



Metro - The Web services Stack in GlassFish

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Agenda

- What is Metro ?
- Features
- Community
- Roadmap
- Reference

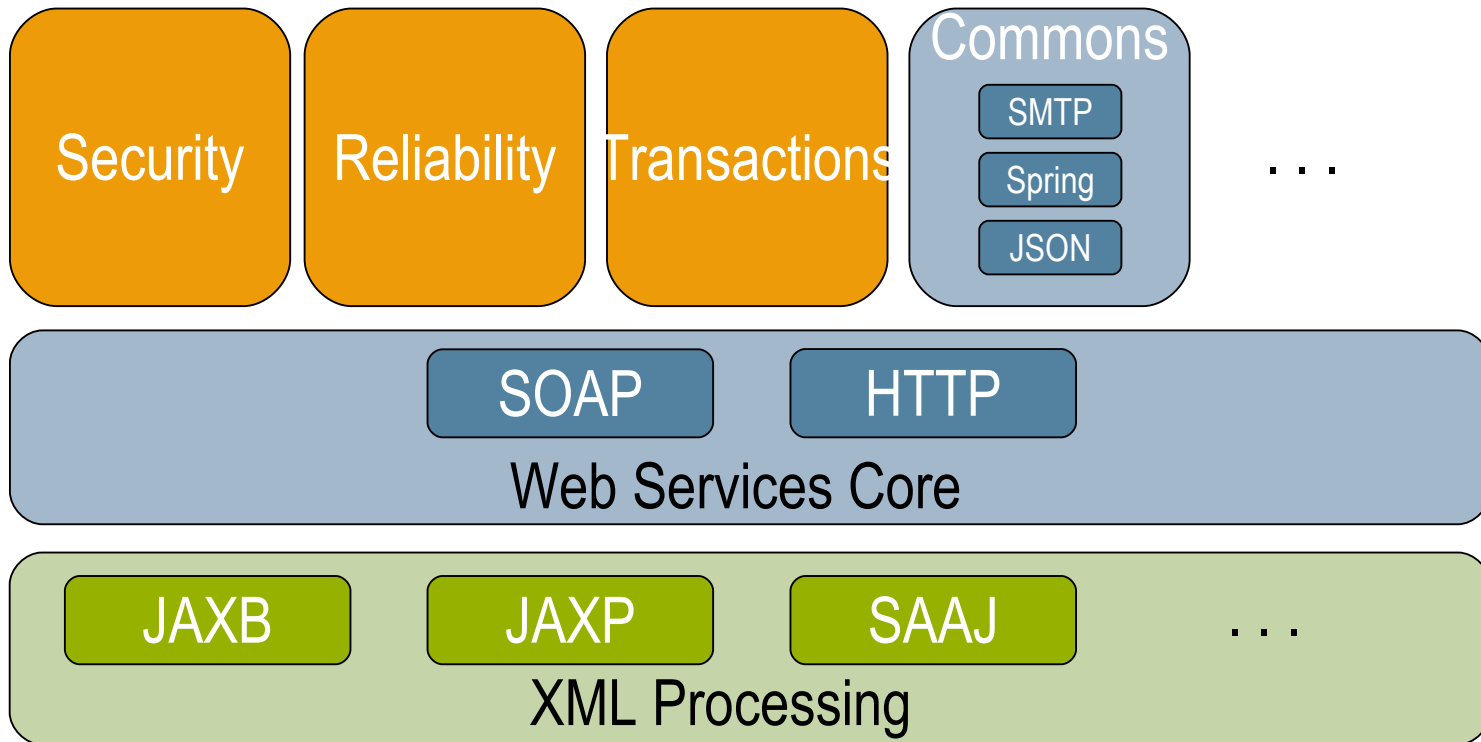
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What is Metro ?

