FlexPod® is a converged infrastructure solution from NetApp and Cisco that powers modern AI and enterprise applications with the latest platform innovations. FlexPod is trusted worldwide and enables customers to embrace private and hybrid cloud with confidence for unmatched versatility.

Supporting materials:

- FlexPod Equals Cloud-Connected Converged Infrastructure

In addition to connecting to the cloud with the data fabric powered by NetApp, FlexPod customers can now:

- Connect to the cloud with their data fabric and use the new FlexPod software solution for disaster recovery tiering and backup to the cloud
- Get the **latest SAP HANA validation** on the most up-to-date AFF A320 with NVMe and Cisco UCS Servers.
- Use a "blueprint" for FlexPod hardening and best practices against ransomware.
- Have a vSphere solution tailored for cloud-connected, midsize workloads. **This new FlexPod solution enables an affordable entry point** into the FlexPod family while keeping all the FlexPod advantages like cloud-connectedness, single-vendor support, end-to-end testing, expertise in the FlexPod partner network.
- Use the continually evolving **NetApp Converged Systems Advisor (CSA)** cloud-based portal to detect and remediate FlexPod configuration issues. CSA configuration assurance and lifecycle management now includes support of Cisco Application Centric Infrastructure (ACI) networking, end-to-end NVMe and, NetApp® MetroCluster™ awareness.
- Evolve and modernize, adding new Cisco Validated Designs (CVDs) and NetApp Validated Architectures (NVAs) like the latest midsize and datacenter FlexPod vSphere updates to its family of more than 170 standard solutions, ensuring the performance of modern enterprise applications that run the largest and most complex enterprises.

FlexPod with SAP HANA

Cisco and NetApp have partnered to deliver FlexPod Datacenter as a platform for a variety of SAP workloads, including fully virtualized workloads. FlexPod uses best-in-class server and network components integrated with Cisco Unified Computing System (Cisco UCS) programmability features and backed by high-performance all-flash storage from NetApp.

The next version of FlexPod for SAP HANA offers the latest SAP HANA validation of the fastest, NVM-e-based AFF storage arrays and the fastest UCS servers.

FlexPod

NetApp®

FlexPod Workload and Infrastructure Updates

FlexPod is constantly evolving and modernizing, adding new Cisco Validated Designs (CVDs) and NetApp Validated Architectures (NVAs) like the latest midsize and datacenter FlexPod vSphere updates to its family of more than 170 standard solutions.

These updates include:

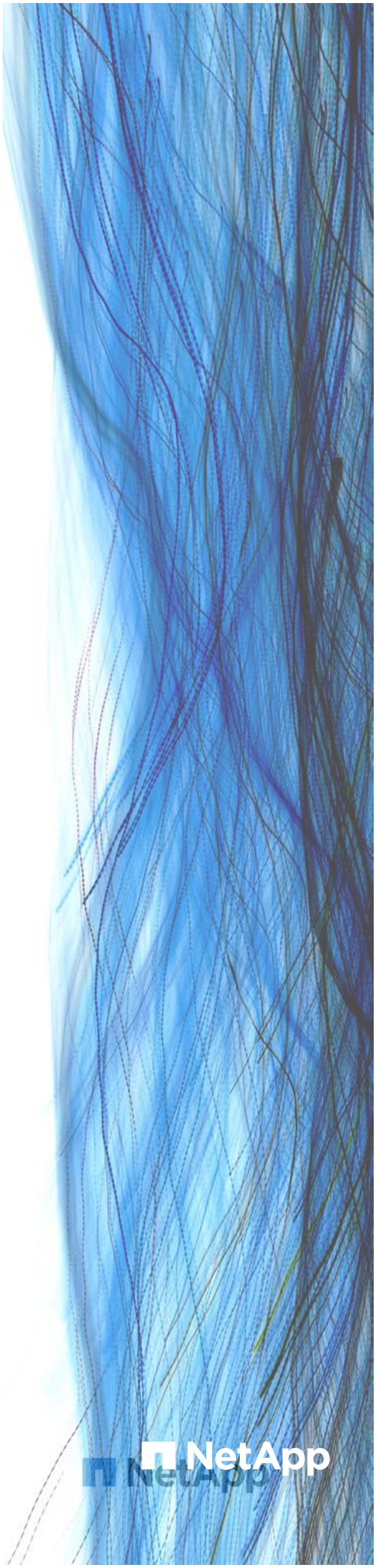
- A new FlexPod infrastructure midsize solution that is tailored for cloud-connected mid-size workloads. The solution is an affordable entry point into the FlexPod family retains all of the FlexPod advantages like cloud-connectedness, single-vendor support, end--to-end testing, and diversified, enormous expertise in the FlexPod partner network.
- FlexPod Datacenter solution that includes the latest technology, hardware and software updates including NetApp AFF storage, Cisco Nexus networking, Cisco MDS storage networking, the Cisco Unified Computing Systems *Cisco UCS), and VMware vSphere software. The FlexPod Datacenter solution meets the business requirements of the most scalable, available, and reliable vSphere solution with comprehensive data services, seamless scalability, new levels of performance, and cloud integration.

