TEMENOS
The Banking Software Company

T24 Inbound Adapter for IBM Integration Bus

T24 Inbound Adapter for IBM Integration Bus

Table of Contents

T24 Inbound Adapter for IBM Integration Bus

Introduction

Preface

This document is intended to those who need to set up IBM Integration Bus in integrating T24 with external system and to emit messages from T24 to an external system.

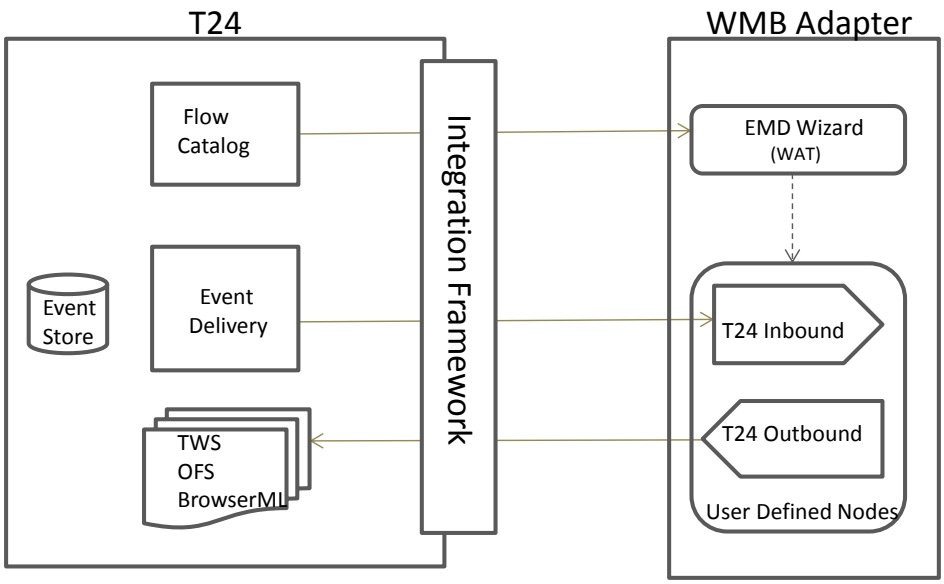
Overview

IBM® Integration Bus is an enterprise service bus (ESB) providing connectivity and universal data transformation for service-oriented architecture (SOA) and non-SOA environments. Now businesses of any size can eliminate point-to-point connections and batch processing regardless of platform, protocol or data format.

To integrate T24 with 3rd party system, T24 Integration Framework provides a flow catalog component along with event delivery component and TWS & OFS components which enables inbound and outbound integration.

This IBM Integration Bus thus provides an opportunity to integrate T24 with 3rd party systems. For this integration an Adapter is required. This document deals about the Inbound adapter that facilitates the communication from T24 to IBM Integration Bus.

The following diagram explains the various components of the T24 Adapter for IBM Integration Bus and T24 Integration Framework.



Prerequisites

Component	Version
T24	R14 with IF Product
IBM Integration Bus (IIB)	9.0
TAFC / TAFJ	R14
T24WMBConnector.rar	V1.0
com.temenos.adapter.wmb.udn_<Version>.jar	V1.0
T24WMBCustomNode.par	V1.0
JDK	1.6
jBoss (For TAFJ)	7.2

Note: Please refer the Appendix 'Setting up T24 and jboss for TAFJ' if the runtime is TAFJ.

Assumptions

The document is highly technical in nature and requires knowledge in T24 Integration Framework and IBM products namely IIB 9.0 (IBM Integration Bus) and MQ. MQ Queues are used for demo purpose

Installation

1. Ensure the T24WMBConnector.rar is copied to a location that can be accessible. This is the artefact that allows the IIB Designer to introspect T24.
2. Copy and paste T24 Custom Node (com.temenos.adapter.wmb.udn_<Version>.jar) into the plugins folder of the Integration Toolkit Designer. This is the plugin used during the design time of the flow.
3. Add the T24WMBCustomNode.par into the library path of IIB using the command mqsichangebroker. This is a runtime artefact that allows the IIB flow to connect to T24 and poll for events

   Syntax:

   Mqsichangebroker BrokerName –l <location of the library file>

   Ex.

   Mqsichangebroker T24_Integ_Node –l "D:\WMBLibrary"

Getting Started

Configuring IBM WMB to receive messages from T24 is a 3 step process:

1. Performing Metadata Discovery.
2. Creating Message Flow
3. Deploying it in a Message Broker.

This document explains the 3 steps in detail.

Before setting up T24 Inbound Adapter for IBM Integration Bus to receive messages from T24, ensure that

1. The TAFC Agent is started or the Application server, where the web service to connect to T24 resides, is started.
2. An OFS record in OFS.SOURCE table in T24 is available with attribute field set to PREAUTHENTICATED.
3. A queue manager is created in IBM MQ with the required queues.
4. A Broker which is a set of execution processes that hosts one or more message flows to route, transform, and enrich in messages, is created.

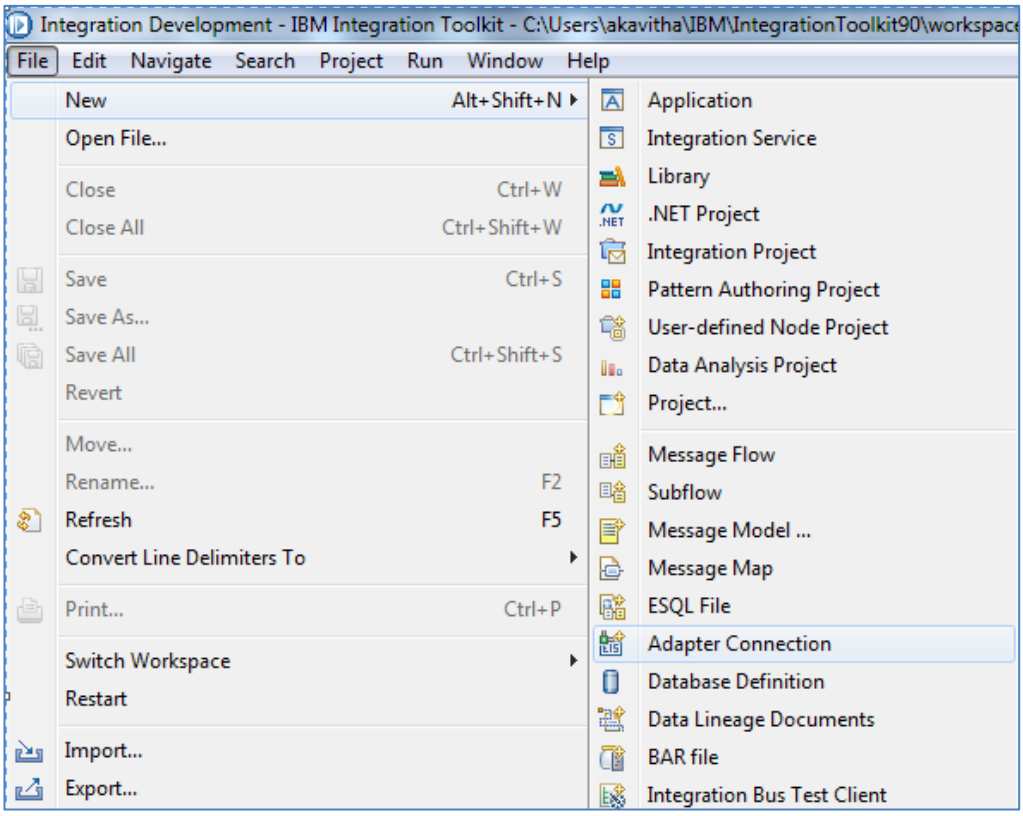
Performing Metadata Discovery

WMB provides Adapter Connection wizard, a tool that is used to create services. The Adapter Connection wizard establishes a connection to the server, discovers services (based on search criteria that is provided), and generates business objects, interfaces, and import or export files, based on the services that are discovered.

The T24WMBConnector.rar is the metadata discovery adapter that is used in the Adapter Connection Wizard to connect to T24 and get the metadata. The metadata discovery wizard has the introspection capabilities for T24 integration framework flow catalogue for business events.

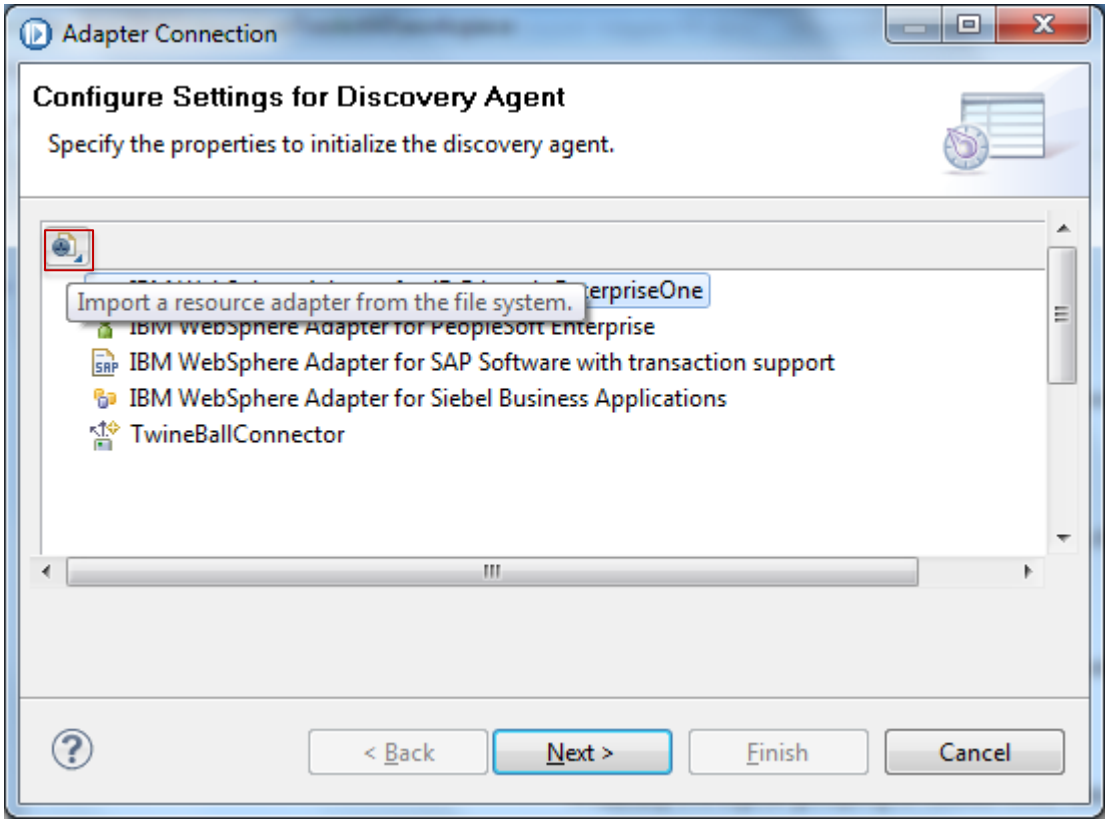
To perform Metadata discovery:

1. Launch IBM Integration BusToolkit.
2. Create a new Adapter Connector Project (File → New → Adapter Connector)

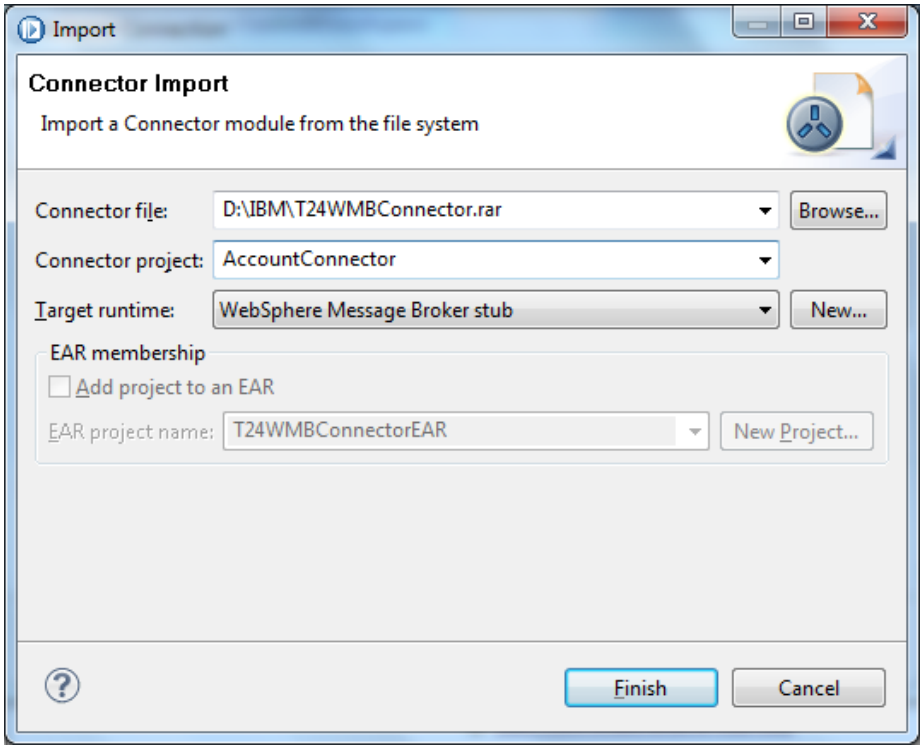


The user is taken to the “Configure Settings for Discovery Agent” dialog box.