- Web Services stack from GlassFish community
- High-performance and production-quality one stop shop for all Web service needs
- Metro = JAX-WS “RI” + WSIT/Tango
- JAX-WS RI provides Core Web services support
 - > Extensible and pluggable architecture
- WSIT/Tango provides support for Security, Reliability, Transactions and Interoperability with .NET 3.0

Metro Overview



Metro – GlassFish Web Services Stack
metro.dev.java.net

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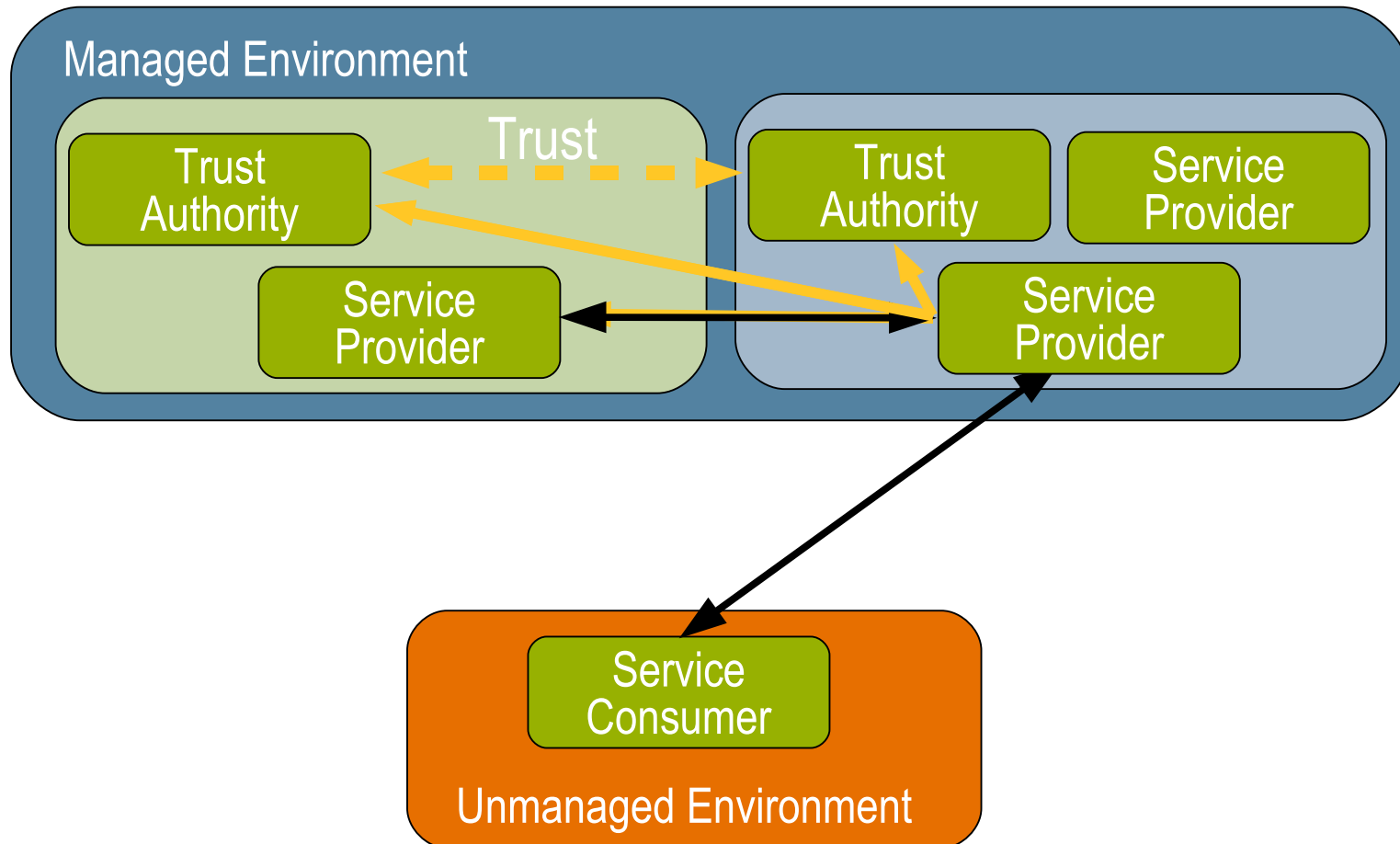
Metro Features

