

FioranoMQ® 9

CJNI-Based Runtime Examples

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JNI-Based C Runtime Examples

Sample programs illustrating the use of CTRL for PubSub and PTP, and XA operations.

PTP

- RequestReply
- SendReceive
- HTTP

PubSub

- RequestReply
- DurableSubscriber
- HTTP

UnifiedDomain

- CreateCF
- Rollback
- SendReceive
- Transacted

XA

- Admin
- XASamples

These samples are available in %FMQ_DIR%\c\jni\samples directory.

PTP Samples

reqrep

This directory contains two sample programs which illustrate the request/reply abstraction supplied by the JMS API using a C requestor application and replying application

- **Requestor.c** Reads strings from standard input and use it to send a request message on the queue "primaryqueue".
- **Replier.c** Implements an asynchronous listener, which listens on the queue "primaryqueue", and replies to each request

To run these samples using FioranoMQ, do the following:

1. Compile each of the source files. For convenience, compiled version of the sources are included in this directory. The %FMQ_DIR%\c\scripts directory contains a script called cclientbuild.bat which compiles the C program.
2. Run the Replier by executing the Replier.exe executable file.
3. Run the requestor by executing the Requestor.exe file.

Note: To run any of the C samples, please ensure environment variable FMQ_DIR points to Fiorano's installation directory. This defaults to \progra~1\Fiorano\FioranoMQ9.

basic

This directory contains two sample programs which illustrate basic JMS Send/Re-ceive functionality using the FioranoMQ C Runtime Library.

- **Sender.c** Reads strings from standard input and sends them on the queue "primaryqueue".
- **Receiver.c** Implements an asynchronous listener, which listens on the queue "primaryqueue", and prints out the received messages.

To run these samples using FioranoMQ, do the following:

1. Compile each of the source files. For convenience, compiled version of the sources are included in this directory. The %FMQ_DIR%\c\scripts directory contains a script called cclientbuild.bat which compiles the C program.
2. Run the Sender by executing the Sender.exe executable file.
3. Run the asynchronous receiver by executing the Receiver.exe file.

Note: To run any of the C samples, please ensure that the environment variable FMQ_DIR points to Fiorano's installation directory. This defaults to \progra~1\Fiorano\FioranoMQ9.

HTTP

This directory contains four sample programs which illustrate the use of HTTP protocol for basic JMS ptp functionality using the FioranoMQ C Runtime Library.

- **HttpQReceiver.c** Receives messages asynchronously on primaryQueue. This program implements an asynchronous listener to listen for messages published on the queue primaryQueue.
- **HttpQSender.c** Implements a client application publishing user specified data on primaryQueue. This program reads strings from standard input and publishes them on the Queue primaryQueue.

To run this sample using FioranoMQ, do the following:

1. Compile the source file. For convenience, compiled version of the sources are included in this directory. The %FMQ_DIR%\c\scripts directory contains a script called cclientbuild.bat which compiles the C program.
2. Run the HttpQReceiver by executing the HttpQReceiver.exe executable file.
3. Run the HttpSender by executing the HttpQSender.exe executable file.

To run any of the C samples, please ensure that environment variable FMQ_DIR points to Fiorano installation directory. This defaults to c:\progra~1\Fiorano\FioranoMQ9.

PubSub Samples

Basic

This directory contains three programs: Publisher.c, which implements a client application publishing user specified data on "primaryTopic", Subscriber.c, which receives messages asynchronously on "primaryTopic", SubscriberS.c which receives messages synchronously on "primarytopic".

- **Publisher.c** Reads strings from standard input and publishes them on the Topic - "primaryTopic".
- **Subscriber.c** Implements an asynchronous listener to listen for messages published on the Topic - "primaryTopic".
- **SubscriberS.c** Receives messages synchronously from "primaryTopic". These programs illustrate the basic Topic Pubsub operations.

To run these samples using FioranoMQ, do the following:

1. Compile each of the source files. For convenience, compiled version of the sources are included in this directory. The %FMQ_DIR%\c\scripts directory contains a script called cclientbuild.bat which compiles the C program. (b) Run the Publisher by executing the Publisher.exe executable file.
2. Run the asynchronous/synchronous subscriber by executing the Subscriber.exe/SubscriberS.exe file.

Note: To run any of the C samples, please ensure environment variable FMQ_DIR points to Fiorano's installation directory. This defaults to c:\progra~1\Fiorano\FioranoMQ9.

DurableSubscriber

This directory contains two sample programs which illustrate basic JMS Durable-Subscriber functionality using the FioranoMQ C Runtime Library.

- **Publisher_d.c** Reads strings from standard input and publishes PERSISTENT messages on the topic "primarytopic".
- **DurableSubscriber.c** Implements a durable subscriber using the client ID "DS_Client_1", and durable subscriber name "Sample_Durable_Subscriber", listening on the topic "primarytopic".

