

1. APACHE AXIS INSTALLATION

This document details how to install Apache Axis as a Web Application under Apache Tomcat. You will need to download and install the following :

Java 2 SDK v1.4.1	http://java.sun.com/j2se/1.4.1/download.html
Apache Tomcat v4.1.12	http://jakarta.apache.org/builds/jakarta-tomcat-4.0/release/v4.1.12/bin/jakarta-tomcat-4.1.12.zip
XML Security v1.0.4	http://xml.apache.org/security/dist/xml-security-bin-1_0_4.zip
Axis v1.0	http://xml.apache.org/axis/dist/1_0/xml-axis-10.zip

1.1 Java 2 SDK

Run the downloaded executable (j2sdk-1_4_1-windows-i586.exe) which will install the SDK in C:\j2sdk1.4.1. Set the **JAVA_HOME** environment variable to point to this directory as follows:

- Click on START->CONTROL PANEL->SYSTEM
- Click on the Advanced tab
- Click on the Environment Variables button
- Click on the New... button in the user variable section and enter the details

Add the Java binaries to your **PATH** variable in the same way by setting a user variable called PATH with the value "%PATH%;C:\j2sdk1.4.1\bin"

1.2 Apache Tomcat

Unzip the downloaded Tomcat archive to C: (this will create a directory jakarta-tomcat-4.1.12).

Edit C:\jakarta-tomcat-4.1.12\conf\tomcat-users.xml and create an "admin" and "manager" role as well as a user with both roles. The contents of the file should be similar to :

```
<?xml version='1.0' encoding='utf-8'?>
<tomcat-users>
  <role rolename="manager" />
  <role rolename="admin" />
  <user username="myuser" password="mypass" roles="admin,manager" />
</tomcat-users>
```

Start Tomcat by running C:\jakarta-tomcat-4.1.12\bin\startup.bat and test it by browsing <http://localhost:8080/>

Stop Tomcat by running C:\jakarta-tomcat-4.1.12\bin\shutdown.bat.

1.3 Apache Axis

Unzip the downloaded Axis archive to C: (this will create a directory C:\xml-axis-10). Extract the file xmlsec.jar from the downloaded security archive to C:\xml-axis-10\webapps\axis\WEB-INF\lib.

Set-up your **CLASSPATH** environment variable to including the following :

- The current working directory
- All the AXIS jar files as found in C:\xml-axis-10\lib
- C:\jakarta-tomcat-4.1.12\common\lib\servlet.jar (to work around a bug in Axis)

Your CLASSPATH should therefore look something like :

```
C:\xml-axis-10\lib\axis-ant.jar;  
C:\xml-axis-10\lib\axis.jar;  
C:\xml-axis-10\lib\commons-discovery.jar;  
C:\xml-axis-10\lib\commons-logging.jar;  
C:\xml-axis-10\lib\jaxrpc.jar;  
C:\xml-axis-10\lib\log4j-20021014.jar;  
C:\xml-axis-10\lib\saa.jar;  
C:\xml-axis-10\lib\wsdl4j.jar;  
C:\jakarta-tomcat-4.1.12\common\lib\servlet.jar
```

Now tell Tomcat about your Axis web application by creating the file
C:\jakarta-tomcat-4.1.12\webapps\axis.xml with the following content :

```
<Context path="/axis" docBase="C:\xml-axis-10\webapps\axis"  
    debug="0" privileged="true">  
    <Logger className="org.apache.catalina.logger.FileLogger"  
        prefix="axis_log." suffix=".txt" timestamp="false"/>  
</Context>
```

Enable the Axis Admin servlet by editing C:\xml-axis-10-10\webapps\axis\WEB-INF\web.xml and uncommenting the servlet mapping for /servlet/AdminServlet

You can now restart Tomcat and browse to <http://localhost:8080/axis>. Click on the [Validate](#) link to test that all libraries are accessible to Axis (both core and optional).

Deploy one of the sample Web Services to test the system and to create the
C:\xml-axis-10-10\webapps\axis\WEB-INF\server-config.wsdd file. From C:\xml-axis-10 issue the command (on one line):

```
java org.apache.axis.client.AdminClient  
-lhttp://localhost:8080/axis/services/AdminService samples/stock/deploy.wsdd
```

This should return the following :

```
- Processing file samples/stock/deploy.wsdd  
- <Admin>Done processing</Admin>
```

Finally test the service that's just been deployed by issuing the following command (on one line):

```
java samples.stock.GetQuote -lhttp://localhost:8080/axis/servlet/AxisServlet -  
uuser1 -wpass1 XXX
```

This should return :

```
XXX: 55.25
```

A useful article can be found at <http://www.onjava.com/lpt/a/1578> for information on creating your first Web Service and client.

1.3.1 SOAP Monitor

When you've deployed your first Web Service the server-config.wsdd file is created in C:\xml-axis-10-10\webapps\axis\WEB-INF. If you want to use the SOAPMonitor then you'll have to compile it and manually edit this file to include service and handler declarations.

Change directory to C:\xml-axis-10\webapps\axis and compile SOAPMonitorApplet.java as follows :

```
javac SOAPMonitorApplet.java
```

Now edit C:\xml-axis-10-10\webapps\axis\WEB-INF\server-config.wsdd and make the following additions :

Add <handler type="soapmonitor"/> as the first element under both the <requestFlow> and <responseFlow> child elements of <globalConfiguration> so that you end up with the following basic structure which may include other elements:

```
<globalConfiguration>
  <parameter name=.../>
  <requestFlow>
    <handler type="soapmonitor"/>
  </requestFlow>
  <responseFlow>
    <handler type="soapmonitor"/>
  </responseFlow>
</globalConfiguration>
```

Then add the handler definition amongst the other handlers:

```
<handler name="soapmonitor" type="java:org.apache.axis.handlers.SOAPMonitorHandler">
  <parameter name="wsdlURL" value="/axis/SOAPMonitorService-impl.wsdl"/>
  <parameter name="serviceName" value="SOAPMonitorService"/>
  <parameter name="namespace" value="http://tempuri.org/wsdl/2001/12/SOAPMonitorService-impl"/>
  <parameter name="portName" value="Demo"/>
</handler>
```

Restart Tomcat and browse to <http://localhost:8080/axis/SOAPMonitor>. Run a Web Service client and the request and response SOAP messages will be captured and displayed.