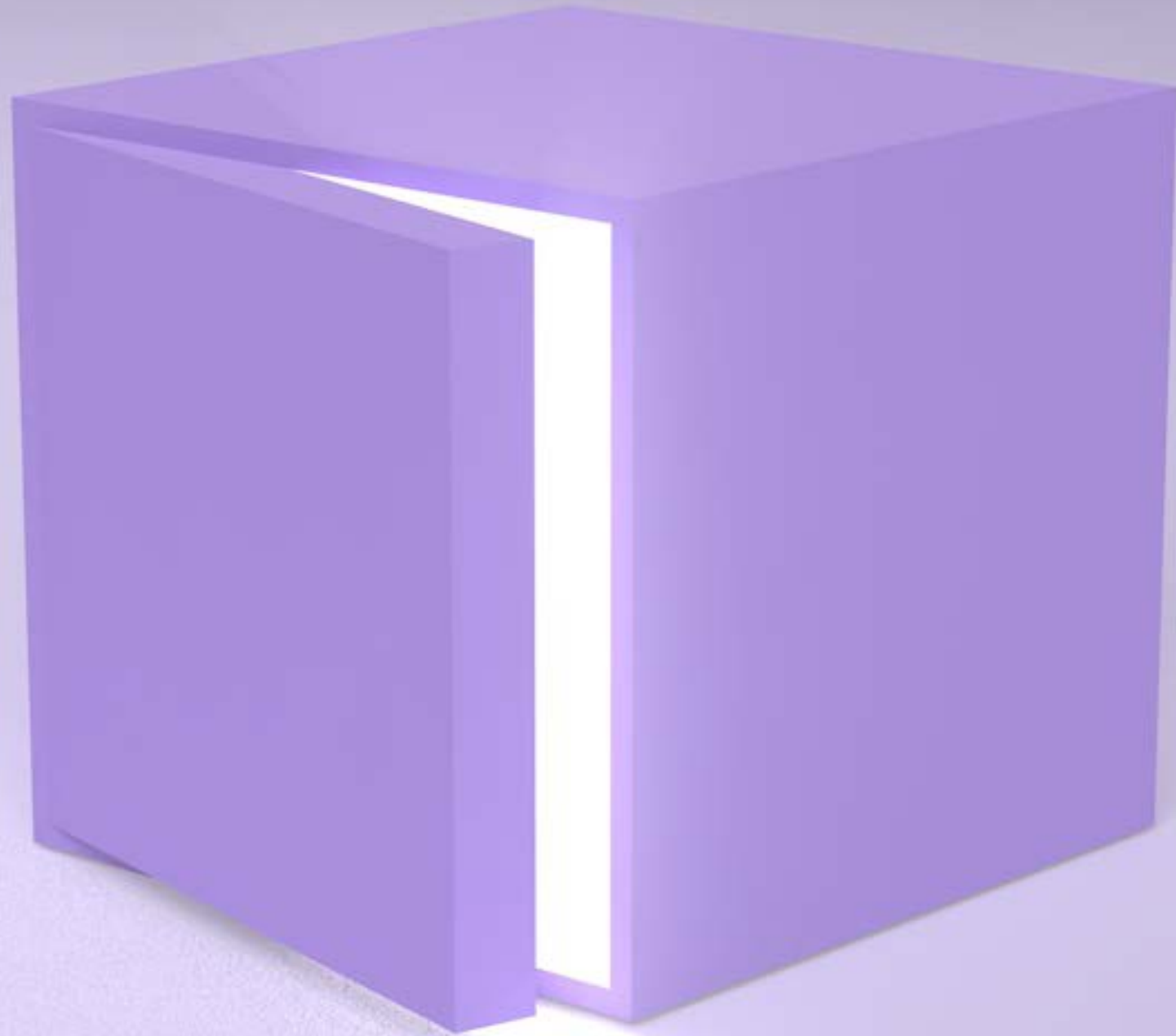E-BOOK

Your future-ready platform is here today

How IT leaders are shifting from response to acceleration with NetApp and VMware

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From response to acceleration at the speed of now

It doesn't take a fancy study to know that a lot has changed over the last 18 months. (But here's one if you need it.) Almost overnight, IT leaders had to address new challenges, including how to quickly transition entire organizations to remote working, how to secure those new environments, and how to prioritize and even accelerate digital initiatives as they adjusted to the new normal.[1]

Yet the biggest challenges and opportunities for CIOs may still lie ahead. New and changing consumption models, flexible workforces, supply chain disruptions, and security challenges are here to stay. And yesterday's stopgap measures aren't going to cut it long term.

