



ADVANCED TECHNOLOGY GROUP (ATG)



Accelerate with ATG Webinar:

How to Build an Affordable Policy Based HA Solution Using FlashSystem Value Bundles

Matt Key

Principal Storage Technical Specialist, IBM Advanced Technology Group - FlashSystem

Craig Nelson

Broadcom, Global Sales Executive (IBM Account)

Tim Werts

Broadcom, Global Marketing Manager (IBM Account)



Accelerate with ATG Technical Webinar Series

Advanced Technology Group experts cover a variety of technical topics.

Audience: Clients who have or are considering acquiring IBM Storage solutions. Business Partners and IBMers are also welcome.

To automatically receive announcements of upcoming Accelerate with ATG webinars - Clients, Business Partners and IBMers are welcome to send an email request to accelerate-join@hursley.ibm.com.

2025 Upcoming Webinars – Register Here!

[AI Data Assistance with IBM Content Aware Storage \(CAS\)](#) - April 29th, 2025

[IBM Storage Virtualize 8.7.3 Technical Update & the New FlashSystem C200](#) - May 13th, 2025

[Discover What's New: The IBM TS7780 and the New Release 6.0](#) – May 20th, 2025



Important Links to Bookmark:

Accelerate with ATG - Click here to access the Accelerate with ATG webinar schedule for 2025, view presentation materials, and watch past replays dating back two years. <https://ibm.biz/BdSUFN>

ATG MediaCenter Channel - This channel offers a wealth of additional videos covering a wide range of storage topics, including IBM Flash, DS8, Tape, Ceph, Fusion, Cyber Resiliency, Cloud Object Storage, and more. <https://ibm.biz/BdfEgQ>

Offerings

Client Technical Workshops

- **IBM DS8000 G10 Advanced Functions: April 30 & May 1, 2025 (Coppell, TX)**
- **IBM Fusion & Ceph: May 14-15, 2025 (Durham, NC)**
- **IBM FlashSystem Deep Dive & Advanced Functions: May 21-22, 2025 (Chicago, IL)**
- **IBM Storage Scale & Storage Scale Functions: June 4-5, 2025 (NYC)**
- Cyber Resilience with IBM Storage Defender

TechZone Test Drive / Demo's

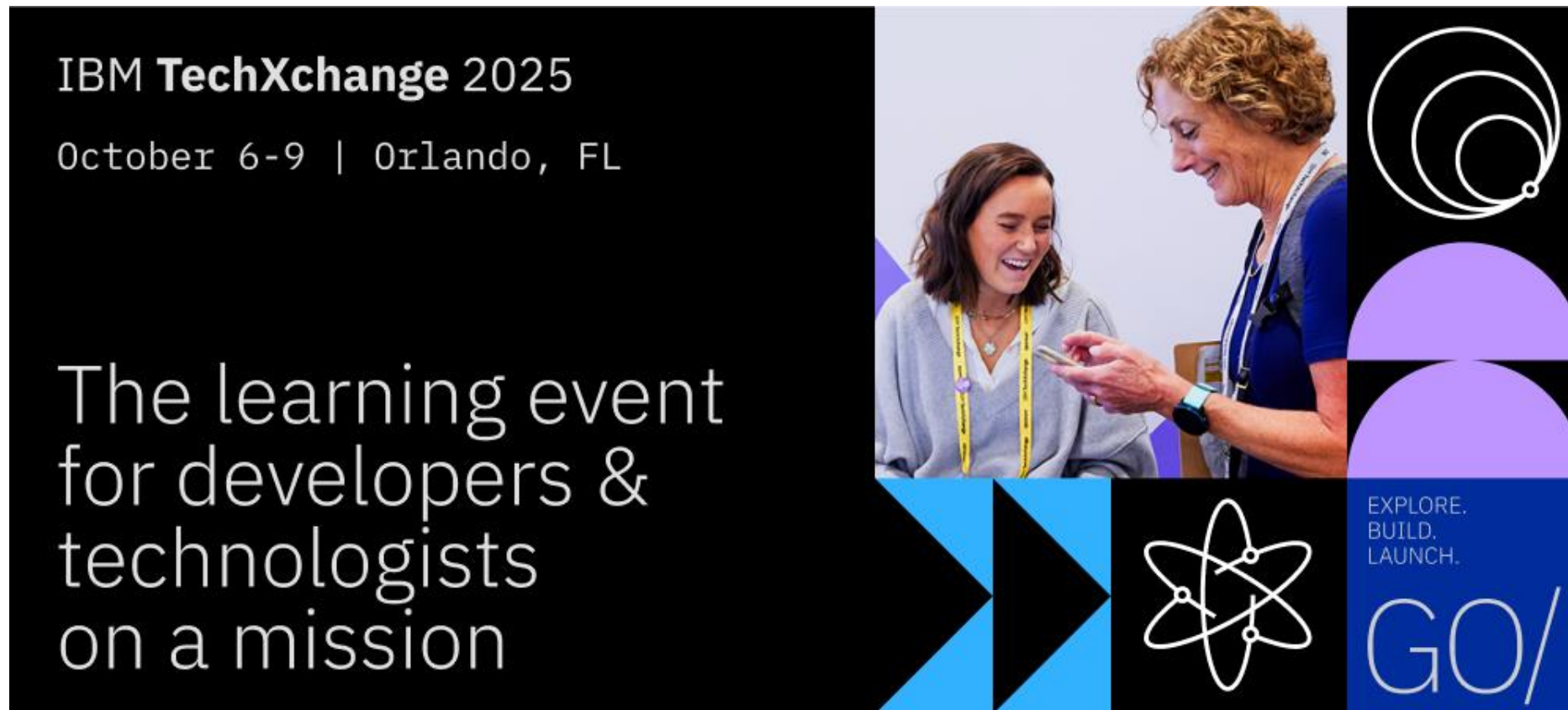
- IBM Storage Scale and Storage Scale System GUI
- IBM Storage Virtualize Test Drive
- IBM DS8900F Storage Management Test Drive
- Managing Copy Services on the DS8000 Using IBM Copy Services Manager Test Drive
- IBM DS8900F Safeguarded Copy (SGC) Test Drive
- IBM Cloud Object Storage Test Drive - (Appliance based)
- IBM Cloud Object Storage Test Drive - (VMware based)
- IBM Storage Protect Live Test Drive
- IBM Storage Ceph Test Drive - (VMware based)

Please reach out to your IBM Representative or Business Partner for more information.

***IMPORTANT* The ATG team serves clients and Business Partners in the Americas, concentrating on North America.**

Announcing the 2025 IBM TechXchange Conference

Our theme this year is simple but powerful: **GO / Explore. Build. Launch.**



IBM TechXchange 2025
October 6-9 | Orlando, FL

The learning event
for developers &
technologists
on a mission

EXPLORE.
BUILD.
LAUNCH.

GO/

The graphic is a collage. On the left, a black rectangle contains the event title and dates in white text, and below it, the tagline 'The learning event for developers & technologists on a mission' in a larger white font. To the right of this is a photograph of two women, one older and one younger, both wearing lanyards and looking at a smartphone together. Further right is a vertical strip of four squares: the top one is black with a white spiral logo; the second and third are purple with white semi-circles; the bottom one is blue with the text 'EXPLORE. BUILD. LAUNCH.' and 'GO/' in white. At the bottom center, there is a blue and black geometric arrow pointing right, and to its right is a white atomic symbol logo on a black background.

For more information, please visit - <https://www.ibm.com/community/ibm-techxchange-conference/>

Accelerate with ATG Survey

Please take a moment to share your feedback with our team!

