Running the ‘standalone JMS client’ example

This example will demonstrate HornetQ failover as it should occur.

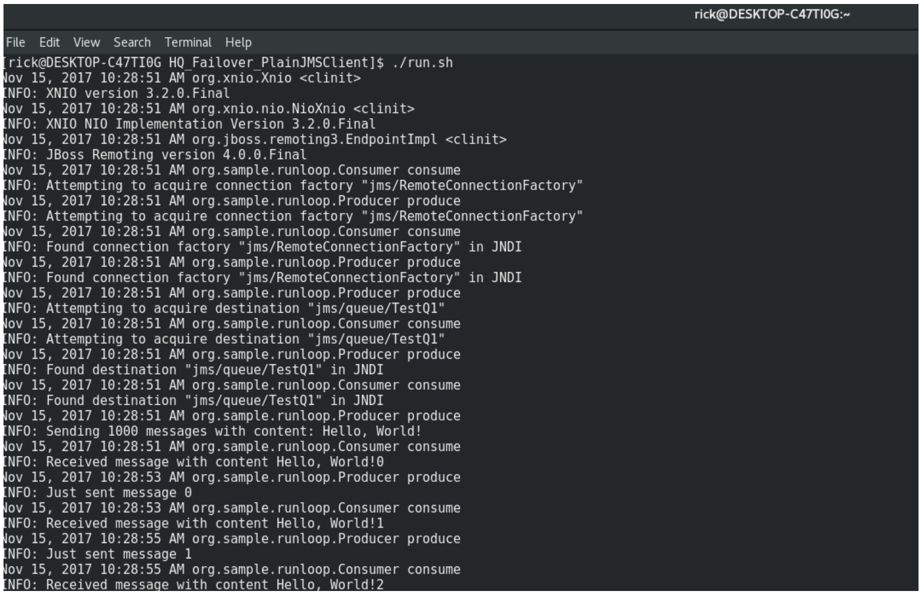
Before starting, be sure to use a configuration file similar to the included ‘domain.xml’ for your Jboss EAP server domain. Note that it includes a few queue definitions and some security allowances for a group called ‘guest’.

You will need to add a user to the ‘guest’ group. In this example, we have used the add-user script in the Jboss/bin directory to add a user called ‘guestuser’ with password ‘Password1!’. Note that these credentials are used in the source code for the examples. (So if you choose different credentials, you will need to change the source code.)

The example requires several external .jar files that must be downloaded from the Red Hat maven repository. Please place these files in a convenient location and update the ‘run.sh’ script to suit your environment.

Start the jboss servers.   (In this example, it is done with a Jboss domain that includes 2 embedded servers. The same experiment will work with different JMS topologies, but adjustments would need to be made to the host/port values configured in the client code.) Be sure you have added a user to the ‘guest’ group.

Start the run script. We should see messages produced and consumed.



