Cisco IOS Voice XML Browser

Cisco[®] Unified Communications is a comprehensive IP communications system of voice, video, data, and mobility products and applications. It enables more effective, more secure, more personal communications that directly affect both sales and profitability. It brings people together by enabling a new way of communicating—where your business moves with you, security is everywhere, and information is always available...whenever and wherever it is needed. Cisco Unified Communications is part of an integrated solution that includes network infrastructure, security, mobility, network management products, lifecycle services, flexible deployment and outsourced management options, end-user and partner financing packages, and third-party communications applications.

Cisco IOS[®] Software provides many rich voice capabilities, including Voice Extensible Markup Language (VoiceXML) browser services. VoiceXML is an open-standard markup language used to create voice-enabled Web browsers and interactive-voice-response (IVR) applications. Available on a wide range of Cisco IOS Software voice gateways, these services are used in conjunction with a VoiceXML application service such as Cisco Unified Customer Voice Portal (CVP).

Product Overview

Maintaining excellence in customer service is a cornerstone of business success. Business success likewise depends on automation, reducing operating costs, and continuously improving employee productivity. IVR systems allow enterprises to tailor telephony self-service applications to meet their specific customer needs and reduce call-center traffic. Until recently, IVR platforms were based on proprietary development environments and limited to specific hardware platforms—reducing application flexibility and typically locking in the IVR vendor. VoiceXML has changed this paradigm by using the power and simplicity of a standard, Web-based model to provide a tightly integrated IVR solution.

Cisco IOS Software voice gateways provide VoiceXML browser services when used in conjunction with a VoiceXML server, such as the Cisco Unified CVP. The Cisco Unified CVP solution, including the Cisco IOS VoiceXML Browser, extends automated self-service beyond the limits of traditional IVR systems and enterprise voice portal platforms. Providing IVR treatment through the use of the Cisco IOS VoiceXML Browser on the voice gateway offers several important benefits. First, because the media treatment and the IVR services occur at the edge of the network, WAN bandwidth and quality-of-service (QoS) considerations are minimized. Support of a wide variety of Cisco IOS Software voice gateways provides a broad range of self-service IVR port densities from which to choose. Additionally, all IVR calls benefit from the superior media treatment capabilities built into the Cisco voice gateways, including digital signal processors (DSPs) for transcoding and conferencing.

The Cisco solution provides lower operational costs in the contact center and protected technology investment to provide a smooth and consistent multichannel customer experience. Support for automated speech recognition (ASR) and text-to-speech (TTS) capabilities allows callers to conduct their business and obtain personalized answers to their questions. When the Cisco IOS VoiceXML Browser is used in conjunction with Cisco Unified CVP, callers can pay bills; order products; track delivery; update names and addresses, customer information, and preferences; check payment status; and request literature or product information.

Features Table

Providing VoiceXML browsers through Cisco IOS Software and on a Cisco IOS Software voice gateway has inherent advantages, including superior media treatment and equipment reuse. The Cisco IOS VoiceXML Browser is an essential component of the Cisco Unified Communications system of voice, video, data, mobility, and IP communications products and applications.

Table 1 lists the features of the Cisco IOS VoiceXML Browser.

