



## Avaya Interactive Voice Response

Unlock the power of the Web using VoiceXML-based speech technology

It's a tough business challenge: Customer expectations are rising, and IT budgets are tighter than ever. To meet the challenge, businesses need to both improve customer service and lower operational costs.

### Avaya voice-enabled Web access can help you meet the challenge

Avaya VoiceXML-based solutions deliver advanced, cost-effective voice portal services around the clock. By leveraging existing Web infrastructure, Avaya speech solutions extend and expand services from

any telephone—landline or wireless. Whether it's a routine information request or 24/7 company-wide availability, the Avaya Interactive Voice Response (IVR) voice browser helps improve customer service by giving customers dynamic, real-time voice access to the information they need. For the contact center, self-service provides a low-cost alternative to costly live-agent contact.

According to a March 2002 report from the Yankee Group, companies' costs to handle an agent-assisted customer interaction over the phone can range from a bare minimum of

around \$7 to upwards of \$70 in functions like software and hardware technical support.\* The nominal cost of handling each self-service contact typically works out to pennies per interaction rather than dollars. Given this type of relative cost structure, adding or upgrading voice browser capabilities presents a clear opportunity to streamline contact center operations by making better use of contact center resources, build customer loyalty by providing improved customer service, and boost margins by providing a cost-effective alternative to live-agent interaction.

### Save money, make money: boost agent and contact center productivity

Avaya Interactive Voice Response (IVR) handles repetitive calls, such as requests for directions, hours of operation, and order confirmation. Agents' productivity and job satisfaction can increase as they spend less time responding to routine questions and more time focusing on delivering quality service. With tools to help build productivity and reduce agent turnover, your contact center can handle more interactions with the same number of agents, which can increase efficiency and profits. You may even be



\* "TCO of Web Self-Service Applications," Yankee Group Report, Customer Relationship Management Strategies, Vol. 4, No. 4, March 2002.



able to expand your services without increasing the number of agents, the number of workstations, or your training costs.

Customers can experience decreased wait times, reduced phone costs, and the convenience of having access to the information they need, when they need it.

### **Fast, flexible service 24 hours a day, 7 days a week**

Whenever and however customers want to reach you, your business is prepared with the automated self-service features of Avaya IVR.

At the heart of Avaya IVR is a high-performance UNIX server, which provides high port density and uptime reliability based on Microsoft Windows systems. Avaya IVR, together with highly scalable and reliable, distributed client/server Avaya Natural Language Speech Recognition architecture, can help you keep pace with your customers and your competition.

### **The power of the Web, the convenience of the phone**

The Avaya IVR voice browser makes it easier than ever to bring the self-service capabilities of your Web site to phone-based, self-service transactions. VoiceXML enables customers to access up-to-date Web-based content with the convenience of their telephone.

Based on Extensible Markup Language (XML) from the World Wide Web Consortium (W3C), Voice eXtensible Markup Language (VoiceXML) greatly simplifies speech recognition development by using the familiar Web paradigm for application development and deployment.

The Avaya IVR voice browser supports the latest VoiceXML 2.0 specifications. The voice browser's unprecedented support of VoiceXML demonstrates Avaya's commitment to open standards and to delivering complete IVR flexibility.

### **Turn customer data into customer satisfaction**

Create a personalized customer experience that can build customer loyalty and grow top-line revenue by deploying proactive, dynamically presented IVR services based on last week's Web-based activity, yesterday's e-mail, or any previous service history. It provides an invaluable opportunity to turn customer data into increased customer satisfaction and increased revenue.



## Best-in-class service delivered on an industry-leading platform

The Avaya IVR server provides call processing and media services, as well as standard operations, administration, and maintenance. The system's open, Web-centric architecture, based on Java, is designed for easy integration into your contact center operations. The standards-based architecture—supporting HTTP, XML, Java, and VoiceXML languages—leverages existing Web infrastructure and decreases time to market with new services aimed at generating revenue and cost savings. And with more than 23,000 deployed systems, Avaya IVR is a proven performer worldwide.

## 50 countries, 27 languages

Avaya Interactive Voice Response supports IVR solutions in over 50 countries and can link your contact center operations around the globe. Using Avaya Natural Language Speech Recognition (NLSR), Avaya IVR can automatically converse with your customers in over 27 languages.

Avaya's distributed client/server speech architecture provides natural language speech port density, and the state-of-the-art speech technology gives you access to the newest capabilities and improved recognition accuracy. For the customer, these improvements mean faster, easier, more convenient information access and transaction completion. For the business, these improvements translate into revenue generation and the ability to offer market-differentiating services.

