Hybrid Cloud for Video Surveillance

What it is and why you'll want one.

wasabi
hot cloud storage

Video Surveillance Systems Present New Challenges to Enterprises

Video surveillance systems across the world generated an average of 2,000+ petabytes of data every day in 2019, according to industry experts IHS Technologies. Since then, the numbers continue to rise.

It's no wonder, then, that organizations across the globe are struggling to find solutions to more easily store and manage their video data, especially when the task falls to infrastructure and operations leaders, who typically don't have backgrounds in IT.

As video surveillance becomes more common—not only in law enforcement or public safety situations, but also in retail, healthcare, manufacturing, banking, education, government, and more—the pressure put on existing infrastructure can become critical and stretch staff members and budgets past the breaking point.

Right now, many organizations simply continue to use what they're familiar with: on-premises storage and a video management system. Others have already ventured into the emerging realm of video storage based completely in the cloud. For everyone else, the answer might lie somewhere in between—and that means a hybrid solution.

Hybrid Cloud: The Best of Both Worlds

The cloud is swiftly becoming critical to business success across every industry. Its benefits include:

- Greater agility for adopting new technologies such as analytics and computer vision
- Scalable, flexible use of bandwidth and other resources
- Anywhere, anytime availability of video footage and applications

Organizations can choose from public or private cloud offerings.

PUBLIC CLOUD: Requires an agreement with a cloud service provider, such as AWS or Microsoft Azure, in which you pay for the use of their distributed data center infrastructure.

PRIVATE CLOUD: A dedicated cloud architecture that only your organization can access. It's often deployed and hosted in an on-premises data center, but can also be offsite and managed by a third party.

HYBRID CLOUD: An approach that many organizations prefer today. It involves the use of both on-site infrastructure and public clouds.

Go Hybrid and Reap the Benefits

Hybrid cloud is becoming more common in the information technology world and has significant advantages for surveillance video storage, especially for medium to large installations. These advantages include:

- **Investment protection** of existing endpoints, servers, and VMS and applications.
- **Open architecture** that allows for a best-of-breed technologies throughout the infrastructure and the ability to adopt new technologies quicker.
- **Less hardware** that organizations physically have to own and babysit.
- The ability to copy all local recordings to the cloud for backup purposes for **protection against local hardware failure, file corruption, and malicious destruction.**
- A **cloud copy** that can be used for remote access to videos. It can be easier to access them from the cloud than from local storage.
- **Increased data safety**—the cloud is often safer than on-site storage.
- **Scalability on demand**—if an organization adds more cameras, increases resolution, increases frame rate or activity, or lengthens the retention period, they don't have to buy more hardware.

DID YOU KNOW?

Organizations can get up to **2.5 times** more value out of a hybrid cloud approach than they get from a single cloud and single vendor.

Source: IBM Institute for Business Value, 2019

As Video Becomes Ubiquitous, Storage and Management Get Tougher

More organizations are beginning to use video surveillance, as video technology and systems get more portable, cost-efficient, and sophisticated. The more an organization relies on video surveillance, the more difficult it will become to store and manage the massive volumes of footage being generated.

There are three main reasons for that.

1 FILE SIZES ARE GROWING EXPONENTIALLY.

As cameras offer ever-higher resolution, they can provide more information, even allowing businesses to zoom in on faces, analyze license plates, and so on. But finer detail also means those files are bigger than ever—and while the need for video storage is increasing to accommodate larger files, storage budgets aren't growing to meet that demand.

Video files can be compressed to help reduce some storage requirements, but compression rates alone won't be able to offset the amount of video being generated by today's advanced cameras.

2 RETENTION PERIODS ARE ON THE RISE.

Every organization is required to comply with various local, state, federal, and industry regulations that mandate how that business uses and stores its data, including video files. Table 1 shows a range of typical retention periods across industries.

