



White paper

# Usage Trends for Flash Storage with Epic

# 1. Introduction

## This white paper presents:

- The benefits of an all-flash data center on a single, unified operating system
- How to reduce the time that it takes for backup and restore
- Factors to consider in the total cost of ownership (TCO) of flash storage for Epic EHR software

This paper also shares real-world examples of NetApp healthcare industry customers who have been successful with NetApp® flash storage for Epic.

To better understand usage trends for flash storage with Epic electronic health record software, Gatepoint Research surveyed more than 100 business and technical thought leaders in the healthcare industry. Survey participants represented hospitals, health systems, and other healthcare institutions. The people who voluntarily responded were primarily IT senior decision makers, including 11% C-level executives, 14% vice presidents, 41% directors, and 34% managers.

Healthcare institutions—and particularly institutions that use the Epic electronic medical record system—have unique data management and storage requirements. Application performance (speed, availability, and reliability) is increasingly important, and institutions face imminent requirements to migrate to flash storage.

NetApp offers scalable storage systems for medical records and diagnostic results, including electronic medical records (EMRs), electronic health records (EHRs), picture archiving and communication systems (PACS), and analytics.

The results of the survey show that most respondents wait up to 24 hours for data backup and restore and that 17% of them feel that the wait is too long. Nearly half of the respondents wanted their flash storage solution to better integrate management of all workloads. Among the many factors to consider when choosing a flash storage solution, cost was the most important factor for 86% of the healthcare industry executive respondents.

## 2. NetApp ONTAP: Managing All Storage Workloads with a Single Method

Survey participants were queried about what they want their flash storage solution to do better (**Figure 1**):

- 39% stated that they want faster performance.
- 29% want a choice of hardware system.
- 21% want to run both their NAS and their SAN from a single box.
- Most important to all respondents—nearly half (46%)—is the ability to better integrate management for all storage workloads.

NetApp ONTAP® 9 enterprise data management software combines simplicity and flexibility to create an integrated, scalable storage environment. It clusters storage controllers from different families—NetApp FAS and All Flash FAS—and from different generations.

Healthcare industry enterprises can grow with the latest hardware and can continue to use older hardware at the same time. When it's time to retire a storage system, users can simply upgrade the controllers and keep data in place on the existing disk shelves. Companies can also get more value from existing investments in third-party arrays by virtualizing them with NetApp FlexArray® virtualization and by using the storage capacity in the ONTAP environment.

Epic users can deploy and configure new storage systems for enterprise workloads in less than 10 minutes. They can automate important processes to increase productivity, can secure data with built-in encryption, and can **gain a global view of storage with a**

**single management console.** They can also perform updates during regular work hours without disrupting applications or users. With ONTAP 9, healthcare industry enterprises can flexibly deploy on a choice of architectures—engineered systems, software-defined storage (SDS), and the cloud—while unifying data management across all of them.

In 2011, [Tucson Medical Center \(TMC\)](#) invested in data storage that was filled in a mere three months. Faced with rapidly growing data volumes from its core Epic software and retention of data per HIPAA guidelines, TMC turned to NetApp storage at the urging of cStor, its IT partner. TMC now benefits from the superior performance of NetApp storage and ONTAP and FlexPod® technologies.

Drew Burnett, systems and network manager at TMC, stated, “Everything that we have, systems-wise, runs—and runs more resiliently—because of NetApp storage.”

According to Paul Lemmons, who leads the Open Systems Group and the storage team at TMC, “The move reduced many headaches and freed up time.”

“Now storage management happens in minutes,” Burnett adds.

ONTAP software lets TMC reorganize storage structures with no downtime and no I/O impact on applications.

Learn more about [NetApp ONTAP data management software](#).

