Learning Objectives

- This module will help you...
  - Get started with running a simple JXTA application
  - Understand the JXTA configuration process

Getting Started – Java

- System requirements
  - Java Run-Time Environment (JRE) or Software Development Kit (SDK) 1.3.1 or later
- Accessing on-line documentation
  - http://platform.jxta.org/java/api/overview-tree.html
- Downloading binaries
  - See *Downloads* link at http://www.jxta.org
  - Quickest option is to download the Project JXTA stable build

Getting Started – Java

Required Binaries

- jxta.jar
- jxtasecurity.jar
- log4j.jar
- jxtaptls.jar
- minimalBC.jar
- cryptix-asn1.jar
- cryptix32.jar

Getting Started – Java

Compiling and Running JXTA Applications

- Compiling

```
C:> javac -classpath .\lib\jxta.jar SimpleJxtaApp.java
```

- Running

```
c:> java -classpath .\lib\jxta.jar;.\lib\log4j.jar;
     .\lib\jxtasecurity.jar;
     .\lib\cryptix-asn1.jar;.\lib\cryptix32.jar;
     .\lib\jxtaptls.jar;.\lib\minimalBC.jar;.
     SimpleJxtaApp
```


Hello World – Java

```
public class SimpleJxtaApp {

    static PeerGroup netPeerGroup = null;

  public SimpleJxtaApp() {

  }

  public static void main(String args[]) {

        System.out.println("Starting JXTA ....");
        SimpleJxtaApp myapp = new SimpleJxtaApp();
        myapp.startJxta();
        System.out.println("Hello JXTA");
        System.exit(0);
    }


    private void startJxta() {
        try {
            // create and start the default JXTA NetPeerGroup
            netPeerGroup = PeerGroupFactory.newNetPeerGroup();
        }
        catch (PeerGroupException e) {
            System.out.println("fatal error : group creation failure");
            e.printStackTrace();
            System.exit(1);
        }
    }
}
```

Getting Started – C

- System requirements
  - Apache APR 2.0 runtime environment
  - Expat XML parser
  - Optional DB CM backends (BerkeleyDB, APR DB)
- Accessing on-line documentation
  - http://jxta-c.jxta.org
  - API
    - http://jxta-c.jxta.org/cdocs/html/files.html
- Downloading binaries
  - Stable and Development
    - http://download.jxta.org/stablebuilds/index.html

Getting Started – C

Compiling and Running JXTA Applications

- Compiling

```
gcc -c -I./include/jxta -I../lib/apr/include  myapp.c
```

- Running

```
LDFLAGS=-ljxta (JXTA lib)
        -ljpr (JXTA portability library layer)
        -lapr (APR)
        -laprutil (APR util)
        -lexpat (XML parser)
        -lcrypt (Crypto)
        -ldb1 -ldl (CM Database backend)
```

Hello World – C

```
int main(int argc, char **argv){

     Jxta_PG* pg;
     Jxta_status status;

#ifdef WIN32
    apr_app_initialize(&argc, &argv, NULL);
#else
    apr_initialize();
#endif

     status = jxta_PG_new_netpg(&pg);
     if (status != JXTA_SUCCESS) {
          fprintf(stderr,"jxta_PG_netpg_new failed with error: %ld\n", status);
     }
     fprintf("hello world");

     JXTA_OBJECT_CHECK_VALID (pg);

     jxta_module_stop((Jxta_module *) pg);
     JXTA_OBJECT_RELEASE(pg);

     return 0;
}
```


Configuration

JXTA Configuration Tool

- Runs automatically the first time a JXTA application is run on a system
- Used to configure:
  - Peer name
  - TCP/IP and HTTP configuration
  - Rendezvous and relay peers
  - Security information (username/password)

Configuration Process

- Two configuration files used:
  - `PlatformConfig` — contains config information
  - `reconf` — used to force a reconfiguration
- Configuration Tool creates:
  - `PlatformConfig`
  - `cm` directory — local cache
  - `pse` directory — username/password

