

# **AnyLink Web Service Adapter User Guide**

**AnyLink 7**



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# About This Document

## Intended Audience

This document is intended to provide developers and system administrators with information about operating and managing Tmax AnyLink<sup>®</sup> (hereafter AnyLink) Web Service adapter. It includes basic concepts, additional knowledge, usage and examples of using Web Service adapter for an AnyLink project or business transaction.

## Required Knowledge

To fully understand this guide, users need to have an understanding of the following:

- JEUS
- XML, XML schema, WSDL, and XML and basic web service related knowledge (refer to the specifications and other related documents found in sources such as <http://www.w3.org>).
- AnyLink (refer to *AnyLink Studio Guide* and *AnyLink WebAdmin Guide*)

## Document Scope

This guide does not contain information about Java EE or Java specifications. For such information, refer to the relevant Java documents.

This guide only covers how to create or configure adapters through AnyLink Studio and WebAdmin. For more information, refer to *AnyLink Studio Guide* and *AnyLink WebAdmin Guide*.

# Document Organization

This guide consists of 3 chapters and an appendix as follows:

- Chapter 1: Introduction

Describes how an AnyLink Web Service adapter works.

- Chapter 2: Environment Configuration

Describes how to configure an AnyLink Web Service adapter and outbound rule.

- Chapter 3: Examples

Describes examples of using an AnyLink Web Service adapter.

- Appendix.A : Importing/Exporting WSDL

Describes the functions for importing and exporting WSDL



## Conventions

Convention	Meaning
<AaBbCc123>	Program source code file name
<Ctrl>+C	Hold down the Ctrl key and press the C key
<b>[Button]</b>	Name of a GUI button or menu
<b>Bold</b>	Emphasis
<i>Italics</i>	Reference to another guide
" " (Double quotation marks)	Reference to a chapter or section in this or another guide
'Input'	User input on the screen
Hyperlink	Email account, website, or a reference to other chapters or sections
>	Proceeding order of menu
+----	Files or directories exist in this directory
----	Files or directories do not exist in this directory
<div><b>Note</b></div>	Reference or caution
<b>[Figure 1.1]</b>	Figure caption
<div>AaBbCc123</div>	Commands, screen output after executing command, or sample code
{ }	Required items
[ ]	Optional items
	Selective items

## System Requirements

Category	Requirement
Platform	Solaris 9-11
	HP-UX 11.x, 11i, 11iV2
	AIX 5L, 6L, 7L
	Linux Kernel 2.6 or later
	Windows 7 (32-bit, 64-bit)
Server	More than 1 GB RAM recommended (At least 512 MB)
	At least 500 MB hard disk space
Studio	Windows 7 (64-bit)
	1 GB RAM recommended (At least 512 MB)
	At least 500 MB hard disk space
Remote Agent	512 MB RAM recommended (At least 256 MB)
	At least 512MB hard disk space
Software	JDK 7.0
	JEUS 7 (Fix#3)
Supported Browsers for WebAdmin	IE 10 or later
	Chrome 41 or later
Supported Databases	Oracle 10g, 11g, 12c
	Tibero 6 FixSet03 or later

## Related Documents

Document	Description
AnyLink Installation Guide	Describes how to install AnyLink Server, Studio, and Remote Agent.
AnyLink Studio Guide	Describes how to create and deploy flow services and various adapter rules through Studio.
AnyLink WebAdmin Guide	Describes how to manage systems through WebAdmin.



# Chapter 1. Introduction

This chapter describes how an AnyLink Web Service adapter works.

## 1.1. Overview

A Web Service adapter supports external connections via web service.

## 1.2. Web Service Adapter

A Web Service adapter can have web service endpoints. A web service can be inbound or outbound, depending on the communication direction.

- Inbound

Provides web services defined in AnyLink to requests received through the URL and path configured in an endpoint.

- Outbound

Requests services to web services that contain the address configured in an outbound rule.



# Chapter 2. Environment Configuration

This chapter describes how to configure AnyLink Web Service adapter and outbound rule.

## 2.1. Adapter Configuration

Configure a Web Service adapter in WebAdmin.

### Note

For information about accessing and using AnyLink WebAdmin, refer to *AnyLink WebAdmin Guide*.

Log in to AnyLink WebAdmin through a web browser, and go to **[System] > [Adapter]** to view the adapter list.

**[Figure 2.1] Adapter List Screen**

No	Biz System Name	Adapter Type	Adapter Name	Version	Last Updated	Owner
1	AL7_BIZSYS	WebService	WS_ADT_tutorial	1	2019-05-28 14:05:55	admin(admin)
2	AL7_BIZSYS	FTP	FTP_ADT	1	2019-03-20 15:06:38	admin(admin)
3	AL7_BIZSYS	TCP	TCP_ADT_186763	1	2019-03-14 17:09:23	admin(admin)
4	AL7_BIZSYS	HTTP	HTTP_ADT_PO	1	2019-03-07 19:37:36	admin(admin)
5	AL7_BIZSYS	ProObject	PO_ADT_TEST	1	2019-03-07 19:13:45	admin(admin)
6	AL7_BIZSYS	HTTP	HTTP_JSON	1	2019-01-16 16:33:35	admin(admin)
7	AL7_BIZSYS	TCP	ADT	1	2019-01-16 16:00:33	admin(admin)
8	AL7_BIZSYS	TCP	Json_Adt	1	2019-01-16 15:03:59	admin(admin)
9	AL7_BIZSYS	ebXML	ebxml_Adt	1	2019-01-10 15:01:27	admin(admin)
10	AL7_BIZSYS	FILE	EP_CMS_RECV	1	2019-01-08 13:34:32	admin(admin)

Click **[Add]** from the **Adapter List** screen to add an adapter. Enter the required information in the **Add Adapter** screen, and then click **[Save]**. If successful, the message "Created successfully." is displayed.

**[Figure 2.2] Add Adapter Screen**

The screenshot shows the 'Add Adapter' screen. The 'Basic Settings' section includes fields for Adapter ID\*, Adapter Name\*, Adapter Type\*, Description, and Biz System Name\*. The 'Advanced Settings' section includes a dropdown for Outbound Thread Pool ID. The 'Save' and 'Cancel' buttons are at the bottom.

- **Basic Settings**

Item	Description
Adapter ID	Adapter ID. Only alphanumeric and special (-, _) characters are allowed, and the length must be between 3 and 30 characters. Must be unique within the same business system.
Adapter Name	Adapter name. Only Korean, alphanumeric, and special (-, _) characters are allowed, and the length must be between 3 and 30 characters.
Adapter Type	Select 'WebService' from the list.
Description	Adapter description (optional).
Biz System Name	Business system to deploy adapter to.

- **[Advanced Settings] Tab**

Item	Description
Outbound Thread Pool ID	Thread pool ID to be used during an outbound service call. If an ID different from the thread pool executed in the engine is specified, then the thread is changed to this thread pool during an outbound service call.  <b>Use this option when the user wants to separate thread pools by each adapter so that there is no effect between different adapters.</b>

## 2.2. Endpoint Configuration

Select the **[System] > [Adapter]** menu of WebAdmin to display the adapter tree on the left. Click the **[Endpoint List]** tab in the **Adapter Details** screen to display the endpoint list of the adapter.



**[Figure 2.3] Adapter Details - [Endpoint List]**

Adapter Details

Adapter List

Basic Settings

Adapter ID\*

WS\_ADT\_tutorial

Adapter Name\*

WS\_ADT\_tutorial

Adapter Type\*

WebService

Description

webservice adapter

Biz System Name\*

AL7\_BIZSYS

Deployment Purpose

Advanced Settings

Endpoint Group List

Endpoint List

	No	Endpoint ID	Endpoint Name	Direction	Version	Status	Last Updated	Owner
	1	WS_EP_IN	WS_EP_IN	Inbound	1		2019-05-28 14:09:41	admin(admin)
	2	WS_EP_OUT	WS_EP_OUT	Outbound	1		2019-05-28 19:03:56	admin(admin)

+ Add

- Del

▶ Start

■ Stop

Click **[Add]** below the **[Endpoint List]** tab to go to the **Add Endpoint** screen. Enter the required items, and then click **[Save]** to add the endpoint. Check the result from the tree on the left.

- **Basic Settings**

The following shows the **Basic Settings** section of the Add Endpoint screen.

**[Figure 2.4] Add Endpoint Screen - Basic Settings**

Basic Settings

Biz System Name

AL7\_BIZSYS

Adapter Type

WebService

Adapter Name

WS\_ADT\_Tutorial

Endpoint ID

WS\_EP\_IN

Endpoint Name\*

WS\_EP\_IN

Endpoint Group

Endpoint Status

Running

Initial State at Boot

Running

Direction

Inbound

Description

webservice inbound endpoint

Deployment Purpose

Item	Description
Endpoint ID	Adapter ID. Only alphanumeric and special (-, _) characters are allowed, and the length must be between 3 and 30 characters. Must be unique within the same adapter or endpoint group.
Endpoint Name	Endpoint name. Only Korean, alphanumeric, and special (-, _) characters are allowed, and the length must be between 3 and 30 characters.
Endpoint Status	Initial endpoint status. <ul style="list-style-type: none"> <li>– Running: endpoint is running.</li> <li>– Stopped: endpoint is stopped.</li> </ul>
Initial State at Boot	Initial endpoint state at boot time. <ul style="list-style-type: none"> <li>– Running: endpoint is in Running state at boot time.</li> </ul>

Item	Description
	<ul style="list-style-type: none"> <li>– Stopped: endpoint is in Stopped state at boot time.</li> </ul> <p>If the 'Endpoint Status' and 'Initial State at Boot' are different, a warning message (<a href="#">[Figure 2.5]</a>) is displayed when stopping or restarting an endpoint.</p>
Direction	<p>Endpoint's communication direction.</p> <ul style="list-style-type: none"> <li>– Inbound: endpoint for inbound messages.</li> <li>– Outbound: endpoint for outbound messages.</li> </ul>
Description	Endpoint description. Optional.

### [Figure 2.5] 'Initial State at Boot' and 'Endpoint Status' Mismatch Message

If the 'Endpoint Status' and 'Initial State at Boot' are different, the status may change at reboot time.

[cf. If the Endpoint Status is 'Running' and the Initial State at Boot is 'Stopped', the Endpoint Status will become 'Stopped'.

If the Endpoint Status is 'Stopped' and the Initial State at Boot is 'Running', the Endpoint Status will become 'Running' at reboot time.]

OK

## 2.2.1. Inbound Endpoint

A Web Service inbound endpoint can process external incoming web service requests.

### • [Connection Info] Tab

The following shows the **[Connection Info]** tab of the Add Endpoint screen.

### [Figure 2.6] Add Endpoint Screen - [Connection Info] - Inbound

Item	Description
WSDL	Name of the WSDL exported from Studio, including the extension. For more information, refer to " <a href="#">Appendix A. Importing &amp; Exporting WSDL</a> ".
context-path	Endpoint context path.
URL	Endpoint URL.
Binding Type	Communication protocol.
Default Encoding	Default encoding to be used in an endpoint. The encoding set in the message is given priority over the default encoding. If no encoding is set in the message and the endpoint, then the system's default encoding is used.
Select Inbound Port	The endpoint port. If not specified, then all ports will be listened.

- **[Advanced Settings] Tab**

The following shows the **[Advanced Settings]** tab of the Add Endpoint screen.

**[Figure 2.7] Add Endpoint Screen - [Advanced Settings] - Inbound**

Item	Description
Message Handler	User message handler for the request message.
BizTx Group/BizTx	BizTx Group/BizTx to be executed by the request received by the endpoint.

## 2.2.2. Outbound Endpoint

Web Service outbound endpoint can request external web service processing.

- **[Connection Info] Tab**

The following shows the **[Connection Info]** tab of the Add Endpoint screen.

