

# Tech Outlook

September 2016

**PROSYS**  
A PIVOT COMPANY

## Storing Video Evidence

*NetApp's public-safety solutions provide efficient, high-performance storage for capturing and managing data from video surveillance.*



Law enforcement agencies around the country are rapidly adopting body cameras and in-car video surveillance. Advances in IP video surveillance technology have made these cameras less expensive, easier to implement and more capable of capturing high-quality images. These tools can help increase officer safety while providing an impartial view of events.

However, deploying IP video cameras is only the first step in video surveillance adoption. Law enforcement agencies must be prepared to handle the massive amounts of data produced by high-resolution video.

“IP video surveillance places significant burdens on the IT environment — particularly the storage infrastructure,” said Craig Alger, Director of Professional Services, ProSys. “The amount of storage capacity needed depends upon a number of factors, including the number of cameras, the image resolution and frame rate, and the type of video compression technology used. While low-resolution video has fairly modest storage requirements, today’s

*continued on page 2*

TECH OUTLOOK

PRSR1 STD  
U.S. POSTAGE  
PAID  
Tulsa, OK  
Permit No. 2146

high-definition, full-motion video streams consume a lot of storage.”

Another factor is data retention. Law enforcement agencies are retaining video surveillance data for months or even years to meet legal and regulatory compliance requirements, further increasing storage demands.

“In order to address these challenges, agencies need cost-efficient storage that can readily scale to accommodate video data growth and enable easy access to video evidence. The storage platform must also be highly reliable and provide the performance needed to support data-intensive video surveillance applications. Robust data protection is required to ensure high levels of data integrity. NetApp’s public safety solutions deliver these capabilities,” Alger said.

## Density and Scale

NetApp has developed a validated reference architecture that combines NetApp E-Series storage systems with industry-leading cameras, video management software and video appliances. Video data captured at the “edge” on servers and storage located close to the cameras can be efficiently transferred to the “core” centralized storage used for long-term archival and analytics.

“The NetApp solution is more than just storage — it creates a digital evidence management system that consolidates multiple channels of video data onto a centralized storage platform,” said Alger. “It provides a tightly integrated solution that enables law enforcement agencies to store video evidence efficiently and retrieve it quickly for improved response times during emergencies.”

NetApp E-Series block storage delivers both industry-leading density and cost-effective scalability. By packing multiple petabytes of data into a 19-inch 40U rack, NetApp enables law enforcement agencies to reduce space, power and cooling requirements by 25 percent. NetApp-E-Series storage systems also feature a modular architecture that makes it easy to scale out storage capacity and performance.

“A scale-out architecture is ideal for video surveillance for a number of reasons,” Alger said. “It eliminates the need to overprovision storage and optimizes storage utilization. It also supports video evidence retrieval requirements by allow-

ing both active and archived data to be stored within a single, scalable platform.

“NetApp E-Series storage maximizes these efficiencies to accommodate the ever-increasing growth of video surveillance data. Simply choose the E-Series model that meets your capacity and performance requirements and scale as needed by adding shelves.”

## Optimal Performance

The NetApp E5600 is a hybrid array that leverages conventional disk drives with highly optimized flash storage to deliver the performance and throughput needed for I/O-intensive applications. It delivers up to 825,000 IOPS and sustains 12GBps data transfers to disk. It is supported by NetApp’s SANtricity operating system, which features adaptive caching algorithms for maximum IOPS and throughput.

“In order to support a large number of simultaneous video streams, as well as enable ready access to stored video data, law enforcement agencies need optimized storage performance,” Alger said. “NetApp’s seventh-generation controller technology is field-proven for use with digital evidence management solutions, ensuring that video data can be retrieved quickly.”

The E5600 supports a variety of host and network interface options, and provides greater than “five 9s” reliability with fully redundant I/O paths and automated path failover. SANtricity Storage Management software, Dynamic Disk Pools and thin-provisioning technology make the

E5600 easy to deploy and manage. Full-disk encryption and SANtricity Remote Mirroring provide advanced data protection and disaster recovery capabilities.

