Java Message Service (JMS) Package

Readme

Version 2.1.1

05/10/2020

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1.   Introduction

This document contains all essential information for the user to make full use of this A2019 *JMS Package*. It includes a description of the functions and capabilities and step-by-step procedures for setup & configuration of the *JMS Package*.

1.1   Overview

With the package actions you can build bots that can act as JMS client to send or receive JMS messages.

1.2   Use cases

The key use cases include:

- Integrate a bot into an existing JMS messaging infrastructure
- Let bots exchange messages in a synchronous and asynchronous communication
- Calling remote bots using reliable messaging
- Bots listen to queues or topics to start an automation

2.   Requirements & Prerequisites

2.1   System Requirements

- Enterprise A2019.12+
- A JMS provider, currently these are supported
  - ActiveMQ Artemis, tested with version 2.12
  - IBM MQ, tested with version 9.1.5

2.2   Prerequisites

- Existing JMS infrastructure
  - Queues or Topics created
  - Correct permissions to access queues and topics

3.   Getting Started

3.1   Quick Start

3.1.1   Setup

Import the A2019 JMS Package in the Control Room under Bots->Packages

3.1.2   Configuration and Use

The package contains the following command actions

```
JMS Messaging
   Queue
      Consume Message Queue        Send and consume queue-based messages
      Purge Queue
      Send Message Queue
   Topic
      Consume Message Topic        Send and consume topic-based messages
      Create Durable Subscription
      Send Message Topic
      Unsubscribe Topic
   Connect
      End Session                  Connect, disconnect and get client details
      Get JMS Client ID
      No Message Code
      Start ActiveMQ Session
      Start IBM MQ Session
   Request/Reply                   Send and receive queue-based messages in a
      Receive Request              request/reply communication
      Reply Request
      Send Request
```

General rules

- A time out of zero always blocks an action until a message is received

- A filter has to be defined in the JMS selector notation.
  https://activemq.apache.org/selectors.html

- Only messages in the JMS "Text Message" format are supported

- Only JMS properties of type "String" are supported, some are predefined by the JMS provider

  https://activemq.apache.org/activemq-message-properties

Name	Description	Parameter	
Consume Message Queue	Consumes a message from a queue	Session Name	Current session
		Queue	Queue where to receive messages
		Time out (ms)	When to stop listening for an incoming message. A time out of zero never expires, and the action blocks
		JMS Filter (optional)	JMS filter that selects incoming messages
		Message	Received message
Purge Queue	Purge all messages from queue	Session Name	Current session
		Queue	Queue where to delete all messages
		No of deleted messages (optional)	How many messages have been deleted
Send Message Queue	Sends a message to a queue	Session Name	Current session
		Queue	Queue where to send the message
		Message	Message to send
		JMS Properties (optional)	JMS properties to be set, can be used by a message receiver
Consume Message Topic	Consumes a message from a topic, topic and filter are set by the action "Create Durable Subscription"	Session Name	Current session
		Time out (ms)	When to stop listening for an incoming message. A time out of zero never expires, and the action blocks
		Message	Received message
Create Durable Subscription	Create durable subscription for a topic	Session Name	Current session
		Topic	Topic where to subscribe to and where to receive messages
		Subscriber Name	To identify the client as a subscriber in the JMS topic
		JMS Filter (optional)	JMS filter that selects incoming messages

Send Message Topic	Sends a message to a topic	Session Name	Current session
		Topic	Where to send a message
		Message	Message to send
		JMS Properties (optional)	JMS properties to be set, can be used by a message receiver
Unsubscribe Topic	Unsubscribe from topic, relates to "Create Durable Subscription"	Session Name	Current session
Start ActiveMQ Session	Starts an ActiveMQ client session	Session Name	Current session
		ActiveMQ Host	Host in the format tcp://<hostname>:<port>
		User (optional)	User to logon
		Password (optional)	´Password to logon
Start ActiveMQ Session	Starts an ActiveMQ client session	Session Name	Current session
		IBM MQ Host	Hostname
		Port	Port of IBM MQ host
		Queue Mgr	Queue Manager Name
		Channel	IBM MQ channel
		User	User to logon
		Password	´Password to logon
End Session	Closes a session to the JMS provider	Session Name	Current session

Get JMS Client ID	Get ID of the JMS Client, useful for debugging	Session Name	Current session
		JMS Client ID	Id of the current client session
No Message Code	No message received	Code	Code that is returned by a message receiver action if no messages has been received. Set in the package to #NoM#
Send Request	Sends request to a queue, sets correlation ID	Session Name	Current session
		Request Queue	Queue where to send the message
		Reply Queue	Queue where to receive the reply
		Request	Message to send
		Time out (ms)	When to stop listening for an incoming reply message. A time out of zero never expires, and the action blocks
		JMS Properties (optional)	JMS properties to be set, can be used by a message receiver
		Reply	Received reply message
Receive Request	Receives request from a queue, set the reply queue for the action "Reply Request"	Session Name	Current session
		Request Queue	Queue where to receive messages
		Time out (ms)	When to stop listening for an incoming message. A time out of zero never expires, and the action blocks
		JMS Filter (optional)	JMS filter that selects incoming messages
		Request	Received request message
Reply Request	Replies to a request, sets correlation ID from the request	Session Name	Current session
		Reply	Reply message for the request

Loop Iterator **Queue Message Reder**	Reads all messages from a queue	Session Name	Current session
		Message Queue	Queue from which all available messages are received
		JMS Filter (optional)	JMS filter that selects incoming messages
		Received message	Stores message content, content changes each iteration
Loop Iterator **Topic Message Receiver**	Reads all messages from a topic, topic and filter are set by the action "Create Durable Subscription"	Session Name	Current session
		Received message	Stores message content, content changes each iteration

4.   Support & FAQs

4.1   Support

Free bots are not officially supported.   You can get access to Community Support through the following channels:

- You can get access to Community Support, connecting with other Automation Anywhere customers and developers on APeople – the Bot Building Forum, the Bot Store Support Forum, or the Developers Everywhere Group.
- Automation Anywhere also provides a Product Documentation portal which can be accessed for more information about our products and guidance on Enterprise A2019.

4.2   FAQs

You find more information about Java Message Service here

https://en.wikipedia.org/wiki/Java_Message_Service

https://activemq.apache.org/components/artemis/documentation/

https://www.ibm.com/support/knowledgecenter/en/SSFKSJ_9.0.0/com.ibm.mq.pro.doc/q002610_.htm

For questions relating to Enterprise A2019: See the Enterprise A2019 FAQs.

Appendix A: Record of Changes

Instructions: Provide information on the version number, the date of the version, the author/owner of the version, and a brief description of the reason for creating the revised version.

No.	Version Number	Date of Change	Author	Notes
1	*2.1.1*	*05/10/2020*	*Stefan Karsten*	*Initial version*

Appendix B: References

No.	Topic	Reference Link
1	Overview of Enterprise A2019	Click here
2	Guidance: Building basic A2019 bots	Click here
3	Guidance: Building A2019 action packages	Click here
4	APeople Community Forum	Click here
5	Automation Anywhere University	Click here