

INTEL® SOA EXPRESSWAY FOR ORACLE® FUSION MIDDLEWARE

BEST-OF-BREED SOLUTION

Intel has brought to market a unique solution that reduces costs, simplifies architecture and provides increased security for Enterprise SOA

Intel® SOA Expressway is a software-appliance designed to secure, accelerate and simplify the Enterprise SOA architecture. It expedites SOA deployments by addressing common SOA bottlenecks – it accelerates, secures, and governs web services and SOA in a single, easy to manage form factor. Oracle Fusion Middleware including Oracle Identity Management Suite and Oracle SOA Suite.

KEY FEATURES AND BENEFITS

KEY FEATURES

- High performance SOA Security gateway for perimeter defense
- Integrates with Oracle® Fusion Middleware and Oracle® Identity Management Products
- Provides runtime SOA management for message throttling, quality of service, and policy management.
- Optimized for standard Intel® Multi-core servers
- Easy to manage software-appliance form factor

BENEFITS

- Increased perimeter defense and security for Oracle® Fusion Middleware
- Increased performance and visibility for critical SOA applications
- Requires no custom hardware appliances
- Deploys in days, not weeks without custom coding

Secure, accelerate, and simplify your SOA architecture

- SOA Security in the DMZ: SOA Expressway provides a complete high performance security gateway for perimeter defense (XML firewalling) and trust enablement for Enterprise SOA that can be deployed as software, an appliance, or virtual appliance without requiring any special programming or any custom, proprietary hardware.
- Runtime Management: SOA Expressway provides comprehensive runtime management of the appliance capabilities such as XML firewall, perimeter defense and message security.
- Certified with Oracle Fusion Middleware: Expressway has pre-tested, proven integration with Oracle Fusion Middleware including Oracle Identity Management Suite and Oracle SOA Suite.
- Cost Reduction: SOA Expressway provides up to 8x the performance on standard Intel® Multi-Core servers at half the cost of purpose built appliances such as IBM Datapower.

Certified with Oracle Fusion Middleware

Intel® SOA Expressway compliments Oracle's SOA platform for closed-loop governance, integrated security, and extreme performance. It augments and extends Oracle Fusion Middleware, Oracle® SOA Suite, and Oracle® Application servers with high performance XML threat defense, XML/WS security gateway and SLA enforcement capabilities. SOA Expressway also integrates directly with Oracle Identity Management products such as Oracle® Access Manager and Oracle® Internet Directory and has proven interoperability with Oracle's suite of SOA products and application servers. Certified integration with Oracle Identity Management products enables you to reuse your existing infrastructure without disruption.

The SOA Security Challenge

One of the biggest challenges to widespread SOA adoption remains SOA security. Service-enablement of existing applications provides a universal SOAP or REST tunnel for function calls or data access which brings new security requirements such as SOAP or REST message level security, service virtualization, delegated AAA functions and XML firewalling. SOA Expressway provides unmatched performance for these features in a software appliance form-factor that avoids the use of custom, hard to manage, proprietary XML hardware. It runs on secure, open operating systems, avoiding the "security by obscurity" problem with "hardened" hardware appliances such as the IBM DataPower XI50.

The Runtime Management Challenge

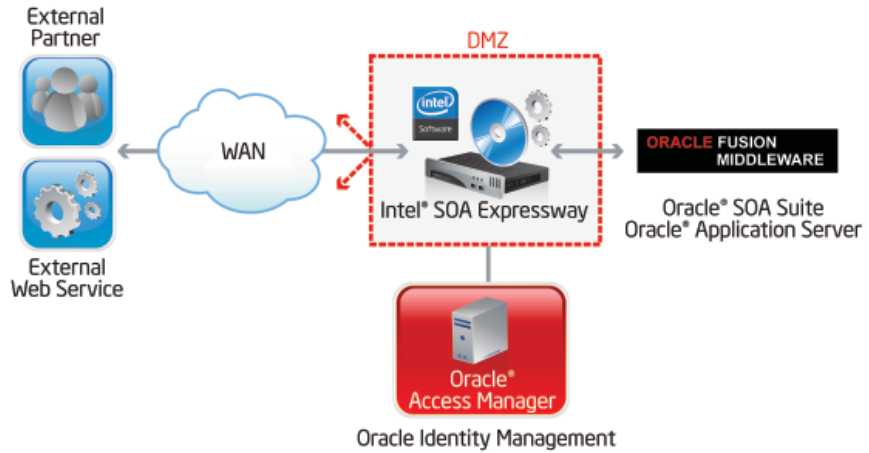
Runtime SOA management ensures that design-time policies are implemented and enforced with speed and precision, no matter where they are written. SOA Expressway provides a standards-driven policy framework including XML-based application bundles and log files to make it easy to integrate with policy design environments and monitoring systems. For example, SOA Expressway can enforce complex local security policies such as message security, SAML credential propagation, message throttling, routing, and even AAA using Oracle® Access Manager or Oracle® Internet Directory.