- JAX-WS 2.1: Easy to use Web services API
 - > Replaces JAX-RPC
- Embrace POJO concepts via annotations
 - > Descriptor-free programming
- Protocol and Transport Independence
- Integrated data binding via Java API for XML Binding (JAXB)
 - > 100% XML Schema Support

Metro Features

- End-to-end Security
 - > Point-to-point and Message-based
 - > Partial integrity and confidentiality
 - > Brokered trust relationships can be established

Brokered Trust Relationship



Metro Features

- Protocol-based Reliability
 - > Recovery from lost or mis-ordered messages
 - > Enable use of multiple transports
- Transactional Web services
 - > Same as EJB/RMI-IIOP Transactions
 - > All operations in TX boundary succeed or rollback

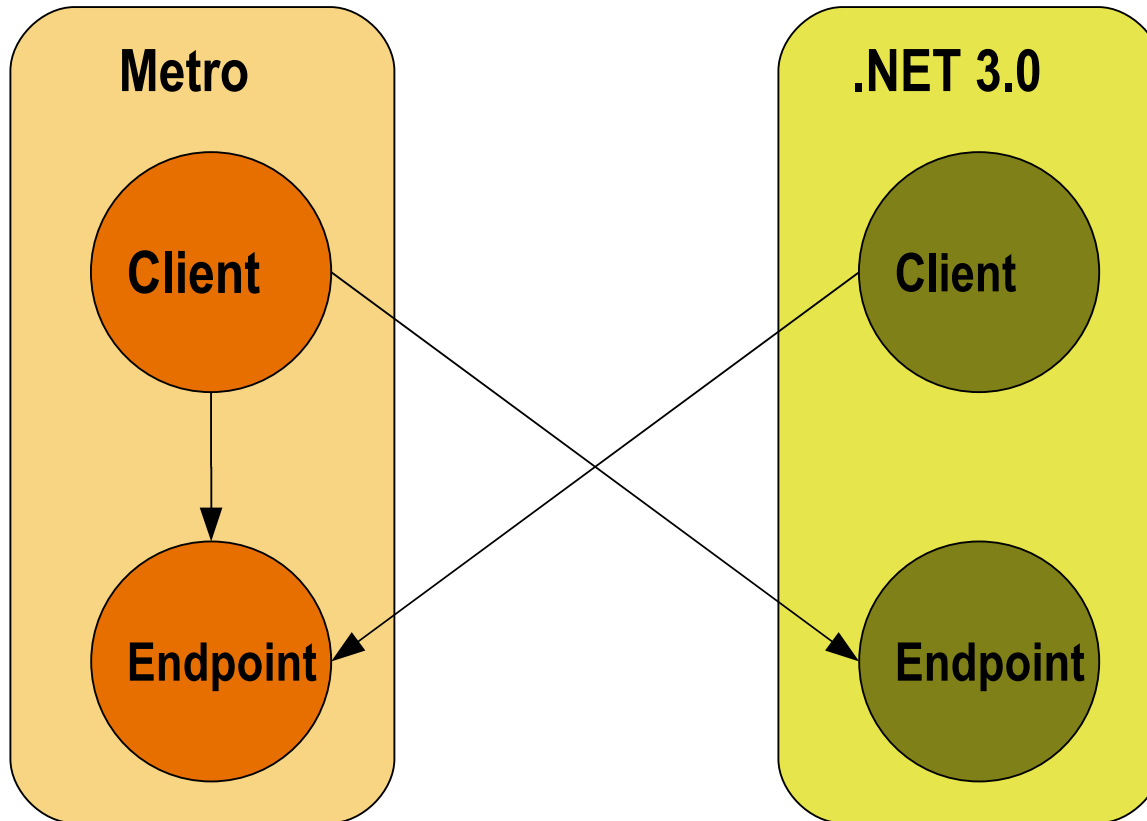
