

3. Indicating Use of WS-Addressing

This specification supports a mechanism for indicating, in a WSDL description, that the endpoint conforms to the WS-Addressing specification. That mechanism uses WS-Policy Framework [[WS Policy 1.5 - Framework](#)].

3.1 WS-Policy Assertions

The mechanism for indicating that a binding or endpoint conforms to the WS-Addressing specification is through the use of the Web Services Policy - Framework [[WS Policy 1.5 - Framework](#)] and Web Services Policy - Attachment [[WS Policy 1.5 - Attachment](#)] specifications. This specification defines three policy assertions.

The `wsam:Addressing` policy assertion applies to the endpoint policy subject.

For WSDL 1.1, these assertions may be attached to `wsdl11:port` or `wsdl11:binding`. For WSDL 2.0, they may be attached to `wsdl20:endpoint` or `wsdl20:binding`.

A policy expression containing the `wsam:Addressing` policy assertion MUST NOT be attached to a `wsdl:portType` or `wsdl20:interface`. The `wsam:Addressing` policy assertion specifies a concrete behavior whereas the `wsdl:portType` or `wsdl20:interface` is an abstract construct.

3.1.1 Addressing Assertion

The `wsam:Addressing` policy assertion is a nested policy container assertion. The meaning of this assertion, when present in a policy alternative, is that WS-Addressing is required to communicate with the subject. In order to indicate that the subject supports WS-Addressing but does not require its use, an additional policy alternative should be provided which does not contain this assertion. This may be done in WS-Policy compact form by adding the attribute `wsp:Optional="true"` to the `wsam:Addressing` assertion.

Three nested Policy Assertion types are defined for use with the `wstrm:Addressing` assertion (i.e., `OnlyAnonymousResponses`, `OnlyNonAnonymousResponses`, `BothResponseTypes`). One and only one of these nested policy assertions MUST be present inside in each `wsam:Addressing` assertion, for the policy subject to indicate its support for sending responses associated with particular types of EPR.

Note: Lack of presence of one of these nested Policy assertions within a `wsam:Addressing` assertion results in a policy expression which causes difficulty when used with the Default Policy Intersection Algorithm.

3.1.2 **OnlyAnonymousResponses** Assertion

The `wsam:AnonymousResponses` element MAY be used as a policy assertion nested within the `wsam:Addressing` assertion in accordance with the rules laid down by WS-Policy Framework 1.5 section 4.3.2. The `wsam:OnlyAnonymousResponses` policy assertion MUST NOT be used in a policy alternative which contains either the `wsam:OnlyNonAnonymousResponses` or the `wsam:BothResponseTypes` policy assertion.

The appearance of this element within the `wsam:Addressing` policy assertion indicates that the endpoint restricts request messages to only use response endpoint EPRs that contain the anonymous URI ("http://www.w3.org/2005/08/addressing/anonymous") as the value of [address]. In other words, the endpoint is restricted to using only anonymous responses.

The None URI ("http://www.w3.org/2005/08/addressing/none") may appear as the value of [address] in place of the anonymous URI; this value MUST be accepted.

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Deleted: The absence of the `wsam:AnonymousResponses` policy assertion within a policy alternative does **not** indicate that the endpoint will not accept request messages with response endpoint EPRs that contain the anonymous URI as an address; it simply indicates the lack of any affirmation of support for anonymous URIs. ¶

3.1.3 OnlyNonAnonymousResponses Assertion

The `wsam:NonAnonymousResponses` element MAY be used as a policy assertion nested within the `Addressing` assertion in accordance with the rules laid down by WS-Policy Framework 1.5 section 4.3.2. The `wsam:NonAnonymousResponses` policy assertion MUST NOT be used in a policy alternative which contains either the `wsam:OnlyAnonymousResponses` or the `wsam:BothResponseTypes` policy assertion.

The appearance of this element within the `wsam:Addressing` assertion indicates that the endpoint restricts request messages to only use response endpoint EPRs that contain something other than the anonymous URI as the value of [address]. In other words, the endpoint is restricted to using only non-anonymous responses. This assertion is deliberately vague; its presence indicates that some non-anonymous addresses will be accepted but doesn't constrain what such an address might look like. A receiver can still reject a request that contains an address that it doesn't understand or that requires a binding it doesn't support.

