**WebSphere**® software

IBM WebSphere Enterprise Service Bus, Version 6.1

Highlights

■ *Uses a broad range of interaction models to meet your requirements*

■ *Provides a comprehensive client package that enables C++ and Microsoft .NET programmers to interact with JMS messaging, and provides C and C++ programmers with client capability for Web services*

■ *Minimizes disruption by using a prebuilt mediation function to handle integration logic*

■ *Requires minimal programming skills*

■ *Supports WebSphere Adapters, Web services, HTTP, JMS and WebSphere MQ connectivity*

■ *Integrates seamlessly with WebSphere Integration Developer*

■ *Enables seamless integration with products across the WebSphere software portfolio*

■ *Delivers a smaller footprint and higher performance with this release*
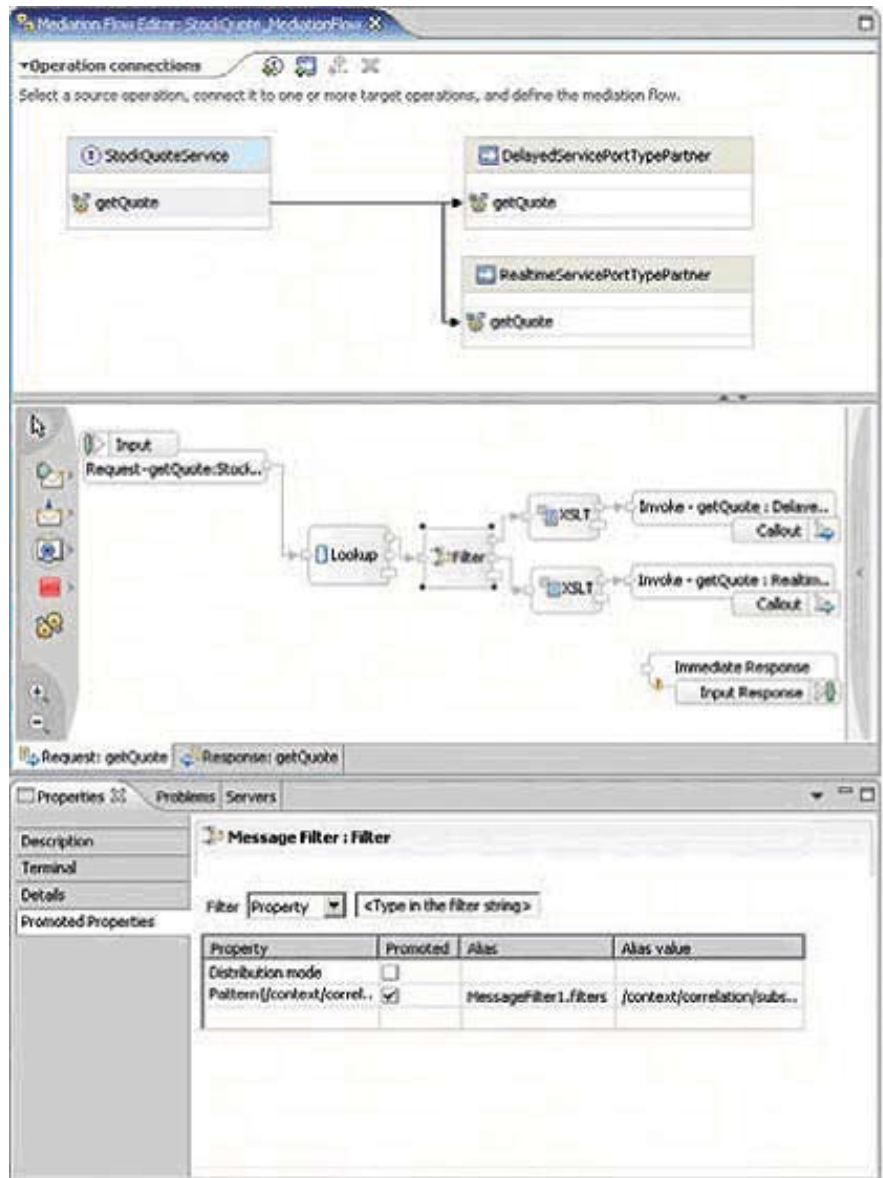
The WebSphere Integration Developer mediation flow editor enables integration developers to locally test and debug mediated interactions before deploying them in the WebSphere Enterprise Service Bus runtime environment.

