



Modernizing IT Architecture with Cloud-Connected Flash

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Digital Transformation Is Driving New IT Imperatives



INSPIRE
innovation with
the cloud



BUILD
clouds to accelerate
new services



MODERNIZE
IT architecture with
cloud-connected flash

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What Is Driving the Modernization Mandate?

Modernizing provides efficiencies and funds transformation

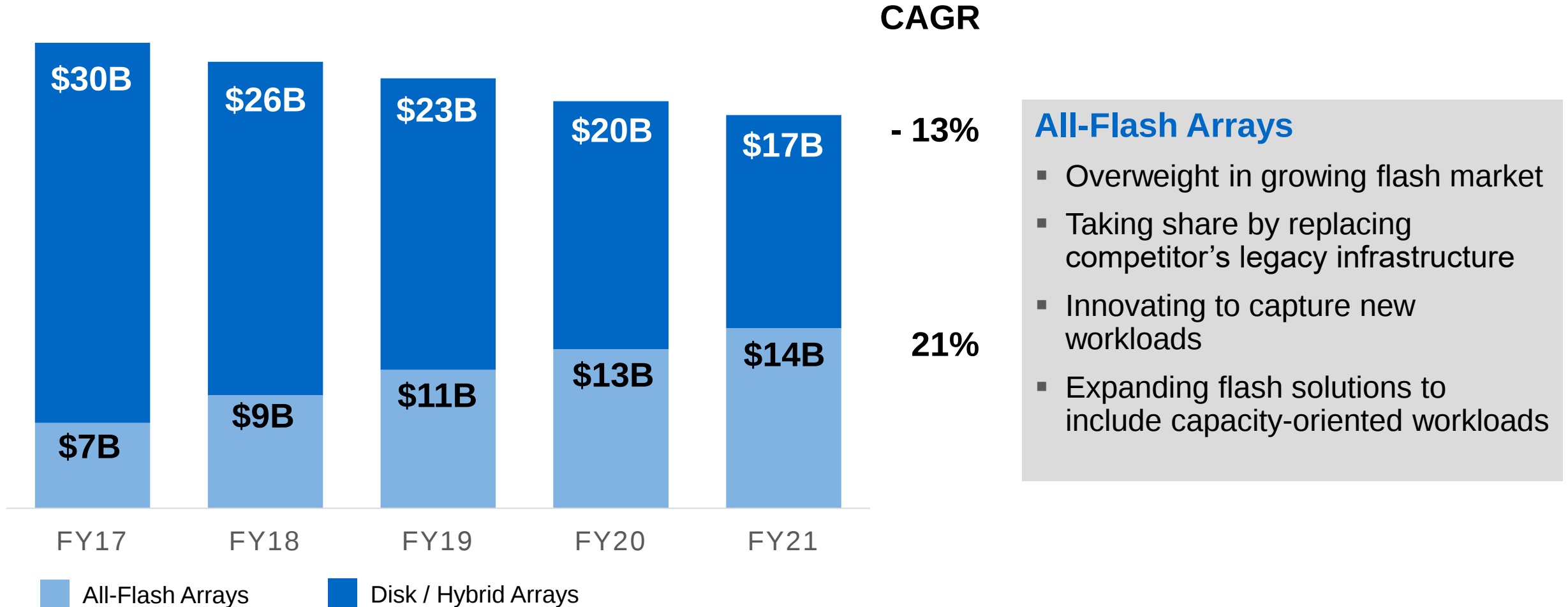
Free up resources to fund transformation

Accelerate performance and drive efficiencies for existing applications and workloads

Support new diverse workloads

Opportunity: Dominate the Fastest-Growing Segment in Storage

The flash market is growing and NetApp is outgrowing the market



Source: Worldwide and U.S. Enterprise Storage Systems Forecast, 2017–2021, IDC; Worldwide Enterprise Storage for Public and Private Cloud 2015-19; Segment Forecasts by IDC; NTAP Market Intelligence

Modernize IT Architecture with Cloud-Connected Flash

Only NetApp has the #1 data operating system for managing data in hybrid cloud and on-prem environments