You can access this 6-question survey via [Menti.com](https://www.menti.com/join/51510447) with code 51510447 or

Direct link <https://www.menti.com/alhsf3bgvxu6>

Or

QR Code





ADVANCED TECHNOLOGY GROUP (ATG)



Accelerate with ATG Webinar:

How to Build an Affordable Policy Based HA Solution Using FlashSystem Value Bundles

Matt Key

Principal Storage Technical Specialist, IBM Advanced Technology Group - FlashSystem

Craig Nelson

Broadcom, Global Sales Executive (IBM Account)

Tim Werts

Broadcom, Global Marketing Manager (IBM Account)

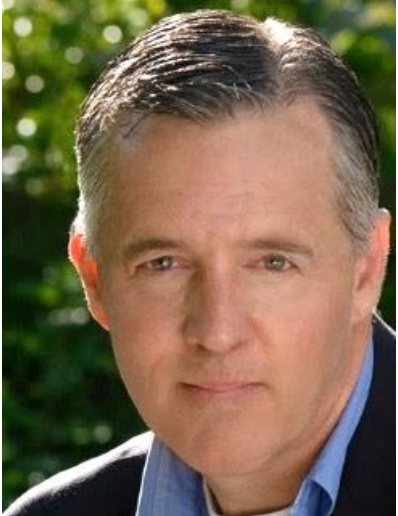


Meet the Speakers



Tim Werts - Global Marketing Manager at Brocade

- 3+ decades in the storage industry
- Current Role - Marketing with Sales enablement focus at Broadcom
- Decade of Business Development at Brocade
- Decade of System Engineering at Brocade
- Decade of Qualification Engineering for Tape and Disk Drives at NCR
- Experienced as trainer, presenter, SAN architect, and part-time troubleshooter



Craig Nelson - Global Sales Executive at Brocade

- Oversees IBM sales across multiple technology divisions
- Includes multiple Broadcom technologies including Brocade, Emulex, and others
- Storage networking expertise since 2000
- Roles at EMC, McDATA, and Brocade (acquired by Broadcom in 2017)
- Worked exclusively with IBM and its Business Partner channel since 2005.
- Frequent presenter at IBM events including Think, Edge, Storage Masters, and TechU.

Meet the Speakers – Matt Key



Matt Key is a 18-year veteran of solid-state storage and came into IBM through the 2012 acquisition of Texas Memory Systems, the Houston-based engineering group behind the FlashCore Modules in IBM's distributed storage portfolio. Currently, he is the technical lead for Flash in the Advanced Technology Group (ATG), the client-facing group of subject matter experts across the portfolios of storage, servers, and software. Matt graduated Texas A&M (WHOOOP!) in 2006 with an engineering degree in telecommunications.

Why are we here?

To avoid surprise
WORK OUTAGES ...



... because no one
wants a *work outage*
when they're
out from work.

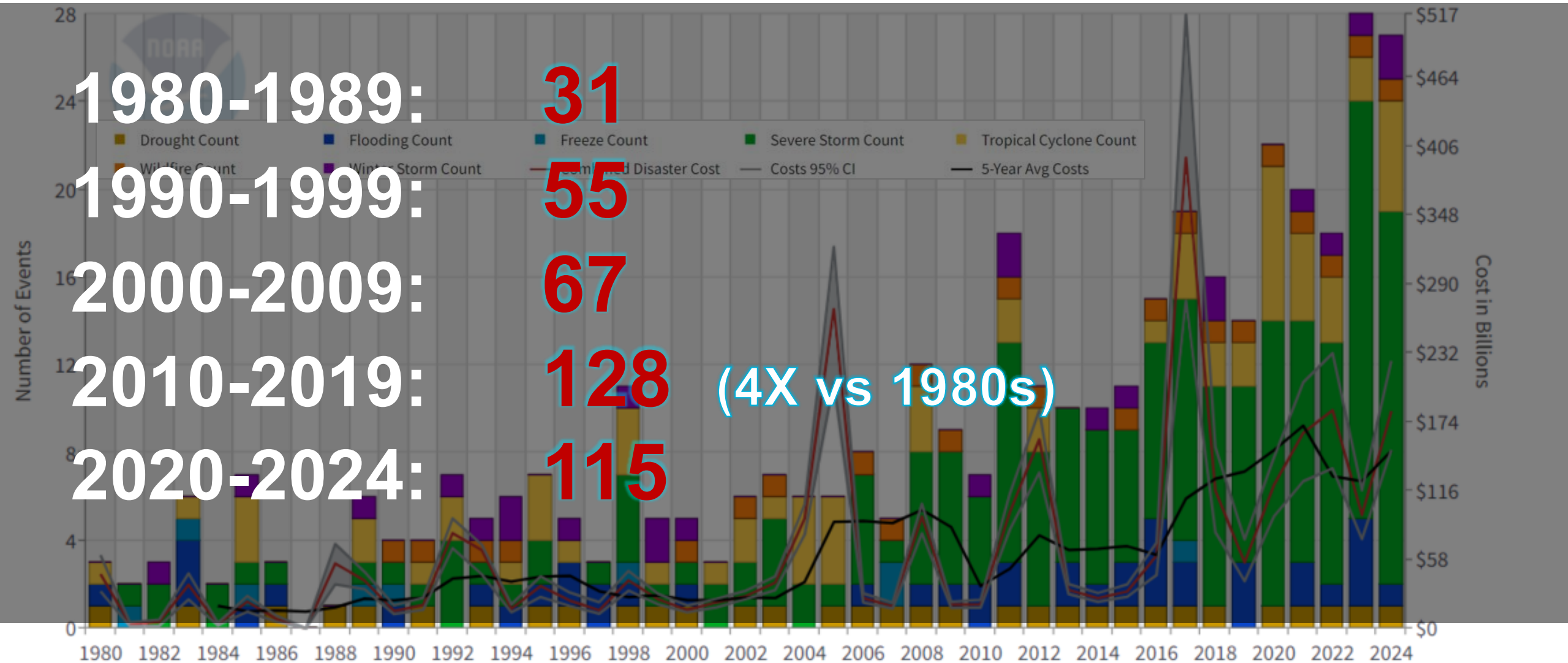


Why are we here?

Avoid outages due to

- Disasters

United States Billion Dollar Natural Disaster Events 1980-2024 (CPI Adjusted)



Why are we here?

Avoid outages due to

- Disasters
- Mistakes

July 19, 2024



Your PC ran into a problem and needs to restart.
We're just collecting some error info, and then we'll restart for you.

20% complete

July 19, 2024



July 19, 2024

COST?



July 19, 2024 – What Happened?



CROWDSTRIKE

“faulty software update”



DELTA

- 5,000 flight cancellations
- **\$500M** 1
- Loss of confidence

Why are we here?

Avoid outages due to

- Disasters
- Mistakes
- Attacks



COST?



The High Cost of Downtime: A Growing Challenge

Rising Downtime Costs and Extended Recovery Times

September 2023



1 Day (\$15M²)



10 Days (\$100M+³)

Why are we here?

