PERCONA LIVE ONLINE

MAY 12 - 13th

2021

Data Protection for Rapid Recovery at Scale

Steve Fingerhut, President, Chief Business Officer

Pliops Profile

Mission

To massively accelerate performance and dramatically lower infrastructure costs for flash-based data-intensive applications including Databases, Analytics, AI/ML, 5G, IoT, and more

Team

Experts in database, flash storage, and semiconductors from industry leaders including Samsung, Intel, Kioxia, Amazon, Microsoft, VMware, Dell/EMC, Western Digital, Fusion-io, HPE, Apple, Nvidia, Cisco and Lenovo

Customers

More than 20 Fortune 500 cloud and enterprise companies

Strategic Investors

SoftBank Ventures Asia

intel Capital

NVIDIA

Western Digital

XILINX

Industry Recognition

2021: CRN Top 10 Cool Tech Companies that Raised Funding in February

2021: Enterprise Storage Forum Top Computational Storage Companies

2020: Most Innovative Flash Memory Enterprise Business Application Product

2020: CRN Top 10 Hottest Semiconductor Startup

2019: Most Innovative Flash Memory Startup

Percona CEO Insights

PERCONA
Peter Zaitsev
CEO

Pliops' technology enables the ability to turn 'dumb' flash storage into 'smart' flash storage for **accelerating database workloads**.

According to our benchmarks, the Pliops Storage Processor is **unique** in that it is able to increase **performance**, improve **compression** and reduce write amplification.

Pliops innovations are **absolutely fantastic**.

https://www.youtube.com/watch?v=o6wa7ivSZg4

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Industry Goals for DB Deployments

Reliability – Data protection and increased database uptime

Performance – Application and database scaling

Capacity – Use low-cost TLC or QLC, store more data with no performance cost

Efficiency – Database consolidation, reduce infrastructure footprint

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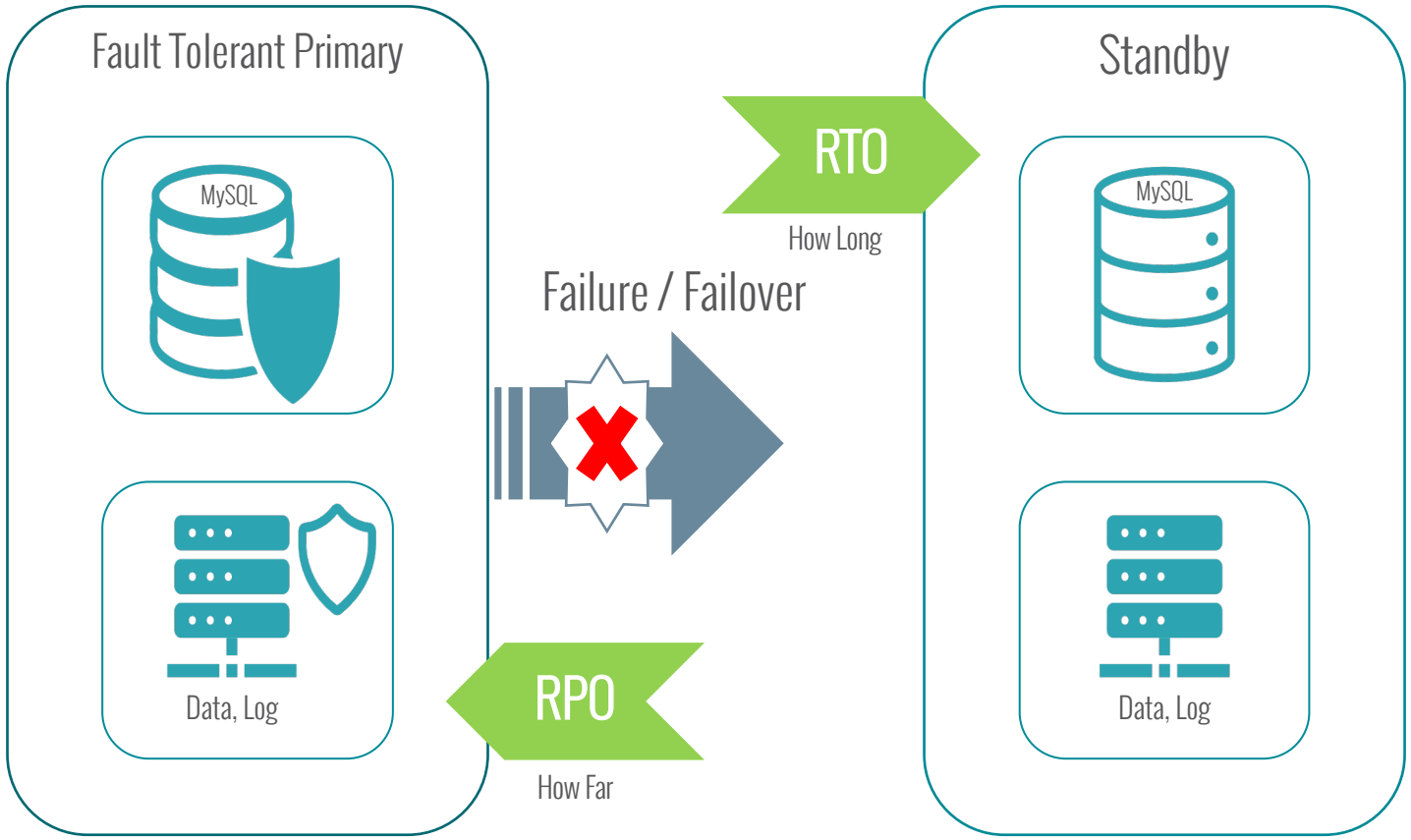
Building Resilient Architectures



- HA failover events creates SLA compliance, data loss risk challenges
  - Faster recovery time (RTO)
  - Minimum data loss (RPO) objective
- Design trade offs with traditional storage
  - High performance
  - High resiliency
  - Low cost

Pick 2 of 3!

