

A POLYCOM WHITEPAPER

Polycom and BroadSoft Help Service Providers Move from Hosted Voice to Cloud-Based Unified Communication Services

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Executive Summary

On November 8, 2010, Polycom and BroadSoft announced the extension of their relationship and the creation of the BroadCloud™ video-enabled unified communications (UC) cloud solution that will allow service providers to lower the cost and complexity of deploying and using business-to-business (B2B) telepresence and high-definition (HD) voice solutions for organizations around the globe.

The solution will drive market growth through the rapid adoption of UC, and will give customers end-to-end HD voice and video communications capabilities, open interoperability with other standards-based UC systems, and B2B telepresence applications.

This cloud offering is designed to help service providers cost-effectively extend their hosted telephony services to address the global, hyper-growth market for hosted and managed UC services, projected to reach approximately \$6.2 billion by 2014.¹ Since small and medium businesses (SMBs) benefit the most from hosted communications services, it is expected that the new BroadCloud video service will dramatically increase video adoption in the SMB market segment.

This paper describes how the collaboration between Polycom and BroadSoft will help service providers move from hosted voice services to much richer unified communications services leveraging the Cloud.²

Introduction

Polycom is a leader in voice and video communications and has established itself as a major player in the UC space through Polycom Open Collaboration Network partners that includes major players in the UC market. BroadSoft—a key Polycom Open Collaboration Network partner—is a leader in hosted voice communication services, and its BroadWorks™ platform has been deployed by more than 150 service providers worldwide.

Polycom and BroadSoft have partnered since 2002 to make hosted Voice over Internet Protocol (VoIP) a commercial success. While BroadSoft focuses on advanced call features and carrier-grade scalability and reliability, Polycom delivers premium voice quality, a complete endpoint portfolio that addresses the needs of SMB and enterprises, and an intuitive user interface. This winning combination overcame critical issues in initial VoIP deployments and has led to numerous successful mass deployments in recent years.

With video quickly becoming a requirement for business communication, Polycom and BroadSoft are expanding their relationship to enable cloud-based UC services, including hosted video services.

What Business Wants

Businesses are looking for ways to reduce communication costs and to escape the fast technological obsolescence of on-premise equipment. 'Pay only for what you use' is a very attractive proposition, especially for SMBs that do not have large IT departments to support on-premise systems, whether voice or video. Larger organizations, for example in education and government, also often prefer hosted services for their flexibility.

Consumer grade services such as Skype are sometimes used, but in SMB environments they do not provide the quality required and limit the options for accessing audio and video services to a single "soft client" with inconsistent support. Like enterprises, SMBs require a broad range of access options, including conference phones, office phones, soft clients, business media phones, video endpoints and so on, to address the needs for personal and group communications. Service providers should be able to support a wide variety of endpoints to meet these requirements.

In addition to voice and video services, businesses need access to presence, instant messaging, and directory services that are intrinsic part of UC. Businesses are accustomed to the seamless connectivity that the combination of VoIP, SIP trunking and the Public Switched Telephone Network (PSTN) provide. They expect UC services—video, instant messaging, and presence—to work not only within the organization (intra-company) but also across organizations (inter-company or B2B).

Finally, businesses are often overwhelmed by the complexity of UC integrations and are looking for a way to simplify UC deployments while keeping the cost low and predictable.

Hosted Voice Communication Services

Hosted voice communication technology has made spectacular advances over the last decade, while the business models in the space have matured and are now well established in the industry. To control cost, service providers use "multi-tenant" functionality in service provider-grade equipment. This allows multiple organizations to leverage a common, robust service provider infrastructure while keeping their communications completely independent from one another. Serving numerous customers with the same pool of resources allows for economies of scale that are not possible in on-premise deployments. Service providers can therefore offer better and more predictable service costs to customers.

Since the infrastructure components are hosted by the service provider, a customer only needs to purchase or lease the on-premise equipment, not the entire infrastructure. This dramatically reduces the initial deployment cost. To control the cost of managing the on-premise equipment and avoid the dreaded "truck roll," service providers deploy auto-provisioning technology. Zero Touch Provisioning, or ZTP, is the latest iteration of this.