The None URI ("http://www.w3.org/2005/08/addressing/none") may appear as the value of [address] in place of a non-anonymous address; this value MUST be accepted.

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Deleted: As with the other assertions, the absence of the `wsam:NonAnonymousResponses` policy assertion within a policy alternative does **not** indicate that the endpoint will not accept request messages with response endpoint EPRs that contain something other than the anonymous URI address; it simply indicates the lack of any affirmation of support for them. ¶

3.1.3 BothResponseTypes Assertion

The `wsam:BothResponseTypes` element MAY be used as a policy assertion nested within the `Addressing` assertion in accordance with the rules laid down by WS-Policy Framework 1.5 section 4.3.2. The `wsam:BothResponseTypes` policy assertion MUST NOT be used in a policy alternative which contains either the `wsam:OnlyAnonymousResponses` or the `wsam:OnlyNonAnonymousResponses` policy assertion.

The appearance of this element within the wsam:Addressing assertion indicates that the endpoint does not restrict request message usage of response endpoint EPRs. In other words, the endpoint is may use either anonymous or non-anonymous responses.. A receiver can still reject a non anonymous request that contains a response address that it doesn't understand or that requires a binding it doesn't support.

The None URI ("http://www.w3.org/2005/08/addressing/none") may appear as the value of [address] in place of a non-anonymous address; this value MUST be accepted.

3.1.4 Examples (Compact Form)

Example 3-1. Subject supports WS-Addressing, no response EPR restrictions,

```
<wsp:Policy>
  <wsam:Addressing wsp:Optional="true">
    <wsp:Policy>
      Wsam:BothResponseTypes/>
    </wsp:Policy>
  </wsam:Addressing>
</wsp:Policy>
```

Example 3-2. Subject requires WS-Addressing, no response EPR restrictions,

```
<wsp:Policy>
  <wsam:Addressing>
    <wsp:Policy>
      Wsam:BothResponseTypes/>
    </wsp:Policy>
  </wsam:Addressing>
</wsp:Policy>
```

Example 3-3. Subject requires WS-Addressing and restricts usage to only non-anonymous response EPRs

```
<wsp:Policy>
  <wsam:Addressing>
    <wsp:Policy>
      <wsam:OnlyNonAnonymousResponses/>
    </wsp:Policy>
  </wsam:Addressing>
</wsp:Policy>
```

3.1.5 Examples (Normal Form)

Example 3-4. Subject supports WS-Addressing, no response EPR restrictions,

```
<wsp:Policy>
  <wsp:ExactlyOne>
    <wsp:All/>
    <wsp:All>
      <wsam:Addressing>
        <wsp:Policy>
          <wsp:ExactlyOne>
            <wsp:All>
```

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```
<wsp:Policy>¶
  <wsam:Addressing
wsp:Optional="true">¶
    <wsp:Policy>¶
```

```
<wsam:AnonymousResponses
wsp:Optional="true"/>¶
```

```
<wsam:NonAnonymousResponses
wsp:Optional="true"/>¶
  </wsp:Policy>¶
```

```
</wsam:Addressing>¶
</wsp:Policy>¶
```

Example 3-4. Subject requires WS-Addressing, requires explicit support of anonymous or non-anonymous response EPRs¶

```
<wsp:Policy>¶
  <wsam:Addressing>¶
    <wsp:Policy>¶
      <wsp:ExactlyOne>¶
```

```
<wsam:AnonymousResponses/>¶
```

```
<wsam:NonAnonymousResponses/
>¶
```

```
</wsp:ExactlyOne>¶
  </wsp:Policy>¶
</wsam:Addressing>¶
</wsp:Policy>¶
```

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```

        <wsam:BothResponseTypes/>
    </wsp:All>
</wsp:ExactlyOne>
</wsp:Policy>
</wsam:Addressing>
</wsp:All>
</wsp:ExactlyOne>
</wsp:Policy>