Fewer failover events + faster recovery = better SLA and ROI

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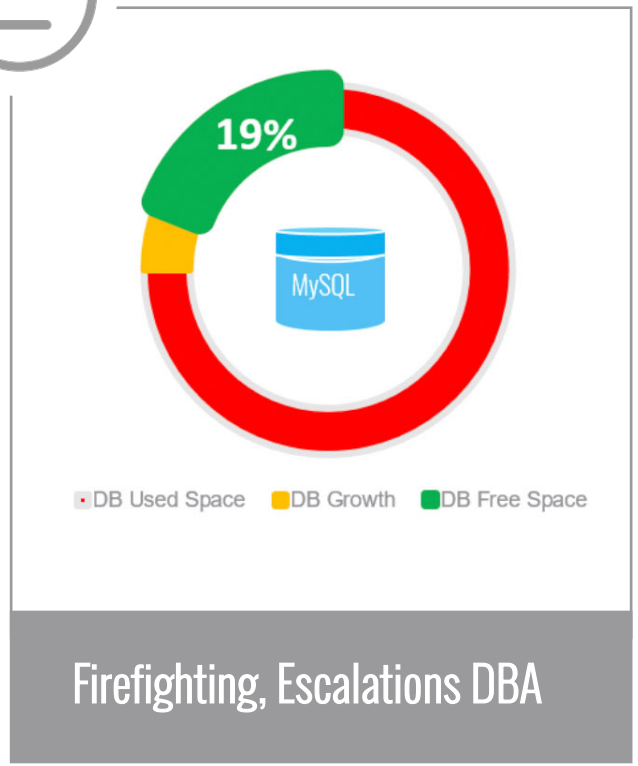
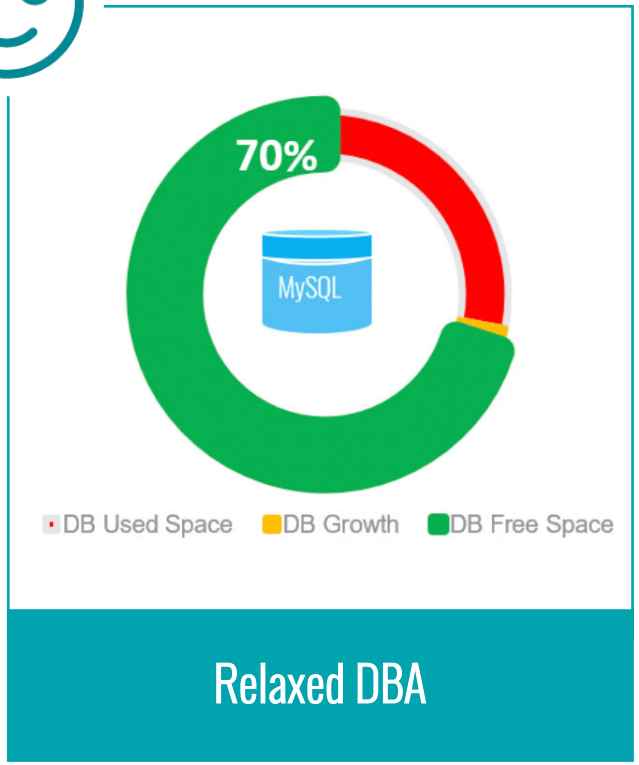
Managing Explosive Data Growth

#4 MySQL DBs with RAID 10



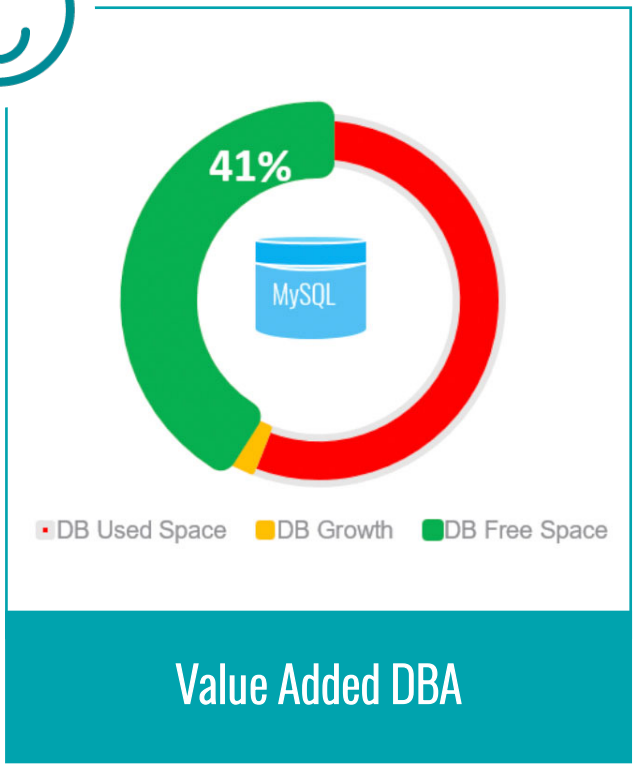
Firefighting, Escalations DBA

#4 MySQL DBs with Pliops



Relaxed DBA

#8 MySQL DBs with Pliops



Value Added DBA

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Identical base server configs

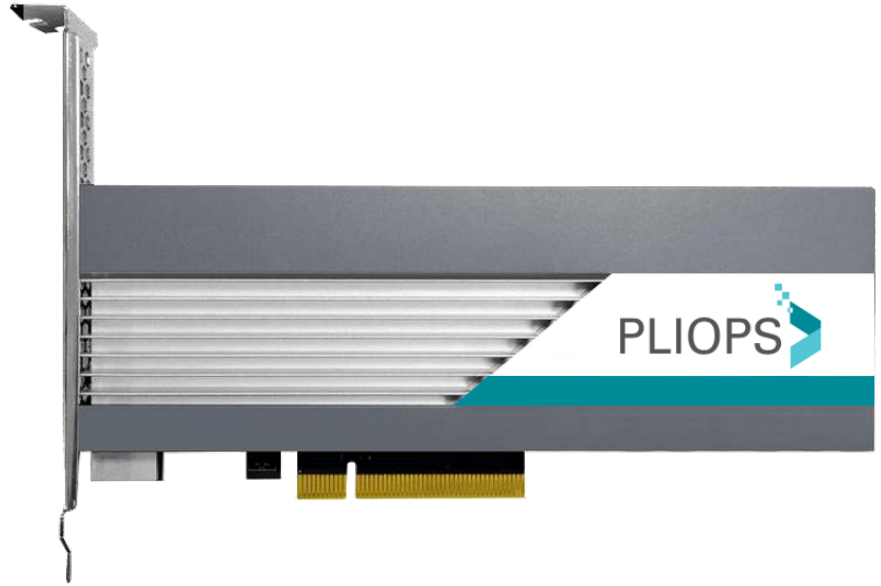
Pliops Storage Processor

Reliability Drive Fail Protection 2x > RAID 0

Performance 2-15x

Capacity Up to 6x

Efficiency TLC, QLC for any workload



Advanced Data Protection Checklist

Automated Data Protection

All data and metadata is protected

Rapid Recovery

Very fast rebuild: Only data stored, not entire drive

Accelerated

No Read-Modify-Write

Virtual Hot Capacity (VHC)

