



Highlights

- Benefit from a purpose-built security and integration gateway to address business needs for mobile, API, web, SOA, B2B, and cloud workloads.
 - Enforce consistent governance, security, and control policies across all channels and workloads.
 - Simplify and secure network topologies, reduce development and operational costs, and eliminate siloed islands of security.
 - Leverage advanced routing, intelligent load distribution, and high-speed XML, JSON, and binary transformation capabilities.
 - Simplify development with an optimized and secured JavaScript runtime.
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IBM DataPower Gateway

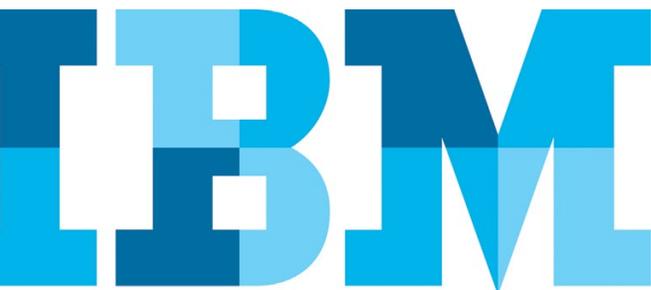
Security, integration, control and optimization in a purpose-built multi-channel gateway

The global shift towards a consumer-centric economy is prompting a digital reinvention as business and IT leaders at organizations of all sizes deliver new and innovative services and application programming interfaces (APIs) to customers, employees and business partners. During this reinvention, infrastructure and network topology must be resilient and ready for change, and existing workloads must remain secure and not be adversely impacted. Your business requires an approach that enhances the value of your existing infrastructure and application investments while reducing security risks and simplifying operation.

Integration, governance and security are now more important than ever. IBM understands these challenges and has developed a multi-channel gateway that is purpose-built to help secure, integrate, control and optimize your network infrastructure. IBM® DataPower® Gateways are designed to help IT leaders simplify infrastructure, integrate and optimize services, and secure new and existing workloads across multiple channels. Use this gateway to benefit from a consistent configuration-based approach to security, governance, integration and routing for mobile, API, web, SOA, B2B and cloud workloads.

Embrace Digital Transformation

Digital technologies have altered how people and businesses interact. These digital forces enable unprecedented levels of disruption and have fundamentally changed the business economics. To succeed in this disruptive environment, successful organizations will offer new experiences, build new expertise and devise new ways to work.



Transformations are being driven, among others, by connected devices and consumers' thirst for compelling brand experiences.

In the Digital economy, application programming interfaces (APIs) act as the glue that links services, applications and systems. This allows businesses to make the most of their data to create compelling customer experiences and open new revenue channels.

The IBM DataPower Gateway serves as the API gateway for IBM's comprehensive API solution called IBM API Connect, which provides a world-class solution designed to meet the most stringent API business requirements in the industry. DataPower Gateway provides access and authentication services at the edge of the network. It also helps secure the message content for all API interactions and then utilizes advanced routing controls to manage and enforce service level policies throughout the enterprise. All API interactions are logged and reported to the IBM API Connect Analytics component, which enables both runtime and historical analytics and reporting.



IBM DataPower Gateways

Bridge the gap between existing services and the cloud

More and more, enterprises of all sizes are leveraging cloud platforms to build innovative applications to meet their business and customer needs. In many cases, these new, Cloud-first applications require access to in-house enterprise data. This “hybrid cloud”, where one part is external and the other part is internal, poses unique security challenges. The cloud-based service must be able to gain access to your on-premises data in a secure way.