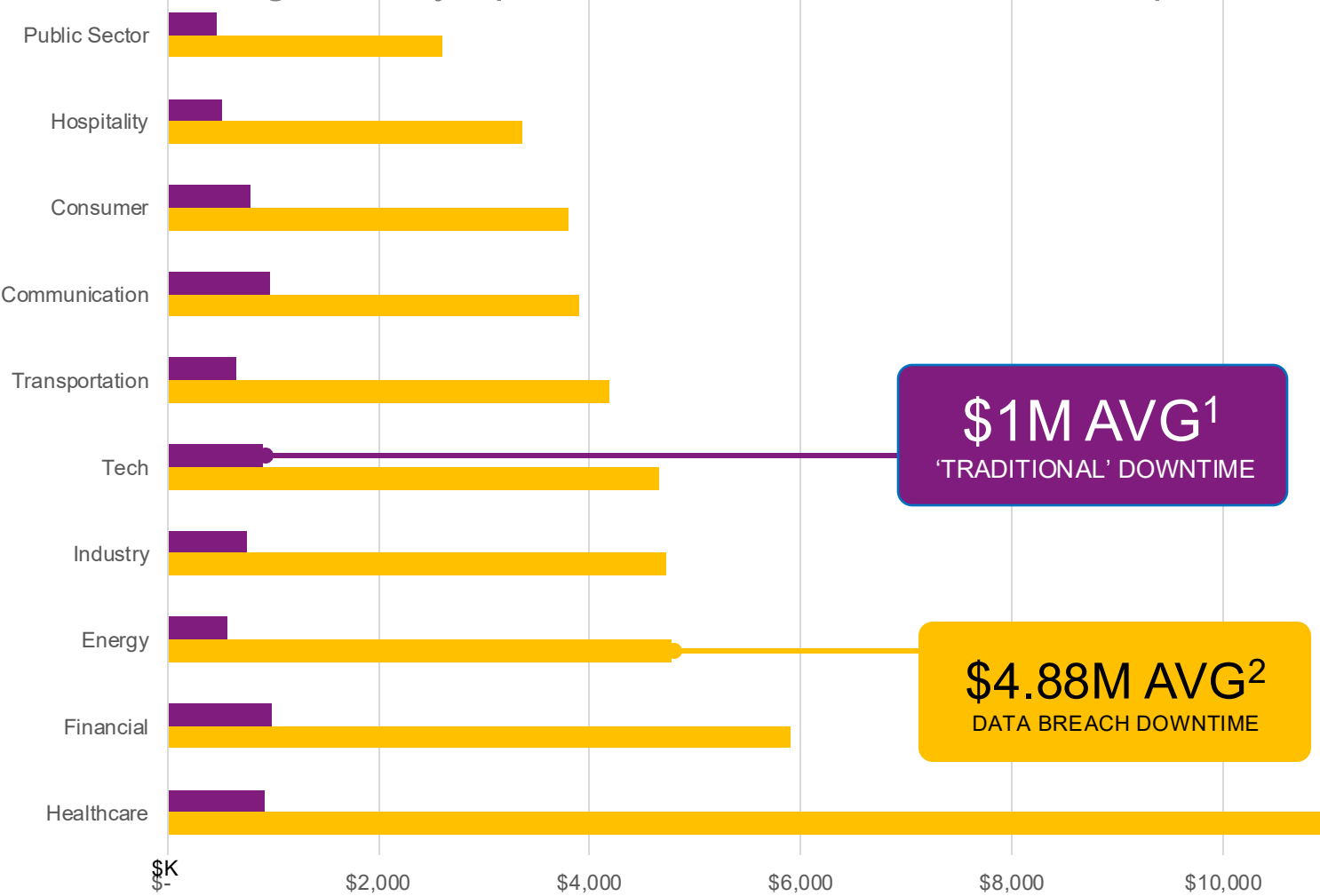
To avoid outages due to

- Disasters
- Mistakes
- Attacks

What are your
Costs ?

Costs of Downtime & Data Breach Across Industries

Understanding industry-specific costs and the additional impact of data breaches



1. Uptime Institute's 2022 Outage Analysis 2. <https://www.ibm.com/security/infographics/data-breach>

TRANSPORTATION

10,000+ Flights canceled/delayed (HRS)

\$150M – 2000 flights canceled/delayed (HRS)

TECH GIANTS

USA - 1000's of Businesses down (HRS) \$150M

Europe - 365 Apps down (HRS)

WW - Search/Maps down (40 MIN)

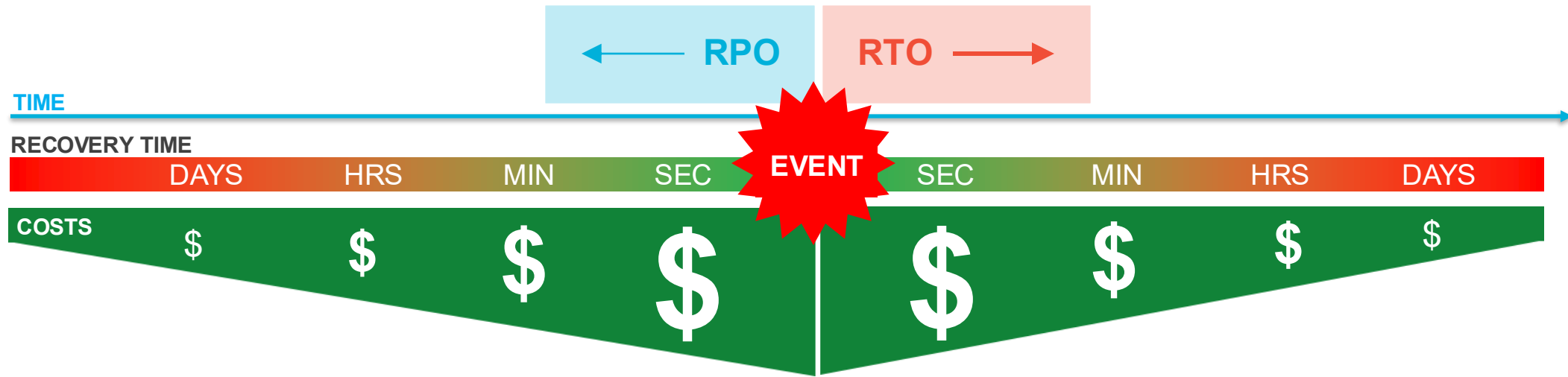
HEALTHCARE

UK - Largest Hospital Down (HRS)

USA - Healthcare System Disrupted (WEEKS) >\$150M

How do we
address these
outage challenges?

The Keys to High Availability Solutions



Recovery Point Objective (RPO)

- How much data can you afford to lose?
- How recent is your point-in-time backup?
- Less data loss is better (but costs more)

Recovery Time Objective (RTO)

- What's your maximum tolerable downtime?
- How fast can you restart your applications with good data?
- Faster recovery is better (but costs more)

The Keys to High Availability Solutions



Recovery Point Objective (RPO)

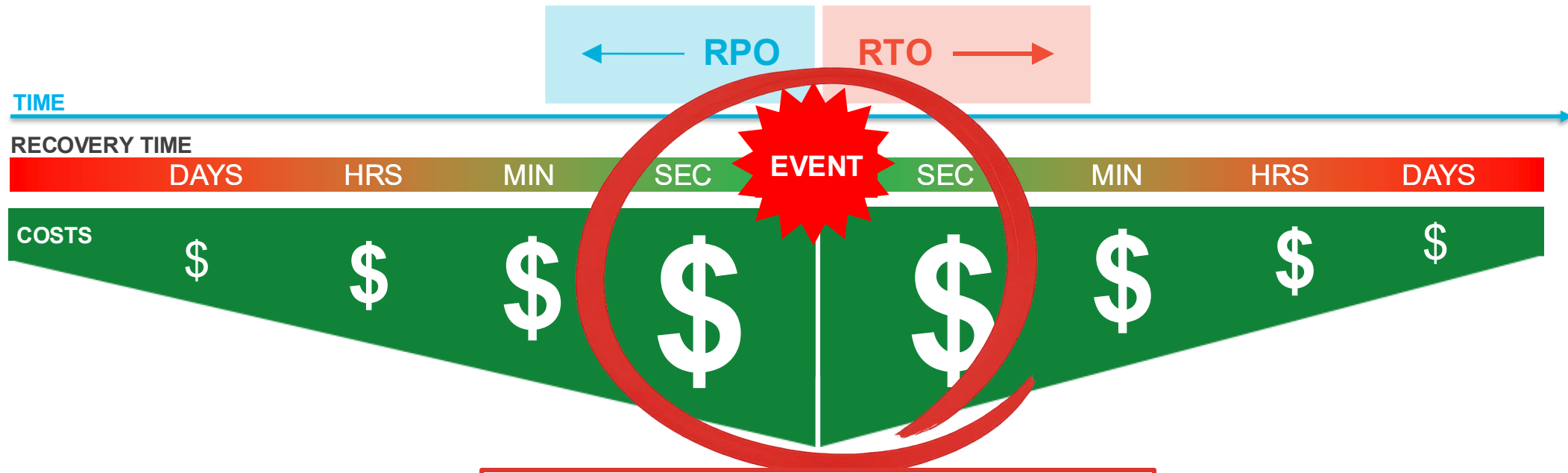
- How much data can you afford to lose?
- How recent is a point-in-time backup?
- Less data loss is better (but costs more)

Recovery Time Objective (RTO)

- What's your maximum tolerable downtime?
- How fast can you restart your applications with good data?
- Faster recovery is better (but costs more)

Is your Data validated & clean?

The Keys to High Availability Solutions



Achieving low RTO & RPO requires:



Smart, Fast, Resilient **Storage**

+



Smart, Fast, Resilient **Network**

The Keys to High Availability Solutions



?

