



SKYHAWK
SURVEILLANCE

FAMILY GUIDE

SEAGATE

INSIDER

FOR PARTNERS

The amount of data generated daily by new video surveillance cameras worldwide in 2021 is forecast to be 340,000 petabytes! That equates to:

- 6.8 billion standard double-layer Blu-ray movie discs
- All Netflix's current users streaming 2,891 hours of ultra-high definition content simultaneously
- Close to 1,863 times the amount of all user data stored by Facebook in 2018 alone

Storage is a key component to video surveillance—it is expected to grow 18% annually, to a \$1.6B market. While retrofits and upgrades are a significant portion of the growth, surveillance has evolved beyond just security. Customer satisfaction, business intelligence, behavior analytics, and facial recognition are among the new use cases. Higher camera resolution, frame rates, and wide dynamic range required for 4K to panoramic video all contribute to the growing demand.

As a Seagate® partner, you have the storage portfolio to match your customers' growing video surveillance needs. SkyHawk™, Seagate's surveillance-optimized drives, are superior across the board to desktop drives—from supporting simultaneous video streams to enhanced vibration resilience and always-on reliability. SkyHawk AI takes surveillance innovation even further by providing high performance and reliability for heavy compute-intensive AI-surveillance workloads.

In these cases, in order to gain deeper insights, surveillance data is stored and analyzed for longer in the cloud.

Petabytes of video and AI metadata from thousands of cameras can be stored as well as continuously analyzed and archived in the back end. Seagate's Exos™ enterprise drives support these heavier workloads and offer additional security features like FIPS and SED. Nytro® enterprise solid state drives (SSD) are optimized for cloud computing and delivering data at record speeds for deep learning (DL) and faster predictive analysis. As a result, banks, for instance, are able to better defend against intrusions and fraud, while also improving customer service.



How to choose the right storage for your video surveillance application

Video surveillance is evolving to cover many scenarios—from HD cameras across multiple locations to advanced analytics through AI for richer data in every frame. No matter how and where these systems are implemented. Reliable storage is critical, as data is captured and analyzed 24 hours a day, 7 days a week.

Seagate's surveillance-optimized hard drive, SkyHawk, supports over 40 surveillance partner systems. Applications for SkyHawk hard drives range from surveillance DVRs (SDVR), network video recorders (NVR), AI-enabled NVRs, edge NVR video analytics, and even centralized or SAN surveillance for video data analytics.

For back-end, centralized storage, Seagate's Exos enterprise drives support the heavier workloads and offer security features like FIPS and SED, while Nytro SSDs are ideal for faster deep learning and predictive analytics.

To choose the right drive, first determine your customers' system requirements:

- **HOW OFTEN WILL CAMERAS BE RUNNING AND RECORDING?**
- **HOW LONG DO YOU NEED TO KEEP YOUR FOOTAGE?**
- **WHERE WILL YOU BE STORING AND STREAMING YOUR DATA?**
- **HOW MANY DRIVES DOES YOUR SYSTEM SUPPORT?**

These questions will help you understand which Seagate drives will best fit your system—**SkyHawk, SkyHawk AI, Exos, or Nytro.**

Hard drives: desktop vs. surveillance-optimized

A surveillance system is only as strong as its weakest link. In today's video surveillance systems, drives are just as critical as cameras for quality video footage. Because desktop drives are especially notorious for failing in surveillance environments, any data loss or corruption can be detrimental to your customers' businesses—and yours. Not only are desktop drives less reliable in surveillance environments, they also lack sufficient performance specs to support multiple cameras.

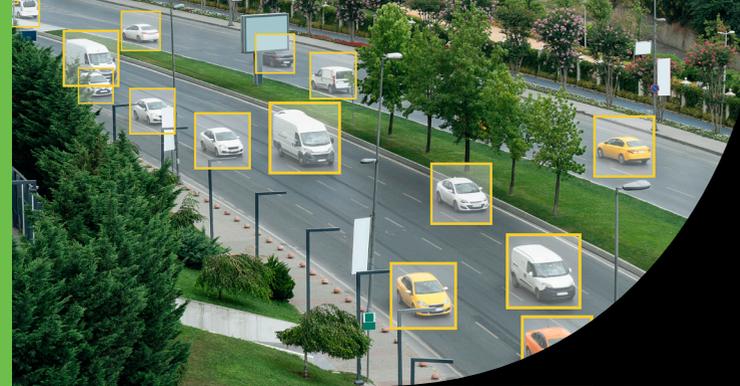
Desktop drives:

