



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

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# 1

## JMS Overview

**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 `EnsLib.JMS.Message` objects. 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`



# 2

## Configuring and Using JMS Business Services and Operations

**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.

InterSystems products can be configured to be a JMS client by adding built-in business hosts to an interoperability production.

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

To enable an InterSystems product to send JMS messages, add a new business operation to the interoperability production, defining the **operation class** of this business operation as `EnsLib.JMS.Operation`. This business operation returns a `EnsLib.JMS.Response` object back to 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. For more information about creating a credential for the JMS username and password, 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.





# 3

## Creating Custom JMS Services and Operations Using the Adapter

**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 `BusinessService` 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 `BusinessOperation` class using `EnsLib.JMS.OutboundAdapter` as its adapter.
- Override the `OnMessage()` method or implement a message map. See [Defining a Message Map](#) in *Developing Productions* 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* has the class `%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.