Web Services (Industrial Session)

Author L. F. (Felipe) Cabrera

Microsoft Corporation
Redmond, WA, USA
cabrera@microsoft.com

Summary

Web Services have become a mainstream development in the industry. Their emergence is based on the mechanisms that made Web Browsing popular: the existence of a pervasive networking infrastructure, the widely deployed availability of communication protocols such as IP, TCP, UDP and HTTP, the standardization of XML documents and their display by browsers, and the emergence of higher-level transports such as SOAP. In addition, standard services such as UDDI and description languages such as WSDL established a base on which services could be specified, described, and published. Thus, the beginnings of the inter Web Service communication was founded.

The technical foundation based on XML, WSDL, SOAP and UDDI is not sufficient to satisfy the need of advanced Web Services. Missing were building blocks to enable interoperability in a broader range of situations to address the needs of federated Web Services. In addition, it also became clear that some of the flexibility introduced in early specifications, like XML Schema and SOAP encoding, was detrimental to interoperability. Additional technical work was needed to solve these early gaps in the agreed-upon infrastructure. For

example, one of the developments in XML has been the emergence of a data model based on the XML Information Set. This concept enables the expression of more properties in an end-to-end manner staying within the XML data model. In particular, the traditional multi-part messages can now be viewed as a single message with mixed type of content; all the mechanisms for securing and transacting a single message can be used in this scenario.

The last couple of years have brought a large effort from a broad set of vendors to define and deploy additional infrastructure to deploy interoperable Web Services. A complete family of technical specifications for Web Service protocols has emerged. These specifications cover aspects that enable building distributed applications including secure messages, secure conversations, trust relationships, transacted messaging, reliable transmission of messages, and the publishing of policies that affect messages and Web Services.

While this new platform is still emerging and being refined, a substantial vendor commitment exits to deploy it in order to achieve broad adoption and interoperability in the industry. Several interoperability demonstrations that incorporate a growing number of these new protocols have already taken place.

For the VLDB community, the group of most relevant specifications are: WS-Coordination, WS-Transaction, WS-Addressing, WS-ReliableMessaging, WS-Policy and WS-Security.

This session at VLDB 2003 presents different experiences with Web Services. The presentations being sought cover foundational aspects of Web Services, practical experiences with the use of Web Services, and critical analyses of the new foundation being proposed.

Selected Web References:
http://www.acm.org/cacm/toc/2003/6june_toc_03.html June 2003 Communications of the ACM issue on Web Services.

http://www.xmethods.com/ is the home page of XMethods, a "virtual laboratory" for developers that includes many examples of Web Services.

http://www.msdn.microsoft.com/webservices/ is the MSDN home page for Web Services.

http://www.oasis-open.org/home/index.php is the OASIS home page.