

ROHDE & SCHWARZ PROVIDES SECURE AND FLEXIBLE CENTRAL STORAGE FOR BLACK PHOTON



At a glance

Black Photon is a new post production facility in Poland that is already busy with work from major broadcast production companies and independent filmmakers. The facility also meets its social responsibilities by providing support for film school students to help them achieve their creative vision.

At the heart of the facility is a powerful and secure central storage system powered by the R&S®SpycerNode platform.

Summary

- **Customer:** Black Photon, Warsaw, Poland
- **Task:** Central storage platform for large post house
- **Challenge:** Very high throughput content delivery with high levels of security and resilience
- **Solution:** R&S®SpycerNode 5u84 high-capacity, high-performance server
- **Key advantages of this solution:** Meets challenging throughput and bandwidth demands, flexible and adaptable architecture without additional license fees, access over fast Ethernet, fits seamlessly into Black Photon's security and archiving approaches

Case Study | Version 01.00

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The customer

Black Photon is a Polish full-service post house located in Mokotów, central Warsaw. The company provides a comprehensive range of services from on-set data management to finishing and deliverables. Facilities include a 4K digital cinema grading theater. Black Photon team members worked on Oscar-winning movies as well as television and cinema projects from Poland and beyond; the facility has a long-term arrangement with Netflix to post its regional and international content.

Black Photon also works with the Lodz Film School as well as the Krzysztof Kieślowski Film School at the University of Silesia, using its facilities to provide training and experience of post production best practices and offering downtime capacity for student productions.

The challenge

Black Photon CEO Kamil Rutkowski has enjoyed a long career in the post industry and by establishing a new facility, he wanted to use his experience to create the best environment for his clients. Together with his business acumen, Rutkowski has a strong technical understanding – he is the Poland Section Chairman of the SMPTE – and recognizes the opportunities and challenges of modern technology.

The company’s services range from pre-principal photography and data wrangling on set to full post production. Black Photon currently offers 11 edit suites, VFX, grading and a digital cinema theater. A Dolby Atmos® mixing studio with dubbing capabilities is currently

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under construction and of course the facility includes the capacity to create all deliverables and provide a secure archive.

All creative rooms, including the 4K Barco projector in the grading theater, are fully HDR-compliant. Monitoring is calibrated to the same standard in every room using in-house calibration facilities, which allows projects to move seamlessly between creative functions.

To support this, Black Photon needed a central storage facility that provided simultaneous media management and access for multiple projects. The server network needed to support both broadcast and digital cinema resolutions and a broad range of third-party editing and finishing tools with seamless interconnectivity.

One principle that Rutkowski was keen to establish was that all the raw footage should be stored in its native resolution. This allows projects to be remastered in the future to meet the needs of 4K and even 8K television, high dynamic range and emerging digital cinema formats.

R&S® SpycerNode

- Purpose-built storage for demanding media environments
- Hundreds of Gbyte/s sustained cluster throughput
- Unified Ethernet file and block storage
- Massive scalability even from the smallest system
- Advanced redundancy mechanisms for data integrity and availability

Connectivity between the central storage and individual creative rooms needed to be fast enough to support real-time workflows, but without relying on Fibre Channel, which is now seen as cumbersome and outdated. Networking had to be over standard Ethernet for compatibility, but fast enough to eliminate delays: post houses are always under enormous time pressure.

Finally, security was seen as absolutely critical. The network – and the facility as a whole – had to be resilient against attempts to access high-value content and ransomware attacks.

The solution

Black Photon carried out extensive tests of leading suppliers and their shared storage solutions. Rutkowski already had experience with Rohde&Schwarz servers through the use of R&S®CLIPSTER products, DVS-SAN and multiple R&S®SpycerNode platforms in other facilities. Having evaluated a number of proposals, the company selected the R&S®SpycerNode solution.

Rutkowski says, “I have a reputation for carrying out extensive tests before I buy anything. We spent two days carrying out speed and load tests at Rohde&Schwarz. We had to be completely satisfied that the solution would do what we needed before we chose it.”

