Web Services Description Language (WSDL) Version 2.0 SOAP 1.1 Binding

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Abstract

WSDL SOAP 1.1 Binding describes the concrete details for using WSDL 2.0 in conjunction with SOAP 1.1 [*SOAP11 [p.7]*] protocol.

Status of this Document

This section describes the status of this document at the time of its publication. Other documents may supersede this document. A list of current W3C publications and the latest revision of this technical report can be found in the W3C technical reports index at http://www.w3.org/TR/.

This is a W3C Working Draft of Web Services Description Language (WSDL) Version 2.0 SOAP 1.1 Binding. It has been produced by the Web Services Description Working Group, which is part of the W3C Web Services Activity.

The Working Group intends to publish this document as a Working Group Note once WSDL 2.0 reached W3C Recommendation status.

Issues about this document are recorded in the issues list maintained by the Working Group. A diff-marked version against the previous version of this document is available.

Implementers are invited to send feedback to the public public-ws-desc-comments@w3.org mailing list (public archive).

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1. Introduction

The Web Services Description Language (WSDL) provides a model and an XML format for describing Web services. WSDL SOAP 1.1 Binding (this specification) describes the binding extension for SOAP 1.1 [*SOAP11 [p.7]*] protocol. This binding is intended to ease the migration from WSDL 1.1 to WSDL 2.0 for implementers describing services that use SOAP 1.1 protocol. And, this binding allows users to continue using SOAP 1.1 protocol.

This specification depends on WSDL 2.0 [*WSDL 2.0 Core [p.6]*] and WSDL 2.0 Adjuncts [*WSDL 2.0 Adjuncts [p.6]*].

1.1 Notational Conventions

This specification uses a number of namespace prefixes throughout; they are listed in Table 1-1 [p.3] . Note that the choice of any namespace prefix is arbitrary and not semantically significant (see [*XML Information Set [p.7]*]).

This specification uses curly brackets (e.g., {property}) to indicate a property in the WSDL component model, as defined in Part 1 [*WSDL 2.0 Core [p.6]*] Component Model.

Table 1-1. Prefixes and Namespaces used in this specification

Prefix	Namespace	Notes
wsdl	"http://www.w3.org/ns/wsdl"	A normative XML Schema [*XML Schema: Structures [p.7]*], [*XML Schema: Datatypes [p.7]*] document for the "http://www.w3.org/ns/wsdl" namespace can be found at http://www.w3.org/ns/wsdl.
wsoap	"http://www.w3.org/ns/wsdl/soap"	A normative XML Schema [*XML Schema: Structures [p.7]*], [*XML Schema: Datatypes [p.7]*] document for the "http://www.w3.org/ns/wsdl/soap" namespace can be found at http://www.w3.org/ns/wsdl/soap.
whttp	"http://www.w3.org/ns/wsdl/http"	A normative XML Schema [*XML Schema: Structures [p.7]*], [*XML Schema: Datatypes [p.7]*] document for the "http://www.w3.org/ns/wsdl/http" namespace can be found at http://www.w3.org/ns/wsdl/http.
xs	"http://www.w3.org/2001/XMLSchema"	Defined in the W3C XML Schema specification [*XML Schema: Structures [p.7]*], [*XML Schema: Datatypes [p.7]*].

Namespace names of the general form "http://example.org/..." and "http://example.com/..." represent application or context-dependent URIs [*IETF RFC 3986 [p.6]*].

All parts of this specification are normative, with the EXCEPTION of examples, and sections explicitly marked as "Non-Normative".

2. SOAP 1.1 Binding

2.1 Identifying a SOAP 1.1 Binding

A SOAP Binding is identified as a SOAP 1.1 binding by assigning the value "1.1" to the {soap version} property of the Binding component.