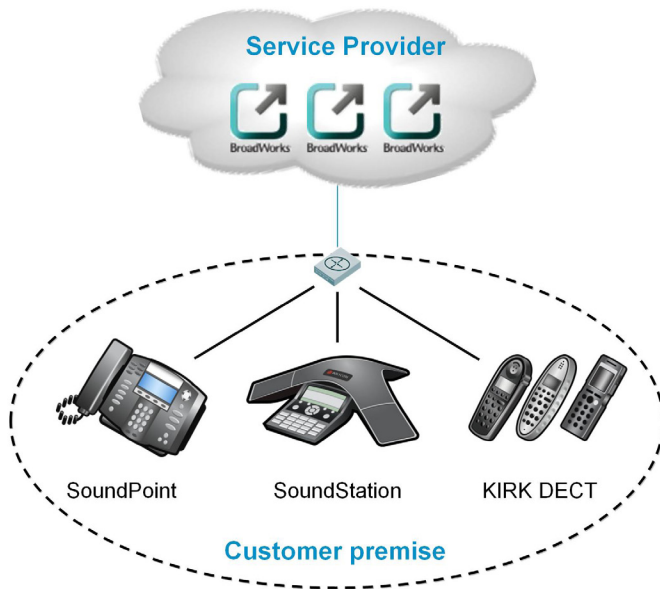


Figure 1: Hosted voice communication services using BroadSoft and Polycom equipment

Figure 1 depicts a typical hosted voice configuration, in this example using the BroadSoft/Polycom solution.

Hosted solutions based on BroadSoft and Polycom equipment provide exceptional investment protection for both Service Providers and their business customers. BroadWorks is entirely based on the Session Initiation Protocol (SIP), a stable and mature standard now widely adopted in VoIP applications. Polycom endpoints, which also implement the SIP protocol, are not only very reliable and easy to use but also extremely easy to integrate, deploy, and manage. These endpoints also support leading-edge technologies such as minimum touch provisioning, VLAN discovery, and voice quality metrics monitoring. Seamless integration with the BroadWorks platform has grown from the close collaboration between Polycom and BroadSoft in the standardization process, and from continuous interoperability tests over years.

BroadSoft BroadWorks

The BroadWorks platform includes application servers, network servers, and voice conferencing servers that allow the building of scalable networks. While a single application server can support around 50,000 users (or “subscribers,” in SP terminology), a network of servers on the BroadWorks platform can scale to 20 million users. Gateways assure connectivity to other networks, such as PSTN, while the SIP Connect specification—adopted by the SIP Forum³ as a basis for SIP trunking interoperability—allows replacing the traditional T1 links between businesses and service providers with an IP connection.

The application server provides call control, and allows for configuration of user profiles—either individually or in groups. While this can be managed through an intuitive Web user interface, most service providers rely on BroadWorks’ built-in import and batch capabilities to easily and accurately create large user groups

leveraging the information in their existing subscriber database. This application server uses the available configuration of user information to create individual configuration files for the devices and clients assigned to each user. The configuration files can then be stored on the application server or—in scalable deployments—on a separate provisioning server, thus enabling very large numbers of Polycom endpoints to retrieve configuration information upon startup and when configuration changes occur.

The voice conferencing server allows features such as multipoint voice conferencing to be activated by the BroadWorks user with a single click. The conferencing server connects multiple voice media streams, collects DTMF input via a built-in Interactive Voice Response (IVR) function, provides this input to the application server for processing, and then executes commands from the application server. It therefore behaves as a typical media server, as defined in the IP Multimedia Subsystem (IMS) and other modern service provider architectures.

Polycom Endpoints

Polycom provides an unparalleled range of endpoints for BroadWorks-based hosted communication services, enabling extraordinary interoperability among environments that range from personal audio devices to room-scale HD video conferencing with HD voice. The Polycom endpoint portfolio today includes Polycom® SoundPoint® IP desktop phones and Polycom SoundStation® conference phones, as well as Polycom KIRK® DECT wireless handsets that can easily connect to BroadWorks through the KIRK Wireless Servers 300 and 6000. The Polycom portfolio has recently been extended to include video-capable devices such as the Polycom VVX® 1500 business media phone, and the entire family of Polycom HDX® video endpoints. Further wireless and video capable endpoints will be added in 2011.