Reserve existing space in the event of a drive failure

Full uptime w/ multiple single drive failures

Full performance with data protection

Expanded User Capacity

Use full capacity of SSDs, and even more

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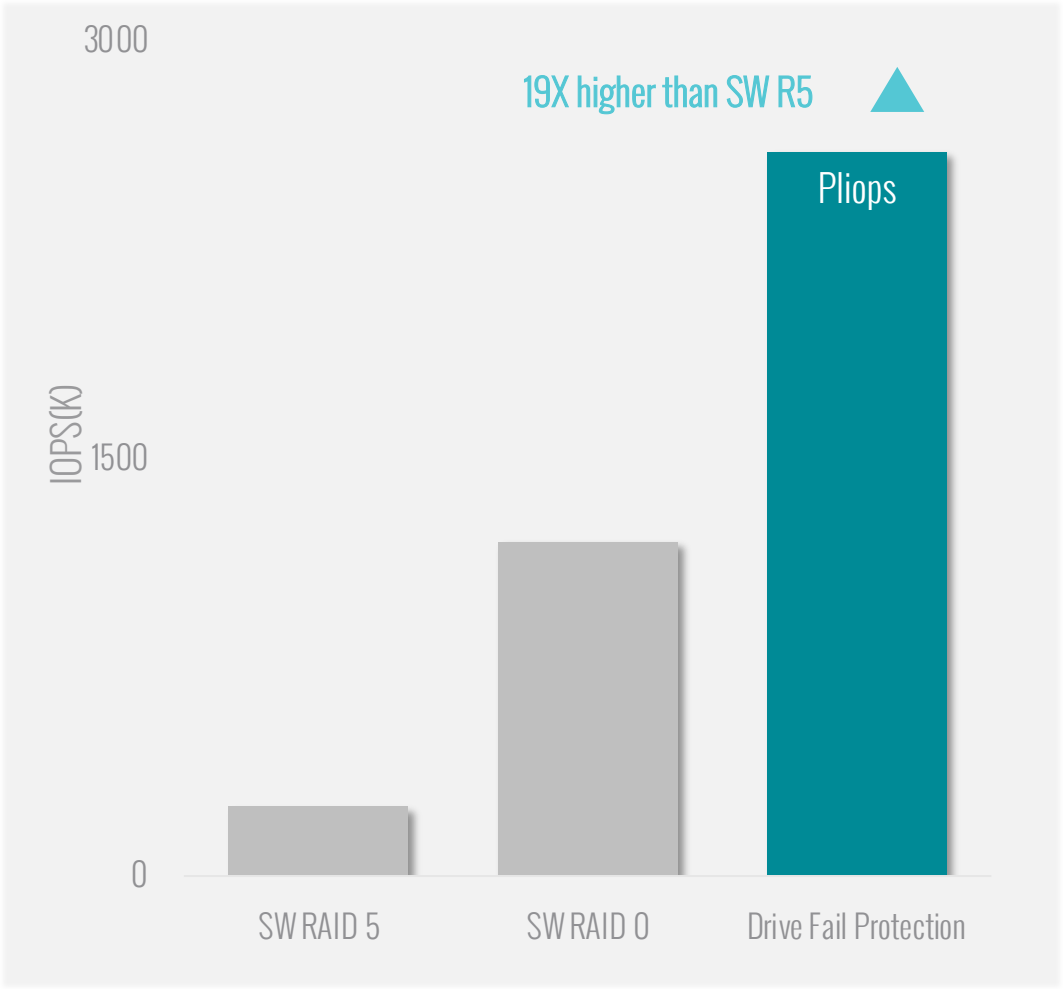
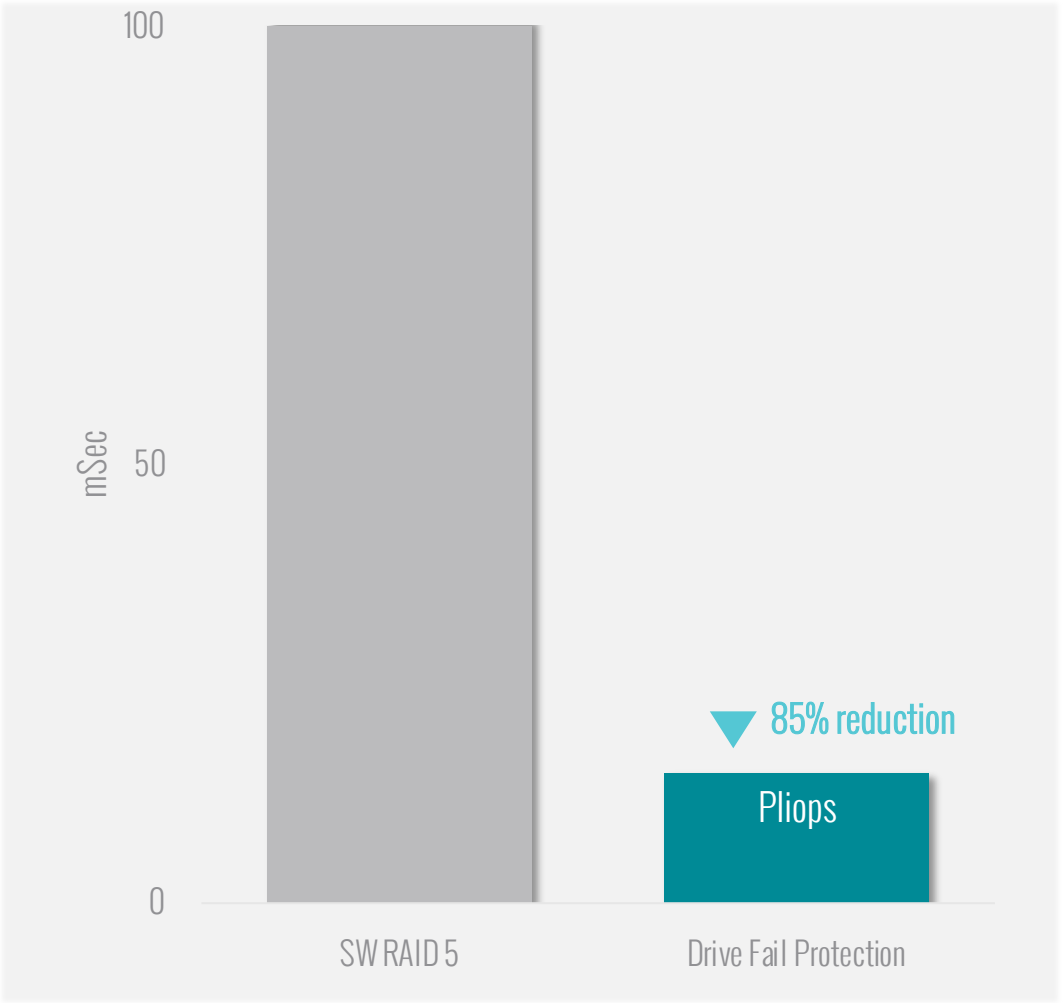
Accelerated Drive Fail Protection

70/30 RR/RW 4K



99.99% Latency QoS (ms)