| Secure | Integrate | Control | Optimize |
|--|--|---|--|
| <ul style="list-style-type: none"> • Authentication, authorization • Security token translation • Service/API virtualization • Threat protection • Message schema validation • Message filtering • Message digital signature • Message encryption • AV scanning integration | <ul style="list-style-type: none"> • Transport protocol bridging • Any-to-any message transformation • Message enrichment • Database connectivity • Mainframe connectivity • B2B partner connectivity • Hybrid cloud connectivity | <ul style="list-style-type: none"> • Quota and rate enforcement • Content-based routing • Message accounting • B2B partner management • Integration w/ governance, management and monitoring platforms including IBM API Connect and WSRR for policy enforcement | <ul style="list-style-type: none"> • HTTP/2 • SSL / TLS offload • Hardware accelerated crypto* • JSON, XML offload • JavaScript, JSONiq, XSLT, XQuery acceleration • Response caching • Intelligent load distribution |

IBM DataPower Gateway can be deployed on IBM Bluemix™, Amazon EC2, Microsoft Azure, IBM SoftLayer. It is also supported on Docker Container based on RHEL and Ubuntu. With these options, IBM DataPower Gateway can be utilized as the security gateway for private, public and hybrid cloud deployments. IBM DataPower Gateway, with its Secure Gateway Service, provides a simple configuration-based solution that creates a security-rich channel between IBM Bluemix cloud applications and services and your on premise applications and users.

Cost-effective change is possible

Your business network encompasses more than just your IT systems; it comprises the sum of interactions and relationships that make up your business. This means you must be able to seamlessly connect applications and process within your business and effectively extend those connection processes to partners, customers and suppliers. To further extend flexibility and achieve cost-effective service delivery, your teams will need to be prepared to extend these connections into the expanding realm of cloud-enabled services and applications.

Your gateway strategy must include the ability to enforce industry standards and easily adapt to new standards as they are defined. Your approach should enhance the value of existing infrastructure investment while improving speed to market, reducing training costs and optimizing application performance. And finally, your approach should be developer friendly and enable easier DevOps.

IBM DataPower Gateways can help you untangle the costly IT complexity associated with point-to-point connectivity and integration, application and data security, API management and security, and enterprise mobility. IBM DataPower Gateways can

help you make the most of your existing infrastructure investments and provide a robust platform for new service delivery while helping reduce operational costs. The ability to build deployment and automation scripts enables easier DevOps for continuous software delivery and quicker problem resolution.

IBM DataPower Gateway key capabilities

The IBM DataPower Gateway provides an integrated set of capabilities that are designed to help organizations thrive: security, integration, control and optimized access to a full range of mobile, API, web, SOA, B2B and cloud workloads. In addition, because the IBM DataPower Gateway is usually the first point of entry and egress for data moving in and out of your enterprise, it is ideally positioned to gather essential information to feed your big data and analytics systems.

Eradicate siloes of security

Over the past several years, organizations have responded to the market and enabled support for new channels in order to meet customer and partner demands. Channel-specific solutions are deployed, along with a skilled workforce to develop, support and secure these new channels. Although this approach may help you reach your goals, the resulting landscape is complex and costly to support and maintain. More alarming is the creation of islands of security, where each channel requires its own unique security policy and governance model, increasing the risk of security breaches.

Security teams often find it easier to author security policies using a single, consistent configuration-driven approach. Consolidation of these different channels of interaction helps simplify the topology, reduce development costs and simplify operations, resulting in real cost savings and reduced risk.

