

# **W3C Web Services Addressing**

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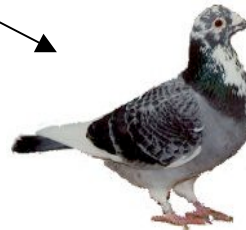
*WS-Addressing Working Group*

[WWW2006](#), May 25th 2006

# **Web Services Addressing**

*“Web Services Addressing provides transport-neutral mechanisms to address Web services and messages.”*

# Transport Independence



**Transport || Transfer**



**||**

**H8**

# **EMail Metaphor**

- to
- from
- reply-to
- messageId
- correlation
- cookies
- other 'stuff'

# Two Submissions

- [WS-MessageDelivery](#)  
*Oracle, Arjuna, Cyclone, Enigmatec,  
IONA, Nokia, see Beyond and Sun  
February 2005*
- [WS-Addressing](#)  
*BEA, IBM, Microsoft and Sun  
September 2005*

**\*Fundamental building block\***

# **SOAP Header Processing**

- Order is insignificant
- Ignore unknown headers
- mustUnderstand flag





# WS-Addressing Headers

<wsa:MessageID> xs:anyURI </wsa:MessageID>

<wsa:RelatesTo RelationshipType="..."?>  
    xs:anyURI </wsa:RelatesTo>

<wsa:To> xs:anyURI </wsa:To>

<wsa:Action> xs:anyURI </wsa:Action>

<wsa:From> wsa:EPR </wsa:From>

<wsa:ReplyTo> wsa:EPR </wsa:ReplyTo>

<wsa:FaultTo> wsa:EPR </wsa:FaultTo>

# Submission Endpoint Reference (EPR)

```
<wsa:EndpointReference>  
  <wsa:Address>xs:anyURI</wsa:Address>  
  <wsa:ReferenceProperties>...  
    </wsa:ReferenceProperties>  
  <wsa:ReferenceParameters>...  
    </wsa:ReferenceParameters>  
  <wsa:PortType>xs:QName</wsa:PortType>  
  <wsa:ServiceName PortName="xs:NCName">  
    xs:QName</wsa:ServiceName>  
  <wsp:Policy> ... </wsp:Policy>*  
</wsa:EndpointReference>
```

