TIBCO ActiveMatrix BusinessWorks™ Plug-in for Amazon SQS and SNS

User Guide

Version 6.6.0 | August 2023

Contents

Contents **2**

Overview **4**

Getting Started **6**

Overview of TIBCO Business Studio for BusinessWorks 6

Creating a Project 8

Creating Amazon SQS and SNS Connection Shared Resource 9

Configuring a Process 9

Debugging and Running a Process 10

Checking Output of an Activity 10

Deploying Applications 11

Generating an EAR File 12

Amazon SQS and SNS Connection Shared Resource **13**

Hot Update of Shared Resource **21**

SQS and SNS Palette **22**

Create Queue 22

Delete Queue 26

Get Queue Message 28

Put Queue Message 31

Receive 34

Inquire Queues 37

Create Topic 41

Destroy Topic 43

Publish 45

Working with Sample Projects **50**
Importing Sample Projects 50
Configuring Module Properties 50
Configuring SNS Sample Process 51
Configuring SQS Sample Processes 51
CreatePutGetDeleteResource.bwp 52
RequestResponse.bwp 52
SqsMessageAttrsResource.bwp 52
TestRequestResponseResource.bwp 52
Running the Sample Project 53

Managing Logs **55**
Log Levels 55
Setting Up Log Levels 56
Exporting Logs to a File 58

Setting Proxy **60**

Error Codes **61**

TIBCO Documentation and Support Services **64**

Legal and Third-Party Notices **66**

Overview

Amazon Simple Queue Service (SQS) is a distributed messaging queue service from Amazon. Messages are composed of text and optional attributes, all of which are supported by the plug-in. After the messages are sent, they can be received either in batches or one at a time.

Amazon Simple Notification Service (SNS) is a notification service used for managing and coordinating the delivery of messages to the subscribing endpoints and clients. The Plug-in integrates into TIBCO ActiveMatrix BusinessWorks™.

It provides the following features:

- **Amazon Connection Shared Resource:**

  You can use the Amazon connection shared resource to connect to the Amazon SQS or SNS instance. The shared resource is used by the Amazon SQS and SNS activities.

- **SQS and SNS palette:**

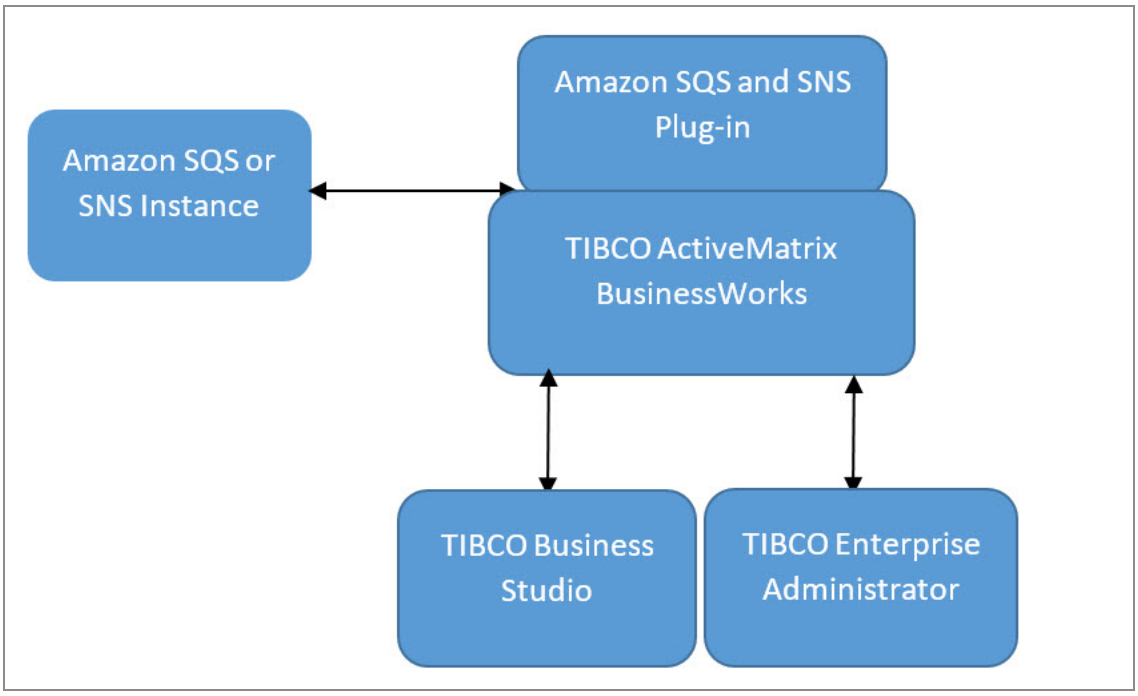
  By using SQS activities, you can create and delete a queue, send messages to a queue, and receive messages from a queue.

  By using SNS activities, you can create and destroy topics, publish messages on the topics.

  Auto and manual delete of messages after they are received.

Plug-in Architecture

The following figure describes the relationship between Amazon SQS or SNS Instance, TIBCO ActiveMatrix BusinessWorks™ Plug-in for Amazon SQS and SNS, and TIBCO ActiveMatrix BusinessWorks.



The following list describes each item in the Plug-in Architecture figure and the relationship between them:

- Amazon SQS or SNS instance with which ActiveMatrix BusinessWorks™ Plug-in for Amazon SQS and SNS communicates.
- ActiveMatrix BusinessWorks Plug-in for Amazon SQS and SNS plugs into ActiveMatrix BusinessWorks and connects to Amazon SQS or SNS instance.
- ActiveMatrix BusinessWorks is an easy-to-use integration product suite for enterprise applications.
- TIBCO Business Studio is the graphical user interface (GUI) used by ActiveMatrix BusinessWorks and the plug-in, to design business processes, and the process engine is used to execute them.
- TIBCO® Enterprise Administrator provides a centralized administrative interface to manage and monitor the plug-in applications deployed in an enterprise application.

Getting Started

A typical workflow for using the plug-in to achieve different goals includes creating a project, testing it in the debugger, and deploying the application.

TIBCO ActiveMatrix BusinessWorks™ uses the Eclipse graphical user interface (GUI) provided by TIBCO Business Studio™ to define business processes and generate Enterprise Archives (EAR files).

The EAR file is then deployed and run in the ActiveMatrix BusinessWorks™ runtime.

The ActiveMatrix BusinessWorks application is managed by using TIBCO® Enterprise Administrator (TEA).

A basic procedure of using TIBCO ActiveMatrix BusinessWorks™ Plug-in for Amazon SQS and SNS includes:

1. Creating a Project
2. Creating Amazon SQS and SNS Connection Shared Resource
3. Configuring a Process
4. Debugging and Running a Process
5. Deploying Applications

Overview of TIBCO Business Studio for BusinessWorks

TIBCO Business Studio™ for BusinessWorks™ is an Eclipse-based integration development environment that is used to design, develop, and test ActiveMatrix BusinessWorks applications. The studio provides a workbench in which you can create, manage, and navigate resources in your workspace. A *workspace* is the central location on your computer where all data files are stored.

