*Integrate, secure and accelerate SOA implementations with hardened, specialized devices*

WebSphere® software

# IBM WebSphere DataPower Integration Appliance XI50

## *Purpose-built SOA appliance for application integration*

### Highlights

- ***Purpose-built hardware ESB for simplified deployment and hardened security***
- ***Any-to-any data transformation between a wide range of data formats***
- ***Sophisticated multistage pipeline processing and content-based message routing***
- ***Optimized bridging between wireline messaging protocols***
- ***Data validation, field-level security, Web services management and access control***
- ***Direct-to-database access***
- ***Easy configuration and management***

Organizations need to respond quickly to tactical change, and they're adopting new operating models to achieve this agility. As a result, enterprises are recognizing the benefits of deploying reusable, open standards-based software components in a service oriented architecture (SOA). Taking this approach can result in a range of benefits, from improvements to financial transactions and online shopping to cost-saving inventory optimization across suppliers to synchronized multichannel product introductions. Likewise, embracing open standards, such as XML-based Web services, has helped many companies improve productivity, quickly respond to changing business needs and seize opportunities as they arise.

To take advantage of the improved business processes, flexibility and IT efficiency that come with moving to SOA, organizations require pervasive,

scalable services and controls, robust security, and high service assurances in their infrastructures. Today, enterprises often find themselves struggling to deliver these critical SOA requirements without having to handle prohibitive cost, complexity and hard-to-manage infrastructures. Addressing these challenges requires a pragmatic approach to SOA—one that simultaneously recognizes the evolution of standards, the value of existing infrastructure investments, your organizational challenges and how performance can be affected across applications.

**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 in a specialized appliance for easy consumption, deployment and service delivery.

**Why an appliance for SOA?**

IBM WebSphere DataPower Integration Appliance XI50 is a complete, purpose-built hardware platform for delivering highly manageable, more secure and scalable SOA solutions. As specialized SOA hardware, WebSphere DataPower Integration Appliance XI50 provides, in a single hardened device, many core functions to SOA deployments, such as service-level management, routing, data and policy transformations, policy enforcement, and access control. Additional advantages of a hardware appliance in the network layer include the ability to perform more security and structural checks without performance degradation.

WebSphere DataPower Integration Appliance XI50 also offers the higher levels of security-assurance certifications that are required by such enterprises as financial services and government agencies, including Public Key Infrastructure (PKI), Federal Information Processing Standard (FIPS) Level 3 Hardware Security Module (HSM), General Services Administration (GSA) eAuthentication and Homeland Security Presidential Directive (HSPD)-12. The combination of the high performance of hardware acceleration with simplified deployment and ongoing management means faster, more secure performance with a reduced need for SOA programming skills for faster time to market for SOA benefits.

WebSphere DataPower Integration Appliance XI50 is a 1U (1.75-inch) rack-mountable network device designed to fit into industry-standard racks. Attachment to the network is through Ethernet. The device is tamper proof and cannot be taken apart and deployed within other servers. Because of its versatility and ease of deployment, the appliance form factor of WebSphere DataPower Integration Appliance XI50 is a cornerstone of a resilient infrastructure. It appeals to a variety of groups with stakes in successful SOA deployment, such as enterprise architects, network operations, security operations, identity management and Web-services developers.

**SOA appliances simplify SOA deployment**

By integrating many core functions required for adopting SOA or Web services into a single, purpose-built device with enterprise service bus (ESB) capability, WebSphere DataPower Integration Appliance XI50 simplifies an overall SOA infrastructure. It is designed

