

iWay

iWay Integration Tools

User's Guide

Version 8.0 and Higher

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Preface

This document is intended for system integrators and application designers. It explains how to configure and use iWay Integration Tools Suite (iIT) in software projects.

How This Manual Is Organized

This manual includes the following chapters:

Chapter/Appendix		Contents
1	Introducing iWay Integration Tools	Provides an overview of iWay Integration Tools Suite (iIT), including key features and facilities.
2	Understanding Key Concepts	Describes key concepts related to iWay Integration Tools Suite (iIT).
3	Performing Specific Configuration Tasks	Describes how to perform specific tasks using iWay Integration Tools (iIT).

Documentation Conventions

The following table describes the documentation conventions that are used in this manual.

Convention	Description
THIS TYPEFACE or this typeface	Denotes syntax that you must enter exactly as shown.
<i>this typeface</i>	Represents a placeholder (or variable), a cross-reference, or an important term. It may also indicate a button, menu item, or dialog box option that you can click or select.
<u>underscore</u>	Indicates a default setting.
Key + Key	Indicates keys that you must press simultaneously.
{ }	Indicates two or three choices. Type one of them, not the braces.
	Separates mutually exclusive choices in syntax. Type one of them, not the symbol.
...	Indicates that you can enter a parameter multiple times. Type only the parameter, not the ellipsis (...).

Convention	Description
.	Indicates that there are (or could be) intervening or additional commands.

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To learn about the full range of available support services, ask your Information Builders representative about InfoResponse Online, or call (800) 969-INFO.

Help Us to Serve You Better

To help our consultants answer your questions effectively, be prepared to provide specifications and sample files and to answer questions about errors and problems.

The following tables list the environment information our consultants require.

Platform	
Operating System	
OS Version	
JVM Vendor	
JVM Version	

The following table lists the deployment information our consultants require.

Adapter Deployment	For example, JCA, Business Services Provider, iWay Service Manager
Container	For example, WebSphere
Version	
Enterprise Information System (EIS) - if any	
EIS Release Level	
EIS Service Pack	
EIS Platform	

The following table lists iWay-related information needed by our consultants.

iWay Adapter	
iWay Release Level	
iWay Patch	

The following table lists additional questions to help us serve you better.

Request/Question	Error/Problem Details or Information
Did the problem arise through a service or event?	
Provide usage scenarios or summarize the application that produces the problem.	
When did the problem start?	
Can you reproduce this problem consistently?	
Describe the problem.	
Describe the steps to reproduce the problem.	
Specify the error message(s).	
Any change in the application environment: software configuration, EIS/database configuration, application, and so forth?	
Under what circumstance does the problem <i>not</i> occur?	

The following is a list of error/problem files that might be applicable.

- Input documents (XML instance, XML schema, non-XML documents)
- Transformation files
- Error screen shots
- Error output files
- Trace files
- Service Manager package to reproduce problem

- Custom functions and agents in use
- Diagnostic Zip
- Transaction log

For information on tracing, see the *iWay Service Manager User's Guide*.

User Feedback

In an effort to produce effective documentation, the Technical Content Management staff welcomes your opinions regarding this document. Please use the Reader Comments form at the end of this document to communicate your feedback to us or to suggest changes that will support improvements to our documentation. You can also contact us through our website, <http://documentation.informationbuilders.com/connections.asp>.

Thank you, in advance, for your comments.

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Introducing iWay Integration Tools

This section provides an overview of iWay Integration Tools Suite (iIT), including key features and facilities. It also describes how to configure and use iWay Integration Tools Suite (iIT).

In this chapter:

- ❑ [Installing and Configuring iIT](#)
 - ❑ [Configuring and Using iWay Integration Tools Suite](#)
-

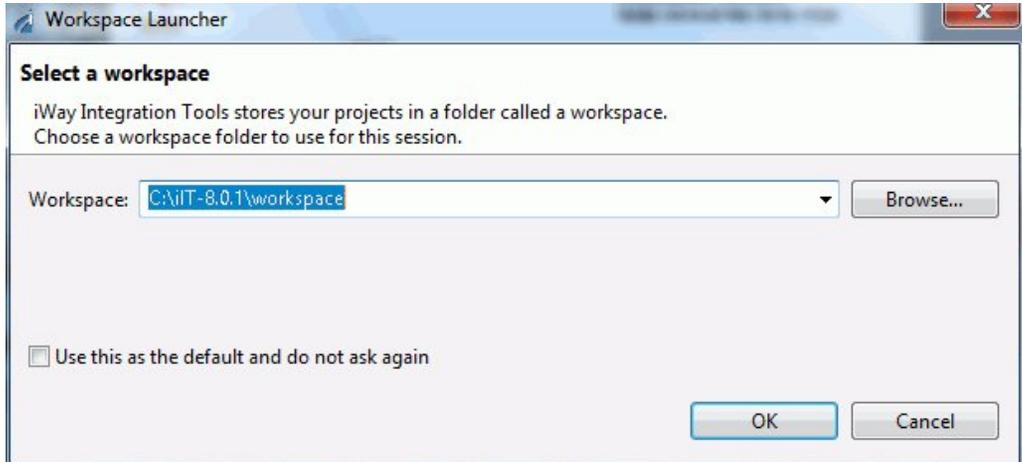
Installing and Configuring iIT

There are two methods of installing iIT. The first is to extract the zip file that contains iIT and the full Eclipse 4.6 development environment. The second is to install iIT into your own installation of Eclipse 4.6 using the update site mechanism. Using this mechanism is out of the scope of this document but more information can be found in the Eclipse help documentation by clicking on *Help* and then the *Help Contents* menu item.

To start iIT, double click the `iit.exe` file found under the `eclipse` folder where you extracted the zip. There are many launch properties found in the `iit.ini` file. These properties concern mainly memory and Java usage and are explained in the Eclipse documentation.

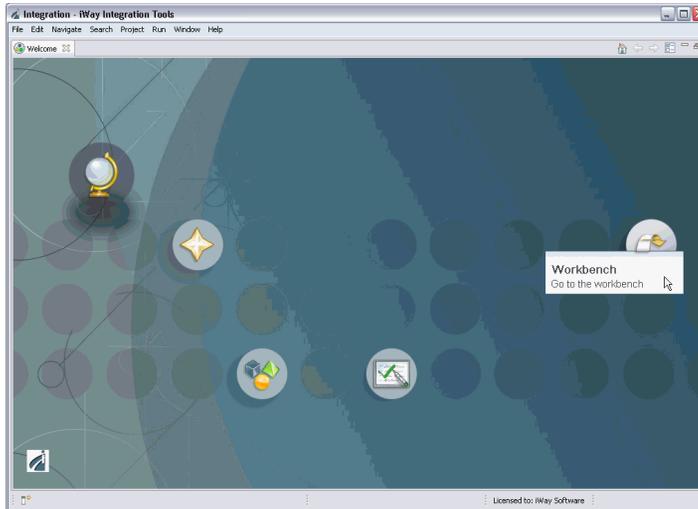
Setting the Workspace

After starting iIT you will be prompted by a dialog box, shown in the image below, asking you to set the workspace location. The workspace is the container for all of the projects you plan to create. It is recommended that you set the workspace location outside your eclipse directory so you can reuse your workspace if you need to reinstall iIT.



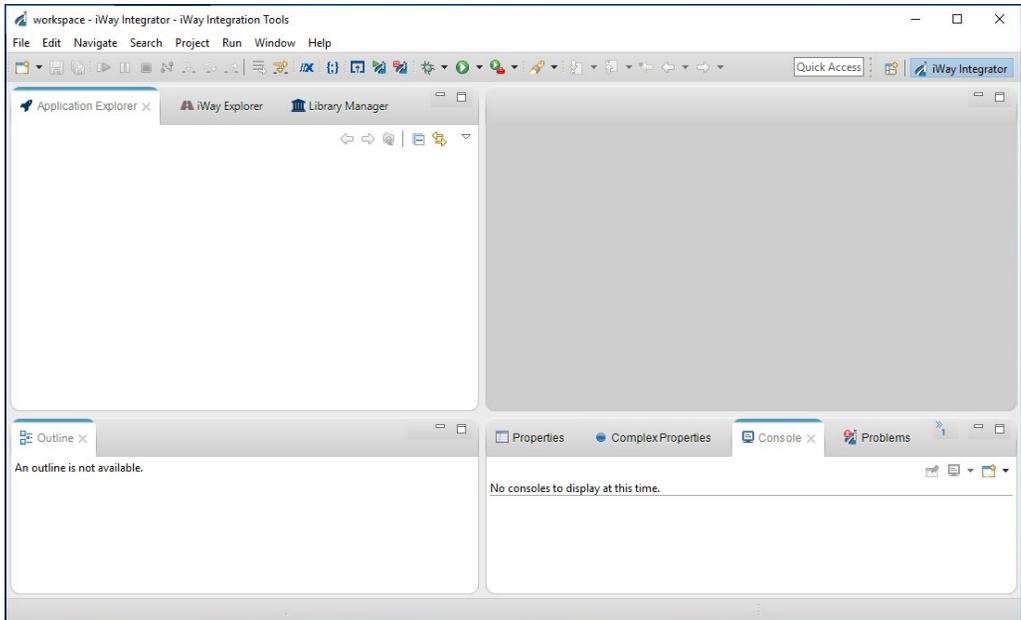
The Welcome Screen

The Welcome Screen, shown in the image below, contains useful information about Eclipse and iIT. Here you can browse tutorials, samples, and find out what is new in this version. To close the screen, click the Workbench icon on the right.



The Workbench

The Workbench, shown in the image below, is the name for the development environment which contains one or more Perspectives. A Perspective is a simple collection and layout of Views and Editors. Editors are usually found in the center of a perspective and are used for editing content. Views surround the editor and allow you to browse and modify the properties of resources.



Setting the iWay Home Directory

Once the workbench is open, it is recommended that you first set your iWay home directory.

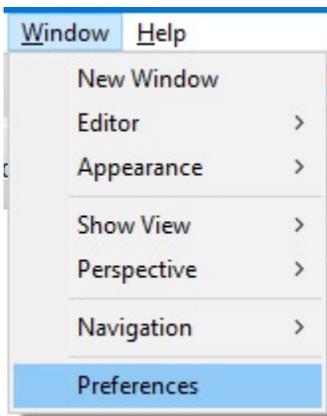
The iWay home directory specifies the path to your local iWay Service Manager (iSM) installation. This preference is used to set the target server version to the correct value and to run transforms and flows locally.

Note: The versions of iSM and iWay Integration Tools (iIT) must match in order for the design time environment (iIT) to communicate with the run-time environment (iSM). As of iWay version 8.0, multiple target server versions are not supported. It is recommended to keep the versions of iSM and iIT in synch to prevent incompatibilities.

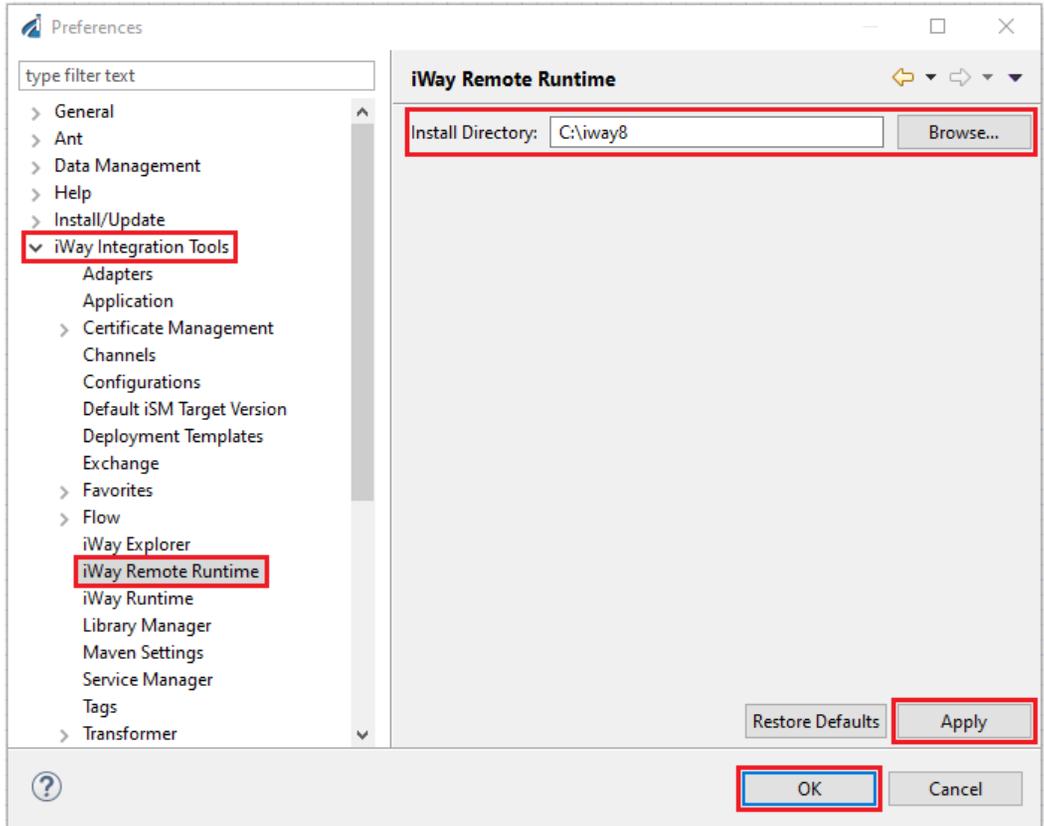
iWay Integration Tools (iIT) can be installed on the same system (locally) where iSM is installed, or on a standalone system where iSM is not installed. If iSM and iIT are installed on different systems, then you can run transforms and flows against the remote instance of iSM. In this case, the iWay Home Directory preference is not required.

However, certain iIT components, such as iWay Functional Language (iFL) Builder, requires local .jar files to be accessed during operation, which reside on the system where iSM is installed. In this case, the iWay Home Directory preference is required.

To set your iWay home directory, click *Window* from the menu bar and select *Preferences*, as shown in the following image.

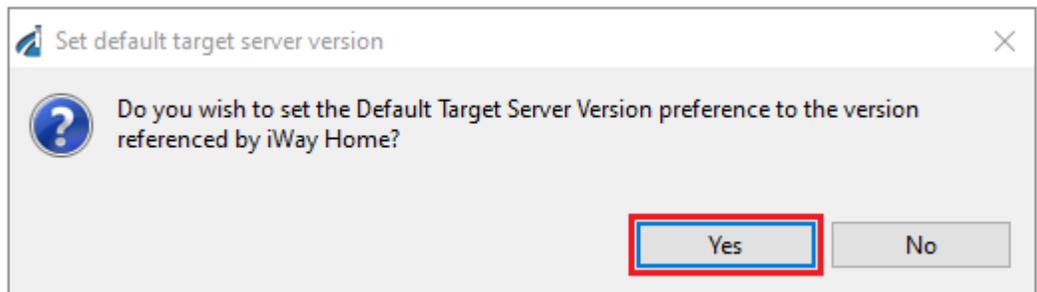


The Preferences dialog opens, as shown in the following image.



Expand the *iWay Integration Tools* preference in the left pane and then click *iWay Remote Runtime*. Click *Browse* to navigate to the location of your iWay 8 installation on your system. Click *Apply* and then click *OK*.

The Set default target server version dialog opens, as shown in the following image.



Click Yes, if you want the *Default Target Server Version* that is used by iIT to match the version of your iWay 8 installation (iWay Service Manager) that is installed in the iWay home directory you have referenced.

Configuring and Using iWay Integration Tools Suite

This section describes how to configure and use iWay Integration Tools Suite (iIT).

Configuring Automatic Updates

iIT can notify you when a new version becomes available. To enable this feature, open the same preferences dialog shown in [Setting the iWay Home Directory](#) on page 14, and select *Install/Update* and then *Automatic Updates*. Click the *Automatically find new updates and notify me* check box.

Creating an Application Project

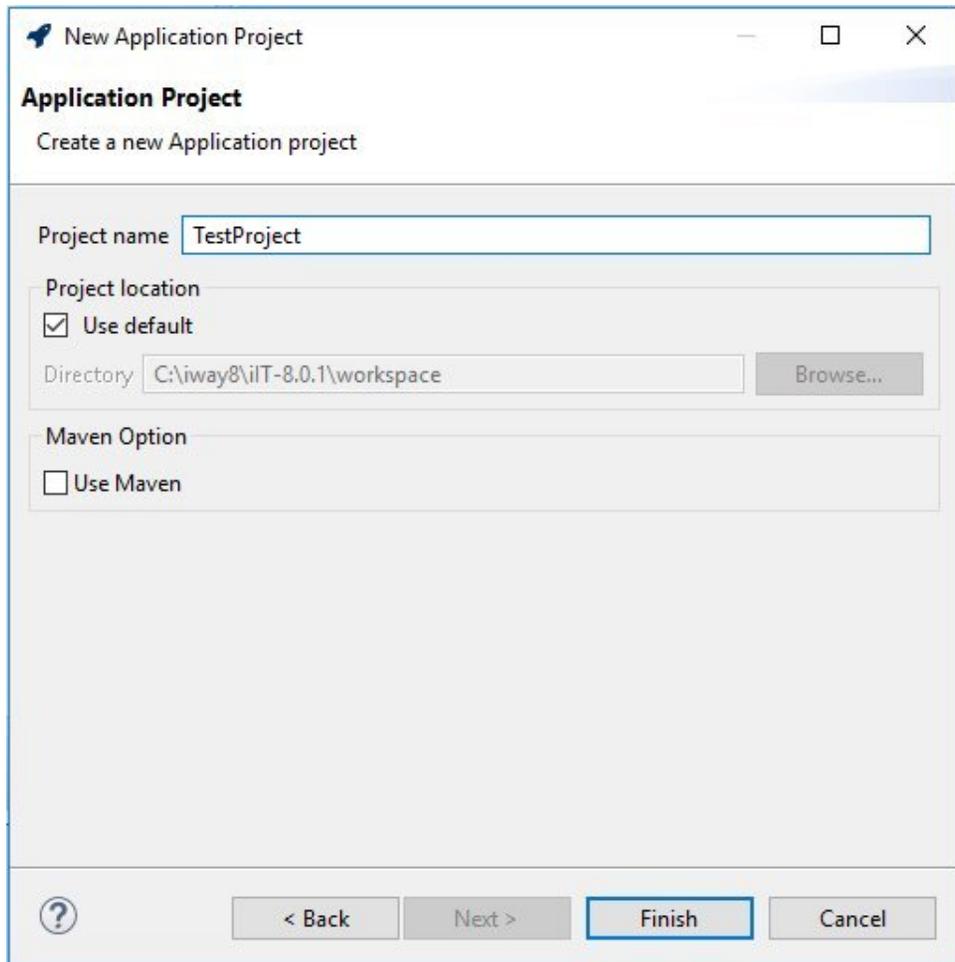
An application project is used to hold all the resources you create for your iSM application.

Procedure: How to Create an Application Project

To create a new application project:

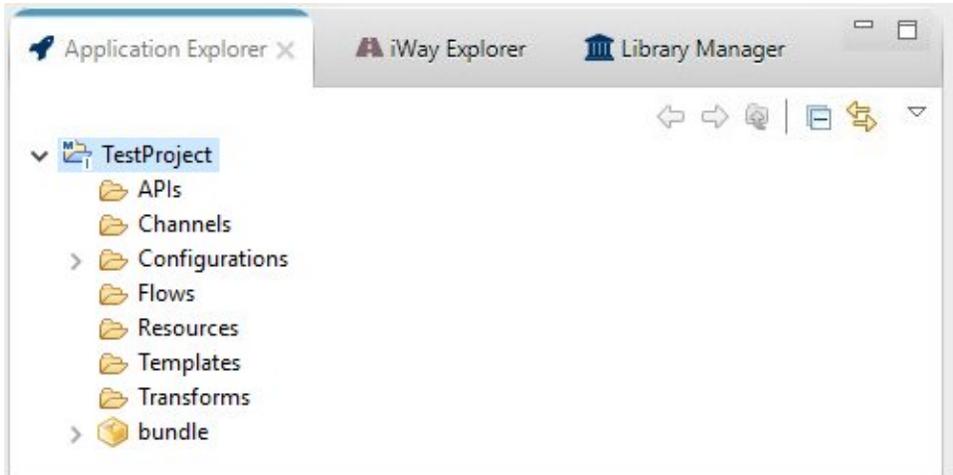
1. Select *File*, choose *New*, and then *Project* from the main menu.
2. In the Select a wizard dialog box, expand *iWay Integration* and select *Application Project*.

The New Application Project wizard opens as shown in the following image.



3. Enter a name for the project and click *Finish*.

A new project with the name you selected will appear in the Application Explorer window as shown in the following image.



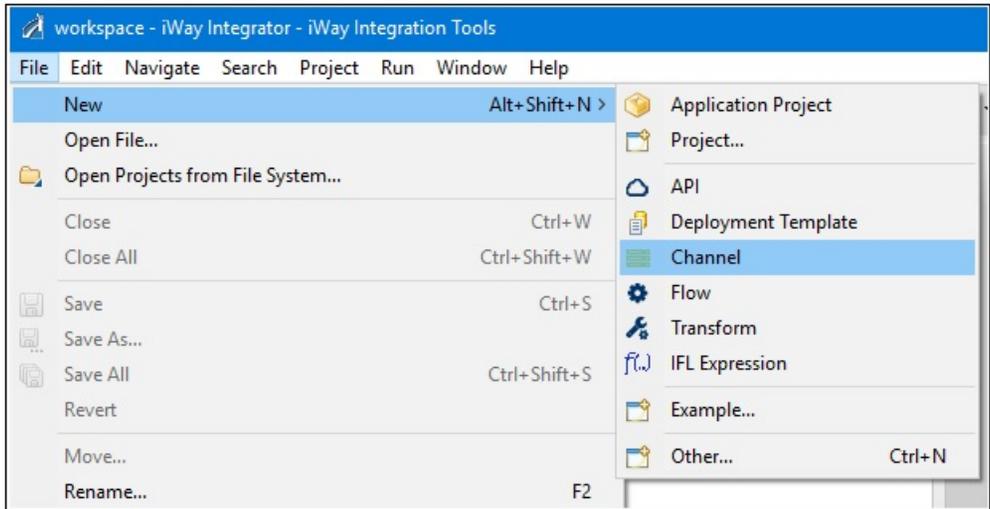
You will also see other folders that were created to hold different types of resources. These folders are just for convenience and it is optional to put resources in them.

Creating a New Resource

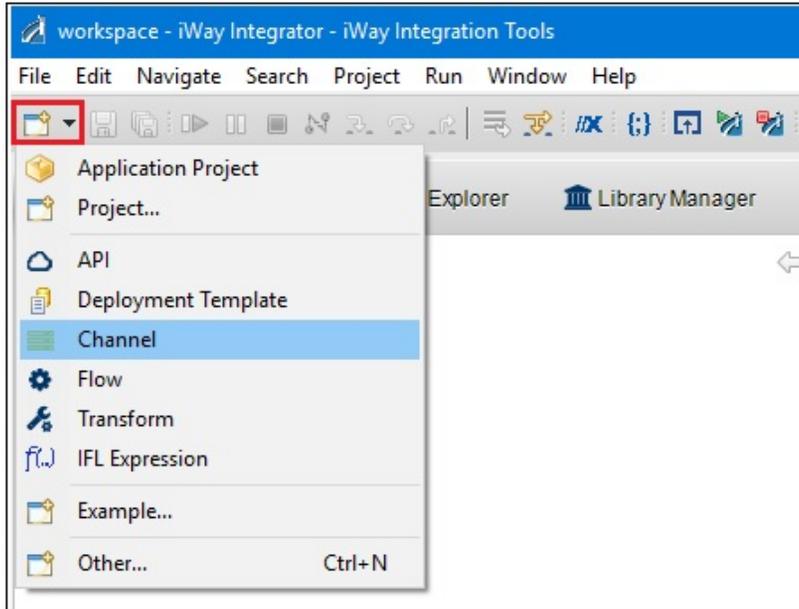
Before you create a new resource, ensure that you have created an Application Project in iIT, which serves as a container for all of your resources.

You can quickly create a new resource in iIT as follows:

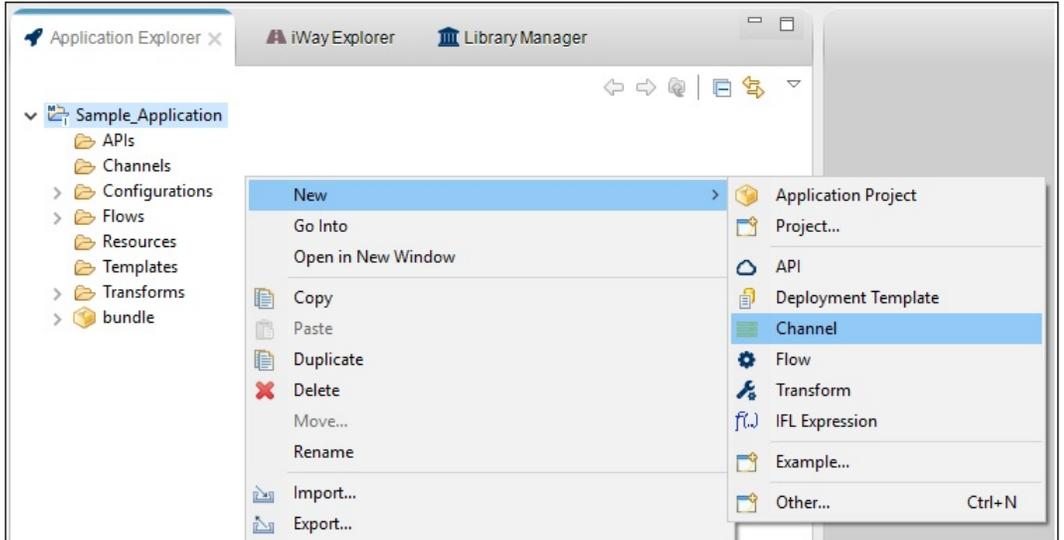
- ❑ **From the File menu.** Click *File*, select *New*, and then select the specific resource you want to create from the context menu (for example, *Channel*), as shown in the following image.



- ❑ **From the toolbar.** Click the down arrow to the right of the New button, and then select the specific resource you want to create from the context menu (for example, *Channel*), as shown in the following image.



- ❑ **From the Application Explorer tab.** Right-click anywhere in the Application Explorer tab, select *New*, and then select the specific resource you want to create from the context menu (for example, *Channel*), as shown in the following image.