**[Figure 2.8] Add Endpoint Screen - [Connection Info] - Outbound**

Item	Description
Default Encoding	Default encoding to be used in an endpoint. The encoding set in the message is given priority over the default encoding. If no encoding is set in the message and the endpoint, then the system's default encoding is used.
Host Variable	Entered when using the endpoint address as a variable in the outbound rule. The variable entered as '\${host}' in the outbound rule's endpoint address is replaced with the value entered in this item. If the function is not used, then no value needs to be entered.
Port Variable	Entered when using the endpoint address as a variable in the outbound rule. The variable entered as '\${port}' in the outbound rule's endpoint address is replaced with the value entered in this item. If the function is not used, then no value needs to be entered.
Message Header	Web service header as a pair of key and value. If variable value encryption is checked, the variable value is encrypted with an encryption algorithm set in a business system.

- **[Advanced Settings] Tab**

The following shows the **[Advanced Settings]** tab of the Add Endpoint screen.

**[Figure 2.9] Add Endpoint Screen - [Advanced Settings] - Outbound**

Item	Description
Message Handler	User message handler for the response message.

- **[SSL] Tab**

The following shows the **[SSL]** tab of the Add Endpoint screen.

**[Figure 2.10] Add Endpoint Screen - [SSL] - Outbound**

Connection Info   Advanced Settings   **SSL**

**SSL**

Use SSL   ☒ Yes   ☐ No

**Trust Store Setting**

Store Location      Store Type      Client Authentication   ☒ Yes   ☐ No   Store Password  

**Key Store Setting**

Store Location      Store Type      Private Key Password      Store Password  

– **SSL**

Item	Description
Use SSL	Option to use SSL authentication.

– **Trust Store Setting**

Set the SSL related Trust Store information. This section is related to the Trust Store (public key, certificate) file settings to be used for SSL authentication.

Item	Description
Store Location	Storage location of the Trust Store.
Store Type	Storage type of the Trust Store.
Client Authentication	Option to use the Key Store.
Store Password	Password for accessing the Trust Store.

– **Key Store Setting**

Set the SSL related Key Store information. This section is related to the private key file settings to be used for SSL authentication.

Item	Description
Store Location	Storage location of the Key Store.
Store Type	Storage type of the Key Store.
Private Key Password	Password for accessing the private key.
Store Password	Password for accessing the Key Store.

## 2.3. Configuring an Outbound Rule

This section describes how to configure a Web Service outbound rule in AnyLink Studio.

---

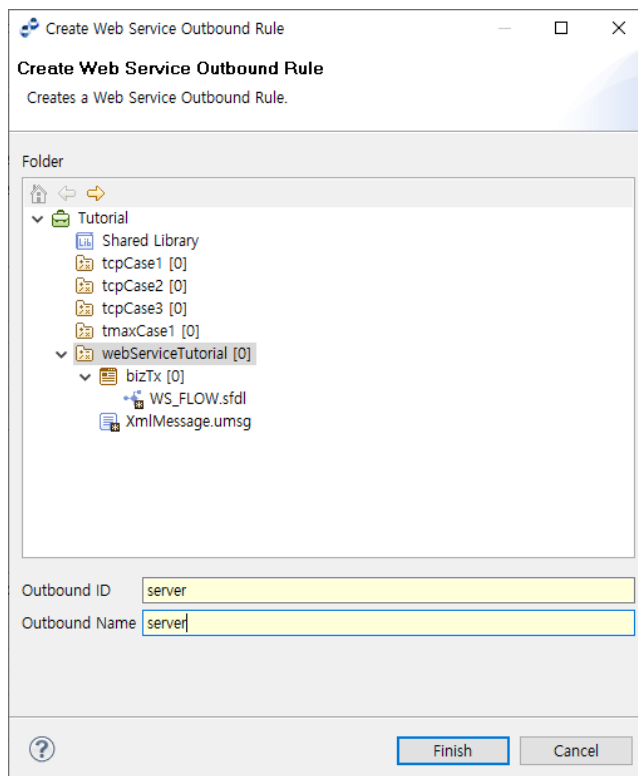
### Note

For more information about AnyLink Studio, refer to *AnyLink Studio Guide*.

---

In the Studio BizTx Group navigator, right click on a **BizTx/BizTx Group** and go to **[New] > [Outbound Rule] > [Web Service Outbound Rule]** to open the following **Create Web Service Outbound Rule** screen. Enter the required items, and then click **[Finish]**.

**[Figure 2.11] Creating Outbound Rule Screen**



Item	Description
Outbound ID	Outbound rule ID. Only alphanumeric and special ( _ ) characters are allowed, and the first character must be an alphabet character. Must be unique in the same BizTx node.
Outbound Name	Outbound rule name. Only Korean, alphanumeric, and special ( -, _ ) characters are allowed. Must follow the XML naming conversion.

After an outbound rule is created, detailed settings are displayed in the following tabs.

**[Figure 2.12] Outbound Rule Definition Screen**

**WEB\_SERVICE Outbound Rule**

**Define Outbound Rule**

- Protocol: WEB\_SERVICE
- Outbound Rule ID: server
- Outbound Rule Name: server
- Request Timeout(ms): 10,000
- Endpoint (Group): WS\_EP\_OUT
- Description: (com.tutorial.trigger)triggerService
- Service: (com.tutorial.ws.trigger)WS\_Trigger.server
- Port: A001
- SOAP Action: http://192.168.105.203:28808/server/tutor
- Endpoint Address: SOAP
- Binding Type: ib\_bizTx.wsdl
- WSDL Path: false
- Use Soap 1.2: false

**Request Message**

☐ Use Multi Message

Name	Message ID	Type ID
XmlMessage	XmlMessage	XmlMessageXML

**Response Message**

☐ Use Multi Message

Name	Message ID	Type ID
XmlMessage	XmlMessage	XmlMessageXML

**Namespace URI**

**Local Part**

## ● Define Outbound Rule

Item	Description
Outbound Rule ID	Outbound rule ID. Only alphanumeric and special (_) characters are allowed. Must be unique within the same BizTx node.
Outbound Rule Name	Outbound rule name. Only Korean, alphanumeric, and special (-, _) characters are allowed.
Request Timeout (ms)	Request processing timeout (positive integer). Timeout occurs if no connection or an outbound request response is received during the timeout period starting from the time when the outbound rule is called.
Endpoint (Group)	Endpoint or endpoint group in which the outbound rule will be added. Must be connected to the server.
Description	Outbound rule description. Optional.
Service	Service name of the target Web Service.
Port	Port name of the target Web Service.
SOAP Action	SOAPAction of the operation requested to the target Web Service.
Endpoint Address	Target Web Service address.

Item	Description
Binding Type	Method for calling the Web Service system's remote procedure. Only the SOAP method is supported.
WSDL Path	WSDL file path.
Use Soap 1.2	Option to use SOAP 1.2. The default value is 'false' and SOAP 1.1 is used.

- **Define Outbound Rule Message**

Request message and normal response message can be defined for an outbound rule.

Item	Description
Request Message	Request message for the outbound rule.
Normal Response Message	Response message for the outbound rule.



# Chapter 3. Examples

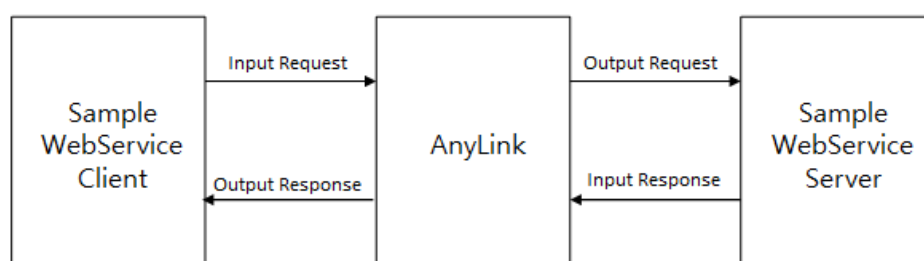
This chapter describes examples of using AnyLink Web Service adapter.

## 3.1. Overview

All used messages use the XML format.

The following shows the basic Web Service BizTx process.

**[Figure 3.1] Basic BizTx Process**



A BizTx is processed as follows:

1. A request input message is sent via a sample Web Service client.
2. AnyLink receives the message via an inbound adapter and then executes a service flow.
3. The service flow maps the request input message to the request output message.
4. The request output message is sent to the sample Web Service server via an outbound adapter.
5. The sample Web Service server sends the response input message.
6. The service flow maps the response input message to the response output message.
7. The response output message is sent to the sample Web Service client via an inbound adapter.

## 3.2. Creating an Adapter

Log in to AnyLink WebAdmin through a web browser, go to **[System] > [Adapter]**, and click **[Add]** below the **Adapter List** to go to the **Add Adapter** screen. For information about creating an adapter, refer to ["2.1. Adapter Configuration"](#). For information about accessing and creating business systems in AnyLink WebAdmin, refer to *AnyLink WebAdmin Guide*.

## 3.2.1. Creating an Adapter

The following is an example of creating a Web Service adapter.

[Figure 3.2] Adding an Adapter

The screenshot shows the 'Add Adapter' form. The 'Basic Settings' tab is active, displaying the following fields:

- Adapter ID\*: WS\_ADT\_Tutorial
- Adapter Name\*: WS\_ADT\_Tutorial
- Adapter Type\*: WebService
- Description: webservice adapter
- Biz System Name\*: AL7\_BIZSYS
- Deployment Purpose: (empty)

The 'Advanced Settings' tab is also visible, showing the Outbound Thread Pool ID field set to 'No'. At the bottom, there are 'Save' and 'Cancel' buttons.

### • Basic Settings

Item	Value
Adapter ID	WS_ADT_Tutorial
Adapter Name	WS_ADT_Tutorial
Adapter Type	WebService
Biz System Name	AL7_BIZSYS

### • [Advanced Settings] Tab

Item	Value
Outbound Thread Pool ID	No

## 3.3. Creating an Endpoint

From the **[Adapter]** screen, click on an adapter and go to the **Adapter Details** screen. Click **[Add]** from the **[Endpoint List]** tab to go to the **Add Web Service Endpoint** screen. For more information about creating an endpoint, refer to ["2.2. Endpoint Configuration"](#).

### 3.3.1. Creating an Inbound Endpoint

The following is an example of creating a Web Service inbound endpoint.

- **Basic Settings**

**[Figure 3.3] Adding an Inbound Endpoint - Basic Settings**

**Add Web Service Endpoint** Endpoint List

**Basic Settings**

Biz System Name:  Adapter Type:  Adapter Name:

Endpoint ID\*:  Endpoint Name\*:  Endpoint Group Name:

Endpoint Status:  Initial State at Boot:  Direction:

Description:

Deployment Purpose:

Item	Value
Endpoint ID	WS_EP_IN
Endpoint Name	WS_EP_IN
Endpoint Status	Running
Initial State at Boot	Running
Direction	Inbound

- **[Connection Info] Tab**

**[Figure 3.4] Adding an Inbound Endpoint - [Connection Info]**

**Connection Info** Advanced Settings

**Connection Mode**

WSDL\*:  Check WSDL context-path\*:

URL\*:  Binding Type\*: ☒ SOAP

Default Encoding:  Select Inbound Port:

Asynchronous Timeout (ms):  ⓘ

Item	Value
WSDL	ib_bizTx.wsdl (Enter the WSDL file name of the inbound BizTx created in Studio.)
context-path	/tutorial
URL	/ws_tutorial_biztx
Binding Type	SOAP

- [Advanced Settings] Tab

[Figure 3.5] Adding an Inbound Endpoint - [Advanced Settings]

Item	Value
BizTx Group/BizTx	com.tmax.tutorial.webServiceTutorial (This item can be entered manually or can be selected after creating BizTx Group/BizTx from the <b>BizTx Group/BizTx</b> screen.)