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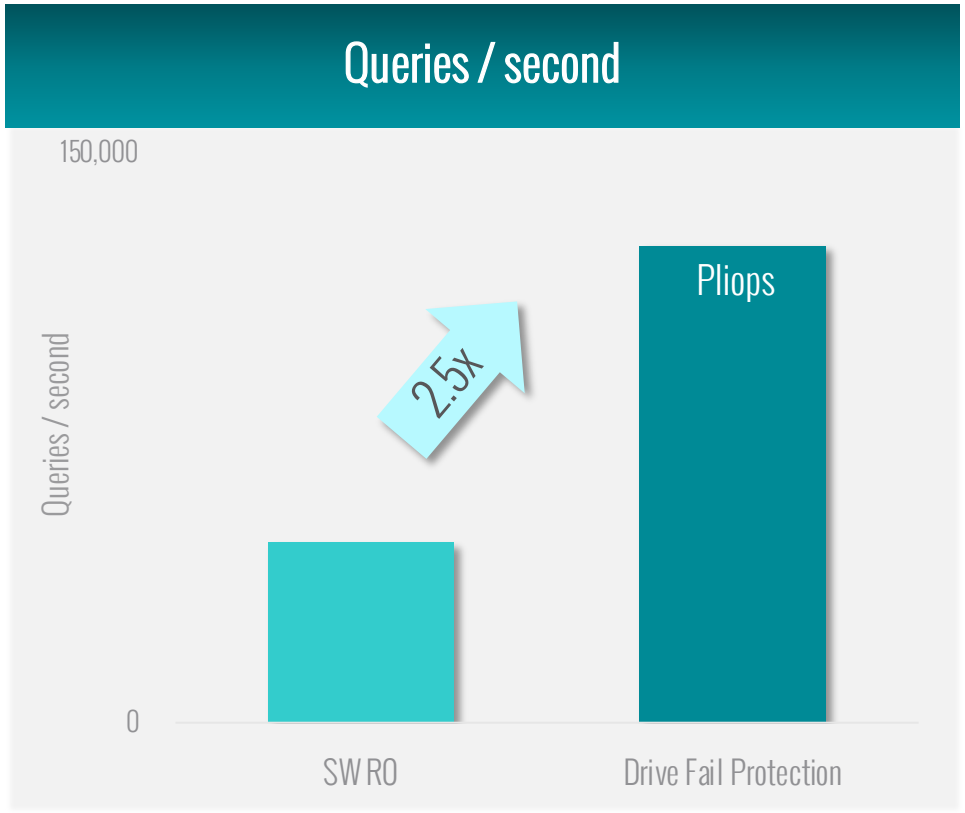
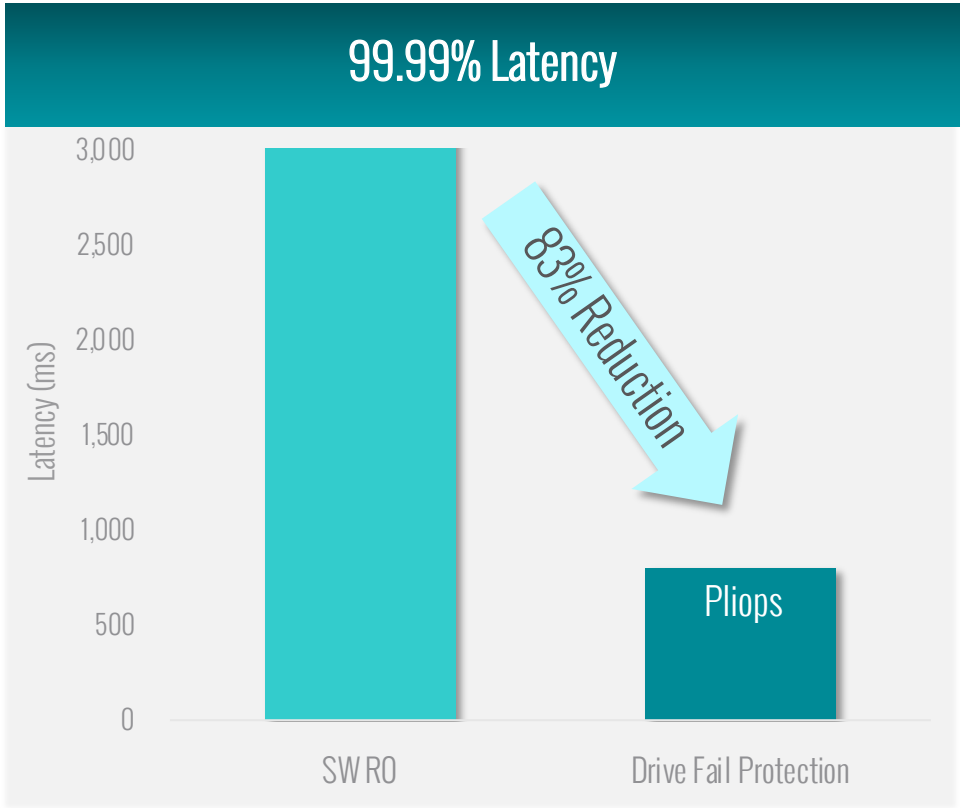
FIO 4KB 70/30 75% compressibility, 8 Samsung PM983

Accelerated Database Performance





Pliops Delivers Performance Acceleration, 3x increase in data density, with Data Protection

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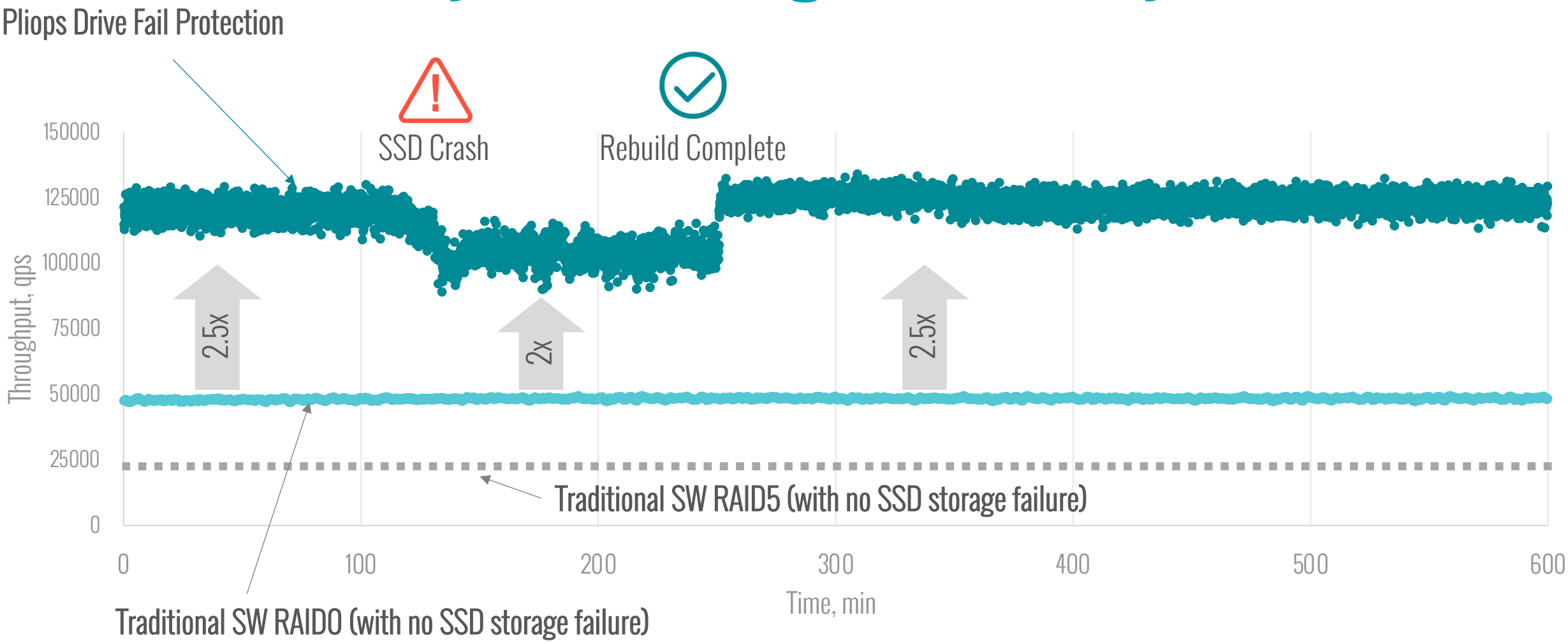
Identical server setup of 40 cores, 512GB RAM, 4 Samsung 2TB SSDs, TPC-C