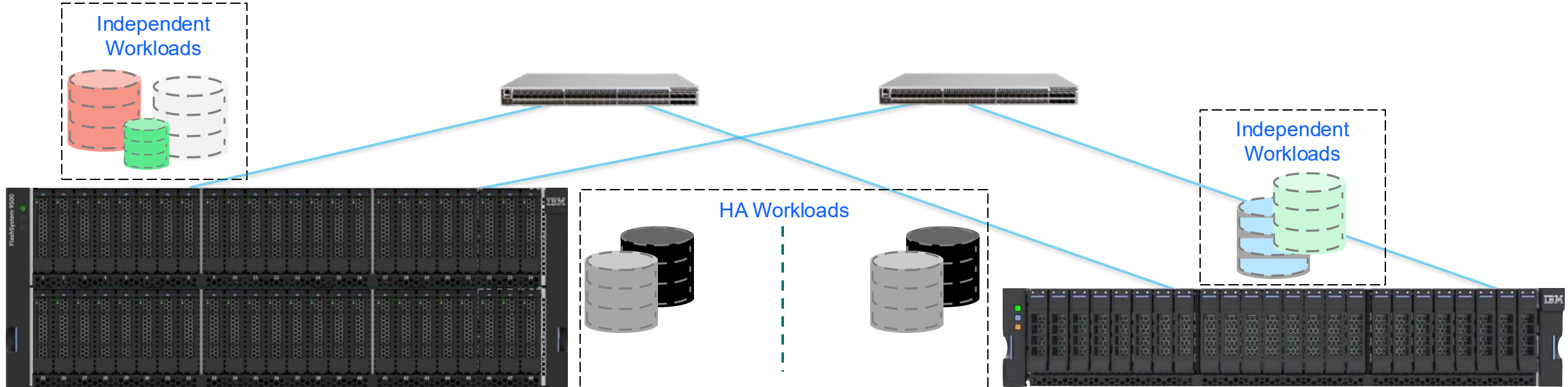
How to minimize
RTO and **RPO**
with **Clean Data**
without
breaking the bank

Active/Active Sites with Policy-Based High-Availability (PB-HA)

Add High Availability to any block workload with base OS multipathing, including:

- VMware
- AIX
- Windows Clusters

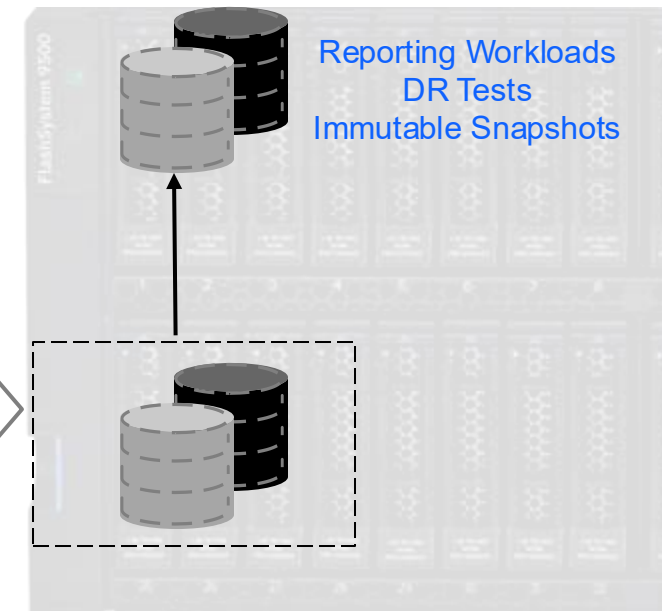
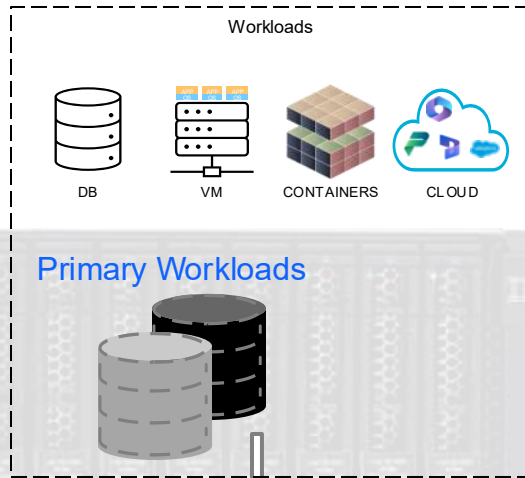
- ✓ Hot-add redundancy
- ✓ Provides Live Workload Mobility
- ✓ Cross-system support of all IBM Storage Virtualize controllers (except FS5015)
- ✓ Even apply HA to 3rd party arrays



Don't forget DR with Best in Class Replication – Policy-Based Replication

High-Speed Replication over IP or Fibre Channel

- Nominal, sub-second RPO
- Resilient through link failures and overruns
- Operationally free
- Self-orchestrated and self-normalizing for high performance apps



High Availability with Disaster Recovery

☰

Loading...

Storage partition: PBHA1

🔔

📄

?

👤²

⋮

🏠

PBHA1

Volume groups

Volumes

Volume mappings

Hosts

Replication policies

Snapshot policies

IP quorum

Partnerships

←| Exit storage partition

PBHA1

Manage partition

Replication overview

PBHA1

FS9500-2

Logged in here

HA established

FS9200-2

DR running

PBHA1_DR

FS7300-2

Storage components

Hosts (1)

✓ Online

→

Volumes (4)

→

Volume groups (1)

✓ 1 within RPO

→

Connectivity

HA partnership (FS9200-2)

● Configured

→

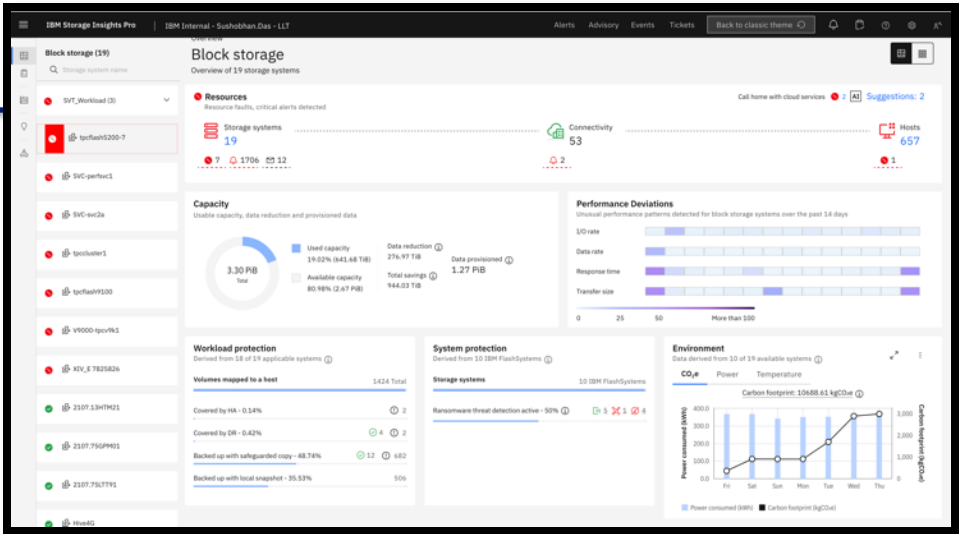
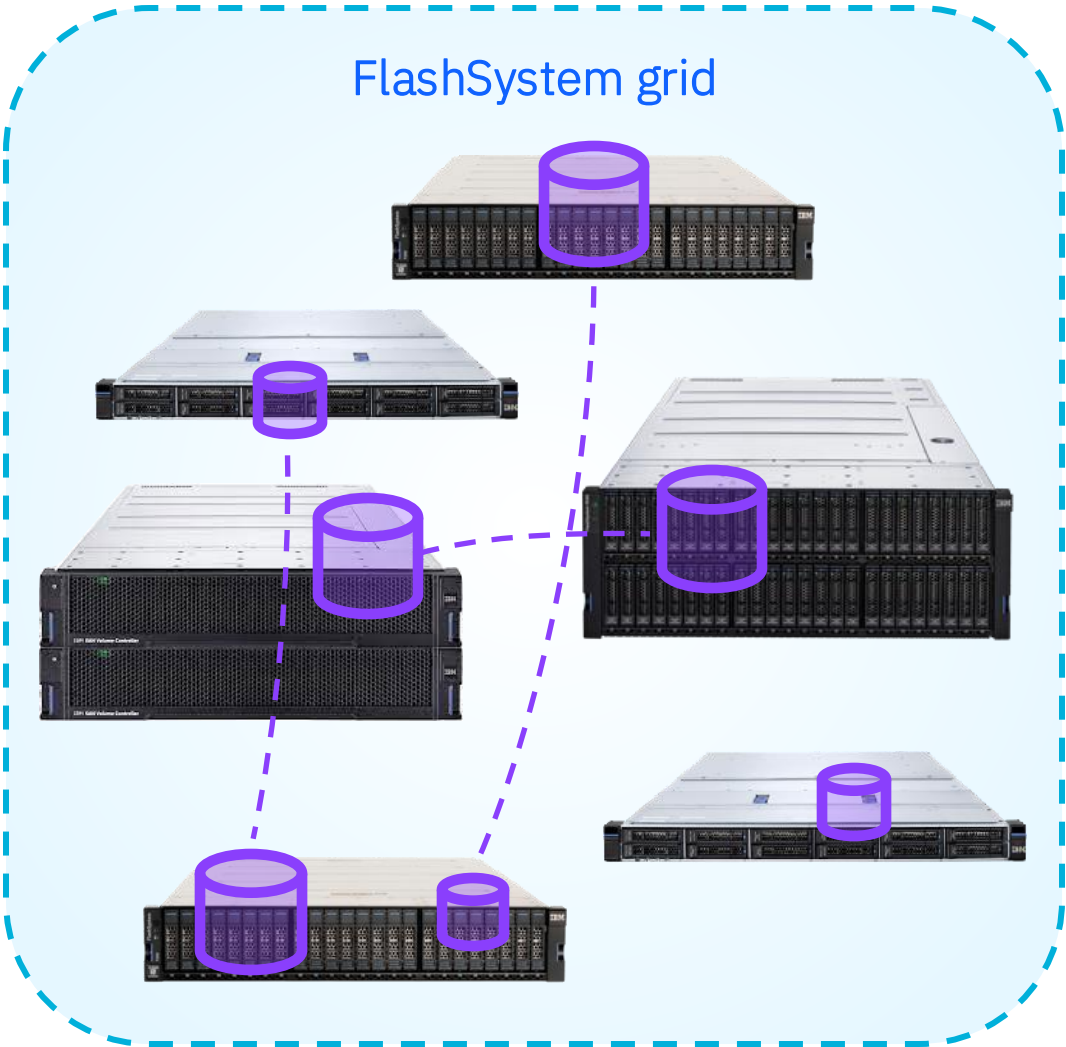
IP quorum