IT organizations need to set a foundation for transformation that is ready now and is also future proof to take them where they may need to go next when market dynamics change again. This is easier said than done, considering the significant investment IT has made in technology, people, and processes. Navigating modernization initiatives while maximizing the use and value of existing investments is key to minimizing technical debt during this transition. This is where the combination of NetApp and VMware is in a class of one.

Acceleration is imperative
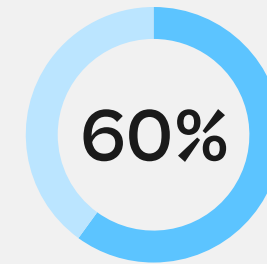
60% of boards have chosen to improve operational excellence through digital business.[1]
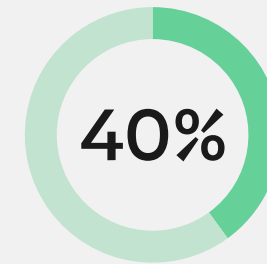
40% of IT budgets will be consumed from technical debt by 2025—carrying risks and keeping IT teams buried in maintenance work that delivers no business value.[2]
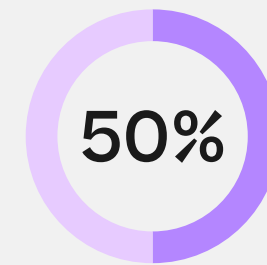
50% faster service delivery is achieved for the business when infrastructure and operations leaders actively manage and reduce technical debt.[3]

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Hybrid cloud has reached the tipping point

According to IDC, in 2020, IT spending on public cloud surpassed spending on traditional IT infrastructure for the first time in history. And IDC predicts that trend will continue—along with significant growth in the adoption of containerized workloads.[4]

A key challenge for VMware customers is how to take advantage of hybrid cloud and modern containerized applications without having to completely redesign their IT infrastructure. Refactoring for cloud compatibility can make or break a hybrid cloud strategy.

A unified platform solves the problem by aligning compute, storage, networking, and management tools, making them simple to operate and compatible across on-premises and cloud environments. To make it work, your IT vendors must invest and work closely together.

With NetApp® and VMware solutions, customers get a unified platform with native integration ready for any workload, in any location, across their choice of leading cloud platforms.

Why a unified platform is important

It can cost an average of **$1M** to move 1,000 VMs to the cloud, due to refactoring applications and performance impacts.[5]
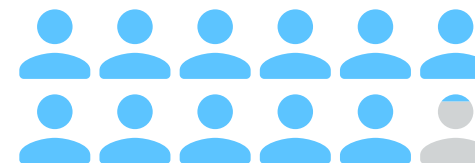
92% of VMware customers surveyed said that consistency of architecture between private and public clouds is important.[6]

"With the adoption of a **consistent VMware Hybrid Cloud environment,** study participants reported that migrating applications is substantially easier and less costly than carrying out a comparable migration with either a customized private cloud or a public cloud environment."

– IDC "Business Value of Hybrid Cloud with VMware"

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NetApp and VMware lay the foundation for future-ready IT

For over 20 years, NetApp and VMware have helped over 18,000 of the world's leading businesses optimize their virtualized applications for performance, efficiency, and cost savings with native integrations across the NetApp and VMware digital platform. Decades of co-development and continued joint integration have resulted in a new, future-proof platform to meet you on your path to a seamless hybrid cloud.

Your future-ready platform is here today

Seamless Hybrid Cloud Experience	Applied Acceleration	Modern Virtual Data Center

One unified digital platform that combines the simplicity and value of VMware's digital foundation with a data fabric delivered by NetApp.
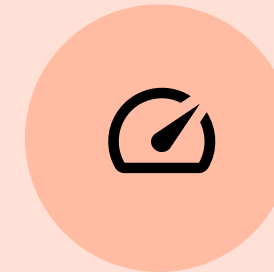
Integration with VMs and containers to empower IT to support all traditional and cloud-native applications, on any cloud.
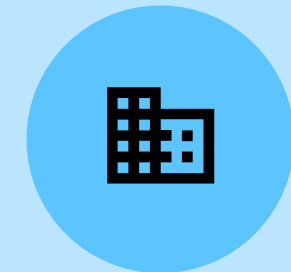
Continuous modernization and optimization with the latest VMware and NetApp technologies to maximize performance, protection, and efficiency at scale—all while controlling costs.