“Video surveillance has complicated the IT environment in law enforcement agencies. A single high-resolution camera can generate 1TB to 3TB of data per month. Agencies not only need the capacity to support those data volumes but the performance to access evidence efficiently,” said Alger.

“NetApp’s public-safety solutions remove much of the complexity and risk from video surveillance deployments. Agencies gain a flexible, easy-to-manage storage infrastructure with the density and scale to meet video storage demands.”



The NetApp solution is more than just storage — it creates a digital evidence management system that consolidates multiple channels of video data onto a centralized storage platform.”

## News Briefs

### 5GHz to Fuel Wi-Fi Chipset Demands

More than 20 billion Wi-Fi chipsets will be shipped during the next five years as Wi-Fi solutions branch out into new usage scenarios, frequency bands, device types and performance requirements, according to a new report from ABI Research.

The firm says the migration to the 5GHz band will drive much of this activity, with more than 95 percent of devices shipped in 2021 to support 5GHz.

"As Wi-Fi technologies begin operating in different bands, operators and OEMs will place greater emphasis on the mixture of efficiency, throughput, range and power-consumption enhancements that these solutions can offer," says Andrew Zignani, industry analyst at ABI Research. "MU-MIMO, narrowband implementations, and other enabling technologies can help to ensure that Wi-Fi is able to operate in both the densest deployments and more power-constrained IoT applications."

ABI says the new 802.11ax standard under development will account for 57 percent of Wi-Fi chipsets by 2021. However, with 802.11ac, 802.11ax and new LTE-U devices all tapping into the 5GHz spectrum, the firm says there are concerns over coexistence among the technologies going forward.

Wi-Gig, which offers high download rates and support for beamforming, will remain a premium standard for the foreseeable future, ABI says. The firm says HaLow, which aims to use Wi-Fi to connect Internet of Things networks, will be a longer-term bet because of competition from low-power wireless technologies such as LPWAN.

### Survey: Intellectual Property at Risk

A majority of companies have no idea where mission-critical information is located on the corporate network, who has access or what is being done with that information, according to a new study. Additionally, few organizations have technology in place to keep employees from sharing confidential documents.

The sobering look at how companies protect intellectual property is described in a Ponemon Institute survey titled, "Risky Business: How Company Insiders Put High Value Information at Risk." The study was sponsored by IT security firm Fasoo.

The study finds that 72 percent of the 637 U.S. IT security practitioners surveyed are not confident in their ability to manage and control employee access to confidential documents and files. Almost 70 percent of respondents do not know where confidential information is located and more than 60 percent don't have visibility into what confidential documents and files employees are sharing.

"There is a belief that data breaches are the work of malicious actors, internal and external, but it is more often the result of careless behavior by employees who don't understand the impact of sharing files. The findings in this study should serve as a wake-up call for all organizations determined to protect high-value information," said Larry Ponemon, President, Ponemon Institute.

## Tech Outlook

Copyright © 2016 CMS Special Interest Publications. All rights reserved.

### Editorial Correspondence:

10221 E. 61st Street  
Tulsa, OK 74133  
Phone (800) 726-7667  
Fax (918) 270-7134

**Change of Address:** Send corrected address label to the above address.

Some parts of this publication may be reprinted or reproduced in nonprofit or internal-use publications with advance written permission. Tech Outlook is published monthly by CMS Special Interest Publications. Printed in the U.S.A. Product names may be trademarks of their respective companies.

