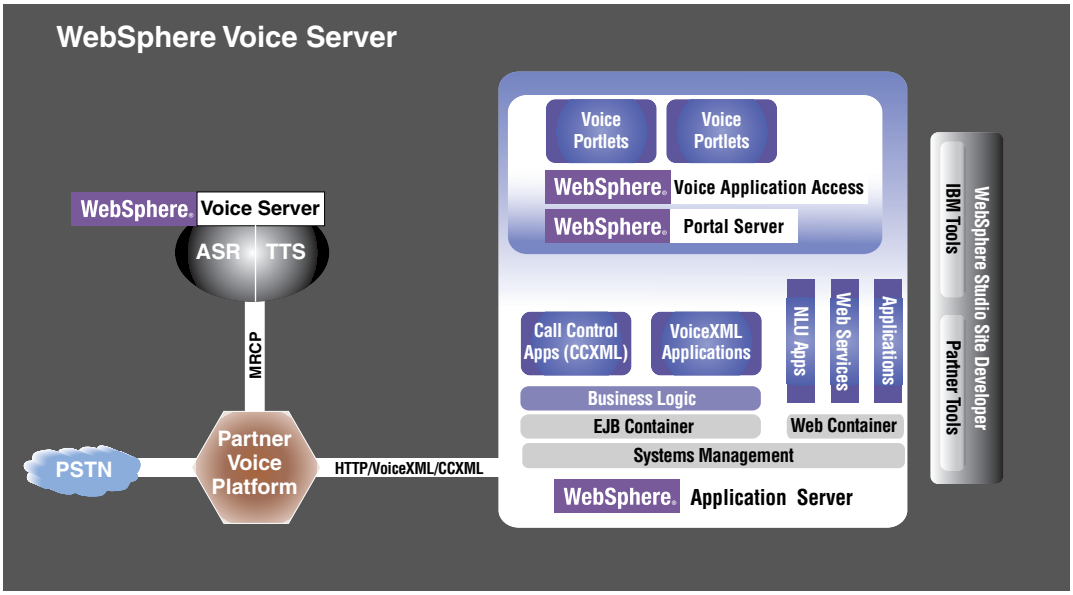
Voice enabled On Demand Business from IBM

WebSphere software

IBM WebSphere Voice Server for Multiplatforms, Version 5.1.1



Highlights

- *Enables on demand access to applications through natural voice input and output*
- *Supports Media Resource Control Protocol Version 1 Draft 4, an industry standard speech interface, giving customers more flexibility in their choice of Interactive Voice Response (IVR) and gateway vendors*
- *Barge-in capability, allowing users to interrupt dialog*
- *Extends Web information to virtually anyone with a telephone and includes powerful IBM speech recognition and Text-To-Speech (TTS) engines*
- *Uses industry standards so you can easily create new speech-enabled applications or add voice interfaces to existing applications*
- *Easily integrates with multiple IVR systems based on open standards*
- *Architected on Java 2 Platform Enterprise Edition (J2EE™), WebSphere Voice Server 5.1.1 is built on WebSphere Application Server. WebSphere Voice Server 5.1.1 utilizes the power of WebSphere Application Server to provide integrated scalability, availability, reliability, systems management and systems integration with existing information technology (IT) infrastructure*

ON DEMAND BUSINESS™

Middleware for an on demand world

As a leading provider of voice-enabling solutions, IBM delivers Web, middleware and telephony solutions that can help businesses deliver information to their customers — quickly and easily. IBM voice middleware is a fundamental component of IBM's strategy for an on demand world, helping customers automate processes, so that information can be accessed from any connection, via a Web browser, a telephone or a mobile device, and transactions can be completed quickly.

Voice-enable your enterprise applications

Based on open standards, IBM WebSphere® Voice Server is a software middleware product that provides breakthrough technology for quickly developing and deploying conversational solutions. Voice-enabled applications give your customers, employees and suppliers greater access to information and services. WebSphere Voice Server supports industry standards such as Speech Recognition Grammar Specification (SRGS), Speech Synthesis Markup Language (SSML), Semantic Interpretation for Speech Recognition (SISR), and Media Resource Control Protocol (MRCP). IBM support for open standards gives you freedom from proprietary technology, enabling you to manage costs and application deployment schedules for your business.