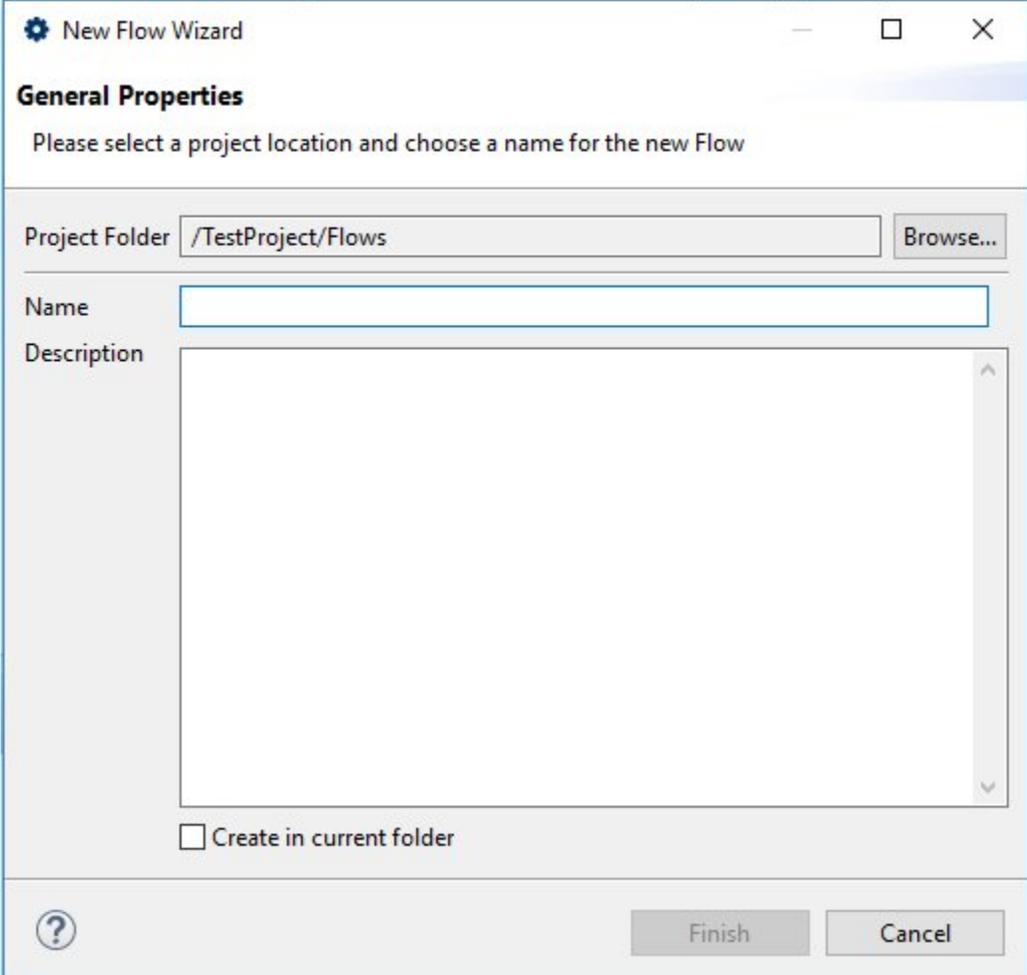


The context menu that displays lists the following resources that you can select to configure:

- ❑ API
- ❑ Deployment Template
- ❑ Channel
- ❑ Flow
- ❑ Transform
- ❑ IFL Expression

Additional resources can be accessed by clicking *Other*.

After you make your selection, a wizard that is specific to the selected resource opens. For example, the following image shows the New Flow Wizard, which opens when you create a new process flow in iIT.



The image shows a dialog box titled "New Flow Wizard" with a gear icon on the left and standard window controls (minimize, maximize, close) on the right. Below the title bar is a section labeled "General Properties" with the instruction "Please select a project location and choose a name for the new Flow". The dialog contains the following fields and controls:

- Project Folder:** A text field containing the path `/TestProject/Flows` and a "Browse..." button to its right.
- Name:** An empty text input field.
- Description:** A large, empty text area with a vertical scrollbar on the right side.
- Options:** A checkbox labeled "Create in current folder" which is currently unchecked.
- Buttons:** A question mark icon on the bottom left, and "Finish" and "Cancel" buttons on the bottom right.

In the Project Folder field, specify the application project folder under which this resource will be created. In this example, the process flow will be created under the *Flows* folder that belongs to the application project called *TestProject*.

Enter a name for your new resource in the Name field, which is required. Enter a description for your new resource in the Description field. Click *Finish*.

The corresponding tool/editor for the selected resource opens (for example, Process Flow Designer, Channel Builder, Transformer, and so on).

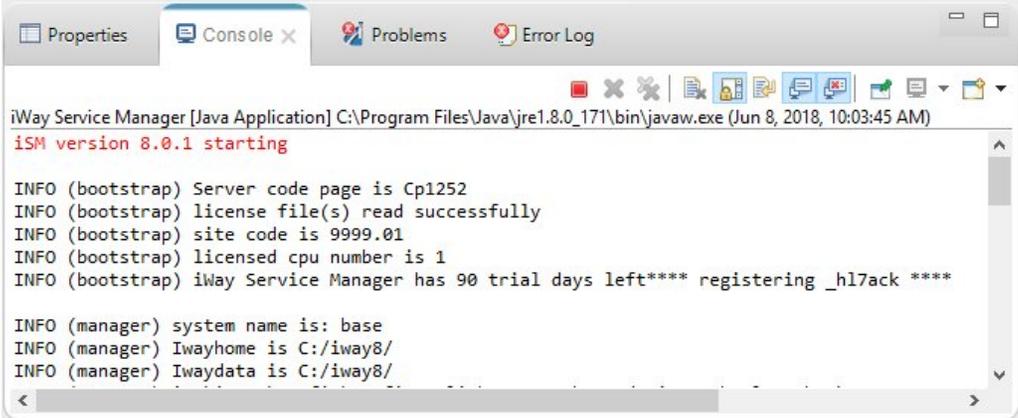
Starting and Running iWay Service Manager

iWay Integration Tools (iIT) allows for an instance of iWay Service Manager (iSM) to be run inside the iIT process. This is beneficial for testing and debugging integration applications, custom services, and special configuration of iSM. iIT automatically detects your iSM installation and sets the iWay Home directory when iSM is run inside iIT.

Note: iIT automatically detects your iSM installation and sets the iWay Home directory when iSM is run inside iIT.

To run iWay Service Manager (iSM), click the *Start Service Manager*  button.

The following image shows iSM running in the Console view.



```
iWay Service Manager [Java Application] C:\Program Files\Java\jre1.8.0_171\bin\javaw.exe (Jun 8, 2018, 10:03:45 AM)
iSM version 8.0.1 starting

INFO (bootstrap) Server code page is Cp1252
INFO (bootstrap) license file(s) read successfully
INFO (bootstrap) site code is 9999.01
INFO (bootstrap) licensed cpu number is 1
INFO (bootstrap) iWay Service Manager has 90 trial days left**** registering_hl7ack ****

INFO (manager) system name is: base
INFO (manager) Iwayhome is C:/iway8/
INFO (manager) Iwaydata is C:/iway8/
```

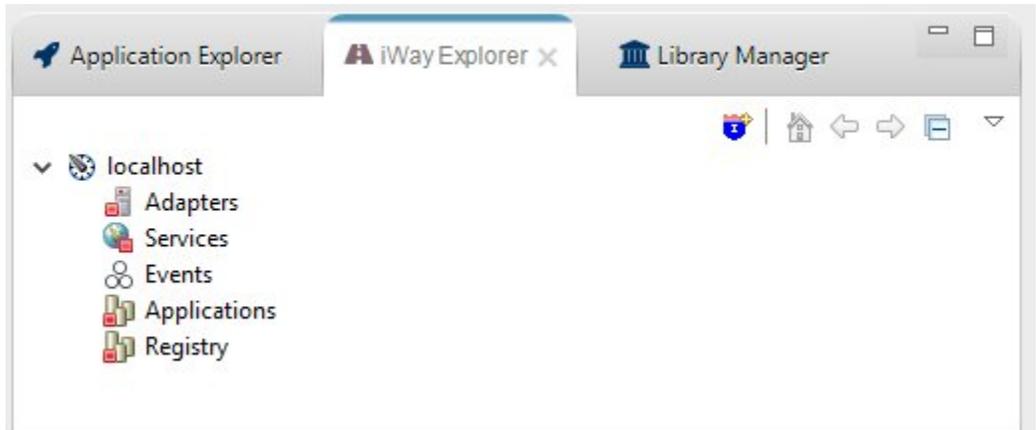
The iWay Service Manager Administration Console opens in a new browser window, as shown in the following image.

The screenshot displays the iWay Service Manager Administration Console. The top navigation bar includes 'Server', 'Registry', 'Deployments', and 'Tools'. The main content area is divided into 'Properties' and 'Settings' sections on the left, and a 'General Properties' table on the right. The 'General Properties' table lists various system and configuration details.

General	
Name / Home	js02109 - C:/iway8/
Version	8.0.1.1633
Build Date	ASGARD 04/21/2018 17:39
Usage	Live
Configuration	
Name	base - C:/iway8/config/base
Status	Server Uptime: 0 minutes
User Security Access	Read / Write
Environment	
OS / Hardware	Windows 10 (process) / amd64, CPU:
Java Info	25.171-b11 -- Oracle Corporation -- J.
Java Memory	211.25 MB of 3611.00 MB (5.9%) use
Classpath	[1] C:\iway8\lib\abi-3.1.1.jar

Creating an iWay Explorer Connection

You can use the iWay Explorer, shown in the image below, to browse the metadata of an iSM server.



Procedure: How to Add an iWay Service Manager Connection

To add an iWay Service Manager connection to your iWay Explorer:

1. Select the *iWay Explorer* tab and click the *Launch iWay Resource Create Wizard* icon  in the iWay Explorer toolbar.
2. Select *iWay Configuration* from the Resource Selection Dialog and click *Next*.
3. Enter `localhost` as the Configuration Alias and click *Next*.

Note: This is just a nickname for display, not the server connection information.

You can verify if the Connection String, Soap, and Console ports are valid.

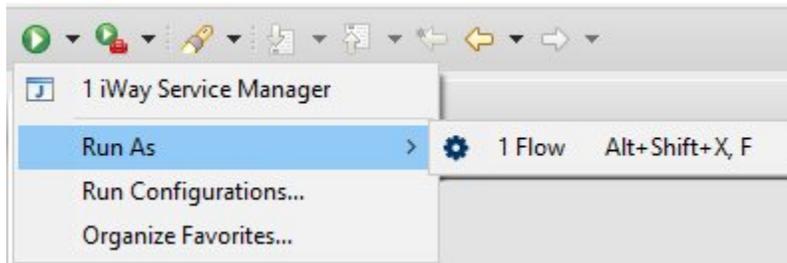
Test-running a Resource

The following section describes how to test-run a resource. The test run operation is dependent on the resource being executed. A test run procedure for the transform will differ from the test run procedure for a process flow or an API. This section provides an example of just one way to run a process flow. In general, a test run operation can also be accessed by right-clicking on the component such as a process flow and selecting to test-run it

Procedure: How to Test-run a Resource

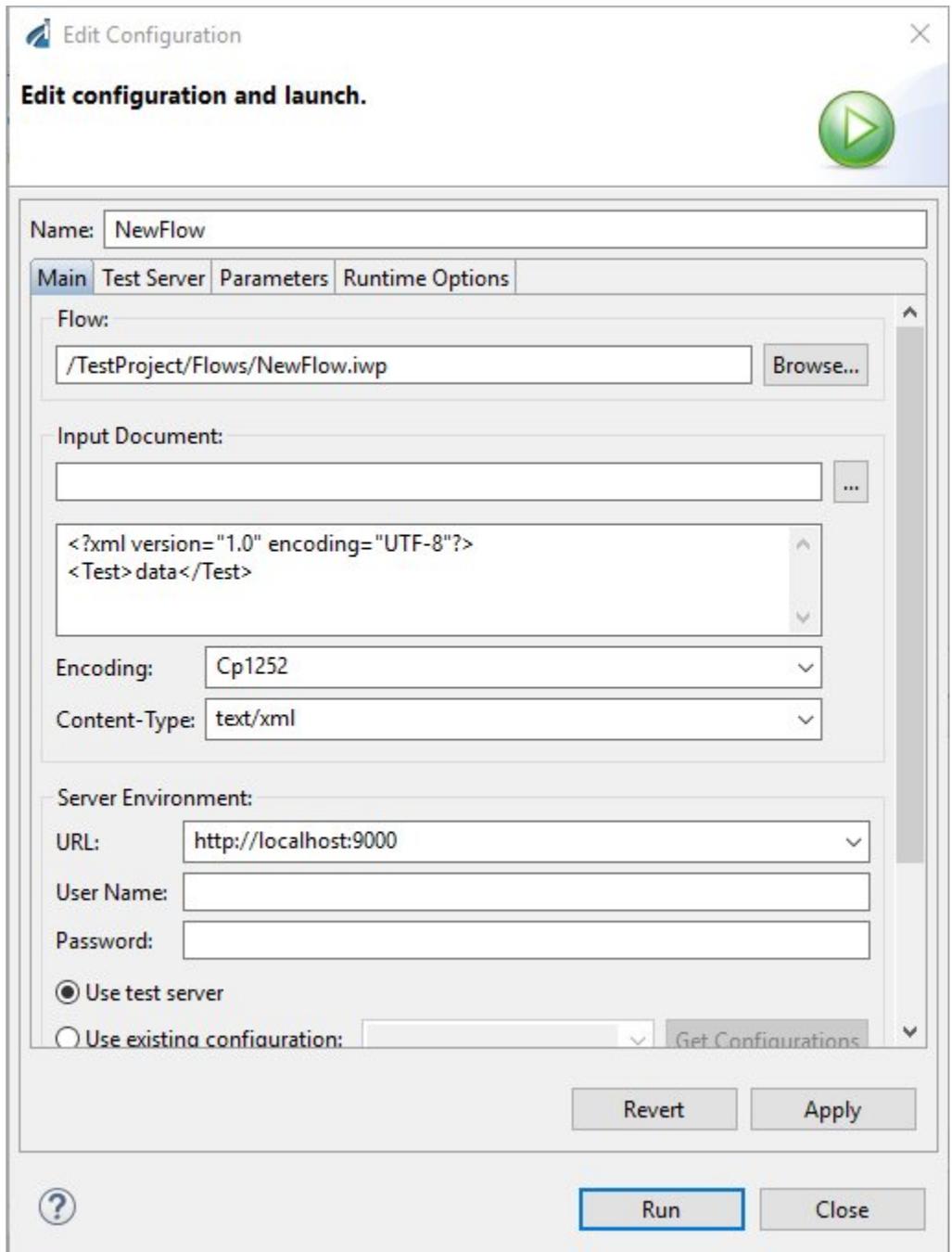
To test-run a resource:

1. Select the flow you wish to test and click the *Run as...*  toolbar icon. The Run As drop-down menu appears as shown in the following image.



2. Select *Flow* and click *OK*.

The Edit Configuration dialog box opens, as shown in the following image.



The Edit Configuration dialog is used to set options for the test run. A configuration is created and saved for each resource that you test run. These configurations can be viewed, modified, and cloned in the Run Configurations dialog accessed by clicking the arrow next to the Run As toolbar icon and selecting *Run Configurations*. After creating a run configuration for a resource, Eclipse will attempt to find and execute that configuration the next time you select the resource and click the Run As icon.

3. Click the Browse... button to select an Input Document from your workspace or click the *Import* button to import an Input Document.
4. Select your encoding and content-type preferences based on your requirements from the Encoding and Content-Type drop-down lists.
5. Select or type in a server URL to execute the test run against.

If you have servers configured in your iWay Explorer, they will show up in the drop-down list.

If you select *Use existing configuration*, the drop-down list will be populated with configurations available on the server you specified in the server URL.

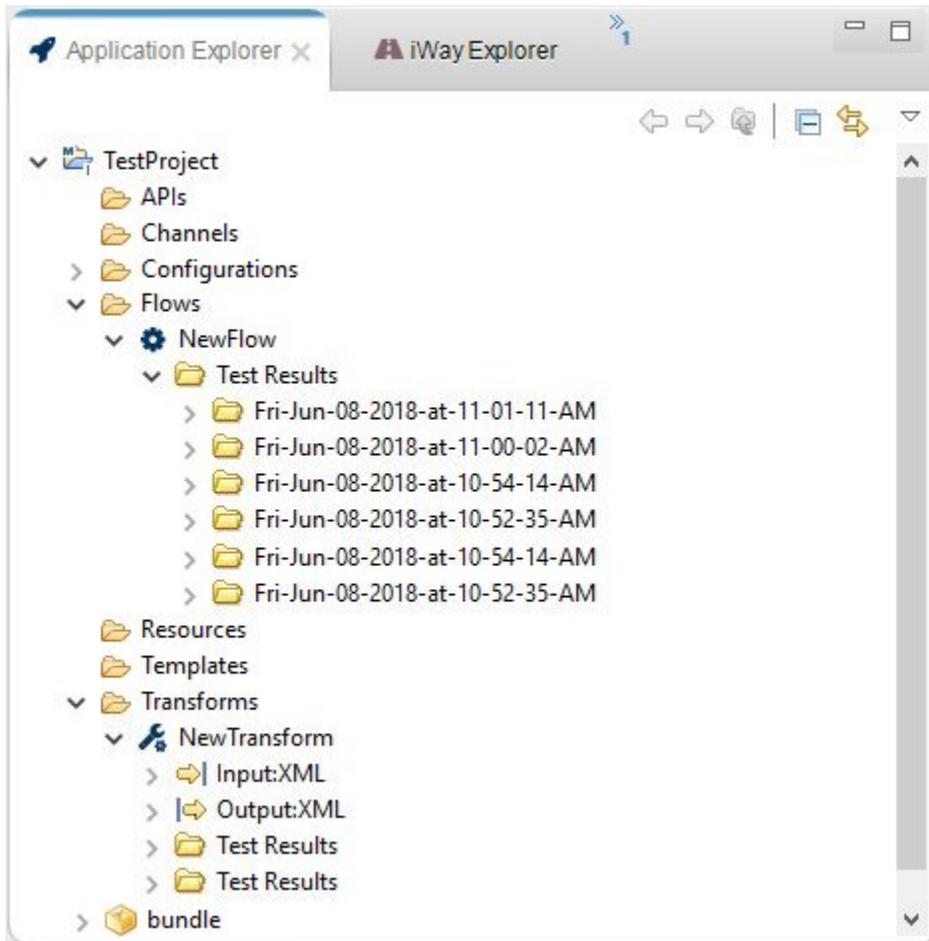
6. Click *Run*.

Viewing Test Results

After a test run operation is complete, a viewer showing the completed test run is displayed. This viewer allows you to click through the various objects in your process flow and see the data and registers associated with any execution step.

The test results for a resource reside under the resource in a folder called Test Results. These results are maintained between runs so you can compare them.

The following image shows a transform and flow with test results.



If you are notified of a test run failure, debugging information can be found in the Test Results folder.

Customizations

Customizations are user created content used in an integration solution. Currently customizations consist of Java based .jar files or class folders containing custom Java classes for use by a flows or transformations. This java based content is added to the Java classpath for the containing Application Project.

Note: The .jar file or class containing the customization is not copied to the server at publish time and must be copied manually to the correct location in the target server iSM installation.

Accessing iWay Service Manager Components in iWay Integration Tools

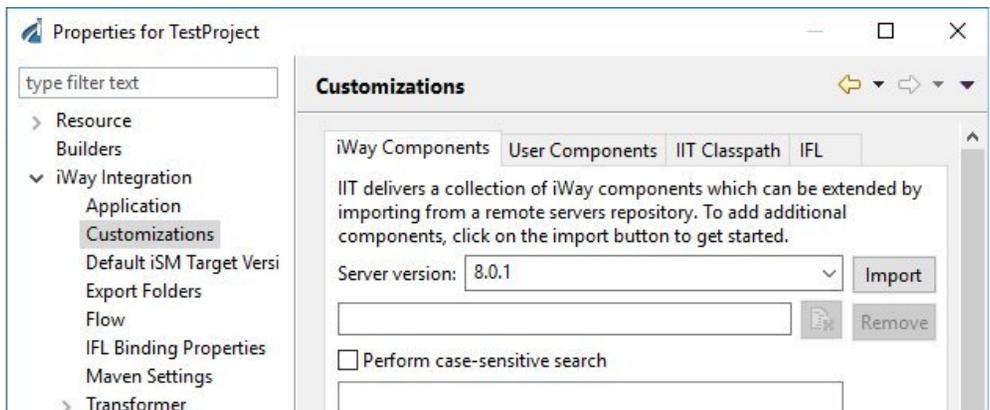
When accessing the customized components (for example, services, listeners, and so on), the component needs to be loaded in the iSM runtime before you can proceed to adding it to the design time. This will ensure that you can run a test of your component and validate that it is properly packaged. In most cases, this requires you to place the new extension into the <iwayhome>/etc/manager/extensions folder, restart or start iSM server, and check to ensure you can find and load the new component in the iSM console Registry section.

Procedure: How to Add Services to an iIT Environment

Adding newly accessible services from the iSM server to an iIT environment allows you to import services which are available in iSM, but not registered with iIT by default.

To add services from the iSM server instance to an iIT environment:

1. Right-click on your project and select *Properties*.
2. Expand *iWay Integration* and click *Customizations*, as shown in the following image.



3. From the Server version drop-down list, select the appropriate version of the iSM instance and click *Add*.

4. Provide the connection parameters for the iSM server and click *Next*, as shown in the following image.

The screenshot shows a window titled "Additional Components Wizard" with a "Server Selection" section. The instruction reads: "Please specify the server to retrieve additional components from." The form contains two main sections: "Server Information" and "Keystore and Truststore".

Server Information:

- Server URL: [Empty text box]
- User Name: [Empty text box]
- Password: [Empty text box]

Keystore and Truststore:

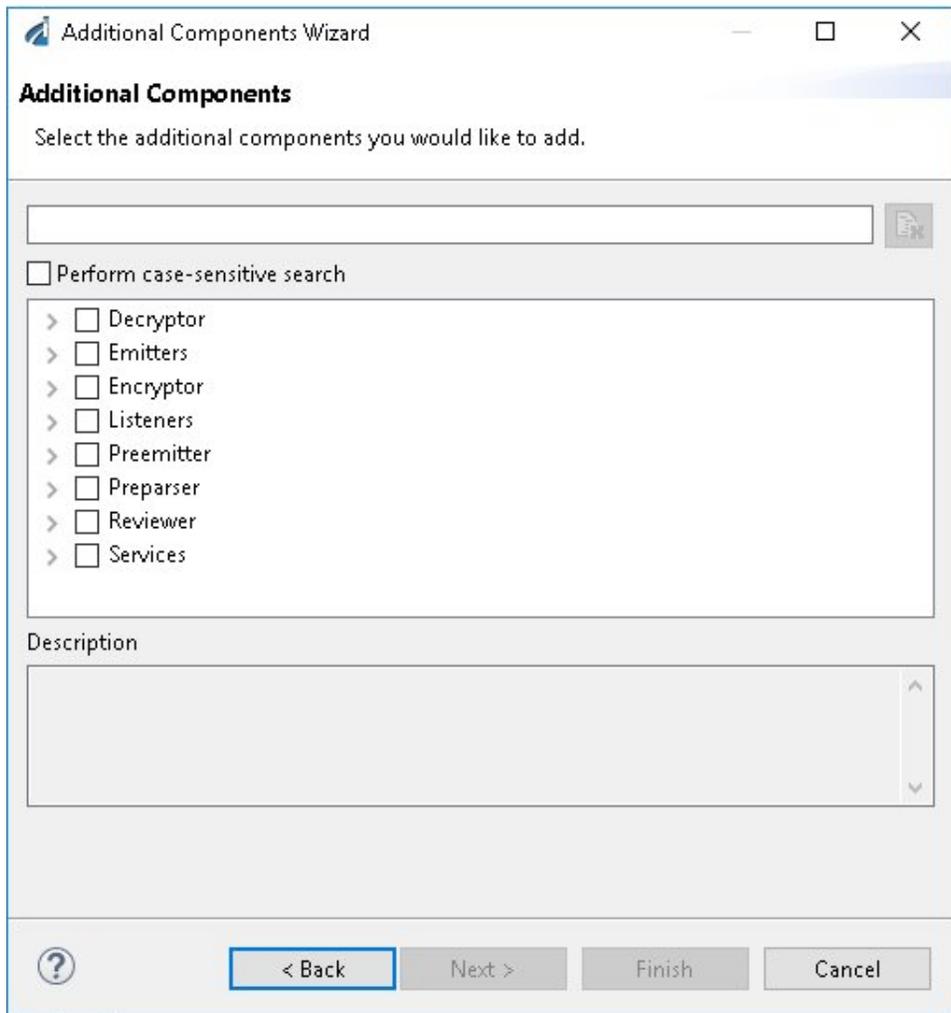
- Keystore: [None (dropdown menu)]
- Truststore: [None (dropdown menu)]

At the bottom, there are four buttons: a help icon (?), "< Back", "Next >" (highlighted with a blue border), "Finish", and "Cancel".

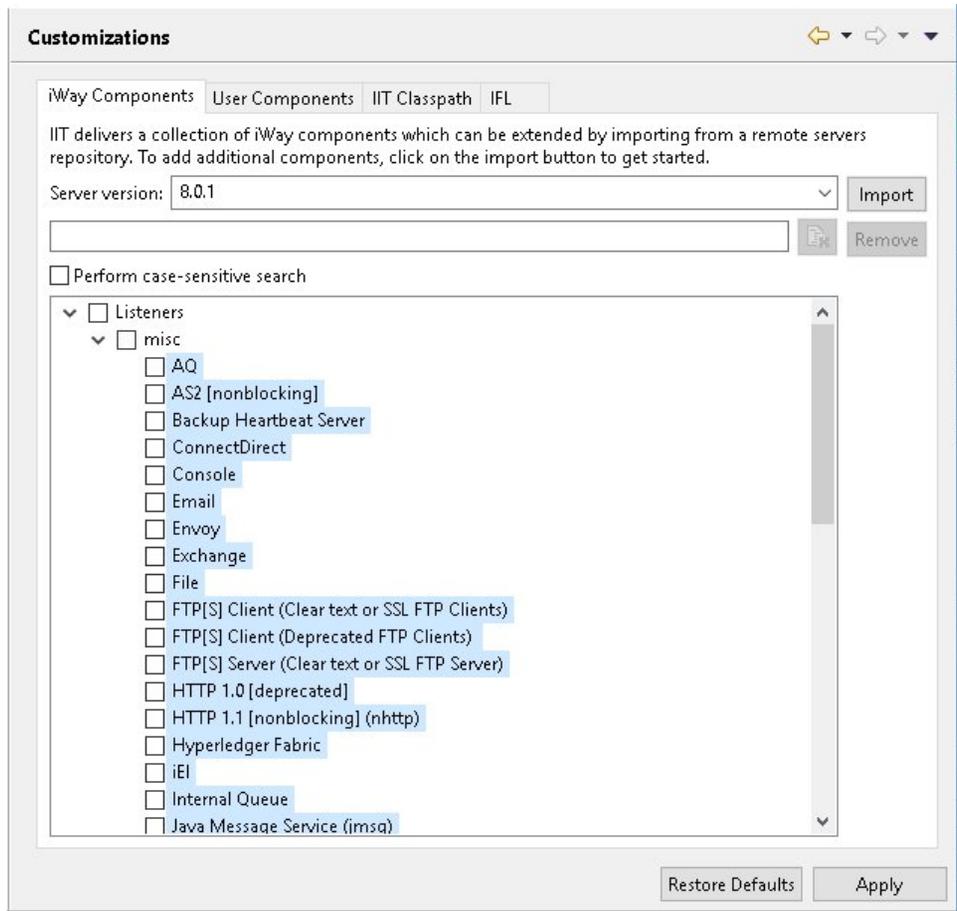
A list of available components appears, where you can select the relevant components to be imported into the iIT project.