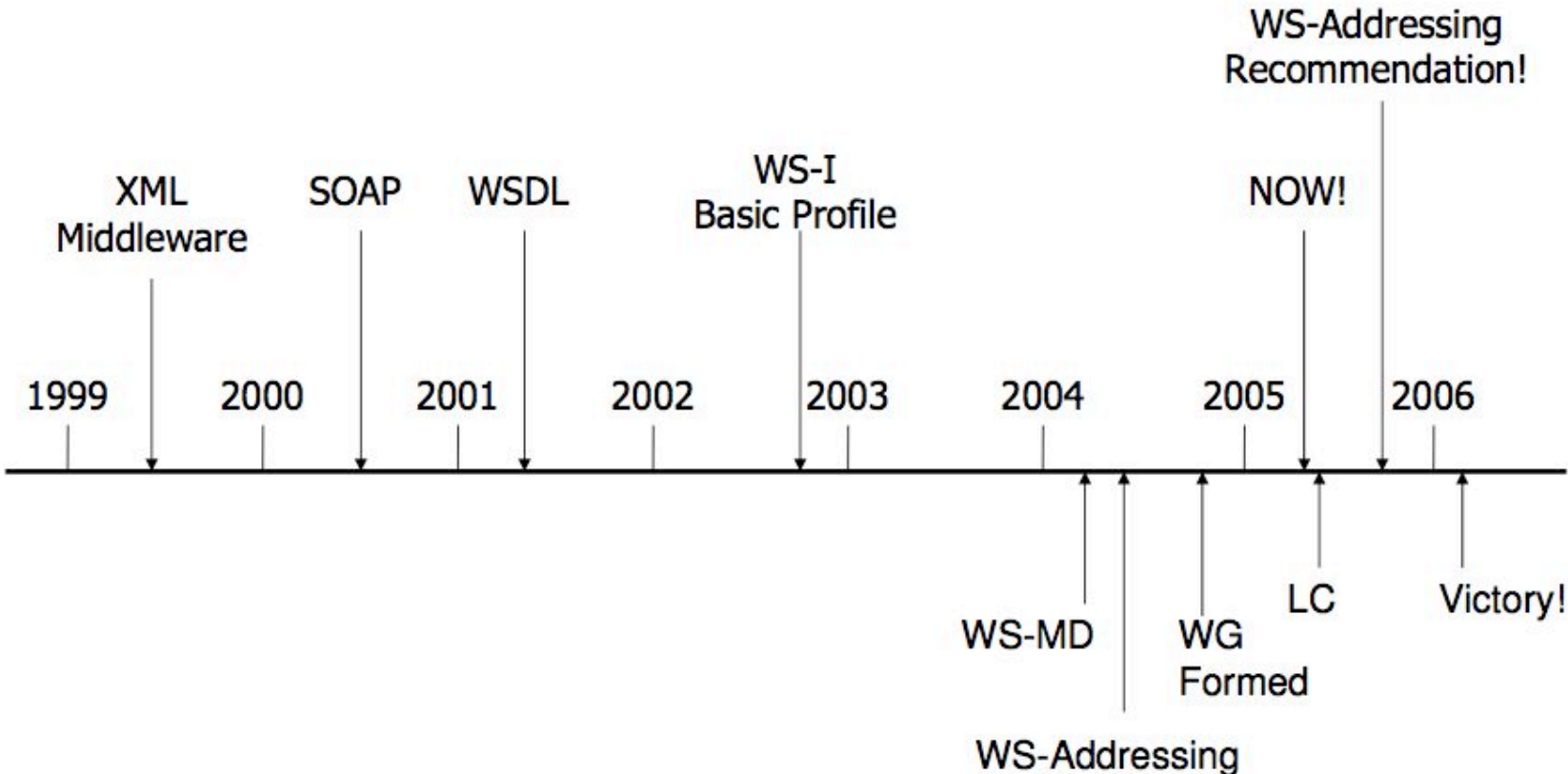
# W3C Endpoint Reference (EPR)

```
<wsa:EndpointReference>  
  <wsa:Address>xs:anyURI</wsa:Address>  
  <wsa:ReferenceParameters>xs:any*  
    </wsa:ReferenceParameters> ?  
  <wsa:Metadata>xs:any*</wsa:Metadata>?  
</wsa:EndpointReference>
```