3. Click on the highlighted section to add the T24WMBConnector.rar

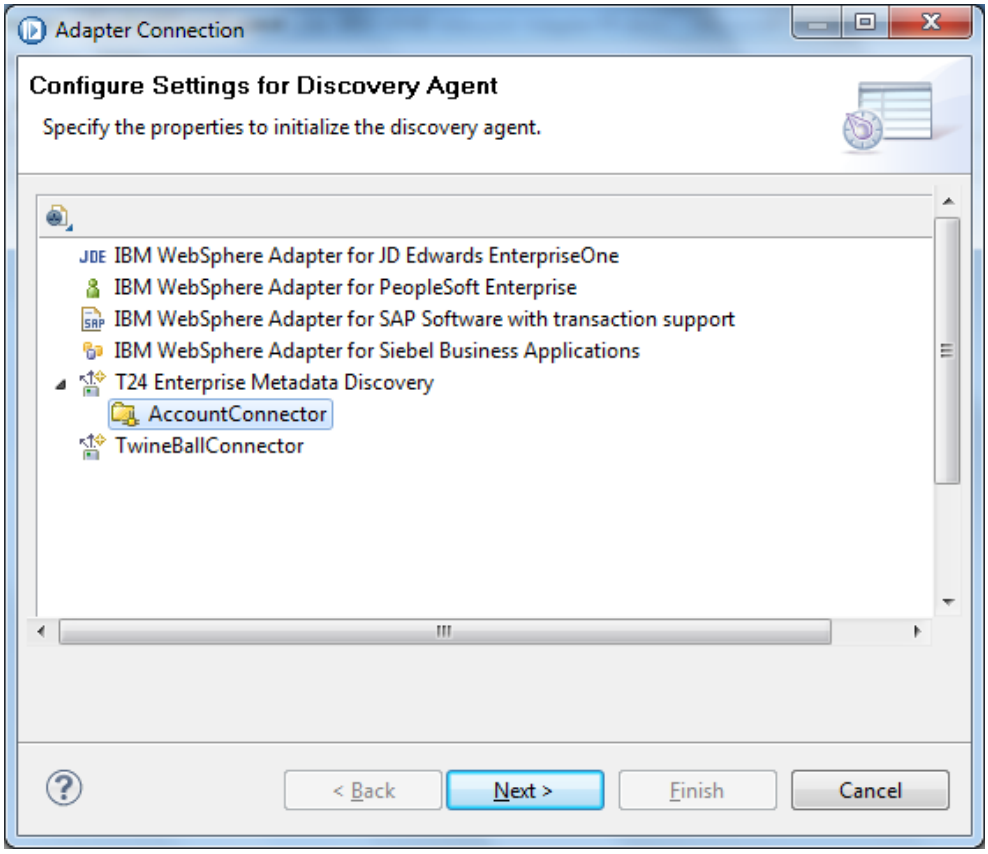


Search and select the Connector Module (here it is T24WMBConnector.rar). Once the Connector module is located, specify the name for the Connector Module (the name using which the connector is identified later)



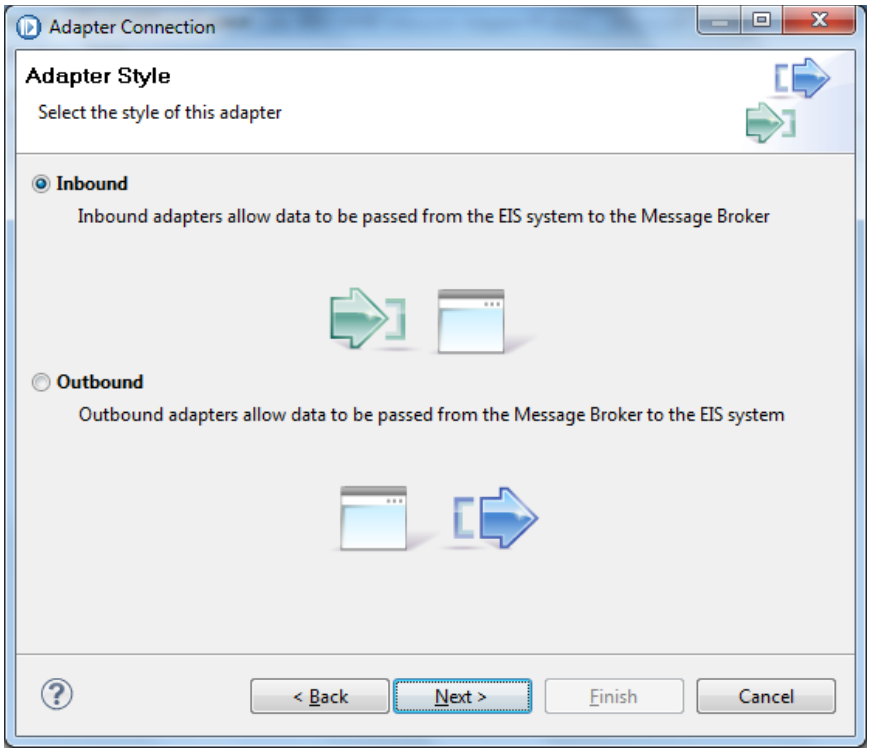
4. Click Finish.

Now the connector module gets displayed in the list of connectors

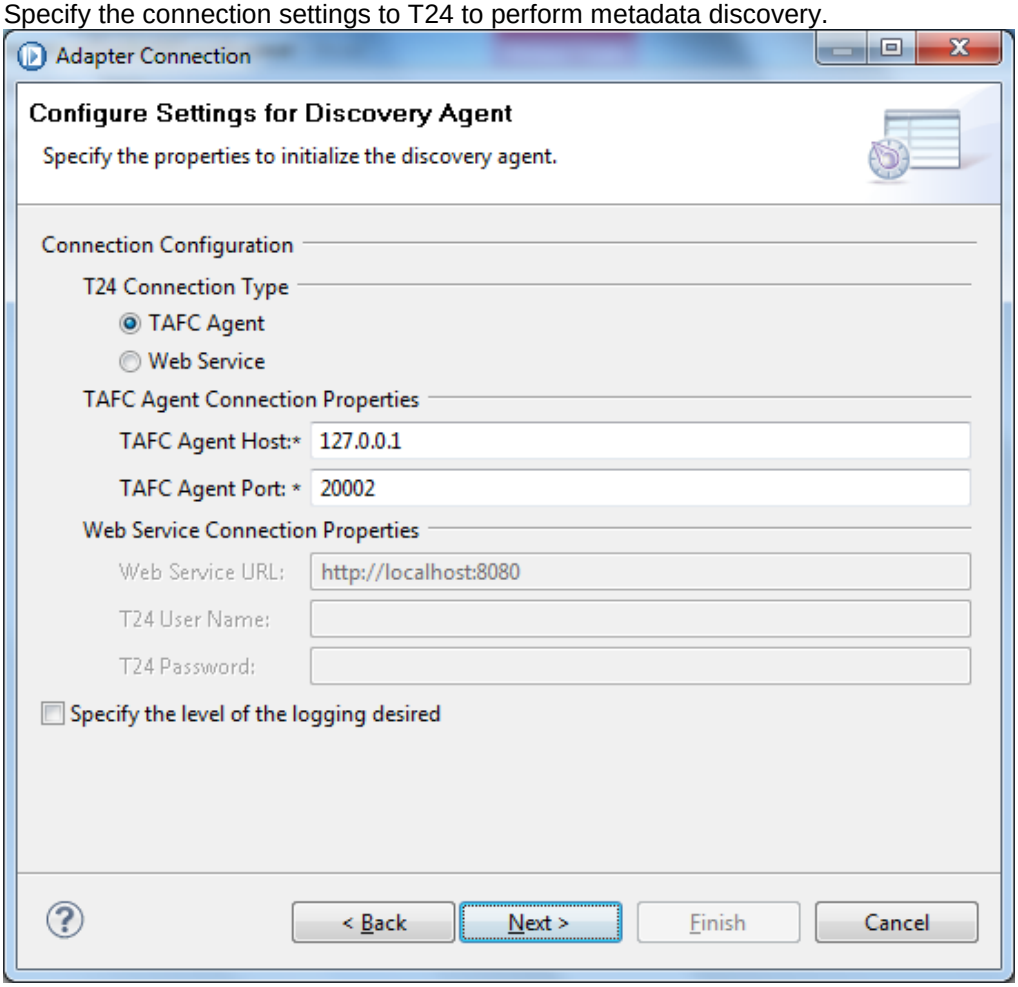


Select the connector module and continue with the Wizard for metadata discovery.

5. The next step is to select the style of the Adapter. In the context of this document “Inbound” needs to be selected.



6. Specify the connection settings to T24 to perform metadata discovery.



There are two types of connection is supported, classic Agent based connectivity and the Web Service based connectivity.

As the connection mechanism is specified as TAFC agent, the user has to provide the Host and Port number of the TAFC Agent.

The logging configuration mentioned here is the design time logging and currently this feature is diabled.

To use the web service based connectivity option the following components has to be packed as a web archive and then to be deployed in an application server like jBoss.