Table 1. Features of Cisco IOS VoiceXML Browser

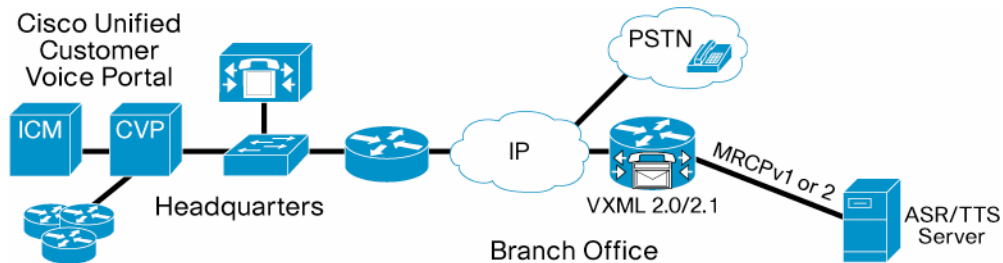| Use Existing Infrastructure	Flexible Architecture	Standards Based	Resilient and Scalable	Security
Cisco VoiceXML service can be combined with Cisco IOS Software Voice Gateway services or used as a standalone, dedicated VoiceXML browser gateway.	Cisco IOS VoiceXML Browser can be co-located with Cisco Unified CVP at a single site or it can be distributed throughout the enterprise branch network with Cisco Unified CVP and media servers centralized at headquarters or regional sites.	Cisco IOS VoiceXML Browser is VoiceXML 2.0-compliant. Voice gateways provide access to the public switched telephone network (PSTN)-, H.323-, or Session Initiation Protocol (SIP)-based networks.	A keepalive feature ensures calls in process and new calls can be directed to a customer-defined basic automatic call distributor (ACD) queue(s) on the voice gateway regardless of network conditions.	Secure HTTP over Secure Sockets Layer (SSL) to secure media communications between the browser and secured servers.
VoiceXML allows the enterprise to reuse the existing Web infrastructure.	The breadth of platform support, including Cisco 2800 and 3800, 1861, 2900 and 3900 Integrated Services Routers and Cisco AS5000 Universal Gateways, allows for a broad range of self-service session densities: from 7 sessions up to 360 concurrent sessions.	Cisco IOS VoiceXML Browser supports the VoiceXML 2.1 and Media Resource Control Protocol (MRCP) Version 2.	Distributed architecture allows IVR calls to be rerouted and process-loaded. Cisco Unified CVP provides centralized, sophisticated operations, administration, management, and provision (OAM&P) for the gateways.	Inherent security is delivered through Cisco IOS Software, including IP Security (IPsec), VPN, and hardware-based encryption.

Applications

Self-Service and IVR

Whether employee- or customer-facing, the Cisco Unified CVP works with the Cisco IOS VoiceXML Browser to deliver intelligent, personalized self-service over the phone. Cisco Unified CVP enables customers to efficiently and easily retrieve the information they need from the contact center, voicemail access, authentication when accessing scheduled conference calls and automated voice-picking for warehouse applications.

Customers can use touchtone signals or their own voice, through Automated Speech Recognition or Text-to-Speech to request self-service information. The Cisco IOS VoiceXML browser and Cisco Unified CVP and the entire Cisco Contact Center solution suite, provide a smooth customer service experience (Figure 1).

Figure 1. Cisco IOS VoiceXML Browser Topology

Key Features and Benefits

Use Existing Infrastructure

VoiceXML browser services are available on two Cisco routing product families: on the award-winning Cisco integrated services routers that are specifically designed for providing a multitude of services in the branch with the Cisco Integrated Services Router 1861, 2800,3800 and newly introduced 2900 and 3900 series. Cisco IOS VoiceXML browser services are also available on the highly resilient, service provider-class Cisco 5350XM and 5400XM Universal Gateways. On both product families, VoiceXML can be combined with voice gateway services or deployed as a standalone, dedicated VoiceXML gateway. VoiceXML provides technology benefits that result in business benefits, such as the cost-saving benefit of the reuse of the Web infrastructure.

Flexible Architecture

The Cisco IOS VoiceXML Browser can be co-located with the Cisco Unified CVP at a single site or distributed throughout the enterprise branch network with Cisco Unified CVP and media servers centralized for ASR and TTS. The breadth of the Cisco IOS Software Voice Gateway platform support allows for a broad range of self-service sessions for every branch size: from 7 sessions up to 360 concurrent sessions, depending on platform and other services on the router.

Standards Based

Certified by the VoiceXML Forum for VoiceXML 2.0, Cisco IOS Software voice gateways also provide access to PSTN-, H.323-, or SIP-based networks through a variety of standards-based mechanisms inherently available on Cisco voice gateways. Additionally, the Cisco IOS VoiceXML Browser supports the major features of VoiceXML 2.1 and Media Resource Control Protocol (MRCP) Version 2 protocols.

Resilient, Scalable, and Secure

A keepalive message between the Cisco Unified CVP and the Cisco IOS VoiceXML Browser on the gateway preserves calls in process and provides basic ACD (B-ACD) for new calls if communications between the two devices is disrupted, regardless of network conditions. A distributed architecture allows IVR calls to be rerouted and process-loaded. Cisco Unified CVP provides centralized, sophisticated OAM&P for all networked gateways that provide PSTN or VoiceXML services. Secure HTTP over SSL means secure media communications between the Cisco IOS VoiceXML Browser and the application or media server. The solution further benefits from the inherent security delivered through Cisco IOS Software.

