CASE STUDY

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Network TEN Expands Omneon Spectrum™ Installation

The Challenge

Network TEN, one of Australia's three major commercial television networks, feeds 24-hour continuous SD and HD services across several time zones spanning more than 7.7 million square miles.

An early adopter of Omneon servers, TEN first implemented Spectrum media server systems to enable the ad hoc time delay of live sports broadcasts. Having gained confidence in the stability of the Omneon product, the network deployed additional Spectrum servers along with Harris D-Series automation to play out all commercials, promos, and other short-form interstitial material.

Omneon server systems next spread into TEN's news production area. Following the success of the server-based news production, TEN then embarked on an all-encompassing project to implement a complete tapeless content management system for all on-air material, including preparation, production and storage of long-form programs in both SD and HD.

Network TEN's Sydney presentation control desk

Chief among the challenges in defining and implementing an IT-based tapeless production and content management system was the need to create a bridge between baseband streaming video inputs and outputs and a new IT storage and processing platform from IBM. The network required a media server system that could serve as such a bridge, accommodating best-of-breed IT storage and processing systems, as well as the demands of baseband A/V encoding, decoding and synchronization. To ensure an effective and stable integration of these systems, Network TEN engaged IBM Australia as the prime contractor and system integrator for the project.

SOLUTION AT A GLANCE

Australia's Network TEN expands its Omneon Spectrum media server installation and third-party integration to support its migration to a stable, streamlined tapeless production and playout environment.

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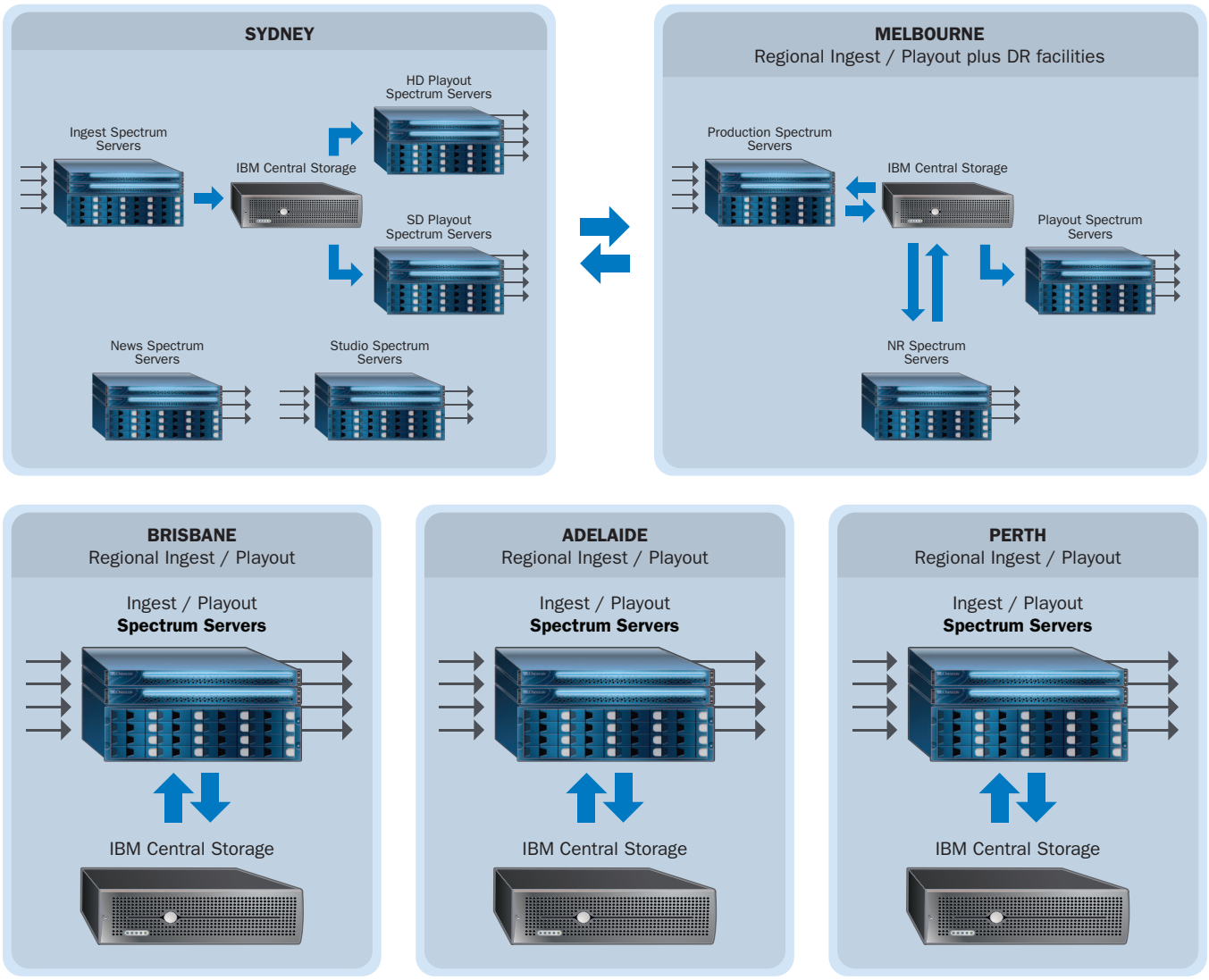

