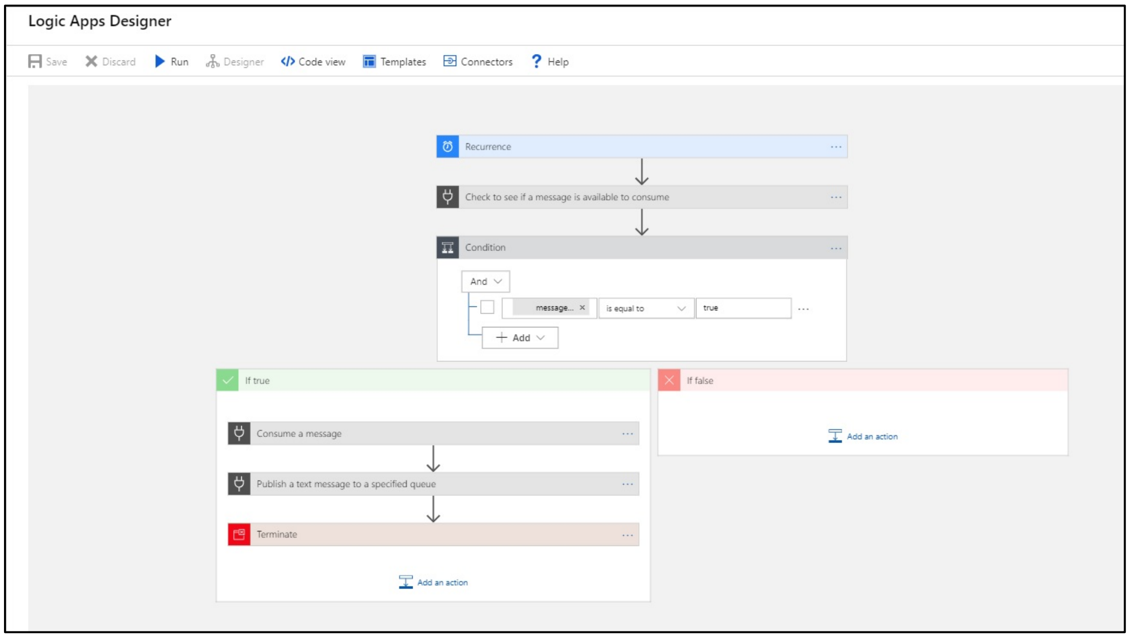
JNBridge R&D Showcase
Azure Logic Apps Connector for JMS

Create a Custom Azure Logic App Connector using the JNBridge JMS Adapter for .NET

Introduction

An Azure Logic App is a cloud service that automates and orchestrates tasks, business processes and workflows enabling integration of data, systems and services across the enterprise. Visually, a Logic App is a workflow built by linking together functional components such as connectors, flow controls and data conversion in the Azure portal. Here's the Logic App that will be built in this R&D Showcase kit. It will consume a JMS text message from a queue, modify the text from that message and then publish a text message to another queue.



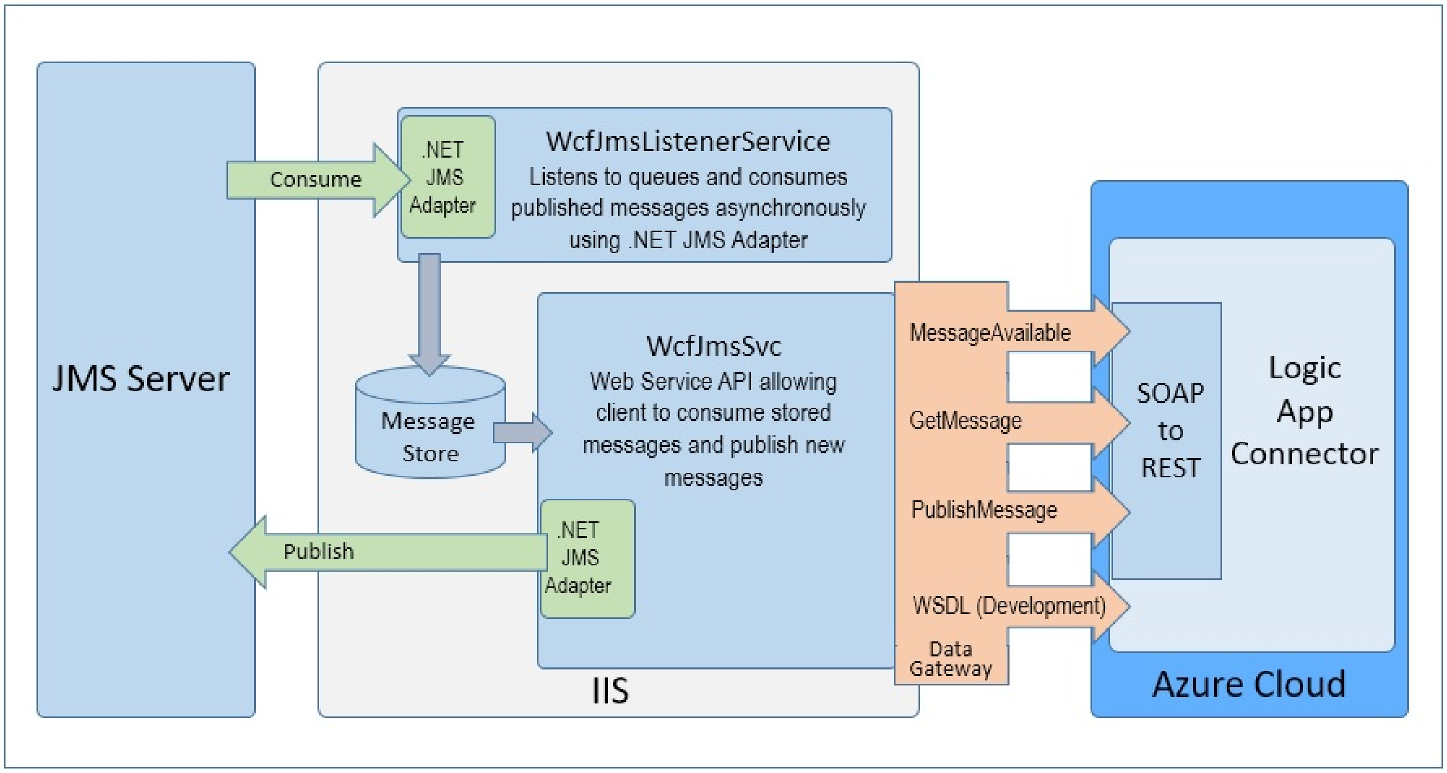
The key component in this workflow is the Azure Logic App Custom Connector that provides actions that map to JMS operations like consuming and publishing messages. This kit will show the reader how to build a custom connector using the JNBridge JMS Adapter for .NET to provide a back-end WCF service hosted in IIS. The API exposed by the service is called by the custom connector.

