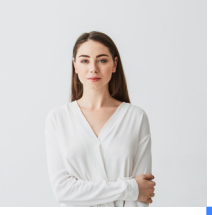
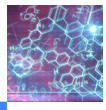
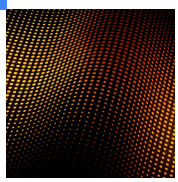
Cloud Volumes ONTAP for Azure:
10 CUSTOMER SUCCESS STORIES

Microsoft Azure







Executive Summary

As the shift towards the cloud continues, enterprises that still need to choose a cloud provider, or who are thinking of moving to a new one, have difficult decisions to make when it comes to their storage demands. Will the new cloud platform provide for all the enterprise's needs? What kind of changes will have to be made to the existing applications to use the storage offered in the cloud? And how much will all of it cost?

As the fastest growing major cloud provider, Microsoft's Azure cloud has steadily grown in influence since its debut in 2010. A large part of its appeal is the shared ecosystem with a wide range of existing Microsoft products at work in many enterprises. But while the advantages of deploying in the cloud with Azure are significant, those advantages are complimented when using Cloud Volumes ONTAP as the data management layer for your Azure storage resources. These enterprise-grade benefits include high availability, advanced data protection, fast migration capabilities, and storage efficiency features.

NetApp® Cloud Volumes ONTAP® runs as an instance on Azure disks to provide secure and proven data management capabilities for any workload, including file shares and block-level storage serving NAS and SAN protocols, disaster recovery, backup and archiving, DevOps, databases, and persistent volumes for containerized workloads.

This guidebook will offer insight into why enterprises choose to deploy with Cloud Volumes ONTAP on Azure through examination of several prominent case studies from various business sectors and use cases.

Table of Contents

Executive Summary 2

Introduction 4

Cloud Use Cases: Drivers and Benefits 5

Why Use Azure for Enterprises? 6

Cloud Storage Challenges 7-8

Cloud Volumes ONTAP Customer Storage Success Stories on Azure 9

- Mellanox Drives Innovation 10
- US Department of Justice 11
- Hiroshima Prefectural Government 12
- Willis Towers Watson 13
- McKesson: Healthcare Innovation and Invention 14
- Financial Services Company Enhanced a VDI to Meet Increased WFH Demands 15
- Galatz Radio Operationalizes a Priceless Archive 16
- Online Fashion and Cosmetic Retailer Moves Mission-Critical Workloads to the Cloud 17
- Managed Services Provider Runs Shared File Systems in the Cloud 18
- U.S. Insurance Company with Petabytes of Data in Azure—All Managed by One Person 19

Get More from Azure with Cloud Volumes ONTAP 20

Introduction

Towards the end of 2019 Gartner forecast that worldwide public cloud revenue in 2020 will be $266.4 billion, up 17% from the previous year. Infrastructure as a service (IaaS) is expected to have the highest growth rate, as enterprises look to the cloud to meet the storage and compute needs of modern applications and workloads. About one-third of corporate IT budgets are spent on cloud services across a wide range of use cases:

Enterprise workloads

In 2019, 60% of workloads were running on a public cloud service (up from 45% in 2018). Cisco predicts that by 2021 94% of all workloads will be processed in cloud data centers.

Databases

By 2023 the global cloud database market is expected to be worth $21.66 billion, having grown at 47% between 2018 and 2023.

File shares

On average, an enterprise uses 76 file sharing cloud services, making it one of the fastest growing cloud use cases year over year.

Data protection

60% of organizations of all sizes use the cloud for disaster recovery, backup and archiving, while 38% of companies cite enhanced disaster recovery capabilities as a key motivation for their cloud migration.

Cloud Use Cases: Drivers and Benefits

Operational efficiency

In addition to shifting infrastructure management responsibilities from the corporate IT team to a cloud service provider, the cloud boosts operational efficiency in a number of ways such as highly automated deployment of applications and workflows, self-service provisioning, and agile service creation.

Performance

The public cloud provides cutting edge, high-performance store-compute capacity at a manageable cost. In addition, the geographic distribution of public cloud data centers can be leveraged to improve availability and latency.

