



▼ Welcome to BI099

**Business Integrator Introduction
Online Training**

► Chapter 1: General Business Integrator Information

► Chapter 2: Communication Interfaces

► Chapter 3: Message Processing

► Chapter 4: Inbound Flow -
Asynchronous

► Chapter 5: Outbound Flow

End of Course

Business Integrator Introduction Online Training

Abstract:

This training will show details of Business Integrator and give you tips and pointers on how to install and run this module.

Detailed objectives. After the training you will know:

- The general concept of Business Integrator
- Interfaces general flow (inbound and outbound)
- What are the file types involved in process and how they are changing
- How to configure outbound flow (with real example)
- How to configure inbound flow (with real example)
- How to diagnose the problems and solve the most common ones

Target audience:

- People who need to configure screen flows as part of their customer projects

Requirements:

- Knowledge of XML Markup and databases (SQL or Oracle)

Role and level:

- DELMIA Apriso Process Authors
- DELMIA Apriso users that will be creating or managing screens



Duration: 1,5 hour

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General Business Integrator Information, part 1

The first step to importing data is that a message must be sent to DELMIA Apriso from an external system.





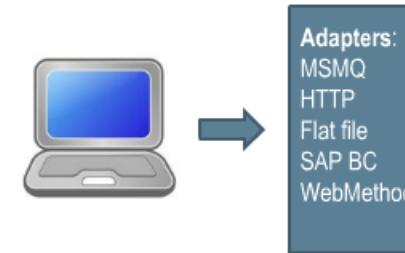
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General Business Integrator Information, part 2

As it is received, it will be processed by a specific adapter, depending on the message type.





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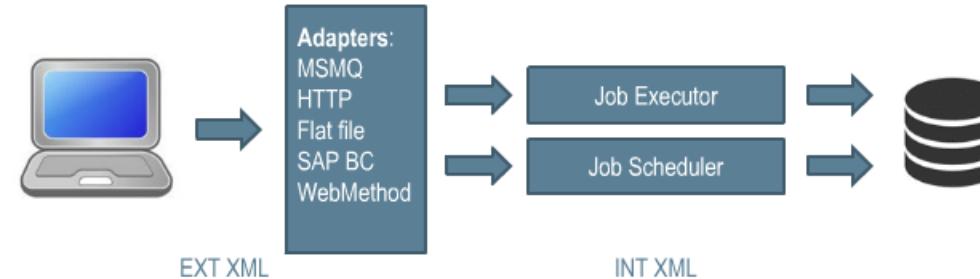
► Chapter 5: Outbound Flow

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General Business Integrator Information, part 3

The type of adapter will also determine which service will process the message, Job Executor or Job Scheduler.

- **Job Executor:** A performance optimized background processing engine. It processes jobs in a queue, while respecting job pool priorities and thread limitations
- **Job Scheduler:** Designed for processing jobs that should be executed at a specific time





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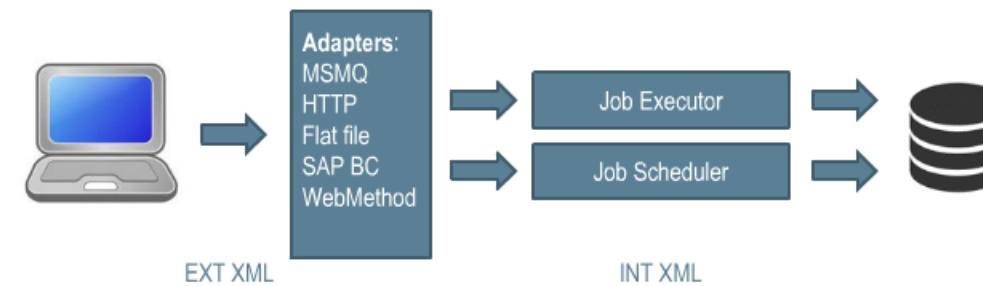
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General Business Integrator Information, part 4

But regardless of the type of service used, at the end of the process the message will be written to the database.





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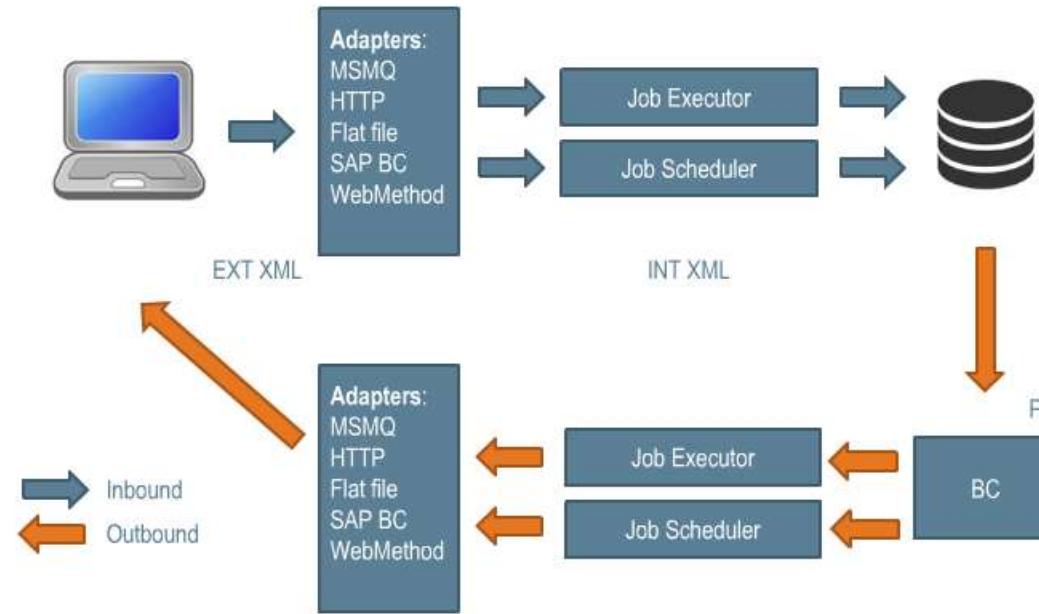
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General Business Integrator Information, part 5

The outbound xml file is then transformed through its respective adapter into the external message format.

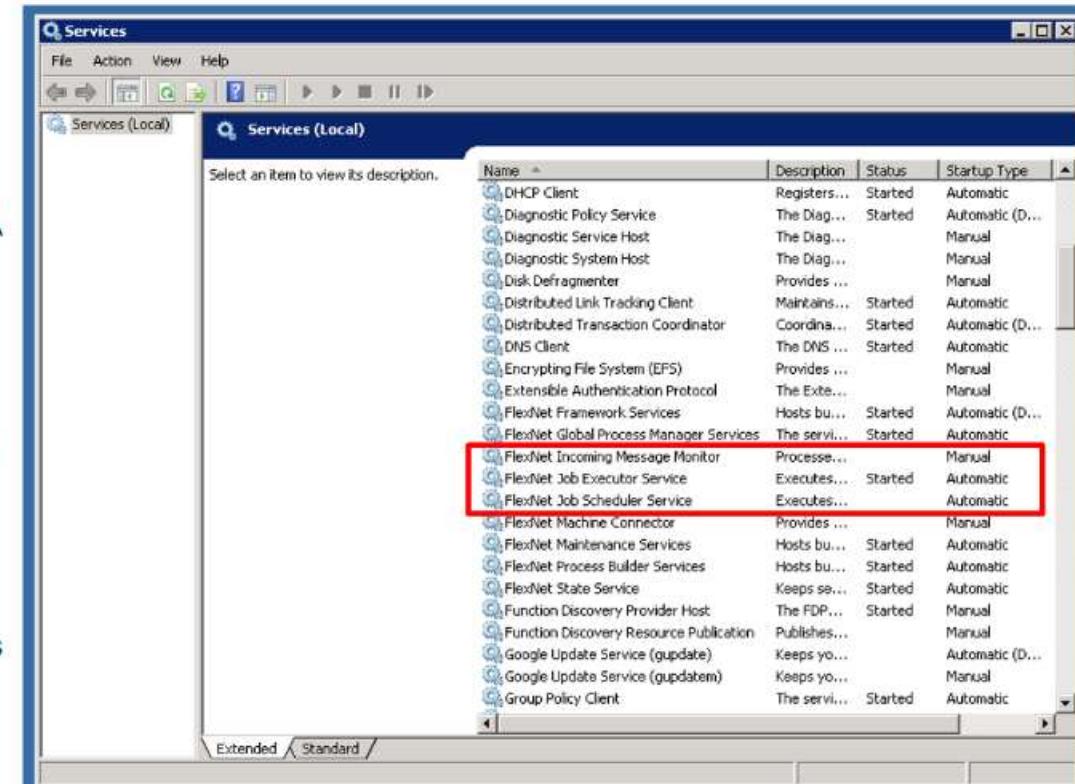


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General Business Integrator Information - Services

An important step of BI configuration is to make sure that the following windows services are running, Incoming Message Monitor, Job Executor, and Job Scheduler.

- ▶ **FlexNet Job Executor Service:** Primary DELMIA Apriso component for processing system background tasks. It is designed as a high-performance execution engine for executing queue-like (FIFO - First In, First Out) jobs
- ▶ **FlexNet Job Scheduler Service:** Secondary DELMIA Apriso component for processing system background tasks. It is designed as a flexible engine for processing complex, recurring, scheduled jobs
- ▶ **FlexNet Incoming Message Monitor:** Monitors the folder where external files are uploaded and is responsible for further processing these files





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End of Course

Inbound Communication, part 1

These are the main adapters used during BI interface setup. DELMIA Apriso System Configuration has configuration tabs for each adapter where you define the adapter parameters. Hover over the adapter to learn more.

- ▶ **MSMQ** - The External System writes messages to local MSMQ on the FlexNet Server. FlexNet incoming Message Monitor, a window service, is configured to poll messages from a local MSMQ
- ▶ **File** - The External System writes the messages as files to a local directory on the FlexNet Server. FlexNet incoming Message Monitor, a window service, is configured to poll messages from a local file directory
- ▶ **HTTP** - The External system via integration broker invokes FlexNet Receive.aspx with flat file or XML message
- ▶ **WebService** - The External system via integration broker invokes FlexNet Message Processor web service with flat file document or XML message





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Inbound Communication, part 2

There are two different communication paths. The path used is determined by the type of data that is to be transferred.

- ▶ **Incoming Message Monitor service** - is a service dedicated for monitoring a folder path for new messages, along with interacting with MSMQ. The FlexNet Configuration Manager offers place to specify the monitored directory, filter files by extension, setup archiving path and offer extra, flat-file related settings
- ▶ **Message processor web service** - when asynchronous method is used, it creates a job to process the data





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Inbound Communication, part 3

File based messages (give examples) are processed through the incoming message processor, while web based messages (xml files) are processed through the web service.





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Inbound Communication, part 4

Regardless of the path used, all messages are written to the DELMIA Apriso database.





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Outbound Communication, part 1

The outbound data flow begins with the DELMIA Apriso database.

DELMIA APRISO DATABASE



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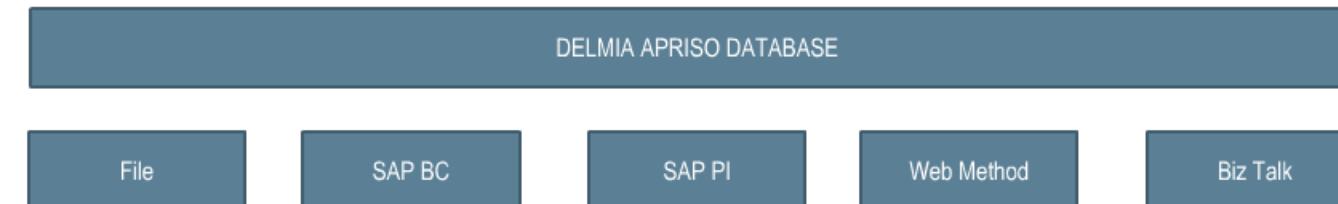
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Outbound Communication, part 2

Job Executor then invokes Action type 10, Route Message to Required Destinations.





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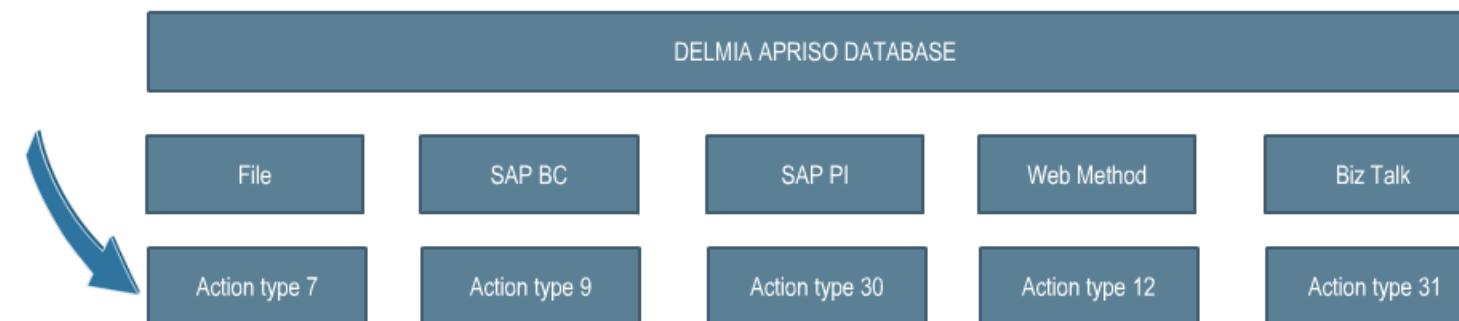
End of Course

Outbound Communication, part 3

Then, depending on the required destination format, different action types are applied. Hover over the different types to view their descriptions.

