



TestCases for the SCA Web Service Binding Specification Version 1.1

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This prose specification is one component of a Work Product which also includes:

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 - ZIP archive:
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 - Online resource:
<http://docs.oasis-open.org/opencsa/sca-bindings/TestCases-BWS-csd02/>

Related work:

This specification is related to:

- *Service Component Architecture Web Service Binding Specification Version 1.1*. Latest version. <http://docs.oasis-open.org/opencsa/sca-bindings/sca-wsbinding-1.1-spec.html>

Declared XML namespaces:

<http://docs.oasis-open.org/ns/opencsa/scatests/200903>
<http://docs.oasis-open.org/ns/opencsa/scatests/2009032>
<http://test.sca.oasisopen.org/>

Abstract:

This document defines the TestCases for the SCA Web Service Binding Specification. The TestCases represent a series of tests that an SCA runtime must pass in order to claim conformance to the requirements of the SCA Web Service Binding specification.

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This document was last revised or approved by the OASIS Service Component Architecture / Bindings (SCA-Bindings) TC on the above date. The level of approval is also listed above. Check the "Latest version" location noted above for possible later revisions of this document.

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1 Introduction

This document defines the testcases for the SCA Web Service Binding specification [SCA-WSBinding].

The tests described in this document are [derived from the normative statements in SCA Web Service Binding specification via Test Assertions which are described in Appendix A, "Web Service Binding Test Assertions"](#).

1.1 TestCase Structure

The SCA Bindings testcases follow a standard structure. They are divided into two main parts:

1. Test Client, which drives the test and checks that the results are as expected
2. Test Application, which forms the bulk of the testcase and which consists of Composites, WSDL files, XSDs and code artifacts such as Java classes, organized into a series of SCA contributions

The basic idea is that the Test Application runs on the SCA runtime that is under test, while the Test Client runs as a standalone application, invoking the Test Application through one or more service interfaces.

1.1.1 Test Client

The test client is designed as a standalone application. The version built here is a Java application which uses the JUnit test framework, although in principle, the client could be built using another implementation technology.

The test client is structured to contain configuration information about the testcase, which consists of:

1. metadata identifying the Test Application in terms of the SCA Contributions that are used and the Composites that must be deployed and run
2. data indicating which service operation(s) must be invoked with input data and expected output data (including exceptions for expected failure cases)

The Java test client consists of a base runtime class, BaseJAXWSTestCase.java. Each actual testcase is implemented by a small class which extends the base runtime class. The bulk of the code required to run a test is held in the base runtime class. The small testcase class contains the configuration for the specific test, which it provides to the code in the base runtime class through a standard interface.

The Java test client base runtime class is structured so that there is a replaceable class called the RuntimeBridge, which is used to communicate with the SCA runtime under test, for the purposes of deploying and running the test application. Each SCA runtime provider can produce a version of this class. The code within the runtime bridge is likely to be highly proprietary and specific to the SCA runtime for which it is written. Which runtime bridge class is used at runtime is controlled by an environment variable or system variable with the name "OASIS_TESTENV_RUNTIME_BRIDGE_CLASS", which is read by the code in BaseJAXWSTestCase.

The Test Client defaults to using Web services to communicate with the test application.

1.1.2 Test Application

Each Test Application consists of one top level SCA Composite file and one or more other SCA Composite files and their associated artifacts (implementations, interface files), plus test client invocation application described above.

A typical test application has a design where the top level composite offers a single service to the client application over a Web services binding. The top level composite contains one component which offers the service that is used by the client application. The top level composite then contains one or more other components which are used by the first component.

All of the components in the top level composite are implemented by composites. These second level composites then contain typically one component, implemented using a specific technology such as Java POJO or a BPEL process. In some cases the implementation may be a third level composite.

The application is structured so that alternative technologies can be used. For example, replacing the contents of the second-level or third-level composites allows different implementation technologies to be tested – eg BPEL scripts or C++ classes may be used instead of Java classes. Similarly, the binding used to connect from the top level composite to the client application may be changed from Web services to JMS if required, simply by changing the binding on the <service/> of the top level composite.

Which implementation language to use for test artifacts is controlled by a system variable or environment variable which is read by the test client application, with the name "OASIS_TESTENV_IMPL_LANG". This variable can have one of the following values:

- "Java" - for Java implementations
- "BPEL" - for WS_BPEL process implementations
- "CPP" - for C++ implementations

The testcases are designed so that the range of implementation types can be expanded

1.1.3 Test Artifacts Organization

Note that the design of these testcases promotes reuse of artifacts between testcases, so that many testcases share components. For example, components implementing simple invocable services are all implemented using a single parameterized implementation artifact.

All the test artifacts are contained in a number of Contributions, which are simply filesystem directories which are all peers in the filesystem hierarchy. The names of the directories are the names of the Contributions and the names are significant. The names of Contributions containing implementation type specific artifacts (such as Java classes) are also specially structured to allow for replacement of one type of implementation artifact with another.

Broadly, Contribution names are as follows:

- BWS_nnnn - a contribution that is specific for a particular testcase, where "nnnn" is the number of the testcase. Often this is required because a particular testcase involves artifacts that contain errors that are statically checkable - an SCA runtime is permitted to reject such artifacts when they are contributed and deployed and it is important to ensure that contributions containing deliberate errors for one testcase do not interfere with the operation of other testcases.
- BWS_nnnn_Java - a contribution for a specific testcase where there is a need for language specific artifacts that relate to that testcase alone
- BWS_General - a shared contribution containing implementation type independent artifacts that can be used by many testcases.
- BWS_General_Java - a shared contribution containing implementation type dependent artifacts for Java POJOs. These artifacts can include both Java classes and also SCA composites that directly use Java classes.
- Contribution1, Contribution2, etc - contributions that are used by various testcases that are testing the handling of SCA contributions

Note that the names of Contributions containing implementation specific artifacts ends with a name that is specific to the implementation type - so "_Java" is used for Java implementations, "_BPEL" is used for

BPEL implementations, "_CPP" is used for C++ implementations (and so on). Note that the name following the underscore matches the name used in the "OASIS_TESTENV_IMPL_LANG" variable used to control execution of the test client. The concept is that where there is an implementation type specific contribution, each implementation type must provide its own versions of the same basic artifacts. Typically, this means that each contribution must contain the same set of Composites, but that the implementation type dependent artifacts that these composites use will differ from implementation type to implementation type.

Basically, the setting of the variable is used to select the suffix used for implementation type dependent contributions. If the variable is set to "Java" then the contribution "General_Java" is selected, whereas if the variable is set to "BPEL", the contribution "General_BPEL" is selected.

1.2 Namespaces and Java Package Names

The SCA Web Service Binding testcase suite makes use of some XML namespaces and Java package names, as follows:

1.2.1 SCA Artifact Namespaces

These apply to artifacts such as Composites

<http://docs.oasis-open.org/ns/opencsa/scatests/200903>

<http://docs.oasis-open.org/ns/opencsa/scatests/2009032>

1.2.2 WSDL Namespace

<http://test.sca.oasisopen.org/>

1.2.3 Java Package name

For Java interface classes and for Java implementation classes

`org.oasisopen.sca.test`

1.3 Terminology

The keywords "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this specification are to be interpreted as described in [IETF RFC 2119 \[RFC 2119\]](#)

1.4 Normative References

[RFC 2119] S. Bradner. *Key words for use in RFCs to Indicate Requirement Levels*. IETF RFC 2119, March 1997.
<http://www.ietf.org/rfc/rfc2119.txt>.

[TA-GUIDE] OASIS Committee Draft 05, *Test Assertions Guidelines Version 1.0, August 2010* <http://docs.oasis-open.org/tag/guidelines/v1.0/cd05/testassertionsguidelines-cd-05.pdf>

[SCA-WSBinding] OASIS Committee Draft 04, "Service Component Architecture Web Service Binding Specification Version 1.1," May 2010.
<http://docs.oasis-open.org/opencsa/sca-bindings/sca-wsbinding-1.1-spec-cd04.pdf>

2 TestCases

2.1 TestCases for Web Service Binding Specification Section 2

2.1.1 BWS_2001_TestCase

| | |
|-----------------|--|
| Testcase ID | BWS_2001_TestCase |
| Test Assertion | BWS-TA-20001 |
| Description | Tests that the value of the @uri attribute of a <binding.ws/> subelement of a <component/> <reference/> element is an absolute URI. |
| Artifacts | BWS_2001_TestCase.java Test_BWS_2001.composite TestInvocation.wsdl TestClient_0002.composite TestComposite1.composite TestComposite4.composite Service1.wsdl |
| Expected output | Negative test: "exception" |

2.1.2 BWS_2002_TestCase

| | |
|-----------------|--|
| Testcase ID | BWS_2002_TestCase |
| Test Assertion | BWS-TA-20002 |
| Description | Tests that a binding.ws/@wsdlElement attribute value points to an existing WSDL 1.1 element |
| Artifacts | BWS_2002_TestCase.java Test_BWS_2002.composite TestInvocation.wsdl TestClient_0002.composite TestComposite1.composite TestComposite4.composite Service1.wsdl |
| Expected output | Negative test: |

| | |
|--|-------------|
| | "exception" |
|--|-------------|

2.1.3 BWS_2003_TestCase

| | |
|-----------------|--|
| Testcase ID | BWS_2003_TestCase |
| Test Assertion | BWS-TA-20003 |
| Description | Tests that a binding.ws/@wsdlElement attribute of a <service/> element of a <component/> does not point to a WSDL 1.1 service element |
| Artifacts | BWS_2003_TestCase.java Test_BWS_2003.composite TestInvocation.wsdl TestClient_0002.composite TestComposite1.composite TestComposite4.composite Service1.wsdl |
| Expected output | Negative test: "exception" |