Characteristics of modernization

Cloud-connected

Flash-empowered and future-proof

Software-defined

Simplified and efficient

Intelligent

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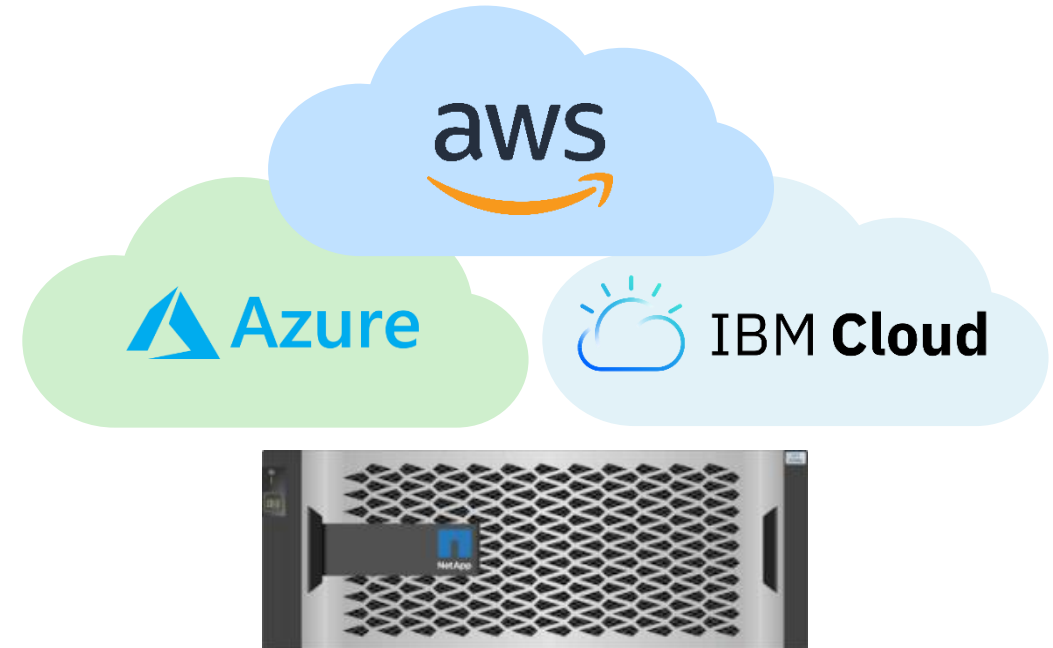
Simplified and efficient

Intelligent

Cloud-Connected

The most cloud-connected all-flash arrays for cloud analytics, backup, DR, tiering, and workload bursting

- Connect to more clouds, in more ways, and to more services
- Seamless data integration across hybrid cloud
- Common data management services on-premises and in the cloud



Common data management from edge to core to cloud

Flash-Empowered

Industry-best application performance across all workloads*

- Leading flash solution for analytics, AI, deep learning, and high-performance engineering and design applications
- Next-generation SAN
- Consolidate mixed workloads
- Guaranteed flash efficiency and performance



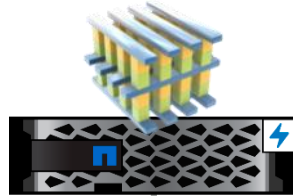
*as ranked in SPC-1 results

The All-Flash Data Center of the Future

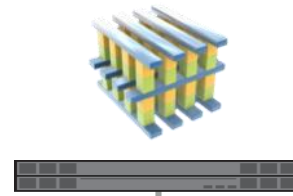
NVMe over Fabrics



Storage-Class Memory (SCM) as Cache



Persistent Memory (PMEM) in Server



Quad-Level Cell/
Consumer SSD (QLC)



