

IBM FlashSystem® storage solution enables massive scaling



Amid rising consumer demand, technologies like **smart meters** generate orders of magnitude more data and analysis than traditional meters, driving the need for faster, more efficient storage solutions in the eclectic utility industry.

5 Million Smart meters

Support with 16 TB of Flash

30% faster processing

Over traditional SSD storage

4.7X number of data streams

over traditional SSD storage

70 Million transactions

in 40 minutes

"IBM FlashSystem provided a platform that enabled PI Server 2014 to scale to levels never before met.."

—Alton Loe, Director, OSIsoft

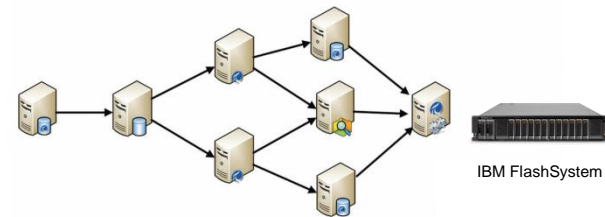


Software

- OSIsoft PI Server 2014

Hardware

- IBM FlashSystem
- PI application servers
- PI analytics servers



OSIsoft determined the key to scaling would be data storage and retrieval performance. The response times of traditional storage could no longer keep pace with the accelerating volumes and velocity of data and, in fact, adding SSDs to these conventional arrays proved inadequate. This is why they turned to IBM FlashSystem.

You can read more this solution in our [whitepaper](#).

Stuttgarter Straßenbahnen AG (SSB)



Puts reliable public transport on the fast track with flash and SAP

7.5x faster

SAP HR payment calculations

98 reduction

in critical batch process times

50 percent

lower TCO compared to traditional disk storage

Solution Components

- SAP ERP
- IBM Power Systems
- IBM FlashSystem 810
- IBM SAN Volume Controller
- IBM InfoSphere



Business challenge: Slow response times impacted SSB's ability to co-ordinate logistics and deliver sale, efficient urban transport to their passengers.

The solution: SSB gained greater business insight and the ability to perform advanced data analytics by moving critical SAP ERP applications to flash.

“...we can easily move whole systems or databases from traditional storage to flash storage at the push of a button. This capability has increased our agility and enables us to improve the user experience and react quickly to changing performance requirements.”

- Roland Wagner, Team Lead Systems & Operations, SSB

Northeast US Commercial Bank

Taking care of clients' needs with virtual desktop infrastructure

178,000 IOPS

needed to meet challenging VDI workload requirements

12x better

user density than competing flash solution

12 seconds

boot time on a VDI, for a faster-than-local desktop experience

Solution Components

- VMware VDI
- Atlantis ILIO
- IBM FlashSystem 820
- IBM SAN Volume Controller
- IBM Storwize V3700



Business challenge: Bank needed an end-to-end VDI solution that could support over two thousand desktops at 175+ branches and handle rapid growth.

The solution: Bank eliminated performance issues, improved VDI density and achieved high availability with IBM FlashSystem and Atlantis software.

Business impact: Implemented a virtualized desktop environment which promoted performance, scalability, centralized control and management while reducing costs, permitting the client to prepare for rapid growth with sustained service levels.

