WSO2 Enterprise Service Bus

A Lightweight SOA Framework

More and more companies – whether big or small – are starting to integrate business systems. The proven approach to this is a Service Oriented Architecture (SOA). The WSO2 Enterprise Service Bus (WSO2 ESB) offers a new lightweight approach to create an SOA, and to add monitoring, management and virtualization to your existing service interactions. In fact, it makes it easy for you to build a simple, effective and above all pragmatic SOA.

The WSO2 ESB is designed to give you control of your integration. Whether you need to simply monitor service and message interactions using our simple Web-based console; or you have more complex requirements such as content-based routing or security, the WSO2 ESB makes it simple. And because its 100% Apache License 2.0 Open Source, there is complete assurance that this is not a lock-in or a proprietary solution.

Based on the Apache Synapse project, the WSO2 ESB offers one of the highest performance, lowest footprint integration systems available. The main design of the WSO2 ESB is simply to route, transform, log, and monitor messages flowing through the system. Built around open standards such as HTTP/S, XML and JMS, it scales from simple systems up to the highest levels of Quality of Service including full secure, reliable communications.

Why WSO2 ESB?

Easy-to-get started – costing you less time to get going

Industrial Strength – with class-leading performance and top-class commercial support from WSO2

Intuitive and flexible – minimizing the cost of managing your SOA and scaling up to the most complex needs

Effective and Pragmatic – with common scenarios available as samples, and common mediations built-in, the ESB can be put to work straight away.

Built on Open Standards – including HTTP/S, XML, XSLT, JavaScript, Java, SOAP, WS-RM and WS-Security, so that you know you aren't locked in to a proprietary solution.

Fully Open Source – because the WSO2 ESB is licensed under the Apache License 2.0, and developed by an open community, you get full visibility and input into the code, the development plans and the direction of the project, as well as a guarantee there is no hidden proprietary code.

Features

Simple to get started and use

- Unzip the code, type bin\wso2-esb, and point your browser at the server. That's all it takes to start out with the WSO2 ESB.
- The Web-based administration makes it easy to configure, even complex standards like WS-ReliableMessaging can be configured through simple check-boxes. And with over 35 sample configurations, you can be sure that you have a good starting point for your own project.

Full XML support

- With built-in support for XML, Namespaces, Xpath, XSLT, and XOP, the WSO2 ESB is ready to support your XML processing needs out-of-the-box.

Full Web services support

- The WSO2 ESB supports the major Web services standards including: SOAP 1.1/1.2, WS-Addressing, WS-Security, WS-ReliableMessaging, MTOM, as well as lightweight XML/HTTP, and JSON formats. Because its based on the popular Apache Axis2 project, it has proven interoperability with the major Web Services stacks including Microsoft .NET WCF.

Practical

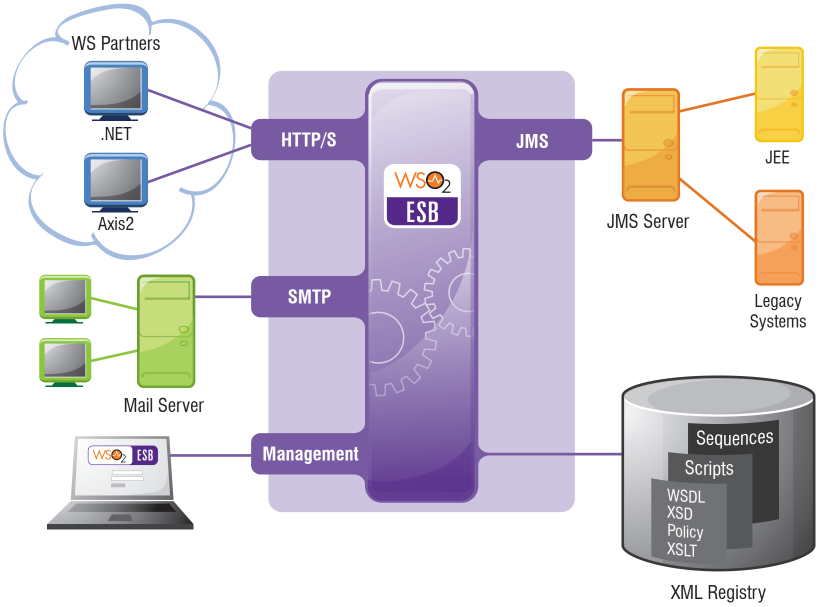
- The WSO2 ESB has been designed to support the most common requirements “out-of-the-box”, so whether it's load-balancing, fail-over, protocol switching, logging, monitoring, adding or reading headers, or simply routing messages, there are built-in mediators to help you get started.

