STORAGE DEVELOPER CONFERENCE

SDC 21

BY Developers FOR Developers

Virtual Conference
September 28-29, 2021

A SNIA Event

PLiOPS
EXTREME DATA PROCESSOR
COMMERCIALLY AVAILABLE

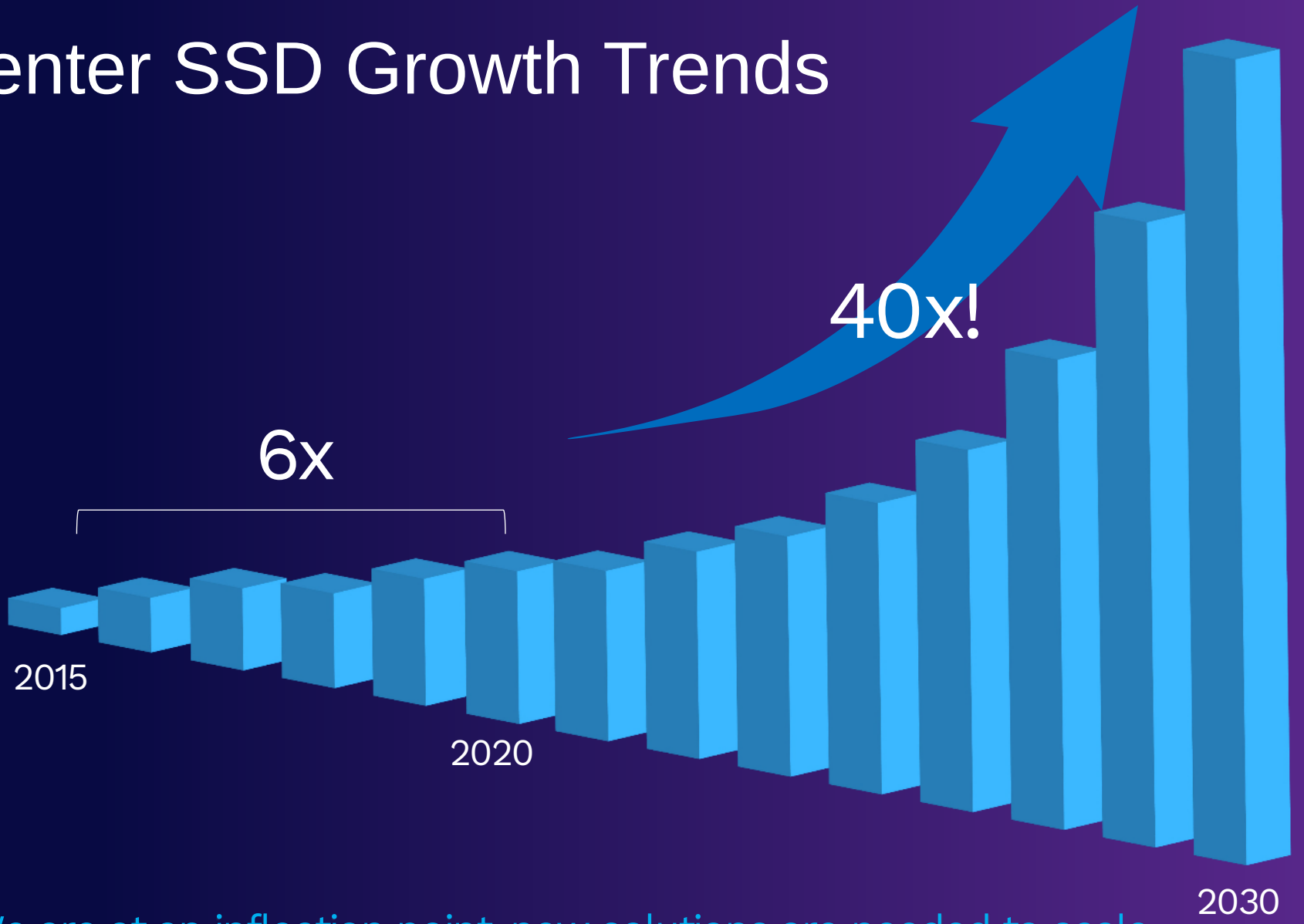
Multiply Your Infrastructure Investment With the Power of X!

