BizTalk Framework 2.0
Building on SOAP for Open Interoperable Business Protocols

Marius Rochon
Technical Evangelist
Microsoft Corp.
Web Service Environment

- No common (programming) language
- No common (development) culture
- No common (component) technology
- No assumption of mutual trust
- Either create a universal translator
  - Everyone in the universe speaks English
- Or create a common language
  - Must be standards based
Requirements for a web service Messaging Framework

- XML-based open framework for message exchange
- Completely based on standards
- Agnostic to platform and implementation technology
- Supports multiple internet transports
- Addresses reliable delivery, routing, packaging and message-level security
BTF2 Foundation: Simple Object Access Protocol (SOAP) Version 1.1

- SOAP 1.1 is an emerging standard submitted to the W3C by Microsoft, IBM, HP, Iona, Ariba, Commerce One, SAP, Compaq, Lotus, Developmentor, Userland

- SOAP provides many features including
  - Extensible messaging protocol framework
  - Standard data encoding style
  - An RPC usage pattern
  - An HTTP binding for messaging and RPC

- The features are independently usable
**SOAP Protocols Vision**

- **TCP**
- **SMTP**
- **FTP**
- **HTTP**

- **BizTalk Framework 2.0**
  - **SOAP/MIME Encrypt**
  - **SOAP Async Messaging**
  - **SOAP/RPC**
  - **Sign**
  - **Attach**
  - **SOAP 1.1 extensible protocol framework**
  - **SOAP 1.1 Encoding**
  - **Base XML technologies**
    - XML, XSD, XMLDSIG, XLINK, ..

- **MIME S/MIME**
BizTalk Framework Goals

- XML-based open framework for message exchange
- Completely based on standards
- Agnostic to platform and implementation technology
- Supports multiple internet transports
- Addresses reliable delivery, routing, packaging, context communication message-level security
BTF Timeline

- 5/29/99 Launched BizTalk.org, BTF 0.8
- 11/1999 Published BTF 1.0
- 6/12/2000: BTF2 draft sent to BTF steering committee
- 6/27/2000: BTF2 draft incorporating steering committee feedback published
- 8/2000: Expect publication of finalized version of BTF2 with some updates
Current Support for BTF

- **Customers** using BTF in their app or marketplace
  - businessengine.net portal
  - capitalstream.com portal
  - ford.com site
  - ohio savings bank
  - wulf gaertner

- **Partners** providing servers supporting BTF
  - SAP, Sequoia software, Sainsbury's, Datastream, Viewlocity, Neon

- **Competitors** that are supporting or will support BTF
  - Webmethods, Ondisplay, Vitria
Support and Interop Model

Source Server

- Application
- BTF Compliant Message Server
- Transport
- Doc
- Ack

Destination Server

- Application
- BTF Compliant Message Server
- Transport
- Doc
- Ack

Network
BTF2 Document Structure

- SOAP Envelope
- SOAP Header
- BTF2 Header Entries
- Other Header Entries
- SOAP Body
- Business Documents
BizTalk Framework 2.0
Guaranteed (Exactly Once) Delivery

- Business processes require higher reliability of message delivery than basic internet transports can provide
- Need certified delivery with fault tolerance and delivery receipt
- Need to ensure the business action is performed exactly once
- BTF2 provides a simple receipt mechanism for reliable delivery
<delivery
SOAP-ENV:mustUnderstand="1"
xmlns:agr="http://www.agreements.org/types">
<!-- to and from left out for brevity -->
<deliveryReceiptRequest>
  <sendTo>
    <address xsi:type="agr:email_uri">
      mailto:sender@myhost.com
    </address>
  </sendTo>
  <sendBy>
    2000-05-14T08:00:00+08:00
  </sendBy>
</deliveryReceiptRequest>
</delivery>
BizTalk Framework 2.0
MIME Packaging for SOAP Messages

- MIME is an established IETF standard
- MIME solves multiple problems for SOAP
  - Packaging of attachments in native format
    - Images, Word/PDF documents, ..
  - Digital signatures
  - XMLDSIG will do that in future for XML fragments within a SOAP message
- Message level encryption
- Arbitrary nesting of these features
BizTalk Framework 2.0
SOAP Messages with Attachments

- MIME multipart/related packages for carrying attachments in native form
- An XML insurance claim submission may have attachments for
  - Facsimile of a hand signed claim form
  - Picture of damaged object (e.g., car crash)
- MIME header labels for attached parts
- Attachments can be referenced using URI references in SOAP message
Multipart/related MIME container

BTF2 message XML Claim Doc Refers to attachments

Content-Location: TIFF

Actual Binary TIFF

Content-Location: GIF

Actual Binary GIF

TIFF Attachment (facsimile form)

GIF Attachment (photo of crash)
BizTalk Framework 2.0
S/MIME Based Message Level Security

- IETF standard (RFCs 2311, 2633)
- Supports signatures and encryption for messages
- Applies to XML and other documents
  - Whole documents only
  - XMLDSIG almost ready for XML fragments
- Supported on practically all platforms in standard MIME libraries
This is the clear signed BTF2 message
BizTalk Framework 2.0
Open Routing Architecture

- Business document routing often requires naming business entities
- Messaging protocols usually require network protocol based addressing
- BTF2 allows routing using an extensible naming convention
  - Allows using, e.g., D&B’s DUNS number
  - Allows agreement based name resolution
<delivery SOAP-ENV:mustUnderstand="1"
xmlns="http://schemas.biztalk.org/btf-2-0/delivery"
xmlns:agr="http://www.agreements.org/types">
  <to>
    <address xsi:type="agr:duns_num">
      99-999-9999
    </address>
  </to>

  <from>
    <address xsi:type="agr:email_uri">
      mailto:sender@myhost.com
    </address>
  </from>

</delivery>
BTS2000 Support for BTF2

- BTS2000 Beta
  - Supports 7/27 draft of BTF2
- BTS2000 RTM
  - Will support updated final version of BTF2 which is due to be published by 8/2000
Key Takeaways

- The BizTalk Framework is:
  - A framework for secure, reliable message exchange.
  - Based on public standards like XML and SOAP.
  - Is platform and transport agnostic.
Questions?
Where do you want to go today?