The following table introduces the workbench UI elements:

UI Element	Description
Menu	Contains menu items such as File, Edit, Navigate, Search, Project, Run, Window, and Help.
Toolbar	Contains the following buttons for frequently used commands: • **New**  • **Save**  • **Enable/Disable Business Studio capabilities**  • **Create a new BusinessWorks Application Module**  • **Debug As**  • **Run As** 
Perspectives	Contains an initial set and layout of views that are required to perform a certain task. TIBCO Business Studio for BusinessWorks launches the Design perspective by default. Use the Design perspective when designing a process and the Debug perspective when testing and debugging a process. To change the perspective, select **Window > Open Perspective > *perspective_name*** from the main menu. Alternatively, click the **Open Perspective**  button from the top upper right of the workbench and select the perspective.
Views	Lists the resources and helps you navigate within the workbench. For example, the Project Explorer view displays the ActiveMatrix BusinessWorks applications, modules, and other resources in your workspace, and the Properties view displays the properties for the selected resource. To open a view, select **Window > Show View > *view_nameview_name*** from the main menu.
Editors	Provides a canvas to configure, edit, or browse a resource. Double-click a resource in a view to open the appropriate editor for the selected resource. For example, double-click on a process (`MortgageAppConsumer.bwp`) in the Project Explorer view to open the process in the editor.

UI Element	Description
Palette	Contains a set of widgets and a palette library. A *palette* groups activities that perform similar tasks, and provides quick access to activities when configuring a process.

Creating a Project

The first task using the plug-in is creating a project. After creating a project, you can add resources and processes. An Eclipse project is an application module configured for TIBCO ActiveMatrix BusinessWorks. An application module is the smallest unit of resources that is named, versioned, and packaged as part of an application.

Procedure

1. Start TIBCO Business Studio.
2. Click **File > New > BusinessWorks Resources**.
3. In the BusinessWorks Resource dialog box, select **BusinessWorks Application Module** and click **Next**.

   Note: There are several ways to open the New BusinessWorks Application Module dialog box and create a new project in TIBCO Business Studio. For more information, see TIBCO ActiveMatrix BusinessWorks™ documentation.
4. In the **Project name** field, type a name for the project that you are creating.
5. Select the **Use default location**, **Create empty process**, and **Create Application** check boxes and click **Finish**.

Result

A project and an application are created and displayed in the **Project Explorer** view. The Process editor opens automatically.

Creating Amazon SQS and SNS Connection Shared Resource

The Amazon SQS and SNS Connection shared resource is required by all SQS and SNS activities as it provides the Amazon Web Services (AWS) client object, which mediates all interactions with the AWS messaging system.

Procedure

1. In the **Project Explorer** view, expand the created project, right-click the **Resources** folder, and select **New > Amazon SQS and SNS Connection**.
2. In the Amazon SQS and SNS Connection dialog box. Click **Finish**, type a name in the **Resource Name** field.
3. Configure the Amazon SQS and SNS Connection resource in the editor, as described in Amazon SQS and SNS Connection Shared Resource.

Configuring a Process

Processes define the business logic. Once a project is created, you have to configure the process by adding activities, conditions, and services.

Procedure

1. Select an activity from the Palette view and drop it in the Process editor.

   For example, select and drop the **Timer** activity from the General Activities palette and the **CreateQueue** activity from the SQS and SNS palette.
2. Select the **Timer** activity in the Process editor.
3. Click the  icon to create links between the activities and configure the condition types.
4. Configure the added activities, as described in SQS and SNS Palette.

> **Note:** An Amazon SQS and SNS Connection resource is required, when configuring the activities. For more details, see Creating Amazon SQS and SNS Connection Shared Resource.

5. Click **File > Save**.

Debugging and Running a Process

Debug the application you have configured, to ensure that the application configuration is correct.

Procedure

1. Open the process that you have configured in TIBCO Business Studio™.
2. On the toolbar, click **Run > Debug Configurations**.
3. In the left panel, click **BusinessWorks Application > BWApplication**.
4. On the **Applications** tab of the right panel, ensure that the application you want to debug and run is selected .
5. Click the **Advanced** tab and click **Browse** to locate the `logback` file.

   By default, the log file resides in the *`TIBCO_HOME`*`/bw/`*`version_number`*`/config/design/logback` directory and error logs are captured.

   For more details, see Managing Logs.
6. Click **Debug**.

   TIBCO Business Studio changes to the **Debug** perspective. Logs are displayed in the **Console** view.

Checking Output of an Activity

After debugging the application, you can check the output of activities.

Procedure

1. In the **Debug** perspective, expand **BWApplication** and click the activity in the upper-

left panel.

2. In the upper-right panel, click the **Job Data** view and click **Output**.

Result

The output of the activity is displayed.

> **Note:** You can also check the activity output in the plug-in logs. For more information, see Managing Logs.

Deploying Applications

After deploying applications, you can manage BusinessWorks applications by using TIBCO Enterprise Administrator.

Before you begin

The following tasks are required before deploying applications:

- Creating a Project.
- Generating an EAR File.

A complete workflow of deployment includes:

Procedure

1. Upload an EAR file.
2. Deploy an application.
3. Configure an application.
4. Start an application.

   You can deploy an application EAR file by using the command-line mode with the bwadmin utility. For more information about how to deploy an application, see TIBCO ActiveMatrix BusinessWorks Administration guide.

Generating an EAR File

Application archives are enterprise archive (EAR) files that are created in the TIBCO Business Studio™. An EAR file is required when deploying an application.

Before you begin

An application project has already been created, as described in Creating a Project.

> **Note:** There are many ways to generate an EAR file. The following procedure is one of the methods. For more information, see *TIBCO ActiveMatrix BusinessWorks Administration* guide.

Procedure

1. Go to the **File Explorer** view and click the **Open Directory to Browse**  icon.
2. Select the folder where you want to generate the EAR file and click **OK**.

   The new folder is displayed in the **File Explorer** view.
3. Drag the application from the **Project Explorer** view to the new folder in the **File Explorer** view.

   The EAR file is generated with the name `<name>.<application>_<version>.ear`.

Amazon SQS and SNS Connection Shared Resource

This Amazon SQS and SNS Connection shared resource is required by all SQS and SNS activities as it provides the AWS client object that mediates all interactions with the AWS messaging system.

General

This section includes the following fields:

Field	Module Property?	Description
Package	No	Name of the package. By default, the value of the field is the name of the package in which the resource is created. You can change the field value by clicking  icon.
Name	No	Name of the connection. You can change the field value by clicking  icon.
Description	No	The user can provide additional description about the connection.

SQS SNS Client Configuration

You can provide information required to establish the connection with Amazon SQS and SNS. You can configure the connection using AWS Credential, SAML Authentication, or Container Credentials.

Note: To enable the AWS regional endpoint for STS (Security Token Service), set the JVM argument as:

```
-Dcom.tibco.aws.useregionalendpoint=true
```

Note: To successfully test the connection for Custom Endpoint on Private VPC use `com.tibco.aws.useregionalendpoint=true` in the *tibcohome**studio*\<*version*>*eclipse**Configuration**config.ini* file.

The following table describes the fields:

Condition Applicable	Field	Module Property?	Description
N/A	**AWS Region Name**	Yes	The name of the AWS region to which you want to connect. For a complete list of regions, see AWS documentation.
N/A	**Authentication Type**	Yes	You can use the following types of authentication: • **AWS Credential** • **SAML Authentication** • **Container Credentials** • **Default Credentials Provider Chain** **Note: Container Credentials** authentication type is loaded from the Amazon ECS when the environment variable AWS_CONTAINER_CREDENTIALS_RELATIVE_URI is set. For information on Amazon ECS container credentials, see AWS documentation.
Available only when	**AWS Key ID**	Yes	This is the ID of the secret key for AWS. Keys can be created through the AWS console and

Condition Applicable	Field	Module Property?	Description
the **Authentication Type** is selected as **AWS Credential**.			downloaded as csv files.
	AWS Secret	Yes	This is the encrypted secret key for access to AWS.
	Session Token	Yes	Along with AWS Key ID and AWS Secret the plug-in now supports the Session Token field. Session Token is the temporary security credentials. **Note:** When the Session Token is provided the AWS credentials are treated as temporary session credentials otherwise they are static IAM credentials.
	Cross Account Access	Yes	Use the AWS Security Token Service (AWS STS) to create and provide trusted users with temporary security credentials that can control access to your AWS resources. This parameter uses cross-account access temporary security credentials created by AssumeRole. For information on Temporary Security Credentials, see AWS documentation.
Available only when the **Authentication Type** is selected as **AWS Credentials** or **Container Credentials** and **Cross Account Access**	**Role ARN**	Yes	The Amazon Resource Name (ARN) of the role to assume. For more information on RoleARN, see AWS documentation.