- are built to read and write small-block and random data transfers, not to exceed 60TB/year
- are on over a limited period of about 8 hours a day, 5 days a week
- are not designed to support high camera count
- don't support around-the-clock streaming, writing of large sequential blocks and high-definition video
- don't have rotational vibration tolerance or RAID capabilities to be used in multi-drive systems
- don't have power management and are not designed to handle heat

On the other hand, surveillance-optimized drives like Seagate's SkyHawk:

- ✓ are always on—24x7x365
- ✓ are tuned for video surveillance to record video 90% of the time, dedicating the other 10% to data playback and review, and support a workload rating of up to 550TB/year for 3.5-inch drives
- ✓ support smooth video streaming from multiple camera inputs with zero dropped frames
- ✓ deliver reliable performance in multi-drive systems with rotational vibration tolerance in multi-bay environments
- ✓ incorporate advanced power management capabilities
- ✓ have built-in SkyHawk Health Management that actively helps to protect your surveillance storage with prevention, intervention, and recovery options

Surveillance-optimized drives are an optimal setup for video surveillance systems that require multiple video recording streams with high-quality video and reliable storage.



Improve your solutions with Seagate surveillance-optimized hard drives

SkyHawk and SkyHawk AI drives are renowned for their reliability, performance, and flexibility. Our seventh-generation SkyHawk hard drives are an ideal fit for today's surveillance systems requiring high-resolution cameras and increased camera counts. They are instrumental when building scalable NVR surveillance systems and provide many advantages over desktop drives, including:

- **SUPPORT FOR LARGE STREAMING WORKLOADS**
Up to 64 cameras, in systems with 16 or more drive bays recording up to 550TB/year
- **IMPROVED RELIABILITY**
Up to 1.5M hours MTBF, plus ImagePerfect™ and ImagePerfect AI for 24x7 smooth video streaming so you never miss a frame or AI data
- **OVER 10,000¹ HOURS OF HIGH-DEFINITION CONTENT**
1TB to 16TB capacity for 3.5-inch drives
- **IMPROVED VIBRATION TOLERANCE AND BETTER PERFORMANCE**
in multi-drive systems because the drives are built with RV sensors
- **SKYHAWK HEALTH MANAGEMENT**
actively helps protect your surveillance storage by focusing on prevention, intervention, and recovery options²
- **RESCUE DATA RECOVERY SERVICES PLAN**
in the event of data loss or accident³
- **3-YEAR LIMITED WARRANTY**

¹ Applies to 3.5-inch, up to 16TB capacity

² SkyHawk Health Management is currently available on SkyHawk and SkyHawk AI

³ Rescue Data Recovery Services plans are optional with all drives



SKYHAWK
HEALTH

Prevention. Intervention. Recovery.

SkyHawk Health Management (SHM) is an embedded software designed for prevention, intervention, and recovery. SHM helps users manage the health of the drives and provides access to Rescue Data Recovery Services should a catastrophic event damage the drive.

To provide this functionality, SHM analyzes multiple parameters related to drive health and uses proprietary algorithms to determine potential effects to the drive. With this output and info on additional operating conditions, such as temperature and humidity, SHM recommends preventive actions. It may also propose specific interventions when the drive health is likely to have been affected.

SHM is compatible with select partners: Hikvision, Dahua, Tiandy, and Uniview.

RAID RapidRebuild™ is the latest feature that significantly reduces the time needed to perform volume rebuilds. It reconstructs only the failed striped data, then copies over the rest of the unaffected striped data to a spare hard drive. SHM also links to the industry-leading Seagate Rescue Data Recovery Services, ensuring peace of mind with SkyHawk drives.

PREVENTION

SHM monitors operating conditions and recommends preventive actions, such as temperature control and vibration control, to limit deterioration.

INTERVENTION

SHM analyzes multiple internal performance parameters to determine drive health status. When drive health has been deemed to have deteriorated, the NVR OS may recommend backup to ensure data availability.