To run these samples using FioranoMQ, do the following:

1. Compile each of the source files. For convenience, compiled version of the sources are included in this directory. The %FMQ_DIR%\c\scripts directory contains a script called cclientbuild.bat which compiles the C program.
2. Start the DurableSubscriber program first, so that the subscriber can register with the FioranoMQ Server.
3. Next, start the Publisher_d program. When the program comes up, type in a few strings, pressing the Enter key after each string. The string is published and is received by the Durable Subscriber started in step (a) above.
4. Now, shut down the Durable Subscriber, but keep typing in messages into the Publisher program. These messages are automatically stored by the FioranoMQ Server, since a Durable Subscriber was previously registered on the topic to which the messages are being published.
5. After a while, restart the DurableSubscriber program. On restart, you will find that all messages that were published during the time that the durable subscriber was down are now made available to the subscriber.
6. Repeat steps (c) and (d) over. Each time, you will find that all messages published during the time that the Subscriber is down are immediately made available to the Subscriber when it restarts.

Note: To run any of the C samples, please ensure environment variable FMQ_DIR points to Fiorano's installation directory. This defaults to \progra~1\Fiorano\FioranoMQ9.

HTTP

This directory contains four sample programs which illustrate the use of HTTP protocol for basic JMS pubsub functionality using the FioranoMQ C Runtime Library.

- **HttpTopicSubscriber.c** Receives messages asynchronously published on "primaryTopic". This program implements an asynchronous listener to listen for messages published on "primaryTopic".
- **HttpTopicPublisher.c** Implements a client application publishing user specified data on "primaryTopic". This program reads strings from standard input and publishes them on "primaryTopic".

To run this sample using FioranoMQ, do the following:

1. Compile the source file. For convenience, compiled version of the sources are included in this directory. The %FMQ_DIR%\c\scripts directory contains a script called cclientbuild.bat which compiles the C program.
2. Run the HttpTopicSubscriber by executing the HttpTopicSubscriber.exe executable file.
3. Run the HttpTopicPublisher by executing the HttpTopicPublisher.exe executable file.
4. To run any of the C samples, please ensure that environment variable FMQ_DIR points to Fiorano installation directory this defaults to \progra~1\Fiorano\FioranoMQ9).

UnifiedDomain

CreateCF

The examples in this directory illustrate the use of the FioranoMQ Administration APIs for creation of UnifiedConnectionFactories.

The program "CreateConnectionFactories" uses Administrator APIs to log in as administrator with a password, create and lookup ConnectionFactories using the appropriate APIs

The administrator uses the password "passwd" to login as the administrator. If you have previously set the administrator password to something other than "passwd", then the test case will have to be modified accordingly.

To run these samples using FioranoMQ, do the following:

1. Compile the source file. For convenience, compiled version of the sources are included in this directory. The %FMQ_DIR%\c\scripts directory contains a script called cclientbuild.bat which compiles the C program.
2. Run the CreateConnectionFactories by executing the CreateConnectionFactories.exe executable file.

Note: To run any of the C samples, please ensure environment variable FMQ_DIR points to Fiorano's installation directory. This defaults to \progra~1\Fiorano\FioranoMQ9.

Rollback

This directory contains two programs: **ProducerTrans.c**, which implements a client application producing user specified data on both Queue destination and Topic destination; **ConsumerTrans.c**, which receives messages synchronously on Queue and Topic destination. By default, destinations are "primaryQueue" and "primaryTopic".

- **ProducerTrans.c** Reads strings from standard input and sends them on the specified queue and topic destinations.

- **ConsumerTrans.c** Implements an synchronous listener to listen for messages published on the specified Queue and Topic destinations.

These programs illustrate the basic rollback operations in consumer side. To run these samples using FioranoMQ, do the following:

1. Compile each of the source files. For convenience, compiled version of the sources are included in this directory. The %FMQ_DIR%\c\scripts directory contains a script called cclientbuild.bat which compiles the C program.
2. Run the ProducerTrans by executing the ProducerTrans .exe executable file.
3. Run the asynchronous ConsumerTrans by executing the ConsumerTrans.exe file.

Note: To run any of the C samples, please ensure environment variable FMQ_DIR points to Fiorano's installation directory. This defaults to \progra~1\Fiorano\FioranoMQ9.

SendReceive

This directory contains two programs: **UnifiedProducer.c**, which implements a client application producing user specified data on Queue and Topic destination (by default, destinations are "primaryQueue" and "primaryTopic"); **UnifiedConsumer.c**, which receives messages asynchronously on Queue and Topic destinations (by default destinations are "primaryQueue" and "primaryTopic"),

- **UnifiedProducer.c** Reads strings from standard input and sends them on the specified destinations.
- **UnifiedConsumer.c** Implements asynchronous Topic and Queue listeners to listen for messages published on the specified destinations.

