

AnyLink

HTTP Adapter User Guide

AnyLink 7



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About This Document

Intended Audience

This document is intended for developers and system administrators who want to use Tmax AnyLink[®] (hereafter AnyLink) to link with a system that uses HTTP protocol.

It includes basic concepts, additional knowledge, usage and examples of using HTTP 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
- Java Servlet Specification
- XML, XML schema
- HTTP protocol (RFC 1945, 2617, etc.)
- 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.

Descriptions of each are as follows:

- Chapter 1: Introduction

Describes how an AnyLink HTTP adapter works.

- Chapter 2: Environment Configuration

Describes how to configure an AnyLink HTTP adapter and outbound rule.

- Chapter 3: Examples

Describes examples of using an AnyLink HTTP adapter.

Conventions

Convention	Meaning
<AaBbCc123>	Program source code file name
<Ctrl>+C	Hold down the Ctrl key and press the C key
[Button]	Name of a GUI button or menu
Bold	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>Note</div>	Reference or caution
[Figure 1.1]	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 512 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 HTTP adapter works.

1.1. Overview

An HTTP adapter is used when a communication protocol is defined based on HTTP. An HTTP adapter supports inbound and outbound communications, depending on the communication direction configured in an endpoint.

1.2. Environment Configuration

The following configurations are required to use an HTTP inbound endpoint in AnyLink. For information about the configuration, refer to JEUS manuals.

- Create an HTTP listener in JEUS.
- Create a servlet in JEUS server.

1.3. HTTP Adapter

An HTTP adapter can have HTTP endpoints. An endpoint can be inbound or outbound, depending on the communication direction.

- Inbound

Listens to a path and a port configured in an endpoint, reads a request received in the endpoint, and sends the request message to the configured business transaction to start a flow.

- Outbound

Sends a request message to the URL configured in an endpoint when the flow sends a request to an endpoint through HTTP outbound rule.

Chapter 2. Environment Configuration

This chapter describes how to configure an AnyLink HTTP adapter and outbound rule.

2.1. Adapter Configuration

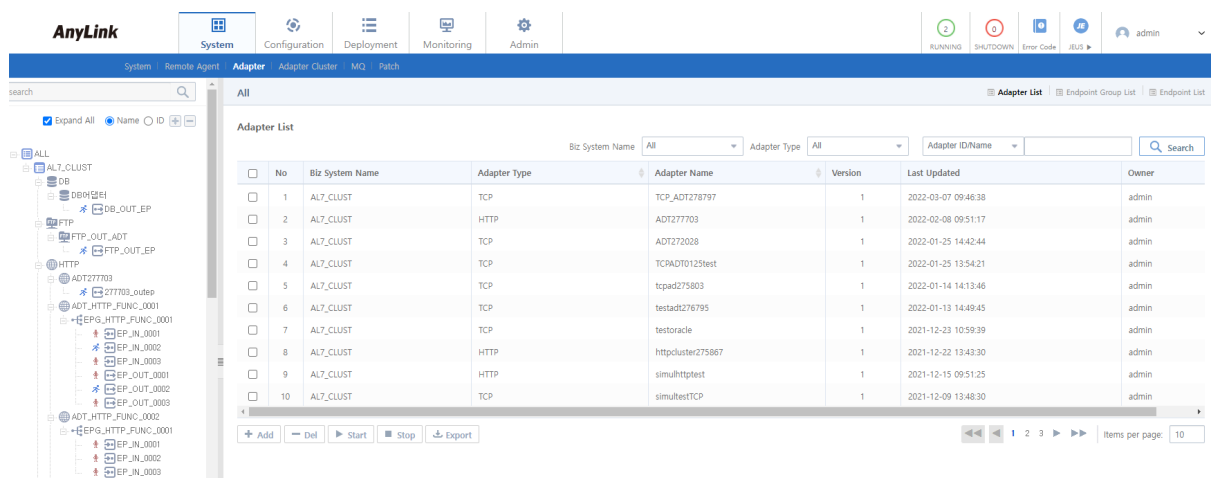
Configure an HTTP adapter in WebAdmin.

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_CLUSTER	TCP	TCP_ADT278797	1	2022-03-07 09:46:38	admin
2	AL7_CLUSTER	HTTP	ADT277703	1	2022-02-08 09:51:17	admin
3	AL7_CLUSTER	TCP	ADT272028	1	2022-01-25 14:42:44	admin
4	AL7_CLUSTER	TCP	TCRADT0125test	1	2022-01-25 13:54:21	admin
5	AL7_CLUSTER	TCP	tcpad275803	1	2022-01-14 14:13:46	admin
6	AL7_CLUSTER	TCP	testadt276795	1	2022-01-13 14:49:45	admin
7	AL7_CLUSTER	TCP	testoracle	1	2021-12-23 10:59:39	admin
8	AL7_CLUSTER	HTTP	httpcluster275867	1	2021-12-22 13:43:30	admin
9	AL7_CLUSTER	HTTP	simulhttptest	1	2021-12-15 09:51:25	admin
10	AL7_CLUSTER	TCP	simultestTCP	1	2021-12-09 13:48:30	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

Add Adapter

Basic Settings

Adapter ID*

HTTP_ADT

Adapter Name*

HTTP_ADT

Adapter Type*

HTTP

Description

HTTP 어댑터

Biz System Name*

ALT_CLUST

Deployment Purpose

Advanced Settings

Outbound Thread Pool ID

No

Save

Cancel

● **Basic Settings** (* : Required)

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 'HTTP' from the list. <ul style="list-style-type: none">– TCP– HTTP– Tmax– WebService– DB– FILE– FTP– MQ– SAP– UDP– SMTP– WEBDAV– Tuxedo

Item	Description
	<ul style="list-style-type: none"> – JMS – ebXML – ISO8583 – ProObject
Description	Adapter description (optional).
Biz System Name *	Business system to deploy adapter to.
Deployment Purpose	Reason for deployment. Click [Deployment] > [Deployment History] tab to check this information.

- **[Advanced Settings] Tab**

Item	Description
Outbound Thread Pool ID	<p>Thread pool ID to be used during an outbound service call. If the specified ID is different from that of the thread pool executed in the engine, the thread is changed to this thread pool during an outbound service call.</p> <p>This option is used to separate a thread pool for each adapter so that different adapters do not affect each other.</p>

2.2. Endpoint Configuration

Select the **[System] > [Adapter]** menu of WebAdmin to display the adapter tree on the left. If you click an adapter to which you want to add an endpoint, adapter details are displayed on the right.

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]

The screenshot displays the 'Adapter Details' screen with the 'Endpoint List' tab selected. The 'Basic Settings' section includes fields for Adapter ID* (HTTP_ADT), Adapter Name* (HTTP_ADT), Adapter Type* (HTTP), Description, Biz System Name* (AL7_CLUST), and Deployment Purpose. Below this, there are tabs for 'Advanced Settings', 'Endpoint Group List', and 'Endpoint List'. The 'Endpoint List' tab shows a table with columns: No, Endpoint ID, Endpoint Name, Direction, Version, Status, Last Updated, and Owner. Two endpoints are listed: HTTP_IN_EP_01 (Inbound, Version 1, Status OK) and HTTP_OUT_EP01 (Outbound, Version 1, Status OK). At the bottom, there are buttons for '+ Add', '- Del', '▶ Start', and '■ Stop'.

No	Endpoint ID	Endpoint Name	Direction	Version	Status	Last Updated	Owner
1	HTTP_IN_EP_01	HTTP_IN_EP_01	Inbound	1	OK	2022-03-14 13:33:11	admin
2	HTTP_OUT_EP01	HTTP_OUT_EP01	Outbound	1	OK	2022-03-14 13:33:47	admin

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.

Add Endpoint Screen consists of the **Basic Settings** pane and **[Connection Info]**, **[Advanced Settings]**, and **[Message Send/Receive Options]** tabs. Depending on the **'Direction'** in **Basic Settings**, items in these tabs will be different. For more information about tab items for each communication direction, refer to the corresponding section.

[Figure 2.4] Add Endpoint Screen - Basic Settings

• Basic Settings

The following shows the **Basic Settings** section of the Add Endpoint screen. (* : Required)

Item	Description
Endpoint ID *	Endpoint 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 Group Name	Endpoint group name.
Endpoint Status	Initial endpoint status. <ul style="list-style-type: none"> – Running : endpoint is running. – Stopped : endpoint is stopped.
Initial State at Boot	Initial endpoint state at boot time.

