



Avaya Voice Portal

Connect Customers to your Business Through Exceptional Self Service

Overview

Avaya Voice Portal is a Web Services based self service platform that brings together the power of Web Services and IP Telephony to create more powerful, profitable, and satisfying speech and touch-tone solutions.

Highlights

Avaya Voice Portal enables businesses to harness sophisticated voice and speech enablement technologies to increase deployment of self service automation capable of serving global, international, and multi-lingual customers. It allows organizations to speech enable new services and web applications across your existing IT infrastructure. With support for Enterprise and Web-based integration and use of flexible Web Services based integrations, Voice Portal delivers rapid services deployment, a lower total cost of ownership and ultimately a stronger return on investment than traditional IVR platforms.

Voice Portal is deployed on standard Linux/Intel/AMD servers and supports integration with market leading IP technologies. Businesses integrate with Avaya Communication Manager, Service Provider Networks, and other communication servers via enterprise communication standards including H.323 and SIP while contact centers can leverage existing vectoring and CTI investments. The solution also provides open standards based integrations to leading speech technologies from Nuance, IBM, and other certified vendors.

Voice Portal includes at no additional cost an industry-standard based application development environment, Avaya Dialog Designer. Providing for the design, simulation, debugging, and deployment of VoiceXML/CCXML speech and touch-tone applications, Dialog Designer generates Java web applications which are installed on customer provided servers running IBM WebSphere, BEA Weblogic, or Apache Tomcat Server software. As Avaya Dialog Designer applications are supported for both Avaya Interactive Response and Voice Portal, application portability between the two software platforms is maintained. Avaya's common VoiceXML 2.1 certified browser technology ensures a seamless deployment of VoiceXML applications from Dialog Designer simulation environment to the Interactive Response and Voice Portal production platforms.

Pre-built integrations simplify handoff between self and assisted service workflows through integration with Avaya Customer Interaction Suite contact management solutions such as Avaya Interaction Center and Avaya Call Center software. Voice Portal applications can access business rules and workflows within Enterprise applications, and Interaction Center to determine treatment in self service applications. Collected data such as account numbers, problem descriptions, etc. can be sent to Interaction Center for use in screen pop, routing and reporting.

In addition, Support of the industry standard VoiceXML 2.1 and call control XML (CCXML) 1.0 specifications through the Voice Portal's Voice Browser offers application developers the flexibility to write applications in their development environment of choice.

Key Benefits

- Lower services costs with convenient 24/7 speech automation of routine call center and online transaction and inquiries like account balance, order status and inventory availability.
- Connect to customers with outbound automated calls for reminders, affinity marketing, and critical notification, all through discoverable Web Services interfaces.
- Offer speech based services not possible with touch-tone such as name and address recognition, secure voice ID technology, and services based on alpha/numeric symbol recognition such as stock symbols, product names, and problem statements
- Unlocks value within Web Self-service applications by making applications available to customers and employees wherever, and whenever through voice access, not just when they are sitting in front of a computer.
- Lower management costs through IP Telephony based architectures that support high availability deployments without over provisioning and "failover" licenses typical in IVR deployments
- Lower integration costs through the support of IT Web Application Infrastructure with standards such as VoiceXML 2.1, CCXML, J2EE, Web Services and MRCP.
- Lower application development costs and lifecycle costs through support of touch-tone and speech application development based on Eclipse, the leading open IT development environment

Components

Voice Portal supports Voice and Self Service applications within the enterprise information technology (IT) environment. The Avaya Voice Portal includes three primary software components:

- Media Processing Platform
- Voice Portal Management System including application reporting
- Application Execution and Design Environment

Media Processing Platform

The Media Processing Platform (MPP) is a key component of the voice portal architecture and performs the following functions:

- VoiceXML 2.1 Voice Browser collects touch-tones and grammar-based speech recognition events, plays pre-recorded phrases and interfaces to support generation of synthesized text-to-speech, processes events, and generates events for call records.
- Interfaces to Avaya IP Telephony. Supports integrations to Avaya Communication Manager version 2.1 and later. Terminates SIP and H.323 integrations from Communication Manager and SIP servers and supports SRTP/RTP/RTCP (bearer channel) via the G.711 codec.
- Supports any TDM or IP infrastructure including ISDN, T1, E1, R2 and SS7 through SIP/RTP standards and through intelligent SIP gateway options.
- Interfaces to Avaya Contact Center infrastructure. Passes data such as Queue Position, Expected Wait Time, Dialed (Entered) Digits, etc. from Call Center Vectors for more intelligent and personalized self service response.
- Supports dynamic provisioning of concurrent VoiceXML sessions, IP Endpoint Registrations, ASR and TTS resources, and application data.
- Supports Media Resource Control Protocol (MRCP) to external Automatic Speech Recognition (ASR) and Text-to-speech (TTS) Resources from leading speech technology partners.