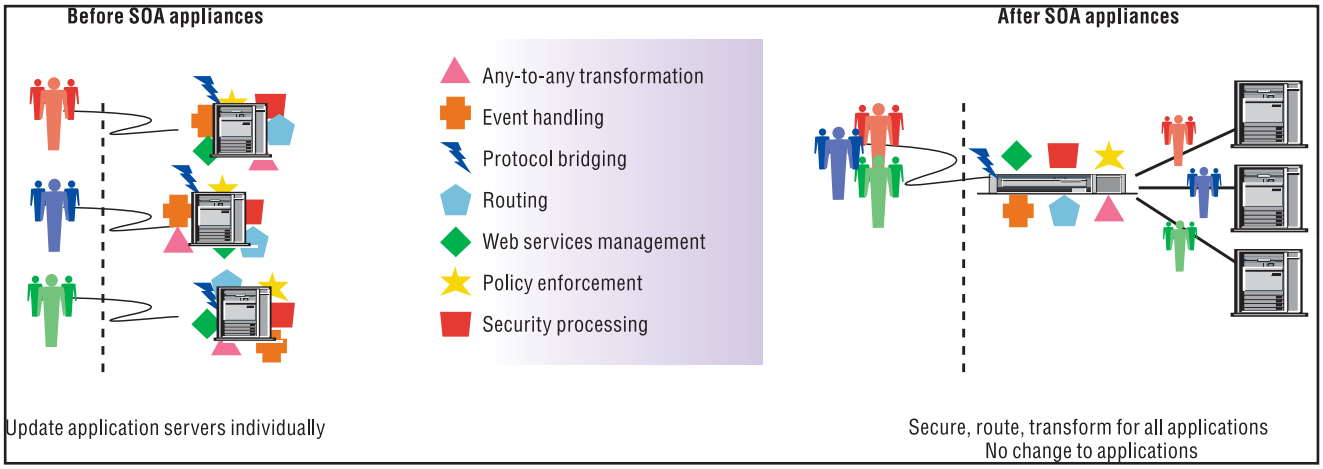


*Figure 1. SOA appliances centralize and simplify Web services management and SOA governance.*

to deploy easily into an existing environment as an inline network device. You gain business value without having to change your network or application software. As a result, proprietary schemas, coding or application programming interfaces (APIs) are not required to install or manage the device.

**Drop-in integration for heterogeneous environments**

As a core offering in the IBM ESB product portfolio, WebSphere DataPower Integration Appliance XI50 is a purpose-built hardware ESB for simplified deployment and hardened security with the ability to quickly transform data between a wide variety of formats, including XML, industry standards and custom formats. The device provides core ESB functions, including routing, bridging, transformation and event handling. It provides a reliable, performance-oriented solution to many integration challenges. Because it is not limited to handling just XML, WebSphere DataPower Integration Appliance XI50 resonates with IT organizations that need to benefit from the connectivity of SOA deployments but must also deal with managing a combination of multiple proprietary, industry, company-specific and existing data formats. The device is a true drop-in integration point for such environments, reducing the time and cost of integrations and speeding the time to market for services.

**Innovative enablement of existing infrastructure for XML and Web services**

For accelerated, security-rich integration capabilities, WebSphere DataPower Integration Appliance XI50 provides transport mediation, routing and transformations among binary, text and XML message formats. Visual tools can be used to describe data formats, create mappings between different formats and define message flows. With native connectivity to IBM DB2® and IBM System z™ technology, the device offers an innovative solution for security-rich XML enablement of existing systems and mainframe connectivity.

**Policy-driven approach to Web services management and SOA governance**

By centralizing management tasks and policy enforcement for Web services, and decoupling them from applications, your SOA infrastructure increases in flexibility and scalability while simultaneously offering you improved insight, visibility and control. By moving certain functions onto WebSphere DataPower Integration Appliance XI50 (such as protocol bridging, Web services management, security processing and policy enforcement), IT architects, operations, security personnel and business personnel can decouple these functions from core business applications. This helps to simplify development, deployment and manageability (see Figure 1).

**Integration with registry and repository, security, identity and service management software**

WebSphere DataPower Integration Appliance XI50 integrates with a variety of registry and repository, security, identity and service management software (see Figure 2). Coupled with access-control software, such as IBM Tivoli® Access Manager, the device enforces fine-grained access controls. Working with IBM Tivoli Federated Identity Manager, the device provides federated identity and policy management for Web services between organizations and enterprises. Integrated with IBM Tivoli Composite Application Manager for SOA, the device monitors Web service and SOA traffic flows for end-to-end service management and dashboard monitoring. Using a registry and repository, such as IBM WebSphere Services Registry and Repository, you can discover and reuse services and configure new services for policy and security enforcement performed by WebSphere DataPower Integration Appliance XI50. The combination of these applications and the robust XI50 security features provides the comprehensive capabilities for SOA security and Web services management that enterprises increasingly require.

