

# POST-PRODUCTION STORAGE TRENDS FOR **4K VIDEO CONTENT**

*2018 Survey Results from postPerspective and Quantum*



Quantum®

# FACING HEIGHTENED EXPECTATIONS FOR COMPELLING VISUAL CONTENT



# How does 4K affect video storage requirements?

Video production continues to evolve rapidly. Consumers expect compelling visual content displayed in ultra-high definition, whether they are watching their favorite sporting event on a big-screen TV at home, a 30-second ad on their smartphone or a blockbuster movie at their local theater.

To meet consumer expectations for high-quality visual content, video production and post-production organizations are making the move to 4K. They are capturing high-resolution video and adopting 4K workflows for a range of post-production tasks.

The transition to 4K will require many organizations to refresh their technology infrastructure. In addition to implementing high-performance workstations and the latest software applications, they will need to bolster their storage environment. They need solutions that can support 4K workflows, providing the right balance of performance, scalability, collaborative capabilities and cost-efficiency.

How prevalent is 4K in existing post-production workflows? What storage solutions are organizations using now? What are their concerns about 4K? And how are organizations planning to address the storage challenges that 4K and higher-resolution formats can create?

To answer these and other questions, Quantum teamed up with Randi Altman's [postPerspective.com](http://postPerspective.com)—a website that has become a leading destination for production and post-production communities. Quantum and postPerspective surveyed creative professionals to understand the current state of post-production storage environments, highlight perceived challenges in moving to 4K and identify key trends.



## SURVEY RESPONDENTS

The survey captured responses from 150 people working in post production, visual effects (VFX), broadcast and content distribution.

## WHAT IS POSTPERSPECTIVE?

Founded by industry veteran Randi Altman, postPerspective is a web-based media outlet designed for production and post-production professionals. Offering a newsletter, articles, product reviews, interviews, events and other resources, the organization's website draws more than 25,000 unique visitors every month.

Randi Altman's  
**postPerspective**<sup>™</sup>

# CHARTING THE RISING ADOPTION OF 4K



# Nearly 79% of respondents are currently working in 4K.

There is no doubt that the 4K era has arrived. Nearly 79% of survey respondents are already working in this high-resolution format. Another 7% expect to be working in 4K within the next 12 months. Only 10% were not sure if and when they would begin working in 4K.

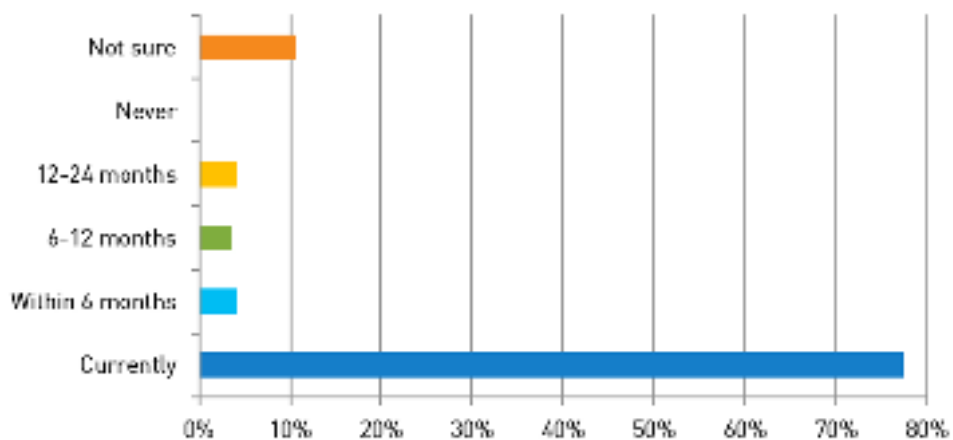
It shouldn't be surprising that so many organizations have 4K workflows. Even those that do not deliver final files in 4K recognize the benefits of working in that format during post production. They know they can improve

the quality of the end result—even if the final video is in HD or SD—by working in the highest quality for editing, coloring and other tasks. Moreover, they understand that working in 4K can future-proof their work: they can return to production files and easily remaster them in a higher format at a later date.