Tony Afshary

Product Management, Pliops

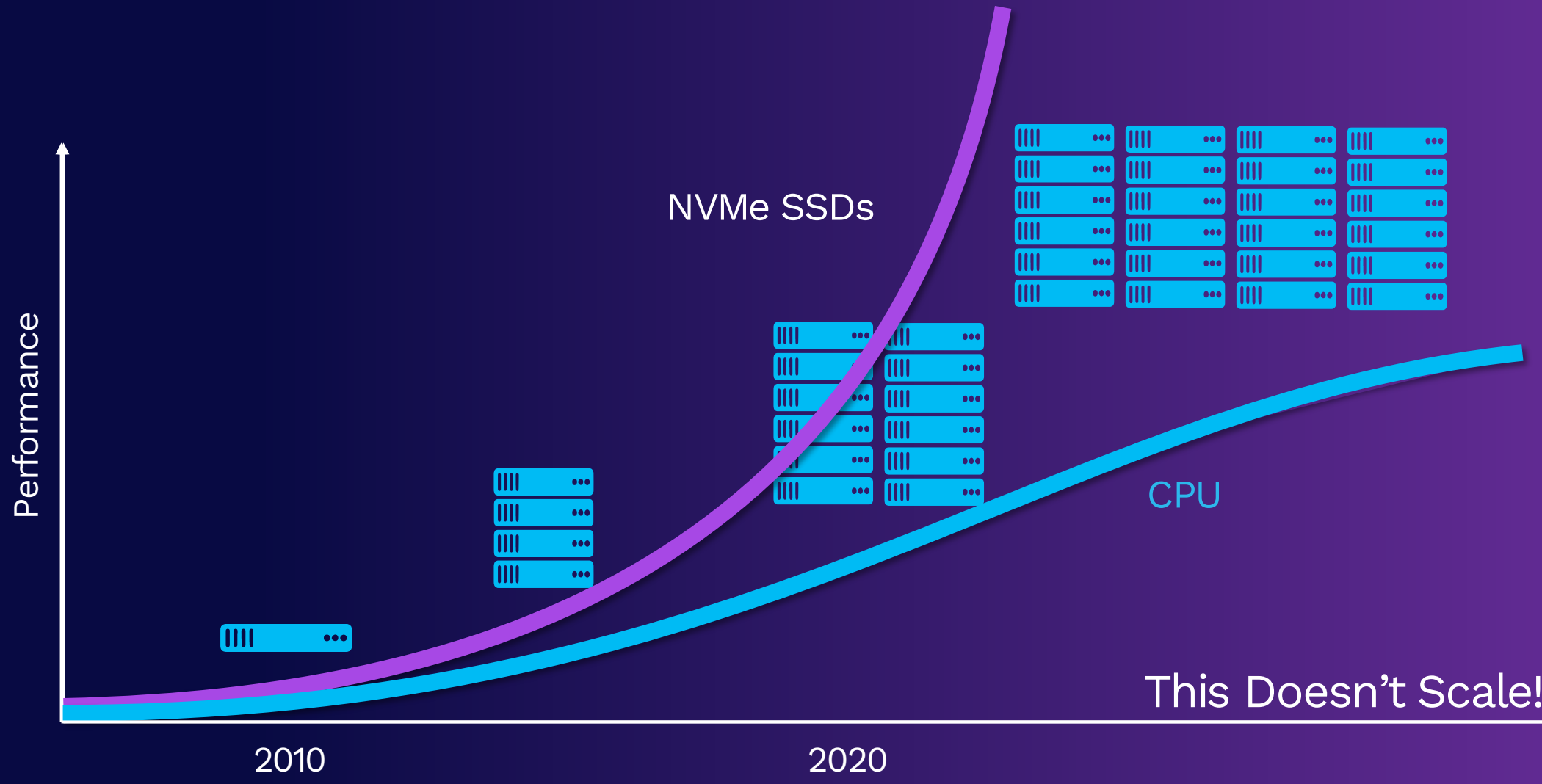
PLiOPS
EXTREME DATA PROCESSOR

Data Center SSD Growth Trends



We are at an inflection point, new solutions are needed to scale

The Data-Compute Bottleneck



Challenges With Broad SSD Adoption

Server Architectures
Not Balanced

Amplified Data

System Reliability
Compromised

Yesterday's
COMPUTE CENTRIC

NETWORK

CPU

Traffic Control

Applications

Storage Management

Storage

SSD

Today's
DATA CENTRIC

Edge

5G

NETWORK

CPU

Traffic Control

Applications

Pliops XDP

PLiOPS

Storage Management

GPU

AI/ML

SSD SSD SSD SSD

Multiplies:
- Performance
- Reliability
- Capacity
- Efficiency

Future's
DATA CENTRIC

Edge

5G

NETWORK

CPU

DPU

Traffic Control

Pliops XDP

PLiOPS

Storage Management

CPU

APPS

GPU

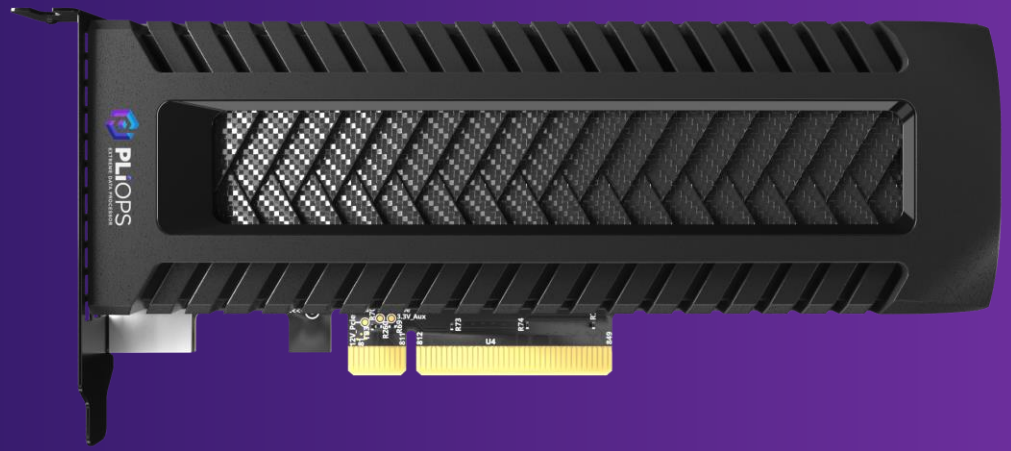
AI/ML

SSD SSD SSD SSD

Furthers:
- Isolation
- Security
- Scaling

Pliops Extreme Data Processor

Performance	3-15x
Reliability	DFP* 2x > RAID 0
Capacity	Up to 6x more
Efficiency	Lowest cost QLC, TLC for any workload