5. After selecting the services you wish, click *Next* to add them to the environment of the project.

The following image shows the list of services that can be imported.



6. Click *Next* and then click *Finish* to finish the process.

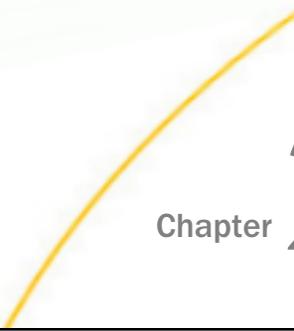


The newly added services are now available for the flow.

7. Create a new flow and continue with the application.

Notes:

- You may need to restart iIT in some instances.
- For iWay versions 7.x only, the metadata (descriptor file) for the imported service or any other component will be updated only for the selected version. For example, if you selected to import from iSM version 7.0.6, only flows with version 7.0.6 will have the components available as a configured option. The flow versions must match the selected version from the import step in order to see the new component.



Chapter 2

Understanding Key Concepts

This section describes key concepts related to iWay Integration Tools Suite (iT).

In this chapter:

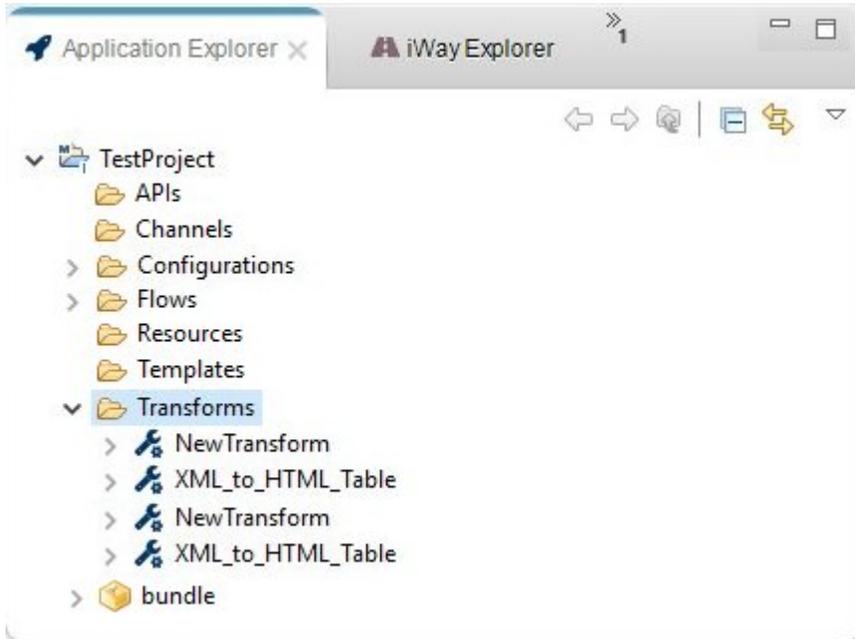
- [Integration Perspective](#)
 - [Application Explorer](#)
 - [Application Projects](#)
 - [iWay Resources](#)
 - [Register Sets](#)
 - [Process Flow Designer](#)
 - [Deployment Template Builder](#)
 - [Channel Builder](#)
 - [Library Manager](#)
-

Integration Perspective

The iWay Integration Perspective provides a layout for all views and editors contributed by the Integration Tools and the Eclipse platform to allow users to view and work with iWay Resources in an effective manner.

Application Explorer

The iWay Application Explorer is an Eclipse view that presents the iWay resources that make up an iWay Application Project in a structured manner.



The Application Explorer is used as the primary entry point for working with iWay resources in a logical manner.

Related Topics:

[iWay Resources](#) on page 37

Application Projects

An Application Project is a container of resources used to create your integration solution. The Application Project helps you organize your resources in a logical manner and provides facilities for working with those resources.

iWay Resources

An iWay resource is any component that can be used in an iWay Service Manager application. These components have a required physical structure in an Application Project that consist of a folder containing the files that constitute the component and a *.iwresource* metadata file containing information about the component that is used by iSM. iWay Integration Tools provides plugins that include tools for working with these components and managing the physical structure in an Application Project.

Note: The Application Explorer view is used to present an iWay Resource in a logical manner and hides the physical structure. If required, the physical structure can be viewed using the Navigator view provided by the Eclipse platform.

APIs

Allows you to develop and host RESTful APIs for consumption by external callers using iWay Integration Tools (iIT). The APIs folder is the default folder for storing REST-based APIs.

Channels

Channels consist of a data acquisition (Inlet) component, business routes, and a data disposition (Outlet) component. The channels are used to receive data from various systems and on various protocols based on the configured polling interval, scheduled bases, or event driven. Each message passes through a channel, and in many applications through multiple channels. As the message is being processed by a channel, it can also be routed based on a business logic for execution to a specific process flow configured in a business route. Messages can be of any format such as flat, XML, JSON, and can be processed as a stream of data, actual data payload, or a signal depending on the protocol being used.

Configurations

The Configurations folder is the default folder for managing configurations which store iWay Generics bindings. You can create more than one configurations using the iWay Configurations Editor. An application project can have only one active configuration file. You can select a configuration within the properties of the application project.

Flows

The capability of graphically visualizing a business process is a powerful and necessary component of any business intelligence offering. iWay Integration Tools Suite, an Eclipse platform based design time tool, provides a visual and user-friendly method of creating a business process, also called a flow.

Through a flow, you control the sequence in which tasks are performed and the destination of the output from each task in the flow. Each flow you create is a single unit of work made up of many objects, such as adapters, protocol interactions, system access objects, message routing definitions, graphically represented by icons and connected by lines that establish a relationship between the objects.

When the design of a flow is complete, you can confirm that the objects and their relationships meet the design criteria through the compilation process. You can also test the flow by executing it with an actual input document to see results.

Templates

Deployment templates allow you to create a component that inject configuration into runtime creation. Often these templates contain variables whose values are specific for either development, test and or production environments. Templates can be created using the iWay Template Builder.

Transforms

Transformation definition files contain sets of rules, interpreted and executed by a transformation engine. Transformation is the process by which data is transformed from one structure/format to another.

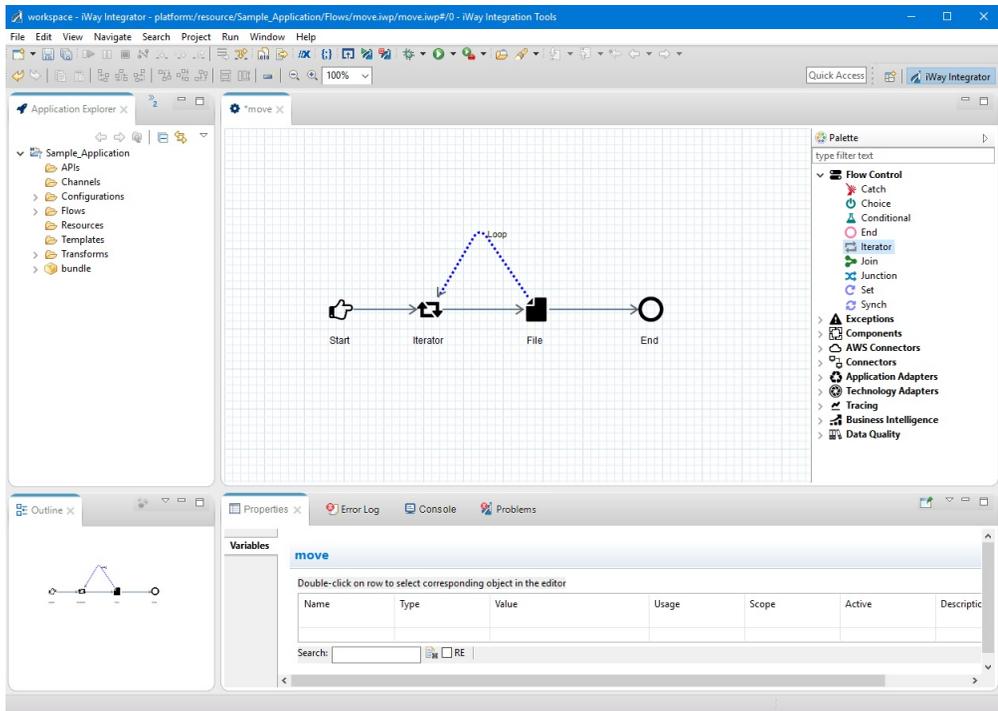
Register Sets

Register sets are very similar to Special Registers (SREGs), but they are not global by default. A register set contains a pool of one or more SREGs. In iIT, register sets are managed like other iWay Resources in a project. Register sets can be created, edited, and attached to a channel using iIT. They become a dependency of the channel to which they are being attached to and are carried into the application during deployment.

For more information on register sets, see the *iWay Service Manager User's Guide*.

Process Flow Designer

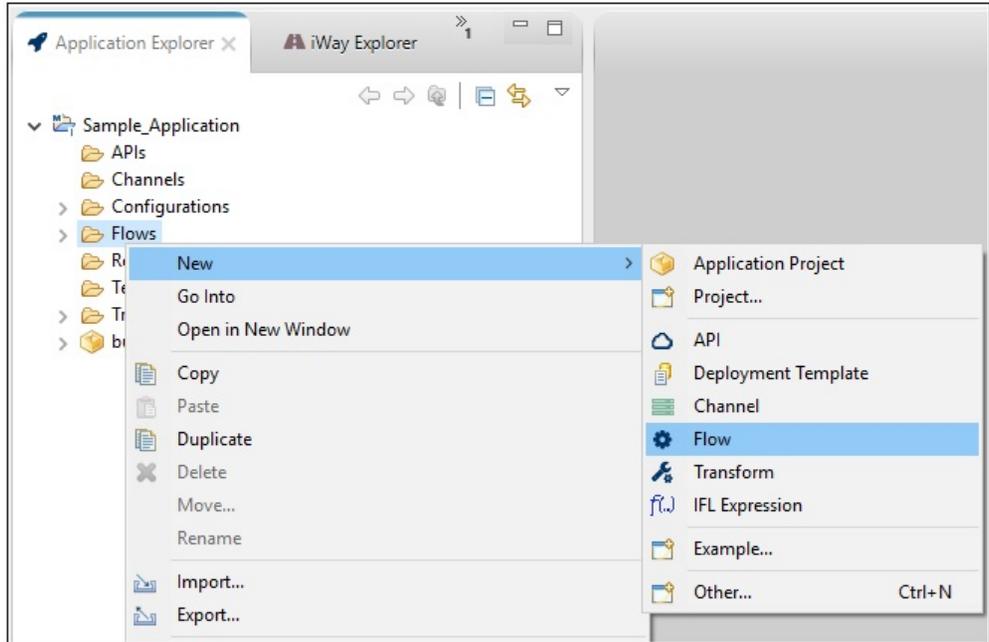
The Process Flow Designer in iWay Integration Tools (iT) allows you to design orchestrations, visual representations of your business, and application processes, which run within the iWay Service Manager (ISM) run-time environment. Many of the most complex integration patterns can be easily solved using a wide variety of components, including iWay Adapters and iWay Connectors.



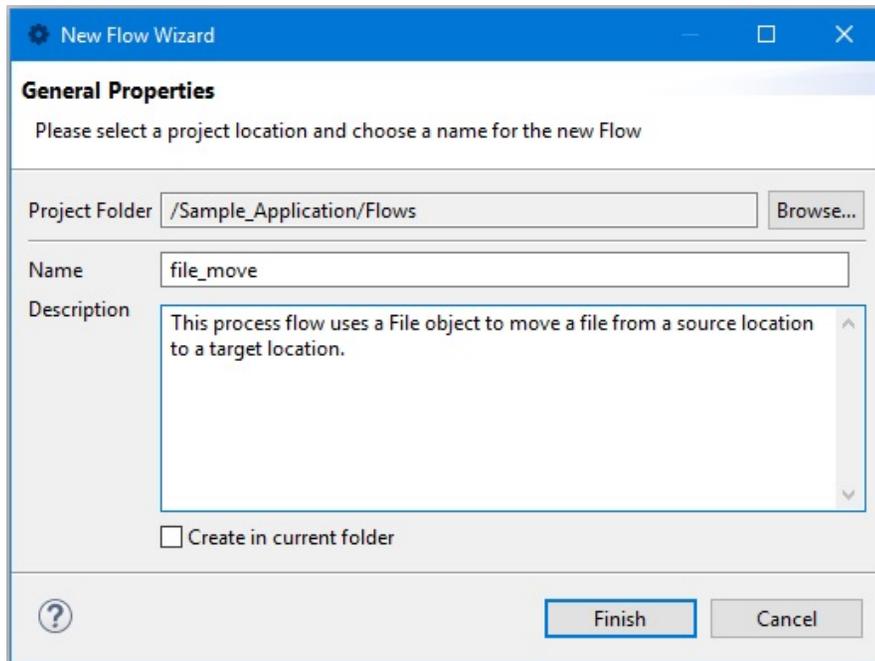
The Process Flow Designer provides process flow objects, the executables within a process flow that direct and act upon the input to the process flow. The process flow is graphically represented in the workspace as a box and line diagram. The boxes are the objects you add, and the lines are the relationships you define between those objects. Process Flow Designer includes executable objects. For example, a Transform object converts a document from one format to another. Other objects control the flow of a document. For example, a Decision Test object routes a document based on a true or false condition. As you build a process flow, you will configure each object and the relationships between them to meet your requirements. Once the process flow is created and saved, you can validate the structure and then test the process flow in a run-time environment.

To create a new process flow:

1. In the Application Explorer tab, expand your application project. Right-click the *Flows* folder, select *New* and then click *Flow*, as shown in the following image.

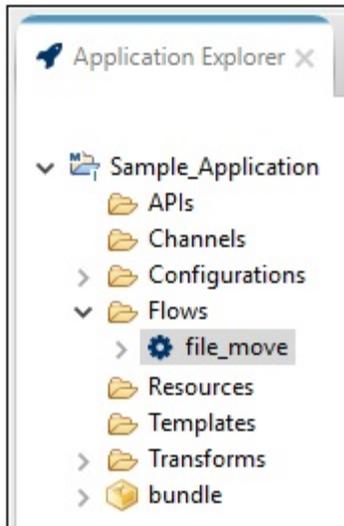


The New Flow Wizard dialog opens, as shown in the following image.

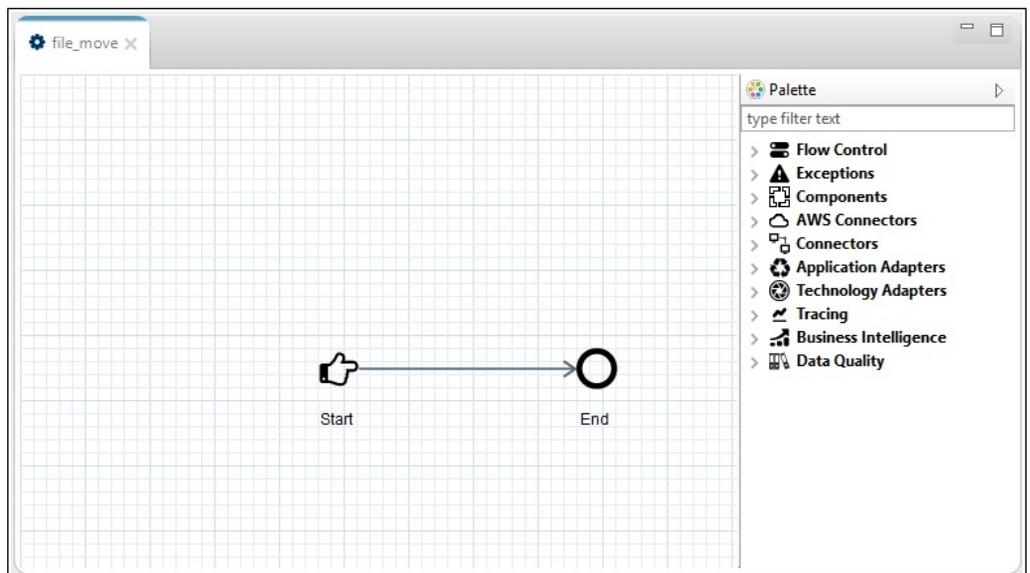


2. Enter a name for your process flow (for example, file_move) with a description (optional), and then click *Finish*.

Your new process flow (file_move) is added to the Flows subfolder within your application project, as shown in the following image.

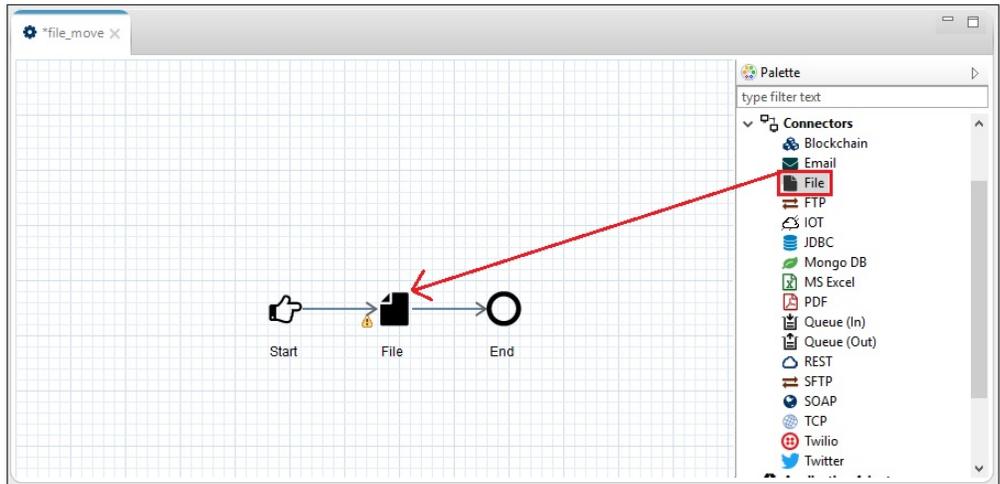


Your process flow also opens as a new tab in the workspace area where you can start building the application logic for processing data, as shown in the following image.

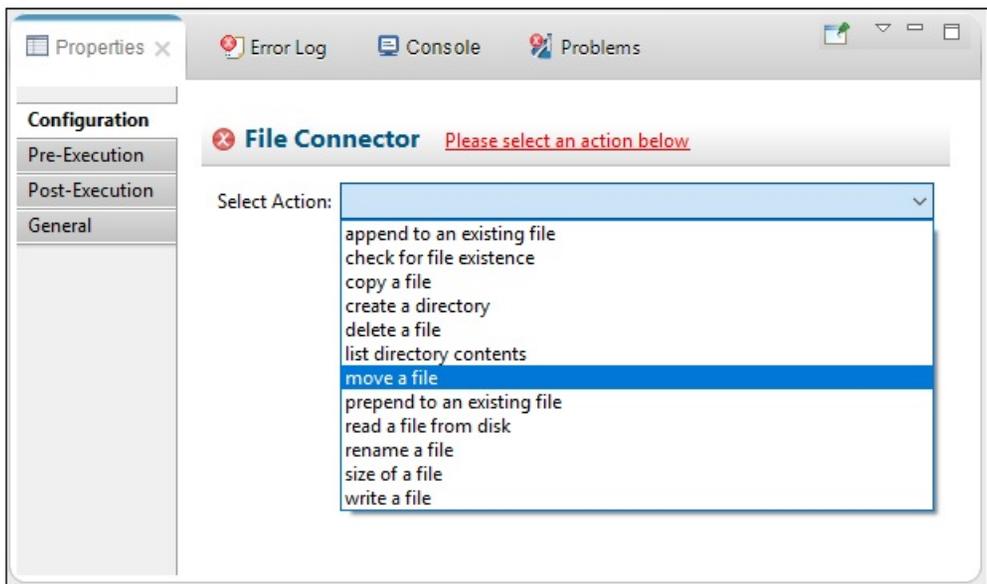


By default, each new process flow consists of a Start and an End object.

- To add an object to your process flow, navigate to the Palette on the right pane, expand one of the categories, and drag the required object onto your process flow. In the following example, the *Connectors* category is expanded and the *File* object is being added between the Start and End nodes of the process flow.

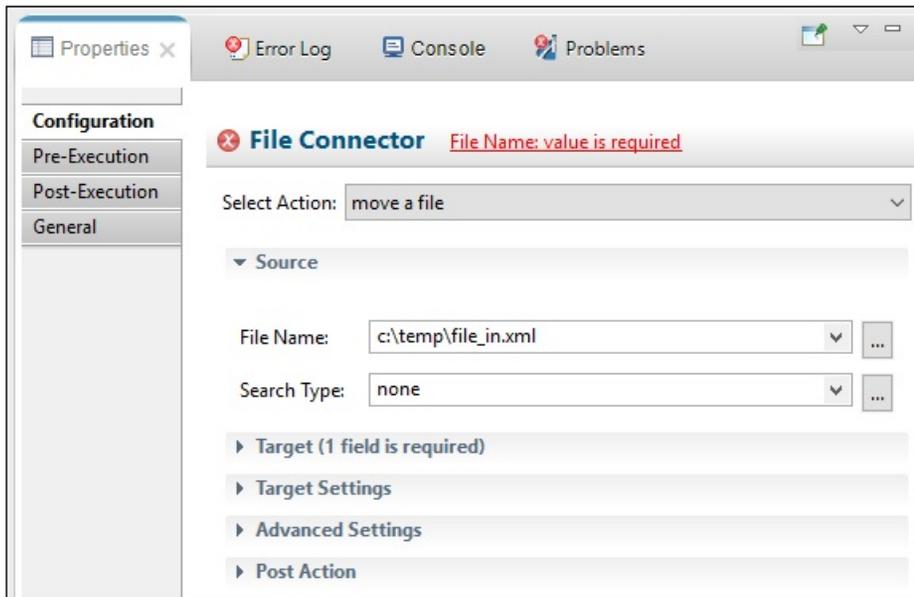


- To configure your File object, navigate to the Properties tab, as shown in the following image.

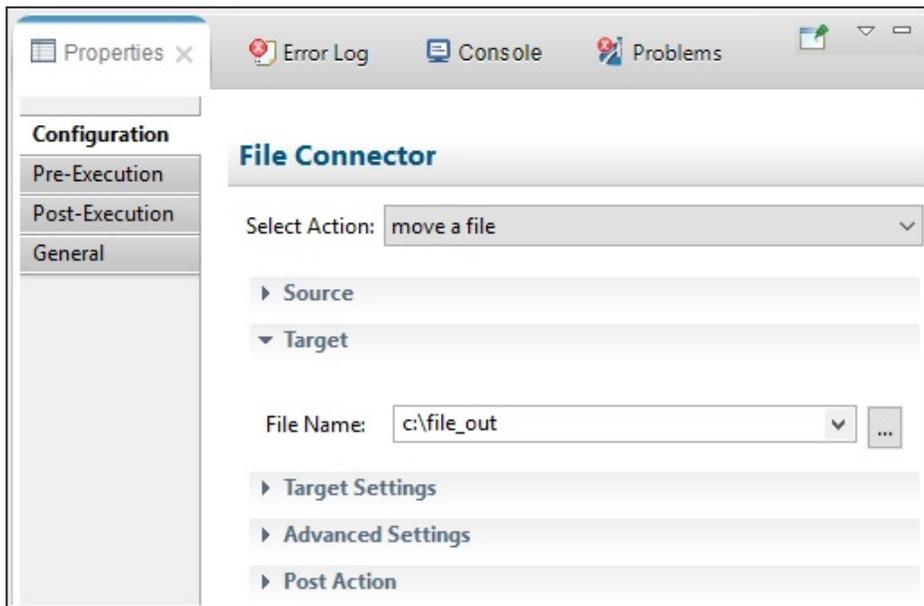


You first need to specify the type of action that you would like this File object to perform. Once a specific action is specified, the appropriate configuration parameters are displayed for that action. This behavior, which simplifies development and saves time, also applies to other objects (for example, Email, FTP, TCP, and so on) that you can add to your process flow.

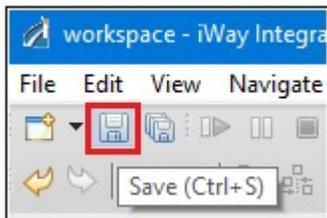
5. Select *move a file* from the Select Action drop-down list.
6. Expand the Source parameter group and specify the path to the source file that you want to move, as shown in the following image.



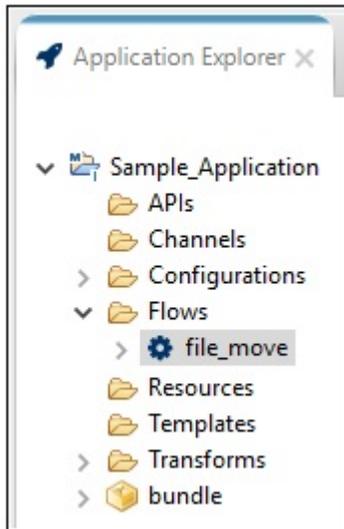
- Expand the Target parameter group and specify a destination for the source file, as shown in the following image.



- Click Save on the toolbar to save the changes you made to your process flow, as shown in the following image.



To open an available process flow for further configuration or editing at any point, simply double-click the name of the process flow in the Flows subfolder of an application project, as shown in the following image.



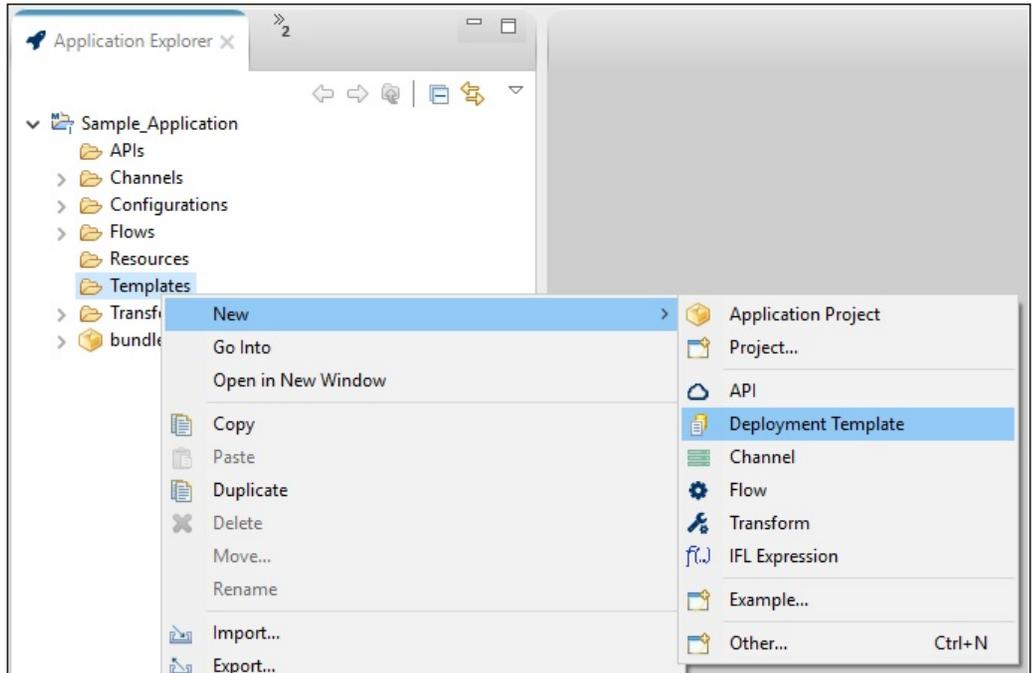
The selected process flow will open as a tab in your workspace area.