### 3.3.2. Creating an Outbound Endpoint

The following is an example of adding a Web Service outbound endpoint.

- Basic Settings

[Figure 3.6] Adding an Outbound Endpoint - Basic Settings

Item	Value
Endpoint ID	WS_EP_OUT
Endpoint Name	WS_EP_OUT
Endpoint Status	Running
Initial State at Boot	Running
Direction	Outbound
Description	webservice outbound endpoint

- [Connection Info] Tab

[Figure 3.7] Adding an Outbound Endpoint - [Connection Info]

The screenshot shows the 'Connection Info' tab with the following sections:

- Connection Mode**: A section with a 'Default Encoding' text input field.
- Additional Properties**: A section with 'Host Variable' and 'Port Variable' text input fields.
- Message Header**: A section with an '+ Add' button and a table.

No	Name	Value	Encrypt Variable Value	Delete

Item	Value
Default Encoding	N/A
Host Variable	N/A
Port Variable	N/A
Message Header	N/A

## 3.4. Creating a Studio Resource

This section describes how to create a resource in Studio. For information about AnyLink Studio, refer to *AnyLink Studio Guide*.

### 3.4.1. Creating a BizTx Group

In the BizTx Group navigator, right click on a **Project** and go to **[New] > [BizTx/BizTx Group]**.

**[Figure 3.8] Create BizTx Group Screen**

Create BizTx / BizTx Group

Creates a BizTx / BizTx Group.

Folder

- Tutorial (AL7\_BIZSYS)
  - Shared Library
  - tcpCase1 [0]
  - tcpCase2 [0]
  - tmaxCase1 [0]

Package Name: com.tmax.tutorial

BizTx ID: webServiceTutorial

BizTx Name: webservice\_example

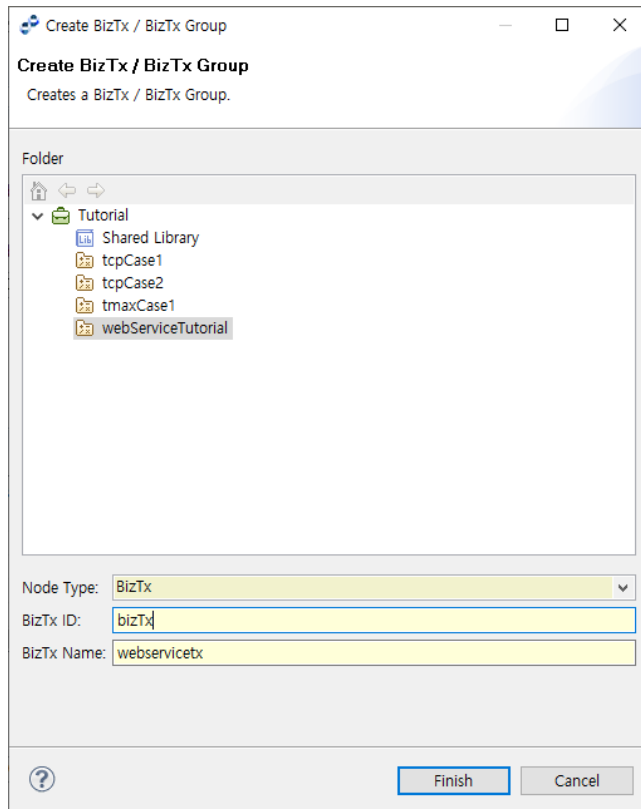
Finish Cancel

Item	Value
Package Name	com.tmax.tutorial
BizTx ID	webServiceTutorial
BizTx Name	webservice_example

## 3.4.2. Creating a BizTx

In the BizTx Group navigator, right click on a **BizTx Group** and go to **[New] > [BizTx/BizTx Group]**.

**[Figure 3.9] Creating a BizTx Screen**

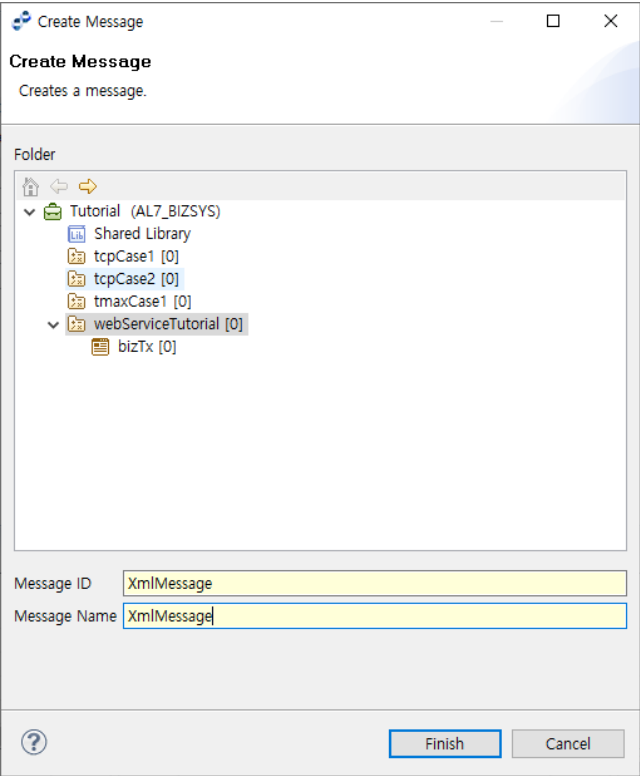


Item	Value
Node Type	BizTx
BizTx ID	bizTx
BizTx Name	webservicetx

### 3.4.3. Creating a Message

In the BizTx Group navigator, right click on a **BizTx Group** and go to **[New] > [Message]**.

[Figure 3.10] Creating a Message



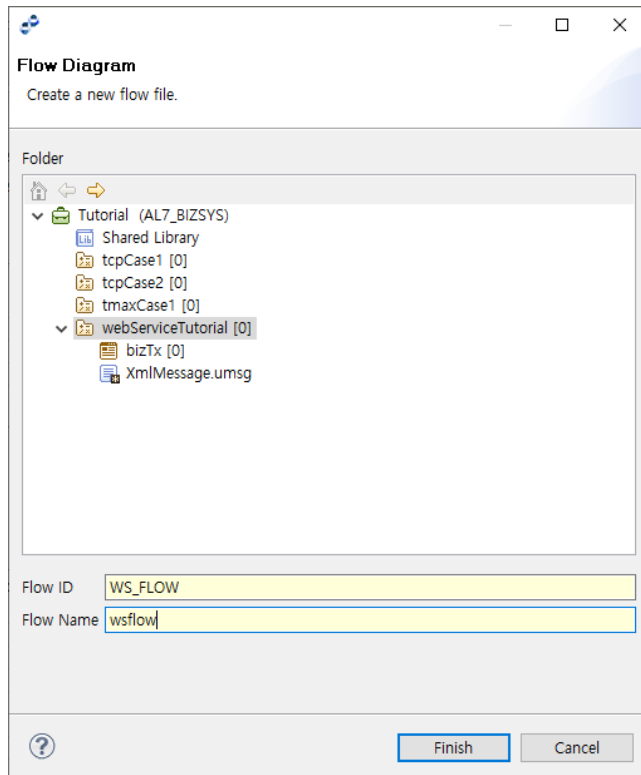
Item	Value
Message ID	XmlMessage
Message Name	XmlMessage



### 3.4.4. Creating a Flow

In the BizTx Group navigator, right click on a **BizTx** and go to **[New] > [Flow]** to create a flow.

**[Figure 3.11] Creating a Flow**



Item	Value
Flow ID	WS_FLOW
Flow Name	wsflow

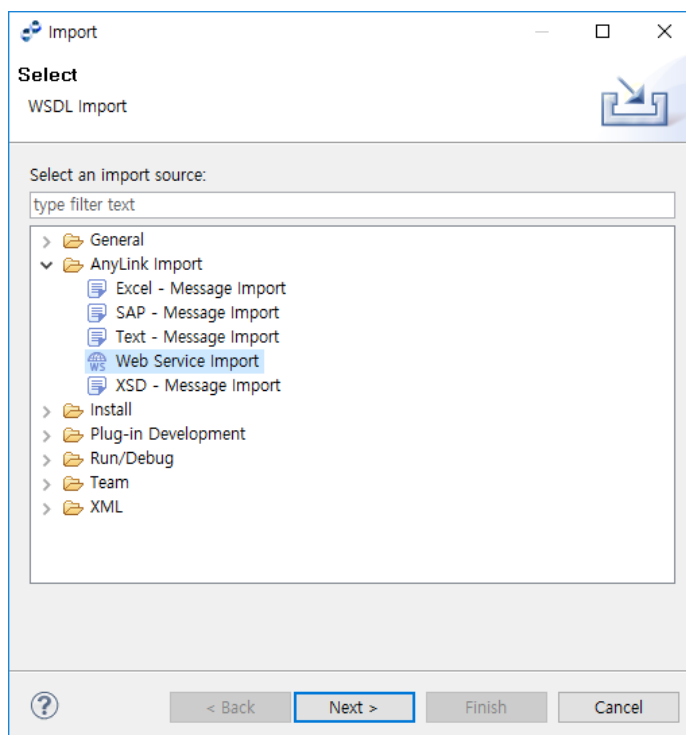
## 3.5. Importing a Web Service

This section describes how to configure an outbound Web Service by using a function for importing Web Services. For more information, refer to ["Appendix A. Importing & Exporting WSDL"](#).

Import a Web Service as follows.

1. In the BizTx Group navigator, right click on a **BizTx** and go to **[Import]**.
2. Select **[Import Web Service]** in the **[AnyLink Import]** menu.

**[Figure 3.12] Importing a Web Service (1)**



3. Import a WSDL by entering the WSDL file path which exists in the local file system, or by entering the URL. Select an outbound type since an outbound service needs to be imported.

**[Figure 3.13] Importing a Web Service (2)**

Import Web Service

**WSDL Location and Service Type**  
"Select the Service Type and Location of the WSDL to import."

**WSDL File Path :**

☐ File Path:  Browse...

☒ URL Path:

**Select Service Type :**

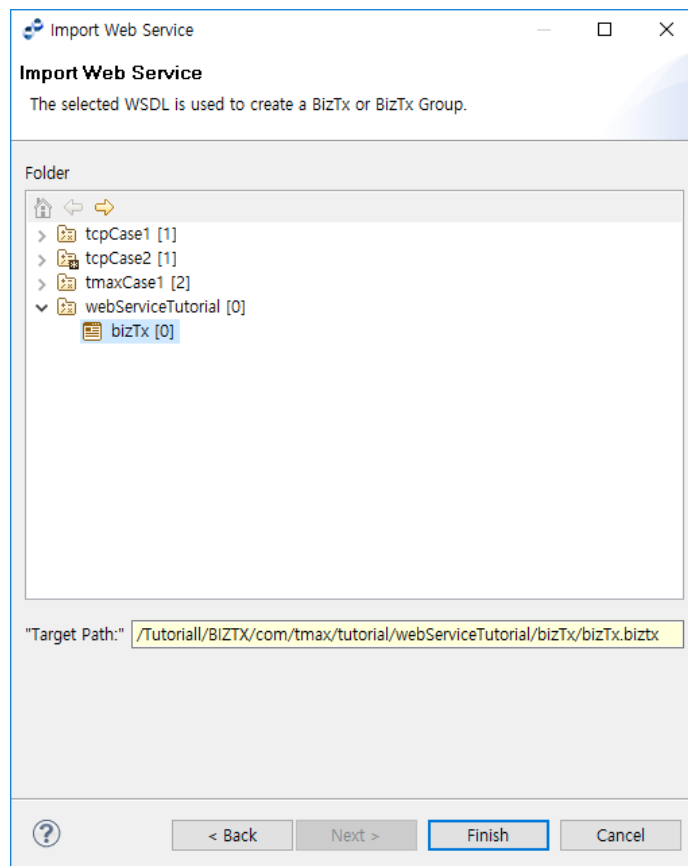
Web Service Type :

A WSDL file can be imported by configuring the server URL in the following format.

```
{ $IP } : { $PORT } / { $CONTEXT_PATH } / { $URL } ?wsdl
```

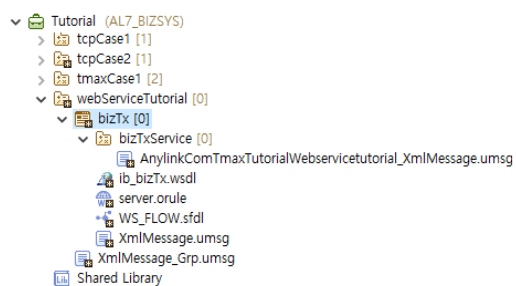
4. Select a path for resources to be created by using "Import Web Service".