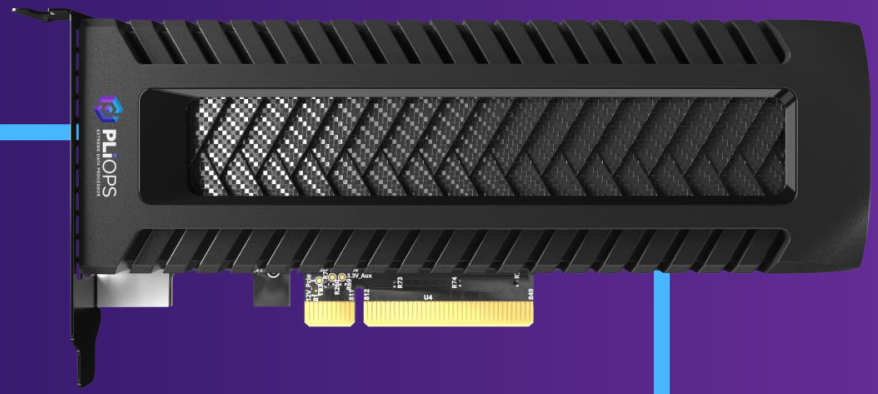
*Drive Failure Protection

XDP Architecture

PLiOPS
EXTREME DATA PROCESSOR

NVMe Block Interface
With Advanced Thin Provisioning

KV Library API
RocksDB, NVMe-KV Compatible



KV Storage Engine

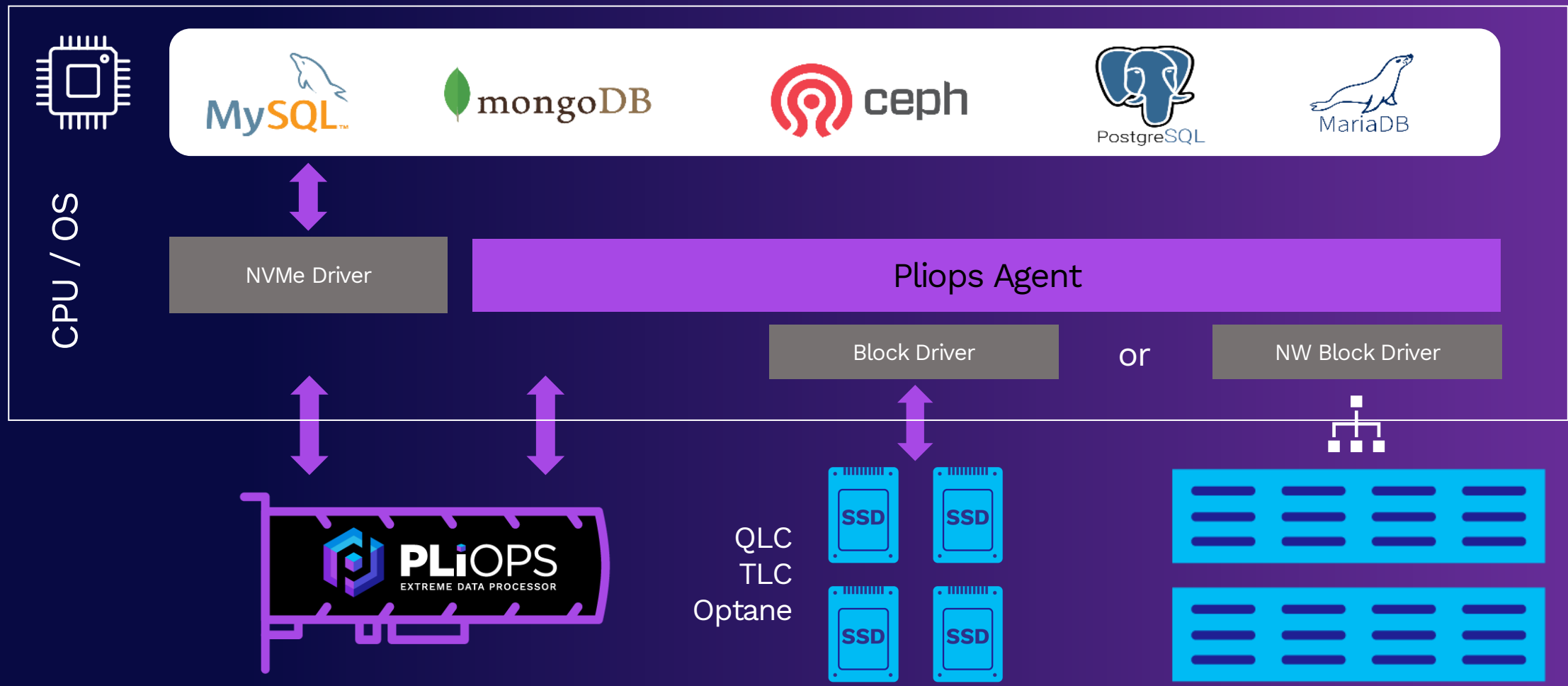
- Merge
- Garbage Collection
- Pack
- Index
- Sort