Item	Description
	<ul style="list-style-type: none"> – Running : endpoint is in Running state at boot time. – Stopped : endpoint is in Stopped state at boot time.
Direction	Endpoint's communication direction. <ul style="list-style-type: none"> – Inbound : endpoint for inbound messages. – Outbound : endpoint for outbound messages.
Description	Endpoint description. Optional.
Deployment Purpose	Reason for deployment. Click [Deployment] > [Deployment History] tab to check this information.

2.2.1. Inbound Endpoint

An HTTP inbound endpoint can process external incoming HTTP requests to AnyLink.

The following describes each tab displayed when the '**Direction**' is selected as 'Inbound' in the **Basic Settings** of the **Add Endpoint screen** ([\[Figure 2.4\]](#)).

- **[Connection Info] Tab** (* : Required)

[Figure 2.5] Add Endpoint Screen - [Connection Info] - Inbound

The screenshot shows the 'Connection Info' tab of the 'Add Endpoint Screen' for an inbound endpoint. The tab is titled 'Connection Info' and contains the following fields and options:

- Path***: A text input field containing '/http/txGrp_HTTP_01'.
- Default Encoding**: A dropdown menu showing 'UTF-8'.
- Select Inbound Port**: A text input field containing '12345'.
- POST URLDecode**: A checkbox that is unchecked.
- Use SOAP**: A checkbox that is unchecked.
- oneway response code**: A text input field.
- Response URL Encode**: A checkbox that is unchecked.
- Use Multipart Byte**: A checkbox that is unchecked.

Item	Description
Path *	Path to be used to call an endpoint. The path consists of Servlet path and TX path of AnyLink. In the example above, /http is Servlet-path, and /txGrp_HTTP_01 is TX path of AnyLink. (Default contextpath in Servlet is deployed as /http.)
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.

Item	Description
Select Inbound Port	The endpoint port. If not specified, then all ports in JEUS will be listened.
POST URLDecode	Option to use URLDecode for POST request message. (URLDecode is always executed in GET).
Response URLEncode	Option to use URLEncode for POST request message. (URLEncode is always executed in GET).
Use SOAP	Option to use SOAP message format for communication.
Use Multipart Byte	Option to use multipart byte for inbound. Received multipart requests are not stored in a temporary file, but stored in byte arrays.

- **[Advanced Settings] Tab**

[Figure 2.6] Add Endpoint Screen - [Advanced Settings] - Inbound

Item	Description
Message Handler	User message handler for the request message.
Message Parameter Name	Value that uses a parsed GET parameter as the key. Only available for GET method.
Multipart Parameter Name	Part name of requested message when receiving multipart message.
BizTx Group/BizTx	BizTx Group/BizTx to be executed by the request received by the endpoint.

- **[Message Send/Receive Options] Tab**

Message conversion is performed when receiving messages. This option is applied before 'Message Handler.'

[Figure 2.7] Add Endpoint Screen - [Message Send/Receive Options] - Inbound

Item	Description
Original characters	Characters to be replaced in a message. Newline (\n), tab (\r), or special (\u) characters also can be set.
Replaced characters	Characters to replace original characters.

2.2.2. Outbound Endpoint

HTTP outbound endpoint can send HTTP message from AnyLink to external servers.

The following describes each tab displayed when the '**Direction**' is selected as 'Outbound' in the **Basic Settings** of the **Add Endpoint screen** ([Figure 2.4]).

- **[Connection Info] Tab** (* : Required)

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

The screenshot shows the 'Connection Info' tab of the 'Add Endpoint Screen' for an outbound endpoint. The interface includes several sections:

- Connection Mode:** Contains checkboxes for 'Use Split', 'Use keepAlive', 'Set Cookie Limits', 'Use SOAP', and 'Use Agent' (set to 'No'). It also includes input fields for 'URL*' (http://192.168.14.102:9998/HTTP_EP_OUT_1), 'Connection Timeout*' (3000 ms), 'Socket Timeout*' (30000 ms), 'Default Encoding', 'Response Timeout' (0 ms), 'Max Connections' (0), and 'Proxy URL'. There is also an 'Ignore response code' checkbox.
- Set HTTP Authentication:** A checkbox that is currently unchecked.
- Message Header:** A section with an '+ Add' button and a table with columns: No, Name, Value, Encrypt Variable Value, and Delete.

Item	Description
Use Split	Option to enter each URL for protocol, IP/host, path, and port.
URL *	URL of the destination to be connected through an outbound endpoint.
Default Encoding	Default encoding to be used in the 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.
Connection Timeout *	Timeout for getting a connection. (Default: 3000)
Response Timeout	Timeout for getting a response before an endpoint is stopped.

Item	Description
Socket Timeout *	Timeout for waiting to read data from a socket. (Default: 30000)
Max Connections	Maximum number of connections between an external server and an endpoint.
Use KeepAlive	Option to use HTTP header connection as Keep-Alive.
Use SOAP	Option to use SOAP message format for communication.
Use Agent	<p>Option to use an endpoint as an agent. If you click 'Yes,' set the agent ID.</p> <p>If you use an endpoint as an agent, add the library list below to the \${Agent installation folder}/lib/common path.</p> <ul style="list-style-type: none"> – httpclient-4.3.2.jar – httpcore-4.3.2.jar – httpasyncclient-4.0.1.jar – commons-logging-1.1.3.jar – httpcore-nio-4.3.2.jar
Message Header	Add message headers in a key - value pair. If you use Encrypt Variable Value, encrypt the header with the algorithm set in the business system.

- **[Advanced Settings] Tab**

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

Item	Description
Message Handler	User message handler for the response message.
Message Parameter Name	Value with a parameter as the key. Only available for GET method.

- **[Message Send/Receive Options] Tab**

Message conversion is performed when receiving messages. This option is applied before 'Message Handler.' For more information, refer to ["2.2.1. Inbound Endpoint"](#).

- **[SSL] Tab**

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

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

– **SSL**

Item	Description
Use SSL	Option to use SSL authentication. Select ' Use without SSL certificate ' to use SSL for communication without SSL certificate.

– **Trust Store Setting**

Set Trust Store information about SSL. 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. (Default: jks)
Client Authentication	Option to use the Key Store.
Store Password	Password for accessing the Trust Store.

– **Key Store Setting**

Item	Description
Store Location	Storage location of the Trust Store.
Store Type	Storage type of the Trust Store. (Default: jks)
Private Key Password	Password for accessing the private key.
Store Password	Password for accessing the Key Store.

2.3. Configuring an Outbound Rule

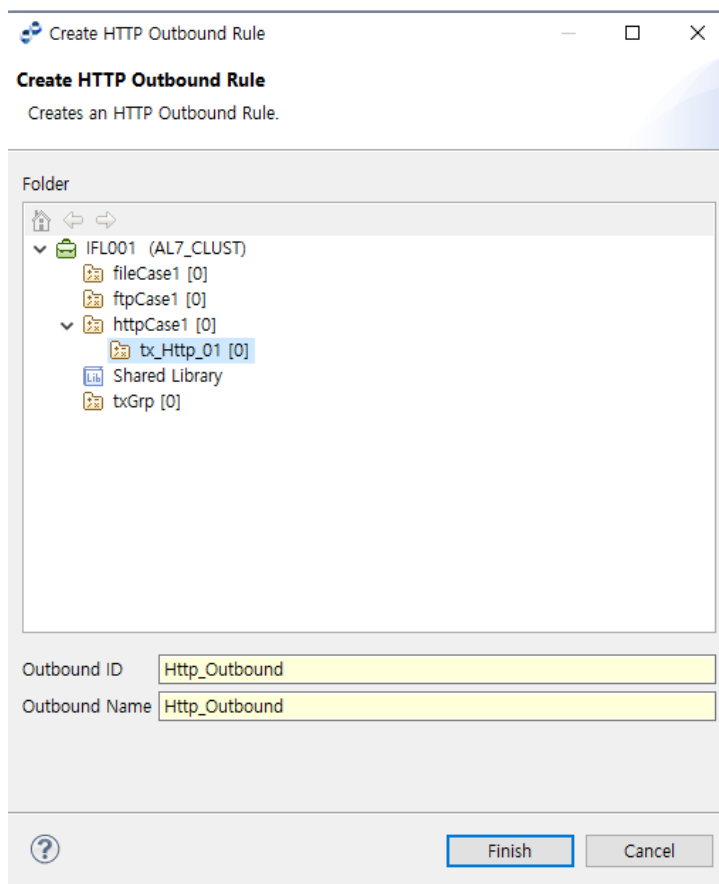
This section describes how to configure an HTTP outbound rule in AnyLink Studio.

