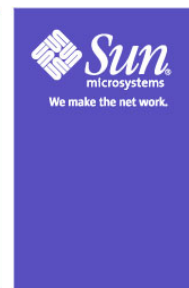




Hello World



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

8-3

Getting Started – Java

Required Binaries

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

8-4

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
```

8-5

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);  
        }  
    }  
}
```

8-6

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>

8-7

Getting Started – C

Compiling and Running JXTA Applications

- Compiling

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

```
LD_FLAGS=-ljxta (JXTA lib)
-ljpr (JXTA portability library layer)
-lapr (APR)
-laprutil (APR util)
-lexpat (XML parser)
-lcrypt (Crypto)
-lldb1 -ldl (CM Database backend)
```

8-8

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;  
}
```

8-9

Configuration

8-10

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)

8-11

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

8-12

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>
```

8-13

JXTA Configuration Tool

Basic Settings



The screenshot shows the 'JXTA Configurator' window with the 'basic' tab selected. The title bar reads 'JXTA Configurator' and the subtitle says 'See "http://shell.jxta.org/index.html" for config help'. Below the tabs, the 'Basic settings' section contains the following fields:

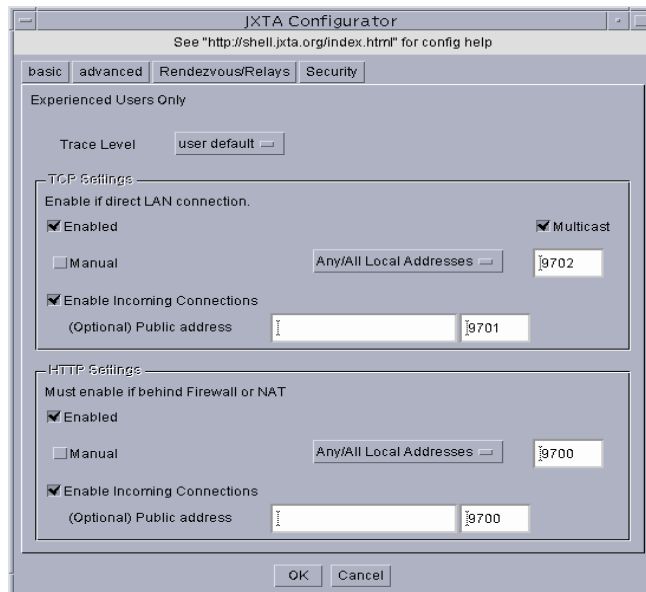
- Peer Name:** A text field containing 'trd' with '(Mandatory)' to its right.
- Use proxy server (if behind firewall):** An unchecked checkbox.
- Proxy address:** A text field containing 'httpProxy.myDomain' followed by a port field containing '8080'.

At the bottom of the window are 'OK' and 'Cancel' buttons.

8-14

JXTA Configuration Tool

Advanced Settings



The screenshot shows the 'JXTA Configurator' window with the 'advanced' tab selected. The window title is 'JXTA Configurator' and it includes a link to 'http://shell.jxta.org/index.html' for configuration help. The 'basic' tab is also visible. The 'Experienced Users Only' section contains the following settings:

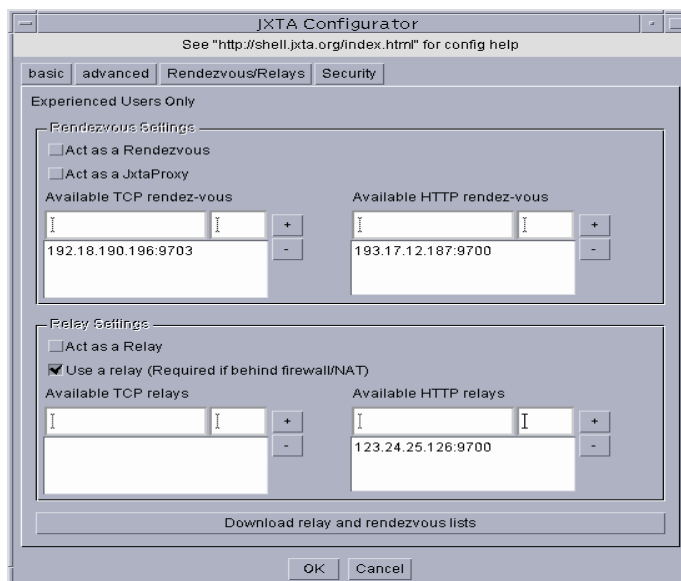
- Trace Level:** A dropdown menu set to 'user default'.
- TCP Settings:**
 - Enable if direct LAN connection:** A checkbox that is checked, with a 'Manual' option below it.
 - Multicast:** A checked checkbox.
 - Any/All Local Addresses:** A dropdown menu set to 'Any/All Local Addresses'.
 - (Optional) Public address:** A text input field containing '9701'.
- HTTP Settings:**
 - Must enable if behind Firewall or NAT:** A checked checkbox.
 - Manual:** A checkbox that is unchecked.
 - Any/All Local Addresses:** A dropdown menu set to 'Any/All Local Addresses'.
 - (Optional) Public address:** A text input field containing '9700'.

At the bottom of the window are 'OK' and 'Cancel' buttons.

8-15

JXTA Configuration Tool

Rendezvous/Relays Settings



The screenshot shows the 'JXTA Configurator' window with the 'Rendezvous/Relays' tab selected. The window title is 'JXTA Configurator' and it includes a link to 'http://shell.jxta.org/index.html' for configuration help. The 'basic' and 'advanced' tabs are also visible. The 'Experienced Users Only' section contains the following settings:

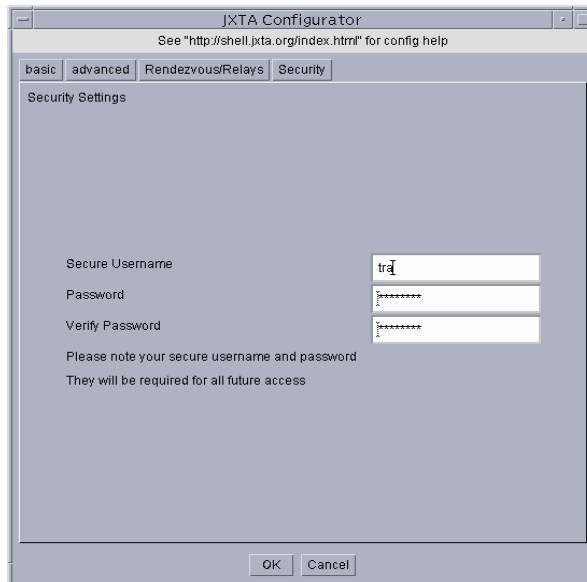
- Rendezvous Settings:**
 - Act as a Rendezvous:** A checkbox that is unchecked.
 - Act as a JxtaProxy:** A checkbox that is unchecked.
 - Available TCP rendez-vous:** A list box containing '192.18.190.196:9703'.
 - Available HTTP rendez-vous:** A list box containing '193.17.12.187:9700'.
- Relay Settings:**
 - Act as a Relay:** A checkbox that is unchecked.
 - Use a relay (Required if behind firewall/NAT):** A checked checkbox.
 - Available TCP relays:** A list box that is empty.
 - Available HTTP relays:** A list box containing '123.24.25.126:9700'.

At the bottom of the window are 'OK' and 'Cancel' buttons, and a 'Download relay and rendezvous lists' button.

8-16

JXTA Configuration Tool

Security Settings



8-17

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 !!!!!
```

8-18

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");
```

8-19

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]

8-20

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*

8-21

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

8-22

