



**WebSphere** software

## **IBM WebSphere DataPower XML Security Gateway XS40**

### ***Specialized hardware for Web services security and XML threat protection***

---

#### **Highlights**

---

- ***Purpose-built, tamper-proof network device***
- ***Provides sophisticated Web services access control, message filtering and field-level encryption***
- ***Centralizes policy enforcement, supporting standards such as WS-Security, WS-Policy and XACML***
- ***Simplifies SOA infrastructure and deployment***
- ***Offers standards-based, fine-grained security controls***
- ***Hardened appliance for DMZ deployments***
- ***Protects SOA infrastructures with XML firewall and threat protection***
- ***Provides robust SOA governance capabilities***

Enterprises are enthusiastic about the enormous potential of XML Web services and Web 2.0. With the right security, XML and Web services can enable businesses to expand connectivity as never before. However, the corporate security staff is appropriately wary. XML flows undetected over existing protocols and pathways, carrying new threats to security, reliability and performance. Additionally, analysts estimate that by 2012, two-thirds of service oriented architecture (SOA) applications will have at least one service that is offered by an entity outside of the enterprise. As a result, it is vital that companies provide secure SOA services that are also scalable and cost-effective without sacrificing performance.

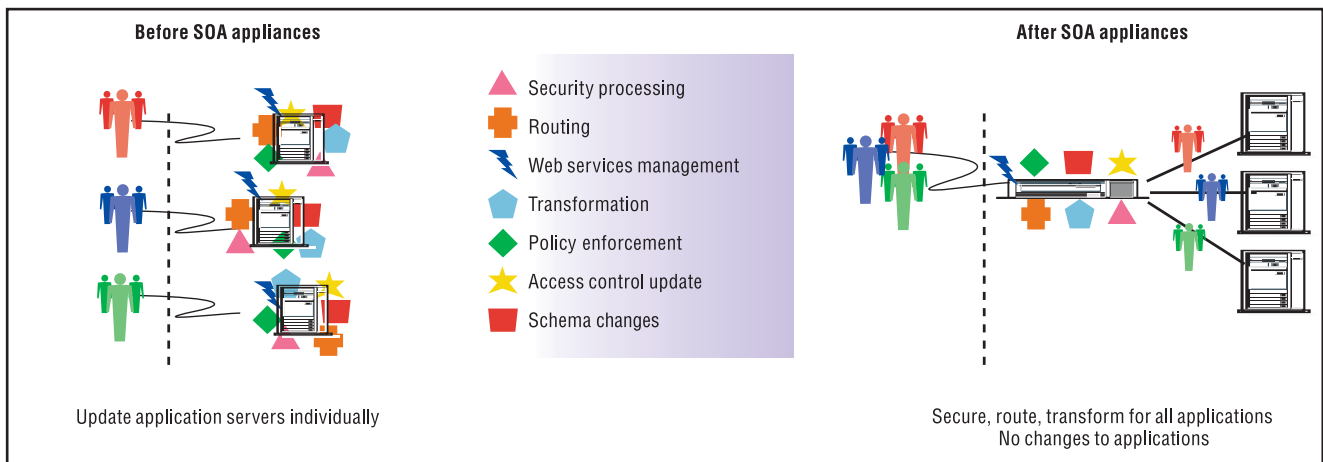


Figure 1. WebSphere DataPower XML Security Gateway XS40 centralizes and simplifies Web services management and SOA governance.

### Redefining the boundaries of middleware

IBM WebSphere® DataPower® SOA appliances redefine the boundaries of middleware by extending the IBM SOA Foundation with specialized, consumable, dedicated SOA appliances that combine simplified integration, superior performance and hardened security for SOA implementations. Meticulously designed to augment all phases of the SOA life cycle and implementation, these highly specialized devices combine a host of essential SOA functions into a specialized appliance for easy consumption, deployment and service delivery.

### Why an appliance for SOA?

The award-winning IBM WebSphere DataPower XML Security Gateway XS40 appliance is a complete,

purpose-built hardware platform for delivering highly manageable, more-secure and scalable SOA solutions. As a hardened SOA appliance, WebSphere DataPower XML Security Gateway XS40 offers an advanced XML threat-reduction and security-enforcement layer for XML messages and Web services transactions. It meets the demand for fast, reliable XML processing in a consumable appliance that transforms back-end disparate message formats to XML while applying message-level security and service policies.

