Accelerating Epic workloads with IBM Flash Storage

A broad portfolio of offerings to help healthcare organizations draw full value from their EHR data

Highlights

- Connect clinicians and patients with needed medical data quickly using tested and proven storage solutions

- Deliver up to 7X performance improvement in IOPS and up to 15X improvement in latency for EHR workloads, as compared to traditional disk drive technology

- Capitalize on operational storage efficiency capabilities to optimize and integrate medical information and deliver deeper insights faster while lowering costs

- Leverage complementary IBM® Spectrum Storage™ offerings to improve storage monitoring, management, orchestration, data protection and more

- Position healthcare IT for next-generation applications and workloads with hybrid cloud, analytics and cognitive-ready storage

Data is flowing into healthcare systems at an unprecedented rate. Between electronic health records (EHRs), digitized diagnostics and wearable medical devices, it's estimated that the average person will leave a trail of more than 1 million gigabytes of health-related data in their lifetime.[1]

All this new data creates tremendous potential for healthcare organizations to understand their patients better and provide them with more personalized, evidence-based care. At the same time, managing this tidal wave of data can be a serious challenge for organizations that aren't adequately prepared. Adopting next-generation healthcare IT solutions today is the first step toward making the most of new healthcare data, while also setting the stage to pursue cognitive healthcare in the future.

EHRs are one area where managing exponential data growth is key. EHRs give providers rapid access to patient data when and where they need it, but only if they're supported with an effective data storage solution. In order to help healthcare organizations get continued access to EHR data, IBM works closely with Epic, a leading provider of EHR solutions, to ensure our IBM Flash Storage offerings can easily support current and future Epic workload requirements.

By testing our storage systems with the Epic EHR platform, we are able to offer our joint customers proven solutions, helping them reduce risk, accelerate decisions and actions, improve patient care and overcome the challenge of massive data growth.

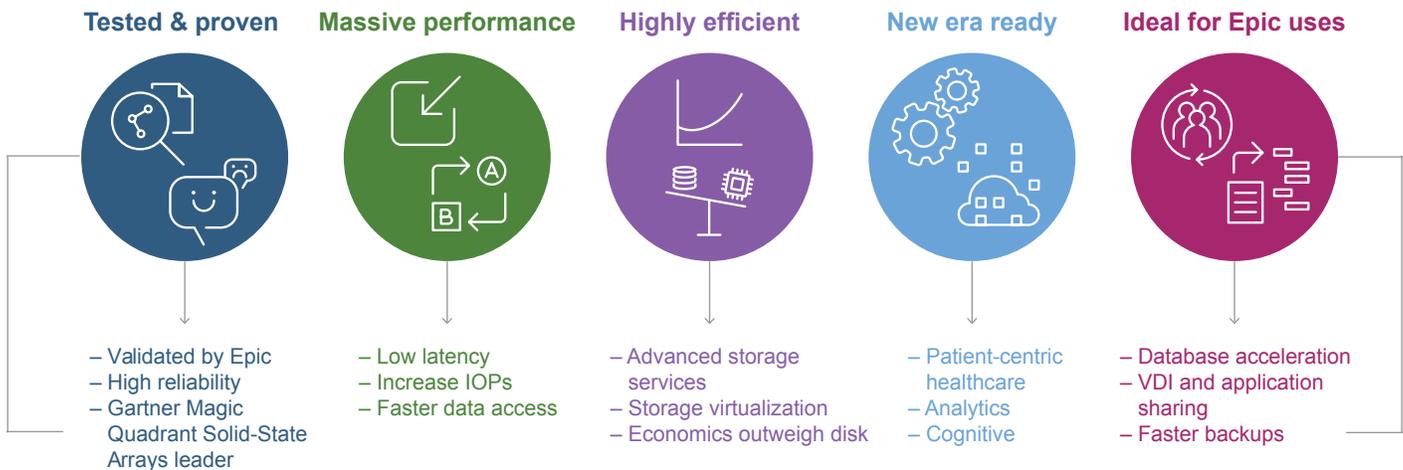# IBM Flash Storage: Delivering Value for Epic Workloads

Tested & proven   **Massive performance**   **Highly efficient**   **New era ready**   **Ideal for Epic uses**

– Validated by Epic
– High reliability
– Gartner Magic Quadrant Solid-State Arrays leader

– Low latency
– Increase IOPs
– Faster data access

– Advanced storage services
– Storage virtualization
– Economics outweigh disk

– Patient-centric healthcare
– Analytics
– Cognitive

– Database acceleration
– VDI and application sharing
– Faster backups

Figure 1: IBM Flash Storage offerings provide a wide variety of benefits for Epic users.

IBM Flash Storage: An offering for every need

IBM offers a broad portfolio of all-flash storage systems designed for high-performance needs. Since Epic EHR deployments span all shapes and sizes of healthcare environments, this diversity of offerings is key in our ability to support as many different Epic users as possible.

The IBM Flash portfolio includes solutions for:

- Business-critical: IBM DS8880F
- Entry-level and midrange: IBM Storwize® V5030F and IBM Storwize V7000F
- Enterprise-level: IBM FlashSystem® V9000, IBM FlashSystem A9000 and IBM FlashSystem A9000R
- Highest level of application acceleration: IBM FlashSystem 900

IBM Flash Storage drives value across a number of healthcare use cases, empowering medical teams to deliver quality care. Whether the need revolves around integrating information, simplifying storage management, database acceleration, supporting virtual desktop infrastructure (VDI) deployments, reducing costs or optimizing data protection, IBM Flash Storage is engineered to meet these modern healthcare IT requirements.

