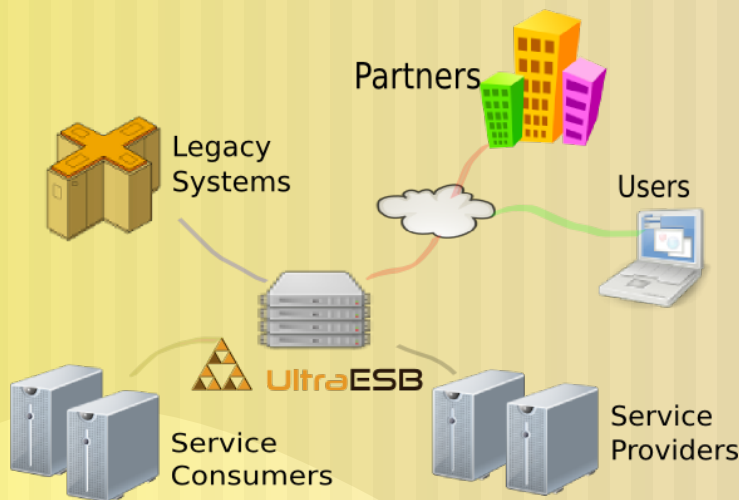# UltraESB

BETTER by Design

The UltraESB is designed to be

- Easier to use and manage
- Better in Performance
- Richer in features and extensibility

The UltraESB sits between service endpoints and service consumers and facilitates the integration of disparate systems by mediating the messages passing through.

By introducing Zero-Copy proxying coupled with Non-Blocking IO [NIO] and Memory mapped files/RAM disks, the UltraESB has proven its lead in performance against other open source and commercial ESBs

Messages may flow into or out via:
- HTTP/S
- Email (POP3, IMAP, SMTP)
- MLLP/S
- TCP/S
- JMS
- JDBC (Database)
- S/FTP, FTPS, File
- AS2
- Quartz / CRON based scheduling
- Other custom transports

The messages maybe mediated using
- Java code fragments or classes
- JSR 223 scripting languages (Ruby, Groovy, Javascript etc)
- XSLT / XQuery / HAPI
- Any compiled Java class / library
- Spring beans, EJBs and Custom code

The messages may be:
- SOAP 1.1 / 1.2
- REST, JSON
- XML / POX, JAXB,
- Hessian, FastInfoset
- Binary, Text, Map, CSV
- HL7, EDI, Copybook, custom formats

Additionally, supporting
- Cloud friendly Clustering based on Apache ZooKeeper
- Local and distributed Caching and Throttling
- HTTP Basic, Digest, NTLM and Amazon S3 authentication
- WS-Security - timestamps, signature, encryption, username token authentication
- Message split / aggregation / cloning
- JTA XA and resource local transactions
- Automatic XML to JSON conversion and SQL based JSON Data Services

Management and Monitoring
- 'UConsole' - Web based management console to manage an instance or cluster
- Command line interface 'UTerm' for system administrators and scripts
- Automated Zabbix integration with customizable templates for monitoring, alerting and graphing

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Easier to use - Learn, Develop, Debug and Unit Test

The UltraESB does not force its users to use a customized version of some IDE. Instead you are free to use IntelliJ IDEA, Eclipse, NetBeans or another IDE as you prefer, and use its auto-completion support for configuration as well as mediation.

The bad and the ugly side of fixed components and DSLs

Although some ESB's have support to define mediation using pre-defined actions, mediators or domain specific languages (DSLs) etc, these may not be flexible enough in real world use cases. While higher level DSLs could complicate or even prevent integrated debugging and unit testing, they also present a new product/vendor specific language for an end user to learn. The problem could be further aggravated with graphical definition environments which cater to only minimal fixed requirements. Some graphical models may create loads of meta data making simple tasks such as copy-pasting, extending code and simple source control etc very complex.

Mediate with Java or any JSR 223 scripting language (Groovy, Ruby, Javascript etc)

The UltraESB allows one to mediate messages using Java code fragments, JSR 223 scripting languages, compiled classes / libraries etc. This allows mediation logic to be simple to learn, debug and unit test by any Java or scripting language developer.

No time wasted on compile-build-and-deploy-cycles

As the UltraESB automatically compiles any mediation code dynamically into byte code for execution, the user does not have to perform time consuming "complile-build-and-deploying" of artifacts using Maven or Ant scripts. Any custom code linked does not have to be OSGi bundles or implement complex interfaces etc. Since the UltraESB is a Spring framework based application, any Java components or libraries can be easily integrated and used during mediation.