Most companies have an IT infrastructure that is the result of years of adding and subtracting components to meet changing business needs — and it's no longer effective. Each business unit maintains its own data about its products and services. Employees have to reenter information as it moves from department to department — potentially creating delays and errors. Each time you have to make changes, the time and expense to develop and maintain the custom links between applications increases.

You recognize the need to connect applications using reliable delivery mechanisms, and to help ensure that the data being exchanged is delivered in the right format to the right application at the right time. Combining all of your IT resources can help maximize operating efficiencies and provide consistent, accurate information to your customers, trading partners and suppliers. Through an effective enterprise service bus (ESB), you can integrate your assets more easily — and potentially get more for your money from the applications you're currently running.

The heart of your SOA
IBM WebSphere® Enterprise Service Bus (ESB) is a flexible connectivity infrastructure designed to help you integrate applications and services as part of your service oriented architecture (SOA). WebSphere ESB can power an SOA by reducing the number and complexity of interfaces, so that you can focus on your core business, rather than on your IT.

WebSphere ESB allows companies to maximize flexibility as an integrated business by:

- *Routing messages between services*
- *Converting transport protocols between requester and service*
- *Transforming message formats between requester and service*
- *Handling business events from disparate sources*
- *Improving time to value through seamless integration with the interactive and visual development environment provided by IBM WebSphere Integration Developer, which helps reduce the need for programming skills*

A core component of your ESB
In an SOA, the ESB optimizes information distribution between service requesters and service providers. Your organization needs to deploy its own unique ESB, reflecting how many of your applications conform to common standards and how many have not yet been made into services. As a key part of the WebSphere software portfolio, WebSphere ESB can provide integration capabilities that enable you to begin reaping the benefits of an SOA by deploying end-to-end environments that deliver the benefits of an ESB across your entire IT infrastructure today.

Advanced connectivity for SOA endpoints
WebSphere ESB supports advanced interactions between service endpoints on three levels: standards-based connectivity, spectrum of interaction models, and quality-of-interaction service and mediation capabilities.

Standards-based connectivity

WebSphere ESB enables you to connect interaction endpoints using a variety of interaction protocols and application programming interfaces (APIs). It supports interactions using Java™ Message Service (JMS), Version 1.1, as well as SOAP over HTTP Secure (HTTPS) and SOAP over JMS. WebSphere ESB also interoperates with other products from the WebSphere software portfolio, and can use IBM WebSphere Adapter solutions to capture and disseminate business events. The message clients for C/C++ and for Microsoft® .NET enable non-Java applications to connect to the ESB. The Web services client is similar to a Java API for XML-Remote Procedure Call (JAX-RPC) Web services client for C++. It enables you to connect to Web services hosted on WebSphere ESB from within a C++ environment. You can use these features to perform basic protocol transcoding between interaction endpoints where the protocol used by requesters to dispatch their requests (for example, SOAP over HTTP) is different from that of the service providers that are to handle those requests (for example, SOAP over JMS).

Spectrum-of-interaction models

WebSphere ESB supports a range of interaction models including request-reply, point-to-point and publish-subscribe interactions. It also supports Web services standards such as Web Service Security (WS-Security) and WS-Atomic Transactions, and includes a Universal Description, Discovery and Integration (UDDI), Version 3.0 service registry that you can use to publish and manage service endpoint metadata. Also, WebSphere ESB can query the IBM WebSphere Service Registry and Repository for service endpoint information stored in the registry and repository without development and deployment. This capability enables dynamic selection and binding of service endpoints.

Mediation services

WebSphere ESB supports mediation of interactions between endpoints beyond protocol transcoding; it enables handling of integration-logic processing in the ESB instead of in the interacting endpoints. This capability includes support for content- and context-based routing of messages that are exchanged using the ESB, as well as other operations on those messages, such as logging or transformation. Prebuilt mediation functions enable you to visually compose mediations using WebSphere Integration Developer. These functions also include message transformation, message logging, message routing and database lookup. You can augment the function provided by the supplied primitives by programming your own, customized primitives.

Robust development capabilities with minimal programming skills

WebSphere ESB delivers an ESB that can connect applications with standards-based interfaces to power your SOA. WebSphere Integration Developer, the WebSphere ESB development tool, provides integrated, interactive and visual development capabilities that automate most of the tasks to model, test, configure and deploy ESB-based applications.