High performance and operational efficiencies for Epic workloads

Database acceleration is a key reason to use IBM Flash Storage for Epic mission-critical workloads. IBM flash technology with ultra-low latency can accelerate performance of Epic-related databases, including the operational database (Caché) and the analytics and reporting databases (Oracle/Microsoft SQL) which underlie the Epic Cogito products Clarity and Caboodle. In fact, when compared to traditional disk drive technology, IBM Flash Storage delivers up to 7X higher performance and up to 15X lower latency for EHR workloads.[2] IBM Flash Storage also speeds retrieval of binary web objects—which may include scanned documents, dictation, discharge instructions and EKGs—from non-Epic applications into Epic workstreams.

Another area where IBM Flash Storage shines is with backups. Faster processing of backup logs, tablespaces, databases and temporary files with IBM Flash Storage can save critical time and reduce your backup windows.

IBM Flash Storage systems use advanced storage capabilities to optimize efficiency and drive higher performance. IBM Flash Storage solutions also support storage virtualization for both IBM and third-party storage systems, thereby reducing costs, simplifying management and integrating medical information for deeper analytics and faster data access.

> *"During the proof of concept for FlashSystem, we saw a 40 percent performance improvement."*
>
> — Jeff Shober, Technical Infrastructure Manager, Froedtert & the Medical College of Wisconsin health network

Today's EHR users expect their data to be available when and where they need it, which means there's simply no room for downtime. In addition, data center downtime is typically very damaging from a financial standpoint, with some estimates placing the costs as high as $8,000 per minute of downtime.[3] IBM Flash Storage offerings are designed to be as resilient as possible, based on IBM's extensive first-hand experience addressing issues that frequently lead to downtime. In fact, IBM offers an All-flash Array High Availability Guarantee for designated Storwize and FlashSystem offerings.[4] Epic users that take advantage of this guarantee will feel confident they will avoid the downtime that is costly and damaging in healthcare environments.

Increase agility and efficiency with IBM Spectrum Storage

IBM offers a comprehensive family of software-defined storage solutions that work together with IBM Flash Storage to further simplify storage and speed data-driven innovation for the cloud era. Ideally suited for Epic workloads, IBM Spectrum Storage family includes offerings such as:

- **IBM Spectrum Control™**: Hybrid cloud storage and data management that helps optimize applications and reduce costs by up to 73 percent.[5]
- **IBM Spectrum Accelerate™**: Highly flexible, scale-out enterprise block storage for hybrid clouds that deploys in minutes and offers consistent tuning-free performance for diverse workloads. Spectrum Accelerate is included with IBM XIV®, IBM FlashSystem A9000 and IBM FlashSystem A9000R.
- **IBM Spectrum Virtualize™**: Virtualization and optimization of hybrid cloud block environments that helps improve flexibility. Spectrum Virtualize is included with IBM SAN Volume Controller (SVC), IBM Storwize family, IBM FlashSystem V9000 and VersaStack™ solutions.
- **IBM Spectrum Copy Data Management**: Simplified copy data management that can increase business velocity and efficiency, and significantly reduce copy sprawl.
- **IBM Spectrum Protect™**: Optimized hybrid cloud data protection that can simplify restores and reduce backup costs by up to 53 percent.[6] Recognized as a leader in the Gartner Magic Quadrant for Data Center Backup & Recovery Software.[7]

Why IBM Storage and Epic

As stated by Epic, their software deployments span midsize and large medical groups, hospitals and integrated healthcare organizations, providing electronic records for 190 million patients.[8] IBM has an extensive track record of providing high performance and efficient infrastructure solutions to support healthcare systems, including EHRs. Additionally, IBM is recognized as a Leader in the Gartner Magic Quadrant for Solid-State Arrays (SSA) for the fourth year in a row.[9]

For over 10 years, IBM has collaborated with Epic to help healthcare organizations optimize their IT environments. The close technical working relationship that IBM and Epic have cultivated provides fully optimized healthcare IT solutions for our joint customers.

For more information

To learn more about IBM Flash Storage offerings for your Epic environment, contact epicibm@us.ibm.com, or your IBM representative or IBM Business Partner. In addition, visit **ibm.com/**storage/flash to learn more about the IBM Flash Storage portfolio.

To learn more about Epic software, visit epic.com/software.

1 Fortune, "IBM's new health care prescription: A stand-alone business unit."
http://fortune.com/2015/04/13/ibms-healthcare-prescription/.

2 IBM lab simulations and results, 2017.

3 451 Research, "Datacenter downtime: when it happens, it (still) really
hurts," March 2016.

4 Guarantee only valid for eligible, newly purchased storage systems
utilizing IBM HyperSwap®. The HyperSwap implementation must
also be performed by IBM System Lab Services or a qualified IBM
Business Partner.

5 ITG, "Cost/Benefit Analysis of IBM Spectrum Storage," November 2015.
ibm.com/common/ssi/cgi-bin/ssialias?htmlfid=TSW03325USEN&

6 Based on IBM Butterfly software analysis engine reports of projected
cumulative savings.

7 Gartner, "Magic Quadrant for Data Center Backup and Recovery
Software," June 2016. https://www.gartner.com/doc/reprints?id=1-
38Z8E64&ct=160607&st=sb

8 http://www.epic.com/about

9 Gartner, "Magic Quadrant for Solid-State Arrays," July 2017.
https://www.gartner.com/doc/3760963/magic-quadrant-solidstate-arrays

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