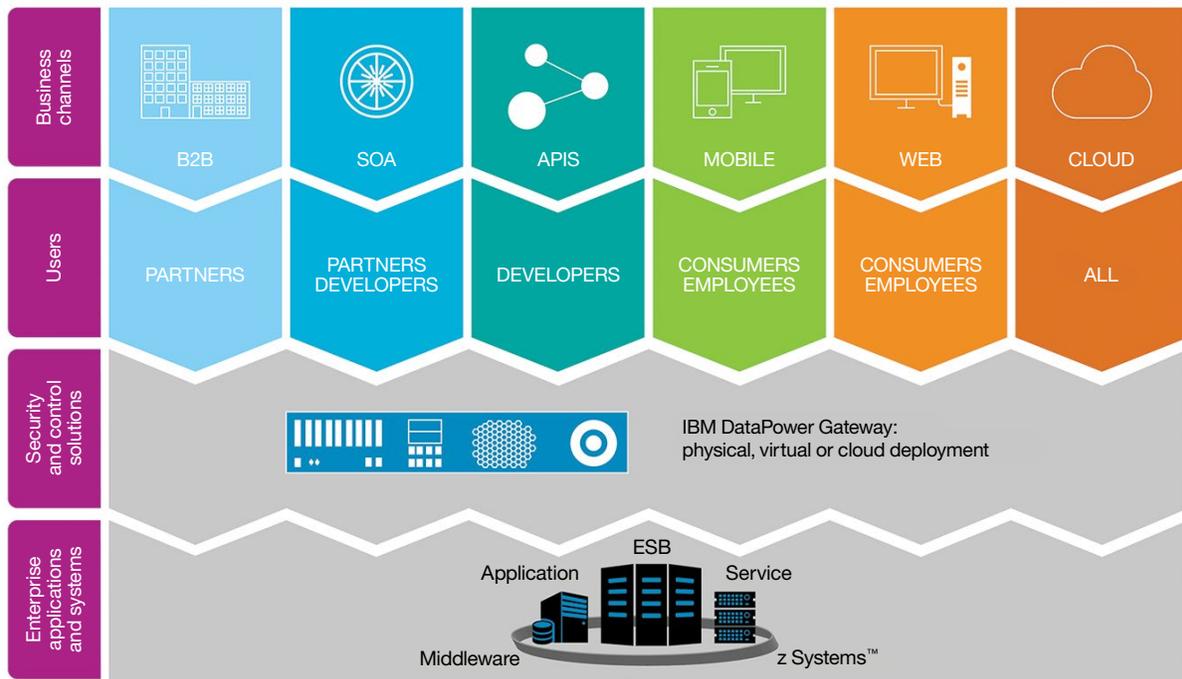


Figure 1. Use a DataPower gateway to standardize security policies and eradicate silos of security

The best security and integration gateway is the one that helps your business aspirations become reality and helps keep your organization compliant and clear of security breaches.

DataPower security features can help mitigate risks for mission-critical enterprise applications

The IBM DataPower Gateway is a multi-channel gateway that delivers advanced access control for mobile, API, web, SOA, B2B and cloud workloads without complex configuration or custom code. It provides the higher levels of security-assurance certification that are required by such enterprises as financial services and government agencies, including Public Key

Infrastructure (PKI), Federal Information Processing Standard (FIPS), 140-2 Hardware Security Module (HSM), General Services Administration (GSA) eAuthentication and Homeland Security Presidential Directive (HSPD)-12. The combination of purpose-built gateway capabilities with simplified deployment represents a powerful combination for your organization, one that can help reduce the costs of securing mission-critical services, applications and data.

Increase trust in existing services with run-time policy enforcement

The IBM DataPower Gateway enables enterprises to integrate security and governance functions in a single “drop-in” gateway that reduces ongoing maintenance costs. Its web interface can help you quickly configure gateway capabilities, and it provides the ability to enrich security and routing rules using either GatewayScript (a high performance gateway implementation of JavaScript) or XSLT. The IBM DataPower Gateway is designed to be a mission-critical policy enforcement and execution engine for today’s multi-channel environment, making it easier for you to use customizable roles and rights to control access to applications, APIs, services and data.

“Drop-in” security for mobile and web applications

Modern web applications have evolved from static pages and forms into interactive experiences that rival native desktop programs. And now with the proliferation of mobile devices and employees using their own devices for work, customers, partners and employees have come to expect the same level of interactivity and data access on both web and mobile channels. Security teams are challenged to apply modern security practices to this rapidly expanding environment.