Deployment Template Builder

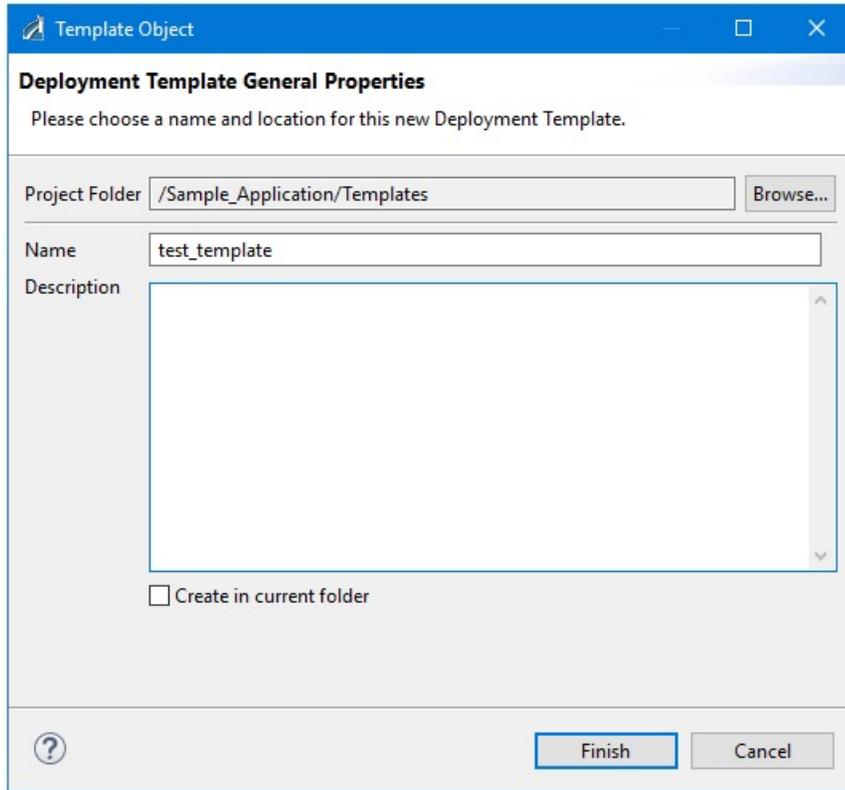
A template is a user-defined server configuration profile that is used to support a particular runtime environment for your application (for example, development, test, and production deployments). The Deployment Template Builder in iWay Integration Tools (iIT) allows you to quickly configure and manage templates for all your application projects.

To create a new template using the Deployment Template Builder:

1. In the Application Explorer tab, expand your application project. Right-click the *Templates* folder, select *New* and then click *Deployment Template*, as shown in the following image.

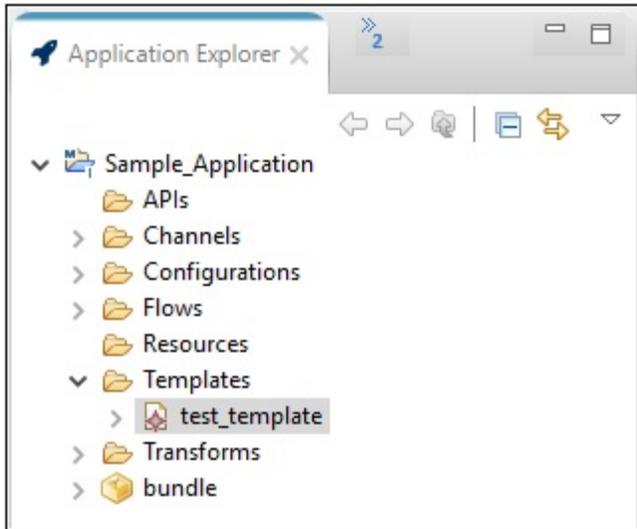


The Template Object dialog opens, as shown in the following image.

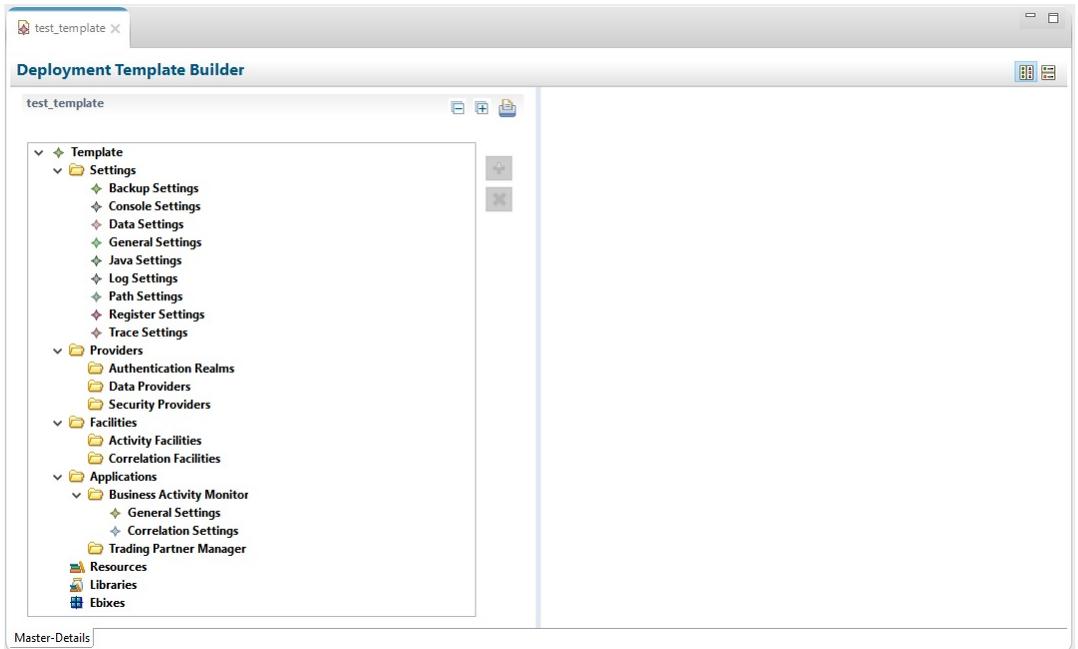


2. Enter a name for your deployment template (for example, test_template) with a description (optional), and then click *Finish*.

Your new template (test_template) is added to the Templates subfolder within your application project, as shown in the following image.



The Deployment Template Builder opens as a new tab in the workspace area where you can start building and configuring your template, as shown in the following image.



The available settings and properties that can be configured for your template are grouped in the Deployment Template Builder as follows:

- Settings.** Allows you to configure various settings that are related to your runtime environment.
 - Backup Settings.** iWay Service Manager (ISM) can be deployed to automatically fail over to another waiting machine usually referred to as a *hot backup* host. Simple failover relies on iWay's native functionality to emit and respond to *heartbeat* messages, which signify normal operation of the primary server. In the Location of backup field, specify the *host:port* of an iSM instance that is monitoring this iSM.
 - Console Settings.** Allows you to specify iSM console settings (for example, user ID and password) to be referenced by your deployment template.
 - Data Settings.** JLINK is a technology that can be used to access information hosted by iWay, WebFOCUS, and EDA data servers. This section provides general settings for the JLINK in the base configuration of this server.
 - General Settings.** Allows you to specify general settings for your deployment template.

- ❑ **Java Settings.** Allows you to specify JVM settings and Java system runtime properties for your deployment template.
- ❑ **Log Settings.** The trace log is used to record the diagnostic information that is generated by the runtime components of iSM. The transaction log is used to maintain a record of every document received and processed by iSM.
- ❑ **Path Settings.** Allows you to specify any class path and system path settings that are required during runtime.
- ❑ **Register Settings.** Special Registers (SREGs) are named variables that reference values that are carried throughout the system. Once defined, these variables become available to all components within the system.
- ❑ **Trace Settings.** Trace settings allow you to control the amount of detail that is produced by the diagnostic components embedded within iSM. Traces produced during runtime are either displayed or logged based on settings in the runtime environment.
- ❑ **Providers.** Allows you to define any authentication realms, data providers, or security providers that are required in your template.
 - ❑ **Authentication Realms**
 - ❑ **Data Providers**
 - ❑ **Security Providers**
- ❑ **Facilities.** Allows you to configure various activity facilities or correlation facilities to be referenced by your template.
 - ❑ **Activity Facilities**
 - ❑ **Correlation Facilities**
- ❑ **Applications.** Allows you to configure iWay Business Activity Monitor (BAM) and iWay Trading Partner Manager (TPM) services within the run time.
 - ❑ **Business Activity Monitor**
 - ❑ **Trading Partner Manager**
- ❑ **Resources.** Add any files or folders that you would like to include as part of your template, which will be placed in the following directory:

IWAY_HOME\config\deployment_name\resource

- ❑ **Libraries.** Add any .jar files that you would like to include as part of your template, which will be placed in the following directory:

IWAY_HOME\config\deployment_name\lib

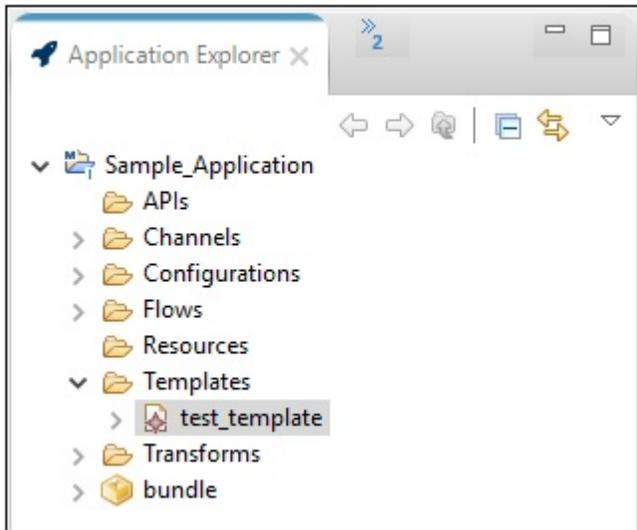
- ❑ **Ebixes.** Add any Ebix resources that you would like to include as part of your template, which will be placed in the following directory:

IWAY_HOME\config\deployment_name\ebix

3. After you have finished configuring your template, click Save on the toolbar to save the changes you made to your template, as shown in the following image.

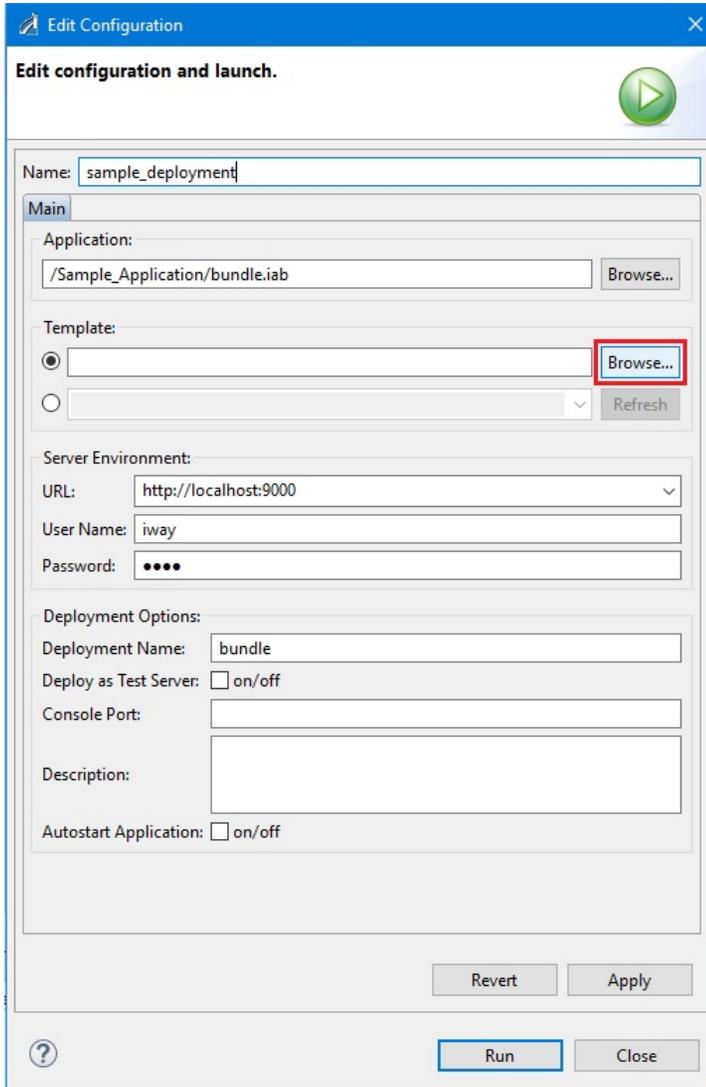


To open an available template for further configuration or editing at any point, simply double-click the name of the template in the Templates subfolder of your application project, as shown in the following image.

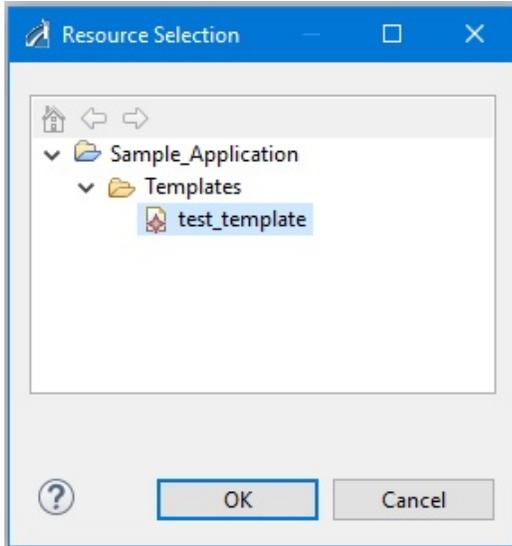


The selected template will open as a tab in the Deployment Template Builder.

- When you are ready to deploy your application you can specify your deployment template in the Edit Configuration dialog.
- Click *Browse* in the Template area, as shown in the following image.

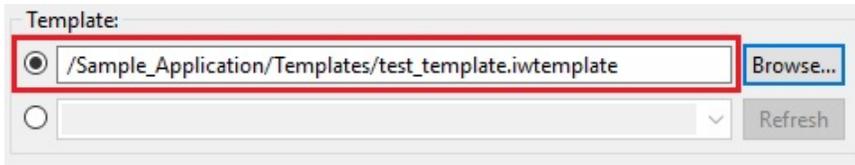


The Resource Selector dialog opens, as shown in the following image.



6. Expand the Templates folder, select your deployment template (for example, test_template), and then click OK.

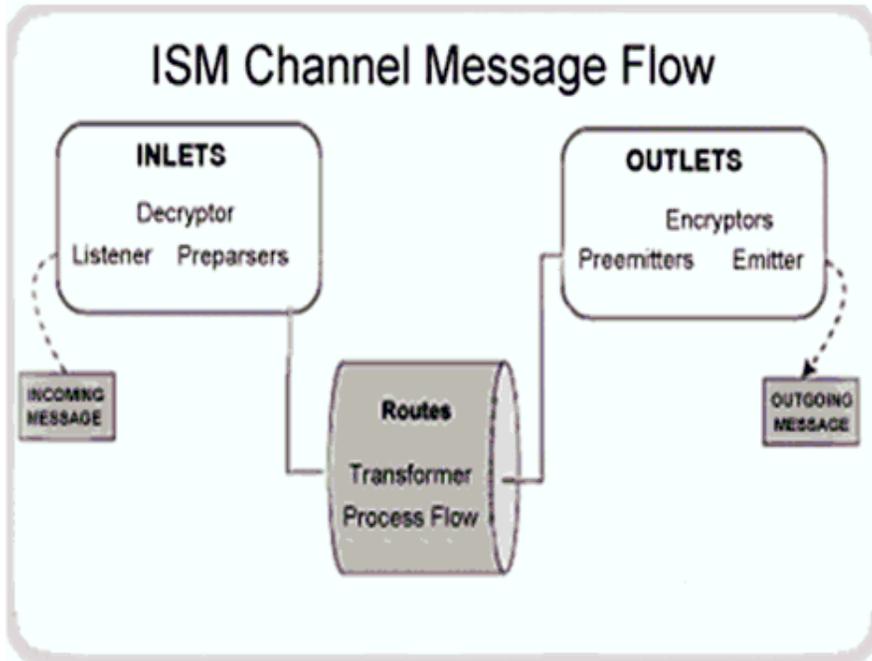
The template you selected is added to your deployment configuration, which will be used during runtime, as shown in the following image.



Channel Builder

iWay Service Manager (ISM) defines a channel as a container of components through which messages flow. The Channel Builder in iWay Integration Tools (iIT) is a tool used to build channels using iWay components.

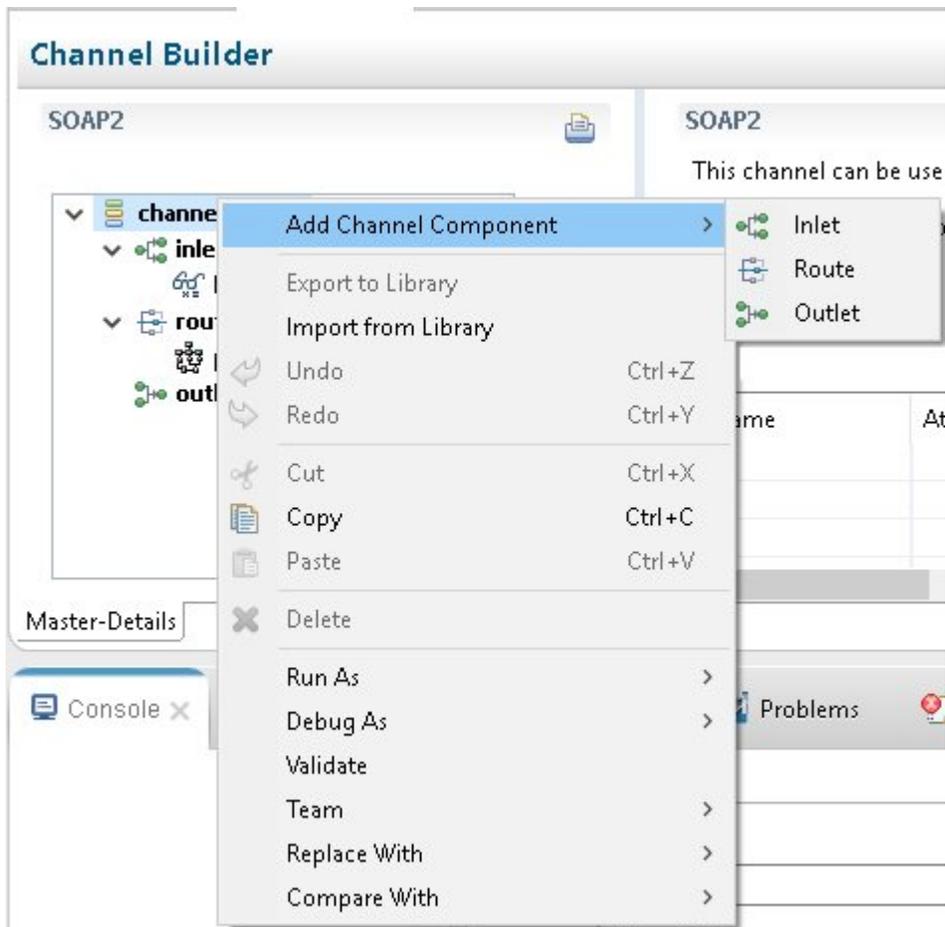
Channels contain references to one inlet, multiple routes, and outlets.



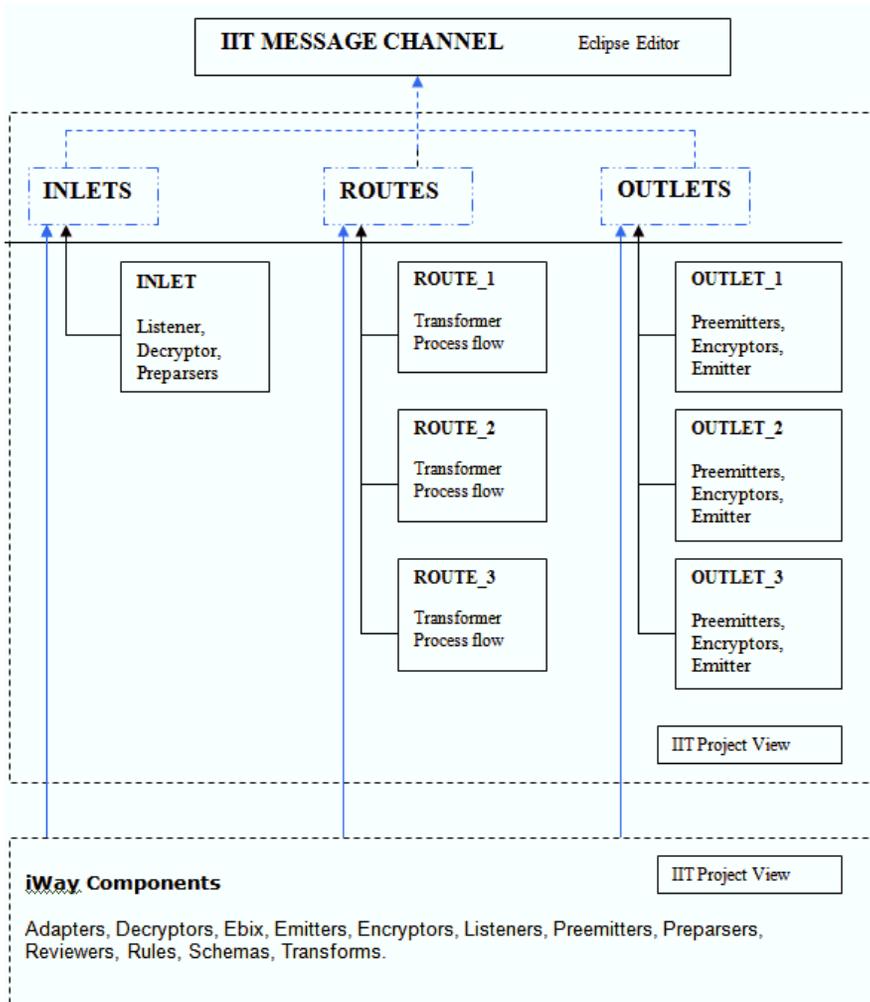
The Channel Builder allows you to:

- Build and edit channels.
- Import and export channels.

The right-click options are shown in the following image.

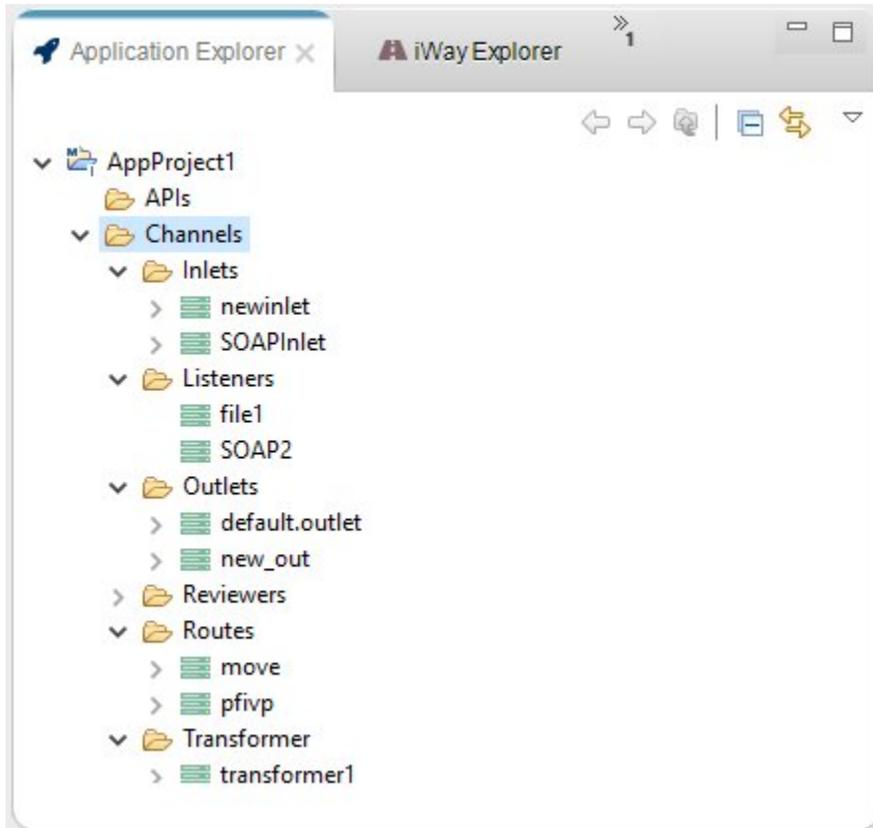


The following diagram illustrates the Channel Builder component logic structure.

