

Azure Service Bus Adapter for SAP Integration Suite

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THE BEST RUN SAP

Contents

1. Introduction 4
   1.1 Objective 4
   1.2 Coding Samples 4
   1.3 Internet Hyperlinks 4
   1.4 Overview 4
   1.5 Features 5
2. Installation and Configuration 6
   2.1 Azure Service Bus Adapter Installation on Cloud Foundry 6
      2.1.1 Prerequisites 6
      2.1.2 Procedure 6
         2.1.2.1 Adapter Installation by Creating a New Integration Flow 7
         2.1.2.2 Adapter Installation without Creating a New Integration Flow 7
   2.2 Monitor the Deployment Status 8
3. Getting Started: Azure Service Bus Adapter 10
   3.1 Application Configuration 10
   3.2 Authentication 10
      3.2.1 Creating Secure Parameter in Security Material 11
   3.3 Architecture Overview 13
      3.3.1 Sender Adapter 13
      3.3.2 Receiver Adapter 13
4. Azure Service Bus Adapter Configuration 14
   4.1 Sender Adapter 14
      4.1.1 General tab 14
      4.1.2 Connection Tab 15
      4.1.3 Processing Tab 18
   4.2 Receiver Adapter 20
      4.2.1 General tab 20
      4.2.2 Connection Tab 20
      4.2.3 Processing Tab 23
5. Azure Service Bus Adapter Operations 26
   5.1 Sender Adapter 26
      5.1.1 Queue 26
      5.1.2 Topic 27

5.2 Receiver Adapter 29
5.2.1 Queue 29
5.2.2 Topic 30
6. Support 32
6.1 Troubleshooting 32
7. References 33
7.1 Message Properties 33

1. Introduction

1.1 Objective

This is the official guide for the Azure Service Bus Adapter for SAP Integration Suite. This guide covers all relevant information for integration developers to start working with the Azure Service Bus adapter. Read this guide carefully before using the Adapter.

1.2 Coding Samples

Any software coding and/or code lines/strings ("Code") included in this documentation are only examples and are not intended to be used in a productive system environment. The Code is only intended to better explain and visualize the syntax and phrasing rules of certain coding. The correctness and completeness of the Code given herein are not guaranteed.

1.3 Internet Hyperlinks

The documentation may contain hyperlinks to the Internet. These hyperlinks are intended to serve as a hint about where to find related information. The availability and the correctness of this related information or the ability of this information to serve a particular purpose are not warranted.

1.4 Overview

Azure Service Bus is a cloud-based messaging service designed for highly accurate, reliable communication between distributed applications.

The Azure Service Bus adapter for SAP Integration Suite facilitates integration with Azure Service Bus by allowing you to perform message publish and subscribe. The Azure Service Bus Adapter is available as sender and receiver adapter that simplifies and streamlines message-based workflows for Queues and Topics.

1.5 Features

Azure Service Bus adapter has the following features:

- Sender Adapter allows consuming messages via **Queue** and **Topic** entity types.
- Receiver Adapter allows publishing messages to **Queue** and **Topic** entity types.
- Supports **Microsoft Entra ID** and **Shared Access Signature** authentication methods.
- Sender Adapter performs **Duplicate Check** to supress duplicate processing of messages with same message ID.
- Sender Adapter has a **Polling** mechanism for receiving messages.
- Sender Adapter provides multiple message handling options in case of failure, like **Acknowledge, Keep and Process Again, Move to Dead Letter Queue,** and **Defer.**
- Receiver Adapter allows publishing messages using multiple content types (including **JSON**, **XML**, and **PLAIN** text).
- Receiver Adapter allows you to specify **Broker Properties** and **Custom Properties** for message creation.

2. Installation and Configuration

This section details the file(s) available as part of the installation package and the prerequisites to configure the Azure Service Bus adapter.

> The Azure Service Bus adapter is available as part of your SAP Integration Suite license.

Before you begin, you must download the Azure Service Bus plugin bundle from the SAP Marketplace that contains the file(s) listed in the following section.

2.1 Azure Service Bus Adapter Installation on Cloud Foundry

Before the adapter can be used in the Cloud Foundry environment, it must be deployed to the SAP Integration Suite tenant.

> To access all adapter variants and features, ensure that your adapter packages are up to date. For more information on how to update your adapter to the latest version, see Updates for SAP's Integration Packages.

2.1.1 Prerequisites

To deploy the Azure Service Bus adapter, you must have access to "*Azure Service Bus Adapter for SAP Integration Suite*" as part of your SAP Integration Suite license.

2.1.2 Procedure

> The below installation procedure is compatible with Apache Camel 2, Apache Camel 3, and the Edge Integration Cell (EIC) platform.

You can deploy the adapter using the following methods:

2.1.2.1 Adapter Installation by Creating a New Integration Flow

The Azure Service Bus adapter is available for selection in the sender and receiver adapter list and can be deployed in the **Design** tab directly as you use it in an Integration flow.

Purpose

To install an adapter for use in your Integration flow.

Procedure

Go to **Design** workspace and select the integration package where you want to create a new Integration flow.

1. Click **Edit** to make the package editable.
2. Go to the **Artifacts** tab. Click **Add** and select **Integration Flow**.
3. Enter **Name** and **ID** for your flow. Additionally, select **Runtime Profile** from the drop-down and choose **Sender** and **Receiver** systems from the list . Finally, click **Add** to create the integration flow.
4. Go to the newly created integration flow and click **Edit** to make it editable.
5. In the integration flow, click **End** to add a **Connector** between the **End** and the **Receiver Box**.
   A drop-down with the available adapters appears. The **Azure Service Bus** adapter should show up in the list.
6. Select the **Azure Service Bus** adapter from the list. The adapter is now imported which *triggers* an adapter deployment. Once Azure Service Bus Adapter is deployed, a success message is displayed.
   After the above steps are done, the Azure Service Bus Adapter is successfully deployed in your Design workspace of the SAP Integration Suite tenant.