WebSphere DataPower XML Security Gateway XS40 streamlines your SOA deployment in a security-rich environment, requiring minimal configuration,

customization and management. Accelerate application integration by using the appliance to minimize the time necessary to implement an infrastructure that can optimally support the IBM SOA Foundation. The device helps protect SOA traffic by implementing XML threat-protection and Web-services security functions, as well as integrating with security and identity management software, such as IBM Tivoli® software.

### XML security in a network appliance

Securing applications with distributed software requires complex custom configurations and constant code patches deep within the enterprise (see Figure 1). Because WebSphere DataPower XML Security Gateway XS40 is a self-contained gateway

shared by applications, it unifies security at the network's edge with interfaces familiar to security staff. Here are some of the key functions offered by the device:

- **Centralized policy management and enforcement.** *The unmatched performance of the XS40 enables enterprises to centralize security functions in a single drop-in device that enhances security and reduces ongoing maintenance costs. Simple firewall and Web-services proxy functions can be configured using a Web GUI, and run in minutes. Or, using the power of Extensible Stylesheet Language Transformation (XSLT), the device can also create sophisticated security and routing rules. WebSphere DataPower XML Security Gateway XS40 is an excellent policy-enforcement and execution engine for securing next-generation applications. It combines integration with leading policy managers and service registries, and support for such standards as WS-Security, WS-SecurityPolicy, WS-ReliableMessaging and WS-Policy. Manageable locally or remotely, the device supports Simple Network Management Protocol (SNMP), script-based configuration and remote logging to integrate seamlessly with leading management software.*
- **XML and SOAP firewall.** *WebSphere DataPower XML Security Gateway XS40 filters traffic at wire speed, based on information from layers 2 through 7 of the protocol stack—from field-level message content and SOAP envelopes to IP address, port and host name, payload size and other metadata. Filters can be predefined and automatically uploaded to change security policies based on time of day or other triggers.*
- **Field-level XML security.** *WebSphere DataPower XML Security Gateway XS40 selectively shares information through encryption and decryption and signing and verification of entire messages or of individual XML fields. These granular and conditional security policies can be based on nearly any variable, including content, IP address, host name and other user-defined filters.*
- **XML Web-services access control.** *WebSphere DataPower XML Security Gateway XS40 supports a variety of access-control mechanisms, including eXtensible Access Control Markup Language (XACML), Security Assertion Markup Language (SAML), Secure Sockets Layer (SSL), Lightweight Directory Access Protocol (LDAP), RADIUS and simple client and URL maps. The device can control access rights by rejecting unsigned messages and verifying signatures within SAML assertions.*
- **Service virtualization.** *XML Web services require companies to link partners to resources without leaking information about their location or configuration. With the combined power of URL rewriting, high-performance XSL transforms and XML and SOAP routing, WebSphere DataPower XML Security Gateway XS40 can transparently map a rich set of services to protected back-end resources with high performance.*
- **Data validation.** *With its unique ability to perform XML Schema validation as well as message validation at wire speed, WebSphere DataPower XML Security Gateway XS40 helps to confirm that incoming and outgoing XML documents are legitimate and properly structured. This protects against threats, such as XML Denial of Service (XDoS) attacks, buffer overflows or vulnerabilities created by deliberately or inadvertently malformed XML documents.*
- **SSL acceleration.** *WebSphere DataPower XML Security Gateway XS40 scales transport layer security by accelerating bidirectional and mutual SSL transactions in hardware. It can be configured with multiple SSL identities functioning as client or server, and with SSL policies based on message content or metadata, such as port number and HTTP header.*

WebSphere DataPower XML Security Gateway XS40 is a 1U (1.75-inch) rack-mountable form factor designed to fit into industry-standard racks. Attachment to the network is through Ethernet. WebSphere DataPower SOA Appliances' hardware and software cannot be taken apart and deployed within other servers.

