



## TenStep Supplemental Paper

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### Simple Object Access Protocol (SOAP)

The Electronic Business XML (ebXML) standards body announced that it would incorporate Simple Object Access Protocol (SOAP) into its messaging specifications. According to Gartner, this move points to a clearer choice for enterprises that have been pondering whether to embrace SOAP or MIME for messaging specifications.

SOAP is used primarily for making remote procedure calls across machine and network boundaries. SOAP has these primary advantages:

- Posting data over the HTTP protocol means not only that the delivery mechanism is widely available, but also that SOAP is able to get past firewalls that pose problems for other methods.
- SOAP uses the open standard of XML to format data, which makes it easily extendable and well supported.
- Also, because SOAP is a wire protocol based on XML and HTTP, it is possibly the most widely interoperable protocol to date.

SOAP will change the way people design systems, making it easier to take advantage of third-party software via Web services.

SOAP primarily uses the standard HTTP request/response model.

The client wraps a method call in SOAP/XML, which is then posted over HTTP to the server. The XML request is parsed to read the method name and parameters passed and delegated for processing. The XML response is then sent back to the client, containing the return value or fault data of the method call. Finally, the client may parse the response XML to make use of the return value.

The server uses a 'listener' to process SOAP requests. The listener is simply the server code at the specified URL for parsing the XML request, making the procedure call, and wrapping the result in XML to send as the response.

SOAP achieves interoperability by providing an XML format that can be transferred as simple text over HTTP or any other protocol capable of transferring XML text. The widespread support of HTTP and XML makes SOAP available as the remoting protocol for nearly any solution. SOAP has considerable momentum over similar solutions, like XML/RPC, and is quickly becoming the standard for remoting.

SOAP is fueling the rapid rise of Web services, which have the potential to change the face of Internet application development. Web services are Internet-based modules that perform a specific business task. The service publishes the interface used to interact with it in Web Service Description Language (WSDL), and other applications can invoke the service by making SOAP calls.

Web services are analogous to ActiveX controls or objects, but Web services are available to anyone who can make the SOAP call to them. SOAP does not attempt to



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handle some issues that other remoting protocols tackle (e.g. garbage collection and marshalling by reference). These features are left to the implementer, if required, since not all clients and servers support them.