



Command Line Reference

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Generating WSDL

Artix provides a number of command line tools for generating WSDL.

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Generating from Java Classes

Overview

Artix supplies a command line tool, <code>javatowsdl</code>, that generates the logical portion of an Artix contract for existing Java class files. <code>javatowsdl</code> uses the mapping rules described in Sun's JAX-RPC 1.1 specification.

JAVATOWSDL

Synopsis

javatowsdl [-t namespace] [-x namespace] [-i porttype] [-o file]
[-useTypes] [-v] [-?] ClassName

Options

The command has the following options:

-t namespace Specifies the target namespace of the generated WSDL

document. By default, the java package name will be used as the target namespace. If no package name is specified, the generated target namespace will be

http:\\www.iona.com\ClassName.

-x namespace Specifies the target namespace of the XMLSchema

information generated to represent the data types inside the WSDL document.By default, the generated target

namespace of the XMLSchema will be

http:\\www.iona.com\ClassName\xsd.

-i porttype Specifies the name of the generated <portType> in the

WSDL document. By default the name of the class from

which the WSDL is generated is used.

-o file Specifies output file into which the WSDL is written.

-useTypes Specifies that the generated WSDL will use types in the

WSDL message parts. By default, messages are generated using wrapped doc/literal style. A wrapper element with a sequence will be created to hold method

parameters.

-v Prints out the version of the tool.

-? Prints out a help message explaining the command line

flags.

The generated WSDL will not contain any physical details concerning the payload formats or network transports that will be used when exposing the service. You will need to add this information manually.

Note: When generating contracts, <code>javatowsdl</code> will add newly generated WSDL to an existing contract if a contract of the same name exists. It will not generate a new file or warn you that a previous contract exists.

Generating from CORBA IDL

Overview

IONA's IDL compiler supports several command line flags that specify how to create a WSDL file from an IDL file. The default behavior of the tool is to create WSDL file that uses wrapped doc/literal style messages. Wraped doc/literal style messages have a single part, defined using an element, that wraps all of the elements in the message.

IDLTOWSDL

Synopsis

idltowsdl [-useypes][-unwrap][-a address][-f file][-o dir][-s
type][-r file][-L file][-P file][-w namespace][-x namespace][-t
namespace][-T file][-n file][-b] idlfile

Options

The command has the following options:

| -usetypes | Generate rpc style messages. rpc style messages have parts defined using XMLSchema types instead of XML elements. |
|-------------------|--|
| -unwrap | Generate unwrapped doc/literal messages. Unwrapped messages have parts that represent individual elements. Unlike wrapped messages, unwrapped messages can have multiple parts and are not allowed by the WS-I. |
| -a <i>address</i> | Specifies an absolute address through which the object reference may be accessed. The <i>address</i> may be a relative or absolute path to a file, or a corbaname URL |
| -f file | Specifies a file containing a string representation of an object reference. The object reference is placed in the <corba:address> element in the <port> definition of the generated service. The file must exist when you run the IDL compiler.</port></corba:address> |
| -o dir | Specifies the directory into which the WSDL file is written. |
| -s type | Specifies the XMLSchema type used to map the IDL sequence <octet> type. Valid values are base64Binary and hexBinary. The default is base64Binary.</octet> |
| | |

| -r file | Specify the pathname of the schema file imported to define the Reference type. If the -r option is not given, the idl compiler gets the schema file pathname from etc/idl.cfg. |
|--------------|---|
| -L file | Specifies that the logical portion of the generated WSDL specification into is written to file. file is then imported into the default generated file. |
| -P file | Specifies that the physical portion of the generated WSDL specification into is written to $file$. $file$ is then imported into the default generated file. |
| -w namespace | Specifies the namespace to use for the WSDL targetNamespace. The default is http://schemas.iona.com/idl/idl_name. |
| -x namespace | Specifies the namespace to use for the Schema targetNamespace. The default is http://schemas.iona.com/idltypes/idl_name. |
| -t namespace | Specifies the namespace to use for the CORBA TypeMapping targetNamespace. The default is http://schemas.iona.com/typemap/corba/idl_name. |
| -T file | Specifies that the schema types are to be generated into a separate file. The schema file is included in the generated contract using an import statement. This option cannot be used with the $-n$ option. |
| -n file | Specifies that a schema file, $file$, is to be included in the generated contract by an import statement. This option cannot be used with the $-T$ option. |
| -b | Specifies that bounded strings are to be treated as unbounded. This eliminates the generation of the special types for the bounded string. |

To combine multiple flags in the same command, use a colon delimited list. The colon is only interpreted as a delimiter if it is followed by a dash. Consequently, the colons in a <code>corbaname</code> URL are interpreted as part of the URL syntax and not as delimiters.