Condition Applicable	Field	Module Property?	Description
check-box is selected	**Role Session Name**	Yes	An identifier for the assumed role session used to uniquely identify a session when the same role is assumed by different principals or for different reasons. For more information on RoleSessionName, see AWS documentation.
	External ID	Yes	A unique identifier that might be required when you assume a role in another account. It is used to address the confused deputy problem. For more information on ExternalId, see AWS documentation.
	Expiration Duration (min)	Yes	Parameter to specify the duration in minutes for which the temporary security credentials remain valid using AssumeRole. For more information on ExpirationDuration, see AWS documentation.
Available only when the **Authentication Type** is selected as **SAML Authentication**.	**Identity Provider** (IdP)	No	The service provider that manages your user identities. With an IdP, you can manage user identities outside of AWS instead of creating AWS Identity and Access Management (IAM) users in your account. After establishing the trust relationship between IdP and AWS, your users can access AWS resources using their corporate credentials. The following identity providers can be used: • PingFederate • ADFS **Note:** Ensure that Form authentication is enabled for the identity provider.

Condition Applicable	Field	Module Property?	Description
			Note: While using ADFS IdP, if the Windows Integrated Authentication (WIA) is enabled and ADFS IdP is accessible via Intranet, then set the `Dcom.tibco.bw.awsplugins.saml.useragent=Java1.8` system property to fallback to Form authentication. For more information, see ADFS doc.

Condition Applicable	Field	Module Property?	Description
	Identity Provider Login URL	Yes	IdP login URL that is generated when you configure the identity provider in the identity provider console. Example URL for PingFederate: https://*<host>*:*<port>* /idp/startSSO.ping?PartnerSpId=urn%3Aamazon%3Awebservices Example URL for ADFS: https://*<host>*:*<port>*/adfs/ls/ IdpInitiatedSignOn.aspx? loginToRp=urn:amazon:webservices
	Username	Yes	User name that is configured with your identity provider
	Password	Yes	Password that is configured with your identity provider
	AWS Role	Yes	AWS IAM role
	Token Expiration Duration	Yes	Duration for which the token is valid **Note:** This is configured in AWS IAM policy when creating the role. If the user specifies the value as 0, the value is taken as 60 minutes.
	SSL Client Configuration	No	Establishes secure connection with the identity provider For more information about SSL Client Configuration, see the "Shared Resource" section of the *TIBCO ActiveMatrix BusinessWorks™ Bindings and Palettes Reference* guide.

Condition Applicable	Field	Module Property?	Description
	Use Proxy	Yes	The call to the identity provider through the proxy can be enabled when using **Advanced** configuration with a custom client type. **Note:** To enable basic authentication, set JVM argument as *-Djdk.http.auth.tunneling.disabledSchemes=* For more information, see setting bwappnode-<AppNodeName>.tra file in "Setting JVM Parameters for the AppNode Manually" section in the TIBCO ActiveMatrix BusinessWorks documentation. With TIBCO BusinessStudio for BusinessWorks : Add this argument in <BW_ HOME>\studio\<version>\eclipse\TIBCOBusinessStudio.ini file.
N/A	**Custom Endpoint**	Yes	The Custom Endpoint is the URL of the entry point for an AWS web service. It serves as a gateway for accessing AWS SQS and SNS. **Note:** For Custom Endpoint the AWS Region Name field is mandatory for the shared resource. **Note:** Use the following property if the **Cross Account Access** checkbox is selected and the deployment environment is in a Virtual Private Cloud. `-Dcom.tibco.aws.useregionalendpoint=true`

Custom Client Config

SQS Default Client Config chooses a predefined configuration or creates a custom configuration.

Note: The DynamoDB and SimpleWorkFlow configurations are provided in case the client defaults for those clients who closely match your desired configuration.

For other situations where the default configuration is not optimal, use the custom configuration. You can configure the HTTP proxy in the custom configuration. For more information about setting a proxy, see Setting Proxy.

For detailed descriptions of custom configuration, see Client Configuration on AWS documentation.

Hot Update of Shared Resource

You can use the Hot Update feature to update application module properties and the TIBCO ActiveMatrix BusinessWorks™ Plug-in for Amazon SQS and SNS Connection Shared Resource module property without restarting the application. The feature works for the following fields in the shared resource:

- Access Key
- Secret Key
- Role ARN
- Session Token
- Custom Endpoint
- Cross Account Access

For more information, see the "Hot Update of Application Module Properties and Module Property for JDBC Shared Resource" topic in the TIBCO BusinessWorks™ Container Edition Application Development guide.

SQS and SNS Palette

The SQS and SNS palette contains activities that you can add to your business processes.

The palette contains the following shared connection:

Amazon SQS and SNS Connection Shared Resource

The palette also contains the following activities:

- Create Queue
- Delete Queue
- Get Queue Message
- Put Queue Message
- Receive
- Inquire Queues
- Create Topic
- Destroy Topic
- Publish

Create Queue

The CreateQueue activity is used to create an SQS queue.

General

On the **General** tab, select shared resource to establish a connection to the Amazon server. The following table lists the configurations on the **General** tab of the **CreateQueue** activity.

Field	Module Property?	Description
Name	No	Specify a name for the activity in the process definition.
SQS Client	Yes	Select SQS Client configuration either from an existing resource or create a new resource, by using the **Choose/Create Default Resource** icon  .

Description

On the **Description** tab, provide a short description for the **CreateQueue** activity.

Input

On the **Input** tab, specify input values for the **CreateQueue** activity. The following table lists the input elements on the **Input** tab of the **CreateQueue** activity.

Input Item	Data Type	Description
QueueName	String	Required. The name of the queue to create. This name is incorporated into the queue URL returned.
FIFOQueue	Boolean	Optional. This flag must be set to true if the user wants to create the FIFO (First-in-First-out) queue. The name of the queue must have .fifo as a suffix.
ContentBasedDeduplication	Boolean	Optional. This field is used for enabling or disabling content based deduplication for the FIFO queue.
DelaySeconds	Int	Optional. The time in seconds for which the delivery of all messages in the queue is delayed. **Value range**: 0 to 900 seconds (15 minutes)

Input Item	Data Type	Description
		Default value: 0
MaximumMessageSize	Int	Optional. The number of bytes a message can contain before Amazon SQS rejects it. **Integer value range**: 1024 bytes (1 KiB) up to 262144 bytes (256 KiB) **Default value**: 262144 (256 KiB)
MessageRetentionPeriod	Int	Optional. The number of seconds for which Amazon SQS retains a message. **Integer value range**:60 seconds (1 minute) to 1209600 seconds (14 days) **Default value**:345600 seconds (4 days)
Policy	String	Optional. The queue's policy. A valid AWS policy. For more information about policy structure, see **Overview of AWS IAM Policies** in the Amazon IAM User Guide.
ReceiveMessageWaitTimeSeconds	Int	Optional. The time for which a ReceiveMessage call wait for a message to arrive. **Integer value range**: 0 to 20 (seconds) **Default value**: 0
RedrivePolicy	String	Optional. The parameters for dead letter queue functionality of the source queue. For more information about RedrivePolicy and dead letter queues, see **Using Amazon SQS Dead Letter Queues** in the *Amazon SQS Developer*

Input Item	Data Type	Description
		Guide.
VisibilityTimeout	Int	Optional. The visibility timeout for the queue is a period of time, during which SQS prevents other consuming components from receiving and processing that queue. **Integer value**: 0 to 43200 seconds (12 hours) **Default value**: 30 seconds
Permissions	Complex	Optional. Permissions contribute to the policy for the queue. Permissions permit queues to be shared with other principles (userIDs).
Label	String	An arbitrary label for the permission.
AccountId	String	One or more Amazon Account IDs for which the permission is to be applied.
Action	String	One or more actions the client wants to allow for the specified principals. The following values are valid values: * | SendMessage | ReceiveMessage | DeleteMessage | ChangeMessageVisibility | GetQueueAttributes | GetQueueUrl

Note: You must fill out either none or all of the following fields: Label, AccountId, and Action.