6x faster

nightly backups

200 hard disks

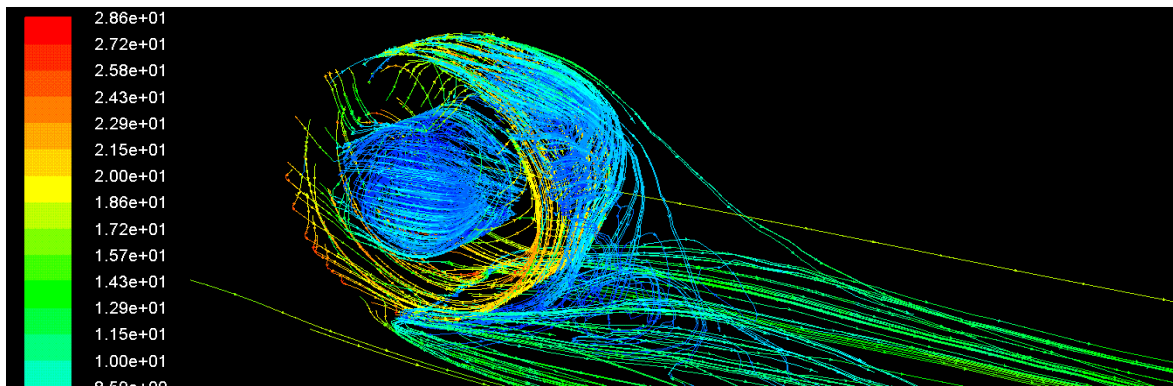
replaced with 2 flash arrays

90 percent

reduction in power consumption
with significant cost savings

Solution Components

- IBM FlashSystem
- IBM Code name: Elastic Storage



Business challenge: Current storage network overwhelmed by transaction demand of research computing group, degraded system operations resulting from lengthy 6 hour nightly backup.

The solution: Replaced 200 disks with 2 IBM FlashSystem arrays in a high availability mirrored configuration using replication functionality of Elastic Storage.

“... it made sense to go with an all flash array rather than continuing to throw traditional disk spindles at the problem.”

- Jason Holmes, Lead Systems Administrator, Penn State

Transforming customer service with ultra-fast flash storage

33x faster

than tier 1 EMC VMAX storage

3.6x more

iPhone activations per minute

#1 ranking

in customer satisfaction among
national carriers

Solution Components

- Oracle RAC
- IBM AIX
- IBM FlashSystem 820
- IBM SAN Volume Controller
- Microsoft Lync



Business challenge: Sprint's call-center agents needed fast, reliable access to respond to customer issues. Existing storage infrastructure was unable to keep up.

The solution: Sprint deployed IBM FlashSystem to greatly improve performance and resolve customer queries faster, while slashing energy consumption, data center footprint and overall operations cost, e.g. reduced software licenses.

“IBM FlashSystem solution allows us to identify and address potential customer issues faster, helping us to maintain and build our subscriber numbers—which is absolutely the most critical metric in our industry.”

- Karim Abdullah, Director of IT Operations, Sprint Nextel

Verizon Networkfleet

Fleet telematics provider tracks extreme performance



6x faster

performance for fleet queries

15x reduction

in IOPS latency, from 15ms or greater to less than 1ms

80 percent

reduction in power, 50% in space to facilitate TCO savings

Solution Components

- IBM FlashSystem
- Oracle



Business challenge: Online GPS tracking solution by Verizon required innovative answers for problems of latency, queries, and reporting, but needed to find clarity among flash alternatives such as hybrid arrays and inline accelerators.

The solution: Winning against other flash alternatives, two IBM FlashSystem arrays were deployed to support fleet telematics such as location, where they are going, what they are doing, and monitoring operational health of vehicles.

Business impact: Exponential improvements in performance and reporting coupled with major reductions in environmental costs put the client on a solid footing for growth.

SciQuest



Staying ahead of the competition with IBM FlashSystem.

2x faster

response times

5x increase

in system load on the 1st day of install

14x reduction

in physical rackspace for significant cost savings

Solution Components

- IBM FlashSystem
- IBM System x
- IBM Storwize V7000
- IBM DB2



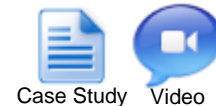
Business challenge: New challenges for optimal performance and availability amid growing user demand for cloud solutions, constraints around costs, energy, and rackspace.

The solution: Replaced a full rack of standard spinning disks with an IBM FlashSystem occupying only 3U of rackspace.

“With IBM FlashSystem . . . we’re able to focus on bringing new customers in. . . it’s a wonderful thing to show the performance.”

- Bill Kirchhoff, Production Infrastructure Manager, SciQuest

Coca-Cola Bottling Co. Consolidated



Case Study Video



Delivering deeper insight into customer demand four times faster

97 percent

reduction in processing time
without replacing a single server

20x more

data crunched within the existing
window and SLAs

150 million

cases of product per week

Solution Components

- SAP ERP
- JDA Manugistics
- IBM FlashSystem 820
- IBM SAN Volume Controller



Business challenge: CCBCC needed to process more data to accurately anticipate customer demand without increasing time-to-insight or exceeding SLAs.

The solution: CCBCC now processes 20 times more forecasting data, down to the store level, which enables them to match manufacturing output with demand, enables earlier logistics planning and increases profitability.

“By using IBM FlashSystem to accelerate our insights into customer demand, we’re better placed than ever before to offer unbeatable levels of service to our customers across the United States.”

