



OSN makes the switch



Isilon storage solutions at OSN.

Dubai-based pay TV network relies on core broadcast IT migration to take its show forward. *BroadcastPro ME* brings you the details.

Orbit Showtime Network (OSN) recently upgraded and expanded its existing broadcast IT and storage infrastructure in Dubai in order to cope with the increased number of channels that had to be played out from this site along with its increasing High Definition (HD) requirements and associated media workflows. Part of the solution was to work with a systems integrator that had an equally strong understanding of both broadcast as well as IT infrastructure, and could support OSN's in-house broadcast team piece the entire puzzle together.

Systems integrator TSL Middle East fit the bill, according to OSN's director of Technical Support and Projects, Frank Kerrin. "TSL was an excellent partner for this type of work because it has invested in local people on the ground in Dubai who not only understand traditional broadcast systems but also how IT and storage systems need to be architected for real time applications," Kerrin explains.

The broadcaster had already set its sights on an Isilon solution to replace the existing production server, and worked with TSL to architect a suitable network topology to support it both now and into the future.

An Isilon clustered storage solution was, therefore, chosen with TSL calculating that the workflow would require 10 x IQ6000x nodes, explains Andrew Davies, business development manager at TSL Middle East. "Up to N+4 redundancy selectable by file or folder meant that any four disks or any four nodes could fail without loss of data. This requirement was essential as this storage platform contains mission critical content. To match the high level of redundancy, up to 2GB/s of aggregate throughput was made available ensuring that each aspect of the workflow had ultra fast access to the content. TSL calculated OSN's bandwidth requirements and customised the configuration of the Isilon to match both the current requirement and provide sufficient expansion for future needs," explains Davies.

For the IP network, the systems integrator architected a topology based on a pair of redundant Cisco 6500E chassis in a fully redundant configuration.

TSL was able to provide a customised switch image and configuration that provided the fastest possible re-convergence times in the event of outages. The switch was also specified to ensure that the full high speed fabric of the Cisco high speed bus was accessible to the workflow. OSN's Kerrin explains that the network solution "resulted in a fourfold increase in performance in some of the key areas of our workflow".

“What we have now is a highly efficient workflow that future proofs our investment,” Kerrin claims. Defining the solution though was only the beginning, according to Davies. With a legacy switch running the live on-air platform, system migration and delivery were always going to be a significant risk.

Early on in the process, therefore, OSN and TSL staff worked together to define a migration strategy. “One of the great things about working with OSN is that it has experienced staff at all levels of the organisation. We benefited greatly from working with OSN engineers who had worked across several generations of file-based operations,” explains Davies.

To meet the project deadline and provide a rapid on-site installation, TSL prebuilt the racks and wiring looms at its UK factory. This also allowed the complex switch configuration and testing to be carried out in the UK. This pre-build ethos allowed the project to proceed quickly against the prescribed timeline, says Davies.

“The existing edge switches were swung across to the new redundant Cisco core. TSL re-configured hosts as required to ensure continuity of service taking into consideration the DNS entries and other critical network parameters. As the project progressed, new fibres were laid in to provide a redundant architecture to the edge. Some of the most crucial parts of the migration were carried out during off peak hours to minimise disruption to the workflow. The final stage of the project was to hook the high-end Isilon clustered storage solution into the new core switch to open up its contiguous, high performance and high availability storage to the entire workflow,” he explains.

The Isilon solution TSL deployed was built on a dual bus technology platform utilising a high availability, low latency back end bus based on InfiniBand to marshal packets and provide supercomputer class, internodal communication. Twin InfiniBand switches were installed to provide a redundant fabric for the InfiniBand transactions.

“This is TSL’s sixth large-scale deployment of an InfiniBand based solution in the last two years making us one of the leading regional experts on this high end network technology,” claims Davies. The other side to the Isilon dual bus is a standard NAS (Network Attached Storage) presentation on the front side allowing the system to directly connect using standard protocols such as NFS, CIFS and SMB to all the key parts of a given workflow.

“The NAS presentation allows rapid expansion, inexpensive connection using commodity IT interfaces, precludes the need for expensive fibre or HBAs (Host Bus Adapters) and ensures that network configuration can be carried out easily by existing IT professionals,” explains Davies.

The InfiniBand configuration was performed once by TSL engineers and was then hidden from the OSN end users who simply see the Isilon platform as a large contiguous network drive. Each front side connection on the Isilon nodes is on standard gigabit Ethernet with dual redundant NICs. Each NIC was connected on to either side of the redundant Cisco cores and the load was spread across the whole switch to eliminate any risk of bottlenecks.

The project was handed over in December 2010 to fit in with an aggressive migration of the pay TV network’s services from Bahrain to Dubai.

“From the first payment to final commissioning, it took less than 10 weeks with TSL spending around three weeks of that time on site,” explains Davies.

As well as the network and storage, TSL also provided a pre-built 3G compliant wiring loom and patch bay for OSN’s new 5122 Probel central router which was also installed and tested within the same time period. The systems integrator deployed a multi-discipline team of approximately eight people to deliver this project backed up by the resources available at TSL’s 2000sqm factory in the UK.

TSL Middle East provided key personnel to ensure the continuity of the delivery. Andrew Davies designed the solution and ensured the delivered project measured up to the initially calculated throughputs while former general manager Colin Sherriff project managed the UK pre-build and UAE delivery. Suhail Ahmed, who recently joined the systems integrator as manager of technical services, handled the onsite activities and ensured the quality of the finished product.

The OSN project is typical of the potential market for this type of solution in the Middle East today, according to Davies.

“Many broadcasters have plans to deploy file-based workflows and most have already made the leap with some aspects of their workflow. However, mid-way through their project some of them discover that their IT and storage infrastructure cannot cope with the high demands being placed on them,” explains Davies.

“Not all switches are made equal and even the same switch from the same manufacturer can exhibit wildly different performances depending on its build and its configuration.”

The Middle East market has the advantage of benefitting from the lessons learnt in markets that adopted HD file-based workflows early on, and ensure that the same issues do not occur here.

“As file-based workflows and stream-based workflows become more and more prevalent in our facilities, we will see an increased reliance on IP as an accepted delivery solution for broadcast critical data. Whilst in its rawest form, a deeply flawed protocol for real time applications, TCP/IP can be made to work well if those deploying it have experience in the deep switch and software configuration necessary to make it work,” explains Davies.

“The benefits for those that take the time to do this are an incredibly flexible network platform that provides rapid expansion based on industry standards with ever reducing costs. These technologies if successfully deployed in this region will promote a new era of high-end television production at higher channel counts and at lower price points than are currently possible today. OSN has understood that trend and is making the leap; others will follow suit.”

OSN's existing IT switch was obsolete and had been specified when the pay TV network's facility was first opened in the emirate in 2004. Subsequently, it had neither the throughput nor the redundant topology required for a modern HD workflow. The solution, therefore, was to provide OSN with a long-term storage platform and network infrastructure that could grow with its needs while being cost effective and easy to maintain in the short-term, and scalable and robust for the long-term.