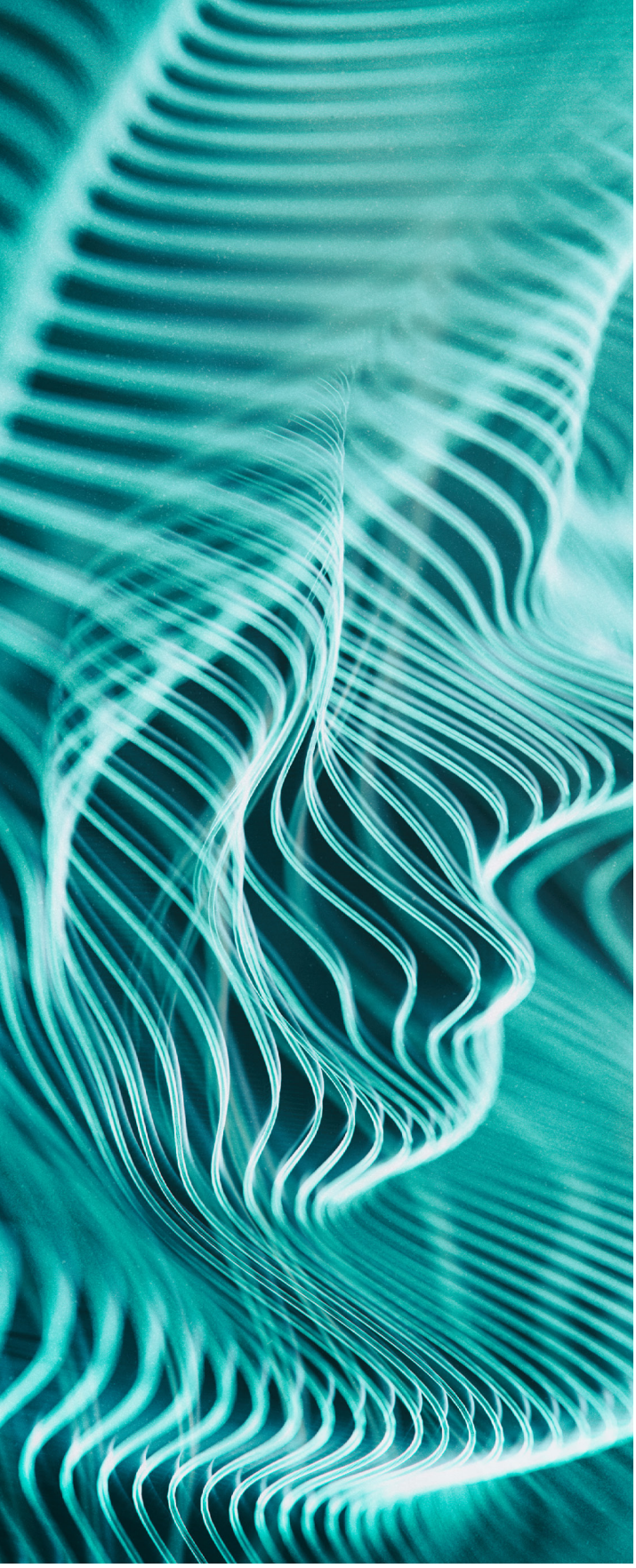
Agility

37% of organizations cited greater flexibility as a key driver for their cloud adoption. Cloud infrastructure resources scale up and down smoothly and cost-effectively to meet dynamic business needs.

Cost savings

A well-managed public cloud environment offers many opportunities to reduce setup, maintenance, and compute-store costs, often by as much as 30%.

However, public cloud usage in general—and cloud storage in particular—is not without its challenges, including availability, operational complexity, cost sprawl, compliance, and security. In this guidebook we present real-life success stories of enterprises from a wide range of domains that have used Cloud Volumes ONTAP on Azure to address these challenges and maximize the benefits from their cloud data storage deployments.



Why Use Azure for Enterprises?

Through Azure, Microsoft offers a full set of infrastructures (IaaS), platform (PaaS), and application (SaaS) cloud services. Currently, 95% of Fortune 500 companies use Azure in their businesses, and its market share has been growing steadily. Many companies have years of technical investment in the Microsoft ecosystem, and using Azure is the logical next step.

With heavy investment in security and compliance, Azure and its large network of partners offer enterprises an environment that integrates well with their existing on-premises and edge deployments.

Cloud Storage Challenges

While the Azure cloud offers an array of benefits, it still presents a number of challenges for enterprise IT departments to consider.