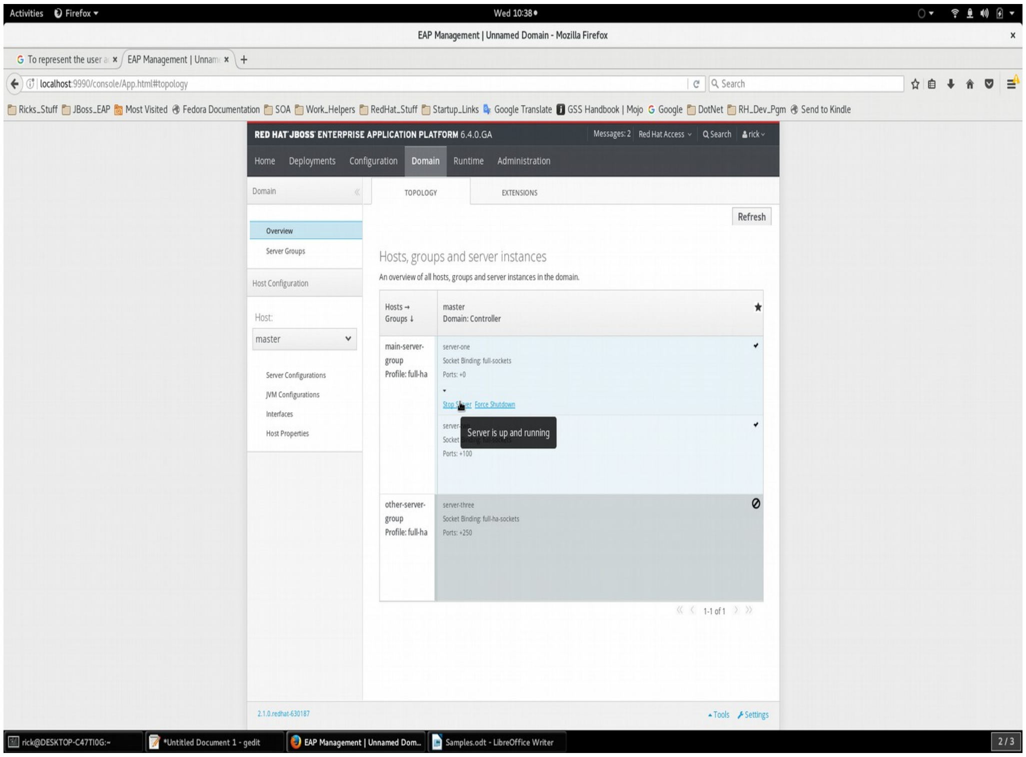
```
[rick@DESKTOP-C47TI0G HQ_Failover_PlainJMSClient]$ ./run.sh
Nov 15, 2017 10:28:51 AM org.xnio.Xnio <clinit>
INFO: XNIO version 3.2.0.Final
Nov 15, 2017 10:28:51 AM org.xnio.nio.NioXnio <clinit>
INFO: XNIO NIO Implementation Version 3.2.0.Final
Nov 15, 2017 10:28:51 AM org.jboss.remoting3.EndpointImpl <clinit>
INFO: JBoss Remoting version 4.0.0.Final
Nov 15, 2017 10:28:51 AM org.sample.runloop.Consumer consume
INFO: Attempting to acquire connection factory "jms/RemoteConnectionFactory"
Nov 15, 2017 10:28:51 AM org.sample.runloop.Producer produce
INFO: Attempting to acquire connection factory "jms/RemoteConnectionFactory"
Nov 15, 2017 10:28:51 AM org.sample.runloop.Consumer consume
INFO: Found connection factory "jms/RemoteConnectionFactory" in JNDI
Nov 15, 2017 10:28:51 AM org.sample.runloop.Producer produce
INFO: Found connection factory "jms/RemoteConnectionFactory" in JNDI
Nov 15, 2017 10:28:51 AM org.sample.runloop.Producer produce
INFO: Attempting to acquire destination "jms/queue/TestQ1"
Nov 15, 2017 10:28:51 AM org.sample.runloop.Consumer consume
INFO: Attempting to acquire destination "jms/queue/TestQ1"
Nov 15, 2017 10:28:51 AM org.sample.runloop.Producer produce
INFO: Found destination "jms/queue/TestQ1" in JNDI
Nov 15, 2017 10:28:51 AM org.sample.runloop.Consumer consume
INFO: Found destination "jms/queue/TestQ1" in JNDI
Nov 15, 2017 10:28:51 AM org.sample.runloop.Producer produce
INFO: Sending 1000 messages with content: Hello, World!
Nov 15, 2017 10:28:51 AM org.sample.runloop.Consumer consume
INFO: Received message with content Hello, World!0
Nov 15, 2017 10:28:53 AM org.sample.runloop.Producer produce
INFO: Just sent message 0
Nov 15, 2017 10:28:53 AM org.sample.runloop.Consumer consume
INFO: Received message with content Hello, World!1
Nov 15, 2017 10:28:55 AM org.sample.runloop.Producer produce
INFO: Just sent message 1
Nov 15, 2017 10:28:55 AM org.sample.runloop.Consumer consume
INFO: Received message with content Hello, World!2
```

If you want to monitor message counts, these can be obtained from the CLI:

/host=master/server=server-one/subsystem=messaging/hornetq-server=default/jms-queue=TestQ1/:read-resource(recursive=false,proxies=false,include-runtime=true,include-defaults=true)

/host=master/server=server-two/subsystem=messaging/hornetq-server=default/jms-queue=TestQ1/:read-resource(recursive=false,proxies=false,include-runtime=true,include-defaults=true)

Stop the primary HornetQ server. (In this case, done with the Jboss console.)