FlexPod Leverages NetApp FabricPool Software

FlexPod now delivers NetApp FabricPool to leverage cloud economies by moving infrequently use data from on-premises flash storage to a storage tier in a private or public cloud. Moving infrequently accessed data to the cloud frees up valuable flash storage space on AFF and FAS systems to deliver more capacity for business-critical workloads to the high-performance flash tier.

FlexPod Best Practices and Hardening Against Ransomware

This solution uses NetApp and Cisco features and innovations to protect against and recover from ransomware attacks. This solution also uses features from NetApp ONTAP® software, Cisco NetFlow and other parts of the Cisco security software portfolio to provide end-to-end hardware and software protection against ransomware.



NetApp Converged Systems Advisor (CSA) for FlexPod

NetApp Converged Systems Advisor (CSA), a software-as-a-service (SaaS) platform, consists of an on-premises agent and a cloud-based portal. CSA validates the deployment of the FlexPod infrastructure and provides continuous monitoring and notifications to ensure business continuity.

CSA configuration assurance and lifecycle management now includes support for Cisco ACI networking, end-to-end NVMe, and MetroCluster awareness.

Supporting materials:

- Webpage: FlexPod Converged Infrastructure
- Solution brief: FlexPod All-Flash Solutions for SAP
- Solution brief: Modernize your Data Center with a Platform Built for Innovation
- Blogpost: FlexPod Equals Cloud-Connected Converged Infrastructure
- Blogpost: Cloud-Based Automation for FlexPod with Configuration Healing Powered by Ansible

Artificial Intelligence (AI) Reference Architecture for Automotive and Healthcare

Automotive – In collaboration with NVIDIA, NetApp is developing an end-to-end reference architecture (RA) for all aspects of autonomous vehicle (AV) development—from training, to validation, to archiving and compliance. The first RA release will offer directional guidance for building an Artificial Intelligence (AI) infrastructure that uses ONTAP AI incorporating NVIDIA DGX-1 systems and NetApp AFF storage. The automotive reference architecture:

- Offers data fabric technologies to satisfy the needs of complex, high-performance data pipelines with solutions that reach from our customer's core data centers to the edge and to the cloud.
- Supports seamless, cost-effective data movement across the hybrid multicloud environment.
- Supports use cases from vehicle safety to advanced driver-assistance systems all the way to fully autonomous vehicles.

