

Práctica Lección 10. Protocolos de mercado QuickFix y sesiones FIX

1. Práctica 1: Introducción QuickFix

Se crea la sesión en el Acceptor:

```

package com.cenebrera.uc3.tech.lesso10.acceptor;

import org.slf4j.Logger;
import org.slf4j.LoggerFactory;
import quickfix.*;
import quickfix.field.ApplVerID;

import java.io.File;
import java.io.FileInputStream;
import java.io.FileNotFoundException;
import java.net.URISyntaxException;
import java.net.URL;

/**
 * Created by alexvarela on 19/12/16.
 */
public class AcceptorRunner
{
    /** a org.slf4j.Logger with the instance of this class given by org.slf4j.LoggerFactory */
}

```

```

InitiatorRunner [Java Application] C:\Program Files\Java\jdk1.8.0_221\bin\javaw.exe (28 dic. 2019 2:34:36)
02:34:41.950 [main] INFO quickfix.SessionSchedule - [FIX.4.4:Initiator->Acceptor] daily, 00:00:00-UTC - 00:00:00-UTC
02:34:42.000 [main] DEBUG c.c.u.t.l.i.QuickFixInitiator - On Create Session ID [FIX.4.4:Initiator->Acceptor]
02:34:42.023 [main] INFO quickfix.mina.NetworkingOptions - Socket option: SocketTcpNoDelay=true
02:34:42.024 [main] INFO quickfix.mina.NetworkingOptions - Socket option: SocketSynchronousWrites=false
02:34:42.024 [main] INFO quickfix.mina.NetworkingOptions - Socket option: SocketSynchronousWritesTimeout=30000
02:34:42.961 [main] INFO d.q.m.Initiator.IoSessionInitiator - [FIX.4.4:Initiator->Acceptor] [/127.0.0.1:10000]
02:34:42.964 [main] INFO quickfix.SocketInitiator - SessionTimer started
02:34:42.965 [main] DEBUG c.c.u.t.l.initiator.InitiatorRunner - Start initiator
02:34:42.966 [QFJ Message Processor] INFO quickfix.SocketInitiator - Started QFJ Message Processor

```

Se crea la sesión en el Initiator:

```

package com.cenebrera.uc3.tech.lesso10.initiator;

import com.cenebrera.uc3.tech.lesso10.acceptor.AcceptorRunner;
import com.cenebrera.uc3.tech.lesso10.acceptor.QuickFixAcceptor;
import org.slf4j.Logger;
import org.slf4j.LoggerFactory;
import quickfix.*;
import quickfix.field.ApplVerID;
import quickfix.fix42.MarketDataRequest;

import java.io.File;
import java.io.FileInputStream;
import java.io.FileNotFoundException;
import java.net.URISyntaxException;
import java.net.URL;

/**
 * Created by alexvarela on 19/12/16.
 */

```

```

AcceptorRunner [Java Application] C:\Program Files\Java\jdk1.8.0_221\bin\javaw.exe (28 dic. 2019 2:36:49)
02:37:14.051 [QFJ Message Processor] DEBUG c.c.u.t.l.acceptor.QuickFixAcceptor - To admin Session ID [FIX.4.4:Acceptor->Initiator], Message [8=FIX.4.409=71B35=A03=
02:37:14.086 [QFJ Message Processor] DEBUG c.c.u.t.l.acceptor.QuickFixAcceptor - On Logon Session ID [FIX.4.4:Acceptor->Initiator], Message [8=FIX.4.409=69B35=2B3
02:37:14.144 [NioProcessor-3] DEBUG o.a.m.f.codec.ProtocolCodecFilter - Processing a MESSAGE_RECEIVED for session 2
02:37:14.145 [NioProcessor-3] DEBUG q.mina.message.FIXMessageDecoder - detected header: pos=0,lim=134,rem=134,offset=0,state=1
02:37:14.145 [NioProcessor-3] DEBUG q.mina.message.FIXMessageDecoder - body length = 111: pos=0,lim=134,rem=134,offset=16,state=3
02:37:14.145 [NioProcessor-3] DEBUG q.mina.message.FIXMessageDecoder - message body found: pos=0,lim=134,rem=134,offset=127,state=4
02:37:14.145 [NioProcessor-3] DEBUG q.mina.message.FIXMessageDecoder - found checksum: pos=0,lim=134,rem=134,offset=127,state=4
02:37:14.145 [NioProcessor-3] DEBUG q.mina.message.FIXMessageDecoder - parsed message: pos=134,lim=134,rem=0,offset=134,state=4 8=FIX.4.409=111B35=5B34=15B49=Init
02:37:14.147 [QFJ Message Processor] DEBUG c.c.u.t.l.acceptor.QuickFixAcceptor - From admin Session ID [FIX.4.4:Acceptor->Initiator], Message [8=FIX.4.409=111B35=
02:37:14.150 [QFJ Message Processor] DEBUG c.c.u.t.l.acceptor.QuickFixAcceptor - To admin Session ID [FIX.4.4:Acceptor->Initiator], Message [8=FIX.4.409=60B35=5B3
02:37:14.169 [QFJ Message Processor] INFO quickfix.Session - [FIX.4.4:Acceptor->Initiator] Disconnecting: Received logout request: MsgSeqNum too low, expecting 1
02:37:14.170 [QFJ Message Processor] DEBUG c.c.u.t.l.acceptor.QuickFixAcceptor - On Logout Session ID [FIX.4.4:Acceptor->Initiator]