Hosts, groups and server instances

An overview of all hosts, groups and server instances in the domain.

Hosts → Groups ↓	master Domain: Controller
main-server-group Profile: full-ha	server-one Socket Binding: full-sockets Ports: +0
	server- Socket Ports: +100
other-server-group Profile: full-ha	server-three Socket Binding: full-ha-sockets Ports: +250

We should see a slight pause, then continued message production/consumption as the secondary server comes into use.
If we later re-start the server, it will again seamlessly fail over.

```
Nov 15, 2017 10:43:28 AM org.sample.runloop.Producer produce
INFO: Just sent message 1
Nov 15, 2017 10:43:30 AM org.sample.runloop.Producer produce
INFO: Just sent message 2
Nov 15, 2017 10:43:30 AM org.sample.runloop.Consumer consume
INFO: Received message with content Hello, World!3
Nov 15, 2017 10:43:32 AM org.sample.runloop.Producer produce
INFO: Just sent message 3
Nov 15, 2017 10:43:32 AM org.hornetq.core.protocol.core.impl.RemotingConnectionImpl fail
WARN: HQ212037: Connection failure has been detected: HQ119015: The connection was disconnected because of server shutdown [code=DISCONNECTED]
Nov 15, 2017 10:43:32 AM org.hornetq.core.protocol.core.impl.RemotingConnectionImpl fail
WARN: HQ212037: Connection failure has been detected: HQ119015: The connection was disconnected because of server shutdown [code=DISCONNECTED]
Nov 15, 2017 10:43:33 AM org.hornetq.core.client.impl.ClientSessionImpl handleFailover
ERROR: HQ214003: Failed to handle failover
HornetQException[errorType=UNBLOCKED message=HQ119016: Connection failure detected. Unblocking a blocking call that will never get a response]
        at org.hornetq.core.protocol.core.impl.ChannelImpl.sendBlocking(ChannelImpl.java:399)
        at org.hornetq.core.client.impl.ClientSessionImpl.handleFailover(ClientSessionImpl.java:1030)
        at org.hornetq.core.client.impl.ClientSessionFactoryImpl.reconnectSessions(ClientSessionFactoryImpl.java:1075)
        at org.hornetq.core.client.impl.ClientSessionFactoryImpl.failoverOrReconnect(ClientSessionFactoryImpl.java:717)
        at org.hornetq.core.client.impl.ClientSessionFactoryImpl.handleConnectionFailure(ClientSessionFactoryImpl.java:587)
        at org.hornetq.core.client.impl.ClientSessionFactoryImpl.access$100(ClientSessionFactoryImpl.java:84)
        at org.hornetq.core.client.impl.ClientSessionFactoryImpl$DelegatingFailureListener.connectionFailed(ClientSessionFactoryImpl.java:1709)
        at org.hornetq.core.protocol.core.impl.RemotingConnectionImpl.callFailureListeners(RemotingConnectionImpl.java:580)
        at org.hornetq.core.protocol.core.impl.RemotingConnectionImpl.fail(RemotingConnectionImpl.java:351)
        at org.hornetq.core.client.impl.ClientSessionFactoryImpl$CloseRunnable.run(ClientSessionFactoryImpl.java:1667)
        at org.hornetq.utils.OrderedExecutorFactory$OrderedExecutor$1.run(OrderedExecutorFactory.java:105)
        at java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1142)
        at java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:617)
        at java.lang.Thread.run(Thread.java:745)

Nov 15, 2017 10:43:34 AM org.sample.runloop.Producer produce
INFO: Just sent message 4
Nov 15, 2017 10:43:36 AM org.sample.runloop.Producer produce
INFO: Just sent message 5
Nov 15, 2017 10:43:38 AM org.sample.runloop.Producer produce
INFO: Just sent message 6
Nov 15, 2017 10:43:40 AM org.sample.runloop.Producer produce
INFO: Just sent message 7
Nov 15, 2017 10:43:42 AM org.sample.runloop.Producer produce
```