TABLE 1. TYPICAL RETENTION PERIODS BY INDUSTRY	
INDUSTRY	**TYPICAL MINIMUM RETENTION PERIOD** without any occurrence of an event
Retail	Three to five days
Prisons, detention centers	Seven years
Law enforcement - body-worn and patrol car cameras	30 days to 99 years
Banking	180 days
Food processing	Seven days
Gaming/gambling	Seven to 30 days
Healthcare - hospitals	30 days
Manufacturing – factories/plants	Seven days
State/local government – citywide surveillance	Seven to 30 days

Source: Gartner, Market Guide for Video Surveillance Management Systems, July 9, 2018

3 THE VALUE OF DATA IS INCREASING.

Advanced analytics and AI capabilities allow users to get more value out of stored files, which is causing organizations to want to retain more data for longer periods of time. Imagine if you could analyze foot traffic patterns over time in your retail location to determine where to place high-ticket items in various seasons. Or what if you could get a detailed view of the different types of vehicles traversing your city streets throughout the day and automatically adjust traffic lights to minimize gridlock?

Getting more value from this kind of data is a significant benefit for all organizations—but it means they will need to keep that data longer, which only adds to the complexity of storage and management as the amount of data grows.

The Bottom Line:
## A New Approach to Video Storage Is Needed

Organizations are now keeping larger files and an expanded library of video footage for much longer periods of time in order to comply with regulations. This increased storage helps data analytics, too, as the accuracy of data analytics depends on the amount of data retained and analyzed.

As video surveillance technology has evolved, so must video storage. You need a scalable storage strategy that can adapt to the changing surveillance storage landscape—and a video management system that allows you to quickly, easily find and use the files you need.

That's where the cloud comes in. While it's still fairly novel for organizations to rely on the cloud for video surveillance storage, it's becoming more and more clear that the benefits of the cloud make it the smart choice for storing and managing video footage today.

Before we move into the benefits of cloud storage, let's see why your on-premises storage won't be able to keep up with your data.

DID YOU KNOW?
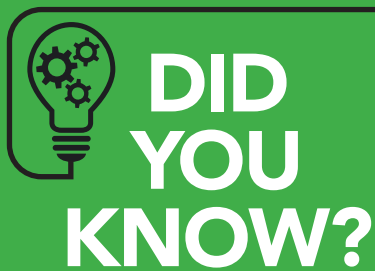
The global video surveillance market is expected to grow from $45.5 billion in 2020 to **$74.6 billion** by 2025, at a CAGR of 10.4%. Reasons include:

- Mounting public safety and security concerns
- Increased adoption of IP cameras
- Growing demand for wireless and spy cameras
- Rise of "smart city" and city surveillance initiatives
- Continuing advancements in Big Data technology and applications
- Advances in artificial intelligence and deep learning technologies

Source: MarketsandMarkets, April 2020

Why On-Premises Storage Isn't Enough

Since the advent of video surveillance, video files have been kept on-premises. In fact, they still are for most organizations. A majority of systems still rely on built-in storage capabilities, whether they're legacy digital video recorders (DVRs) or newer network video recorders (NVRs) that work with connected IP cameras. Video files are often stored on on-premises servers or on tapes or other physical media.

As your video files grow, however, these low-capacity solutions simply won't provide the space you need, or the manageability features that allow you to access and analyze that data so it can benefit your business.

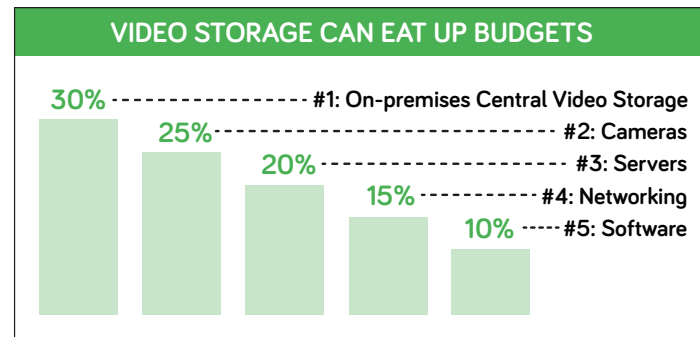## On-Premises Storage

THE PROS:

- It's what you know. Your staff is already trained.
- Files are onsite, readily accessible.
- You have absolute control over that video footage, from security to configuration.
- You don't need to worry about bandwidth.