Action type number is an id from JOB_ACTION_TYPE table, this is the type of action created by job executor service.

- ▶ Action type 7: XML - Process/Send Message to Flat File location
- ▶ Action type 9: XML - Process/Send Message to SAP BC
- ▶ Action type 12: XML - Process/Send Message to Web Methods
- ▶ Action type 30: XML - Process/Send Message to SAP PI
- ▶ Action type 31: XML - Process/Send Message to Biztalk





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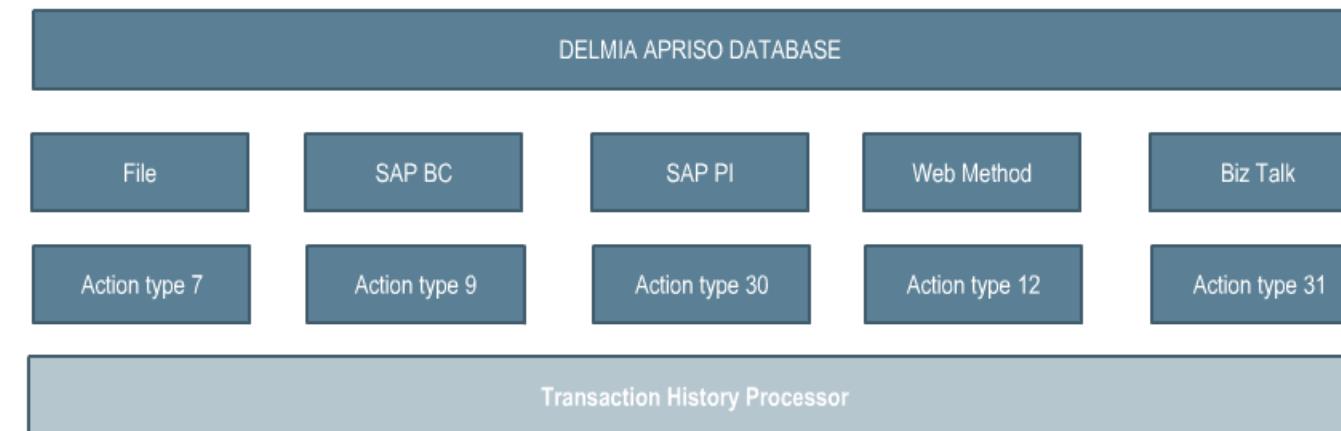
Message Processing - Inbound Flow, part 1

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Message Processing - Inbound

Outbound Communication, part 4

Lastly, all the data is archived in the transaction history processor.



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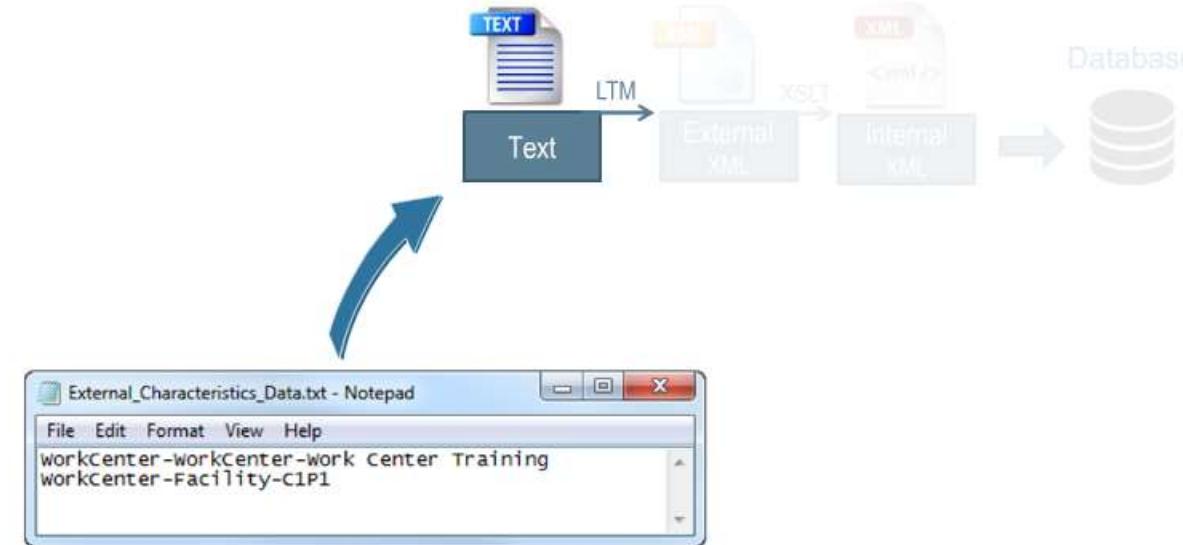
Message Processing - Inbound Flow, part 1

Message Processing - Inbound Flow, part 2

Message Processing - Inbound

Message Processing - Inbound Flow, part 1

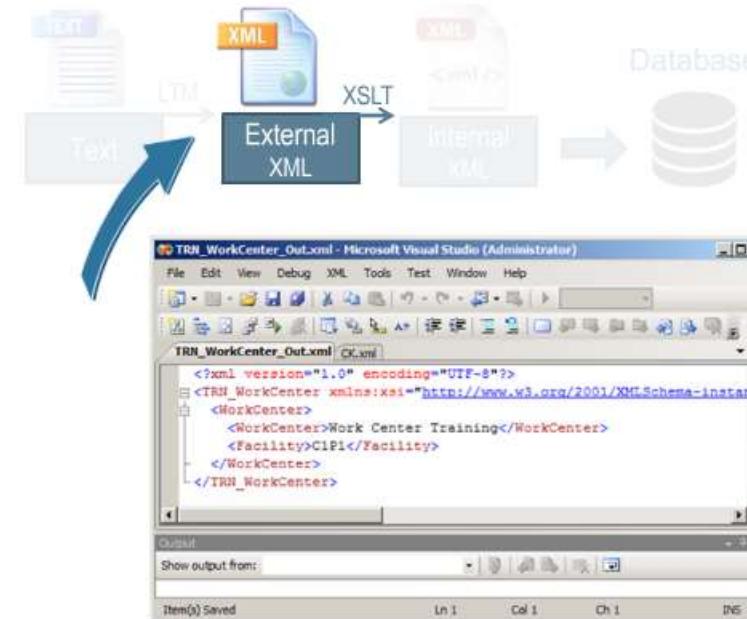
Now let's look at the inbound message processing flow. It starts by receiving a text file from an external system.



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Message Processing - Inbound Flow, part 2

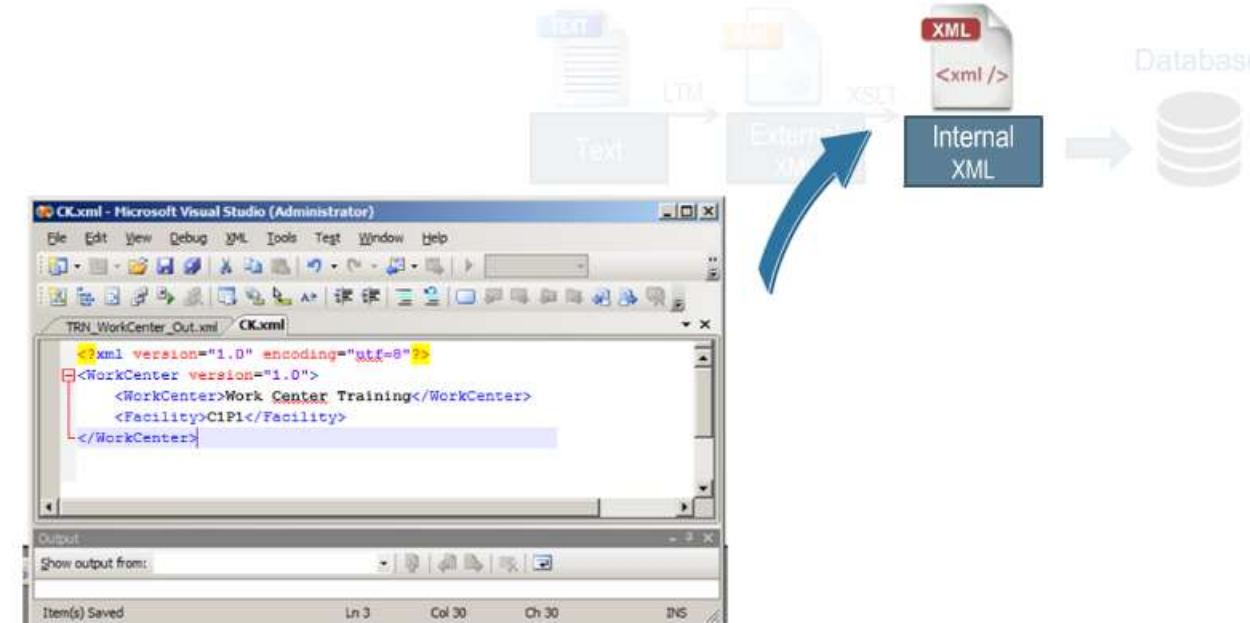
We then have to transform this text file into xml. This xml file is an external file, and must be translated in the next step.



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Message Processing - Inbound Flow, part 3

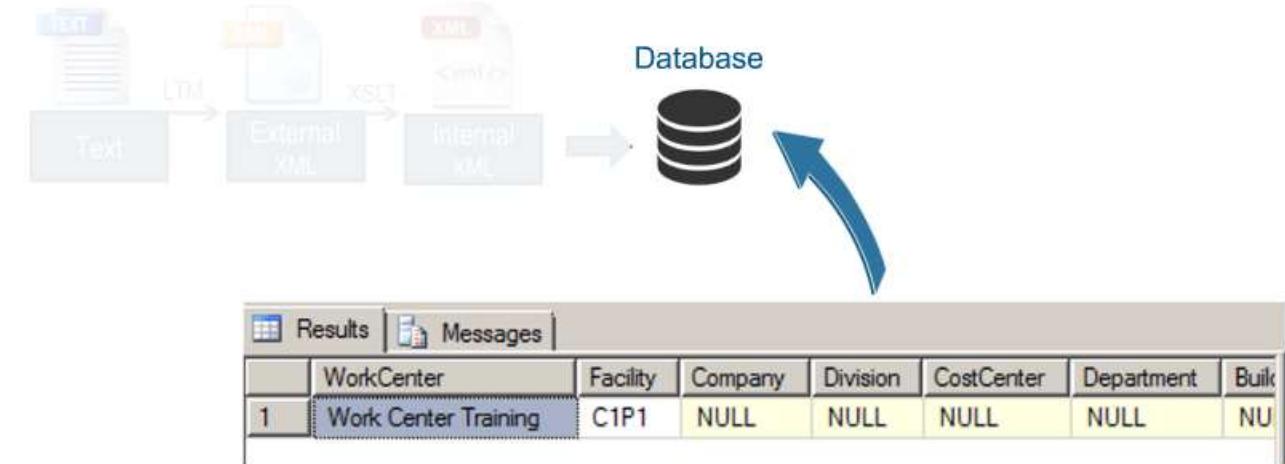
Then we have to translate the external xml to an internal xml. This is done using a pre-defined xslt file, which defines the mapping between the external and internal xml files.



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Message Processing - Inbound Flow, part 4

Once we have translated the internal xml, we can import the appropriate data into the proper tables in the database



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Message Processing - Inbound
Flow, part 1

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Message Processing - Inbound
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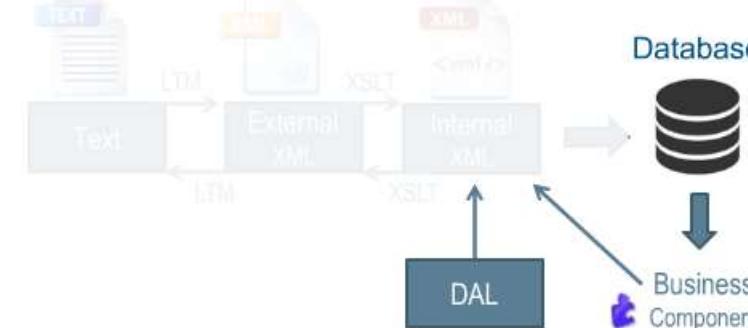
Message Processing - Inbound
Flow, part 4

Message Processing - Outbound
Flow, part 1

Message Processing - Outbound Flow, part 1

For the outbound flow, the first step is to generate an xml from data in the database. This is done by executing the appropriate business component.