Note: The command line flag entries are case sensitive even on Windows. Capitalization in your generated WSDL file must match the capitalization used in the prewritten code.

Generating from a COBOL Copybook

Overview

Artix provides a command line tool, colboltowsdl, that will import COBOL copybook data and generate an Artix contract containing a fixed binding to define the COBOL interface for Artix applications.

COLBOLTOWSDL

Synopsis

coboltowsdl -b binding -op operation -im [inmessage:]incopybook [-om [outmessage:]outcopybook] [-fm [faultmessage:]faultbook] [-i portType] [-t target] [-x schema_name] [-useTypes] [-o file]

Parameters

The command has the following required parameters:

-b binding Specifies the name for the generated binding.

-op operation Specifies the name for the generated

operation.

-im

[inmessage:]incopybook

Specifies the name of the input message and the copybook file from which the data defining the message is taken. The input message name, inmessage, is optional. However, if the copybook has more than one 01 levels, you will be asked to choose the one you want to use as the input message.

Options

The command has the following options:

Specifies the name of the output message [outmessage:]outcopybook and the copybook file from which the data defining the message is taken. The output message name, outmessage, is optional. However, if the copybook has more than one 01 levels, you will be asked to choose the one you want to use as the output message.

| -fm [faultmessage:]faultbook | Specifies the name of a fault message and the copybook file from which the data defining the message is taken. The fault message name, <code>faultmessage</code> , is optional. However, if the copybook has more than one <code>01</code> levels, you will be asked to choose the one you want to use as the fault message. You can specify more than one fault message. |
|---------------------------------|---|
| -i portType | Specifies the name of the port type in the generated WSDL. Defaults to bindingPortType. ^a |
| -t target | Specifies the target namespace for the generated WSDL. Defaults to http://www.iona.com/binding. |
| -x schema_name | Specifies the namespace for the schema in the generated WSDL. Defaults to http://www.iona.com/binding/types. |
| -useTypes | Specifies that the generated WSDL will use <types>. Default is to generate <element> for schema types.</element></types> |
| -o file | Specifies the name of the generated WSDL file. Defaults to <i>binding</i> .wsdl. |

a. If binding ends in Binding or binding, it is stripped off before being used in any of the default names.

Once the new contract is generated, you will still need to add the port information before you can use the contract to develop an Artix solution.

Adding Bindings

Artix provides a tools for adding bindings to WSDL.

In this chapter

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Generating a SOAP Binding

Overview

Artix provides a tool, wsdltosoap, that will generate a SOAP binding from an existing logical interface defined in a WSDL <portType>. The tool will generate a new contract which includes the generated SOAP binding.

WSDLTOSOAP

Synopsis wsdltosoap -i portType -n namespace wsdl_file [-b binding][-d dir]

[-o file] [-style {document|rpc}] [-use {literal|encoded}]

Parameters The command has the following required parameters:

-i portType Specifies the name of the port type being mapped to a

SOAP binding.

-n namespace Specifies the namespace to use for the SOAP binding.

wsdl_file Specifies the WSDL file in which the logical binding is

defined.

Options The command has the following options:

-b *binding* Specifies the name for the generated SOAP binding.

Defaults to portTypeBinding.

-d dir Specifies the directory into which the new WSDL file is

written.

-o file Specifies the name of the generated WSDL file. Defaults

to wsdl_file-soap.wsdl.

-style Specifies the encoding style to use in the SOAP binding.

Defaults to document.

-use Specifies how the data is encoded. Default is literal.

Notes wsdltosoap does not support the the generatoin of document/encoded SOAP

bindings.

Generating a CORBA Binding

Overview

The wsdltocorba tool adds CORBA binding information to an existing Artix contract. The generated WSDL file will also contain a CORBA port with no address specified.

WSDLTOCORBA

Synopsis

wsdltocorba -corba -i portType [-d dir] [-b binding] [-o file] [-n namespace] wsdl_file

Parameters

The command has the following required parameters:

-corba Instructs the tool to generate a CORBA binding for the

specified port type.

-i portType Specifies the name of the port type being mapped to a

CORBA binding.

wsdl_file Specifies the name of the WSDL file containing the

logical interface to which the CORBA binding is mapped.

Options

The command has the following options:

-d dir Specifies the directory into which the new WSDL file is

written.

-b *binding* Specifies the name for the generated CORBA binding.