2.1.2.2 Adapter Installation without Creating a New Integration Flow

The following procedure describes how the Azure Service Bus adapter is migrated from the Discover workspace to the Design workspace of the SAP Integration tenant.

This method is useful for scenarios where integration flow packages are migrated from development to a higher environment such as Production.

The Azure Service Bus adapter can be imported into the Design workspace without creating an integration flow. Use the Transport Management Service (TMS) to import/transport the Azure Service Bus adapter to a higher environment. Alternatively, If the TMS is not available in the landscape, the adapter package can be imported to the Design workspace by copying it from the Discover workspace.

Purpose

To copy the integration package from the Discover workspace and import the Azure Service Bus adapter to the Design workspace, follow these steps:

Procedure

1. Go to **Discover** workspace.
2. In the search box, search for the **Azure Service Bus adapter for SAP Integration Suite** package.
3. Select the package and click **Copy**. This copies the package from the Discover workspace to the Design workspace.
4. Go to Design workspace and select the copied **Azure Service Bus adapter for SAP Integration Suite** package.
5. In the **Actions** tab of the selected package, click **Deploy**. This completes the adapter deployment to the Design workspace.

2.2 Monitor the Deployment Status

After the adapter deployment is complete, you can check the status in the **Monitor** section.

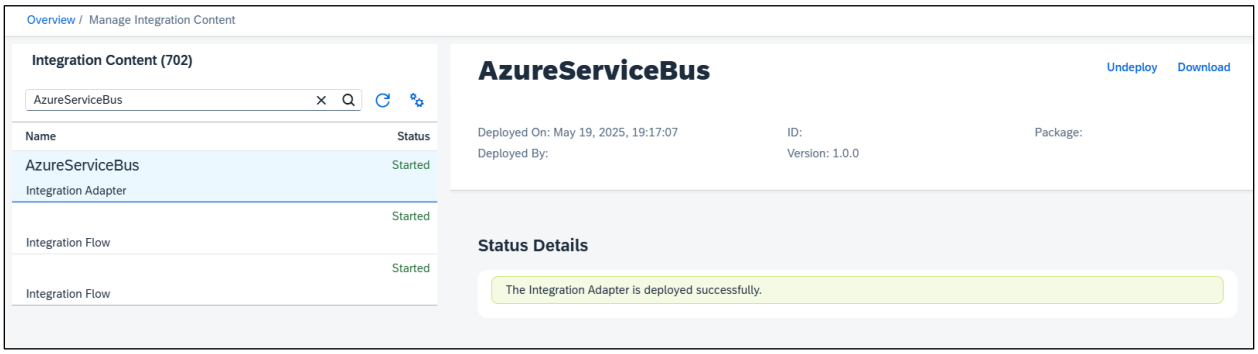
Purpose

To check the status of the deployed adapter:

Procedure

1. Under the **Monitor** tab, click **Integrations and APIs**. This opens the **Overview** page.
2. On the **Overview** page, go to **Manage Integration Content** section and click **All**. This opens **Integration Content** page with a list of all the deployed adapters.

3. Here, you can check and confirm the deployment status of your adapter.



3. Getting Started: Azure Service Bus Adapter

This section contains information about adapter architecture, application configuration, authentication.

3.1 Application Configuration

- To get started with the basics of Azure Service Bus, see Azure Service Bus Messaging.
- To learn more about Microsoft Entra ID and Shared Access Signature authentication methods, see Service Bus Authentication and Authorization
- To learn more about registering an app, see Register your application with a Microsoft Entra tenant.
- To use more about access control, see Service Bus access control with Shared Access Signatures.

3.2 Authentication

This section details the authentication mechanism supported by the Azure Service Bus Adapter in SAP Integration Suite.

Microsoft Entra ID authentication mechanism enhances overall system security by giving administrators centralized access control. Applications can request an OAuth 2.0 access token from the Microsoft identity platform. Upon successful authentication, Microsoft Entra ID issues an access token, which the application can then use to authorize requests to Azure Service Bus resources. For more information, see the Microsoft Entra ID.



Microsoft Entra ID Credentials have an expiry which results in iFlow failure if exceeded. Ensure to set the expiration time according to your use case.

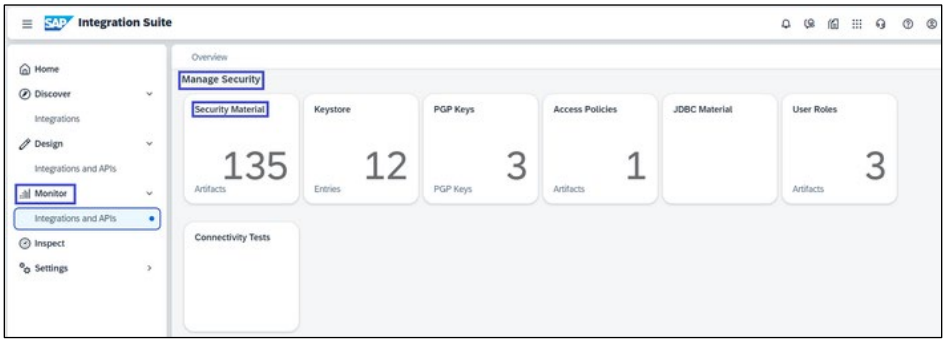
Shared Access Signatures offer secure, claims-based authorization using signed tokens without exposing keys. Keys are used only to sign data, which the service verifies. Share Access Signature can act like a username-password model, or time-limited tokens issued without sharing the signing key. For more information, see the Shared Access Signatures.

Before setting up the authentication, you must create the Credentials in **Security Material** in SAP Integration Suite.