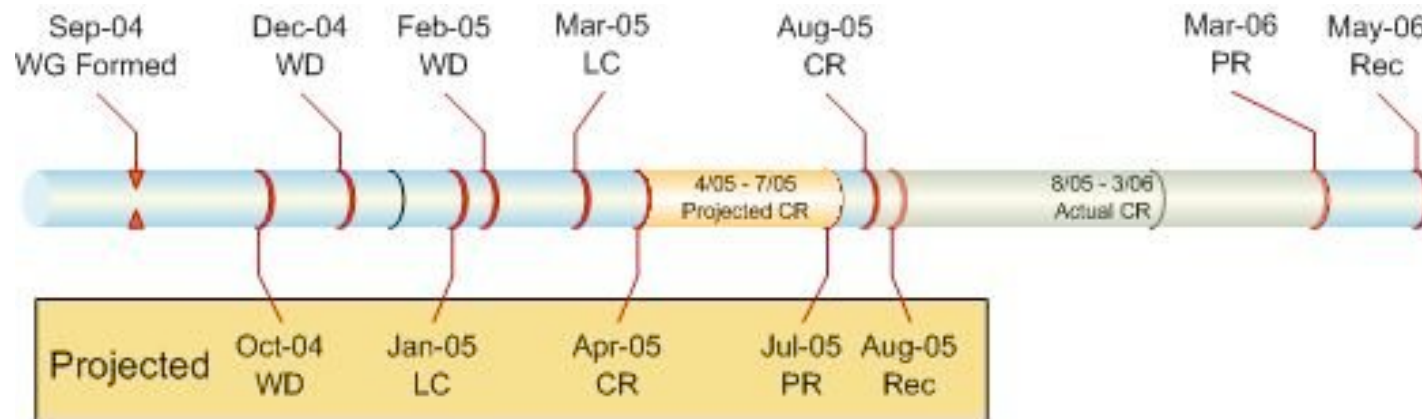
# **Deliverables**

- Core specification
- Bindings for SOAP 1.1, 1.2
- Bindings for WSDL 1.1, 2.0
- Test Suite

# Timeline



# Actual Timeline!



<http://spaces.msn.com/auburnmarshes/blog/>

# Candidate Recommendation



<http://www.w3.org/2002/ws/addr/testsuite/>

# Addressing Features

~ Exit Criteria

...

**core06** - wsa:ReplyTo defaulting

**core09** - Formulating a normal Reply

**core10** - Formulating a Fault Reply

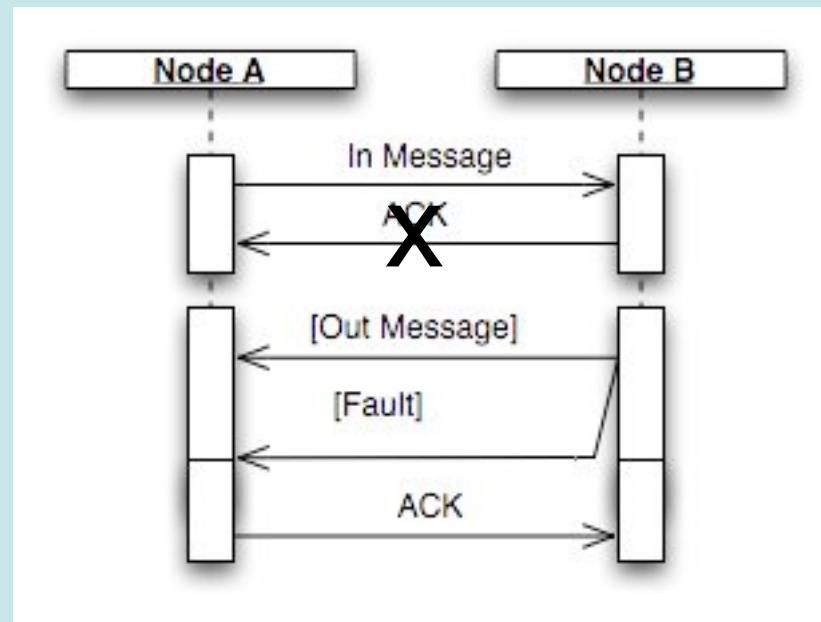
**soap03** - SOAP 1.2 Anonymous Address

...



# Message Exchanges

## SOAP12-HTTP-In-Out-Callback



- 1) A sends B a HTTP POST with a SOAP 1.2 message
- 2) B sends A a HTTP 202 (Accepted) with no content
- 3) B sends A a HTTP POST with a SOAP 1.2 message
- 4) A sends B a HTTP 202 (Accepted) with no content

# Example Documents

## ~ Canned Interactions

```
<?xml version="1.0"?>
<!-- $Id: Overview.html,v 1.57 2006/03/20 13:03:02 pdowney Exp $ -->
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:wsa="http://www.w3.org/2005/08/addressing">
  <env:Header>
    <wsa:Action>http://example.org/action/echoIn</wsa:Action>
    <wsa:MessageID>urn:uuid:DAF81D9F-D1B3-47F8-9074-158BDD85E518</wsa:MessageID>
    <wsa:ReplyTo>
      <wsa:Address>http://www.w3.org/2005/08/addressing/anonymous</wsa:Address>
    </wsa:ReplyTo>
  </env:Header>
  <env:Body>
    <m:echoIn xmlns:m="http://example.org/echo">Echo This Text</m:echoIn>
  </env:Body>
</env:Envelope>
```

# Test Cases

**test1101** - SOAP 1.1 one-way defaulted (**REQUIRED**)

Features: **core02**

One-way message containing a MessageID.  
ReplyTo and FaultTo are defaulted.