Modern cloud-connected data management
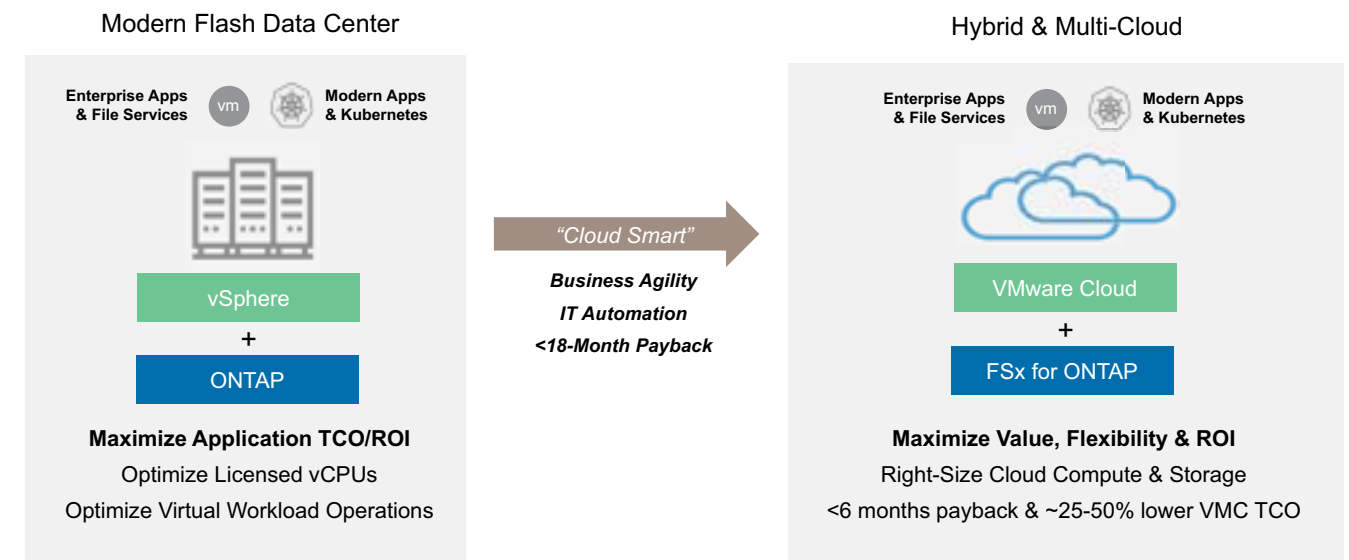
Native integration with VMware vSphere for simplified operations.

- **Simple:** Offload workload data management, protection, and mobility to storage integrated with vSphere.

- **Fast:** Optimize flash, NVMe, and GPU performance for traditional VMs and modern Kubernetes or AI deployments.

- **Efficient:** Compress, dedupe, and compact data for 5-30X less storage with 85-90% more data center efficiency.

- **Protected:** Offload virtual workload backup and restore and deliver zero RPO and lower RTO data replication.

- **Secure:** Extend VMware-level security and compliance to data to improve protection, detection, remediation, and recovery capabilities.

NetApp data fabric with built-in VMware integrations

Modern Flash Data Center

Enterprise Apps & File Services — vm — Modern Apps & Kubernetes

vSphere
+
ONTAP

Maximize Application TCO/ROI
Optimize Licensed vCPUs
Optimize Virtual Workload Operations

"Cloud Smart"

Business Agility
IT Automation
<18-Month Payback

Hybrid & Multi-Cloud

Enterprise Apps & File Services — vm — Modern Apps & Kubernetes

VMware Cloud
+
FSx for ONTAP

Maximize Value, Flexibility & ROI
Right-Size Cloud Compute & Storage
<6 months payback & ~25-50% lower VMC TCO

A data fabric is an architecture and a set of data services that provide consistent capabilities across a choice of endpoints that span on-premises and multiple cloud environments. A data fabric powered by NetApp simplifies data management across the hybrid cloud—with a consistent look and feel across on-premises and cloud environments—to accelerate digital transformation. It delivers integrated hybrid cloud data services for data visibility and insights, data access and control, and data protection and security.

Smooth your journey to hybrid multicloud

So you want to move VMware to the cloud?
Look no further! NetApp has done the work for you.

NetApp is the only supported and certified supplemental external storage provider with first-party cloud services for moving data-intensive VMware workloads to any cloud.