3.2.1 Creating Secure Parameter in Security Material

To create Secure Parameters for fields like **Directory (tenant) ID Alias, Application (client) ID Alias, Client Secret Value Alias** and **Access Key Alias**, follow the below steps:

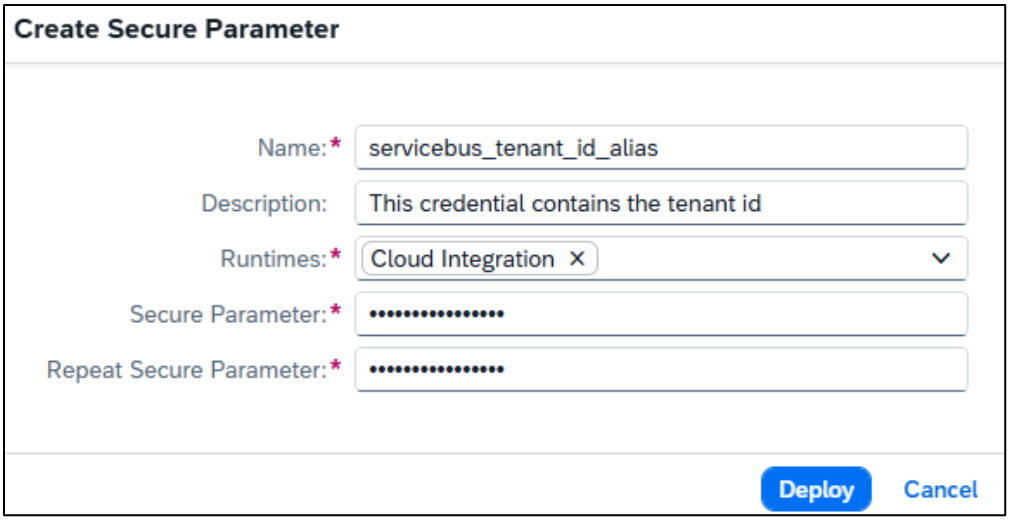
1. In SAP Integration Suite, navigate to **Monitor** > **Integrations and APIs**. This opens the **Overview** page.
2. On the **Overview** page, go to **Manage Security** section and click on the **Security Material** tile.



3. Click **Create** and select **Secure Parameter** from the dropdown.



4. In the **Create Secure Parameter** popup, provide the below details.



5. Click **Deploy** to complete the process.

Parameter	Description
Name	Specify the name of the security artifact. The artifact name is used as an alias for the confidential data.
Description	Enter a description for the artifact (optional).
Secure Parameter	Enter the confidential value of the attribute.
Repeat Secure Parameter	Repeat the confidential value of the attribute.

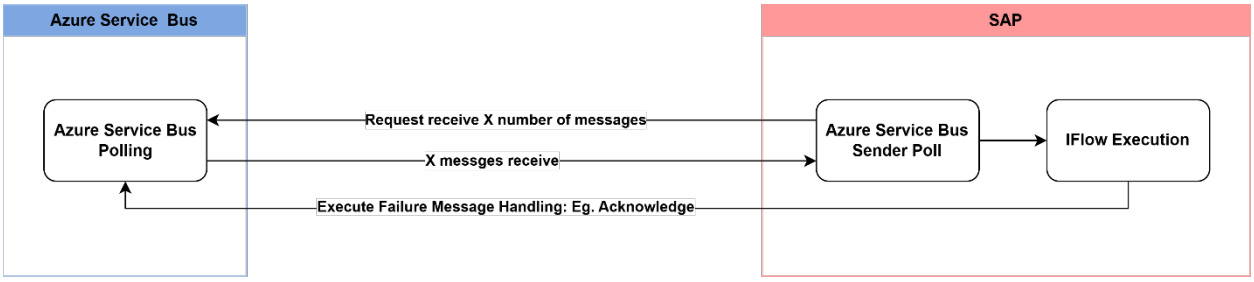
When you refresh the **Manage Security Material** page, the new artifact is displayed in the artifact table(**Secure Parameter**).

3.3 Architecture Overview

The Azure Service Bus adapter is designed to function as a sender and receiver adapter.

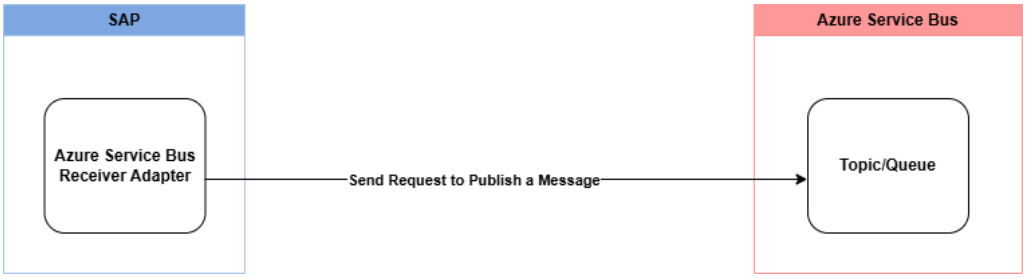
3.3.1 Sender Adapter

In a scenario where the adapter is used as a sender adapter, Azure Service Bus acts as the initiator of the calls. The Polling actively checks for new messages at a defined interval. After iFlow execution is completed, message is acknowledged in case of success or failure message handling actions are performed in case of failure.



3.3.2 Receiver Adapter

In a scenario where the Azure Service Bus Adapter is used as a receiver adapter, SAP Integration Suite acts as the initiator of the calls. Azure Service Bus Receiver Adapter sends the request to publish a message to Azure Service Bus (this is a receiver system), Azure Service Bus processes this request.



4. Azure Service Bus Adapter Configuration

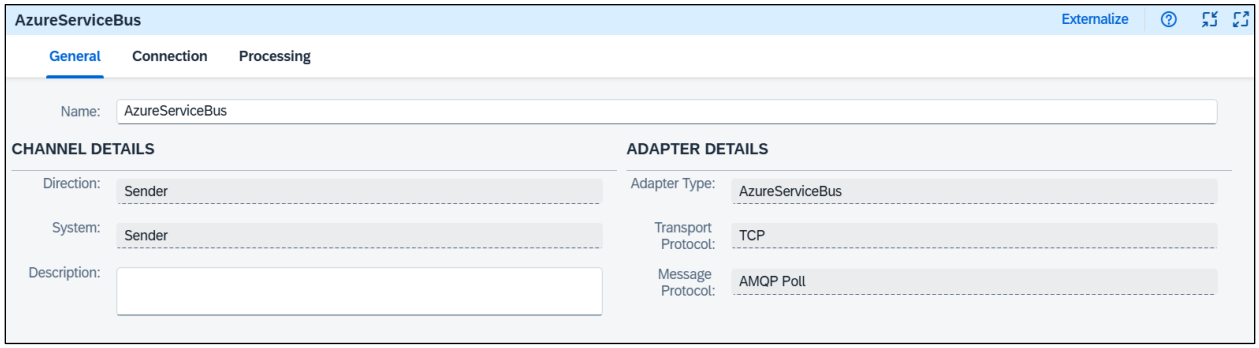
This section describes the parameters to be configured for your Azure Service Bus adapter. You need to configure the **General**, **Connection,** and **Processing** tabs. A description and example usage for every field has been added.

