

CLOUD COMPUTING

BREATHES NEW LIFE INTO VIDEO CONFERENCING

By Tom Toperczer

Cloud computing, whether implemented internally or consumed as an online service, is an effective technology for better utilizing shared resources. Storage management, online backup, and customer relationship management (CRM) are examples of applications where cloud-based offerings have met with widespread adoption. Today, even hold-out applications such as video conferencing are available via cloud-based delivery. When implemented properly, cloud-based video conferencing leverages virtualization to deliver load balancing, automated failover, and scalability. More importantly, cloud computing moves video conferencing infrastructure – well known as an ‘island of computing’ – under managed service and virtualization strategies prevalent in most mid- to large-sized IT departments today.

It should be noted that financial service firms operate under regulatory requirements concerning customer communications and public forums, among others. An important capability in video conferencing is ‘Recording,’ the ability to record all communications – all audio, video, and live sharing – that occurs during a session. Such requirements may or may not apply to internal and B2B sessions; consult your own company policies and qualified legal counsel regarding regulatory topics.

Until recently, only one video conferencing architecture existed: installed-site, room-based systems. If more than two sites – called endpoints – are involved, infrastructure components such as multichannel units (MCUs) are required.

Today, the industry landscape has changed dramatically. Apple®, Skype®, and others render consumer-grade video to millions daily, fueling greater demand for video conferencing in businesses. However, while these consumer products may be adopted in some business settings, their inability to ensure continuous high-quality video, security, and operation over branch office and private networks preclude their use in most financial

services institutions. As a result, these institutions are increasingly turning to cloud-based video conferencing to deliver high definition (HD) video to desktops and conference rooms.

Installed-Site Video Conferencing Systems

The installed base of standalone video conferencing systems such as those sold by Polycom® and Tandberg® has grown steadily over the last two decades, with pronounced increases in recent years due in part to travel limitations.

This architecture relied on fixed bit-rate video encoders and decoders (e.g., H.263, H.264) and dedicated network routes to guarantee high video quality. While some multichannel mixing, typically up to four channels, and H.239 data sharing capabilities have recently been built-in, such systems still require detailed bandwidth, network route, and port capacity planning.

As such, companies have been forced to adopt one of three infrastructure strategies for the system: entirely outside the firewall, entirely on a private network for internal-only conferencing, or outsourced to a facilities management firm. Regardless of the configuration, the result for IT is the same: islands of computing with no provision for load balancing, failover, and scalability—all fundamental requirements as demand for video conferencing grows beyond the boardroom.

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Cloud-Based Video Conferencing

Cloud computing is a proven architecture that addresses most of these issues. When combined with end-to-end parallel processing and variable bit-rate or dynamic scalable video, this architecture can deliver multipoint HD video to business desktops and rooms, adjusting video quality based on real-time network conditions. Security is always a concern – whether video infrastructure is on-premise or cloud-based – and in addition to confirming encrypted communications, users must be aware of their responsibilities regarding their login credentials, content, who attends, and any associated privacy requirements..

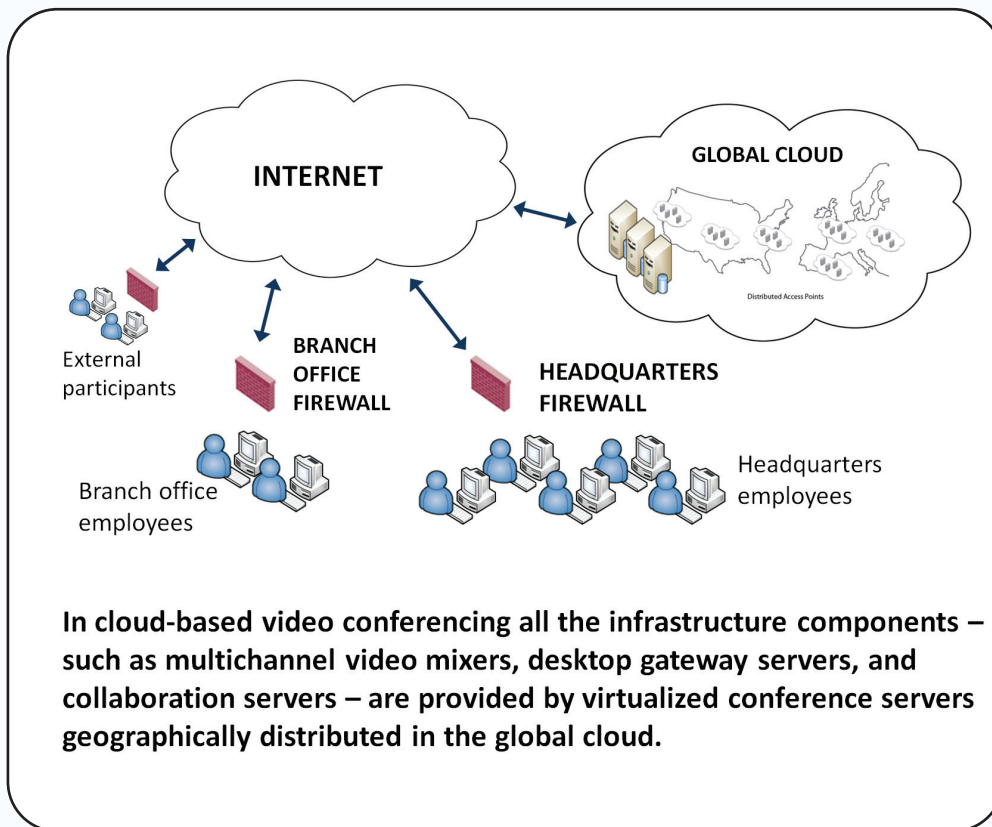
sessions. The required gateway service, proxy and firewall traversal components are all provided via the cloud.

A refined implementation, such as that shown in the diagram, leverages proximity heuristics to virtualize video conference sessions in close geographic and ping-time proximity to participants. Such optimization is simply not possible with infrastructure that relies on static routes.

A Better Fit with Virtualization & IT Management Strategies

Cloud computing treats video input as a peripheral function, providing all other infrastructure capabilities,

including video mixing, desktop gateway service, and seamless collaboration, through virtualized resources in the cloud. Depending on the implementation, this architecture has functional advantages over installed-site systems, such as external desktop reach and more powerful live sharing tools. Moreover, cloud computing and its virtualized resources provide load balancing, failover, and scalability, providing a better fit with today's IT management strategies for providing and maintaining business-critical services.



Among the benefits of the cloud-based approach is removing the barriers between 'all outside the firewall' and 'all on the private network' configurations described above. Now IT staff can elect to support both employee-only and internal-external conferencing

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