AWS FSx for ONTAP VMware Integration →

Microsoft Azure VMware Solution for ANF datastores →

CVS Datastore for Google Cloud VMware Engine →

Why NetApp for VMware →
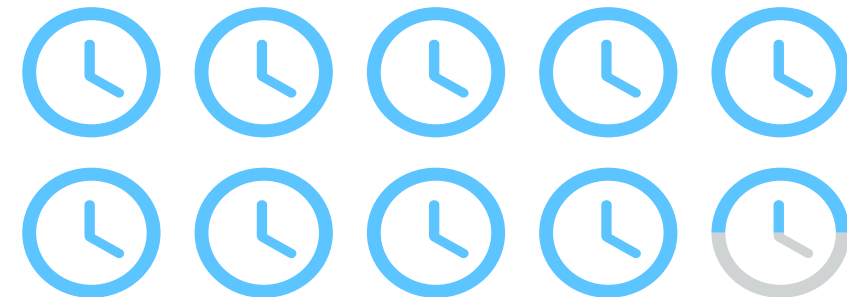
95% faster backup times

U.S. Department of Energy **reduces VMware backup times by 95%** using Cloud Volumes ONTAP and AWS cloud.

Learn more →

Looking for a lower TCO?

Listen to these customer podcasts and hear how easy it is to get VMware to the cloud—and save some dough.

Financial Services →

Baptist Health →

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Traditional apps and cloud-native apps leveraging the same platform? Yes, please.

More apps will be deployed in the next 5 years than in the past 40 years combined.[7] To keep up this pace, the one thing we know is that change is driving businesses to be more flexible and agile to respond quickly—to build a digital business.

68%

of IT professionals accelerated the adoption of containers during the pandemic to accelerate deployment, increase automation, and reduce costs.[8]

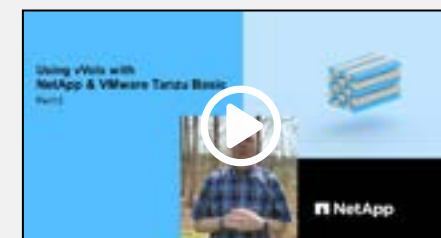## Optimize VMware Tanzu and Kubernetes on NetApp

How VMware runs Kubernetes →

The importance of dynamic, persistent storage for Tanzu →
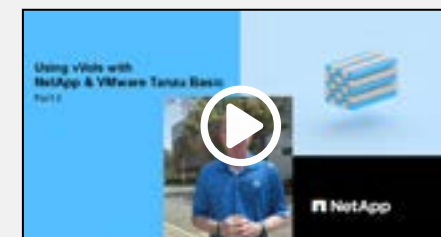
Accelerate your Kubernetes journey →

Meet one of our VMware specialists, Chance Bingen, in this 3-part video series on how to use vVols with NetApp and VMware Tanzu Basic.

Part 1: How to use vVols with NetApp and VMware Tanzu Basic

Part 2: Using vVols with NetApp and VMware Tanzu Basic

Part 3: Using vVols with NetApp and VMware Tanzu Basic

Modernizing IT doesn't have to be painful

90% of companies are modernizing IT

Digital modernization is a constant requirement on the road to transformation. In fact, Forrester estimates that 90% of companies are using technology simply to modernize their existing business model, not to transform it.[9] And that's OK. Having the newest technologies is a minimum requirement for modernization and it will help you get where you're going faster and more easily.

Our unique investment as co-design partners ensures that NetApp and VMware customers can confidently take advantage of the latest innovations, such as NVMe and GPU/DPU technologies. Customers can also enjoy new enhancements in the VMware software platform to optimize transactional, analytics, dev/test, and artificial intelligence and machine learning workloads at the lowest cost.

Modernize your virtual data center

Thinking of deploying NVMe-oF? →

How to boost VMware performance 2 to 3 times →

Managing NetApp through vSphere →

Running AI/ML workloads with NVIDIA →

Getting more VMware VDI at 87% lower cost →

Enabling submillisecond response times for VDI →

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In fact, modernizing IT can be quite rewarding—just ask these NetApp and VMware customers.

13 times more SAP performance
IGZ drives 13 times more SAP performance and 200% greater capacity with an 85% smaller storage footprint by leveraging NetApp FAS and all-flash systems.

10 times database batch performance
FICO accelerates critical database batch performance by 10 times while reducing VDI storage requirements by 4:1 using NetApp SolidFire® scale-out storage systems.

25% less storage requirements
Denver Broncos reduce storage requirements by 25% while improving business continuity using NetApp FAS.
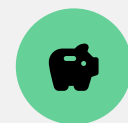
81% faster VDI deployment
University Medical Center reduces VDI deployment time by 81% and increases performance 2 to 4 times using FlexPod® with all-flash FAS.

67% reduction in TCO
Oak Hill saved $1.2M on their VMware and VDI deployment, reducing TCO by 67% and accelerating desktop updates by 98% using FlexPod.