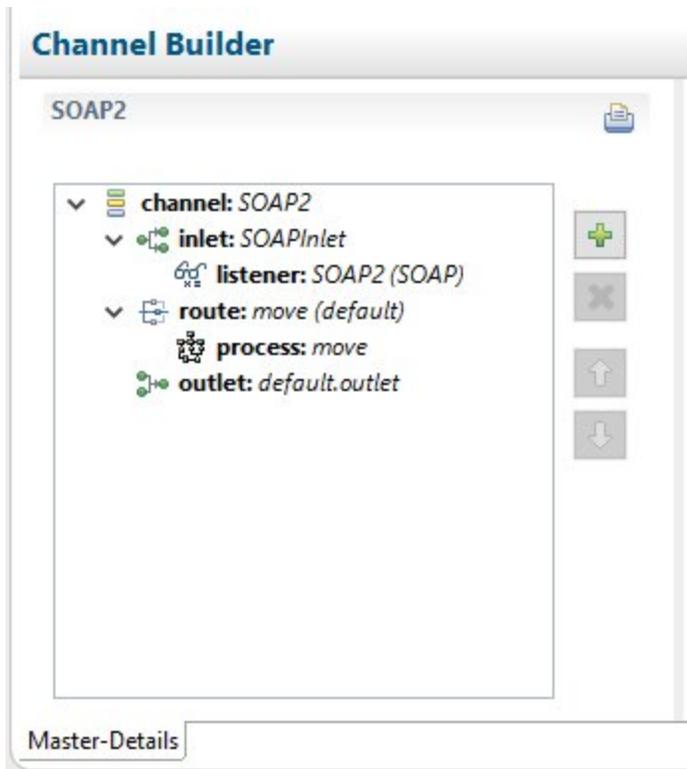


Channel Builder and Component Editors

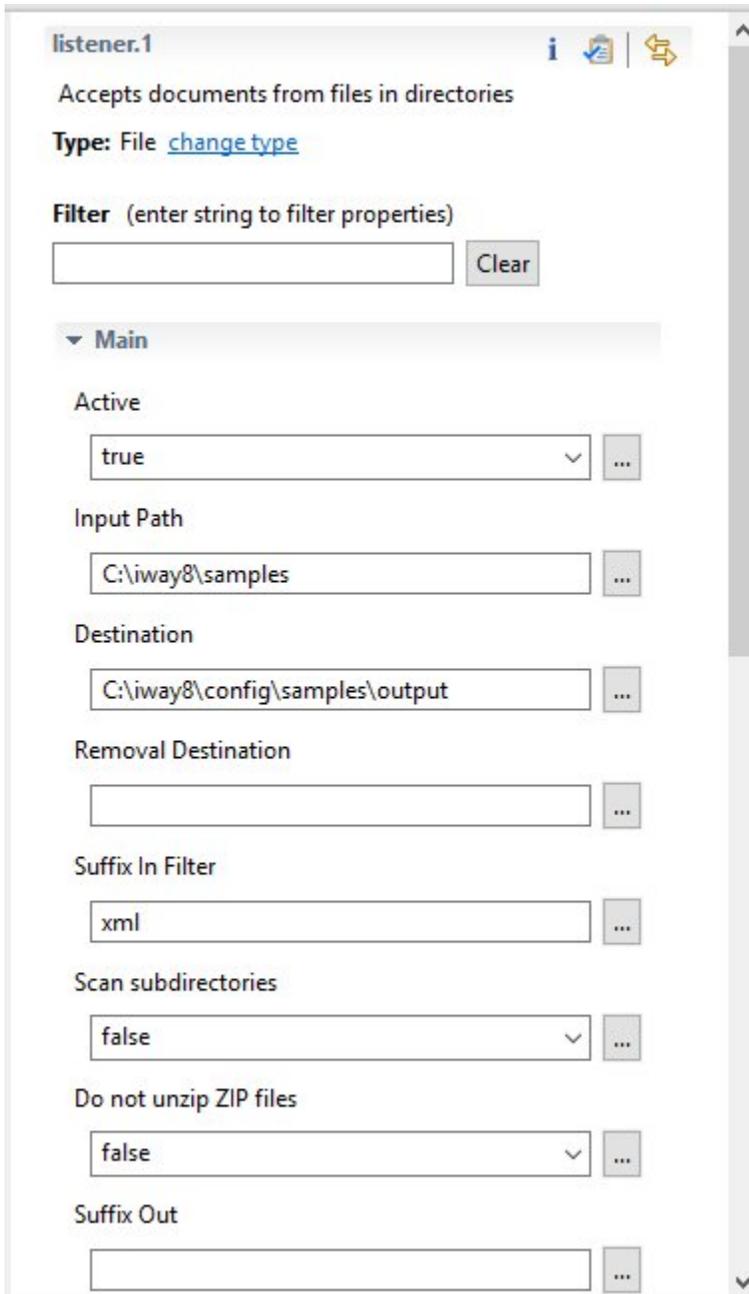
The following image shows the presentation of a channel and its composing components in Application Explorer.



The following image shows the SOAP2 channel in the Channel Builder with a corresponding inlet, route, and outlet.



Clicking a component opens an editor on the right. The following image shows a listener and its properties in the Component Editor.



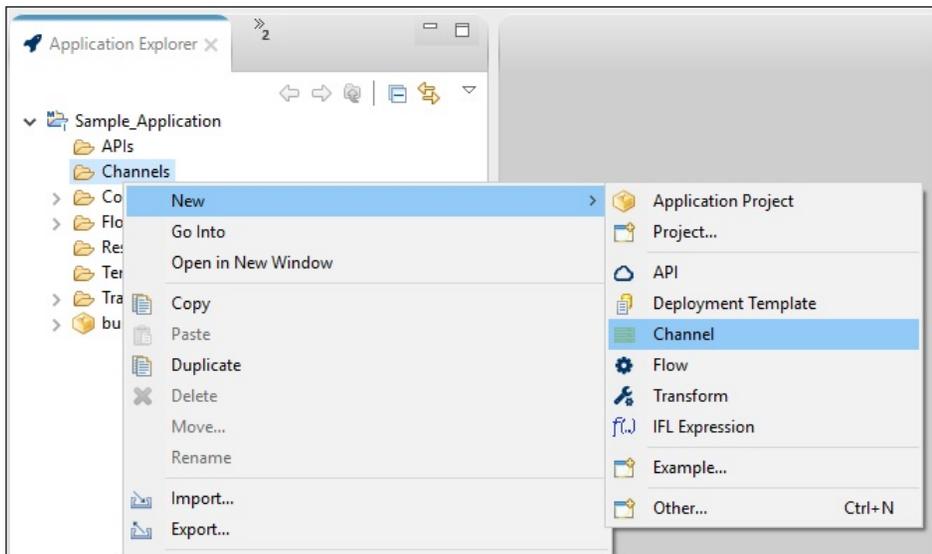
Creating Channels Using Channel Builder

This section describes how to create channels using Channel Builder.

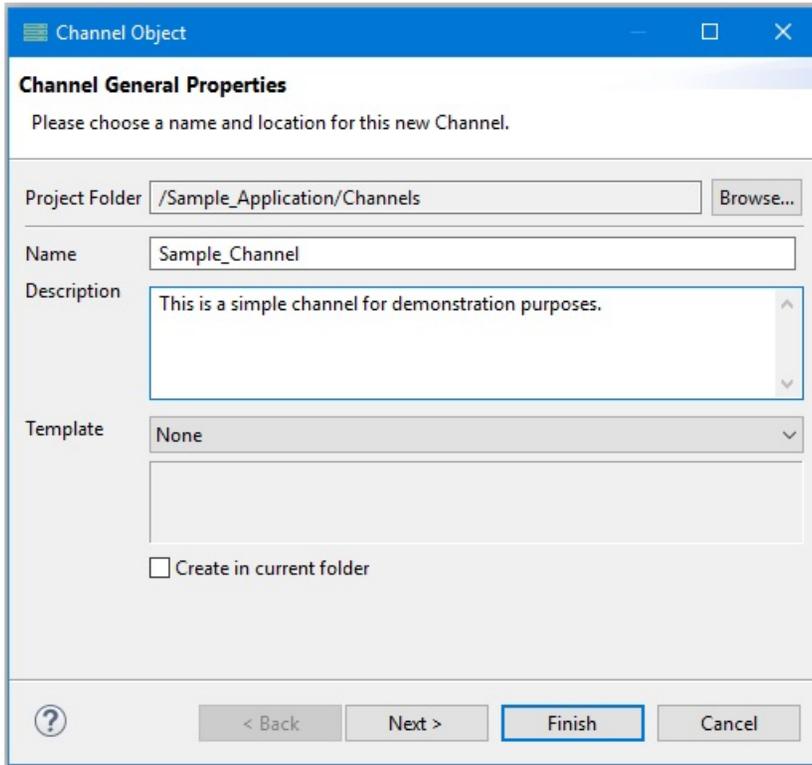
Procedure: How to Create a New Channel

To create a new channel:

1. In the Application Explorer tab, expand your application project. Right-click the *Channels* folder, select *New* and then click *Channel*, as shown in the following image.

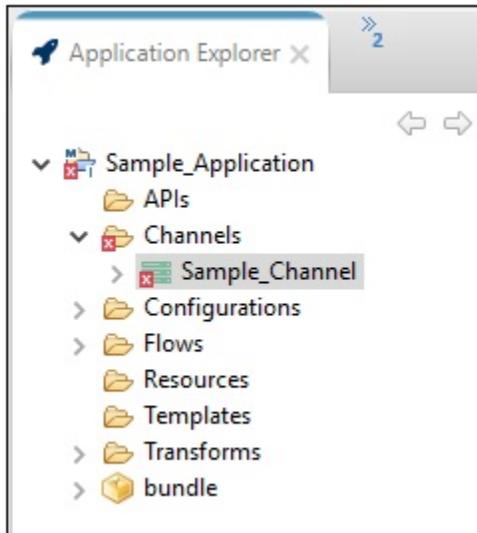


The Channel Object dialog opens, as shown in the following image.



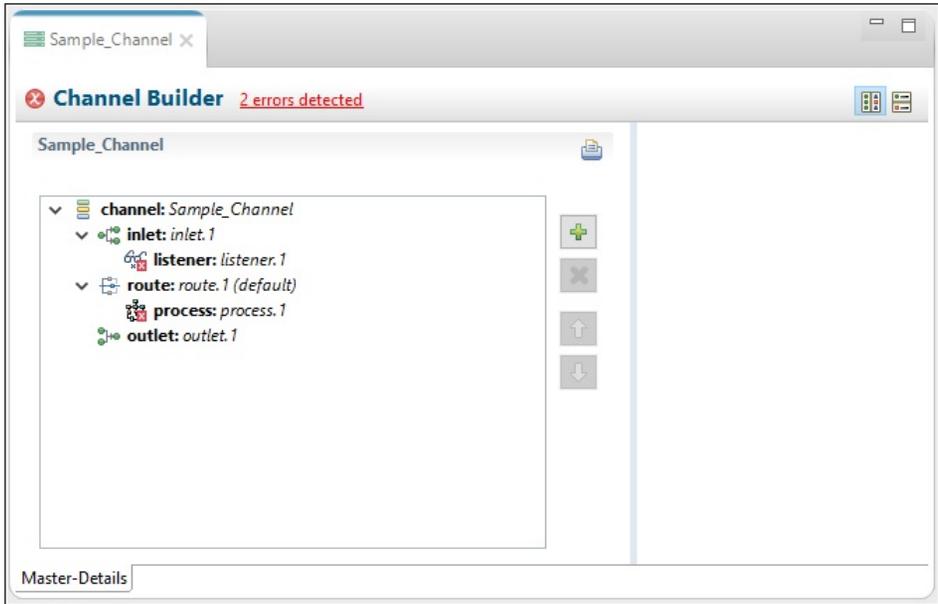
2. Enter a name for your channel (for example, Sample_Channel), a description (optional), and then click *Finish*

Your new channel (Sample_Channel) is added to the Channels subfolder within your application project, as shown in the following image.



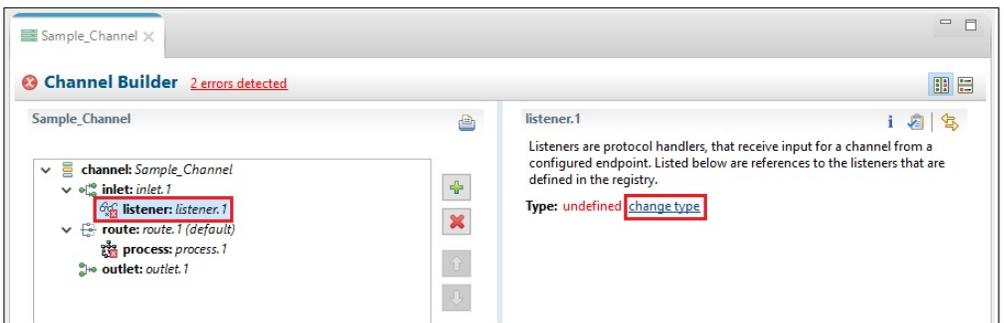
Since this channel has not yet been configured, the red x icons are displayed as shown. You can ignore these error indicators for now, which will be removed once the channel is configured.

The Channel Builder also opens as a new tab (containing the name of your channel) in the workspace area where you can start adding your channel components, as shown in the following image.

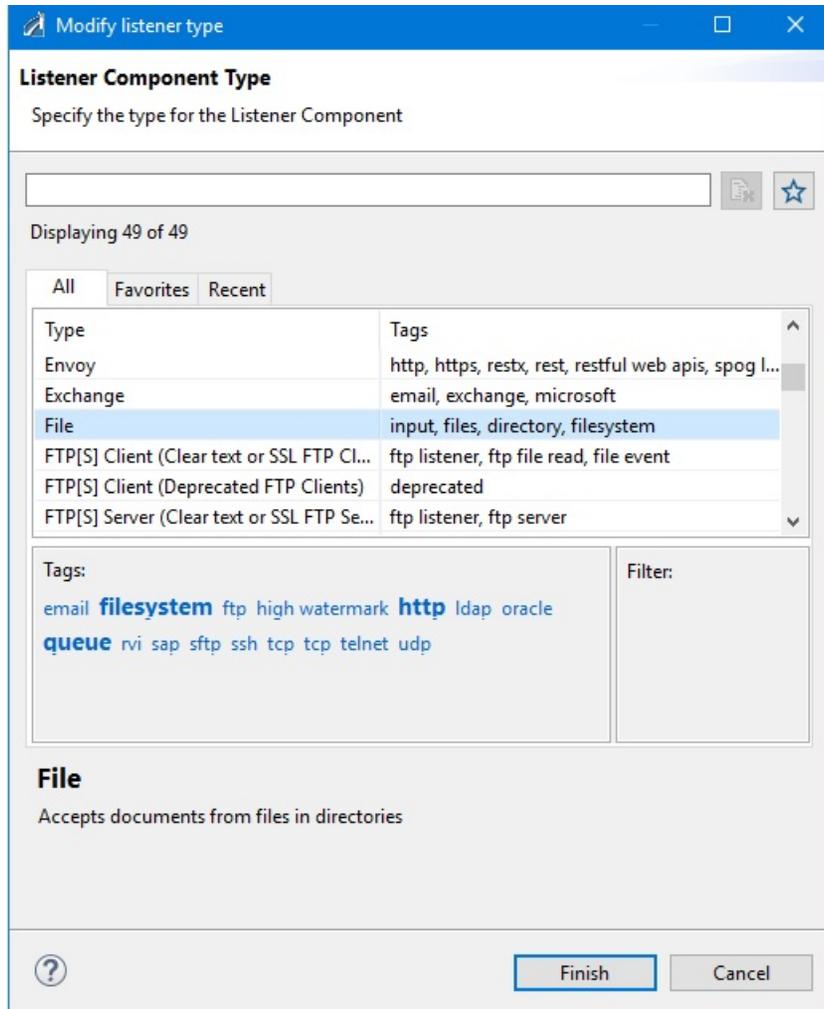


Once again, error indicators are displayed, which now indicate that an inlet and a route must be defined for this channel.

3. To define your listener, click *listener:listener.1* under the *inlet: inlet.1* node in the left pane and then *change type* in the right pane, as shown in the following image.



The Modify listener type dialog opens, as shown in the following image.



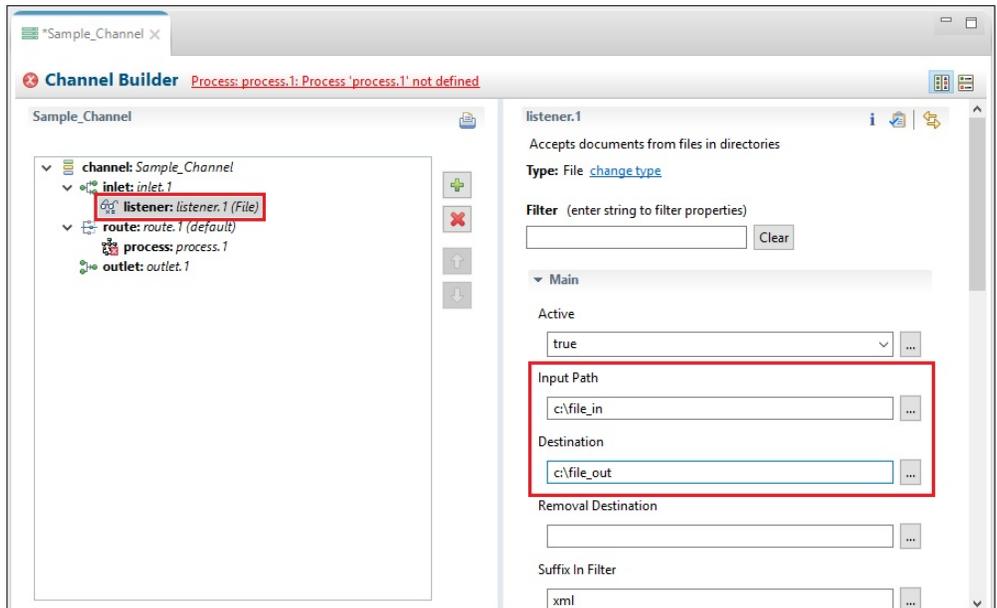
4. Select *File* from the list of available listener types, which indicates a File listener, and then click *Finish*.

The configuration parameters for the File listener are displayed in the right pane of the Channel Builder, as shown in the following image.

The screenshot shows a configuration window titled "listener.1" with three icons in the top right: an information icon, a checkmark icon, and a refresh icon. Below the title, it says "Accepts documents from files in directories". The "Type" is set to "File" with a "change type" link. A "Filter" section includes a text input field and a "Clear" button. A section titled "Main (Missing 2 required fields)" is expanded, showing several configuration fields: "Active" (a dropdown menu with "true" selected and a "..." button), "Input Path" (a text input field with a red label and a "..." button), "Destination" (a text input field with a red label and a "..." button), "Removal Destination" (a text input field with a "..." button), and "Suffix In Filter" (a text input field with "xml" and a "..." button).

Any required configuration parameters are identified by red text. For example, in the case of a File listener, the Input Path and Destination parameters are required.

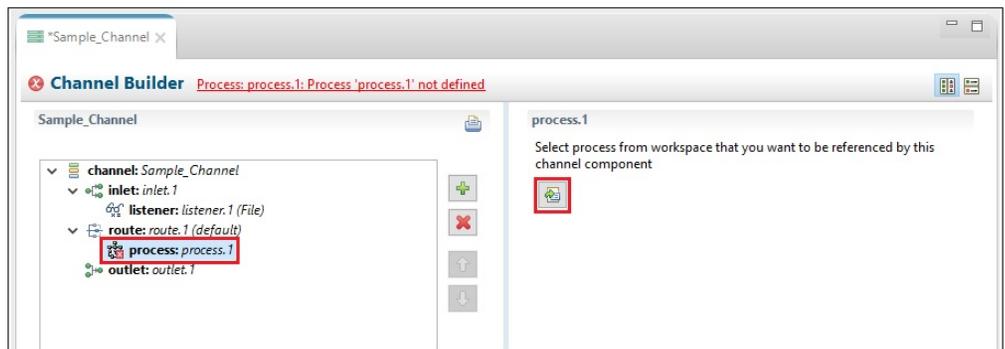
- Specify values for the Input Path and Destination parameters, as shown in the following image.



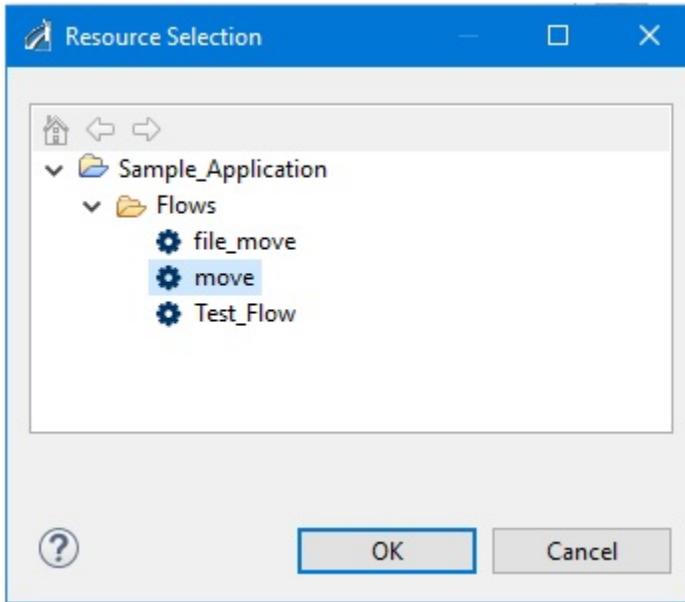
Notice that the red text previously used to identify the Input Path and Destination parameters has been removed. In addition, one of the error indicators, which was previously shown for the undefined listener in the left pane is no longer displayed.

You are now ready to associate a process flow for the route of this channel.

- Click *process:process.1* under the *route: route.1* node in the left pane and then the *Resource Selection* icon in the right pane, as shown in the following image.

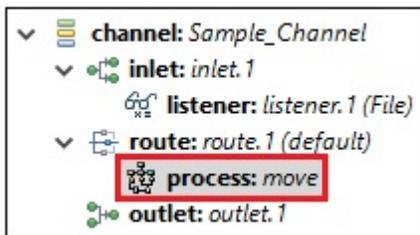


The Resource Selection dialog opens, as shown in the following image.



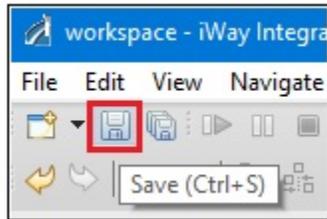
7. Navigate to the Flows subfolder in your application project, select the process flow that you want to associate with the route of your channel, and then click **OK**.

You are returned to the Channel Builder, as shown in the following image.

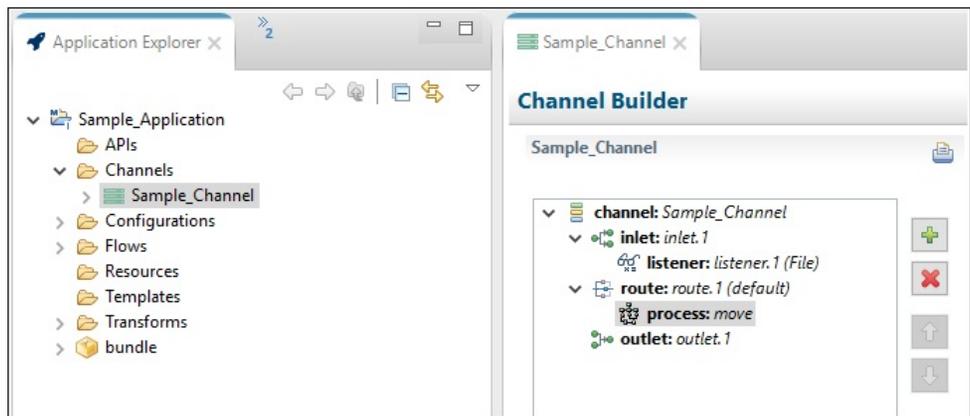


Notice that the second error indicator, which was previously shown for the undefined route in the left pane is no longer displayed.

8. Click Save on the toolbar to save the changes you made to your channel, as shown in the following image.



You have successfully created a new channel using Channel Builder in iIT.



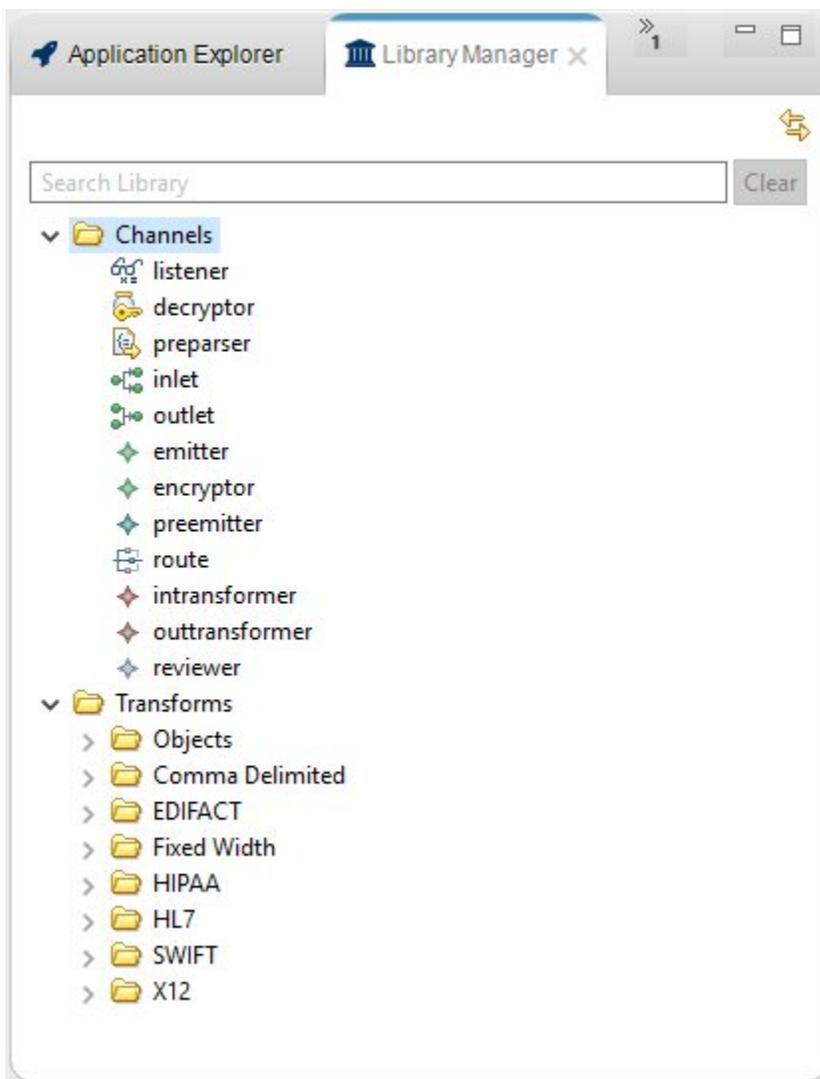
Notice that all of the error indicators, which were previously shown for this channel, are no longer displayed.

Library Manager

The library in iIT is a repository for reusable resources. The Library Manager provides a graphical interface to work with the library and interact with the resources. The component resources in the library are generic and extensible so the Library Manager can work with an array of resources that iIT supports (for example, channels and transforms).

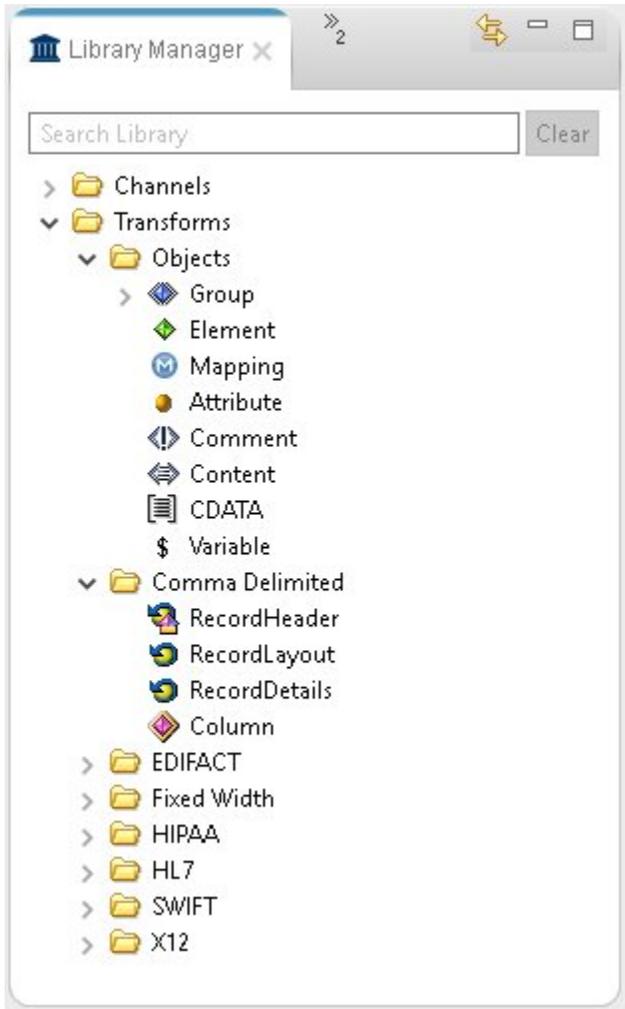
Library Manager View

The Library Manager is a new view in the Integration perspective. By default, it appears to the left of the editor area. The main control in the Library Manager is a tree representation of the library, as shown in the following image.