1. **Availability**
2. **Data Protection, Disaster Recovery**
3. **Backups and Archiving**
4. **File Share Accessibility**
5. **Compliance and Governance**
6. **Security**
7. **Storage Footprint and Costs**
8. **Data Tiering, Inactive Data**
9. **Container/Kubernetes Persistent Volumes**
10. **Multicloud and Hybrid**

1 Availability

To uphold high availability SLAs in the cloud, enterprises must institute redundant architectures with seamless failover and failback processes.

2 Data Protection, Disaster Recovery

In the shared responsibility model, cloud customers are responsible for protecting their data from deletion, corruption, and exfiltration, including the ability to recover from natural or man-made disaster scenarios.

3 Backups and Archiving

Data backup and long-term retention are business-critical requirements. Enterprises must ensure that data to be archived in the cloud is aggregated from all relevant storage systems in a fully automated process.

4 File Share Accessibility

Enterprises employ both Windows and Linux machines and need to serve out both NFS and SMB/ CIFS file data.

5 Compliance and Governance

Some key challenges are the blurred lines of compliance responsibility across the different service models (IaaS, PaaS, SaaS), the highly distributed nature of cloud environments, and the growth of shadow IT.

6 Security

Challenges include IAM controls that are granular enough to prevent unauthorized access, as well as encryption of data at-rest and in-flight and careful data encryption key management.

7 Storage Footprint and Costs

For maximum cost-effectiveness, cloud data needs to be stored as efficiently as possible, but storage efficiencies such as thin provisioning, compression, deduplication, efficient point-in-time snapshots, and data cloning aren't built-in to cloud storage services.

8 Data Tiering, Inactive Data

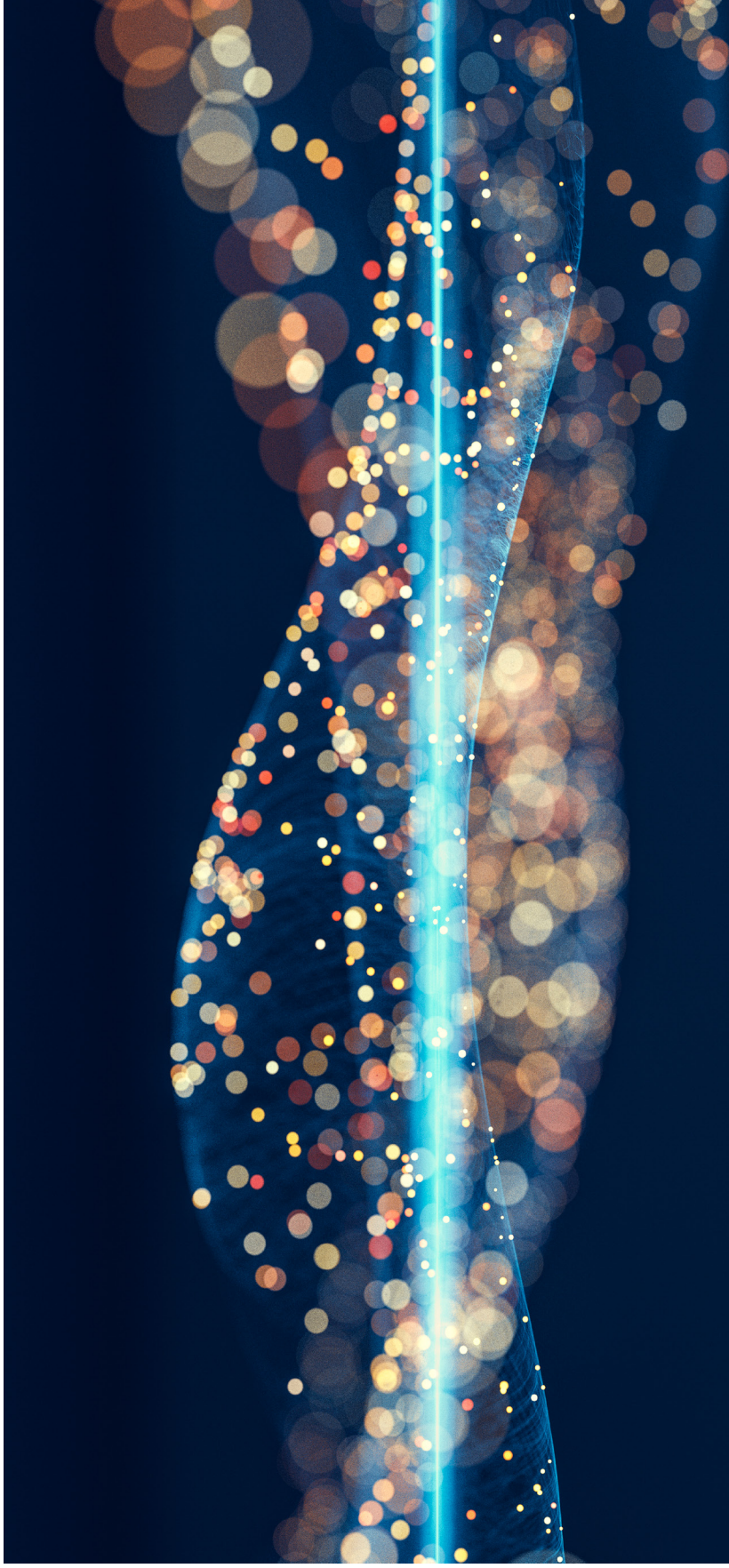
Active and inactive data have to be automatically detected so that they can be seamlessly shifted between low-cost object storage and performant disk storage.