This kit is a continuation of two previous blog posts, Creating WCF Services using the .NET JMS Adapter–Part 1 and Creating WCF Services using the .NET JMS Adapter–Part 2. The second blog in the series will be our starting point. In that blog, the JMS Adapter for .NET was used to create a WCF Channel Listener service that consumed messages from a JMS destination. We'll add another WCF Service similar to that built in the first blog post. It is the new service that will be used by the custom connector.

Overview

A Logic App Custom Connector is simply a graphical interface to any service that exposes a REST API. Since the WCF based service in this example exposes a SOAP interface, this example makes use of the SOAP-to-REST protocol translation feature in the Custom Connector architecture. The service is hosted on-premise in IIS, though the service could just as easily be hosted in Azure. Likewise, the on-premise JMS broker could also be hosted in Azure. The Azure On-Premise Data Gateway provides secure access to on-premise services, but would not be necessary if the WCF service were hosted in Azure.

The *WcfJmsListenerService* uses the .NET JMS Adapter to consume messages from the JMS broker and store them in memory. This service does not expose an interface. The *WcfJmsSvc* service exposes a SOAP interface to consume the stored messages and publish new messages, using the .NET Adapter, directly to the JMS broker.

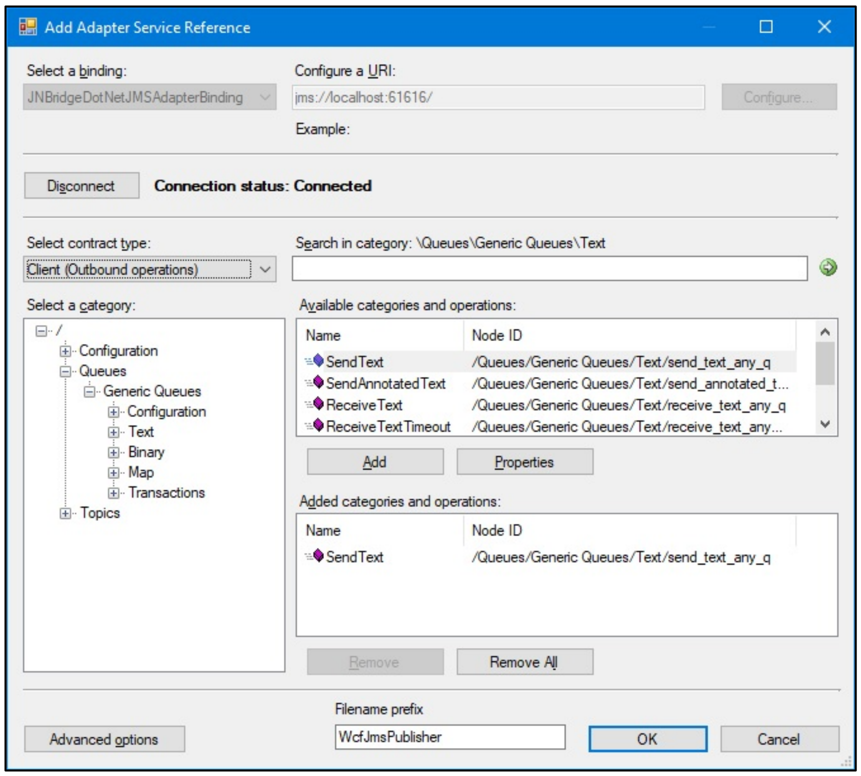


Prerequisites

Building this example requires the JNBridge JMS Adapter for .NET and Visual Studio 2015. Deployment requires IIS 7.5, or later, and AppFabric for Windows Server. As before in Part 1 & 2, ActiveMQ will be the JMS implementation. Building the custom connector requires an Azure account and an Azure Resource Group to contain all the resources. While the WCF services can be hosted in Azure along with the ActiveMQ implementation, this example will use a local IIS and ActiveMQ broker. So the Logic App Connector can access the WCF service, it is necessary to install the *Azure On-Premise Data Gateway for Logic Apps* on the IIS machine. Here's an excellent blog post that describes how to install and configure the gateway on the local machine. Finally, it might be useful to peruse Parts 1 & 2 in this blog series. The code in this kit is available for download here.

Create the Outbound Binding

Using Visual Studio 2015, open the WCF Service project created in Part 2. Open the *Add Adapter Service Reference* dialog from Visual Studio's *Project* menu. This dialog consumes any WCFLOB adapter allowing the developer to choose individual messaging operations. As in Part 1 of this blog series, remember to use the *Configure Adapter* dialog to choose *ActiveMQ* as the JMS implementation and to toggle the property, *Work Off Line*, to **true**. As shown, a single generic operation has been chosen, **SendText()**. This operation will publish a JMS Text message to a specified JMS queue. In addition, the field, *Filename prefix*, contains the prefix, *WcfJmsPublisher*.



Select a binding: JNBridgeDotNetJMSAdapterBinding

Configure a URI: jms://localhost:61616/

Connection status: Connected

Select contract type: Client (Outbound operations)

Search in category: \Queues\Generic Queues\Text

Select a category:

```
/
  Configuration
  Queues
    Generic Queues
      Configuration
      Text
      Binary
      Map
      Transactions
  Topics
```

Available categories and operations:

Name	Node ID
SendText	/Queues/Generic Queues/Text/send_text_any_q
SendAnnotatedText	/Queues/Generic Queues/Text/send_annotated_t...
ReceiveText	/Queues/Generic Queues/Text/receive_text_any_q
ReceiveTextTimeout	/Queues/Generic Queues/Text/receive_text_any...

Added categories and operations:

Name	Node ID
SendText	/Queues/Generic Queues/Text/send_text_any_q

Filename prefix: WcfJmsPublisher

Clicking *OK* will create the source file, *WcfJmsPublisherClient.cs*, and modify the *Web.config* file. Note that Visual Studio will immediately complain that the default namespace has become polluted because of two different interfaces with the same name, *JNBridgeJMSAdapter*. The simplest solution is to add a namespace declaration to encapsulate the interface source in the file, *WcfJmsPublisherClient.cs*. Edit the file, adding the namespace, *WcfJmsPublisher*, as shown below.

```
namespace WcfJmsPublisher
{
    [System.CodeDom.Compiler.GeneratedCodeAttribute("System.ServiceModel", "4.0.0.0")]
    [System.ServiceModel.ServiceContractAttribute(
        Namespace = "jms://JNBridge.JMSAdapter",
        ConfigurationName = "JNBridgeJmsAdapter")]
    public interface JNBridgeJmsAdapter {...}

    [System.Diagnostics.DebuggerStepThroughAttribute()]
    [System.CodeDom.Compiler.GeneratedCodeAttribute("System.ServiceModel", "4.0.0.0")]
    public partial class JNBridgeJmsAdapterClient :
        System.ServiceModel.ClientBase<JNBridgeJmsAdapter>, JNBridgeJmsAdapter {...}
}
```

