XOP/MTOM

Sang Shin
Michèle Garoche
www.javapassion.com
"Learning is fun!"



Agenda

- What are and Why XOP & MTOM?
- SOAP vs XOP/MTOM

What are and Why XOP & MTOM?

Motivations for XOP and MTOM

- Two approaches of sending binary data via XML
 - > Embedding Base64 encoding
 - > Referencing SOAP with Attachment
- Problem of Base64 encoding
 - Increased size of the data
 - > Added performance overhead
- Problem of SOAP with Attachment
 - Data is external to the document, and it isn't part of the message Infoset, thus requires two different ways of processing data

XOP (XML-binary Optimized Packaging)

- Is an alternate serialization of XML that just happens to look like a MIME multipart/related package, with an XML document as the root part
 - That root part is very similar to the XML serialization of the document, except that base64-encoded data is replaced by a reference to one of the MIME parts, which isn't base64 encoded.
 - Let you avoid the bulk and overhead in processing associated with base64 encoding
- Can be used for any XML-based format

MTOM (Message Transmission Optimization Mechanism)

 Is a description of how XOP is layered into the SOAP HTTP transport

SOAP with Attachment vs. MTOM

SOAP with Attachment

```
Content-Type: multipart/related; type="text/xml"; start="<9D645C8EBB837CE54ABD027A3659535D>";
           boundary="---= Part 0 1977511.1123163571138"
-----= Part_0_1977511.1123163571138
Content-Type: text/xml; charset=UTF-8
Content-Transfer-Encoding: binary Content-Id: <9D645C8EBB837CE54ABD027A3659535D>
<?xml version="1.0" encoding="UTF-8"?>
<soapenv:Envelope xmlns:soapenv="...."...>
            <source href="cid:3936AE19FBED55AE4620B81C73BDD76E"</pre>
   xmlns="/>
</soapenv:Envelope>
-----= Part 0 1977511.1123163571138
Content-Type: text/plain
Content-Transfer-Encoding: binary
Content-Id: <3936AE19FBED55AE4620B81C73BDD76E>
Binary Data.....
-----= Part 0 1977511.1123163571138--
```

XOP/MTOM

```
Content-Type: multipart/related; boundary=MIMEBoundary4A7AE55984E7438034;
  type="application/xop+xml";
start="<0.09BC7F4BE2E4D3EF1B@apache.org>";
               start-info="text/xml; charset=utf-8"
--MIMEBoundary4A7AE55984E7438034
content-type: application/xop+xml; charset=utf-8; type="application/soap+xml;"
content-transfer-encoding: binary
content-id: <0.09BC7F4BE2E4D3EF1B@apache.org>
<?xml version='1.0' encoding='utf-8'?>
<soapenv:Envelope xmlns:soapenv="...."...>
     <xop:Include href="cid:1.A91D6D2E3D7AC4D580@apache.org"</pre>
               xmlns:xop="http://www.w3.org/2004/08/xop/include">
     </xop:Include>
</soapenv:Envelope>
--MIMÉBoundary4Á7AE55984E74380/34
content-type: application/octet-stream content-transfer-encoding: binary
content-id: <1.A91D6D2E3D7AC4D580@apache.org>
Binary Data.....
--MIMEBoundary4A7AE55984E7438034--
```





Check JavaPassion.com Codecamps!
http://www.javapassion.com/codecamps
"Learn with Passion!"