1. The top tier in the view reflects Channels and Transforms.

The following image shows the contents of the *Transforms* folder with the *Objects* and *Comma Delimited* folders expanded.



Working With Library Resources

Library Manager provides a centralized location of reusable components for Channels and Transforms.

To access the Import/Export menus, the user must be in the proper section of the component.

To export a component from the Channel Builder, right-click the component (for example listener) and choose *Export to Library*. The component will then show up in the Library Manager under the applicable category.

To import a component from the Library Manager, and use it in a Channel or Transform, right-click the area where the imported resource should go (for example, Channel Listener) and select *Import from Library*. The user can then select a resource to import from a list of available Library Manager components.

Library Manager components can also be exported to a file system by right-clicking the component in the Library Manager, choosing *Export* and selecting a file system location. Components can also be imported into the Library Manager from the file system, assuming that they were exported from a Library Manager tool.

Library Manager provides the following options.

Subcategory

Subcategories can be created using the context menu on the parent category. When exporting a resource to the Library, pick a subcategory or the category where you want the resource to be created.

Delete/Delete All

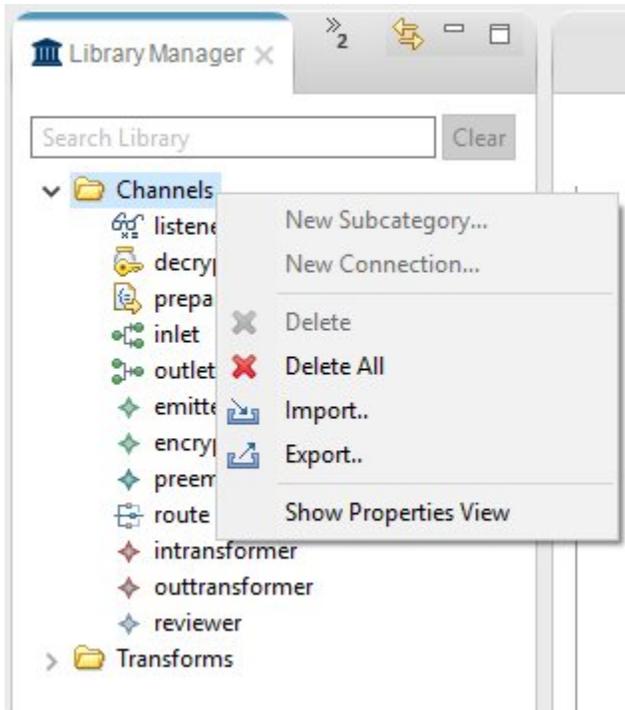
Resources and subcategories can be removed by using the context menu.

Search

Search resources by typing a name pattern in the search field. The Library tree will be filtered to show the matching resources. The Clear button to the right of the search area clears the pattern and restores the Library tree.

Import/Export

These operations are provided by the context menu of the Library Manager. The archived library will be in .ebl format. The following image shows the context menu for Import/Export resources.



Chapter 3

Performing Specific Configuration Tasks

This section describes how to perform specific tasks using iWay Integration Tools (iIT).

In this chapter:

- [Working With Application Projects](#)
 - [Setting a Default Target Server Version](#)
 - [Configuring Disposable Test Servers for Test Run Integration](#)
 - [Configuring and Using Schema Sets](#)
 - [Configuring and Using the Script Object](#)
 - [Working With the Registry](#)
-

Working With Application Projects

An Application Project is a container of resources used to create your integration solution. The Application Project helps you organize your resources in a logical manner and provides facilities for working with those resources.

Creating an Application Project

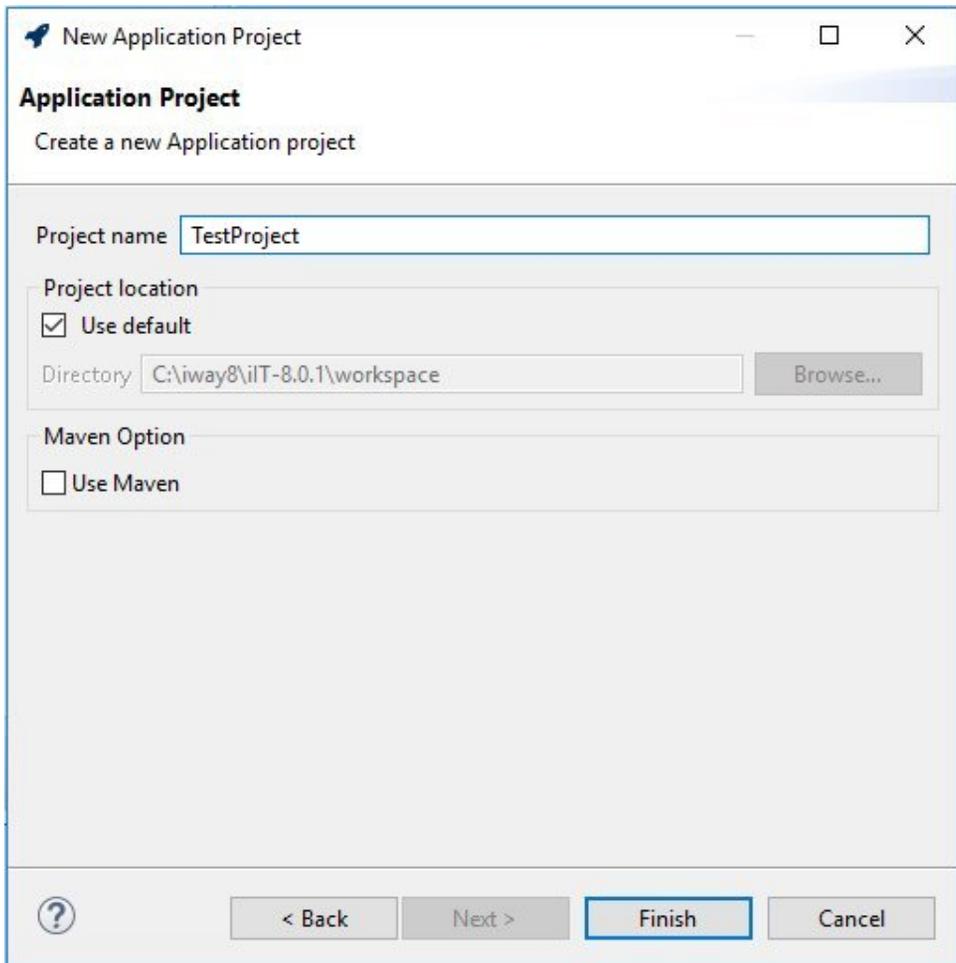
To create a new Application Project:

1. Select *File*, choose *New*, and then *Project* from the main menu.

You can also right-click anywhere within the Application Explorer view, select *New* and then *Project* from the context menu.

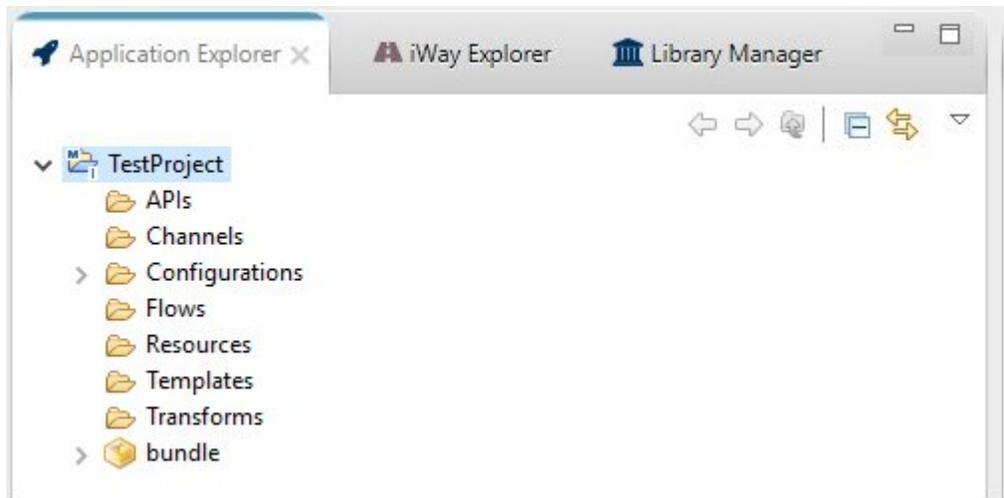
2. In the Select a wizard dialog box, expand *iWay Integration* and select *Application Project*.

The New Project wizard opens as shown in the following image.



3. Enter a name for the project in the Project name field (for example, TestProject) and click *Finish*.

A new project with the name you selected will appear in the Application Explorer window as shown in the following image.



You will also see other folders that were created to hold different types of resources. These folders are just for your convenience and it is optional to put resources in them.

Changing a Default Export Location

To change the default export location for a resource type:

1. Select the Application Project that you wish to change and right-click to open the context menu.
2. Select *Properties*. The properties for the Application Project opens.
3. Expand the *iWay Integration > Export Folders* branch in the left pane.
4. Select the *Enable project specific settings* checkbox.
5. Click the folder in the *Default Folder* column for the type that you wish to change. An ellipsis (...) will appear that allows you to browse the project's folders and pick a new default location.
6. Click *Apply*.
7. Click *OK* to close the properties page.

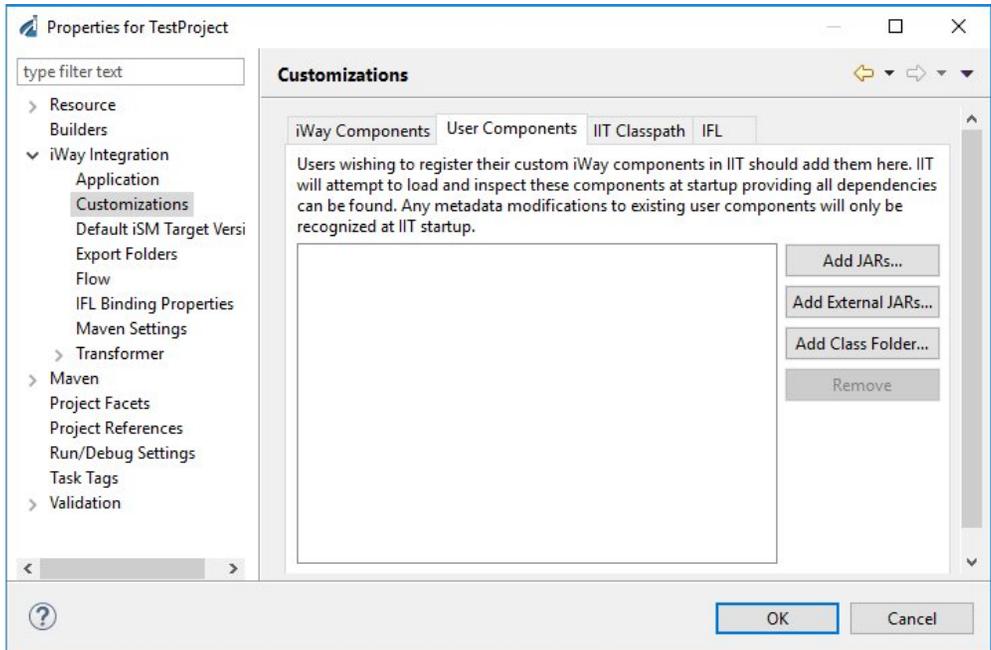
Adding a Customization to an Application Project

To add a customization to an Application Project:

1. Select the Application Project that you wish to contain the Customization and right-click to open the context menu.

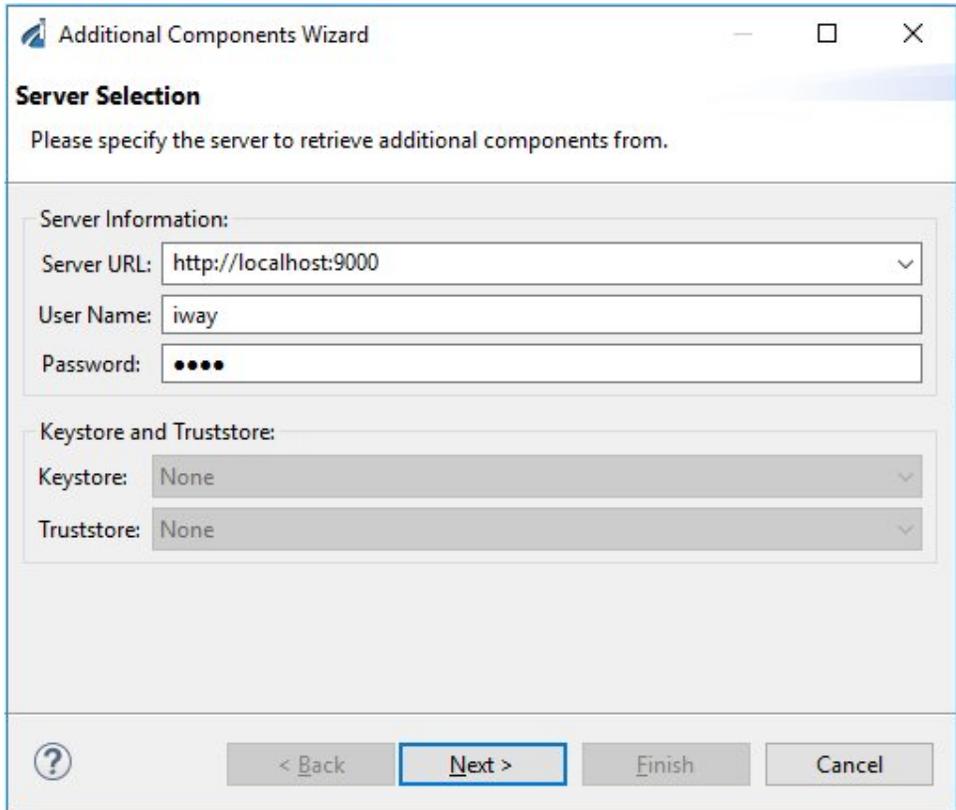
2. Select *Properties*. The properties for the Application Project opens.
3. Expand the *iWay Integration > Customization* branch of the iWay Integration properties category.

The Customization dialog has four tabs, iWay Components, User Components, IIT Classpath, and IFL, as shown in the following image.



4. To add iWay Components, click *Import* in the *iWay Components* tab.

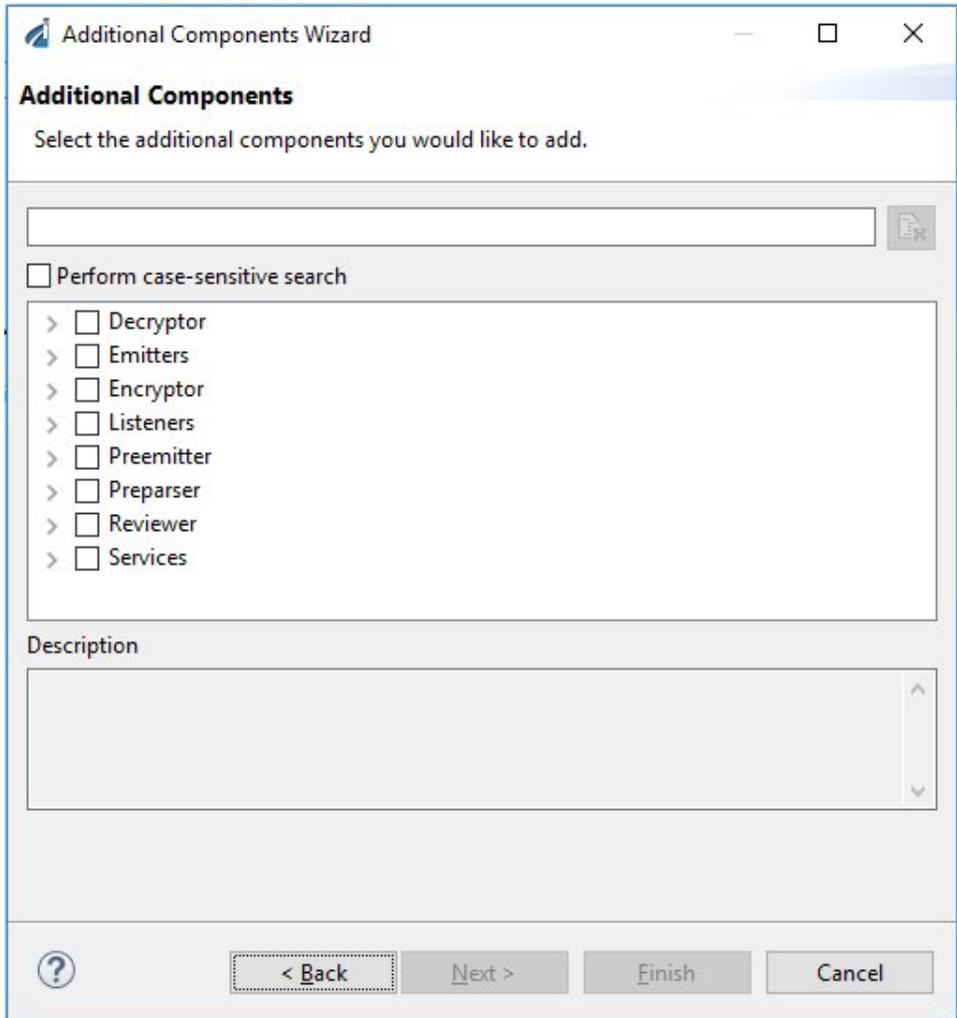
The Server Selection dialog box opens, as shown in the following image.



The screenshot shows a dialog box titled "Additional Components Wizard" with a "Server Selection" section. The instruction reads: "Please specify the server to retrieve additional components from." The "Server Information" section contains three fields: "Server URL" with the value "http://localhost:9000", "User Name" with the value "iway", and "Password" with four dots. The "Keystore and Truststore" section contains two fields: "Keystore" and "Truststore", both with the value "None". At the bottom, there are four buttons: a help icon (?), "< Back", "Next >" (highlighted with a blue border), "Finish", and "Cancel".

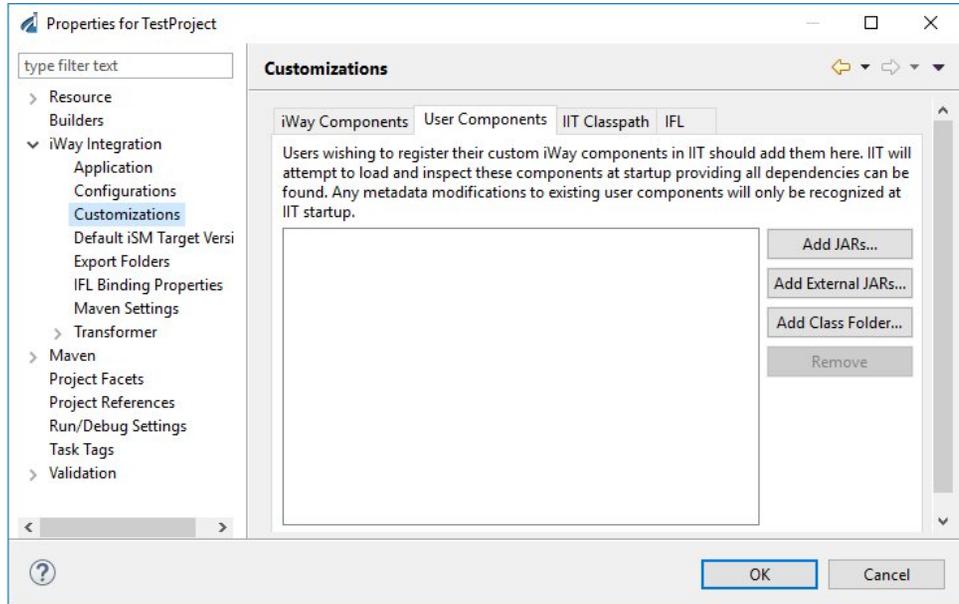
5. Click Next.

The Additional Components dialog box opens, , as shown in the following image.



6. Select the check box(es) of the components you wish to add and click *OK*.

7. On the *User Components* tab or *IIT Classpath* tab, add a JAR from the workspace using the *Add JARs* button, link a JAR from the local file system using the *Add External JARs* button, or use the *Add Class Folder* to link classes from another project, as shown in the following image.



8. Click *Apply*. The Java content will be added to the Application Projects customization classpath.
9. To add IFL (iWay Functional Language) functions, click *Import* in the *IFL* tab.
10. Select the functions you wish to add and click *Finish*.
11. Click *OK* to close the properties page.

Searching Flows

Using the Search feature, you can search for specific terms within flows in your Application Projects. This feature is also useful when searching for items, such as Special Register (SREG) names and other parameters.

Procedure: How to Search Across Flows

To search across flows:

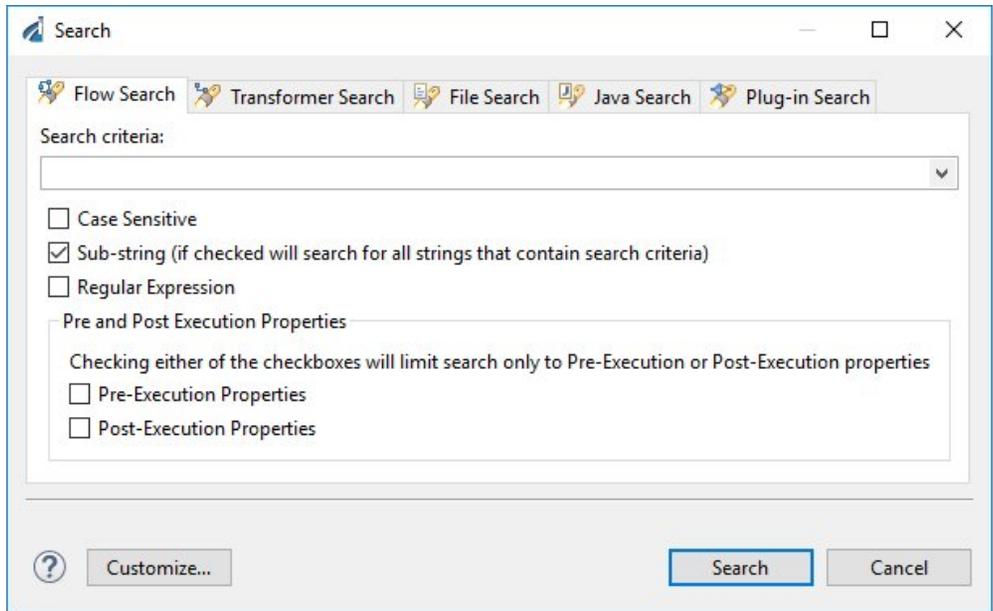
1. Click the *Search* icon in the toolbar, as shown in the following image.



You can also click the down arrow to the right of the Search icon and select *Flow Search*, as shown in the following image.

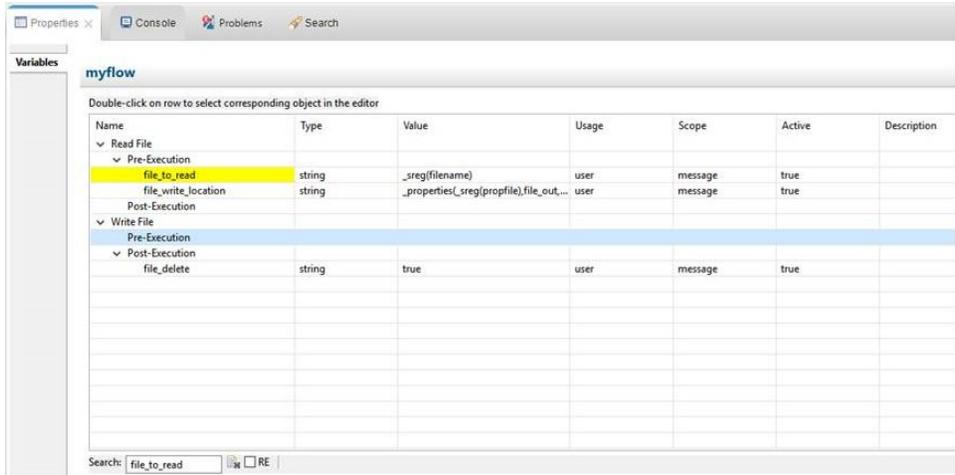


The Search dialog opens and displays the Flow Search tab, as shown in the following image.



2. Enter your search term in the Search criteria field and select any of the following options, if you want to refine your search results:
 - Case Sensitive
 - Sub-string
 - Regular Expression
 - Pre and Post Execution Properties.
3. Click *Search*.

When editing a flow, you can see all the variables in the Properties tab and you can search across them. In this example, the result of a search for the "file_to_read" variable is highlighted for quick access ,and shown in the following image.



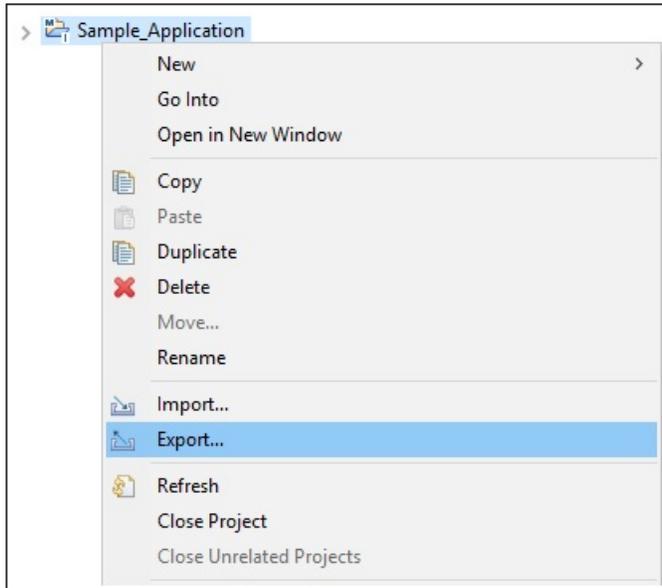
Exporting and Importing Application Projects

This section describes how to export and import application projects using iWay Integration Tools (iIT).