Product enhancements

With WebSphere Voice Server, Version 5.1.1, IBM provides many new and advanced product features to help you increase customer satisfaction while lowering the total cost of ownership. Enhanced features include:

- *Ability to utilize J2EE architecture and Enterprise Java Beans for core functionality. WebSphere Voice Server runs as an enterprise application on WebSphere Application Server, extending its reliability, scalability and availability.*
- *Support for MRCP Version 1 Draft 4, SRGS 1.0, SSML 1.0, and SISR 1.0.*
- *Grammar-based speech recognition, including support for dynamic grammars.*
- *Additional voice specific administration panels to facilitate configuration, monitoring and troubleshooting, ensuring consistency with WebSphere Systems Management.*
- *Allows servers to be taken out of the network for maintenance and automatic failover without interruption; provides for scaling, reliability, availability and serviceability of the MRCP server.*
- *Allows a single System Administrator's Console to manage a network of WebSphere Voice Server V5.1.1 machines, using WebSphere Application Server Network Deployment Manager.*

WebSphere Voice Server for Multiplatforms, Version 5.1.1 delivers additional customer-focused enhancements:

- *WebSphere Application Server infrastructure for common administrative console, install, deployment and logging throughout the enterprise, as well as for scalability and reliability.*
- *Support for the emerging MRCP standard for connectivity to multiple qualified IVR vendors who support MRCP Version 1 draft 4. For a list of compatible IVRs, visit: www.ibm.com/software/pervasive/voice_server/*
- *Support for Red Hat Enterprise Linux WS/ES/AS for Intel 3.0 and SuSE SLES 8.0.*
- *Supports MRCP, an industry standard speech interface, giving customers more flexibility in their choice of speech vendors, broadening the list of potential customers for WebSphere Voice Server. This additional flexibility means that a change in speech vendors will not have an impact on the application, as long as the standard format for synthesis markup (such as SSML) and grammar creation (such as SRGS) are employed.*

Increase the availability of your services

WebSphere Voice Server provides self-service access for your existing customers as well as new ones. It ensures 24x7 support at all times, dramatically extending your business' level of customer service. Now you can reach a much larger audience — anyone with a telephone. Your customers can access information and conduct transactions, and they don't have to be connected to the Internet to do it. Using a telephone, they can fully interact with your applications and Web site in a much more natural, user-friendly way.

Extend your investments

You have already made significant investments in developing your legacy applications and your business infrastructure. By voice-enabling those existing applications, you can extend these same applications and databases to everyone, including customers and employees who may not have had access previously.

Rapid payback

WebSphere Voice Server uses your existing Web and telephony infrastructure, allowing you to reach new customers and provide additional service to existing customers. Speech recognition and Text-To-Speech technologies allow you to simplify long menu selections in your existing systems. This means you can reduce the average call duration cost per call, and decrease call abandonment rates. You can add additional revenue streams by offering new services and use customer service representatives for higher value customer interactions. This allows you to improve customer satisfaction and retention rates. These, and many other factors, can mean a rapid system payback.

Improved usability

Speech recognition and TTS make it easy and natural for your customers to interact with your business. Just as usability is an important factor in traditional applications, it is even more so in mobile applications. Users can access information virtually anywhere, anytime—increasing overall productivity and accelerating communications and responsiveness to customers.

Typical voice-enabled Web application scenarios

Today, many applications are used by customers to access information or conduct transactions. WebSphere Voice Server provides the structure for voice-enabled applications using dialog management that enables the caller to use a natural interface just by speaking. Voice-enabled applications allow customers to call in for a variety of information and transactions, such as the latest weather report, current movie listings, health care provider enrollment, stock information, travel arrangements, employee timecards, appointments and purchases—in short, the entire range of interactive applications.

These elements make up the WebSphere Voice Server product offering:

Speech recognition engine—recognizes caller utterances by means of one or more application-specific grammars and converts spoken audio into text.