Output

On the **Output** tab, find the output value of the **CreateQueue** activity. The following table lists the output elements on the **Output** tab of the **CreateQueue** activity.

Output Item	Data Type	Description
QueueName	String	Provides the queue name from the input schema.
QueueUrl	String	The URL for the created SQS queue.

Fault

The **Fault** tab lists exceptions that are generated by this activity.

Fault	Data Type	Description
SQSException	N/A	Any exception generated by the activity after execution. It has the following fields: **ErrorCode** and **ErrorMessage**.
ErrorCode	String	The plug-in error code for the exception. For more information, see Error Codes topic.
ErrorMessage	String	The plug-in error message for the exception. It contains the error message from the AWS SQS API call that failed.

Delete Queue

The SQS DeleteQueue activity deletes a queue from the AWS backend.

General

On the **General** tab, you can establish a connection to the Amazon server. The following table lists the configurations on the **General** tab of the **DeleteQueue** activity.

Field	Module Property	Description
Name	No	Name to be displayed as a label for the activity in the process.

Field	Module Property	Description
SQS Client	Yes	Select SQS Client configuration either from an existing resource or create a new resource, by using the **Choose/Create Default Resource** icon  .
Purge Queue	No	Select to delete the messages in a queue. **Note:** This operation deletes only the messages in the queue but not the queue itself.

Description

On the **Description** tab, you can provide a short description for the **DeleteQueue** activity.

Input

On the **Input** tab, you can specify input values for the **DeleteQueue** activity. The following table lists the input element on the **Input** tab of the **DeleteQueue** activity.

Input Item	Data Type	Description
QueueName	String	Required. The name of the queue to be deleted.

Output

This activity does not generate any output.

Fault

The **Fault** tab lists exceptions that are generated by this activity.

Fault	Data Type	Description
SQSException	N/A	Any exception generated by the activity after execution. It has the following fields: **ErrorCode** and **ErrorMessage**.
ErrorCode	String	The plug-in error code for the exception. For more information, see Error Codes topic.
ErrorMessage	String	The plug-in error message for the exception. This frequently contains the error message from the AWS SQS API call that failed.

Get Queue Message

This activity is used to receive one or more messages from an SQS Queue. The GetQueueMessage activity can be configured to use long polling by setting the WaitTime to be greater than zero (0). However, the activity returns almost immediately, when there are messages on the queue. The number of messages returned are usually smaller than the MaxMessages parameter (unless it is 1) and it is usually necessary to loop on the **Get Queue Message** to retrieve all the messages in the queue. This is normal within the context of SQS messaging. The only time that the activity is blocked for the full WaitTime period, is when the queue is empty.

General

On the **General** tab, select shared resource to establish a connection to the Amazon server. The following table lists the configurations on the **General** tab of the **GetQueueMessage** activity.

Field	Module Property?	Description
Name	No	Name to be displayed as a label for the activity in the process.

Field	Module Property?	Description
SQS Client	Yes	Select SQS Client configuration either from an existing resource or create a new resource, by using the **Choose/Create Default Resource** icon .
ManualDelete	No	If enabled, use confirm activity to delete the messages. By default, the check box is not selected. **Caution:** Always use confirm activity to delete messages within visibility timeout. If the messages are deleted after visibility timeout, there could be an exception or duplicate messages are received.

Description

On the **Description** tab, provide a short description for the **GetQueueMessage** activity.

Input

On the **Input** tab, you can specify input values for the **GetQueueMessage** activity. The following table lists the input elements on the **Input** tab of the **GetQueueMessage** activity.

Input Item	Data Type	Description
QueueName	String	Required. The name of the queue from which messages are to be received.
MaxMessages	Int	Optional. Indicates the maximum number of messages to be received in one operation. The default value is 1 and the maximum value is 10.
WaitTime	Int	Optional. The duration (in seconds) for which the call waits for a message to arrive before returning. If no message arrives in the allowed time, an SQSException is thrown indicating that a

Input Item	Data Type	Description
		timeout condition has occurred. If Amazon server is down, plug-in keeps trying to reconnect to the server till WaitTime.
PollingInterval	Int	Optional. The duration after which plug-in tries to reconnect to the server before timeout.

Output

On the **Output** tab, find the output value of the **GetQueueMessage** activity. The following table lists the output elements on the **Output** tab of the **GetQueueMessage** activity.

Output Item	Data Type	Description
SqsMessage	Complex	Encodes 1 to 10 messages.
SenderId	String	Returns the IAM Role or user ID of the sender.
MessageId	String	The message ID assigned to the message when it was originally sent.
SentTimeStamp	String	The timestamp when the message was sent.
Body	String	The message body.
MessageGroupId	String	It specifies that a message belongs to a specific message group.
MessageDeduplicationId	String	It is used for avoiding a duplication of the sent messages.
SequenceNumber	String	The large, non-consecutive number that Amazon SQS assigns to each message.
MessageAttrs	Complex	Encodes the message attributes to be sent as part of the message. Each attribute is composed of a Name, Type, and Value.

Output Item	Data Type	Description
Name	String	The name of the attribute.
Type	String	The type of the attribute.
Value	String	A string representation of the attribute value.

Fault

The **Fault** tab lists exceptions that are generated by this activity.

Fault	Data Type	Description
SQSException	N/A	Any exception generated by the activity after execution. It has the following fields: **ErrorCode** and **ErrorMessage**.
ErrorCode	String	The plug-in error code for the exception. For more information, see Error Codes topic.
ErrorMessage	String	The plug-in error message for the exception. It contains the error message from the AWS SQS API call that failed.

Put Queue Message

The PutQueueMessage activity puts a message on the SQS queue.

General

On the **General** tab, select shared resource to establish a connection to the Amazon server. The following table lists the configurations on the **General** tab of the **PutQueueMessage** activity.

Field	Module Property?	Description
Name	No	Name to be displayed as a label for the activity in the process.
SQS Client	Yes	Select SQS Client configuration either from an existing resource or create a new resource, by using the **Choose/Create Default Resource** icon  .

Description

On the **Description** tab, provide a short description of the **PutQueueMessage** activity.

Input

On the **Input** tab, specify input values for the **PutQueueMessage** activity. The following table lists the input elements on the **Input** tab of the **PutQueueMessage** activity.

Input Item	Data Type	Description
QueueName	String	Required. The name of the queue on which the message is to be placed.
MessageGroupId	String	Optional. Required for FIFO queue only. It specifies that a message belongs to a specific message group.
MessageDeduplicationId	String	Required when ContentBasedDeduplication is set as False. Optional when ContentBasedDeduplication is set as True. It is used for avoiding a duplication of a sent message.
SqsMessage	Complex	Required. Encodes the body and attributes of the message.
Body	String	Required. The message body.
MessageAttrs	Complex	Encodes the message attributes to be sent as part

Input Item	Data Type	Description
		of the message. Each attribute is composed of a Name, Type, and Value.
Name	String	The name of the attribute.
Type	String	The type of the attribute. The attribute types supported are: • String • Number • Binary • Custom Attribute type: For example, String.EmployeeId. For more information, see AWS documentation.
Value	String	A string representation of the attribute value. **Note:** Provide Base64 encoded string as input when the attribute of the **Type** field is Binary.