MySQL: Storage Resiliency



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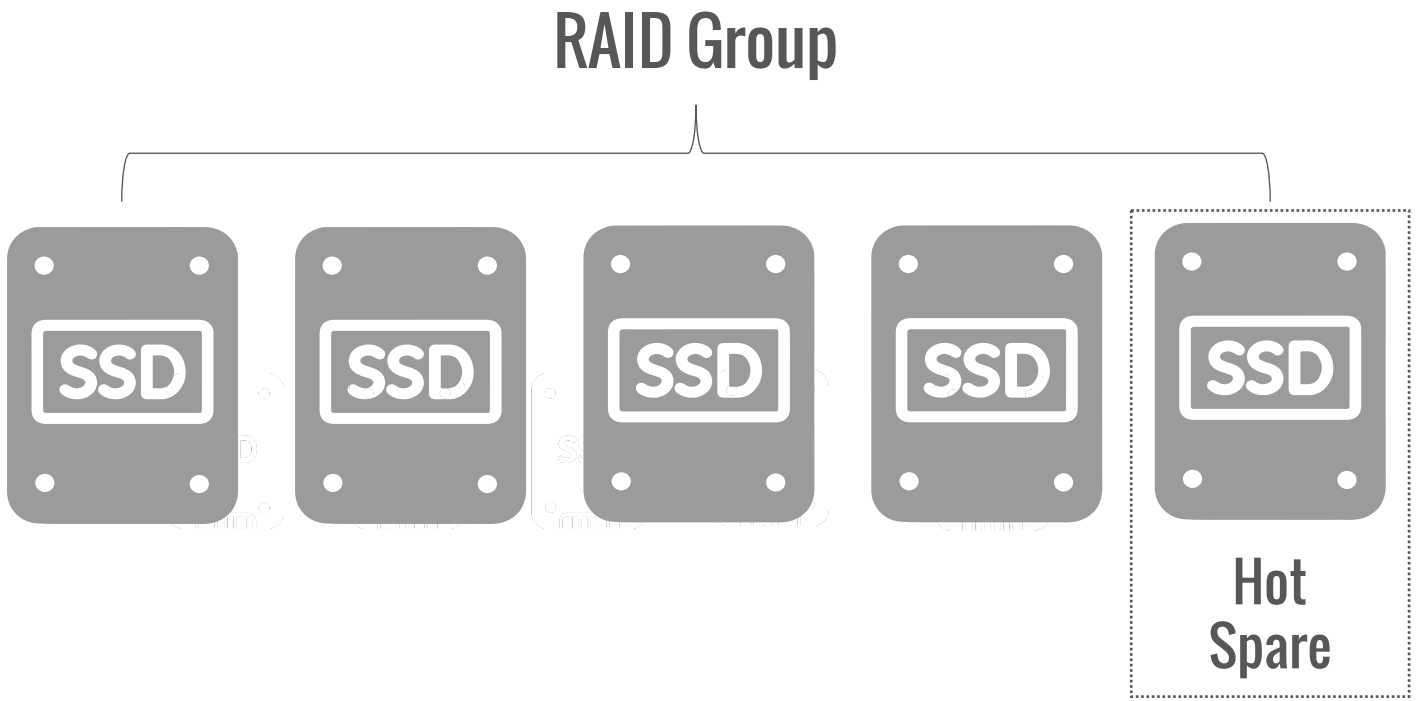
Identical server setup of 40 cores, 512GB RAM, 4 Samsung 2TB SSDs

Traditional RAID 5



- Dedicates a standby drive in the event of a drive failure
- Fully functional drive that is not operational until a failure
- The entire failed drive's allocated capacity is reconstructed on to the Hot Spare
- Significant performance degradation during the rebuild process

Significant portion of costs sit idle

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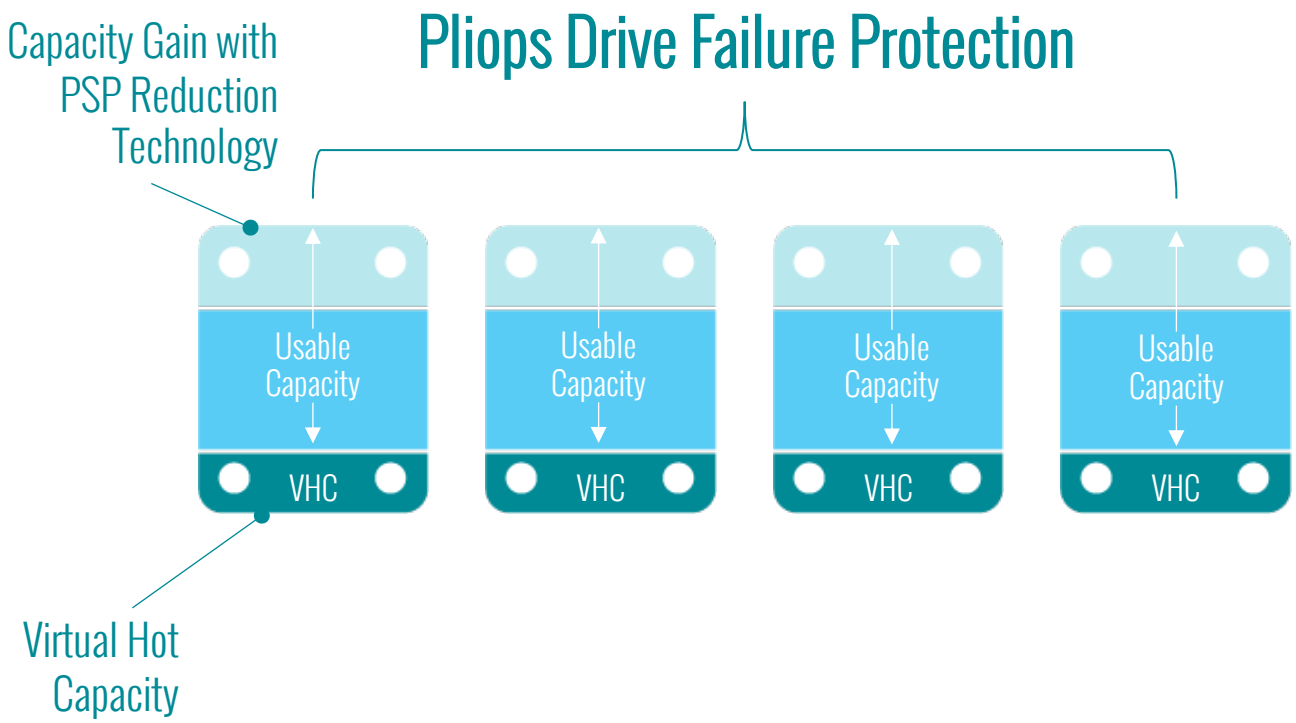
Pliops Virtual Hot Capacity (VHC)



- VHC eliminates the need for a dedicated Hot Spare
- PSP reserves existing space across N drives in the event of a drive failure
- VHC enables ultra-fast rebuilds with no performance cost
- With Inline Transparent Compression, use all physical capacity, and even more, for user data

