



With the HP OpenCall Media Platform, you get more of what you need—a carrier-grade adaptive infrastructure that enables consolidation of traditional vertically integrated voice applications, and convergence toward next-generation multimedia services. It is based on industry-standard tools and platform for lowest CAPEX/TCO and time to deployment of new services.

Highly scalable and backed by HP worldwide delivery, support, and services organization, the HP OpenCall Media Platform integrates easily with existing network architectures. If you're a service provider, this capability allows you to rapidly capitalize on near-term business opportunities, such as large-scale interactive voice response (IVR) applications, unified messaging, virtual call centers, and entertainment services.

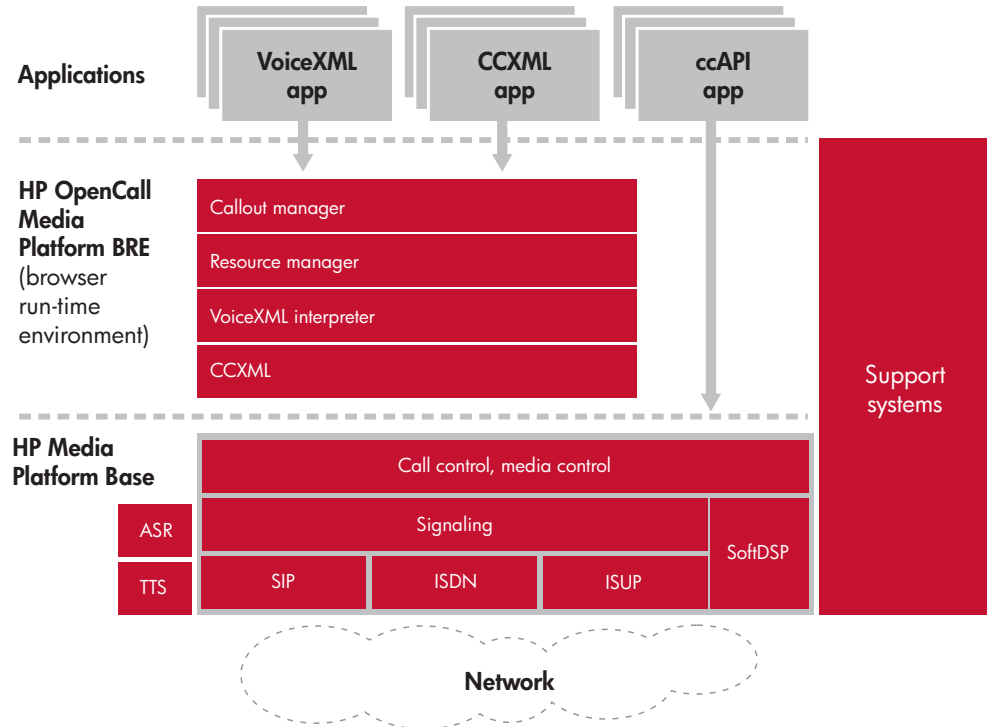
Additionally, the HP OpenCall Media Platform protects the future value of your investment with its Media Resource Function (MRF) and video capabilities (HP OpenCall Media Platform release 4). These features prepare HP OpenCall Media Platform to support services based on the IP Multimedia Subsystem (IMS).

Key differentiators

HP OpenCall Media Platform

- More than 750,000 IVR ports deployed in over 50 countries within more than 150 major service providers
- First deployment of carrier VoiceXML (Extensible Markup Language) application with 250,000 ports currently deployed
- World's largest single-carrier VoiceXML deployment with 16,000 ports
- First deployments of video applications in 2005
- 20 years experience in signaling (SIP/SS7)
- Pioneer in SoftDSP technology for ten years
- More than 100 patents in video technology

Figure 1: HP OpenCall Media Platform architectural overview



HP OpenCall Media Platform: an adaptable, scalable infrastructure

In the face of growing competition, service providers require solutions that enable new business models and streamline deployment of next-generation services. With changing subscriber demands, you need to be able to test and implement new concepts quickly and

increase revenue. The maturing of speech recognition technology and other innovative voice processing technologies, such as VoiceXML, Call Control XML (CCXML), and host-based media processing, make way for cost-effective creation of new service possibilities. These new possibilities allow your company to improve services while accommodating the increasingly dynamic and mobile lifestyles and work environments of your enterprise and customers.