2.2 Description

The SOAP 1.1 binding enables Web Service applications to use SOAP 1.1 [*SOAP11 [p.7]*] by extending the SOAP binding in the WSDL Adjuncts specification [*WSDL 2.0 Adjuncts [p.6]*]. This binding supports the following:

- **Message Exchange Patterns** - supports two Message Exchange Patterns defined by the WSDL Adjuncts specification [*WSDL 2.0 Adjuncts [p.6]*]: In-Out and In-Only.
- **SOAP Modules** - supports SOAP Modules and allows users to indicate SOAP Modules using the SOAP Module component. For SOAP 1.1, this specification adopts the conceptual definition of SOAP Module as described in the SOAP 1.2 specification [*SOAP 1.2 Part 1: Messaging Framework (Second Edition) [p.6]*].

  The term "SOAP Module" (also known as SOAP Extensions) refers to the specification of the syntax and semantics of one or more SOAP header blocks.

  Note:

  An IRI [*IETF RFC 3987 [p.6]*] is required to indicate a SOAP Module in a SOAP 1.1 binding.

- **SOAP 1.1 HTTP Binding** - supports the SOAP 1.1 HTTP binding defined in Section 6, SOAP 1.1 specification [*SOAP11 [p.7]*]. This is indicated by assigning the URI "http://www.w3.org/2006/01/soap11/bindings/HTTP/" to the {soap underlying protocol} property.

  The value of the {soap action} property, if present, identifies the value of the SOAP 1.1 SOAPAction HTTP request header field, Section 6.1.1, SOAP 1.1 specification [*SOAP11 [p.7]*].

  The values of {http location} properties are ignored for SOAP 1.1 HTTP binding.

  Note:

  If the Interface Operation component's {message exchange pattern} property has the value "http://www.w3.org/ns/wsdl/in-only" and the Binding component's {soap underlying protocol} property has the value"http://www.w3.org/2006/01/soap11/bindings/HTTP/", then the HTTP response is undefined. For specific guidance on what the HTTP response ought to be, implementers are referred to the Basic Profile [*BP10 [p.6]*] and/or the latest version of this specification(s).

- **Other SOAP 1.1 Underlying Protocols** - supports other SOAP 1.1 underlying protocols. Other values can be used for the {soap underlying protocol} property in conjunction with the SOAP 1.1 binding provided that the semantics of such protocols are consistent with this binding.

The values of {soap mep default}, {soap mep} and {soap fault subcodes} properties are ignored for SOAP 1.1 binding.

2.3 Default Binding Rule

The following default binding rule applies to SOAP 1.1 binding:

SOAP Action. If the Binding Operation component does NOT have a {soap action} property defined, then the *quoted empty string value ("")* value is used for the SOAP 1.1 SOAPAction HTTP Header Field (see [*SOAP11 [p.7]*]).

2.4 Example (Non-Normative)

The following example shows the WSDL definition of a simple service providing stock quotes. This service supports a single operation called GetLastTradePrice, which is deployed using the SOAP 1.1 protocol over HTTP. GetLastTradePrice operation request takes a ticker symbol of type string, and returns the price as a float.

```
<?xml version="1.0"?>
<wsdl:description name="StockQuote" xmlns:wsdl="http://www.w3.org/ns/wsdl"
  targetNamespace="http://example.com/stockquote"
  xmlns:tns="http://example.com/stockquote"
  xmlns:wsoap="http://www.w3.org/ns/wsdl/soap">

  <wsdl:types>
    <xs:schema targetNamespace="http://example.com/stockquote"
      xmlns:xs="http://www.w3.org/2001/XMLSchema">
      <xs:element name="TradePriceRequest">
        <xs:complexType>
          <xs:all>
            <xs:element name="tickerSymbol" type="xs:string"/>
          </xs:all>
        </xs:complexType>
      </xs:element>
      <xs:element name="TradePrice">
        <xs:complexType>
          <xs:all>
            <xs:element name="price" type="xs:float"/>
          </xs:all>
        </xs:complexType>
      </xs:element>
    </xs:schema>
  </wsdl:types>

  <wsdl:interface name="StockQuoteInterface">
    <wsdl:operation name="GetLastTradePrice"
      pattern="http://www.w3.org/ns/wsdl/in-out">
      <wsdl:input element="tns:GetLastTradePriceInput"/>
      <wsdl:output element="tns:GetLastTradePriceOutput"/>
    </wsdl:operation>
  </wsdl:interface>

  <wsdl:binding name="StockQuoteSoapBinding" interface="tns:StockQuoteInterface"
    type="http://www.w3.org/ns/wsdl/soap"
    wsoap:version="1.1"
    wsoap:protocol="http://www.w3.org/2006/01/soap11/bindings/HTTP/">
    <wsdl:operation ref="tns:GetLastTradePrice"
```

```
      wsoap:action="http://example.com/GetLastTradePrice"/>
  </wsdl:binding>

  <wsdl:service name="StockQuoteService" interface="tns:StockQuoteInterface">
    <wsdl:documentation>My first service</wsdl:documentation>
    <wsdl:endpoint name="StockQuoteEndPoint" binding="tns:StockQuoteBinding"
    address="http://example.com/endpoint/stockquote"/>
  </wsdl:service>

</wsdl:description>
```