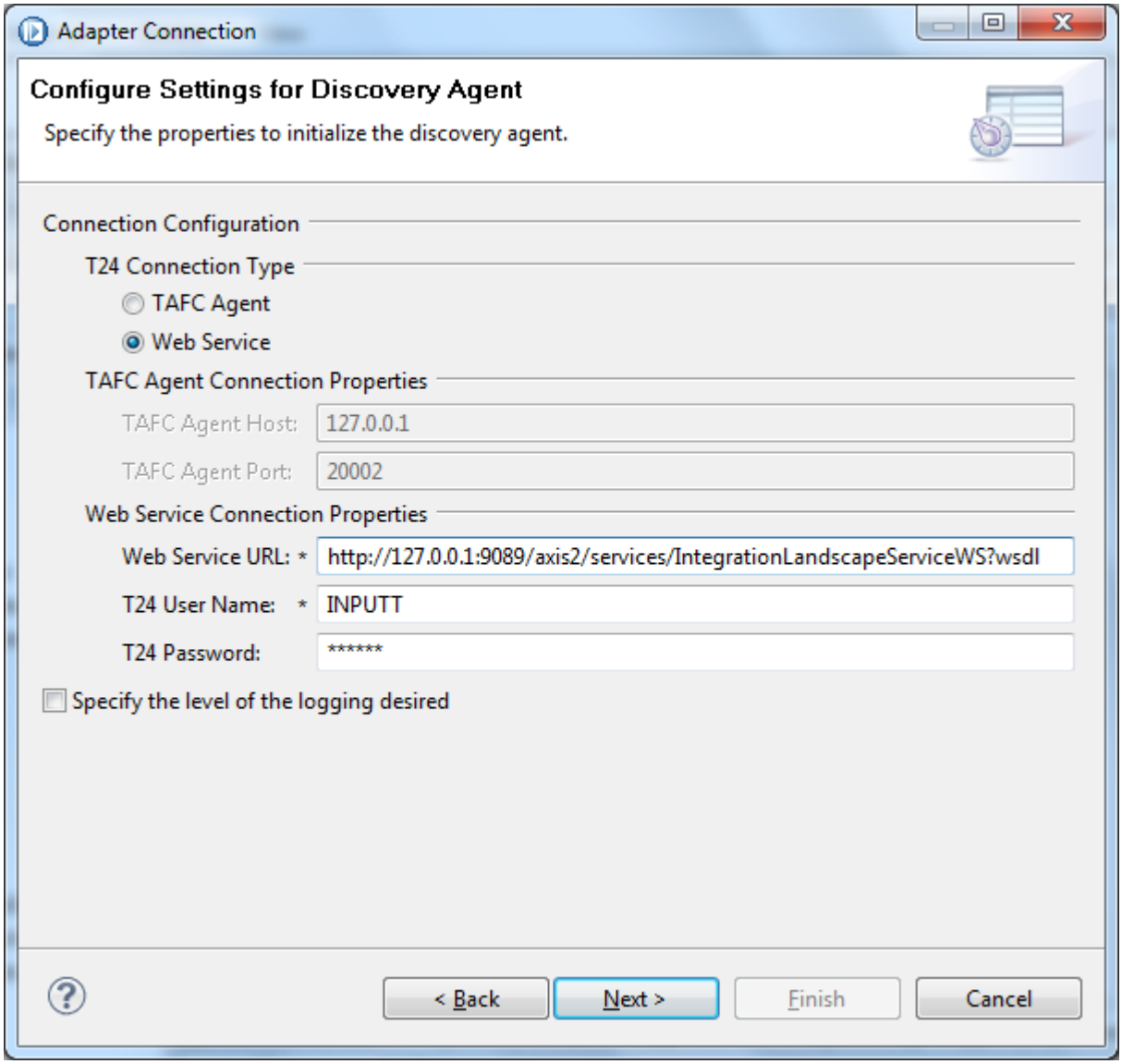
- IntegrationLandscapeService
- IntegrationFlowService
- CatalogService

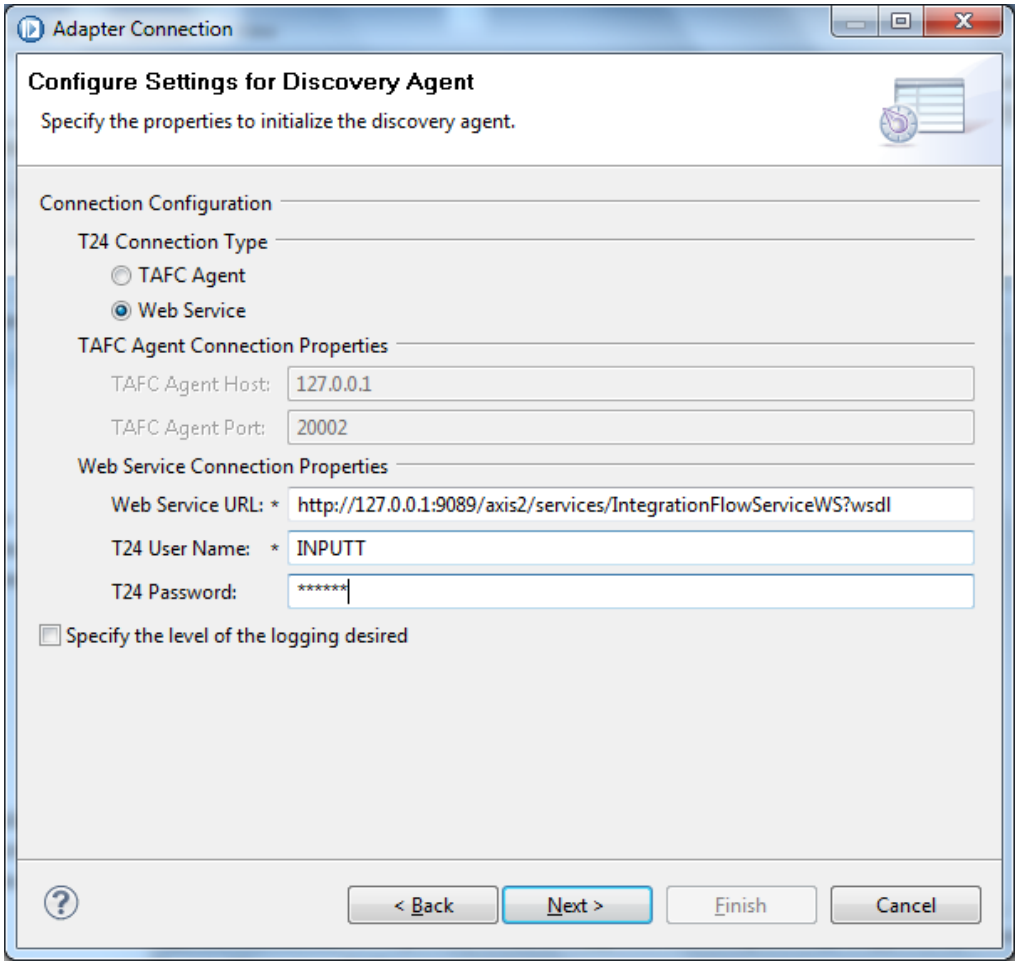
The URL of the deployed service has to be provided along with the user credentials to connect to T24.

The IF Service URL will be in this form:

http://<Host Name>:<Port Number>/<context Name>/
services/IntegrationLandscapeServiceWS?wsdl?wsdl

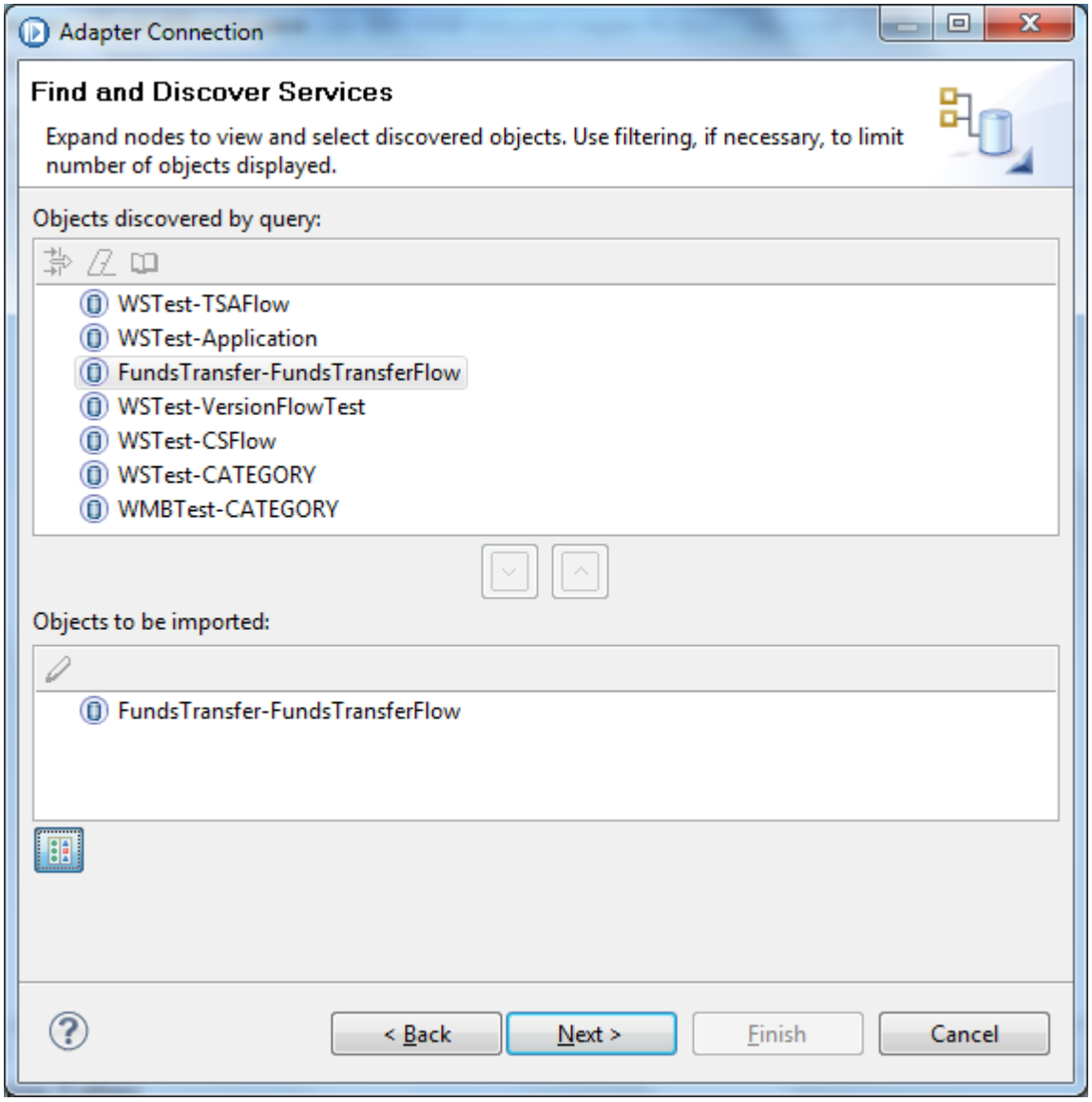
For ex.:



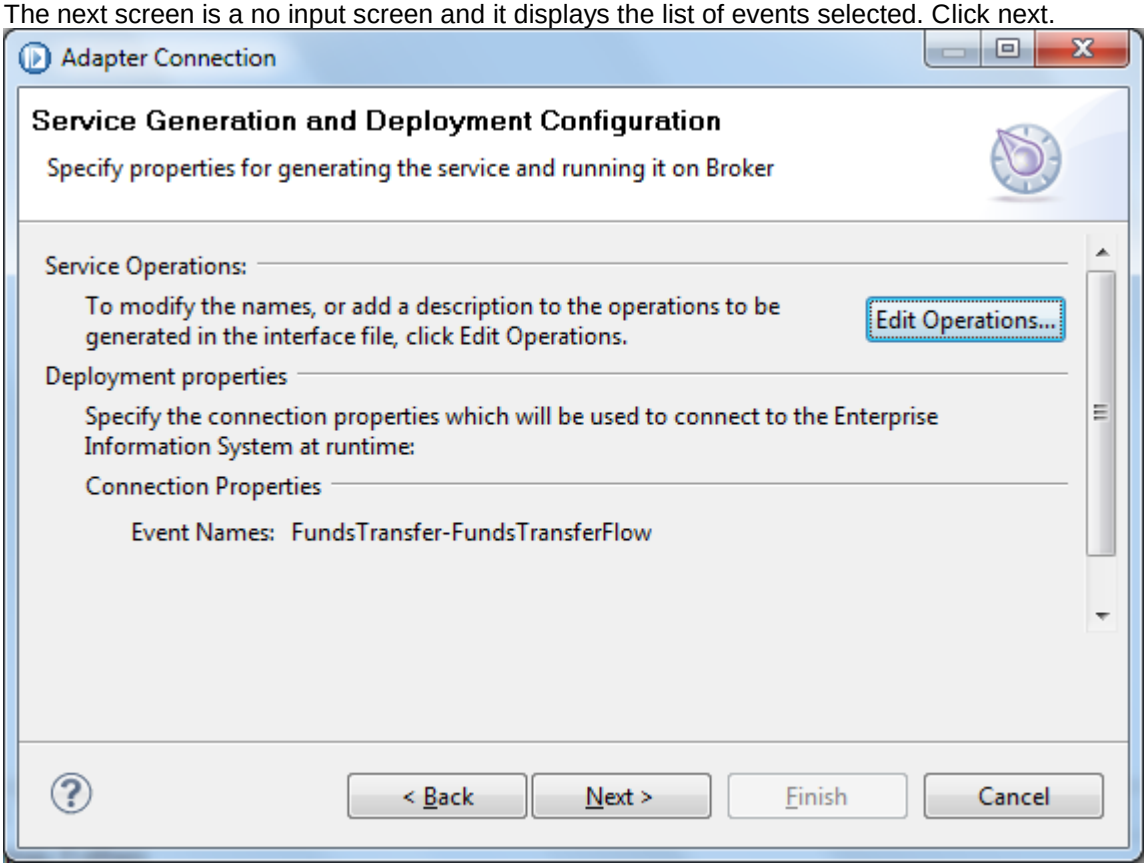


Note: Refer the Deploying Component Service User Guide to know how to deploy a component in a J2EE application server.