Text-To-Speech engine—produces an audio stream from text provided by the application for playback over a telephone. There are two TTS offerings available with WebSphere Voice Server:

- *Concatenative – provides unlimited vocabularies using natural-sounding voices*
- *Phrase splicing – an IBM services offering, which provides limited vocabularies using pre-recorded human voices.*

Voice application development tools—used to develop and test speech applications using speech recognition and/or TTS. These tools provide support for applications written in VoiceXML and Java.

- *WebSphere Voice Toolkit, an Eclipse plug-in to WebSphere Studio Site Developer, that enables J2EE application developers to easily add voice technology to middleware applications and includes a VoiceXML editor, grammar editor and pronunciation builder as well as tools for testing VoiceXML applications on a PC without a telephony server. The toolkit also provides a graphical call flow builder along with capabilities to integrate partner IVR tools via Eclipse plugins provided by the partners.*

Complimentary products—your WebSphere Voice Server package includes this complimentary product:

- *WebSphere Studio Site Developer V5.1 provides additional tools for a comprehensive Web development tool suite*
- *WebSphere Application Server Edge Load Balancer (formerly Network Dispatcher) provides scalability and ability for a server to be removed from the network without interruption; features high availability, load balancing, and ease of integration.*

IVR platform support

WebSphere Voice Server is supported by various IVR vendors. For a complete list of supported IVRs, please go to ibm.com/software/pervasive/voice_server/

Global access

WebSphere Voice Server is available in multiple languages, enabling easy communication around the globe in users' native languages. Planned languages include Cantonese-Hong

Kong, Chinese-Simplified, English-Australian, English-UK, English-US, French, French-Canadian, German, Italian, Japanese, Korean, Dutch, and Spanish. For up-to-date language and platform support, go to **ibm.com**/pervasive.

Beyond WebSphere Voice Server Natural Language Understanding (NLU)

Natural Language Understanding is the ability of a computer to understand and intelligently react or respond to a query or command from a human in standard language, as opposed to a specially formatted sentence or menu command. People interact with their applications by typing, clicking, speaking or writing; and NLU technology spans all of these input modalities. NLU solutions offer significant benefits to both the enterprise and the end user by allowing users to do things for themselves (self-service means decreased cost of business) in a manner that's comfortable and pleasant.

NLU combines breakthrough research and development in the fields of voice recognition, linguistics, statistics, human factors and artificial intelligence. There are several types of NLU, including grammar-based and statistical NLU. Grammar-based NLU requires an exact utterance that has a specific match in the system, whereas statistical NLU employs abstract models based on actual conversation, which means a perfect match is not required. Statistical NLU can provide a solid foundation to accommodate increased scalability and application complexity, which can help facilitate future maintenance, expansion and deployments.

Hardware requirements

Note: the WebSphere Voice Server V5.1.1 package includes both WebSphere Voice Server V4.2 and WebSphere Voice Server V5.1.1 content.

WebSphere Voice Server, (V5.1.1 content only) minimum requirements

- 3rd party IVRs or VoiceXML2.0 gateways that interoperate with the WebSphere Voice Server V5.1.1 using MRCP V1 draft 4.
- Supported hardware platforms for WebSphere Voice Server V5.1.1 include Linux systems that meet the minimum hardware criteria defined below.

Minimum Hardware required:

Operating System	Linux
Processor	Intel x86 1GHz (minimum)
Memory (RAM)	2GB RAM (minimum)
Available Disk Space	2GB
Network	TCP/IP
Other	CD-ROM

Voice Toolkit V5.1 for WebSphere Studio, (for use with WebSphere Voice Server V5.1.1 and V4.2, WebSphere Voice Response V4.2 and WebSphere Voice Application Access V5.0) minimum hardware requirements

