SOAP

SOAP (Simple Object Access Protocol), was created in 1998 by Dave Winer et al in collaboration with Microsoft. Developed by a large software company, this protocol addresses the goal of addressing the needs of the enterprise market.

SOAP relies exclusively on XML to provide messaging services. Microsoft originally developed SOAP to take the place of older technologies that don’t work well on the Internet such as the Distributed Component Object Model (DCOM) and Common Object Request Broker Architecture (CORBA). These technologies fail because they rely on binary messaging; the XML messaging that SOAP employs works better over the Internet.

The XML used to make requests and receive responses in SOAP can become extremely complex. In some programming languages, you need to build those requests manually, which becomes problematic because SOAP is intolerant of errors. However, other languages can use shortcuts that SOAP provides; that can help you reduce the effort required to create the request and to parse the response. In fact, when working with .NET languages, you never even see the XML.

Part of the magic is the Web Services Description Language (WSDL). This is another file that’s associated with SOAP. It provides a definition of how the Web service works, so that when you create a reference to it, the IDE can completely automate the process. So, the difficulty of using SOAP depends to a large degree on the language you use.

An interesting SOAP feature is that you don’t necessarily have to use it with the HyperText Transfer Protocol (HTTP) transport. There’s an actual specification for [using SOAP over Simple Mail Transfer Protocol](http://www.pocketsoap.com/specs/smtpbinding/" \t "_blank" \o "using SOAP over Simple Mail Transfer Protocol) (SMTP) and there isn’t any reason you can’t use it over other transports. In fact, developers in some languages, such as Python and PHP, are [doing just that](http://www.drdobbs.com/writing-smtp-based-soap-messages-in-php/184416579" \t "_blank" \o "doing just that).