Supporting materials:

- eBook: AI in Automotive
- Solution brief: NetApp AI Solutions for Automotive
- Infographic: Driving Transformation in Automotive with AI and Deep Learning
- Reference architecture: TR-4799: NetApp ONTAP AI for Autonomous Driving Workloads: Solution Design
- Webpage: AI for Automotive
- Blog: Artificial Intelligence in the Automotive Industry
- Blog: How to Build a Pipeline for Autonomous Driving
- Blog: Infrastructure Design for Autonomous Vehicle Development
- Pre Show Blog: Your Guide to Everything AI at NetApp INSIGHT® 2019

Healthcare – In collaboration with NVIDIA, NetApp is developing an end-to-end reference architecture (RA) for healthcare that unlocks the potential of AI in healthcare by breaking down data silos and connecting disparate datasets to generate deeper insights. The first RA release will offer directional guidance for building an AI infrastructure that uses ONTAP AI incorporating NVIDA DGX-1 systems and NetApp AFF storage systems for healthcare use cases, in particular medial imaging. The healthcare architecture:

- Makes is possible to review thousands and millions of records or images in less time and apply cognition to unlock vast amounts of data.
- Supports improved diagnostics through training with deep learning to detect the earliest changes in cell structure that typically develop into cancerous cells.
- Supports radiologists and prevents burnout by "triaging" overwhelming numbers of images, quickly sorting out normal images and flagging exceptions.

Supporting materials:

- E-book: AI in Healthcare
- Solution Brief: NetApp AI Solutions for Healthcare
- Solution Brief: Accelerate Genome Sequencing with ONTAP AI and Parabricks
- Infographic: How AI and Deep Learning are Improving Healthcare
- Contributed Article: Two Steps for AI Readiness for Healthcare Organizations
- Webpage: AI for Healthcare
- Blog: How NetApp Partners Are Improving Patient Care with Artificial Intelligence
- Blog: How to Improve Healthcare with AI and Deep Learning
- Blog: Accelerate Genome Sequencing with NetApp ONTAP AI and Parabricks
- Blog: How AI is Changing Medical Imaging

Virtual Desktop Infrastructure (VDI) for Citrix

NetApp HCI for Virtual Desktop Infrastructure (VDI) with Citrix Virtual Apps and Desktops is a hybrid cloud infrastructure that lets organizations run virtual desktops and other user applications side by side with guaranteed performance, simplifying management and enabling independent scaling of both compute and storage resources. With the latest release, available October 28, 2019, customers have access to:

- NetApp HCI best practices for the deployment of graphic-intensive desktop applications for knowledge and business users with Citrix Virtual Apps and Desktops 7
- A NetApp Validated Architecture that they can use to deploy virtual desktops with Citrix on NetApp HCI

Supporting materials:

- NetApp HCI for Citrix Virtual Apps and Desktops
- NetApp HCI End User Computing Solutions
- What is VDI?
- What is EUC?

StorageGRID All Flash

StorageGRID offers improved data management intelligence on a simplified platform for object data. Because StorageGRID leverages S3, it painlessly bridges hybrid cloud workflows and enables data to be fluid to meet business demands. SGF6024 introduces an all-flash appliance for small, high-performance object workloads. SGF6024 delivers:

- Speed at enormous scale
- 3X performance for small object versus SG6060

StorageGRID Tiering to Azure Blob Storage

StorageGRID now offers tiering to Azure Blob Storage, supporting up to 10 Cloud Storage Pools per grid.

SG6060 Expansion Nodes

StorageGRID expansion nodes provide a simple and cost-effective way to grow a StorageGRID environment. SG6060 expansion nodes now offer:

- 400PB in a single namespace.
- High density, high-capacity large object workloads.
- Ample compute, making the SG6060 the best option for on-premises FabricPool.

Supporting materials:

- NetApp StorageGRID Datasheet
- StorageGRID: Take control of your unstructured data at scale
- Blog: Speed, Scale, & Simplicity: You Can Now Have It All with StorageGRID

NetApp®

Cloud Manager

Cloud Manager enables you to deploy and manage NetApp Cloud Volumes ONTAP (CVO), which is a data management solution that provides protection, visibility, and control for your cloud-based workloads.