✓ Connected

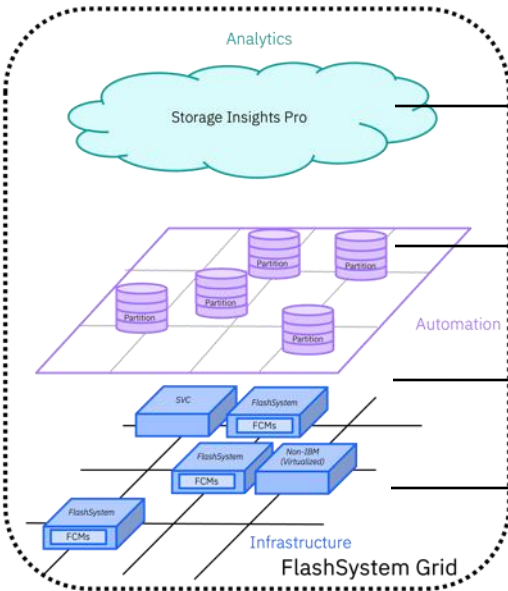
→

DR partnership (FS7300-2)

Manage by the grid



Actionable intelligence with Storage Insights Pro



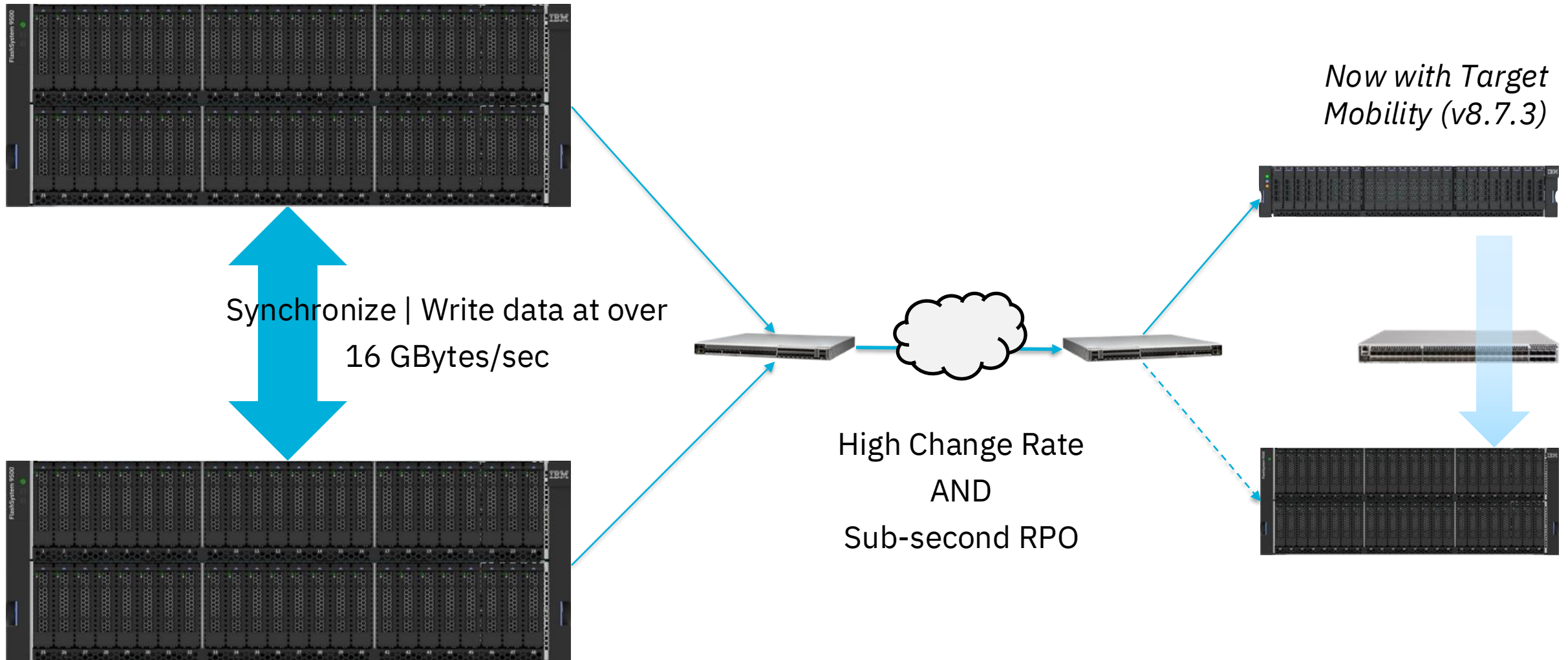
Anticipates storage needs to optimize capacity and performance

Mobilize data non-disruptively for dynamic tiering and rebalancing

Fleet-wide management of a highly scalable platform

Virtualize FlashSystem, SVC and even non-IBM storage

Invest in networking = Tier 0 + Mobility + Protection



Making PB-HA Affordable

IBM Storage and b-type SAN for Data and Data Path Resilience

FlashSystem

C200 5015/5045 5300 7300 9500 9500R

NEW

SAN Volume Controller (SVC)

FlashCore Module 4

32G 64G

TS7700

Virtual Tape Library for Z, BC-DR

32G FC-IP Extension

DS8000 G10

Enterprise Storage for Z and Open

32G

IBM b-type Storage Networking supports 32G and 64G for SCSI, NVMe, FICON, and Extension

Storage/Tape Extension Solutions



SAN18B-6



SAN42B-R7

IBM SANnav Management



Global View



Management Portal

32G



SAN24B-6

GEN6
FIBRE CHANNEL

32G

64G



SAN64B-7



SAN128B-7



SAN256B-7



SAN512B-7

GEN7
FIBRE CHANNEL

IBM Storage and SAN Value Bundles

FlashSystem

SAN Volume Controller (SVC)

C200 5015/5045 5300 7300 9500 9500R

FlashCore Module 4

32G 64G

FlashSystem Value Bundles

Perfect for PB-R

Storage/Tape Extension Solutions



SAN18B-6



SAN42B-R7

IBM SANnav Management



Global View



Management Portal

The image displays two network switches from Fibre Channel. On the left is the SAN24B-6, a black 1U switch with a blue badge indicating 32G capability. On the right is the SAN64B-7, a silver 1U switch with blue and red badges indicating 32G and 64G capabilities respectively. Both are labeled as GEN6 and GEN7 Fibre Channel.

The image displays three Gen7 Fibre Channel storage units. On the left is the SAN128B-7, a compact unit with a 32G capacity icon. In the center is the SAN256B-7, a medium-sized unit with a 64G capacity icon. On the right is the SAN512B-7, a tall rack-mountable unit. Below each unit is its model name. At the bottom center is the GEN7 FIBRE CHANNEL logo.