**[Figure 3.14] Importing a Web Service (3)**



5. The resources will be created as follows.

**[Figure 3.15] Result of Importing a Web Service**



6. Configure an endpoint by selecting a Web Service outbound rule.

**[Figure 3.16] Web Service Outbound Rule**

**WEB\_SERVICE Outbound Rule**

**Define Outbound Rule**

- Protocol: WEB\_SERVICE
- Outbound Rule ID \*: server
- Outbound Rule Name \*: server
- Request Timeout(ms): 10,000
- Endpoint \*: WS\_EP\_OUT

**Description**

- Service: (com.tutorial.trigger)triggerService
- Port: (com.tutorial.ws.trigger)WS\_Trigger.server
- SOAP Action: A001
- Endpoint Address: http://192.168.105.203:28808/server/tutor
- Binding Type: SOAP
- WSDL Path: ib\_bizTx.wsdl
- Use Soap 1.2: false

**Request Message**

☐ Use Multi Message

Name	Message ID	Type ID
XmlMessage	XmlMessage	XmlMessageXML

**Response Message**

☐ Use Multi Message

Name	Message ID	Type ID
XmlMessage	XmlMessage	XmlMessageXML

**Namespace URI**

- Local Part

## 3.6. Configuring a Studio Resource

This section describes how to configure a resource. For more information about AnyLink Studio, refer to *AnyLink Studio Guide*.

### 3.6.1. Configuring a BizTx Group

The following is an example of configuring a BizTx Group. The **[Parsing Info]** tab and the **[Parsing Options]** tab are not configured in this example.

- **[BizTx Group Info] Tab**

**[Figure 3.17] Configuring a BizTx Group - [BizTx Group Info]**

Basic Info

- BizTx Group ID
- Package Name
- BizTx Group Name
- BizTx Type

webServiceTutorial

com.tmax.tutorial

webservice\_example

NONE

- Version
- Description
- Bypass
- XA

0

NO

NO

Request Message

Normal Response Message

Business Error Response Message

Name

Message ID

Type ID


<

>

+ Add

- Delete

- Namespace URI
- Local Part
- Group
- Group Number

NONE

Name

Message ID

Type ID


<

>

+ Add

- Delete

- Namespace URI
- Local Part
- Group
- Group Number

NONE

Name

Message ID

Type ID


<

>

+ Add

- Delete

- Namespace URI
- Local Part
- Group
- Group Number

NONE

Error Response Handling

- Error Response Type

NONE

Item	Value
Request Message	None
Normal Response Message	None
Bypass	NO
XA	NO
Error Response Type	NONE

- [BizTx Group Option] Tab

[Figure 3.18] Configuring a BizTx Group - [BizTx Group Option]

**BizTx Group Options**

- BizTx Flow Timeout (ms) 60,000
- Fixed Connection NO
- Use External GUID NO
- GUID Type STRING
- Response Option REQUEST\_RESPONSE
- Reliable Message Delivery ☐
  - RM Enabled
  - Queue ID
  - Custom
    - Retry Interval (s)
    - Maximum Retry Count
    - Expiry Time (s)
- Check Duplicate BizTx NO
  - Check Duplicate BizTx Field

Message ID	Field ID
  - Duplicate BizTx Retention Interval
- BizTx Priority MEDIUM

Item	Value
BizTx Flow Timeout (ms)	60000
Response Option	REQUEST_RESPONSE
BizTx Priority	MEDIUM

### 3.6.2. Configuring a BizTx

The following is an example of configuring a BizTx. The [Parsing Info] tab and the [Parsing Options] tab are not configured in this example.

- [BizTx Info] Tab

[Figure 3.19] Configuring a BizTx - [BizTx Info]

The screenshot displays the BizTx configuration interface with the following sections:

- Basic Info:**
  - BizTx ID: bizTx
  - Package Name: com.tmax.tutorial.webServiceTutorial
  - BizTx Name: webservicetx
  - Version: 0
  - BizTx Type: PARENT
  - Bypass: NO
  - XA: NO
  - Description: (empty)
- Invocation Service:**
  - Service Type: FLOW
  - Service Name: WS\_FLOW (WS\_FLOW\_Message\_START\_Eve) [Search]
  - Mapping: ☐
- Request Message:**

Name	Message ID	Type ID
XmlMessage	XmlMessage	XmlMessageXML

Buttons: Add, Delete

  - Namespace URI
  - Local Part
  - Group: NONE
  - Group Number
- Normal Response Message:**

Name	Message ID	Type ID
XmlMessage	XmlMessage	XmlMessageXML

Buttons: Add, Delete

  - Namespace URI
  - Local Part
  - Group: NONE
  - Group Number
- Business Error Response Message:**

Name	Message ID	Type ID
------	------------	---------

Buttons: Add, Delete

  - Namespace URI
  - Local Part
  - Group: NONE
  - Group Number
- Error Response Handling:**
  - Error Response Type: PARENT

Item	Value
Request Message	XmlMessage
Normal Response Message	XmlMessage
Bypass	NO
XA	NO
Error Response Type	PARENT
Service Type	FLOW
Service Name	WS_FLOW (WS_FLOW_Message_STRT_Event_011D39) (randomly generated)



- **[BizTx Options] Tab**

**[Figure 3.20] Configuring a BizTx - [BizTx Options]**

### BizTx Options

- ☐ BizTx Flow Timeout (ms)
- ☒ No Timeout ☐
- ☐ Fixed Connection
- ☐ Use External GUID
- ☐ GUID Type
- ☐ Response Option
- ☐ Reliable Message Delivery ☐
  - ☐ RM Enabled
  - ☐ Queue ID
  - ☐ Custom ☐
    - ☐ Retry Interval (s)
    - ☐ Maximum Retry Count
    - ☐ Expiry Time (s)
- ☐ Check Duplicate BizTx 
  - ☐ Check Duplicate BizTx Field
 

Message ID	Field ID
- ☐ Duplicate BizTx Retention I
- ☐ BizTx Priority

Item	Value
BizTx Flow Timeout (ms)	None
No Timeout	Yes
Response Option	PARENT
BizTx Priority	MEDIUM

### 3.6.3. Configuring a Message

For information about how to configure messages, refer to *AnyLink Studio Guide*.

[Figure 3.21] Configuring a Message - XML Message

Message Editor

Message Definition

• Message ID

XmlMessage

• Message Name

XmlMessage

• Description

Message List \*

Message ID	Message Type
XmlMessageXML	XML

Add

Delete

Edit

• XmlMessageXML Message Type

Root Element Name

{urn:anylink:com.tmax.tutorial.webSer

Content Type

ELEMENT

Complex Type Name

{urn:anylink:com.tmax.tutorial.webSer

Simple Type Name

Message Encoding

NONE

Ignore UnmarshalException

☐

Namespace - Prefix Option

Namespace	Prefix

Add

Delete

XmlMessageXML Message Format \*

Add

Add Fields

Delete

Search

Reset

VO Export

Validate

No.	Physical Name	Logical Name	Field Type	Included Str. Name	Included Str. Path	Array Size	Comment	Mask	Is Element	Attribute ...	Attr Use	Element N...
1	Header	Header	string						true			{urn:anylink...
2	Body	Body	string						true			{urn:anylink...

Item	Value
Message Type	XML
Field 1	Header
Field 2	Body

### 3.6.4. Configuring an Outbound Rule

Outbound rules are configured in "3.5. Importing a Web Service" so no additional configuration is necessary.

### 3.6.5. Configuring a Flow

Configure a flow as follows:

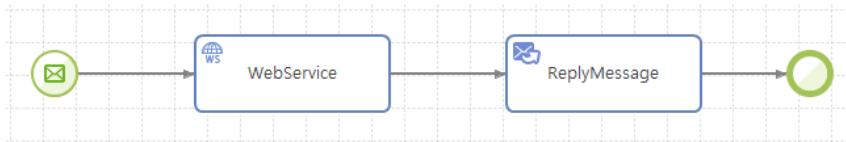
1. Create a flow diagram
2. Configure variables
3. Configure message events
4. Configure outbound service call

## 5. Configure response service call

### Flow Diagram

The following is an example of creating a service flow diagram.

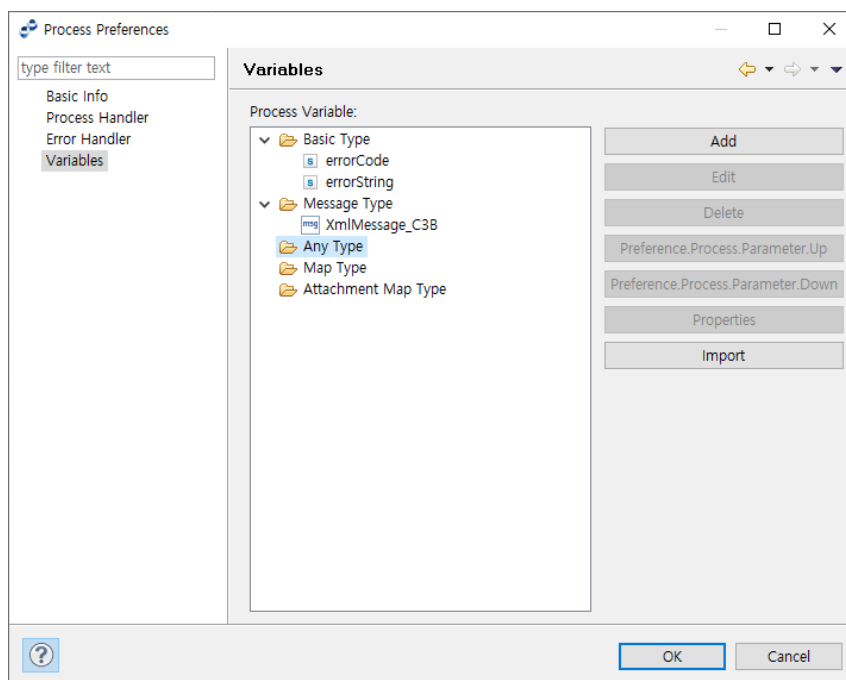
**[Figure 3.22] Service Flow Editor - Basic Diagram**



### Variables

To set variables, click **[Properties]** from the context menu of the Flow editor.