Metro Features

- Binding
 - > SOAP 1.1/1.2, MTOM, XML, JSON, FastInfoset
- Pluggable Transports
 - > HTTP, SMTP, TCP/IP, JMS, In-VM
- Deployment
 - > JSR 109-based, Servlet-based and Spring-based
- Cool Features
 - > Stateful Web service, Server-side Asynchrony, Multiple service instances, ...

Metro Interoperability

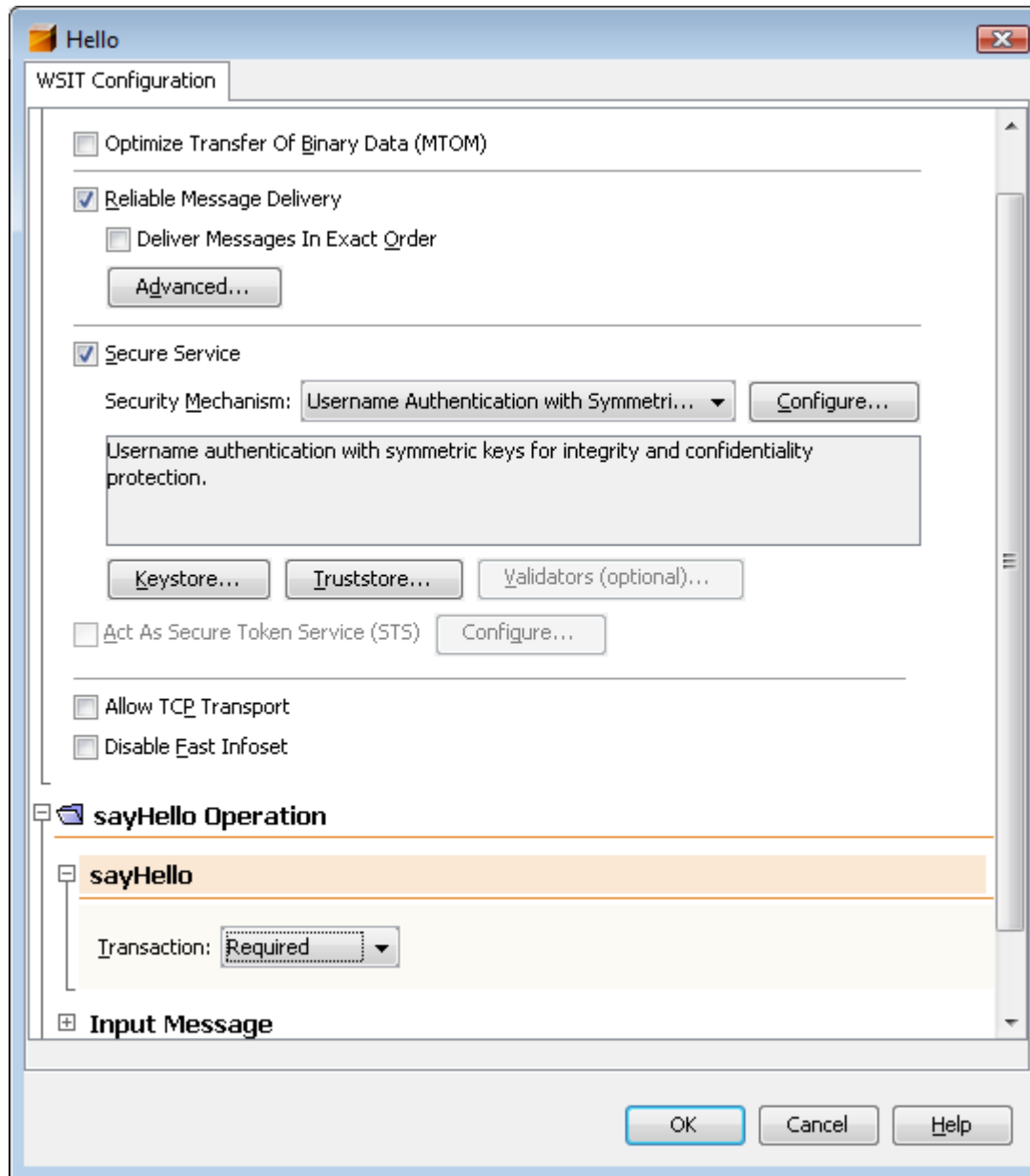
- Standards Compliant
 - > JAX-WS 2.1 & JAXB 2.1
 - > W3C SOAP 1.1/1.2, WSDL 1.1, WS-Addressing, MTOM
 - > WS-I Basic Profile 1.x, SSBP 1.0, AP 1.0
- .NET 3.0 interoperable
 - > WS-* specs used by .NET 3.0
 - Reliable Messaging, Secure Conversation, Trust, Security, SecurityPolicy, MetadataExchange, Atomic Transaction, Coordination, Policy
 - > Secure, Reliable, Transactional