### **Embed message processing into network infrastructure**

With WebSphere DataPower XML Security Gateway XS40, you can embed message processing directly into your network infrastructure, facilitating new business processes without reinventing your security infrastructure. A purpose-built network device, it delivers full XML Web-services security, whether deployed within the enterprise or in the DMZ. When the device's unmatched performance advantage is coupled with its depth of functionality, the security of your SOA deployment is centralized so that valuable information is shared quickly and securely.

### **Comprehensive XML security**

WebSphere DataPower XML Security Gateway XS40 delivers the full range of security services and is purpose-built to meet the unique demands of processing XML. Filtering, encryption, digital signatures and data validation can be performed at the message level (for SOAP or raw XML) or at the XML field level. With a straightforward, award-winning GUI for rapid, secure deployment and an advanced standards-based interface for sophisticated policy definition, the device satisfies the requirements of both IT operations and business-application owners.

### **Performance without compromise**

With WebSphere DataPower XML Security Gateway XS40, security doesn't have to be traded for performance. Using the field-proven

IBM WebSphere DataPower XML Generation Four (XG4) technology, the XS40 can parse, filter, validate, encrypt and transform XML at gigabit-per-second wire speed. This unique, patent-pending performance advantage provides the processing headroom to keep pace with the growing security demands of the business. By combining gigabit performance, comprehensive security and agility, the device allows enterprises to overcome the largest barrier to adopting XML Web services both internally and externally.

### **Standards flexibility**

The WebSphere DataPower XML Security Gateway XS40 processing engine was designed from the ground up with XML at the core so that security functions aren't hardcoded. Through its ability to dynamically incorporate new schemas, the device enables businesses to quickly adapt to changes in

industry standards, internal security policies, trading partner specifications and customer needs. Using the device, enterprises can implement all current XML Web-services security standards and easily adopt newer standards as they are ratified.

### Infrastructure integration

IBM recognizes that your existing security infrastructure might be single-vendor or heterogeneous (see Figure 2). WebSphere DataPower XML Security Gateway XS40 transparently cooperates with installed security components, firewalls and load-balancing devices. Compatibility with single sign-on systems, public key infrastructures (PKIs) and enterprise management tools helps to ensure that the device fits smoothly into your existing operations while providing protection for next-generation applications, with out-of-the-box support for a broad variety of Web services standards.

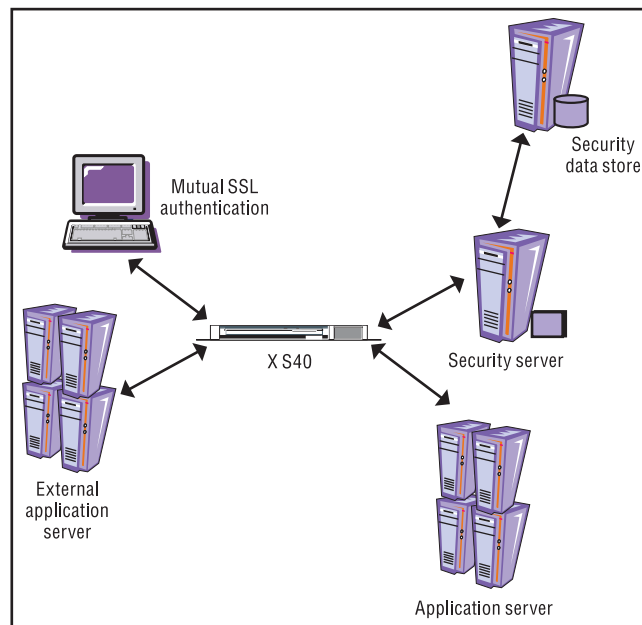


Figure 2. WebSphere DataPower XML Security Gateway XS40 features drop-in integration for faster return on investment (ROI).

With many enterprises struggling to deal with resource constraints, diverging business goals and the requirement to assimilate new and varied technologies, WebSphere DataPower XML Security Gateway XS40 offers relief in a purpose-built network appliance that is easy to install and maintain, satisfying both application and network groups

while supporting current and pending security standards. The device provides an XML and Web-services security solution with lower risk, enhanced scalability, carrier-grade reliability, reduced operational complexity and lower operational costs, resulting in an overall lower cost of ownership.