```

Example 3-5. Subject requires WS-Addressing, no response EPR restrictions

```

<wsp:Policy>
  <wsp:ExactlyOne>
    <wsp:All>
      <wsam:Addressing>
        <wsp:Policy>
          <wsp:ExactlyOne>
            <wsp:All
              <wsam:BothResponseTypes/>
            </wsp:All>
          </wsp:ExactlyOne>
        </wsp:Policy>
      </wsam:Addressing>
    </wsp:All>
  </wsp:ExactlyOne>
</wsp:Policy>

```

Example 3-6. Subject requires WS-Addressing and restricts usage to only non-anonymous response EPRs

```

<wsp:Policy>
  <wsp:ExactlyOne>
    <wsp:All>
      <wsam:Addressing>
        <wsp:Policy>
          <wsp:ExactlyOne>
            <wsp:All>
              <wsam:OnlyNonAnonymousResponses/>
            </wsp:All>
          </wsp:ExactlyOne>
        </wsp:Policy>
      </wsam:Addressing>
    </wsp:All>
  </wsp:ExactlyOne>
</wsp:Policy>

```

3.1.6 Finding Compatible Policies

When a client is looking for an endpoint with compatible policy, one common method used is to take the policy intersection between the policy which the client is looking for, and the policy asserted in the WSDL document; a non-empty intersection is sought. The policy used by the client must be written carefully to avoid unexpected results. This is most obvious when the client is not looking for explicit support of a particular kind of response; failing to take care could mean missing a compatible policy.

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Deleted: Example 3-8. Subject supports WS-Addressing, explicitly (and optionally) supports anonymous and non-anonymous response EPRs

```

<wsp:Policy>¶
  <wsp:ExactlyOne>¶
    <wsp:All/>¶
    <wsp:All>¶
      <wsam:Addressing>¶
        <wsp:Policy>¶
          <wsp:ExactlyOne>¶
            <wsp:All/>¶
          </wsp:ExactlyOne>¶
        </wsp:Policy>¶
      </wsam:Addressing>¶
      </wsp:All/>¶
    </wsp:All>¶
  </wsp:ExactlyOne>¶
</wsp:Policy>¶
</wsam:Addressing>¶
  </wsp:All>¶
  <wsp:All>¶
    <wsam:Addressing>¶
      <wsp:Policy>¶
        <wsp:ExactlyOne>¶
          <wsp:All>¶
            <wsam:AnonymousResponses/>¶
          </wsp:All>¶
        </wsp:ExactlyOne>¶
      </wsp:Policy>¶
    </wsam:Addressing>¶
    </wsp:All>¶
  </wsp:All>¶
  <wsam:Addressing>¶
    <wsp:Policy>¶
      <wsp:ExactlyOne>¶
        <wsp:All>¶
          <wsam:NonAnonymousResponses/>¶
        </wsp:All>¶
      </wsp:ExactlyOne>¶
    </wsp:Policy>¶
  </wsam:Addressing>¶
  </wsp:All>¶
</wsp:ExactlyOne>¶
</wsp:Policy>¶
</wsam:Addressing>¶
  </wsp:All>¶
  <wsp:All>¶
    <wsam:Addressing>¶
      </wsp:All>¶
      <wsp:All>¶
    </wsp:Addressing>¶
  </wsp:All>¶
</wsp:ExactlyOne>¶
</wsp:Policy>¶

```

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Example 3-7. Client looking for an endpoint which supports Addressing, and which supports anonymous responses

```
<wsp:Policy>
  <wsp:ExactlyOne>
    <wsp:All>
      <wsam:Addressing>
        <wsp:Policy>
          <wsp:ExactlyOne>
            <wsp:All>
              <wsam:OnlyAnonymousResponses />
            </wsp:All>
          </wsp:ExactlyOne>
        </wsp:Policy>
      </wsam:Addressing>
    </wsp:All>
  </wsp:ExactlyOne>
  <wsp:All>
    <wsam:Addressing>
      <wsp:Policy>
        <wsp:ExactlyOne>
          <wsp:All>
            <wsam:BothResponseTypes />
          </wsp:All>
        </wsp:ExactlyOne>
      </wsp:Policy>
    </wsam:Addressing>
  </wsp:All>
</wsp:Policy>
```

