Central Queensland University, Australia, Implements IP Video Conferencing for Teaching with RADVISION Technology

About

Customer: Central Queensland University

Country: Australia

Industry: Education

Product: RADVISION's video conferencing infrastructure including Multipoint Conferencing Unit (MCU), IP / ISDN Gateway and ECS H.323 Gatekeeper application

About Central Queensland University

Central Queensland University (CQU) has almost 20,000 students located at more than a dozen learning facilities across Australia and Asia Pacific. The university has traditionally provided well designed printed notes for its distance learning students (67% of its domestic students participate in distance education). Some of these materials are supplemented by audio and video recordings and audio conferencing. Since 1992, video conferencing has been progressively installed and used for teaching across all campuses of the university.

The Mission

CQU operates 12 video conference teaching facilities for over 120 hours of teaching and 10 hours of administrative purposes per week. Video conferencing is a critical part of CQU's operation. Conferences commence automatically on the hour, lecturers control the video and audio sources during their presentations and students can interact via desk microphones that activate the camera to auto-zoom on the student speaking.

Video conferencing has been 384k ISDN-based using a 12-port ISDN MCU and endpoints operating at H.261 CIF (352 x 288) video resolution. This has presented several reliability and support issues and with a 12-port MCU limit there has been no room to grow. The CIF resolution has meant that the document camera and PC video were acceptable but not high quality images. Video conference calls were also competing with inter-campus PBX-to-PBX calls and there were significant call dropout problems.

The Challenge

The challenge was to converge operations onto a single network infrastructure with an IP-based system that could provide greater bandwidth and better video and audio quality more cost effectively. The system also needed to provide higher call reliability with shorter call connection times. Lecturers at CQU have used video conferencing for several years and are familiar and comfortable with the operation and interface. Any new system had to support the current user paradigm. The technical support team also needed a web based interface for system administration and operational support, and the ability to monitor conference status in real time without affecting the conference.

The Solution

CQU researched extensively with a specific set of criteria to meet their technical, administrative and educational requirements. The final solution included a 100 port RADVISION MCU with H.323 and SIP support, plus a 60 port MCU for user self-serve video conferences. The Gatekeeper is a RADVISION ECS H.323 Gatekeeper (installed on mirrored servers in failover mode) and the IP/ISDN Gateway is a RADVISION PRI Gateway.

The endpoints are from Tandberg and the conference scheduling/reservation and monitoring system is VisionNex VCS. The RADVISION and VisionNex equipment, along with installation and network testing, was provided by Broadreach Services.

The Benefits

The new RADVISION video conferencing infrastructure has resulted in improved video transmission quality at considerable savings. Reliability has improved with a call completion ratio now over 99% (the previous ISDN system was approximately 90%) and reduced connection times. The system also provides enhanced user support with Web-based interfaces, a real-time conference monitoring interface, along with remote conference observation and conference recording from support staff offices. These capabilities allow the small technical support team to be more efficient and cover more conferences across a larger area without having to travel.

Within weeks of the release of the new system, students and lecturers were expressing their delight with the improved quality provided by 768k 4CIF video conferences. The improvement in quality was particularly evident in subjects that rely on high-quality video transmission; for example, multimedia studies. The 'ready-to-roam' nature of the new system allows staff to plug in to the CQU network from wherever they are and automatically be up and running. The support team assigns a permanent 'video extension number' to each staff member or video conferencing system. No matter where the video conference endpoint is plugged in, it is automatically assigned an IP address (DHCP), and registers to CQU's H.323 Gatekeeper. The endpoint is then ready to make and receive video calls.

Personnel who are away from their usual campus are able to deliver lectures or attend meetings from any CQU campus with a sufficient wide-area-network connection back to the main campus at Rockhampton. A recent example of this was a music lecturer who traveled several thousand miles from Rockhampton to CQU's Brisbane and Melbourne campuses over a 2-week period, and was able to continue to deliver the usual weekly lecture and tutorial to his students in Mackay and Rockhampton via his laptop equipped with a webcam.

Looking Forward

"The next phase of the project will take advantage of the low costs associated with IP Internet connections to make video conference lecturing to CQU's International campuses more cost effective," said Shaune Sinclair, Manager, Flexible Delivery Support. "We're also planning to provide users with self-serve video conference services such as scheduling their own multipoint conferences."

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