Extensible Scripting

- The WSO2 ESB can be extended using simple Java, JavaScript, Ruby or other scripting languages. In addition there is support for using the Spring Framework to configure the mediation flow.

Multi-protocol

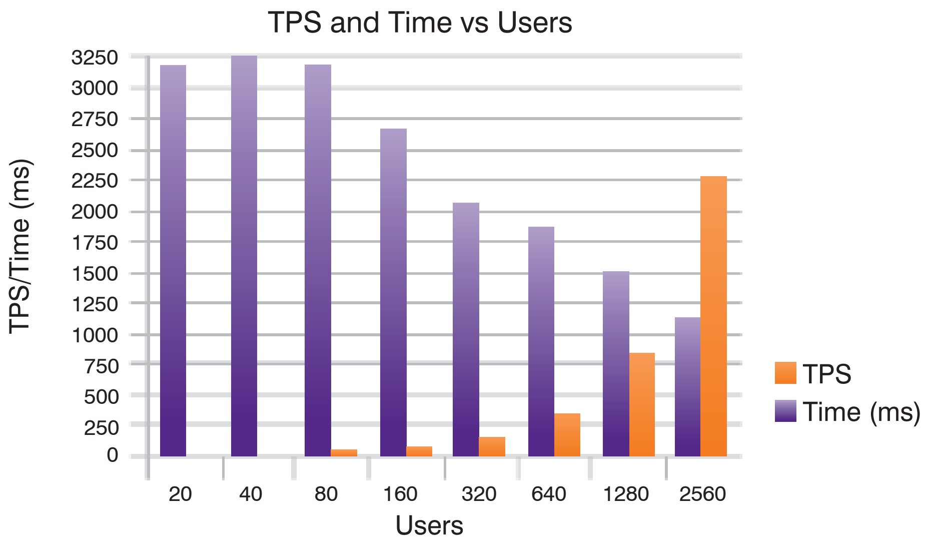
- With inbuilt support for HTTP/S, TCP, SMTP and JMS, the WSO2 ESB is ready to integrate with your existing network, your partners and your new projects.