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] > [HTTP Outbound Rule]** to open the following **Create HTTP Outbound Rule** screen. Enter the required items, and then click **[Finish]**.

[Figure 2.11] Create HTTP 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.

Item	Description
Outbound Name	Outbound rule name. Only Korean, alphanumeric, and special (-, _) characters are allowed. Must follow the XML naming convention.

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

[Figure 2.12] Outbound Rule Definition Screen

HTTP Outbound Rule

Define Outbound Rule

- Protocol: HTTP
- Outbound Rule ID: HTTP
- Outbound Rule Name: HTTP
- Request Timeout(ms): 10,000
- Endpoint * (Group): EP_OUT_0002
- Description:

Response Method: SYNC

HTTP Method: POST

URL Encoding: ☐

URL Decoding: ☐

Content Type:

Trim Data Before XML Tag: ☐

XML Self-Closing Flag: TRUE

ByPass: ☐

Use DynamicIPAddress: ☐

Request Message

☐ Use Multi Message

Name	Message ID	Type ID	Select Array
MS_HEADER	MS_HEADER	MS_HEADER/ISON	Off
MS_OUT_REQ	MS_OUT_REQ	MS_OUT_REQ/ISON	Off

Response Header Message

☐ Use Response Header Message

Identifies normal and normal error response by reading the header message field.

Name	Message ID	Type ID

☐ Response Type Validation Field

Message ID: Field ID: Search

Normal Response Message

Name	Message ID	Type ID	Select Array
MS_HEADER	MS_HEADER	MS_HEADER/ISON	Off
MS_OUT_RES	MS_OUT_RES	MS_OUT_RES/ISON	Off

Field Value: Type: Add Delete

HTTP Outbound Rule | Multipart | XML Viewer

● Define Outbound Rule (* : Required)

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. Timeout occurs if the server didn't get connection or an outbound request response 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.
Response Method	Method of receiving a response. – SYNC :The endpoint that sends a request receives the response.

Item	Description
	<ul style="list-style-type: none"> – ONEWAY : No response.
HTTP Method	<p>HTTP request method.</p> <ul style="list-style-type: none"> – GET : Requests data from the URL. – POST : Sends data that can be processed by the server. – PUT : Stores data in the URL. – DELETE : Deletes data in the URL. – INBOUND : Sets the same method as a response method for an inbound request. Only available for an inbound request.
URL Encoding	Option to use URL encoding when sending a request to an endpoint URL. Only available for the POST method.
URL Decoding	Option to use URL decoding when receiving a response from an endpoint URL. Only available for the POST method.
Content Type	<p>Content-Type to be specified in HTTP header. Generally it is set to be suitable for the message type. If not set, the default is text/plain.</p> <p>When using messages in the Key-Value format with "application/x-www-form-urlencoded" Content-Type, the servlet can get the value through <code>getParameter(Key)</code>.</p>
Trim Data Before XML Tag	Option to remove blank characters before XML Tag to avoid a parsing error.
XML Self-Closing Flag	<p>Empty XML tag.</p> <ul style="list-style-type: none"> – FALSE : Sets to the '<ELEM></ELEM>' format. – TRUE : Sets to the '<ELEM/>' format.
ByPass	Option to call the outbound rule for bypass transaction. If selected, request and response messages are disabled.
Use DynamicIpAddress	Option to set a host and a port to send request message field values. To select a message ID and a field ID, click [Search] .

● 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. A request message can be set as a multi-message. A multi-message is used for XML message to specify a namespace URI and local part separately for each message. Select ' Use Multi Message ' to set HTTP Multi Part information. (Refer to [Figure 2.13]).
Normal Response Message	Response message for the outbound rule.
Response Header Message	Option to use a response header message. The response header message is used when response messages are divided into normal and error response messages – Response Type Validation Field : When using a response header message, enter a message field and its type (normal or error) to identify normal and error response.

• Define HTTP Multi Part

Multipart can be set for an outbound rule.

[Figure 2.13] HTTP Multipart Settings

HTTP Multipart Settings

- Use Multipart ☒
- Use SOAP Batch ☐
- Message Part Name
- Mapping Type

File ▼
- Temporary File Path

Mapping...
- Part Name

Mapping...

Item	Description
Use Multipart	Option to use multipart for sending messages.
Use SOAP Batch	Option to send a messages as a SOAP batch header. If this option is selected, ' Message Part Name ' cannot be specified. ' Part Name ' for ' File Mapping Type ', and ' Part Name ' and ' File Name ' for ' Byte Mapping Type ' can not be set.

Item	Description
Message Part Name	First part name of the request message.
Mapping Type	Choose either of the following options: <ul style="list-style-type: none"> – File: Stored in a temporary file. – Byte : Stored in byte.
Temporary File Path	Path of the file to be sent when ' Mapping Type ' is selected as 'File.'
Part Name	Part name of the file to be sent.
File Content	File content stored in byte when ' Mapping Type ' is selected as 'Byte.'
File Name	File name stored in byte when ' Mapping Type ' is selected as 'Byte.'

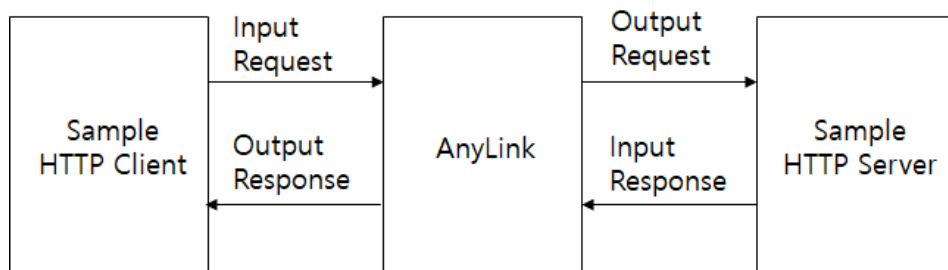
Chapter 3. Examples

This chapter describes examples of using AnyLink HTTP adapter.

3.1. Overview

The following shows the basic HTTP BizTx process.

[Figure 3.1] Basic BizTx Process



A BizTx is processed as follows:

1. A request input message is sent via a sample HTTP 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 HTTP server via an outbound adapter.
5. The sample HTTP 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 HTTP client via an inbound adapter.

All used messages use the JSON format.

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"](#).

Note

For information about accessing and creating business systems in AnyLink WebAdmin, refer to *AnyLink WebAdmin Guide*.

3.2.1. Creating an Outbound Adapter

The following is an example of creating an HTTP adapter.

[Figure 3.2] Adding an Adapter

The screenshot shows the 'Add Adapter' form. The 'Basic Settings' tab is selected. The 'Adapter ID*' field contains 'HTTP_ADT_Tutorial'. The 'Adapter Name*' field contains 'HTTP_ADT_Tutorial'. The 'Adapter Type*' dropdown is set to 'HTTP'. The 'Description' field contains 'HTTP outbound adapter'. The 'Deployment Purpose' field is empty. The 'Biz System Name*' dropdown is set to 'AL7_CLUST'. The 'Advanced Settings' tab is also visible, showing 'Outbound Thread Pool ID' set to 'No'. At the bottom, there are 'Save' and 'Cancel' buttons.

• Basic Settings

Item	Value
Adapter ID	HTTP_ADT_Tutorial
Adapter Name	HTTP_ADT_Tutorial
Adapter Type	HTTP
Description	HTTP outbound adapter
Biz System Name	ANL001

• [Advanced Settings] Tab

Item	Value
Outbound Thread Pool ID	No

3.3. Creating an Endpoint

From the **[Adapter]** screen, click 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 an HTTP inbound endpoint.

