Broadcaster Media Network Case Study | Al Jazeera

A Media & IP Unified Network for Broadcast

The Company

Al Jazeera is a leading global media network with more than 70 news bureaus around the globe and multiple international news channels. Known globally for its factual, fair and evenhanded coverage, Al Jazeera has won many prestigious awards for journalism including the Emmys, the Gracies, the Peabody's, the Franklin D. Roosevelt Freedom Award and the DuPont Award. Al Jazeera is reshaping global media and constantly working to strengthen its reputation as one of the world's most respected news and current affairs channels

شبكة الجزيرة الإعلامية
ALJAZEERA MEDIA NETWORK

The Issue

Al Jazeera Media Network was pioneering in its adoption of the digital transformation process that began in the media industry a decade ago. In 2006, it launched Al Jazeera English, the first 24-hour international news network to implement a complete High Definition file-based workflow, connecting London, Washington DC, Kuala Lumpur and the headquarters in Doha.

While it was groundbreaking at that time to implement a complete file-based workflow in individual locations, the real challenge was to move petabytes of HD video between these locations in a fast, efficient and timely manner. Initially, traditional baseband transfer methods were employed to play out a video file, streaming it over the network, ingesting it on the other location, and editing it for production and transmission.

This workflow needed to be improved and a system was put in place comprising of IP (Internet Protocol) circuits over fiber that offered the option to scale up or down based on the file size. WAN accelerators were also employed to get the best performance out of the available bandwidth.

The challenge however was to enable live video services QoS (Quality of Service) on top of an SDH (Synchronous Digital Hierarchy) infrastructure and translate the broadcast requirements into a format for telcos.

It took time for the telco operators to adjust to the broadcast requirements. Studio feeds, DTLs (Down the Line video circuits) and image frame quality had to be adjusted to meet SDH performances and capabilities.

The inter-site file-based transfer workflow eventually was widely adopted and overtook the traditional baseband and satellite video services. This resulted in massive resource efficiency and cost savings being achieved.

The Solution

In 2014, with the growing demands of the Al Jazeera Media Network, which is now comprised of the Arabic, English, Mubasher, Documentary and Balkans channel, it became evident that a move to a converged media network was required as this would not only cater to the existing demands, but would also be able to sustain the future demands of the news network and enable a fully distributed workflow. Such a network would be the core of the production workflow process and would thus require both high reliability and operational flexibility.

Further, a new requirement of the network was to increase content sharing between the channels, connect Doha headquarters with the 70 bureaus around the globe and to have content reach any consumer or viewers wherever they were located. It became clear that to

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design and implement a network that could deliver on this vision and be able to carry critical video and IP services while remaining cost effective would be a challenge.

Following studies undertaken by the Al Jazeera Technology teams it was concluded that a network that combines the best of both SDH and Multiprotocol Label Switching (MPLS) in the transport network would meet these requirements, and a decision was made to build the Al Jazeera Global Media Cloud.

The Global Media Cloud is a highly reliable and flexible core network, without any single point of failure and connects the major core locations of Doha, London, Washington DC, and Sarajevo.

Running video and IP data services over the same networks is challenging. Traditionally, the SDH network had provided a perfect environment for broadcast services in terms of quality, but offers low flexibility to cope with the changing demands of a media production environment. The IP networks, on the other hand, provide the flexibility that a news network requires to scale up/down the usage on demand, but don't offer enough assurances to run critical video services. Hence, Al Jazeera employed a balanced mix of these technologies to optimize both the quality and flexibility of the networks.

The network was built to enhance the quality, flexibility and reliability of stand-alone IP/MPLS or SDH networks, in order to cope with the future of broadcast networks which will increasingly be IP-based.

The old IP/MPLS data networks needed enhancements to provide better control of jitter and wander phase variations, applying the right QoS, employing strict congestion controls; also stringent performance monitoring and SLA was needed to satisfy the broadcast expectations. In addition, the IP networks support all native audio and videos services such as ASI, HD/SD-SDI, AES, etc.

The Results

This core network now connects over an optical SDH network employing Net Insight's Nimbra MSRs (Media Switch Routers) to provide the necessary flexibility and reliability for a fully distributed workflow needed for the attainment of both 100 percent QoS for video and IP data services. The network provides both point-to-point and point-to multi-point video circuits with 100 percent quality of service (QoS).

The new network will in the future also act as a core aggregation conduit for connectivity out to the 70 bureaus enabling a true end-to-end solution for a fully distributed workflow with improved overall reliability and quality of service.

This solution also provides performance-monitoring statistics per service deployed as well as management reporting on the underlying links to equip Al Jazeera with better control and visibility of the health of the entire network and services.

As a result, staff can now access an efficient global news gathering network that enables reporters and content contributors in all corners of the world to work as if they were actually sitting in the Doha newsroom production environment.

4K, production in the cloud, interactive TV, fragmented distribution platforms and devices are all new trends that will continue challenging the video networks. The new Al Jazeera network is built to be able to cope with these new trends and enable a smooth transition to a future TV experience for its viewers.

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