## ProSys locations

**Atlanta, GA**  
(Headquarters)  
Phone: 678-268-1300  
Toll-Free: 888-337-2626  
chash@prosysis.com

**Atlanta, GA**  
(Integration Center)  
Phone: 678-268-9000  
Toll Free: 888-337-2626  
twheless@prosysis.com

**Austin, TX**  
Phone: 512-658-5847  
Toll Free: 888-337-2626  
jwestmoreland@prosysis.com

**Birmingham/Montgomery, AL**  
Phone: 205-314-5746  
Toll-Free: 800-863-9778  
birminghamsales@prosysis.com

**The Carolinas**  
Toll-Free: 888-337-2626  
chash@prosysis.com

**Indianapolis, IN**  
Phone: 317-688-1283  
Bill.sanders@prosysis.com

**Knoxville, TN**  
Phone: 865-310-8843  
Toll-Free: 800-863-9778  
pmadden@prosysis.com

**Louisville, KY**  
Phone: 502-719-2101  
Toll-Free: 800-863-9778  
pmadden@prosysis.com

**Mexico City**  
Phone: +52 (55) 3601 3755  
pmadden@prosysis.com

**Miami, FL**  
Phone: 305-256-8382  
Toll-Free: 800-891-8123  
lspivack@prosysis.com

**Mid-Atlantic**  
Phone: 800-634-2588 ext 2  
midatlantic@prosysis.com

**Nashville, TN**  
Phone: 615-301-5200  
Toll-Free: 800-863-9778  
pmadden@prosysis.com

**New England**  
Toll Free: 800-634-2588 ext 1  
newengland@prosysis.com

**Seattle, WA**  
Phone: 425-939-0342  
sballantyne@prosysis.com

**Tampa, FL**  
Phone: 813-440-2410  
800-891-8123  
lspivack@prosysis.com



# Evaluating UCaaS Security

*How to choose a cloud-based unified communications solution with confidence.*

**T**he global market for Unified Communications as a Service (UCaaS) is poised for “staggering growth” and will be worth nearly \$38 billion by 2022, according to analysts with Transparency Market Research. The cloud-based model makes great economic sense because it delivers all the infrastructure required to support multichannel business communications as a managed service, allowing customers to conserve cash, improve efficiency and accelerate business opportunities.

However, as organizations look to take advantage of the flexibility, scalability, manageability and financial benefits of UCaaS, they should not overlook security and regulatory compliance concerns. As with any other cloud-based solution, UCaaS may be vulnerable to security threats if the proper protections are not in place.

While traditional phone systems could be subject to eavesdropping and toll fraud, IP-based phone systems open up a new realm of security issues. Voice calls become data packets that travel over the network, subject to the same

risks as any other data. Thus, the IP phone system is only as secure as the underlying network and server hardware. The infrastructure must be protected against data breaches, denial-of-service (DoS) attacks, malware and other threats.

UCaaS ups the ante because it is hosted in a shared, multi-tenant environment. The service provider’s customers share a virtual instance of a system that provides UC services via the Internet. How does the service provider segment and isolate the data of each customer? How is access authenticated? How often is data backed up, and how quickly can it be recovered in a disaster? Is strong encryption applied to both data in motion and data at rest?

## **Get Answers**

The UCaaS provider should be able to answer these questions, and explain in detail the security measures that are in place. For example, enterprise-class UCaaS solutions employ state-of-the-art firewalls and session border controllers (SBCs) to thwart intrusions and DoS attacks. An SBC sits be-

tween the customer and the carrier network, allowing authorized sessions to pass through while detecting and blocking malicious data packets.

Best-in-class UCaaS vendors often employ a dual-SBC strategy, with one customer-facing SBC and another facing the carrier. This setup provides both an extra layer of security and a backup should one SBC fail. Top vendors also host their services in carrier-grade data centers that are SSAE-16 certified, with strict physical security measures.

The UCaaS solution should use virtual private networks and encryption to protect signaling and media traffic as it travels across the network. Additionally, strong anti-malware features should be in place to protect information assets and prevent lost productivity due to spam or viruses.

Organizations subject to regulatory compliance requirements should also ask about the UCaaS provider's experience dealing with compliance audits for their specific industry. It is important to know how frequently the provider performs internal security assessments.