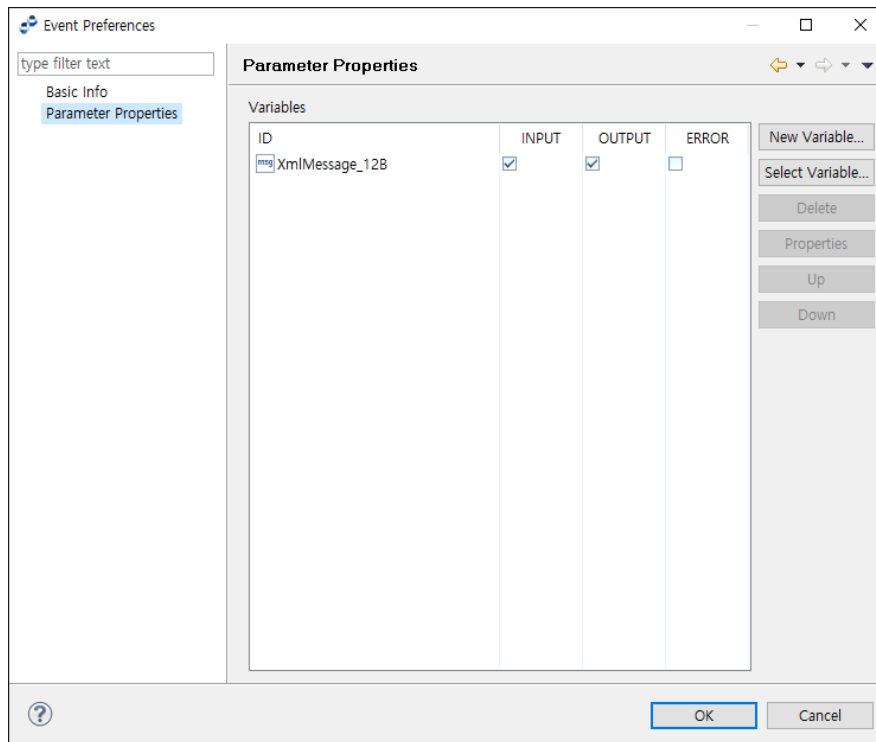
**[Figure 3.23] Property Preference - Variables**



## Message Event

Click **[Properties]** from the context menu of a **Message Event** in the Flow editor, and then click **[Parameter Settings]** from the **Event Preferences** window.

**[Figure 3.24] Event Preferences - Parameter Settings**

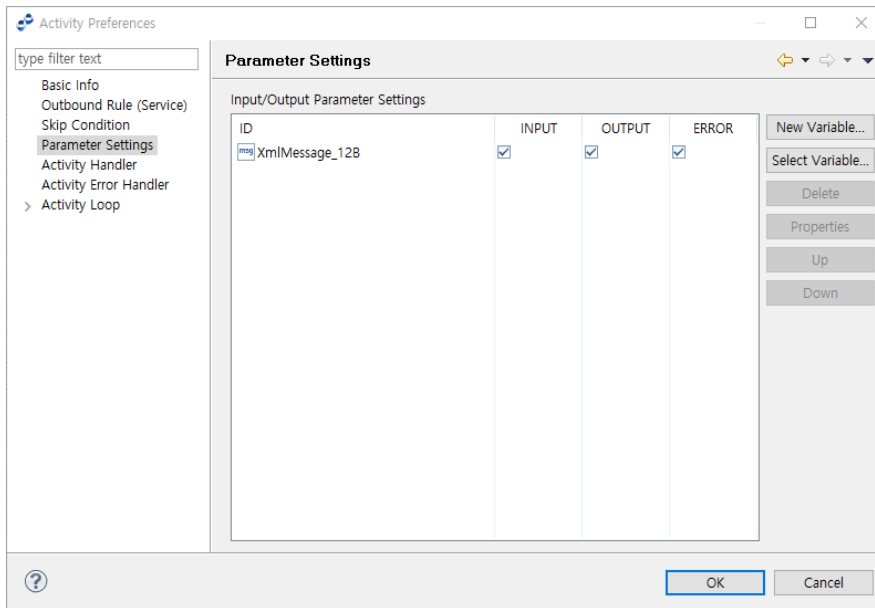


## Outbound Call

Configure an outbound call as follows:

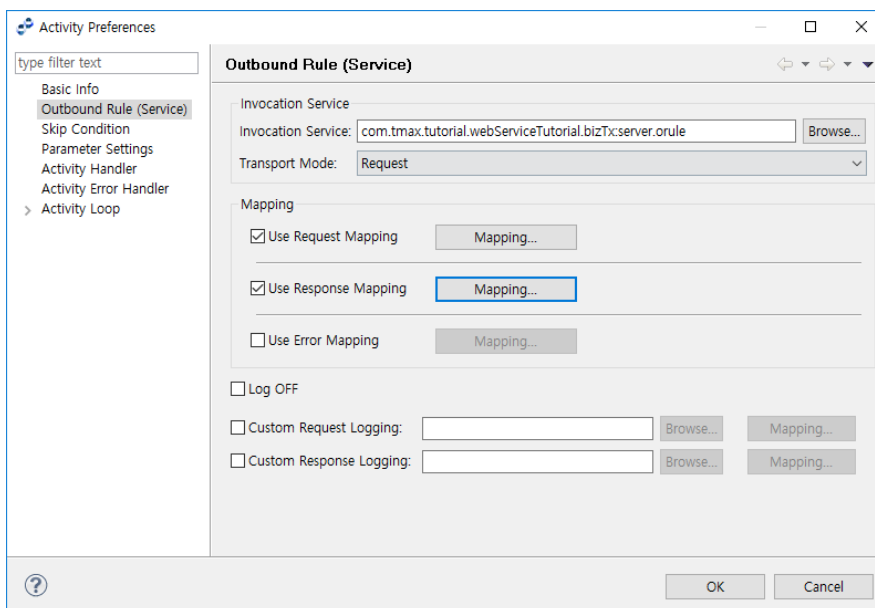
1. Select **[Properties]** from the **WebService Activity (Outbound Call)** context menu of the flow editor. Click **[Parameter Settings]** in the **Activity Preferences** window.

**[Figure 3.25] Outbound Call - Parameter Settings**



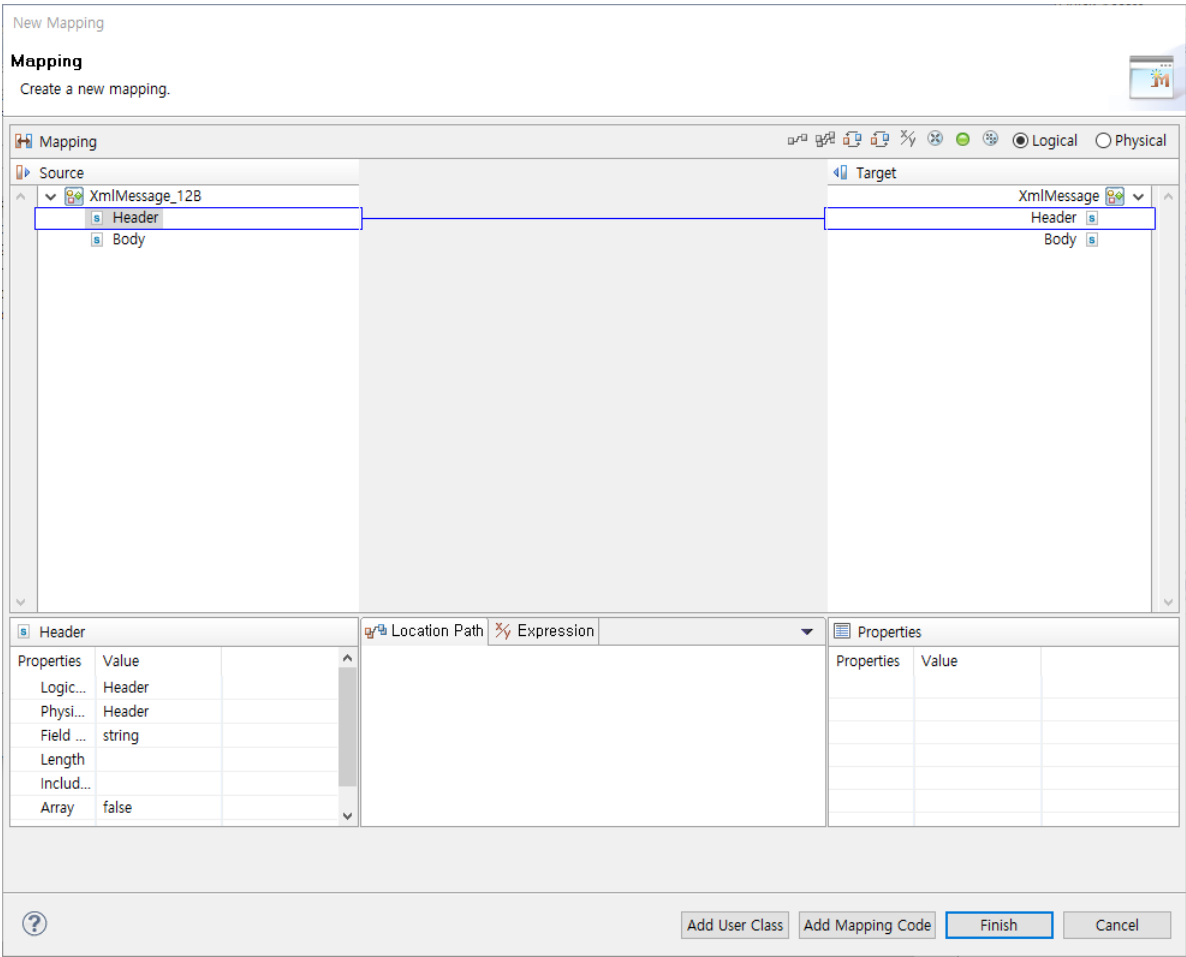
2. Click **[Outbound Rule (Service)]** from the **Activity Preferences** window.