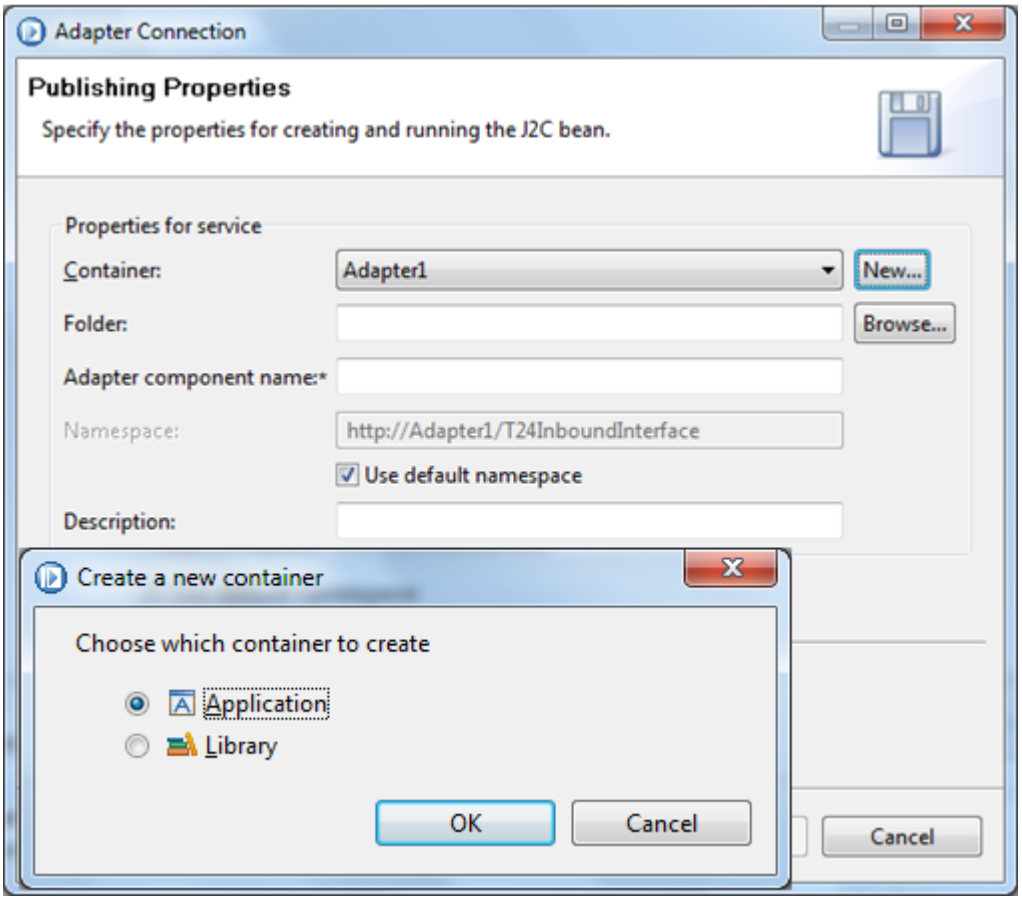
7. On proceeding to the next screen, the list of events available in T24 gets listed. Select the required list of events and click next.



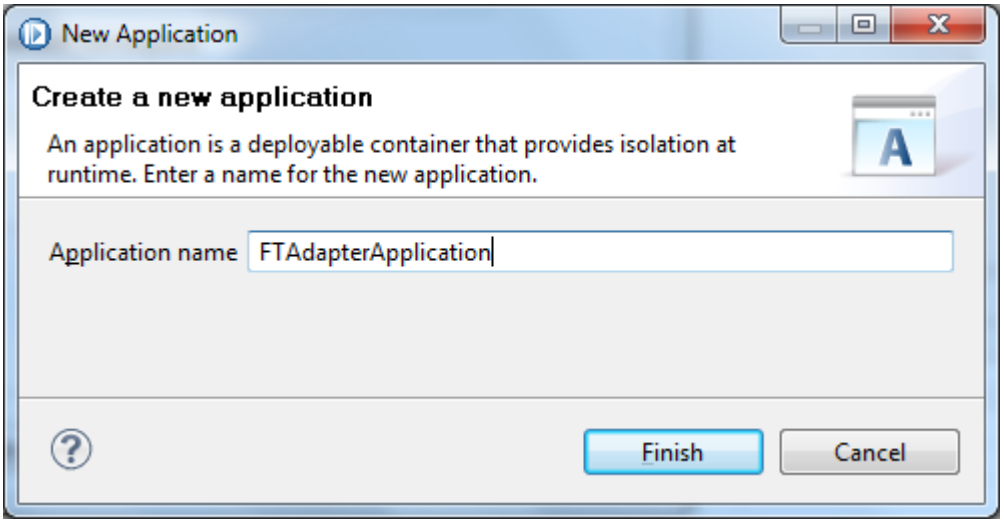
8. The next screen is a no input screen and it displays the list of events selected. Click next.



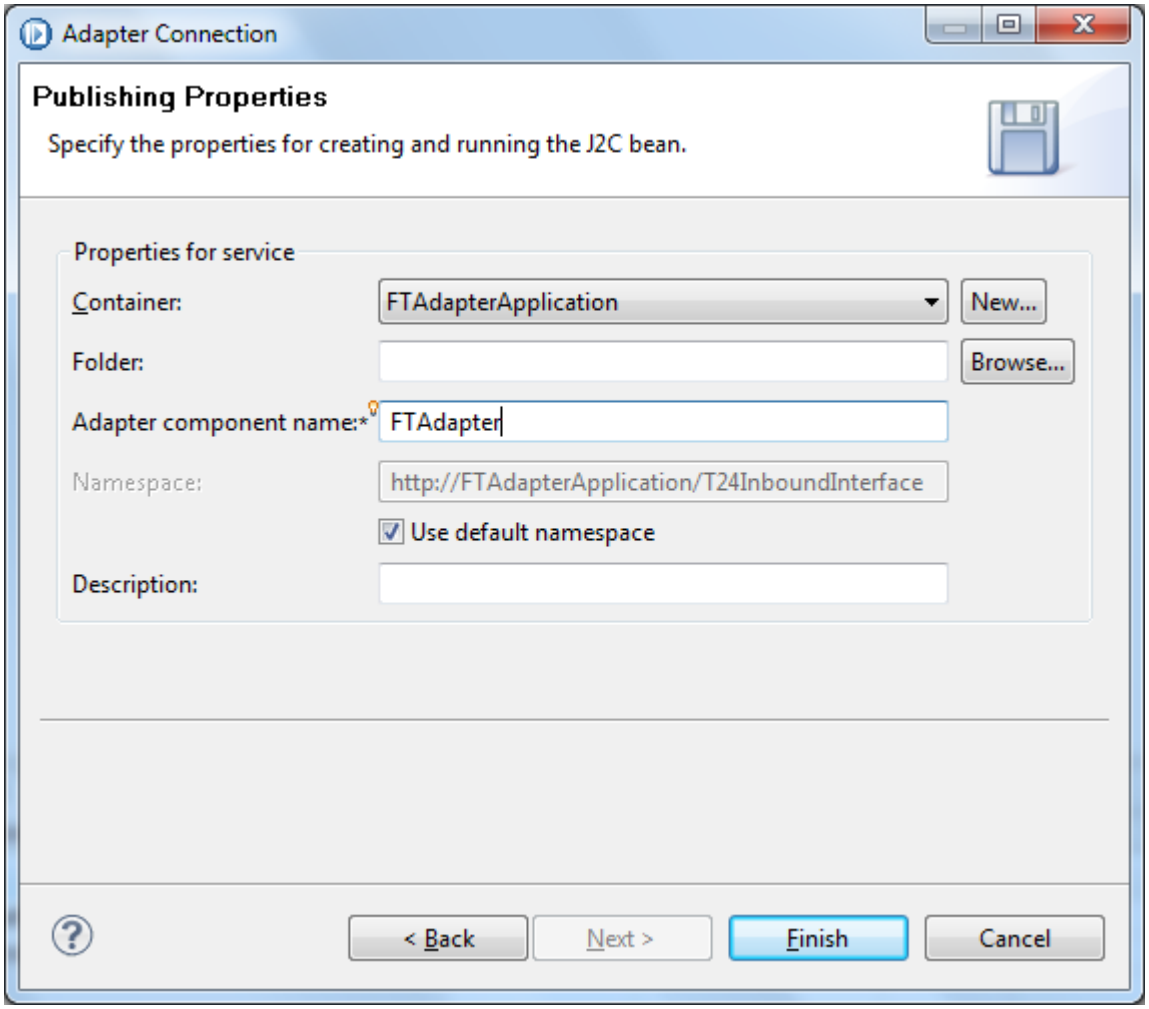
Now the wizard moves to the next step to configure the publishing properties. Here the user has to specify the container for the adapter connection properties. The container could be an Application or a library based on the requirement whether to reuse the adapter connection or not. To create a new container click on New and select the type of container.



1. Enter the Project Name in the dialog box that opens and click finish.



2. Then in the publishing properties dialog, specify a name for the Adapter and click finish.



Note: Ensure that the folder name is left blank.

Creating Message Flow

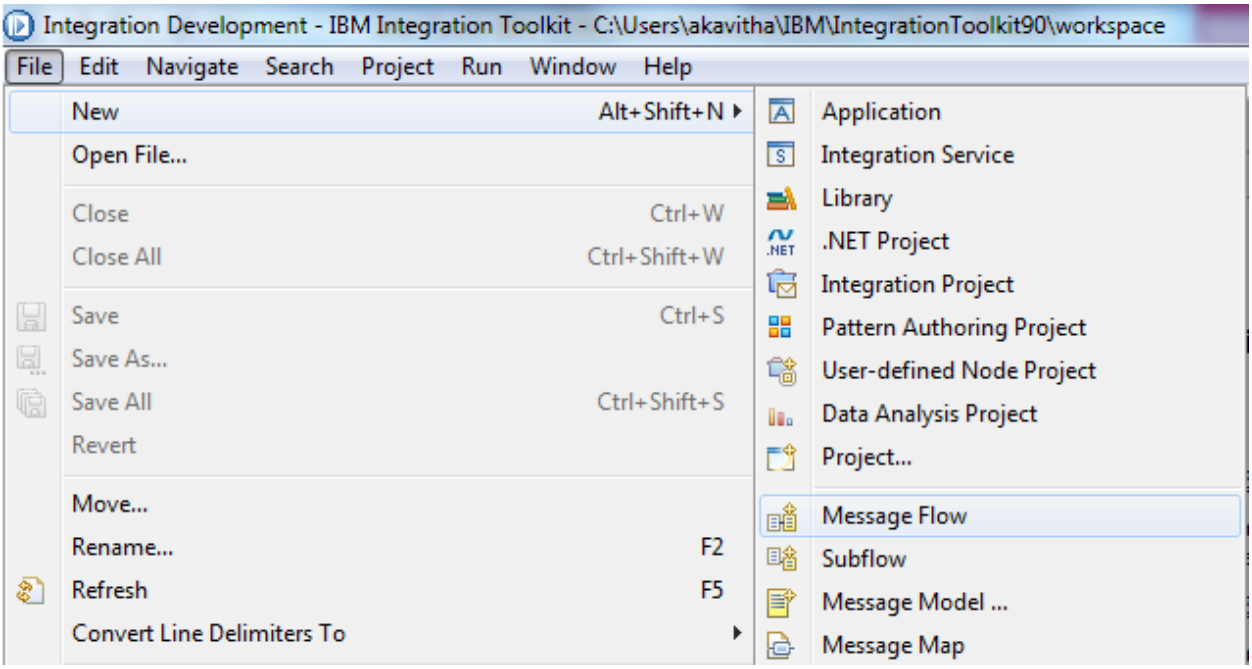
Now the metadata discovery is completed and now the flow has to be designed. This flow is the component that gets deployed to MQ.