RECOVERY

With optional access to industry-leading Rescue Data Recovery Services, customers can rest assured they have top experts working to recover their data in a highly secure environment.

SkyHawk AI: designed for artificial intelligence (AI) surveillance

Today's surveillance requirements are rapidly expanding with the growing demand for richer data associated with every recorded frame. To this end, Seagate is delivering SkyHawk AI—the world's first purpose-built hard drive for artificial intelligence (AI)-enabled surveillance solutions that allows for quicker and smarter decisions. SkyHawk's innovative design is optimized for machine learning and deep learning applications which are the building blocks of AI. SkyHawk delivers reliable storage capabilities, high-resolution video, and advanced analytic streaming.

Features include:

- Unlike other surveillance hard drives, SkyHawk AI simultaneously supports 32 AI streams alongside 64 video streams
- SkyHawk AI supports 50/50 read and write of AI streams and can scale AI workloads to match the unique user's environment. Video streaming is optimized for surveillance environments requiring 10/90% read and write workloads.
- ImagePerfect AI firmware supports both AI knowledge and video footage integrity with no dropped frames or lost AI data
- SkyHawk AI supports a 550TB/year workload rate, more than 3× the workload rate of standard surveillance hard drives
- Rotational Vibration (RV) sensors maintain high performance in multi-bay NVR systems
- SkyHawk AI is also bundled with an optional Rescue Data Recovery Services plan for 2 years plus a standard 5-year limited warranty





Seagate Rescue Data Recovery for peace of mind and differentiation

Built into every SkyHawk AI drive and optional for SkyHawk and SkyHawk Lite drives, our Rescue Data Recovery Service plan provides a fast and easy recovery process within 15 days if you experience unintentional deletion or corrupted data. Not to mention, Seagate delivers an industry-leading success rate!

Changwu County Police credits the Seagate Data Recovery Services Team with helping solve gold heist:

“ We believe that Seagate played a key role in helping us crack the case and made great contributions in the investigation. The teamwork, energy, and interdepartmental cooperation, and outstanding professional skills exhibited by Seagate greatly impressed all the police officers in the investigation. ”

— Changwu County Police Official

The Seagate portfolio

Security can take many forms. While SkyHawk hard drives are purpose-built for video surveillance systems, we design drives for smaller configurations, as well as AI-enabled systems and larger enterprise surveillance systems.

| Surveillance applications | Edge NVR/DVR | AI-Enabled NVR Systems | Centralized Back-End |
|---------------------------------|--|--|--|
| Typical usage environments | Home and Office, Commercial Buildings, Campuses, Factories, Hotels | Banking/Finance, Retail, City Security | Centralized, Back-End Cloud |
| Key systems requirements | <ul style="list-style-type: none"> ✓ Reliability ✓ Scalability ✓ Data Loss Protection | <ul style="list-style-type: none"> ✓ Reliability ✓ Performance ✓ AI-enabled | <ul style="list-style-type: none"> ✓ Reliability ✓ Performance ✓ Scalability |
| Seagate recommendations | SkyHawk Mainstream surveillance drives tuned for 24x7, high write cycle workloads typical for surveillance. | SkyHawk AI World's first purpose-built drive for AI-enabled surveillance solutions. | Exos Market leading enterprise drive supports petabytes of camera and AI workloads for storing, analyzing, and archiving data. |
| | Multi-Bay NVR | AI-Enabled NVR | IP SAN/Server Data Center |
| Form Factor | 3.5-inch | 3.5-inch | 3.5-inch |
| Capacity, TB | 1, 2, 3, 4, 5, 6, 8 | 8, 10, 12, 14, 16 | 1 to 16 |
| HD Camera Count | Up to 64 | Up to 64 | Unlimited |
| AI Surveillance | — | 32 Streams | Unlimited AI Streams |
| RV Sensors | Yes ¹ | Yes | Yes |
| Performance, Max Sust DTR, MB/s | Up to 210 | Up to 250 | Up to 250 |
| Reliability, MTBF, hrs | 1 Million | 1.5 Million | 2 Million |
| Workload Rate Limit, TB/year | 180 | 550 | 550 |
| Data Recovery | Optional | Optional | Optional |
| Data Security | No | No | Yes |
| Limited Warranty | 3 years | 3 years | 5 years |
| Drive Health Management | Yes | Yes | No |

¹ Capacities of 4TB and above

Market leader in surveillance

SkyHawk hard drives deliver over 10 years of advanced technology.