- Tom DeJuneas, Infrastructure Manager, CCBCC

IBM Flash improves process flow for robotics giant

464 percent

faster response time than disk

157 percent

better CPU utilization

75 percent

lower operational costs



Business challenge: Client confronting SLA penalties of \$100K monthly owing to SAP performance problems; additional concern for scalability of existing solutions.

The solution: Deployed IBM FlashSystem arrays to accelerate critical end of month SAP e-business batch process, which improved 2-4x in overall performance. Costs were also improved through a reduction in software licenses.

“SSD performed better than traditional spinning disk . . . but after completing our due diligence process, it became obvious that the “shared Flash array” from IBM was in an entirely different category all together.”

- Monty Gay, Senior Director of Infrastructure

Solution Components

- IBM FlashSystem
- IBM SAN Volume Controller
- SAP
- Oracle



Iconic northeastern supermarket freshens performance with IBM

75 percent

compression rate with 7TB
Oracle database

10 years

planning horizon owing to new
capability and flexibility

>300 stores

in northeast USA (CT, DE, MD,
NJ, NY, PA)

Solution Components

- IBM FlashSystem V840
- Oracle



Business challenge: Long-standing grocery chain in the NE USA needed better performance, flexibility and features which its aging disk-based infrastructure was unable to deliver.

The solution: An IBM FlashSystem V840 was deployed to provide tiered storage, capacity efficiency with compression and better service levels for Oracle database.

Business impact: Outstanding compression ratios and performance have positioned the client with a flexible storage infrastructure to move the business forward for the next decade.



Enabling lightning-fast performance to lead enterprises to the cloud

66 percent

reduction in SAP ERP
application response times

97 percent

cut in potential footprint
requirement

95 percent

decrease in power consumption



Business challenge: To broaden its cloud-services client base, Cegeka targeted enterprises with demanding SLA requirements. Could it meet data performance and scalability needs without costs spiraling out of control?

The solution: Cegeka gained the capacity to support enterprise clients in the cloud, helping to meet corporate growth objectives, while continuing to attract and retain business from existing customers.

“IBM FlashSystem Enterprise Solution accelerates some SAP ERP processing jobs by up to 90 percent.”

- Luc Greefs, Director of Cloud Services, Cegeka

Solution Components

- SAP ERP
- IBM FlashSystem 820
- IBM SAN Volume Controller
- Oracle database
- VMware



Rathbone Brothers Plc.

Portfolio management in real-time using IBM flash



40x faster

batch processes run in real-time instead of 7-8 hours overnight

98 percent

reduction in footprint

88 percent

reduction in power consumption



Business challenge: With more than £17 billion under management, Rathbones needed to increase performance for real-time measurement and portfolio management. Traditional HDD array vendors were unable to meet this demand.

The solution: Rathbones moved their investment management business to flash and exceeded performance requirements by over 300 percent, while shrinking a full cabinet of storage down to 1U.

“When you add in the reliability and the ease of setup, the solution really ticks all the boxes for us. We are big fans.”

- Gerry Johnson, Technical Admin. & Support Analyst, Rathbones

Solution Components

- InterSystems Caché
- Oracle
- Bespoke portfolio management software
- IBM FlashSystem 720

US Army LOGSA

Reinforcing logistics with bigger data and smaller costs



50 percent

better database performance

4x reduction

in latency

\$100K saved

per month in lease fees from the displaced Vendor Array/Software

Solution Components

- IBM FlashSystem
- IBM SAN Volume Controller
- Oracle



Business challenge: A shrinking federal budget was putting pressure on the ability of the US Army Logistical Support Activity to improve performance of larger data sets in their mission of enabling warfighter operations.

The solution: Analysis of AWR and Disk Magic reports impelled the client to replace the installed HDS disk with IBM FlashSystem and SVC with Easy Tier.

Business impact: The client achieved better performance and significant cost reductions allowing them to augment advancements in their core mission with excellent stewardship of tax funding.



Automobile manufacturer

Focus on reducing latency gives edge to CAD designers

22x reduction

in latency for CAD with DB2

30x reduction

in latency for SAP with Oracle

Faster

design rendering = quicker time
to market with new models



Business challenge: High-end designers required better response time for rendering designs to bring products to market faster amid significant competition.

The solution: IBM FlashSystem was implemented to provide latency improvements over the SSD solution used previously.

Business impact: Exceptional reductions in latency and higher performance for CAD and SAP in DB2 and Oracle environments assisted in faster designs and speed to market in a highly-competitive industry.