3. References

3.1 Normative References

[BP10]
Basic Profile Version 1.0, Keith Ballinger, David Ehnebuske, Martin Gudgin, Mark Nottingham, and Prasad Yendluri, Editors. The Web Services-Interoperability Organization, Final Material 16 April 2004.

[IETF RFC 2616]
Hypertext Transfer Protocol -- HTTP/1.1, R. Fielding, J. Gettys, J. Mogul, H. Frystyk, L. Masinter, P. Leach, T. Berners-Lee, Authors. Internet Engineering Task Force, June 1999. Available at http://www.ietf.org/rfc/rfc2616.txt.

[IETF RFC 3986]
Uniform Resource Identifiers (URI): Generic Syntax, T. Berners-Lee, R. Fielding, L. Masinter, Authors. Internet Engineering Task Force, January 2005. Available at http://www.ietf.org/rfc/rfc3986.txt.

[IETF RFC 3987]
Internationalized Resource Identifiers (IRIs), M. Duerst, M. Suignard, Authors. Internet Engineering Task Force, January 2005. Available at http://www.ietf.org/rfc/rfc3987.txt.

[SOAP 1.2 Part 1: Messaging Framework (Second Edition)]
SOAP Version 1.2 Part 1: Messaging Framework (Second Edition), M. Gudgin, et al., Editors. World Wide Web Consortium, 24 June 2003, revised 27 April 2007. This version of the "SOAP Version 1.2 Part 1: Messaging Framework (Second Edition)" Recommendation is http://www.w3.org/TR/2007/REC-soap12-part1-20070427/. The latest version of "SOAP Version 1.2 Part 1: Messaging Framework" is available at http://www.w3.org/TR/soap12-part1/.

[WSDL 2.0 Core]
Web Services Description Language (WSDL) Version 2.0 Part 1: Core Language, R. Chinnici, J-J. Moreau, A. Ryman, S. Weerawarana, Editors. World Wide Web Consortium, 23 May 2007. This version of the "Web Services Description Language (WSDL) Version 2.0 Part 1: Core Language" Specification is available is available at http://www.w3.org/TR/2007/PR-wsdl20-20070523. The latest version of "Web Services Description Language (WSDL) Version 2.0 Part 1: Core Language" is available at http://www.w3.org/TR/wsdl20.

[WSDL 2.0 Adjuncts]
Web Services Description Language (WSDL) Version 2.0 Part 2: Adjuncts , R. Chinnici, H. Haas, A. Lewis, J-J. Moreau, D. Orchard, S. Weerawarana, Editors. World Wide Web Consortium, 23 May 2007. This version of the "Web Services Description Language (WSDL) Version 2.0 Part 2: Adjuncts" Specification is available at http://www.w3.org/TR/2007/PR-wsdl20-adjuncts-20070523.