Example 3-8. Client looking for an endpoint which supports Addressing, and does not require support for responses (will intersect with anything)

```
<wsp:Policy>
  <wsp:ExactlyOne>
    <wsp:All>
      <wsam:Addressing> <-- no response type restrictions -->
        <wsp:Policy>
          <wsp:ExactlyOne>
            <wsp:All>
              <wsam:BothResponseTypes />
            </wsp:All>
          </wsp:ExactlyOne>
        </wsp:Policy>
      </wsam:Addressing>
    </wsp:All>
  <wsp:All>
    <wsam:Addressing> <--restrict to Anonymous responses -->
      <wsp:Policy>
        <wsp:ExactlyOne>
          <wsp:All>
            <wsam:OnlyAnonymousResponses />
          </wsp:All>
        </wsp:ExactlyOne>
      </wsp:Policy>
    </wsam:Addressing>
  </wsp:All>
</wsp:Policy>
```

```
<wsam:Addressing> <-restrict to nonAnonymous responses-->
  <wsp:Policy>
    <wsp:ExactlyOne>
      <wsp:All>
        <wsam:OnlyNonAnonymousResponses />
      </wsp:All>
    </wsp:ExactlyOne>
  </wsp:Policy>
</wsam:Addressing>
</wsp:All>
</wsp:ExactlyOne>
</wsp:Policy>
```

For more detailed descriptions of the use of `wsp:Optional`, `wsp:Ignorable`, and strict and lax intersection, please refer to the WS-Policy Primer [[WS Policy 1.5 - Primer](#)].

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Example 3-8. Subject supports WS-Addressing, explicitly (and optionally) supports anonymous and non-anonymous response EPRs

```

<wsp:Policy>
  <wsp:ExactlyOne>
    <wsp:All/>
    <wsp:All>
      <wsam:Addressing>
        <wsp:Policy>
          <wsp:ExactlyOne>
            <wsp:All/>
          </wsp:ExactlyOne>
        </wsp:Policy>
      </wsam:Addressing>
    </wsp:All>
    <wsp:All>
      <wsam:Addressing>
        <wsp:Policy>
          <wsp:ExactlyOne>
            <wsp:All>
              <wsam:AnonymousResponses/>
            </wsp:All>
          </wsp:ExactlyOne>
        </wsp:Policy>
      </wsam:Addressing>
    </wsp:All>
    <wsp:All>
      <wsam:Addressing>
        <wsp:Policy>
          <wsp:ExactlyOne>
            <wsp:All>
              <wsam:NonAnonymousResponses/>
            </wsp:All>
          </wsp:ExactlyOne>
        </wsp:Policy>
      </wsam:Addressing>
    </wsp:All>
    <wsp:All>
      <wsam:Addressing>
        <wsp:Policy>
          <wsp:ExactlyOne>
            <wsp:All>
              <wsam:AnonymousResponses/>
              <wsam:NonAnonymousResponses/>
            </wsp:All>
          </wsp:ExactlyOne>
        </wsp:Policy>
      </wsam:Addressing>
    </wsp:All>
  </wsp:ExactlyOne>
</wsp:Policy>

```

Example 3-9. Subject requires WS-Addressing, requires explicit support of anonymous or non-anonymous response EPRs

```

<wsp:Policy>
  <wsp:ExactlyOne>

```

```
<wsp:All>
  <wsam:Addressing>
    <wsp:Policy>
      <wsp:ExactlyOne>
        <wsp:All>
          <wsam:AnonymousResponses/>
        </wsp:All>
      </wsp:ExactlyOne>
    </wsp:Policy>
  </wsam:Addressing>
</wsp:All>
<wsp:All>
  <wsam:Addressing>
    <wsp:Policy>
      <wsp:ExactlyOne>
        <wsp:All>
          <wsam:NonAnonymousResponses/>
        </wsp:All>
      </wsp:ExactlyOne>
    </wsp:Policy>
  </wsam:Addressing>
</wsp:All>
</wsp:ExactlyOne>
</wsp:Policy>
```