Cisco Unified Customer Voice Portal 12.5

Contents

Product overview

Cisco® Unified Customer Voice Portal (Unified CVP) helps businesses and organizations deliver a connected digital experience, enabling you to deliver contextual, continuous, and capability-rich journeys for your customers across time and channels. This award-winning product provides IP-based self-service and call routing. It combines open-standards support for speech with intelligent application development and industry-best call control to deliver personalized self-service to callers, either as a standalone Interactive-Voice-Response (IVR) system or transparently integrated with a contact center.

Business value

With Unified CVP, businesses and organizations can provide incoming callers with automated, intelligent self-service using touch-tone input or speech recognition. Callers can access and modify their accounts, place orders, get status updates, retrieve information, and resolve problems, all without speaking to a live agent. This paradigm results in dramatic savings in agent costs. However, if an agent's services are required, Unified CVP can queue the call and then transfer it to an agent, along with information about the caller and the self-service session. With this solution agent, productivity improves, and customers enjoy a smooth service experience.

Unified CVP is an IP-based system, but it easily interoperates with traditional telephony networks through voice gateways. The architecture of Unified CVP provides distributed call treatment with centralized application management, allowing calls to receive self-service and queuing at the most efficient (or desirable) location, while still enabling consistent branding and caller experience and easy application updates.

When self-service or queuing is complete, Unified CVP uses Session Initiation Protocol (SIP)-based call control to instruct the network where to route the call, potentially reducing or eliminating telephony carrier transfer costs. The ability of Unified CVP to route calls across customer service sites enables resource virtualization, allowing businesses and organizations to lower their costs significantly by reducing the number of agents required to maintain a given service level. For example, a customer might call a local office and if no agents are free, Unified CVP can easily route the call to a different site where an agent is available.

Unified CVP is especially powerful when used as part of the broader portfolio of Cisco Unified Communications solutions because it takes full advantage of the superior capabilities of Cisco routers and Session Border Controllers (SBCs).

Table 1 lists the new features and benefits available in the latest release of Unified CVP.

Table 1. New features and benefits of Unified CVP 12.5

Feature	Benefits
Virtualized Voice Browser enhancements	The Unified CVP Virtualized Voice Browser (VVB) has the following improved capabilities: • DTMF tone Overlay at random intervals for masking tones • DTMF tone Injection • Type Ahead buffer/flush • HTTP/HTTPs URL based Media streaming support for Queue treatment • Waveform URI support for recording servers • Cloud based ASR service • Cloud based TTS service • VAD (Voice Activity Detection)]
Conversational IVR or Customer Virtual Assistant (CVA)	The Unified CVP Virtualized Voice Browser (VVB) can provide Customer Virtual Assistant functionality (also known as Conversational IVR) using cloud-based services. Benefits: • Media is streamed from VVB to Dialog Flow using the gRPC interface • VVB directly interfaces with Dialog Flow without any interim gateways • A customer can choose to avail services like Automatic Speech Recognition (ASR), Text-To-Speech (TTS), or Natural Language Understanding (NLU) based on business requirements • Cisco Unified Call Studio elements have been introduced for easier configuration and project management • Legacy scripts could be enhanced to avail the CVA feature with minimal effort • Relevant intents can be passed as Expanded Call Context (ECC) variables for better call context toward agents • Significant reduction in average handling time at IVR (~30%) • Reduction in call transfers to actual agents (~30 to 40%)
Smart Licensing	The Unified CVP introduced smart licensing capability to ease and view purchases under a single UI interface with reduced licensing management. Capabilities introduced as part of Smart licensing include: • Smart account to deposit and view all new purchases under a single UI • New purchases immediately reflect under a customer's Smart Account for usage • No PAK-based node-locked licensing • Easy to register with Cloud-based License Management Service (CSSM) • Secure interface for direct cloud access or via on-premises based proxy for regular usage reporting • Consolidated usage view from all devices registered with Cisco Smart Software Manager (SSM)

Table 2 lists continuing features and benefits of Unified Customer Voice Portal.