- **Basic Settings**

[Figure 3.3] Adding an Inbound Endpoint - Basic Settings

HTTP Endpoint Details Endpoint List

☐ Cold Deploy  

Basic Settings

Biz System Name	AL7_CLUST	Adapter Type	HTTP	Adapter Name	HTTP_ADT_Tutorial
Endpoint ID	HTTP_EP_IN	Endpoint Name*	HTTP_EP_IN	Endpoint Group	
Endpoint Status	Running	Initial State at Boot	Running	Direction	Inbound
Description					
Deployment Purpose					

Item	Value
Endpoint ID	HTTP_EP_IN
Endpoint Name	HTTP_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** Message Send/Receive Options

Connection Mode

Path*	/http/tc/HTTP_EP_IN_Tutorial	Default Encoding	
Select Inbound Port	12345		
POST URLDecode	<input type="checkbox"/>	Response URL Encode	<input type="checkbox"/>
Use SOAP	<input type="checkbox"/>	Use Multipart Byte	<input type="checkbox"/>
oneway response code			

Item	Value
Path	/http/tc/HTTP_EP_IN_Tutorial

- [Advanced Settings] Tab

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

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

3.3.2. Creating an Outbound Endpoint

The following is an example of adding an HTTP outbound endpoint. In this example, only [Connection Info] tab is shown.

- Basic Settings

[Figure 3.6] Adding an Outbound Endpoint - Basic Settings

Item	Value
Endpoint ID	HTTP_EP_OUT
Endpoint Name	HTTP_EP_OUT
Endpoint Status	Running
Initial State at Boot	Running
Direction	Outbound

- [Connection Info] Tab

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

Connection Info

Advanced Settings

Message Send/Receive Options

SSL

Connection Mode

Use Split

☐

URL*

http://192.168.14.102:9998/HTTP_EP_OUT_1

Connection Timeout*

3000

ms

Socket Timeout*

30000

ms

Use keepAlive

☐

Set Cookie Limits

☐

Proxy URL

Use SOAP

☐

Use Agent

☐ Yes

☒ No

Default Encoding

Response Timeout

0

ms

Max Connections

0

Ignore response code

☐

Set HTTP Authentication

☐

Message Header

+ Add

No	Name	Value	Encrypt Variable Value	Delete
----	------	-------	------------------------	--------

Item	Value
URL	http://192.168.14.102:9988/http/HTTP_EP_IN_Tutorial
Connection Timeout	3000
Socket Timeout	30000

3.4. Creating a Studio Resource

This section describes how to create a resource in Studio.

Note

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

Create a BizTx resources in AnyLink Studio.

[Figure 3.8] HTTP BizTx Resource List

httpCase1 [3]

Http_Msg_Body.umsg

Http_Msg_Header.umsg

Http_Msg.umsg

tx_Http_01 [4]

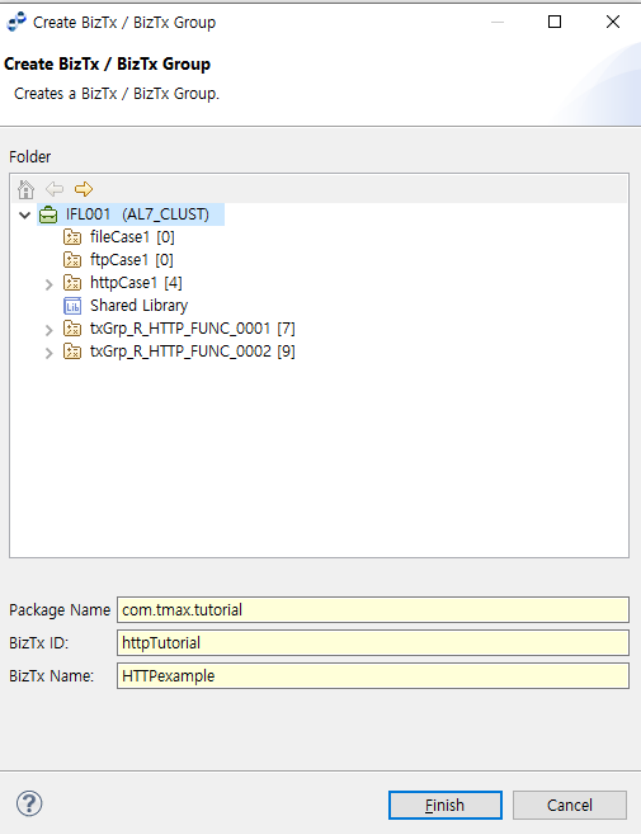
HTTP_Outbound.orule

JsonMessage.umsg

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 3.9] Creating a BizTx Group

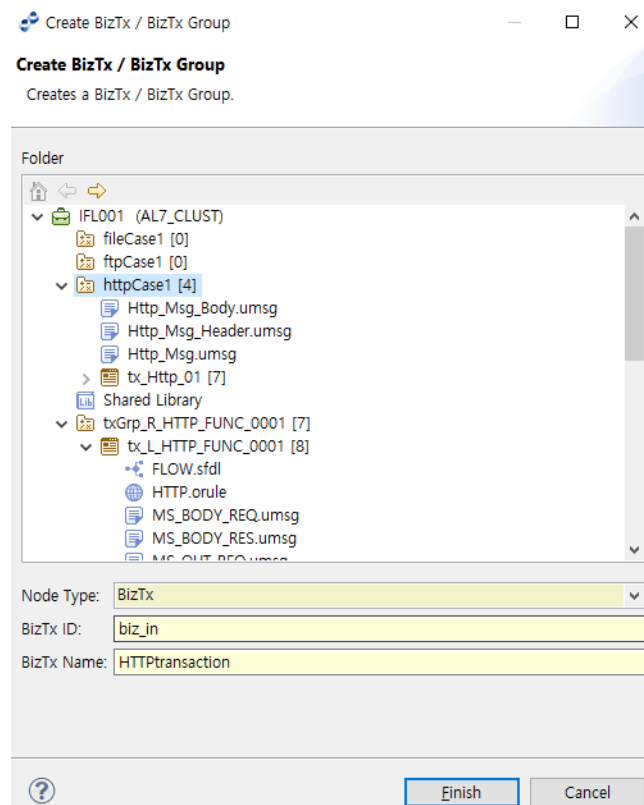


Item	Value
Package Name	com.tmax.tutorial
BizTx ID	httpTutorial
BizTx Name	HTTPexample