Output

On the **Output** tab, find the output value of the **PutQueueMessage** activity. The following table lists the output element on the **Output** tab of the **PutQueueMessage** activity.

Output Item	Data Type	Description
MessageId	String	Contains the message identifier for the message.

Fault

The **Fault** tab lists exceptions that are generated by this activity.

Fault	Data Type	Description
SQSException	N/A	Any exception generated by the activity after execution. It has the following fields: **ErrorCode** and **ErrorMessage**.
ErrorCode	String	The plug-in error code for the exception. For more information, see Error Codes topic.
ErrorMessage	String	The plug-in error message for the exception. It contains the error message from the AWS SQS API call that failed.

Receive

This is an event source activity that starts a TIBCO ActiveMatrix BusinessWorks™ process when one or more messages are received.

General

Because an event source has no input transition, all parameters for the receiver are static literals, process properties, or module properties.

Field	Module Property?	Description
Name	No	Name to be displayed as a label for the activity in the process.
SQS Client	Yes	Select SQS Client configuration either from an existing resource or create a new resource by clicking the **Choose/Create Default Resource** icon  .
QueueName	Yes	Required. This is the queue on which the receiver listens.

Field	Module Property?	Description
Maximum Messages	Yes	Required. Enter the number of messages to be processed by each newly created ActiveMatrix BusinessWorks™ job. The minimum value is 1, and the maximum value is 10.
ManualDelete	No	If enabled, use the confirm activity to delete messages. By default, the check box is not selected. **Caution:** During the visibility timeout, use the confirm activity to delete messages. Deleting messages after visibility timeout might cause exceptions or duplicate messages.
Create Queue If Not Exist	No	If enabled, the receiver creates a queue with the default configuration, if the named queue does not exist. The queue is owned by the AWS ID specified on the SQS Client shared resource and cannot be accessed by others. By default, the check box is not selected.
ContentBasedDeduplication	No	This check box appears only when **QueueName** is entered and **Create Queue If Not Exist** check box is selected. This check box is applicable for FIFO queue only.

Description

On the **Description** tab, provide a short description for the **Receive** activity.

Advanced

The **Advanced** tab has the following fields:

Field	Description
Sequence Key	Optional. This field can contain an XPath expression that specifies the order in which processes should run. Process instances with sequencing keys that evaluate to the same value are run in the order, the process instances were created.
Custom Job Id	Optional. This field can contain an XPath expression that specifies a custom ID for the process instance.

Input

There are no input fields for the activity.

Output

On the **Output** tab, find the output value of the **Receive** activity. The following table lists the output elements on the **Output** tab of the **Receive** activity.

Output Item	Data Type	Description
ReceiveOut	Complex	Serves as an anchor node for multiple SqsMessage nodes. SqsMessages ranging from 1 to 10 might be sent as an input to a new job.
SqsMessage	Complex	Encodes up to 10 messages.
SenderId	String	Returns the IAM Role or user ID of the sender.
MessageId	String	The message ID assigned to the message when it was originally sent.
SentTimeStamp	String	The time stamp when the message was sent.
Body	String	The content of the message.
MessageGroupId	String	It specifies the message group to which the message belongs.

Output Item	Data Type	Description
MessageDeduplicationId	String	It is used for avoiding a duplication of sent messages.
SequenceNumber	String	The large, nonconsecutive number that the Amazon SQS assigns to each message.
MessageAttrs	Complex	Any message attributes that were included with the message. Each attribute is composed of a Name, Type and Value.
Name	String	The name of the attribute.
Type	String	The type of the attribute.
Value	String	A string representation of the attribute value.

Fault

The **Fault** tab lists exceptions that are generated by this activity.

Fault	Data Type	Description
SQSException	N/A	Any exception generated by the activity after the execution. It has the following fields: **ErrorCode** and **ErrorMessage**.
ErrorCode	String	The plug-in error code for the exception. For more information, see Error Codes topic.
ErrorMessage	String	The plug-in error message for the exception. It contains the error message from the AWS SQS API call that failed.

Inquire Queues

The InquireQueue activity queries the queue to discover its attributes and message depth.

General

On the **General** tab, select shared resource to establish a connection to the Amazon server. The following table lists the configurations on the **General** tab of the **InquireQueue** activity.

Field	Module Property?	Description
Name	No	Name to be displayed as a label for the activity in the process.
SQS Client	Yes	Select SQS Client configuration either from an existing resource or create a new resource, by using the **Choose/Create Default Resource** icon  .

Description

On the **Description** tab, provide a short description for the **InquireQueue** activity.

Input

On the **Input** tab, specify input values for the **InquireQueue** activity. The following table lists the input element on the **Input** tab of the **InquireQueue** activity.

Input Item	Data Type	Description
QueueName	String	Required. The name of the queue from which properties are to be retrieved.

Output

On the **Output** tab, find the output value of the **InquireQueue** activity. The following table lists the output elements on the **Output** tab of the **InquireQueue** activity.

Output Item	Data Type	Description
QueueName	String	A copy of the input schema QueueName.
QueueUrl	String	The URL of the named queue.
ApproximateNumberOfMessages	Int	The approximate number of messages on the queue.
ApproximateNumberOfMessagesNotVisible	Int	The approximate number of messages that are currently hidden. This happens when a client receives a message and when deletes it.
VisibilityTimeout	Int	The number of seconds a message can be hidden before it becomes visible, regardless of the actions of the client that received it.
CreatedTimeStamp	String	The times stamp of when the queue was created.
LastModifiedTimeStamp	String	The time stamp of when the queue was most recently modified.
Policy	String	Any security policies in place for the queue.
MaximumMessageSize	Int	The maximum message size permitted for the queue.
MessageRetentionPeriod	Int	The duration (in seconds) for which a message remains on the queue before being deleted.

Output Item	Data Type	Description
QueueArn	String	The Amazon Resource Name for the queue.
ApproximateNumberOfMessagesDelayed	Int	The approximate number of messages which have been placed on the queue, for which there is a delay in effect, such that they are not yet visible.
DelaySeconds	Int	The duration (in seconds) for which the delivery of all messages in the queue is delayed.
ReceiveMessageWaitTimeSeconds	Int	The duration for which a ReceiveMessage call must wait for a message to arrive.
RedrivePolicy	String	The parameters for dead letter queue functionality of this queue.
ContentbasedDeduplication	Boolean	For FIFO queue, it displays whether content-based deduplication is enabled or disabled.

Fault

The **Fault** tab lists exceptions that are generated by this activity.

Fault	Data Type	Description
SQSException	N/A	Any exception generated by the activity after execution. It has the following fields: **ErrorCode** and **ErrorMessage**.

Fault	Data Type	Description
ErrorCode	String	The plug-in error code for the exception. For more information, see Error Codes topic.
ErrorMessage	String	The plug-in error message for the exception. It contains the error message from the AWS SQS API call that failed.

Create Topic

The CreateTopic activity is used to create the SNS topic. If the topic already exists, then its topicARN is returned. You can also create FIFO topics using this activity.

General

On the **General** tab, you can select a shared resource to establish a connection to the Amazon server. The following table lists the configurations on the **General** tab of the **CreateTopic** activity.

Field	Module Property?	Description
Name	No	Name to be displayed as a label for the activity in the process.
SNS Client	Yes	The SNS activities use the same client shared resource configuration as the SQS activities. Select SNS Client configuration either from an existing resource or create a new resource, by using the **Choose/Create Default Resource** icon  .

