



## Case Study:

### India's First SAS based SAN deployment

Well known GPS Maps Navigation service provider entrusts Tyrone Opslag FS2 unified storage platform for their storage needs as it offers them high performance, scalability and flexibility

#### CHALLENGE:

- Wanted a complete overhaul of their storage and networking setup so that it would be able to cater to their growing bandwidth and storage needs.
- They cannot dispose their legacy systems so that the new storage and networking architecture will have to support them.
- For their post production work especially scanning and restoration part, they did not want any downtime or bandwidth drop.
- As they were mostly working on HD and 2K format video content, they required sustained throughput of 350 MBps for each user.

#### SOLUTION:

- Tyrone Opslag SAS Based storage solution from Tyrone Systems was chosen.
- The SAN environment has been built on SAS interface with SAS switch for routing to provide bandwidth of 6 Gbps.

#### BUSINESS RESULTS:

- With higher capacity and bandwidth, the company no more faces the issues of lags or downtime for any of their production departments.
- The solution has provided them scalability and flexibility options to cater to their future demands.

#### DEPLOYMENT ENVIRONMENT:

- 288 TB of RAW space distributed across 6 Storage Boxes.
- Tyrone Opslag boxes are deployed as SAN storage for each of the four production departments.
- The storage boxes are configured on SAS interconnect.

The company is an established integrated media content house in India with activities across content acquisition, value addition to content and content distribution. Their content library consists of more than 2500 titles ranging from classic Hindi movies to new Hindi movies. They also own movie titles from regional languages like Marathi, Gujarati, and Bengali etc. They distribute their content library through Television, online, mobile and other media.

#### EXECUTIVE SUMMARY

##### Customer Name:

: A leading Film and media company

##### Industry:

Film and Media Content

##### Corporate Office:

Mumbai, India

## India's First SAS based SAN deployment

### Challenges:

The film media company has a post-production studio where they are converting the Indian classic movies which are in photo-film format to a digitally restored format. With this digital conversion and restoration, the company intends to preserve the Indian films of yester era, as keeping them stored in photo-films will result in their degradation with time. At present the media company has ownership rights of more than 2,500 movie titles from past era where movies were shot and stored in photo-film reels, to present day where movies are digitally recorded. Converting and restoring large number of movie titles that are in photo-films to a digital format requires huge capacity of storage system.

For the analog to digital conversion of movies, the production house had different workgroups each handling a specific process ranging from scanning of photo-film reels to color restoration of the digital movie frames, etc. As the video content being created is of full HD and 2K format, the company was facing issues of system downtimes as the video streams would choke their network when a certain workgroup is working online directly on the central storage. As over the years and with increase in work, the company's bandwidth and storage capacity requirements had increased manifold.

Recognizing these issues, the management of the company decided to have a complete overhaul of their storage setup in a cost effective manner, where their main issue of bandwidth availability is also resolved. And addressing these storage setup issues would also lead to a challenge of making the new setup compatible to work with their old legacy systems and solutions, as replacing them would have meant incurring huge costs beyond their budget.

### Solution:

The main requirement of the company was to address their bandwidth requirement that could cater to HD and 2K video specifications. Netweb Technologies offered their Tyrone Opslag storage array, to be configured on SAN environment having SAS interconnect as networking interface. As SAS provides upto 6 Gbps of bandwidth it would have sufficed the bandwidth required by the HD and 2K format video to be accessed online on real-time basis. Therefore, a complementing SAS network to connect the different workgroups through a SAS switch became imperative to maintain a sustained bandwidth between the SAN storage and the production systems. This is where the biggest challenge of deployment arose.

### SAS Switch Problem:

The SAS switch was being implemented/deployed in India for the first time, and to make things even more difficult was that one of the legacy production systems, BONES scanning systems couldn't work with SAS interface. When the PCI-express card for SAS adapter was added to BONES scanning systems; it was not being recognized as the Linux OS on those systems was of very old version which didn't had supporting SAS drivers. Even LSI, the SAS switch provider, wouldn't provide drivers for the obsolete operating systems. The company too couldn't change or upgrade their BONES scanning systems as they were very costly. Being the first SAS switch deployment in India, there was hardly any reference help available for Netweb Technologies to refer to in case of difficulties. Since, BONES is the very first step in the film conversion and restoration process, it was critical to integrate the BONES system to SAN storage over SAS network.

### How Netweb Resolved Legacy Issues:

BONES wasn't just one legacy system that needed to be integrated to the SAN system; the company also relied on the old version of StorNext File System (SNFS) in their storage array. Upgrading the legacy systems was required so that they could integrate with the new SAN setup; but as that would have resulted in huge costs; the company was unwilling to spend heavily on the upgrade of their legacy systems. So, it was all up to Netweb Technologies to integrate the new SAS based SAN setup with the legacy systems without increasing the costs. Their skilled and efficient technical team not only completed the first of its kind SAS switch

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deployment in India, but also compiled the Linux based SAS drivers for BONES scanning systems and made old version of StorNext File System based existing storage array to integrate with new SAS based SAN setup. This ensured that the production house's complete SAN environment setup would now be on SAS interface.

### Benefits:

The ideal combination of SAN on a SAS backbone has helped the media company to meet all their expectations from the Tyrone storage solution.

- **High Bandwidth Availability:**
  - With SAS as networking backbone, the main requirement of high bandwidth availability for HD and 2K format video content streaming has been achieved. Each workgroup of the production house is now having dedicated SAS connectivity to their SAN therefore the users does not face lags while editing the video directly residing on the SAN.
- **Cost:**
  - Comparing the cost of SAN deployment on SAS backbone with that of Fibre Channel or 10 GbE; the cost with SAN with SAS interconnects and networking has been much lower.
  - As Netweb Technologies was able to compile SAS drivers on their own and make old version of SNFS based storage array to integrate with new SAN setup; the company has been able to keep their legacy production systems like BONES scanner to be compatible with SAS networking without having to upgrade their legacy systems or to purchase newer machines.
- **Scalability:**
  - As the Opslag storage boxes support expansion features, this allows the company to have scalability option to increase the bandwidth as well as capacity if need arise in future.

### \*Disclaimer for Case Study

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