## Growing Trust

The service provider should store only enough information to maintain user accounts. However, the customer's IT team should have the ability to add, change or revoke user credentials as roles and responsibilities change or as employees leave the company. Any delay can prevent employees from doing their jobs or allow a disgruntled former employee to steal or delete company data.

A recent survey by the IHS business advisory firm indicates there is growing trust in cloud-based UC. More than half of the midsize and large North American businesses surveyed say they will run at least some of their UC applications in the cloud by the end of this year — even though they have the infrastructure and expertise to run them onsite.

“Businesses continue to migrate their unified communications applications to the cloud, citing flexibility as the key reason,” said Diane Myers, principal analyst at IHS. “Cloud solutions are inherently more flexible than premises-based solutions, offering businesses the ability to scale users up and down, centralize management, and deploy new features and applications quickly.”

There is good reason for organizations of all sizes to trust UCaaS services. UCaaS can actually improve security by quashing consumer-grade solutions that employees might be using without the knowledge or support of IT staff. What's more, a service provider's enterprise-grade technology and security expertise probably surpasses that of the typical organization, making UCaaS even more secure than an on-premises phone system. With the proper due diligence, organizations should feel confident that a UCaaS solution provides maximum levels of security, reliability and flexibility.



## Connect your teams with the experience they need, in the Office applications they use every day.

Skype for Business Online delivers reliable and flexible Unified Communications enabled by the Microsoft Cloud.

### Skype across Devices

Connect with your team anywhere using our mobile apps across Windows, iOS and Android™, or bring remote participants into meeting spaces of all sizes with Skype for Business Room Systems and Surface Hub.

### Complete Meeting Solution

From collaborative team sessions to large broadcasts or dialing into a conference using your phone, Skype for Business is designed for all your meeting needs.

### Modern Voice with Cloud PBX

Make, receive, and transfer business calls in the office, at home, or on the road using phone, PC, and mobile. Increase agility and consolidate management with voice services in Office 365.

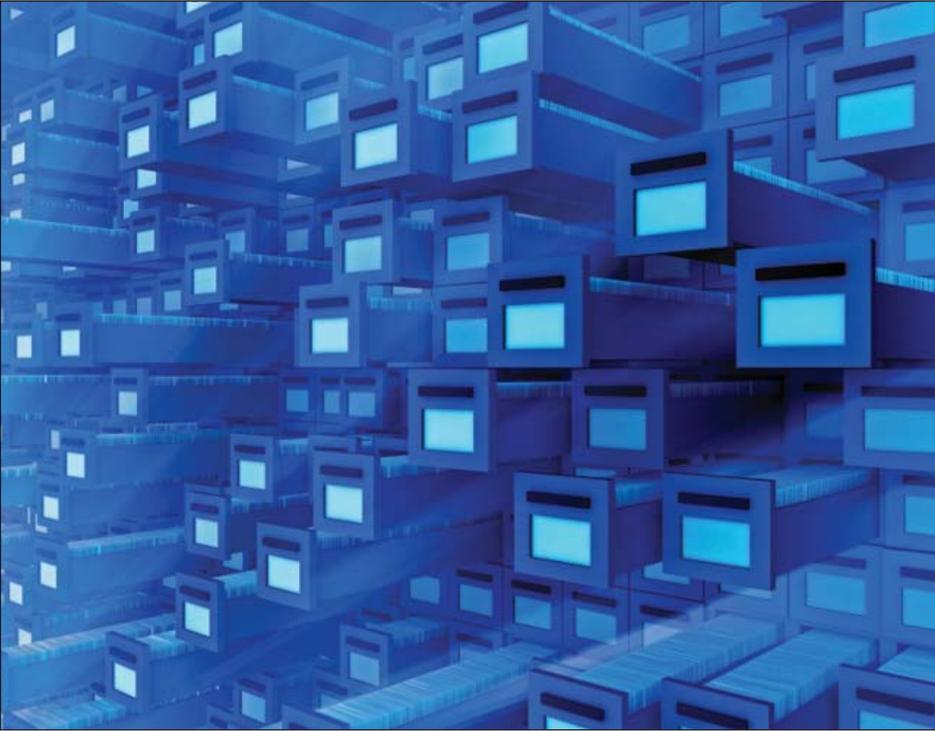
### Security, Control and Compliance

Get end-to-end security, control and compliance that span from the user to the enterprise. All powered by the on-demand scale and manageability of Office 365.