Compression
HW offloaded

Drive Fail Protection
No performance cost

Encryption
Per Volume AES-256

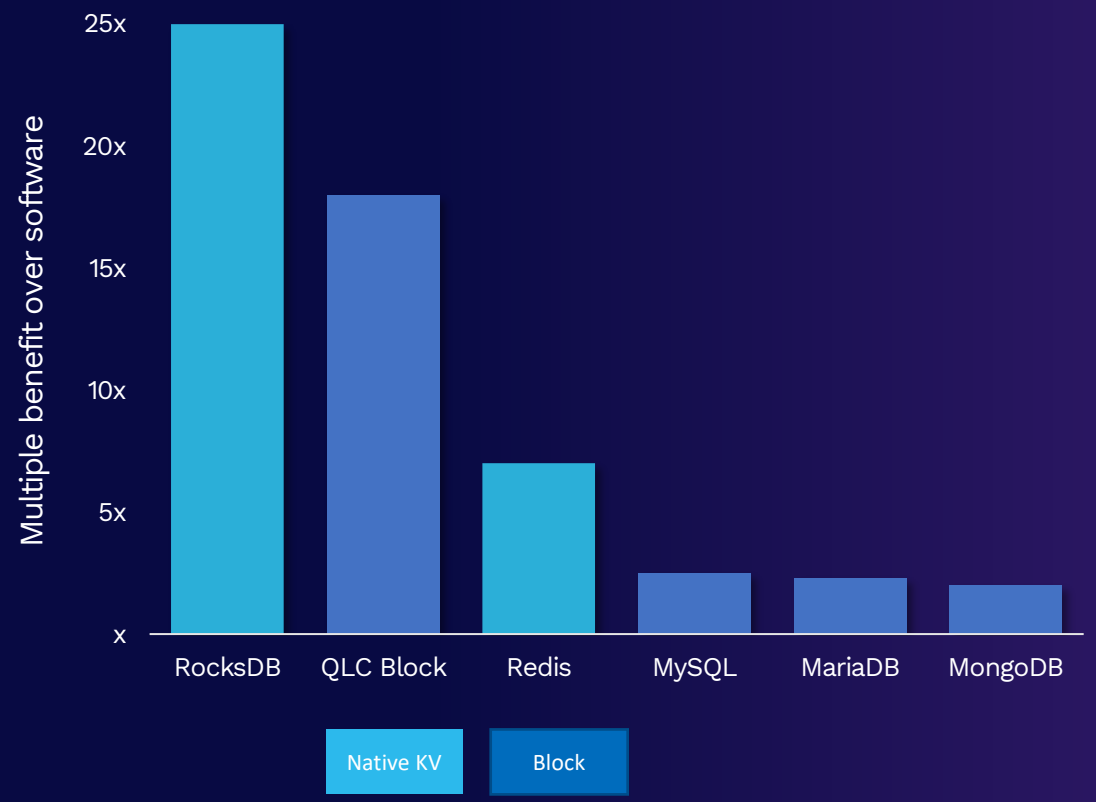
System Integration Overview



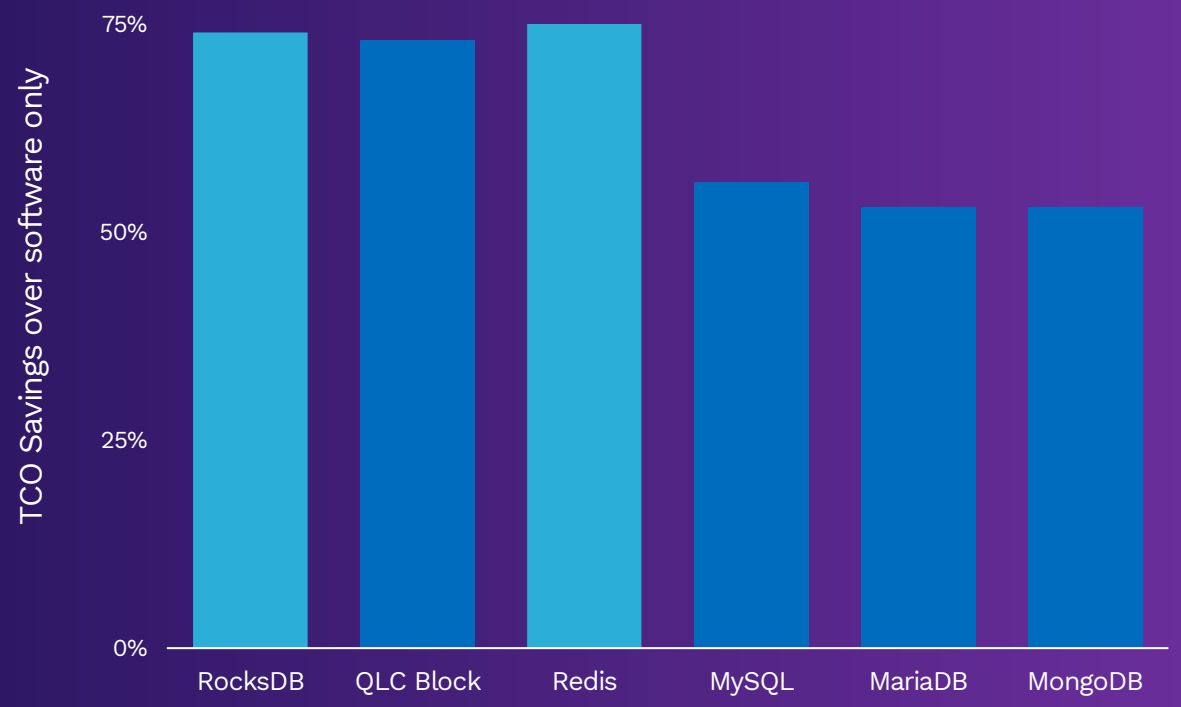
Breakthrough Value Across Workloads

PLiOPS
EXTREME DATA PROCESSOR

Increased Application Scaling



Significant TCO Savings



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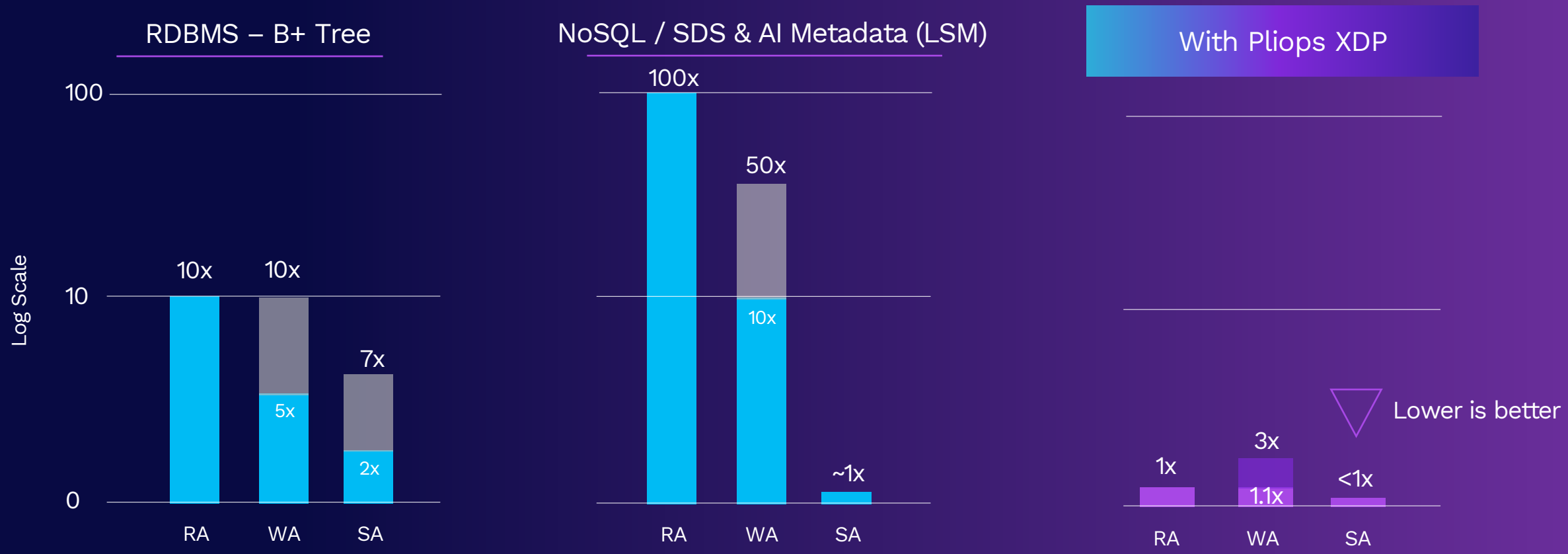
Data Amplification in Flash Based Applications