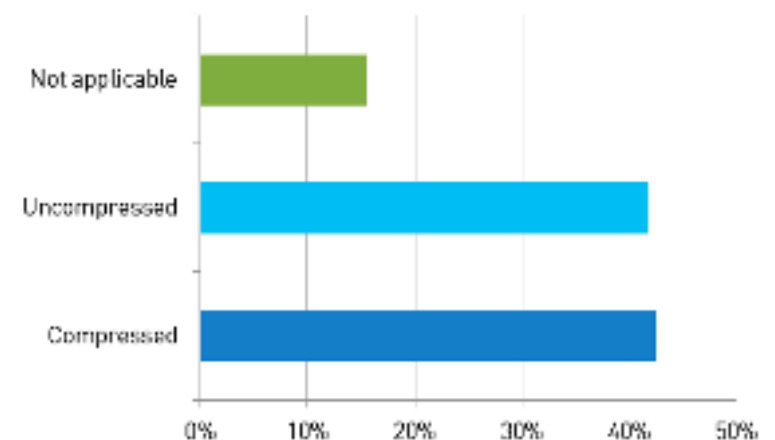
Among those respondents using 4K, there is no clear preference for compressed or uncompressed files. The survey respondents were split nearly evenly. These results could

reflect the diversity of survey respondents in terms of their primary job functions: while colorists might prefer to work in 4K uncompressed format, for example, editors might be satisfied using compressed footage.

Q: Are you working in, or do you plan to start working in, 4K?



Q: What formats are you using for your 4K workflow?



# EVALUATING THE CURRENT STATE OF VIDEO STORAGE



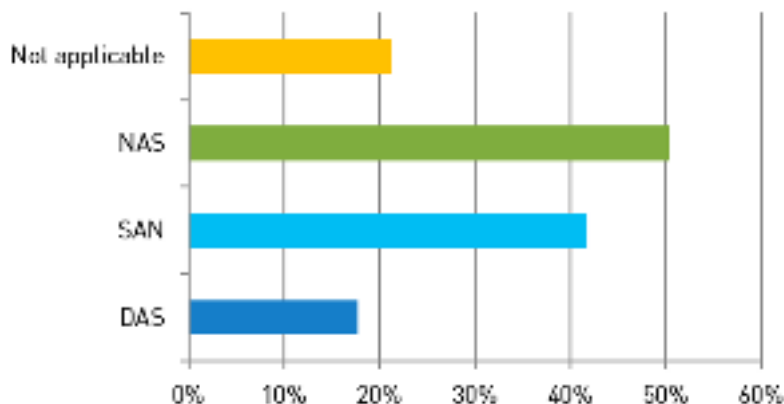
# Organizations use a wide variety of storage technologies— but less than one third use the cloud.

Survey respondents currently use a wide range of storage technologies, with many using more than one technology within their organization to meet varying performance requirements associated with their workflows. Of the two primary storage network architectures found in media and entertainment, network-attached storage (NAS) is used by the majority of respondents (52%) with 41% of respondents using storage-area networks (SANs). A much smaller number use direct-attached storage (DAS).

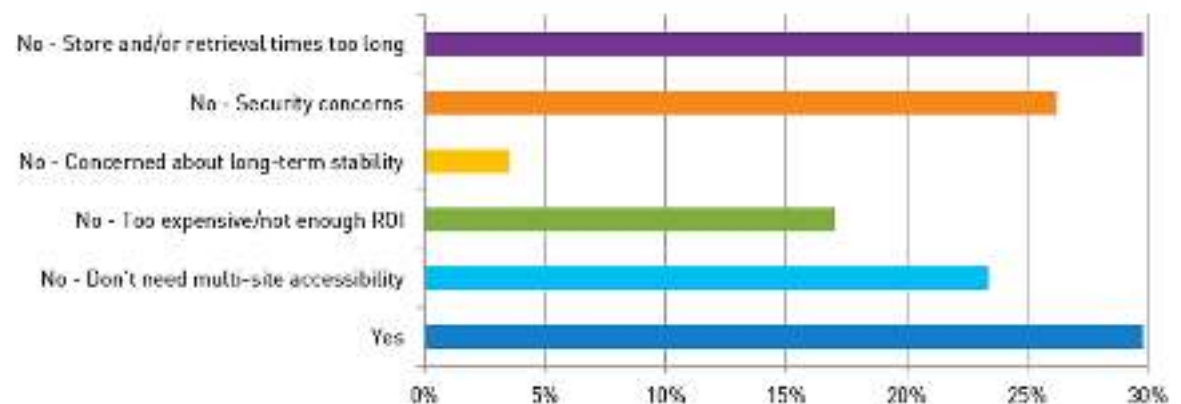
Less than one third of respondents (31%) currently use cloud-based solutions. The primary problem with cloud storage? Storage and retrieval times, according to 30% of respondents, which makes sense for video post production. While cloud solutions can be effective for archiving, the lag in retrieving and working with files prevents these solutions from being used for several post-production tasks.