Contact ProSys to learn more.



www.prosys.com  
888-337-2626



# Serious Storage

*Scalable and simple object storage is emerging as the foundation for modern data management initiatives.*

Once considered a niche storage platform suitable only for long-term data retention, object storage is now emerging as an essential option for supporting modern data requirements. Free from early integration challenges, object storage is an efficient, scalable and economic choice for handling massive amounts of unstructured data, which makes it the ideal foundation for both cloud storage and software-defined storage initiatives.

“After years of being dismissed as an archival storage platform, object-based storage is re-emerging as the technology of choice for massive cloud storage platforms and media delivery systems as well as for enterprises,” said Steven Hill, senior storage analyst for 451 Research. Hill added that object storage is “the multi-tool of the modern storage industry” with the ability to cre-

ate massive data repositories while also providing “exceptional data protection, analytics and policy management in the background.”

Simplicity is a key value proposition for object storage. Unlike traditional file and block storage systems that organize data in rigid, hierarchical schemes of directories, folders, subfolders and files, object storage treats all files as unique objects stored in a flat organization of containers.

## Managing Unstructured Data

This minimalist approach to file classification is increasingly important as organizations deal with growing amounts of unstructured data such as emails, videos, images, text documents, web pages and other types of electronic records. About 85 percent of the data managed by the average company today is unstructured, according to a recent

Osterman Research report. With users increasingly reliant upon cloud applications, mobile computing, image sharing and file collaboration services, unstructured data will continue to grow faster than traditional transaction-based storage for the foreseeable future.

Conventional storage technology doesn’t work well with records that don’t fit neatly into traditional row-and-column databases. The location-based addressing schemes these systems use to find and retrieve files depend largely on simple metadata in the file or a sector header that describes what is in the file. However, problems arise in huge repositories of unstructured data. For example, there could be hundreds of images with nearly identical metadata.

Object storage avoids this problem by putting a file and all its associated metadata into a container and then assigning it a unique 128-bit identifier. As such, application servers no longer need to find the physical location of information. Removing the need to manage and search directory metadata eliminates a significant performance bottleneck, simplifies management and speeds file retrieval —performance benefits that enable scaling into the petabyte range and beyond.

Object storage is gaining in importance because of the role it can play in automating and streamlining data storage in cloud computing environments. Data objects can be moved in and out of storage “pools” in the cloud with no need for a directory hierarchy. Because objects are retrieved using their unique identifiers, there’s no need to know a directory path or the object’s location. This location transparency allows massive scalability, making object storage ideal for managing and archiving large quantities of static information in the cloud.

## Old Challenges Resolved

Object storage isn’t particularly new. EMC is generally acknowledged as being the first to bring object-based storage to market with the introduction

of Centera in 2002, which was targeted for long-term storage to meet regulatory requirements.

For many years, object storage wasn't a candidate for more widespread usage due to integration challenges. A primary problem was that most vendors' solutions could not communicate with application servers through standard interfaces such as Network File System (NFS) and Common Internet File System (CIFS), so organizations had to rely upon proprietary application programming interfaces (APIs). That is rapidly becoming a non-issue with most vendors now supporting NFS and CIFS. Equally significant is the development of RESTful interfaces that allow applications to access object storage via standard protocols such as HTTP or HTTPS.