Create a Second WCF Service

There is already one WCF service in this implementation; however, that service is a special inbound channel listener that consumes JMS Messages from a queue. A second service is required to expose an interface that will be consumed by the Custom Logic App Connector. Using Visual Studio, add a new WCF service to the project named *WcfJmsSvc*. Visual Studio will create three source files, *IWcfJmsSvc.cs*, *WcfJmsSvc.svc.cs* and *WcfJmsSvc.svc*. It will also modify the *Web.config* file. Edit the service interface definition in *IWcfJmsSvc.cs*. Note that this service declares a different *Service Contract* namespace than the Channel Listener contract in the class *WcfJmsListenerService*.

```
namespace WcfJmsListener
{
    [ServiceContract(Namespace = "jms://JNBridge.JMSAdapter/Service")]
    interface IWcfJmsSvc
    {
        [OperationContract]
        bool MessageAvailable();

        [OperationContract]
        JMSMessage GetMessage();

        [OperationContract]
        void PublishMessage(string destination, string text);
    }
}
```

Edit the interface implementation file, *WcfJmsSvc.svc.cs*. Notice that a *Service Behavior* attribute declaring the same namespace used in the interface's Service Contract attribute decorates the implementation class. The namespaces in the attributes are necessary to separate the two WCF services running in one process. In addition, a simple, and serializable, data class is declared that will contain the JMS Message header and message body. The class, *JMSMessageHeader*, is defined in the source file, *WcfJmsListenerInterface.cs*, created by the JMS Adapter for .NET as part of the Channel Listener implementation.

```
namespace WcfJmsListener
{
    [ServiceBehavior(Namespace = "jms://JNBridge.JMSAdapter/Service")]
    public class WcfJmsSvc : IWcfJmsSvc
    {
        JNBridgeJmsAdapterClient client = null;

        public bool MessageAvailable()
        {
           return (WcfJmsListenerService.messages.IsEmpty == false);
        }

        public JMSMessage GetMessage()
        {
            JMSMessage aMessage;
            WcfJmsListenerService.messages.TryDequeue(out aMessage);
            return aMessage;
        }

        public void PublishMessage(string destination, string text)
        {
            if (client == null)
            {
                client = new JNBridgeJmsAdapterClient();
            }
            client.SendText(destination, text);
        }
    }

    public class JMSMessage
    {
        private string messageText;
        private JMSMessageHeader messageHeader;

        public string Text
        {
            get { return messageText; }
            set { this.messageText = value; }
        }

        public JMSMessageHeader Header
        {
            get { return messageHeader; }
            set { this.messageHeader = value; }
        }
    }
}
```

Edit the original Channel Listener implementation source file, *WcfJmsListenerService.cs*. Orginally, the listener callback method, *OnReceiveAnnotatedTextFromQueue()*, just used trace statements to dump the contents of the consumed JMS Text Message. The new source creates an instance of the data class, *JMSMessage*, and adds it to a FIFO collection. Because of the multi-threaded nature of the WCF Services, the thread-safe collection class *ConcurrentQueue* is used as the FIFO.

```
namespace WcfJmsListener
{
    public class WcfJmsListenerService : JNBridgeJmsAdapter
    {
        public static ConcurrentQueue<JMSMessage> messages =
            new ConcurrentQueue<JMSMessage>();

        public virtual void OnReceiveAnnotatedTextFromQueue(string name,
            string text,
            jnbridge.jmsadapter.JMSMessageHeader messageHeader)
        {

            JMSMessage aMessage = new JMSMessage();
            aMessage.Header = messageHeader;
            aMessage.Text = text;
            messages.Enqueue(aMessage);
        }
    }
}
```

Now it's time to edit the *Web.config* file. The configuration contains two WCF services and a client endpoint.

```xml
<?xml version="1.0"?>
<configuration>
  <appSettings>
    <add key="aspnet:UseTaskFriendlySynchronizationContext" value="true" />
  </appSettings>
  <system.web>
    <compilation debug="true" targetFramework="4.6.1" />
    <httpRuntime targetFramework="4.6.1"/>
  </system.web>
  <system.serviceModel>
    <!-- This is the "outbound" client that contains the operation SendText() -->
    <client>
      <endpoint address="jms://localhost:61616/"
        binding="JNBridgeDotNetJMSAdapterBinding"
        bindingConfiguration="JMSAdapterBinding"
        contract="JNBridgeJmsAdapter"
        name="JMSAdapterBinding_JNBridgeJmsAdapter" />
    </client>
    <extensions>
      <behaviorExtensions>
    <add name="inboundActionElement"
             type="Microsoft.ServiceModel.Channels.InboundActionElement,
             Microsoft.ServiceModel.Channels, Version=3.0.0.0,
             Culture=neutral, PublicKeyToken=31bf3856ad364e35" />
      </behaviorExtensions>
    </extensions>
    <services>
      <!--Channel Listener service that consumes messages from the queue, dynamicQueues/exampleQueue -->
      <service name="WcfJmsListener.WcfJmsListenerService">
        <endpoint address="jms://localhost:61616/"
          behaviorConfiguration="InboundActionEndpointBehavior"
          binding="JNBridgeDotNetJMSAdapterBinding"
          bindingConfiguration="JMSAdapterBinding"
          contract="JNBridgeJmsAdapter" />
      </service>
      <!--This is the WCF service that exposes the operations used by the Logic App Connector-->
      <!--Note that the transport protocol is basicHttpBinding-->
      <service behaviorConfiguration="WcfJmsSvcBehavior" name="WcfJmsListener.WcfJmsSvc">
        <endpoint address="" binding="basicHttpBinding" bindingConfiguration=""
            contract="WcfJmsListener.IWcfJmsSvc" />
        <endpoint address="mex" binding="mexHttpBinding" contract="IMetadataExchange" />
      </service>
    </services>
    <bindings>
      <JNBridgeDotNetJMSAdapterBinding>
        <binding BcelPath="C:\Program Files\JNBridge\JMSAdapters\jnbin\bcel-5.1-jnbridge.jar"
          JnbCorePath="C:\Program Files\JNBridge\JMSAdapters\jnbin\jnbcore.jar"
          name="JMSAdapterBinding" AcknowledgeMode="AUTO_ACKNOWLEDGE"
          SecurityAuthentication="none" TopicConnectionFactory="ConnectionFactory"
          QueueConnectionFactory="ConnectionFactory"
          ClassPath="C:\Program Files\apache-activemq-5.13.3\activemq-all-5.13.3.jar;"
          JvmPath="C:\Program Files\Java\jre1.8.0_77\bin\server\jvm.dll"
          JMSScheme="tcp"
          InitialContextFactory="org.apache.activemq.jndi.ActiveMQInitialContextFactory"
          JmsVendor="ActiveMQ" MessageSelector="" DurableSubscription=""
          QueueName="dynamicQueues/exampleQueue" TopicName="" OffLine="false"
          TransactionEnlistment="false" RunTime="true" BridgeType="Shared Memory"
          HostName="" PortNumber="" UseSSL="false" JVMArgs="" InboundPollPeriod="10"
          CustomConnectionString="" JmsVersion="JMS 1.1" />
      </JNBridgeDotNetJMSAdapterBinding>
    </bindings>
    <behaviors>
      <endpointBehaviors>
        <behavior name="InboundActionEndpointBehavior">
          <inboundActionElement />
        </behavior>
      </endpointBehaviors>
      <serviceBehaviors>
        <behavior name="WcfJmsSvcBehavior">
          <serviceMetadata httpGetEnabled="true" />
          <serviceDebug includeExceptionDetailInFaults="false" />
        </behavior>
        <behavior name="">
          <serviceMetadata httpGetEnabled="true" httpsGetEnabled="true" />
          <serviceDebug includeExceptionDetailInFaults="false" />
        </behavior>
      </serviceBehaviors>
    </behaviors>
    <serviceHostingEnvironment aspNetCompatibilityEnabled="true" multipleSiteBindingsEnabled="true" />
  </system.serviceModel>
  <system.webServer>
    <modules runAllManagedModulesForAllRequests="true"/>
    <directoryBrowse enabled="true"/>
   </system.webServer>
</configuration>
```