Get up and running quickly with comprehensive documentation, easy-to-understand samples and a compelling experience right from the start. WebSphere ESB, Version 6.1 is designed to deliver easier server installation and configuration. Develop integration applications quickly and easily with capabilities that simplify the task of declaring interaction endpoints, and that provide graphical modeling tools (from WebSphere Integration Developer) that you can use to describe the envisioned interconnections between service requesters and providers, as well as the message flows between them. Assemble mediation flows from a set of predefined

mediation templates that are configured to perform the required message routing, enrichment and transformation operations. Unit-test mediated interactions in the WebSphere Integration Developer environment before deploying them in the WebSphere ESB runtime environment. And refactoring support in WebSphere Integration Developer enables changes made in one place to be reflected in other places that are dependent, which helps reduce the complexity that can result from trying to resolve errors and dependencies.

The WebSphere ESB administration console enables solution administrators to manage WebSphere ESB deployments with role-based administration support that provides a simplified user experience, as well as full access to the underlying WebSphere administration capabilities through progressive disclosure of functions. You also gain flexibility with the ability to modify the definition of a service endpoint as your business requirements change and control the details of how the mediation behaves in the runtime environment.

Improving time to value

As a cost-effective solution for services integration, WebSphere ESB enables you to use your SOA IT investments by quickly building a flexible integration infrastructure that can extend the value of your existing investments, regardless of vendor. The product's extensive business and IT standards support greater interoperability and portability, enabling you to take advantage of the first-class support available for hundreds of independent software vendor (ISV) solutions. It provides extensive support for IBM WebSphere Adapters, including Java Enterprise Edition (JEE) Connector architecture (JCA) technology-based adapters. And you can introduce new services or applications to market quickly by using the bundled technology JCA (e-mail, File Transfer Protocol [FTP], flat file and Java Database Connectivity [JDBC]) adapters within WebSphere Integration Developer, Version 6.0.2 packaging, at no charge to you. Enterprise resource planning (ERP) JCA adapters for SAP, Siebel Business Applications, PeopleSoft, Oracle E-business and JD Edwards are also provided for development use only.

You can dynamically reconfigure interactions managed by WebSphere ESB to meet changing business-processing loads. This is accomplished by modifying interconnections and message-flow interaction logic in WebSphere Integration Developer, or to some degree in the WebSphere ESB administration console. You can also dynamically add or replace interaction endpoints without affecting the rest of the ESB-based applications. Administrative configuration features enable you to modify the definition of a service endpoint as your business requirements change, or dynamically change the behavior of a running mediation without redevelopment and redeployment.

Help save time and development costs by using prebuilt mediation functions
Mediations operate on messages or events as they are passed between service requesters and service providers, for both one-way and request-response interactions. WebSphere ESB provides prebuilt mediation primitives that you can use right away.

Developers using WebSphere Integration Developer can compose these functions into a mediation flow to create a mediation layer. You can visually compose mediations, such as XML transformation, message logging, message routing and database lookup. WebSphere ESB, Version 6.1 provides expanded XML and Web Services Description Language (WSDL) support and a broader set of mediation patterns. Customized mediations can also be developed as service component architecture (SCA) components, and a Java system programming interface (SPI) is also provided for more advanced programmers, enabling them to create highly customized mediation primitives.

Take advantage of seamless integration with the WebSphere platform
To help maximize the capabilities of your ESB, WebSphere ESB software seamlessly integrates with products throughout the WebSphere software stack, enabling you to move up the stack to solve more-complex business problems. Because WebSphere ESB is built on the market-leading IBM WebSphere Application Server product, it inherits WebSphere Application Server qualities of service, workload-balancing, clustering, failover, systems-management, high-availability, security and scalability features.

WebSphere ESB offers a service-hosting and a services-mediation environment in one package, enabling it to provide more-robust manageability, availability and simplicity compared with competing ESB offerings.

Integration with WebSphere Application Server enables integration with IBM Tivoli® security, directory and systems management offerings. WebSphere ESB includes IBM Tivoli Access Manager (for optional use to deliver security-rich, unified and personalized capabilities that can help manage growth and complexity), IBM Tivoli Directory (for optional use as a Lightweight Directory Access Protocol [LDAP] server) and IBM Tivoli Composite Application Manager for SOA (for added monitoring and management capabilities). Integration between Tivoli Composite Application Manager for SOA and WebSphere Service Registry and Repository gives WebSphere ESB enhanced service interactions by enabling dynamic selection of service endpoints.