2.1.4 BWS_2004_TestCase

| | |
|-----------------|---|
| Testcase ID | BWS_2004_TestCase |
| Test Assertion | BWS-TA-20004 |
| Description | Tests that where a <component/> <reference/> has a <binding.ws/> element with @wsdlElement attribute referencing a WSDL service element, that the set of available WSDL ports is not empty. |
| Artifacts | BWS_2004_TestCase.java Test_BWS_2004.composite TestInvocation.wsdl TestClient_0002.composite TestComposite1.composite TestComposite4.composite Service1.wsdl |
| Expected output | Positive test: |

| | |
|--|--|
| | "BWS_2004 request service1 operation1 invoked service2 operation1 invoked" |
|--|--|

2.1.5 BWS_2005_TestCase

| | |
|-----------------|--|
| Testcase ID | BWS_2005_TestCase |
| Test Assertion | BWS-TA-20005 BWS_TA_20010 |
| Description | Tests that where a <component/> <reference/> has a <binding.ws/> element with @wsdlElement attribute referencing a WSDL service element, and the WSDL service element does not have any ports that are supported by the SCA runtime, the SCA runtime raises an error. |
| Artifacts | BWS_2005_TestCase.java Test_BWS_2005.composite TestInvocation.wsdl TestClient_0002.composite TestComposite1.composite TestComposite4.composite Service1.wsdl Service1InvalidService.wsdl in contribution BWS_2005 sca-variables.dtd in contribution BWS_2005 |
| Expected output | Negative test: "exception" |

2.1.6 BWS_2006_TestCase

| | |
|----------------|--|
| Testcase ID | BWS_2006_TestCase |
| Test Assertion | BWS-TA-20006 |
| Description | Tests that where a <component/> <reference/> has a <binding.ws/> element with @wsdlElement attribute referencing a WSDL service element, and the WSDL service element has 2 or more WSDL Ports available, that the SCA Runtime uses exactly one port for each invocation through the reference |
| Artifacts | BWS_2006_TestCase.java Test_BWS_2006.composite TestInvocation.wsdl |

| | |
|-----------------|---|
| | TestClient_0002.composite TestComposite1.composite TestComposite4.composite Service1.wsdl |
| Expected output | Positive test - 2 alternative outcomes: 1) "BWS_2006 request service1 operation1 invoked service2 operation1 invoked" 2) "BWS_2006 request service1 operation1 invoked service3 operation1 invoked" |

2.1.7 BWS_2007_TestCase

| | |
|-----------------|--|
| Testcase ID | BWS_2007_TestCase |
| Test Assertion | BWS-TA-20007 |
| Description | Tests that where a <component/> <reference/> has a <binding.ws/> element with @wsdlElement attribute referencing a WSDL port element, that the WSDL portType element associated with the WSDL port element is compatible with the service interface. |
| Artifacts | BWS_2007_TestCase.java Test_BWS_2007.composite TestInvocation.wsdl TestClient_0002.composite TestComposite1.composite TestComposite4.composite Service1.wsdl Service1InvalidService.wsdl |
| Expected output | Negative test: "exception" |

2.1.8 BWS_2008_TestCase

| | |
|----------------|---|
| Testcase ID | BWS_2008_TestCase |
| Test Assertion | BWS-TA-20008 |
| Description | Tests that where a <component/> <service/> has a <binding.ws/> element with @wsdlElement attribute referencing a WSDL port element, that the endpoint specified by the port element is exposed by the SCA runtime |

| | |
|-----------------|---|
| Artifacts | BWS_2008_TestCase.java Test_BWS_2008.composite TestInvocation.wsdl TestClient_0002.composite TestComposite1.composite TestComposite4.composite Service1.wsdl Service1WithPort.wsdl |
| Expected output | Positive test: "BWS_2008 request service1 operation1 invoked service2 operation1 invoked" |

2.1.9 BWS_2009_TestCase

| | |
|-----------------|---|
| Testcase ID | BWS_2009_TestCase |
| Test Assertion | BWS-TA-20009 |
| Description | Tests that where a <component/> <reference/> has a <binding.ws/> element with @wsdlElement attribute referencing a WSDL port element, that the portType specified by the WSDL port is a compatible superset of the interface on the reference |
| Artifacts | BWS_2009_TestCase.java Test_BWS_2009.composite TestInvocation.wsdl TestClient_0002.composite TestComposite1.composite TestComposite9.composite Service1.wsdl Service1Superset.wsdl sca_variables.dtd in BWS_2009 contribution |
| Expected output | Positive test: "BWS_2009 request service1 operation1 invoked service2 operation1 invoked" |

2.1.10 BWS_2010_TestCase

| | |
|-----------------|--|
| Testcase ID | BWS_2010_TestCase |
| Test Assertion | BWS-TA-20011 |
| Description | Tests that where a <component/> <service/> has a <binding.ws/> element with @wsdlElement attribute referencing a WSDL binding element, that the portType associated with the WSDL port is compatible with the interface on the service |
| Artifacts | BWS_2010_TestCase.java Test_BWS_2010.composite TestInvocation.wsdl TestClient_0002.composite TestComposite1.composite Service1.wsdl Service1WithBinding.wsdl |
| Expected output | Positive test: "BWS_2010 request service1 operation1 invoked service2 operation1 invoked" |

2.1.11 BWS_2011_TestCase

| | |
|-----------------|--|
| Testcase ID | BWS_2011_TestCase |
| Test Assertion | BWS-TA-20012 |
| Description | Tests that where a <component/> <service/> has a <binding.ws/> element with @wsdlElement attribute referencing a WSDL binding element and the WSDL binding element is not supported by the SCA runtime, an error is raised |
| Artifacts | BWS_2011_TestCase.java Test_BWS_2011.composite TestInvocation.wsdl TestClient_0002.composite TestComposite1.composite Service1.wsdl Service1WithBinding.wsdl |
| Expected output | Negative test: "exception" |

2.1.12BWS_2012_TestCase

| | |
|-----------------|--|
| Testcase ID | BWS_2012_TestCase |
| Test Assertion | BWS-TA-20013 BWS-TA-20015 (this testcase uses the @uri to identify the target service and so covers that aspect of that test assertion) |
| Description | Tests that where a <component/> <reference/> has a <binding.ws/> element with @wsdlElement attribute referencing a WSDL binding element, that the portType specified by the WSDL binding is a compatible superset of the interface on the reference |
| Artifacts | BWS_2012_TestCase.java Test_BWS_2012.composite TestInvocation.wsdl TestClient_0002.composite TestComposite4.composite TestComposite9.composite Service1.wsdl Service1Superset.wsdl in BWS_2012 contribution sca_variables.dtd in BWS_2012 contribution |
| Expected output | Positive test: "BWS_2012 request service1 operation1 invoked service2 operation1 invoked" |

2.1.13BWS_2013_TestCase

| | |
|----------------|---|
| Testcase ID | BWS_2013_TestCase |
| Test Assertion | BWS-TA-20014 |
| Description | Tests that where a <component/> <reference/> has a <binding.ws/> element with @wsdlElement attribute referencing a WSDL binding element, and the WSDL binding element is not supported by the SCA runtime, the SCA runtime raises an error. |
| Artifacts | BWS_2013_TestCase.java Test_BWS_2013.composite TestInvocation.wsdl TestClient_0002.composite TestComposite1.composite TestComposite4.composite |

| | |
|-----------------|---|
| | Service1.wsdl Service1InvalidService.wsdl in contribution BWS_2013 sca-variables.dtd in contribution BWS_2013 |
| Expected output | Negative test: "exception" |

2.1.14BWS_2014_TestCase

| | |
|-----------------|---|
| Testcase ID | BWS_2014_TestCase |
| Test Assertion | BWS-TA-20015 (this testcase uses the EndpointReference element to identify the target service and so covers that aspect of that test assertion) |
| Description | Tests that where a <component/> <reference/> has a <binding.ws/> element with @wsdlElement attribute referencing a WSDL binding element, that when the endpoint address of the target service is supplied as an <wsa:EndpointReference/> element, the service can be successfully invoked |
| Artifacts | BWS_2014_TestCase.java Test_BWS_2014.composite TestInvocation.wsdl TestClient_0002.composite TestComposite4.composite TestComposite9.composite Service1.wsdl Service1Superset.wsdl in BWS_2014 contribution sca_variables.dtd in BWS_2014 contribution |
| Expected output | Positive test: "BWS_2014 request service1 operation1 invoked service2 operation1 invoked" |

