# Web Services Package 1.8

ProSyst Web Services Package integrates the SOAP technology in the OSGi framework by implementing the SOAP 1.1 Specification (Simple Object Access Protocol). It enables the communication over SOAP - e.g. invocation of web services from an OSGi application or exporting of OSGi services as web services.

## Features

- SOAP 1.1 support
- Implementation is based on JSOAP Open Source Project
- Web services can be called from an OSGi application
- OSGi services can be exported as web services
- HTTP and HTTPS are supported as transports under SOAP
- WSDL to Java and Java to WSDL tools are included to save developer time

## Benefits

- OSGi applications can access web services available in Internet
- OSGi applications can be integrated with enterprise systems. Typically enterprise systems export their functionality in the form of web services
- OSGi applications can be accessed as web services. This is a very common scenario when OSGi is working on top of a gateway device

SOAP provides a simple and lightweight mechanism for exchanging structured information between peers in a decentralized, distributed environment using XML. It defines simple means for expressing application semantics by providing a modular packaging model and mechanisms for encoding data within modules.

**ProSyst SOAP Solution Details**

The ProSyst SOAP implementation is based on the JSOAP open source project. JSOAP library provides two main functionalities:

- Accessing Web services from within OSGi. If a web service needs to be accessed and its methods to be called through SOAP, it can use the JSOAP client library with which SOAP calls can be done. In order to do that info about the methods and their parameters has to be provided. This info resides in a WSDL file for the web service.
- Exporting OSGi services in the form of web services.
  For this case JSOAP provides a SOAP server that can be used with a given HTTP server. The developer has only to write and register a servlet in the HTTP server, to write the needed "markup" code and to generate the WSDL file.

# mBedded Server Extensions

## Technical Data Sheet

**Additional functionality provided:**

- JSOAP packaged in an OSGi bundle. The SOAP client is exported as an OSGi package. A special OSGi SOAP server was developed which is integrated with the OSGi HTTP server.
- OSGi services can be easily exported as web services. They need only to implement a given interface and to specify the type mapping file if some special types are used. The SOAP server listens for such services in the OSGi registry and publishes them in the form of web services. WSDL can be generated by the provided Java2WSDL tool to avoid having to write WSDL by hand.
- External web services can be accessed in two ways – using the low level JSOAP client (which is packaged in an OSGi bundle) or generating a proxy for the web service using WSDL2Java tool. The generated proxy can be packaged directly in the OSGi bundle that wants to use the web service.
- SSL support is also integrated as a transport for calling web service or for exporting of an OSGi service as a web service.
- A lot of bug fixes and optimizations are done compared to the JSOP initial version.

**Supported SOAP Types**

- Support for in, out, and in/out parameters. The supported types are: int, integer, long, short, decimal, float, double, boolean, string, base64, and struct
- Serialization and deserialization are carried out automatically through reflection
- A custom serializer can be easily plugged in

**SOAP Demos**

Two demos are provided. The first demo shows how to call a sample web service; the second one shows how to export an OSGi service as a web service.

Additional capabilities and packages of mBedded Server and other ProSyst products are explained in the data sheets available for each product.

If you have any further questions, we will be happy to assist. Please contact us via info@prosyst.com or visit our Developer Zone at dz.prosyst.com

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