



## TelFormHost Server

A TelFormHost server strategy is one which validates incoming TelForm data against the relevant XML Schema, and processes accordingly. Such a policy results in reduced information errors and provides a future-proof IT direction. XML Schema validation is easily integrated into any Server-side environment. TelFormHost has been implemented on Linux and Windows platforms, with Apache Tomcat 6 Servlet Engine.

Java and XML are popular technology choices 'Server-side' but less so on the Client-side. Because TelForms uses these same technologies, and in particular by using the same XML Schema document, TelForms means Client and Server support teams become tightly integrated, increasing business efficiency, and improving the customer experience. Even if an organisation already has advanced XML Schema policies, the effort involved in producing a TelForm compatible XML Schema is minimal, and the results can then be imported into the existing XML Schema library.

### **Apache Software Foundation products and Web Services using Java and XML**

The Apache Software Foundation (ASF) is best known for its web server, which is used by most of the world's organisations to provide static web pages in Hyper-Text Markup Language using the Hyper-Text Transfer Protocol. Server-side scripting may provide a degree of dynamic client interaction using Perl or PHP script languages but scripts are interpreted serially, are verbose, and are processor intensive, often requiring a new process per client. This means server resources must be adequately matched to public demand, and this is not always predictable.

A server-side Java application is called a servlet. Properly written servlets will only need to fork a new thread, rather than a process, per client, if that. A thread is a logical set of programmed activities which operates within the shared memory and resources of a process. Compared with scripts Java programmes can carry out work in parallel, thereby greatly reducing processing time. Furthermore by creating and storing pools of 'Objects' used to process clients, which are then recycled for re-use, greater speed and efficiency results can be seen.

### **Tomcat Servlet Engine as a platform**

The benefits of Open Source Software movement have been recognised in recent years, and the prestige of the ASF has been to the fore of the movement's successes. For many reasons individuals and multi-nationals have been willing to produce and or support applications development in public, thereby achieving their own goals. There are now a huge variety of Apache projects and the Tomcat servlet engine is the basis of many of them. Banks and other organisations which need reliability and efficiency while appreciating value, are increasingly adopting Tomcat.

### **Cocoon and XML processing**

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For some time TelForm server-side development used Apache Struts as a framework. However, the restrictions far out-weighed the benefits and Apache Cocoon has been used for the last 4 years. Cocoon provides Database plugins or blocks for most major products, important since many software projects proceed with the Database vendor as the primary decision, given the expense of database management and support, and the business and legacy system implications. Output processing consists of XML Stylesheet Language XSL Transforming to a large degree and the Apache Formatting Objects Processor FOP to produce customised PDF documents, (All PDF documents on this website have been produced from

XML using FOPs). XML and X/HTML are of course native, Plain Text or Zip format are inbuilt. Scalable Vector Graphics (SVG) is a powerful graphics format defined in XML. The number of SVG enabled applications is growing, especially among hand-held devices, and SVG is easily transformed into JPG, GIF or PNG. The integration of Client and Server of TelForms and TelFormHost means scalability is inherent in the design.

The demonstration TelFormHost uses Cocoon version 2.4. The core of a Cocoon work-flow is one or more 'Sitemaps'. The sitemap consists of a 'pipeline' of 'generators', 'transformers', 'selectors', 'matchers', 'serializers', 'actions' and 'aggregators'. The minimal pipeline consists of a generator with default input from the web request, and the default output is the XML serialiser. Cocoon version 3 will provide more flexibility.

Probably one area which needs most attention is the return of meaningful error messages to the Customer in case of invalid data. This is because the Schema validator relies on the W3C recommendation which by its nature has a 'legalese' vocabulary, not to mention its technical syntax. This may improve with the maturation or greater choice of validating software.

### **Try TelFormHost with TelForms**

It is assumed that the installer has a good knowledge of Ant, Java Servlets, Tomcat or other Servlet engine.

Download and unpack the latest TelFormHost tar bzip2 package. Edit 'build.xml' with relevant urls, paths etc. The default ant task will install the TelFormHost Web archive containing the Servlet in the (Tomcat) webapps folder. Startup tomcat. The logs should help in fault-finding. Use the TelFormHost blog site to request assistance.

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