2.1.15BWS_2015_TestCase

| | |
|----------------|--|
| Testcase ID | BWS_2015_TestCase |
| Test Assertion | BWS-TA-20016 |
| Description | Tests that where a <binding.ws/> element has a @wsdli:wSDLLocation attribute specified that it also has a @wsdlElement attribute specified |
| Artifacts | BWS_2015_TestCase.java |

| | |
|-----------------|--|
| | Test_BWS_2015.composite TestInvocation.wsdl TestClient_0002.composite TestComposite1.composite TestComposite4.composite Service1.wsdl Service1InvalidService.wsdl in contribution BWS_2015 sca-variables.dtd in contribution BWS_2015 |
| Expected output | Negative test: "exception" |

2.1.16BWS_2016_TestCase

| | |
|-----------------|--|
| Testcase ID | BWS_2016_TestCase |
| Test Assertion | BWS-TA-20017 |
| Description | Tests that where a <binding.ws/> element has a @wsdl:wsdlLocation attribute specified, that the value of the attribute points to a WSDL 1.1 document |
| Artifacts | BWS_2016_TestCase.java Test_BWS_2016.composite TestInvocation.wsdl TestClient_0002.composite TestComposite1.composite TestComposite4.composite Service1.wsdl Service1InvalidService.wsdl in contribution BWS_2016 sca-variables.dtd in contribution BWS_2016 |
| Expected output | Negative test: "exception" |

2.1.17BWS_2017_TestCase

| | |
|----------------|-------------------|
| Testcase ID | BWS_2017_TestCase |
| Test Assertion | BWS-TA-20018 |

| | |
|-----------------|--|
| Description | Tests that where a <binding.ws/> element has a @uri attribute referen- cing the target service it does not also have a wsa:EndpointReference subelement referencing the target service |
| Artifacts | BWS_2017_TestCase.java Test_BWS_2017.composite TestInvocation.wsdl TestClient_0002.composite TestComposite9.composite TestComposite4.composite Service1.wsdl Service1Superset.wsdl in contribution BWS_2017 sca-variables.dtd in contribution BWS_2017 |
| Expected output | Negative test: "exception" |

2.1.18BWS_2018_TestCase

| | |
|-----------------|--|
| Testcase ID | BWS_2018_TestCase |
| Test Assertion | BWS-TA-20019 |
| Description | Tests that where a <binding.ws/> element is a subelement of a <service> <callback> element, it has no @uri attribute specified |
| Artifacts | BWS_2018_TestCase.java Test_BWS_2018.composite TestInvocation.wsdl TestClient_0002.composite TestComposite54.composite TestComposite55.composite Service1.wsdl Service5.wsdl Service5Callback.wsdl |
| Expected output | Negative test: "exception" |

2.1.19BWS_2019_TestCase

| | |
|-----------------|--|
| Testcase ID | BWS_2019_TestCase |
| Test Assertion | BWS-TA-20023 |
| Description | Tests that a <binding.ws/> element conforms to the schema defined in sca-binding-webservice-1.1.xsd |
| Artifacts | BWS_2019_TestCase.java Test_BWS_2019.composite TestInvocation.wsdl TestClient_0002.composite TestComposite1.composite TestComposite4.composite Service1.wsdl |
| Expected output | Negative test: "exception" |

2.1.20BWS_2020_TestCase

| | |
|-----------------|--|
| Testcase ID | BWS_2020_TestCase |
| Test Assertion | BWS-TA-20024 |
| Description | Tests that where a <binding.ws/> subelement of a component <reference/> does not have a target defined, that the SCA runtime raises an error |
| Artifacts | BWS_2020_TestCase.java Test_BWS_2020.composite TestInvocation.wsdl TestClient_0002.composite TestComposite1.composite TestComposite4.composite Service1.wsdl |
| Expected output | Negative test: "exception" |

2.1.21BWS_2021_TestCase

| | |
|-----------------|---|
| Testcase ID | BWS_2021_TestCase |
| Test Assertion | BWS-TA-20025 |
| Description | Tests that where a <binding.ws/> subelement of a component <reference/> has a valid target defined by means of its @uri attribute, that the SCA runtime uses that target address when the component invokes an operation of the reference |
| Artifacts | BWS_2021_TestCase.java Test_BWS_2021.composite TestInvocation.wsdl TestClient_0002.composite TestComposite1.composite TestComposite4.composite Service1.wsdl |
| Expected output | Positive test: "BWS_2021 request service1 operation1 invoked service2 operation1 invoked" |

2.1.22 BWS_2022_TestCase

| | |
|-----------------|--|
| Testcase ID | BWS_2022_TestCase |
| Test Assertion | BWS-TA-20030 |
| Description | Tests that where a <binding.ws/> subelement of a component <reference/> has a @wsdlElement attribute which references a Port element of a WSDL document and the Port element has an associated portType which contains an sca @callback extension attribute, but where the <reference/> interface declaration does not have a callback, that the portType is treated as being not compatible with the interface for the reference and that an error is raised. |
| Artifacts | BWS_2022_TestCase.java Test_BWS_2022.composite TestInvocation.wsdl TestClient_0002.composite TestComposite1.composite TestComposite4.composite Service1.wsdl Service1WithCallback.wsdl |
| Expected output | Negative test: |

| | |
|--|-------------|
| | "exception" |
|--|-------------|

2.1.23 BWS_2023_TestCase

| | |
|-----------------|--|
| Testcase ID | BWS_2023_TestCase |
| Test Assertion | BWS-TA-20033 |
| Description | Tests that the <bindingType/> for binding.ws binding includes the SOAP.v1_1 intent in its @mayProvides or @alwaysProvides attributes |
| Artifacts | BWS_2023_TestCase.java Test_BWS_2023.composite TestInvocation.wsdl TestClient_0002.composite TestComposite1.composite TestComposite4.composite Service1.wsdl |
| Expected output | Positive test: "BWS_2023 request service1 operation1 invoked service2 operation1 invoked" |

2.2 TestCases for Web Service Binding Specification Section 4

2.2.1 BWS_4001_TestCase

| | |
|-----------------|---|
| Testcase ID | BWS_4001_TestCase |
| Test Assertion | BWS-TA-40001 |
| Description | Tests that where a <component/> <service/> element has a <binding.ws/> subelement to which the SOAP intent is applied, that the service endpoint both sends and receives messages in a version of the SOAP protocol |
| Artifacts | BWS_4001_TestCase.java Test_BWS_4001.composite TestInvocation.wsdl TestClient_0002.composite Service1.wsdl TestComposite1.composite |
| Expected output | Positive test: "BWS_4001 request service1 operation1" |

2.2.2 BWS_4002_TestCase

| | |
|-----------------|--|
| Testcase ID | BWS_4002_TestCase |
| Test Assertion | BWS-TA-40002 |
| Description | Tests that where a <component/> <service/> element has a <binding.ws/> subelement to which the SOAP.v1_1 intent is applied, that the service endpoint both sends and receives messages in the SOAP v1.1 protocol |
| Artifacts | BWS_4002_TestCase.java Test_BWS_4002.composite TestInvocation.wsdl TestClient_0002.composite Service1.wsdl TestComposite1.composite |
| Expected output | Positive test: "BWS_4002 request service1 operation1" |

2.2.3 BWS_4003_TestCase

| | |
|-----------------|--|
| Testcase ID | BWS_4003_TestCase |
| Test Assertion | BWS-TA-40003 |
| Description | Tests that where a <component/> <service/> element has a <binding.ws/> subelement to which the SOAP.V1.2 intent is applied, that the service endpoint both sends and receives messages in the SOAP v1.2 protocol |
| Artifacts | BWS_4003_TestCase.java Test_BWS_4003.composite TestInvocation.wsdl TestClient_0002.composite Service1.wsdl TestComposite1.composite |
| Expected output | Positive test: "BWS_4003 request service1 operation1" |

2.2.4 BWS_4004_TestCase

| | |
|----------------|-------------------|
| Testcase ID | BWS_4004_TestCase |
| Test Assertion | BWS-TA-40001 |

| | |
|-----------------|--|
| Description | Tests that where a <component/> <reference/> element has a <binding.ws/> subelement to which the SOAP intent is applied, that the reference both sends and receives messages in a version of the SOAP protocol |
| Artifacts | BWS_4004_TestCase.java Test_BWS_4004.composite TestInvocation.wsdl TestClient_0002.composite Service1.wsdl TestComposite4.composite |
| Expected output | Positive test: "BWS_4004 request service1 operation1 invoked request Client service1 operation1 invoked" |

2.2.5 BWS_4005_TestCase

| | |
|-----------------|---|
| Testcase ID | BWS_4005_TestCase |
| Test Assertion | BWS-TA-40002 |
| Description | Tests that where a <component/> <reference/> element has a <binding.ws/> subelement to which the SOAP.v1_1 intent is applied, that the reference both sends and receives messages in the SOAP v1.1 protocol |
| Artifacts | BWS_4005_TestCase.java Test_BWS_4005.composite TestInvocation.wsdl TestClient_0002.composite Service1.wsdl TestComposite4.composite |
| Expected output | Positive test: "BWS_4005 request service1 operation1 invoked request Client service1 operation1 invoked" |