Description

On the **Description** tab, provide a short description of the **CreateTopic** activity.

Input

On the **Input** tab, specify input values for the **CreateTopic** activity. The following table lists the input elements on the **Input** tab of the **CreateTopic** activity.

Input Item	Data Type	Description
Name	String	Required. The name of the topic to be created. This name is incorporated into the TopicARN value returned.
Permissions	Complex	Permissions contribute to the policy for the queue. Permissions control whether queues can be shared with other principles (userIDs).
Label	String	An arbitrary label for the permission.
AccountId	Int	One or more Amazon Account IDs for which the permission is to be applied.
Action	String	One or more actions the client wants to allow for the specified principals. The following values are valid values: Publish | Subscribe | Receive.
ContentBasedDeduplication	Boolean	Applicable only for FIFO topics. You can use this input to enable content-based deduplication. The default value is false.

Note: You must fill out either none or all of the following fields: Label, AccountId, and Action.

Output

On the **Output** tab, find the output value of the **CreateTopic** activity. The following table lists the output element on the **Output** tab of the **CreateTopic** activity.

Output Item	Data Type	Description
TopicARN	String	The AWS Resource Name for the newly created topic. This is the value that must be used when publishing to or deleting the topic.

Fault

The **Fault** tab lists exceptions that are generated by this activity.

Fault	Data Type	Description
SQSException	N/A	Any exception generated by the activity after execution. It has the following fields: **ErrorCode** and **ErrorMessage**.
ErrorCode	String	The plug-in error code for the exception. For more information, see Error Codes topic.
ErrorMessage	String	The plug-in error message for the exception. It contains the error message from the AWS SQS API call that failed.

Destroy Topic

The DestroyTopic activity is used to delete an SNS topic.

General

On the **General** tab, select shared resource to establish a connection to the Amazon server. The following table lists the configurations on the **General** tab of the **DestroyTopic** activity.

Field	Module Property?	Description
Name	No	Name to be displayed as a label for the activity in the process.
SNS Client	Yes	Required. The SNS activities use the same client shared resource configuration as the SQS activities. Select **SNS Client configuration** from an existing resource or create a new resource by using the **Choose/Create Default Resource** icon .

Description

On the **Description** tab, provide a short description for the DestroyTopic activity.

Input

On the **Input** tab, specify input values for the **DestroyTopic** activity. The following table lists the input elements on the **Input** tab of the **DestroyTopic** activity.

Input Item	Data Type	Description
TopicARN	String	Required. The Amazon Resource Name for the topic.

Output

The activity has no output schema. If the delete operation fails, an exception is generated.

Fault

The **Fault** tab lists exceptions that are generated by this activity.

Fault	Data Type	Description
SQSException	N/A	Any exception generated by the activity after execution. It has the following fields: **ErrorCode** and **ErrorMessage**.

Fault	Data Type	Description
ErrorCode	String	The plug-in error code for the exception. For more information, see Error Codes topic.
ErrorMessage	String	The plug-in error message for the exception. It contains the error message from the AWS SQS API call that failed.

Publish

The Publish activity is used to publish a message on an SNS Topic. You can also publish messages to FIFO topics using this activity.

General

On the **General** tab, you can select shared resource to establish a connection to the Amazon server. The following table lists the configurations on the **General** tab of the **Publish** activity.

Field	Module Property?	Description
Name	No	Name to be displayed as a label for the activity in the process.
SNS Client	Yes	Required. The SNS activities use the same client shared resource configuration as the SQS activities. Select SNS Client configuration either from an existing resource or create a new resource, by using the **Choose/Create Default Resource** icon  .

Description

On the **Description** tab, you can provide a short description for the **Publish** activity.

Input

On the **Input** tab, you can specify input values for the **Publish** activity. The following table lists the input elements on the **Input** tab of the **Publish** activity.

Input Item	Data Type	Description
TopicARN	String	Optional. The Amazon Resource Name for the topic. Either TopicARN, TargetARN or PhoneNumber must be specified but not all.
TargetARN	String	Optional. The Amazon Resource Name for the endpoint to which you want to publish the output. Either TopicARN, TargetARN or PhoneNumber must be specified but not all.
Subject	String	Optional. The value to be used as the subject line when the message is delivered to email endpoints.
MessageStructure	String	Optional. Set MessageStructure to JSON, if you want to send a different message for each protocol.
PhoneNumber	String	Optional. Specify the phone number using the E.164 format to send an SMS message. If you don't specify a value for the **PhoneNumber** parameter, you must specify a value for the **TargetARN** or **TopicARN** parameters. For more details about Sending an SMS Message and configuring the message attributes, see Sending an SMS Message.
SnsMessage	String	The message you want to send to the topic.
Body	String	Required. Content of the message.
MessageAttrs	Complex	Optional. Any message attributes that were included with the message. Each attribute is composed of a Name, Type, and Value.

Input Item	Data Type	Description
Name	String	The name of the attribute.
Type	String	The type of the attribute. The attribute types supported are: • String • Number • Binary • String.Array **Note:** String.Array type expects comma-separated values. To map the activity input, use the following XPath function: `tib:concat-sequence-format(<String-repeating-element>, ",")`.
Value	String	A string representation of the attribute value. **Note:** Provide Base64 encoded string as input when the attribute of the **Type** field is Binary.
MessageGroupId	String	Applicable only for FIFO topics. You must provide an ID, which specifies that the message belongs to a particular group. For more information, see AWS documentation.
MessageDeduplicationId	String	Applicable only for FIFO topics. If you create a topic without content-based deduplication, a unique ID must be provided to prevent duplication. For more information, see AWS documentation.

Output

On the **Output** tab, you can find the output value of the **Publish** activity. The following table lists the output element on the **Output** tab of the **Publish** activity.

Output Item	Data Type	Description
MessageId	String	Contains the message identifier for the message.

Fault

The **Fault** tab lists exceptions that are generated by this activity.

Fault	Data Type	Description
SQSException		Any exception generated by the activity after execution. It has the following fields: **ErrorCode** and **ErrorMessage**.
ErrorCode	String	The plug-in error code for the exception. For more information, see Error Codes topic.
ErrorMessage	String	The plug-in error message for the exception. It contains the error message from the AWS SQS API call that failed.

Sending an SMS Message

You can send a message directly to the phone number without subscribing the phone number to an Amazon SNS topic. You can use the **MessageAttrs** to set the values for the following attribute names:

Name	Type	Value
AWS.SNS.SMS.SenderID	String	A custom ID that contains up to 11 alphanumeric characters, including at least one letter and no spaces. The sender ID is displayed as the message sender on the receiving device. If the SenderID is not defined, then the default SenderID is used. For the countries and regions that support sender IDs, see Supported Regions and Countries.

Name	Type	Value
AWS.SNS.SMS.MaxPrice	String	The maximum amount in USD that you are willing to spend to send an SMS message. **Note:** The message is not sent if the cost of sending the message exceeds the amount specified in the MaxPrice.
AWS.SNS.SMS.SMSType	String	The type of message that you are sending: • **Promotional**- Noncritical messages, such as marketing messages. Amazon SNS optimizes the message delivery to incur the lowest cost. **Note:** By default, **Promotional** is used as a value for MessageAttrs. • **Transactional**- Critical messages that support customer transactions, such as one-time passcodes for multi-factor authentication. Amazon SNS optimizes the message delivery to achieve the highest reliability.

Working with Sample Projects

TIBCO ActiveMatrix BusinessWorks™ Plug-in for Amazon SQS and SNS is packaged with a sample project. After installing the plug-in, you can navigate to the sample projects located at `TIBCO_HOME\bw\palettes\awsm\<version>\samples`.

Importing Sample Projects

To run sample projects, you must first import them to TIBCO Business Studio™.