Using the Message Brokers Toolkit (for WebSphere Business Integration Message Broker), the user can build message flows from message-processing primitives to allow processing decisions to be made on either the message header or the message content. That is, the message flow can specify different processing steps for each type of message it is expected to handle.

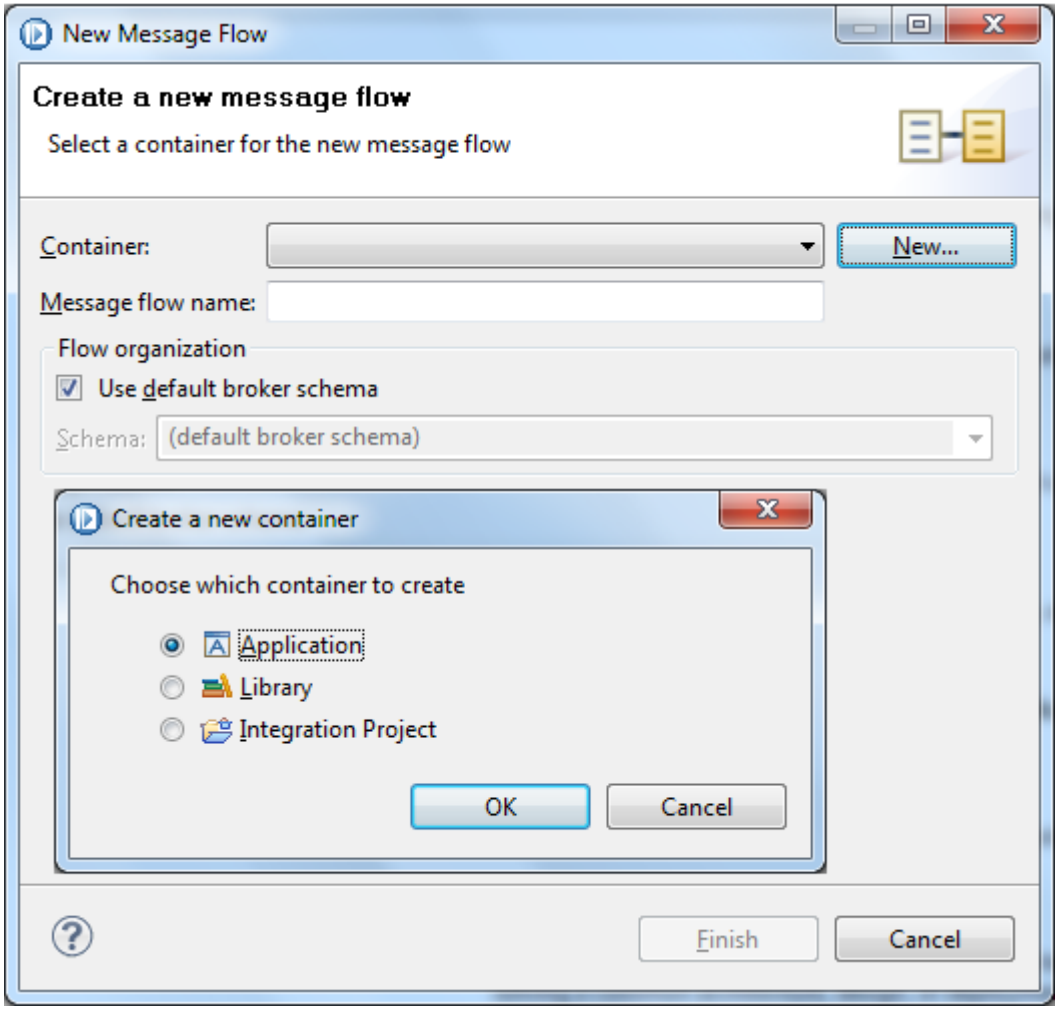
Here the process of creating Message flows is explained.

To define a message flow

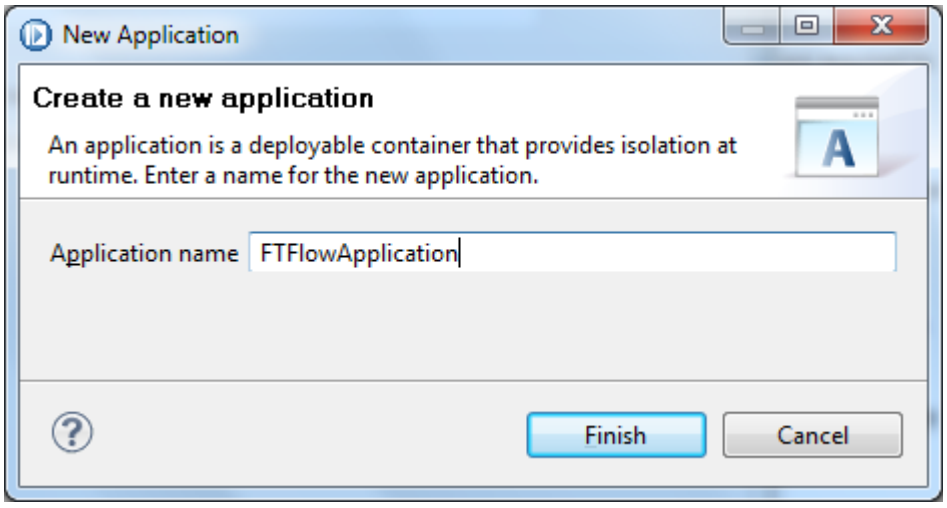
1. Change the perspective to “Integration Development” perspective and create a new Message Flow.



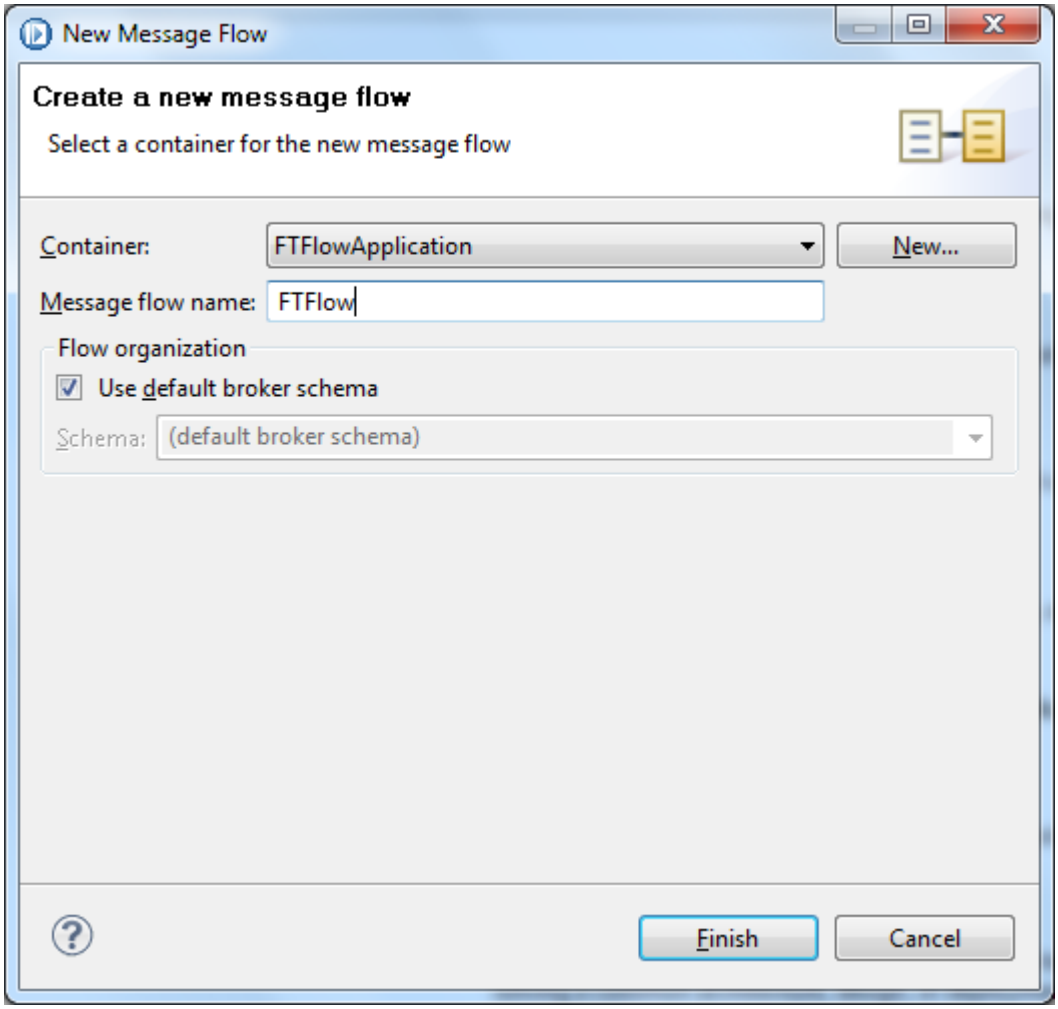
2. This opens the New Message Flow Dialog Window. To add the flow to a new container, click new. The message flow has to be added to an application or to a library. Here application is used as a container for the flow.



3. Specify a name for the new application and click finish.



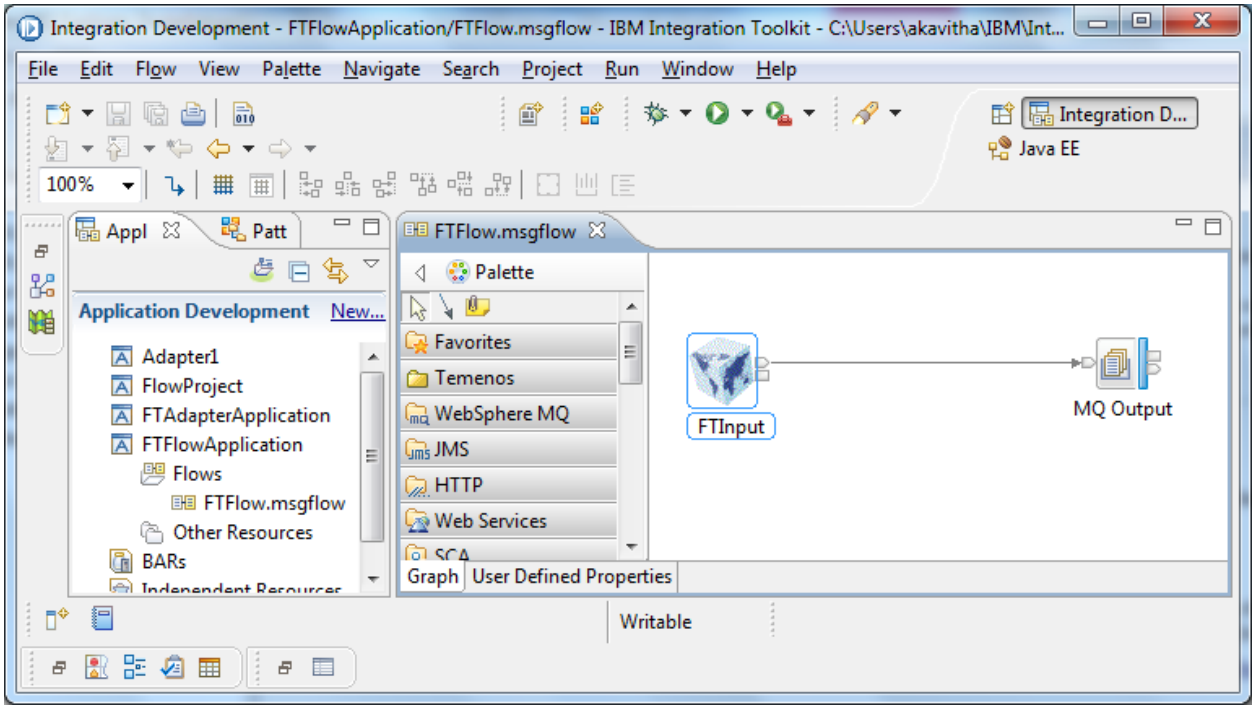
4. Specify a name to the flow



5. Click Finish.

Once the flow is created, the flow designer is available to the user to design the flow of the message and to apply any transformations.