2.2.6 BWS_4006_TestCase

| | |
|----------------|---|
| Testcase ID | BWS_4006_TestCase |
| Test Assertion | BWS-TA-40003 |
| Description | Tests that where a <component/> <reference/> element has a <binding.ws/> subelement to which the SOAP.V1.2 intent is applied, that the reference both sends and receives messages in the SOAP v1.2 pro- |

| | |
|-----------------|--|
| | toCol |
| Artifacts | BWS_4006_TestCase.java Test_BWS_4006.composite TestInvocation.wsdl TestClient_0002.composite Service1.wsdl TestComposite4.composite |
| Expected output | Positive test: "BWS_4006 request service1 operation1 invoked request Client service1 operation1 invoked" |

2.2.7 BWS_4007_TestCase

| | |
|-----------------|---|
| Testcase ID | BWS_4007_TestCase |
| Test Assertion | BWS-TA-40004 |
| Description | Tests that where a <component/> <reference/> element has an explicit portType rpc-literal in form, it is accepted |
| Artifacts | BWS_4007_TestCase.java Test_BWS_4007.composite TestInvocation.wsdl TestClient_0002.composite Service1.wsdl TestComposite4.composite Service1RPCLiteral.wsdl |
| Expected output | Positive test: "BWS_4007 request service1 operation1 invoked request Client service1 operation1 invoked" |
| Comment | All other (positive) testcases use a simple document literal wrapped form and so the acceptance of rpc-literal is otherwise not tested |

2.2.8 BWS_4008_TestCase

| | |
|----------------|--|
| Testcase ID | BWS_4008_TestCase |
| Test Assertion | BWS-TA-40004 |
| Description | Tests that where <component/> <reference/> element has an explicit port- Type rpc-encoded in form, it is rejected |
| Artifacts | BWS_4008_TestCase.java |

| | |
|-----------------|---|
| | Test_BWS_4008.composite TestInvocation.wsdl TestClient_0002.composite Service1.wsdl TestComposite4.composite Service1RPCEncoded.wsdl |
| Expected output | Negative test: "exception" |

2.3 TestCases for Web Service Binding Specification Section 5

2.3.1 BWS_5001_TestCase

| | |
|-----------------|--|
| Testcase ID | BWS_5001_TestCase |
| Test Assertion | BWS-TA-50001 |
| Description | <p>Tests that where an SCA reference with a bidirectional interface invokes a Web service, that the Web service message sent to the target service contains a Callback EPR, either in the wsa:From SOAP header or in the wsa:ReplyTo header</p> <p>In this case, an SCA component is a client to an external Web service that has a callback, so this checks the ability of the binding.ws implementation of the runtime to transmit a callback address in the right way and host the callback service for a reference</p> |
| Artifacts | BWS_5001_TestCase.java Test_BWS_5001.composite TestInvocation.wsdl TestClient_0002.composite TestComposite54.composite Service5.wsdl Service5Callback.wsdl jaxwsClient.Service5Impl.java |
| Expected output | Positive test: "BWS_5001 request service1 operation1 invoked request Client service5 operation1 invoked service1 callback1 invoked" |

2.3.2 BWS_5002_TestCase

| | |
|-----------------|---|
| Testcase ID | BWS_5002_TestCase |
| Test Assertion | BWS-TA-50001 BWS-TA-50003 |
| Description | <p>Tests that where an SCA service with a bidirectional interface is invoked by a Web services client, that the Web service message sent to the target service contains a Callback EPR, either in the wsa:From SOAP header or in the wsa:ReplyTo header, which the service is able to use to invoke an operation on the callback interface</p> <p>In this case, an SCA component provides a service over binding.ws where the service has a callback and an external client invokes the service and hosts the callback service.</p> |
| Artifacts | BWS_5002_TestCase.java Test_BWS_5002.composite TestInvocation.wsdl TestClient_0002.composite TestComposite54.composite Service5.wsdl Service5Callback.wsdl jaxwsClient.Service5Impl.java |
| Expected output | Positive test: "BWS_5002 service1 operation1 invoked callback service5Callback callback1 invoked" |

2.3.3 BWS_5003_TestCase

| | |
|----------------|--|
| Testcase ID | BWS_5003_TestCase |
| Test Assertion | BWS-TA-50002 |
| Description | <p>Tests that where an SCA service with a bidirectional interface is invoked by a Web services client, that if the Web service invocation message sent to the target service contains a Callback EPR, of the form "http://www.w3.org/2005/08/addressing/anonymous"</p> <p>that the service raises an Invalid Addressing Header fault.</p> |
| Artifacts | BWS_5003_TestCase.java Test_BWS_5003.composite TestInvocation.wsdl TestClient_0002.composite |

| | |
|-----------------|--|
| | TestComposite54.composite Service5.wsdl Service5Callback.wsdl jaxwsClient.Service5Impl.java |
| Expected output | Negative test: "exception" |

2.3.4 BWS_5004_TestCase

| | |
|-----------------|--|
| Testcase ID | BWS_5004_TestCase |
| Test Assertion | BWS-TA-50004 BWS-TA-50007 |
| Description | Tests that where an SCA service with a bidirectional interface is invoked by a Web services client, that a callback operation invocation follows the rules defined in Section 3.3 of the WS-Addressing 1.0 - Core specification - deals with case where there are no reference parameters on forward call |
| Artifacts | BWS_5004_TestCase.java Test_BWS_5004.composite TestInvocation.wsdl TestClient_0002.composite TestComposite54.composite Service5.wsdl Service5Callback.wsdl jaxwsClient.Service5Impl.java |
| Expected output | Positive test: "BWS_5004 service1 operation1 invoked callback service5Callback call-back1 invoked headers OK" |

2.3.5 BWS_5005_TestCase

| | |
|----------------|--|
| Testcase ID | BWS_5005_TestCase |
| Test Assertion | BWS-TA-50005 BWS-TA-50006 |
| Description | Tests that where an SCA service with a bidirectional interface is invoked by a Web services client, and the client invocation message contains a |

| | |
|-----------------|---|
| | wsa:MessageID SOAP header block, that an invocation of a callback operation contains a wsa:RelatesTo SOAP header block |
| Artifacts | BWS_5005_TestCase.java Test_BWS_5005.composite TestInvocation.wsdl TestClient_0002.composite TestComposite54.composite Service5.wsdl Service5Callback.wsdl jaxwsClient.Service5Impl.java |
| Expected output | Positive test: "BWS_5005 service1 operation1 invoked callback service5Callback callback1 invoked headers OK" |

2.3.6 BWS_5006_TestCase

| | |
|-----------------|---|
| Testcase ID | BWS_5006_TestCase |
| Test Assertion | BWS-TA-50004 |
| Description | Tests that where an SCA service with a bidirectional interface is invoked by a Web services client, that a callback operation invocation follows the rules defined in Section 3.3 of the WS-Addressing 1.0 - Core specification - deals with case where there are reference parameters on forward call |
| Artifacts | BWS_5006_TestCase.java Test_BWS_5006.composite TestInvocation.wsdl TestClient_0002.composite TestComposite54.composite Service5.wsdl Service5Callback.wsdl jaxwsClient.Service5Impl.java |
| Expected output | Positive test: "BWS_5006 service1 operation1 invoked callback service5Callback callback1 invoked headers OK" |

3 Catalog of Test Artifacts

3.1 Composite Files - lower level

| Name | Valid | Description |
|---|-------|---|
| TestComposite1 <i>"Impl Specific"</i> | Y | 1 service, interface Service1 0 references service1Impl |
| TestComposite4 <i>"Impl Specific"</i> | Y | 1 service, interface Service1 1 reference (1..1), interface Service1 service1Impl2 |
| TestComposite9 <i>"Impl Specific"</i> | Y | 1 service, interface = Service1Superset 0 references service1SupersetImpl |
| TestComposite54 <i>"Impl Specific"</i> | Y | 1 service, interface = Service1 1 reference with a callback - Service5 & Service5Callback service1Callback5Impl |
| TestComposite55 <i>"Impl Specific"</i> | Y | 1 service with callback - Service5 & Service5Callback 0 references service5Impl |
| | | |
| TestClient_0002 <i>"Impl Specific"</i> | Y | Test client invocation composite 1 service, interface = TestInvocation 1 reference (1..1), interface = Service1 |

3.2 Java Interfaces

| Name | Description |
|---------------|-------------|
| Service1.java | |

| | |
|-----------------------|--|
| Service1Superset.java | |
| Service5.java | |
| Service5Callback.java | |
| TestInvocation.java | |

3.3 Java Implementation Classes

| Name | Description |
|----------------------------|-------------|
| Service1Impl.java | |
| Service1Impl2.java | |
| Service1SupersetImpl.java | |
| Service1Callback5Impl.java | |
| Service5Impl.java | |
| TestException.java | |
| ASM_0002_Client.java | |