Future-proof strategy requires a software-defined, whole-ecosystem approach

Future-Proof

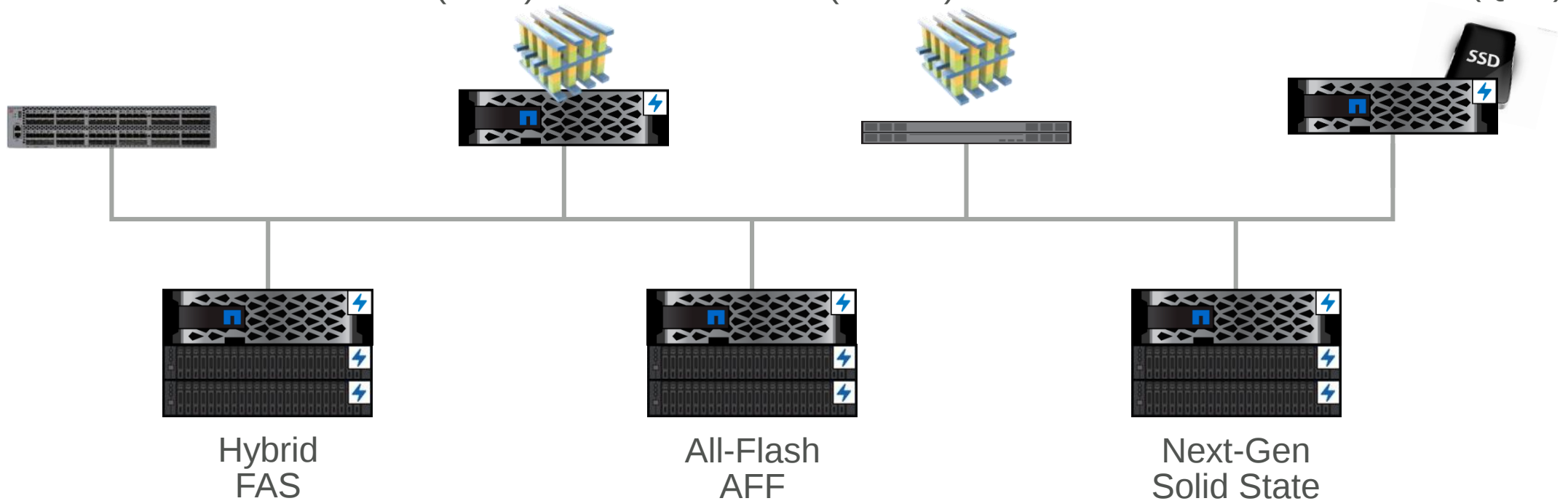
NetApp leads in future-proofing flash technology

NVMe over Fabrics

Storage-Class Memory
(SCM) as Cache

Persistent Memory
(PMEM) in Server

Quad-Level Cell/
Consumer SSD (QLC)



Helping customers confidently embrace disruptive technologies non-disruptively

Software-Defined

Operate from edge to core to cloud with common data management and services

Software innovation delivers flexibility of choice for customers

AS A SERVICE

CONVERGED

**PURPOSE-BUILT
SYSTEMS**

**SOFTWARE-
DEFINED**



In clouds



Near the cloud



Hyper-
converged



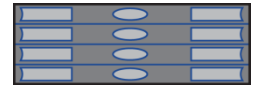
Converged



Engineered



Heterogeneous



Software-
defined

Customer Example: Fortune 20 EMC SAN Takeout

NetApp innovation delivers the best ROI and TCO in the industry

- NetApp won a fiercely competitive takeout at a Fortune 20 customer
- Over 18 months, won 80%+ share in a data center modernization initiative

Results after 12 months of migrating more than 10PB to all-flash

Next stage:
Innovate with public cloud

\$6.5M in run-rate savings

7,200 sq ft reduction in footprint

500 kW of data center power savings

90% latency improvement (average)