When combined with the optional IBM Security Access Manager module, the IBM DataPower Gateway provides enhanced user access security for web and mobile applications by using industry-proven technology from the IBM Security

Access Manager product. It provides a highly scalable reverse proxy for user access control and web single sign-on along with enforcement of context-based access policies.

High-speed transformation capabilities

IBM DataPower Gateways provide native support for JSON and SOAP/XML and various standards based on these message formats, which can help your team easily support new mobile devices, social networking, cloud computing and software-as-a-service (SaaS) applications.

Access new partners with standards-based B2B messaging

The IBM DataPower Gateway B2B module delivers core B2B functions that integrate and consolidate B2B trading-partner and transaction management. It can help your business extend its B2B implementations and solve heterogeneous integration challenges. The B2B module provides a high-throughput, security-rich entry point at the edge of the enterprise for routing B2B data. The security gateway consolidates B2B trading partner connectivity and transaction management.

The B2B module augments the base IBM DataPower Gateway capabilities with support for message protocols such as AS1, AS2, AS3 and ebMS. This support provides unique message and file transfer processing capabilities for EDI, XML and binary data, ensuring a single point of message management and security processing for partner interactions. In addition to supporting these protocols and message formats, the IBM DataPower Gateway provides powerful message mediation which simplifies trading partner interaction by eliminating the need for all partners to standardize on a single set of protocols. Unique support is also provided for advanced partner interactions such as guaranteed message delivery, message queuing and the ability to resend messages in the event of message loss. A built-in transaction viewer enables real-time management and visibility of all B2B activities.

By integrating many core B2B, API and web services functions into a single gateway, you can successfully access new customers and new routes to market by simplifying, standardizing and securing the integration of partners, customers and suppliers with your enterprise.

Maximize existing SOA investments

For SOA channels, the IBM DataPower Gateway provides web service security, message validation, cryptographic operations and advanced threat protection both at the protocol and transport layers. Rapid XML and XSL processing results in higher throughputs and less congestion. The IBM DataPower Gateway can serve as an SOA Governance Policy Enforcement point. This helps ensure access management policies are enforced while delivering advanced service level management for SOA workloads. The IBM DataPower Gateway provides these capabilities onboard or can integrate with external servers (such as WebSphere® Service Registry and Repository) to enable enterprise-wide SOA governance.



IBM DataPower
Gateways

Deployment options

The IBM DataPower Gateway provides the same capabilities in either a hardened physical form factor or a virtual gateway. These can be mixed and matched in an enterprise, providing maximum deployment flexibility while delivering the best total cost of ownership. The IBM DataPower Gateway Virtual Edition can be deployed on hypervisors, public cloud or Container platforms such as:

- VMware ESX Server and Workstation
- Citrix XenServer
- IBM PureApplication®
- IBM SoftLayer bare metal servers or SoftLayer virtual server
- Amazon EC2
- Microsoft Azure
- Docker

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- Secure, control, and accelerate API, mobile, IoT, and cloud workloads using purpose-built gateways.
 - Rapid time to value with comprehensive set of built-in security, traffic management, mediation, acceleration policies and standardized patterns for common scenarios.
 - Extend capabilities with secure and optimized JavaScript runtime.
 - Reduce user-perceived latency and scale backend infrastructure with wire-speed JSON, XML, REST, SOAP processing along with intelligent load distribution and response caching.
 - Utilize enterprise DevOps processes and tools via Docker.
 - Deploy anywhere using Docker, cloud, virtual or physical form factors.
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Supported standards and protocols

Data format and language

- JavaScript (ECMAScript 6.0)
- JSON
- JSON Schema
- JSONiq
- REST
- SOAP 1.1, 1.2
- WSDL 1.1
- XML 1.0
- XML Schema 1.0
- XPath 1.0, 2.0 (XQuery only)
- XSLT 1.0
- XQuery 1.0