THE CONS:

- As you run out of space, you are forced to choose between deleting video files or purchasing additional storage.
- On-site storage technology needs to be refreshed every three to five years, which means more money spent on equipment and more time spent on data migration.
- Physical media can be destroyed, misplaced, or stolen. And even files in on-premises servers can be lost for good if that server fails.
- IT spends a lot of time and effort managing, configuring, and updating the systems.
- **And on-premises storage doesn't come cheap ...**

On-Premises Storage: The High Cost of Ownership

Using on-premises storage to retain the video footage created by your surveillance systems costs a lot. In fact, some experts estimate that video storage alone can eat up almost a third of your budget. One report found that on-premises storage for retail video surveillance deployments was 30% for traditional cameras and 25% for networked cameras.* Today, there's no reason that percentage has to be so high for video storage. Table 2 shows other cost considerations when it comes to on-premises video storage.

VIDEO STORAGE CAN EAT UP BUDGETS

30% - - - - - - - - - - - - - - #1: On-premises Central Video Storage
25% - #2: Cameras
20% - - - - - - - - - - - - - - - #3: Servers
15% - - - - - - - - #4: Networking
10% - - - - - #5: Software

* Source: NetApp, 2017.

TABLE 2. OTHER COST CONSIDERATIONS FOR ON-PREMISES VIDEO STORAGE	
HARD COSTS	Up-front capital expense of hardware and software, infrastructure costs of networking, power, cooling, and floor space
SOFT COSTS	Staffing, training, product acquisition and lead times, installation and maintenance, technology refreshes and data migrations

Moving Video to the Cloud: Pros and Cons

As the high cost and limitations of traditional on-premises storage become more apparent, businesses have begun turning to the cloud as a new way to store video data. The cloud can make storing and accessing large files, such as video files, quick and easy.

A report by Gartner found that "cloud-based VMS (video management system) providers are increasingly being evaluated as an alternative solution to on-premises video surveillance solutions. Pay per use and ease of management are the key drivers for cloud-based VMS."*

When you decide to move your video data to the cloud, you'll likely go with one of two options: a single vendor that provides everything from cameras to software to storage, or a systems integrator that offers a mix of third-party solutions. Whichever you choose, you'll want to make sure you get a reliable, affordable solution that is infinitely scalable and makes your data easily available.

But no system is ideal for every use case or business need. Even the cloud has its advantages and disadvantages.

* Source: Gartner, Market Guide for Video Surveillance Management Systems, July 9, 2018

Cloud Storage

THE PROS:

- Bottomless capacity means you can increase frame rate, resolution, retention periods, or number of devices without any impact to existing hardware
- Flexibility of plans, pricing, retention periods, notification alerts, etc.
- No need to own, maintain, or manage the equipment
- Extremely low up-front capital expense
- Video footage is safe in the cloud and can't be destroyed or lost when hardware fails
- Anywhere, anytime accessibility of video data

THE CONS:

- Cloud storage subscriptions can turn out to be extremely expensive over the years, especially when you want to access your data.
- Many cloud-based storage solutions don't integrate with physical surveillance infrastructure or evidence management systems.
- The most popular cloud service providers offer a range of pricing and storage tiers, which causes confusion and tough decisions about where to store data.
- Most of the video collected by an organization is never used, and it can be expensive to send data to storage over expensive networks.
- Using a provider's network to transmit video data means that an outage could keep you from accessing that data, or even result in lost data if transmission was interrupted by the outage.

As is the case with most technologies, the challenges of cloud-based video storage will decrease with time as new capabilities become available and issues with video compression, bandwidth, integration, and security are resolved.

In the meantime, however, there is a storage strategy that can minimize the disadvantages and enhance the advantages of cloud storage: the hybrid approach.

DID YOU KNOW?
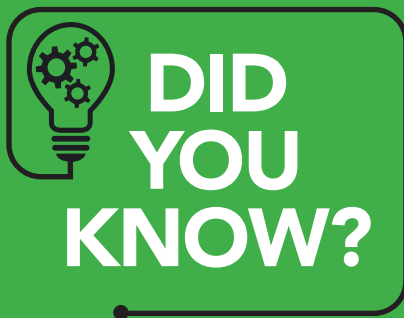
Although Gartner considers cloud-based video surveillance to be a "nascent but steadily developing market," it found that **law enforcement agencies are some of the most common users of the technology**, thanks to the "mobile nature of body-worn cameras" and because "most leading body-worn camera vendors provide evidence management in the cloud."

Source: Gartner, Market Guide for Video Surveillance Management Systems, July 9, 2018

More Perks, Lower Costs with Hybrid Cloud

With a hybrid approach to video surveillance storage, you can get the best of on-site infrastructure and public clouds and minimize the hassles. By combining public clouds with your on-premises data center, you can mix and match where you store your data to best suit your needs.