9 Container/Kubernetes Persistent Volumes

With modern applications relying more and more on ephemeral containers and on Kubernetes orchestration, organizations face the challenge of managing persistent data storage.

10 Multicloud and Hybrid

The almost universal adoption of multicloud and hybrid strategies raises many data storage challenges such as end-to-end visibility, unified management, interoperability, and consistent security and compliance policies.



Cloud Volumes ONTAP Customer Storage Success Stories on Azure

NetApp Cloud Volumes ONTAP is an enterprise-grade data management system that runs as an instance on Azure storage, complementing cloud native services. Its operational and storage efficiencies dramatically reduce administration time, storage footprints, and costs. Cloud Volumes ONTAP is managed through NetApp Cloud Manager, the single-pane GUI that provides end-to-end visibility into and control of cloud data assets in Azure and across hybrid and multicloud architectures, with every action also fully automatable via API calls.

Cloud Volumes ONTAP for Azure is successfully in operation with thousands of customers worldwide. In this section we will look at some of these case studies and show how NetApp Cloud Volumes ONTAP helps these enterprises address the challenges described above and maximize data storage on Azure.

Mellanox TECHNOLOGIES

Financial Services Company

THE UNITED STATES DEPARTMENT of JUSTICE

広島県

Online Fashion and Cosmetic Retailer

Willis Towers Watson

Managed Services Provider

MCKESSON

U.S. Insurance Company

NetApp | Microsoft Azure

MELLANOX TECHNOLOGIES DRIVES INNOVATION

Mellanox Technologies is a global company that develops and markets networking products for high performance and reliability. Its hi-tech products and solutions serve many market sectors, including enterprise-level computing, network security, and the finance industry.

With the company viewing data as a catalyst for innovation, the Mellanox storage team sought a unified and shareable cloud storage solution so that its worldwide operations could get cutting-edge products to market faster. The solution had to be reliable, scalable, cost effective, and easily integrated with the company's on-premises storage deployment.

After a three-month proof of concept with Cloud Volumes ONTAP for Azure, Mellanox put the solution into production, which included a cloud-based MongoDB database of production logs and other data.

The benefits Mellanox gets from its Cloud Volumes ONTAP deployments on Azure include the following:

- NFS file shares give production engineers access to logs from all Mellanox factories, promoting innovation through actionable insights.
- Staff can easily scale and share dev/test environments by using NetApp FlexClone® technology to quickly spin up and tear down cloned volumes with a near-zero footprint.
- Superior data protection by using the centralized scheduling capabilities and policies of NetApp Cloud Manager.
- Storage costs are reduced through automatic tiering of "cold" production data to Microsoft Azure Blob storage.
- Cost-effective secondary backup and disaster recovery solutions by using SnapMirror® for efficient data replication.

Read the full Mellanox case study here

US DEPARTMENT OF JUSTICE

The Environment and Natural Resource Division of the U.S. Department of Justice issues massive amounts of subpoenas and maintains a large volume of data for numerous cases. This data is in constant use and requires easy and secure access. Migrating such a workload to Azure presented a challenge, one that Cloud Volumes ONTAP was able to achieve.

Cloud Volumes ONTAP was used by the Environment and Natural Resource Division to shift a massive 300 TB of backup data to the cloud, securely and on a tight, two-week deadline, all while providing full access to all of the data set as case work was ongoing.