With version 3.7.5, NetApp Cloud Manager customers can get more out of their data with new features and tighter integration with the NetApp cloud portfolio. Cloud Manager now allows customers to manage more of their NetApp product portfolio, including Cloud Volumes Service for AWS and Azure NetApp Files. New capabilities include:

- Protection of data on Cloud Volumes ONTAP in AWS with a new Cloud Backup Service that is fully integrated and easy to manage via the Cloud Manager interface.
- Discovery of existing Kubernetes clusters with NetApp Kubernetes Service integration.
- New Cloud Compliance feature for Cloud Volumes ONTAP that offers improved data governance and control.
- Additional enhancements in Azure, AWS and Google Cloud.

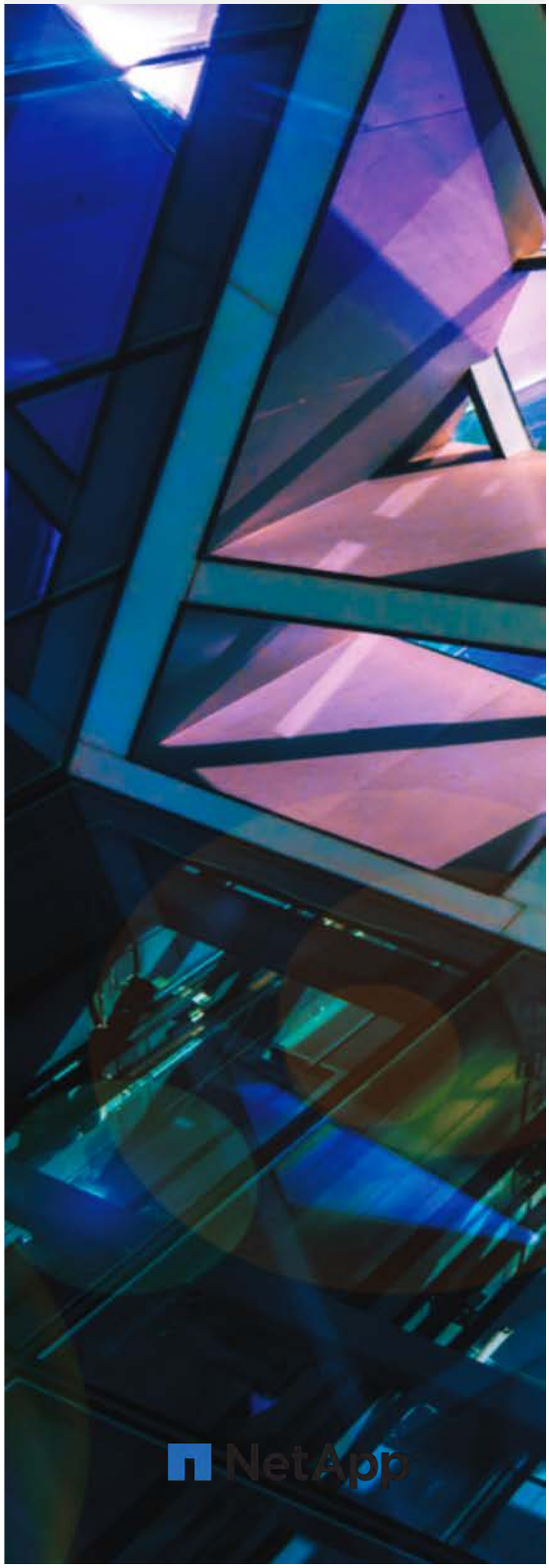
Enhancement to Cloud Volumes ONTAP for Amazon Web Services

NetApp Cloud Volumes ONTAP (CVO) enables migration of applications to the cloud to achieve the precise performance, scale, and security that each application demands. The Cloud Volumes ONTAP for AWS now offers:

- Data protection with a new Cloud Backup Service that is fully integrated and simple to manage via the Cloud Manager interface.
- New Cloud Compliance feature that offers improved data governance and control.
- Released in ONTAP 9.5, NVMe Caching allows Cloud Volumes ONTAP instances to leverage NVMe flash available on virtual compute instances. Currently available only in AWS.

