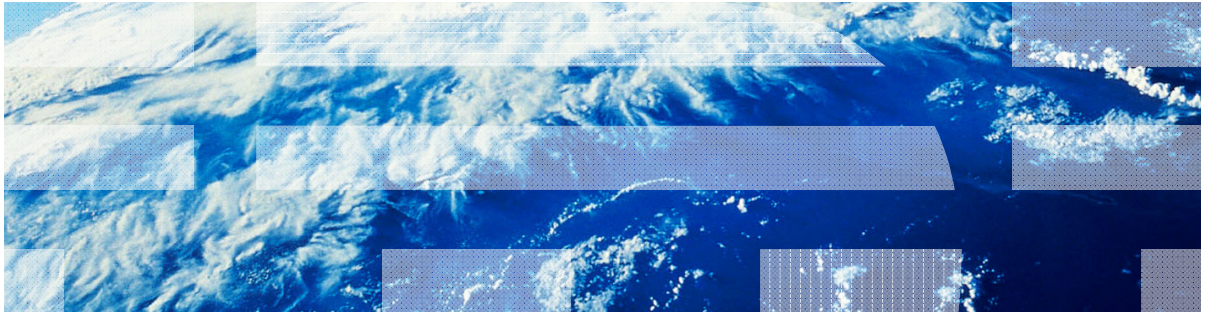


# ***IBM Worklight V5.0.5 Getting Started***

## **Module 5.6 – Creating JMS adapters**



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# Agenda

- What is it?
- Creating an adapter
- Adapter methods

## ***What is it?***

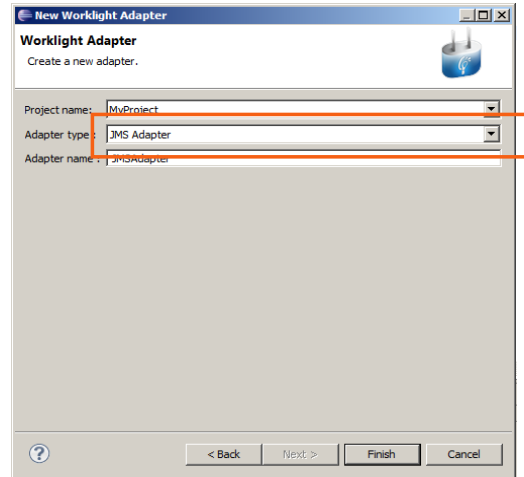
- Java™ Message Service (JMS) is the standard messaging Java API
- With JMS, you can read and write messages from any messaging provider that supports the API
- With the JMS adapter, you can read and write messages to any messaging provider that supports JMS

# Agenda

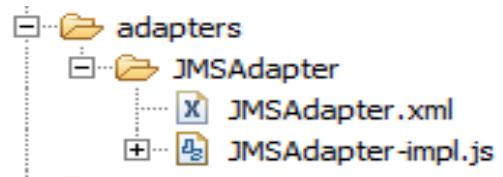
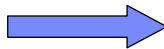
- What is it?
- Creating an adapter
- Adapter methods

## Creating a Worklight JMS adapter

- Within the Worklight® Studio, right-click the Worklight project and add a Worklight JMS adapter.

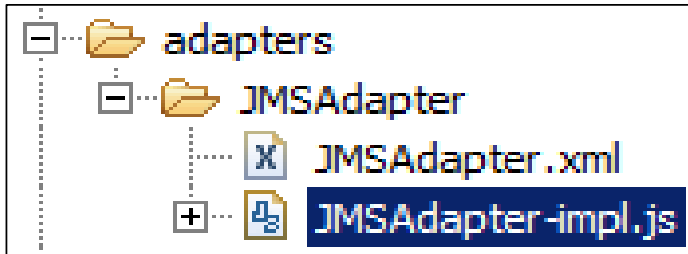


- A standard adapter structure is created.



## *JS File: Procedures Implementation*

- Procedures are implemented in the adapter JavaScript file.



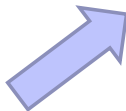
## JS File: Procedures implementation

- Procedure names in the JavaScript file must be the same as in the XML file.
- DESTINATION is the target for messages that are produced by the client and the source for messages that are used by the client.

```
<connectivity>
  <connectionPolicy xsi:type="jms:JMSConnection
    <jmsConnection
      connectionFactory="java:comp/env/
      user="myusername"
      password="mypassword"
    />
  </connectionPolicy>
  <loadConstraints maxConcurrentConnectionsPerN
</connectivity>

<procedure name="writeMessage"/>
<procedure name="readMessage"/>
```

XML file



```
function writeMessage(message) {
  return WL.Server.writeJMSMessage
  (
    {
      destination: DESTINATION,
      message:{
        body: message,
        properties:{MY_USER_PROPERTY:123456}
      }
    }
  );
}
```

JavaScript file



## ***XML File: Connection properties***

- Connection properties are configured in the adapter XML file.