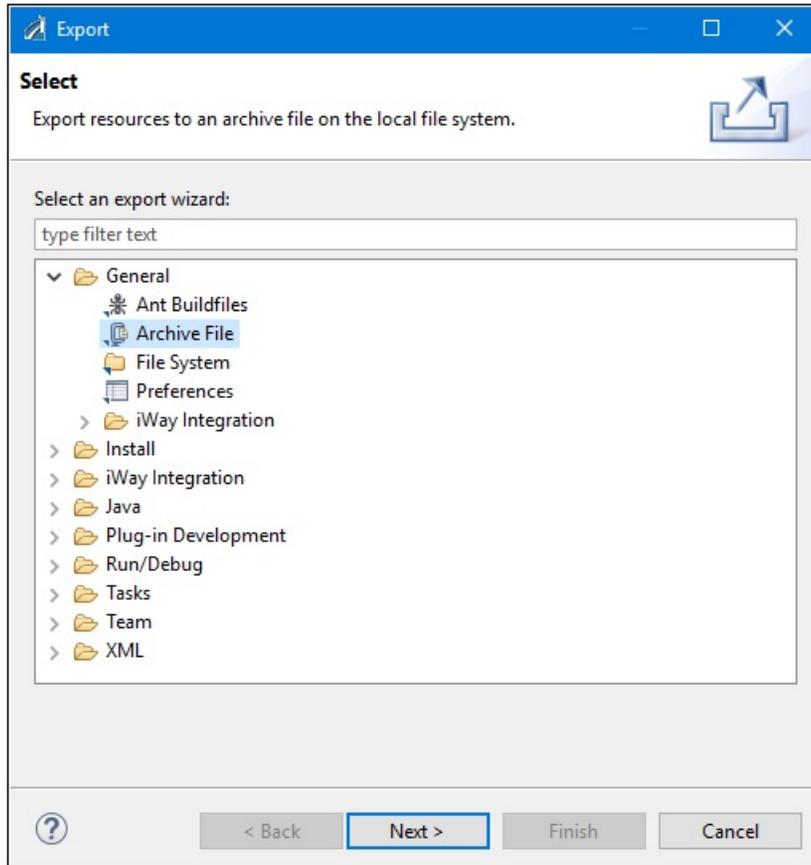
Exporting Application Projects

To export an application project:

1. Right-click an application project in the Application Explorer tab and select *Export* from the context menu, as shown in the following image.

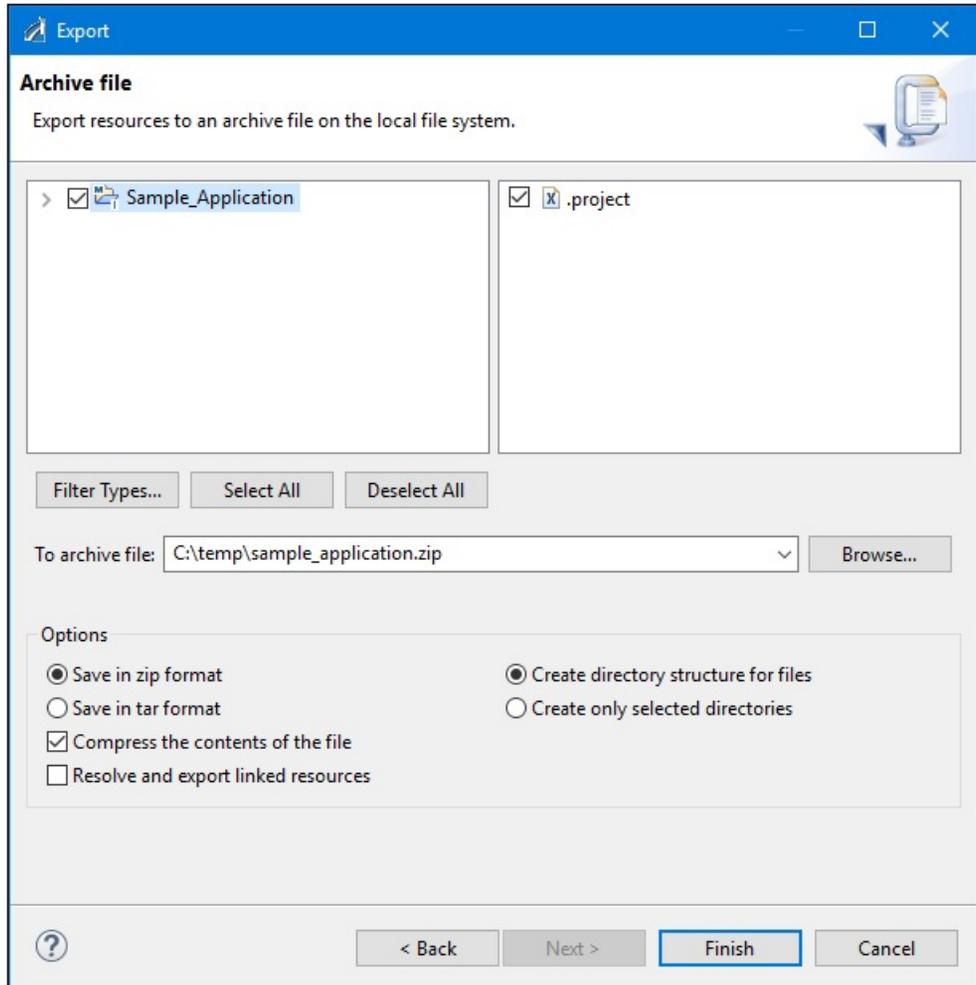


The Export dialog opens, as shown in the following image.



2. Expand the *General* folder, select *Archive File*, and then click *Next*.

The Archive file pane opens, as shown in the following image.



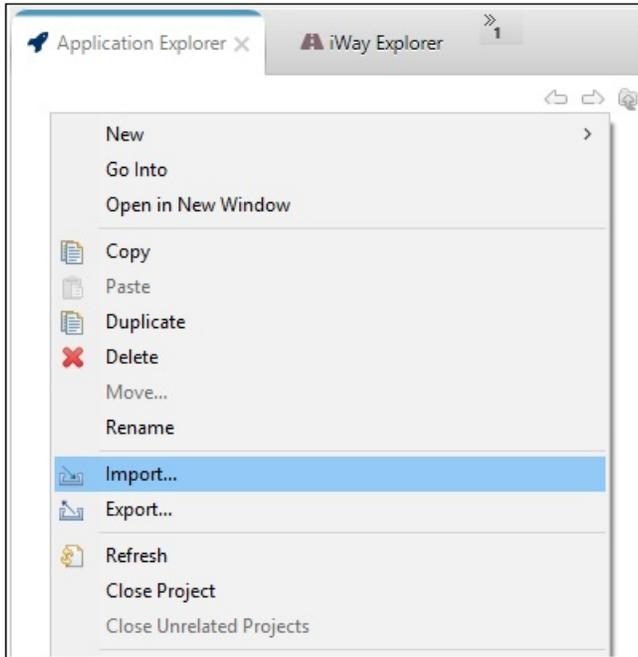
3. Browse to a location on your file system where you want to save the archive file that will be generated for your application project (for example, c:\temp).
4. Click *Finish*.

The selected application project is saved as an archive file (for example, sample_application.zip) in the location that you specified.

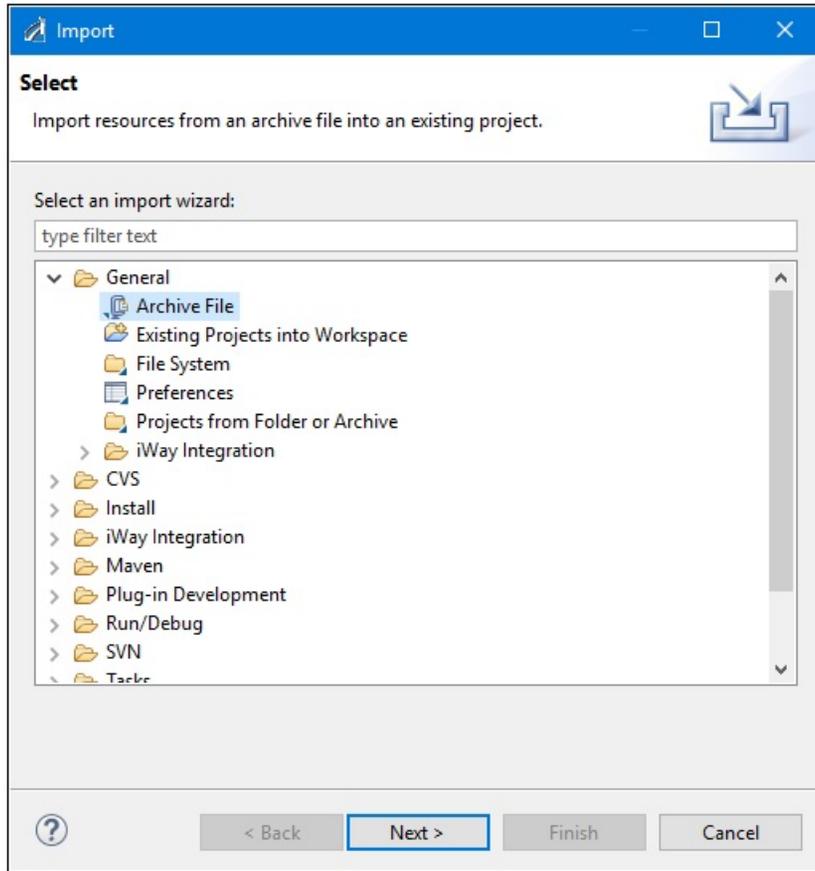
Importing Application Projects

To import an application project:

1. Right-click anywhere in the Application Explorer tab and select *Import* from the context menu, as shown in the following image.

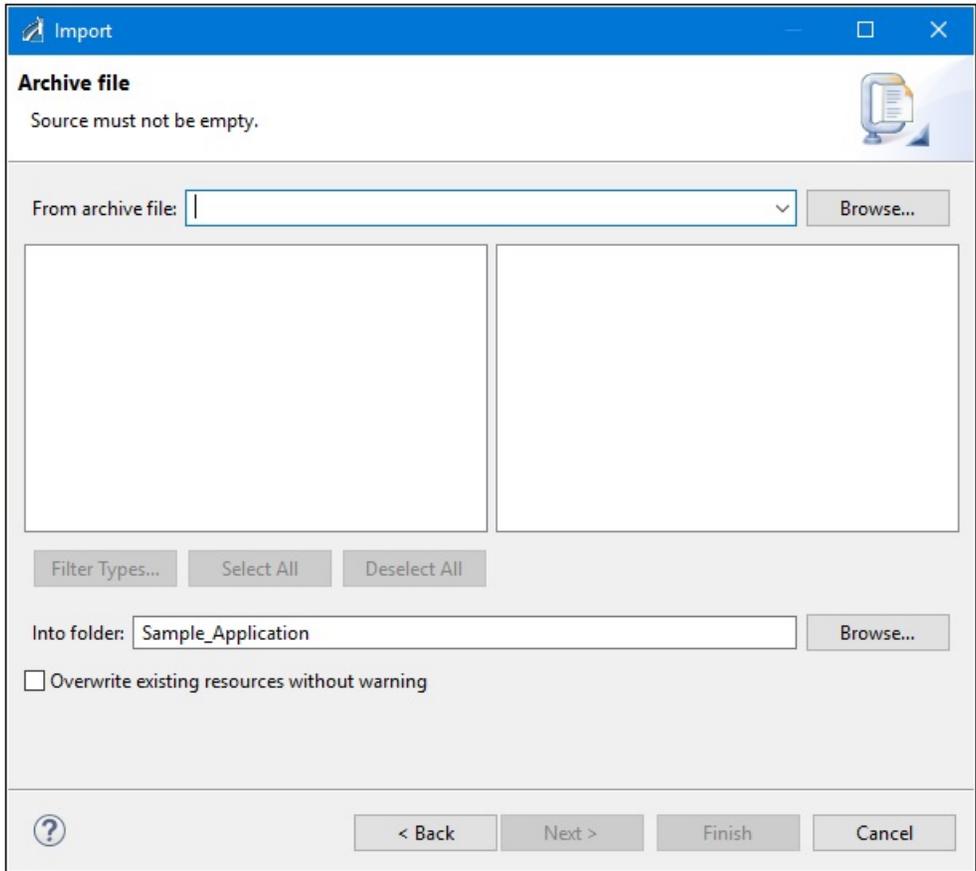


The Import dialog opens, as shown in the following image.



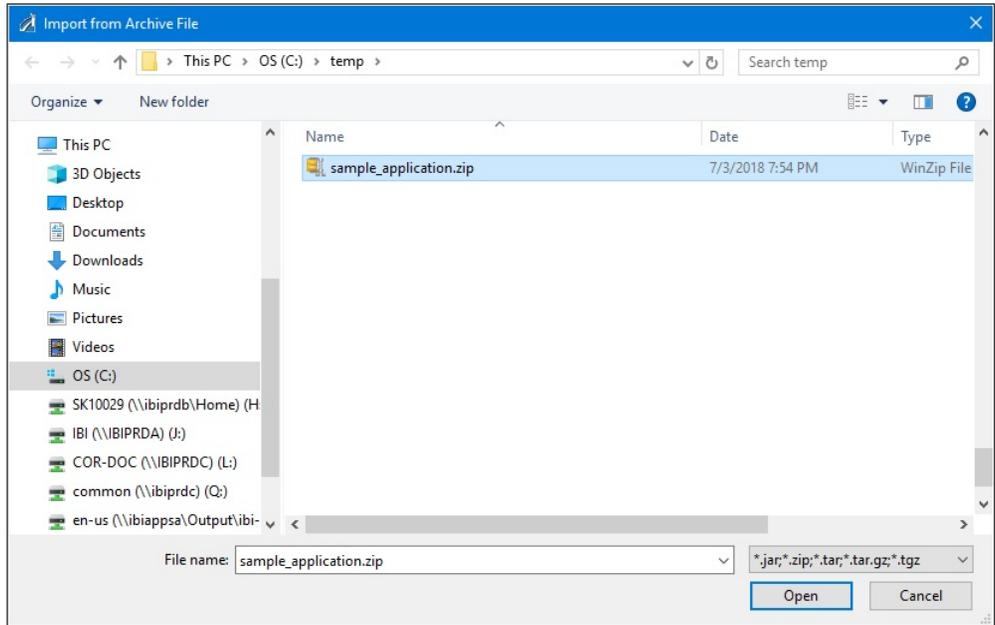
2. Expand the *General* folder, select *Archive File*, and then click *Next*.

The Archive file pane opens, as shown in the following image.



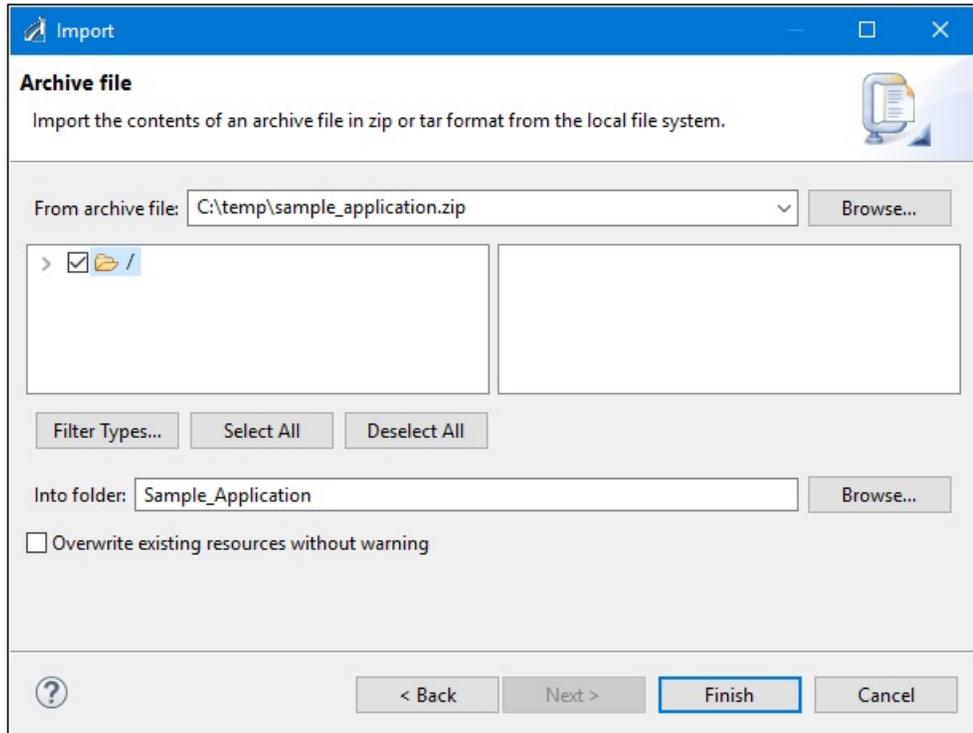
3. Click *Browse* to the right of the From archive file field.

The Import from Archive file dialog opens, as shown in the following image.



4. Browse to the location on your file system where the archive file for your application project (for example, sample_application.zip) is located and select the file.
5. Click *Open*.

You are returned to the Archive file pane, as shown in the following image.



6. Click *Browse* to the right of the *Into folder* field and select an available folder where you want to import the contents of the selected archive file.

For example, you can select an existing application project and all of the components (for example, channels, flows, transforms, and so on) from the archive file will be imported into the corresponding sub-folders of the selected application project.

7. Click *Finish*.

Setting a Default Target Server Version

To set a default target server version for new resources created in a project:

1. Select the project you wish to set the default target server version for and right-click to open the context menu.
2. Select *Properties*. The properties for the project opens.
3. Expand the *iWay Integration > Default iSM Target Version* branch of the *iWay Integration* properties category.

4. Set the default target server version from the combo box.
5. Click *Apply*.
6. Click *OK* to close the properties page.

Configuring Disposable Test Servers for Test Run Integration

In prior iSM releases, there were only two options of test running a flow within iIT:

- Test run against a Registry

Note: The Registry is not supported in iWay 8 implementations, but is still available for backwards compatibility.

- Test run against a server

Test run against a Registry is seamless. All flow dependencies are published to the Registry. However, in a multi-application, multi-developer environment, there is the risk of flows conflicting. This can cause flows to rewrite dependencies or missing dependencies. Test run against a test server or admin server can guarantee that the flow has all of the required dependencies. However, building a test server with all of the required dependencies is an involved, multiple step operation.

A third option (which is actually the first option on the selection) is available to test run the flow against a disposable test server, which is created automatically and then disposed of upon the completion of the test.

This feature provides several key enhancements:

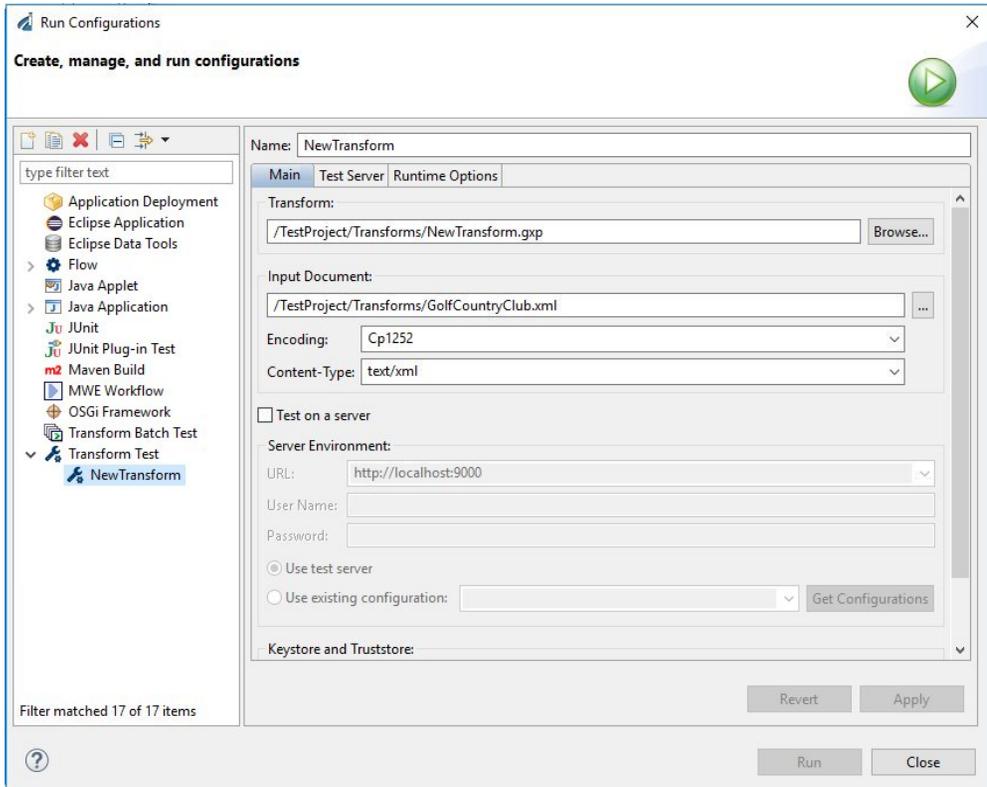
- Eliminates the need for a Registry during testing.
- Creates, deploys, and destroys the disposable test server automatically.
- The test server is based on provided iIA and template parameters or a default version is created.

The following steps outline the process of using the new test run option:

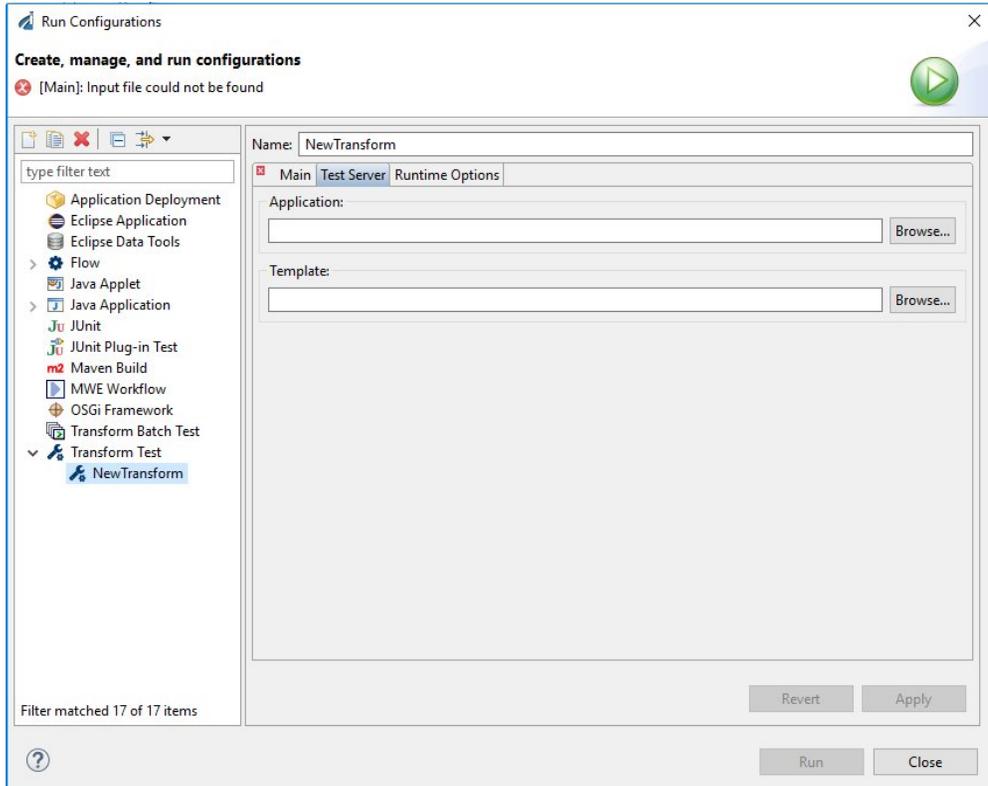
1. If the flow does not have an associated application, create a default application with all of the flow dependencies.
2. Build and deploy an application and (optionally) a template to an iWay installation as a test server.
3. Start the test server.
4. Test run the flow using the new test server and receive the resulting document.
5. Stop the test server.

6. Undeploy the test server.

The option to run the flow against the disposable test server is available under the Main tab of Run Configurations pane.



The Test Server tab enables you to configure a specific application with an optional template to be used as a disposable server. If an application or template is not provided, a default disposable test server is created for testing the flow.



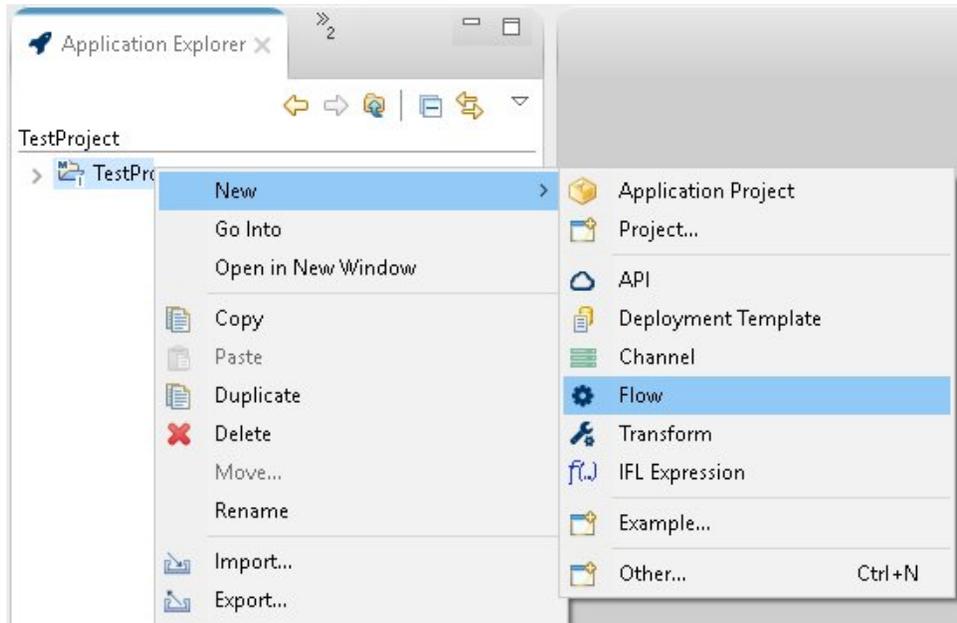
Configuring and Using Schema Sets

A schema can be assigned to a Start object in a flow to describe the input document.