Table 2. Cisco Unified CVP continuing features and benefits

Feature	Benefits
Self-service	
Play announcements, prompts, and audio	Unified CVP can play prerecorded announcements and prompts to callers, supporting a wide variety of informational and self-service applications. Streaming audio is also supported (with Real-Time Streaming Protocol [RTSP]) when using the Cisco IOS® Gateway VoiceXML browser, allowing play of live audio sources.
Collect caller input	Unified CVP can collect information from callers in a variety of ways (for example, yes or no, menu choices, forms, and data types), enabling faster, more intuitive self-service sessions.
Barge and type ahead	Knowledgeable callers can save time by skipping through prompts and announcements they are already familiar with.
Opt out	Callers have the option to press zero to speak with a live agent.
G.729 codec	Support for this audio codec helps ensure that network bandwidth is used more efficiently.
Post-call surveys	Support for caller surveys following the self-service session enhances customer satisfaction and provides valuable feedback to the business or organization.
Courtesy callback	Callers in queue can request a call back when an agent becomes available, reducing time spent on hold and lowering caller frustration.
Speech (Automatic Speech Recognition [ASR] and text-to-speech [TTS])	• ASR and TTS are optionally supported through Nuance, providing a faster, more intuitive self-service session. • Media Resource Control Protocol (MRCP) Version 2 is supported, allowing support for optional, advanced speech-based features. For additional information, visit the Cisco Developer Network at: https://marketplace.cisco.com/catalog.
Multi-lingual ASR and TTS support	Unified CVP VVB now offers multilingual support (UTF-8) for Automatic Speech Recognition (ASR) and Text-To-Speech (TTS)
Database read and write	Cisco Unified CVP can read and write information from back-office databases, providing callers with real-time access to their accounts.
Web services and Representational-State-Transfer (REST) support	Cisco Unified CVP supports web services interfaces such as Web Services Description Language (WSDL) and Simple Object Access Protocol (SOAP), enabling real-time integration with web-enabled business applications. REST is also supported, enabling lighter-weight communications.
IVR application debugging	Application debugging tools enable deployment of robust, error-free Unified CVP self-service applications the first time. Debugging capabilities include: • Debug tool integration with Microsoft's Speech API for an enhanced debugging experience with speech applications • Introduction of debugging break points, which can suspend the debug flow at designated nodes to verify inputs and outputs, and navigate through call flows using debug commands • Event handlers in Unified CVP Studio applications to handle VoiceXML events and Java exceptions at the most appropriate place within the call flow; exception events are mapped to more context-specific errors to provide better information to troubleshooters
Third-party device integration	Unified CVP is integrable with select third-party recording and analytic tools that help businesses and organizations improve their customer care. For additional information, visit the Cisco Developer Network at: https://marketplace.cisco.com/catalog.

Feature	Benefits
Video	
Video contact center	Unified CVP supports audio-based self-service and queuing for calls, which optionally become video calls when routed to a contact center agent. This support provides rich caller-agent interactions while saving costs and bandwidth during the self-service portion of the call.
Video in queue	The Unified CVP video-in-queue feature allows a video caller on Cisco Unified Communications Manager (UCM) to view a High-Definition (HD) video prompt and navigate a video menu using Dual-Tone Multi-Frequency (DTMF) keys while in queue for a video agent. This feature allows businesses and organizations to provide personalized, high-touch services to customers at remote and branch-office sites such as a local bank office or a retail store. **Note:** Video-in-queue functionality with Unified CVP is supported only for existing Cisco MediaSense customers on the Cisco IOS®-based VoiceXML gateway. For a list of supported video endpoints, consult the latest hardware and system software specification for Unified CVP at: https://www.cisco.com/en/US/products/sw/custcosw/ps1006/prod_technical_reference_list.html.
Cisco Virtual Expert Management	Unified CVP is tested with validated reference designs for Cisco Virtual Expert Management, which is designed for retail businesses that want to redefine their relationships with their customer base by providing a superior consultative experience around complicated products or services. For additional information, visit: https://www.cisco.com/en/US/solutions/ns340/ns414/ns742/ns821/landing_oracle_siebel.html.
Multichannel	
Email	Unified CVP supports integration with email servers to send email messages based on caller self-service input, allowing callers to benefit from this additional service channel.
Short Message Service (SMS)	Unified CVP supports integration with SMS servers to send messages based on caller self-service input, allowing callers to benefit from this additional service channel.
Basic outbound	Built-in outbound functions enable Unified CVP to make an outbound call from a polled data file, providing simple outbound functions without the complexity and expense of a complete solution.
Outbound with Cisco Unified Contact Center Enterprise	If full outbound functions are required, Unified CVP can be deployed with the Cisco Unified Contact Center Enterprise Outbound option.
Call control and CTI	
Transfer to agent, IVR, Private Branch Exchange (PBX), Automatic Call Distributor (ACD), or carrier network	In addition to its self-service and queuing capabilities, Unified CVP possesses powerful SIP-based call control to instruct the IP network where to route the call. This control can include call transfer to an agent, IVR, ACD, PBX, or a carrier network, providing a wealth of customer service options. Cisco professional services and authorized Cisco Advanced Technology Partners can assist with integrations to specific devices and carrier networks.
Bridge transfer	Unified CVP can bridge transfer calls to an alternate number in case the primary number for an agent is not reachable or if no response is received from remote PBX. The original call is maintained on the bridge and the alternate number dialed by the application. When the call is answered, the caller will be bridged to a remote agent. The caller can always press the termination character to come out of the current call and dial another secondary number without disconnecting the initial call.