- ▶ DAL appears here for the first time. Please add some explanation for it



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▼ Chapter 2: Communication Interfaces

Inbound Communication, part 1

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Outbound Communication, part 1

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Message Processing - Inbound Flow, part 1

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Message Processing - Inbound Flow, part 3

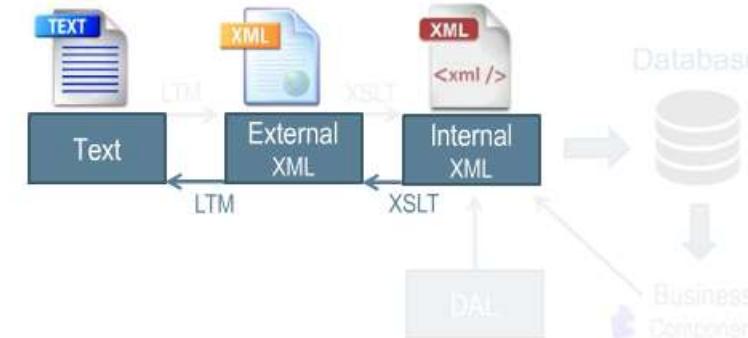
Message Processing - Inbound Flow, part 4

Message Processing - Outbound Flow, part 1

Message Processing - Outbound Flow, part 2

Message Processing - Outbound Flow, part 2

After the internal xml is created, it is converted back to text in the reverse of the inbound flow.





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Message Processing - Inbound
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Message Processing - Outbound
Flow, part 1

Message Processing - Outbound
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Message Processing - Flow Design,
part 1

Message Processing - Flow Design, part 1

Now let's look into the flow design from there used software perspective. The first step is once again to receive a text file..



Text

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Outbound Communication, part 1

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Flow, part 1

Message Processing - Inbound
Flow, part 2

Message Processing - Inbound
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Message Processing - Inbound
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Message Processing - Outbound
Flow, part 1

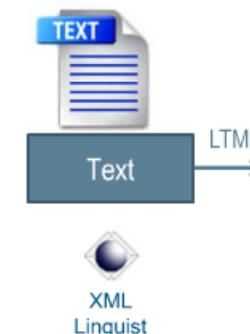
Message Processing - Outbound
Flow, part 2

Message Processing - Flow Design,
part 1

Message Processing - Flow Design,
part 2

Message Processing - Flow Design, part 2

The system then translates that text file to xml using the LTM (xmlLinguist translation mapping) file defined in the mapping definitions.
Now we have the external XML.



▼ Chapter 2: Communication Interfaces

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Message Processing - Inbound Flow, part 3

Message Processing - Inbound Flow, part 4

Message Processing - Outbound Flow, part 1

Message Processing - Outbound Flow, part 2

Message Processing - Flow Design, part 1

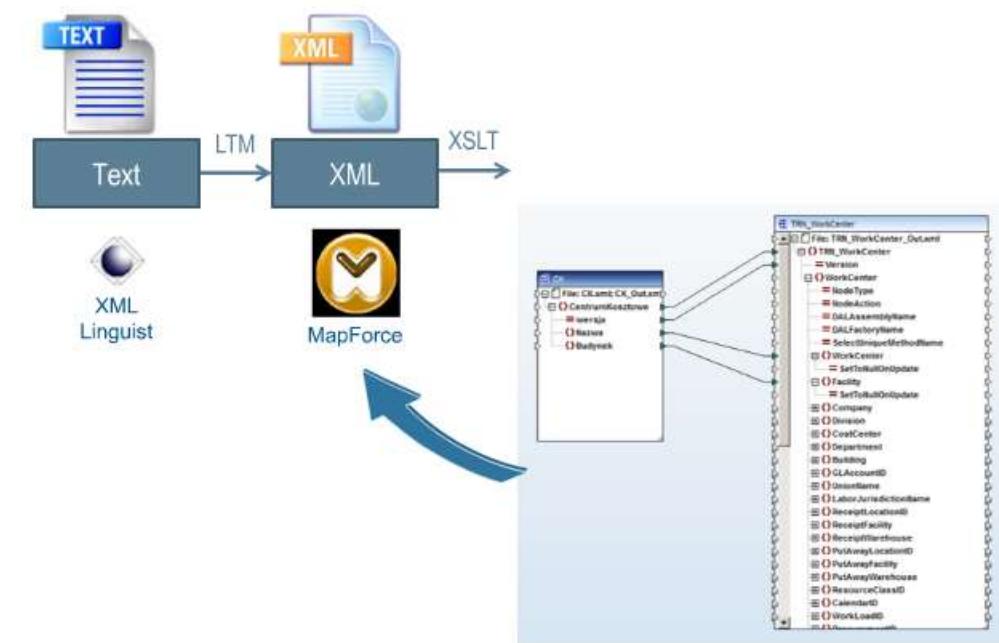
Message Processing - Flow Design, part 2

Message Processing - Flow Design, part 3

Message Processing - Flow Design, part 3

Then Map Force is used to create an XSLT file, which provides the mapping between external xml and internal xml.

- ▶ **XSLT: Extensible Stylesheet Language Transformations** is a language for transforming XML documents into other XML documents



Inbound Communication, part 1

Inbound Communication, part 2

Inbound Communication, part 3

Inbound Communication, part 4

Outbound Communication, part 1

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Message Processing - Inbound Flow, part 2

Message Processing - Inbound Flow, part 3

Message Processing - Inbound Flow, part 4

Message Processing - Outbound Flow, part 1

Message Processing - Outbound Flow, part 2

Message Processing - Flow Design, part 1

Message Processing - Flow Design, part 2

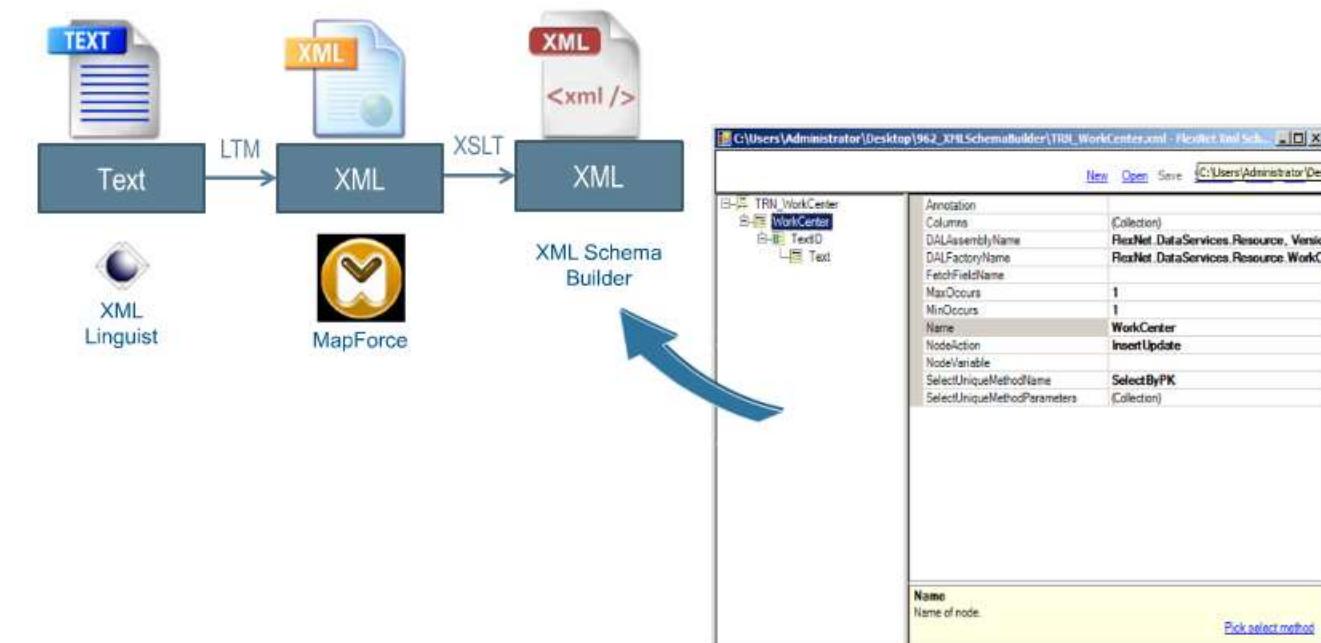
Message Processing - Flow Design, part 3

Message Processing - Flow Design, part 4

Message Processing - Flow Design, part 4

Map Force provides also an XSD file which is used by XML Schema Builder to persists the XML to the database.

- ▶ **XML Schema Builder:** This tool uses schema files to translate XML files into database actions. These schema files have the extension of XSD



Inbound Communication, part 4

Outbound Communication, part 1

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Message Processing - Inbound Flow, part 3

Message Processing - Inbound Flow, part 4

Message Processing - Outbound Flow, part 1

Message Processing - Outbound Flow, part 2

Message Processing - Flow Design, part 1

Message Processing - Flow Design, part 2

Message Processing - Flow Design, part 3

Message Processing - Flow Design, part 4

Message Processing - Synchronous/Asynchronous Flow, part 1

Message Processing - Synchronous/Asynchronous Flow, part 1

Synchronous or Asynchronous processing determines whether the message is processed in the web service (synchronous) or as a background job (asynchronous).

Synchronous

Asynchronous

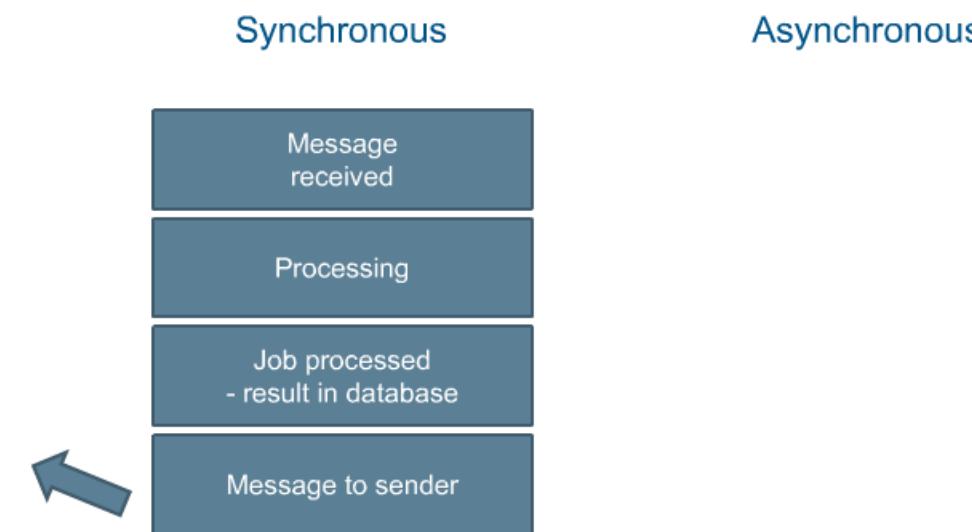
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Message Processing - Synchronous/Asynchronous Flow, part 2

This is a typical path for synchronous communication. The sender receives the feedback after the message is processed. Information will include the status of the processed message.





Outbound Communication, part 4

▼ Chapter 3: Message Processing

Message Processing - Inbound Flow, part 1

Message Processing - Inbound Flow, part 2

Message Processing - Inbound Flow, part 3

Message Processing - Inbound Flow, part 4

Message Processing - Outbound Flow, part 1

Message Processing - Outbound Flow, part 2

Message Processing - Flow Design, part 1

Message Processing - Flow Design, part 2

Message Processing - Flow Design, part 3

Message Processing - Flow Design, part 4

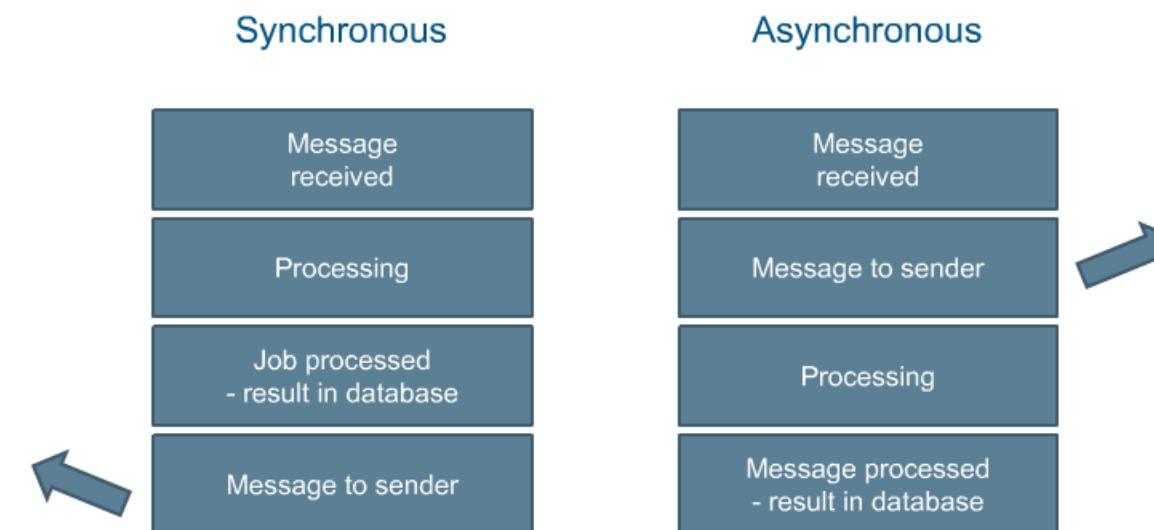
Message Processing - Synchronous/Asynchronous Flow, part 1

Message Processing - Synchronous/Asynchronous Flow, part 2

Message Processing - Synchronous/Asynchronous Flow, part 3

Message Processing - Synchronous/Asynchronous Flow, part 3

For Asynchronous communication, the sender receives feedback before the message is processed. This means that the final status cannot be included in the message.