IBM FlashSystem Value Bundles are better together

- Configured for Optimum Performance
- Allows for SAN Flexibility
- Integrated Safeguarded SAN Features
- Save with **up to 20% SAN Discount**

FlashSystem 5045 Value Bundle



Includes two
24-port SAN24B-6
base switches and
8 x 16G SWL SFPs

FlashSystem 5300 Value Bundle



Includes two
24-port SAN24B-6
base switches and
8 x 32G SWL SFPs

FlashSystem 7300 Value Bundle



Includes two
64-port SAN64B-7
base switches and
24 x 32G SWL SFPs

FlashSystem 9500 Value Bundle



Includes two
64-port SAN64B-7
base switches and
24 x 64G SWL SFPs

For PB-HA configuration
configure two Value Bundles ...



**FlashSystem
5015/5045
Value Bundle**



Includes two
24-port SAN24B-6
base switches and
8 x 16G SWL SFPs

**FlashSystem
5300
Value Bundle**



Includes two
24-port SAN24B-6
base switches and
8 x 32G SWL SFPs

**FlashSystem
7300
Value Bundle**



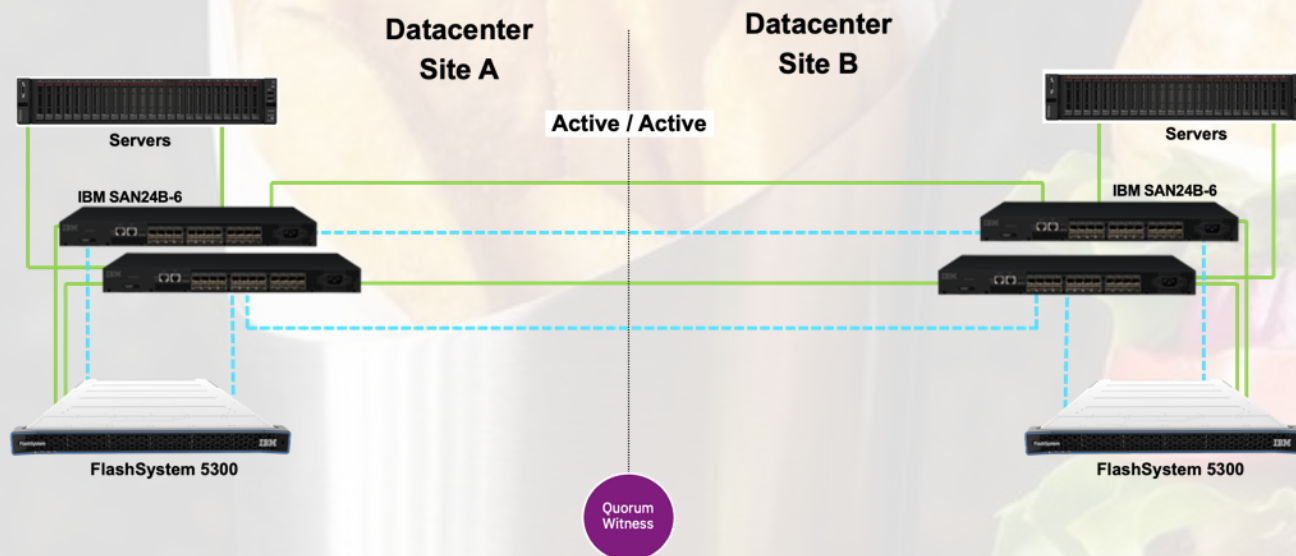
Includes two
64-port SAN64B-7
base switches and
24 x 32G SWL SFPs

**FlashSystem
9500
Value Bundle**



Includes two
64-port SAN64B-7
base switches and
24 x 64G SWL SFPs

and connect them across two metro sites
for **Active-Active Replication** ...



FlashSystem 5015/5045 Value Bundle



Includes two
24-port SAN24B-6
base switches and
8 x 16G SWL SFPs

FlashSystem 5300 Value Bundle



Includes two
24-port SAN24B-6
base switches and
8 x 32G SWL SFPs

FlashSystem 7300 Value Bundle



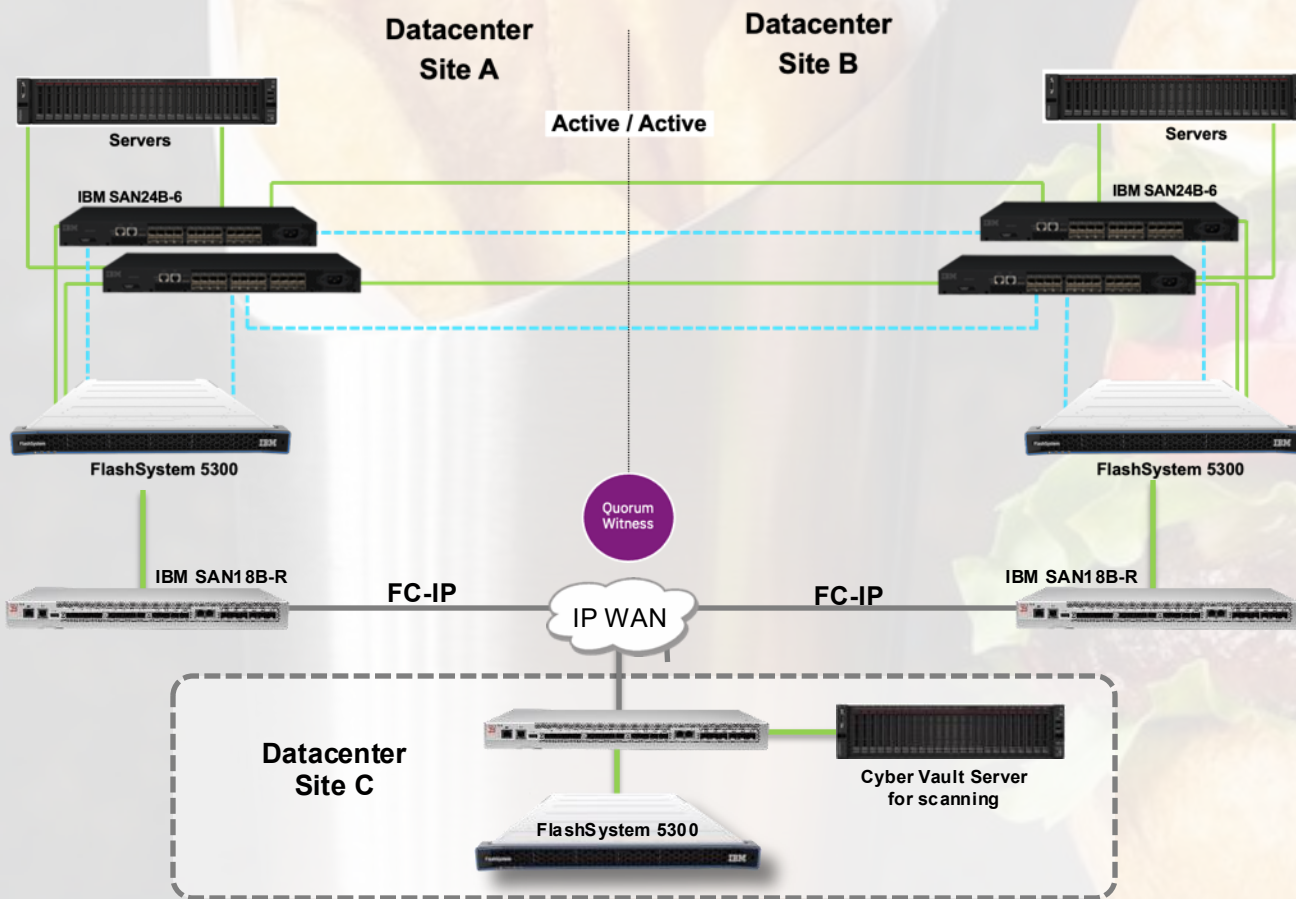
Includes two
64-port SAN64B-7
base switches and
24 x 32G SWL SFPs