6. To design the flow frag and drop the T24 Inbound Adapter Node from the service palatte. As the message destination is MQ, add the MQ Output Node to the designer. This allows the message from T24 is directly delivered to a MQ Queue.

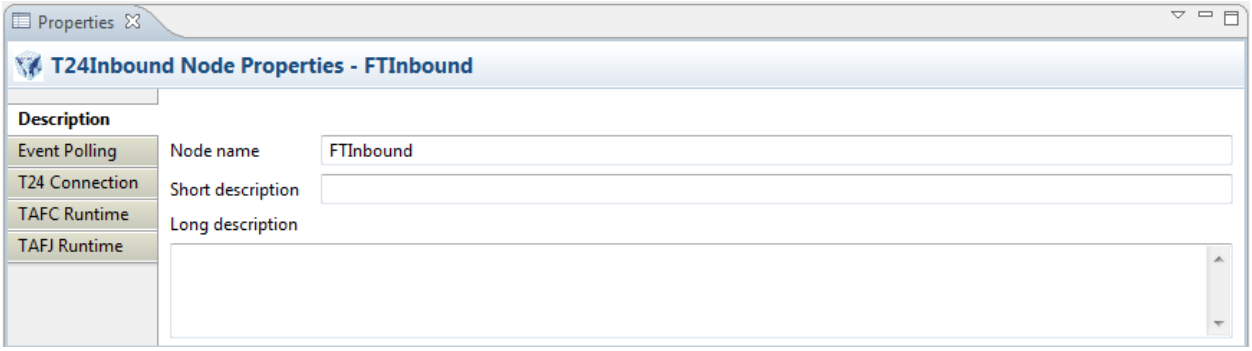


T24 Inbound Node Configuration:

The T24 Inbound node has a set of properties to be configured. The property page can be accessed by double clicking the Node.

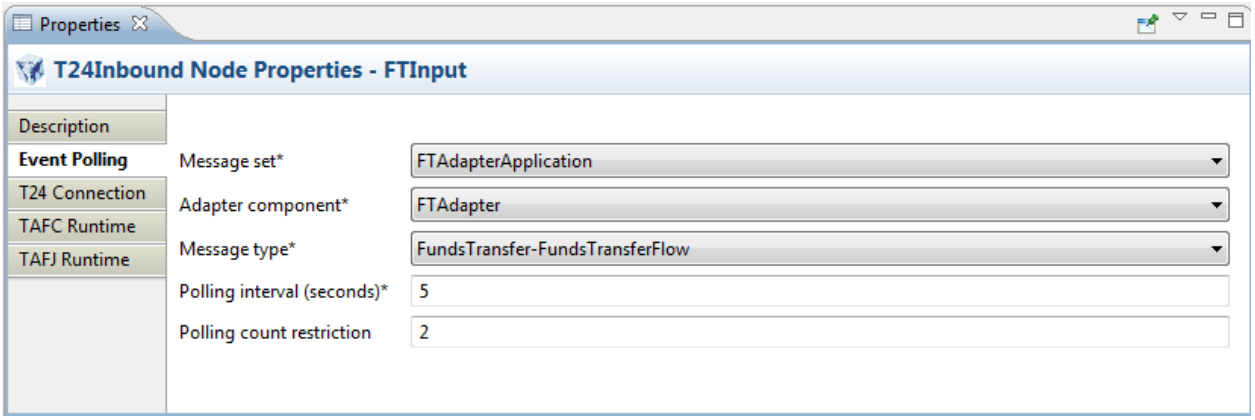
Description:

The description tab of the property page is used to specify the name of the node and an optional description.



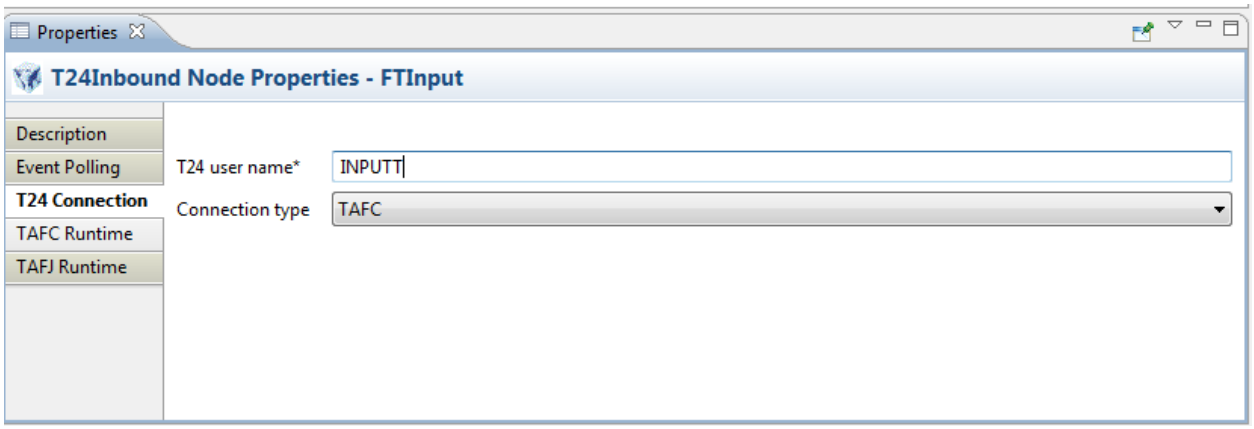
Event Polling

The Event polling tab is used to specify the event name for which this node has to poll for, the polling interval and the maximum events to be polled at a given point in time.



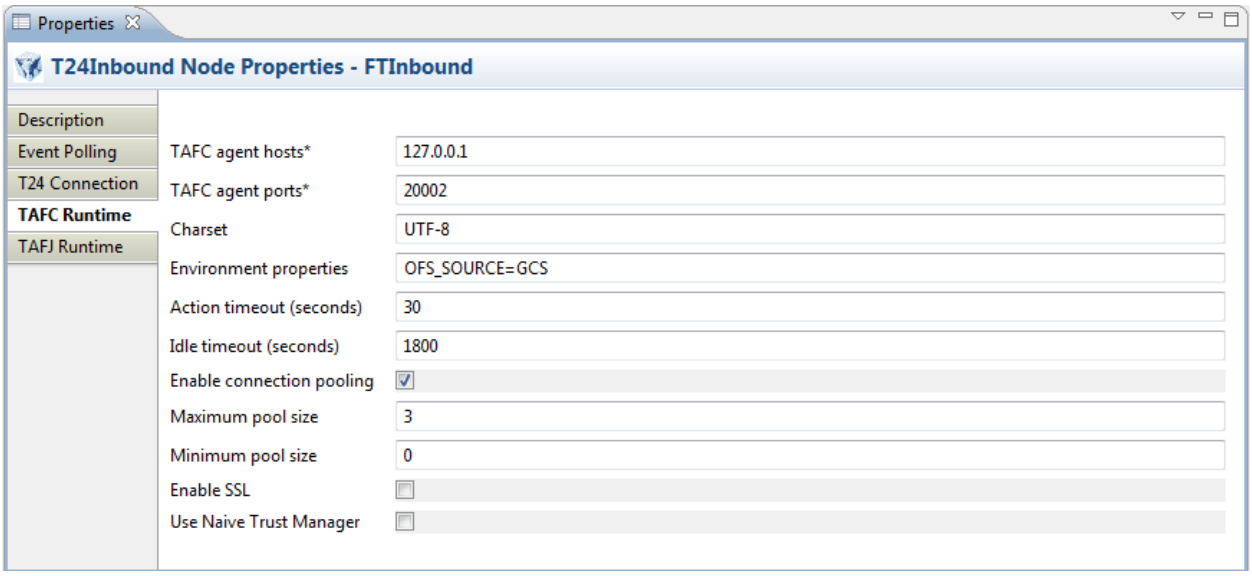
T24 Connection:

The T24 Connection tab allows the user to input the T24 user name that is to be used at runtime. This requires an OFS.SOURCE record with PREAUTHENTICATED attribute set. The user name validation is done at T24 and hence this field accepts any valid string. The connection type can be set as TAFC or TAFJ based on the runtime specified.



TAFC Runtime:

The TAFC Runtime tab allows the user to specify the settings that is used at runtime when TAFC is mentioned as the connection type in the T24 Connection Tab.



TAFC Agent Hosts: Comma separated list of server addresses hosting TAFC Agent e.g. 10.44.1.100, 10.44.1.101

TAFC Agent Ports: This property specifies TCP Port number where TAFC Agent is listening. e.g. 20002, 20003

Charset: This property specifies the character set of the remote EIS on which TAFC Agent is running. T24RA will use this value when encoding and decoding character data between the server and the client. This setting should only be used when connecting to non I18N T24 configurations. It is set to UTF-8 by default.

Environment Properties: This property specifies OFS Source record ID to communicate with T24.

ActionTimeout: This property configures the length of time the TAFC Agent will wait for a request to return a result before forcibly stopping the subroutine call and exiting. This setting is very important to avoid T24 deadlocks as all T24 locks will be released when the action is stopped, thus allowing processing in other connections to continue.

IdleTimeout: This is the maximum time out period, till when the connection can be idle in the pool before being removed to free resources.

Enable Connection Pooling: This property specifies whether the connection to T24 is pooled or not. Values are true or false.

Maximum Pool Size: This specifies the maximum number of connections that can be available in pool.

Minimum Pool Size: This specifies the minimum number of connections to be used.

Enable SSL: This is set to true to enable secure connection This option should only be enabled when the remote TAFC Agent instance is also configured to use SSL encryption.