3.4 WSDL Interface Files

| Name | Description |
|-------------------------|--|
| Service1.wsdl | Service1 interface 1 operation: - "operation1" string input, string output |
| Service1RPCLiteral.wsdl | Service1 interface in RPC Literal form |
| Service1Superset.wsdl | Service1Superset interface - superset of Service1 2 operations: - "operation1" string input, string output - "operation2" string input, string output |

| | |
|--|--|
| Service5.wsdl | Service5 interface which has a callback interface Service5Callback 1 operation: - "operation1" string input, string output |
| Service5Callback.wsdl | Service5Callback interface, which is the callback interface for Service5 1 operation: - "callback1" string input, string output |
| Service1InvalidService.wsdl (BWS_2005 contribution) | Service1 interface - this is Service1 with an invalid WSDL Binding (invalid transport) |
| Service1InvalidPort.wsdl (BWS_2007 contribution) | Service1 interface - this is Service1 with a PortType incompatible with the regular Service1 PortType |
| Service1WithPort.wsdl (BWS_2008 contribution) | Service1 interface - this is Service1 with a Port which includes a target address for the service |
| Service1Superset.wsdl (BWS_2009 contribution) | Service1Superset interface - with additional WSDL Service, Port & Binding elements |
| Service1WithBinding.wsdl (BWS_2010 contribution) | Service1 interface - with a valid WSDL Binding element |
| Service1InvalidService.wsdl (BWS_2011 contribution) | Service1 interface - this is Service1 with a WSDL Service made invalid through the use of an invalid WSDL Binding element |
| Service1Superset.wsdl (BWS_2012 contribution) | Service1Superset interface - with additional WSDL Service, Port & Binding elements |
| Service1InvalidService.wsdl (BWS_2013 contribution) | Service1 interface - this is Service1 with a WSDL Service made invalid through the use of an invalid WSDL Binding element |
| Service1Superset.wsdl | Service1Superset interface |

| | |
|--|---|
| (BWS_2014 contribution) | - with additional WSDL Service, Port & Binding elements |
| Service1WithBinding.wsdl (BWS_2015 contribution) | Service1 interface - with a valid WSDL Binding element |
| Service1WithBinding.wsdl (BWS_2016 contribution) | Service1 interface - with a valid WSDL Binding element |
| Service1Superset.wsdl (BWS_2017 contribution) | Service1Superset interface - with additional WSDL Service, Port & Binding elements |
| Service1WithCallback.wsdl (BWS_2022 contribution) | Service1 interface - PortType has a sca:callback attribute added which points to a callback interface Service1Callback, which is contained in the same WSDL document |
| Service1RPCEncoded.wsdl (BWS_4008 contribution) | Service1 interface in RPC Encoded form |
| | |
| | |
| sca_variables.dtd (BWS_General contribution) | DTD holding service addresses which can be modified to suit an SCA runtime |
| sca_variables.dtd (BWS_2005 contribution) | holds service address for <i>TEST_BWS_2005Component2/Service1</i> |
| sca_variables.dtd (BWS_2008 contribution) | holds service address for <i>TEST_BWS_2008Component2/Service1Special</i> |
| sca_variables.dtd (BWS_2009 contribution) | holds service address for <i>TEST_BWS_2009Component2/Service1Superset</i> |
| sca_variables.dtd (BWS_2011 contribution) | holds service address for <i>TEST_BWS_2011Component2/Service1</i> |
| sca_variables.dtd (BWS_2012 contribution) | holds service address for <i>TEST_BWS_2012Component2/Service1Superset</i> |
| sca_variables.dtd (BWS_2013 contribution) | holds service address for <i>TEST_BWS_2013Component2/Service1</i> |

| | |
|---|--|
| sca_variables.dtd (BWS_2014 contribution) | holds service address for <i>TEST_BWS_2014Component2/Service1SuperSet</i> |
| sca_variables.dtd (BWS_2015 contribution) | holds service address for <i>TEST_BWS_2015Component2/Service1</i> |
| sca_variables.dtd (BWS_2016 contribution) | holds service address for <i>TEST_BWS_2016Component2/Service1</i> |
| sca_variables.dtd (BWS_2017 contribution) | holds service address for <i>TEST_BWS_2017Component2/Service1SuperSet</i> |
| sca_variables.dtd (BWS_2021 contribution) | holds service address for <i>TEST_BWS_2021Component2/Service1</i> |
| sca_variables.dtd (BWS_2022 contribution) | holds service address for <i>TEST_BWS_2022/Component2/Service1</i> |
| sca_variables.dtd (BWS_2023 contribution) | holds service address for <i>TEST_BWS_2023Component2/Service1</i> |
| sca_variables.dtd (BWS_4008 contribution) | holds service address for service exposed by JAXWS test runner client application |
| TestClient.wsdl | TestClient interface used to invoke SCA services |
| TestInvocation.wsdl | TestInvocation interface supplied by SCA component to allow client application to invoke test artifacts 1 operation: - "invokeTest" string input, string output |
| | |
| | |

4 Conformance

The artifacts contained in the sca-wsbinding-1.1-testcases.zip are considered to be authoritative and take precedence over the artifacts described in this document.

This specification defines two targets for conformance:

a) WS Binding Testcases

b) Web Service Callback (WSCB) Testcases

An implementation that claims to conform to the requirements of the WS Binding Testcases **MUST** be able to run all test cases in Section 2.1 and Section 2.2, producing the 'Expected Output'.

An implementation that claims to conform to the WSCB Testcases **MUST** be able to run all tests in Section 2.3, producing the 'Expected Output'.

Appendix A. Test Assertions for the Web Service Binding

This section defines the Test Assertions for the SCA Web Service Binding specification, following the format defined in the OASIS Test Assertion Guidelines specification [TA-GUIDE].

A.1. Example Test Assertion

Test assertions are presented in a tabular format with rows corresponding to the entry types defined in the OASIS Test Assertions Guidelines

| | |
|--------------------|---|
| Assertion ID | BJM-TA-nnnnn |
| | [BJMnnnnn] |
| Target | <xyuvbghs/> element of composite file |
| Prerequisites | The [<xyuvbghs/> element] has a @foobar attribute |
| Predicate | The @foobar attribute of [the <xyuvbghs/> element] is a URI that references a foobar element in the SCA Domain- |
| Prescription Level | Mandatory |
| Tags | foobar references |

Assertion ID: Is a unique ID for the test assertion. Its format starts with a 3 letter string that identifies the specification to which it relates - "BJM" for the SCA JMS Binding specification. This is followed by "-TA-" to indicate that this identifier is for a test assertion. This is then followed by a unique 5 digit number

Source: Is the identifier(s) of the normative statement(s) in the specification to which this assertion relates.

Target: Identifies the target which is addressed by this assertion. This is typically some SCA document element, but possibly could identify an SCA runtime and its behaviour.

Prerequisites: Defines any prerequisites for this test assertion. The prerequisites can be defined in terms of one or more other test assertions that have to be true.

Predicate: The meat of the assertion - something that evaluates to true or false for the given target.

Prescription Level: Mandatory (for "MUST" requirements) or Preferred (for "SHOULD" requirements) or Permitted (for "MAY" requirements).

Tags: Zero or more labels to be attached to this test assertion - these tags can be used to group sets of assertions.

A.2. Test Assertions for Web Service Binding Specification Section 2

| | |
|---------------|---|
| Assertion ID | BWS-TA-20001 |
| Source | [BWS20001] |
| Target | The reference/binding.ws/@uri attribute |
| Prerequisites | |
| Predicate | The value of the attribute is an absolute value |
| Prescription | Mandatory |

| | |
|-------|------------------------------------|
| Level | |
| Tags | “uri attribute” “reference target” |

| | |
|--------------------|---|
| Assertion ID | BWS-TA-20002 |
| Source | [BWS20002] |
| Target | The binding.ws/@wsdlElement attribute |
| Prerequisites | |
| Predicate | The value of the attribute points to an existing WSDL 1.1 element |
| Prescription Level | Mandatory |
| Tags | “wsdlElement” |

| | |
|--------------------|---|
| Assertion ID | BWS-TA-20003 |
| Source | [BWS20003] |
| Target | The service/binding.ws/@wsdlElement attribute |
| Prerequisites | |
| Predicate | The value of the attribute is not of the form <WSDL-namespace-URI>#wsdl.service(<service-name>) |
| Prescription Level | Mandatory |
| Tags | “wsdlElement” |

| | |
|--------------------|---|
| Assertion ID | BWS-TA-20004 |
| Source | [BWS20004] |
| Target | The reference/binding.ws/@wsdlElement attribute |
| Prerequisites | The value of the attribute is of the form <WSDL-namespace-URI>#wsdl.service(<service-name>) |
| Predicate | The set of available ports for that reference-binding is non-empty |
| Prescription Level | Mandatory |
| Tags | “wsdlElement” “reference target” “port” |

| | |
|--------------|--------------|
| Assertion ID | BWS-TA-20005 |
| Source | [BWS20005] |
| Target | SCA runtime |

| | |
|--------------------|---|
| Prerequisites | The value of the attribute reference/binding.ws/@wsdlElement is of the form <WSDL-namespace-URI>#wsdl.service(<service-name>) and SCA runtime does not support any of the available ports |
| Predicate | The SCA runtime raises an error |
| Prescription Level | Mandatory |
| Tags | "wsdlElement" "reference target" "error" |

| | |
|--------------------|--|
| Assertion ID | BWS-TA-20006 |
| Source | [BWS20006] |
| Target | SCA runtime |
| Prerequisites | The value of the attribute reference/binding.ws/@wsdlElement is of the form <WSDL-namespace-URI>#wsdl.service(<service-name>) and the number of available ports is more than one |
| Predicate | The SCA runtime uses exactly one port for each invocation |
| Prescription Level | Mandatory |
| Tags | "wsdlElement" "reference target" |