Black Photon opted for the 5U84 chassis size to provide the necessary storage capacity. This configuration manages and delivers up to 1.3 petabytes in a cabinet only 5U high. Incorporating high capacity and power in such a small rack footprint is a major advantage of the

R&S®SpycerNode. Since this means less power and air conditioning are required, the facility significantly reduces its environmental impact.

Thanks to the Rohde&Schwarz solution’s ability to scale, Black Photon can expand the capacity alone by simply adding COTS disks, or increase performance and capacity simultaneously by adding more R&S®SpycerNode RAID units.

The total capacity is divided to provide each department – such as VFX and editing – with dedicated capacity. DaVinci Resolve is used extensively in the facility, together with Blackmagic Fusion and Adobe tools, to provide VFX. The film school has its own dedicated storage portion, ensuring it is completely separated from the media of commercial clients.

The architecture of R&S®SpycerNode allows other levels of separation by using quotas and a domain controller, adding multi-user permissions. This makes the system ideal for multi-tenant operations such as post houses and also hardens it against internal security breaches.

R&S®SpycerNode uses high-performance computing (HPC) technologies to deliver the required capacity and throughput. The storage platform is built on IBM erasure coding technology for extreme security and resilience. This technology is only available to Rohde&Schwarz, Lenovo and IBM. The Spectrum Scale™ file system is flexible and practical, renders outdated Fibre Channel connections obsolete and is affordable because it does not need per-client licensing.



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Kamil Rutkowski, CEO, Black Photon

To eliminate the risk of external cyberattacks, R&S®SpycerNode has no internet connection. Ingest is done via isolated systems and when remote access is needed for on-site editing, content transfers via carefully secured portals are initiated at the facility.

Black Photon is working towards being certified by the Trusted Partner Network (TPN) of the Motion Picture Association. This is regarded as the highest audit level for content security.

It is of course crucial to protect the storage against ransomware attacks and technical failures. The R&S®SpycerNode architecture is highly resilient and critical data such as databases, VFX works and project metadata is backed up overnight on a daily basis.

The system includes two Linear Tape Open (LTO) library devices. One manages and stores the full backups, and the other provides a secure and isolated portal for exchange with other facilities and for ingest of on-set dailies.

LTO tape is also used to archive a completed project for clients. Rutkowski adds that clients are encouraged to take away and store every element of a production, including the raw camera footage, to be prepared for new formats in the future. The cost of archiving a project for clients is a tiny fraction of a typical production budget and Black Photon is keen to educate every client on the importance of this added security.

"Rohde & Schwarz has the best support I have ever known. We work closely together and there is always a prompt response from them when we need something."

Kamil Rutkowski, CEO, Black Photon



Conclusion

Black Photon is a relatively new facility that from the outset was designed to create an environment and ambience where creative people can get on with their work. This includes everything from carefully considered use of natural light in the suites to providing seamless access to preferred tools and project media.

The shared storage of R&S®SpycerNode is an important part of the facility, delivering media where it is needed quickly and securely. The solution is highly resilient, securely archived and provides outstanding security that minimizes the risk of data loss and attacks, all without constraining the way that clients and creative users need to work.

It is also a highly reliable solution. "Rohde & Schwarz has the best support I have ever known," says Rutkowski. "We work closely together and there is always a prompt response from them when we need something. As a growing business, we appreciate the scalability of R&S®SpycerNode, allowing us to grow our storage at the same rate as the business. The cost-effective solution simplifies processes with a minimal impact on operations."

Black Photon is a major Polish player in post production that has established contracts with major production companies such as Netflix. The company also takes an active role in ensuring the long-term future of the industry by actively supporting the local film school and its students. The flexible, secure and powerful R&S®SpycerNode installation is the heart of the facility.

R&S®SpycerNode is perfectly suited for content creation and delivery, growing with the facility and providing a strong return on investment. "The ability to scale capacity and performance while offering industry-leading security, redundancy and improved workflows is essential for production growth. We are proud to work with Black Photon to empower their team and partners to deliver exceptional content and powerful storytelling from their incredible facility," adds Duncan Beattie, Product Manager for Storage Solutions at Rohde & Schwarz Broadcast & Media.



R&S®SpycerNode in use at Black Photon.

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PD 3683.9905.32 | Version 01.00 | March 2023 (ch)

Rohde & Schwarz provides secure and flexible central storage for Black Photon

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