

The File/FTP adapter is designed in a way that a file with exactly this name is recognized and moved from the source directory *XiPattern1* to the target directory *XiPattern2* every 60 seconds. If the configuration was executed without errors, the file will be moved from the source directory within 60 seconds after it is renamed.

3. Open the directory *XiPattern2* and check that the file has arrived.

4. Open the file and check whether the content has changed (compare with the original file *ZXiPatternSenderFile1.xml*).

The file must not have been changed when this variant is executed.

Furthermore, you can check the processing of the message in monitoring. You can do this in channel and message monitoring. To do this, proceed as follows:

Channel Monitoring:

Access Channel Monitor on PI Runtime Explorer

1. Open the view for PI Runtime Explorer
2. Under the corresponding node for the server where the de-Central Adapter Engine is running, locate the folder “XiPatternOneStepScenario_dAAE” which contains the Integration Flow “XiPatterniFlowScenario_dAAE”
3. Expand the Integration Flow “XiPatterniFlowScenario_dAAE”, select one communication channel and on the context menu (right-click) select “Open Channel Monitoring”
4. Proceed with log-in credentials if necessary

Alternatively, you can access the Channel Monitoring from the Monitoring Home page of the de-central Adapter Engine:

1. Start the Monitoring by calling the *Configuration and Monitoring Home* on the de-central AAE: `http(s)://<AAE-host>:<AAE-port>/pimon`.
2. Select tab Monitoring and choose Adapter Engine → Communication Channel Monitor
3. Use appropriate filter criteria to restrict the number of channels displayed. On the very right hand side select Advanced to get all possible filter criteria displayed. To select your channels, put in the channel ID (you can find it in the channel editor screen) `XiPatterniFlowScenario_dAAE_XiPatternChannel_File*` into the communication channel field, press Go and select your sender channel from the list.

Check communication channels

1. Check that the channel is running without error.
2. In the Processing Details section you can find the processing logs and the links to the processed messages. The link can be followed to get the message details.

Message Monitoring:

Access Message Monitor on PI Runtime Explorer

Similar to the steps for accessing the Communication Channel Monitoring previously mentioned, follow these steps for accessing the Message Monitoring on the PI Runtime Explorer:

1. Open the view for PI Runtime Explorer
2. Under the corresponding node for the server where the de-Central Adapter Engine is running, locate the folder “XiPatternOneStepScenario_dAAE” which contains the Integration Flow “XiPatterniFlowScenario_dAAE”
3. Select the Integration Flow “XiPatterniFlowScenario_dAAE” and on the context menu (right-click) select “Open Message Monitoring”
4. Proceed with log-in credentials if necessary

Alternatively, you can access the Message Monitor from the Monitoring Home page of the de-central Adapter Engine

1. Start the Monitoring by calling the *Configuration and Monitoring Home* on the de-central AAE: `http(s)://<AAE-host>:<AAE-port>/pimon`.
2. Select tab Monitoring and choose Adapter Engine → Message Monitor
3. Use appropriate filter criteria to restrict the number of XML messages displayed (for example, the processing period).
4. Choose Go.
5. The system displays the selected messages in a table. You want to locate the messages that were sent during execution. Look for the corresponding Integration Flow and Sender/Receiver Component, respectively.
6. Select the message(s) to be displayed by selecting the link (number of messages) on the Overview table. i.e. under the column “Success”

Check the processed messages

1. The “Message List” table is displayed at the bottom of the Message Monitor page. Select the message you want to have a look at by selecting the corresponding row.
2. The section “Message Details” is displayed. On the tab Message Content, details of the message can be seen. Processing details can be seen on the tab Message Log.

Note that the message cannot be seen in the Integration Server since the message is sent directly from the sender adapter to the receiver adapter on the de-Central Adapter Engine.

4 Variant 2: One Sender and Two Receivers using the de-central Advanced Adapter Engine

This variant extends variant 1 by adding an additional receiver. The message is sent from the sender to two receivers using the de-central Advanced Adapter Engine, without a mapping being executed at runtime.

One sender (file directory *XiPattern1*) sends a message to two receivers (file directory *XiPattern2* and *XiPattern3*). The message is exchanged between sender and receiver adapter using the de-Central Adapter Engine without the integration server runtime. No mapping is executed between the outbound and inbound interface in this variant.

4.1 Design Objects Used

In this variant the same design objects are used as in variant 1. Interface used for the second receiver: `XiPatternInterface1_In`

4.2 Configuring the Integration Flow

When you configure this variant, you will extend the configuration settings from variant 1. You use the same integration flow `XiPatterniFlowScenario_dAAE` as in variant 1.