Message Processing - Inbound Flow, part 4

Message Processing - Outbound Flow, part 1

Message Processing - Outbound Flow, part 2

Message Processing - Flow Design, part 1

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Message Processing - Synchronous/Asynchronous Flow, part 4

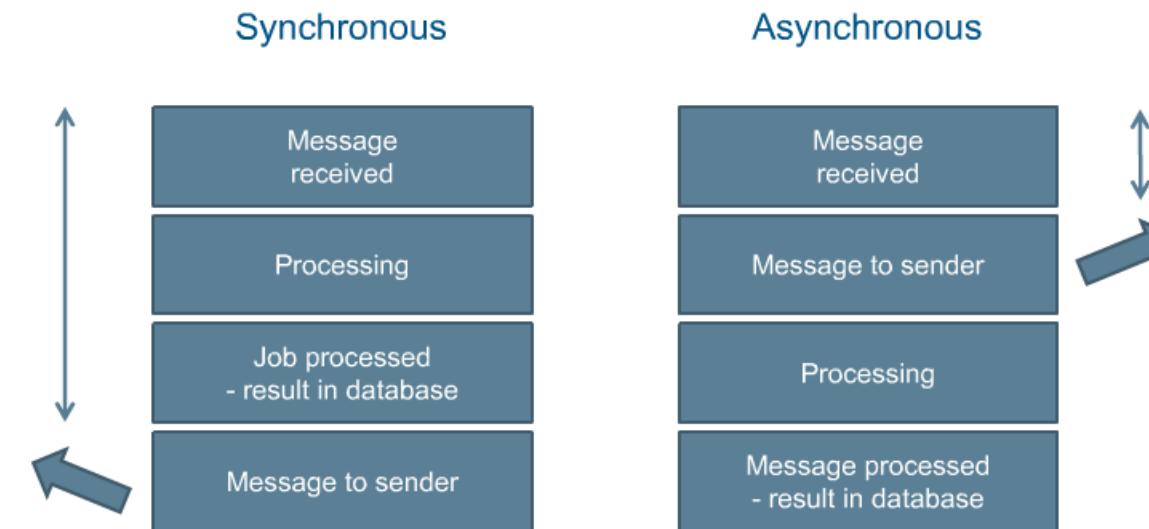
▶ Chapter 4: Inbound Flow - Asynchronous

▶ Chapter 5: Outbound Flow

End of Course

Message Processing - Synchronous/Asynchronous Flow, part 4

So the two main differences between the types of processing are when the message is sent, and the quantity of data in the message.





Message Processing - Inbound Flow, part 4

Message Processing - Outbound Flow, part 1

Message Processing - Outbound Flow, part 2

Message Processing - Flow Design, part 1

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Message Processing - Flow Design, part 3

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Message Processing - Synchronous/Asynchronous Flow, part 1

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▼ Chapter 4: Inbound Flow - Asynchronous

Inbound Flow – Configuration, part 1

Inbound Flow – Configuration, part 2

Chapter 4: Inbound Flow - Asynchronous

In this chapter you will examine the inbound flow in greater detail, and provide usage examples.

Here are the chapters to be covered:

1. *General Business Integrator Information*
2. *Communication Interfaces*
3. *Message Processing*
- 4. Inbound Flow - Asynchronous**
5. *Outbound Flow*
6. *Troubleshooting*

Message Processing - Inbound Flow, part 4

Message Processing - Outbound Flow, part 1

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Message Processing - Synchronous/Asynchronous Flow, part 1

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Message Processing - Synchronous/Asynchronous Flow, part 4

Chapter 4: Inbound Flow - Asynchronous

Inbound Flow - Configuration, part 1

Inbound Flow - Configuration, part

Inbound Flow – Configuration, part 1

This is how an inbound flow is configured.



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 - Message Processing - Outbound Flow, part 1
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 - Message Processing - Flow Design, part 1
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 - Message Processing - Synchronous/Asynchronous Flow, part 1
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Inbound Flow – Configuration, part 2

Now we'll show an example of inbound flow configuration. The first step is to define the scope of data to be covered by the interface. In our example, we will import a new work center record.



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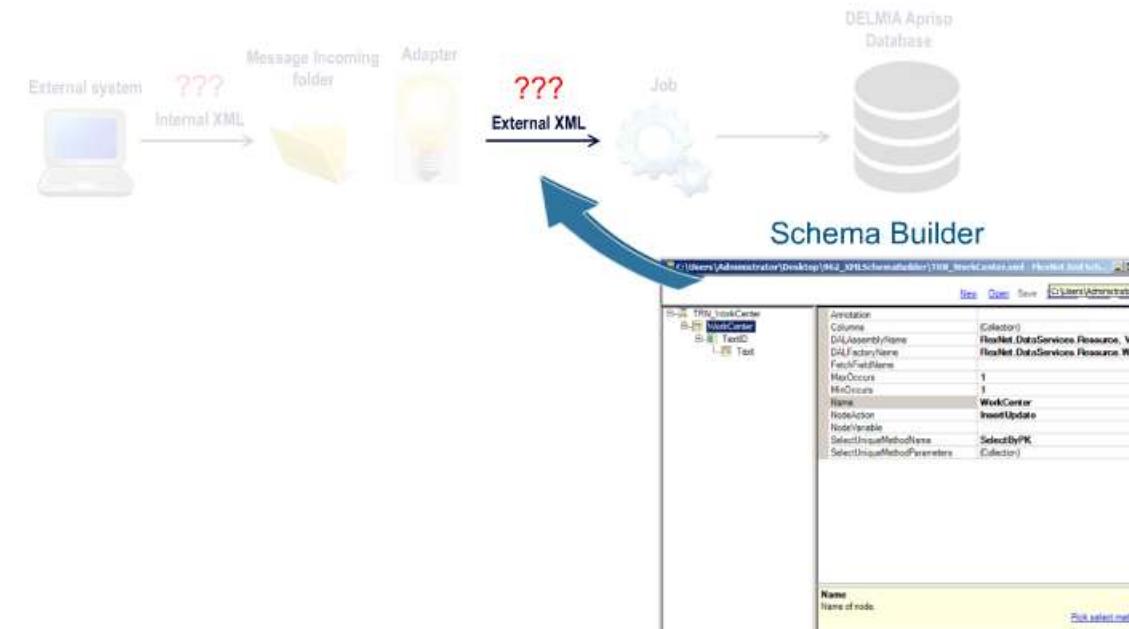
Inbound Flow – Execution, part 6

► Chapter 5: Outbound Flow

End of Course

Inbound Flow – Configuration, part 3

Then we need to create the TRN_WorkCenter.xsd schema file for the work center, using DELMIA Apriso XML Schema Builder. This schema is created based on the DAL library file.



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Message Processing -
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Inbound Flow – Execution, part 1

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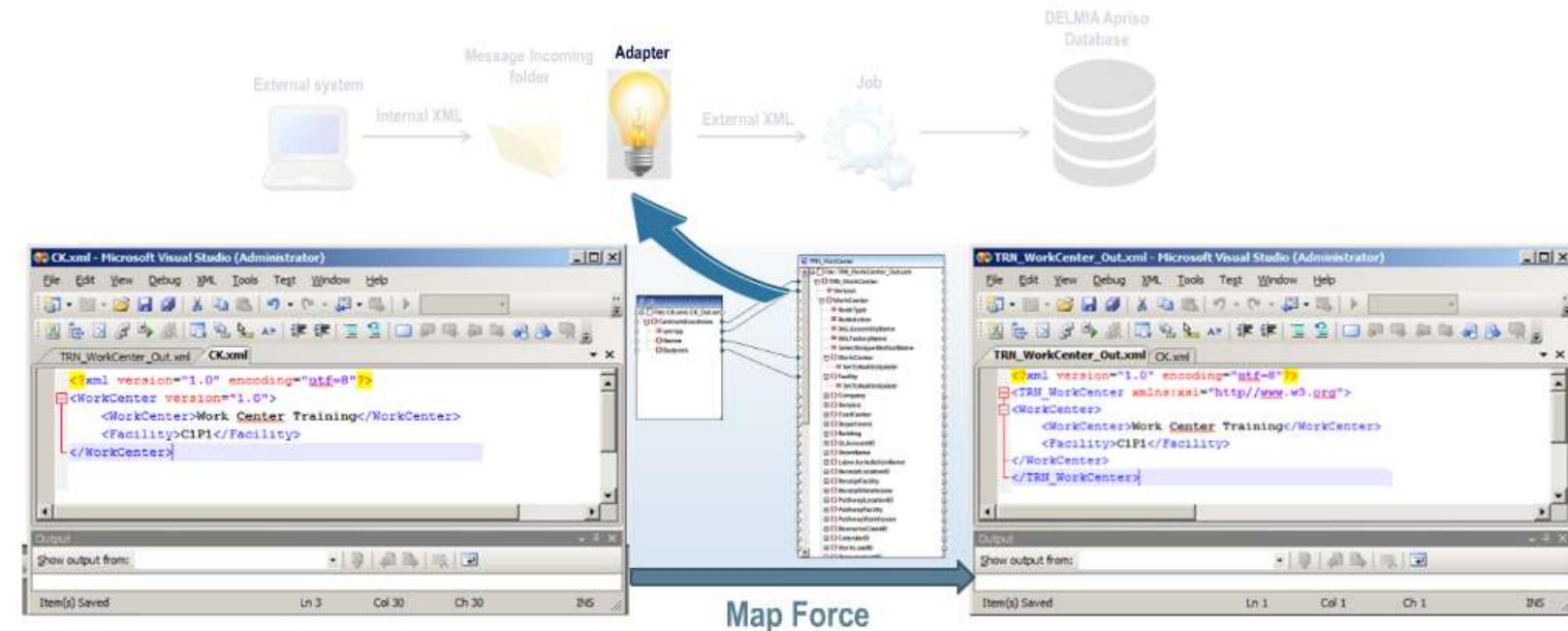
Inbound Flow – Execution, part 6

▶ Chapter 5: Outbound Flow

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Inbound Flow – Configuration, part 4

Using MapForce, we create the transformation file that defines how the external xml data is connected with our internal xml file. The internal definition is included in the xsd file we created in the previous step. The external definition is included in an external xml file or in an external xsd schema definition.



Message Processing -
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Inbound Flow – Configuration, part 5

The transformation and schema files must be stored in the correct folders on the DELMIA Apriso server

- ▶ TRN_WorkCenter.xsd: Schema file created by XML Schema Builder, it translates external file into internal schema
C:\inetpub\wwwroot\SchemaRepository\XMLSchemas\External
- ▶ CK.xslt: This file defines mapping definition between external XML message and DELMIA Apriso XML
C:\inetpub\wwwroot\SchemaRepository\Maps\External
- ▶ CK.mfd: This is an optional file created by MapForce, it is to archive created design
C:\inetpub\wwwroot\SchemaRepository\Designs\Mapforce\External





Message Processing -
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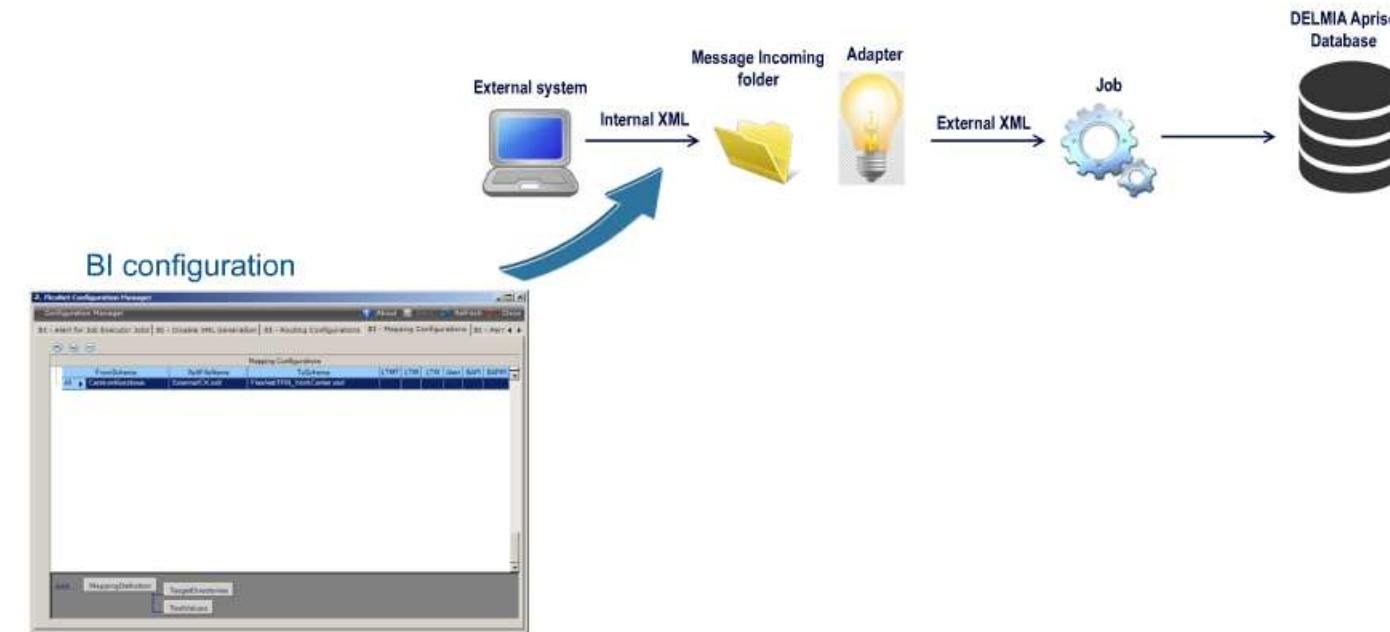
Inbound Flow – Execution, part 6

► Chapter 5: Outbound Flow

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Inbound Flow – Configuration, part 6

Then we configure BI to execute the transformation file when a new message comes in.