Avaya IVR supports the latest innovations in text-to-speech, speaker verification, and speech recognition, such as "Say Anything" and "Speak Freely." Avaya IVR is one of the only enterprise platforms to support the entire suite and feature set from Nuance and SpeechWorks, including:

- Nuance 8
- Nuance Speech Objects
- Nuance Verifier
- Nuance Vocalizer
- SpeechWorks OpenSpeech Server 1.0
- SpeechWorks OpenSpeech DialogModules
- SpeechWorks Speechify TTS
- SpeechWorks Speech Secure

## A range of flexible configurations

Avaya IVR offers a variety of configurations that provide the processing power and system integration required for intelligent call routing and sophisticated computer telephony applications. Platform choices range from 96 to 192 ports, depending on server configuration.

## Seamless IVR integration adds personalization and creates opportunity

Avaya's substantial investment in CRM integration provides a comprehensive, fully integrated suite of self-service solutions. Avaya IVR offers complete integration with Avaya Interaction Center, Avaya Predictive Dialing System, and Siebel 7.0.

- **Avaya Interaction Center**  
These days it's not uncommon to receive a service call like this: "I'm calling you today about my e-mail yesterday regarding my Web transaction last week." If your voice, Web, and e-mail customer interactions are islands of isolated contacts, this is going to be a tough call to handle. Avaya Interaction Center not only provides an integrated view of customer history across multiple communication channels, it also integrates with Avaya IVR to personalize callers' experiences. The Avaya IVR

### Avaya Interactive Voice Response is a key component of the comprehensive Avaya CRM Solutions portfolio.

- Customers receive fast, convenient telephone access to Web-based information.
- Avaya IVR handles repetitive information requests to boost agent and call center productivity.
- VoiceXML 2.0 development support makes it easier than ever to build phone-based, self-service applications for Web-based content.
- Enhanced Avaya Natural Language Speech Recognition facilitates a new generation of communication available in 27 languages.



system can be designed to dynamically trigger personalized IVR services based on a previous multi-channel interaction, event, ongoing business activity, customer net worth, or personal preference. And the Avaya IVR system is unique in its ability to quickly and efficiently escalate a high-value customer from self-service to assisted service, promoting customer satisfaction and maximizing the value of the customer contact.

- **Avaya Predictive Dialing System**

Proactive Contact Management Solutions combine the power of the Avaya Predictive Dialing System and Avaya IVR to deploy outbound “virtual agents” for proactive customer service. For an airline, this may mean alerting platinum frequent fliers about flight delays. For a package delivery company, it may mean confirming that an important order has shipped. Or for a wireless phone company, it may mean increasing customer retention by contacting subscribers when calling plans are up for renewal. Whatever the specific execution, integrated IVR solutions can add service value to build customer loyalty.

- **Siebel 7.0**

Avaya is a worldwide Siebel Global Alliance Partner. Avaya’s standard, out-of-the-box Web-integration tools make it easy to integrate to Siebel 7.0. A standard XML plug-in makes it all possible.

### **Development tools**

Avaya Interactive Voice Response Designer provides a user-friendly, graphical scripting tool that enables you to set up and modify Avaya IVR applications from a desktop computer. Or you can team up with one of Avaya’s independent software vendors (ISVs) to build sophisticated applications for your contact center—including Avaya Natural Language Speech Recognition. These custom applications can be designed to give you access to the broadest selection of development tools available, such as VoiceXML, IRAPI APIs (C and C++), Vonetix, and Java API.

Avaya IVR Designer has been enhanced to generate code that is compliant with VoiceXML 2.0. You can write VoiceXML by hand, use emerging tools, or use Avaya IVR Designer and continue to use your application developers for maintaining past and future applications with one tool. And, because VoiceXML also executes right alongside script on the Avaya IVR platform, you are not forced to make a choice between the two. Either way, Avaya Professional Services provides the consulting, integration, and management services you need to integrate Avaya IVR into your CRM strategy.



## Standard software

Bundled with three CRM applications right out of the box:

### CRM software applications

**Agent Assist** schedules automated recordings of agent conversations and stores them on the Avaya IVR system. Supervisors can listen to the calls from a PC with a sound card. Makes it easier to spot service trends and optimize the Web browser architecture.

**CallBack Manager** allows callers to leave messages while in queue and offers automated callback features for agents. Provides customers with live assistance and helps facilitate, manage, and monitor callback activity.

**Form Manager** collects information from your callers in either touch-tone, spoken numbers, or comments. Use it to build surveys or data-collection programs without programming knowledge or training. Easily managed through a Windows interface via an Ethernet TCP/IP connection.

### Development tools, integration services, and management tools

**Avaya Interactive Voice Response Designer** offers a drag-and-drop “service creation tool,” based on the Microsoft Windows platform, for creating applications in either native scripting language or VoiceXML. It provides developers with the flexibility to design and change Avaya IVR custom applications from a desktop PC.