Get full performance, endurance, capacity benefits from **all** your SSDs

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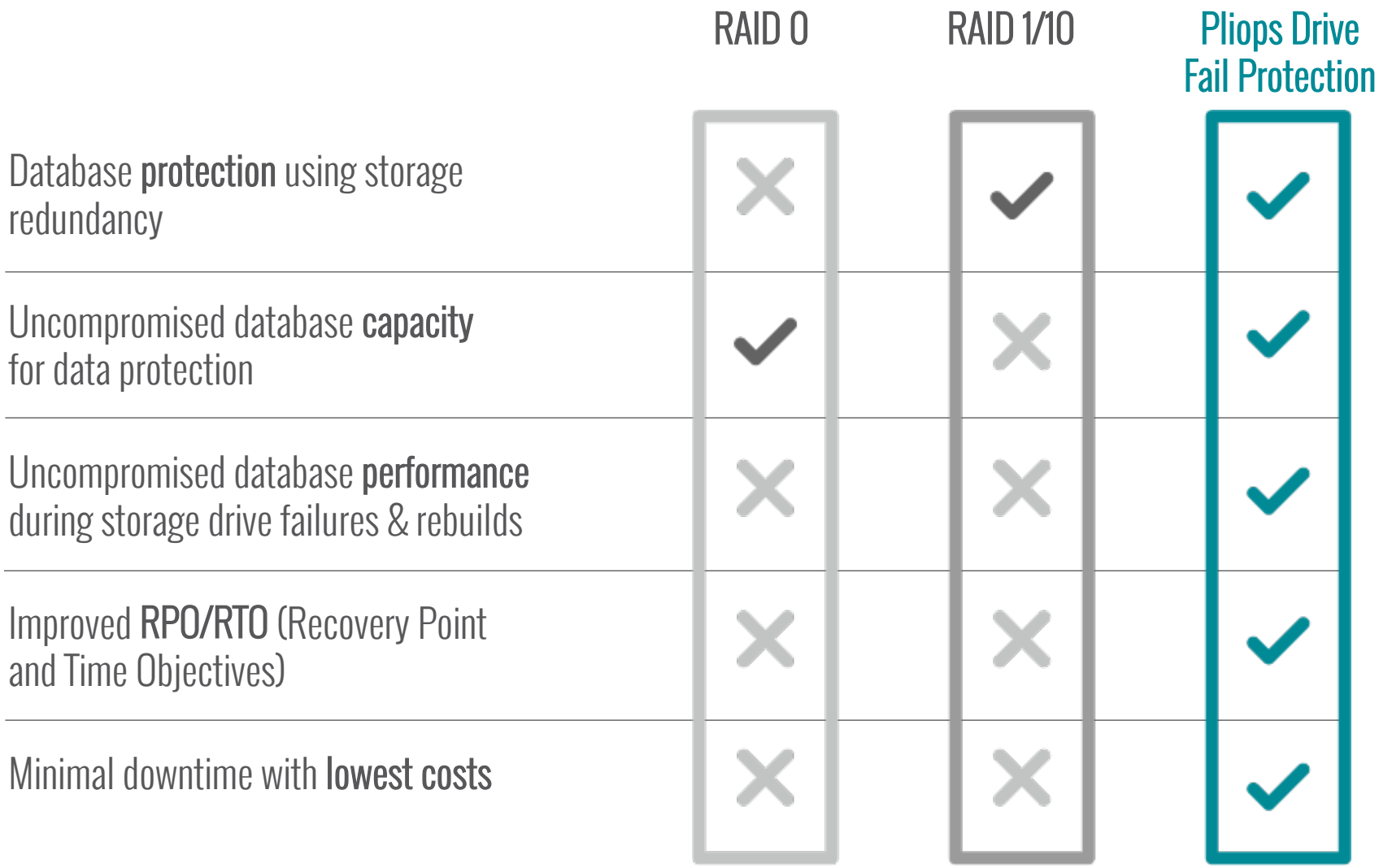
Storage Architecture Options