With Cloud Volumes ONTAP the Environment and Natural Resource Division:

- Carried out the entire 300 TB migration securely and on time via SnapMirror data replication technology.
- Gained an easy interface to manage all the data resources in use throughout the deployment.
- Avoided the data corruption incidents that had been an issue with previous vendors.
- Added scalability and flexibility for future growth.

Read the full case study on The Environment and Natural Resource Division of the U.S. Department of Justice here.

HIROSHIMA PREFECTURAL GOVERNMENT

広島県

Hiroshima Prefecture, home of the major city of Hiroshima, is one of the major industrial centers of Japan, and home to close to 3 million people. The IT solution that supports the prefecture integrates a file server with some 300 TB of data alongside another 100 TB in virtual storage infrastructure. Because of the critical nature of this data, the system cannot tolerate any downtime, meaning business continuity and high availability are a must.

Cloud Volumes ONTAP helps the Hiroshima Prefectural Government combine their on-premises data center with Azure, providing them with the capabilities to:

- Create six complete backup copies of their data every day via NetApp Snapshot™ technology.
- Maintain data protection and recovery capabilities that ensure the system stays up and running.
- Cut 33% of storage footprint and costs by leveraging storage efficiencies.
- Reduce their overall power consumption by a considerable 23%.

Read the entire Hiroshima Prefectural Government case study here

WILLIS TOWERS WATSON

Willis Towers Watson is a global, multinational risk management, insurance brokerage, and advisory company. It is the third largest insurance broker in the world, and operates in more than 140 countries with over 45,000 employees.

The journey of Willis Towers Watson centered around their development of a new, cloud-based SaaS offering. Data management, scalability, availability, and data protection were all critical design points for this project, but they were having a challenging time finding a native solution on Azure that could satisfy all these requirements. As an existing NetApp ONTAP user, they needed a solution in the cloud that could do everything they were already capable of doing on-prem in the all new Azure environment. Cloud Volumes ONTAP helped them do that.

- Cloud Manager's UI and API automation capabilities provided an additional layer of value, making it possible to easily create protection relationships and automate the entire storage processes.
- Significant savings due to storage efficiencies, particularly Cloud Volumes ONTAP's automated data tiering feature that shifts infrequently used data between low-cost Azure Blob storage and high-performing Azure disks as needed.
- Cloud Volumes ONTAP's interface exactly mirrored their on-prem console, presenting no onboarding challenges for their workforce.
- Performance and scalability to handle the increasing demands of the fast growing SaaS.
- Disaster recovery capabilities with drag-and-drop replication and reliable failover and failback processes.

Watch this webinar that goes into detail on all of this customer's story and the video case study here

MCKESSON:
HEALTHCARE INNOVATION AND INVENTION

McKesson is the largest healthcare company in the United States, distributing one-third of all medications across North America. McKesson was feeling constrained by the managed private cloud solution it was using. The company needed a platform for developing, testing, and deploying their fulfillment and logistics applications at scale and at speed. They found what they needed in the public cloud and NetApp.

The McKesson IT team adopted a data fabric strategy. The team uses NetApp AFF and NetApp E-Series flash storage in its data center while its public cloud is powered by Cloud Volumes ONTAP in Azure. Today, McKesson benefits from:

- Improved cloud performance at a much lower cost.
- More responsiveness, so its IT team can effectively address the needs of developers and business units.
- Disaster recovery as a service (DRaaS) by using Azure Site Recovery to replicate applications and virtual machines.
- Seamless integration across the hybrid deployment with SnapMirror and Cloud Volumes ONTAP replicating on-premises data to Azure.

Read the full McKesson case study here

FINANCIAL SERVICES COMPANY ENHANCED A VDI TO MEET INCREASED WFH DEMANDS

In the ongoing work disruptions around the world, companies are trying to act fast to set up new virtual desktop infrastructure (VDIs) or enhance existing ones to meet the increased usage and demand. Here is a case study of one company that turned to Cloud Volumes ONTAP to overcome their VDI ramp-up challenges.

This company is a prominent US financial advisory enterprise that serves over a hundred countries and markets with a global workforce in the tens of thousands. They had already been using Cloud Volumes ONTAP for Azure to meet their data retention, backup, disaster recovery (DR) and availability use cases, while their self-hosted VDI solution was using NetApp on-prem arrays to handle the SMB/CIFS file sharing element. In the wake of the COVID-19 crisis, the company's internal IT team had to expand overnight the capacity of their self-hosted VDI environment in order to meet the needs of thousands of employees beginning to work from home. That's when they turned to Cloud Volumes ONTAP.