### What do you wish your flash storage solution could do better?

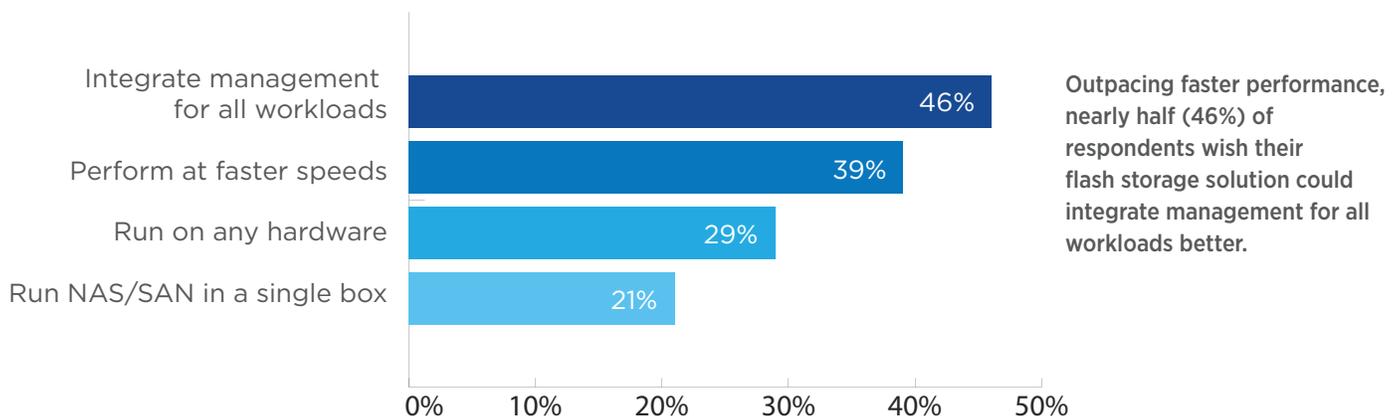


Figure 1) The importance of workload management integration for healthcare executives.  
— Gatepoint Research, Pulse Report, January 2017

# 3. NetApp OnCommand Workflow Automation: Accelerating Backup and Restore

The majority of survey respondents wait up to 24 hours for data backup and restore. Backup and restore takes between one hour and one day for 58% of respondents and 17% think it takes too long (Figure 2). Many respondents are no doubt unaware that a better solution exists.

NetApp OnCommand® Workflow Automation (WFA) is a powerful and flexible tool to orchestrate environment refreshes. Included with ONTAP, WFA provides an alternative to the traditional extensive, complex scripting that is required for provisioning and refreshing replication environments. NetApp developed a prebuilt WFA for Epic solution to accelerate the Epic refresh processes.

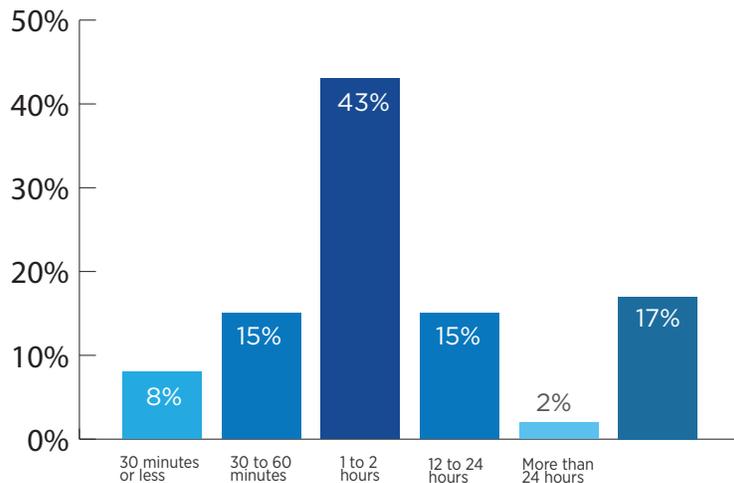
By leveraging existing Epic scripts, the Workflow Automation toolset orchestrates environment refreshes for SUP, REL, and REL VAL. To speed up the process, to compress cycle times, and to improve storage efficiency, the toolset uses NetApp FlexClone® volumes in a predictable, automated manner. Users of the WFA for

Epic solution have reduced the duration of refreshes of their SUP environments. They have documented refreshes that used to take from 16 to 24 hours with previous storage vendors that now take as little as 14 minutes with NetApp.

Mercy Technology Services operates 58 hospitals across five states and is one of Epic's largest installed customers. Mercy has run its Epic production databases on flash-accelerated NetApp storage since 2013.

According to Scott Richert, VP of Enterprise Services at Mercy Technology Services, "A partner like NetApp, who understands the critical availability needs that an EMR system requires, really helped us to gain the trust of our customer base. The tools SnapMirror, SnapVault, and FlexClone volumes have changed the lives of the folks who operate our storage systems. They've allowed us to reduce our backup times. **We now get them done in less than an hour.**"

How long does your backup and restore take?