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 3.10] Creating a BizTx

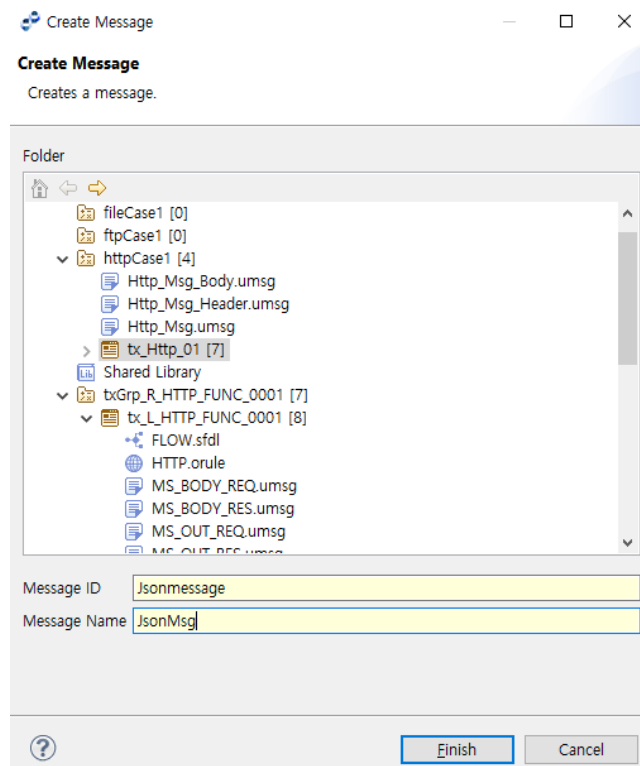


Item	Value
Node Type	BizTx
BizTx ID	biz_in
BizTx Name	HTTPtransaction

3.4.3. Creating a Message

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

[Figure 3.11] Creating a Message

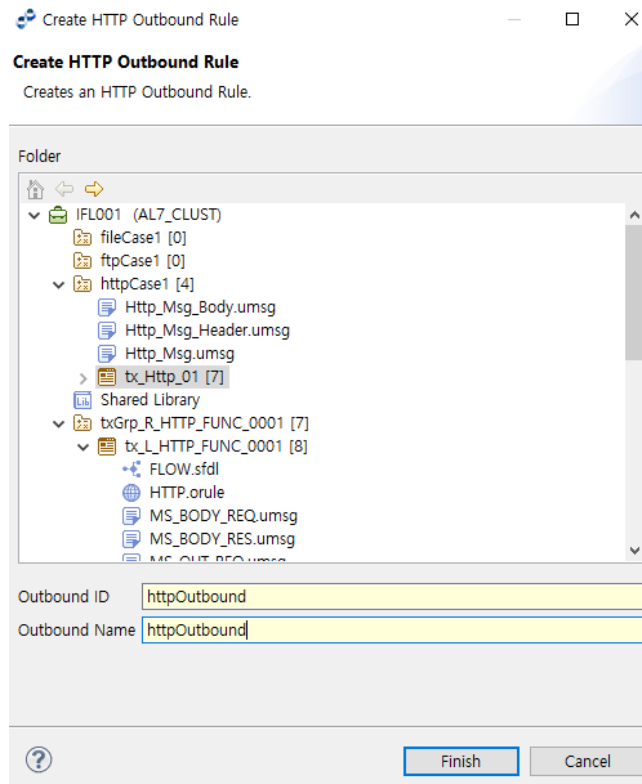


Item	Value
Message ID	Jsonmessage
Message Name	JsonMsg

3.4.4. Creating an Outbound Rule

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

[Figure 3.12] Creating an Outbound Rule

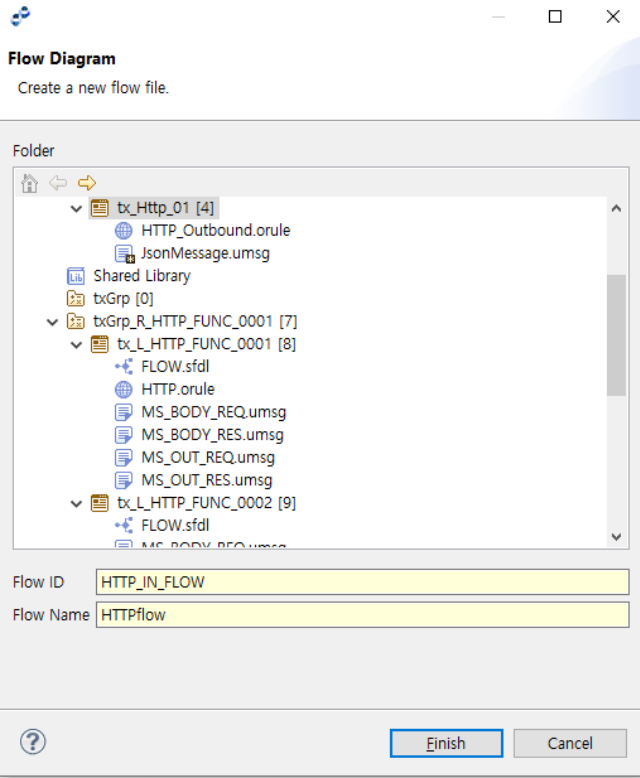


Item	Value
Outbound ID	httpOutbound
Outbound Name	httpOutbound

3.4.5. Creating a Flow

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

[Figure 3.13] Creating a Flow



Item	Value
Flow ID	HTTP_IN_FLOW
Flow Name	HTTPflow

3.5. Configuring a Studio Resource

This section describes how to configure a resource.

Note

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

3.5.1. 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 3.14] Configuring a BizTx Group - [BizTx Group Info]

BizTx Group Definition

Basic Info

• BizTx Group ID

httpTutorial

• Package Name

com.tmax.tutorial

• BizTx Group Name

httpexample

• BizTx Type

NONE

• Version

6

• Description

• Bypass

NO

• XA

NO

Request Message

Name	Message ID	Type ID	Select Array

• Namespace URI

• Local Part

• Group

NONE

• Group Number

Normal Response Message

Name	Message ID	Type ID	Select Array

• Namespace URI

• Local Part

• Group

NONE

• Group Number

Business Error Response Message

Name	Message ID	Type ID	Select Array

• Namespace URI

• Local Part

• Group

NONE

• Group Number

Error Response Handling

• Error Response Type

NONE

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

• [BizTx Group Option] Tab

[Figure 3.15] Configuring a BizTx Group - [BizTx Group Option]

BizTx Group Options

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

Search

• 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

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

3.5.2. 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 3.16] Configuring a BizTx - [BizTx Info]

The screenshot displays the 'BizTx Definition' configuration window. The 'BizTx Info' tab is active, showing the following configuration details:

- Basic Info:**
 - BizTx ID: tx_Http_01
 - Package Name: com.tmax.testguide.httpCase1
 - BizTx Name: tx_Http_01
 - Version: 7
 - BizTx Type: PARENT
 - Bypass: NO
 - XA: NO
 - Description: (empty)
- Invocation Service:**
 - Service Type: FLOW
 - Service Name: (empty)
 - Mapping: (empty)
- Request Message:**

Name	Message ID	Type ID	Select Array
JsonMessage	JsonMessage	com.tmax.testgul...	Off
- Normal Response Message:**

Name	Message ID	Type ID	Select Array
JsonMessage	JsonMessage	JsonMessage/SON	Off
- Business Error Response Message:**

Name	Message ID	Type ID	Select Array
------	------------	---------	--------------
- Error Response Handling:** (empty)

Item	Value
Bypass	NO
XA	NO
Error Response Type	PARENT
Service Type	FLOW
Service Name	HTTP_IN_FLOW_Message_START_Event_BE815D (randomly generated)
Request Message	JsonMessage (JsonMsg)
Normal Response Message	JsonMessage (JsonMsg)

- [BizTx Options] Tab

[Figure 3.17] 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 Interval
- BizTx Priority

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

3.5.3. Configuring a Message

The following is an example of configuring a message. For information about how to configure a message, refer to *AnyLink Studio Guide*.

[Figure 3.18] Configuring a Message - JSON Message

Message ID

JsonMessage

Message Name

JsonMessage

Message List *

Message ID	Message Type
JsonMessage/JSON	JSON

Add

Delete

Edit

Description

JsonMessage/JSON Message Type

Message Encoding

NONE

Null Processing Mv

NULL

Ignore UnmarshalException

☐

Object Name

JsonMessage/JSON Message Format *

No.	Physical Name	Logical Name	Field Type	Included Str. Name	Included Str. Path	Array Size	Comment	Mask	Encode(JSON)	Date Pattern (yyyy-MM-dd)	Corr. Field	JsonK
1	header	header	string						Char	yyyy-MM-dd	false	none
2	body	body	string						Char	yyyy-MM-dd	false	none

3.5.4. Configuring an Outbound Rule

The following is an example of configuring an HTTP outbound rule.

[Figure 3.19] Configuring an Outbound Rule

HTTP Outbound Rule

Define Outbound Rule

Protocol

HTTP

Outbound Rule ID *

HTTP_Outbound

Outbound Rule Name *

HTTP_Outbound

Request Timeout(ms):

10,000

Endpoint *

(Group)

HTTP_EP_OUT

Search

Description

Response Method

Sync

HTTP Method

POST

URL Encoding

☐

URL Decoding

☐

Content Type

Trim Data Before XML Tag

Yes

XML Self-Closing Flag

FALSE

ByPass

☐

Use DynamicIPAddress

☐

Request Message

Use Multi Message

☐

Name	Message ID	Type ID	Select Array
JsonMessage	JsonMessage	JsonMessage/JSON	Off

Import

Add

Delete

Normal Response Message

Name	Message ID	Type ID	Select Array
JsonMessage	JsonMessage	JsonMessage/JSON	Off

Add

Delete

Response Header Message

Use Response Header Message

☐

Identifies normal and normal error response by reading the header message field.

Name	Message ID	Type ID

Import

Add

Delete

Response Type Validation Field

Message ID

Field ID

Search

Field Value	Type
header	

Add

Delete

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Item	Value
Request Timeout (ms)	10000
Response Method	Sync
HTTP Method	POST
Endpoint	HTTP_EP_OUT
Request Message	JsonMessage (JsonMsg)
Normal Response Message	JsonMessage (JsonMsg)

3.5.5. Configuring a Flow

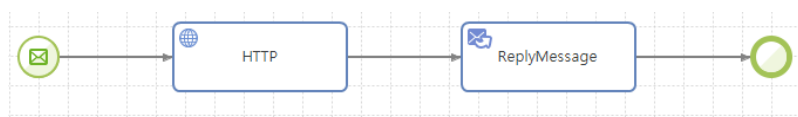
Configure a flow as follows:

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.