The resulting WCF service is composed of two WCF services, one that does not expose a SOAP interface and one that does. The Channel Listener that consumes JMS messages simply stores them in memory using a FIFO. The exposed service uses the basicHttpBinding, a SOAP transport using XML. It is not REST/JSON.

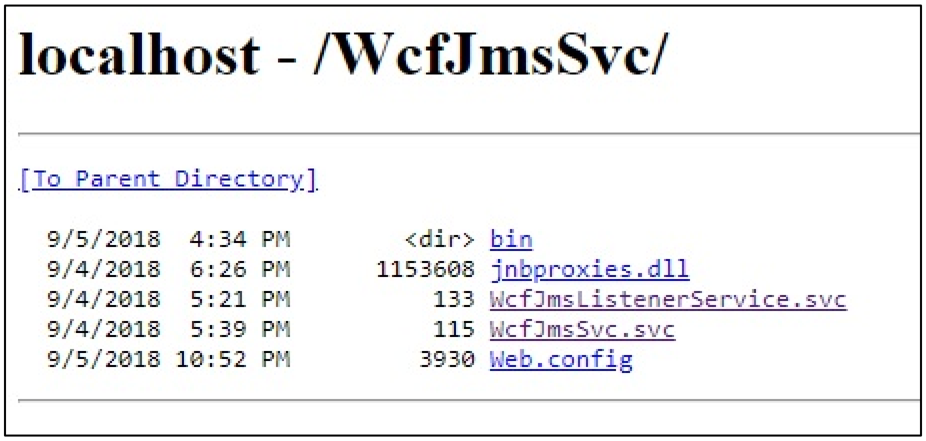
The final coding task is the publishing configuration, *WcfJmsSvcPublish.pubxml*, that will publish the two services to IIS. One final step is to include the JMS Adapter for .NET component, jnbproxies.dll, in the project with Copy Always enabled. The assembly can be found in ...\JMSAdapters\DotNet\bin\jms11.

```
<Project ToolsVersion="4.0" xmlns="http://schemas.microsoft.com/developer/msbuild/2003">
  <PropertyGroup>
    <WebPublishMethod>MSDeploy</WebPublishMethod>
    <LastUsedBuildConfiguration>Debug</LastUsedBuildConfiguration>
    <LastUsedPlatform>Any CPU</LastUsedPlatform>
    <SiteUrlToLaunchAfterPublish />
    <LaunchSiteAfterPublish>True</LaunchSiteAfterPublish>
    <ExcludeApp_Data>False</ExcludeApp_Data>
    <MSDeployServiceURL>localhost</MSDeployServiceURL>
    <DeployIisAppPath>Default Web Site/WcfJmsSvc</DeployIisAppPath>
    <RemoteSitePhysicalPath />
    <SkipExtraFilesOnServer>True</SkipExtraFilesOnServer>
    <MSDeployPublishMethod>InProc</MSDeployPublishMethod>
    <EnableMSDeployBackup>False</EnableMSDeployBackup>
    <UserName />
    <_SavePWD>False</_SavePWD>
    <ADUsesOwinOrOpenIdConnect>False</ADUsesOwinOrOpenIdConnect>
  </PropertyGroup>
</Project>
```

After the services have been published to IIS, remember that the Channel Listener service must be configured for Auto-Start using *AppFabric for Windows Server*. Please refer to the section titled, *Configuring AppFabric for Windows Server* in the previous blog, Creating WCF Services using the .NET JMS Adapter–Part 2.

Building a Custom Logic App Connector

Most of the hard work is done because building the connector relies on the WSDL that describes the service that was just deployed to IIS. Despite the fact that the exposed API uses SOAP/XML, the WSDL description is used by the Custom Connector to facilitate a SOAP to REST/JSON conversion using Liquid templates.The best way to obtain the WSDL is to use the *IIS Management Console* to browse the service. Doing so will display the directory structure of the service.