THREAT PREVENTION

- POX/SOAP/POX/REST Firewall
- XPath Filtering
- Deny-by-default
- Content filtering
- XML limit enforcement
- SQL Injection, DTD threats
- Attachment checking
- XML Bomb, WSDL Scanning
- Malicious Morphing
- Replay Attacks

TRUST ENABLEMENT

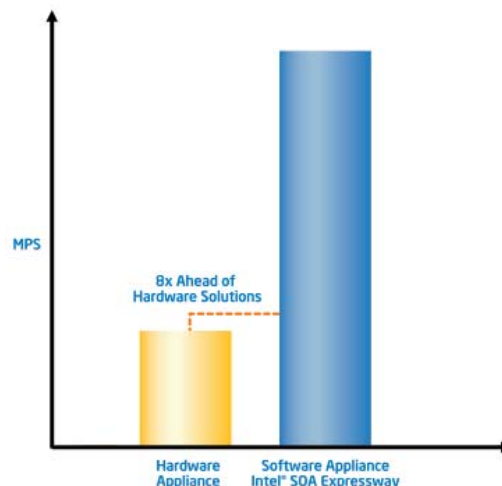
- SSL/TLS Acceleration
- WS-Security 1.0 and 1.1
- Raw XML Security
- Username, X.509, SAML Tokens
- Credential Mediation
- Attachment Security (SwA)
- Custom AAA support
- HTTP Basic Auth
- Oracle Access Manager
- Oracle Internet Directory



High performance software replaces custom XML hardware appliances for SOA security at a lower price point

The Performance Challenge

As applications grow larger they tend to mix legacy (binary), plain-old-XML (POX), and web services (SOAP) data in order to support changing business requirements. Accelerating such a large distributed application requires optimizing not only “point” XML operations such as transformation or validation, but also providing an optimized service mediation engine to orchestrate between services that rely on these functions. SOA Expressway provides a single runtime instance that offers XML and service mediation acceleration that scales with general purpose Intel® Xeon Multi-Core servers, regularly beating custom hardware appliances by a factor up to 8x using unique software level XML optimizations. Expressway brings Moore’s Law to XML-rich business applications without requiring any special programming or any custom, proprietary hardware.



Intel® SOA Expressway outperforms hardware appliances, such as the IBM DataPower XI50, by a factor of 4-8 for common use cases