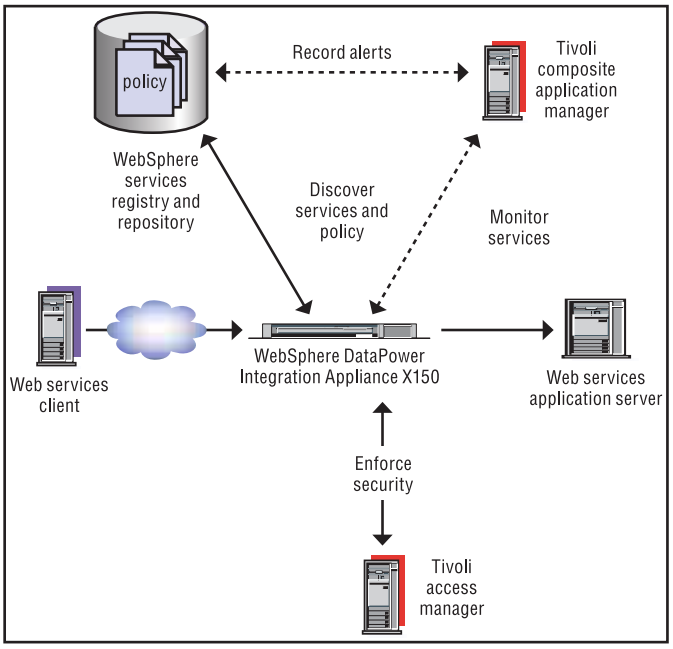


*Figure 2. Drop-in integration with registry, security, identity and service management applications*

**Support for advanced Web services standards and interoperability**

IBM recognizes that SOA must address the need to integrate heterogeneous environments both within and outside the enterprise. The WebSphere DataPower SOA appliance portfolio has a long-standing history of support for key and advanced standards, including WS-Security, WS-Policy, WS-ReliableMessaging, SOAP, Web Services Distributed Management (WSDM), WS-I Profiles, WS-Addressing, eXtensible Access Control Markup Language (XACML), Security Assertion Markup Language (SAML), Secure Socket Layer (SSL), and proprietary Single Sign-on (SSO) tokens. In addition, WebSphere DataPower SOA appliances support interoperability with Universal Description, Discovery, and Integration (UDDI) registries, and such databases as Oracle and Sybase.

**Integration across the IBM SOA Foundation for Smart SOA deployments**

WebSphere DataPower Integration Appliance XI50 has broad and deep integration across the IBM SOA Foundation. As a result, it contributes to what IBM calls the *Smart SOA*™ approach, a set of guiding principles that benefit both business and IT, eliminating unnecessary complexity while building a strong foundation for future growth. Integration of WebSphere DataPower Integration Appliance XI50 with popular integrated development environments, such as the IBM Rational® portfolio, reduces the time you have to spend in development and debugging. In addition to interoperability, the device also features deep integration with such products as IBM WebSphere MQ, IBM WebSphere Enterprise Service Bus, IBM WebSphere Message Broker and IBM DB2 to help process SOA transactions in a faster, more secure and simplified way. Additionally, the XI50 enables you to take advantage of IBM's self-management capabilities for autonomic computing, creating infrastructures that require minimal intervention, which can help lower cost of ownership and improve service availability.

| IBM WebSphere DataPower Integration Appliance XI50 at a glance |
|---|
| **XML** |
| • XPath<br>• XSLT<br>• Schema, document type definitions (DTDs) |
| **Optimization** |
| • Compression<br>• Multistep flow processing and mediation<br>• Wirespeed XML and XPath processing; XSLT<br>• Quality of service (QoS) and service prioritization |
| **Enterprise messaging and integration** |
| • HTTP, Secure HTTP (HTTPS)<br>• WebSphere MQ, Java™ Message Service (JMS) and so on<br>• Protocol bridging (for example, from WebSphere MQ to HTTP)<br>• Routing (XPath, WS-Routing and XML)<br>• Non-XML message transformation (such as binary, flat text, COBOL Copybook, ISO 8583 and electronic data interchange [EDI])<br>• Message logging<br>• Database integration |
| **Data security** |
| • Data validation (XML Schema, Web Services Description Language [WSDL] and SOAP filtering)<br>• XML encryption and digital signature<br>• WS-Security<br>• WS-SecureConversation<br>• Field and message-level XML security<br>• Internet Content Adaptation Protocol (ICAP) integration (anti-virus) |

## IBM WebSphere DataPower Integration Appliance XI50 at a glance

### Security policy enforcement for XML and Web services

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

### Web services

- SOAP 1.1 and 1.2
- WSDL
- WS-SecurityPolicy
- WS-Policy Framework
- Registry integration (UDDI V2/V3, UDDI V3 subscription, WebSphere Service Registry and Repository)
- WS-Trust
- WS-ReliableMessaging
- WS-I Basic Profile
- WS-I Basic Security Profile
- WSDM
- WS-Management

### System and service security

- Service virtualization
- XML and SOAP firewall
- XDoS protection

### Management

- Web GUI
- Command-line interface (CLI)
- Simple Network Management Protocol (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

### Public key infrastructure (PKI)

- XKMS, RSA, 3DES, DES, AES, SHA, X.509, PKCS, CRLs, 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/

To join the Global WebSphere Community, visit:

http://www.websphere.org/



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