Extending the Integration Flow

In this variant, the integration flow `XiPatterniFlowScenario_dAAE` created in variant 1 is extended.

Perform the following steps to open the integration flow you created in variant 1.

1. In the SAP Process Integration Designer open the integration flow `XiPatterniFlowScenario_dAAE`. To do so, in the SAP NetWeaver Developer Studio call the SAP Process Integration Designer perspective, go to the PI Explorer view and open the integration flow `XiPatterniFlowScenario_dAAE` by double-clicking.

2. Right click on the line inside the operation pool representing the message flow and select *Add Receiver*.
3. Click on the newly inserted receiver. The properties tab for the receiver will be displayed on the bottom.
4. *Browse* for communication components and add the receiver `<SID>_iFlow_dAAE_FileSystem_XiPattern3`
5. Click on the interface of the new receiver. The properties tab for the interface will be displayed on the bottom.
6. *Browse* for interfaces and add the interface `XiPatternInterfacel_In`.
7. Right-click on the channel of the new receiver (line) and in the context menu select: *Apply Channel Template*. Select the template `XiPatternChannel_FileReceiver` from Software component `SAP BASIS 7.31` and press *OK*. Change to the channel view.
8. As Channel Name set `XiPatternChannel_FileRec2`.
9. In tab Adapter Specific under *File Access Parameter* in the *Target Directory* field, enter the path in the file directory that you defined previously (see 2.2.3). In the case of the sender communication channel, enter the whole path for the file directory `XiPattern3`.
Example: `C:/<selected path>/XiPatterns_iFlow/XiPattern3`
10. The File Name `XiPatternReceiverFile.xml` is set automatically.

Saving and activating the Configuration Objects

Proceed as described in variant 1.

4.3 Executing the Use Case

You perform the following steps to check that the integration flow is executed without errors.

As for the execution of variant 1, in directory `XiPattern1`, copy the file `ZXiPatternSenderFile1.xml` and rename it `XiPatternSenderFile1.xml`. The file will be moved from the directory within the next 60 seconds.

Since this variant has two target directories (receivers), check in both directories, `XiPattern2` and `XiPattern3` whether the file has arrived. The file should be available in both directories.

The content of the xml file should not change as no mapping is executed.

Check the message monitoring as described for variant 1. The message monitoring will display two messages, one for each of the receivers.



In this variant, two messages are created from the outbound message (one for each receiver).

5 Variant 3: One Sender and Two Receivers using de-central Advanced Adapter Engine – with Routing Condition

This variant extends variant 2 by adding a routing condition. Depending on the condition, the message is sent to one of the two receivers.

5.1 Design Objects Used

In this variant, the same design objects are used as in variant 1 and 2.

5.2 Configuring the Integration Flow

When you configure this variant, you will extend the configuration settings from variant 1 and 2. You use the same integration Flow `XiPatterniFlowScenario_dAAE`.

Extending the Integration Flow

In this variant, the integration flow `XiPatterniFlowScenario_dAAE` created in variant 1 is extended.

Perform the following steps to open the integration flow you created in variant 1.

1. In the SAP Process Integration Designer open the integration flow `XiPatterniFlowScenario_dAAE`. To do so, in the SAP NetWeaver Developer Studio call the SAP Process Integration Designer perspective, go to the PI Explorer view and open the integration flow `XiPatterniFlowScenario_dAAE` by double-clicking.
2. Select *Recipient List* to add the routing conditions. The properties tab for the receiver determination will open (on the bottom). Select the *properties* tab.
3. For the receiver component `<SID>_iFlow_dAAE_FileSystem_XiPattern2` call the expression editor by selecting the line for the receiver and pressing *Edit* button.
4. In the *Parts of a condition* section under *Xpath* select `/p1:XiPatternMessage1/Person/CountryCode` via double click.



To maintain the entry directly in the condition editor press **Ctrl + Space** and select *Xpath*. Add a "." next to *Xpath* & hit **Ctrl + Space** again. The data structures of the message are displayed. 1. Select `/p1:XiPatternMessage1/Person/CountryCode`.

5. Choose the operator Equal To (=) in the Operators section via double click.
6. In the expression section, enter "US". The expression should now look like this:
`Xpath./p1:XiPatternMessage1/Person/CountryCode = "US"`
7. Choose *OK*.

You have specified the routing condition `CountryCode = US`.



At runtime, messages that have the value `US` entered for the element `CountryCode` are sent to receiver `<SID>_iFlow_dAAE_FileSystem_XiPattern2`.