| | |
|--------------------|--|
| Assertion ID | BWS-TA-20007 |
| Source | [BWS20007] |
| Target | The service/binding.ws/@wsdlElement attribute |
| Prerequisites | The value of the attribute is of the form <WSDL-namespace-URI>#wsdl.-port(<service-name>/<port-name>) |
| Predicate | The portType associated with the port is compatible with the service interface and satisfies all the policy constraints of the binding |
| Prescription Level | Mandatory |
| Tags | "wsdlElement" |

| | |
|---------------|--|
| Assertion ID | BWS-TA-20008 |
| Source | [BWS20008] |
| Target | SCA runtime |
| Prerequisites | The value of the attribute service/binding.ws/@wsdlElement is of the form <WSDL-namespace-URI>#wsdl.port(<service-name>/<port-name>) |
| Predicate | The SCA runtime exposes the endpoint specified by the WSDL port or raises an error if the port is not supported |
| Prescription | Mandatory |

| | |
|-------|---------------|
| Level | |
| Tags | “wsdlElement” |

| | |
|--------------------|---|
| Assertion ID | BWS-TA-20009 |
| Source | [BWS20009] |
| Target | The reference/binding.ws/@wsdlElement attribute |
| Prerequisites | The value of the attribute is of the form <WSDL-namespace-URI>#wsdl.-port(<service-name>/<port-name>) |
| Predicate | The portType associated with the port is compatible superset of the reference interface and satisfies all the policy constraints of the binding |
| Prescription Level | Mandatory |
| Tags | “wsdlElement” |

| | |
|--------------------|--|
| Assertion ID | BWS-TA-20010 |
| Source | [BWS20010] |
| Target | SCA runtime |
| Prerequisites | The value of the attribute reference/binding.ws/@wsdlElement is of the form <WSDL-namespace-URI>#wsdl.port(<service-name>/<port-name>) |
| Predicate | The SCA runtime uses the endpoint specified by the WSDL port for invocations or raises an error if the port is not supported |
| Prescription Level | Mandatory |
| Tags | “wsdlElement” |

| | |
|--------------------|--|
| Assertion ID | BWS-TA-20011 |
| Source | [BWS20011] |
| Target | The service/binding.ws/@wsdlElement attribute |
| Prerequisites | The value of the attribute is of the form <WSDL-namespace-URI>#wsdl.-binding(<binding-name>) |
| Predicate | The portType associated with the WSDL binding is compatible with the service interface and satisfies all the policy constraints of the binding |
| Prescription Level | Mandatory |
| Tags | “wsdlElement” |

| | |
|--------------|--------------|
| Assertion ID | BWS-TA-20012 |
|--------------|--------------|

| | |
|--------------------|---|
| Source | [BWS20012] |
| Target | SCA runtime |
| Prerequisites | The value of the attribute <code>service/binding.ws/@wsdlElement</code> is of the form <code><WSDL-namespace-URI>#wsdl.binding(<binding-name>)</code> |
| Predicate | The SCA runtime exposes an endpoint using the specified WSDL binding or raises an error if the WSDL binding is not supported |
| Prescription Level | Mandatory |
| Tags | "wsdlElement" |

| | |
|--------------------|---|
| Assertion ID | BWS-TA-20013 |
| Source | [BWS20013] |
| Target | The <code>reference/binding.ws/@wsdlElement</code> attribute |
| Prerequisites | The value of the attribute is of the form <code><WSDL-namespace-URI>#wsdl.binding(<binding-name>)</code> |
| Predicate | The portType associated with the WSDL binding is compatible superset of the reference interface and satisfies all the policy constraints of the binding |
| Prescription Level | Mandatory |
| Tags | "wsdlElement" |

| | |
|--------------------|---|
| Assertion ID | BWS-TA-20014 |
| Source | [BWS20014] |
| Target | SCA runtime |
| Prerequisites | The value of the attribute <code>reference/binding.ws/@wsdlElement</code> is of the form <code><WSDL-namespace-URI>#wsdl.binding(<binding-name>)</code> |
| Predicate | The SCA runtime uses the WSDL binding specified for reference invocations or raises an error if the WSDL binding is not supported |
| Prescription Level | Mandatory |
| Tags | "wsdlElement" |

| | |
|---------------|--|
| Assertion ID | BWS-TA-20015 |
| Source | [BWS20015] |
| Target | The <code>reference/binding.ws/@wsdlElement</code> attribute |
| Prerequisites | The value of the attribute is of the form <code><WSDL-namespace-URI>#wsdl.binding(<binding-name>)</code> |
| Predicate | The endpoint address is either specified by the <code>reference/binding.ws/@uri</code> |

| | |
|--------------------|---|
| | attribute, or the reference/binding.ws/EndpointReference element, except for the cases where the SCA Assembly specification allows the @uri attribute to be omitted |
| Prescription Level | Mandatory |
| Tags | "wsdlElement" |

| | |
|--------------------|--|
| Assertion ID | BWS-TA-20016 |
| Source | [BWS20017] |
| Target | The binding.ws element |
| Prerequisites | The attribute wsdl:wsdlLocation attribute is present |
| Predicate | The attribute wsdlElement is also present on the same binding.ws element |
| Prescription Level | Mandatory |
| Tags | "wsdlElement" "wsdlLocation" |

| | |
|--------------------|---|
| Assertion ID | BWS-TA-20017 |
| Source | [BWS20018] |
| Target | The binding.ws/@wsdl:wsdlLocation attribute |
| Prerequisites | |
| Predicate | The attribute value points to an existing WSDL 1.1 document |
| Prescription Level | Mandatory |
| Tags | "wsdlLocation" |

| | |
|--------------------|---|
| Assertion ID | BWS-TA-20018 |
| Source | [BWS20019] |
| Target | The binding.ws element |
| Prerequisites | |
| Predicate | The uri attribute, the endpointReference element and the wsdlElement attribute referring to a WSDL port or service are mutually exclusive |
| Prescription Level | Mandatory |
| Tags | "wsdlElement" "uri" "endpoint reference" |

| | |
|--------------|--------------|
| Assertion ID | BWS-TA-20019 |
|--------------|--------------|

| | |
|--------------------|---|
| Source | [BWS20020] |
| Target | The service/callback/binding.ws element |
| Prerequisites | |
| Predicate | The uri attribute or endpointReference element are absent |
| Prescription Level | Mandatory |
| Tags | “callback” “uri” “endpoint reference” |

| | |
|--------------------|--|
| Assertion ID | BWS-TA-20020 |
| Source | [BWS20021] |
| Target | SCA runtime |
| Prerequisites | |
| Predicate | All attributes of binding.ws, i.e., name, uri, requires, policSets, wsdlElement, wsdl:wsdlLocation are supported |
| Prescription Level | Mandatory |
| Tags | “wsdlElement” “uri” “requires” “policySets” “name” “wsdlLocation” |

| | |
|--------------------|---|
| Assertion ID | BWS-TA-20021 |
| Source | [BWS20022] |
| Target | SCA runtime |
| Prerequisites | |
| Predicate | binding.ws/endpointReference element is supported |
| Prescription Level | Mandatory |
| Tags | “endpointReference” “SCA runtime” |

| | |
|--------------------|--|
| Assertion ID | BWS-TA-20023 |
| Source | [BWS20024] |
| Target | binding.ws element |
| Prerequisites | |
| Predicate | Conforms to the schema defined in sca-binding-webservice-1.1.xsd |
| Prescription Level | Mandatory |
| Tags | “schema” |

| | |
|--------------------|---|
| Assertion ID | BWS-TA-20024 |
| Source | [BWS20025] |
| Target | <binding.ws/> subelement of a component <reference> element |
| Prerequisites | binding.ws does not contain a target address |
| Predicate | SCA runtime raises an error |
| Prescription Level | Mandatory |
| Tags | “target address” “SCA runtime” |

| | |
|--------------------|---|
| Assertion ID | BWS-TA-20025 |
| Source | [BWS20026] |
| Target | <binding.ws/> subelement of a component <reference/> |
| Prerequisites | The binding.ws element has a valid target specified by one of the mechanisms defined in the specification section "Endpoint URI resolution" |
| Predicate | The target address is used by the runtime when the component implementation invokes an operation of the reference |
| Prescription Level | Mandatory |
| Tags | “target address” |

| | |
|--------------------|--|
| Assertion ID | BWS-TA-20026 |
| Source | [BWS20027] |
| Target | SCA runtime |
| Prerequisites | binding.ws is used on a service or a reference that has an interface which is not defined using interface.wsdl |
| Predicate | A WSDL portType is derived for the service or the reference using the WSDL mapping rules defined for that interface type |
| Prescription Level | Mandatory |
| Tags | “sca runtime” “interface mapping” “Language dependent” |

| | |
|---------------|--|
| Assertion ID | BWS-TA-20027 |
| Source | [BWS20028] |
| Target | SCA runtime |
| Prerequisites | binding.ws is used on a service or a reference that has an interface which is not defined using interface.wsdl |

| | |
|--------------------|---|
| Predicate | An error is raised if the interface used cannot be mapped to a WSDL port-Type |
| Prescription Level | Mandatory |
| Tags | "sca runtime" "interface mapping" |