Simplified block diagram for Network TEN

The Solution Implemented

Omneon Spectrum servers provide Network TEN with the perfect gateway between the pure IT domain of IBM's core storage infrastructure and the broadcaster's baseband video and audio signals. In addition to handling all the detailed requirements of non-stop synchronous television signal processing, the Omneon systems offer functions such as closed caption standards conversion on the fly. The Omneon Design and Development department worked with TEN's engineering team to optimize the Spectrum systems for operation in accordance with Australia's closed caption standards.

In addition to the integration of Omneon Spectrum systems with the IBM core storage infrastructure, the installation called for close work between IBM Australia and vendors such as Avid, Vizrt and Harris. IBM Australia acted as the coordinator of VizRT Ardendo and took responsibility for the system integration.

Viz Ardome provided the media asset management and workflow automation functionality, as well as about 90 percent of the desktop editing function within the news production area. Avid desktop workstations support all other content editing requirements. TEN uses EVS servers for live delay and turn-around of its real-time sports broadcast feeds. A Pilat scheduling system manages all the upstream playlist creation and content registration and rights management. An IBM Tivoli Storage Manager and LTO tape library serve as the hardware core of the system, which is surrounded by a layer of Omneon Spectrum servers.

The Result

In 2009 the new platform at Network TEN was completed and taken online, allowing all viewers of Network TEN services to enjoy high-quality and stable programming, due in part to TEN's universal deployment of Omneon Spectrum servers for ingest and all forms of playout. The three services delivered from this platform are "One HD," a-24 hour HD sports channel in 1080i/50 format; "Ten," an SD channel in 576i/50 format that also is simulcast on the legacy analog transmitter network; and a 576i/50 digital simulcast of One HD.

Six concurrent ingest ports (mirrored) provide 60 hours of ingest server capacity for Network TEN. The network ingests SD content as IMX 50-Mbps MPEG-2 files, HD content as DNxHD 120-Mbps files, and commercials as 15-Mbps MPEG-2 files. The DNxHD codec has been fully integrated with the Omneon Spectrum ingest and playout modules, and the finished ready-for-air program content arrives in the Omneon servers directly from the VizRT Ardome Media Asset Management system. Extensive support for the Omneon server API was developed within the Viz Ardome asset management system and the Harris D-Series playout automation.

The Spectrum servers in the main playout system maintain three to five days of active on-air content. The Spectrum servers in the news department keep about three days of active content online.

To simplify the system and thereby reduce the complexity of A/V file processing and management, TEN chose to eliminate the usual step of transcoding the high bit rate production master files to a lower bit rate for playout. Instead, the Omneon Spectrum servers decode and play the high bit rate production master files directly to the on-air presentation switchers. At 120 Mbps for the DNxHD-encoded HD content, this is a demanding requirement for the playout servers, but it is competently handled by the Omneon disk arrays.

The Omneon servers output the decoded SD and HD files in their original format. Any required upconversion and downconversion is performed in Harris NEO XHD conversion hardware under Harris D-Series automation control, before the signal reaches the presentation control switcher. Careful management of closed caption data conforming to Australia's OP47 standard is handled within the Omneon server platform.

Network TEN ingest operator

The Network TEN Sydney headquarters feeds its three services as a DVB-T multiplex to each of its other capital city markets: Melbourne, Brisbane, Adelaide and Perth. Viewers in regional areas outside the major metropolitan markets receive the Network TEN services via the Southern Cross Network.

TEN's early adoption of Omneon Spectrum servers, followed by continued expansion of the Omneon platform, demonstrates not only the long-term stability of the product, but also the degree of confidence that TEN has in Omneon and its ability to accommodate new codecs, closed caption data formats, API features and any other requirements presented by the network's new file-based workflow.

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