Established installed base: more than 750,000 IVR ports deployed in over 50 countries within more than 150 major service providers

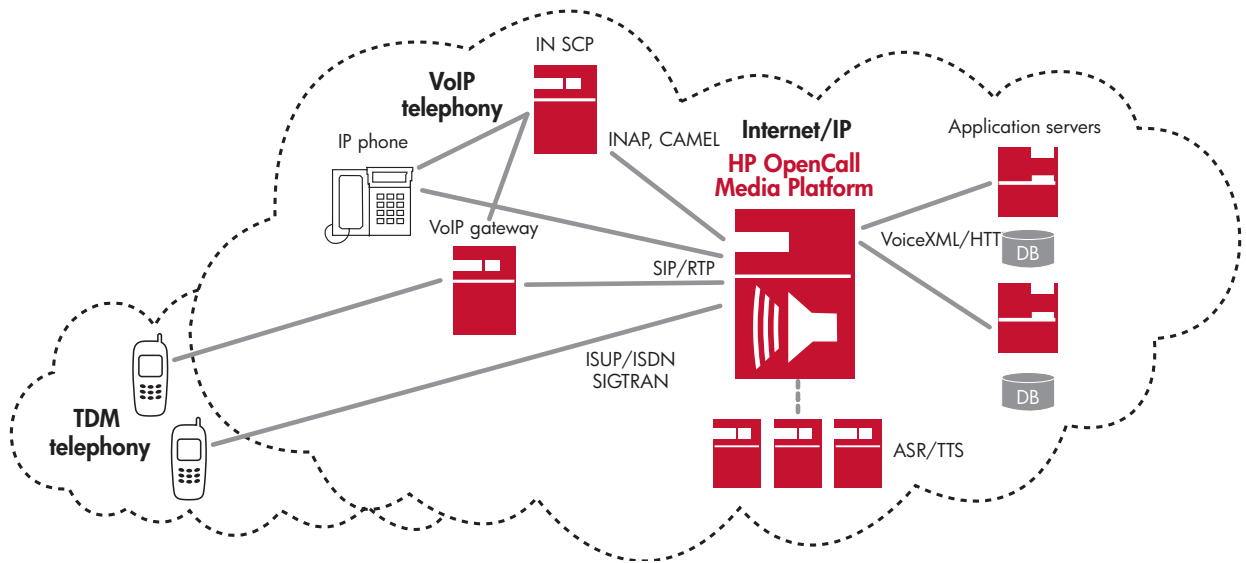
cost-effectively. HP OpenCall Media Platform, with its adaptable and scalable infrastructure, helps you achieve these goals. It can integrate and scale easily with your current network architectures, while providing the investment protection that comes with support for evolving next-generation architectures.

Furthermore, the speech and voice processing capabilities that come along with HP OpenCall Media Platform not only enhance your existing services and applications but also help you cut costs and

The market for interactive voice services is expected to increase over the coming years. Services that will continue to use voice processing include traditional applications, such as network IVR. Standards-based platforms—that may be extended to Short Message Service (SMS), Multimedia Messaging Service (MMS), and more—will replace the large installed base of existing legacy voicemail systems. Other existing services that can be voice-enabled for significant cost savings include directory assistance and call centers.

Your organization can generate more income with forward-looking services—such as voice portals and personal information management (PIM)—that offer voice and data in an integrated service. Furthermore, innovative services such as personalized ring-back tones and song requests help you expand your voice interactive services to encompass all types of voice and speech communications.

Figure 2: HP OpenCall Media Platform high-level network view



Delivering an adaptive infrastructure, HP OpenCall Media Platform assists your company in capitalizing quickly on a wide array of current and future services, thus improving operational efficiency, reducing time-to-market, and enhancing profitability.

Product overview

HP OpenCall Media Platform offers an open, highly scalable, easy-to-manage, carrier-grade media platform that adapts to future networks and applications. Its architecture involves several different components: VoiceXML operating environment, media and control processing, and a comprehensive management interface.