The majority of respondents (58%) say they wait as long as 12-24 hours for data backup and restore, and a significant 17% say it "takes too long".

Figure 2) Backup and restore time for respondents. — Gatepoint Research, Pulse Report, January 2017

## 4. NetApp All Flash FAS for Epic: Reducing TCO

When choosing a flash storage solution for Epic, respondents had considered several factors. Most considered the Epic comfort level rating, vendor reputation and stability, ease of implementation and use, and cost and speed to be of key importance. Second only to speed, 86% of respondents considered cost to be the most important factor when choosing a flash storage solution for Epic (Figure 3).

NetApp All Flash FAS for Epic environments reduces physical space requirements and the costs that are associated with overprovisioning. By eliminating disks that are not needed for storage capacity, healthcare providers can reduce the purchase price of a storage system and can obtain ongoing savings by consuming less power, cooling, and rack space.

Working together, NetApp and Epic make it possible for mutual customers to expertly manage hundreds of terabytes of patient data, delivering high availability, data protection, and disaster recovery capabilities. NetApp offers fast, simple, scalable, and

What factors were involved in choosing the flash storage solution you're currently using with Epic?

	Less Important	More Important
Speed	10%	88%
Cost	11%	86%
Ease of implementation/use	17%	81%
Vendor reputation stability	19%	78%
Epic Comfort Level Rating	17%	78%

While all of these factors are considered important in choosing a flash storage solution, 88% of respondents say speed is paramount, followed closely by cost (86%)

Figure 3) Factors that respondents considered in selecting flash storage for Epic. — Gatepoint Research, Pulse Report, January 2017

reliable data storage. Epic customers get a cost-effective, easy-to-maintain data storage solution that lowers their TCO while simplifying operational management.

Scott Richert, VP of Enterprise Services at Mercy Technology Services said that with NetApp technology, **“Our operational costs have reduced significantly.”**

Another example is [University Medical Center \(UMC\) New Orleans](#), the academic medical center of LCMC Health. UMC delivers industry-leading performance for EMRs by hosting application and virtual desktop images on FlexPod with All Flash FAS.

Ten years after Hurricane Katrina decimated two of Louisiana’s major teaching hospitals, the State of Louisiana with LCMC Health unveiled a new academic medical center—the state’s largest teaching hospital—UMC New Orleans. Because of a tight launch schedule, the LCMC IT team had only three months to deploy and test the infrastructure for its state-of-the-art facility.

Austin Park is the Epic infrastructure team leader for LCMC and principal consultant with Sapphire Health. Park says, “We knew we needed an infrastructure that would enable us to deploy all of our server systems as quickly as possible. After looking at several solutions, we chose FlexPod with All Flash FAS because it delivered excellent performance at a great value.”

[Group Health Cooperative of South Central Wisconsin](#) is a nonprofit health plan that serves the greater Madison, Wisconsin, area. The cooperative provides both insurance and clinical care services. Group Health Cooperative has run its Epic Caché and Clarity production databases on flash-accelerated NetApp storage since 2013.

“Rather than deploying yet another solution from another vendor, we saw the value in standardizing on a single, agile storage infrastructure that could support our expanded Epic software installation,” said David Stark, chief technology officer at Group Health Cooperative. “We’ve recovered 25% of our data center space with expectations for that to reach 40% when we’ve completed consolidation. We’ve eliminated IT silos and are benefiting from centralized resource management.”

For a detailed discussion about how Group Health Cooperative relies on a FlexPod architecture to deliver cost-saving consolidation, simplified management, and improved performance for Epic EHR applications on Linux, read the [case study](#).

# 5. Conclusion

NetApp flash solutions for Epic environments deliver consistent high performance, availability, and data protection.

Since 2010, Epic and NetApp have maintained a technical alliance to consistently test and confirm that NetApp storage systems meet Epic customer requirements. A growing number of Epic's largest and most progressive customers run their Epic production, operational, and analytical databases on NetApp technology. NetApp FAS initially earned Epic's high comfort level ranking for midrange arrays in 2013 and earned it again for enterprise arrays in 2014. In June 2015, NetApp All Flash FAS earned Epic's high comfort rating, receiving the ranking for enterprise and midrange environments.

**Email us now for more information: [Epic@netapp.com](mailto:Epic@netapp.com).**