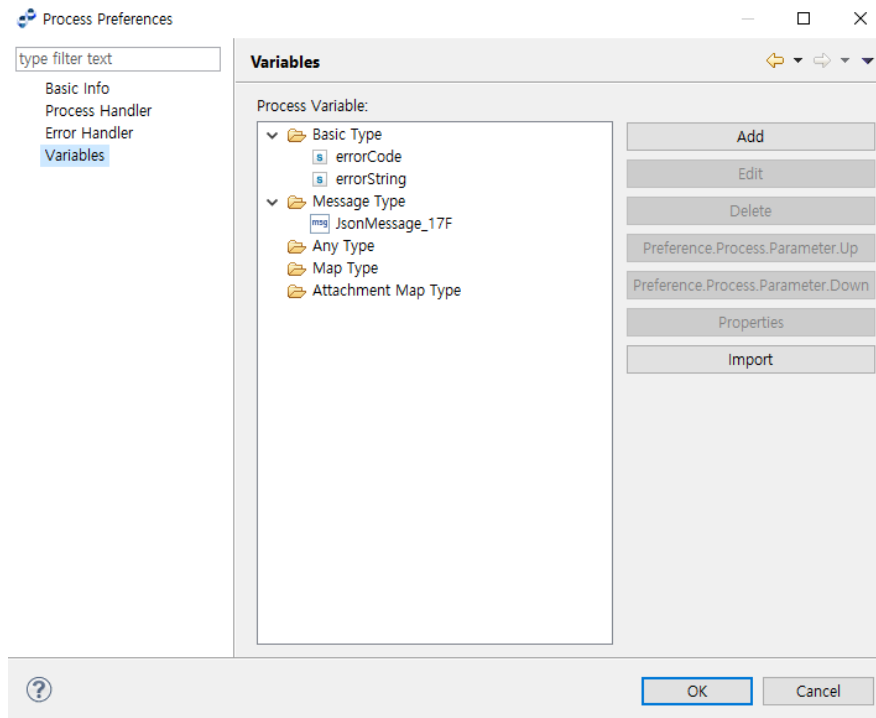
[Figure 3.20] Service Flow Editor - Basic Diagram



Variables

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

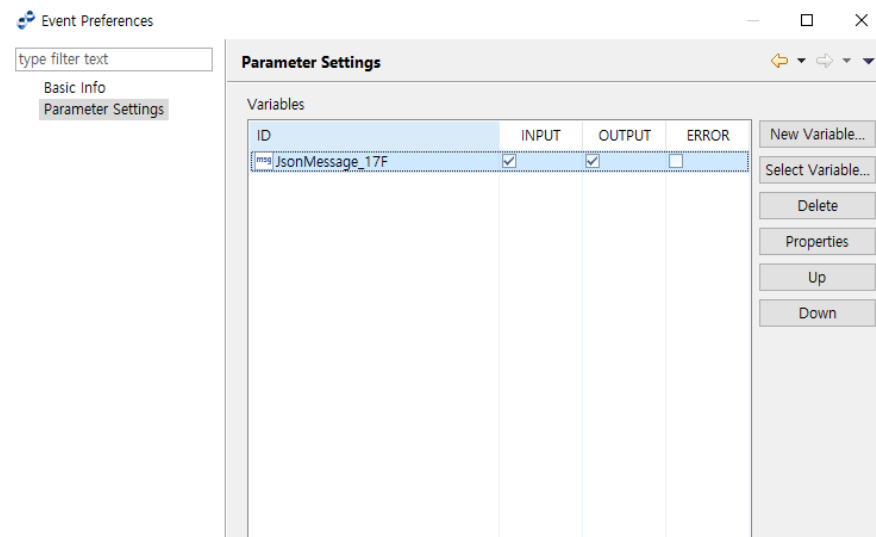
[Figure 3.21] Property Preference - Variables



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 3.22] Event Preference - Parameter Settings

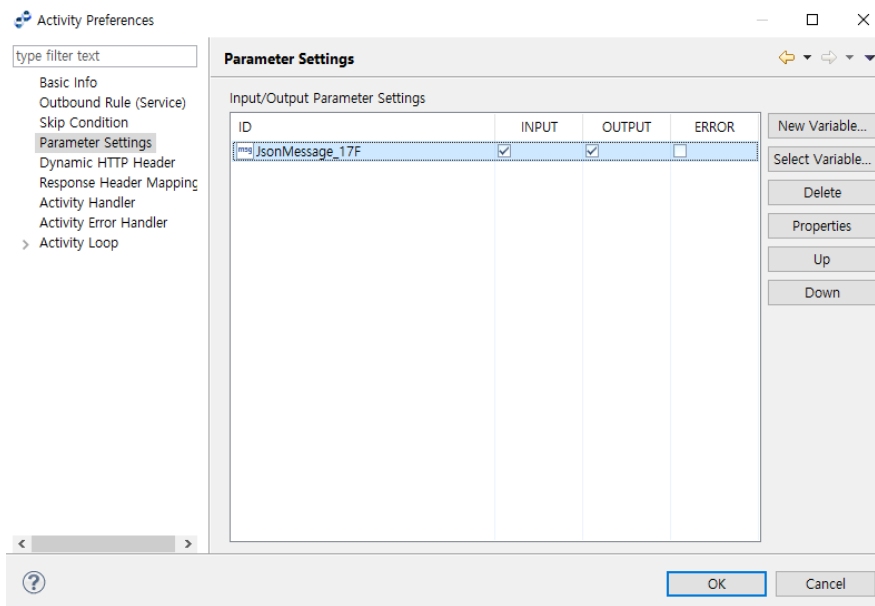


Outbound Call

Configure an outbound call as follows:

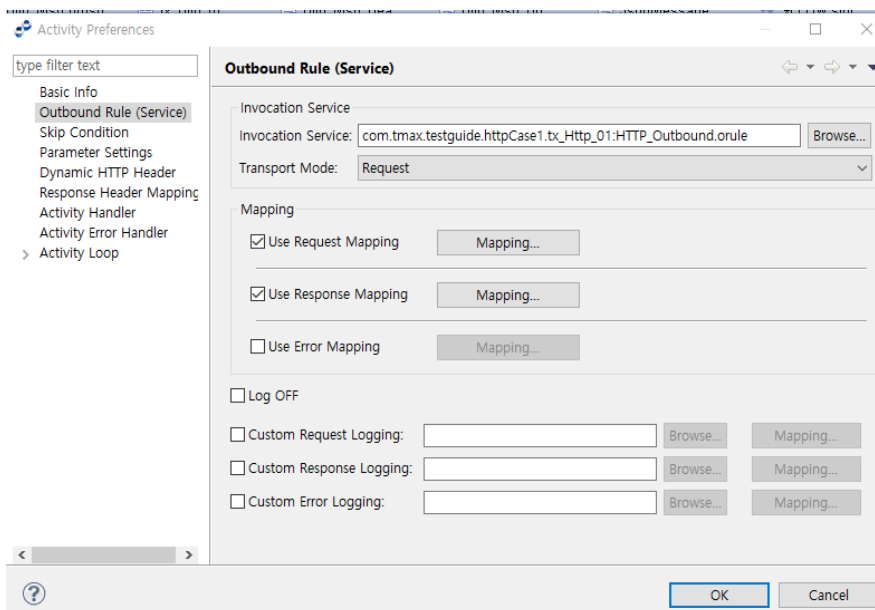
1. Select **[Properties]** from the **[Outbound Call] > [Outbound Rule]** context menu of the flow editor.
Click **[Parameter Settings]** in the **Activity Preferences** window.