No one-size-fits-all message model

The UltraESB does not enforce any message model or expect the users to treat every message as a SOAP message etc, which can be very confusing - especially when a message is a File, or Email message or legacy message etc. Instead a message is kept in its native format, with the option to easily convert it to another format if required.

```xml
<u:proxy id="CBRProxy">
    <u:transport id="http-8280">
        <u:property name="ultra.http.wsdl_url" value="file:samples/resources/perf/ProxyWSDL-embedded.wsdl"/>
    </u:transport>
    <u:target>
        <u:inSequence>
            <u:java><![CDATA[
                if (mediation.filter(msg, "//order[1]/symbol", null, "IBM")) {
                    mediation.sendToEndpoint(msg, "RealService");
                } else {
                    mediation.setPayloadToSOAP11Fault(msg, null, "First order must be for the symbol IBM", null);
                    mediation.sendResponse(msg, 500);
                }
            ]]></u:java>
        </u:inSequence>
        <u:outDestination
            <u:address ty
        </u:outDestinatio
    </u:target>
</u:proxy>
```

⊕ 🔒 sendResponse(Message, int)	void
⊕ 🔒 addPreemptiveBasicAuthentication(Message, String, String)	void
⊕ 🔒 addPreemptiveBasicAuthentication(Message, String, String, Stri…	void
⊕ 🔒 convertFromFI(Message)	void
⊕ 🔒 convertSOAPToJSONStream(Message)	void
⊕ 🔒 convertSOAPToJSONStream(Message, QName, boolean)	void
⊕ 🔒 convertToDOM(Message)	void
⊕ 🔒 convertToFI(Message)	void

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Open Source and Zero-Dollar Commercial Licenses

The UltraESB is available under the OSI approved Affero General Public License [AGPL]. The exact same version is also available under an enterprise friendly, yet no cost, zero-dollar commercial license, without AGPL/GPL licensing. Both versions are identical in features and the codebase, and comes will full production support.

Commercial Support

AdroitLogic currently supports production deployments at large enterprise installations in the US, EU and Asia. 24x7 production support, development support, training and consultancy are available world-wide

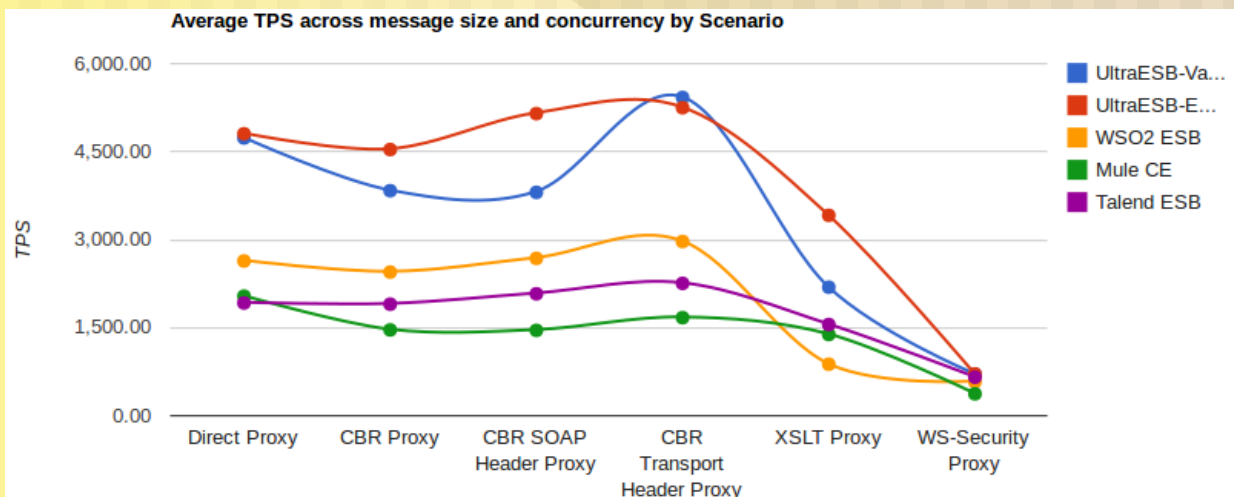## Community Support and Development resources

Free community support and an issue tracker is available with highly responsive support. Direct access to the source code, continuous/nightly build system and code quality servers are also available to the public.

"In a very demanding and rapidly changing market it is of utmost importance to be able to quickly adjust the technical platform to support product innovation and change. The UltraESB was able to demonstrate to the Jesta Digital Technology team in Berlin that its simplicity, testability, extensibility and performance is made for a matching foundation"

- Eric Hubert, Executive Director Strategy and Architecture, Jesta Digital

ESB Performance

AdroitLogic conducts regular performance tests against many comparative ESBs. The complete performance benchmark is shipped with the UltraESB distribution, and the ESB Performance site http://esbperformance.org includes references to re-execute a comparison against other open source ESBs using an easy to use Amazon EC2 Machine Image (AMI).

Next Steps

- Visit http://adroitlogic.org
- Checkout the 5-minute screen casts
- Download the ~35MB distribution

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