



Using Java Messaging Service (JMS) in Interoperability Productions (Legacy Implementation)

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JMS Overview (Legacy Implementation)

Important: This page discusses a legacy implementation of JMS messaging that should not be used for new implementations. This legacy implementation may be removed in future releases. Instead, use the JMSPEX interoperability adapters ([inbound](#) and [outbound](#)) which InterSystems has implemented using the [PEX](#) framework. Alternatively, use the JMS Messaging API.

The Java Messaging Service (JMS) is a Java messaging framework for providing communication between two or more systems. In this framework, a JMS provider manages a queue of messages sent by JMS clients. A typical JMS message has the following path:

1. A JMS client sends the message to a JMS provider.
2. The JMS provider sends the message to another JMS client.

With interoperability productions, InterSystems products can be a JMS client that both sends and receives JMS messages. InterSystems JMS clients use the `EnsLib.JMS.Operation` business host to send messages to JMS providers and the `EnsLib.JMS.Service` business host to receive messages from JMS providers. Advanced users who are familiar with ObjectScript can create their own [custom JMS business hosts](#) rather than using these built-in components.

Internally, JMS business hosts leverage an InterSystems external server to connect to Java.

1.1 JMS Messages

Within the JMS client's interoperability production, the JMS messages are instances of `EnsLib.JMS.Message`. The `text` property of message object contains the message content. The `type` property of the message object specifies the message type such as `TextMessage` and `BytesMessage`. The `EnsLib.JMS.Message` class also provides methods for setting and retrieving properties of the message.

1.2 Jar Files

The jar file for the JMS feature is available at: `install-dir\dev\java\lib\JDK18\intersystems-enslib-jms-3.0.0.jar`

The following client development jar files are also available:

- `install-dir\dev\java\jms\wljmsclient.jar`
- `install-dir\dev\java\jms\wlthint3client.jar`

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Using JMS Business Services and Operations (Legacy Implementation)

Important: This page discusses a legacy implementation of JMS messaging that should not be used for new implementations. This legacy implementation may be removed in future releases. Instead, use the JMSPEX interoperability adapters ([inbound](#) and [outbound](#)) which InterSystems has implemented using the [PEX](#) framework. Alternatively, use the JMS Messaging API.

To enable an InterSystems production to receive JMS messages, add a new business service, specifying the **service class** of this business service as `EnsLib.JMS.Service`. This business service ignores any response.

To enable an InterSystems production to send JMS messages, add a new business operation, specifying the **operation class** of this business operation as `EnsLib.JMS.Operation`. This business operation returns an instance of `EnsLib.JMS.Response` the business host that sent the JMS message to the business operation.

Once you have added these business hosts to the production, configure the following settings on the **Settings** tab:

- **JMSCredentials**—The credential defined for the username and password of the JMS server. See [Defining Credentials](#).
- **JavaGatewayHost** and **JavaGatewayPort**—The IP address and port of the InterSystems external server that your production is using to enable JMS support. An external server is also known as a Java Gateway. If you added the `EnsLib.JavaGateway.Service` business host to the production, use the IP address and port under its Basic Settings.
- **JMS Server**—URL of the JMS server.
- **JMSFactory**—Name of the `QueueConnectionFactory`.
- **JMSQueue**—Name of the JMS Queue.
- **JMSClientID**—Name that appears on the JMS Server's list of active connections.

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Creating Custom JMS Services and Operations (Legacy Implementation)

Important: This page discusses a legacy implementation of JMS messaging that should not be used for new implementations. This legacy implementation may be removed in future releases. Instead, use the JMSPEX interoperability adapters ([inbound](#) and [outbound](#)) which InterSystems has implemented using the [PEX](#) framework. Alternatively, use the JMS Messaging API.

Creating custom JMS business services and business operations requires writing custom ObjectScript code and consequently takes more development resources than using the built-in JMS services and operations, but provides better performance as you can access the Java Gateway proxy object directly.

To develop a custom JMS business service:

- Implement a custom business service class using `EnsLib.JMS.InboundAdapter` as its adapter.
- Override the **OnProcessInput()** method with the following signature:

```
Method OnProcessInput(pMessage As %Net.Remote.Object, Output pOutput As %RegisteredObject) As %Status
```
- *pMessage* is a Gateway proxy object of a Java message object of class `com.intersystems.enslib.jms.Message`. Properties and methods of the Java message object can be accessed using the Gateway proxy interface. The *pMessage* object contains the message received from the JMS provider.

To develop a custom JMS business operation:

- Implement a custom business operation class using `EnsLib.JMS.OutboundAdapter` as its adapter.
- Override the **OnMessage()** method or implement a message map. See [Defining a Message Map](#) for information on message maps.
- Call `..Adapter.GetNewMessage(tMessage)` to get the message that was sent to the business operation by another host in the production.
tMessage is an instance of `%Net.Remote.Object`.
- *tMessage* is a Gateway proxy object of a Java message object of class `com.intersystems.enslib.jms.Message`. Properties and methods of the Java message object can be accessed using the Gateway proxy interface. Access *tMessage* with properties and methods that are implemented in Java class `com.intersystems.enslib.jms.Message`.
- Send the message to the JMS provider by calling `..Adapter.SendMessage(tMessage)`.

Once you have developed your custom JMS business service and JMS business operation, you add them to a production just like you would the built-in JMS business hosts.