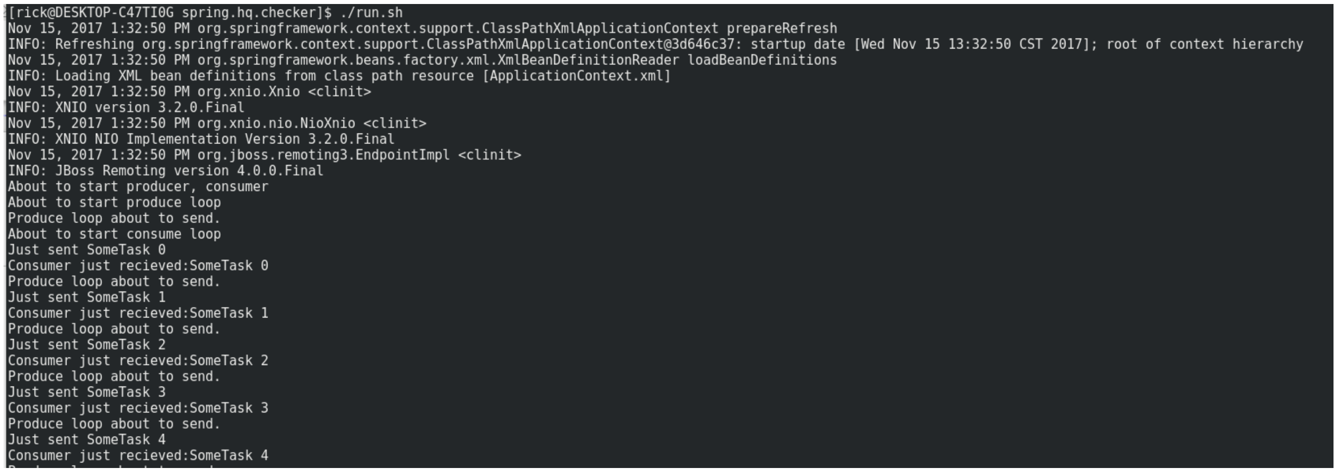
Please note the client-side code does not contain anything special, this behavior is part of the supplied HornetQ client components.

This is the desired behavior. When a primary HornetQ server fails, the backup seamlessly takes it’s place.

Spring Templates example

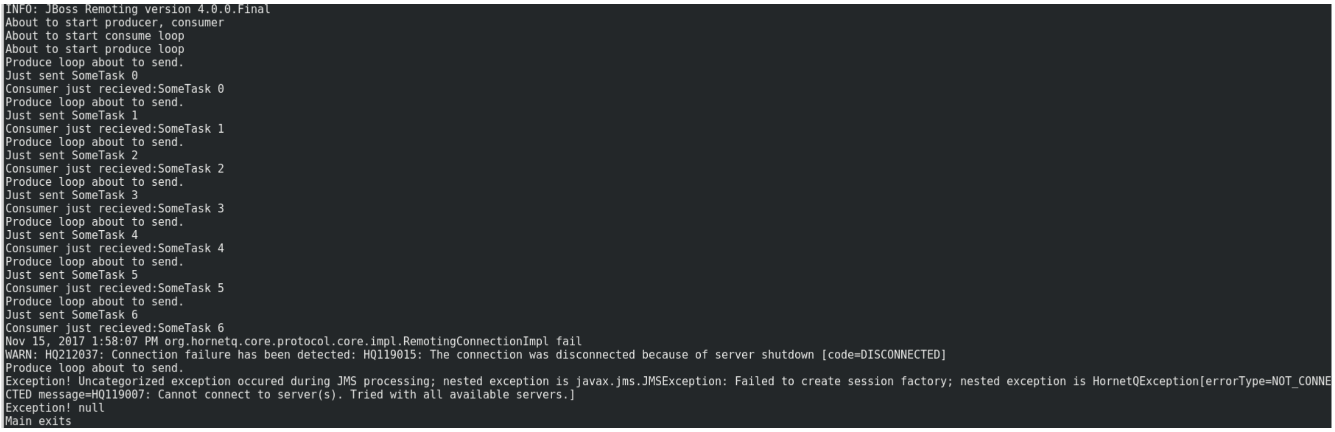
Start the jboss servers.