20 hours/week savings
Polaris Alpha frees up 20 hours of IT productivity per week and accelerates container deployments to 15 minutes using FlexPod integration for vSphere.

Take the lead with NetApp and VMware

NetApp and VMware continue to invest in the comprehensive joint engineering necessary to deeply integrate our solutions from the point of design to the point of delivery. It's hard work, but someone's got to do it.

VMware Cloud (VMC, AVS, GCVE)
Integrated use of NetApp Cloud Volumes ONTAP (performance, efficiency, protection) across the VMware hybrid cloud.

VMware Tanzu
First-class disk and persistent datastore support using vVols, VMware CNS on NFS, and VMFS.

VMware vSphere Storage APIs Array Integration (VAAI)
Enables vSphere to leverage NetApp copy and clone offload, and space reservation for thick virtual disk files.
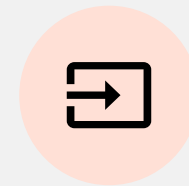
VMware Site Recovery Manager (SRM) plug-in
Uses NetApp Storage Replication Adapter to manage disaster recovery replication and to enable nondisruptive testing of DR replicas.

VMware Cloud Foundation
Primary and secondary datastore use of NetApp ONTAP performance, efficiency, and protection on vVols, NFS, and VMFS.

ONTAP Tools for VMware (OTV)
Policy-based management and efficiency for traditional datastores of vVols; copy offload for VM cloning operations.

VMware vStorage APIs for Storage Awareness (VASA)
Simplified provisioning and monitoring of VM storage, including vVols support and storage profiles.

VMware vSphere plug-in
Uses NetApp SnapCenter® to offload and simplify application-consistent data protection and clone management.

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VMware and NetApp: Quantifiably better together

Why VMware on NetApp is better.

VCF/VMware Cloud delivers	When run on NetApp storage, customers also get
• $3.6M saved in hardware, software, and data center costs • $1.2M saved in operations • $2.7M saved avoiding app redesign	• ~70% lower cost to run VMware in cloud of choice through storage efficiency, snapshot and cloning technologies, and tiering • Simplified and integrated use cases for workload mobility, backup and restore, and disaster recovery into VMC, AVS, and GCVE
VCF/VMware Tanzu delivers	**When run on NetApp storage, customers also get**
• 61% faster release time • 90% faster environment provisioning • 69% more efficient operations	• 50% to 70% lower cost to run Tanzu through storage efficiency, snapshot and cloning technologies, and tiering • Simplified and integrated use cases for dynamic persistent storage provisioning, backup and restore, and data protection
vSphere 7 delivers	**When run on NetApp storage, customers also get**
• NVMe-oF support • Improved provisioning and mobility • Enhanced vVols (VCF, SRM, VNS, and vROps) • Intrinsic security and control	• 3 to 5 times greater VMware performance using 50% less CPU through NVMe-oF (and first-to-market NVMe/TCP coming soon) • ~80% lower storage costs through thin provisioning, storage efficiency, snapshot and cloning technologies, and tiering • Simplified VM operations with APIs and vVols for multi-vCenter, VCF, Tanzu, NVMe, and SRM • Improved data protection with the NetApp Zero Trust security architecture

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Navigate to the future today

1. Learn about VMware and NetApp solutions →

2. Review our latest NetApp solutions for VMware →

3. Explore video demonstrations of the latest VMware and NetApp solutions →

4. Deploy a flexible hybrid cloud and modernized applications infrastructure →

5. Engage VMware and NetApp experts as needed →

1. Gartner, Top Priorities for IT: Leadership Vision for 2021
2. Klinect, Thomas and Van Der Zijden, Stefan. "Application Modernization Should Be Business-Centric, Continuous and Multiplatform." Gartner. August 2019.
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5. IDC, The Business Value of Hybrid Cloud with VMware. August 2019.
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7. Radius, HCI – The Foundation for Your Future-Proof Infrastructure.
8. Container Journal, The 2021 Kubernetes Adoption Report.
9. Forrester, Survival-Mode Digital Strategy: Focus On Pragmatic Modernization.

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About NetApp
In a world full of generalists, NetApp is a specialist. We're focused on one thing, helping your business get the most out of your data. NetApp brings the enterprise-grade data services you rely on into the cloud, and the simple flexibility of cloud into the data center. Our industry-leading solutions work across diverse customer environments and the world's biggest public clouds.

As a cloud-led, data-centric software company, only NetApp can help build your unique data fabric, simplify and connect your cloud, and securely deliver the right data, services, and applications to the right people—anytime, anywhere.

To learn more, visit **www.netapp.com**

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