4.1 Sender Adapter

The Configuration of the Azure Service Bus Receiver Adapter for each one of the supported variants is mentioned below.

4.1.1 General tab

The General tab provides an overview of basic adapter information, including **Channel** and **Adapter** details.



Only the Name and Description fields are editable.

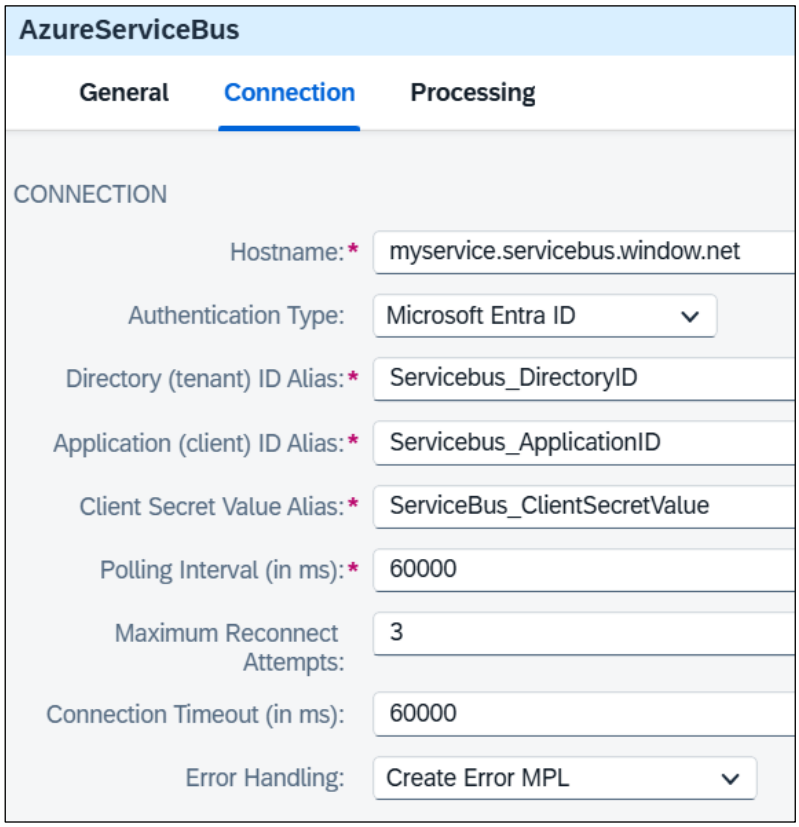
Parameter	Description
Name	Name of the adapter flow
Description	Description of the adapter

4.1.2 Connection Tab

The Connection tab contains connection and authentication parameters for the Sender Adapter.

Using Credentials

The Security artifact created in the Creating Credentials in Security Material should be used in the **Connection tab** of the Adapter, as shown below.



The connection tab contains the following fields:

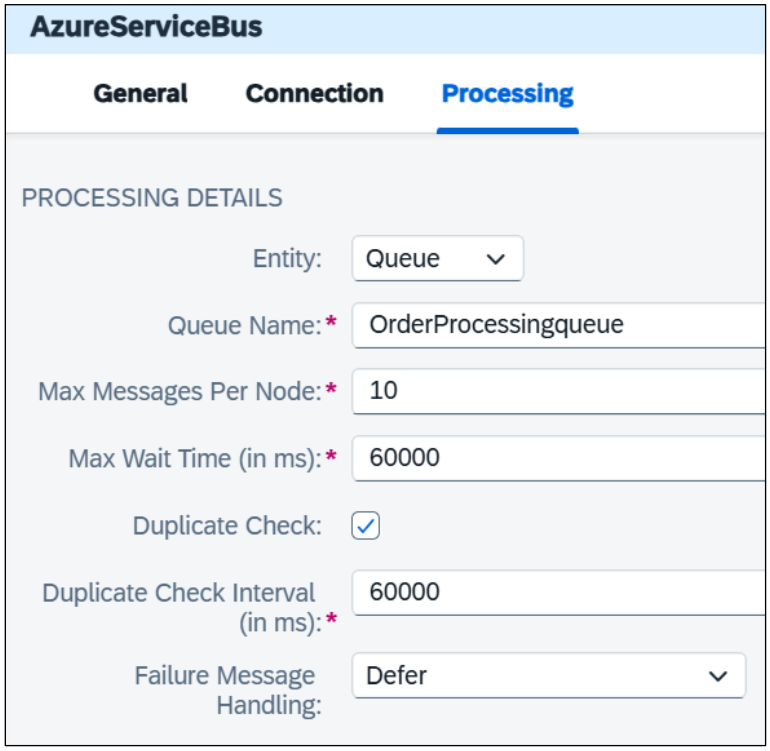
Parameter	Description
Hostname	Specify the hostname for the namespace in use. Example: `myservice.servicebus.windows.net`

Parameter	Description
Authentication Type	Select the Authentication Mechanism to connect to Azure Service Bus: • **Microsoft Entra ID** • **Shared Access Signature**
Values to create **Secure Parameter** can be found in the Azure Portal.	
Directory (tenant) ID Alias (only available when **Microsoft Entra ID** is selected)	Specify the name of the Secure Parameter artifact that contains the Directory ID needed to connect to Azure Service Bus.
Application (client) ID Alias (only available when **Microsoft Entra ID** is selected)	Specify the name of the Secure Parameter artifact that contains the Application ID needed to connect to Azure Service Bus.
Client Secret Value Alias (only available when **Microsoft Entra ID** is selected)	Specify the name of the Secure Parameter artifact that contains the Client Secret Value ID needed to connect to Azure Service Bus.
Shared Access Policy Name (only available when **Shared Access Signature** is selected)	Specify the name of the Shared Access Policy that defines the authorization rule.