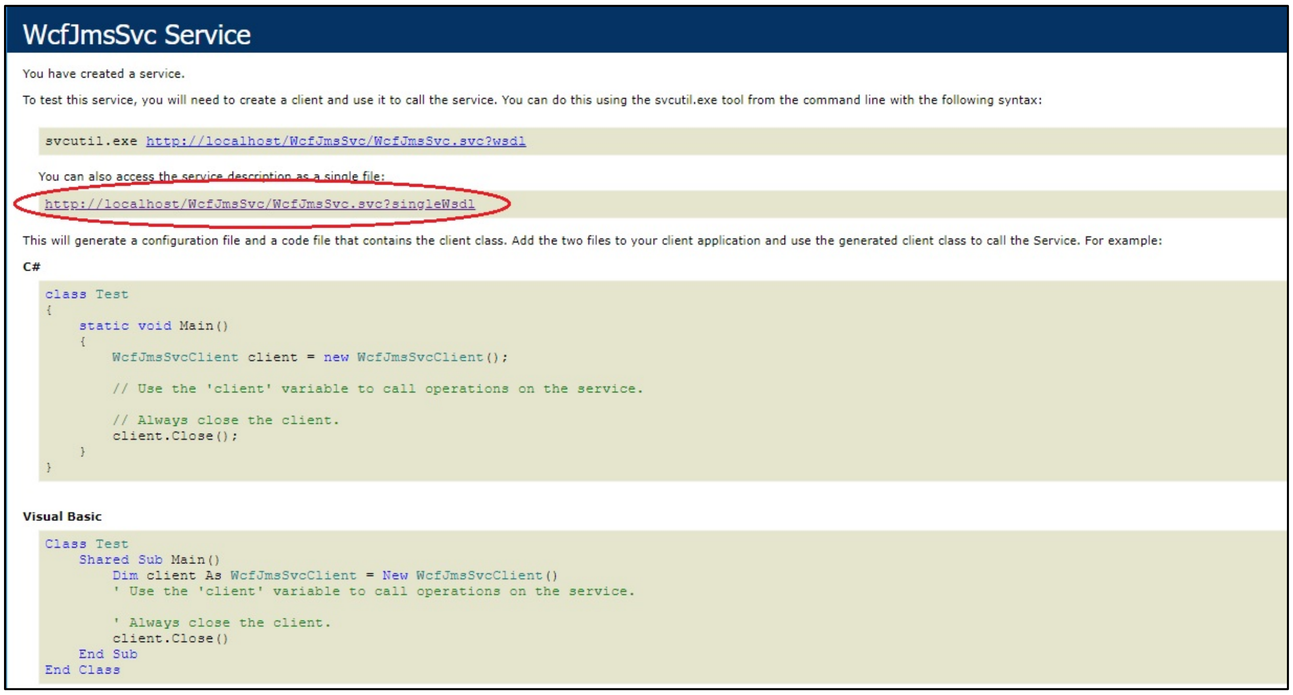


localhost - /WcfJmsSvc/

[To Parent Directory]

```
 9/5/2018  4:34 PM        <dir> bin
 9/4/2018  6:26 PM      1153608 jnbproxies.dll
 9/4/2018  5:21 PM          133 WcfJmsListenerService.svc
 9/4/2018  5:39 PM          115 WcfJmsSvc.svc
 9/5/2018 10:52 PM         3930 Web.config
```

By simply clicking on the file, *WcfJmsSvc.svc*, the default page is displayed. Click on the circled link to generate the WSDL and save it to a file named *WcfJmsSvc.wsdl*.



WcfJmsSvc Service

You have created a service.

To test this service, you will need to create a client and use it to call the service. You can do this using the svcutil.exe tool from the command line with the following syntax:

```
svcutil.exe http://localhost/WcfJmsSvc/WcfJmsSvc.svc?wsdl
```

You can also access the service description as a single file:

```
http://localhost/WcfJmsSvc/WcfJmsSvc.svc?singleWsdl
```

This will generate a configuration file and a code file that contains the client class. Add the two files to your client application and use the generated client class to call the Service. For example:

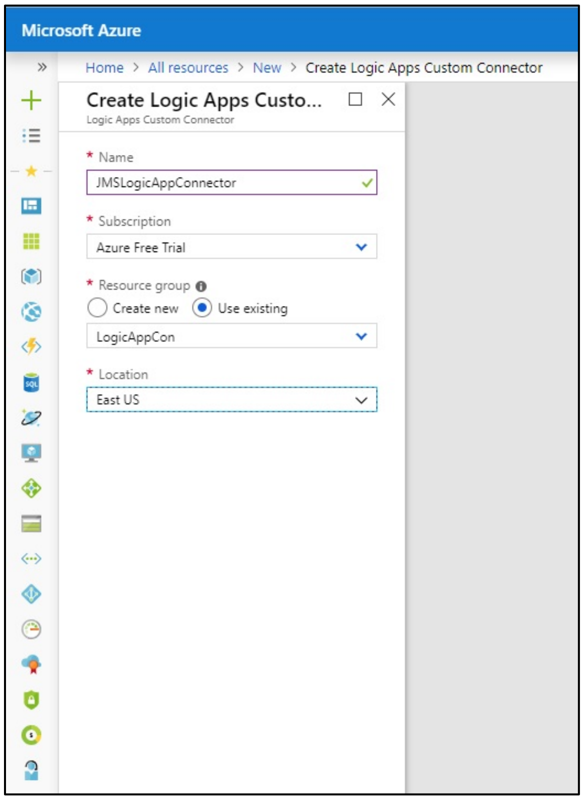
C#

```
class Test
{
    static void Main()
    {
        WcfJmsSvcClient client = new WcfJmsSvcClient();

        // Use the 'client' variable to call operations on the service.

        // Always close the client.
        client.Close();
    }
}
```

Visual Basic

```
Class Test
    Shared Sub Main()
        Dim client As WcfJmsSvcClient = New WcfJmsSvcClient()
        ' Use the 'client' variable to call operations on the service.

        ' Always close the client.
        client.Close()
    End Sub
End Class
```

Now it's time to open the Azure portal and create a Custom Logic App Connector. The first step is to add a new resource of type Logic App Custom Connector. In the Azure Dashboard, click on the *Add* link to get the *New* form and type in the string *Logic App Custom Connector* in the search field. Click on the icon for the custom connector to display the *Create* form. Remember that all resources—the connector, the Logic App and the On-Premise Data Gateway—must all be in the same resource group.


Microsoft Azure
Home > All resources > New > Create Logic Apps Custom Connector
Create Logic Apps Custo...
Logic Apps Custom Connector

