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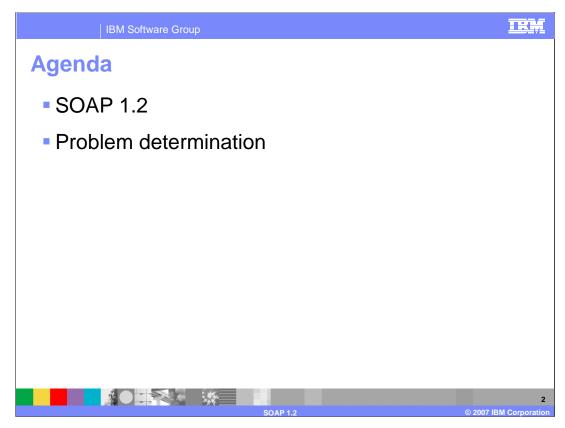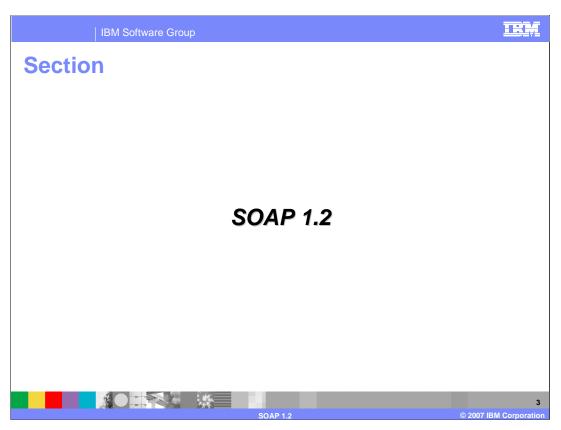# IBM® WebSphere® Application Server V6.1 Feature Pack for Web Services

SOAP 1.2

@business on demand.

This presentation will provide an overview of the SOAP 1.2 technologies provided by the Feature Pack for Web Services.

Agenda

- SOAP 1.2
- Problem determination

This presentation will explain the SOAP 1.2 support in the Feature Pack for Web Services, and explain problem determination for this component.

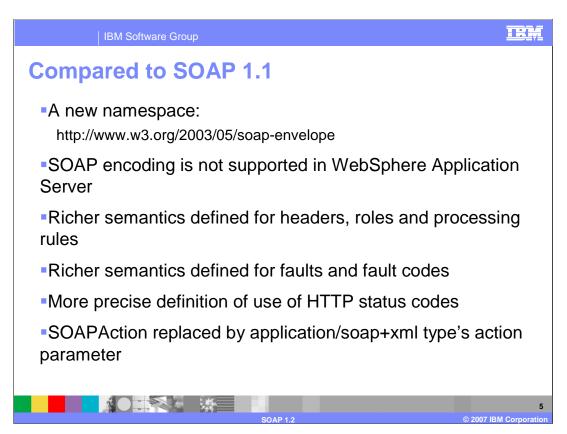This section will provide an overview of SOAP 1.2

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SOAP 1.2

- Supported by IBM WebSphere Application Server Version 6.1 Feature Pack for Web Services

  ▸ Not supported by WebSphere Application Server Version 6.1 (JAX-RPC)

- Removes many of the ambiguities of the SOAP 1.1 specification that sometimes led to interoperability problems

- Based on the XML Information Set (XML Infoset) rather than XML 1.0 serialization

- Can support transport protocols other than HTTP

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SOAP 1.2 is supported by IBM WebSphere Application Server Version 6.1 Feature Pack for Web Services, though it is not supported by just WebSphere Application Server Version 6.1 in the JAX-RPC programming model. SOAP 1.2 is largely based on an effort to remove many of the ambiguities of SOAP 1.1 that sometimes led to problems in interoperability. SOAP 1.2 is also based on the XML Information Set (XML Infoset) instead of the serialized XML specified in XML 1.0. There is a formal provision in SOAP 1.2 for support of transport protocols other than HTTP.

Compared to SOAP 1.1

- A new namespace:
  http://www.w3.org/2003/05/soap-envelope

- SOAP encoding is not supported in WebSphere Application Server

- Richer semantics defined for headers, roles and processing rules

- Richer semantics defined for faults and fault codes

- More precise definition of use of HTTP status codes

- SOAPAction replaced by application/soap+xml type's action parameter

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SOAP 1.2 has a number of differences compared to SOAP 1.1. The protocols, SOAP 1.1 vs SOAP 1.2, cannot be intermingled in the sense that an application that uses SOAP 1.2 to send requests must receive SOAP 1.2 in the responses. SOAP 1.2 is based on a new namespace, and uses richer semantics for header, roles and faults. SOAP 1.2 also has a more precise definition for use of the HTTP status codes. The SOAPAction has been replaced as well, by a combined Action parameter.