Defaults to portTypeBinding.

-o file Specifies the name of the generated WSDL file. Defaults

to wsdl_file-corba.wsdl.

-n namespace Specifies the namespace to use for the generated CORBA

typemap

Notes

By combining the <code>-idl</code> and <code>-corba</code> flags with <code>wsdltocorba</code>, you can generate a CORBA binding for a logical operation and then generate the IDL for the generated CORBA binding. When doing so, you must also use the <code>-i portType</code> flag to specify the port type from which to generate the binding and the <code>-b binding</code> flag to specify the name of the binding to from which to generate the IDL.

CHAPTER 2 | Adding Bindings

Validating WSDL

Artix can validate your contracts to see if they are well-formed WSDL documents. In addition, Artix can validate your contract against the WS-I Basic Profile.

Overview

Artix includes a command line tool, schemavalidator, for validating Artix contracts.

SCHEMAVALIDATOR

Synopsis

schemavalidator [-d schema-directory]* [-wd wsdl-directory] [-s schema-url]* [-w WSDL_XSD_URL] [-deep] [-wsi] [-wh wsi-test-tools.home] [-tad BasicProfileAssertions] [-?] [-v]

Parameters

You must specify the location of a WSDL contract file, <code>WSDL_XSD_URL</code>, for the schema validator to work.

Options

You can supply the following optional parameters:

-d schema-directory Specifies the directory used to search for

schemas. This switch can appear multiple

times.

-wd wsdl-directory Specifies the directory to look for the

specified contract.

-s schema-url Specifies the URL of a user specific

schema to be included in the validation of the contract. This switch can appear

multiple times..

-w WSDL_XSD_URL Specifies the name of contract to validate.

-deep Specifies that the validator is to check all

WSDL imports and all WSDL semantics. When using this switch, the tool will also

validate the imported WSDL.

-wsi Specifies that the tool is to use the

wsi-test-tools from wsi.org to validate the

contract.

-wh wsi-test-tools.home Specifies the base directory of

wsi-test-tools.

-tad BasicProfileAssertions Specifies the URL of the of

BasicProfileTestAssertions.xml used in

wsi-test-tools.

-? Displays detailed information about the

tool's options.

-v Displays the version of the tool.

-verbose Displays detailed information on the tools

progress as it is validating.

-verbose Send extra diagnostic messages to the

console while wsdltocpp is running.

Generating Code from WSDL

Artix generates stub and skeleton code that provides a developer with a simple model to develop transport-independent applications.

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C++ Code Generation

Overview

Artix includes a command line tool, wsdltocpp, for generating Artix C++ skeletons for the services defined in an Artix contract. It can also generate starting point code for your server and client applications.

WSDLTOCPP

Synopsis

wsdltocpp [options] { WSDL-URL | SCHEMA-URL } [-e web_service_name]
[-t port] [-b binding_name] [-i port_type]* [-d output-dir] [-n
URI=C++namespace]* [-nexclude URI[=C++namespace]]* [-ninclude
URI[=C++namespace]]* [-nimport C++namespace] [-impl] [-m {NMAKE |
UNIX}:[exe|lib]] [-jp plugin_class] [-f] [-server] [-client]
[-sample] [-plugin] [-v] [-license] [-declspec declspec] [-all] [-?]
[-flags] [-upper|-lower|-minimal|-mapper class] [-verbose]
[-reflect]

Parameters

You must specify the location of a valid WSDL contract file, wsdl-url, for the code generator to work.

Options

You can supply the following optional parameters:

| i port_type | Specifies the name of the port type for which the tool will generate code. The default is to use the first port type listed in the contract. This switch can appear multiple times. |
|---------------------|---|
| -e web_service_name | Specifies the name of the service for which the tool will generate code. The default is to use the first service listed in the contract. |
| -t port | Specifies the name of the port for which code is generated. The default is to used the first port listed in the contract. |
| -b binding_name | Specifies the name of the binding to use when generating code. The default is the first binding listed in the contract. |