Because RESTful APIs leverage protocols that were designed to travel the Internet, they pave the way for cloud storage by making the distance between data and applications inconsequential. This also allows organizations to create a form of software-defined storage,

with a globally distributed network of hardware-agnostic data stores running in parallel on commodity servers, or nodes. This allows linear scaling of both capacity and performance by simply adding nodes.

## Replacing NAS?

Clearly, object storage is no longer merely an archival platform. It has the massive scalability to handle data analytics or content delivery, as well as the agility and resilience required for backup and active archive operations. This versatility makes many industry experts believe object storage may eventually supplant network-attached storage (NAS).

In a recent survey of 373 midsize and enterprise organizations, Enterprise Strategy Group found that 24 percent are already using object storage extensively, while another 44 percent say they are using the technology to some extent. A big majority — 67 percent — anticipate that object storage will lead to a reduction in their NAS footprint over the next three years, while 25 percent say

it will completely replace NAS in their environments.

Cloud computing, business analytics and other initiatives are fundamentally changing the size and scope of modern IT workloads. Traditional storage platforms, often based upon technologies predating the Internet, are increasingly ill-suited to handle the load. As organizations face continuing pressure to store more data, protect it longer and make it available more quickly, object storage has emerged as potential game-changer.

“Getting a handle on data growth is a challenge that affects companies of every size. More importantly, traditional storage architectures don't offer the powerful data insight and distributed management capabilities enabled by a metadata-rich object storage environment,” said Hill, adding that object storage platforms “offer data protection, visibility, scalability, efficiency and granular storage management capabilities, as well as providing a seamless hybrid storage platform that extends to public cloud resources.”

## Active Archives Balance Cost, Easy Access

A primary use case for object storage is the active archive, which houses data that is never modified but frequently accessed. By delivering online, accessible and affordable data management, active archives are fast becoming the de facto approach to resolving data growth, performance and long-term retention challenges.

According to a new report from the Active Archive Alliance, the volume of digital data is increasing more than 40 percent each year. About 90 percent of that data was created within the past two years but most of it has never changed. This data is clogging up primary storage tiers, driving demand for smarter and more cost-effective long-term storage strategies.

At the same time, organizations are retaining data for longer periods of time for Big Data analytics and to meet regulatory compliance, business and security requirements. As a result, many organizations

are struggling to manage hundreds of terabytes or several petabytes of archived data, triggering a need to redesign the archival storage infrastructure.

Active archive software allows existing file systems to expand over flash, disk, tape and other storage technologies. Organizations can move data to the most efficient storage tier while enabling easy access to files regardless of the storage medium.

An active archive can be implemented on premises, in the cloud or in a hybrid approach. In addition, object storage software or appliances can transform a traditional archive into an “active” archive that is positioned between high-performance storage and low-cost disk or tape.

“The growing complexity of long-term data storage combined with cost, compliance and the explosion of unstructured data are all driving the need for more advanced storage capabilities,” said Peter Faulhaber, chairman of the Active Archive Alliance. “An active archive provides an innovative way for organizations to address the unique challenges of long-term data storage.”

# Reliability matters.



Your organization relies on core applications that are critical to business success, which makes continuous availability and consistent application performance business imperatives. A proven storage system that works with your application software is a must for achieving this reliability.

That is why the NetApp® E5600 hybrid storage system was developed. It supports high-performance mixed workloads, databases, file systems, data analytics and bandwidth-intensive streaming applications, backup, and archive — all with equal ease. Combine these high-availability features with SANtricity® patent-pending Dynamic Disk Pools (DDP) and thin-provisioning technology, and the result is a simple-to-deploy, simple-to-manage data storage solution.



Today's storage must not only meet today's demanding requirements, but must also keep up with continuous growth. The NetApp E5600 system is storage you can count on.

**Contact your ProSys representative to learn more.**

**PROSYS**   
A PIVOT COMPANY

[www.prosysis.com](http://www.prosysis.com)  
888-337-2626