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SOAP 1.2 notes

- Best to always use an explicit WSDL file
  - ▸ JAX-WS requires runtimes to not generate a WSDL for endpoints that use SOAP 1.2 but were deployed without a WSDL
  - ▸ ?WSDL will not work for endpoints that specify a SOAP 1.2 binding but do not provide an explicit WSDL file

- SOAP 1.2 based Web Services require @BindingType annotations and matching WSDL
  - ▸ Without @BindingType defaults to SOAP 1.1
  - ▸ JAX-WS requires endpoint metadata cannot conflict with WSDL

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When using SOAP 1.2 bindings with a JAX-WS application, an explicit WSDL file should be included with the application during deployment. Where as normally a WSDL is not required for a JAX-WS application, with SOAP 1.2 bindings, the runtime cannot generate a WSDL for the application, due to rules in the specification. SOAP 1.2 bindings use a special @BindingType annotation, without which the application will default to using SOAP 1.1.

Section

Problem determination

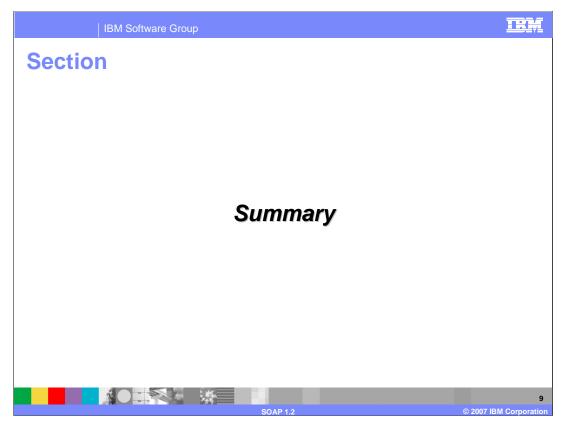The next section will explain problem determination for the SOAP 1.2 technologies.
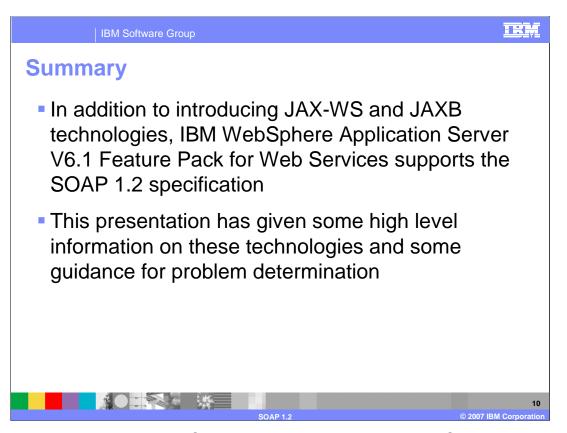
SOAP problem determination

- Problems **reported by** the code associated with SOAP are frequently data model related
- The data model is streamed through the various components (axis2, jaxws, sandesha, security, and WebSphere Application Server)
- Therefore, he best approach is to use several trace strings: com.ibm.xml.xlxp.*=all, org.apache.*=all com.ibm.ws.webservices.*=all com.ibm.ws.websvcs.*=all
  - ▶ open source tracing may be disappointing (that is, insufficient tracepoints)
- Prior to determining the trace string, try to determine if the problem is client or server related. This may not be obvious, for example:
  - ▶ an exception may occur on the server, but the server is responding to invalid information from the client
  - ▶ client may report exception but exception is really occurring on server due to some internal error happening on service side
- Using tcpmon to collect message traces is useful

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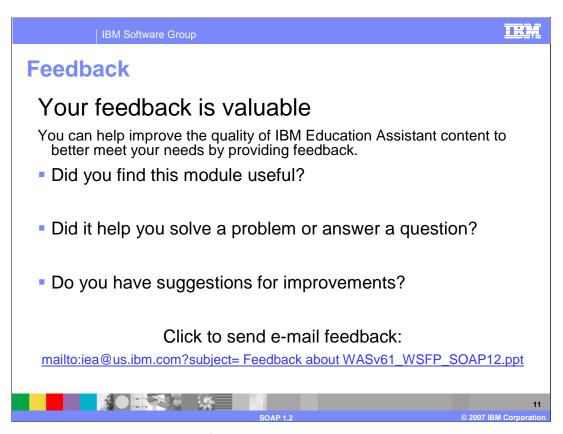
Most problems related to SOAP will be related to the Data Model or a form of the SOAP message. Since the data is streamed through numerous components, it is best to use multiple trace strings, capturing data for each of those components. Prior to running the trace, it is good practice to determine if the problem is specific to the client or service provider. Using a TCP monitor to view the SOAP message can help to determine where the problem originated.

Section

Summary

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The next section provides a summary of this presentation.

Summary

- In addition to introducing JAX-WS and JAXB technologies, IBM WebSphere Application Server V6.1 Feature Pack for Web Services supports the SOAP 1.2 specification

- This presentation has given some high level information on these technologies and some guidance for problem determination

SOAP 1.2

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In addition to introducing JAX-WS and JAXB technologies, IBM WebSphere Application Server V6.1 Feature Pack for Web Services supports the SOAP 1.2 specification. This presentation has given some high level information on these technologies and some guidance for problem determination related to the SOAP technologies.

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