-d output dir Specifies the directory to which the generated code is written. The default is the current working directory. Maps an XML namespace to a C++ -n [URI=]C++namespace namespace. The C++ stub code generated from the XML namespace. URI, is put into the specified C++ namespace, C++namespace. This switch can appear multiple times. -nexclude URI[=C++namespace] Do not generate C++ stub code for the specified XML namespace, URI. You can optionally map the XML namespace, URI, to a C++ namespace, C++namespace, in case it is referenced by the rest of the XML schema/WSDL contract. This switch can appear multiple times. -ninclude URI[=C++namespace] Generates C++ stub code for the specified XML namespace, URI. You can optionally map the XML namespace, URI, to a C++ namespace, C++namespace. This switch can appear multiple times. Specifies the C++ namespace to use for -nimport C++namespace the code generated from imported schema. Generates the skeleton code for -impl implementing the server defined by the contract. -m {NMAKE | UNIX}:[exe | Used in combination with -impl to lib] generate a makefile for the specified platform (NMAKE for Windows or UNIX for UNIX). You can specify that the generated makefile builds an executable, by appending : exe, or a library, by appending :lib. For example, the options, -impl -m NMAKE: exe, would generate a Windows makefile to build an executable.

-f

-server

Deprecated -- No longer used (was needed

to support routing in earlier versions.

Generates code for a sample

implementation of a server.

-client Generates code for a sample

implementation of a client.

-sample Generates code for a sample

implementation of a client and a server

(equivalent to -server -client).

-plugin Generates servant registration code as a

Bus plug-in.

-v Displays the version of the tool.

-license Displays the currently available licenses.

-declspec declspec Creates NT declaration specifiers for

dllexport and dllimport. This option makes it easier to package Artix stubs in a DLL

library.

-all Generate stub code for all of the port types

and the types that they use. This option is useful when multiple port types are defined

in a WSDL contract.

-? Displays help on using the command line

tool.

-flags Displays detailed information about the

options.

-verbose Send extra diagnostic messages to the

console while wsdltocpp is running.

-reflect Enables reflection on generated data

classes.

-wrapped When used with document/literal wrapped

style, generates function signatures with

wrapped parameters, instead of unwrapping into separate parameters.

Generated files

The code generator produces a number of stub files from the Artix contract. They are named according to the port type name, *PortTypeName*, specified in the logical portion of the Artix contract. If the contract specifies more than one port type, code will be generated for each one.

The following stub files are generated:

PortTypeName.h defines the superclass from which the client and server are implemented. It represents the API used by the service defined in the contract.

PortTypeNameService.h and PortTypeNameService.cxx are the server-side skeleton code to implement the service defined in the contract.

PortTypeNameClient.h and PortTypeNameClient.cxx are the client-side stubs for implementing a client to use the service defined by the contract.

PortTypeName_wsdlTypes.h and PortTypeName_wsdlTypes.cxx define the complex datatypes defined in the contract (if any).

PortTypeName_wsdlTypesFactory.h and PortTypeName_wsdlTypesFactory.cxx define factory classes for the complex datatypes defined in the contract (if any).

Java Code Generation

Overview

wsdltojava generates JAX-RPC compliant Java code stubs and skeletons for the services defined in the specified Artix contract. It can also generate starting point code for your server and client applications. The default behavior of wsdltojava is to generate all of the java code needed to develop a client and server.

WSDLTOJAVA

Synopsis

wsdltojava [-e service][-t port][-b binding][-i portType][-d
output_dir][-p [namespace=]package][-impl][-server][-client]
[-types][-interface][-sample][-all][-ant][-datahandlers]
[-nexclude namespace[=package]] [-ninclude namespace[=package]]
artix-contract

Description

You must specify the location of a valid Artix contract for the code generator to work. The default behavior of wsdltojava is to generate all of the java code needed to develop a client aSd server.

Options

You can supply the following optional parameters to control the portions of the code generated:

-e service Specifies the name of the service for which the tool will generate code. The default is to use the first service listed in the contract.

-t port Specifies the name of the port for which code is generated. The default is to use the first port

listed in the service.

Specifies the name of the binding to use when generating code. The default is to use the first

binding listed in the contract.

-i portType Specifies the name of a portType for which code

will be generated. You can specify this flag for

each portType for which you want code

generated. The default is to use the first portType

in the contract.

-b binding

-d output dir Specifies the directory to which the generated

code is written. The default is the current working

directory.

-p [namespace=]package Specifies the name of the Java package to use for

the generated code. You can optionally map a WSDL namespace to a particular package name if your contract has more than one namespace.

Generates the skeleton class for implementing the -impl

server defined by the contract.

Generates a simple main class for the server. -server

-client Generates only the Java interface and code

needed to implement the complex types defined

by the contract. This flag is equivalent to specifying -interface -types.

Generates the code to implement the complex

types defined by the contract.

-interface Generates the Java interface for the service.

Generates a sample client that can be used to test -sample

your Java server.

-all Generates code for all portTypes in the contract.

-ant Generate an ant build target for the generated

code.