Security is another reason that many respondents (27%) are not using the cloud. Others noted that they don't need the multi-site accessibility that the cloud can offer (23%), or that the cloud is either too expensive or doesn't provide sufficient return on investment (17%).

**Q: Which media storage technology do you currently have deployed at your organization?**  
(Select all that apply.)

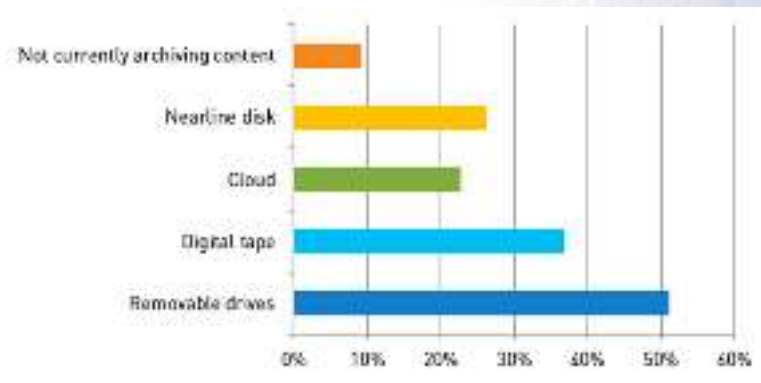


**Q: Are you currently working with cloud-based storage solutions?**  
(Select all that apply.)



Cloud storage is used as an archive by about 21% of respondents. But much more popular are removable drives (49%) and digital tape (38%), followed by nearline disk (27%). Approximately 9% of respondents report they do not currently archive content, which could mean they have not yet approached the capacity limits of their existing production storage solution or their total volume of storage is less than a few hundred terabytes.

**Q: How is your archived content stored?  
(Select all that apply.)**





# PREPARING FOR 4K

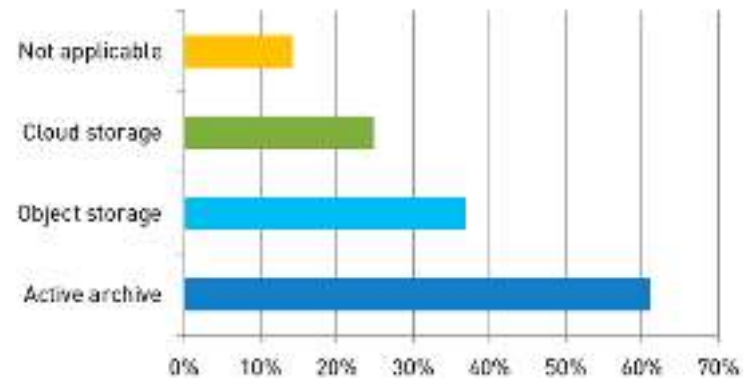


# Organizations need solutions that offer scalable capacity and collaborative capabilities.

Working in 4K can require significant changes in storage. For example, organizations need scalable capacity to support significantly larger video files. When organizations choose a high-resolution format, they often use higher frame rates, dynamic ranges, and color depths than they would with SD or HD video. All of those decisions contribute to the file size.

Respondents are using a variety of storage technologies to handle the expanding capacity required by 4K, with many using more than one technology. While 61% have some type of active archive, 37% use object storage and 25% use cloud storage.