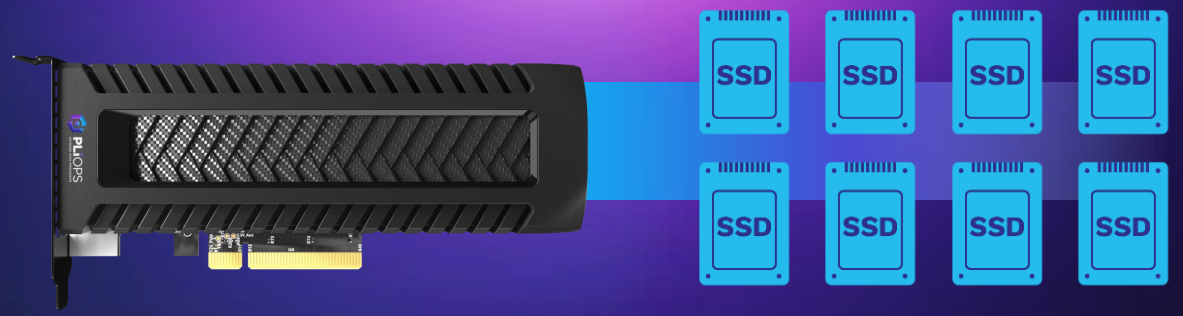


Guaranteed 1 NAND Access per Read

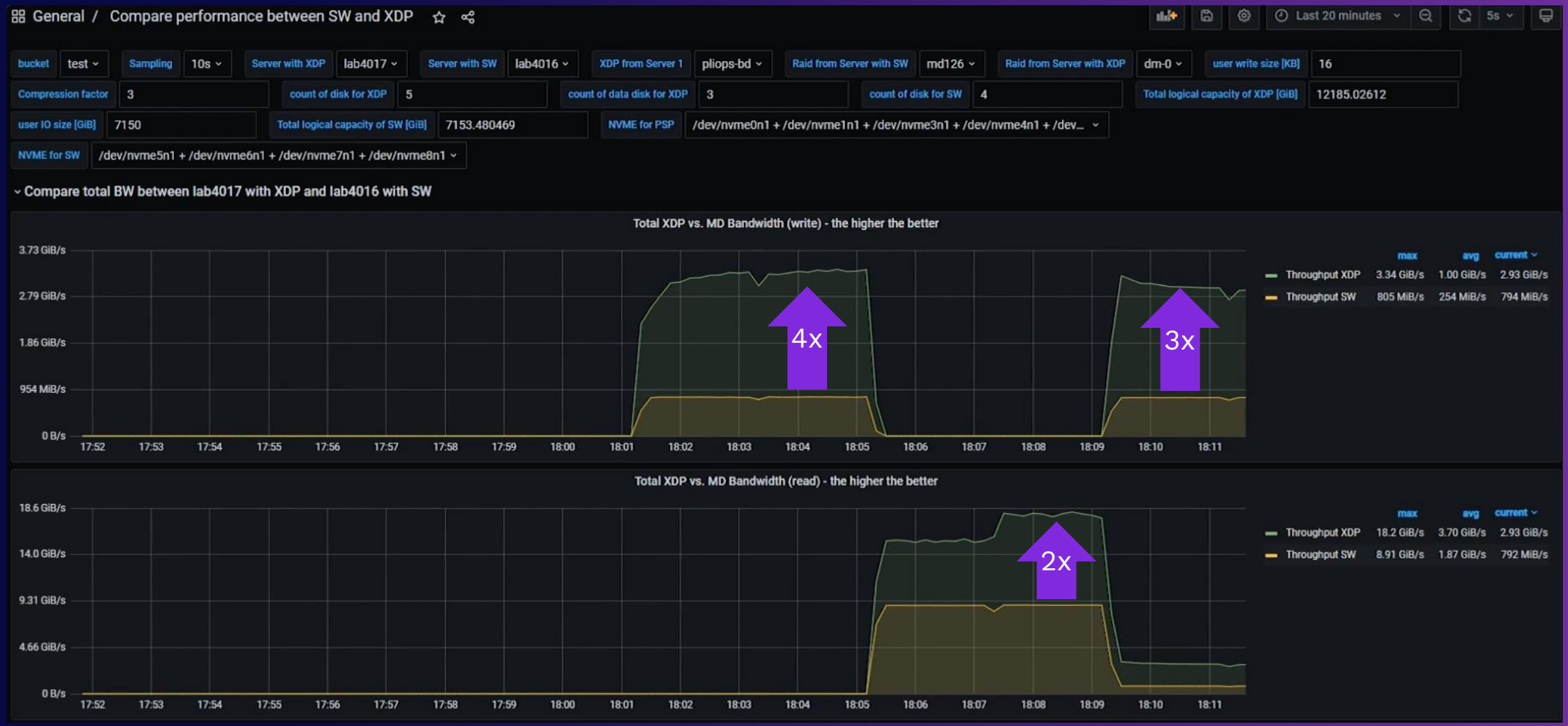
Pliops Drive Failure Protection

PLiOPS
EXTREME DATA PROCESSOR

- Full uptime w/ multiple
- Virtual Hot Capacity (VHC)
- Accelerated Hardware Engine
- All Data and Metadata is Protected
- Rapid Recovery
- Automatic Rebuild