```

Luego se observa como los mensajes llevaban secuencia, entre el AcceptorRunner y el InitiatorRunner:

```

02:58:06.326 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - detected header: pos=0,lim=83,rem=83,offset=0,state=1
02:58:06.326 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - body length = 61: pos=0,lim=83,rem=83,offset=15,state=3
02:58:06.326 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - message body found: pos=0,lim=83,rem=83,offset=76,state=4
02:58:06.326 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - found checksum: pos=0,lim=83,rem=83,offset=76,state=4
02:58:06.326 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - parsed message: pos=83,lim=83,rem=0,offset=83,state=4 8=FIX.4.409=61B35=0B34=14B49=Initiato
02:58:06.327 [QFJ Message Processor] DEBUG c.c.u.t.l.acceptor.QuickFixAcceptor - From admin Session ID [FIX.4.4:Acceptor->Initiator], Message [8=FIX.4.409=61B35=0
02:58:12.296 [QFJ Timer] DEBUG c.c.u.t.l.acceptor.QuickFixAcceptor - To admin Session ID [FIX.4.4:Acceptor->Initiator], Message [8=FIX.4.409=61B35=0B34=15B49=Acce
02:58:12.326 [NioProcessor-2] DEBUG o.a.m.f.codec.ProtocolCodecFilter - Processing a MESSAGE_RECEIVED for session 1
02:58:12.327 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - detected header: pos=0,lim=83,rem=83,offset=0,state=1
02:58:12.327 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - body length = 61: pos=0,lim=83,rem=83,offset=15,state=3
02:58:12.327 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - message body found: pos=0,lim=83,rem=83,offset=76,state=4
02:58:12.327 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - found checksum: pos=0,lim=83,rem=83,offset=76,state=4
02:58:12.327 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - parsed message: pos=83,lim=83,rem=0,offset=83,state=4 8=FIX.4.409=61B35=0B34=15B49=Initiato
02:58:12.328 [QFJ Message Processor] DEBUG c.c.u.t.l.acceptor.QuickFixAcceptor - From admin Session ID [FIX.4.4:Acceptor->Initiator], Message [8=FIX.4.409=61B35=0