Parameter	Description
Access Key Alias (only available when **Shared Access Signature** is selected)	Specify the name of the Secure Parameter artifact that contains the Access Key alias needed to connect to Azure Service Bus. This can be created as a Secure Parameter using the Primary Key for your Shared Access Policies available under Settings in Azure Portal.
Polling Interval (in ms)	Specify the polling interval in milliseconds to retrieve the messages. Example: `60000`
Maximum Reconnect Attempts	Specify the maximum number of retries to connect to Azure Service Bus. Example: `3`
Connection Timeout (in ms)	Specify the maximum waiting time in milliseconds for the connection to be established. This is applicable to each retry, so the total connection timeout will also be dependent on the Maximum Reconnect Attempts. Example: `60000`
Error Handling	Select the process action for the error in the adapter: • **Add to System Trace Logs** • **Change iFlow Status to Error** • **Create Error MPL**

4.1.3 Processing Tab

The Processing tab lists all the operations that can be performed on the database through the adapter.



Parameter	Description
Entity	Select the entity for receiving messages: • **Queue** • **Topic**
Queue Name (only available when Entity as **Queue** is selected)	Specify the Queue name for receive messages. Example: `OrderProcessingQueue`

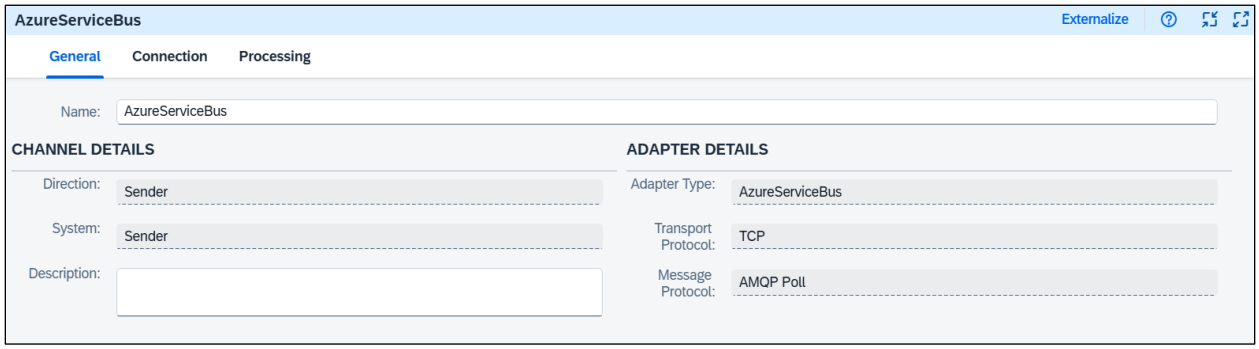
Parameter	Description
Topic Name (only available when Entity as **Topic** is selected)	Specify the Topic name from which message will be read. Example: `OrderApproval`
Subscription Name (only available when Entity as **Topic** is selected)	Specify the subscription name to receive a message. Example: `OrderSubscription`
Max Messages Per Node	Specify the maximum number of messages to be retrieved per node. Recommended: Less than `5000`. Example: `10`
Max Wait Time (in ms)	Specify the maximum waiting interval in milliseconds for receiving the messages. Example: `60000`
Duplicate Check	Enable to check duplicates in receiving messages.
Duplicate Check Interval	Specify the time interval in milliseconds for duplicate check. Example: `60000`
Failure Message Handling	Select the action to be performed in case of transaction failure: • **Acknowledge** • **Defer** • **Keep and Process Again** • **Move to Dead Letter Queue**

4.2 Receiver Adapter

The Configuration of the Azure Service Bus Receiver Adapter for each one of the supported variants is mentioned below.

4.2.1 General tab

The General tab provides an overview of basic adapter information, including **Channel** and **Adapter** details.



Only the Name and Description fields are editable.

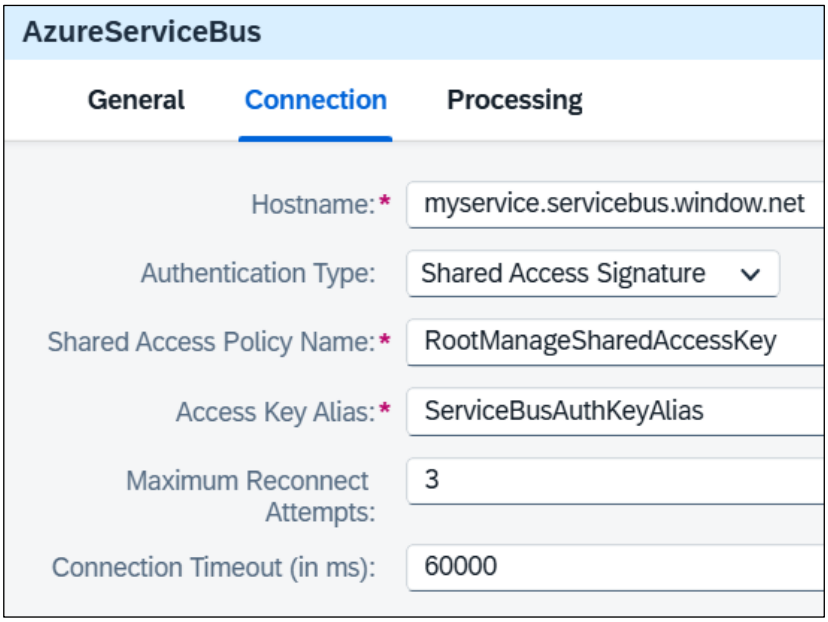
Parameter	Description
Name	Name of the adapter flow
Description	Description of the adapter

4.2.2 Connection Tab

The Connection tab contains connection and authentication parameters for Azure Service Bus.