Metro Interoperability



Metro Runtime & Tools

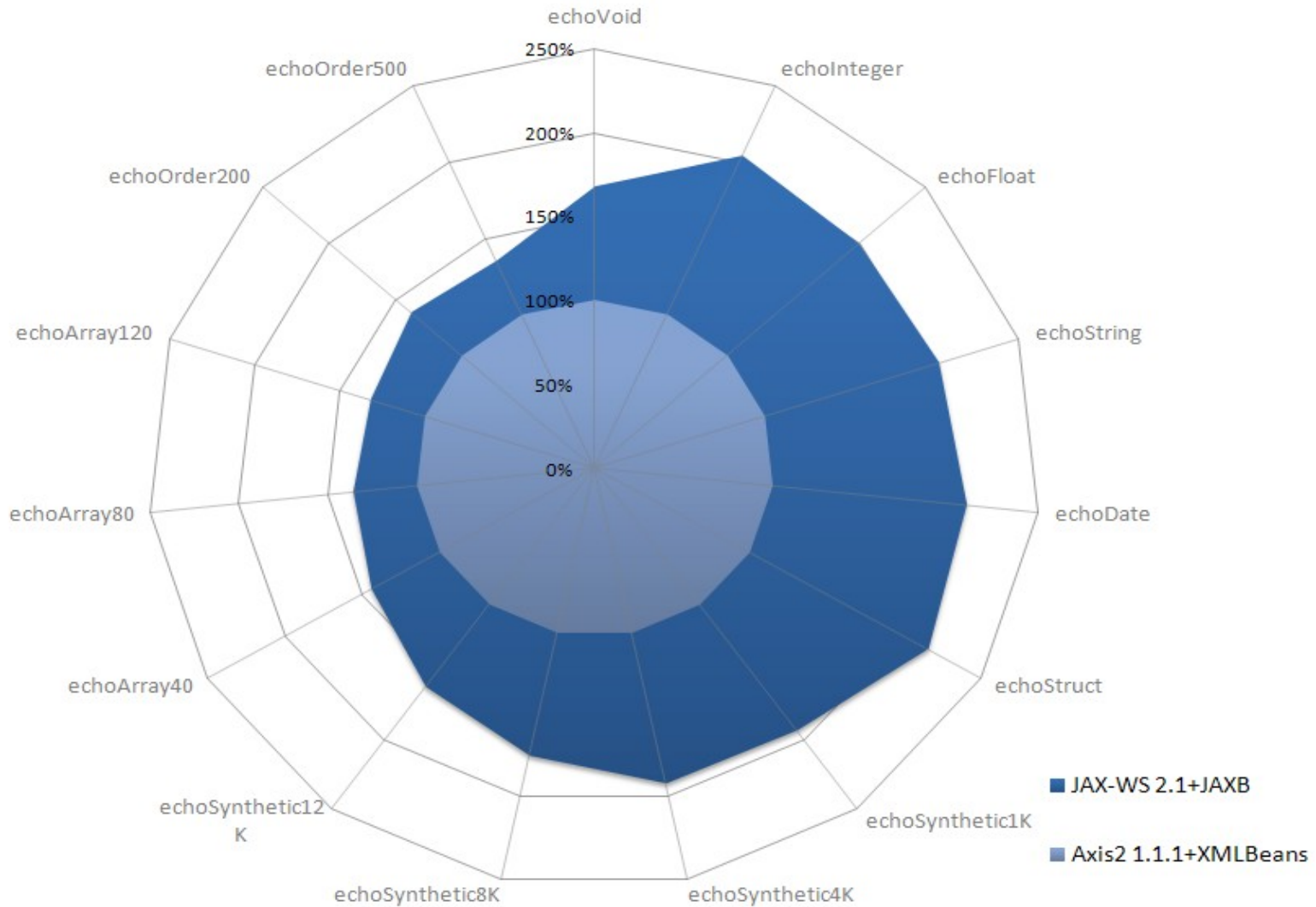
- Containers (runtime)
 - > Integrated in GlassFish V2 and V3
 - > Light-weight HTTP server (Java SE 6)
 - > JBoss WS 2.1.0, BEA WLS 10, IBM JDK Version 6, TmaxSoft JEUS, Tomcat, Jetty
 - > Any Servlet-2.4 container
- Development Tools
 - > Command-line: wsimport, wsgen
 - > NetBeans IDE
 - > Maven plugins
 - > Eclipse (SOAP UI plugin)