```

2. Práctica 2: Reproducir error.

En esta parte reproduciremos un error de la siguiente forma. Una vez arrancados el Acceptor y el Initiator, se para el initiator y se vuelve a lanzar:

```

03:16:11.886 [NioProcessor-4] DEBUG q.mina.message.FIXMessageDecoder - detected header: pos=0,lim=132,rem=132,offset=0,state=4
03:16:11.886 [NioProcessor-4] DEBUG q.mina.message.FIXMessageDecoder - body length = 109: pos=0,lim=132,rem=132,offset=16,state=3
03:16:11.886 [NioProcessor-4] DEBUG q.mina.message.FIXMessageDecoder - message body found: pos=0,lim=132,rem=132,offset=125,state=4
03:16:11.886 [NioProcessor-4] DEBUG q.mina.message.FIXMessageDecoder - found checksum: pos=0,lim=132,rem=132,offset=125,state=4
03:16:11.886 [NioProcessor-4] DEBUG q.mina.message.FIXMessageDecoder - parsed message: pos=132,lim=132,rem=0,offset=132,state=4 8=FIX.4.409=109B35=5B34=7B49=InitiatorB52=20191228-02
03:16:11.889 [QFJ Message Processor] DEBUG c.c.u.t.l.acceptor.QuickFixAcceptor - From admin Session ID [FIX.4.4:Acceptor->Initiator], Message [8=FIX.4.409=109B35=5B34=7B49=Initiator
03:16:11.889 [QFJ Message Processor] DEBUG c.c.u.t.l.acceptor.QuickFixAcceptor - To admin Session ID [FIX.4.4:Acceptor->Initiator], Message [8=FIX.4.409=60B35=5B34=3B49=AcceptorB52=
03:16:11.911 [QFJ Message Processor] INFO quickfix.Session - [FIX.4.4:Acceptor->Initiator] Disconnecting: Received logout request: MsgSeqNum too low, expecting 6 but received 1
03:16:11.911 [QFJ Message Processor] DEBUG c.c.u.t.l.acceptor.QuickFixAcceptor - On Logout Session ID [FIX.4.4:Acceptor->Initiator]
03:16:40.891 [NioProcessor-5] INFO q.mina.acceptor.AcceptorIOHandler - MINA session created: local=127.0.0.1:10000, class org.apache.mina.transport.socket.nio.NioSocketSession, re
03:16:41.827 [NioProcessor-5] DEBUG o.a.m.f.codec.ProtocolCodecFilter - Processing a MESSAGE_RECEIVED for session 4
03:16:41.827 [NioProcessor-5] DEBUG q.mina.message.FIXMessageDecoder - detected header: pos=0,lim=99,rem=99,offset=0,state=1
03:16:41.828 [NioProcessor-5] DEBUG q.mina.message.FIXMessageDecoder - body length = 77: pos=0,lim=99,rem=99,offset=15,state=3
03:16:41.828 [NioProcessor-5] DEBUG q.mina.message.FIXMessageDecoder - message body found: pos=0,lim=99,rem=99,offset=92,state=4
03:16:41.828 [NioProcessor-5] DEBUG q.mina.message.FIXMessageDecoder - found checksum: pos=0,lim=99,rem=99,offset=92,state=4
03:16:41.829 [NioProcessor-5] DEBUG q.mina.message.FIXMessageDecoder - parsed message: pos=99,lim=99,rem=0,offset=99,state=4 8=FIX.4.409=77B35=AB34=1B49=InitiatorB52=20191228-02:16:
03:16:41.841 [QFJ Message Processor] DEBUG c.c.u.t.l.acceptor.QuickFixAcceptor - From admin Session ID [FIX.4.4:Acceptor->Initiator], Message [8=FIX.4.409=77B35=AB34=1B49=InitiatorB
03:16:41.842 [QFJ Message Processor] DEBUG c.c.u.t.l.acceptor.QuickFixAcceptor - To admin Session ID [FIX.4.4:Acceptor->Initiator], Message [8=FIX.4.409=77B35=AB34=1B49=AcceptorB52=
03:16:41.847 [QFJ Message Processor] DEBUG c.c.u.t.l.acceptor.QuickFixAcceptor - On Logon Session ID [FIX.4.4:Acceptor->Initiator]
03:16:47.810 [NioProcessor-5] DEBUG o.a.m.f.codec.ProtocolCodecFilter - Processing a MESSAGE_RECEIVED for session 4
03:16:47.810 [NioProcessor-5] DEBUG q.mina.message.FIXMessageDecoder - detected header: pos=0,lim=82,rem=82,offset=0,state=1
03:16:47.810 [NioProcessor-5] DEBUG q.mina.message.FIXMessageDecoder - body length = 60: pos=0,lim=82,rem=82,offset=15,state=3

```

03:16:11.911 [QFJ Message Processor] INFO quickfix.Session - [FIX.4.4:Acceptor->Initiator] Disconnecting: Received logout request: MsgSeqNum too low, expecting 6 but received 1

Al volver al lanzar el initiator con el acceptor lanzado se puede observar cómo se pierde la secuencia de los mensajes, la validación se rompe y fuerza a reiniciar el número de secuencia.