FlashSystem 9500 Value Bundle



Includes two
64-port SAN64B-7
base switches and
24 x 64G SWL SFPs

Add a 3rd site using SAN extension for PBHA +R to add Async Disaster Recovery



FlashSystem 5015/5045 Value Bundle



Includes two
24-port SAN24B-6
base switches and
8 x 16G SWL SFPs

FlashSystem 5300 Value Bundle



Includes two
24-port SAN24B-6
base switches and
8 x 32G SWL SFPs

FlashSystem 7300 Value Bundle



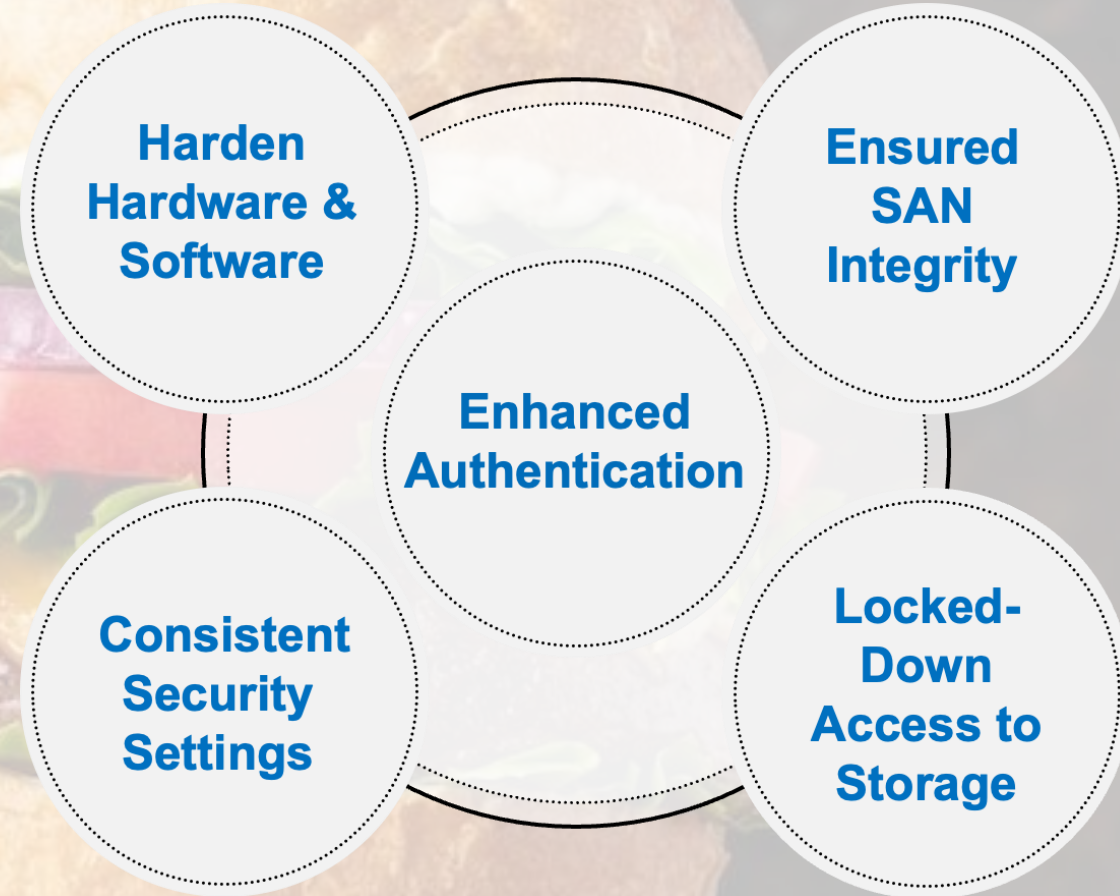
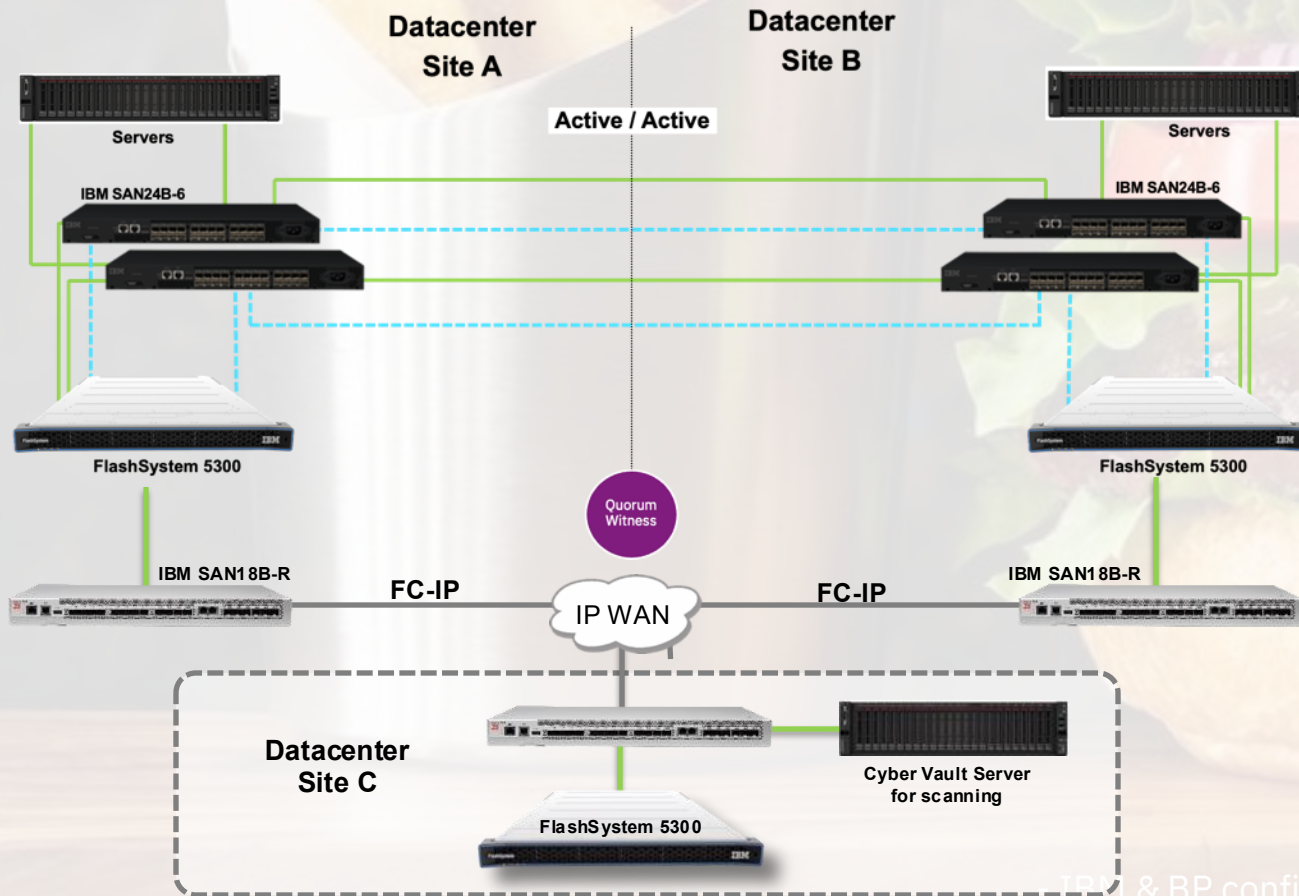
Includes two
64-port SAN64B-7
base switches and
24 x 32G SWL SFPs