You can use WebSphere ESB in combination with an existing IBM WebSphere MQ messaging installation to integrate new environments in an open-standards-based way. WebSphere ESB interoperates with IBM WebSphere Message Broker, which you can use to implement complex topologies, with WebSphere ESB handling standards-based Web services interactions, and WebSphere Message Broker taking care of non-Web services application integration. WebSphere ESB has native WebSphere MQ binding support, which enables you to integrate WebSphere MQ assets easier and faster. And along with JMS implementation in WebSphere Application Server, WebSphere ESB provides WebSphere MQ JMS support for broad connectivity reach.

Common tooling and administration means the move from WebSphere ESB to IBM WebSphere Process Server is painless. Because WebSphere ESB shares development and administration tools with WebSphere Process Server, it is easy to start building your SOA infrastructure on WebSphere ESB and add more-advanced service composition and orchestration capabilities supported in WebSphere Process Server as your business needs evolve.

WebSphere ESB, Version 6.1 provides data bindings for IBM WebSphere Transformation Extender for Integration Servers, supporting new Web services through the transformation engine mediating and checking the quality of electronic data interchange (EDI) and converting industry-standard formats to XML. IBM WebSphere Transformation Extender Industry Packs are available for WebSphere ESB users to accelerate complex mediation development without coding. Industry packs are provided for these standards:

- *Society for Worldwide Interbank Financial Telecommunication (SWIFT)*
- *Single Euro Payments Area (SEPA)*
- *Association for Cooperative Operations Research and Development (ACORD)*
- *National Automated Clearing House Association (NACHA)*
- *Health Insurance Portability and Accountability Act (HIPAA)*
- *American National Standards Institute Accredited Standards Committee X12 (ASC X12)*
- *United Nations/Electronic Data Interchange For Administration, Commerce and Transport (UN/ EDIFACT)*

WebSphere ESB, Version 6.1 is compatible with IBM WebSphere Application Server Network Deployment, Version 6.1. This compatibility enables clients to use a license of WebSphere ESB as a full license of WebSphere Application Server Network Deployment.

A robust ESB solution
WebSphere ESB provides an easy-to use, robust ESB that can reliably deliver information to the right place, in the right format, at the right time. You can connect and extend new and existing systems by simplifying your SOA integration deployment using open-standards-based connectivity between applications and heterogeneous systems. Improve time to value with an easy-to-learn, cost-effective solution that is simple to install, configure, build and manage. And gain business flexibility by taking advantage of a responsive connectivity infrastructure that can adapt to business change quickly and easily.

For more information
To learn more about IBM WebSphere Enterprise Service Bus, Version 6.1, contact your IBM representative or IBM Business Partner, or visit:

ibm.com/software/integration/wsesb

To join the Global WebSphere Community, visit:

www.websphere.org

IBM WebSphere Enterprise Service Bus, Version 6.1 at a glance

Hardware requirements

For IBM AIX®
- IBM System p™ and IBM System i™ server at 375 MHz or faster
- Minimum 1.3 GB (1350 MB) available disk space for installation
- Approximately 600 MB temporary space during installation
- Minimum 512 MB physical memory; 1 GB recommended
- CD-ROM drive

For HP-UX
- PA-RISC processor at 440 MHz or faster
- Minimum 512 MB physical memory; 1 GB recommended
- Minimum 1.5 GB (1550 MB) available disk space for installation (includes software development kit [SDK])
- Approximately 600 MB temporary space during installation
- CD-ROM drive

For Linux® on System i
- System i models that support logical partitioning (LPAR) (64-bit kernel support only) with a minimum of 450 client performance workload (CPW) in the Linux partition
- Minimum 16 GB available disk space for the IBM OS/400® partition; minimum 2.5 GB for the Linux partition
- Minimum 512 MB physical memory; 1 GB recommended for the OS/400 partition
- CD-ROM drive

For Linux on System p
- Any compatible System p model (64-bit kernel support only)
- Minimum 1.3 GB (1350 MB) available disk space for installation
- Approximately 600 MB temporary space during installation
- Minimum 512 MB physical memory; 1 GB recommended
- CD-ROM drive

For Linux on IBM System z™
- IBM S/390® G5, G6 or MP3000 processors (31-bit kernel support only) or IBM eServer™ zSeries® processors (31-bit or 64-bit kernel support)
- Minimum 1.3 GB (1350 MB) available disk space for installation
- Approximately 600 MB temporary space during installation
- Minimum 512 MB physical memory, 1 GB recommended
- CD-ROM drive