**[Figure 3.26] Outbound Call - Outbound Rule (Service)**

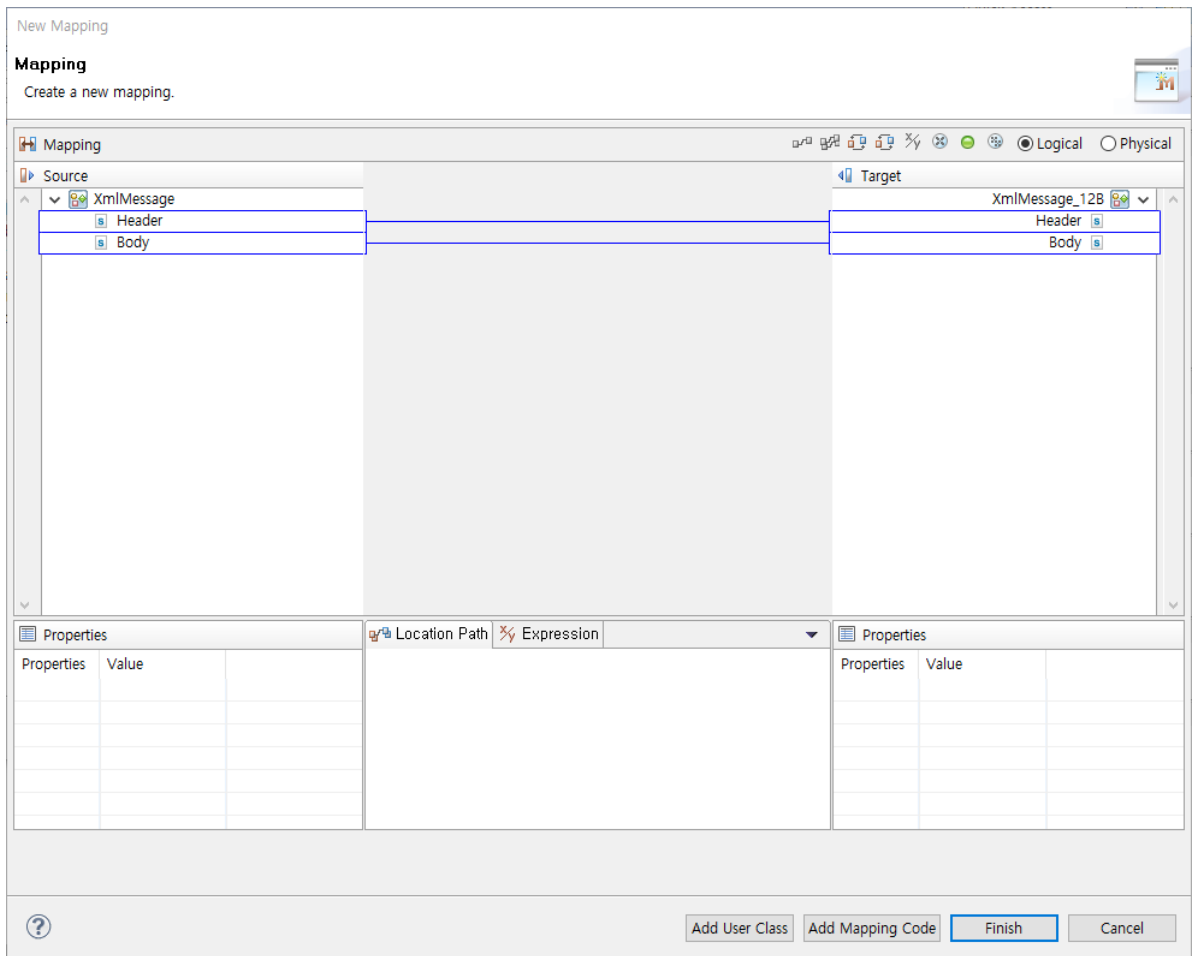


3. Select the 'Use Request Mapping' and 'Use Response Mapping' checkboxes, and then click [Mapping] to create mappings.

[Figure 3.27] Outbound Call - Outbound Rule (Service) - Request Mapping



**[Figure 3.28] Outbound Call - Outbound Rule (Service) - Response Mapping**

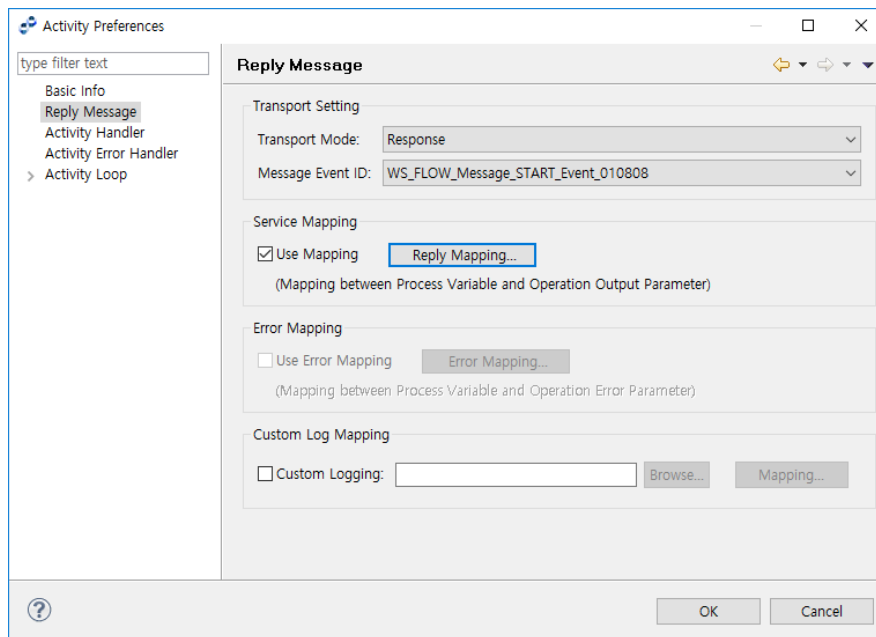


## Response Call

Configure a response call as follows:

1. Select **Properties** from the **Response Message Activity (Send Message)** context menu of the flow editor. Click **[Reply Message]** in the **Activity Preferences** window.

**[Figure 3.29] Reply Message**

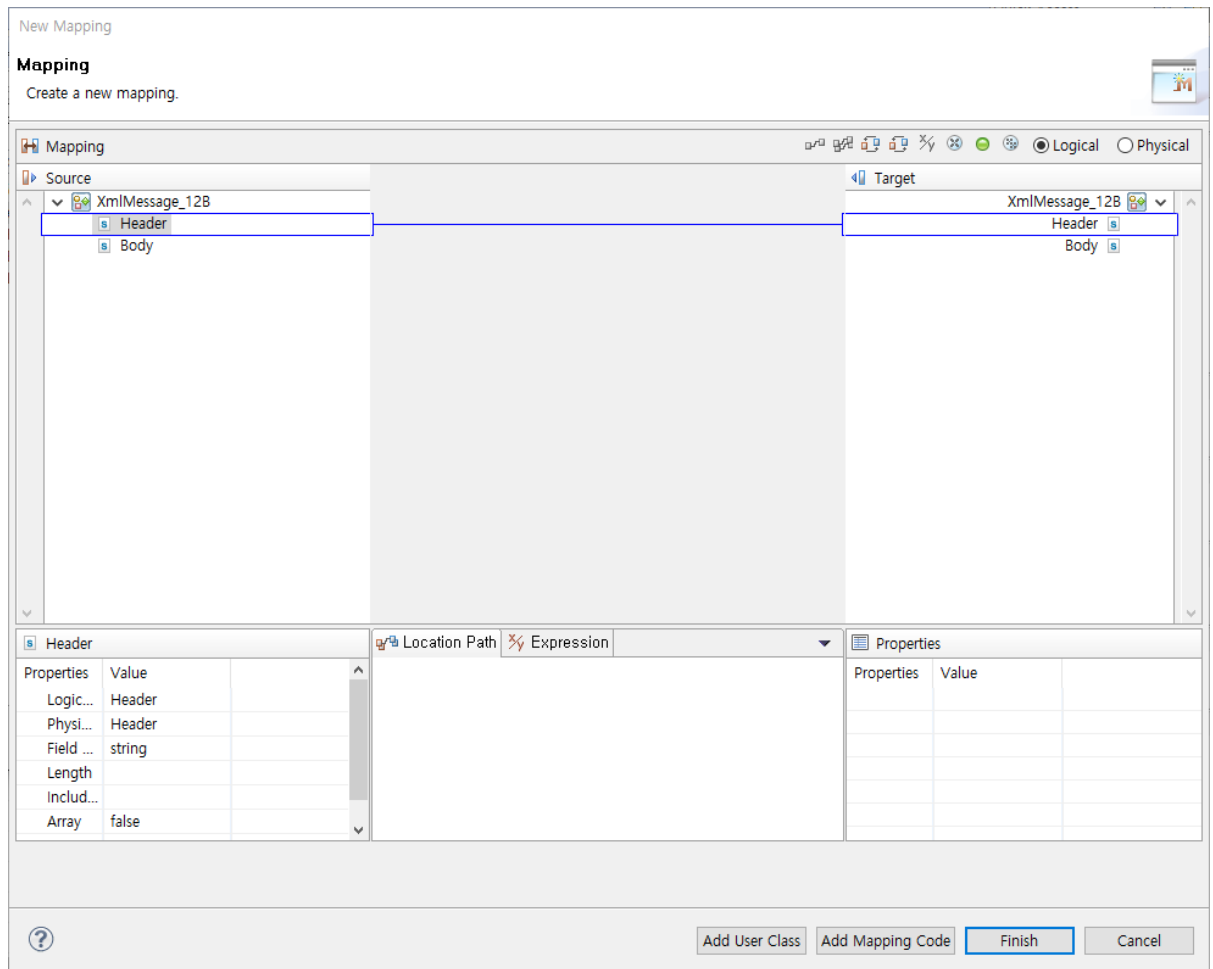


2. Select the '**Service Mapping**' checkbox, and then click **[Reply Mapping...]** to create mapping.

Click **[Add Source]** from the context menu of the Source section in the **Mapping** screen, and then select ReqInHeader, ResInHeader, and ResInBody for the mappings.



**[Figure 3.30] Reply Message - Service Mapping - Reply Mapping**



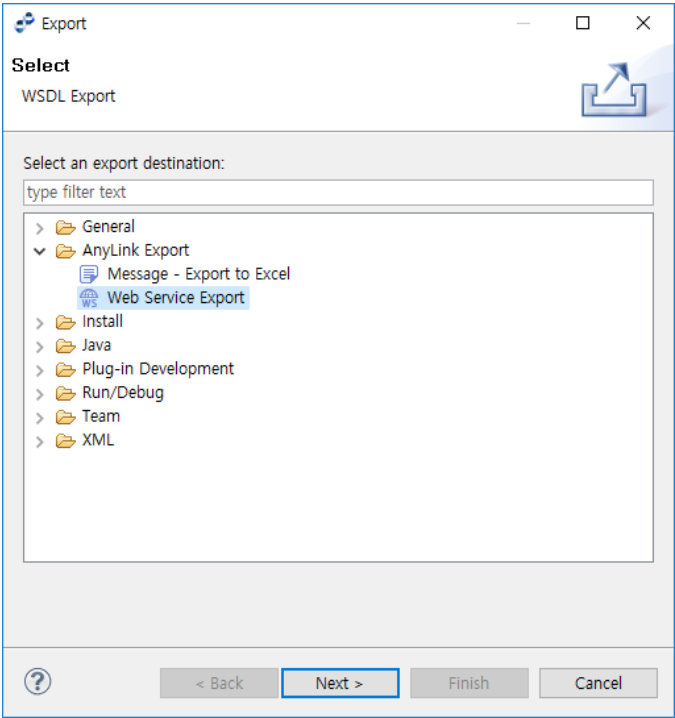
## 3.7. Exporting a Web Service

This section describes how to create a WSDL (which is for Web Service inbound transactions) by using the function for exporting Web Services. For more information, refer to ["Appendix A. Importing & Exporting WSDL"](#).

Export a Web Service as follows.

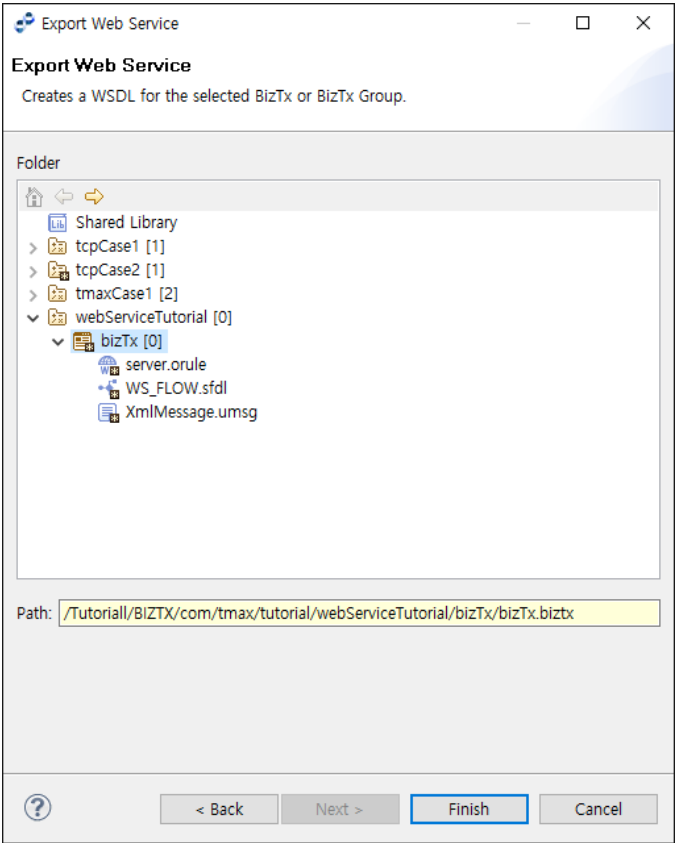
1. In the BizTx Group navigator, right click on a **BizTx** and go to **[Export]**.
2. Select **[Export Web Service]** in the **[AnyLink Export]** menu.