Message Processing -
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Inbound Flow – Execution, part 1

Now let's see how the inbound flow works in a real scenario.



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Message Processing -
Synchronous/Asynchronous Flow,
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Chapter 4: Inbound Flow -
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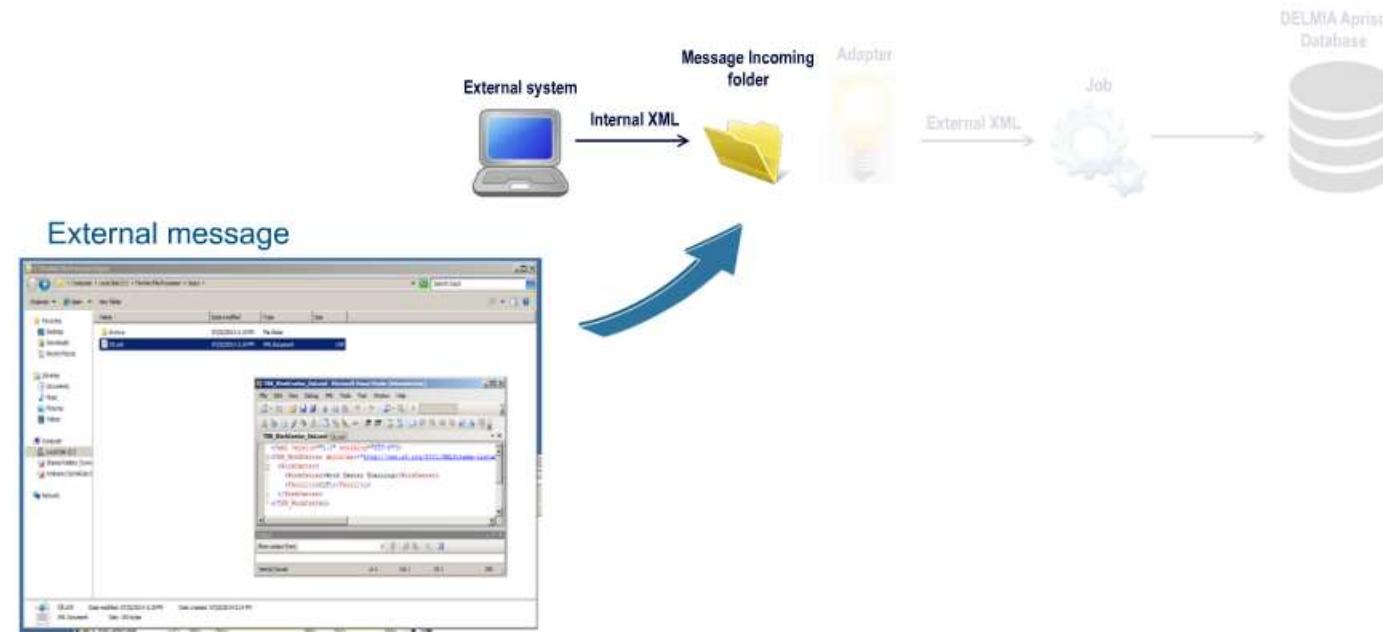
Inbound Flow – Execution, part 6

▶ Chapter 5: Outbound Flow

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Inbound Flow – Execution, part 2

First, the external message is sent to the DELMIA Apriso server, and is stored in the repository folder we defined in configuration manager.



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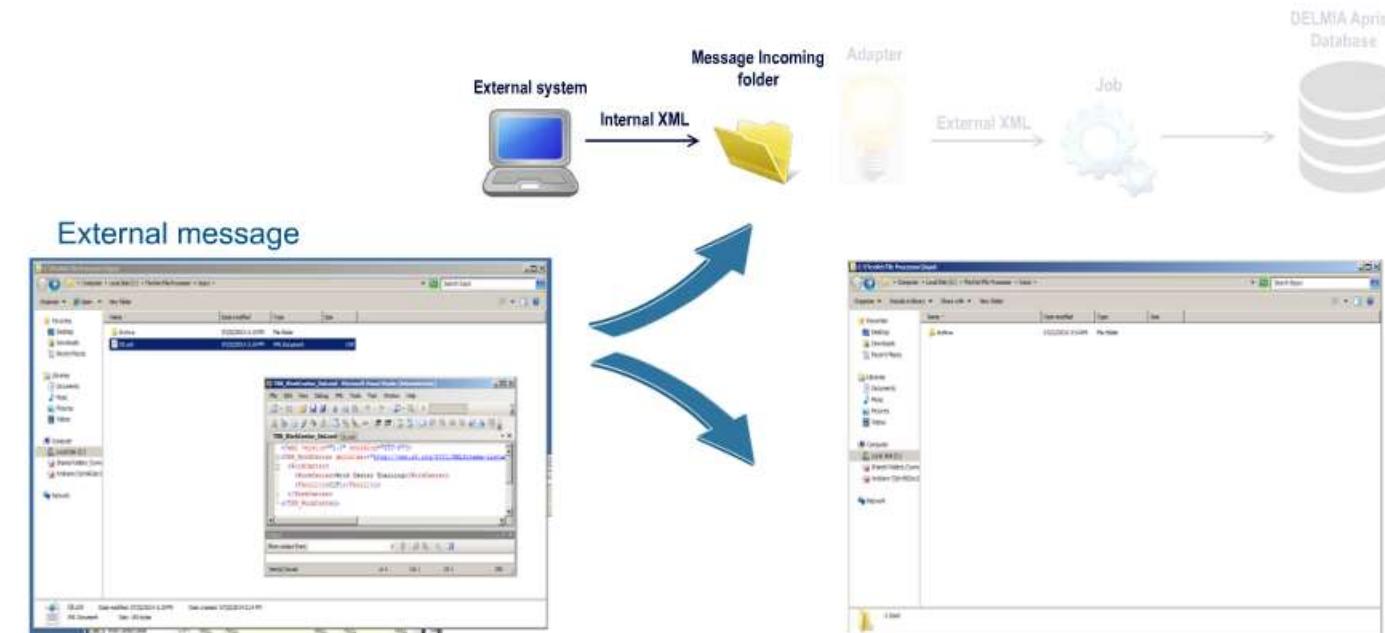
Inbound Flow – Execution, part 6

▶ Chapter 5: Outbound Flow

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Inbound Flow – Execution, part 3

When the message has been processed, it is removed from the folder.



Message Processing -
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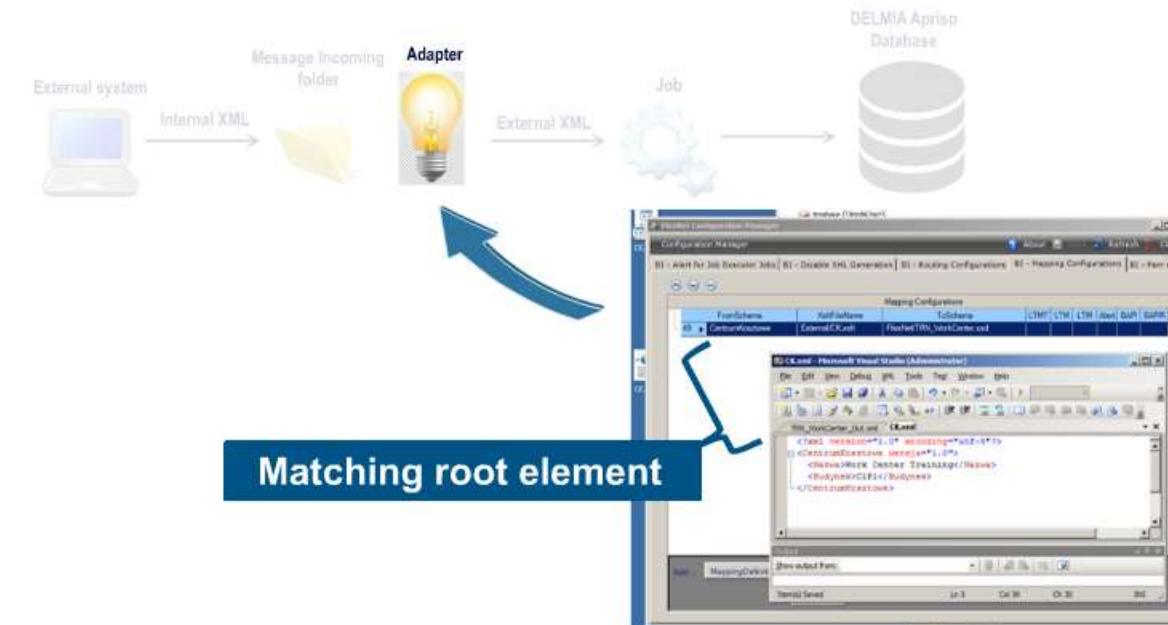
Inbound Flow – Execution, part 6

▶ Chapter 5: Outbound Flow

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Inbound Flow – Execution, part 4

Then the schema is matched with its root element.





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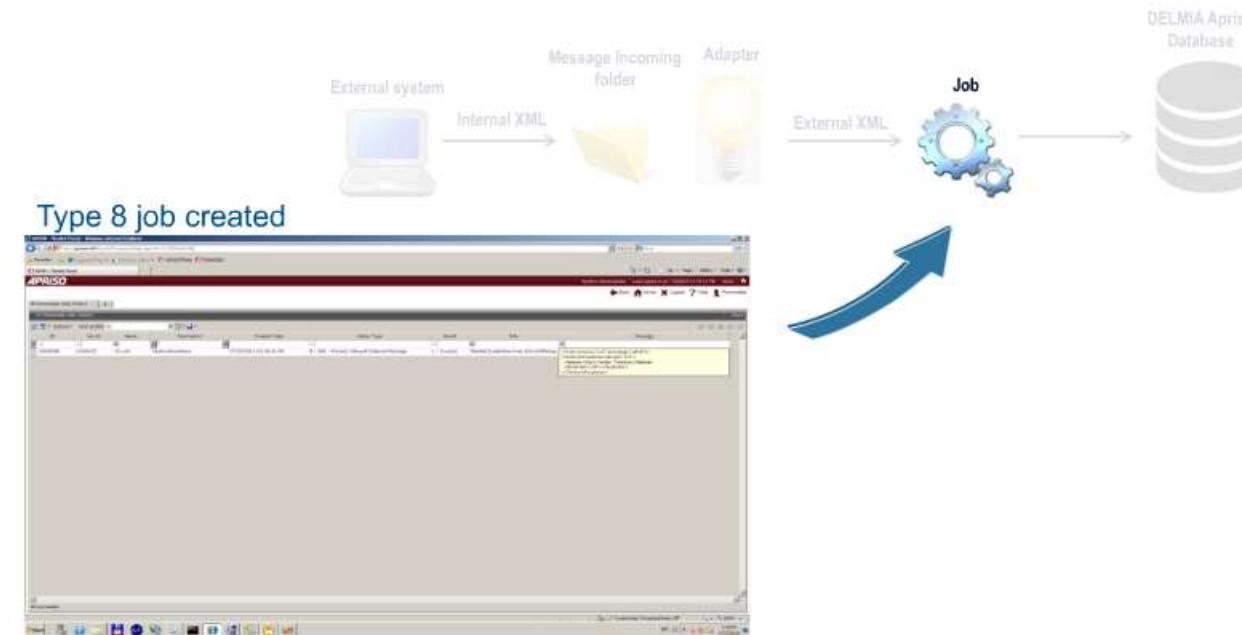
Inbound Flow – Execution, part 6

▶ Chapter 5: Outbound Flow

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Inbound Flow – Execution, part 5

Next, the transformation is automatically applied and a type 8 job (process inbound external message) is created.