The Media Processing Platform runs on Red Hat Linux Enterprise 4.0 Certified Hardware Platforms provided either by the customer or orderable through Avaya as the CSAD Common Server or Avaya Communication Manager Servers.

Voice Portal Management System

The Voice Portal Management System (VPMS) provides an easy to use Web-based interface for all management functions.

VPMS provides centralized operations, administration, management and provisioning interfaces for the voice portal system. The VPMS supports management of multiple Media Processing Platforms to support virtually any number of concurrent

VoiceXML "IVR" sessions across an enterprise. The VPMS also manages VoIP, application and Speech Resource provisioning across the Enterprise.

The Voice Portal Management System performs fail-over in case of loss of a media processing platform by reclaiming VoiceXML licenses and registrations from the affected MPP. It

automatically redeploys those licenses and registrations to spare capacity (on provisioned server) or to a spare server offering businesses the highest levels of availability of mission critical customer self service applications.

VPMS includes a Simple Network Management Protocol (SNMP) Management Information Base (MIB) to external Network Management Systems such as IBM Tivoli or HP OpenView.

Application Reporting

Voice Portal collects a rich set of call, session, and application record detail that can be presented within fully customizable web-based reports. Reporting includes detailed application reporting, automatic "breadcrumb" reports of a caller's experience at every step of a self service interaction, plus transactional roll-ups. Application and caller information can be combined in unique ways with other external resources ("Web mashups") such as overlaying caller detail report data with mapping data to see the geographical distribution of caller information for visual trends analysis.

Voice Portal also includes centralized reporting for multiple Voice Portal clusters to get an "Enterprise View" of all self-service capabilities whether across town or around the world. Multiple system management and reporting allow a single "cockpit" view into all live systems with operational indicators. Reports can extend across systems to create a holistic view of operational and business focused data.

Records are accessible through an open interface for integration into virtually any existing enterprise reporting system (such as Cognos, Crystal Reports, etc.) or information can be conveyed through Avaya IQ or Avaya Operational Analyst for cradle-to-grave reporting integration.

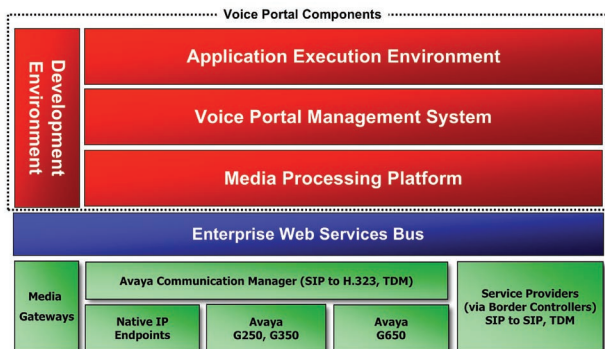
Application Execution and Design Environment

Avaya Voice Portal working in conjunction with Dialog Designer offers application developers one of the most flexible, open, and cost effective application platforms today. Applications can be written in a number of ways based on the standard VoiceXML 2.1 and CCXML specifications. Businesses and independent software developers can create applications by hand-coding VoiceXML/CCXML, by using a custom code environment to write static VoiceXML, or can use an Integrated Development Environment to generate dynamic VoiceXML 2.1.

Avaya Dialog Designer is a complete Integrated Development Environment (IDE) allowing faster and less costly application design, coding, debugging, testing, simulation and deployment. Applications are designed using a graphical "drag and drop" metaphor allowing for rapid application development. Dialog Designer includes an embedded VoiceXML/CCXML browser allowing simulation of applications; the same VoiceXML browser is integrated within Voice Portal and Interactive Response offering developers an additional level of assurance that applications deployed will operate as expected.

Voice Portal combined with Dialog Designer offer advanced functionality in the following areas;

Figure 1: Key components of Voice Portal software. Voice Portal software was specifically designed for Service Oriented Architectures (SOA) running across today's IP Telephony based architectures.



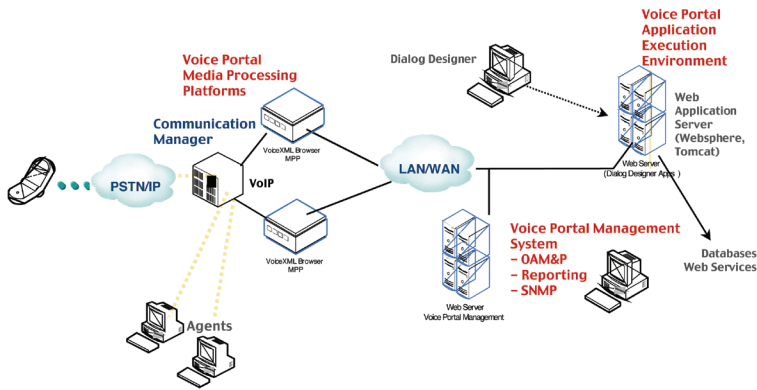


Figure 2: Unlike traditional Interactive Voice Response platforms, Voice Portal was specifically designed for deployment across distributed IP telephony based networks allowing businesses to more flexibly design, deploy, operate, and manage applications where there are existing skills and resources.