Use Naïve Trust Manager: This property is set to true when enabling secure connections via SSL

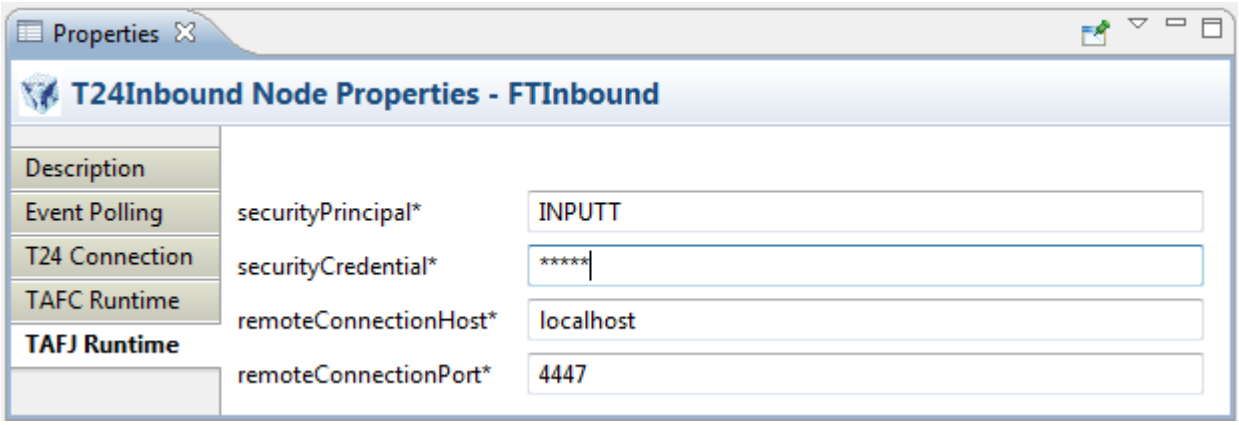
TAFJ Runtime:

The TAFJ Runtime tab allows the user to specify the settings that is used at runtime when TAFJ is mentioned as the connection type in the T24 Connection Tab.

1. **SecurityPrincipal and SecutityCredential**: These properties is used to authenticate the runtime connection with JBoss and for JBoss to pass on the principal to T24.
2. **Remote Connection Host**: The name or IP Address of the machine where jBoss is running.

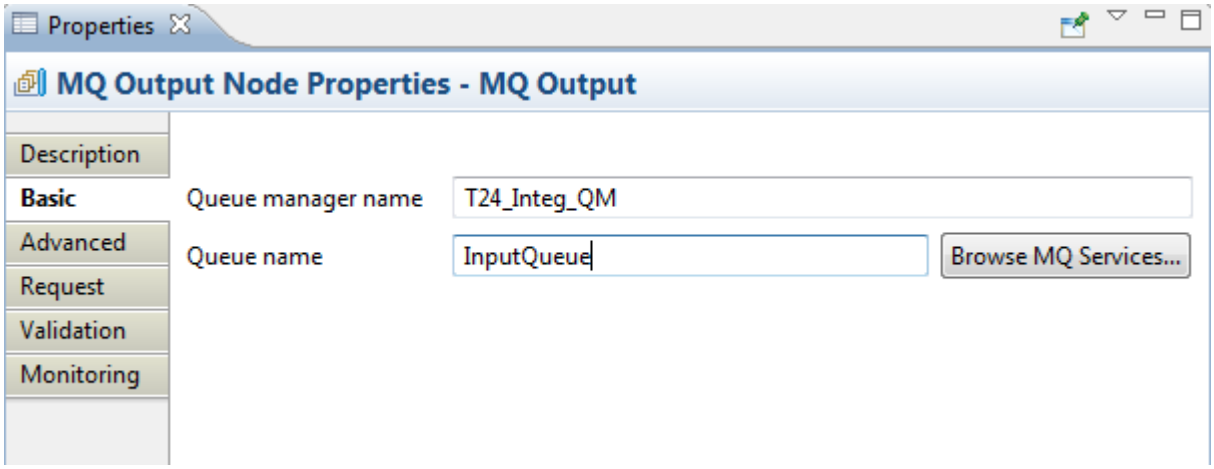
3. **Remote Connection Port**: This is the port number used for remote ejb lookup.

   Remote connection Host and Port resolve the ejb lookup for t24-IntegrationFrameworkService-ejb.jar deployed in the jboss
   Note: Please refer the Appendix 'Setting up T24 and jboss for TAFJ' if the runtime is TAFJ.



MQ Output Node Configuration:

The MQ Output Node has to be configured to specify the MQ Queue Manager name and the Queue Name to which the event will be delivered.



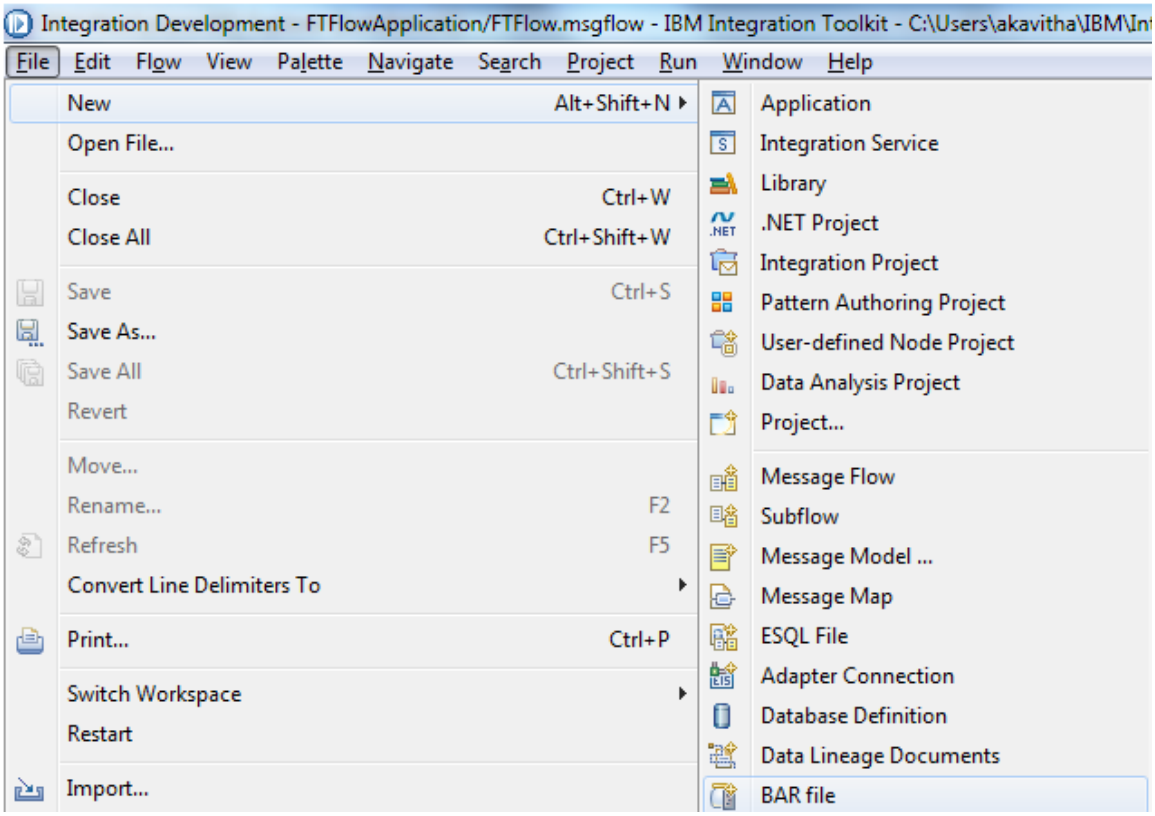
Note: The user has an option to transform the the XML message from T24 to another form of XML message. XSLTransform node under the Transformation option of Service Pallette can be used to perform transformation. Refer IBM Help under the link http://publib.boulder.ibm.com/infocenter/wmbhelp/v7r0m0/topic/com.ibm.etools.mft.doc/ac12490_.htm for more information.

Deploying the Message Flow to a Message broker

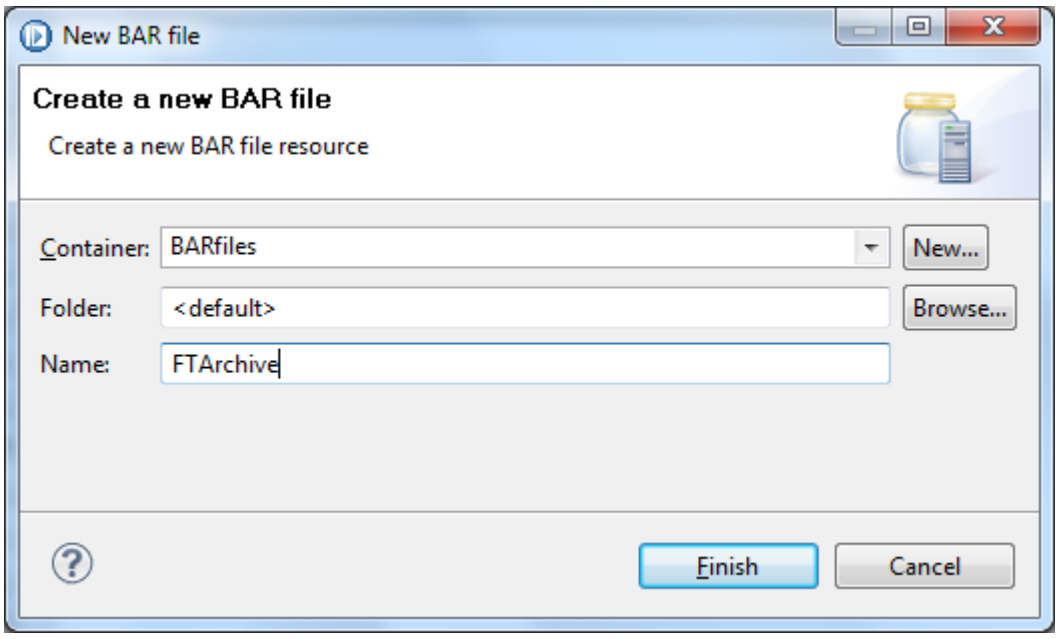
When a WebSphere Business Integration adapter uses a message broker as its integration broker, it uses WebSphere MQ message flows to process and route business object messages representing data or requests being sent by business applications to one another. A single message flow, defined for each queue, processes all messages placed on that queue.

Here the process of deploying Message flows in a Message Broker is explained.

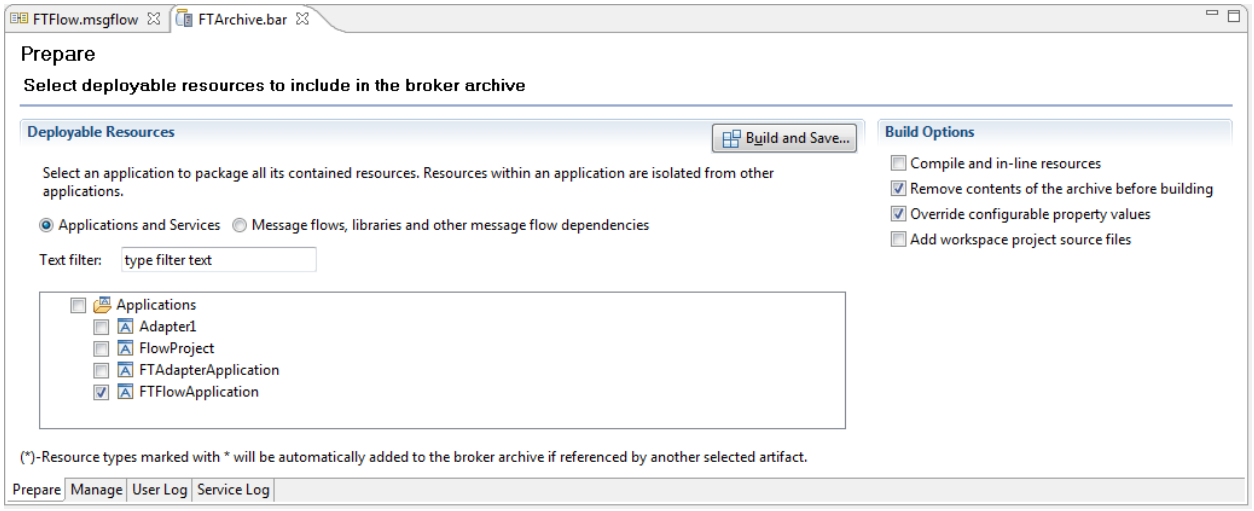
1. Once the flow is configured, the user has to create the Message Broker Archive. To do so, use the menu option File → New → BAR File.