[Figure 3.23] Outbound Call - Parameter Settings



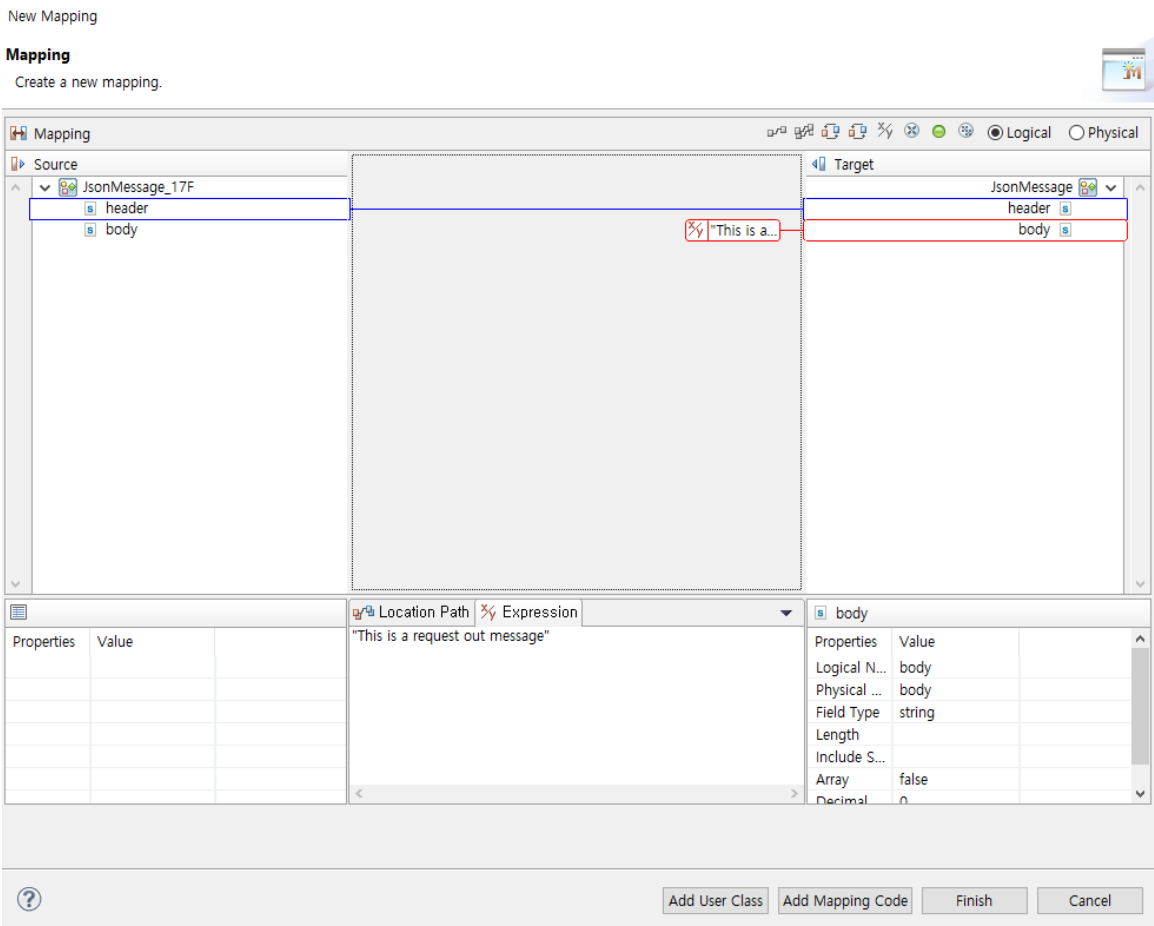
2. Click **[Outbound Rule (Service)]** from the **Activity Preferences** window.

[Figure 3.24] Outbound Call - Outbound Rule (Service)

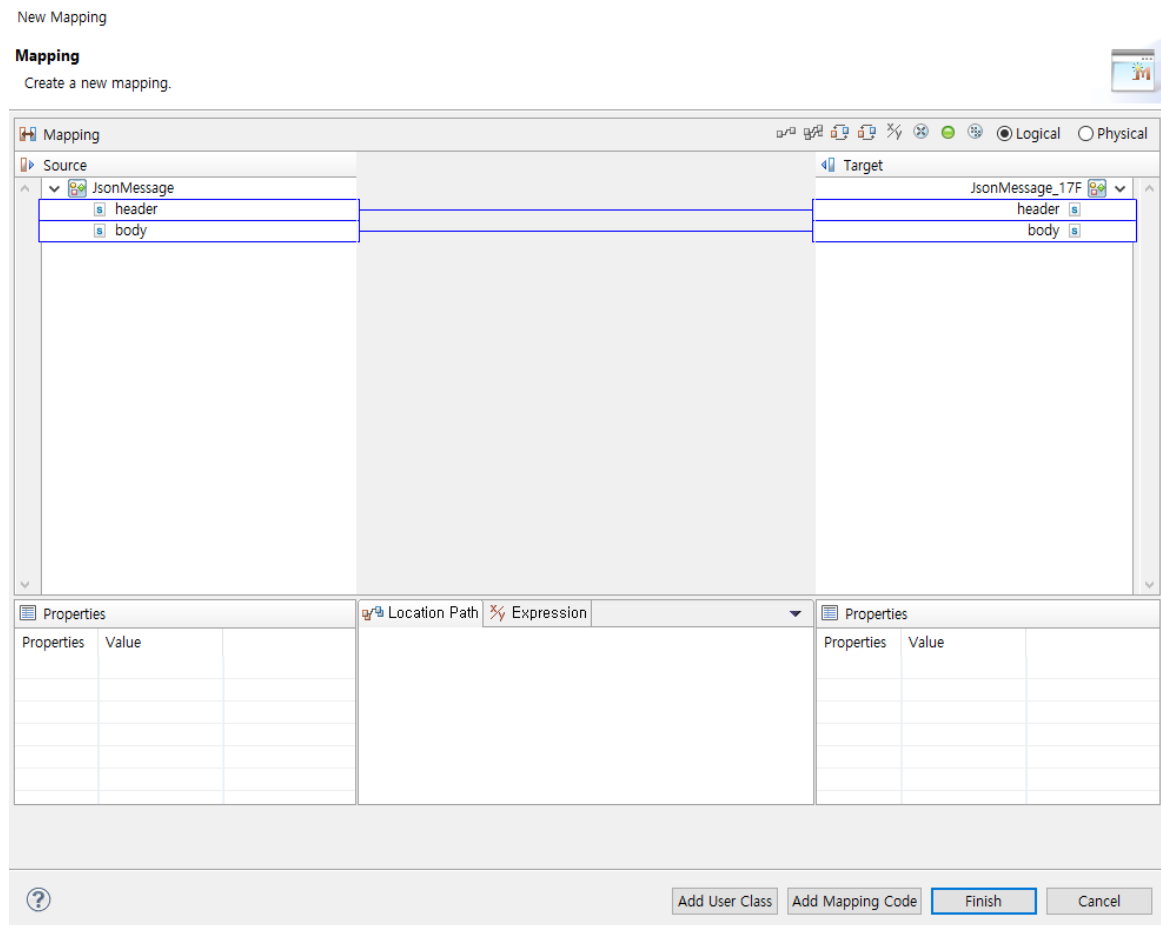


3. Select the 'Use Request Mapping' and 'Use Response Mapping' checkboxes, and then click [Mapping] to create mappings.

[Figure 3.25] Outbound Call - Outbound Rule (Service) - Request Mapping



[Figure 3.26] Outbound Call - Outbound Rule (Service) - Response Mapping

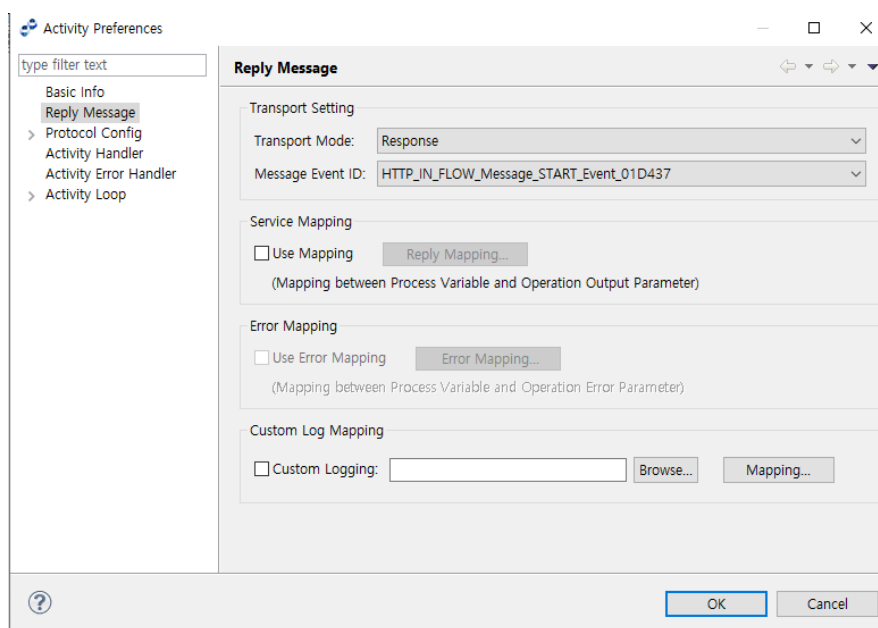


Response Call

Configure a response call as follows:

1. Select **[Property]** from the **[Send Message] > [Reply Message]** context menu of the flow editor. Click **[Reply Message]** in the **Activity Preferences** window.