Polycom endpoints deliver industry leading innovations, such as the latest advances in HD voice technology with patented Polycom Acoustic Clarity™ technology II, in one powerful package. Polycom remains a leader in developing advanced codecs to reliably deliver high-quality media over diverse channels. Since creating the open-standard G.722.1 and G.722.1 Annex C (Siren7, Siren14) HD voice codecs and making them available royalty-free, Polycom has co-developed the G.719 full-band 20kHz codec, and supports these and a variety of other codecs to ensure maximum interoperability with BroadSoft.

Advanced Polycom-BroadSoft Interoperability

Interoperability between Polycom and BroadSoft has evolved over time and now includes all areas from call control to endpoint provisioning. Polycom endpoints authenticate and register with BroadWorks servers. They leverage the SIP protocol to place and receive calls as well as to activate a long list of telephony features, such as hold, transfer, forward, conference, and multiple line appearance. Through the advance call control functionality in BroadWorks, users can leverage BroadSoft’s soft client to control functions on the Polycom endpoint.

When Polycom endpoints on BroadWorks connect directly, the users enjoy all benefits of HD voice. BroadSoft is working to enable HD voice on its voice conferencing server, so that HD voice can be used in multipoint voice calls.

Polycom endpoints support advanced application development through Application Programming Interfaces (APIs) for partner developers. BroadWorks also has APIs that allow for customization of the user interface. Service providers or other BroadSoft and Polycom partners can use the endpoint and soft client customization options to create unique user interfaces for their customers and users. Examples of such applications are account billing codes, integrated dialers, and paging/alerts, as well as integrations with Salesforce.com, Microsoft® Outlook®, and IBM® Lotus® Sametime® solutions.

Both BroadWorks and Polycom endpoints support an advanced, secure provisioning mechanism based on XML and HTTPS. Configuration data for the endpoints is automatically generated in XML format when a new user account is created. Once the Polycom endpoint comes on line, it uses the secure HTTPS protocol to contact BroadWorks and to download its unique configuration file. The provisioning mechanism also allows for quick updates of configuration files, and automatic distribution of updated provisioning information to thousands and potentially millions of Polycom endpoints in the network.

As a result of this seamless integration between Polycom endpoints and the BroadWorks platform the number of support calls is held to a minimum, which leads to lower operational cost for hosted voice service providers.

The New Competitive Environment for Service Providers

With more than 500 million users around the globe, Skype has emerged as a new kind of a service provider that offers free IP-to-IP calls and low rates on international calls. Google has also entered the market with Google Voice and promises to further lower the cost of regular telephony. Both Skype and Google are shifting focus to business customers, with Skype recently hiring Tony Bates from Cisco (whose background is in business applications) as their new CEO.

Both Skype and Google services are cloud-based and rely on the strategic advantages that cloud implementations have in terms of scale, reliability, and—some even say—security, although this last advantage is debatable. These companies are driving voice to become a commodity and a utility.

Service providers therefore need to take their services for enterprises and SMB to the next level by offering business-quality video, instant messaging, presence, and other UC services—in addition to voice. Service providers also have to leverage cloud-based architectures for further gains in the areas of scalability, reliability, and accessibility.

From Hosted Voice to Cloud-Based UC Services

Service providers are a powerful ally to UC vendors in their effort to roll out UC services across enterprises and SMBs. They have experience developing new services, testing and hardening them, and then rolling them out to large numbers of customers.

At the BroadSoft Connections conference in October 2010, BroadSoft announced the new BroadCloud™ services⁴ including instant messaging, presence, video, and Web conferencing. This announcement marks an important milestone towards offering video service that service providers can resell. Polycom is BroadSoft's technology partner in the video services area, and Polycom RMX 4000 conferencing server(s) are at the core of the BroadCloud offering.

While voice service providers have been looking for ways to add video to their offering, the cost of the video infrastructure has been a major obstacle and barrier to entry. With BroadCloud, service providers who have BroadWorks systems in operation can configure them to access multipoint video services in the cloud, thus eliminating equipment investment. Figure 2 depicts such a configuration.

