



The changing infrastructure technology behind the modern media production environment

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beyond expectations



The Power Behind the Storage

The Media and Entertainment industry is transitioning from Fibre Channel to Ethernet-based architectures (infrastructure) and Network Attached Storage (NAS) technology. This shift to a more universal infrastructure technology is driven by cost, availability, reliability, and a robust roadmap.

When evaluating storage performance there are several factors that must be considered for content production; factors which extend far beyond disk, controller and connection to a host.

Whether for content capture, post-production editing, visual effects, or coloring and finishing, Fibre Channel and Storage Area Networks (SAN) met the needs of the modern media production environment for one key reason; they provided a shared storage environment that guaranteed video content could be played back without disruption. But this capability comes at a cost, both in monetary terms, and the

fact that a SAN is an ‘island’ of data that limits collaboration, productivity, and efficiency.

Thanks to advances in the performance of commodity IT hardware and Ethernet networks, the performance requirements for high-end production at every stage of the media pipeline can now be met with reduced complexity and vastly improved value for money per port or per client.

NVMe-oF: The New Frontier for On-set Dailies

For on-set production companies, getting all the raw camera footage from dailies into the pipeline to be transcoded, reviewed, archived and delivered as quickly as possible is an ongoing balancing act for solution stacks. The higher the frame size, frame rate and footage definition, the more data there is to shift.



Handling media content on-set is a punishing task for shared storage both in terms of real-time playback requirements, for instant shot review, but also the number of concurrent read and write processes taking place simultaneously. Camera footage is being constantly written to the file system, transcode processes are taking place to transform raw footage into frame-based and compressed video files used in post-production and VFX pipelines, plus data is being written out to a local archive and delivered out to the many in-house and third-party vendors downstream.

It is a widely held assumption that as formats and data-rates become even higher, a SAN is needed. However, application performance and ultimately end-user experience is affected by the whole solution stack; from the workstation and access protocols in use through to the network environment and underlying disk configuration.

A software defined storage solution can provide this unified view of the media workflow, no matter where the data sits, along with the flexibility of a shared NAS environment. DIT tools and technologies, such as NVMe-oF can then be utilised to provide a 'SAN-like' experience to specific hosts and applications as required.

Production can't take place in silos

Similarly, production houses have a high-priority job to do - feeding the creative process, VFX artists, render farms, grading and finishing without delaying any of the process through administration.

These facilities will have many creative disciplines, many different types of software and often a lot of technology and storage islands to service them all.

Storage islands, such as a SAN or SAN-in-a-can applications, can result in huge amounts of duplication and time spent data wrangling. This problem is compounded as there will be a constant pressure to stop these buckets of storage from overflowing as these facilities work on multiple shots, scenes and projects concurrently.

High end facilities will of course need high performance shared storage solutions, however the many moving parts within the modern production environment means that we can no longer be lulled into the false sense of security that SAN technology used to provide. When assessing the application performance on SAN and the resource management to maintain it, the ultimate benchmark will be the end-user experience, the creative at the workstation and whether they can perform the job at hand; creativity and excellence.



You won't get SAN in the cloud

Post production, creative agencies and facilities that work with raw camera footage and compressed video often fall into the trap of purchasing a SAN when one wasn't needed in the first place. Because of its low latency and high bandwidth, SAN has provided a degree of reassurance for facilities looking to handle increasingly higher file sizes and data-rates.

However, for those investing into SAN to remain competitive, efficient and scalable, the infrastructure comes with prohibitively high manpower and infrastructure costs to manage and maintain.

Unlike SAN, a software-defined solution is 100% cloud compatible. With the ability to scale into the cloud using standard workstations, industry standard codes and workflows, and appropriate VDI technologies, there are minimal barriers for post-production facilities and agencies to scale into the cloud for global collaboration, burst-render, remote composition, editing and grading to name a few.

Summary

Application performance and ultimately end-user experience is affected by the whole solution stack; from the workstation, the access protocols in use, through to the network environment, shared filesystem and underlying disk configuration.

With this understanding, if we reframe the question of 'what is fit for purpose' then we can ensure that we have the right solution for any possible sector, workflow or pipeline within the



Media & Entertainment industry, regardless of performance requirements.

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Software-defined storage for the unified view of workflows

At pixonmedia, our software defined solution, pixstor, is purpose-built for demanding Media and Entertainment workflows. At all times the pixstor solution respects the golden rule for storage solutions; guarantee bandwidth to real-time video playback applications.

pixstor's pixstor solution utilises commodity IT and Ethernet technology to achieve the flexibility of a shared NAS environment with the option of utilising technologies, such as NVMe-oF, to provide a 'SAN-like' experience to specific hosts and applications.

About pixonmedia.

pixionmedia delivers seamless collaboration to enable the power of ideas.

Our purpose-built, software-defined storage and data solutions simplify the flow of data to connect an increasingly complex world.

Our aim is to deliver beyond expectations throughout all areas of our operation. We devise solutions that give customers both choice and freedom, our restless innovation constantly pushes boundaries and the unrivalled care and knowledge of our team ensure optimum performance and value. Customer success is at the heart of our business.

We have a dedicated in-house lab facility to guarantee the effectiveness of our solutions.

pixionmedia is privately-owned and headquartered in the UK, with offices in the USA and Germany.

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