**Q: As your 4K workloads increase, how are you growing your capacity? (Select all that apply.)**



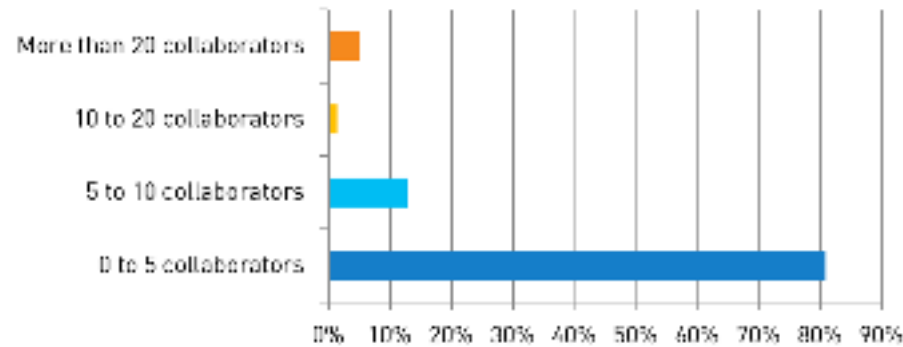
As organizations explore new storage solutions for 4K video workflows, defining their collaborative needs will be key. How many team members need to work together on 4K projects? And how many streams will each team member use?

Understanding the level of collaboration will help you determine the degree of flexibility and accessibility that the storage solution must provide. For example, if your organization has 20 geographically dispersed team members who need to collaborate on 4K projects, a DAS approach is not the best strategy. Supporting a large number of team members might also require a solution with the ability to accommodate a variety of operating systems and software.

Most respondents for this survey reported a modest number of collaborators. Nearly 79% noted that there are fewer than five collaborators on 4K projects. Approximately 15% reported that there are typically 5 to 10 collaborators, while 2% reported 10 to 20 collaborators. Almost 5% noted that there are more than 20 collaborators on 4K projects.

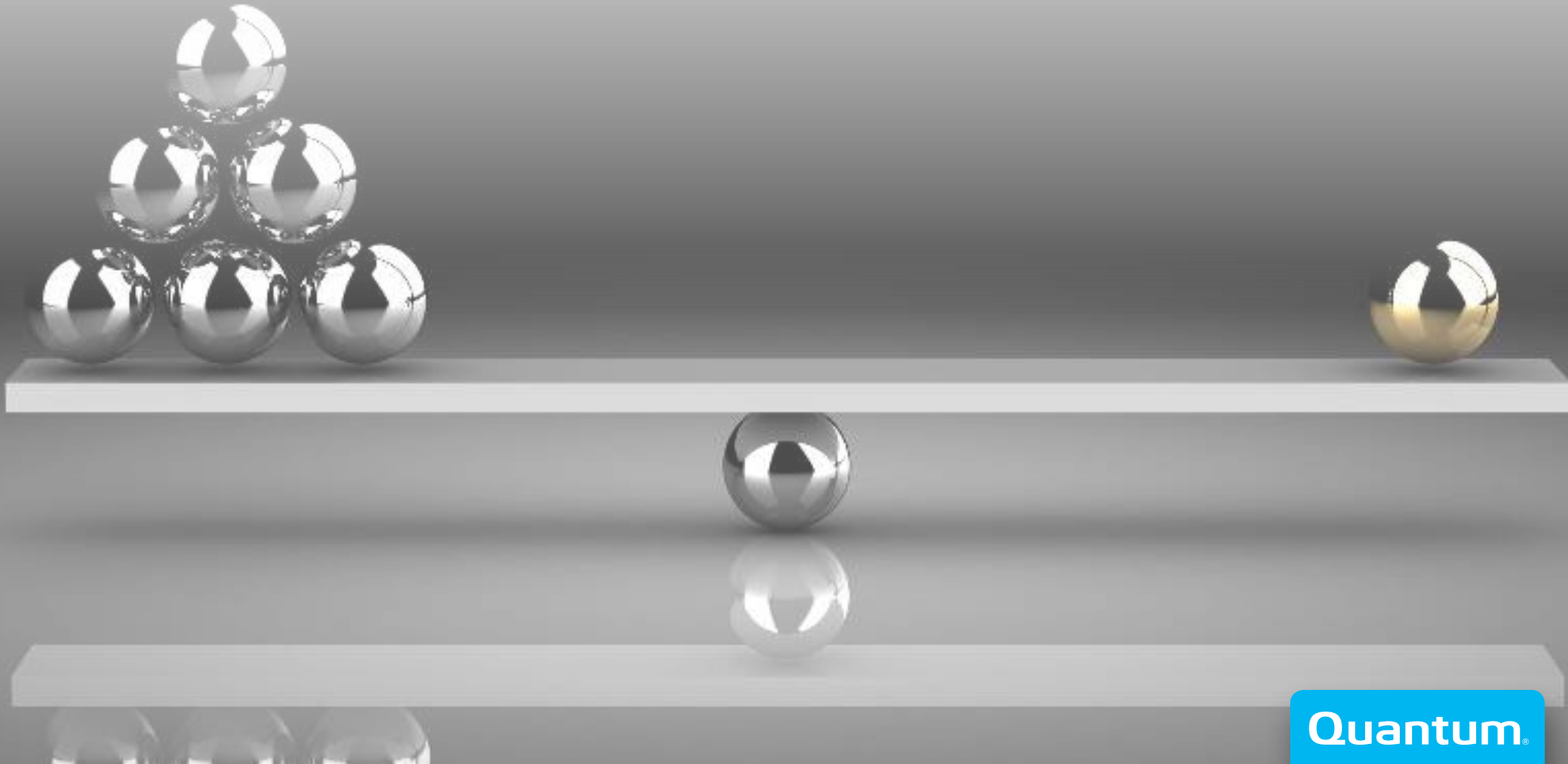
How many streams does each collaborator typically use? Understanding stream counts can help choose between flash-based solid-state drives (SSDs) and more economical hard disk drives (HDDs)—flash is a better fit for extremely high stream counts. Few respondents in this survey are using large numbers of streams. Over 60% are using more than two streams, but only about 15% are using more than four.