Feature	Benefits
Computer Telephony Integration (CTI)	Unified CVP can transfer the call to an agent along with CTI information about the caller and the caller's self-service session. This feature improves agent productivity and results in a smoother customer service experience. CTI data can be passed through either Cisco Unified Intelligent Contact Management (ICM) or directly to SIP-enabled devices through the SIP message header.
Carrier interoperability	Testing and certification have been performed with Unified CVP and the following telephony carrier-call transfer mechanisms: ● *8 ● Two B-Channel Transfer (TBCT) ● ATT's IP Trunking

Session Initiation Protocol (SIP)	● Information about the call and caller can be provided to the agent in the SIP header, speeding problem resolution.
	● Support for Cisco Unified SIP Proxy improves solution redundancy by enabling dynamic reroute around an endpoint that is down.
	● Unified CVP supports SIP trunks with mu-law and A-law encoding.
	● Unified CVP supports SIP trunks with TLS.
	● Unified CVP supports a range of SIP RFCs to enable powerful, comprehensive, and efficient control over calls. Some of the major RFCs supported include:
	  ◦ RFC 3261: Session Initiation Protocol (SIP)
	  ◦ RFC 3811: SIP UPDATE method (Unified CVP receives and responds)
	  ◦ RFC 3515: SIP REFER method (Unified CVP sends)
	  ◦ RFC 3891: SIP REPLACE method (no special handling)

Dynamic routing	Unified CVP can route calls based on trunk group and endpoint availability, improving call-completion rates and providing trunk reporting.
Location-Based Call Admission Control (LBCAC)	LBCAC enables you to control the audio quality and video quality of calls over a wide area network (IP WAN) link by limiting the number of calls that are allowed on that location at the same time. Enhanced LBCAC bandwidth calculations are more accurate, and the feature can now select a local VoiceXML gateway for Voice-Response-Unit (VRU) treatment at the branch office during warm transfers from an agent.
Agent greeting	A configurable, automated agent greeting can be played to callers, standardizing the caller experience. The agent greeting helps to keep agents' voices fresh by saving them from having to repeat the same greeting on every call.
Agent whisper	A configurable announcement can be played to an agent right before the caller is connected, providing information about the type of call being delivered (for example, "sales" or "tech support") and other guidance. This feature gives agents information about the caller, speeding problem handling and improving first-call resolution.
MicroApp integration	MicroApps created with the Cisco Unified Contact Center Enterprise (UCCE) script editor are integrated with the CVP VoiceXML server. This process consumes a VoiceXML server port during MicroApp execution.
Architecture	
Scalability	Unified CVP is extremely scalable, supporting deployments from as small as 24 ports (a single T1) to as large as 15,000 ports. The CVP Java Virtual Machine uses a 64-bit architecture, enabling Unified CVP to support up to 3000 calls per virtual machine.