IBM WebSphere Enterprise Service Bus, Version 6.1 at a glance (continued)

Hardware requirements (continued)

For Linux on Intel®
- Intel Pentium® (or equivalent) processor at 1 GHz or faster (32-bit kernel support only)
- Minimum 1.3 GB (1350 MB) available disk space for installation
- Approximately 600 MB temporary space during installation
- Minimum 1 GB of physical memory
- CD-ROM drive

For Sun Solaris Operating Environment
- Sun Solaris SPARC workstation at 440 MHz or faster
- Minimum 1.3 GB (1350MB) available disk space for installation
- Approximately 600 MB temporary space during installation
- Minimum 512 MB physical memory; 1 GB recommended
- CD-ROM drive

For Sun Solaris Operating Environment
- AMD Opteron (or equivalent) processor at 1 GHz or faster—toleration only (64-bit kernel support only)
- Minimum 1.3 GB (1350 MB) available disk space for installation
- Approximately 600 MB temporary space during installation
- Minimum 1 GB physical memory
- CD-ROM drive

For Microsoft Windows® 2000, Windows 2003 and Windows XP Professional
- Intel Pentium (or equivalent) processor at 1 GHz or faster (32-bit operating system support only)
- Minimum 1.3 GB (1350 MB) available disk space for installation
- Approximately 600 MB temporary space during installation
- Minimum 1 GB physical memory
- CD-ROM drive

Software requirements

For AIX
- Operating environments (one of the following)
    - IBM AIX 5L™, Version 5.2
    - AIX 5L, Version 5.3
- Supported databases (one of the following)
    - IBM Cloudscape™, Version 5.1
    - IBM DB2® Universal Database™ Enterprise Server, Version 8.1 with Fix Pack (FP) 13 or Version 8.2 with FP 6
    - IBM DB2 Workgroup Server Edition, Version 8.1 with FP 13 or Version 8.2 with FP 6
    - IBM DB2 Connect™, Version 8.2 with FP 3
    - IBM WebSphere Information Integrator, Version 8.1 with FP 13 or Version 8.2 with FP 6
    - IBM Informix® Dynamic Server, Version 9.4 C8, Version 10.00 C4 or Version 10.00 C5
    - Oracle 9i Standard or Enterprise Edition Release 2—9.2.0.7
    - Oracle 10g Standard or Enterprise Edition Release 1—10.1.0.4
    - Microsoft SQL Server Enterprise 2000 with Service Pack (SP) 4

IBM WebSphere Enterprise Service Bus, Version 6.1 at a glance (continued)

Software requirements (continued)

For HP-UX
- Operating environments (one of the following)
    - HP-UX 11, Version 1
    - HP-UX 11, Version 2
- Supported databases (one of the following)
    - Cloudscape, Version 5.1
    - DB2 Universal Database Enterprise Server, Version 8.1 with FP 13 or Version 8.2 with FP 6
    - DB2 Workgroup Server Edition, Version 8.1 with FP 13 or Version 8.2 with FP 6
    - DB2 Connect, Version 8.2 with FP 3
    - WebSphere Information Integrator, Version 8.1 with FP 13 or Version 8.2 with FP 6
    - Informix Dynamic Server, Version 9.4
    - Oracle 9i Standard or Enterprise Edition Release 2—9.2.0.7
    - Oracle 10g Standard or Enterprise Edition Release 1—10.1.0.4
    - Microsoft SQL Server Enterprise 2000 with SP4

For Linux on System i and Linux on System p
- Operating environments (one of the following)
    - Red Hat Enterprise Linux (RHEL) AS, Version 4.0 with Update 3
    - SUSE Linux Enterprise Server (SLES), Version 9.0 with SP3
    - SLES, Version 10.0
    - Cloudscape, Version 5.1
    - DB2 Universal Database Enterprise Server, Version 8.1 with FP 13 or Version 8.2 with FP 6
    - DB2 Workgroup Server Edition, Version 8.1 with FP 13 or Version 8.2 with FP 6
    - DB2 Connect, Version 8.2 with FP 3
    - WebSphere Information Integrator, Version 8.1 with FP 13 or Version 8.2 with FP 6
    - Informix Dynamic Server, Version 9.4
    - Oracle 9i Standard or Enterprise Edition Release 2—9.2.0.7
    - Oracle 10g Standard or Enterprise Edition Release 1—10.1.0.4
    - Microsoft SQL Server Enterprise 2000 with SP4