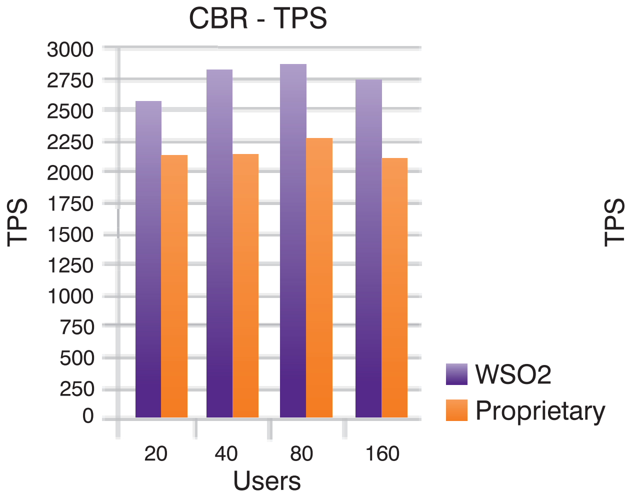
Highly Performant ESB

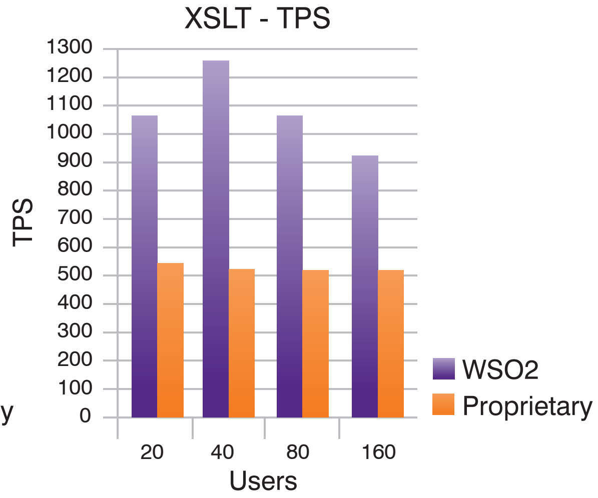
The WSO2 ESB has been optimized to support high-levels of throughput, low latency, and to support thousands of concurrent connections. A combination of non-blocking IO and a streaming XML parsing design means that the ESB can scale as much as you need.

The graph shows the scalability of a single instance of the WSO2 ESB under load, as the number of concurrent users are doubled from 20 to 2560. The results show that the WSO2 ESB can handle a load effectively and that it is even capable of handling thousands of concurrent/simultaneous connections, using a much smaller pool of threads and resources.



The WSO2 ESB clearly outperforms commercial and open source alternatives. An initial performance comparison against one of the leading proprietary ESB's reveals that the WSO2 ESB can perform more content based routing (CBR) decisions and twice as many XSLT transformations using lesser resources.





For further details on WSO2 ESB performance and scalability check out the WSO2 Oxygen Tank article http://wso2.org/library/1721.

The WSO2 ESB in Action

Proxy Services

- The simplest way to get started is to use the Proxy Services support which allows the administrator to create virtual services through the simple graphical wizard.
- As well as allowing the virtual service to be accessed on multiple transports, the proxy service can support WS-ReliableMessaging and WS-Security. This model enables virtualization of services, allowing the clients to be decoupled from the actual service implementation.
- Proxy services also enable transport switching (e.g. From XML/JMS to SOAP/HTTP to XML/HTTP etc.), as well as load-balancing and fail-over.
- The administration console makes it simple to monitor and trace proxy services.

Policy-based mediation

- In addition the WSO2 ESB can act as an HTTP proxy. This allows clients to be simply re-targeted to send messages via the ESB, where they can be mediated using a policy-based approach.
- This model allows a set of rules to be run against the messages including fault handling rules.
- The rules can use techniques such as Xpath expressions or regular expressions (regex) to apply rules to specific messages.

Effective Partner Integration

- With built-in support for ReliableMessaging, WS-Security and HTTPS, the WSO2 ESB makes a great on-ramp for e-business. You can safely expose internal services knowing that the WSO2 ESB will manage the security and reliable integration without any coding required.
- The proxy services approach makes it simple and quick to expose internal services to your partners and manage the security, logging and monitoring in a single place.

Extensible Mediation Framework

- As the WSO2 ESB is based on the Apache Open Source Synapse framework, it has a simple, open extensibility model. As well as supporting Java, JavaScript, Ruby, Groovy and Spring, you can even extend the core set of mediators with custom XML configuration languages.
- The WSO2 ESB supports defining re-useable Sequences of mediations that capture useful sets of mediation.
- The WSO2 ESB allows the definition of endpoints, which captures an endpoint address (EPR) and associated QoS engagements and policies to be used when sending messages. Endpoints can be named and referenced from within multiple mediation sequences. In addition, the ESB allows endpoints to be grouped into load-balance and fail-over groups.

Built-in Registry

- A built-in Registry allows XML configuration resources to be centrally cataloged and managed.
- The registry provides for the storage of sequence definitions, schemas, scripts, transformations, policies etc. and makes these available to running WSO2 ESB instances.
- In addition, the Registry supports dynamic reloading of resources, allowing administrators to manage the SOA without having to bring down the ESB and restart.
- The ESB also supports accessing remote registries via HTTP or other URL providers.