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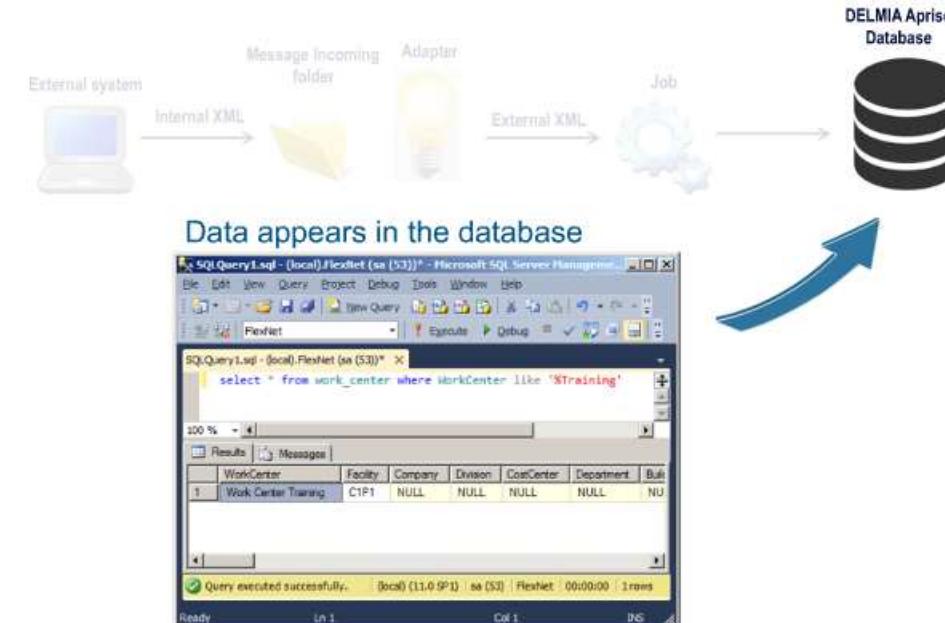
Inbound Flow – Execution, part 6

▶ Chapter 5: Outbound Flow

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Inbound Flow – Execution, part 6

And then you can see the new workcenter created in the DELMIA Apriso database.



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Message Processing -
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Chapter 4: Inbound Flow -
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▼ Chapter 5: Outbound Flow

- Outbound Flow – Configuration,
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Chapter 5: Outbound Flow

In this chapter you will examine the outbound flow in greater detail, and provide usage examples.

Here are the chapters to be covered:

1. *General Business Integrator Information*
2. *Communication Interfaces*
3. *Message Processing*
4. *Inbound Flow - Asynchronous*
5. **Outbound Flow**
6. *Troubleshooting*

Message Processing -
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Chapter 4: Inbound Flow -
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Chapter 5: Outbound Flow

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Outbound Flow – Configuration, part 1

Now let's see how to configure the outbound flow.



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AsynchronousInbound Flow – Configuration, part
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Inbound Flow – Execution, part 1

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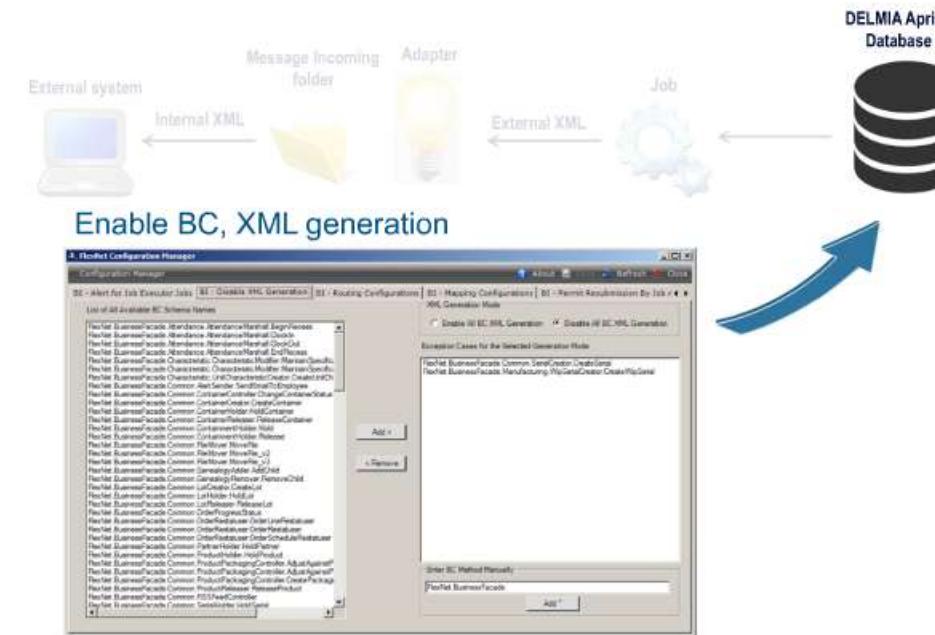
Inbound Flow – Execution, part 6

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Outbound Flow – Configuration,
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Outbound Flow – Configuration, part 2

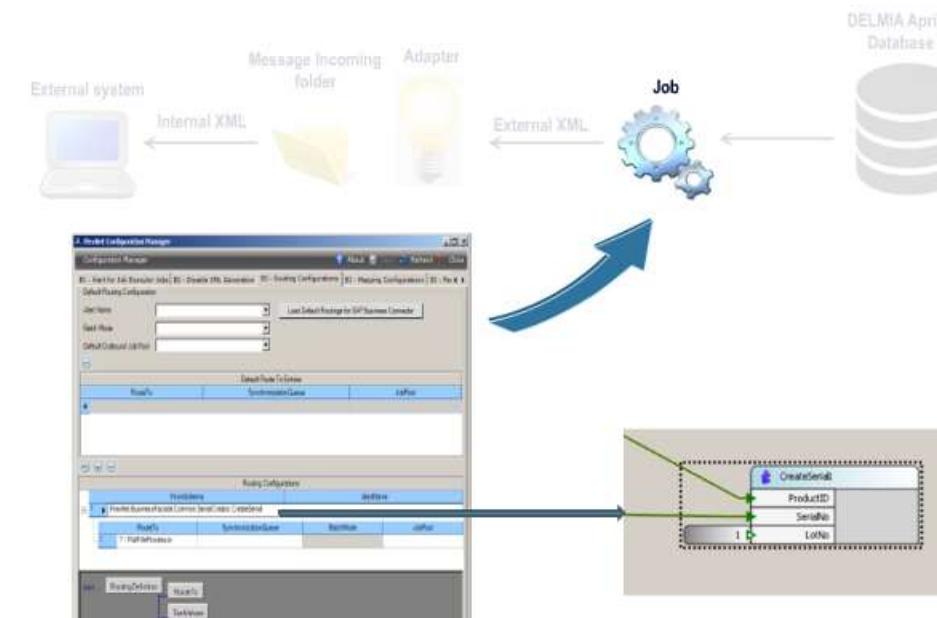
First we need to define which business components we want to use to create xml files for export. Through the configuration manager we can specify which business components we want to enable xml generation for, or we can enable all of them (but this is not recommended as it can slow down the system by generating many unneeded xml files).



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Outbound Flow – Configuration, part 3

Then we need to define which interface will be used when a particular business component generates an xml. This is also done in the configuration manager.





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▼ Chapter 5: Outbound Flow

Outbound Flow – Configuration,
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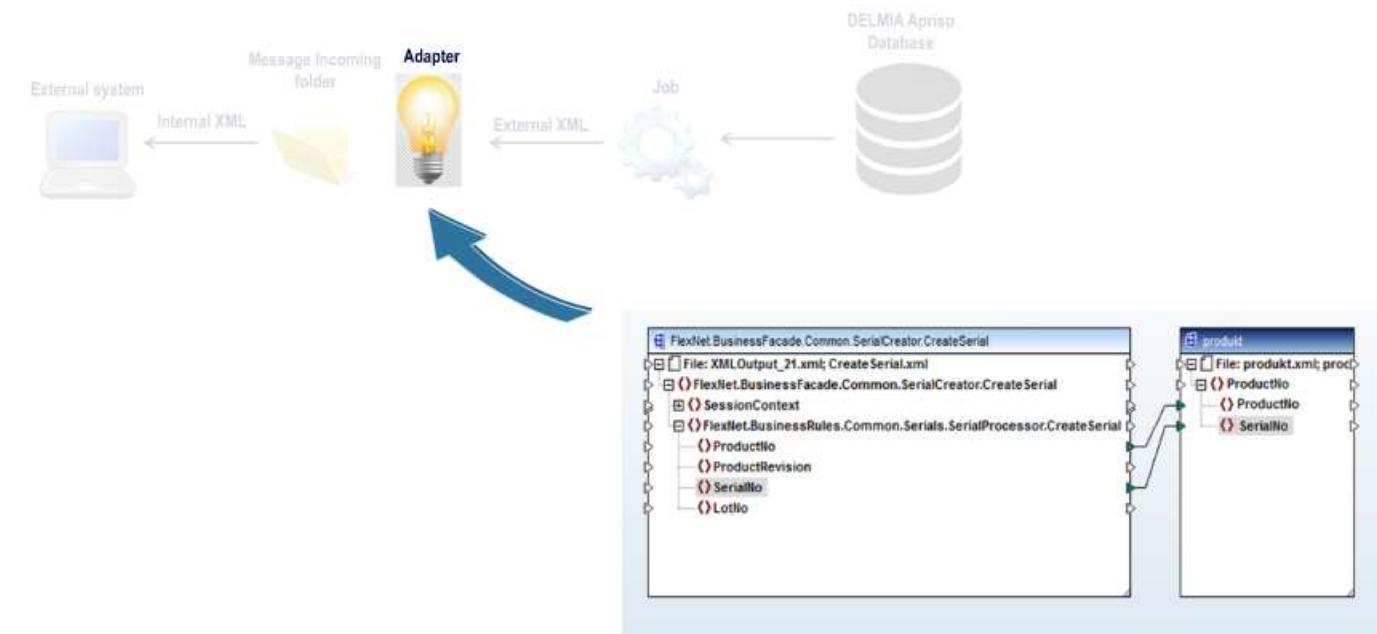
Outbound Flow – Configuration,
part 2

Outbound Flow – Configuration,
part 3

Outbound Flow – Configuration,
part 4

Outbound Flow – Configuration, part 4

Then we prepare the mapping file. Based on an example file from an external message (in this case `Produkt.xml`) we need to create a schema file `xsd` through map force. This example will be `serialcreator.xsd`.



Inbound Flow – Configuration, part 1

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Outbound Flow – Configuration, part 5

The newly created mapforce files must be stored in the correct folders.

- ▶ **Produkt.xsd:** Schema file created by XML Schema Builder, it translates internal schema into external file
C:\inetpub\wwwroot\SchemaRepository\XMLSchemas\External
- ▶ **Produkt.xslt:** This file defines mapping definition between external XML message and DELMIA Apriso XML
C:\inetpub\wwwroot\SchemaRepository\Maps\External



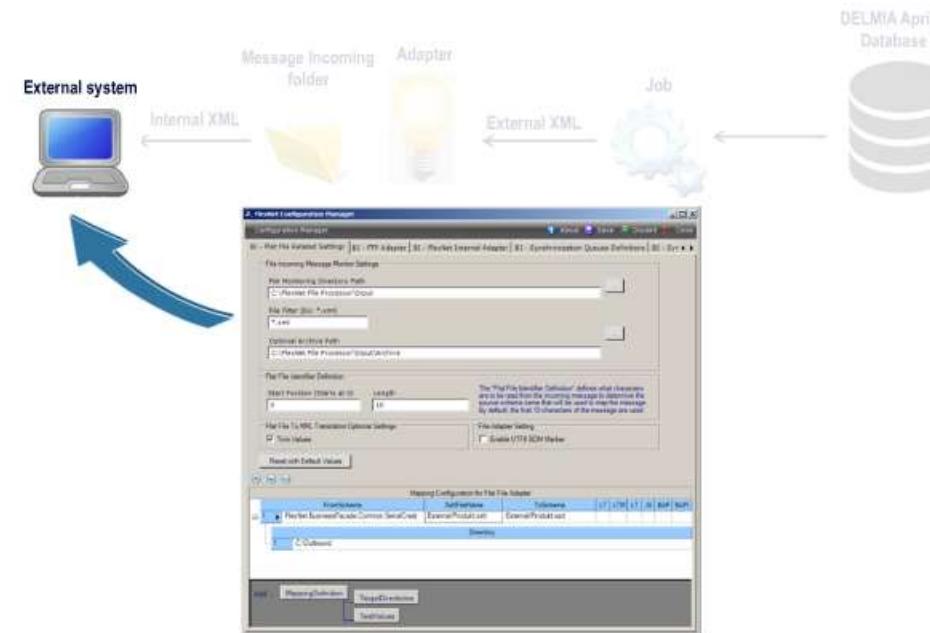
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Outbound Flow – Configuration, part 6

Then we define the output folder to store the extracted files, and the transformation file used to create the external xml. This is also done in the configuration manager.





Inbound Flow – Configuration, part 3

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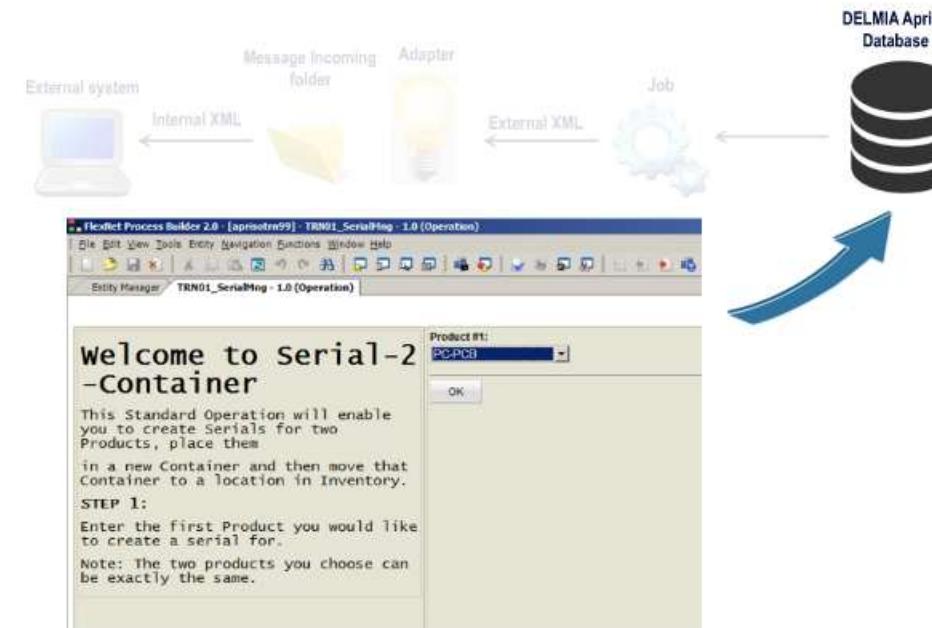
Outbound Flow – Configuration, part 5

Outbound Flow – Configuration, part 6

Outbound Flow – Execution, part 1

Outbound Flow – Execution, part 1

Now let's see how the outbound flow works in a real scenario. First we need to call a business component to generate an xml file. This is done by running a standard operation which uses that business component.