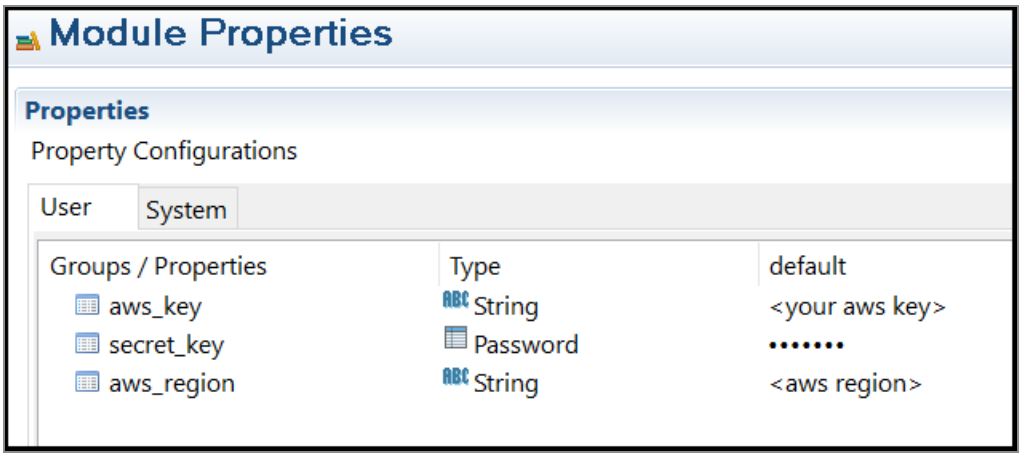
Procedure

1. Start TIBCO Business Studio.
2. Click **File > Import**.
3. In the Import dialog box, expand the **General** folder and select the **Existing Studio Projects into Workspace** item, and click **Next**.
4. Click **Browse** next to the **Select archive file** field, select the samples that you want to import, and click **Finish**.

Configuring Module Properties

After importing the `SqsSnsSamples.zip` file, you must configure the module properties in TIBCO Business Studio™ and then run the processes. The module properties includes aws_ key, secret_key, and aws_region, which is used to connect Amazon instance.

1. In the **Project Explorer** view, double-click **Module Descriptors > Module Properties**
    - In the Module Properties pane, configure the module property values.



2. On the toolbar, click the **Save** icon .

Configuring SNS Sample Process

The sns package has one process that explains the usage of SNS activities

Before you begin

Ensure that the project is imported successfully and the process associated with the sns package does not contain errors.

SNSPublishResource.bwp

This process creates a topic, publishes a message, and deletes the topic.

SendMessageResource.bwp

This process sends a message directly to the phone number.

Configuring SQS Sample Processes

The sqs package has five processes that explain the usage of SQS activities.

Before you begin

Ensure that the project is imported successfully and the processes associated with sqs package do not contain any error.

CreatePutGetDeleteResource.bwp

This process performs the following tasks:

- Creates a standard or FIFO queue.
- Puts a message on the queue.
- Reads a message from the queue.
- Deletes the queue.

RequestResponse.bwp

The TestRequestResponse.bwp process triggers this process. This process performs the following task:

- Uses receiver as starter activity and then puts a reply to the other queue.

SqsMessageAttrsResource.bwp

This process performs the following tasks:

- Creates a standard queue.
- Puts a message in the queue with message attributes.
- Reads the message from the queue.
- Deletes the queue.

TestRequestResponseResource.bwp

This process performs the following tasks:

- Creates a standard queue.
- Puts a message on the queue which triggers the receiver in RequestResponse.bwp.
- Reads the message from the queue.
- Deletes the queue with the wait time configuration.

Running the Sample Project

You can run the process in the sample project to see how to perform different operations.

Before you begin

Ensure that you have imported the sample project to TIBCO Business Studio as described in the Importing Sample Projects section and configured module properties as described in the Configuring Module Properties section.

Procedure

1. In the TIBCO Business Studio™, click **Run > Run Configurations**.
2. In the Run Configurations window, expand **BusinessWorks Application** and click **BW Application**.
3. On the right pane, click the **Applications** tab and select the **SqsSnsSamples.application** check box.

   Check boxes for all of the processes from SqsSnsSamples.application are selected.
4. Click **Run** to run the process.
5. Run `lrestdoc` command from **console** tab.

   This command gives the REST endpoint for the process. You can get the URL on the **console** tab.
6. Run the URL in the browser.

   The swagger UI page is displayed in the browser.
7. Provide parameters and values as shown in the Example value.
8. Click the **Try it out** button to run the process.

9. Click the **Terminate** icon to stop the process.

Managing Logs

When an error occurs, you can check logs to trace and troubleshoot the plug-in exceptions.

A logback.xml file is located at TIBCO_HOME\bw\version_number\config\design\logback. By default, error logs are displayed in the Console view when you run a process in debug mode. You can change the log level of the plug-in to trace different messages and export logs to a file. Different log levels correspond to different messages as described in Log Levels. For more information, see Setting Up Log Levels.

Log Levels

The plug-in captures logs at different levels. The level tag defines the log level.

Log Level	Description
Info	Indicates normal plug-in operations. No action is needed. A tracing message tagged with Info indicates that a significant processing step is reached and logged for tracking or auditing purposes. Only info messages preceding a tracking identifier are considered as significant steps.
Warn	Indicates that an abnormal condition is found. Processing continues, but special attention from an administrator is recommended.
Error	Indicates that an unrecoverable error has occurred. Depending on the error severity, the plug-in may continue with the next operation or may stop altogether.
Debug	Indicates a developer-defined tracing message.
Trace	Includes all the information regarding the running process.

Setting Up Log Levels

By default, the log level is Error . You can change the log level to trace different messages.

> **Note:** If neither the plug-in log nor the BusinessWorks log is configured in the `logback.xml` file, the error logs of the plug-in are displayed in the **Console** view by default.
>
> If the plug-in log is not configured but the BusinessWorks log is configured in the `logback.xml` file, the configuration for the BusinessWorks log is implemented by the plug-in.

Procedure

1. Navigate to the *TIBCO_HOME*\bw*version*\config\design\logback directory and open the `logback.xml` file.
2. Add the following node in the Console Appender area to specify the log level for the plug-in.

   For SQS:

   ```
   <logger name="com.tibco.tci.plugin.aws.sqs.runtime">
     <level value="DEBUG"/>
   </logger>
   ```

   For SNS:

   ```
   <logger name="com.tibco.tci.plugin.aws.sns.runtime">
     <level value="DEBUG"/>
   </logger>
   ```

   The `level` tag defines the log level and the value is TRACE, DEBUG, INFO, WARN or ERROR.

   > **Note:** When the `level` is set to Debug, the input and output for the plug-in activities are also displayed in the **Console** view. For more details, see Log Levels.

3. To set the log level for an activity, use the following node:

```
<logger
name="com.tibco.tci.plugin.aws.sqs.runtime.create.CreateActivity">
  <level value="DEBUG"/>
</logger>
<logger
name="com.tibco.tci.plugin.aws.sqs.runtime.delete.DeleteActivity">
  <level value="DEBUG"/>
</logger>
<logger
name="com.tibco.tci.plugin.aws.sqs.runtime.inquire.InquireActivit
y">
  <level value="DEBUG"/>
</logger>
<logger
name="com.tibco.tci.plugin.aws.sqs.runtime.put.PutActivity">
  <level value="DEBUG"/>
</logger>
<logger
name="com.tibco.tci.plugin.aws.sqs.runtime.receive.ReceiveActivit
y">
  <level value="DEBUG"/>
</logger>
<logger
name="com.tibco.tci.plugin.aws.sns.runtime.create.CreateActivity">
  <level value="DEBUG"/>
</logger>
<logger
name="com.tibco.tci.plugin.aws.sns.runtime.destroy.DestroyActivit
y">
  <level value="DEBUG"/>
</logger>
<logger
name="com.tibco.tci.plugin.aws.sns.runtime.publish.PubActivity">
  <level value="DEBUG"/>
</logger>
```

Note: Activities that are not configured with specific log levels, still inherit the log level configured for the plug-in or TIBCO ActiveMatrix BusinessWorks™ .