Mature and complete VoiceXML operating environment for carrier-grade VoiceXML applications

HP OpenCall Media Platform comes with an industry-leading VoiceXML 2.0-2.1 interpreter and support for CCXML. With VoiceXML and CCXML, service providers deploying HP OpenCall Media Platform have benefited from reduced application lead times, the ability to port existing applications in less than a month, and rapid revenue growth through increased reactivity to end-user subscribers' needs. In addition to overcoming the difficulty and expense of delivering new services on legacy equipment, HP OpenCall service provider customers have lowered maintenance and support costs.

Robust media and control processing

HP OpenCall Media Platform integrates a robust media and control execution environment that efficiently allocates voice processing functions within the platform by automating the usage of resources—as needed—during call processing.

HP OpenCall Media Platform supports a range of interfaces for Time Division Multiplexing (TDM) network and next-generation voice over IP (VoIP) packet-switched network architectures, enabling you to plug quickly and easily into your networks.

The platform uses HP innovative host-based media processing technology called Soft Digital Signal Processing (SoftDSP), which treats media operations in real time with software. Along with this capability, a unique architecture, and MRF and video capabilities (OCMP 4), the media platform delivers investment protection. It gives you the ability to support IMS network architectures and feature-rich multimedia services, such as video mail and next-generation messaging.

HP innovative technology helps you to adapt and react faster to changing media platform requirements. Not only does the HP OpenCall Media Platform run on commercial and carrier-grade versions of c-Class BladeSystem, ProLiant servers, and Linux operating systems, it provides a broad range of network connectivity. Furthermore, host-based media processing removes the need for—and the costs associated with—specialized hardware media processing cards.

Comprehensive management interface

The HP OpenCall Media Platform supplies consolidated and detailed system views. The platform can be managed through Web interfaces or Simple Network Management Protocol (SNMP). For call statistics, Call Data Records (CDRs) are generated.

HP OpenCall Media Platform in the network

The HP OpenCall Media Platform is a good choice for environments that combine legacy telecommunication networks and next-generation networks. Among other capabilities:

- It supports converged network solutions with simultaneous access to both packet-switched IP-based networks and TDM networks. Also ISUP and TCAP TDM signaling transport is offered both over traditional E1/T1 trunks or over IP (SIGTRAN M3UA protocol).
- Existing services running on the HP OpenCall Media Platform in a TDM network can run transparently on both TDM and VoIP networks, enabling the same service behavior and subscriber experience.
- It bridges media sessions across TDM and VoIP networks facilitating services—like conferencing services—that can be accessed simultaneously from subscribers of both networks without the need for additional gateway equipment.
- It includes complete Intelligent Networks (IN) Specialized Resource Function (SRF) functionality supporting Intelligent Network Application Part (INAP) CS1 and CS2 as well as Customized Applications for Mobile networks Enhanced Logic (CAMEL) 2 and 3. Deployed as an SRF, it allows media processing capabilities to be shared between IN applications and standard VoiceXML applications.
- It brings together overall clustering, distribution design, and performance capabilities.

Features and benefits

Reduce capital expenses/operating expenses (CAPEX/OPEX) and enable innovation.

HP OpenCall Media Platform's innovative SoftDSP framework, adaptable media and control execution environment, coupled with industry-standard protocols and platforms help you reduce total cost of ownership (TCO) significantly.

- An expandable SoftDSP framework with flexible media processing algorithms reduces the need to buy and maintain expensive hardware DSP boards.
- Sophisticated resource management capabilities improve resource utilization and supply the best return on investment.
- Support for the Media Resource Control Protocol (MRCP) standard expands your options by facilitating integration with best-in-class speech technology partners for automated speech recognition and text-to-speech functions.
- A modular software execution environment helps you adapt to a variety of infrastructures (packet networks, next-generation networks, alternative signaling methods, and third-party integration).
- Support for industry-standard IA-32 base servers running Linux enables you to standardize on low-price solution building blocks. Server support includes rack-mount ProLiant as HP c-Class blade support.

Enables innovation

HP OpenCall Media Platform provides fast time-to-market for new, innovative services allowing you to increase customer loyalty and increase average revenue per subscriber (ARPU) while reducing customer churn. It supports a large number of revenue-generating applications as it allows the development of the most up-to-date VoiceXML applications, as well as future IMS-based services with its MRF capabilities. A call-out manager can be used to create or schedule outgoing calls based on time or capacity availability. For service providers, the HP Rich Communication solution portfolio broadens the realm of cost-saving and revenue-generating applications. Solutions include:

- HP Call Completion & Messaging
- HP Network IVR
- HP Enterprise Communications
- HP Entertainment and Communities

Simplify and increase agility.