Solution Components

- IBM FlashSystem 840
- CAD
- IBM DB2
- Oracle
- SAP

Verizon Networkfleet

Fleet telematics provider tracks extreme performance



6x faster

performance for fleet queries

15x reduction

in IOPS latency, from 15ms or greater to less than 1ms

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Solution Components

- IBM FlashSystem
- Oracle

IBM FlashSystem® provides performance boost

Helps improve patient healthcare experience

Healthcare consumers often accept care without knowing the financial implications of their decision. TriZetto strives to change that through their proven claims administration systems and require high-performing infrastructure to capture and reliably deliver healthcare information seamlessly, with no unplanned downtime.



12% improvement
in application performance

90% OPEX reduction
compared to disk

90% reduction
in storage latency

up to 10X improvement
In database maintenance operations

Replacing the disk storage solution with IBM FlashSystem provided TriZetto tangible performance improvement in its payer software. The reduction in batch cycles and improvement in online response in TriZetto payer applications seen with FlashSystem are vital.

With IBM FlashSystem storage, TriZetto can process claims faster, which can improve the patient experience, help customers make more informed healthcare decisions and reduce healthcare costs for insurers and members.

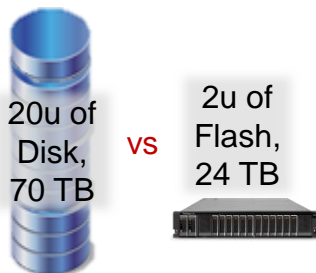
You can read more this solution in our [whitepaper](#).

Hardware

- IBM FlashSystem storage
- Flex System™ server with IBM POWER7+™, IBM AIX®

Software

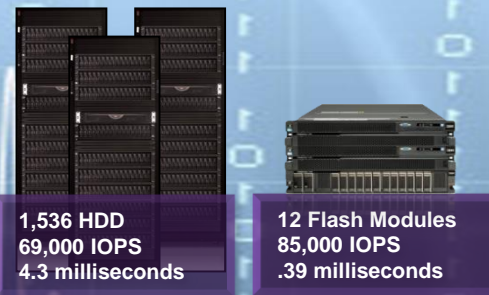
- TriZetto QNXT application w/Microsoft SQL Server
- TriZetto Facets application w/Sybase ASE 15.7



Understanding Storage in a Healthcare Environment: why it matters

Why FlashSystem storage matters

Doctors get the data they need quickly without waiting for storage to address their request. IT personnel get peace of mind knowing the patient data is stored in a safe, high performing solution that delivers the data when needed at a lower cost.



Epic Healthcare

40% lower

random read latency than SSDs

90% lower

random read latency than high-end disk

30X below

recommended performance requirements

70% compression

rate achieved

Epic is a set of software that has changed the way healthcare interacts with patients.

Epic covers all aspects of the healthcare organization which directly affect patients, doctors, and operations. This presents challenges to the infrastructure.

The ability of EPIC to do what it was designed to do is what directly affects doctors and patients. Due to this, solutions have to meet minimum requirements when deployed in an EPIC environment.

Storage ensures that Epic can function efficiently and effectively.

The processing ability of IBM POWER8 coupled with the enterprise capabilities and performance of IBM® FlashSystem™ V840 surpassed EPIC needs at a lowest cost*

You can read more this solution in our [whitepaper](#).

* Based on IBM internal testing

FIS™ accelerates global banking with IBM FlashSystem®

Profile is FIS' premier real-time ultra-scalable core banking application. It is based on FIS [GT.M](#)—a transaction processing database engine.

Why FlashSystem?

Customer growth leads to data growth. With over **17 million** credit card accounts, **42 million** loyalty accounts, **151 million** prepaid cards and **8 million** debit cards. FlashSystem produced the performance needed to service current and future growth.



100X Improvement

in system latency

38% Improvement

in application response time

75% Improvement

in online backup time

40% Reduction

in batch processing

The IBM FlashSystem solution delivered improvements in front-end and back-end application response times and reduced overnight scheduled processing timelines and overall operational latency, enabling FIS to continue to meet their customer's SLA requirements, now and in the future.

You can read more this solution in our [whitepaper](#).

A Smarter, Faster Solution

IBM FlashSystem, FIS Profile, FIS GT.M Database Engine, IBM Power Systems, IBM AIX