



## CHAPTER 2

# SOAP/XML Environment

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The Simple Object Access Protocol/Extensible Markup Language (SOAP/XML) Interface Adapter conforms to the SOAP 1.2 specification.

## Compiler Tools

The minimum required compiler is the J2SE Development Kit (JDK)-1.4.1. The Cisco BTS 10200 Softswitch uses JDK 1.5.0 for compilation and JDK 1.5.0 or JDK5 for the Java Runtime Environment (JRE). Additional tools that might be required for the client side application are

- Xerces Parsers
- Event Control System (ECS) Report Builder
- Apache Coyote
- Apache Tomcat
- Apache Web Services including AXIS 1.3

Cisco Systems, Inc. does not provide these tools. They are generally available on the Internet from various sources. For example, <http://www.apache.org>.

## WSDL Stub Generation

The SOAP/XML package uses the Apache AXIS toolkit to generate skeletons and stubs from the Web Service Description Language (WSDL) file. These skeletons and stubs are used to implement the abstraction between the SOAP Interface with the BTS 10200 middleware and code.

This code example uses the Java package tree as developed in the Cisco BTS 10200 Softswitch product. This code can vary. Other clients can specify a different package tree to contain the WSDL interface objects. See the software development kit (SDK) for a detailed breakdown of this script.

```
#!/bin/sh
#####
# Copyright (c) 2002, 2006 by Cisco Systems, Inc.
#
#
#####
set -e
set -a
#set -x
#
# List required jar files
#
AXISLIB=/opt/Tomcat/webapps/axis/WEB-INF/lib
CLASSPATH=$AXISLIB/axis.jar:$AXISLIB/commons-logging-1.0.4.jar:$AXISLIB/jaxrpc:$AXISLIB/commons-discovery-0.2.jar:$AXISLIB/saaj:$AXISLIB/wsdl4j-1.5.1.jar
export CLASSPATH
java -classpath $CLASSPATH org.apache.axis.wsdl.WSDL2Java -o . -p
com.sswitch.oam.soap.client bts10200.wsdl
```

Java files are generated in a local directory tree specified in the package directory. This package path is required in the bind logic to find the object interface implementation.

```
#!/bin/sh
#####
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#
#
#####
set -e
set -a
#set -x
#
# List required jar files
#
AXISLIB=/opt/Tomcat/webapps/axis/WEB-INF/lib
CLASSPATH=$AXISLIB/axis.jar:$AXISLIB/commons-logging-1.0.4.jar:$AXISLIB/jaxrpc:$AXISLIB/commons-discovery-0.2.jar:$AXISLIB/saaj:$AXISLIB/wsdl4j-1.5.1.jar
export CLASSPATH
javac -classpath $CLASSPATH -d ./ com/sswitch/oam/soap/client/*.java
```

Compile a package of Java files to generate the required class files. These class files must exist in the client classpath.

Sample Makefile(s) and Apache jar files are included in the BTS 10200 XSDK.