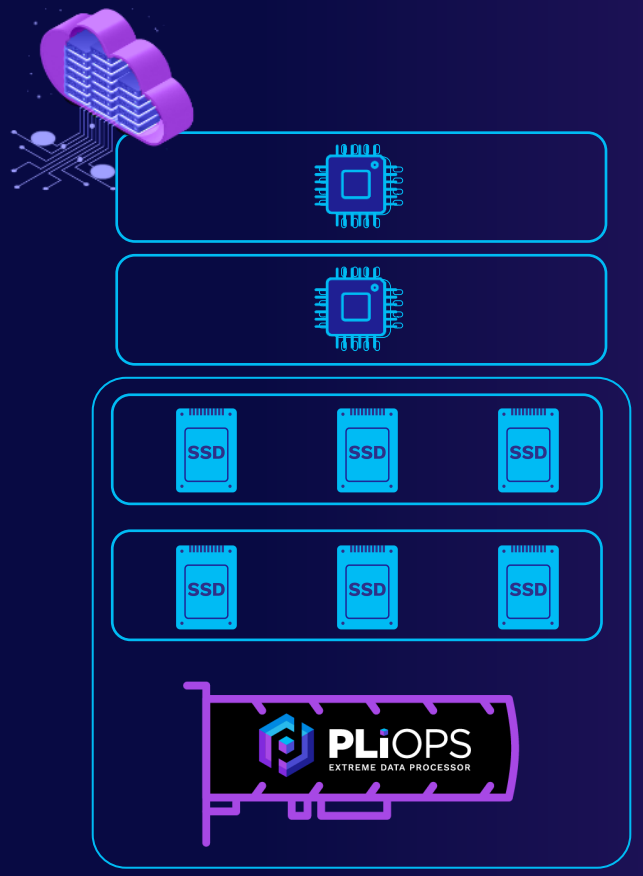
New, Cloud-Optimized Architecture



Cloud Deployments

PLiOPS
EXTREME DATA PROCESSOR

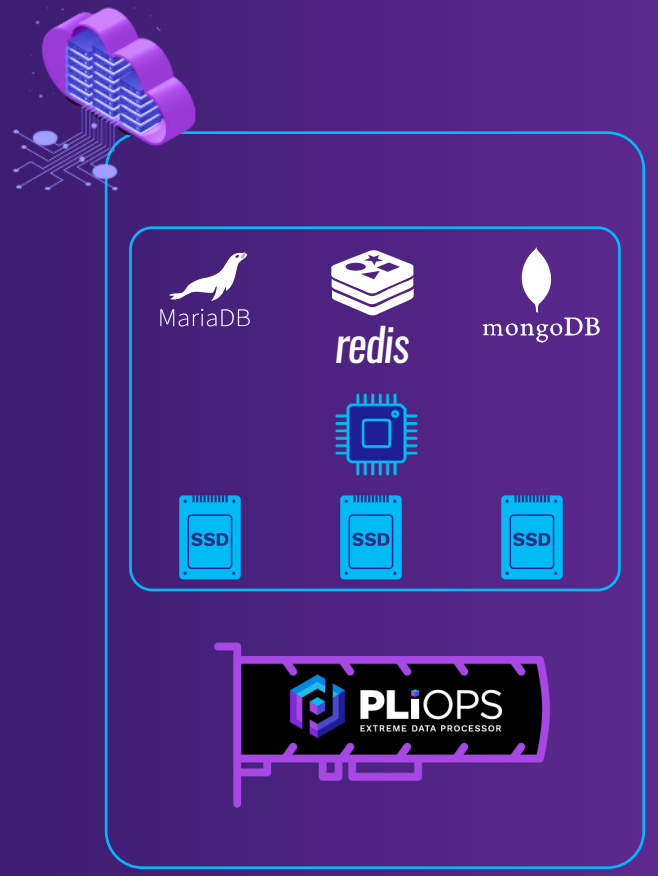
1. Disaggregating Infrastructure



General Purpose
Compute Servers

Storage Servers

2. Empowering the Application Server

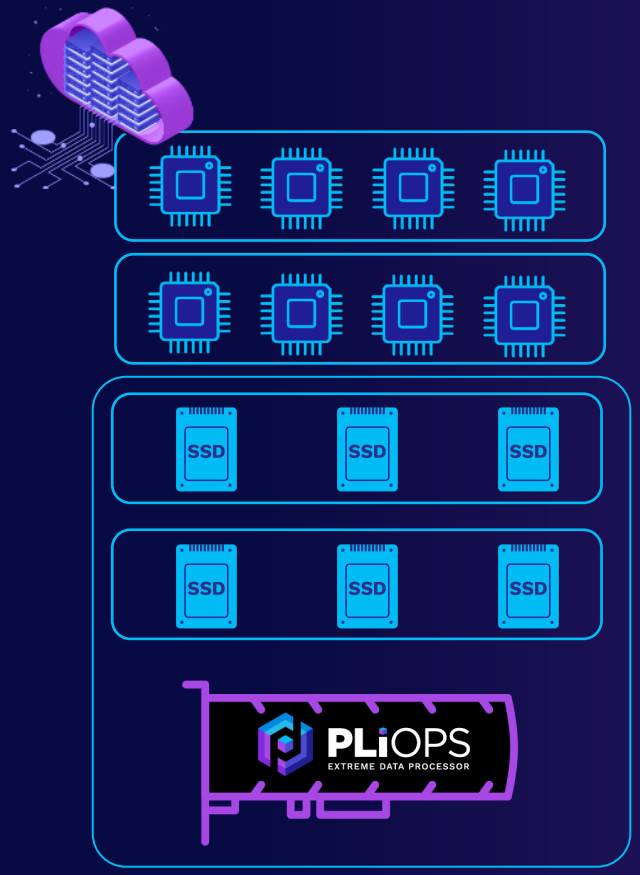


Database &
Big Data
Applications

Cloud Deployments

PLiOPS EXTREME DATA PROCESSOR

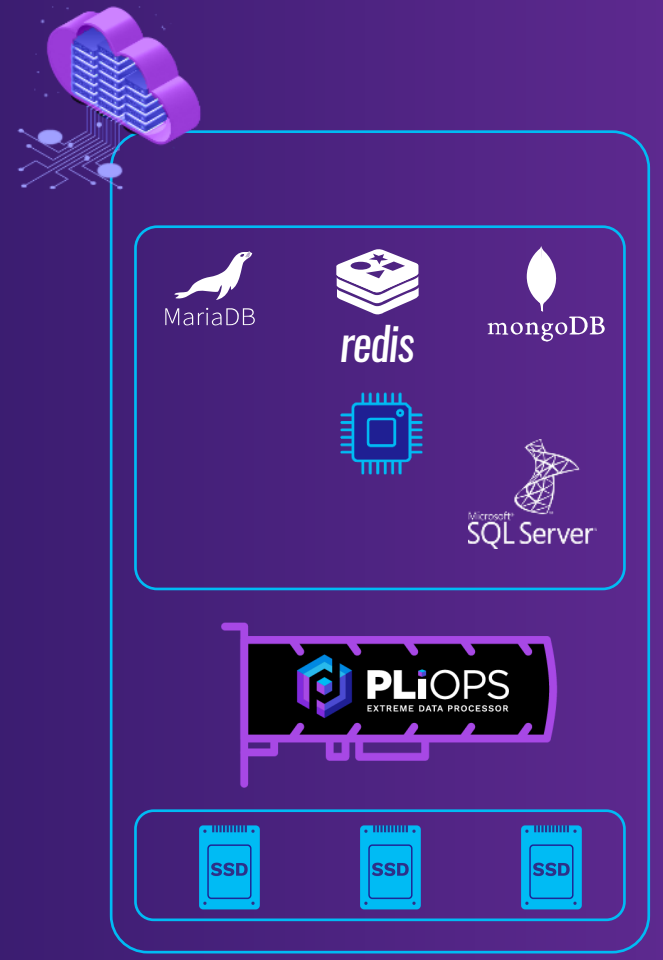
3. High Performance Computing



High Performance Compute Servers