Search... 

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Outbound Flow – Configuration, part 1

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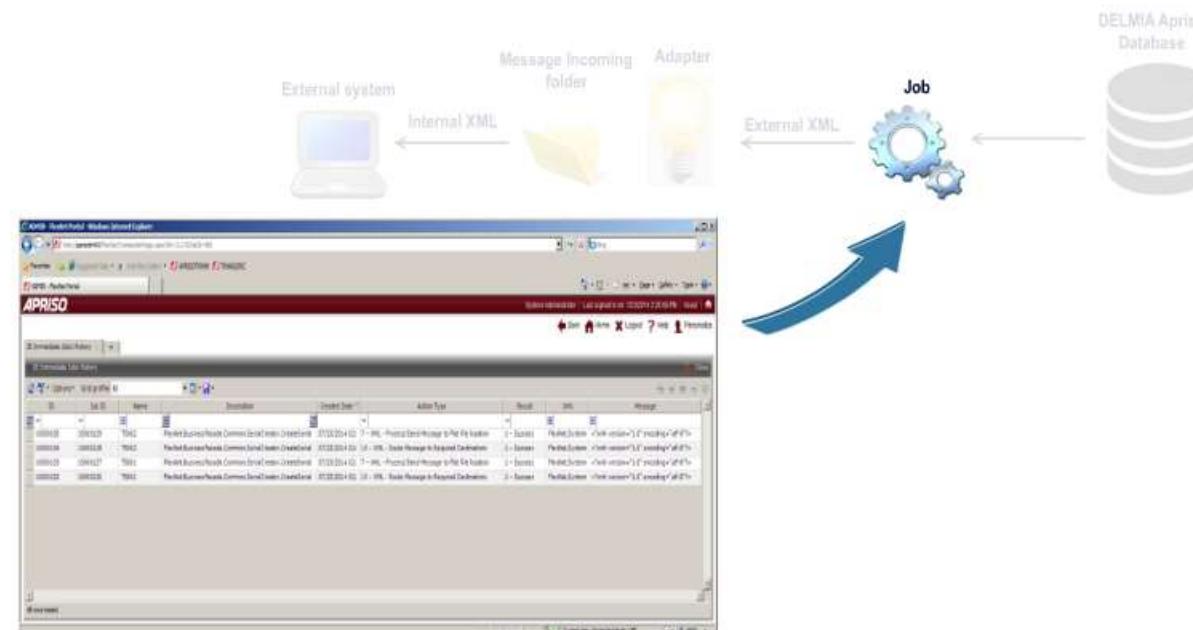
Outbound Flow – Configuration, part 6

Outbound Flow – Execution, part 1

Outbound Flow – Execution, part 2

Outbound Flow – Execution, part 2

Then job executor creates a type 10 job (route message to required destinations) and sends the internal message to the adapter.



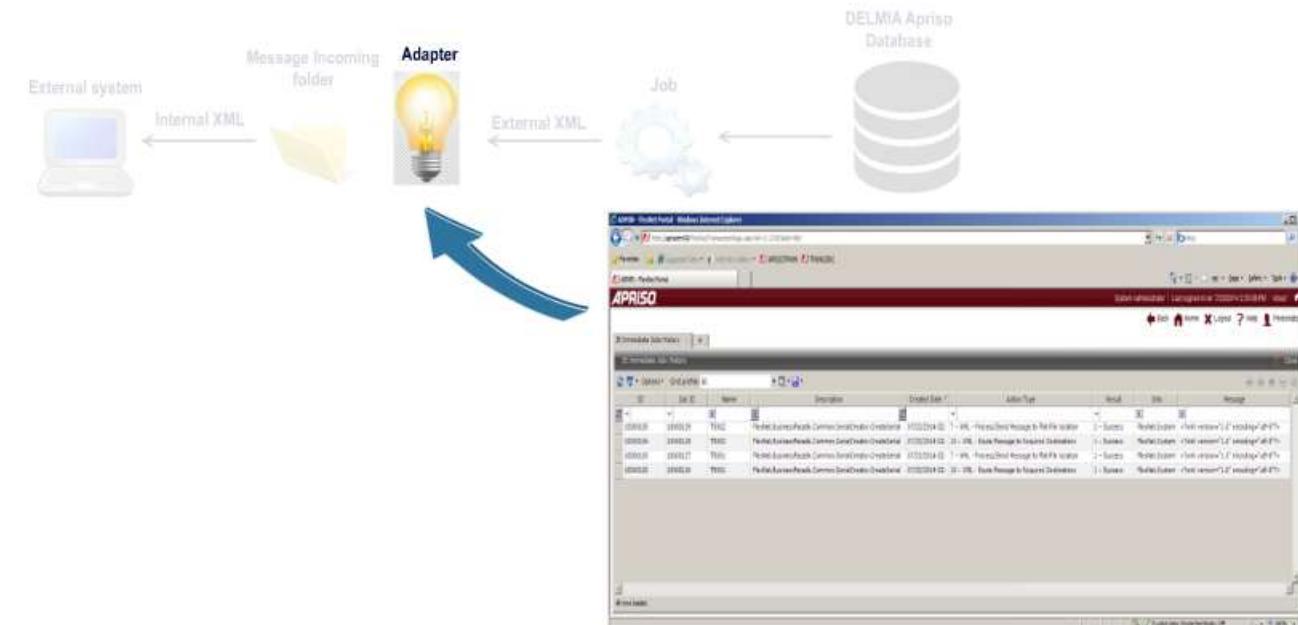
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 - Outbound Flow – Execution, part 1
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Outbound Flow – Execution, part 3

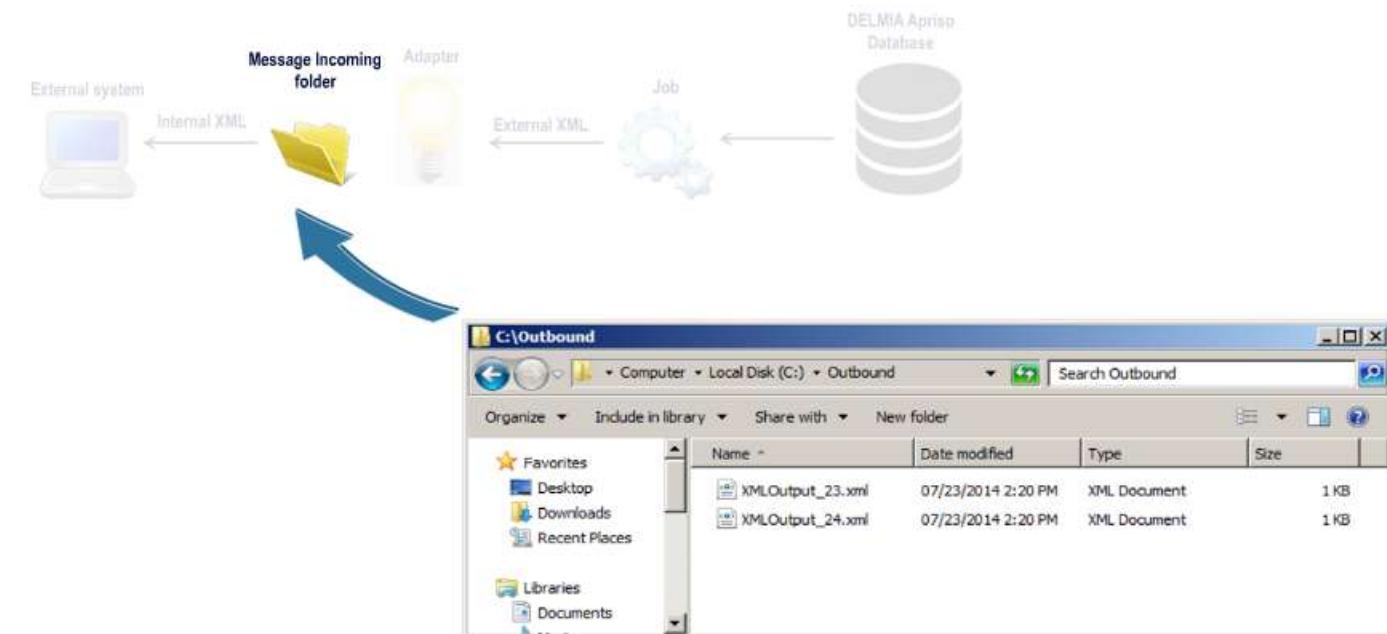
Job executor then creates a type 7 job (Process/send message to flat file location) that sends the file to its final location.



- Search... 
- 4.
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Outbound Flow – Execution, part 4

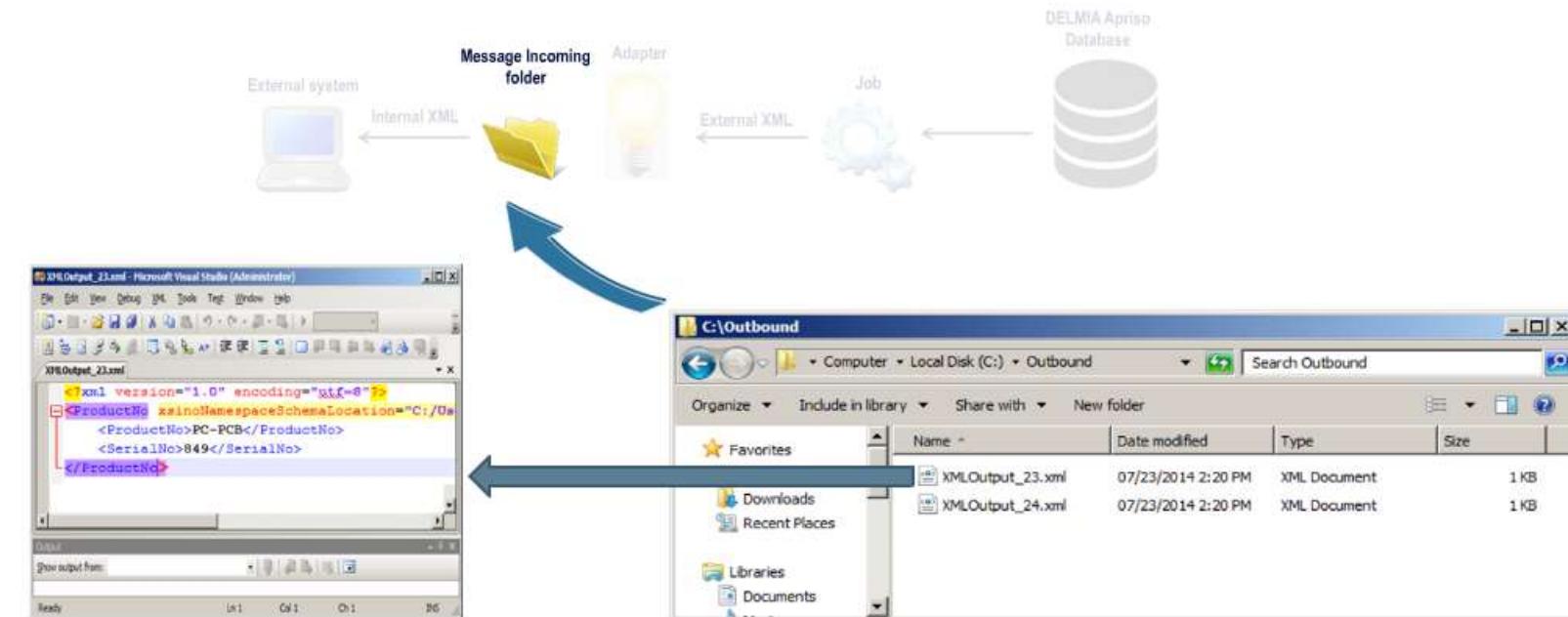
The external file is written to the pre-defined folder.



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Inbound Flow – Configuration, part 6	
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Outbound Flow – Execution, part 5

And can be exported following the pre-defined format.





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Inbound Flow – Configuration, part 6

Inbound Flow – Execution, part 1

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Chapter 5: Troubleshooting

Chapter 5: Troubleshooting

In this chapter a cover basic troubleshooting will be covered, including some DELMIA Apriso tools that can help diagnose BI issues, as well as highlight required information to navigate through BI related settings.