-datahandlers When a service uses SOAP w/ attachments as its

payload format, generate code that uses

javax..activation.DataHandler instead of the standard Java classes specified in the JAX-RPC

specification.

-nexclude Instructs the code generator to skip the specified

namespace[=package] XMLSchema namespace when generating code.

You can optionally specify a package name to use

for the types that are not generated.

-ninclude

-types

Instructs the code generator to generate code for namespace[=package] the specified XMLSchema namespace. You can

optionally specify a package name to use for the

types in the specified namespace.

Generated files

The Artix code generator produces a number of files from the Artix contract. They are named according to the port name specified when the code was generated. The files include:

portTypeName.java defines the Java interface that both the client and server implement.

portTypeNameImpl.java defines the class used to implement the server.

portTypeNameServer.java is a simple main class for the server.

In addition to these files, the code generator also creates a class for each named schema type defined in the Artix contract. These files are named according to the type name they are given in the contract and contain the helper functions needed to use the data types. The naming convention for the helper type functions conforms to the JAX-RPC specification.

Generated type packages

The generated types are generated into a single package which must be imported for any methods using them. By default, the package name will be mapped from the target namespace of the schema describing the types. The default package name is created following the algorithm specified in the JAXB specification. The mapping algorithm follows four basic steps:

- 1. The leading http://orum://are stripped off the namespace.
- 2. If the first string in the namespace is a valid internet domain, for example it ends in .com or .gov, the leading www. is stripped off the string, and the two remaining components are flipped.
- 3. If the final string in the namespace ends with a file extension of the pattern .xxx or .xx, the extension is stripped.
- 4. The remaining strings in the namespace are appended to the resulting string and separated by dots.
- All letters are made lowercase.

For example, the XML namespace

http://www.widgetVendor.com/types/widgetTypes.xsd Would be mapped to the Java package name com.widgetvendor.types.widgettypes.

Exceptions

If you generate code from a WSDL file that contains multiple portTypes, multiple bindings, multiple services, or multiple ports wsdltojava will generate a warning message informing you that it is using the first instance of each to use for generating code. If you use the command line flags to specify which instances to use, the warning message is not displayed.

Tools for Generating Support Files

Artix provides a tools to generate a number of support files that can be used in conjunction with Artix solutions.

In this chapter

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Generating IDL from WSDL

Overview

The wsdltocorba tool compiles Artix contracts containing a CORBA binding and generates IDL for the specified binding and port type.

WSDLTOCORBA

Synopsis wsdltocorba -idl -b binding [-corba] [-i portType] [-d dir] [-o

file] wsdl_file

Parameters The command has the following required parameters:

-idl Instructs the tool to generate an IDL file from the

specified binding.

-b binding Specifies the CORBA binding from which to generate IDL.

wsdl_file Specifies the WSDL file to process.

Options The command has the following options:

-corba Instructs the tool to generate a CORBA binding for the

specified port type.

-i portType Specifies the name of the port type being mapped to a

CORBA binding.

-d dir Specifies the directory into which the new WSDL file is

written.

-o file Specifies the name of the generated WSDL file. Defaults

to wsdl_file.idl.

Notes By combining the -idl and -corba flags with wsdltocorba, you can generate

a CORBA binding for a logical operation and then generate the IDL for the generated CORBA binding. When doing so, you must also use the -i portType flag to specify the port type from which to generate the binding and the -b binding flag to specify the name of the binding to from which to generate the

IDL.

Generating an ACL File

Overview

The wsdltoacl tool generates an ACL file for the operation for which the default role name is not sufficient. It takes a WSDL file and generates an appropriate ACL file. You will need to add information specific to your deployment to this file.

WSDLTOACL

Synopsis

wsdltoacl -s server WSDL-URL [-i interface] [-r default_role] [-d
output_dir] [-o output_file] [-props props_file] [-v] [-?]

Parameters

The command has the following required parameters:

-s server Specifies the name of the server. Typically this is the

ORB name of the server.

WSDL-URL Specifies the name of the WSDL file from which the ACL

file is generated.

Options

The command has the following options:

-i interface Specifies the <portType> for which ACL data will be

generated. The default is to generate information for all

port types defined in the contract.

-r default_role Specifies the role name to use in the generated ACL

document. The default is IONAUserRole.

-d output_dir Specifies the directory where the generated file will be

written.

-o output_file Specifies the name of the generated ACL file. The

default is to use the name of the WSDL file with a .acl

extension.

-props props_file Specifies the properties file listing the roles for each

operation.

CHAPTER 5 | Tools for Generating Support Files