Removing Barriers to Communication for an Elite Academic Institution

While many universities around the world conduct collaborative learning programs, this particular academic institution is moving towards a deeper, high-profile focus on the interaction between Asia and the west with its education program. Every year, a select group of students from highly selective American and Asian colleges and universities engage in an intensive 1-year Master's program with concentrations in economics, public policy or education. These students are competitive yet compassionate, worldly yet down-to-earth, and interested in making a difference in the world. Together, these students collaborate to enhance their management and leadership capabiities across cultures.

A key component of this collaboration is videoconferencing. The institution regularly invites guest lecturers to speak on topics within the geopolitical and economic spectrum. The institution also records and saves these lectures for later use. Many of the guest lecturers are well-known, high-profile political figures or former/retired top government officials who want to be in a position to speak candidly. In some cases, the officials or political figures are in the United States or a western European capital and are speaking via teleconference with students in China. These lectures are recorded in the institution's location, then backed up to a offsite location in the US. So from a network and IT management standpoint, one of the biggest headaches for the institution's IT staff is ensuring secure WAN access and later use of the recorded lectures.

The institution's Program Director has this to say about UMBRA second generation SD-WAN: "Being a new program, aiming to be a world class educational institution with alumni achievements rivaling those of Rhodes Scholars in the future, it has been critical for us to attract high achievers, both as scholars and as lecturers. We could not have done that without the use of UMBRA's Secure Network Optimization Service".

The institution's IT staff needed secure off-site disaster recovery, and flawless videoconferences. Chained caching with enhanced protocol neutral security, and lossless compression were key capabilities of UMBRA Technologies' SNO Service needed by the institution.

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The academic institution uses UMBRA's Secure Network Optimization ("SNO") Service for improvements in long distance video conferencing. And because a key feature of the SNO service is chained caching, daily backups can be moved from the high-end data center in the institution's basement to a remote site on the other side of the world for secure third party backup and disaster recovery options through a secure connection built by the institution's managed service provider in the US.

Chained Caching is a key feature of the SNO service, and a core part of UMBRA's Global Virtual Network (GVN). When moving large data volumes around the world, the transport needs to be as efficient as possible, and UMBRA's GVN makes that possible by taking advantage of the interconnected states of datacenters. Third party experiments have shown significant speed increases and reduced file delivery time by a factor of 10 over the GVN, all while the customer can deploy their own security tunnels to make sure their data backups are not compromised.

UMBRA's GVN grid already ensures optimal routing for any destination around the world. This routing avoids congestion points reduces latency and other network anomalies that would otherwise impact the quality of the live video feed between the lecturer and the student. Additionally, lossless compression is an important component in a high quality video experience.

Many solutions that accelerate or optimize an internet connection do so by compressing the data so that they are able to push more data through the existing internet connection. Compression works well for file transfer and other static content. UMBRA's GVN takes advantage of maximum compression through use of chained caching when transporting static data. But for live video or video-conferences, compression of the data stream can lead to rapid reduction in video frame-rate.

UMBRA's GVN avoids this frame-rate reduction through, among other methods, avoiding bloat in the packets transmitted and adjusting compression levels and transfer buffering rates based on overall network conditions.

Lastly, because of the efficiencies achieved by UMBRA's SNO Service, the institution's overall bandwidth needs has been kept at a reasonable level, eliminating the need for costly Enterprise WAN Connectivity solutions or more costly SD-WAN solutions. This allows the institution to focus financial resources on scholarly satisfaction and the overall learning environment.

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