Security policy enforcement

- OAuth 2.0
- OpenID Connect
- JSON Web Encryption (JWE)
- JSON Web Signature (JWS)
- JSON Web Token (JWT)
- JSON Web Key (JWK)
- SAML 1.0, 1.1 and 2.0, SAML Token Profile, SAML queries
- XACML 2.0
- Kerberos, SPNEGO
- RADIUS
- LDAP versions 2 and 3
- Lightweight Third-Party Authentication (LTPA)
- Microsoft Active Directory
- FIPS 140-2 Level 3 (w/ optional HSM)
- SAF & IBM RACF integration with z/OS®
- Internet Content Adaptation Protocol
- W3C XML Encryption
- W3C XML Signature
- S/MIME encryption and digital signature
- WS-Security 1.0, 1.1
- WS-I Basic Security Profile 1.0, 1.1
- WS-SecurityPolicy
- WS-SecureConversation 1.3

Transport and Connectivity

- HTTP 1.1, HTTP/2, HTTPS, WebSocket Proxy
- FTP, FTPS, SFTP
- WebSphere MQ
- WebSphere MQ File Transfer Edition (MQFTE)
- TIBCO EMS
- WebSphere Java Message Service (JMS)
- IBM IMS™ Connect & IMS Callout
- NFS
- AS1, AS2, AS3, ebMS 2.0, CPPA 2.0, POP, SMTP
- DB2®, Microsoft SQL Server, Oracle, Sybase, IMS

Transport Layer Security

- SSL versions 2 (deprecated) and 3
- TLS versions 1.0, 1.1 and 1.2 (hardware-accelerated on physical gateway)
- Server Name Indication (SNI)
- Elliptical Curve Cryptography (ECC)
- Perfect Forward Security (PFS)

Public key infrastructure (PKI)

- RSA, 3DES, DES, AES, SHA, X.509, CRLs, OCSP
- PKCS#1, PKCS#5, PKCS#7, PKCS#8, PKCS#10, PKCS#12
- XKMS for integration with Tivoli® Security Policy Manager (TSPM)

Management

- Simple Network Management Protocol (SNMP)
- SYSLOG
- IPv4, IPv6

Open File Formats

- Distributed Management Task Force (DMTF) Open Virtualization Format (OVF)
- VMware Virtual Machine Disk Format (VMDK)

Web services

- WS-I Basic Profile 1.0, 1.1
- WS-I Simple SOAP Basic Profile
- WS-Policy Framework
- WS-Policy 1.2, 1.5
- WS-Trust 1.3
- WS-Addressing
- WS-Enumeration
- WS-Eventing
- WS-Notification
- Web Services Distributed Management (WSDM)
- WS-Management
- WS-I Attachments Profile
- SOAP Attachment Feature 1.2
- SOAP with Attachments (SwA)
- Direct Internet Message Encapsulation (DIME)
- Multipurpose Internet Mail Extensions (MIME)
- XML-binary Optimized Packaging (XOP)
- Message Transmission Optimization Mechanism (MTOM)
- WS-MediationPolicy (IBM standard)
- Universal Description, Discovery and Integration (UDDI versions 2 and 3), UDDI version 3 subscription
- WebSphere Service Registry and Repository (WSRR)

Why IBM?

More than 2,400 organizations of all sizes employ IBM DataPower technology to reduce IT complexity, reduce their costs, improve their return-on-investment and foster new innovation and business. The IBM approach to security and optimization provides value to a wide range of organizations throughout major industries and across more than 60 countries. With DataPower modular component-based architecture, you can select the capabilities you need today and add future capabilities as your requirements grow. Engage the IBM team and take advantage of our deep industry and technical knowledge combined with the robust capabilities provided by IBM DataPower Gateways. Work smarter with IBM.

For more information

To learn more about IBM DataPower Gateways, contact your IBM sales representative or your IBM Business Partner, or visit the following website:

ibm.com/software/products/en/ibm-datapower-gateways

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* Available on physical gateway form factor



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