Start the Spring application.



```
[rick@DESKTOP-C47TI0G spring.hq.checker]$ ./run.sh
Nov 15, 2017 1:32:50 PM org.springframework.context.support.ClassPathXmlApplicationContext prepareRefresh
INFO: Refreshing org.springframework.context.support.ClassPathXmlApplicationContext@3d646c37: startup date [Wed Nov 15 13:32:50 CST 2017]; root of context hierarchy
Nov 15, 2017 1:32:50 PM org.springframework.beans.factory.xml.XmlBeanDefinitionReader loadBeanDefinitions
INFO: Loading XML bean definitions from class path resource [ApplicationContext.xml]
Nov 15, 2017 1:32:50 PM org.xnio.Xnio <clinit>
INFO: XNIO version 3.2.0.Final
Nov 15, 2017 1:32:50 PM org.xnio.nio.NioXnio <clinit>
INFO: XNIO NIO Implementation Version 3.2.0.Final
Nov 15, 2017 1:32:50 PM org.jboss.remoting3.EndpointImpl <clinit>
INFO: JBoss Remoting version 4.0.0.Final
About to start producer, consumer
About to start produce loop
Produce loop about to send.
About to start consume loop
Just sent SomeTask 0
Consumer just recieved:SomeTask 0
Produce loop about to send.
Just sent SomeTask 1
Consumer just recieved:SomeTask 1
Produce loop about to send.
Just sent SomeTask 2
Consumer just recieved:SomeTask 2
Produce loop about to send.
Just sent SomeTask 3
Consumer just recieved:SomeTask 3
Produce loop about to send.
Just sent SomeTask 4
Consumer just recieved:SomeTask 4
Produce loop about to send.
```

Now kill a server, as previously done with the plain Java example. We get a different result:



```
INFO: JBoss Remoting version 4.0.0.Final
About to start producer, consumer
About to start consume loop
About to start produce loop
Produce loop about to send.
Just sent SomeTask 0
Consumer just recieved:SomeTask 0
Produce loop about to send.
Just sent SomeTask 1
Consumer just recieved:SomeTask 1
Produce loop about to send.
Just sent SomeTask 2
Consumer just recieved:SomeTask 2
Produce loop about to send.
Just sent SomeTask 3
Consumer just recieved:SomeTask 3
Produce loop about to send.
Just sent SomeTask 4
Consumer just recieved:SomeTask 4
Produce loop about to send.
Just sent SomeTask 5
Consumer just recieved:SomeTask 5
Produce loop about to send.
Just sent SomeTask 6
Consumer just recieved:SomeTask 6
Nov 15, 2017 1:58:07 PM org.hornetq.core.protocol.core.impl.RemotingConnectionImpl fail
WARN: HQ212037: Connection failure has been detected: HQ119015: The connection was disconnected because of server shutdown [code=DISCONNECTED]
Produce loop about to send.
Exception! Uncategorized exception occured during JMS processing; nested exception is javax.jms.JMSException: Failed to create session factory; nested exception is HornetQException[errorType=NOT_CONNE
CTED message=HQ119007: Cannot connect to server(s). Tried with all available servers.]
Exception! null
Main exits
```

The client does not connect to the backup server, it fails.