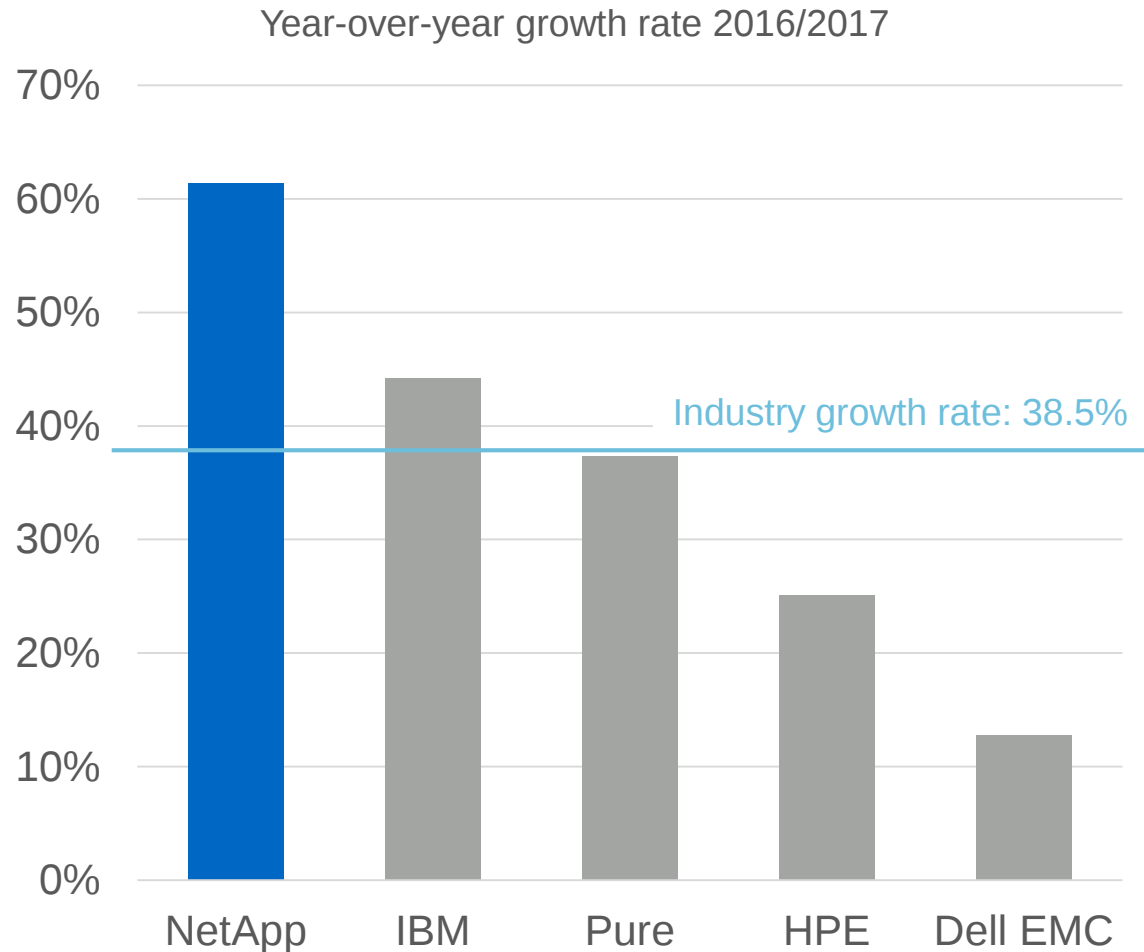
10x I/O throughput improvement

3x better utilization w/ dedupe and compression

-
- Removed 16 different HDD array models
 - Entire all-flash footprint takes less space than just **one** of their old EMC VMAX arrays

Customers Vote with Their Wallets

Fastest-growing top 5 flash vendor for CY2017



Source: IDC Q4 2017 WW Enterprise Storage Systems Tracker, March 1 2018

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Run2NetApp Program Success

75%

Win percentage
vs. Dell EMC

80%

SAN deals

33%

of SAN deals
are net new
customer logos

2+ competitive displacements daily

Why We're Winning in Flash

Performance. Intelligence. Protection. For a hybrid world.

Cloud strategy resonates

Flash solutions fund customers' transformation

Highest performance for AI and deep learning

Disruptive technology delivered non-disruptively

Integrated data and common data services

#1 data operating system for managing data in hybrid cloud and on-prem environments

Industry-leading portfolio unified by the NetApp Data Fabric



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