Feature	Benefits
VoiceXML browsers	Unified CVP uses a server-based Virtualized Voice Browser (VVB), allowing it to play announcements, collect information, and queue calls using open-standards VoiceXML. VVBs can be deployed essentially anywhere on the network, allowing self-service and queuing to occur at the most efficient and cost-effective location. Unified CVP can also use the VoiceXML browser built into certain Cisco IOS voice gateways, although this support is gradually being phased out in favor of the VVB. The CVP port license includes entitlement for either the VVB or the Cisco IOS Voice Browser. Customers can currently use both the VVB and the Cisco IOS Voice Browser in the same deployment.
VVB on a Kernel-Based Virtual Machine (KVM)	Cisco VVB is supported on the Kernel-Based Virtual Machine (KVM) that is available natively on Cisco 4000 Series Integrated Service Routers. This allows a small-to-medium-sized edge deployment to use the VVB natively on the router hardware by removing the need to host an add-on Cisco UCS-E module. For more information, visit: https://www.cisco.com/c/en/us/td/docs/voice_ip_comm/cust_contact/contact_center/cisco_vvb/vvb11_6/installation/guide/cvvb_b_installation_upgrade-guide-11-6/cvvb_b_installation_upgrade-guide-11-6_chapter_011.pdf
Load-balancer support	Unified CVP supports Citrix NetScaler and other third-party load balancers that meet defined criteria to provide load distribution and high availability with resources such as speech-recognition servers. For more detailed interoperability information, visit: https://www.cisco.com/c/en/us/solutions/enterprise/interoperability-portal/voice_portal.html or consult the latest CVP design guide at: https://www.cisco.com/c/en/us/support/customer-collaboration/unified-customer-voice-portal/products-implementation-design-guides-list.html.
Cisco Unified Computing System™ (Cisco UCS®) server support	• The cost per server is lower with Unified CVP. • Virtual-machine co-residency allows server consolidation, reducing power, rack space, and cooling requirements.
Cisco ASR 1000 Aggregation Services Router support	The router consolidates the Unified CVP voice browser with other network functions on a single server, reducing hardware and support requirements.
Virtual CUBE (Cisco Cloud Service router)	Unified CVP is certified with the virtual Cisco Unified Border Element (vCUBE), enabling a broader range of deployment options and making it possible for businesses to deploy Unified CVP with less router hardware. For more information, visit: http://www.cisco.com/c/en/us/support/routers/cloud-services-router-1000v-series/products-installation-and-configuration-guides-list.html and the Compatibility Matrix for your solution at: https://www.cisco.com/c/en/us/support/customer-collaboration/unified-contact-center-enterprise/products-device-support-tables-list.html.
Secure Hash Algorithm 256 (SHA 256) security	CVP supports SHA 256 Secure Sockets Layer (SSL) certificates that significantly improve solution security.
Network queuing	The ability of the application to treat and queue calls on network gateways helps businesses and organizations achieve higher customer service levels by virtualizing resources across multiple sites. For example, a customer might call the local Boston office and if no agents are free, Unified CVP can easily route the call to a different site where an agent is available.
Network-based recording	You can use Cisco Unified Border Element (CUBE) and Cisco Unified Communications Manager with Unified CVP to enable network-based recording of calls.
Failover	The distributed architecture of the application provides robust failover capabilities. For example, if a network gateway is taken out of service, subsequent calls can be immediately routed to a different gateway for treatment.
VMware support	Support for VMware and a co-resident Peripheral Gateway (PG) provides more Unified CVP deployment options on fewer boxes. VMware ESXi 5.5, 6, and 6.5 are supported.

Feature	Benefits
System compatibility	• Unified CVP and Cisco Unified Contact Center Enterprise (UCCE) support IPv6 endpoints in dual-network mode, enabling easier migration from IPv4. • Windows 2012 and Informix 12.10 (for CVP reporting server) are supported.
Management	
Operations console	A built-in operations console gives managers and operators straightforward configuration of Unified CVP components.
Cisco Analysis Manager	Integration with Cisco Analysis Manager provides integrated alarming and diagnostics across the Cisco Unified Communications solution, enhancing Unified CVP serviceability and operational management.
System call-trace support	Unified CVP provides IT managers with end-to-end call tracing, expediting problem resolution.
Unified system Command-Line Interface (CLI)	The unified system CLI enables you to collect diagnostic (health and status) information about Unified CVP servers and to collect device-specific information from each supported node connected to the Unified CVP server from which you are using the unified system CLI.
Simplified configuration and administration	Representational-State-Transfer (REST) APIs for service fulfillment (for example, media files and VoiceXML scripts) and service assurance (such as syslog configurations and Simple Network Management Protocol [SNMP] alerts) provide easy manageability of VoiceXML applications and media files across the network and simplify the configuration of syslog and SNMP alerts. Unified CVP service assurance APIs support SNMP Version 3.
Reporting	
Reporting database	A built-in reporting database enables businesses and organizations to create their own Unified CVP reports using third-party tools.
Cisco Unified Intelligence Center	Customers can optionally purchase Cisco Unified Intelligence Center with Unified CVP to create customizable reports that show a holistic view of their customer interactions.
Unified Communications integration	
Cisco solution releases	Unified CVP is fully tested with other Cisco Unified Communications products (for example, Cisco Unified Communications Manager) as part of each Unified Communications release, helping assure customers of robust, fully supported end-to-end solutions. Testing includes certification with major Unified CVP solution components such as proxy servers, content-server switches, Cisco Unified Border Element gateways, Cisco Unified Contact Center Enterprise (Unified CCE), and Cisco Packet Data Network Gateway (PGW) soft switches.