Feature Availability

Cisco IOS VoiceXML Browser features are available on a wide range of Cisco IOS Software voice gateways (refer to Table 2).

Table 2.   Feature Availability

Feature	Platform Support
VoiceXML 2.0	Cisco 1861, 2800, 3800, 2900, 3900 Series Integrated Services Routers Cisco AS5350XM, and AS5400XM Universal Gateways
VoiceXML 2.1	Cisco 1861, 2800, 3800, 2900, 3900 Series Integrated Services Routers Cisco AS5350XM, and AS5400XM Universal Gateways
MRCP Version 2	Cisco 1861, 2800, 3800, 2900, 3900 Series Integrated Services Routers Cisco AS5350XM, and AS5400XM Universal Gateways

Product Specifications

Table 3 gives specifications of the Cisco IOS VoiceXML Browser.

Table 3. Specifications of Cisco IOS VoiceXML Browser

Product Compatibility	Cisco Unified Customer Voice Portal 7.0
Software compatibility	Nuance Speech Server 5.0.1, Nuance Recognizer 9.0.0, RealSpeak 4.5.0 Nuance SWMS 3.1.13, OSR 3.0.12, RealSpeak 4.0.12 Nuance MRCP 1.0.0 SP10 (includes Nuance 8.5 SP050930) and Vocalizer 4.0.6
Protocols	VoiceXML 2.0 World Wide Web Consortium (W3C) standard; support for VoiceXML 2.1 W3C standard mandatory features

Ordering Information

Cisco IOS VoiceXML Browser services are priced on a per-session basis. There are two feature license part numbers for sessions on the Cisco 1861, 2800 and 3800, 2900 and 3900 Integrated Services Routers: FL-VXML-1= and FL-VXML-12=. The part numbers for the licenses can be combined to achieve the maximum concurrent sessions required.

The Cisco AS5350XM provides special bundles when deployed as a dedicated Cisco IOS VoiceXML Browser. In this configuration no additional Feature Licenses are required. . The Feature Licenses; FL-VXML-1= and FL-VXML-12= are required to increase the number of bundled sessions. Multiples of the Feature Licenses may be combined to achieve the maximum concurrent sessions required. When the Cisco AS5350XM or AS5400XM is purchased as a bundle that includes TDM or Cisco Unified Border Element, Session Border Controller functions and PVDM2, the ability to run VoiceXML—to a maximum of 240 sessions per chassis is included.

To place an order, visit the Cisco Ordering Home Page and refer to Table 4.

Table 4. Ordering Information

Product Name	Part Number
Cisco IOS VoiceXML Browser – single session on Cisco 2800, Cisco 3800 and Cisco 2900, Cisco 3900 Series Integrated Services Router	FL-VXML-1
Cisco IOS VoiceXML Browser – twelve concurrent sessions on Cisco 2800, Cisco 3800, and Cisco 2900, Cisco 3900 Series Integrated Services Router	FL-VXML-12
Cisco IOS VoiceXML Browser on Cisco AS5350XM – 48 sessions	AS535XM-VXML-48-V
Cisco IOS VoiceXML Browser on Cisco AS5350XM – 72 sessions	AS535XM-VXML-72-V
Cisco IOS VoiceXML Browser on Cisco AS5350XM – 96 sessions	AS535XM-VXML-96-V
Cisco IOS VoiceXML Browser on Cisco AS5350XM – 120 sessions	AS535XM-VXML-120-V
Cisco IOS VoiceXML Browser on Cisco AS5350XM – 192 sessions	AS535XM-VXML-192-V
Cisco IOS VoiceXML Browser on Cisco AS5350XM – 240 sessions	AS535XM-VXML-240-V

Cisco Unified Communications Services and Support

Using the Cisco Lifecycle Services approach, Cisco and its partners offer a broad portfolio of end-to-end services to support the Cisco Unified Communications system. These services are based on proven methodologies for deploying, operating, and optimizing IP communications solutions. Initial planning and design services, for example, can help you meet aggressive deployment schedules and minimize network disruption during implementation. Operate services reduce the risk of communications downtime with expert technical support, and optimize services enhance solution performance for operational excellence. Cisco and its partners offer a system-level service and support approach that can help you create and maintain a resilient, converged network that meets your business needs.

For More Information

For more information about the Cisco Unified Customer Voice Portal or the Cisco IOS VoiceXML Browser, visit http://www.cisco.com or contact your local Cisco account representative.

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