Performance

- Ran benchmark tests with JAX-WS 2.1 RI against Axis2 1.1.1
- Depending on the data size JAX-WS RI is 30% - 100% faster
- Details
 - > http://weblogs.java.net/blog/kohsuke/archive/2007/02/jaxws_ri_21_ben.html

Performance



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Community

- Visible development at java.net
 - > metro, jax-ws, wsit, jax-ws-commons
 - > Continuous testing using Hudson
- Fully Open-source
 - > CDDL and GPL v2 license
 - > Source code, Emails, Forums
- Light-weight committer process to encourage external contributions
- Features driven by users and community
 - > Spring, SMTP, JSON, Stateful Web service, etc.

Adoption

- BEA Web Logic Server 10
- JBoss WS 2.1.0
- IBM JDK Version 6
- Salesforce.com for APEX 8.0 toolkit
- Many others ...
 - > TmaxSoft, Worldspan, MailVision Ltd., MyUniPortal, Nortrop Grumman Corporation, Cordys, SLIB, Expeditors International, Cast Iron Systems, Covergence, National Science Foundation, etc.

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Roadmap

- Metro 1.0
 - > Released with GlassFish V2
 - > Standalone download bundle
- Future plans
 - > Better REST support through JAX-RS (JSR 311)
 - > JMX agent for server (metrics, health of the system etc)
 - > XMPP Transport
 - > Very large attachment support
 - > Align with .NET 3.5
 - Update to standard version of WS-* specs