8. Following this procedure, create the routing condition `CountryCode = "DE"` for the configured receiver `<SID>_iFlow_dAAE_FileSystem_XiPattern3`.

Activating the Integration Flow

Proceed as described in variant 1.

5.3 Executing the Use Case

You perform the following steps to check that the integration Flow is executed without errors.

In directory `XiPattern1`, copy the file `ZXiPatternSenderFile1.xml` and rename the copied file `XiPatternSenderFile1.xml`. The file will be moved from the directory within the next 60 seconds.

Check whether the file has arrived in directory `XiPattern2`. Open the file and check that the country code `US` is entered in the personal data.

There should be no file in directory *XiPattern3*.

Message monitoring contains one entry for this exchange of messages.



You can repeat this procedure for file *ZXiPatternSenderFile2.xml*. This file should arrive in directory *XiPattern3* (contains personal data with the country code *DE*).

6 Variant 4: One Sender and Two Receivers using the de-central Advanced Adapter Engine – With Mapping

In this variant the scenario from variant 3 is extended. The message is sent to two receivers. A mapping is executed when the message is forwarded to one of the two receivers.

6.1 Design Objects Used

All the design objects used can be accessed from the ESR view.

Interface Objects

The outbound interface used is the same as in variant 1. However, the asynchronous service interface *XiPatternInterface2* is used as the inbound interface at the receiver. This service interface references the message type *XiPatternMessage2*. The data structure of the message is defined by the data type *XiPatternDataType2*. The structure of data type *XiPatternDataType2* is different to the structure of data type *XiPatternDataType1* in the following ways:

- In data type *XiPatternDataType1*, two separate elements are used to specify the person's first and second name, whereas in data type *XiPatternDataType2*, only **one** element is used (*FullName*).
- In data type *XiPatternDataType1*, the name of the element that specifies the telephone number is *TelephoneNumber*, whereas in data type *XiPatternDataType2*, the name is *PhoneNumber*.

Mapping Objects

A mapping between the sender and receiver data structures must therefore be executed for the message to be processed. The operation mapping *XiPatternInterface1ToInterface2* is used in this scenario. You can view the operation mapping by double clicking it on the ESR view. On the Overview tab, the names of the source and target interface are displayed (operations). On the Definition tab, the message types are displayed. By double-click on the fx icon, the message mapping is displayed (*XiPatternMessage1ToMessage2*).

Summary of Additional Design Objects Used

The following table summarizes the additional design objects used.

Additional Design Objects Used

Object Type (Name)	Description
Service interface (<i>XiPatternInterface2</i>)	Describes the interface and data structure of the receiver. The data structure is different to the data structure of the sender.
Message Type (<i>XiPatternMessage2</i>)	

Data Type (<i>XiPatternDataType2</i>)	
Operation mapping (<i>XiPatternInterface1ToInterface2</i>)	Describes the mapping between the source and target interface
Message Mapping (<i>XiPatternMessage1ToMessage2</i>)	Describes the mapping between the source and target structure in detail

6.2 Configuring the Integration Flow

When you configure this variant, you will extend the configuration settings from variant 3. You use the same integration flow `XiPatterniFlowScenario_dAAE`.

Extending the Integration Flow

In this variant the integration flow `XiPatterniFlowScenario_dAAE` created in variant 1 and extended in variants 2 and 3 is extended to use a mapping for one of the receivers.

Perform the following steps to open the integration flow you created in variant 1.

1. In the SAP Process Integration Designer open the integration flow `XiPatterniFlowScenario_dAAE`. To do so, in the SAP NetWeaver Developer Studio call the SAP Process Integration Designer perspective, go to the PI Explorer view and open the integration flow `XiPatterniFlowScenario_dAAE` by double-clicking
2. On the line representing the message flow to receiver `<SID>_iFlow_dAAE_FileSystem_XiPattern3` in the context menu select *Add Mapping*.
3. Select the mapping object in the graphical view. The properties tab will open.
4. Using the Browse functionality select the operation mapping `XiPatternInterface1ToInterface2`.

Activating the Integration Flow

Proceed as described in variant 1.

6.3 Executing the Use Case

You perform the following steps to check that the process integration scenario is executed without errors.

In directory `XiPattern1`, copy the file `ZXiPatternSenderFile2.xml`. Rename the file to `XiPatternSenderFile2.xml`. The file will be moved from the directory within the next 60 seconds.

Check whether a file has arrived in directory `XiPattern3`. Open the file. The structure will have changed: the first and the second name of the person have been concatenated; the field for the telephone number has a new name.

Monitoring contains one entry for this exchange of messages.