Increase agility through a single platform.

HP OpenCall Media Platform is based on industry standards: VoiceXML, CCXML, Java™. It then offers your developers the flexibility and convenience to select the right tool for the right application; Eclipse, HP OpenCall Studio and third-party service creation and execution environment.

HP OpenCall Media Platform provides:

- A VoiceXML 2.1 interpreter to enable easy implementation of voice applications, such as personal information management, and voice-enabled information services, such as stock tickers, weather reports, and directions
- A CCXML 1.0 interpreter that offers a standardized, flexible, and easy way of implementing call control features in conjunction with VoiceXML, such as different variations of call transfer and early media playback

Simplify management.

With VoiceXML and CCXML, the HP OpenCall Media Platform provides your company with the ability to centrally manage voice services along with other value-added services, reducing complexity and infrastructure investment. Operations are simplified with the powerful HP management environment, which affords:

- A Web-based management interface using a standard browser that enables the user-friendly configuration and operation of the platform
- Turnkey integration with any SNMP network management systems
- Rapid integration with standard management solutions or other operational support systems (OSS)
- A consolidated system view of multi-node configurations

Improve performance.

HP OpenCall Media Platform helps deliver a better end-user experience by enabling always-on media services that can scale as your business grows, while maintaining low-latency user interaction. These gains are enabled by:

- Scalability from tens to tens-of-thousands of ports using an open, distributed architecture
- An N+1 architecture that provides no loss of call capacity on server failure and no single point of failure for any system element

- The HP OpenCall SS7 signaling platform that allows high-availability deployments to operate as a single point code in the network
- A world-leading, efficient, fast, high-density VoiceXML 2.1 implementation
- Advanced VoiceXML caching, streaming, and pre-fetching functions

Mitigate risk for today and tomorrow.

Reduce the risk of business disruption.

HP's vast experience in migrating mission-critical telecom infrastructure solutions around the world plus leadership in voice competencies enables a smooth deployment of large-scale voice systems. The HP OpenCall Media Platform reduces the risk of business disruption and allows your organization to upgrade with confidence using proven HP experience.

Additionally, you can achieve rapid integration into the network with the widest range of connectivity and platforms. HP OpenCall Media Platform delivers and supports:

- E1/T1/ and VoIP connectivity
- Advanced signaling and networking technologies, such as SS7, SIGTRAN, Integrated Services Digital Network (ISDN), and Session Initiation Protocol (SIP)
- Small to medium to large service deployments, ranging from tens to tens-of-thousands of ports
- Industry-standard IA-32 base servers running Linux

Leverage global services and support.

HP combines a world-class product offering with a globally reaching service and support portfolio. This combination enhances your investment by mitigating risks, improving performance, and increasing execution agility. A suite of services is available to support your HP

OpenCall Media Platform deployment and operational lifecycle. Service capabilities include development assistance, integration, education, ongoing support, and incremental upgrades.

Relying on HP OpenCall support and services, you benefit from:

- The expertise of dedicated and specialized teams
- High availability of personnel, 24x7 support, and named points of contact
- The capacity to leverage best practices, based on our 15 years of experience and centralized infrastructure
- The ability to manage business-critical situations as a standard way of conducting business
- Proactive support that enables us to engage with you throughout the project lifecycle

Future-proof your investment.

HP OpenCall Media Platform helps protect the future value of your investment with MRF and video capabilities. The platform:

- Leverages VoiceXML and CCXML capabilities in your organization to capitalize on existing Web infrastructure
- Facilitates easy interoperability of application servers and media servers through HP VoiceXML software
- Comes with an asynchronous, high-level, powerful Java call control API for media resource allocation
- Offers a comprehensive software developer kit with a call emulation tool, allowing functional testing of developed applications without a live network connection
- Integrates with Eclipse, an open extensible integrated development environment (IDE), through an HP OpenCall Media Platform plug-in