Using the flexible and cost-effective pay-as-you-go (PAYGO) model, it took the company's IT team just over **24 hours** to do three major tasks: deploy three new Cloud Volumes ONTAP environments across three different Azure regions, replicate their on-premises VDI data to the cloud instances, and configure the instances to match the on-premises environment. This quick adoptability ensured that the company's global standards were maintained, even during the increased usage.

The **immediate benefits** the company gained from deploying their VDI with Cloud Volumes ONTAP include:

- Being able to burst into Azure quickly and agilely to meet the WFH VDI demands when the capacity of the self-hosted environment reaches its limit.
- Seamless transfer of VDI data to and from the cloud with no need for re-formatting, using SnapMirror data replication.
- Enterprise-grade protection of VDI data in the cloud: Encryption of data at rest as well as automated backups using point-in-time incremental NetApp Snapshot technology.

Read the full blog post on this case study here

GALATZ RADIO OPERATIONALIZES A PRICELESS ARCHIVE

Galatz Radio comprises two popular Israeli radio stations that are regularly listened to by more than half of Israel's population. Galatz Radio stored its archive of 90,000 hours of programming on analog tapes, which were becoming difficult and risky to access. After deciding to digitize its priceless archive, the company first moved it to an on-premises NetApp storage environment and then used Cloud Volumes ONTAP for Azure to migrate the digitized assets to the cloud. This unique recorded history is now readily available to the public.

Here are some other advantages that Galatz Radio gets from its Cloud Volumes ONTAP deployment:

- The company can have the same data storage management interface for its on-premises and cloud-based assets through NetApp Cloud Manager. This intuitive interface provides full visibility and control across the company's hybrid deployment in a single pane.
- Moving to the cloud, combined with Cloud Volumes ONTAP automated compression and deduplication storage efficiencies, has reduced the company's costs by 70%.
- Using SnapMirror, the company can maintain a backup and recovery replica site with excellent failure recovery metrics.

Read the full Galatz Radio case study here

ONLINE FASHION AND COSMETIC RETAILER MOVES MISSION-CRITICAL WORKLOADS TO THE CLOUD

Founded at the turn of the millennium, this British online fashion and cosmetic retailer sells more than 850 brands as well as its own line of clothing and fashion accessories. It employs more than 3,500 people worldwide and ships to over 200 countries from fulfillment centers in the United Kingdom, United States, and Europe.

As part of its transition to a cloud-only strategy, the company sought a storage platform for its mission-critical Oracle Retail stack. After a brief, successful proof of concept, the company decided to deploy 14 Cloud Volumes ONTAP for Azure systems. It used them across regions for production database workloads and also in its pre-production environment.

The company chose Cloud Volumes ONTAP over other solutions for the following reasons:

- Ease of implementation: The entire solution was deployed in a single day.
- Superior manageability by using NetApp Cloud Manager as a single-pane data storage management interface.
- An in-cloud disaster recovery solution with the proven ability to recover quickly from both local and full-region failure scenarios, with no data loss.

MANAGED SERVICES PROVIDER
RUNS SHARED FILE SYSTEMS IN THE CLOUD

This SAP full-service provider is the leader in the German-speaking midmarket segment. It has more than 2,000 customers—mostly small to medium businesses in manufacturing, consumer goods, and services. In addition to SAP consulting and support, the company offers a range of fully managed services, including hosting services on its own infrastructure, cloud-hosted services, and end-to-end SAP application management.

The company was already using NetApp solutions for its on-premises storage systems, so Cloud Volumes ONTAP for Azure was a natural choice for moving services over to the cloud. The first clear benefit was the seamless transition from NetApp on-premises data storage management to Cloud Volumes ONTAP, with no need to retrain staff. All of its on-premises processes and automation scripts worked "as is" on Cloud Volumes ONTAP.

Other benefits that the company has realized include:

- High availability: With Cloud Volumes ONTAP high-availability (HA) pairs, the company doesn't need to close down its own services during maintenance, upgrades, or updates. Site failure downtime can be limited to under 60 seconds, with no data loss.
- A complete and fully managed cloud file share solution.
- Strong automation capabilities, either by using REST APIs directly or by using the Cloud Manager GUI. For example, Cloud Volumes ONTAP instances are provisioned automatically when the company onboard a new customer.
- Good visibility into the environment through Cloud Manager.
- Data protection through NetApp Snapshot technology.
- Cost savings from deduplication and compression as well as from data tiering, which automatically offloads code data to Blob Storage.