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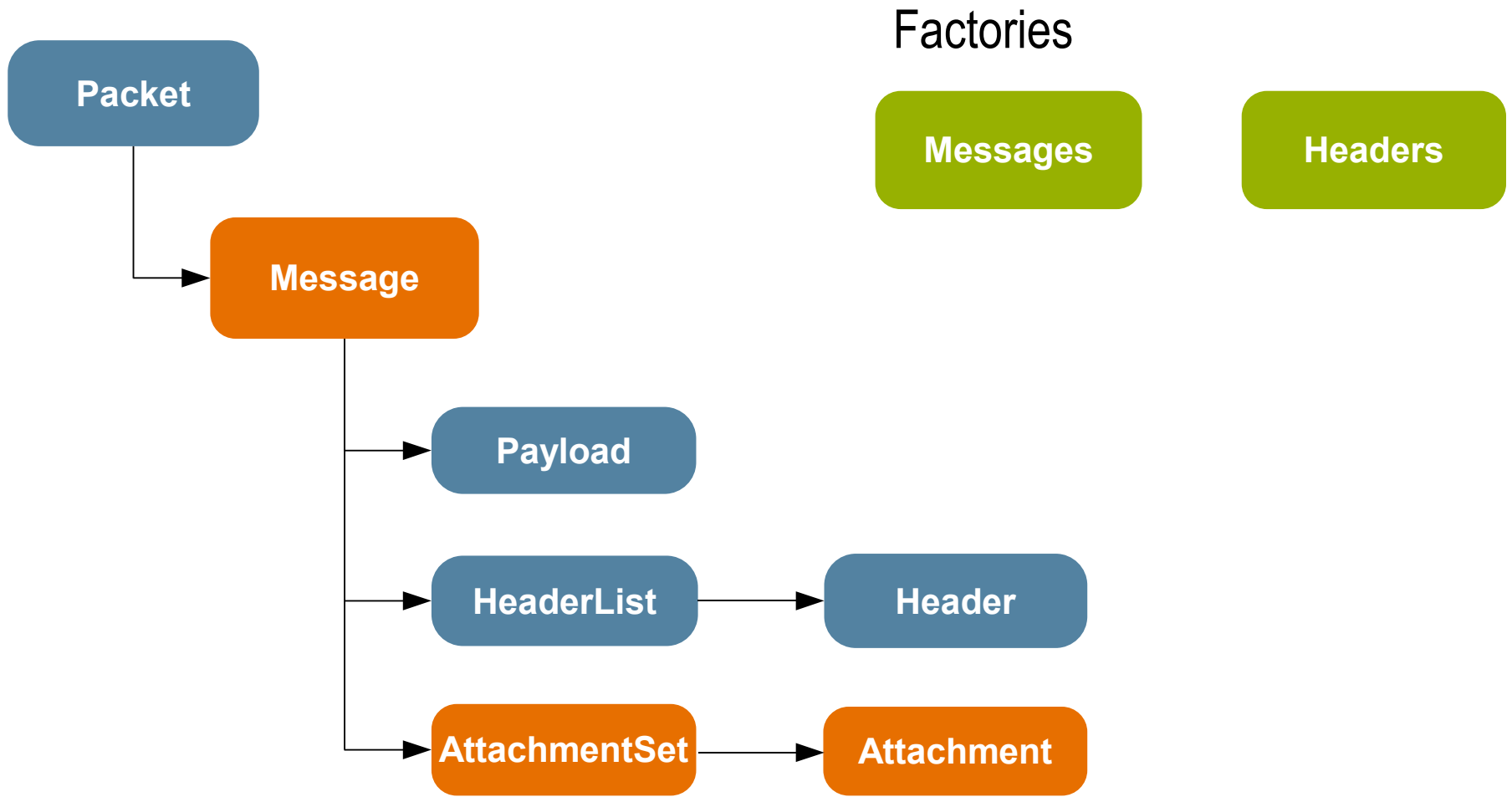
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Reference

- Metro
 - > metro.dev.java.net
 - > users@metro.dev.java.net
 - > <https://forums.java.net/jive/forum.jspa?forumID=46>
 - > <http://feeds.feedburner.com/MetroBlogs>
- GlassFish (glassfish.java.net)
- TheAquarium (blogs.sun.com/theaquarium)

Appendix

Abstraction of SOAP Message



Processing Pipeline