* Name: JMSLogicAppConnector

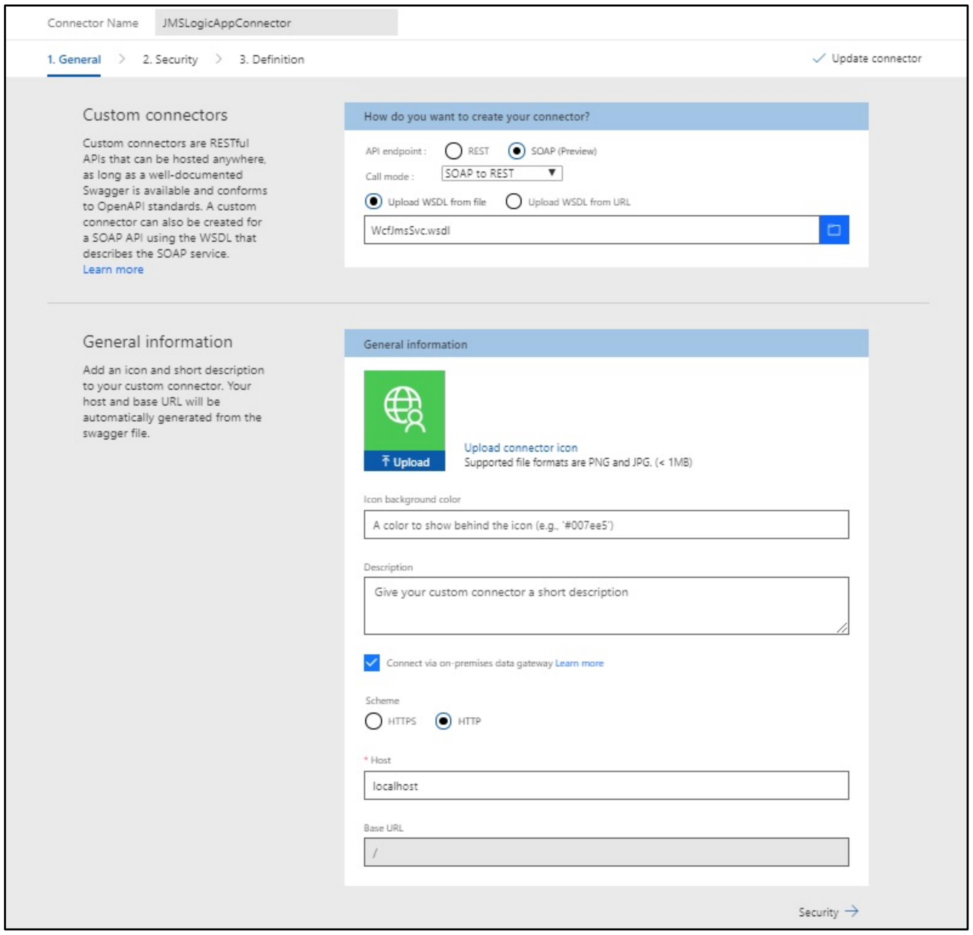
* Subscription: Azure Free Trial

* Resource group: Create new [✓ Use existing]

LogicAppCon

* Location: East US

Once the new resource has been created, open the custom connector console and click on the *Edit* link. In the form, *How do you want to create your connector?*, choose *SOAP* as the API endpoint and *SOAP to REST* as the call mode. Choose *Upload WSDL from File* and click on the browse icon and navigate to the WSDL file created from the WCF service, WcfJMSSvc. In the General information form let everything default but make sure to check the box, *Connect via on-premises data gateway*.



Connector Name JMSLogicAppConnector

1. General > 2. Security > 3. Definition ✓ Update connector

Custom connectors

Custom connectors are RESTful APIs that can be hosted anywhere, as long as a well-documented Swagger is available and conforms to OpenAPI standards. A custom connector can also be created for a SOAP API using the WSDL that describes the SOAP service. Learn more

How do you want to create your connector?

API endpoint : REST [✓ SOAP (Preview)]

Call mode : SOAP to REST

[✓ Upload WSDL from file] Upload WSDL from URL

WcfJmsSvc.wsdl

General information

Add an icon and short description to your custom connector. Your host and base URL will be automatically generated from the swagger file.

General information

Upload

Upload connector icon
Supported file formats are PNG and JPG. (< 1MB)

Icon background color
A color to show behind the icon (e.g., '#007ee5')

Description
Give your custom connector a short description

✓ Connect via on-premises data gateway Learn more

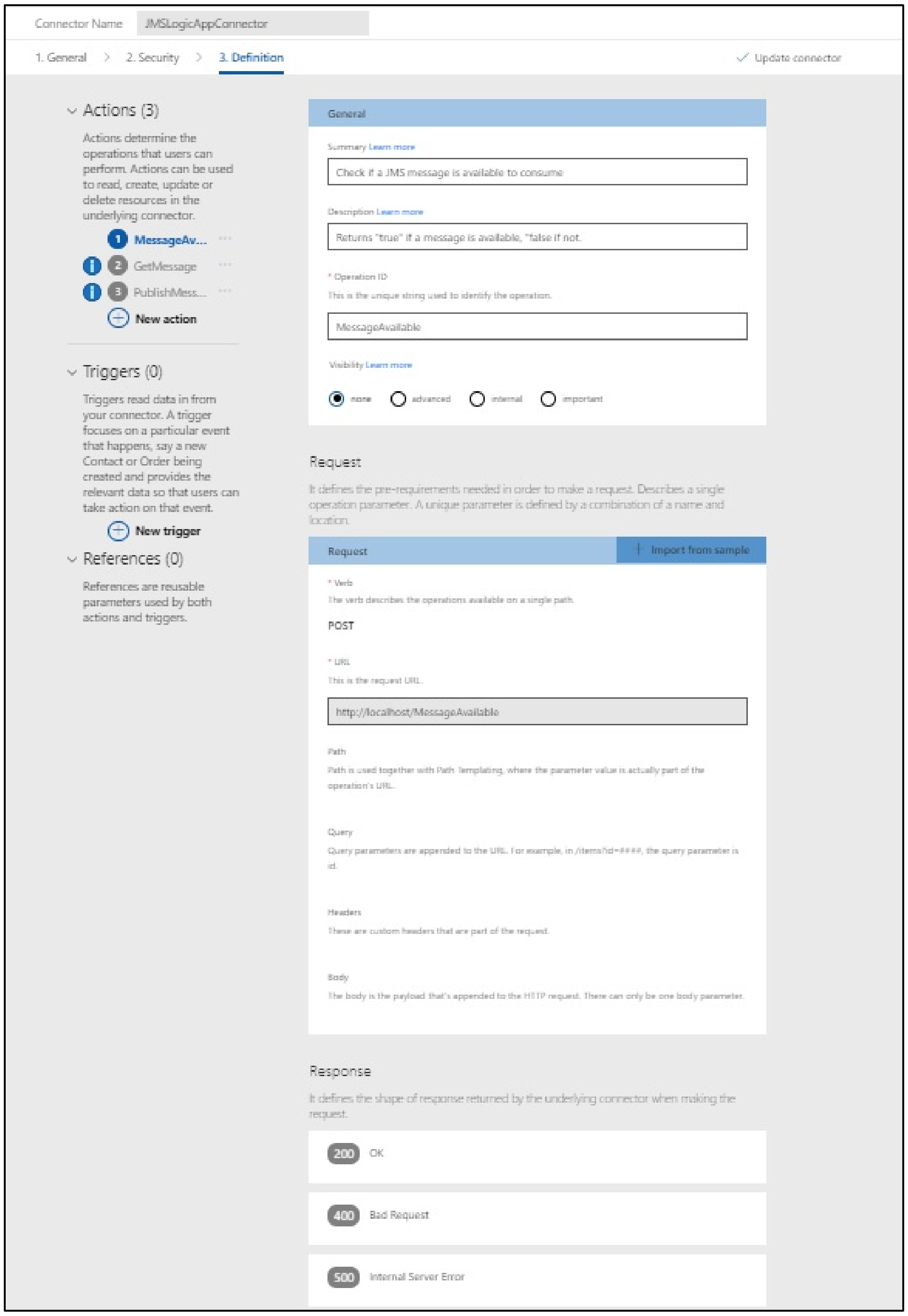
Scheme
HTTPS [✓ HTTP]

* Host
localhost

Base URL
/

Security →

The next step is to click on the link *Definition*, bypassing the *Security* configuration as there will be no secure access in this example. Each of the operations exposed by the WCF service, *MessageAvailable*, *GetMessage* and *PublishMessage* must have a *Summary* and *Description* entered. In addition, both *MessageAvailable* and *GetMessage* must have the request body removed as they have no arguments. *PublishMessage* must have the response body set to type string even though the return type is void.