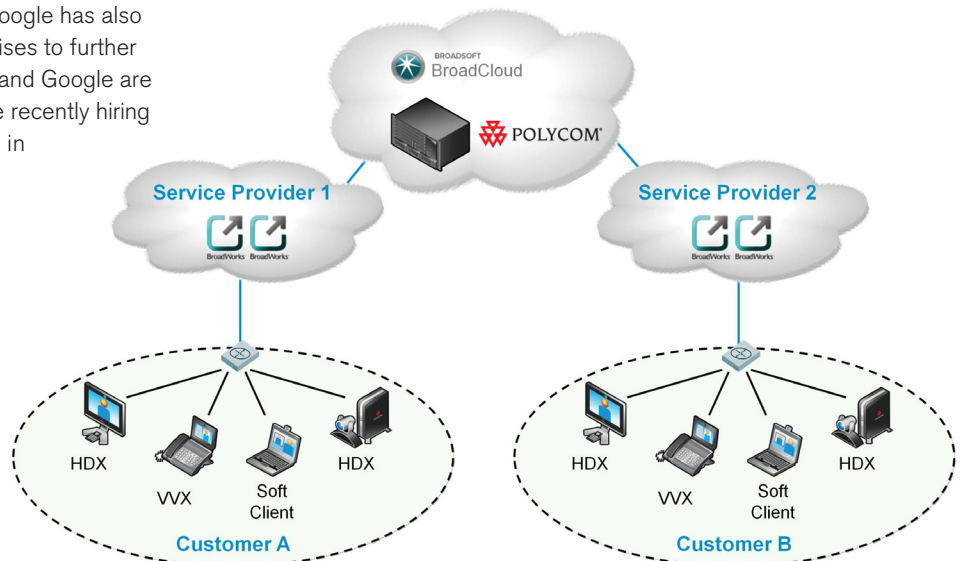


Figure 2: Multi-point video services through the BroadCloud

The BroadCloud service enables advanced video communication functionality embedded in Polycom VVX and HDX endpoints. Entering a multipoint conference call is as simple as dialing a number configured on BroadWorks. Multipoint conferencing allows for screen layout control and continuous presence, while BroadCloud also enables Polycom-exclusive technologies, such as H.264 High Profile⁵ technology that allows service providers to save precious bandwidth on the interface between customer premise and service provider's data center. An H.264 High Profile implementation can save up to 50 percent on network bandwidth (compared to common H.264 Baseline Profile implementations), and is now supported by Polycom HDX endpoints as well as by the Polycom RMX[®] conferencing servers deployed in the BroadCloud.

Note that the customers in Figure 2 may be small, medium, or large enterprises. They may access video services independently, and use Uniform Resource Identifier (URI) dialing to reach "off-net" destinations outside the organization. Another option for B2B communication is through one of the emerging telepresence exchanges that maintains connectivity and dialing information and facilitate calls across organizations. The exchange function is not in the scope of the BroadCloud today.

BroadCloud users who have Polycom endpoints will also enjoy HD voice and HD video capabilities. For example, HDX to HDX connections over the BroadCloud will result in the highest audio quality (here, the preferred codec is G.719 for transparent 20kHz sound in both voice and music) and the highest video quality (up to HD1080p using H.264 High Profile technology).

Conclusion

Polycom and BroadSoft continue to expand their partnership to help service providers evolve their hosted voice services to cloud-based UC services required to compete in new markets. The long-standing partnership that started back in 2002 and made hosted VoIP a reality is now leveraged by the two companies together to deliver video services to a wider customer base.

Cloud services are a disruptive technology that will increase competition as regional service providers face new competitors such as Skype and Google.

The trend toward cloud services is having a powerful impact on voice and video communications and requires new business models and innovative communication technology. Cloud services call for reducing complexity in video infrastructure, so that scalable and inexpensive video networks can be built by service providers. Polycom recognizes these challenges, and is leading the market in its announced plans to develop new technologies⁶ and through openly sharing a detailed understanding of their benefits.⁷

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