Hybrid cloud lets you leverage your existing on-premises infrastructure while preventing the need to replace or extend that infrastructure with additional hardware as storage capacity runs out.

Consider this: As surveillance data ages, it becomes less and less likely that you'll need to access it. Up to 90% of your on-premises storage capacity can be this older data that could be off-loaded to lower-cost cloud storage—thereby freeing up your primary storage for the latest video files. You don't have to delete that older data, which you might have

had to do in the past without the unlimited scale of cloud storage, but it also doesn't have to be kept in the most expensive tier of storage.

Every gigabyte of data you clear from your primary storage translates into real-life savings because you are delaying the need to purchase additional on-premises storage devices.

With a hybrid approach, you can upload video files to the cloud when it's convenient—such as after hours when your network is free of other traffic. It also provides an offsite copy of your video that can be used to restore files if your on-premises infrastructure goes down or is interrupted by natural disaster. And in the event your internet connection goes down and you can't reach the cloud, you can continue business operations with the video footage you still have on-premises.

DID YOU KNOW?
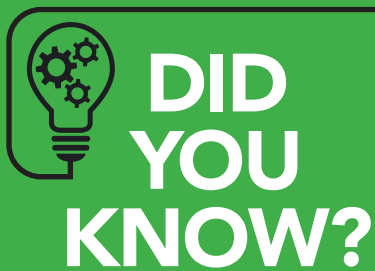
The **data retention policy** of the Washington, D.C. Metropolitan Police Department mandates that footage captured by body-worn cameras are retained for the following time periods:

- Videos that don't depict a crime – 90 days
- Videos related to a citizen complaint – 5 to 10 years
- Videos subject to Freedom of Information Act requests – indefinitely

Source: MPDC, 2015

Power Your Hybrid Cloud with Wasabi Hot Storage

When it comes to affordable, reliable cloud storage for video surveillance data, Wasabi is a clear winner. Wasabi hot cloud storage allows you to maintain all the features that your video management system (VMS) needs on-premises while empowering you to benefit from the cost savings of the cloud. And you'll never run out of storage capacity.

What Differentiates Wasabi from the Competition?

BREAKTHROUGH ECONOMICS / As the industry's lowest-priced cloud storage service, Wasabi makes it cost-effective to store and maintain massive collections of video files in the cloud. You'll pay 80% less than the price of the leading "hot tiers" from AWS S3, Microsoft Azure Blob, and Google Cloud.

INSTANT ACCESSIBILITY / With "archive tiers" from the other guys, you could be waiting up to 15 hours to get access to the video footage you need. With Wasabi, all of your video files are instantly accessible, whenever you need them. Archive tiers are a bad idea for organizations that need speedy access to video data or need to move files in and out of cloud storage very often.

EXTREME DATA DURABILITY AND INTEGRITY / Wasabi hot cloud storage provides 11 9s of object durability. That translates to 99.999999999% reliability, or the likelihood that you'll never experience data loss in your lifetime. Wasabi also supports data immutability to protect against accidental deletions, ransomware, and viruses. Immutability means that video files saved in your preconfigured "bucket" cannot be deleted or altered in any way, by anyone, throughout its storage lifetime.

INTEGRATION WITH TODAY'S MOST COMMON VIDEO MANAGEMENT TOOLS AND TECHNOLOGY PARTNERS / With Wasabi, you won't need to worry about integration with your favorite VMS and analysis tools. Wasabi supports a simple, standards-based REST API that is 100% bit-compatible with AWS S3, so any video management application that works with S3 will work great with Wasabi. Our open ecosystem and long-time relationships with technology partners allow you to create a best-of-breed video surveillance solution and makes it easy to move workloads from place to place.
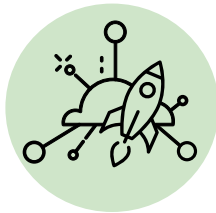
SUPER-FAST PERFORMANCE / Our highly parallelized system architecture gives you about a six-fold read/write performance advantage over competitors like S3. And Wasabi delivers significantly faster time-to-first-byte speeds. In fact, Wasabi is markedly faster than S3—even for Amazon Elastic Compute Cloud customers. That means whether you're executing video analytics and AI-driven search functions locally or on a cloud compute service like EC2, Wasabi can deliver your content more quickly for faster processing and analysis.