**Q: When working in 4K, what is your average number of collaborators?  
How many streams per collaborator?  
(Please select your response and write in  
how many streams per collaborator.)**



IDENTIFYING

# TOP CONCERNS ABOUT 4K



# Cost, capacity and performance top the list of concerns for accommodating 4K workflows.

Adopting a 4K workflow can require significant changes for an organization's storage infrastructure. But what challenges and concerns were most prominent among survey respondents?

Cost appeared most frequently in responses to this open-ended survey question, with more than one third of survey respondents pointing to cost as an issue. Many of those respondents coupled cost with capacity. Organizations need to boost capacity to support more 4K projects—and the larger files that those projects generate—while keeping cost under control.

Performance is another top challenge and concern, with just under one third of respondents indicating it is—or will be—an issue. For some, performance referred primarily to compute resources (the speed of workstations) or networking. But dialing in the right level of storage performance will also be critical in optimizing infrastructure for 4K. Organizations must be able to provide a responsive experience to team members as they access and work with large 4K files stored in a shared environment.

PLANNING YOUR  
**4K FUTURE**

# Find the right 4K storage solution by working with Quantum.

Whether your organization is already making the move to 4K or planning to do so soon, now is the time to reassess your storage infrastructure. Do you have a solution in place that can deliver the performance and capacity for handling large, high-resolution files, and supporting collaborative workflows, all while controlling costs?

Quantum SureStaQ™ 4K reference architectures are designed to address the key challenges of 4K video production. Quantum can work with you to identify your requirements, find the right reference architecture and define a configuration that can meet your evolving needs.



# READY TO LEARN MORE?

For more about the Quantum 4K reference architectures—and the extensive real-world testing that helped create them—download our 4K reference architectures white paper: [www.quantum.com/4KRefArchWP](http://www.quantum.com/4KRefArchWP)

When you're ready to figure out which 4K reference architecture is right for you, use our reference architecture estimation tool: [www.quantum.com/StorNext-Reference-Architecture](http://www.quantum.com/StorNext-Reference-Architecture)



## ABOUT QUANTUM

Quantum is a leading expert in scale-out tiered storage, archive and data protection. The company's StorNext® platform powers modern high-performance workflows, enabling seamless, real-time collaboration and keeping content readily accessible for future use and re-monetization. More than 100,000 customers have trusted Quantum to address their most demanding content workflow needs, including top studios, major broadcasters and cutting-edge content creators. With Quantum, customers have the end-to-end storage platform they need to manage assets from ingest through finishing and into delivery and long-term preservation. See how at [www.quantum.com/customerstories](http://www.quantum.com/customerstories).

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