The latest version of "Web Services Description Language (WSDL) Version 2.0 Part 2: Adjuncts" is available at http://www.w3.org/TR/wsdl20-adjuncts.

[XML Schema: Structures]
XML Schema Part 1: Structures Second Edition, H. Thompson, D. Beech, M. Maloney, and N. Mendelsohn, Editors. World Wide Web Consortium, 2 May 2001, revised 28 October 2004. This version of the XML Schema Part 1 Recommendation is http://www.w3.org/TR/2004/REC-xmlschema-1-20041028. The latest version of XML Schema Part 1 is available at http://www.w3.org/TR/xmlschema-1.

[XML Schema: Datatypes]
XML Schema Part 2: Datatypes Second Edition, P. Byron and A. Malhotra, Editors. World Wide Web Consortium, 2 May 2001, revised 28 October 2004. This version of the XML Schema Part 2 Recommendation is http://www.w3.org/TR/2004/REC-xmlschema-2-20041028. The latest version of XML Schema Part 2 is available at http://www.w3.org/TR/xmlschema-2.

[XML Information Set]
XML Information Set (Second Edition), J. Cowan and R. Tobin, Editors. World Wide Web Consortium, 24 October 2001, revised 4 February 2004. This version of the XML Information Set Recommendation is http://www.w3.org/TR/2004/REC-xml-infoset-20040204. The latest version of XML Information Set is available at http://www.w3.org/TR/xml-infoset.

3.2 Informative References

[SOAP11]
Simple Object Access Protocol (SOAP) 1.1, Don Box, David Ehnebuske, Gopal Kakivaya, Andrew Layman, Noah Mendelsohn, Henrik Frystyk Nielsen, Satish Thatte, Dave Winer, Editors. World Wide Web Consortium, Note 08 May 2000.

[SOAP 1.2 Part 2: Adjuncts (Second Edition)]
SOAP Version 1.2 Part 2: Adjuncts (Second Edition), M. Gudgin, et al., Editors. World Wide Web Consortium, 24 June 2006, revised 27 April 2007. This version of the "SOAP Version 1.2 Part 2: Adjuncts (Second Edition)" Recommendation is http://www.w3.org/TR/2007/REC-soap12-part2-20070427/. The latest version of "SOAP Version 1.2 Part 2: Adjuncts" is available at http://www.w3.org/TR/soap12-part2/.

[WSDL 2.0 Primer]
Web Services Description Language (WSDL) Version 2.0 Part 0: Primer, D. Booth, C.K. Liu, Editors. World Wide Web Consortium, 23 May 2007. This version of "Web Services Description Language (WSDL) Version 2.0 Part 0: Primer" is http://www.w3.org/TR/2007/PR-wsdl20-primer-20070523. The latest version of the "Web Services Description Language (WSDL) Version 2.0 Part 0: Primer" document is available from http://www.w3.org/TR/wsdl20-primer.

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B. SOAP 1.1 Binding Change Log (Non-Normative)

Date	Author	Description
20060227	AV	Implemented CR008 and CR009
20051117	HH	Fixed quoted string text for SOAPAction
20051111	HH	LC333: also ignoring {soap mep default}, and not talking about {http method}
20051111	HH	LC300: updated Infoset reference
20050923	HH	LC313: made {soap action} optional.
20050617	JMarsh	Updated prevloc
20050617	JMarsh	"Predefined Extensions" -> "Adjuncts"
20050617	JMarsh	Updated primer bibref
20050615	JJM	Removed the reference to RFC2119 and its keyword description.
20050615	JJM	Fixed remaining capital MUST, MAY and SHOULD.
20050615	JJM	Added markup for components and properties.
20050527	HH	Switched to IRIs
20050112	AV	Rewrote sections to improve readability, no substantial changes
20041208	AV	Changed title from SOAP 11 to SOAP 1.1
20041129	AV	Incorporated WG resolutions from the webMethods F2F, Nov 2004
20040826	AV	Created the first draft