

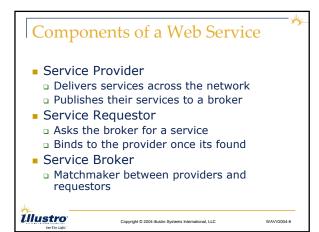


A Web service is a software system designed to support interoperable machine-to-machine interaction over a network. It has an interface described in a machine-process able format (specifically WSDL). Other systems interact with the Web service in a manner prescribed by its description using SOAP-messages, typically conveyed using HTTP with an XML serialization in conjunction with other Webrelated standards. **Copyright © 2004 Blastro Systems International, LLC** **WAV/2004-1

■ Some kind of function you can use across some kind of network ■ Usually involve short interactions (connect, access code, disconnect) ■ Discoverable, maybe ... ■ Described with XML ■ A Web Service is the exposure of a business process over a network



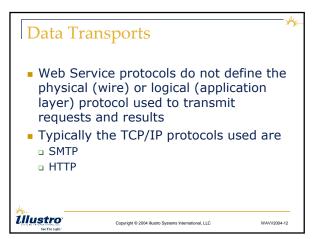




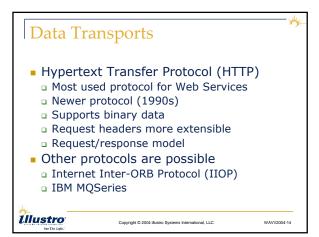


SML EVERYTHING is in XML SOAP Simple Object Access Protocol Protocol to make requests and receive result WSDL Web Service Description Language Describes the available services, inputs and outputs Copyright © 2004 Blustro Systems International, LLC WAN/2004-10

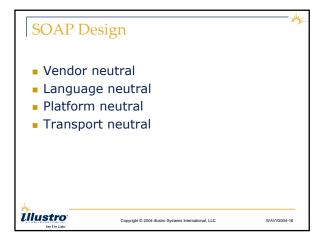


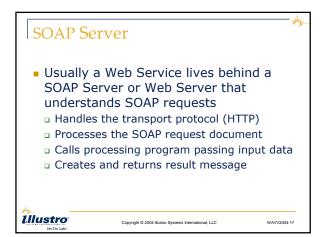


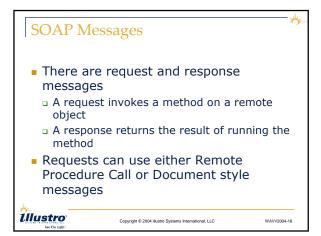
Data Transports Simple Mail Transfer Protocol (SMTP) Early TCP/IP protocol Multipurpose Internet Mail Extensions (MIME) support allows non-textual data Problems with SMTP Non-textual data must be encrypted Security problems Data size limitations



eXtensible Markup Language XML Platform independent way to share data Markup language similar to SGML Tags describe the meaning and purpose of the data Data only, no presentation attributes Used for all documents, requests and responses in Web Services architecture Details at www.w3c.org







SOAP Messages Most Web Services use RPC style messages SOAP specification defines how calls and returns are serialized in messages Document style messages can transport any XML document as long as the SOAP Server knows what to do with it

SOAP Envelopes A SOAP envelope contains the message itself The message is in an application specific vocabulary; namespaces distinguish the parts The envelope can contain a header, and MUST contain a body

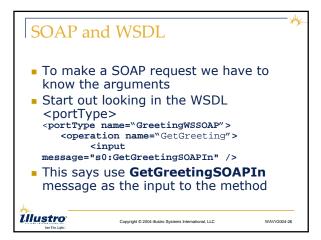




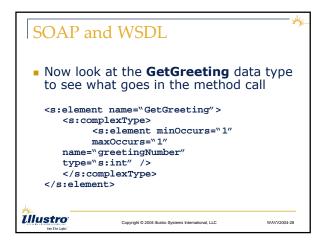


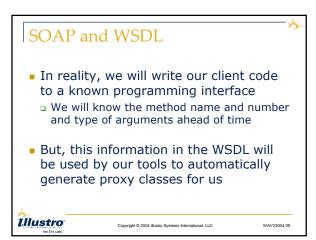


■ The WSDL file contains everything needed to make a SOAP request □ The address of the machine that hosts the service □ The name of the service □ The name and types of the arguments to the method □ The name and types of the arguments to the method



SOAP a	nd WSDL	when the second
Message <message <part na<br="">elemen <th><pre>name="GetGreetingSOAPIn"> ame="parameters" nt="GetGreeting" /></pre></th><th>)APIn</th></part></message 	<pre>name="GetGreetingSOAPIn"> ame="parameters" nt="GetGreeting" /></pre>)APIn
	eting data type defined	earlier
	Copyright © 2004 illustro Systems International, LLC	WAVV2004-27

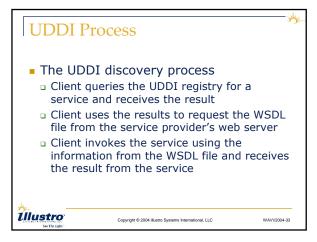






IBM. Microsoft, SAP, NTT and others provide registries of Web Services See www.uddi.org/find.html for access See www.ibm.com/services/uddi for information on IBM's registry You can register for no charge and publish your own Web Services

■ Registration basic process □ Split your WSDL file □ Register the interface portion as a TModel □ Describe your business with a BusinessEntity □ Add a BusinessServices record to describe your service. Refers to BusinessEntity and TModel □ Install the WSDL file on your web server



■ IBM has released UDDI4J, a free, open source implementation of the client side of UDDI. □ Simplifies the task of interacting with a UDDI registry □ JAVA Class Library □ See www 124.ibm.com/developerworks/projects/uddi4j





Other Considerations J2EE and .NET support direct XML handling XML parser APIs (DOM and SAX) Stream readers and writers (XMLTextReader/XMLTextWriter) They also support sockets and even HTTP XML documents can be sent/received and processed without SOAP overhead Copyright 6 2004 fibration Systems International, LLC WANY2004-37





Resources	
Apache Web Services Projectws.apache.org	
 LOTS of books are available Professional XML Web Services 	
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