U.S. INSURANCE COMPANY WITH PETABYTES OF DATA IN AZURE—ALL MANAGED BY ONE PERSON

This veteran insurance and finance company is among the top ten providers of pensions, variable annuities, and life insurance in the United States. Its 8,800 employees serve 13 million customers.

Already a NetApp on-premises storage customer, the company uses Cloud Volumes ONTAP on both Azure and AWS to move data into the cloud. It uses Cloud Manager to create volumes, do CIFS shares and NFS mounts, and create aggregates.

A team of just three manages the company's entire NetApp NAS environment of petabytes of storage, with hundreds of thousands of shares across thousands of volumes. Within that team, one person handles Cloud Volumes ONTAP. Now, the company gets all the same benefits in the cloud that it gets from its on-premises environment:

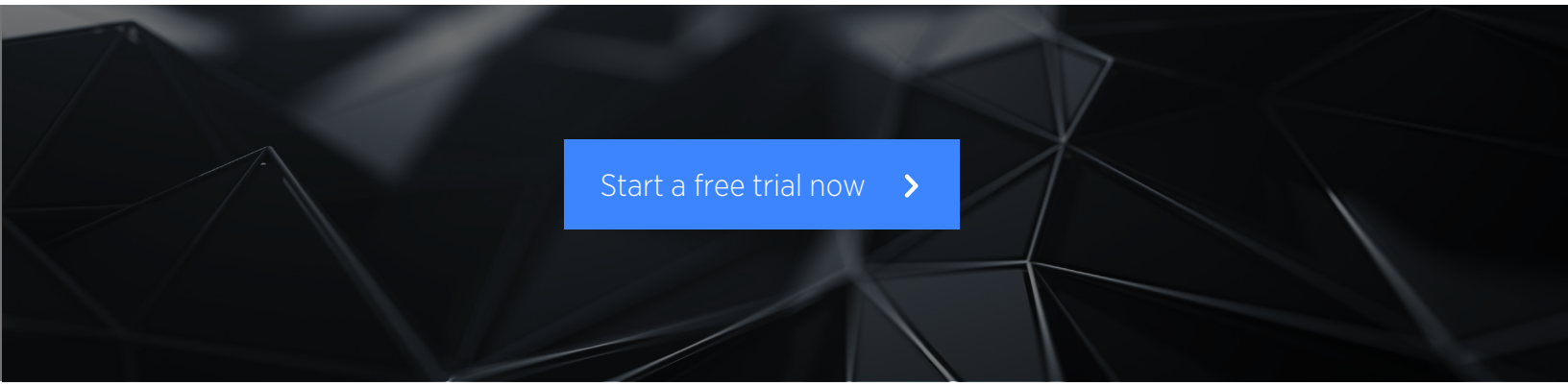
- File service solutions—both SMB/ CIFS and NFS—that work the same way in the cloud as on premises
- High availability support, using HA pairs
- Data protection, backup, and disaster recovery through NetApp point-in-time, read-only Snapshot copies
- The ability to create writable cloned volumes from Snapshot copies by using FlexClone
- Meeting the strict compliance regulations through volume-level encryption of data at rest and in flight

Get More from Azure with Cloud Volumes ONTAP

With all the compelling benefits of data storage in the cloud with Azure, there are still considerable challenges to be addressed in order to ensure that data is available, protected, secure, and compliant. Cloud data storage must also be carefully managed in as automated a manner as possible to prevent costly sprawl and unnecessarily high storage costs for inactive data.

NetApp's Cloud Volumes ONTAP extends NetApp's industry-leading enterprise data management on-premises solutions to Azure cloud users Creating a seamless Data Fabric across multicloud and hybrid architectures, Cloud Volumes ONTAP improves the performance, availability and security of cloud native storage, while reducing costs.

See how Cloud Volumes ONTAP for Azure can take your data management to the next level.



NetApp | Microsoft Azure

Refer to the Interoperability Matrix Tool (IMT) on the NetApp Support site to validate that the exact product and feature versions described in this document are supported for your specific environment. The NetApp IMT defines the product components and versions that can be used to construct configurations that are supported by NetApp. Specific results depend on each customer's installation in accordance with published specifications.

NA-000-0720