| | |
|--------------------|---|
| Assertion ID | BWS-TA-20030 |
| Source | [BWS20032] |
| Target | <binding.ws/> element which references a WSDL document by means of its @wsdlElement attribute |
| Prerequisites | The referenced WSDL document contains one or more of the extensions defined in the SCA namespace " http://docs.oasis-open.org/ns/opencsa/sca/200912 " as defined in the SCA Assembly specification |
| Predicate | The SCA runtime supports the SCA WSDL extensions contained in the WSDL document |
| Prescription Level | Mandatory |
| Tags | "sca runtime" "WSDL extension" |

| | |
|--------------------|--|
| Assertion ID | BWS-TA-20031 |
| Source | [BWS20033] |
| Target | <binding.ws/> element which references a Binding in a WSDL document by means of its @wsdlElement attribute |
| Prerequisites | The WSDL Binding element uses the SOAP 1.1 over HTTP binding, using a wsoap11:binding that has the @transport attribute with a value of "http://schemas.xmlsoap.org/soap/http" |
| Predicate | The binding.ws element is supported by the SCA runtime and it is possible to invoke a service operation successfully through the reference or service which uses the binding.ws element. |
| Prescription Level | Mandatory |
| Tags | "sca runtime" "WSDL extension" "SOAP 1.1" |

| | |
|---------------|---|
| Assertion ID | BWS-TA-20032 |
| Source | [BWS20034] |
| Target | <binding.ws/> element which references a Binding in a WSDL document by means of its @wsdlElement attribute |
| Prerequisites | The WSDL Binding element uses the SOAP 1.2 over HTTP binding, using a wsoap12:binding that has the @transport attribute with a value of |

| | |
|--------------------|--|
| | "http://schemas.xmlsoap.org/soap/http" |
| Predicate | The binding.ws element is supported by the SCA runtime and it is possible to invoke a service operation successfully through the reference or service which uses the binding.ws element. |
| Prescription Level | Mandatory |
| Tags | "sca runtime" "WSDL extension" "SOAP 1.2" |

| | |
|--------------------|--|
| Assertion ID | BWS-TA-20033 |
| Source | [BWS20035] |
| Target | <bindingType> element associated with binding.ws |
| Prerequisites | |
| Predicate | The <bindingType> element associated with binding.ws includes the SOAP.v1_1 intent in its @mayProvides or @alwaysProvides attributes |
| Prescription Level | Mandatory |
| Tags | "SOAP 1.1" "bindingType" "intent" "mayProvides" "alwaysProvides" |

| | |
|--------------------|--|
| Assertion ID | BWS-TA-20034 |
| Source | [BWS20036] |
| Target | <bindingType> element associated with binding.ws |
| Prerequisites | |
| Predicate | The <bindingType> element associated with binding.ws includes the SOAP.v1_2 intent in its @mayProvides attribute |
| Prescription Level | Mandatory |
| Tags | "SOAP 1.2" "bindingType" "intent" "mayProvides" |

| | |
|--------------------|---|
| Assertion ID | BWS-TA-20035 |
| Source | [BWS20037] |
| Target | <binding.ws/> element configured with a policy intent |
| Prerequisites | The policy intent conflicts with the configuration of the <binding.ws/> element |
| Predicate | SCA runtime raises an error |
| Prescription Level | Mandatory |
| Tags | "SCA runtime" "intent" |

A.3. Test Assertions for Web Service Binding Specification Section 4

| | |
|--------------------|---|
| Assertion ID | BWS-TA-40001 |
| Source | [BWS40001] |
| Target | Component <service/> or <reference/> with a <binding.ws/> subelement |
| Prerequisites | SOAP intent is applied to the <binding.ws/> element |
| Predicate | The <service/> or <reference/> transmits and receives messages using one or more versions of SOAP |
| Prescription Level | Mandatory |
| Tags | "SCA runtime" "intent" "SOAP" |

| | |
|--------------------|---|
| Assertion ID | BWS-TA-40002 |
| Source | [BWS40002] |
| Target | SCA runtime |
| Prerequisites | SOAP.v1_1 intent is required |
| Predicate | The SCA runtime transmits and receives messages using only SOAP 1.1 |
| Prescription Level | Mandatory |
| Tags | "SCA runtime" "intent" "SOAP" |

| | |
|--------------------|---|
| Assertion ID | BWS-TA-40003 |
| Source | [BWS40003] |
| Target | SCA runtime |
| Prerequisites | SOAP.v1_2 intent is required |
| Predicate | The SCA runtime transmits and receives messages using only SOAP 1.2 |
| Prescription Level | Mandatory |
| Tags | "SCA runtime" "intent" "SOAP" |

| | |
|---------------|---|
| Assertion ID | BWS-TA-40004 |
| Source | [BWS40004] |
| Target | portType of an SCA component <service/> or <reference/> element |
| Prerequisites | portType is either explicitly specified or is derived from the interface specified for the service or reference |
| Predicate | The portType follows either the rpc-literal pattern or the document-literal pattern |

| | |
|--------------------|-------------------------------|
| Prescription Level | Mandatory |
| Tags | "SCA runtime" "intent" "SOAP" |

| | |
|--------------------|--|
| Assertion ID | BWS-TA-40005 |
| Source | [BWS40005] |
| Target | SCA runtime |
| Prerequisites | The transport details are not otherwise determined |
| Predicate | The default transport binding rules are used |
| Prescription Level | Mandatory |
| Tags | "SCA runtime" "default transport binding rules" |

| | |
|--------------------|---|
| Assertion ID | BWS-TA-40007 |
| Source | [BWS40007] |
| Target | SCA runtime |
| Prerequisites | Default transport binding rules are used along with rpc-literal pattern |
| Predicate | SCA runtime uses the structural URI associated with the binding as the namespace of the child elements of the SOAP body element |
| Prescription Level | Mandatory |
| Tags | "SCA runtime" "default transport binding rules" "rpc-literal" |

A.4. Test Assertions for Web Service Binding Specification Section 5

| | |
|--------------------|---|
| Assertion ID | BWS-TA-50001 |
| Source | [BWS50002] |
| Target | Web service request message sent to a Web service endpoint |
| Prerequisites | a) Web service endpoint has an interface with an associated callback (ie. it is bidirectional) b) SCA Web Services Callback Protocol is used |
| Predicate | Request message contains a Callback EPR, either in the wsa:From SOAP header block or in the wsa:ReplyTo SOAP header block |
| Prescription Level | Mandatory |
| Tags | "SCA runtime" "SCA Web Services Callback Protocol" |

| | |
|--------------|--------------|
| Assertion ID | BWS-TA-50002 |
|--------------|--------------|

| | |
|--------------------|---|
| Source | [BWS50004] |
| Target | SCA bidirectional service using the binding.ws binding with the SCA Web Services Callback Protocol |
| Prerequisites | The service receives an operation invocation of the service where the Callback EPR's address value is "http://www.w3.org/2005/08/addressing/anonymous" or "http://www.w3.org/2005/08/addressing/none" |
| Predicate | An Invalid Addressing Header fault is generated as specified in Section 6.4.1 of WS-Addressing 1.0 SOAP Binding |
| Prescription Level | Mandatory |
| Tags | "SCA runtime" "SCA Web Services Callback Protocol" "callback EPR" |

| | |
|--------------------|---|
| Assertion ID | BWS-TA-50003 |
| Source | [BWS50005] |
| Target | SCA runtime |
| Prerequisites | The callback interface is invoked using the SCA Web Services Callback Protocol |
| Predicate | The Callback EPR from a request message that invoked the forward interface is used to invoke the callback interface |
| Prescription Level | Mandatory |
| Tags | "SCA runtime" "SCA Web Services Callback Protocol" "callback EPR" |

| | |
|--------------------|---|
| Assertion ID | BWS-TA-50004 |
| Source | [BWS50006] |
| Target | SCA runtime |
| Prerequisites | The Callback EPR is selected to invoke the callback interface |
| Predicate | The rules defined in Section 3.3 of WS-Addressing 1.0 – Core are followed to invoke operations on the callback interface using the Callback EPR |
| Prescription Level | Mandatory |
| Tags | "SCA runtime" "SCA Web Services Callback Protocol" "callback EPR" |

| | |
|---------------|--|
| Assertion ID | BWS-TA-50005 |
| Source | [BWS50007] |
| Target | SCA runtime |
| Prerequisites | The request message from which the Callback EPR was obtained contained the wsa:MessageID SOAP header block |

| | |
|--------------------|---|
| Predicate | The callback message contains the wsa:RelatesTo SOAP header block |
| Prescription Level | Mandatory |
| Tags | "SCA runtime" "SCA Web Services Callback Protocol" "callback EPR" |

| | |
|--------------------|--|
| Assertion ID | BWS-TA-50006 |
| Source | [BWS50008] |
| Target | SCA runtime |
| Prerequisites | The request message from which the Callback EPR was obtained contained the wsa:MessageID SOAP header block |
| Predicate | The wsa:RelatesTo SOAP header block in the callback message has the relationship type value of "http://docs.oasis-open.org/opencsa/sca-bindings/ws/callback" and the related message id is the wsa:MessageID of the message from which the Callback EPR was obtained |
| Prescription Level | Mandatory |
| Tags | "SCA runtime" "SCA Web Services Callback Protocol" "callback EPR" |

| | |
|--------------------|---|
| Assertion ID | BWS-TA-50007 |
| Source | [BWS50009] |
| Target | SCA runtime |
| Prerequisites | The request message from which the Callback EPR was obtained does not contain the wsa:MessageID SOAP header block |
| Predicate | The callback message does not contain the wsa:RelatesTo SOAP header block with a relationship type value of "http://docs.oasis-open.org/opencsa/sca-bindings/ws/callback" |
| Prescription Level | Mandatory |
| Tags | "SCA runtime" "SCA Web Services Callback Protocol" "callback EPR" |

| | |
|--------------------|--|
| Assertion ID | BWS-TA-50008 |
| Source | [BWS50010] |
| Target | SCA runtime |
| Prerequisites | WSCallback policy assertion is present in the effective policy of a service/binding or a reference/binding |
| Predicate | The SCA Web Services Callback Protocol is used to invoke callbacks for that binding |
| Prescription Level | Mandatory |

| | |
|------|--|
| Tags | "SCA runtime" "SCA Web Services Callback Protocol" "WSCallback policy assertion" |
|------|--|