## **SOAP11-HTTP-In-Only**

1. A sends a message to B.

\* soap11:Envelope/soap11:Header/wsa:Action  
= 'http://example.org/action/notify'

\* soap11:Envelope/soap11:Header/wsa:MessageID

# Log Files

...

JBoss-JBoss-Sun.xml

JBoss-JBoss-WSO2.xml

Microsoft-Microsoft-Axis.xml

Microsoft-Microsoft-IBM.xml

Microsoft-Microsoft-JBoss.xml

Microsoft-Microsoft-Microsoft.xml

Microsoft-Microsoft-Sun.xml

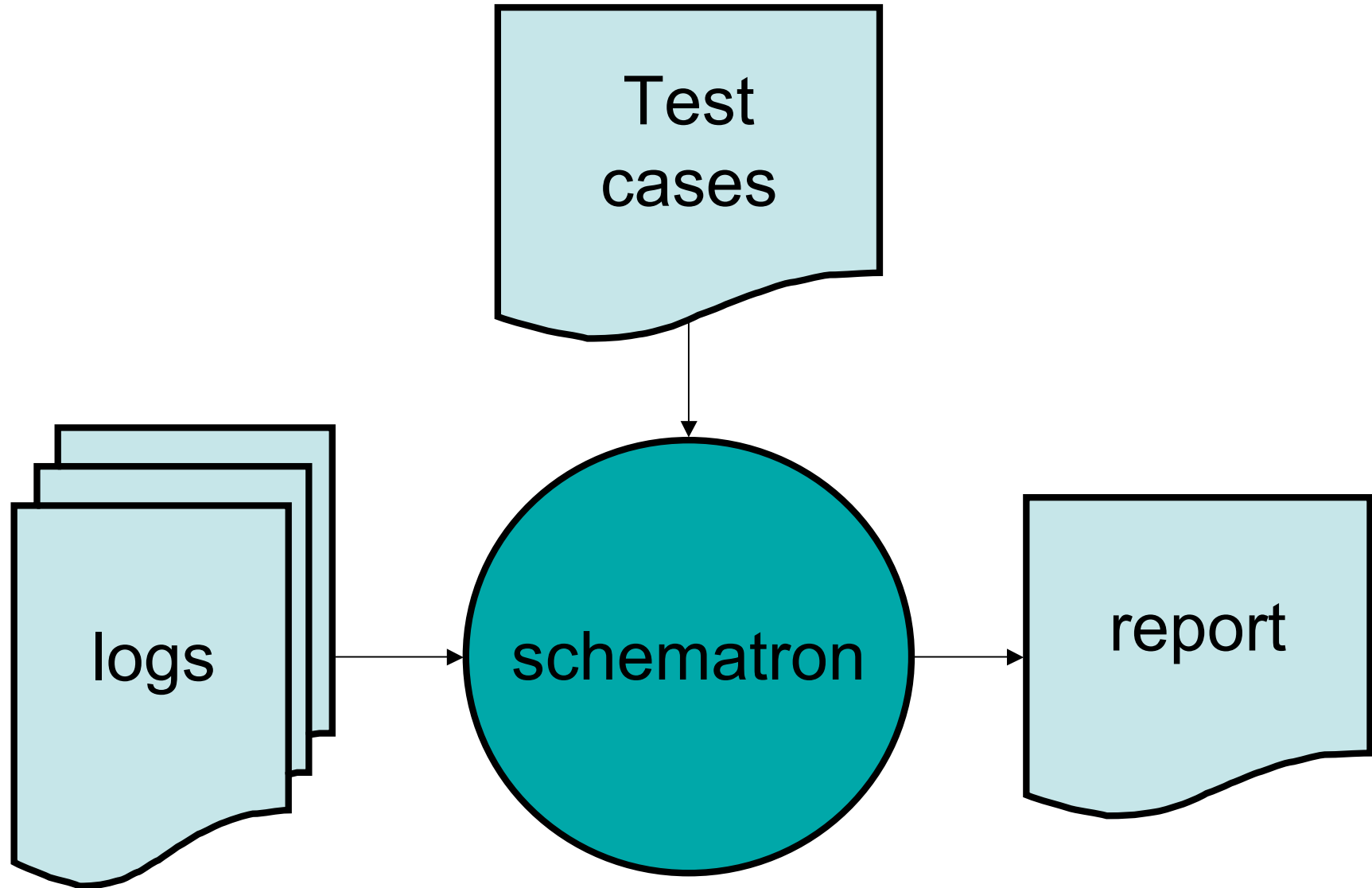
Microsoft-Microsoft-WSO2.xml

IBM-Sun-Axis.xml

IBM-Sun-IBM.xml

...