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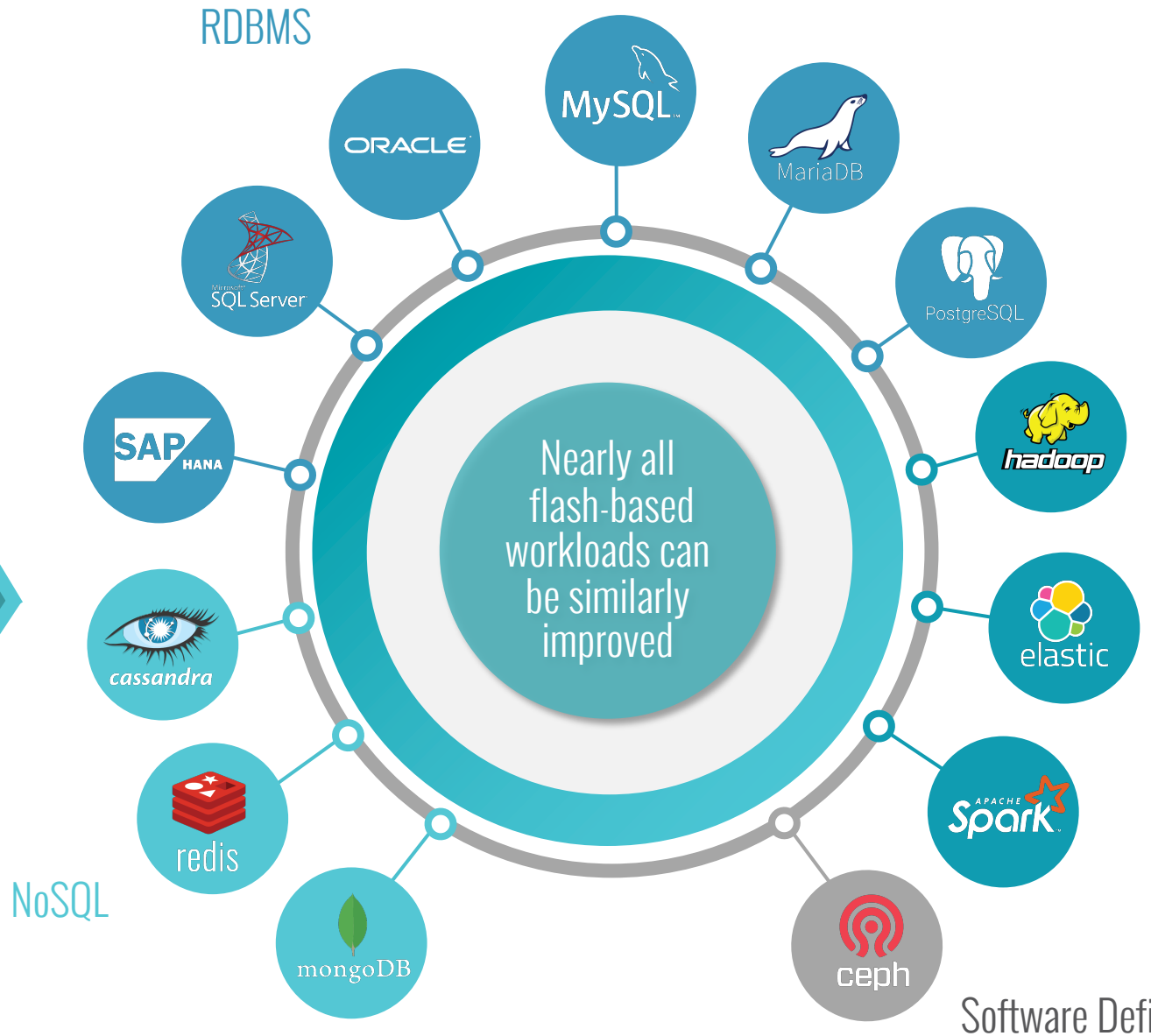
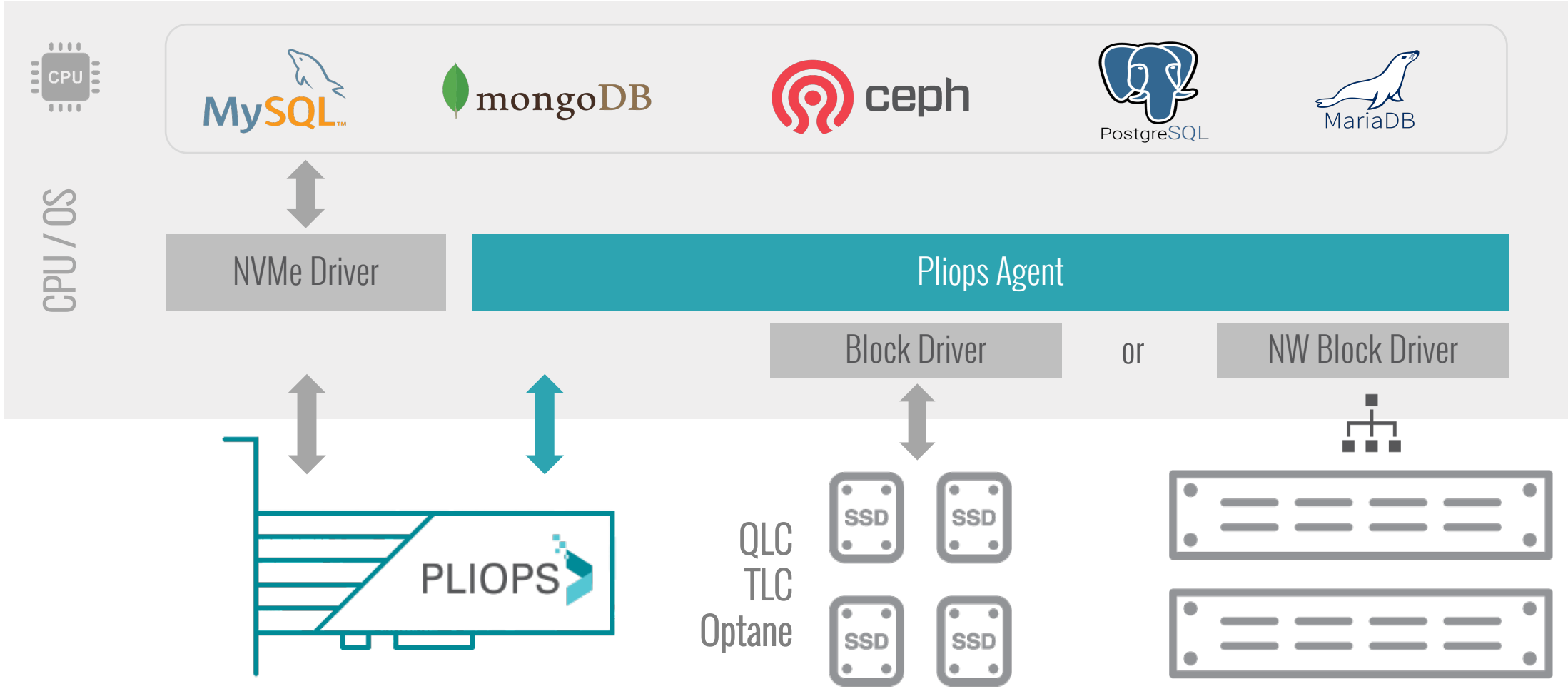
Data Intensive Flash-based Workloads



System Integration Overview



Any Application – Any Standard Server – Any SSD – Direct or Disaggregated

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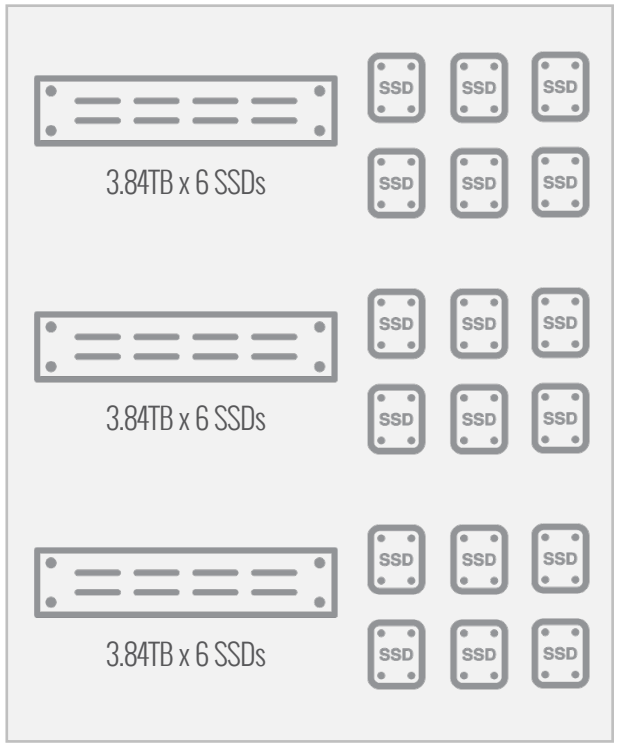
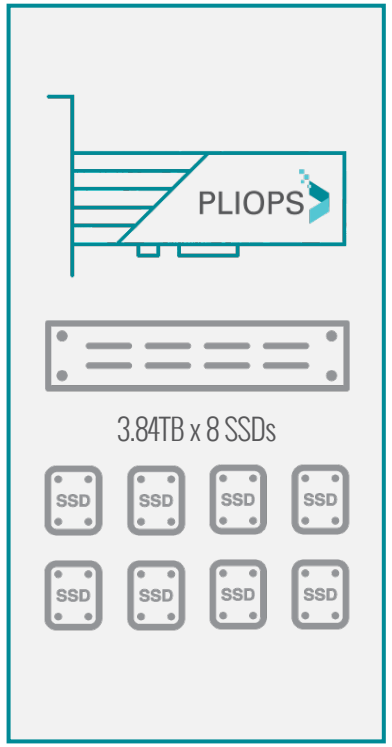
Large eTailer: ROI with Pliops