High I/O Storage Servers

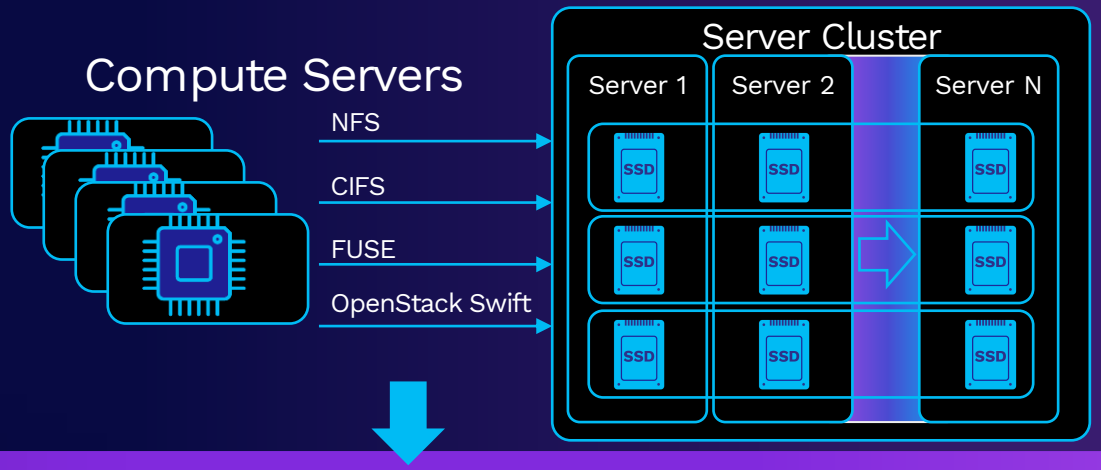
4. DB Backup Offloading

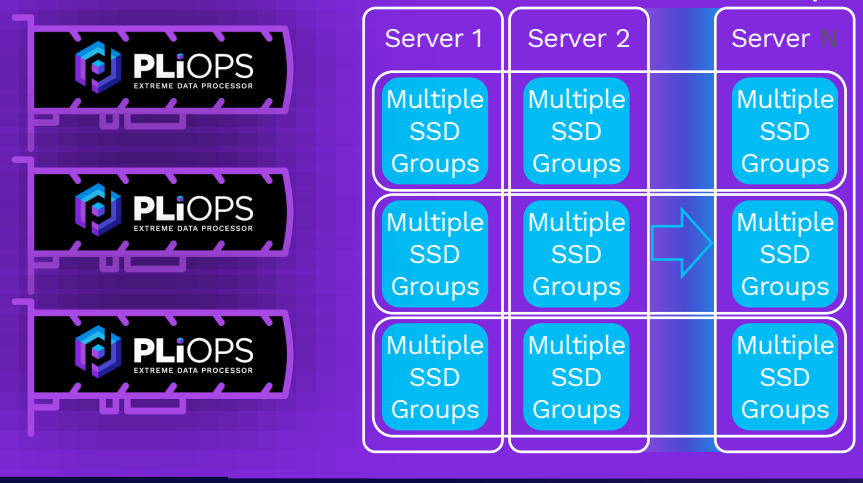


Database & Big Data Applications

Compressed Backup Offloaded

Public Cloud Provider: Pliops Impact





- Improved QoS without CPU & network E-W traffic
- Using QLC SSDs w/o performance hit
- Larger & more reliable cluster

- Capacity Expansion by 43%!
- Zero downtime!
- Reduce cost by 36%!

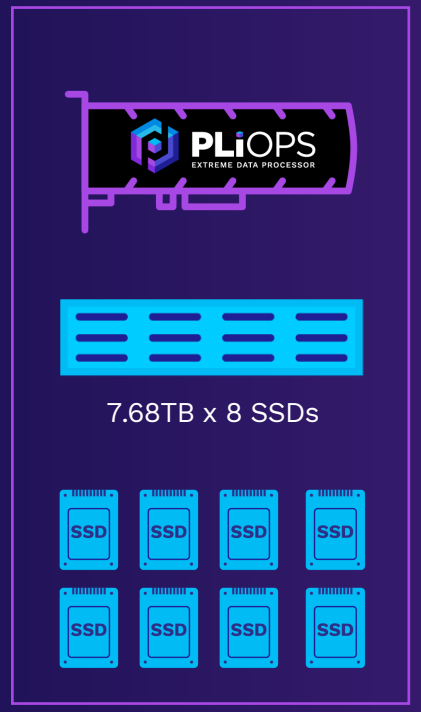
More reliable and easier orchestration of applications and workloads