Appendix B. Cross Mapping of Normative Statements to Assertions

This section contains a list of normative statements in the SCA Web Service Binding specification and the corresponding Test Assertions.

| Statement Identifier | Test Assertion |
|----------------------|----------------|
| BWS20001 | BWS-TA-20001 |
| BWS20002 | BWS-TA-20002 |
| BWS20003 | BWS-TA-20003 |
| BWS20004 | BWS-TA-20004 |
| BWS20005 | BWS-TA-20005 |
| BWS20006 | BWS-TA-20006 |
| BWS20007 | BWS-TA-20007 |
| BWS20008 | BWS-TA-20008 |
| BWS20009 | BWS-TA-20009 |
| BWS20010 | BWS-TA-20010 |
| BWS20011 | BWS-TA-20011 |
| BWS20012 | BWS-TA-20012 |
| BWS20013 | BWS-TA-20013 |
| BWS20014 | BWS-TA-20014 |
| BWS20015 | BWS-TA-20015 |
| BWS20017 | BWS-TA-20016 |
| BWS20018 | BWS-TA-20017 |
| BWS20019 | BWS-TA-20018 |
| BWS20020 | BWS-TA-20019 |
| BWS20021 | BWS-TA-20020 |
| BWS20022 | BWS-TA-20021 |
| BWS20024 | BWS-TA-20023 |
| BWS20025 | BWS-TA-20024 |
| BWS20026 | BWS-TA-20025 |
| BWS20027 | BWS-TA-20026 |
| BWS20028 | BWS-TA-20027 |
| BWS20032 | BWS-TA-20030 |
| BWS20033 | BWS-TA-20031 |
| BWS20034 | BWS-TA-20032 |
| BWS20035 | BWS-TA-20033 |
| BWS20036 | BWS-TA-20034 |
| BWS20037 | BWS-TA-20035 |

| Statement Identifier | Test Assertion |
|----------------------|----------------|
| BWS40001 | BWS-TA-40001 |
| BWS40002 | BWS-TA-40002 |
| BWS40003 | BWS-TA-40003 |
| BWS40004 | BWS-TA-40004 |
| BWS40005 | BWS-TA-40005 |
| BWS40007 | BWS-TA-40007 |

| Statement Identifier | Test Assertion |
|----------------------|----------------|
| BWS50002 | BWS-TA-50001 |
| BWS50004 | BWS-TA-50002 |
| BWS50005 | BWS-TA-50003 |
| BWS50006 | BWS-TA-50004 |
| BWS50007 | BWS-TA-50005 |
| BWS50008 | BWS-TA-50006 |
| BWS50009 | BWS-TA-50007 |
| BWS50010 | BWS-TA-50008 |
| BWS50013 | BWS-TA-50009 |
| BWS50014 | BWS-TA-50010 |
| BWS50015 | BWS-TA-50011 |

Appendix C. Cross Mapping of Test Assertions to TestCases

This section contains a list of Test Assertions and the corresponding TestCases.

| Test Assertion | Test Cases |
|----------------|--|
| BWS-TA-20001 | BWS_2001_TestCase |
| BWS-TA-20002 | BWS_2002_TestCase |
| BWS-TA-20003 | BWS_2003_TestCase |
| BWS-TA-20004 | BWS_2004_TestCase |
| BWS-TA-20005 | BWS_2005_TestCase |
| BWS-TA-20006 | BWS_2006_TestCase |
| BWS-TA-20007 | BWS_2007_TestCase |
| BWS-TA-20008 | BWS_2008_TestCase |
| BWS-TA-20009 | BWS_2009_TestCase |
| BWS-TA-20010 | BWS_2005_TestCase |
| BWS-TA-20011 | BWS_2010_TestCase |
| BWS-TA-20012 | BWS_2011_TestCase |
| BWS-TA-20013 | BWS_2012_TestCase |
| BWS-TA-20014 | BWS_2013_TestCase |
| BWS-TA-20015 | BWS_2012_TestCase BWS_2014_TestCase |
| BWS-TA-20016 | BWS_2015_TestCase |
| BWS-TA-20017 | BWS_2016_TestCase |
| BWS-TA-20018 | BWS_2017_TestCase |
| BWS-TA-20019 | BWS_2018_TestCase |
| BWS-TA-20020 | Covered by a series of other testcases that use one or more of each of the attributes of the <binding.ws/> element |
| BWS-TA-20021 | Untested |
| BWS-TA-20023 | BWS_2019_TestCase |
| BWS-TA-20024 | BWS_2020_TestCase |
| BWS-TA-20025 | BWS_2021_TestCase |
| BWS-TA-20026 | Language Dependent |
| BWS-TA-20027 | Untestable as this requires a specific non-WSDL interface type, and there is no mandatory support for such an interface type |

| | |
|--------------|---|
| BWS-TA-20029 | Untestable |
| BWS-TA-20030 | BWS_2022_TestCase |
| BWS-TA-20031 | BWS_2012_TestCase (depends on the SOAP 1.1 binding being supported) |
| BWS-TA-20032 | Untested |
| BWS-TA-20033 | BWS_2023_TestCase |
| BWS-TA-20034 | Untested |
| BWS-TA-20035 | Untestable - there is no standard way of producing a conflict between attached intent(s) and the configuration of a <binding.ws/> element |

| Test Assertion | Test Cases |
|----------------|--|
| BWS-TA-40001 | BWS_4001_TestCase BWS_4004_TestCase |
| BWS-TA-40002 | BWS_4002_TestCase BWS_4005_TestCase |
| BWS-TA-40003 | BWS_4003_TestCase BWS_4006_TestCase |
| BWS-TA-40004 | BWS_4007_TestCase BWS_4008_TestCase |
| BWS-TA-40005 | Untestable - or test not required since the assumption behind the TA pervades many other tests in the test suite |
| BWS-TA-40007 | Untested |

| Test Assertion | Test Cases |
|----------------|---|
| BWS-TA-50001 | BWS_5001_TestCase BWS_5002_TestCase |
| BWS-TA-50002 | BWS_5003_TestCase |
| BWS-TA-50003 | BWS_5002_TestCase |
| BWS-TA-50004 | BWS_5004_TestCase BWS_5006_TestCase |
| BWS-TA-50005 | BWS_5005_TestCase |
| BWS-TA-50006 | BWS_5005_TestCase |
| BWS-TA-50007 | BWS_5004_TestCase |
| BWS-TA-50008 | Untestable as it requires the support of some other callback protocol |
| BWS-TA-50009 | SCA runtimes are not required to support or understand WS Policy - untestable |

| | |
|--------------|----------|
| BWS-TA-50010 | Untested |
| BWS-TA-50011 | Untested |

Appendix D. Acknowledgments

The following individuals have participated in the creation of this specification and are gratefully acknowledged

Participants:

| Participant Name | Affiliation |
|------------------|-------------|
| Mike Edwards | IBM |
| Eric Johnson | TIBCO |
| Anish Karmarkar | Oracle |
| Simon Holdsworth | IBM |

Appendix E. Revision History

| Revision | Date | Editor | Changes Made |
|------------|----------|------------------|--|
| wd01 | 05/13/10 | Mike Edwards | Initial version |
| wd02 | 05/17/10 | Mike Edwards | Added testcases BWS_2002 to BWS_2006 |
| wd03 | 06/01/10 | Mike Edwards | Added testcases BWS_2007 to BWS_2023 |
| wd04 | 06/07/10 | Mike Edwards | Editorial changes Added testcases BWS_4001 to BWS_4007 |
| wd05 | 06/14/10 | Mike Edwards | Modified BWS_5001 Added BWS_5002 to BWS_5006 |
| cd01 | 07/01/10 | Mike Edwards | All changes accepted Frontmatter edited to conform to OASIS requirements Completed artifact catalog in Section 4 |
| csd01-rev1 | 04/01/10 | Simon Holdsworth | Applied resolutions to issues BINDINGS-142, BINDINGS-146, BINDINGS-148 |
| wd06 | 06/24/11 | Simon Holdsworth | Applied resolutions to issues BINDINGS-151, BINDINGS-152, BINDINGS-153, BINDINGS-160, BINDINGS-161, BINDINGS-162, BINDINGS-163, BINDINGS-168 |
| wd07 | 07/04/11 | Simon Holdsworth | Editorial formatting updates |