Current Software Based Solution



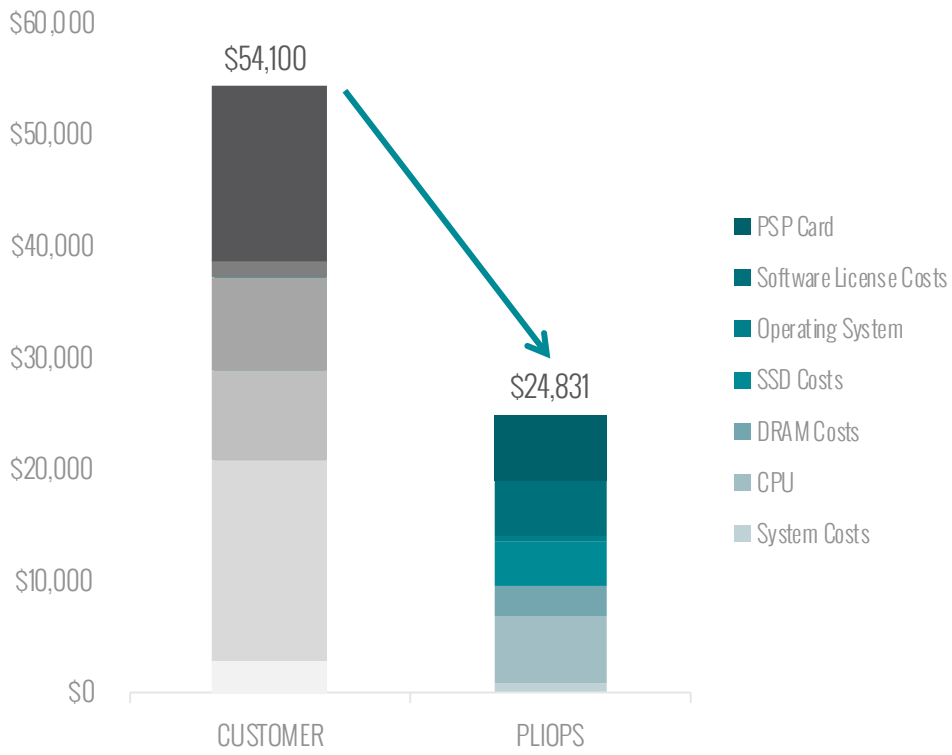
150K Queries/Sec
31 TB Usable
RAID 10

Pliops Accelerated Solution



157K Queries/Sec
49 TB Usable
Pliops Drive Fail Protection

Capex Benefit



54% lower cost with
58% more usable capacity

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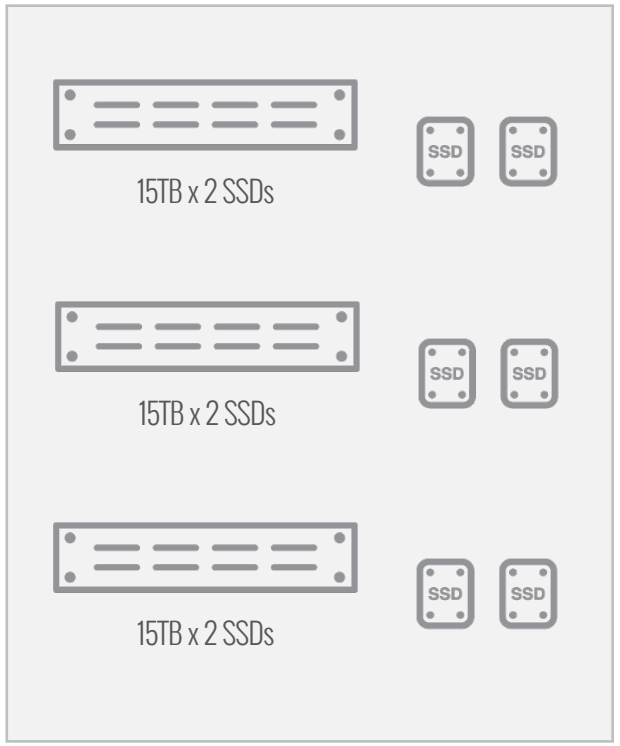
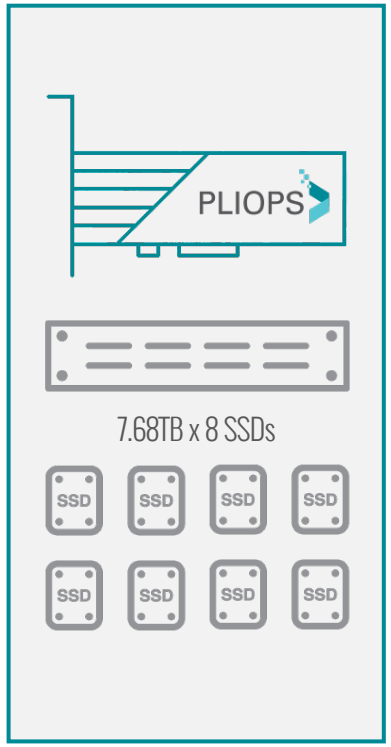
Top SaaS Provider: ROI with Pliops

Current Software Based Solution



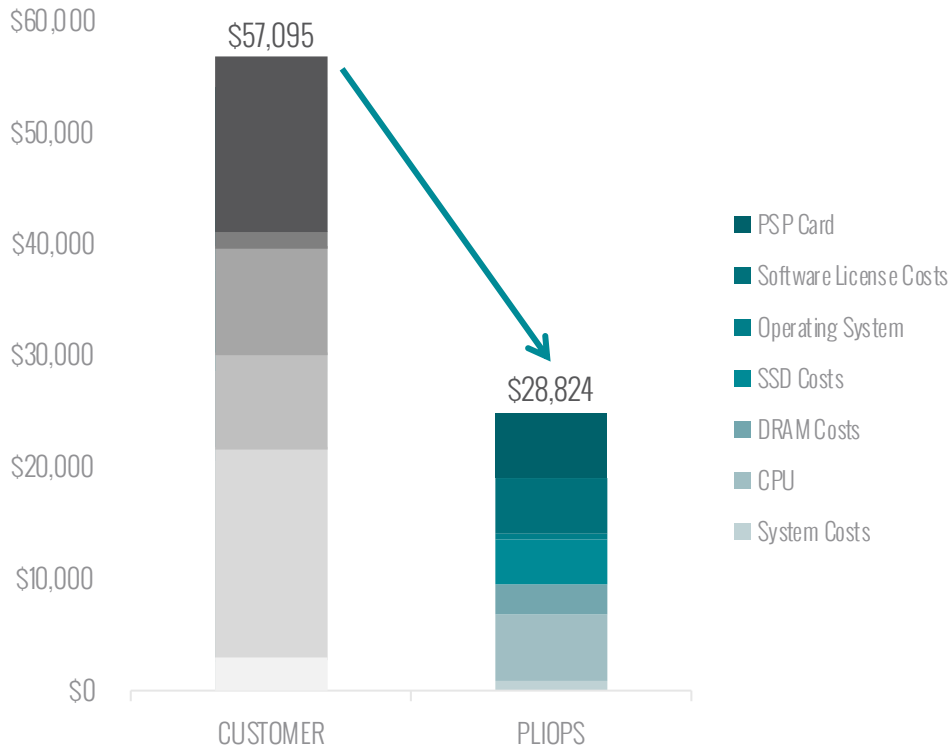
15 User Instances
41 TB Usable, RAID 0
600 Server Failures/Year

Pliops Accelerated Solution



20 User Instances
66TB Usable, PSP Drive Fail Protection
0 Server Failures/Year

Capex Benefit



50% lower cost, 600 fewer server failures,
33% more users, 66% more usable capacity

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Key Takeaways

1. Reliable local node is key for database cluster reliability, RTO, RPO
2. Fast, efficient SSD data protection requires a different architecture
3. Advanced data protection for SSDs is possible, with no tradeoffs
4. Learn more at www.pliops.com

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