**Vonetix** reduces the overall complexity and integration costs of any self-service application. It is a powerful Java

middleware component that facilitates easy integration to a variety of front- and back-office environments through the use of standard Java development tools. Libraries of Java plug-ins are available for most common data environments. Standard HTML, XML, and JDBC Vonetix plug-ins ship with every Avaya IVR. Other plug-ins are available for purchase, such as Microsoft SQL Server, MQ Series, TN3270/5250, Reporting, and WAP Wireless Alert. Don't see one on the list? The Vonetix Universal Services Creation Tool makes it straightforward for any developer to build one for you. The Vonetix Java API is available for developers who wish to create their IVR applications utilizing the Java development environment of their choice, such as J-Builder.

**IRAPI** is a published C, C++ API for developers that prefer application development in native C.

The **Speech Conversion Tool** converts .wav files to either ADPCM or CELP format, using a variety of off-the-shelf .wav editors.

The on-board **Apache Web Server** is utilized for making HTTP or HTTPS requests to typically Web-based sources of information. The Apache Web Server is generally used in conjunction with the HTML, XML, or VoiceXML environments. It is also leveraged for Web browser access to the Avaya IVR for reports, documentation, and other applications utilizing Web browsers.

**Java Database Connectivity** (JDBC) offers an interface for connecting the Avaya IVR to external databases that are compatible with the Java database.

## Optional software

Optional software available with Avaya IVR can extend your functionality and provide interoperability with a wide range of applications.

### Speech technologies

**Custom Speech Phrases and Recording:** Avaya ISV partners (FutureCom Technologies, GM Voices, Jingle Phone Productions) and a host of other third-party companies can provide professional speech recording for custom phrases and prompts.

**Whole Word Speech Recognition:** Basic recognition capability for numbers, including large-digit-string recognition and connected-digit recognition.

**Text-to-Speech (TTS)** is available through Avaya's partners Nuance, SpeechWorks, and Loquendo in many languages, including U.S. English, Latin-American Spanish, Castilian Spanish, French, German, Italian, Brazilian Portuguese, Dutch, Swedish, Greek, Norwegian, Polish, Russian, Japanese, Korean, Mandarin, and Cantonese.

## Optional software (Continued)

### **Avaya Natural Language Speech Recognition:**

Natural Language Interpreter, Natural Language Speech Recognition, and Proxy/Client Release 1.1 provide automatic speech recognition in over 27 languages. Available from Nuance and SpeechWorks.

**Dial Pulse Recognition** gives callers with dial pulse telephones the convenience of accessing Avaya IVR applications and self-service options in the same way as touch-tone callers.

**Call Classification Analysis Package:** Full CCA provides a more complete interpretation of network progress tones than does basic intelligent CCA.

**PRI Feature Software Packages:** ISDN Primary Rate Interface Package, Advanced PRI Package, Nortel ISDN PRI Package, ETSI PRI Extension Library, National ISDN, including 2B Channel Transfer.

**ASAI Feature Software Packages:** Adjunct/Switch Application Interface Package, Universal Call ID.

**Avaya Computer Telephony Package:** As an alternative to ASAI, the Avaya CT DIP is available

as an option with the native ASAI package. It utilizes fewer CPU resources and most of the features supported in the complete ASAI package. Consult your Avaya Client Executive for details on the differences.

**Fax Software Packages:** Next-generation Fax Package, Avaya IVR ScriptBuilder Fax Actions, and Avaya IVR Fax Set. Now also supports ECM and MMR fax protocols for the Japanese market.

**Whole Word Software Packages:** U.S. English, Canadian French, Latin-American Spanish, Brazilian Portuguese, U.K. English, Australian English, German, Castilian Spanish, Japanese, French, Dutch, Italian.

**Digital Interface Software Packages:** E1 CAS R2 MTC Interface Package: Argentina, Brazil, Australia, and Mexico. T1 E&M Interface Package, Loop Start FXS, Ground Start FXS.

**Oracle Database Software Packages:** Oracle 8i RDBMS Integration Package, Oracle Developer 2000, Oracle 8i Server Enterprise Edition, Oracle 8i RDBMS Integration Package.

## Find out more

For more information on how Avaya Interactive Voice Response can enhance your customer relationships, improve agent productivity, and help increase your bottom line, contact your Avaya Client Executive or Authorized Avaya BusinessPartner today. Or, visit our Web site at [avaya.com/solutions](http://avaya.com/solutions).

### About Avaya

Avaya enables businesses to achieve superior results by designing, building and managing their communications networks. More than one million businesses worldwide, including 90 percent of the FORTUNE 500®, rely on Avaya solutions and services to enhance value, improve productivity and gain competitive advantage.

Focused on enterprises large to small, Avaya is a world leader in secure and reliable IP telephony systems, communications software applications and full life-cycle services. Driving the convergence of voice and data communications with business applications – and distinguished by comprehensive worldwide services – Avaya helps customers leverage existing and new networks to unlock value and enhance business performance.

reach  
**AVAYA**  
a higher plane  
of communication

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