For Linux on System z
- Operating environments (one of the following)
    - RHEL AS, Version 4.0 with Update 3
    - SLES, Version 9.0 with SP3
    - SLES, Version 10.0
    - Cloudscape, Version 5.1
    - DB2 Universal Database Enterprise Server, Version 8.1 with FP 13 or Version 8.2 with FP 6
    - DB2 Workgroup Server Edition, Version 8.1 with FP 13 or Version 8.2 with FP 6
    - DB2 Connect, Version 8.2 with FP 3
    - WebSphere Information Integrator, Version 8.1 with FP 13 or Version 8.2 with FP 6
    - Informix Dynamic Server, Version 9.4
    - Oracle 9i Standard or Enterprise Edition Release 2—9.2.0.7
    - Oracle 10g Standard or Enterprise Edition Release 1—10.1.0.4
    - Microsoft SQL Server Enterprise 2000 with SP4

IBM WebSphere Enterprise Service Bus, Version 6.1 at a glance (continued)

Software requirements (continued)

For Linux on Intel
- Operating environments (one of the following)
    - RHEL AS, Version 4.0 with Update 3
    - RHEL ES, Version 4.0 with Update 3
    - RHEL WS, Version 4.0 with Update 3 (supported for application design, development and testing only; not supported for production use)
    - SLES, Version 9.0 with SP3
    - SLES, Version 10.0
    - Red Flag Advanced Server, Version 4.1 with FP 1
    - Cloudscape, Version 5.1
    - DB2 Universal Database Enterprise Server, Version 8.1 with FP 13 or Version 8.2 with FP 6
    - DB2 Workgroup Server Edition, Version 8.1 with FP 13 or Version 8.2 with FP 6
    - DB2 Connect, Version 8.2 with FP 3
    - WebSphere Information Integrator, Version 8.1 with FP 13 or Version 8.2 with FP 6
    - Informix Dynamic Server, Version 9.4
    - Oracle 9i Standard or Enterprise Edition Release 2—9.2.0.7
    - Oracle 10g Standard or Enterprise Edition Release 1—10.1.0.4
    - Microsoft SQL Server Enterprise 2000 with SP4

For Sun Solaris Operating Environment
- Operating environments (one of the following)
    - Sun Solaris, Version 9 (SPARC) with Patch Cluster of September 2005
    - Sun Solaris, Version 10 (SPARC and Opteron x84-64)
    - Cloudscape, Version 5.1
    - DB2 Universal Database Enterprise Server, Version 8.1 with FP 13 or Version 8.2 with FP 6
    - DB2 Workgroup Server Edition, Version 8.1 with FP 13 or Version 8.2 with FP 6
    - DB2 Connect, Version 8.2 with FP 3
    - WebSphere Information Integrator, Version 8.1 with FP 13 or Version 8.2 with FP 6
    - Informix Dynamic Server, Version 9.4
    - Oracle 9i Standard or Enterprise Edition Release 2—9.2.0.7
    - Oracle 10g Standard or Enterprise Edition Release 1—10.1.0.4
    - Microsoft SQL Server Enterprise 2000 with SP4

IBM WebSphere Enterprise Service Bus, Version 6.1 at a glance (continued)

Software requirements (continued)

For Windows 2000, Windows 2003 and Windows XP Professional

- Operating environments (one of the following)
    - Windows 2000 Server and Advanced Server with Update roll-up 1 for SP4
    - Windows 2000 Professional with Update roll-up 1 for SP4
    - Windows 2003 Server Datacenter, Standard and Enterprise Edition with SP1
    - Windows XP Professional with SP2

Note: Windows 2000 Professional and Windows XP are supported for application design, development and testing only; no support is provided for production use.

    - Cloudscape, Version 5.1
    - DB2 Universal Database Enterprise Server, Version 8.1 with FP 13 or Version 8.2 with FP 6
    - DB2 Workgroup Server Edition, Version 8.1 with FP 13 or Version 8.2 with FP 6
    - DB2 Connect, Version 8.2 with FP 3
    - WebSphere Information Integrator, Version 8.1 with FP 13 or Version 8.2 with FP 6
    - Informix Dynamic Server, Version 9.4
    - Oracle 9i Standard or Enterprise Edition Release 2—9.2.0.7
    - Oracle 10g Standard or Enterprise Edition Release 1—10.1.0.4
    - Microsoft SQL Server Enterprise 2000 with SP4

For the latest hardware and software requirements for WebSphere Enterprise Service Bus, Version 6.1,

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