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Winning With Better Storage: How the LA Kings Turned a Championship Into Eternal Gold With G-Technology®

In 2012, for the first time ever, the Los Angeles Kings won the Stanley Cup, the iconic championship trophy of the National Hockey League. Players and fans alike desired a way to relive the moment, highlight the victory and remain a lasting testament to a historical playoff run. The team created a 20-episode video series called **Stanley Cup Moments**, a full-blown, professionally produced documentary set, to tell the story.

According to Aaron Brenner, Director of Production for the Kings, the series was a massive hit with viewers. **One episode** even went on to win an Emmy Award in 2014. However, there's usually a bit of fortune to be found with glory. The video collection proved to be an able driver of sponsorships and partnerships that yielded significant revenue.

When the Kings returned to the championship arena in 2014 against the New York Rangers, everyone understood exactly what a video series of a winning team could represent. So when the Kings at last claimed the Game 5 win in double overtime, Brenner and his crew needed to deliver an equally stunning performance. His group had been racking up footage for months. Now the pressure was on to deliver another Stanley Cup Moments series even more amazing than the last. Yet the technical challenges confronting his crew were even more daunting than before, and to reach the goal within the limited weeks given for completion would require a little luck, a lot of skill, and a timely upgrade to the team's storage and work flow.



Managing Mountains of Data

"The scale and scope of the project is just extreme at every level," says Brenner. "Not only had we been capturing a lot of data as the Kings were pushing through the playoffs, but once they won, we sat players down for in-depth interviews. We'd shoot for a day and get six terabytes of talking head interviews. To get the story we set out to tell, we used new cameras with higher frame rates and higher resolution formats. That led to huge amounts of data that we would generate from a single game or from a single interview. When we actually stood back and looked at all the footage we'd compiled, we were facing a project of a scale that we'd never handled before."

Even during the first round of Stanley Cup Moments, managing all of the data necessary for a complex documentary was a challenge for Brenner's crew. The Kings had implemented servers and a Fibre Channel-based storage area network (SAN) in their main office, and that was fine for data ingestion and editing, but it was no use out in the field. The Kings needed a solution that could accommodate the group's capacity and speed demands but didn't involve fixed rackmount storage. In 2012, no such solution existed...and then the data load only grew larger and more intense.

By the time the Kings seized their second crown in 2014 and Stanley Cup Moments went into post-production, Brenner was sitting on just over 100 TB of new raw footage. Simply moving and protecting that much data was daunting, never mind having to edit and work with it. With a new season approaching, the production crew had less than two months to turn around thirteen finished episodes. Speed and leveraging an optimized workflow became critical. Brenner knew that they would need a better disk-based solution added to the workflow for his post-production team to succeed.

Fortunately, just as Brenner and his team were gearing up to find a suitable path forward, G-Technology released its G-SPEED® Studio XL with Thunderbolt™, an eight-bay RAID enclosure designed for 4K workflows and a Thunderbolt 2-driven throughput of up to 1350 MB/s. The product supported RAID levels from 0 to 60, hosted up to eight HGST Enterprise-class hard drives, and arrived in a form factor small enough to tuck under one arm and conveniently whisk anywhere. Upon close examination and a long look at the possible competition, the LA Kings implemented two 64 TB models.

"We needed a big tool like this not only for its size but also its speed," says Brenner. "We're cutting a lot of material constantly. Multiple editors, cutting in multiple locations, with an unprecedented amount of raw footage. We duplicate our source media across multiple sites and have our entire team working with the native files from wherever they are rather than working with low resolution proxies. There was no way we could have ever done that before. There was no mobility, no ability to plug back in somewhere else and keep working. In our world, having that ability translates into a streamlined workflow, less time spent duplicating media or transcoding media to low-res, and then, later, bringing those files online. It allows all of our editors to save time and work more efficiently."



The Workflow

When in the field, LA Kings staff work with a host of camera platforms, including RED cameras shooting 6K video in high frame rates. As soon as RED mags are removed from the cameras, they get duplicated, verified, and sent along physically separate paths back to the office. From there, footage gets loaded on the SAN for editing as well as sent to an LTO archival system for redundancy. Only then do the original RED mags get wiped for reuse on the next day's shoot.

As in past years, editing could be done from the office SAN, but that's not always an effective use of time for editors. Post-production people have a separate facility, plus they often get called on to perform rush work away from the offices. They need more flexibility, but they also can't afford to be separated from their content. With the G-SPEED Studio XL pulling entire projects straight from the SAN, editors have all of the assets they need to work from anywhere, and the solution offers the bandwidth necessary for them to process even 6K content with no loss of real-time frame rates during editing and playback. When they finally return to the office, editors merely re-sync content with the SAN using transfer rates fast enough to let others in post-production pick up in minutes where off-site workers left off.

"We've got so many guys working at the same time, and we're all tag-teaming these videos," says Brenner. "A lot of the original edits get handled right off the [G-SPEED Studio XL] drive tethered to a Mac Pro. Then we'll send that project file over to a finishing editor who works directly with our audio mixer and colorist. The G-Technology drives play a huge role in our workflow, especially in their initial stages."