FlashSystem 9500 Value Bundle

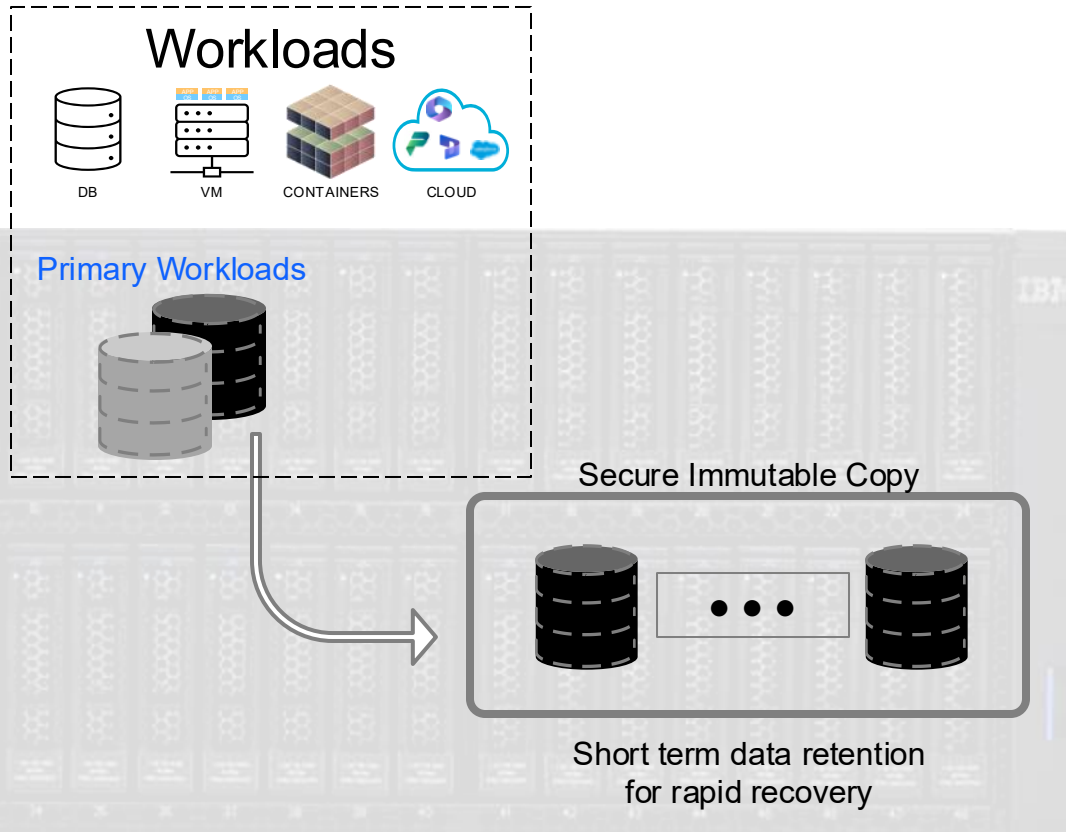


Includes two
64-port SAN64B-7
base switches and
24 x 64G SWL SFPs

... with Brocade's **Safeguarded SAN** features to protect the data path.



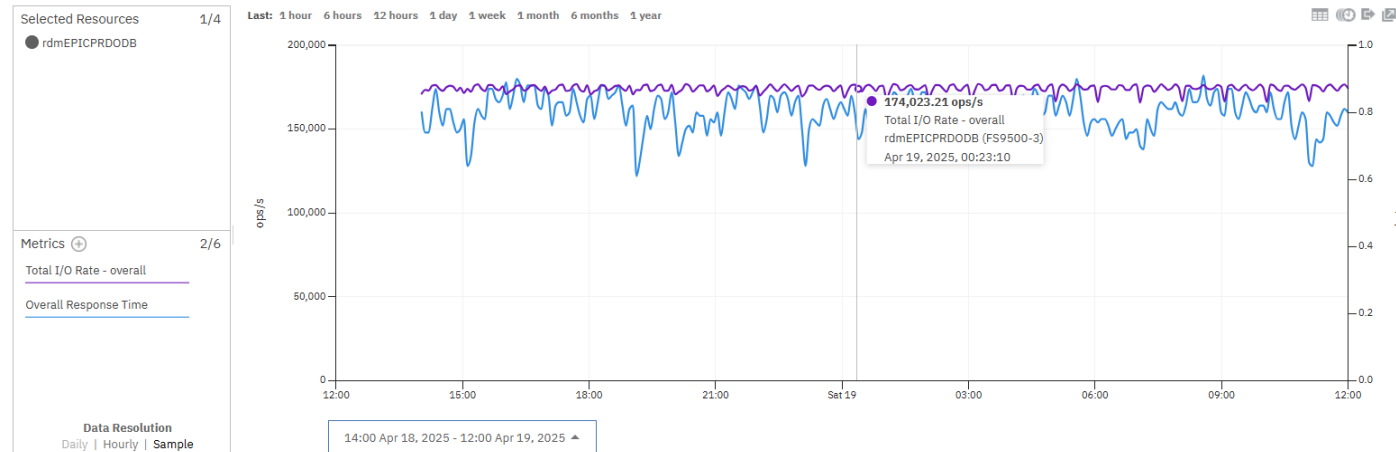
Immutable Snapshots – Safeguarded Copy



Safeguarded Copy augments the current data protection strategy for mission critical applications to enable rapid recovery.

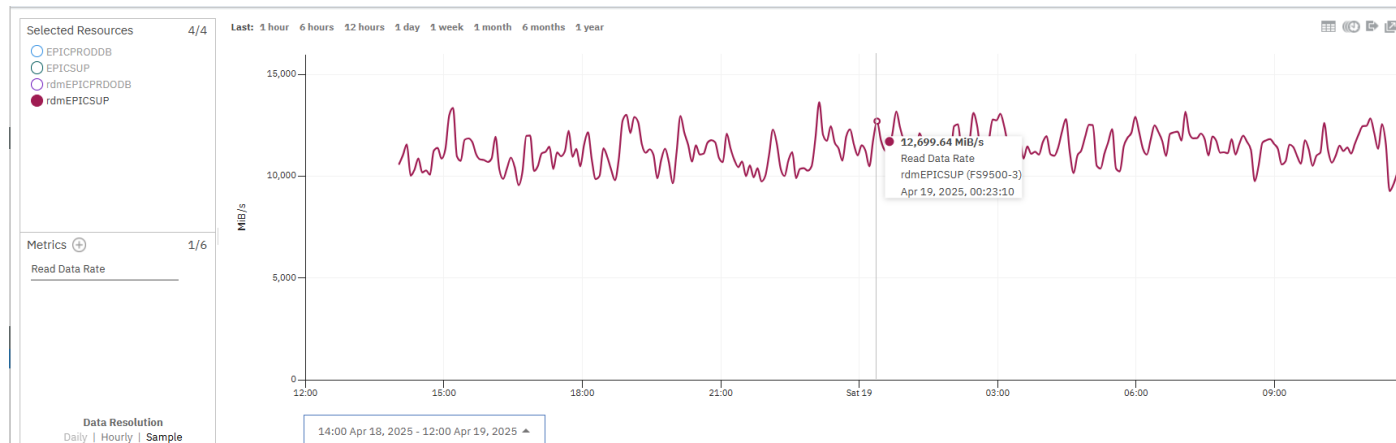
- Policy enabled, hidden from hackers
- Small, space-efficient buckets of change data
- Located on primary array – no data movement
- Operationally free
- **Two-person integrity** authority without the need to contact support

Build Confidence in Your Recovery Options



Validate your data and KNOW you have a quick recovery option

175K transactional IOPS @ <1ms with a 13GBps average snapshot read rate



Less than 1/3rd of a FlashSystem 9500 utilization

but...

You MUST invest in the networking

Putting it all
together

Why are we here?

To build **Affordable** and **Effective** High Availability Storage Solutions

1) Start with

FlashSystem Value Bundles

FlashSystem
5300
& SAN24B-6



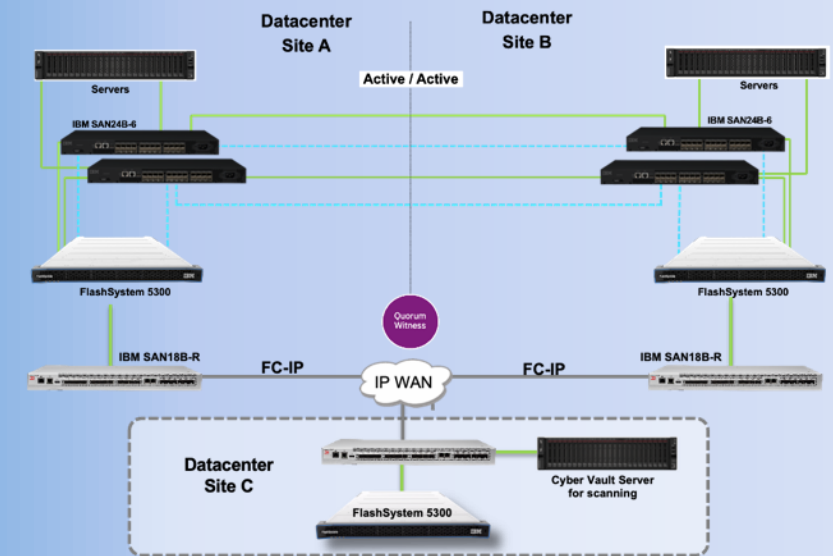
FlashSystem
7300
& SAN64B-7



FlashSystem
9500
& SAN64B-7



2) Build
Policy Base
HA Solutions



3) Save \$\$

4) Keep your business data resilient, secure, & operational

Why are we here?

To avoid surprise
WORK OUTAGES



All Systems
Operational

... and
enjoy our time
OUT from WORK



Accelerate with ATG Survey

Please take a moment to share your feedback with our team!

You can access this 6-question survey via [Menti.com](https://www.menti.com/join/51510447) with code 51510447 or

Direct link <https://www.menti.com/alhsf3bgvxu6>

Or

QR Code



THANK YOU!