Connector Name: JMSLogicAppConnector

1. General > 2. Security > 3. Definition ✓ Update connector

Actions (3)

Actions determine the operations that users can perform. Actions can be used to read, create, update or delete resources in the underlying connector.

1 MessageAv...
2 GetMessage
3 PublishMess...
New action

Triggers (0)

Triggers read data in from your connector. A trigger focuses on a particular event that happens, say a new Contact or Order being created and provides the relevant data so that users can take action on that event.

New trigger

References (0)

References are reusable parameters used by both actions and triggers.

General

Summary Learn more: Check if a JMS message is available to consume

Description Learn more: Returns "true" if a message is available, "false if not.

* Operation ID
This is the unique string used to identify the operation.
MessageAvailable

Visibility Learn more: [✓ none] advanced internal important

Request

It defines the pre-requirements needed in order to make a request. Describes a single operation parameter. A unique parameter is defined by a combination of a name and location.

Request | Import from sample

* Verb
The verb describes the operations available on a single path.
POST

* URL
This is the request URL.
http://localhost/MessageAvailable

Path
Path is used together with Path Templating, where the parameter value is actually part of the operation's URL.

Query
Query parameters are appended to the URL. For example, in /items?id=####, the query parameter is id.

Headers
These are custom headers that are part of the request.

Body
The body is the payload that's appended to the HTTP request. There can only be one body parameter.

Response

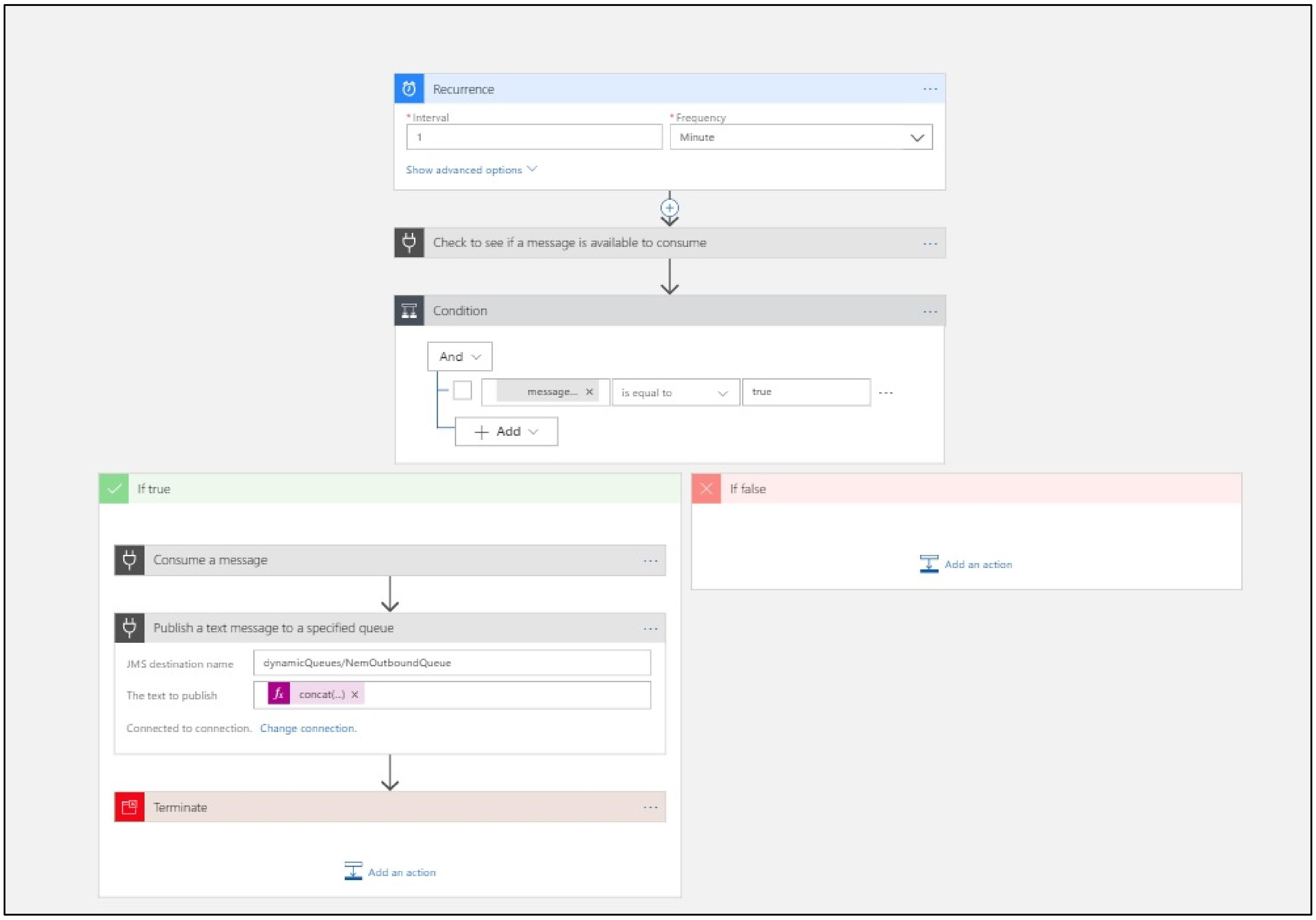
It defines the shape of response returned by the underlying connector when making the request.

200 OK
400 Bad Request
500 Internal Server Error

When completed, click on the link *Update Connector*.

Building a Logic App to Test the Connector

The following screen shot shows the Logic App that will test the connector


Recurrence

*Interval: 1

*Frequency: Minute

Show advanced options

Check to see if a message is available to consume

Condition

And

message... is equal to true

Add

If true

Consume a message

Publish a text message to a specified queue

JMS destination name: dynamicQueues/NemOutboundQueue

The text to publish: concat(...)

Connected to connection. Change connection.