Supporting materials:

- Cloud Volumes ONTAP
- Blog: NetApp Cloud Insights Enhances Monitoring and Security for All Your IT Infrastructure



Cloud Backup Service

Cloud Backup Service, a fully managed data protection offering with new support for Cloud Volumes ONTAP for AWS, offers efficient backup of user data to cloud object storage with easy recovery in the event of data loss or to be used as a long-term data archive.

- Protection settings are available via NetApp Cloud Manager, and the service is supported on Cloud Volumes ONTAP 9.4 and later.
- Requires little to no management. The service is enabled by default with new installations of Cloud Volumes ONTAP, making it ideal for IT generalists and application owners.
- Cloud Backup Service is cost effective, storing Snapshot copies of data volumes to low-cost cloud object storage.
- Recovering a data volume is easy with only a few clicks.
- Cloud Backup Service for Cloud Volumes ONTAP is available now with simple pay-as-you-go pricing and billing through an AWS account.

Supporting materials:

- Fully managed data protection for cloud volumes ONTAP made easy
- Blog: ONTAP 9.7: Do More – with Less Time and Effort

Network File System v4.1 for Azure and Amazon Web Services

Network File System is a type of file system mechanism that enables the storage and retrieval of data from multiple disks and directories across a shared network.

NetApp is committed to making it easier for its customers to move more enterprise workloads to the cloud without rearchitecting or refactoring. That's why NetApp has expanded its multiprotocol file services to encompass NFS v4.1, NFS v3, and SMB for both Azure NetApp Files and Cloud Volumes Service for AWS, delivering the widest range of support for Windows and Linux workloads. These services pave the way for NetApp customers to continue their migration to the cloud and to gain increased scale, performance, and availability.

Supporting materials:

- Azure NetApp Files – Powerful Enterprise File Shares
- Extreme Performance for File Services

Azure NetApp Files Backup

- Azure NetApp Files Backup is an integrated, fully managed data protection feature that complements Azure NetApp Files snapshots. It offers efficient backup of Azure NetApp Files user data to Azure Blob Storage with easy recovery in the event of data loss or to be used as a long-term data archive.
- Protection settings are available via the Azure NetApp Files interface or through the Azure resource provider API.
- Offers global policy-based protection of Azure NetApp Files volumes with minimal user management, making it ideal for cloud architects, application owners, and IT generalists.
- Cost-effective and secure, storing snapshots of data volumes to low-cost Azure Blob Storage.
- Azure NetApp Files backup is available now in private preview, with more preview releases planned prior to GA.

Supporting materials:

- Cloud Backup Service - Fully Managed Cloud Backup and Restore Service

NetApp

NetApp SaaS Backup Enhancements

NetApp SaaS Backup is a secure, web-based, software-as-a-service (SaaS) offering that backs up essential data across popular platform to ensure business continuity. NetApp SaaS Backup features daily automated backup and point-in-time, granular restore of your critical data with a simple interface and streamlined user management. New updates include:

- Partner Central Edition of SaaS Backup is being previewed for cloud solution providers (CSPs) and managed service providers (MSPs). With the Partner Central edition, CSPs and MSPs can provide backup for Office 365 to their end customers via a true multi-tier, multi-tenant service.
- SaaS Backup for Salesforce is now generally available (GA) worldwide and via Salesforce AppExchange marketplace. The service, offered on a license per seat, per year basis, requires no installation and is easy for any business to use.
- SaaS Backup for Office 365 support for backup and restore of Microsoft OneNote is available for customer preview. SaaS Backup performs full and incremental backup, and restores data at the OneNote, Section, and Section Group levels of OneNote notebooks stored in OneDrive and SharePoint.
- SaaS Backup now provides PowerShell cmdlets that help automate typical workflows such as onboarding of users and grouping them into tiers with specific grouping criteria that are based on Azure Active Directory attributes. Includes managing backup schedules and retention periods for different groups of users.