**[Figure 3.31] Exporting a Web Service (1)**



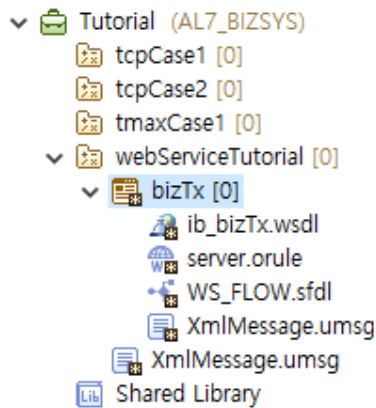
3. Select a BizTx to be used to create a Web Service.

**[Figure 3.32] Exporting a Web Service (2)**



4. ib\_bizTx.wsdl will be automatically created as follow.

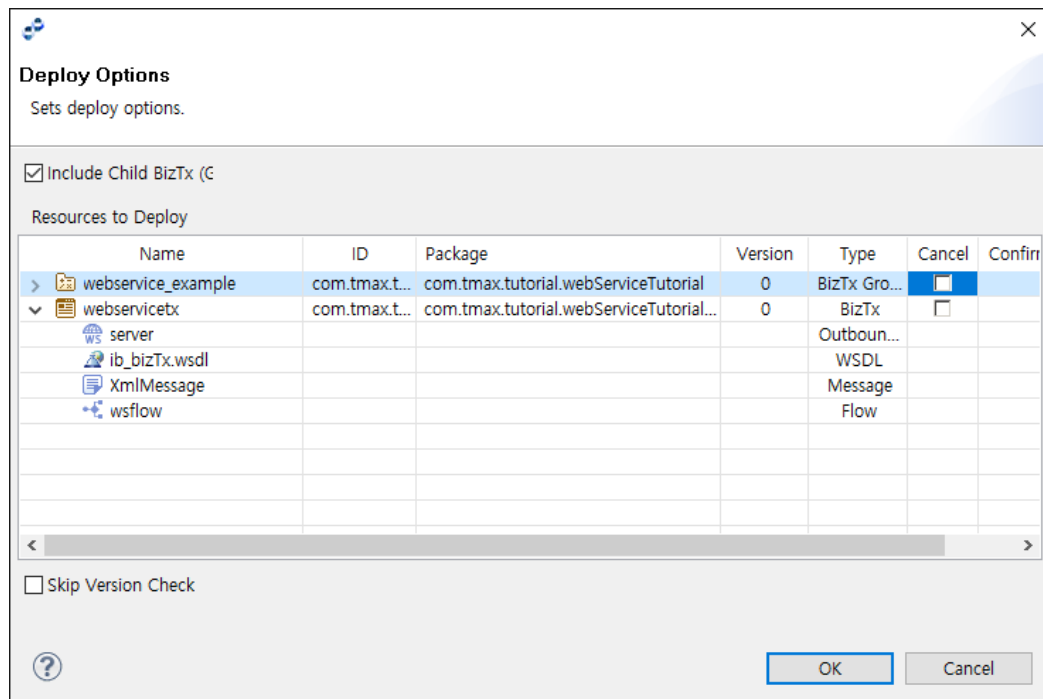
**[Figure 3.33] Exporting a Web Service (3)**



## 3.8. Deployment

Use the following Deploy Options window to configure deployment options for a BizTx Group/BizTx. For more information, refer to *AnyLink Studio Guide*.

**[Figure 3.34] Deploying a BizTx Group/BizTx**



### 3.9. Testing a BizTx

Client programs use AnyLink's outbound Web Service, and server programs use AnyLink's inbound Web Service. The following is an example of performing a test.

[Figure 3.35] AnyLink BizTx Log

Transaction Trace

Basic Settings

GUID	7F000001POEPCMABGKPIJAE00000023	PGUID	
BizTx ID	com.tmax.tutorial.webServiceTutorial.bizTx		
BizTx Name	webservicetx		
Endpoint	WS_ADT_tutorial.WS_EP_IN		
Server	server1	Status	SUCCESS
Request Time	2019-05-28 20:59:22	Elapsed Time (ms)	19

Trace

FEP

All

No	Category	Execution Module	Timestamp	Time	Message	Error
1		WebService Adapter ( WS_ADT_tutorial ) - [ WS_EP_IN → bizTx ]	2019-05-28 20:59:22.626	0		
2		Flow Start ( WS_FLOW )	2019-05-28 20:59:22.629	3		
3		MESSAGE Event ( WS_FLOW_Message_START_Event_1C7757 )	2019-05-28 20:59:22.63	1		
4		WEBSERVICE Activity ( WS_FLOW_WebService_1C055A )	2019-05-28 20:59:22.633	3		
5		WebService Adapter ( WS_ADT_tutorial ) - [ WS_EP_OUT → WS_ADT_tutorial ]	2019-05-28 20:59:22.635	2		
6		WebService Adapter ( WS_ADT_tutorial ) - [ → WS_EP_OUT ]	2019-05-28 20:59:22.637	2		
7		WEBSERVICE Activity ( WS_FLOW_WebService_1C055A )	2019-05-28 20:59:22.637	0		
8		WEBSERVICE Activity ( WS_FLOW_WebService_1C055A )	2019-05-28 20:59:22.639	2		
9		WebService Adapter ( WS_ADT_tutorial.WS_EP_IN )	2019-05-28 20:59:22.626	0		
10		Flow End ( WS_FLOW )	2019-04-12 20:51:59.944	0		

⏮

⏪

1

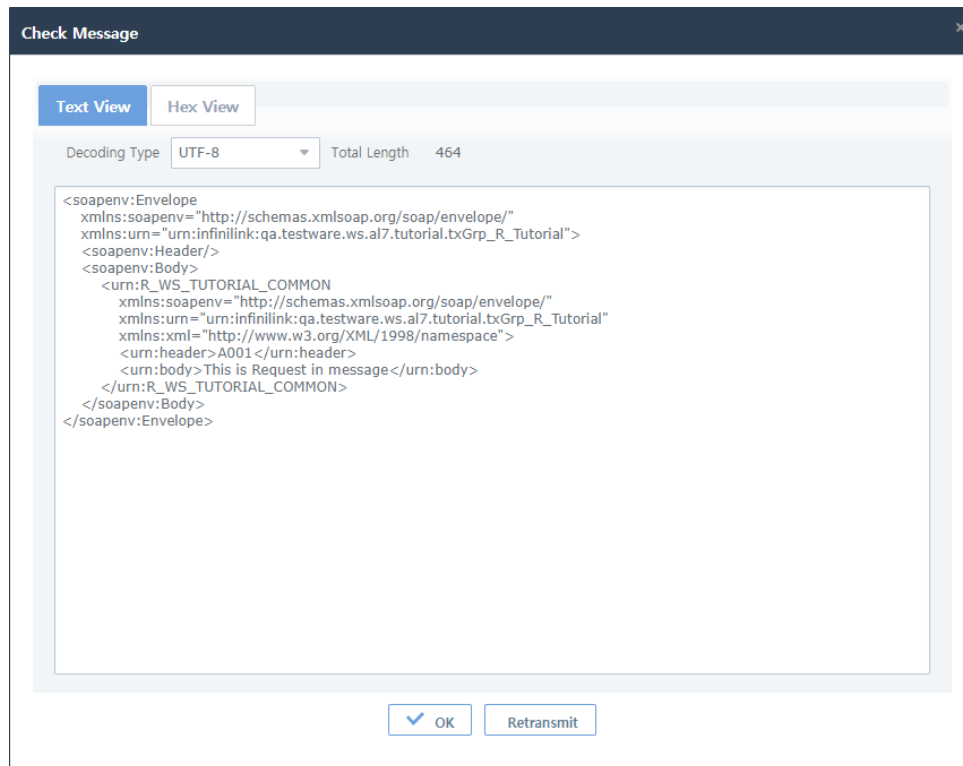
⏩

⏭

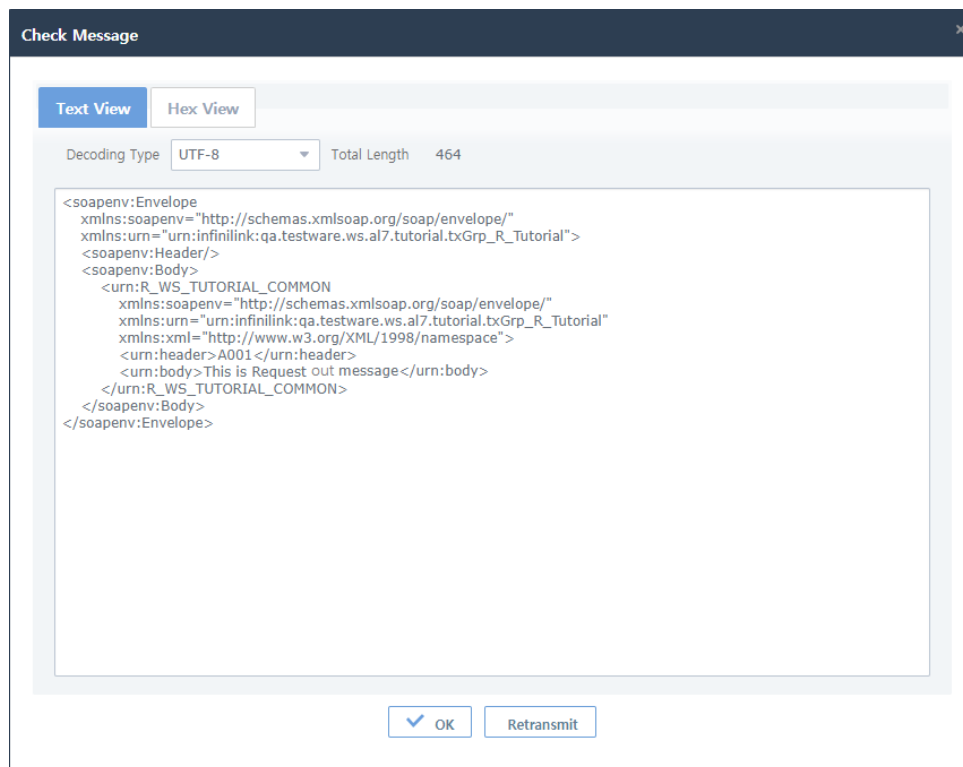
50

✓ OK

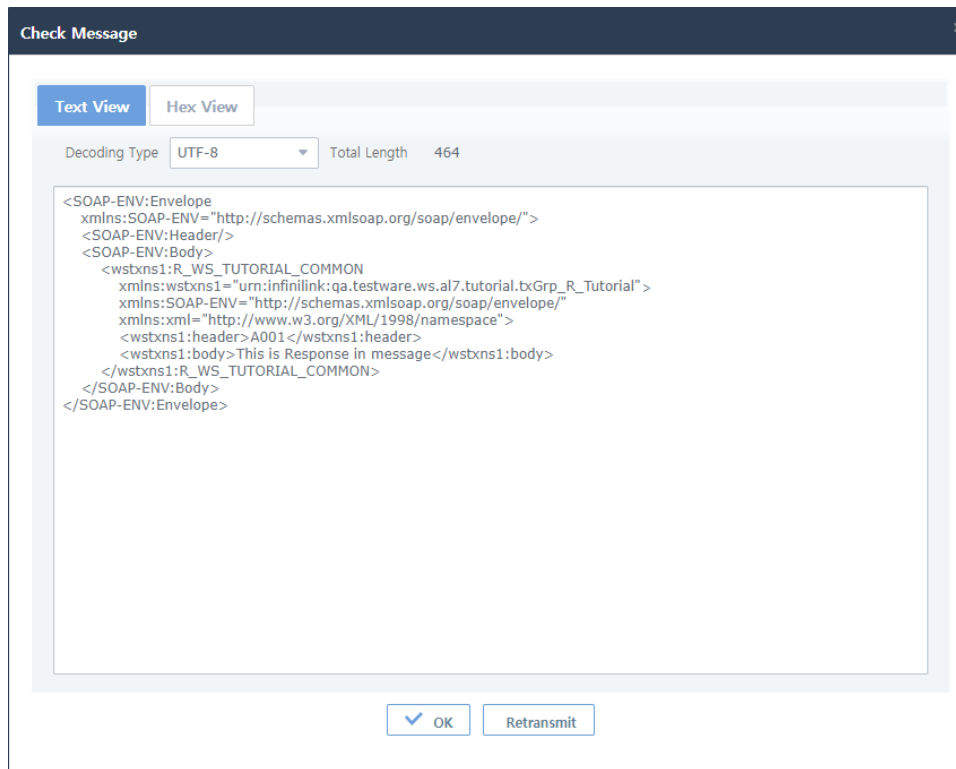
**[Figure 3.36] Request Input Message (No. 1)**