- Programmable Web services for outbound applications
- Fax and Answering Machine detection with “live person” and “beep” indications
- Multiparty conferencing
- Integrated Video and Voice response
- Advanced Call Handling

video enabled mobile devices. Applications include “store within a store” applications, delivery of Video Content and Self-help to Video Capable Mobile phones.

Advanced Call Handling — Allows advanced contact center functions to be delivered in a software platform for the first time. The latest Voice Portal enhancements allow platform deployment alongside Avaya Communication Manager ACD functions as a peer advanced routing and treatment options include:

- Terminate calls ahead of Communication Manager treatment with guaranteed Universal Call ID (UCID) generation consistent between Voice Portal and other Call Center elements
- Caller identification, determination of intent, and ability to select from multiple Contact Centers using real-time information for routing
- Treatment ahead of Communication Manager interaction with options for local treatment (music on hold, wait treatments) even when calls will be delivered overseas
- Predictive self-service applications which waiting in queue. By understanding expected wait times based on Avaya patented agent selection algorithms, Voice Portal can select a self-service application which accomplishes preparation work ahead of agent selection and handling allowing for faster resolution of customer issues at lower cost
- Provides detailed self service application, call, and session level reporting for end-to-end customer experience reporting
- Transport CTI information within SIP signaling paths, lowering complexity and costs while boosting reliability
- Reduce or eliminate costly pre-route and transfer-connect charges

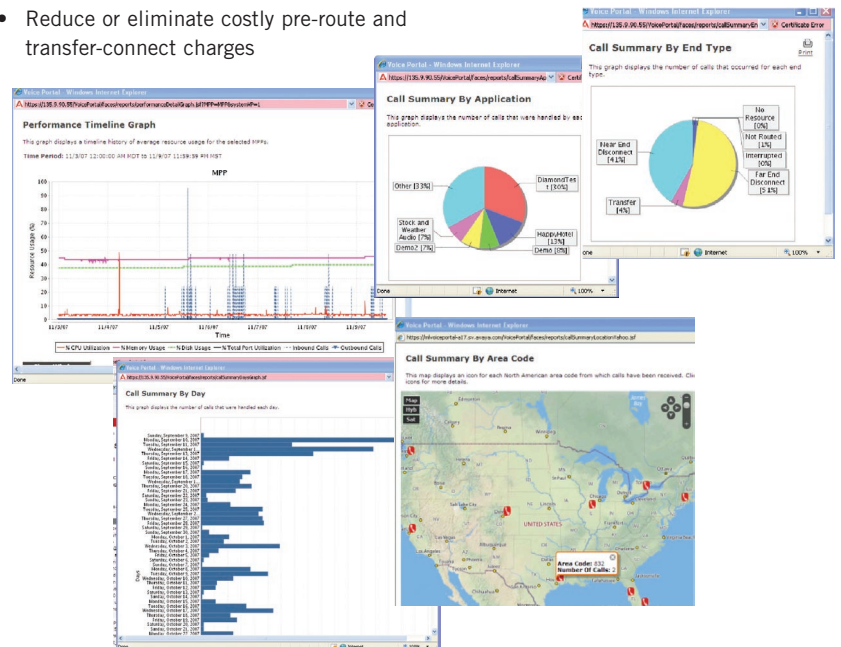
Programmable Web services — Outbound and event Web Services using CCXML support outbound notifications, alerts and confirmations. Web Services support provides a simpler integration point to other contact center applications including Proactive Contact and Interaction Center. More important, the ability to publish Web Services and not just consume Web Services means that Voice Portal can be integrated in a enterprise application suite. Any Enterprise, Web, or ad-hoc application can include Voice Portal services. For example, a business process can acquire people (like a technician, field services technician, or resident expert) to accomplish a supporting task. Additionally, a simple Web Page (ASP, JSP, or PHP) might trigger applications such as notifications or trigger applications like dynamic conferencing. Services can be designed to dynamically adjust customer experience based on any information passed during the Web Service invocation.

Fax and Answering Machine Detection — Developers can design inbound and outbound self service applications so that faxes can be redirected to a designated fax server or outbound faxes or SMS messages can be delivered in support of the Self-Service experience. For outbound applications, developers can create self service applications that dynamically personalize call handling and messages based on whether a person or answering machine is detected. By providing “beep” detection, a message can be left based on the initiation of message recording.