Terminate

Add an action

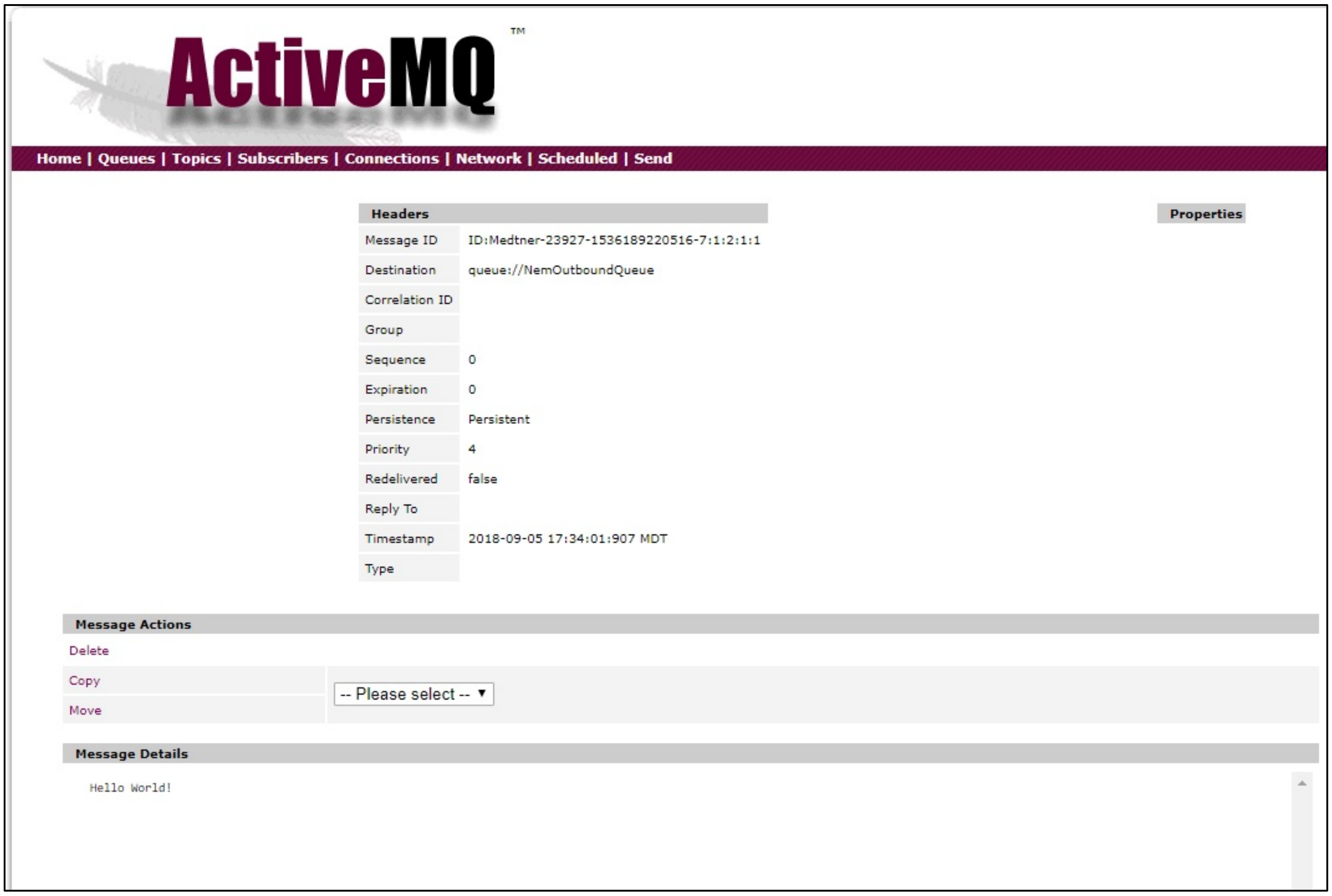
If false

Add an action

The Logic App is triggered by a *Recurrence* object that fires every minute. The first object to execute is the connector operation *MessageAvailable* which will return **false** if no JMS message is available to be consumed. If a message is available, the connector returns **true**. The output of the *MessageAvailable* operation is tested by the *Condition* object. If the result is false, nothing happens. If the result is true, then the connector operation *GetMessage* is executed. The output of *GetMessage* is a JSON document that is the serialized data class *JMSMessage* defined in the source file, *WcfJmsSvc.svc.cs*.

```
{
    "statusCode": 200,
    "headers": {
        "Transfer-Encoding": "chunked",
        "Vary": "Accept-Encoding",
        "x-ms-request-id": "27ef62a0-8883-4d57-80ae-e3ccafb50389",
        "Cache-Control": "private",
        "Date": "Wed, 05 Sep 2018 23:34:01 GMT",
        "Set-Cookie":
"ARRAffinity=29e552cea7db23196f7ffa644003eaaf39bc8eb6dd811911f669d13ab7424faf;Path=/;HttpOnly;Domain=gate
wayconnector-eastus.logic-ase-eastus.p.azurewebsites.net",
        "X-AspNet-Version": "4.0.30319",
        "X-Powered-By": "ASP.NET,ASP.NET",
        "Content-Type": "application/json",
        "Content-Length": "671"
    },
    "body": {
        "getMessageResponse": {
            "getMessageResult": {
                "header": {
                    "properties": [],
                    "jmsCorrelationID": "CorrelationID",
                    "jmsCorrelationIDAsBytes": "",
                    "jmsDeliveryMode": 1,
                    "jmsExpiration": 0,
                    "jmsMessageID": "ID:Medtner-6293-1536082484859-4:4:1:1:6",
                    "jmsPriority": 0,
                    "jmsRedelivered": false,
                    "jmsTimestamp": 1536190382790,
                    "jmsType": "",
                    "deliveryDelay": "0001-01-01T00:00:00"
                },
                "text": "Hello"
            }
        }
    }
}
```

The arguments to the connector operation, *PublishMessage*, is a queue named, *NemOutboundQueue* and the text that is sent is a concatenation of the incoming text, “Hello”, and the string “ World!”. Here is the published JMS Text Message in the queue, *NemInboundQueue*.


ActiveMQ™
Home | Queues | Topics | Subscribers | Connections | Network | Scheduled | Send
Properties
Delete
Copy
Move
-- Please select --

Headers	
Message ID	ID:Medtner-23927-1536189220516-7:1:2:1:1
Destination	queue://NemOutboundQueue
Correlation ID	
Group	
Sequence	0
Expiration	0
Persistence	Persistent
Priority	4
Redelivered	false
Reply To	
Timestamp	2018-09-05 17:34:01:907 MDT
Type	

Message Actions

Message Details

```
Hello World!
```

Conclusion

The JNBridge JMS Adapter for .NET is a custom WCF stack. As such it can be used to create WCF services exposing a JMS publish/consume API that can be called remotely using HTTP/SOAP/XML. Even though the service ran on a local machine's IIS and used the On-Premise Data Gateway to allow access from the Azure cloud, this entire implementation could be deployed to Azure, including ActiveMQ.

Because the Custom Logic App Connector is essentially a REST/JSON client 90% configured by using an API description language like WSDL or OpenAPI (Swagger), building a JMS connector is simple. Moreover, any JMS implementation can be supported by simply modifying the Web.config file.

Download the code for this kit here.