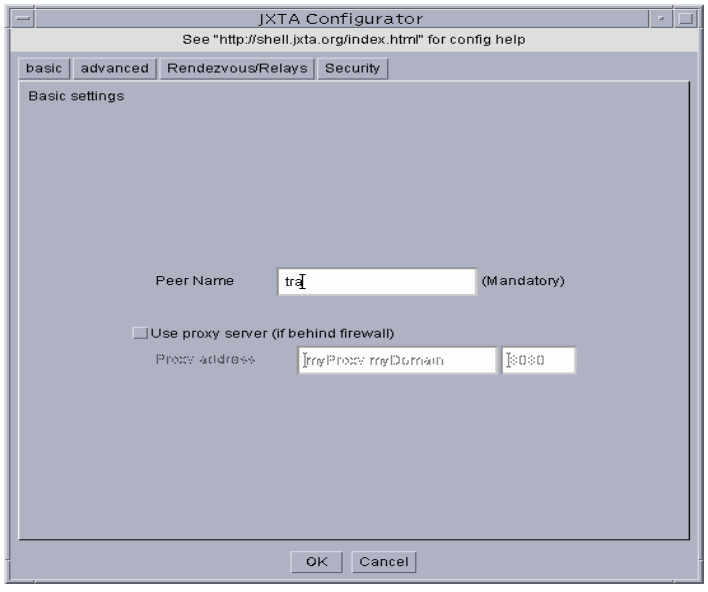
Example PlatformConfig File

```
<?xml version="1.0"?>
<!DOCTYPE jxta:PA>
<jxta:PA xmlns:jxta="http://jxta.org">
    <PID>

urn:jxta:uuid-59616261646162614A787461503250335E3B160E5E6
            541959F2892A08A4C77E003
        </PID>
    <Name>
            suzyq
    </Name>
    <Dbg>
            error
    </Dbg>
    <Desc>
    </Desc>
    <Svc>
            TCP configuration information, edited for brevity
    </Svc>
    <Svc>
            HTTP configuration information, edited for brevity
    </Svc>
</jxta:PA>
```