Platform support, compatibility, and specifications

Consult the hardware and system software specifications for Cisco Unified CVP (bill of materials [BOM]) for hardware and operating system requirements, for compatibility with other Cisco and third-party products, and for additional product specifications at:
https://www.cisco.com/en/US/products/sw/custcosw/ps1006/prod_technical_reference_list.html.

Licensing

Unified CVP is licensed by the total number of concurrent call sessions managed by the Unified CVP solution.

Warranty information

Find warranty information on Cisco.com at the Product Warranties page.

Cisco environmental sustainability

Information about Cisco's environmental sustainability policies and initiatives for our products, solutions, operations, and extended operations or supply chain is provided in the "Environment Sustainability" section of Cisco's Corporate Social Responsibility (CSR) Report.

Reference links to information about key environmental sustainability topics (mentioned in the "Environment Sustainability" section of the CSR Report) are provided in the following table:

Sustainability topic	Reference
Information on product material content laws and regulations	Materials
Information on electronic waste laws and regulations, including products, batteries, and packaging	WEEE compliance

Cisco makes the packaging data available for informational purposes only. It may not reflect the most current legal developments, and Cisco does not represent, warrant, or guarantee that it is complete, accurate, or up to date. This information is subject to change without notice.

Ordering information

To place an order, visit the Cisco Ordering Home Page. Detailed ordering information is available in the Cisco Customer Care Solutions Ordering Guide (requires a Cisco.com login). Businesses should consult a Cisco Authorized Technology Provider (ATP) or their Cisco account manager.

To download software, visit the Cisco Software Center.

Cisco services

Cisco services adapt to market changes while increasing productivity, improving competitive advantage, and delivering a rich-media experience across any workspace.

The combined strengths of Cisco and our partners provide a portfolio of services that can help you prepare your infrastructure for future changes that align to long-term business goals.

Together we create innovative, network-centric architecture solutions, resulting in a scalable and responsive foundation that can help you realize the full value of your IT and communication investment.

For more information about Cisco Unified Contact Center Services, visit https://www.cisco.com/go/uccservices.

Cisco Authorized Technology Providers

Unified CVP ATPs have completed rigorous training and validation of their knowledge of the product. They can offer customers some or all the following capabilities:

- Planning
- Design
- Implementation
- Operation
- Optimization
- Product resale
- Professional services
- Post-sales support

Information about Cisco contact center ATPs is available at:
https://www.cisco.com/web/partners/pr11/atp/ucc_enterprise/index.html.

Cisco Developer Network Partners

The Cisco Developer Network program offers a formalized means for developers to certify value-added applications and solutions for use with Cisco Unified Customer Voice Portal. Information about Cisco Developer Network partners is available at: https://marketplace.cisco.com/catalog. Under "Find a Solution/Service By" choose "Technology", then "Contact Center Applications" (in the drop-down box on the left-side of the screen) and click "Find Solution".

Cisco Capital

Flexible payment solutions to help you achieve your objectives

Cisco Capital makes it easier to get the right technology to achieve your objectives, enable business transformation and help you stay competitive. We can help you reduce the total cost of ownership, conserve capital, and accelerate growth. In more than 100 countries, our flexible payment solutions can help you acquire hardware, software, services and complementary third-party equipment in easy, predictable payments. Learn more.

For more information

For more information about Cisco Unified Customer Voice Portal, visit https://www.cisco.com/go/cvp.

Printed in USA   C78-743445-01   03/20