Low cost, high speed, fast access, and ultra secure. All-hot storage at cold storage prices. That's the value of Wasabi hot cloud storage.
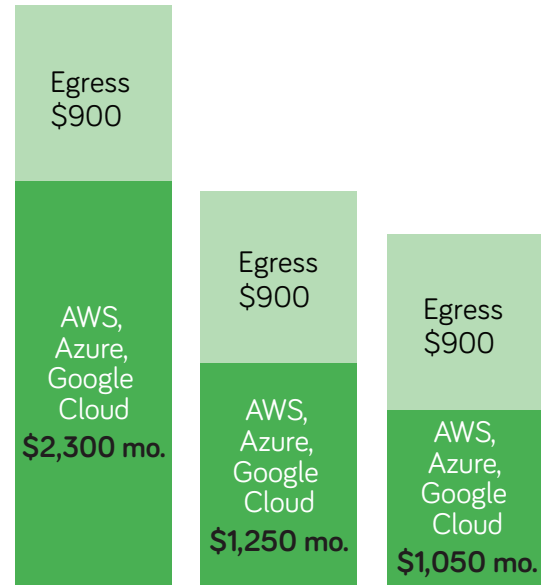
CLOUD STORAGE COST COMPARISON

100 TB Storage
+900 assuming 10% egress
+API request charges
+Data retrieval charges

- **Wasabi - $599 per mo.**
- AWS S3 - $2,300 per mo.
- AWS IA - $1,250 per mo.
- AWS IA1Z - $1,000 per mo.

$599 mo. Wasabi

Egress $900

AWS, Azure, Google Cloud $2,300 mo.

Egress $900

AWS, Azure, Google Cloud $1,250 mo.

Egress $900

AWS, Azure, Google Cloud $1,050 mo.

DID YOU KNOW?

Wasabi hot cloud storage is a **universal, one-size-fits-all cloud storage service** that eliminates confusing service tiers and satisfies nearly all performance requirements. **Wasabi hot cloud storage costs exponentially less than traditional storage options and is significantly faster.**

But Wait, There's More

In addition to the benefits we've already mentioned, Wasabi hot cloud storage can help you in two other key areas.

VIDEO ANALYTICS AND DATA LAKES

With low-cost, instantly accessible cloud storage, you can create data lakes, or repositories of raw, unstructured or structured data captured from a multitude of devices. You can then use analytics applications on this pooled video data to minimize shrinkage from theft and fraud, for instance, or monitor customer service, detect manufacturing anomalies, and so on. Because Wasabi keeps all of your video data "hot" and available, you can run analytics programs on demand—even in the background to flag predetermined behaviors or events.

SECURITY AND REGULATORY COMPLIANCE

Wasabi can help you maintain compliance with ever-evolving regulations and enable you to confidently store your most sensitive video data securely. Our storage services are designed to meet security best practices and standards, including HIPAA, HITECH, FINRA, CJIS, and FERPA. And we provide powerful identity management and access controls, and inherent encryption for data at rest to protect digital rights and safeguard intellectual property.

NEXT STEPS

- **CONTACT WASABI TODAY.**
  Learn more about our price, performance, and protection benefits.
- **TRY WASABI FOR FREE.** Get up to 1 TB for 30 days

ABOUT WASABI

Wasabi provides simple, predictable, and affordable hot cloud storage for businesses all over the world. It enables organizations to store and instantly access an infinite amount of data at 1/5 the price of the competition with no complex tiers or unpredictable egress fees. Trusted by tens of thousands of customers worldwide, Wasabi has been recognized as one of technology's fastest-growing and most visionary companies. It was created by Carbonite co-founders and cloud storage pioneers David Friend and Jeff Flowers, and is a privately held company based in Boston.

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KEY FEATURES

- Ultra-low-cost pricing
- No egress fees for retrieving your video files from the cloud
- Instant accessibility
- Digital evidence preservation and protection
- Regulatory compliance
- Industry-leading performance

BENEFITS

- Store more video for longer at less cost
- No need to choose between saving money and keeping data
- Apply analytics to video pools to create "data lakes"
- Pay-as-you-grow scalability
- Inherent resiliency and data integrity

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