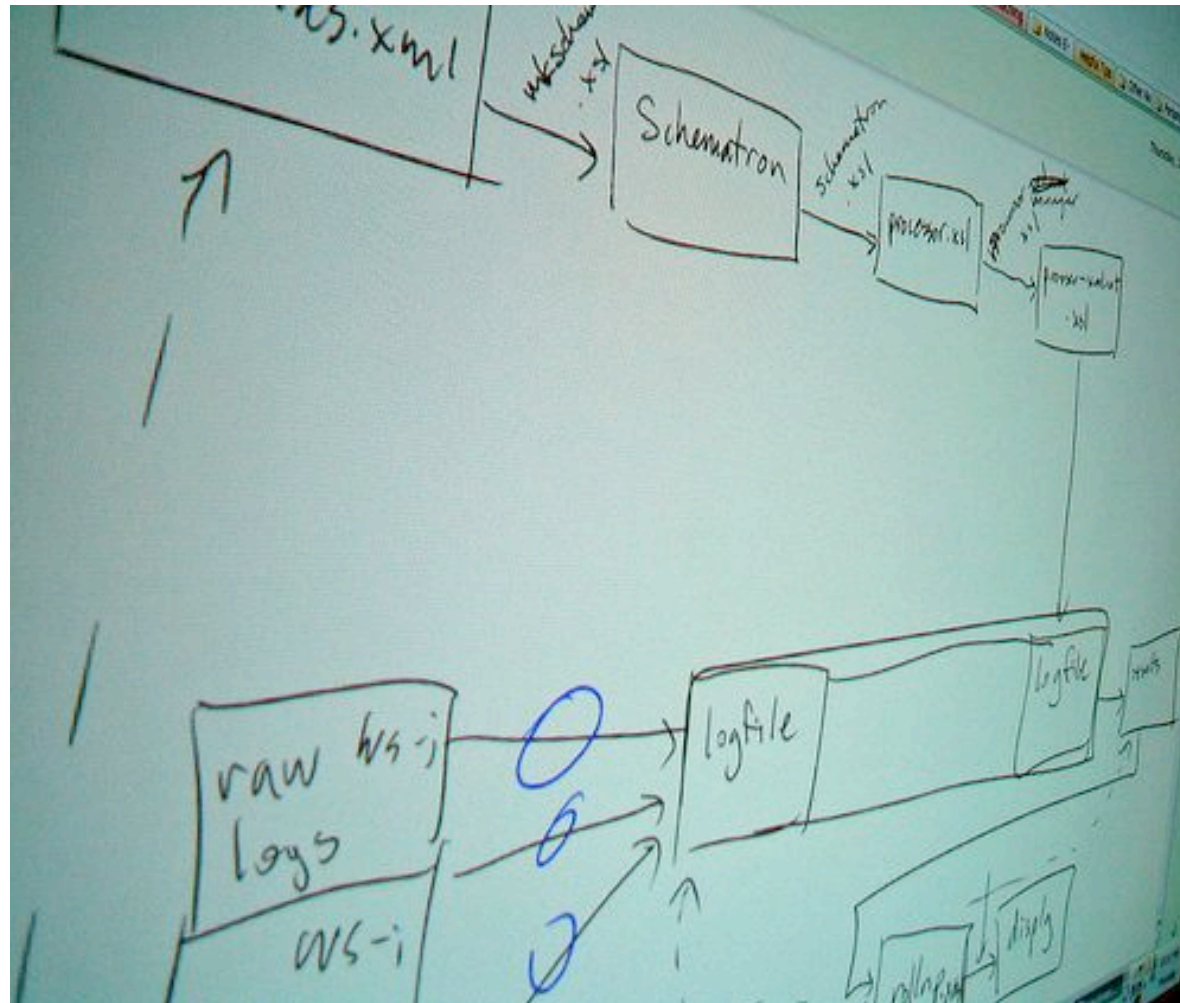
# Observer



# Interoperability Event



# Schematron Pipeline



# Interoperability Report

WS-Addressing Test Results, 17 January 2006, Vancouver BC

Tests of required features

	IBM ->Sun -> Axis ->IBM ->Microsoft ->Sun ->IBM -> Microsoft ->Sun -> Axis ->IBM ->IBM ->Microsoft ->Sun ->Sun	Axis	Axis	IBM	IBM	IBM	IBM	Microsoft	Microsoft	Microsoft	Sonic	Sonic	Sun	Sun
test1200	X	X	Failed	X	X	X	X	X	X	Failed	X	X	X	X
test1200	X	X		X	X	X	X	X	X		X	X	X	X
test1201	X	X		X	X			X	X			X	X	X
test1201	X	X		X	X			X	X			X	X	X
test1202	X	X	X	X	X			X	X		X	X	X	X
test1202	X	X	X	X	X			X	X		X		X	X
test1203	X	X	X	X	X			X	X		X	X	X	X
test1203	X	X	X	X	X			X	X		X		X	X
test1204	X	X	X	X	X			X	X		X	X	X	X
test1204	X	X	X	X	X			X	X		X		X	X
test1206	X	X	X	X	X			X	X		X	X	X	X
test1206	X	X	X	X	X			X	X		X	X	X	X
test1207	Failed	Failed	Failed	X	X			X	X		X		X	X
test1207	Failed	Failed	Failed	X	X			X	X		Failed	Failed	X	X
test1208	X	X	Failed	X	X			X	X		Failed		X	X
test1208	X	X		X	X			X	X		Failed		X	X
test1230	Failed	Failed		X	X			X	X		Failed	X	X	X
test1230	Failed	Failed		Failed	X			X	X			X	X	X
test1230	Failed	Failed		Failed	X			Failed	X			X	X	X
test1230	X	X		Failed	X			Failed	X			X	X	X



# Final Report

Required tests						
Client/Server	Axis	IBM	JBoss	Microsoft	Sun	WSO2
Axis						
IBM						
JBoss						
Microsoft						
Sun						
WSO2						

Orange border represents minimum necessary to meet CR requirements (4 interoperable implementations of all required features).

Now fixed!

<http://www.w3.org/2002/ws/addr/testsuite/report/>

# W3C Recommendation!

W3C Recommendation



## Web Services Addressing 1.0 - Core

W3C Recommendation 9 May 2006

**This version:**

<http://www.w3.org/TR/2006/REC-ws-addr-core-20060509>

**Latest version:**

<http://www.w3.org/TR/ws-addr-core>

**Previous versions:**

<http://www.w3.org/TR/2006/PR-ws-addr-core-20060321>

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**Thank you!**

Any Questions?