Using Credentials

The Security artifact created in the Creating Credentials in Security Material should be used in the **Connection tab** of the Adapter, as shown below.



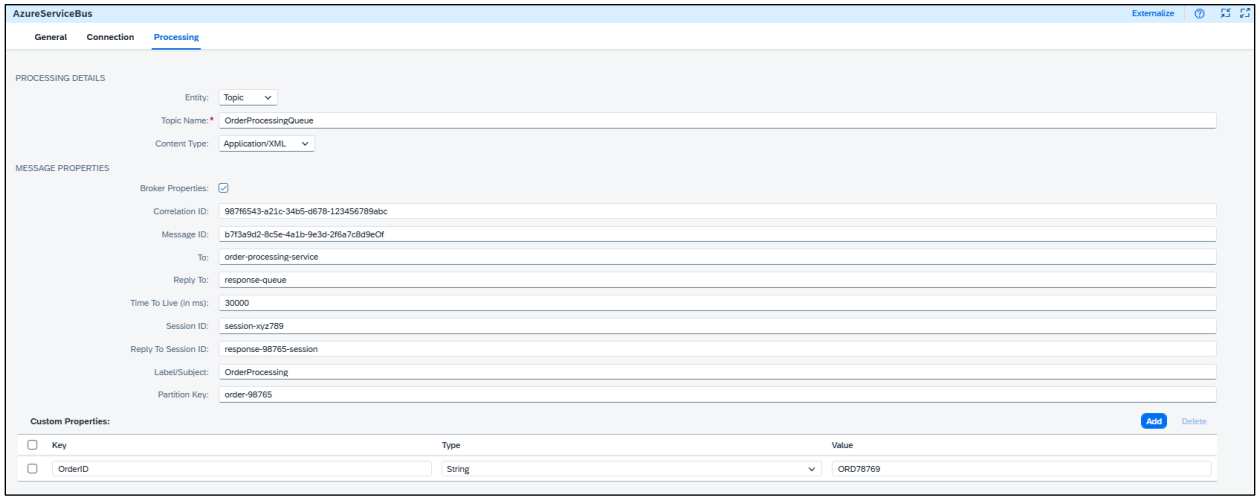
The connection tab contains the following fields:

Parameter	Description
Hostname	Specify the hostname for the namespace in use. Example: `myservice.servicebus.windows.net`
Authentication Type	Select the Authentication Mechanism to connect to Azure Service Bus: • **Microsoft Entra ID** • **Shared Access Signature**
Values to create security artifacts can be found in the Azure Portal.	
Directory (tenant) ID Alias (only available when **Microsoft Entra ID** is selected)	Specify the name of the Secure Parameter artifact that contains the Directory ID needed to connect to Azure Service Bus.

Parameter	Description
Application (client) ID Alias (only available when **Microsoft Entra ID** is selected)	Specify the name of the Secure Parameter artifact that contains the Application ID needed to connect to Azure Service Bus.
Client Secret Value Alias (only available when **Microsoft Entra ID** is selected)	Specify the name of the Secure Parameter artifact that contains the Client Secret Value ID needed to connect to Azure Service Bus.
Shared Access Policy Name (only available when **Shared Access Signature** is selected)	Specify the name of the Shared Access Policy that defines the authorization rule.
Access Key Alias (only available when **Shared Access Signature** is selected)	Specify the Access Key alias to authorize access to the Azure Service Bus. This can be created as a Secure Parameter using the Primary Key for your Shared Access Policies available under Settings in Azure Portal.
Maximum Reconnect Attempts	Specify the maximum number of retries to connect to Azure Service Bus. Example: `3`
Connection Timeout (in ms)	Specify the maximum waiting time in milliseconds for the connection to be established. This is applicable to each retry, so the total connection timeout will also be dependent on the Maximum Reconnect Attempts. Example: `60000`

4.2.3 Processing Tab

The Processing tab lists all the operations that can be performed on the database through the adapter.



Parameter	Description
PROCESSING DETAILS	
Entity	Select the entity to write a message: • **Queue** • **Topic**
Queue Name (only available when **Entity** is selected as **Queue**)	Specify the name of the Queue to which the message will be sent. Example: `OrderProcessingQueue`
Topic Name (only available when **Entity** is selected as **Topic**)	Specify the name of the Topic to which the message will be sent. Example: `OrderApproval`

Parameter	Description
Content Type	Select content type for message to be sent to Azure Service Bus: • **Application/JSON** • **Application/XML** • **Text/Plain**
MESSAGE PROPERTIES	
Broker Properties	Enable to send Broker Properties to the message.
Correlation ID	Specify the Correlation Identifier for the message. Example: `987f6543-a21c-34b5-d678-123456789abc`
Message ID	Specify the Message Identifier for the message. Example: `b7f3a9d2-8c5e-4a1b-9e3d-2f6a7c8d9e0f`
To	Specify the address of the queue or topic to which message must be sent. Example: `order-processing-service` ℹ This property is reserved for future use in routing scenarios and is currently ignored by the broker itself.
Reply To	Specify the address of the queue or topic for which a response must be sent. Example: `response-queue`
Time To Live (in ms)	Specify a Time to Live (TTL) attribute (in milliseconds) for the message to be sent. Messages exceeding their TTL duration expire and are not retained by Azure Service Bus. Example: `30000`
Session ID	Specify the session affiliation of the message for session aware entities. Example: `session-xyz789`
Reply To Session ID	Specify the session identifier to reply to. Example: `response-98765-session`
Label/Subject	Specify the label or subject for the message. Example: `OrderProcessing`

Parameter	Description
Partition Key	Specify the partition key for the message. Example: `order-98765`
Custom Properties	
Key	Specify the key to the property for the message.
Type	Select the type of property for the message: • **Date** • **Boolean** • **Number** • **String**
Value	Specify the value for the message.