3. Práctica 3: Reproducir una subscripción a datos de mercado.

Al completar los TODOS en el código otorgado se puede observar cómo se envía la petición para conectarse al mercado y este la acepta y se empieza a enviar la información.

```

package com.cenebrera.uc3.tech.lesso10.marketDataProvider;

import com.cenebrera.uc3.tech.lesso10.acceptor.AcceptorRunner;

MarketDataSubscriberRunner [Java Application] C:\Program Files\Java\jdk1.8.0_221\bin\javaw.exe (2 ene. 2020 14:40:23)
14:40:46.409 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - detected header: pos=0,lim=127,rem=127,offset=0,state=1
14:40:46.409 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - body length = 104: pos=0,lim=127,rem=127,offset=16,state=3
14:40:46.409 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - message body found: pos=0,lim=127,rem=127,offset=120,state=4
14:40:46.410 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - found checksum: pos=0,lim=127,rem=127,offset=120,state=4
14:40:46.410 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - parsed message: pos=127,lim=127,rem=0,offset=127,state=4 8=FIX.4.409=104035=X@34=5@49=Acceptor@52=20200102-13:
14:40:46.411 [QFJ Message Processor] DEBUG c.c.u.t.l.m.MarketDataSubscriber - -----New message received----- Prices [270=1.5]
14:40:48.291 [QFJ Timer] DEBUG c.c.u.t.l.m.MarketDataSubscriber - To admin Session ID [FIX.4.4:Initiator->Acceptor], Message [8=FIX.4.409=60035=0@34=3@49=Initiator@52=20200102-13:40
14:40:48.416 [NioProcessor-2] DEBUG o.a.m.f.codec.ProtocolCodecFilter - Processing a MESSAGE_RECEIVED for session 1
14:40:48.416 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - detected header: pos=0,lim=128,rem=128,offset=0,state=1
14:40:48.417 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - body length = 105: pos=0,lim=128,rem=128,offset=16,state=3
14:40:48.417 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - message body found: pos=0,lim=128,rem=128,offset=121,state=4
14:40:48.417 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - found checksum: pos=0,lim=128,rem=128,offset=121,state=4
14:40:48.417 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - parsed message: pos=128,lim=128,rem=0,offset=128,state=4 8=FIX.4.409=105035=X@34=6@49=Acceptor@52=20200102-13:
14:40:48.418 [QFJ Message Processor] DEBUG c.c.u.t.l.m.MarketDataSubscriber - -----New message received----- Prices [270=10.1]
14:40:51.408 [NioProcessor-2] DEBUG o.a.m.f.codec.ProtocolCodecFilter - Processing a MESSAGE_RECEIVED for session 1
14:40:51.409 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - detected header: pos=0,lim=128,rem=128,offset=0,state=1
14:40:51.409 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - body length = 105: pos=0,lim=128,rem=128,offset=16,state=3
14:40:51.409 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - message body found: pos=0,lim=128,rem=128,offset=121,state=4
14:40:51.409 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - found checksum: pos=0,lim=128,rem=128,offset=121,state=4
14:40:51.409 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - parsed message: pos=128,lim=128,rem=0,offset=128,state=4 8=FIX.4.409=105035=X@34=7@49=Acceptor@52=20200102-13:
14:40:51.412 [QFJ Message Processor] DEBUG c.c.u.t.l.m.MarketDataSubscriber - -----New message received----- Prices [270=10.2]
14:40:54.294 [QFJ Timer] DEBUG c.c.u.t.l.m.MarketDataSubscriber - To admin Session ID [FIX.4.4:Initiator->Acceptor], Message [8=FIX.4.409=60035=0@34=4@49=Initiator@52=20200102-13:40
14:40:56.418 [NioProcessor-2] DEBUG o.a.m.f.codec.ProtocolCodecFilter - Processing a MESSAGE_RECEIVED for session 1
14:40:56.418 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - detected header: pos=0,lim=128,rem=128,offset=0,state=1
14:40:56.418 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - body length = 105: pos=0,lim=128,rem=128,offset=16,state=3
14:40:56.418 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - message body found: pos=0,lim=128,rem=128,offset=121,state=4
14:40:56.418 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - found checksum: pos=0,lim=128,rem=128,offset=121,state=4
14:40:56.418 [NioProcessor-2] DEBUG q.mina.message.FIXMessageDecoder - parsed message: pos=128,lim=128,rem=0,offset=128,state=4 8=FIX.4.409=105035=X@34=8@49=Acceptor@52=20200102-13:
14:40:56.426 [QFJ Message Processor] DEBUG c.c.u.t.l.m.MarketDataSubscriber - -----New message received----- Prices [270=10.3]
  
```

En lo recuadros rojos se observa la recepción de precios con los mensajes la clase MarketDataSubscribe.