2. The Message Broker Archive project is usually added to a container. Here the container BARfiles is used.

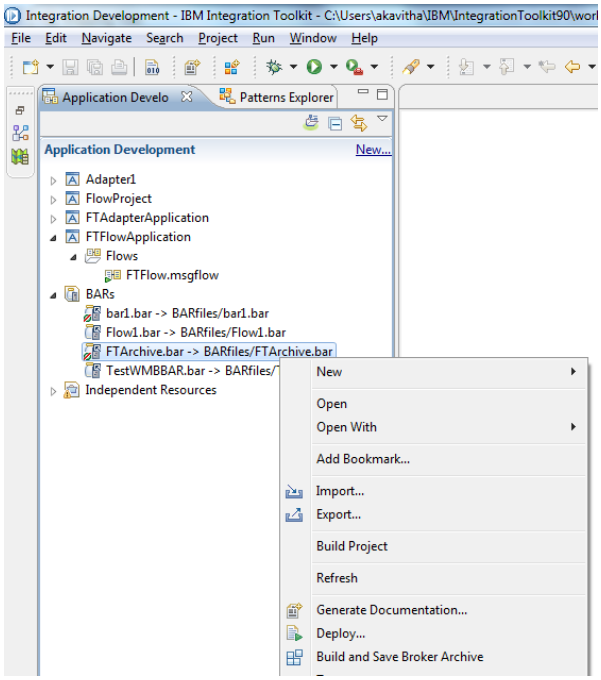


3. The user is now taken to the prepare screen of the Message Broker Archive inorder to select the Message Flow that are to be added to archive.

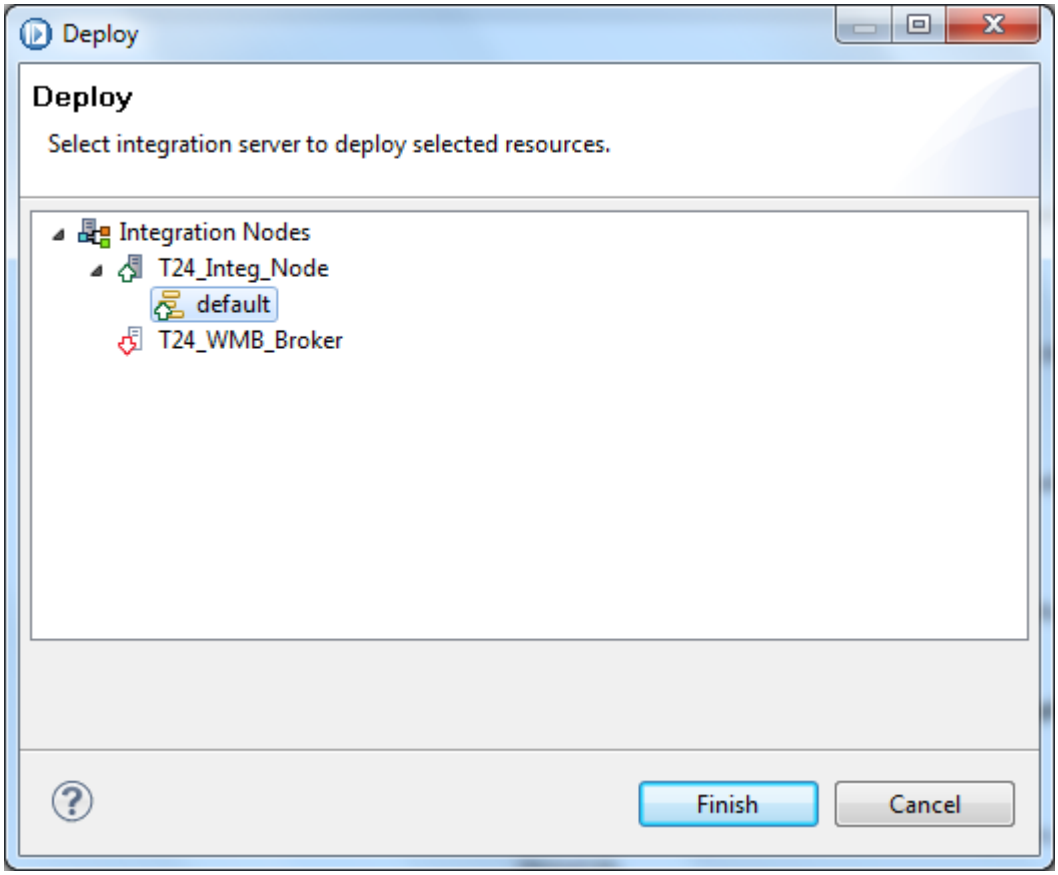


Once the required contents are selected, the broker archive has to be built using the “Build and Save” option.

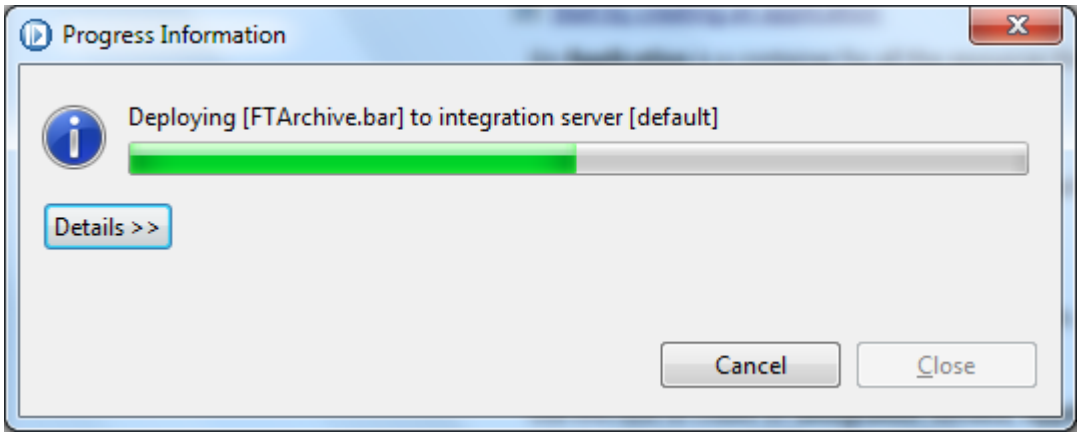
4. The built Broker Archive now is ready to be deployed into a Broker. The deployment process is very simple. Right click the broker archive file and select deploy.



5. Then select the Broker under which the broker archive has to be deployed.



6. Click finish. This starts the deploy process. Once the deployment is completed successful the progress information dialog box gets closed.

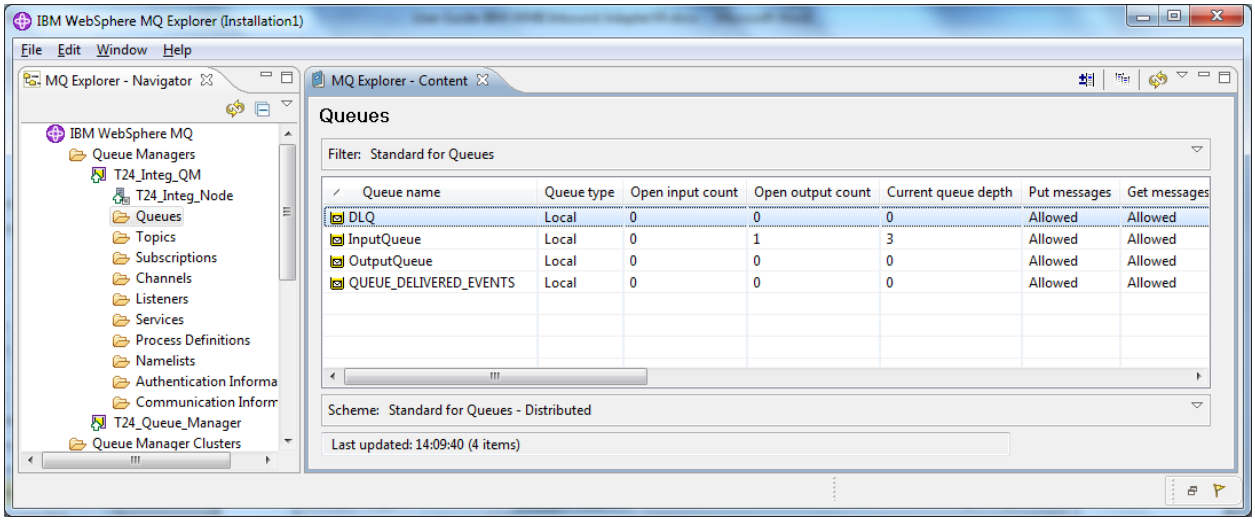


Now the broker archive is deployed under the selected broker and ready to poll T24 for Inbound Messages

Verifying Message Delivery (Optional)

After the Message Broker Archive is deployed to the Broker, event polling happens. The polled events are kept in the queue mentioned in the MQ Output Node.

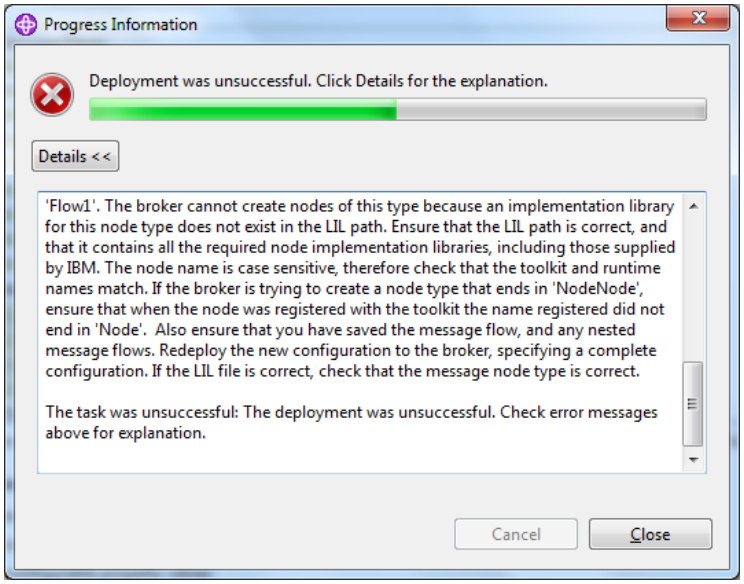
Here you can see the queue that is used in the MQ Output Node configuration holds the “Current queue depth” as 3. This count indicates that 3 events of the event type selected during flow creation are polled from T24 and it is ready to be consumed by the 3rd party system.



Note: The successful event delivery requires the queue “QUEUE_DELIVERED_EVENTS” to be available in the queue system that is used for queue delivery (here MQ)

Troubleshooting

Problem: Error shown below while deploying:



Solution: Clean and rebuild the project

Glossary

Appendix

Starting TAFC Agent:

The TAFC Agent has to be started for establishing the connectivity to TEMENOS T24 using TAFC as runtime. SSL certificates can also be used while starting the TAFC Agent. TAFC Agent may be started from the command line/shell via the following executable:

tafc_agent -p [PORT NUMBER]

Example:

tafc_agent -p 33333

(or)

tafc_agent -p [PORT NUMBER] -c [CERTIFICATE PATH] -k [KEY PATH]

Example:

tafc_agent -p 33333 -c c:\openssl\bin\keys\cert.cer -k c:\openssl\bin\keys\key.pem

References

Creating a queue manager in IBM MQ:
http://publib.boulder.ibm.com/infocenter/wmqv6/v6r0/index.jsp?topic=%2Fcom.ibm.mq.amqzag.doc%2Ffa14220_.htm

Creating a queue in IBM MQ:

http://publib.boulder.ibm.com/infocenter/wmqv7/v7r0/index.jsp?topic=%2Fcom.ibm.mq.explorer.tutorials.doc%2Fbi00257_.htm

Creating a broker:

http://publib.boulder.ibm.com/infocenter/wmbhelp/v7r0m0/index.jsp?topic=%2Fcom.ibm.etools.mft.doc%2Fbe10000_.htm