Multiparty Conferencing — CCXML based conferencing capabilities provide the ability to develop self service applications that can dynamically establish adhoc multi-party conferences based on self service or CEBP monitored events. Self service applications can be designed to gracefully bring in live assistance into a self service transaction when a caller may be having difficulty or even provide conferencing services on behalf of an assisted-service or business process event. (For example, providing a multi-party conference when a consultation is required)

Integrated Video and Voice — New devices and video media are changing communications and media expectations leading corporations to consider adoption of video. Voice Portal supports deployment of video self and assisted service including video kiosks, video self help, and integrated voice and video applications like personalized streaming video advertising to

Figure 3: Voice Portal interaction data can be reported through a number of means including web mashups such as overlaying caller detail report data with maps data to see the geographical distribution of caller information for visual trends analysis.



Features & Benefits

Feature	Benefit
Flexible, scalable IP architecture	Multiple server options, flexible configurations, and support for both H.323 and SIP allow enterprises to more effectively meet design, capacity, and price criteria while supporting IT sourcing and management guidelines.
Integrated self and assisted service	Makes CTI and Contact Center integration accessible to IT staffs, opening the possibilities to dynamic self-service applications built on intelligent call center and contact center events.
Common VoiceXML 2.1 Voice and CCXML browser	Common VoiceXML browser reduces application deployment risks and ensures a consistent user experience. Advanced call control capabilities are supported through the CCXML browser.
Open Standards-based Interfaces	Drives lower integration and support costs through use of existing expertise in Java and Web application development.
Flexible path to Open IP based speech enabled services	Transferable software platform licenses preserve self service investments. Interactive Response licenses under current maintenance contracts can be converted to Voice Portal licenses at no additional license cost.
Centralized Reporting and detail record access	Better business insight with automated application summary reports for insights on customer behavior within your self-service environment. Lower operational costs by leveraging centralized self-service reporting and application reporting capabilities while managing the solution with included SNMP support. Application breadcrumbs provides detailed view of a callers self service experience. Self service application and platform data can be combined with external data sources for tabular and visual trends analysis.
Multiple concurrent languages including dynamic AudioVariable capabilities	Address multilingual customer's needs while consistently keeping lifecycle costs low.
Active management of VP elements, Error/Alarming and Failover	High availability capabilities for "always on" services.
Multi-system management and reporting with support for external Databases including Oracle 9i	Supports centralized management and reporting of geographically distributed systems for true Enterprise wide management and understanding.
Worldwide Services and Support	Avaya Global Services and DevConnect Members provide: local support, solutions discovery, applications development, and professional services to meet business needs. Modem-less access support provided by Avaya with the Avaya Secure Services Gateway.

Platforms, Protocols, Interface Specifications

Media Processing Platform	Application Execution and Deployment, Web Application Servers Supported
RedHat Linux Enterprise 4.0 Certified Platforms	Dialog Designer API (Java and GUI IDE)
Common Servers including the Avaya S8500c, CSAD Common Server and customer-provided Linux/Intel/AMD Servers Support for Avaya Communication Manager 2.1 and newer via H.323/SIP/SRTP/RTP	IBM WebSphere Express 6.1, WebSphere 6.1
Avaya S8300/S8500/S8700, Avaya G350/G650, IP media processing; Avaya SIP Enablement Server 4.0 or later; SIP Gateways and SIP Service Provider Trunks per Avaya System Interoperability Lab verification	BEA Weblogic 9.2, Apache Tomcat 5.0.28, Tomcat 5.5
MRCP v1 integration to external speech resources	Windows 2003, XP, Solaris 8/10, Linux RedHat Enterprise 3.0/4.0
Voice Portal Management System	Speech Engines, Text to Speech, and Grammar support
RedHat Linux Enterprise 4.0 Certified Platforms	Nuance OSR 3.0, Nuance 9.0 (ASR); Real Speak 4.0, 4.5 (TTS), OSDM 2.0.6
Common Servers including the Avaya S8500c, CSAD Common Server and customer-provided Linux/Intel/AMD Servers	IBM WebSphere Voice Server 5.1.3
SNMP v1, 2, 3	Others via MRCP /SRGS pending certification by Avaya DevConnect

About Avaya

Avaya delivers Intelligent Communications solutions that help companies transform their businesses to achieve market-place advantage. More than 1 million businesses worldwide, including more than 90 percent of the FORTUNE 500®, use Avaya solutions for IP Telephony,

Unified Communications, Contact Centers and Communications Enabled Business Processes. Avaya Global Services provides comprehensive service and support for companies, small to large. For more information visit the Avaya Web site: <http://www.avaya.com>.

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For more information about how Avaya Voice Portal can support your business, please contact your Avaya Client Executive, Avaya Authorized BusinessPartner, or visit us on our Web site at [avaya.com](http://www.avaya.com)