Technical specifications

Linux platform	
Servers	HP ProLiant DL360, DL380, and DL380CG HP BladeSystem commercial and carrier-grade versions BL460 quad-core CPUs
Operating system	Red Hat Linux 5 (hardened configuration)
Signaling stacks	HP OpenCall USP-M (with MTP and SIGTRAN support); HP OpenCall SIP; EuroISDN for E1; NI-2 for T1
Network interfaces	TDM Media: PCIe—8 span T1/E1 TDM Signaling: PCI—E1/T1, IP IEEE 802.3u for 100Base-TX, IEEE 802.3ab for 1000Base-T Gigabit Ethernet
Compliance	
VoiceXML	2.0 and 2.1
CCXML	1.0 W3C working draft (no support for CCXML-based conferencing)
IN support	Support for SRF INAP CS1, CS1, and CAMEL PH2 and PH3; support for multi-lingual variable announcement
Fax	ITU T.30, T4, T6
RFC compliance	HP OpenCall Media Platform provides support for SIP standards as a User Agent Client/Server: RFC 3261, Session Initiation Protocol RFC 3262, Session Initiation Protocol/Reliability of Provisional Responses RFC 3263, Session Initiation Protocol/Locating SIP server RFC 3264, An Offer/Answer Model with the Session Description Protocol RFC 3265, SIP Events: SUBSCRIBE/NOTIFY RFC 2976, SIP INFO method RFC 3428, SIP extensions for I.M. RFC 2327, SDP DNS A records (RFC1035, Domain names) DNS SRV records RFC2782: a DNS RR for specifying the location of services) DNS NAPTR records (RFC 2915: NAPTR Resource Record) RFC 2916, ENUM RFC 3087, (Registration of Oclet/VXML application on SIP Request-URI) RFC1889, Real-time Transport Protocol (RTP)
ASR/TTS and pre-recorded languages	MRCP 1.0 Nuance Speech Server 5.0, Nuance RealSpeak Telecom 4.5, Nuance Recognizer v9, other MRCP-compliant speech resources; contact HP for details, prompt-based variable announcements (currency, dates, time, etc.)
Grammar support	XML form W3C SRGS (speech recognition grammar specification); built-in grammars (DTMF, voice)
CDR support	Call-based XML formatted CDRs (Call Data Records)
Management	SNMP and Web-based
Developer tools	Eclipse IDE HP OpenCall Studio, third-party graphical service creation environment
Media processing functions	DTMF generation and recognition in-band and out of band RFC2833 Codecs: G.711, G.726, GSM 06.10, G.729a, G.723.1, and recording volume control, speed control, automatic gain control, comfort noise generation, voice activity detection, end-pointing, echo cancellation, conferencing, RTP, FSK Protocol 2 and 1, VCR audio controls through VoiceXML HTTP, audio streaming through VoiceXML
Network interfaces	IEEE 802.3u for 100 Base-TX, IEEE 802.3ab for 1000 Base-T Gigabit Ethernet

Gain long-term viability.

The HP commitment to standards gives you the confidence that the HP OpenCall Media Platform can support the innovative services of today and the future. With leadership in the World Wide Web Consortium (W3C) and the VoiceXML Forum, HP paves the way with VoiceXML and CCXML. HP OpenCall Media Platform offers support for best-in-class speech technology through MRCP.

Committed to offering support to its leading Signaling System 7 (SS7) product portfolio as well as packet-network standards such as SIP, HP has emerged as an innovator in the networking space. In addition, the HP OpenCall Media Platform roadmap includes support for IMS MRF deployments.

With capabilities like these, the HP OpenCall Media Platform is a good choice for service providers and developers who want to take advantage of existing and emerging standards for innovative services.

A complete solution**The smartest way to invest in IT**

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Ordering information

For information on ordering HP OpenCall Media Platform solutions, contact your HP OpenCall sales representative.

About HP OpenCall**Leading carrier-grade platforms**

HP OpenCall software is an integral part of HP portfolio of wireline, wireless, IP, and media solutions, enabling service providers to transition to IMS-based networks and effectively manage the triple play of voice, data, and multimedia services. Deployed in 40 of the world's top 50 service provider networks, HP OpenCall is the market leader in many industry categories, facilitating the convergence of the Internet with the world of voice communications.

Technology for better business outcomes

To learn more, visit www.hp.com/cms

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