## XML File: Connection properties

- Naming Connection (only necessary if you are using an external JNDI repository)
  - url: the url of JNDI repository
  - initialContextFactory: the classname for factory used for JNDI property configuration
  - user, password: the credentials as set up by the JNDI administrator

```

<?xml version="1.0" encoding="UTF-8"?>
<wl:adapter name="JMS_Adapter"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:wl="http://www.worklight.com/integration"
  xmlns:jms="http://www.worklight.com/integration/jms">

  <displayName>JMS_Adapter</displayName>
  <description>JMS_Adapter</description>
  <connectivity>
    <connectionPolicy xsi:type="jms:JMSConnectionPolicyType">
      <namingConnection url="tcp://localhost:61616"
        initialContextFactory="org.apache.activemq.jndi.ActiveMQInitialContextFactory"
        user="admin"
        password="admin"/>
      <jmsConnection
        connectionFactory="ConnectionFactory"
        user="admin"
        password="admin"/>
    </connectionPolicy>
    <loadConstraints maxConcurrentConnectionsPerNode="10"/>
  </connectivity>

  <procedure name="writeMessage"/>
  <procedure name="readMessage"/>
  <procedure name="readAllMessages"/>
</wl:adapter>

```

# XML File: Connection properties

- JMS Connection

- connectionFactory: the classname for JMS Connection Factory that contains JMS configuration properties
- user, password: the credentials as set up by JNDI administrator

```
<?xml version="1.0" encoding="UTF-8"?>
<wl:adapter name="JMS_Adapter"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:wl="http://www.worklight.com/integration"
  xmlns:jms="http://www.worklight.com/integration/jms">

  <displayName>JMS_Adapter</displayName>
  <description>JMS_Adapter</description>
  <connectivity>
    <connectionPolicy xsi:type="jms:JMSConnectionPolicyType">
      <namingConnection url="tcp://localhost:61616"
        initialContextFactory="org.apache.activemq.jndi.ActiveMQInitialContextFactory"
        user="admin"
        password="admin"/>

        <jmsConnection
          connectionFactory="ConnectionFactory"
          user="admin"
          password="admin"/>

    </connectionPolicy>
    <loadConstraints maxConcurrentConnectionsPerNode="10"/>
  </connectivity>

  <procedure name="writeMessage"/>
  <procedure name="readMessage"/>
  <procedure name="readAllMessages"/>
</wl:adapter>
```

# Agenda

- What is it?
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## ***Adapter methods***

- There are four JMS adapter methods:
  - readSingleJMSMessage
  - readAllJMSMessages
  - writeJMSMessage
  - requestReplyJMSMessage

## Adapter methods

- The readSingleJMSMessage method:
  - gets the next message from the destination
  - waits for timeout in milliseconds
  - optional: a JMS message selector

```
var result = WL.Server.readSingleJMSMessage({
    destination: "jms/MyQ",
    timeout: 60,
    filter: "NewsType = 'Opinion' OR NewsType = 'Sports'"
});
```

- Returns a JMS message
  - body
  - all available properties
    - JMS\*
    - JMS\_provider\_\*
    - user-specific

```
{
  "isSuccessful": true,
  "message": {
    "body": "Hello World",
    "properties": {
      "JMSCorrelationID": null,
      "JMSDeliveryMode": 2,
      "JMSDestination": "queue://worklightQueue",
      "JMSExpiration": 0,
      "JMSMessageID": "ID:dhcp-9-41-62-243-50565-1350319511250-1:2:1:1:1",
      "JMSPriority": 4,
      "JMSRedelivered": false,
      "JMSReplyTo": null,
      "JMSTimestamp": 1350319533527,
      "JMSType": null,
      "MY_USER_PROPERTY": 123456
    }
  }
}
```

## Adapter methods

- The readAllJMSMessages method:
  - accepts the same parameters as the readSingleJMSMessage method
  
- Returns a list of JMS messages in the same format as the readSingleJMSMessage method
  - The result is contained in a “messages” object

```
"isSuccessful": true,
"messages": {
  {
    "body": "Hello World",
    "properties": {
      "JMSCorrelationID": null,
      "JMSDeliveryMode": 2,
      "JMSDestination": "queue:\\\\.worklightQueue",
      "JMSExpiration": 0,
      "JMSMessageID": "ID:dhcp-9-41-62-243-50565-1350319511250-1:4:1:1:1",
      "JMSPriority": 4,
      "JMSRedelivered": false,
      "JMSReplyTo": null,
      "JMSTimestamp": 1350319659819,
      "JMSType": null,
      "MY_USER_PROPERTY": 123456
    }
  }
},
```





## ***Adapter methods***

- The requestReplyJMSMessage method:
  - accepts the same parameters as the writeJMSMessage method
  - writes a JMSText message to the destination
  - waits for a response on a dynamic destination
  - is designed for services that use the replyTo destination from the originating message
  
- Returns a JMS message in the same format as the readSingleJMSMessage method.

## ***Check yourself questions***

- JMS adapters can be used to:
  - Read a single message from a queue
  - Read all messages from a queue
  - Write a message to a queue
  - All of the above
- JMS adapters can send and receive messages from:
  - Any messaging provider that supports the JMS API
  - Only Websphere MQ
  - Only Apache Active MQ
  - Only OpenJMS
- The purpose of the requestReplyJMSMessage method is:
  - To instruct the message broker where to send a message
  - To request messages that were queued while the client was offline
  - To write a message to a queue and wait for a response all in one invocation
  - To reply to a message sent from the broker

## Check yourself questions

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