## IBM WebSphere DataPower XML Security Gateway XS40 at a glance

### XML

- XPath
- XSLT
- Schema, document type definitions (DTDs)

### Optimization

- Compression
- Multistep flow processing and mediation
- Wirespeed XML and XPath processing, XSLT
- Quality of service (QoS) and service prioritization

### Enterprise messaging and integration

- HTTP, Secure HTTP (HTTPS)
- Routing (XPath, WS-Routing and XML)
- Message logging

### Data security

- Data validation (XML Schema, Web Services Description Language [WSDL] and SOAP filtering)
- XML encryption and digital signature
- WS-Security
- WS-SecureConversation
- Field and message-level XML security
- Internet Content Adaptation Protocol (ICAP) integration (antivirus)

### Security policy enforcement for XML and Web services

- Authentication of Web services messages using WS-Security and SAML, Version 1.0, 1.1 and 2.0
- XACML
- Authorization for XML messages
- Support for Kerberos, RADIUS, LDAP, Microsoft® Active Directory and SAML queries
- Ability to process Liberty Alliance Identity Federation Framework (ID-FF), WS-Trust and WS-Federation messages when configured with IBM Tivoli Federated Identity Manager or similar policy manager
- Federation of security tokens when configured with Tivoli Federated Identity Manager or similar policy manager
- Federal Information Processing Standard (FIPS) Hardware Security Module (HSM) option

## IBM WebSphere DataPower XML Security Gateway XS40 at a glance

### Web services

- SOAP 1.1 and 1.2
- WSDL
- WS-SecurityPolicy
- WS-Policy Framework
- Registry Integration (Universal Description, Discovery, and Integration [UDDI] v2/v3, UDDI v3 subscription, IBM WebSphere Service Registry and Repository)
- WS-Trust
- WS-ReliableMessaging
- WS-I Basic Profile
- WS-I Basic Security Profile
- Web Service Distributed Management (WSDM)
- WS-Management

### System and service security

- Service virtualization
- XML and SOAP firewall
- XDoS protection

### Management

- Web GUI
- Command-line interface (CLI)
- SNMP
- SOAP management interface
- Integrated development environment (IDE) integration through Eclipse and Altova XML Spy
- Service-level management (to configure, enforce and monitor qualities of service)
- Logging, drill down and alerting (on-box, off-box or centralized)
- Device virtualization and role-based management

### Transport Layer Security (TLS)

- SSL and HTTPS, hardware-accelerated

### PKI

- XML Key Management Specification (XKMS), Rivest-Shamir-Adleman algorithm (RSA), Triple Data Encryption Standard (3DES), DES, Advanced Encryption Standard (AES), Secure Hash Algorithm (SHA), X.509, Public Key Cryptography Standards (PKCS), certificate revocation lists (CRLs), Online Certificate Status Protocol (OCSP)
- XML digital signature, time stamp and nonrepudiation

### Reliability

- Virtual Router Redundancy Protocol (VRRP), single firmware image, no moving media



**For more information**

To learn more about IBM WebSphere  
DataPower SOA appliances, contact  
your IBM representative or  
IBM Business Partner, or visit:  
[ibm.com/software/integration/  
datapower/](http://ibm.com/software/integration/datapower/)

To join the Global WebSphere  
Community, visit:

<http://www.websphere.org/>

© Copyright IBM Corporation 2008.

IBM Corporation  
Software Group  
Route 100  
Somers, NY 10589  
U.S.A.

Produced in the United States of America  
March 2008  
All Rights Reserved

IBM, IBM logo, [ibm.com](http://ibm.com), DataPower, Tivoli  
and WebSphere are trademarks of International  
Business Machines Corporation in the  
United States, other countries or both.

Microsoft is a trademark of Microsoft  
Corporation in the United States, other  
countries or both.

Other company, product or service names may  
be trademarks or service marks of others.

References in this publication to IBM products  
or services do not imply that IBM intends to  
make them available in any other countries.

**TAKE BACK CONTROL WITH** 