NetApp Data Protection and Security Assessment

The NetApp Data Protection and Security Assessment enables customers to simplify and improve the security and stability of their NetApp ONTAP and Cloud Volumes environments. By uncovering gaps and vulnerabilities and defining and documenting security risks that could leave the storage estate exposed, this new professional service helps customers:

- Proactively plan for minimizing the potential of security threats by quickly determining security readiness and establishing the ability to effectively respond before a cyberattack happens.
- Recover faster when an attack occurs by defining data restoration requirements, determining appropriate data protection policies and strategy, and identifying recovery processes to demonstrate compliance.
- Stay up to date with changing security requirements to avoid future risks.

Supporting materials:

- ONTAP Data Security - Ensure company and customer data is secure across your hybrid cloud

NetApp FAS Hybrid-Flash Arrays

NetApp FAS hybrid flash arrays are simple, smart, trusted storage shared NAS and SAN environments that require rich data management and easy cloud integration. Powered by ONTAP data management software, they are ideal for back-up and retention, consolidation of general business applications, and distributed content. The new storage systems include:

- FAS8700 is a new high-end system that is optimized for high capacity and performance to consolidate multiple business workloads.
- FAS8300 is a next-generation midrange system designed for a wide range of deployments that need a balance of capacity and performance.

Supporting materials:

- FAS Datasheet

NetApp

NetApp AFF All Flash Arrays

Powered by NetApp ONTAP data management software, AFF systems deliver the industry's highest performance, superior flexibility, and best-in-class data services and cloud integration to help you accelerate, manage, and protect your business-critical data in the hybrid cloud. New products and offerings include:

- **AFF A400:** This new end-to-end NVMe all-flash system that offers extremely low latency at a mid-range price point for enterprise applications, data analytics, and artificial intelligence workloads. With new data acceleration technology, it delivers up to 50% higher performance than its predecessor, especially for workloads with large I/Os, such as SAP HANA with reducible data sets. It offers best-in-class network connectivity including NVMe/FC, 100GbE and 32Gb FC making it versatile enough to support a wide variety of deployment options, such s scale out and scale up. It also supports both NVMe SSDs and SAS SSDs for a seamless transition path.
- **Simplified data management and software offering:** The new ONTAP System Manager makes it quick and easy to install and manage the system. The simplified software package allows customers to choose exactly the capability they need, such as data protection, cloud integration and security.
- **New services and support offering:** Includes a new digital advisor with predictive capabilities and a high0touch support tier, setting a new standard to help customer manage and optimize their storage

Supporting Material:

- AFF Family Datasheet
- Blog: Reinvent Your Modern IT with the Newest AFF NVMe All-Flash Storage

NetApp ONTAP Data Management Software

NetApp ONTAP 9 combines simplicity, flexibility, and security with powerful data management capabilities, proven storage efficiencies, and leading cloud integration. With ONTAP 9, you can build a storage infrastructure that is smart, powerful, and trusted – the foundation of an intelligent hybrid cloud that spans flash, disk, and cloud. Flexibly deploy storage on your choice of architectures—hardware storage systems, software-defined storage (SDS), and the cloud—while unifying data management across all of them. Accelerate enterprise applications with flash, without compromising on the essential data services. And seamlessly manage data as it flows to wherever it's needed most to help make the best possible decisions for your organization.

New capabilities with ONTAP 9.7 enable you to do more with less time and effort:

- Even simpler management, with redesigned dashboards for ONTAP System Manager and Active IQ Unified Manager that provide a clear and comprehensive status of your ONTAP clusters and enable proactive management of performance, capacity, data protection, and security.
- Expanded integration of hybrid cloud, with seamless and efficient migration of tiered data between private and public clouds using FabricPool.
- For business applications where continuous data availability is the top priority, AFF systems for all-SAN deployments are now available with symmetric active-active host-to-LUN access.
- Reduce the time and cost to deploy MetroCluster for business continuity by using your existing networking infrastructure for enterprise applications.
- Extended scale-out NAS deployments to workloads that use NFS 4.x protocols and storage-efficient data caching.

Supporting materials:

- ONTAP Data Sheet
- Blog: ONTAP 9.7: Do More – with Less Time and Effort

NetApp