Top SaaS Provider ROI with Pliops

Current Software Based Solution

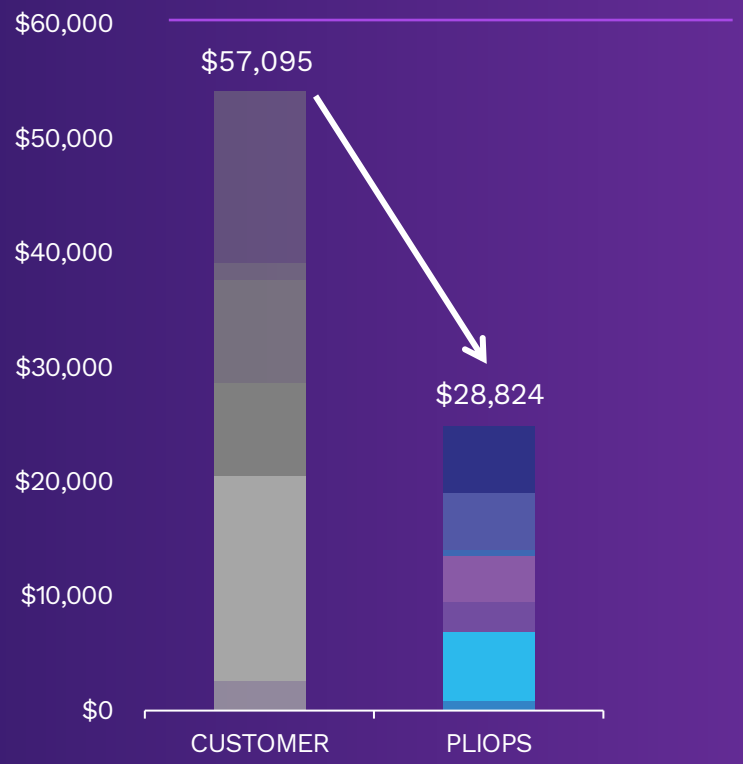
15 User Instances
41TB Usable, RAID 0
600 Server Failures/Year

Pliops Accelerated Solution



20 User Instances
66TB Usable with
XDP Drive Fail Protection
Zero Server Failures/Year

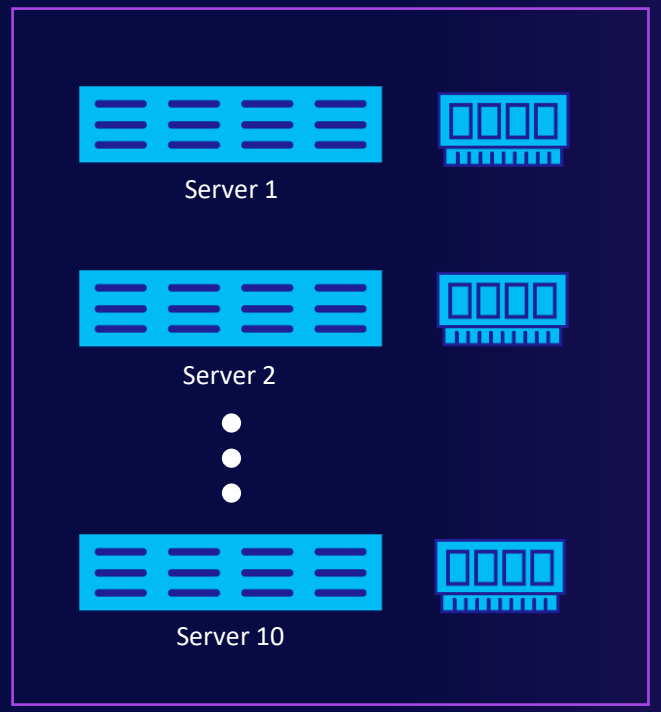
Capex Benefit



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

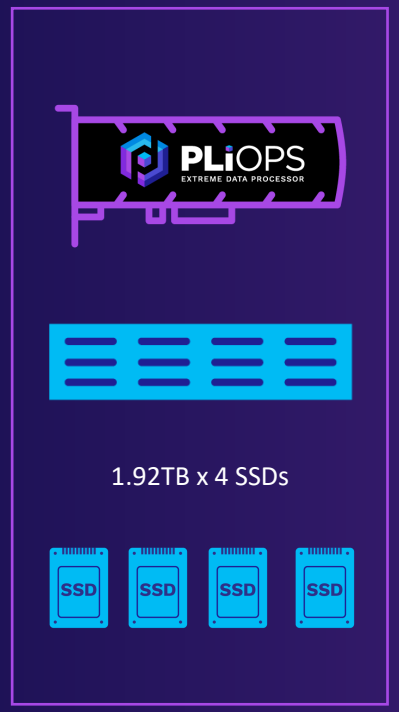
Redis / IMDB TCO Advantage

Current DRAM-Based Solution



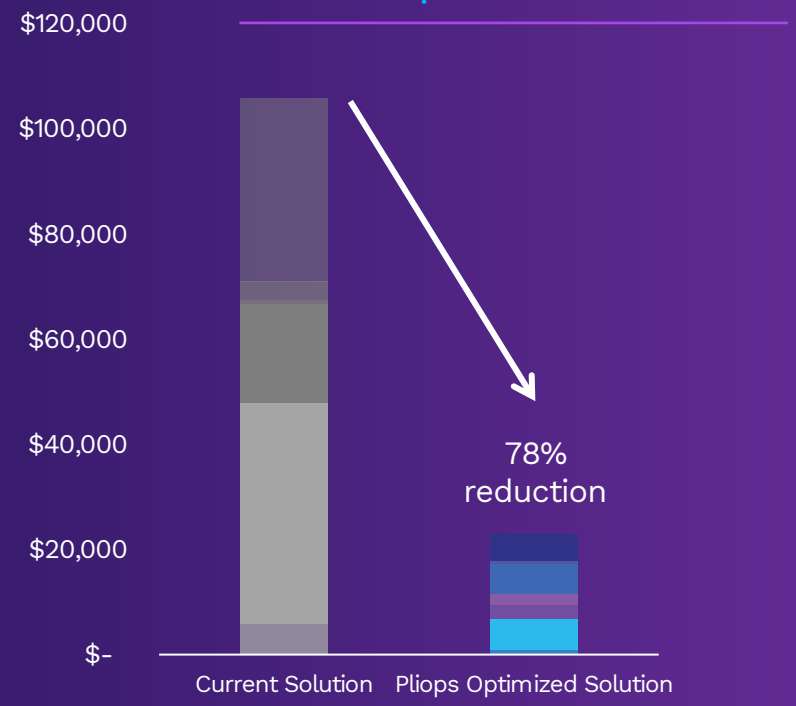
10 Redis DRAM Based Instances
6TB DRAM based Storage
920K IOPS, 1.01ms 99.99% Latency

Pliops Optimized Solution



1 Redis on Flash Pliops
Enabled Instance,
6TB Pliops + SSD based Storage
910 KIOPS, 1.11ms 99.99% Latency

Capex Benefit



Deploy In-memory performance
for much larger data sets
at very low cost

Summary

- The era of storage hardware accelerators is here
- Integration is seamless
- Drive failure protection for NVMe SSDs is a game-changer
- QLC & ZNS SSDs are now equal or better than TLC