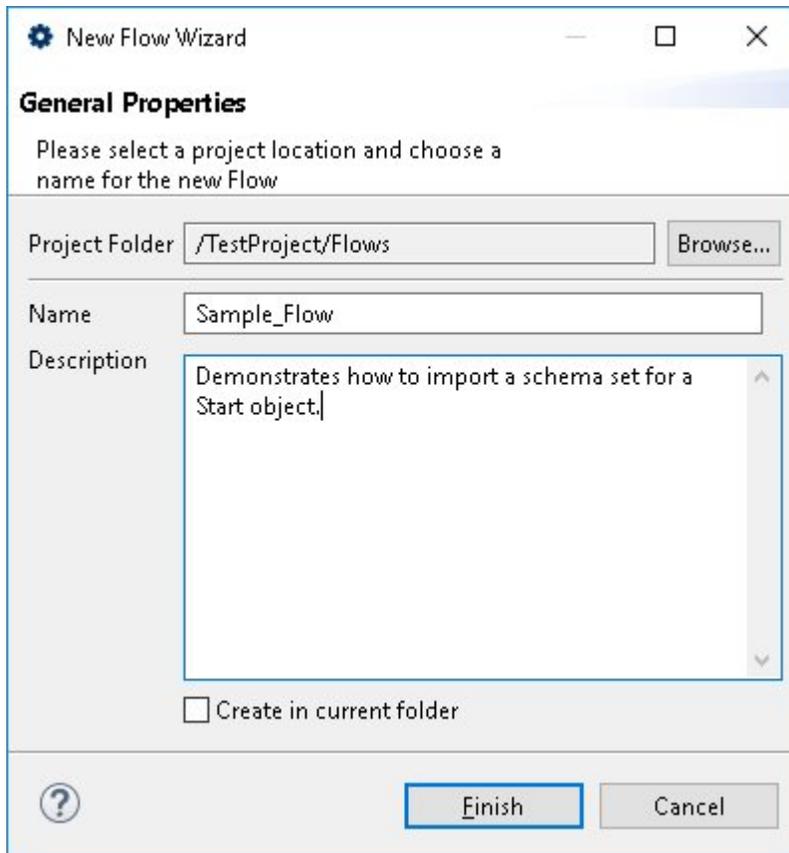
Procedure: How to Assign a Schema to a Start Object

To assign a schema for a Start object in a flow:

1. Right-click the *Flows* folder in your Application Project, select *New*, and then click *Flow*.

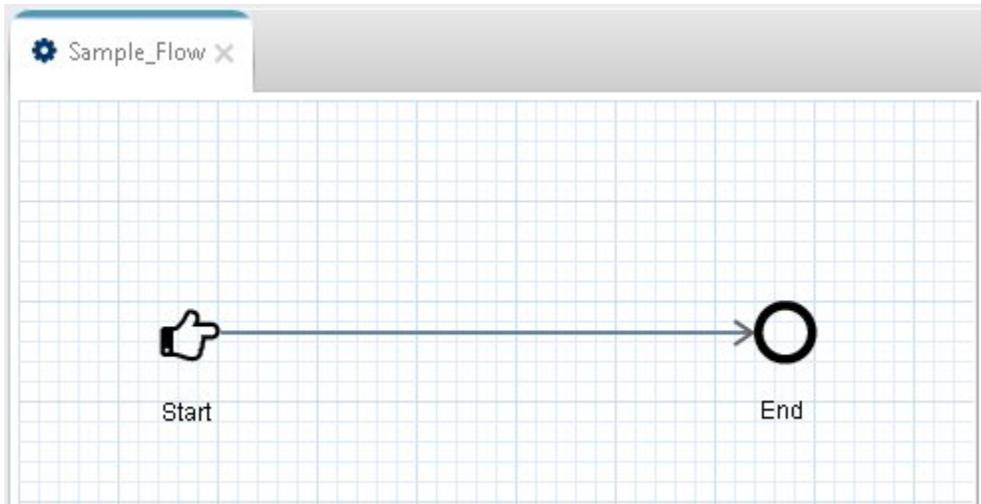


The New Flow Wizard opens and displays the General Properties pane, as shown in the following image.



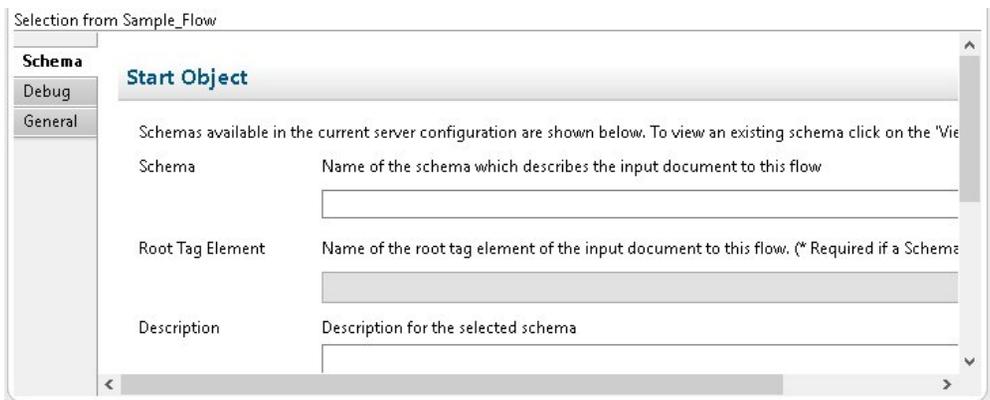
2. Provide a name for your flow (required) and a brief description (optional).
3. Click *Finish*.

The new flow is created in the designer workspace with a default Start object, as shown in the following image.



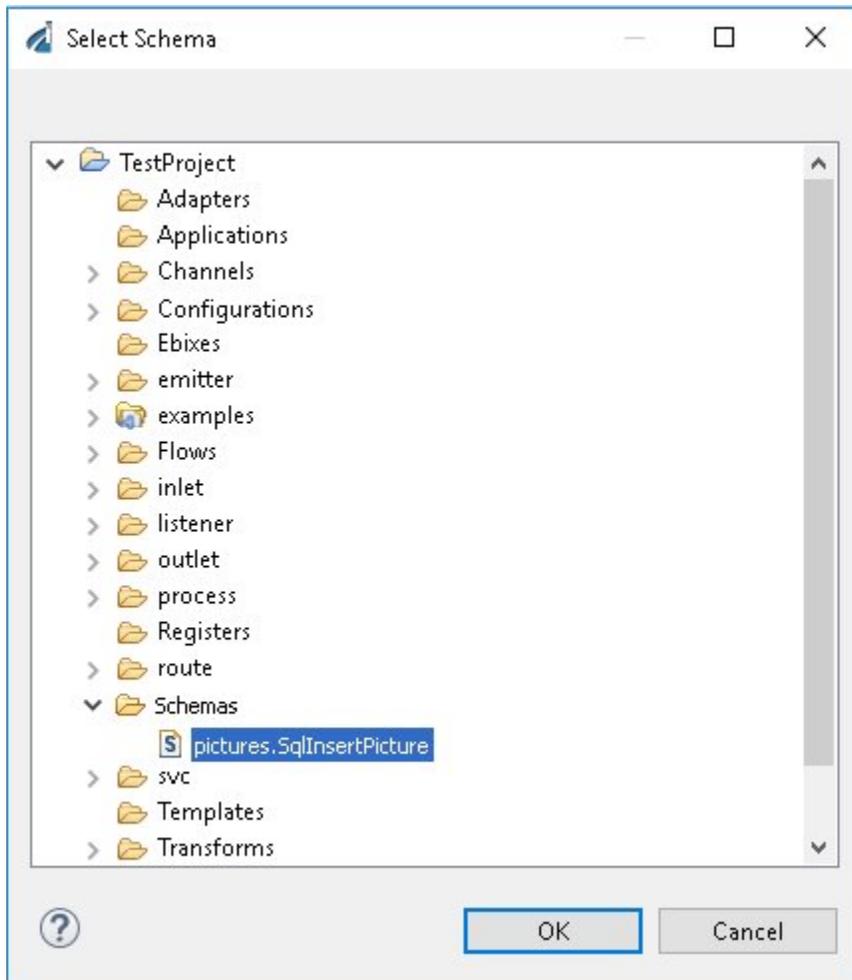
4. Click the *Start* object.

The Properties tab in the lower pane displays the properties for the selected Start object.



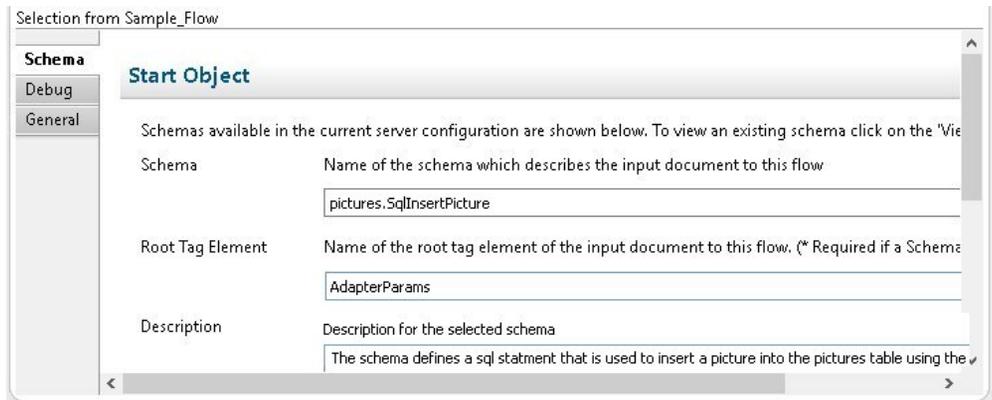
5. In the *Schema* tab in the left pane of the Properties tab, click the ellipsis button to the right of the Schema field (Browse project for Schema).

The Select Schema dialog box opens, as shown in the following image.



6. Expand the *Schemas* folder in your Application Project, and select the schema document that you want to add.

The input schema properties for the Start object are now defined in the Properties tab, as shown in the following image.



You can also assign a schema for an End object in a flow to describe the output document.

Configuring and Using the Script Object

The Script object is available, which you can configure and add to flows that are constructed in iIT. The Script object uses the following iSM service type:

`com.iwaysoftware.service.ScriptAgent`

The Script object allows you to include complex document processing and routing instructions in your flow that are written in any scripting language that is supported by the Java Scripting API (for example, Jython). This enables your application to optimize some of the application processing into a script rather than a complex flow. As a result, you can also reuse identical logic across multiple systems.

To add the Script object to a flow, click and drag the Script object from the Components section of the Palette, as shown in the following image.

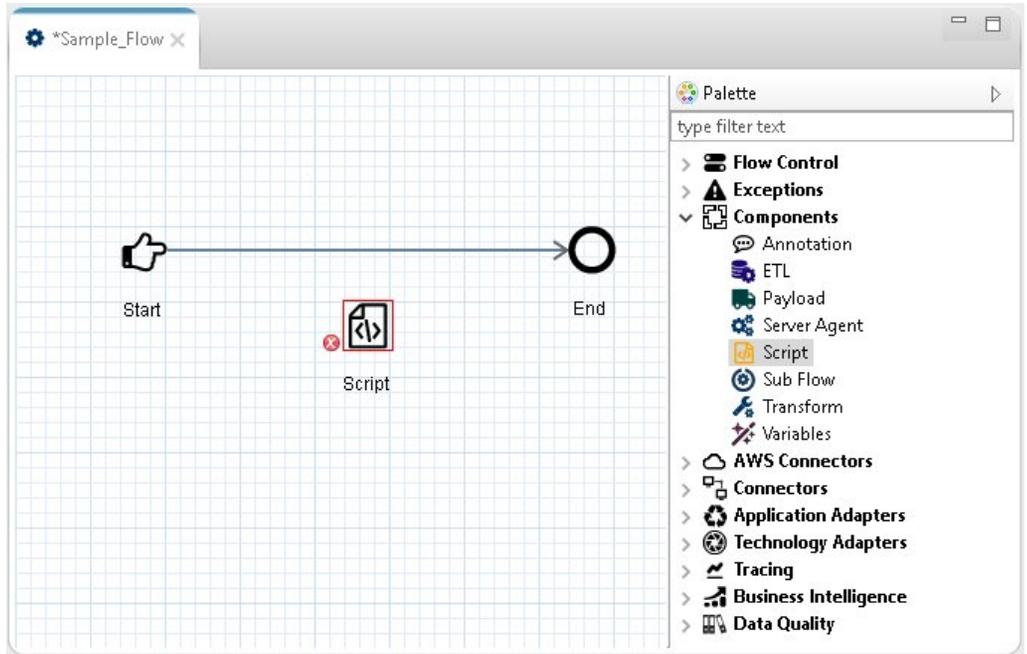


Procedure: How to Add a Script Object to a Flow

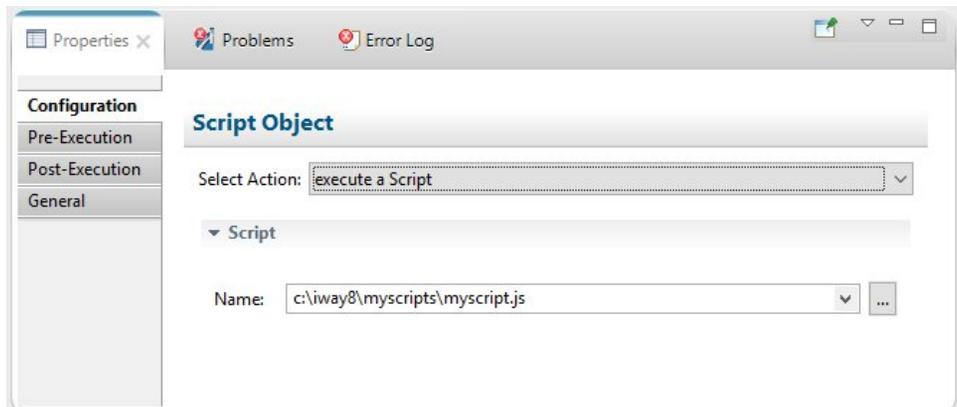
1. Click and drag the *Script* object from the Components section of the Palette to your flow, as shown in the following image.



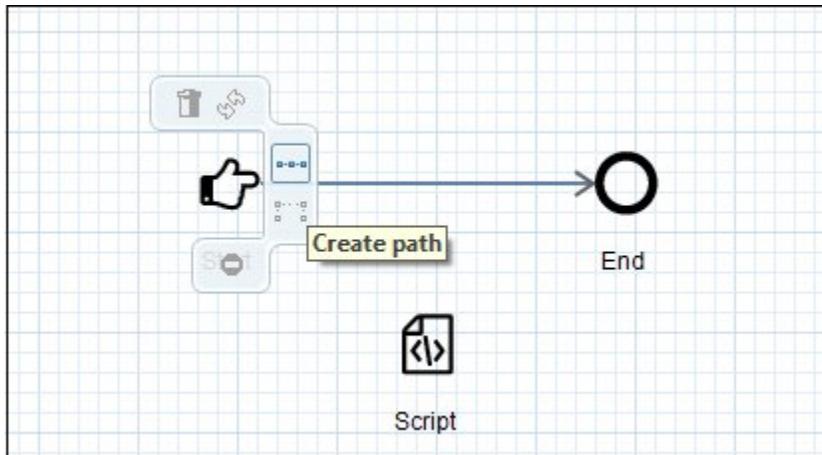
The new Script object is added to the workspace area, as shown in the following image.



2. In the *Name* field of the Properties pane, enter the a full path to the script file, which should include an explicit location, such as `c:\myscripts\myscript.jsscript`, or click the ellipsis (...) and navigate it, as shown in the following image.

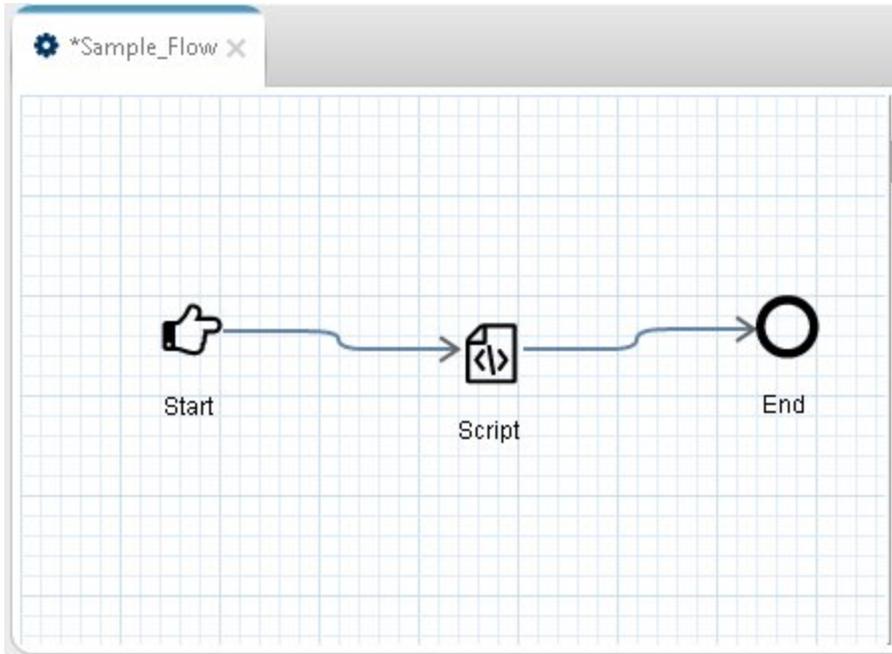


3. Click the Start object, select the *Create path* link, and drag it to the Script object, as shown in the following image.



4. Similarly, click the Script object, select the *Create path* link, and drag it to the End object.
5. Delete the original path between the Start and End objects.

The Script object is now in the flow between the Start and End objects, as shown in the following image.



Example 1: Invoking a Flow and Service Using the Script Object

This example shows how a flow and service can be invoked using the Script object.

Procedure: How to Invoke a Flow and Service

1. Create a file called `pflowobj.js` on your file system that contains the following JavaScript code:

```
importPackage(com.ibi.edaqm);
importPackage(com.iwaysoftware.iwscript);
function execute()
{
    var outDir = tools.getSpecialRegister("docOut");
    params = tools.newParameters();
    params.put("directory", outDir);
    // execute process
    processName = "hello_p1";
    process = tools.getProcess(processName);
    processResponse = new XDDocument();
    state = process.execute(ctx.getDocIn(), processResponse);
    if (state.indexOf('fail') == 0)
    {
        tools.info("Process flow '" + processName + "' not found");
    }
    else
    {
        // write result of process to file
        params.put("pattern", "process.xml");
        processToFile = tools.makeNewService("XDFileEmitAgent", params);
        processToFile.execute(processResponse, new XDDocument());
        return "success";
    }
}
```

2. Save this file to a location on your file system (for example, C:\Scripts).
3. Create a new flow and add a Script object that points to the following path:

C:\Scripts\pflowobj.js

This flow must contain a Start object, Script object, and an End object.

4. Import the *hello_p1* flow from the sample *hellozos.zip* archive using the Archive Manager tool in the iSM Administration Console.
5. Export the *hello_p1* flow to an Application Project.
6. Create a new application by adding the new flow (containing the Script object) and the imported *hello_p1* flow.
7. Test run the new flow (containing the Script object) against the test server. Ensure that the new application is added to the Test Server tab.

Verify that a response is obtained in the destination as defined by the new application.

Example 2: Invoking an iWay Transform Component Using the Script Object

This example shows how an iWay Transform component can be invoked using the Script object.

Procedure: How to Invoke an iWay Transform Component

1. Create a file called *transformobj.js* on your file system that contains the following JavaScript code:

```
importPackage(com.ibi.edaqm);
importPackage(com.iwaysoftware.iwscript);
function execute()
{
  transformResult = new XDDocument();
  transform = tools.getTransform("Computer_Parts_Sales");
  status = transform.execute(ctx.getDocIn(), transformResult);
  return XDAgent.EX_SUCCESS;
}
```

2. Save this file to a location on your file system (for example, C:\Scripts).
3. Create a new flow and add a Script object that points to the following path:

```
C:\Scripts\transformobj.js
```

This flow must contain a Start object, Script object, and an End object.

4. Import the following sample iWay Transform project into the Transforms subfolder of your Application Project:

```
<ism_home>\tools\transformer\samples\transform_projects\xml\XML_to_XML
\Computer_Parts_Sales
```

5. Import the following sample input XML document into the XML subfolder of your Application Project:

```
<ism_home>\tools\transformer\samples\transform_projects\xml\XML_to_XML
\Computer_Parts_Sales\input.xml
```

6. Create a new application by adding the new flow (containing the Script object) and the imported sample iWay Transform project.
7. Right-click the flow, select *Run As*, and then *Run Configurations* from the context menu.
8. Test run the new flow (containing the Script object) against the test server. Ensure that the new application is added to the Test Server tab.
9. Return to the main tab and select the input. Select *Use Test Server* and click *Run*.

Verify that a response is obtained in the destination as defined by the new application.

Working With the Registry

The Registry is not used in the iWay 8 implementations, but is still available for backwards compatibility.

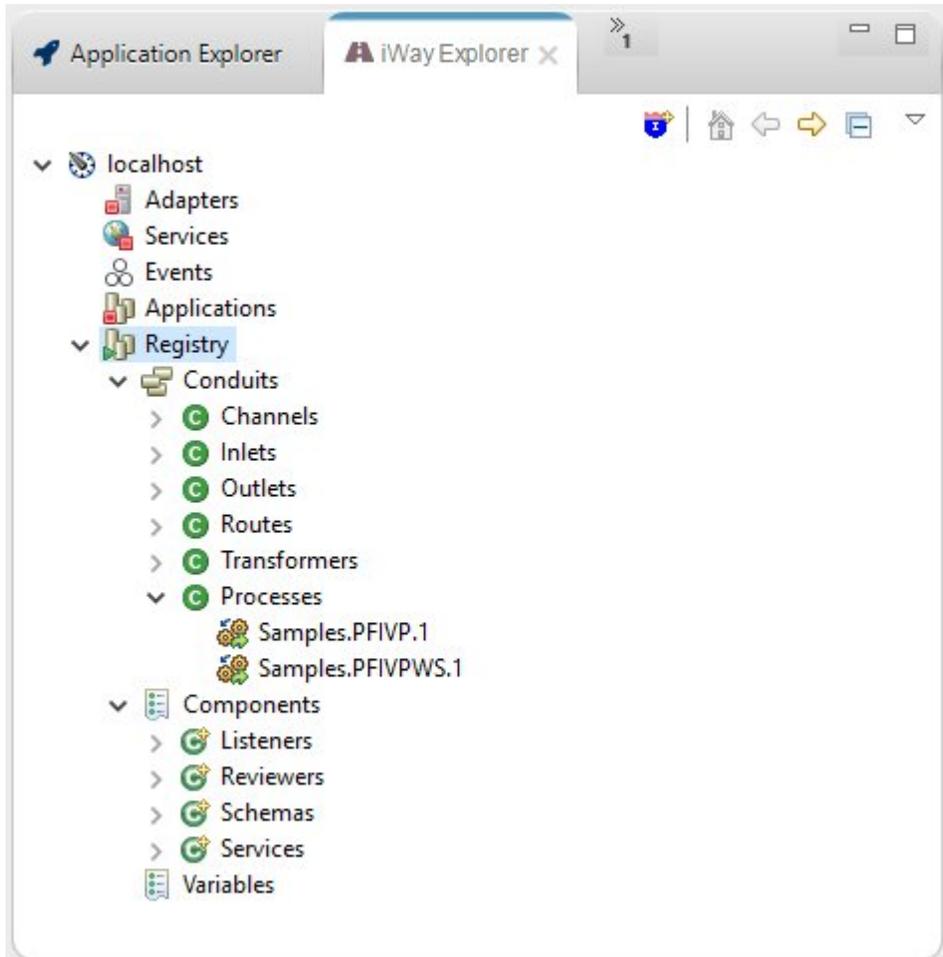
You can use the Registry Explorer to:

- Browse the contents of an iWay Service Manager (iSM) registry. For details on the iSM registry, see the *iWay Service Manager User's Guide*.
- Export a selected resource from a registry to an application project in your workspace.
- Add an object from a registry to a flow created in the iWay Integration Tools Suite.

Exporting a Resource From an iSM Registry

You can use the Registry component in iWay Explorer to browse resources available in the registry of an iSM server.

Registry-based deployment is not supported in the iWay 8 environment. However for migration purposes, this procedure can be used to import components from Registry-based deployments into the Application Project.



Some resources, for example, Transforms, Flows, Adapter, Registry Sets, and Schemas can be exported to an Application Project.

To export a resource:

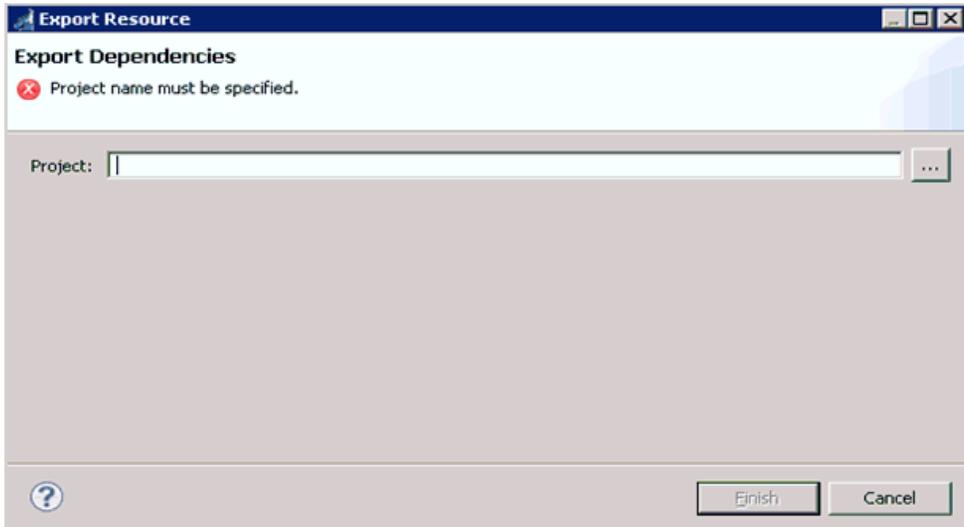
1. Connect to an iSM instance using the Registry component in the iWay Explorer view.
2. Right-click on a resource that you would like to export to iIT and select *Export*.

The Export Resource dialog box opens.

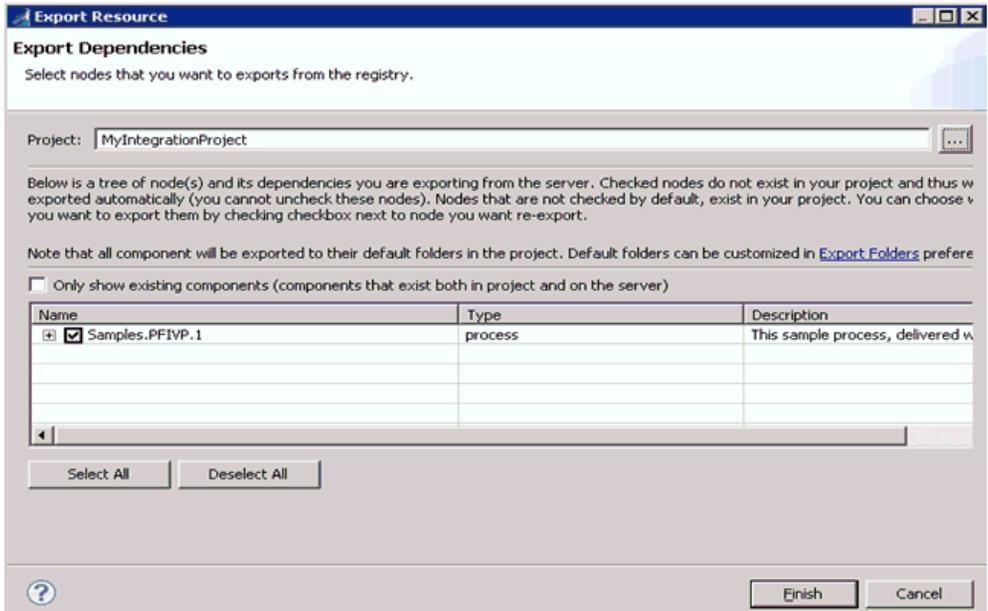
3. Specify a target project in the Project field.

If you have not created a project, click the Browse button and then the *Create Project* button.

All dependencies of the resource will be exported with the parent by default. For example, if you have a flow containing a transform, the transform will be exported to the default containing folder during the flow export process.



4. Select all of the nodes that need to be exported to the project and click *Finish*.



After the process is complete, the selected resource can be found in the Application Explorer under the target folder.



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Version 8.0 and Higher

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