- System suitable for running Microsoft® Windows® 2000 or Windows XP
- Minimum of an Intel® Pentium III 500MHz processor or equivalent (1.0GHz recommended)
- 768MB RAM
- A display adapter setting of at least 256 colors and 800x600 resolution or higher (1024x768 resolution recommended)
- Sound card and speakers for audio playback
- 200MB minimum free disk space (in addition to the disk space requirement for WebSphere Studio Site Developer, WebSphere Studio Application Developer, WebSphere Studio Enterprise Developer, WebSphere Studio Application Developer Integration Edition), plus additional space for the installation options selected by the user
- For installation, an additional 200MB temporary space on the drive specified in your user TMP environment variable

WebSphere Voice Server, (V4.2 content only) minimum requirements

- When used with the WebSphere Voice Response for AIX®, V3.1 or V4.2 Telephony Platform
- IBM RS/6000® or pSeries® 233MHz or higher
- CD-ROM drive
- 512MB RAM minimum required
- 500MB of disk space minimum required per language install
- Local network — 10/100Mb Ethernet

IBM NLU systems use statistically-based models which provide more flexibility and robustness than traditional grammar-based methods. IBM can provide services to help you realize the benefits of this state-of-the-art technology. Please contact your IBM sales representative for details on NLU.

Custom services

IBM and certified IBM Business Partners offer a complete set of fee-based integration services that can help businesses develop and deploy their voice-enabled applications. There is a fixed-price, Fast-Start program available to help you get up and going quickly.

Custom services include:

- *Requirements workshops*
- *Solution design*
- *Solution implementation*
- *Project planning*
- *Human factors*
- *Prototypes*
- *Proof of concept*
- *Integrated voice solutions*
- *Migration between platforms*
- *Speech recognition and grammar tuning*
- *Enhanced TTS.*

To learn more

For more information about how IBM can help your business take advantage of conversational access please visit **ibm.com**/pervasive

Software requirements

Note: the WebSphere Voice Server V5.1.1 package includes both WebSphere Voice Server V4.2 and V5.1.1 content

WebSphere Voice Server, (V5.1.1 content only) minimum requirements

Operating system

- Red Hat Enterprise Linux WS/ES/AS for Intel 3.0 with Update 1 (2.4 Kernel) and SuSE Linux Enterprise Server 8.O, powered by United Linux 1.0 (SLES 8.0) (Intel) with Service Pack 2a or 3
- Voice Toolkit V5.1 for WebSphere Studio Requirements (for use with WebSphere Voice Server V5.1.1 and V4.2, WebSphere Voice Response V4.2 and WebSphere Voice Application Access V5.0)
- Microsoft Windows 2000 (Service Pack 4, or higher) or Microsoft Windows XP (Service Pack 1 or higher)
- An installed version of one of the following base platforms: WebSphere Studio Site Developer V5.1.2, WebSphere Studio Application Developer V5.1.2, or WebSphere Application Server-Express V5.1.2
- IBM Portal Toolkit is required for WebSphere Voice Application Access V5.0 voice portlet development
- WebSphere Voice Server, (V4.2 content only) minimum requirements
- WebSphere Voice Server when used with WebSphere Voice Response for AIX, V4.2 or V3.1 Telephony Platform
- WebSphere Voice Server needs to be run on AIX V5.2 when WebSphere Voice Response V4.2 is used as Telephony Platform
- WebSphere Voice Server needs to be run on AIX V5.1 when WebSphere Voice Response V3.1 is used as Telephony Platform
- Deployment Environment for WebSphere Voice Response for AIX
- PSTN (T1/E1), SS7 or VOIP-SIP connection for WebSphere Voice Response for AIX product to switch network
- WebSphere Voice Server recommends using Uncompressed G.711 voice when WebSphere Voice Response AIX V4.2 is using VOIP-SIP connection for best speech recognition accuracy
- WebSphere Voice Server Client software installed on the WebSphere Voice Response system
- WebSphere Voice Server software and Language software installed on separate pSeries machines for Speech Recognition and TTS capabilities
- Dedicated high-speed LAN for Distributed WebSphere Voice Response systems and WebSphere Voice Server systems (100Mb Ethernet LAN depending on size of system)
- Web application server such as WebSphere Application Server hosting VoiceXML applications recommended

IBM Corporation
8051 Congress Avenue
Boca Raton, Florida 33487

Printed in the United States of America
12-04

G507-1674-00