For more information about the above fields, see References.

5. Azure Service Bus Adapter Operations

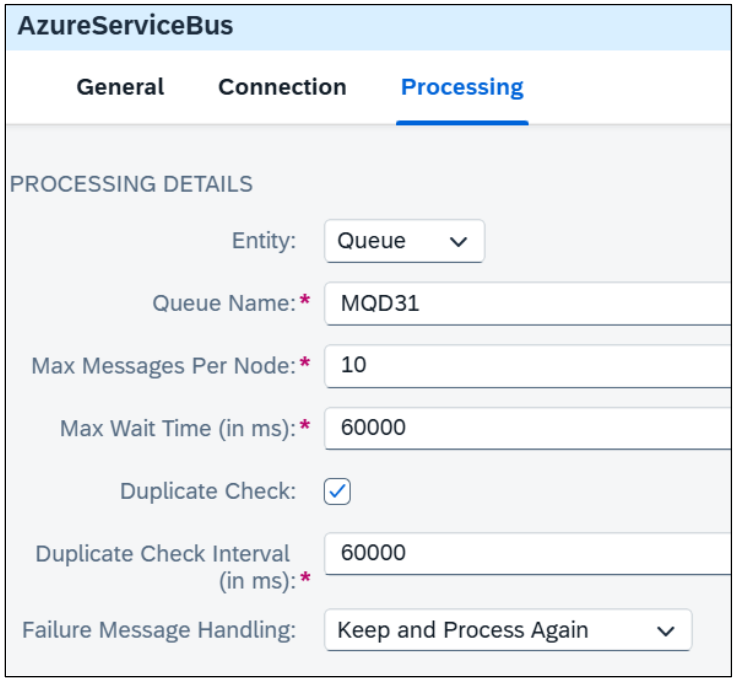
This section lists and describes all the operations supported by the Azure Service Bus adapter.

5.1 Sender Adapter

You can perform read operations with the sender adapter in Azure Service Bus.

5.1.1 Queue

You can perform read operations with the sender adapter in Azure Service Bus.

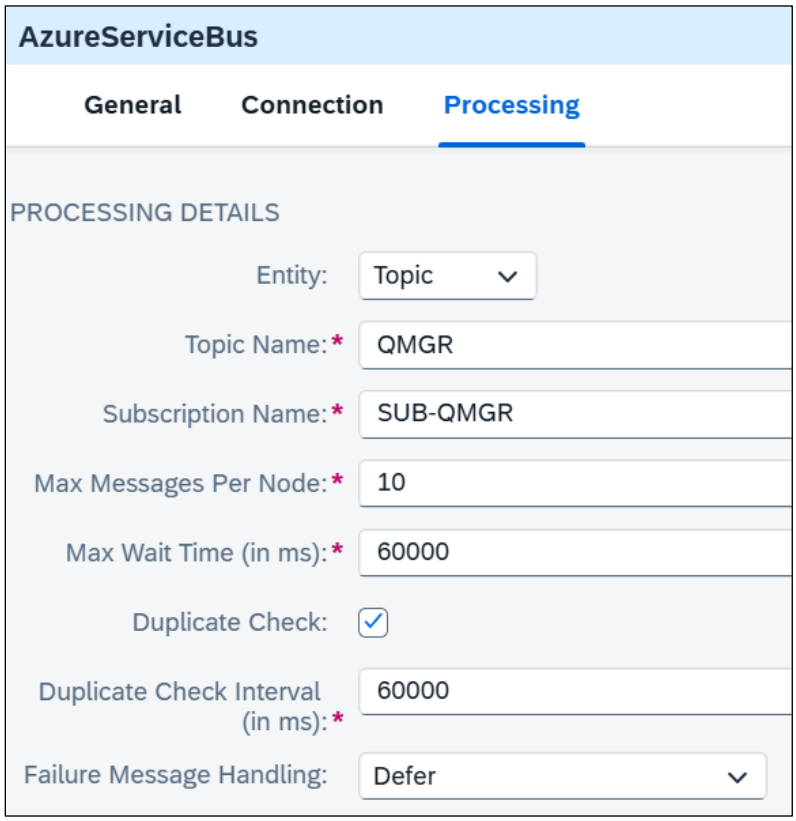


Parameter	Values
Entity	Select entity as **Queue.**
Queue Name	Set as `MQDG31`
Max Message Per Node	Set as `10`
Max Wait Time (in ms)	Set as `60000`

Duplicate Check	Enable Duplicate Check
Duplicate Check Interval	Set as `60000`
Failure Message Handling	Select as **Keep and Process Again**

5.1.2 Topic

You can perform read operations with the sender adapter in Azure Service Bus.



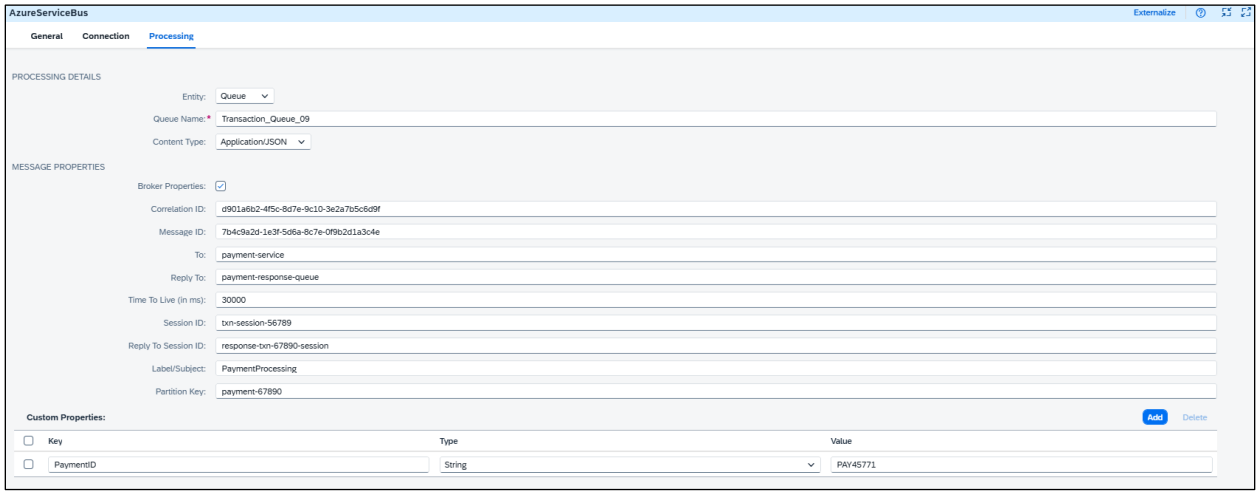
Parameter	Values
Entity	Select the entity as **Topic.**
Topic Name	Set as `QMGR`
Subscription Name	Set as `SUB-QMGR`
Max Message Per Node	Set as `10`