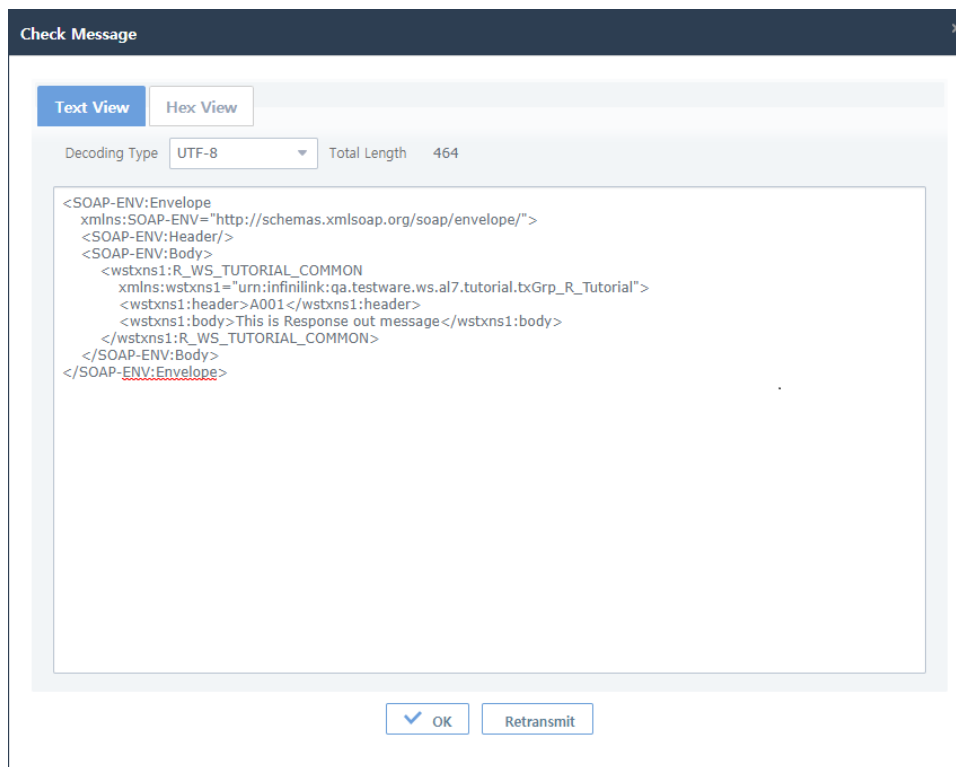
**[Figure 3.37] Request Output Message (No. 5)**



[Figure 3.38] Response Input Message (No. 6)



[Figure 3.39] Response Output Message (No. 9)



# Appendix A. Importing & Exporting WSDL

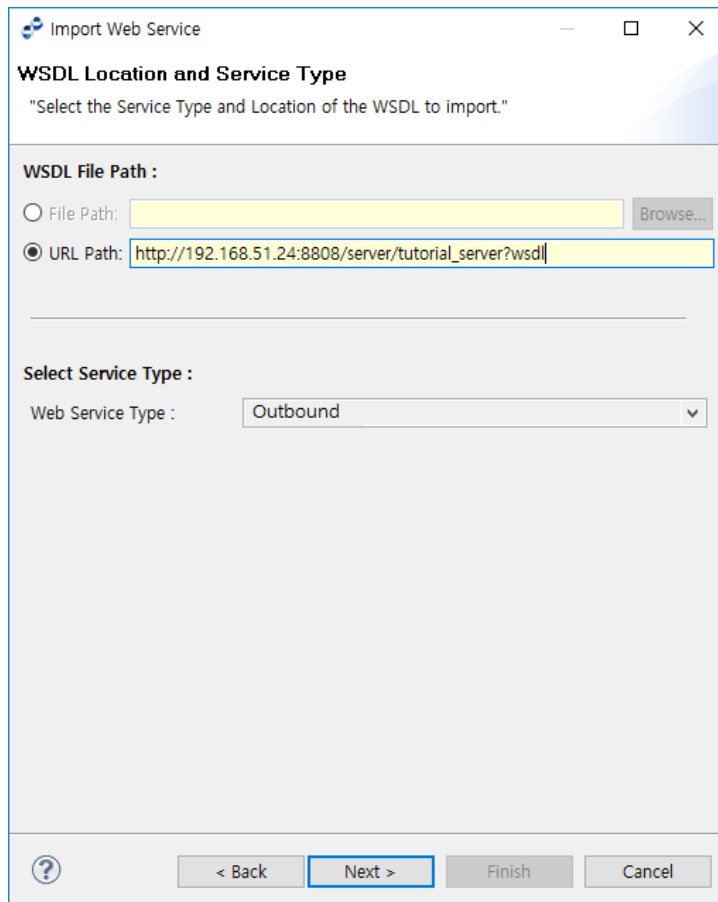
This appendix describes how to import and export WSDL.

## A.1. Importing a Web Service

The Import Web Service function uses the WSDL file to configure inbound and outbound services.

1. In the BizTx Group navigator, right click on a **BizTx/BizTx Group** and select **[Import]**. Then, select **[Import Web Service]** in the **[AnyLink Import]** menu.

**[Figure A.1] Importing a Web Service**

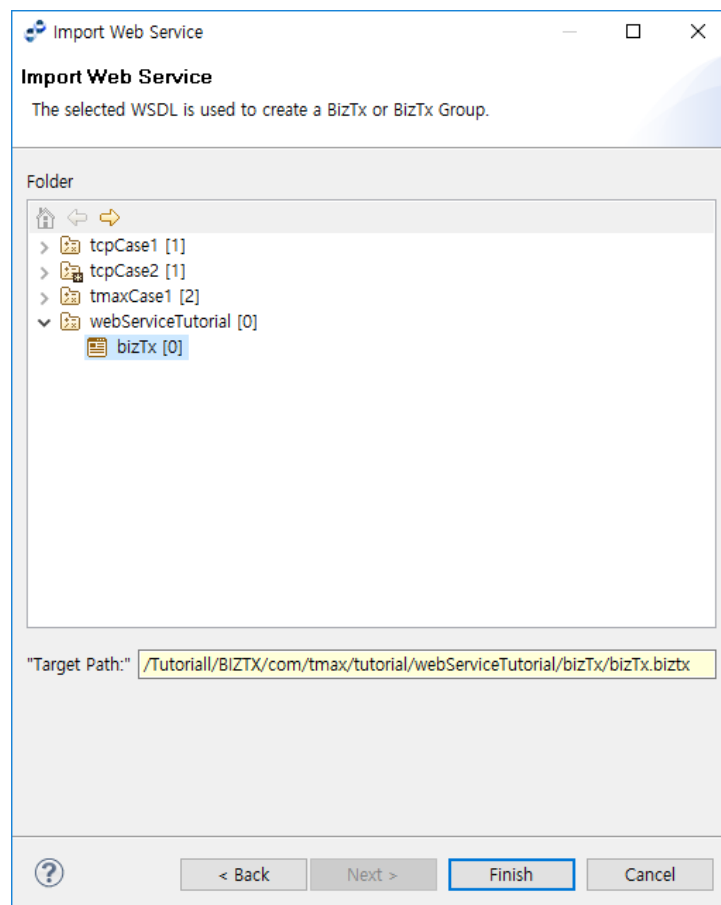


Item	Description
File Path	Imports a WSDL file from the file system and creates a service.
URL Path	Imports a WSDL file from the entered URL path and creates a service.

Item	Description
	<p>WSDL files can be imported by using the following URL format:</p> <pre>{ \$IP } : { \$PORT } / { \$CONTEXT_PATH } / { \$URL } ?wsdl</pre>
Web Service Type	<p>Web Service type.</p> <ul style="list-style-type: none"> <li>– Inbound: Creates a BizTx Group, inbound WSDL, and message required for inbound services.</li> <li>– Outbound: Creates an outbound WSDL, outbound message, and outbound rule required for inbound services.</li> <li>– Proxy: Creates all resources required for inbound and outbound services. Also, creates the flow used for outbound rules.</li> </ul>

2. Use Import Web Service to select the path of the resources to be created.

**[Figure A.2] Importing a Web Service - Select Resource Path**





## A.2. Exporting a Web Service

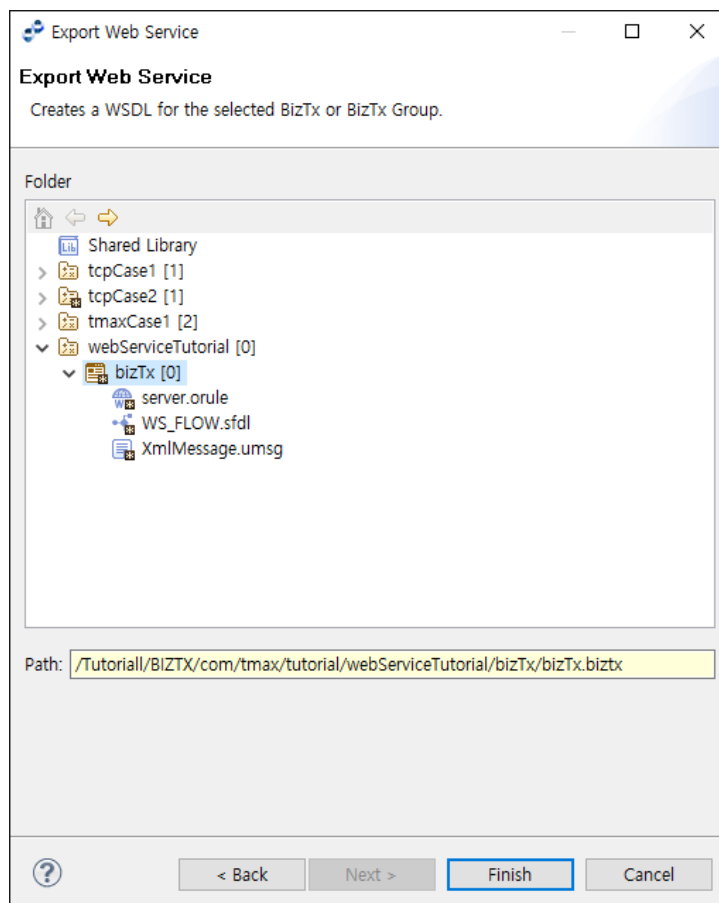
The Export Web Service function helps to create WSDL files for providing Web Services out of an AnyLink BizTx.

1. In the Studio BizTx Group navigator, right click on a **BizTx/BizTx Group** and select **[Export]**. Then, select **[Export Web Service]** in the **[AnyLink Export]** menu.
2. Select the BizTx (Group) to be exported to WSDL.

When a BizTx is selected and exported, then the BizTx's inbound message is defined in the WSDL, and the service's SOAPAction is defined as the BizTx's sysId.

If a BizTx Group is selected and exported, then the inbound messages of all the BizTx in the group are defined in the WASL. As well, the code value defined in **[BizTx] > [Parsing Info] > [BizTx Identifier Code]** is the SOAPAction of each service.

**[Figure A.3] Exporting a Web Service**



3. A WSDL file will be created as follows. The file name will be in the format 'ib\_\${BizTx(Group)ID}.wsdl'.

**[Figure A.4] Result of Exporting a Web Service**

