


Enterprise Backup Solutions

Backup as a Service vs Traditional Backup

In today's digital age, healthcare organizations have moved from filing cabinets full of patient health records to a paperless system of Electronic Health Records (EHR) for better patient care and data analysis. In fact, in March of 2017, SK&A reported that 67% of all healthcare providers surveyed were using EHR¹.

With the transition to a digital first reality in healthcare, technology has become a critical component to patient care. Infrastructure including compute and storage cannot afford a moment of downtime. Outages can be caused by many factors including:

- Cybercrime such as Malware/Ransomware
- Human Error
- Weather Related (Hurricane, Floods, etc.)
- Hardware/Software Failures
- Lagging Maintenance such as Patches
- Insufficient, Old, Or Misconfigured Backup Power
- Cooling Failures/Fires



Any type of outage today can impact multiple campuses, access to patient records, clinical workflow, and business operations. Strong backup, as well as business continuity and recovery plans, are essential.



Cybersecurity is a key issue that is continuing to escalate.



According to the Identity Theft Resource Center, the healthcare industry accounted for **22.6% of the total number of U.S. data breaches**, with healthcare breaches exposing the highest number of social security numbers².

Healthcare was also by far the prime target of ransomware attacks in the United States in 2016, with the **percentage totaling 88%**³.

To counteract the potential impact of outages, data breaches, and security attacks, more and more healthcare providers are choosing newer off-site data storage methods, for faster data restore times and to provide a clean copy in the event of a data compromise. According to HIMSS Media, 65% of healthcare providers in 2017 planned to use off-site cloud backup or Backup as a Service (BaaS) for business continuity and disaster recovery purposes, which has increased by 38% from 47% in 2016⁴.

Backup as a Service Explained

Backup as a Service is backup and recovery that operates in the cloud through an online data backup provider. When a healthcare organization chooses BaaS for their backups, the backup target is handled through an offsite provider.

Typically, there are three offerings for BaaS:

- **BaaS through a Public Cloud:** The Managed Service Provider (MSP) backs up customer data to a multi-tenant cloud.
- **BaaS through a Private Cloud:** This could be an on-site or off-site owned or managed cloud, or one that the healthcare organization owns and has hired the MSP to run and maintain for them.
- **BaaS as a Hybrid:** On-premise backups, along with an additional layer of protection, via off-site cloud-based backup services through a BaaS provider.

Benefits of BaaS

As the healthcare industry grapples with exponential data growth and increased cyber security threats, it is becoming increasingly popular to let others manage the risk and complexity of backing up important data. Healthcare organizations are choosing Backup as a Service for the following reasons:

Quicker Recovery: No one knows when or if a natural disaster will strike and recent events have shed light on the need to be prepared. A cloud backup and recovery solution allows for faster recovery — sometimes in the span of minutes rather than the hours or days that an off-site tape backup restore could take, saving critical time. With BaaS, the online backup can be rapidly accessed and restored from anywhere with an internet connection. It also offers the capability to easily obtain and locate backups if data is lost or deleted, via multiple copies of the data stored in different cloud locations. When a healthcare organization works with a managed service provider, they select their Recovery Time Objectives and Recovery Point Objectives to match their business requirements.

Potential Cost Savings: Rather than trying to estimate future needs and invest in expensive equipment, backup and data recovery solutions in the cloud allow a healthcare organization to take advantage of their existing infrastructure with little or no equipment investments. BaaS is an operating expense, avoiding capital outlays. BaaS can be coupled with Infrastructure as a Service to take all or partial data management offsite or onsite.

When an organization moves to Backup as a Service, their cloud storage can be scaled up or down to meet demand. Flexible, pay-as-you-go pricing is based on actual usage instead of a guess, avoiding over-buying of capacity.

Cybersecurity Protection: In cloud computing, security is often considered a challenge because the organization is entrusting some of its IT systems or data to a third party. In the case of backup, however, this can be an advantage. When malware gets into a system it may also infect the backup. If data is stored offsite, an air gap reduces the chance of infection significantly and allows faster application recovery.

In addition, with Backup as a Service, the healthcare organization now has a partner to help restore the data.

Quality of Service: Maintaining continual uptime and performance can be challenging for even the best technology teams. Backup as a Service provides access to data management experts who have created rigorous processes and testing to ensure RTOs are met. Additionally, they tend to run the best software available to monitor and manage the infrastructure, with equipment that an organization may not have access to on their own.

Flexible Options: BaaS can provide various backup options, including flash storage, to meet technology needs. The requirements for data management vary – for example, some data vital to ongoing care activities cannot be down at all. Other data is important, but may not need to be immediately accessible. With many different data scenarios, it can be hard to manage data pools internally, but Backup as a Service partners work with you to provide RTO and RPO objectives based on business and clinical goals.