- 1 EXPERIENCE**
Data content is the most valuable result of video surveillance—providing analytics and business intelligence. Only SkyHawk hard drive combines always-on reliability with built-in data recovery to help protect your data assets and secure your digital property.
- 2 INNOVATION**
First to market with an AI surveillance-optimized hard drive, we don't rest on our laurels. We innovate year after year, with an annual investment of over US\$1 billion for research and development.
- 3 RELIABILITY**
It's critical to have drives that excel at performance and reliability. With SkyHawk Health Management, users are provided with recommendations on prevention, intervention, and recovery options for added peace of mind.
- 4 SCALABILITY**
Seagate SkyHawk supports up to 64 HD cameras. With SkyHawk AI, an additional 32 AI streams are supported in parallel. Built NVR-ready to allow you to design RAID environments with 16+ drives. Scale up or down with reliability and performance in mind.

Oncam Grandeye looks to Seagate to maintain its competitive edge:



“ We were looking for products which were server-quality with AV applications in mind, and Seagate has proved to be a market leader in developing this kind of technology. We found that Seagate had the right technical specifications for our requirements, the best match for price, performance, and storage capacity.”

— Bryan Waters, Oncam Grandeye



SkyHawk delivers performance and reliability to our customers



“ The SkyHawk surveillance drives operate with an extreme workload rating, low power consumption, provide long-term drive reliability and can operate in harsh environments, withstanding a variety of temperature ranges—ideal for British Airways i360 being on the seafont.”

— Christopher Dean, Brighton CCTV



“ After switching to Seagate, we have lower disk failure rates, and we also achieved a remarkable NFD (no frame drop) during our solution partner certification with Milestone System's Xprotect VMS.”

— Bing Wan, Rasient Systems



“ All NVRs built by Sentry Security Systems Inc. now feature Seagate SkyHawk surveillance drives because of their proven reliability, increasing performance and recording throughput on our servers.”

— Nick Keller, Sentry Security Systems Inc.





Explore the latest in smart, safe, and secure surveillance solutions

Visit the updated **Seagate Surveillance Center** to learn more about our core technologies, get access to up-to-date resources, and put our system compatibility tool to the test.

PARTNER HIGHLIGHTS

Read how our industry-leading partners are transforming surveillance technology solutions for tomorrow.

TECHNOLOGY

Discover the core technologies that make SkyHawk drives the best in the industry.

KNOWLEDGE BASE

Expand your understanding with learning tools like webinars, industry analyst papers, and solution white papers.

PORTFOLIO AND COMPATIBILITY

Determine the drives that make the most sense for your workloads.

SKYHAWK HEALTH MANAGEMENT

Actively helps protect your surveillance storage by focusing on prevention, intervention, and recovery options.

STORAGE CALCULATOR

Calculate the approximate amount of storage you will need based on a number of parameters (such as frame rate, resolution, and number of cameras).

PARTNER RESOURCES AND BENEFITS

Seagate and LaCie Insider for partners provides access to unique resources and benefits to help channel partners secure new opportunities and grow revenue and profitability.

As a program member, you'll receive regular product and industry updates in our monthly newsletter, access to a comprehensive resource portal, and priority access to our support team.

The program offers immediate access to these valuable resources to help you get up to speed on hot new products and technology:

- Marketing kits, product guides, and sales cards
- Online training and brand materials
- Diagnostics and firmware updates
- Support and trackers for RMAs

Start reaping the rewards of membership — register today at seagate.com/partners

- Complete the online form
- Click through and accept our standard agreement

SERVICE AND SUPPORT

Products and Services:
seagate.com/about/contact-us/technical-support

Available services include:

- Presales and Technical Support
- Global Support Services telephone numbers and business hours
- Authorized Seagate Service Centers

Warranty Support:
seagate.com/support/warranty-and-returns

Data Recovery Services:
seagate.com/services-software/

Seagate OEM and Distribution Partner portal:
seagate.com/direct-partners

Seagate Reseller portal:
seagate.com/partners



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