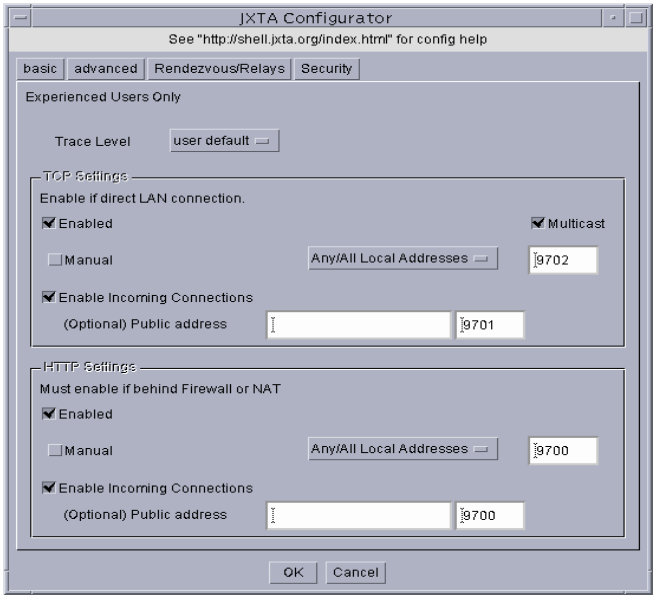

JXTA Configuration Tool

Basic Settings



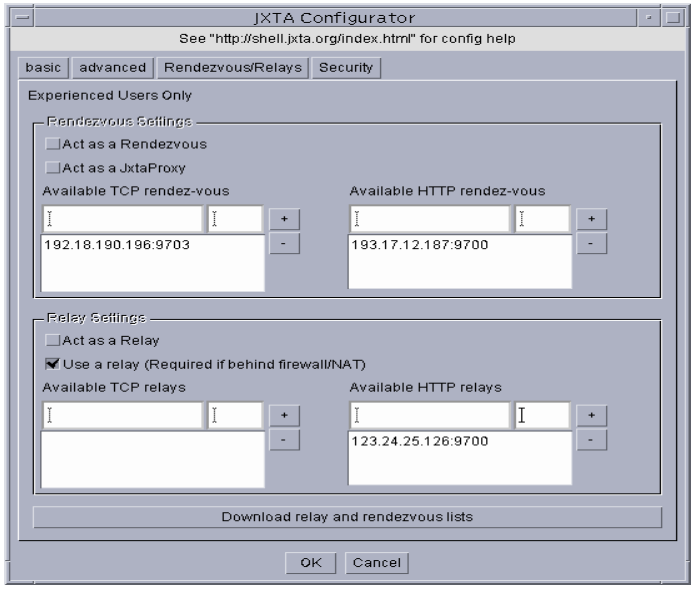
JXTA Configuration Tool

Advanced Settings



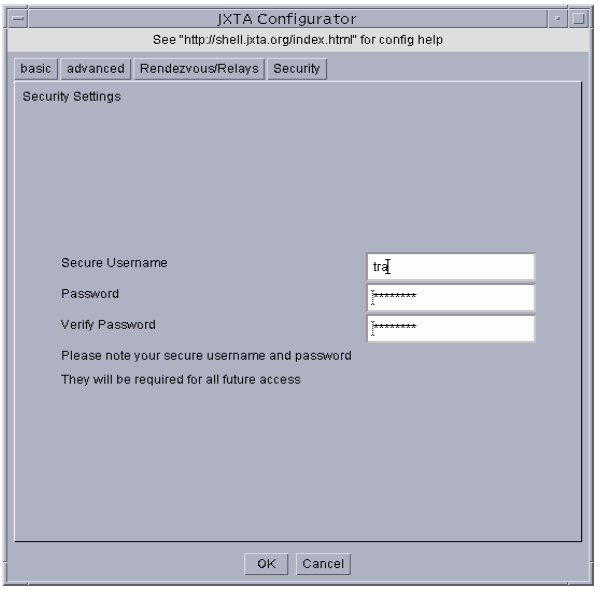
JXTA Configuration Tool

Rendezvous/Relays Settings



JXTA Configuration Tool

Security Settings



Re-Entering Configuration

- Configuration information
  - Network configuration information stored in current directory (*PlatformConfig* file)
  - Username/password stored in files in *./pse* subdirectory
- To change configuration information
  - Remove these files and restart shell
  - Create file called *reconf* in `./.jxta` directory
  - Use the JXTA shell *peerconfig* command:

```
JXTA> peerconfig
peerconfig: Please exit and restart the
jxta shell to reconfigure !!!!!
```

Command Line Configuration

- Can create/edit *PlatformConfig* file by hand before starting Shell (or application)
- Can specify username/password on the command line:

```
-Dnet.jxta.tls.password=********
-Dnet.jxta.tls.principal=myusername
```

- Can set properties in a program:

```
System.setProperty("net.jxta.tls.password",
                   "yourPassword")
System.setProperty("net.jxta.tls.principal",
                   "yourLogin");
```


Running Multiple Peers

- To start a second Shell application as a different JXTA peer:
  - Copy C:\Program Files\JXTA_Demo\Shell directory to Shell2
  - Remove .jxta subdirectory from Shell2
  - Start second shell (*Shell2\shell.bat*)
  - When the configuration tool appears, enter a different port number [on the Advanced Tab, TCP settings change port 9701 to 9702]

Running Multiple Peers

No Internet Connection

- First peer:
  - Advanced panel
    - Disable HTTP
    - Select *Manual* under TCP settings, and enter IP address – use a different port number for each peer
  - Rendezvous/Relays panel
    - Check *Act as Rendezvous*

Running Multiple Peers

No Internet Connection

- Second peer:
  - Advanced panel
    - Disable HTTP
    - Select *Manual* under TCP settings, and enter IP address – use a different port number for each peer
  - Rendezvous/Relays panel
    - Add the internal IP address and port number of the first peer to the *Available TCP Rendezvous* field

End – Hello World