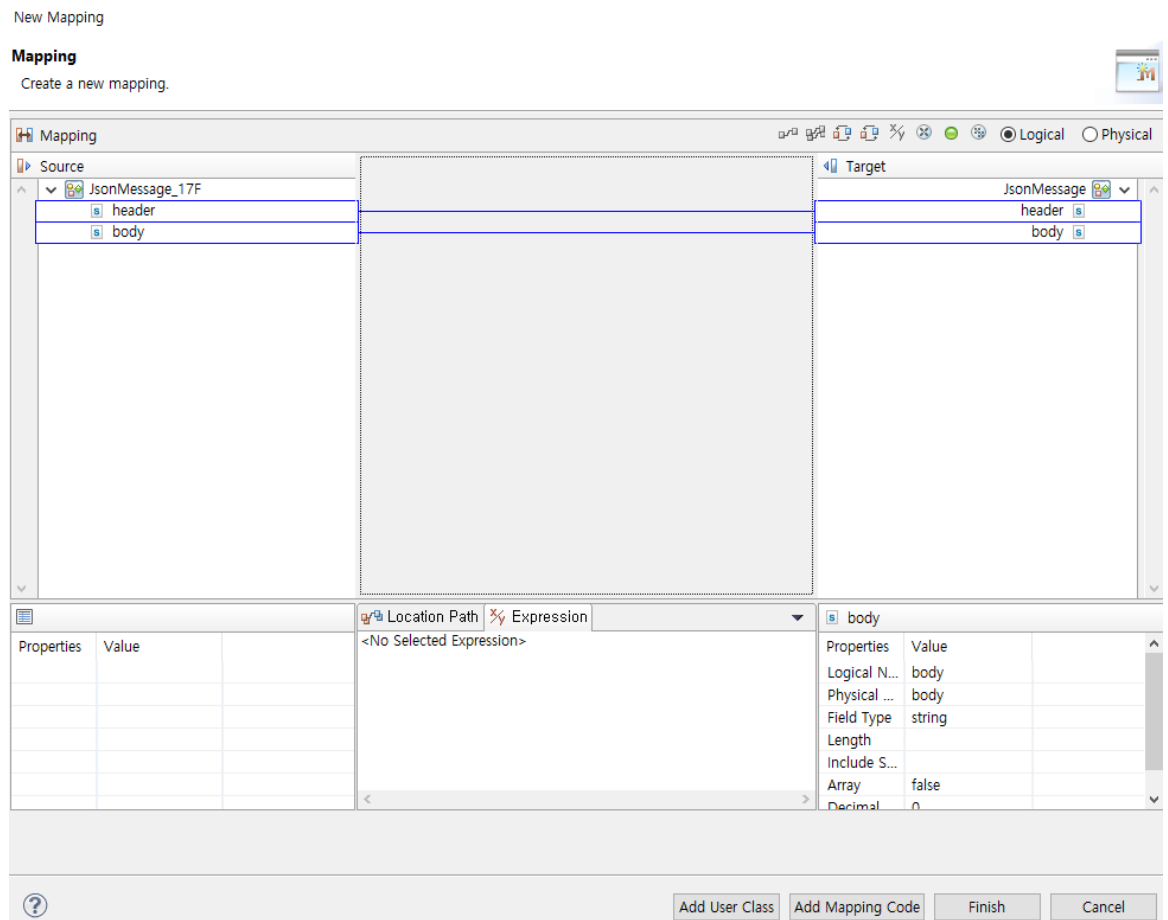
[Figure 3.27] Response Call - Reply Message



2. Select the **'Use 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 JsonMsg for the mappings.

[Figure 3.28] Response Call - Reply Message - Service Mapping - Reply Mapping



3.6. Deployment

Use the following Deploy Options window to configure deployment options for a BizTx Group/BizTx

[Figure 3.29] Deploying a BizTx Group/BizTx

Deploy Options

Sets deploy options.

☒ Include Child BizTx (Group)

Resources to Deploy

Name	ID	Package	Version	Type	Cancel	Confirm
▼ httpCase1	httpCase1	com.tmax.testguide	3	BizTx Gro...	<input checked="" type="checkbox"/>	Dej
Http_Msg	Http_Msg...			Message		
Http_Msg_Body	Http_Msg...			Message		
Http_Msg_Header	Http_Msg...			Message		
▼ tx_Http_01	tx_Http_01	com.tmax.testguide.httpCase1	4	BizTx	<input type="checkbox"/>	Dej
HTTP_Outbound	HTTP_Outb...			Outboun...		
JsonMessage	JsonMessage			Message		

Reason for Deployment

☐ Skip Version Check

☐ Use Cold Deploy

?

OK

Cancel

Note

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

3.7. Testing a BizTx

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

[Figure 3.30] Testing a BizTx - AnyLink BizTx Log

Transaction Trace

Basic Settings

GUID	COA86737FAEB\NDCBFFPKCEF00000091		PGUID		
BizTxID	com.tmax.al7.http.txGrp_R_HTTP_FUNC_0002.tx_L_HTTP_FUNC_0001				
BizTxName	요청				
Endpoint	ADT_HTTP_FUNC_0001.EPG_HTTP_FUNC_0001.EP_IN_0002				
Server	server1		Status	SUCCESS	
Request Time	2021-11-24 13:43:37		Elapsed Time (ms)	39	

Trace	FEP						All
No	Category	Execution Module	Timestamp	Time	Message	Error	
1		HTTP Adapter (ADT_HTTP_FUNC_0001) -- [EP_IN_0002 → tx_L_HTTP_FUNC_0001]	2021-11-24 13:43:37.138	0			
2		Flow Start (FLOW)	2021-11-24 13:43:37.139	1			
3		MESSAGE Event (FLOW_Message_START_Event_607645)	2021-11-24 13:43:37.14	1			
4		HTTP Activity (FLOW_HTTP_605F48)	2021-11-24 13:43:37.145	5			
5		HTTP Adapter (ADT_HTTP_FUNC_0001) -- [EP_OUT_0002 → EPG_HTTP_FUNC_0001 → http://192.168...	2021-11-24 13:43:37.149	4			
6		HTTP Adapter (ADT_HTTP_FUNC_0001) -- [EP_OUT_0002 →]	2021-11-24 13:43:37.165	16			
7		HTTP Activity (FLOW_HTTP_605F48)	2021-11-24 13:43:37.166	1			
8		Reply Activity (FLOW_ReplyMessage_60EE4A)	2021-11-24 13:43:37.172	6			
9		HTTP Adapter (ADT_HTTP_FUNC_0001) -- [→ EP_IN_0002]	2021-11-24 13:43:37.174	2			
10		Reply Activity (FLOW_ReplyMessage_60EE4A)	2021-11-24 13:43:37.175	1			
11		NONE Event (FLOW_None_END_Event_60C84B)	2021-11-24 13:43:37.177	2			
12		Flow End (FLOW)	2021-11-24 13:43:37.177	0			

[Figure 3.31] Testing a BizTx - Request Input Message (No. 1)

Check Message	
Text View	Hex View
Decoding Type	UTF-8
Total Length	61
<pre>{ "Header": "A001", "Body": "This is a request in message" }</pre>	
<div> <div>✓ OK</div> <div>Retransmit</div> </div>	

[Figure 3.32] Testing a BizTx - Request Output Message (No. 4)

Check Message

Text View

Hex View

Decoding Type

Select

com.tmax.tutorial.httpTutorial.JsonMsg@ed7f0f5
Header : A001
Body : This is a request out message

✓ OK

[Figure 3.33] Testing a BizTx - Response Input Message (No. 6)

Check Message

Text View

Hex View

Decoding Type

UTF-8

 Total Length 41

{"Header":"B001","Body":"This is a request in message"}

✓ OK

[Figure 3.34] Testing a BizTx - Response Output Message (No. 9)