These programs illustrate the basic Producer-Consumer operations. To run these samples using FioranoMQ, do the following:

1. Compile each of the source files. For convenience, compiled version of the sources are included in this directory. The %FMQ_DIR%\c\scripts directory contains a script called cclientbuild.bat which compiles the C program.
2. Run the UnfiiedProducer by executing the UnfiiedProducer.exe executable file.
3. Run the asynchronous UnifiedConsumer by executing the UnifiedCon-sumer.exe file.

Note: To run any of the C samples, please ensure environment variable FMQ_DIR points to Fiorano's installation directory. This defaults to \progra~1\Fiorano\FioranoMQ9.

Transacted

This directory contains two programs: ProducerTrans.c, which implement a client application producing user specified data on both Queue destination and Topic destination (by default this is "primaryQueue" and "primaryTopic"); Consumer-Trans.c, which receives messages asynchronously on Queue and topic destination.

1. ProducerTrans.c Reads strings from standard input and sends them on the specified queue and topic destinations.

2. ConsumerTrans.c Implements an asynchronous listener to listen for messages published on the specified Queue and Topic destinations.

These programs illustrate the basic Producer-Consumer operations in Transacted session.

To run these samples using FioranoMQ, do the following:

1. Compile each of the source files. For convenience, compiled version of the sources are included in this directory. The %FMQ_DIR%\c\scripts directory contains a script called cclientbuild.bat which compiles the C program.
2. Run the ProducerTrans by executing the ProducerTrans .exe executable file.
3. Run the asynchronous ConsumerTrans by executing the ConsumerTrans.exe file.

To run any of the C samples, please ensure environment variable FMQ_DIR points to Fiorano's installation directory. This defaults to \progra~1\Fiorano\FioranoMQ9.

XA

Admin

The example in this directory illustrates the use of the FioranoMQ Administration APIs for creation of JMS Administered objects such as XA-enabled-Destinations and XA-ConnectionFactories.

The program "AdmintestXA" uses Administrator APIs to log in as administrator with a password, creates the following:

XA-enabled Queues

RDBMSQueue1

RDBMSQueue2

XA-enabled Topics

RDBMSTopic1

RDBMSTopic2

XAQueueConnectionFactories

myXAQueueConnectionFactory1

myXAQueueConnectionFactory2

XATopicConnectionFactories

myXATopicConnectionFactory1

myXATopicConnectionFactory2

XAConnectionFactories (acc to JMS1.1 unified domain)

myXAUnifiedConnectionFactory1

myXAUnifiedConnectionFactory2

Then this sample looks up the XA Administered objects created using the appropriate APIs.

The administrator uses the password "passwd" to login as the administrator. If you have previously set the administrator password to something other than "passwd", then the test case will have to be modified accordingly.

To run these samples using FioranoMQ, do the following:

1. Compile each of the source files. For convenience, a compiled version of the sources are included in this directory. The %FMQ_DIR%\c\scripts directory contains a script called cclientbuild.bat which compiles the C program.
2. Run the sample by executing the AdminTestXA.exe executable file.

Note: To run any of the C samples, please ensure that environment variable FMQ_DIR points to Fiorano's installation directory. This defaults to c:\progra~1\Fiorano\FioranoMQ9

XASamples

The example in this directory illustrate the XA capabilities of FioranoMQ.

XASampleS.c In this sample, a receiver synchronously receives 10 messages from a queue and publish these messages on a topic demonstrating the XA implementation of FioranoMQ.

XASample.c In this sample, a receiver asynchronously receives 10 messages from a queue and publish these messages on a topic demonstrating the usage of 2 phase protocol of distributed transaction.

LocalTransactions.c This sample demonstrates how a JMS application switches from the local transaction context to global transaction context. In this sample, initially a sender and publisher performs the following functions.

1. Sender sends 10 messages on a queue in a local transaction.
2. Publisher published 10 messages on a topic in a local transaction.
3. Both the local transaction are committed (it can also be rolled back), so that application can switch to global transaction context.
4. Sender sends 10 messages in a global transaction.
5. Publisher publishes 10 messages in a global transaction.

The parameters for connecting to a database can be changed by modifying the file rdbms.cfg

1. To run these samples using FioranoMQ, do the following:
Compile each of the source files. For convenience, a compiled version of the sources are included in this directory.
2. The %FMQ_DIR%\c\scripts directory contains a script called cclientbuild.bat which compiles the C++ program.

3. Run XASample by executing XASample.exe.
4. Run XASampleS by executing XASampleS.exe.
5. Run LocalTransactions by executing LocalTransactions.exe.

To run any of the C samples, please ensure that environment variable FMQ_DIR points to Fiorano's installation directory. This defaults to \progra~1\Fiorano\FioranoMQ9.