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Benefits of Traditional Backups

For healthcare organizations on-site physical tape and disk backups are the best choice for sensitive data, if they have both the equipment and experienced staff to manage them.

On-Site Backup Technology Advances: Flash storage is taking over as a step up from traditional tape backups. Sales of all-flash storage arrays have experienced a 24% CAGR, and are expected to continue in this vein through 2020⁵.

The speed of flash memory does more than enable faster processing and analytics. It means faster backups, more efficient backups, and faster data recovery in the event of an outage or disaster. Organizations that back up their data on all-flash arrays can restore data faster than those who back up on disks or tape drives. Flash users will be able to fully back up critical data while taking up much smaller amounts of drive space. In addition, this efficiency means that users save on energy and rack space as well.

Security: One undeniable fact of disk-based backup is that a data center is hard to misplace. Many still worry about security in the cloud and feel more comfortable with their solutions being in-house. For these healthcare organizations, this option may be the correct one for the care system. However, both physical and network security for data needs to be addressed so there is no compromise. In these cases, private cloud solutions in-house can be considered.

Recovery: Generally speaking, disk-based backup is quick and reliable for data restoration. If a healthcare organization has a team of experts and if the technology is up-to-date and secure, this is still the way to go for fast recovery. What needs to be determined are possible failure points that can cause healthcare systems to come to a screeching halt. Organizations also need to ensure they have multiple copies of data in various locations to ensure redundancy. One of these

that is easy and cost-effective can be a BaaS copy.

Cost of Tape: At an average cost of \$.01/GB⁶, tape storage is the most affordable option for storing massive amounts of data. As an option for long-term data retention, tape can still hold its own. Please keep in mind however that tape storage can also be the least successful if an organization needs to recover data in the event of a failure.

Best Practice: BaaS and 3-2-1 Rule

When it comes to backups for healthcare organizations, it's important to follow the 3-2-1 backup rule, which can help a hospital come back from an outage, disaster, or a malware/ransomware data breach or attack. The 3-2-1- backup rule is as follows:

- **Have at least 3 copies of data:** This should be in the form of the original data and two backups
- **Keep those backups on 2 different media:** One reason for this is that each type of media has its own vulnerabilities, and both backups shouldn't be susceptible to the same problem. For example, two drives in a data center could be corrupted by the same virus or infrastructure failure. By utilizing different media, exposure to the same incident can be reduced.
- **Store 1 backup offsite:** For example, in the case of a fire or natural disaster impacting the data center, the organization must recover via remote copies. To do so, the offsite backup must be physically located away from the primary data. BaaS is an easy way to implement the one offsite copy.

In order to follow the 3-2-1 backup rule, healthcare organizations are investing in a dual strategy of onsite and cloud backups. Specifically, we are seeing trends of flash storage, like the HPE 3PAR StoreServ storage and backup as a service as the go-to approach.



Why ComportSecure BaaS?

As experts in healthcare data, Comport works with our clients to create a 3-2-1 strategy that is best for your particular long and short term patient care and business goals. ComportSecure BaaS can also help recovery from cyberattacks by creating an “air gap” between production and off-site backups, and allow a hospital to restore from uninfected ComportSecure data in the event of an outage or malware incident.

ComportSecure works in conjunction with the Veeam Availability Suite, and can provide Recovery Time Objectives of under 15 minutes. When a hospital chooses ComportSecure BaaS, they optimize application reliability through Veeam backups to ComportSecure for an off-site copy, and free their IT staff with these benefits:

- More frequent backups minimize potential data loss
- 99.9999 data accessibility with fast restore in the event of an outage or failure
- Covers remote locations as well as data centers
- Hospital IT staff retain control of scheduling and other backup decisions
- HIPAA compliant
- Financially effective with Opex instead of capex expenditures

Control and Confidence in Your Backups

Comport Healthcare Solutions has the expert knowledge and years of healthcare experience to help you navigate the possibilities and perils of hospital IT and best practices. Healthcare faces different challenges than other industries, and we offer services specifically tailored for evolving health information technology requirements. Our mission is to achieve the protection and reliability that your patients and clinicians expect and deserve. Our insights are based on practical experience and extensive investment in certifications, which has earned numerous industry.



¹ SK&A, “EHR Adoption Trends: Current & Historical Insights,” March 2017.

² Identity Theft Resource Center, “ITRC Data Breach Report 2017,” June 2017.

³ Healthcare Dive, “Healthcare its own enemy in attracting 88% of U.S. ransomware attacks,” September 2016.

⁴ HIMSS Media, “HIMSS Analytics 2017 Cloud Survey,” July 2017.

⁵ 451 Research, “The All-Flash Array Market by the Numbers: 2015-2020,” June 2016.

⁶ Forbes, “The Costs of Storage,” July 2014.



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