Parameter	Values
Max Wait Time (in ms)	Set as 60000
Duplicate Check	Enable Duplicate Check
Duplicate Check Interval	Set as 60000
Failure Message Handling	Select as **Defer**

5.2 Receiver Adapter

5.2.1 Queue

Azure Service Bus receiver adapter allows you to write messages to a queue on an Azure server.



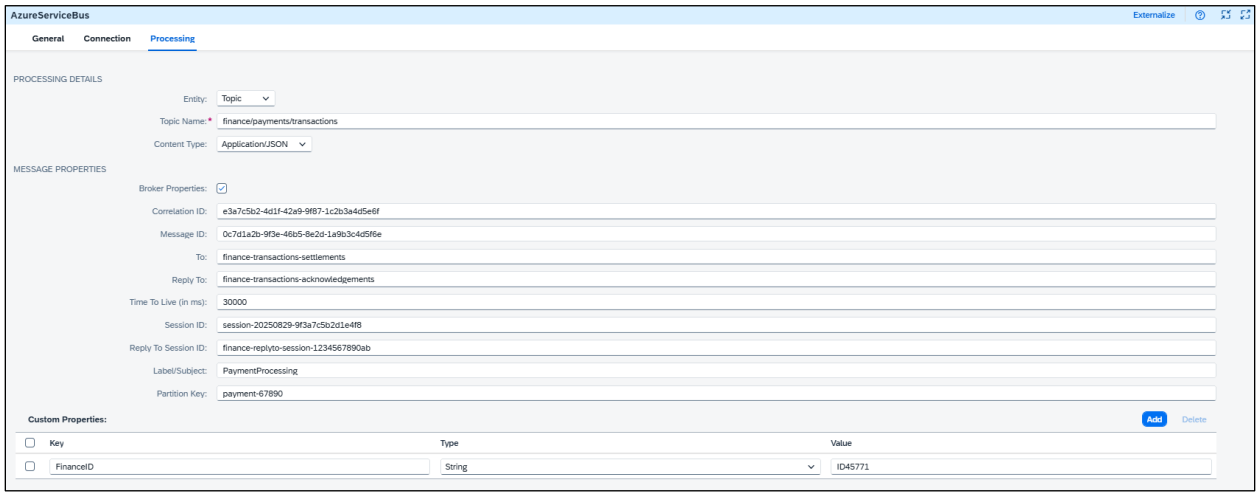
Parameter	Description
PROCESSING DETAILS	
Entity	Select as **Queue**
Queue Name	Set as `Transaction_Queue_09`
Content Type	Select as **Application/JSON**
MESSAGE PROPERTIES	
Broker Properties	Enable to send Broker Properties to the message.
Correlation ID	Set as `d901a6b2-4f5c-8d7e-9c10-3e2a7b5c6d9f`
Message ID	Set as `7b4c9a2d-1e3f-5d6a-8c7e-0f9b2d1a3c4e`
To	Set as `payment-service`
Reply To	Set as `payment-response-queue`

Parameter	Description
Time To Live (in ms)	Set as `30000`
Session ID	Set as `txn-session-56789`
Reply To Session ID	Set as `response-txn-67890-session`
Label/Subject	Set as `PaymentProcessing`
Partition Key	Set as `payment-67890`
Custom Properties	

	Key	Type	Value
	`PaymentID`	**String**	`PAY45771`

5.2.2 Topic

Azure Service Bus receiver adapter allows you to write messages to a topic on the Azure server.



Parameter	Description
PROCESSING DETAILS	
Entity	Select as **Topic**

Parameter	Description		
Topic Name	Set as `finance/payments/transactions`		
Content Type	Select as **Application/JSON**		
MESSAGE PROPERTIES			
Broker Properties	Enable to send Broker Properties to the message.		
Correlation ID	Set as `e3a7c5b2-4d1f-42a9-9f87-1c2b3a4d5e6f`		
Message ID	Set as `0c7d1a2b-9f3e-46b5-8e2d-1a9b3c4d5f6e`		
To	Set as `finance-transactions-settlements`		
Reply To	Set as `finance-transactions-acknowledgements`		
Time To Live (in ms)	Set as `30000`		
Session ID	Set as `session-20250829-9f3a7c5b2d1e4f8`		
Reply To Session ID	Set as `finance-replyto-session-1234567890ab`		
Label/Subject	Set as `PaymentProcessing`		
Partition Key	Set as `payment-67890`		
Custom Properties			
	Key	**Type**	**Value**
	`FinanceID`	**String**	`ID45771`

6. Support

6.1 Troubleshooting

Scenario	Error Message	Error Reasoning
Sender Adapter: Polling Fails with IFlow status as Error	`[CONTENT][CONTENT_DEPLOY][InstanceError] : {"message":"POLL_FAILED","childMessageInstances":[{"message":"EXCEPTION","parameters":["org.apache.camel.CamelException: Error message: Error while polling and processing the messages., Reason: The receiver client is terminated. Re-create the client to continue receive attempt. (Reason: upstream-error)`	Occurs in case of expired Microsoft Entra ID credentials.

7. References

7.1 Message Properties

For more information regarding Message Properties, see Messages, payloads, and serialization.