If you want to set the log level of the Amazon SQS and SNS Shared Resource to Debug, set the following parameters

```
<logger name="com.tibco.tci.sharedresource.sqsclient.runtime">
<level value="DEBUG"/> </logger>
```

4. Save the file.

Exporting Logs to a File

Modify the `logback.xml` file to export plug-in logs to a file.

Procedure

1. Navigate to the *TIBCO_HOME*\bw*version*\config\design\logback directory and open the `logback.xml` file.

   Note: When deploying an application in TIBCO® Enterprise Administrator, you have to navigate to the *TIBCO_HOME*\bw\domains\mydomain\appnodes\myspace\mynode directory to find the `logback.xml` file.

2. Specify the file location by adding the following node to:

```
<appender name="FILE" class="ch.qos.logback.core.FileAppender">
   <file>c:/bw6.log</file>
      <encoder>
        <pattern>%d{HH:mm:ss.SSS} [%thread] %-5level %logger
{36}-%msg%n</pattern>
      </encoder>
</appender>
```

   The `file` tag defines the location to which the log is exported, and the value is the absolute path of the file.

   Note: You must add the file name in the file path.

3. Enable export of the logs to a file by adding the following node to the `root` node at the end of the `logback.xml` file:

```
        <appender-ref ref="FILE" />
```

```
<root level="ERROR">
   <appender-ref ref="STDOUT" />
   <appender-ref ref="FILE" />
</root>
```

4. Save the file.

Setting Proxy

The HTTP proxy can be configured through **Amazon SQS and SNS Connection** in the **Custom Client Config** by selecting the **Custom** option. The following fields are used to configure HTTP proxy:

Group	Field	Description
Plug-in HTTP Proxy Properties	Proxy Host	Required. The proxy host name or its IP address.
	Proxy Port	Required. The port on which the proxy server is running.
	Proxy Username	Optional. The user name for logging on to the proxy server.
	Proxy Password	Optional. The password for logging on to the proxy server.

Error Codes

The following table lists the exceptions that are thrown by the plug-in with corresponding descriptions and resolutions.

Error Code and Error Message	Role	Category	Description	Resolution
BW-AMAZON-SQSSNS-503000 Resource exception creating connection shared resource	errorRole	BW-Plug-in	Exception while creating connection shared resource	Correct the shared resource definition such that it can be instantiated.
BW-AMAZON-SQSSNS-503001 Failed to create the AmazonSQSClient	errorRole	BW-Plug-in	Cannot create AWS credentials based on the provided KeyId and KeySecret, or the default configuration	Correct the shared resource definition such that the client can be instantiated.
BW-AMAZON-SQSSNS-503002 Failed to create the AmazonSQSClient because the custom client configuration is not correctly configured.	errorRole	BW-Plug-in	The Amazon SQSClient cannot be created because the custom client configuration is not correctly configured.	Correct the shared resource definition such that the client can be instantiated.
BW-AMAZON-SQSSNS-503003	errorRole	BW-Plug-in	The Amazon SQSClient cannot	Correct the shared

Error Code and Error Message	Role	Category	Description	Resolution
Failed to create the AmazonSQSClient because a KeyId is provided and a KeySecret wasn't			be created because a KeyId is provided but a KeySecret is not provided.	resource definition such that the client can be instantiated
BW-AMAZON-SQSSNS-503004 Invalid Authentication Type	errorRole	BW-Plug-in	Occurs when invalid authentication type is specified in the module property.	Correct the shared resource definition such that the client can be instantiated.
BW-AMAZON-SQSSNS-502002 The get operation failed to return a message for the reason: "{error}"	errorRole	BW-Plug-in	The get operation fails to return a message. It shows an error message displayed by Amazon SQS	Resolve the problem based on the exception information provided.
BW-AMAZON-SQSSNS-502003 The put operation failed to send a message for reason: "{error}"	errorRole	BW-Plug-in	The get operation fails to return a message. It shows an error message thrown by Amazon SQS	Resolve the problem based on the exception information provided.
BW-AMAZON-SQSSNS-502005 The create operation failed to create queue for the reason: "{error}"	errorRole	BW-Plug-in	The create operation fails to create a message. It shows an error message thrown by Amazon SQS	Resolve the problem based on the exception information provided.

Error Code and Error Message	Role	Category	Description	Resolution
BW-AMAZON-SQSSNS-502006 The delete operation failed for reason: "{error}"	errorRole	BW-Plug-in	The delete operation fails. It shows an error message thrown by Amazon SQS	Resolve the problem based on the exception information provided.
BW-AMAZON-SQSSNS-502007 The inquire operation failed for the reason: "{error}"	errorRole	BW-Plug-in	The inquire operation fails. It shows an error message thrown by Amazon SQS	Resolve the problem based on the exception information provided.
BW-AMAZON-SQSSNS-502020 The create topic operation failed for reason:{reason}	errorRole	BW-Plug-in	The create topic operation fails. It shows an error message thrown by Amazon SQS.	Resolve the problem based on the exception information provided.
BW-AMAZON-SQSSNS-502021 The publish operation failed to send a message for reason: {reason}	errorRole	BW-Plug-in	The publish operation fails to send a message. It shows an error message thrown by Amazon SQS.	Resolve the problem based on the exception information provided.
BW-AMAZON-SQSSNS-502022 The destroy topic operation failed for reason: {reason}	errorRole	BW-Plug-in	The publish operation fails. It shows an error message thrown by Amazon SQS.	Resolve the problem based on the exception information provided.

TIBCO Documentation and Support Services

For information about this product, you can read the documentation, contact TIBCO Support, and join TIBCO Community.

How to Access TIBCO Documentation

Documentation for TIBCO products is available on the TIBCO Product Documentation website, mainly in HTML and PDF formats.

The TIBCO Product Documentation website is updated frequently and is more current than any other documentation included with the product.

Product-Specific Documentation

The following documentation for this product is available on the TIBCO ActiveMatrix BusinessWorks™ Plug-in for Amazon SQS and SNS Product Documentation page:

- *TIBCO ActiveMatrix BusinessWorks™ Plug-in for Amazon SQS and SNS Release Notes*
- *TIBCO ActiveMatrix BusinessWorks™ Plug-in for Amazon SQS and SNS Installation*
- *TIBCO ActiveMatrix BusinessWorks™ Plug-in for Amazon SQS and SNS User Guide*

How to Contact TIBCO Support

Get an overview of TIBCO Support. You can contact TIBCO Support in the following ways:

- For accessing the Support Knowledge Base and getting personalized content about products you are interested in, visit the TIBCO Support website.
- For creating a Support case, you must have a valid maintenance or support contract with TIBCO. You also need a user name and password to log in to TIBCO Support website. If you do not have a user name, you can request one by clicking **Register** on the website.

How to Join TIBCO Community

TIBCO Community is the official channel for TIBCO customers, partners, and employee subject matter experts to share and access their collective experience. TIBCO Community offers access to Q&A forums, product wikis, and best practices. It also offers access to extensions, adapters, solution accelerators, and tools that extend and enable customers to gain full value from TIBCO products. In addition, users can submit and vote on feature requests from within the TIBCO Ideas Portal. For a free registration, go to TIBCO Community.

Legal and Third-Party Notices