Feature and Functionality Details

Category	Description
XML Firewall Threat Prevention	<ul style="list-style-type: none"> Multi-stage Denial of Service (DoS) Protection, with escalation levels for rate-shaping, blocking and alerting, XML Limit Checking, SQL Injection, DTD Checking, XPath Injection, Malformed XML Attack, XML Bomb Attack, Schema Poisoning Attack, XSS, Data Cloning Attacks, Service Scanning, SOAP operation filtering, Query string analysis Regular Expression scanning for forbidden and required expressions, configurable 'dirty word' filtering, hitless updating of content attack prevention policies. Unidirectional protection for inbound and outbound messages ideal for Web 2.0 and REST based security
Authentication and Authorization	<ul style="list-style-type: none"> Delegated authentication support for Oracle® Access Manager, Oracle® Internet Directory, LDAP, and CA Siteminder Point and Click AAA policy creation with shared, portable XML policies. Local X.509 certificate and username/ password authentication, external LDAP or Active Directory authentication. Content-based authorization, delegated authorization, query-based authorization Username/Password X.509 and SAML token authentication, custom XML-based credentials, HTTP basic auth Point and click support for credential mapping including Username/Password tokens, X.509 tokens, SAML v1.0/v1.1/v2.0 tokens, custom tokens and X.509 certificates from SSL sessions Certificate and Key Management, integrated X.509 certificate path validation support X.509 certificate key usage checking support, certificate revocation list (CRL) checking. Fine-grained policy controls for X.509 path validation
Web Services Security Standards	<ul style="list-style-type: none"> OASIS WS-Security 1.0/1.1, OASIS X.509, Username and SAML profiles, W3C XML encryption and XML signatures, Support for non-SOAP-based XML security, WS-I BSP 1.0/1.1, SOAP with Attachments, MTOM, WS-Policy, WS-SecurityPolicy, UDDI
Transport Layer Security	<ul style="list-style-type: none"> Support for multiple SSL identities and mutual authentication. SSL v3 and Transport Layer Security v1 acceleration, origination, and termination
Cryptographic Support	<ul style="list-style-type: none"> Optional Cryptographic acceleration of private key, symmetric key, and hashing operations Supports DES, 3DES, AES, RSA v1.5, RSA-OAEP, SHA-1 and SHA-256
Transport Protocols	<ul style="list-style-type: none"> HTTP(S) 1.0, 1.1, JMS, FTP, MLLP, File, Raw TCP, Custom Protocol Support
Service Mediation	<ul style="list-style-type: none"> High performance service mediation engine Secure SOAP, REST, Non-XML or custom service mediation within the datacenter or across the Internet Supports simple proxy or complex service mediation cases. XML Data Enrichment for Oracle 8,9,10 or any JDBC compliant database
Service Governance	<ul style="list-style-type: none"> High performance run-time policy enforcement for XML well-formed checking, schema validation, XML transformation (XSLT), content conversion for Non-XML support, content filtering (XPath), XML Security, WS-Security and content-based routing for SOAP, REST, or POX (Plain-Old-XML) data Real-time "hitless" policy updates on running traffic with zero message loss Message throttling for message rate and concurrent requests
Management and Monitoring	<ul style="list-style-type: none"> System wide and per-application resource tuning for capacity planning and business usage monitoring, service outage detection, SLA monitoring, service fail-over, standardized XML logs and reusable XML policies Cluster support allows a group of Intel® SOA Expressway software appliances to be managed simultaneously Eclipse-based Intel® Services Designer provides for application definition and testing in a single environment Web User Interface allows cluster or single node monitoring XML-based log files allow custom post-analysis Cluster and single-node dashboard view provides system overview information Scriptable management through CLI. Highly tunable logging facilities with seven different logging levels to enable full byte-by-byte audit or high performance operation. SNMP Notification Support (TRAP) and E-mail Alerting. Self-healing managed processes automatically recover from failures.
Supported Hardware	<ul style="list-style-type: none"> Software Option: Any Intel® Xeon® Multi-Core server with 4GB RAM (8GB Recommended) Appliance Option: Intel® Xeon 5500 based, 1U rack height with dual, hot-pluggable energy smart 502W PSU. Two dual port embedded Broadcom® NetXtreme II™ 5709c Gigabit Ethernet NIC with failover and load balancing. Tamper resistant hardware and software: locked front bezel and screws, TPM chip for disk image verification, opaque chassis, tamper-evident tape, limited external ports, physical trip-wire, locked BIOS.
Operating Systems	<ul style="list-style-type: none"> Red Hat AS4/A5 (32 or 64-bit), SUSE Linux Enterprise 10 (32 or 64-bit), Microsoft Windows 2003 Server (32 or 64-bit), Oracle Enterprise Linux
Virtualization Support	<ul style="list-style-type: none"> VMWare ESX
Performance Features	<ul style="list-style-type: none"> Wire speed XML processing engine for parsing, transformation, security, and routing – outperforms dedicated XML appliances with software alone Optimized for Intel® Multi-Core including Intel® Xeon® 5500 Utilizes Cavium CN1230 NPB (if installed, requires PCI-X support) for optional cryptographic acceleration or Cavium CN1620 (if installed, requires PCIe support)

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