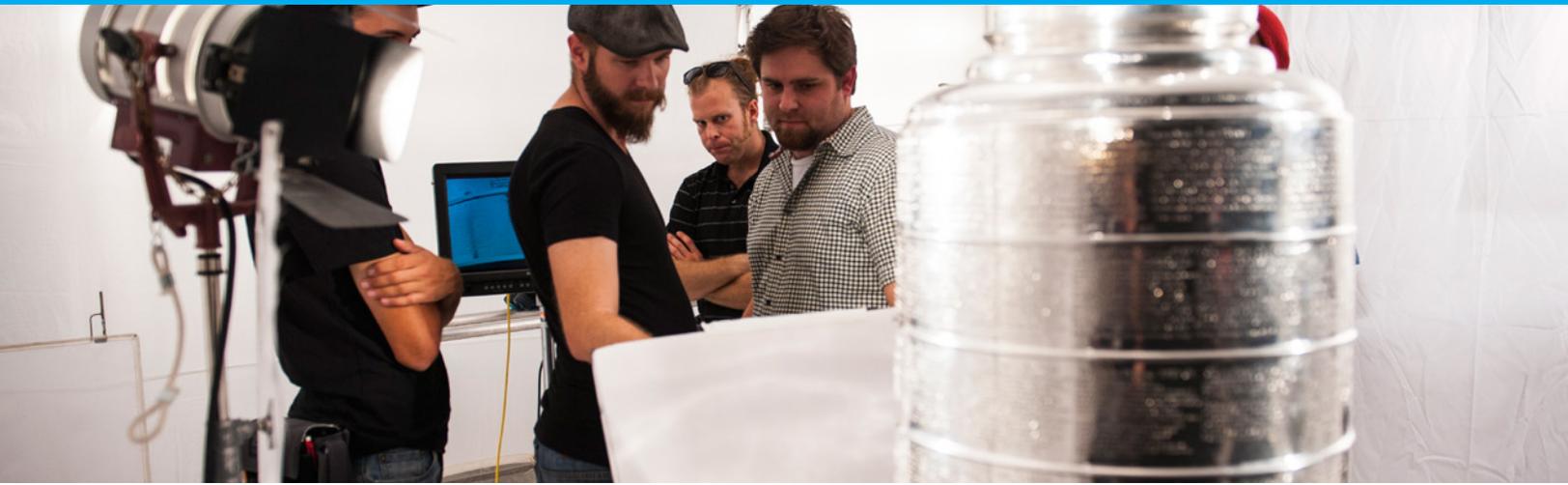


Small Window, Big Difference

No one experienced in video could fail to be impressed by the production of thirteen Emmy-caliber documentary episodes in under two months. Content and workmanship aside, getting through the post process often comes down to basic data handling tasks — how long it takes to get things done. When loading the G-SPEED Studio XL drives, Aaron Brenner recalls copying 50 TB off of his SAN in under 30 hours, a feat his team had never come close to achieving before. Previously, such a mountainous move would have taken from three to five days and bottlenecked the workflow of multiple editors.

Today, with the help of G-Technology's G-SPEED Studio XL, the LA Kings enjoy a much more streamlined, productive process. The crew has redundancy, archiving, geographic production flexibility, and increased peace of mind that both their assets and deadlines are covered. Even still, Brenner is quick to point out that his group is assiduous about backing up active content on their G-Technology drives — not because he doesn't trust their integrated RAID protection, but because he doesn't rely solely on operators, courier services, or other sources of potential mishap. No solution is perfect, so plan accordingly. That said, Brenner believes that G-Technology solutions are as good as storage gets.

"We've been using smaller products in the field, in production, on the range of our shoots," he says. "We do all of our on-set DIT work using G-Technology drives, and we've enjoyed several of their products for years. We're always impressed with the quality, speed, the products themselves, and the way that the company stands behind them. Naturally, when we were looking for a big solution that was fast and reliable, that put G-Technology on the top of our list."



In the end, perhaps the greatest contribution of the G-SPEED Studio XLs to the LA Kings has been a shift in where bottlenecks happen. For years, their external storage was the slowest element, the weakest link in the production chain. Now that editors can work natively with high-resolution files and formats over Thunderbolt 2, external storage is no longer the bottleneck. Instead, the burden falls back on the workstation, in particular its graphics subsystem, and that's an easy enough item to upgrade. If nothing else, it sets a much higher ceiling for total editing solution performance. That, in turn, translates into the LA Kings getting more of the results they desired from the Stanley Cup Moments project.

"Are we generating revenue with every episode?" muses Brenner. "Absolutely. As we release videos, we're branding them for sponsors. But it's about more than that. This is also the story of how they won one of the most difficult trophies to win in sports. The way that we captured it, these are stories that Kings fans and broadcasters will be telling for decades to come. Our long, long, long term goal is that we tell the story right while it's still fresh in everybody's mind. This will be part of the Kings' history forever."



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One GB is equal to one billion bytes, and one TB equals 1,000 GB (one trillion bytes). Actual capacity will vary depending on operating environment and formatting. G-Technology external hard drives serve as an element of an overall backup strategy. It is recommended that users keep two or more copies of their most important files backed up or stored on separate devices or online services.

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