Here are the chapters to be covered:

1. General Business Integrator Information
2. Communication Interfaces
3. Message Processing
4. Inbound Flow - Asynchronous
5. Outbound Flow
6. Troubleshooting



Inbound Flow – Configuration, part 6

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Chapter 5: Troubleshooting

Troubleshooting

Troubleshooting

- ▶ Issues may be caused by
 - Invalid configuration of BI related settings
 - External system issues/misconfiguration
 - Network problems
- ▶ Investigation/solving requires
 - DELMIA Apriso administrator rights
 - Knowledge of implemented solution
 - Advanced knowledge of BI configuration, flows, and processes

BI issues may be caused by invalid configuration settings, misconfiguration of external systems that communicate with DELMIA Apriso, or even network issues that block communication. It is important to note that an DELMIA Apriso administrator who has extensive knowledge of the DELMIA Apriso implementation as well as BI configuration, flows, and processes would have the best chance to find the resolution to an issue in a timely manner, and implement the proper changes.

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Troubleshooting – More Info

DELMIA Apriso offers different tools to help diagnose issues. We will look at two that are directly related to BI.



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Troubleshooting - DELMIA Apriso Logging Overview, part 1

DELMIA Apriso logging framework offers a large amount of information regarding the internal processing of various components.

```
2014-05-09 11:52:45,046 INFO FlatFileProcessorthread (null)  (null)  (null)  FlexNet.XmlManager.WinUI.IncomingMessageMonitorService
| Start up File Monitor Parameters :
|   FileMonitoringDirectoryPath = [C:\FlexNet File Processor\Input].
|   FileFilter = [*.xml].
|   OptionalArchivePath = [C:\FlexNet File Processor\Input\Archive].
|   ProcessAndCreateFinishedJob flag = [False]
|   InactivitySleepValue = [1000]
|
2014-05-09 11:52:45,062 INFO FlatFileProcessorthread (null)  (null)  (null)  FlexNet.XmlManager.WinUI.IncomingMessageMonitorService
| Getting files already exist in the monitoring folder
|
2014-05-09 11:52:45,062 INFO FlatFileProcessorthread (null)  (null)  (null)  FlexNet.XmlManager.WinUI.IncomingMessageMonitorService
| Setting and enabling File System Watcher for directory C:\FlexNet File Processor\Input
|
2014-05-09 11:52:45,062 DEBUG FlatFileProcessorthread (null)      (null)  (null)  FlexNet.XmlManager.WinUI.IncomingMessageMonitorService
| Exiting StartFileWatcherThread
```

Inbound Flow – Execution, part 4

Inbound Flow – Execution, part 5

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Troubleshooting - DELMIA Apriso Logging Overview, part 2

DELMIA Apriso logging:

- ▶ Based on Log4net technology
- ▶ Configuration file location:
\\inetpub\\wwwroot\\FlexNetCentralConfiguration\\LoggingConfiguration.xml
- ▶ Appender thresholds offer different levels of logged information
- ▶ Levels available - Debug, Info, Warn, Error, and Fatal
- ▶ Grouped by application name

DELMIA Apriso logging is based on Log4Net technology that is easily configurable, groupable, and routable. The settings are located in a single centralized file that can be adjusted and expanded with ease, requiring little knowledge of the framework. Thresholds can be set per route, with several different levels, each offering different information. Incorporating macros, such as application name, can extend the grouping ability for easier use.



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Troubleshooting - DELMIA Apriso Logging Overview, part 3

Log file application name:

- ▶ IncomingMessageMonitorService
 - MSMQ and file inbound processing
- ▶ FlexNetJobExecutorService
 - All outbound and majority of inbound processing
- ▶ MessageProcessor
 - FlexNetMessageProcessor web service processing

The application name macro plays a crucial role in DELMIA Apriso logging setup. For BI relevant log information, we designate the following applications: the Incoming message monitor, which covers inbound messages from flat files and MSMQ, the Job Executor service, which covers all outbound and a majority of inbound processing, and the message processor web service, which monitors web messages.

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Troubleshooting - Immediate Jobs History M&M Screen, part 1

Troubleshooting - DELMIA Apriso Logging Overview, part 4

Log file analysis:

- ▶ Logged information is tagged with thread number

```
2014-05-28 14:47:25,156 DEBUG 4 (null) (null) FlexNet.SystemServices.Xml.Configurations.ConfigurationFileChangeMonitor  
Watching directory C:\inetpub\wwwroot\FlexNetCentralConfiguration for config file C:\inetpub\wwwroot\FlexNetCentralConfiguration\XMLManager_ExternalSystemConfiguration.xml  
  
2014-05-28 14:47:25,281 INFO 5 (null) (null) FlexNet.XmlManager.WinUI.IncomingMessageMonitorService  
Starting File Monitor thread 0  
  
2014-05-28 14:47:25,312 DEBUG FlatFileProcessorThread (null) (null) FlexNet.XmlManager.WinUI.IncomingMessageMonitorService  
Entering StartFileWatcherThread
```

- ▶ Debug level offers the most information
- ▶ File Appender rolling functionality allows for some historic information

 FlexNetJobExecutorService_DebugRolling.log	5/28/2014 2:52 PM	LOG File	9,805 KB
 FlexNetJobExecutorService_DebugRolling.log.1	5/28/2014 1:23 PM	Notepad++ Document	10,241 KB
 FlexNetJobExecutorService_DebugRolling.log.2	5/28/2014 11:51 AM	Notepad++ Document	10,241 KB
 FlexNetJobExecutorService_DebugRolling.log.3	5/28/2014 10:20 AM	Notepad++ Document	10,241 KB

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[...]

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Troubleshooting - Immediate Jobs History M&M Screen, part 1

The immediate jobs history maintenance screen can be used as a dashboard for BI related jobs that have been processed.

ID	Job ID	Name	Description	Created Date	Pool	Synchronization	Action Type	Timeout	Started On	Finished
10000598	10003872	Printing in back	Printing in back	05/12/2014 07:	tp_pool		2 - Print Report	00:30:00	05/12/2014 07:	05/12/2014
10000597	10003868	T16512	JCTest	05/09/2014 11:	DEFAULT	JC	12 - XML - Proc	00:06:40	05/12/2014 06:	05/12/2014
10000596	10003871	Printing in back	Printing in back	05/12/2014 06:	tp_pool		2 - Print Report	00:30:00	05/12/2014 06:	05/12/2014
10000595	10003870	Printing in back	Printing in back	05/12/2014 05:	DEFAULT		2 - Print Report	00:30:00	05/12/2014 05:	05/12/2014
10000594	10003869	Printing in back	Printing in back	05/12/2014 05:	DEFAULT		2 - Print Report	00:30:00	05/12/2014 05:	05/12/2014
10000593	10003867	T16512	JCTest	05/09/2014 11:	DEFAULT	RoutingQueue	10 - XML - Rout	00:06:40	05/09/2014 11:	05/09/2014

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Troubleshooting - Immediate Jobs History M&M Screen, part 1

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10000598	10003872	Printing in back	Printing in back	05/12/2014 07:	tp_pool		2 - Print Report	00:30:00	05/12/2014 07:	05/12/2014
10000597	10003868	T16512	JCTest	05/09/2014 11:	DEFAULT	JC	12 - XML - Proc	00:06:40	05/12/2014 06:	05/12/2014
10000596	10003871	Printing in back	Printing in back	05/12/2014 06:	tp_pool		2 - Print Report	00:30:00	05/12/2014 06:	05/12/2014
10000595	10003870	Printing in back	Printing in back	05/12/2014 05:	DEFAULT		2 - Print Report	00:30:00	05/12/2014 05:	05/12/2014
10000594	10003869	Printing in back	Printing in back	05/12/2014 05:	DEFAULT		2 - Print Report	00:30:00	05/12/2014 05:	05/12/2014
10000593	10003867	T16512	JCTest	05/09/2014 11:	DEFAULT	RoutingQueue	10 - XML - Rout	00:06:40	05/09/2014 11:	05/09/2014

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Outbound Flow - Configuration, part 3

Outbound Flow - Configuration, part 4

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Outbound Flow - Configuration, part 6

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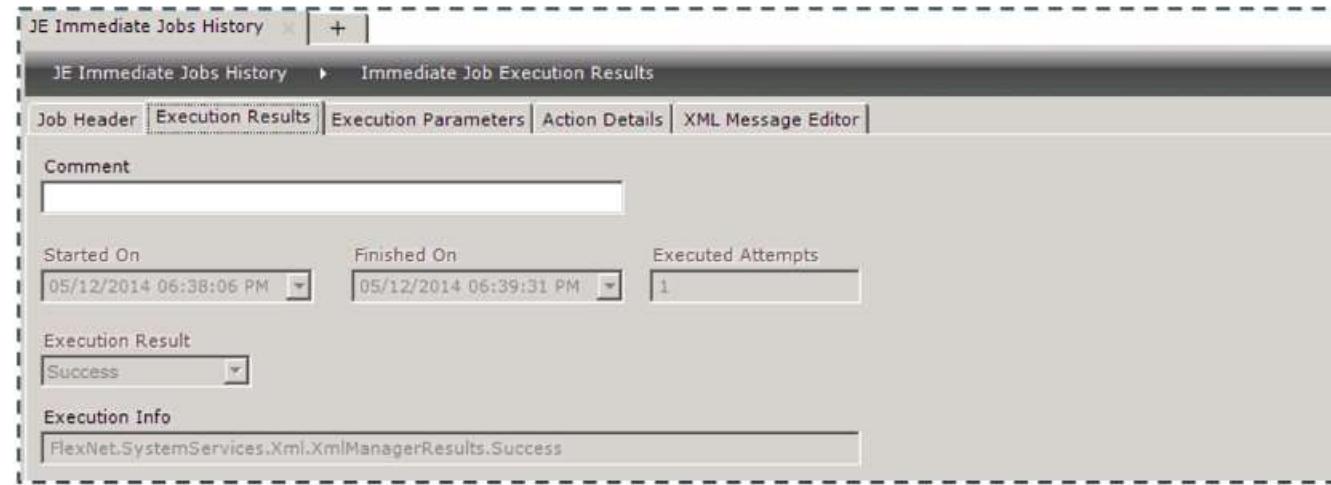
Troubleshooting - Immediate Jobs History M&M Screen, part 1

Troubleshooting - Immediate Jobs History M&M Screen, part 1

Troubleshooting - Immediate Jobs History M&M Screen, part 1

- ▶ Representation of JOB_QUEUE_HISTORY table
- ▶ Offers detailed view into particular job's processing (i.e. xml)
- ▶ Allows filtering
- ▶ Ability to resubmit job

The immediate jobs history M&M screen represents the contents of the Job_Queue_History table. Each entry can be viewed in detail, providing information on the processing results, parameters, and even the actual xml message. This screen also allows filtering data based on certain criteria, sorting, and allows you to resubmit a job.





part 3

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Troubleshooting - Most Common Issues, part 1

Schema/Mapping file not found:

- ▶ Ensure files noted in error messages exist
- ▶ In case of Multi tier environment, ensure the web and application servers are synchronized

The most common issue comes from the system not being able to locate schema files. First, ensure that the file exists, and that it is in the proper location (the path will be noted in the log). Restart the IIS service and retest. Another possibility, in the case of multi-tier environments, may be unsynchronized servers, especially when making small adjustments to certain files. Failure to update the related servers may result in this error as well.



part 4

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Troubleshooting - Most Common Issues, part 2

XML missing elements, attributes:

- ▶ Validate the processed xml against the corresponding schema file
- ▶ Validation can be achieved with 3rd party applications (Notepad++ XML Tools)
- ▶ Use the returned message to look for missing, but required elements (i.e. Version)

Another source of problems come from xmls being unable to validate against the corresponding schema file. If a message is received that is missing elements or attributes, adjust the format of the xml to match the corresponding schema. This may also require adjusting the mapping files. Third party tools, such as Notepad ++ with the XML tools plugin activated can be of great assistance in diagnosing the problems without resending the message to DELMIA Apriso and waiting for processing.



part 3

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Troubleshooting - Most Common Issues, part 3

Concurrency:

- ▶ Concurrency mechanism is implemented to detect multiple threads updating the same record at the same time
- ▶ Ways to avoid it
 - Process your xmls in the synchronization queue if you suspect parallel processing
 - Increase the amount of retries of failed jobs due to concurrency violation

Concurrency violation is also a fairly common problem when processing inbound messages. DELMIA Apriso prevents multiple threads from updating the same record at the same time. This mechanism ensures that updates are made in the context of the data selected and not changed by other activities.

If there is a suspicion that multiple inbound messages are attempting to change the same records at the same time, you can introduce a synchronization queue so that the messages are processed sequentially. Another source of concurrency may be an M&M screen showing the same data, so an increase of failed job retry setting will bring immediate results.



part 4

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Troubleshooting - Most Common Issues, part 4

Timeout:

- ▶ Processing took abnormal amount of time
- ▶ Performance log review may reveal the root cause
- ▶ Immediate relief may come from extending timeout:
 - Interpreter
 - Job
 - Command

Timeout can sometimes be a problem when processing messages, and it is designated as an abnormality. Before extending the message timeout settings, whether through the interpreter, job, or command, it is best to investigate why the message took so long to process in the first place. Performance logging may reveal why, and may find potential bottlenecks like poorly written sql queries.



part 4

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Troubleshooting - Most Common Issues, part 4

Timeout:

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4 Trouble Shooting Videos