Astra Data Store

Accelerate your adoption of cloud-native applications

Deliver storage to your cloud-native applications the way Kubernetes wants it

Get the shared file services, scalability, resilience, efficiency, and rich enterprise-grade data management services you expect from a tried-and-true storage back end in a Kubernetes-native solution

■ NetApp

The challenge
Organizations need to modernize on-premises infrastructure to support a new breed of business-critical cloud-native apps.

Although the app frameworks might be new, the high standards required for data management and storage are not. These data-intensive apps still need shared file services, data protection, security, and mobility, along with an underlying infrastructure that's stable, scalable, and high performing. These apps need to be supported whether they run in containers or in virtual machines (VMs), on premises or in the cloud.

Not all Kubernetes-native storage platforms can provide this functionality in a single, unified solution, resulting in tradeoffs that increase cost and complexity.

Astra Data Store is the newest addition to the NetApp Astra family. Through the Astra family, NetApp provides a consistent approach to data management and storage across your entire Kubernetes footprint, regardless of where you want to deploy your Kubernetes clusters.

The opportunity
Achieve simplified operations required by Kubernetes at scale. Get shared file service and automatic enterprise data management to run any workload in Kubernetes. Run multiple parallel file systems on the same resource pool to achieve cloudlike scale.
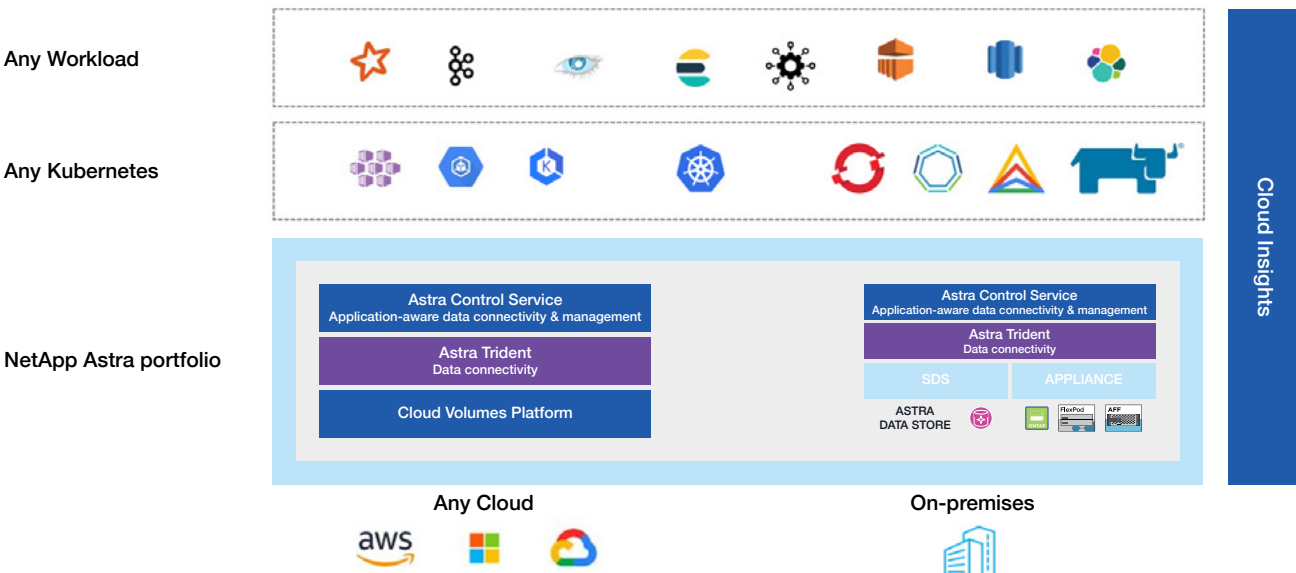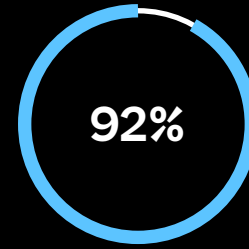
Designed specifically for Kubernetes, this is what NetApp® Astra™ Data Store delivers.

As the world's leader in data management and primary storage, NetApp provides one of the industry's first Kubernetes-native, unified shared file services for containers and VMs with advanced enterprise data management, available as software-defined-storage.

Astra Data Store fits into your existing environment, running on your choice of hardware, serving all major Kubernetes distributions, and providing the self-healing and quality-of-service (QoS) capabilities required by the apps that drive your business.

NetApp Kubernetes portfolio

Any Workload		
Any Kubernetes		
NetApp Astra portfolio		Cloud Insights

Astra Control Service
Application-aware data connectivity & management

Astra Trident
Data connectivity

Cloud Volumes Platform

Astra Control Service
Application-aware data connectivity & management

Astra Trident
Data connectivity

SDS | APPLIANCE

ASTRA DATA STORE | RexPod | AFF

Any Cloud

On-premises

Competitive edge

NetApp delivers end-to-end Kubernetes-native data management and storage required to accelerate your adoption of cloud-native applications.

- **Kubernetes-native shared file:** one of the first to offer a shared file service native to Kubernetes using a standard NFS client as a unified datastore for containers and VMs to reduce complexity

- **Cloud scale:** one of the first to offer Kubernetes-native multiple parallel file systems on the same resource pool to achieve cloudlike scale and utilization

- **Resilient:** industry-leading use of replication and erasure-coding technologies for Kubernetes-native workloads for greater resiliency

92%

92% of companies use containers in production[1]

300% increase from March 2016

1 Source: CNCF Survey 2020.

As more workloads move to containers and Kubernetes, your storage must adapt. It needs to scale with cloudlike simplicity, handle any data-intensive workload, and adjust quickly to match the flexibility of Kubernetes.

Three ways Astra Data Store accelerates your adoption of cloud-native applications:

1 Kubernetes-native

Cloudlike simplicity through a native Kubernetes experience

- **Run apps and storage together:** provides tight integration with Kubernetes tools and workflow, so you don't need to manage storage separately from the cluster for the simplest Day 2 storage operations

- **API-first approach:** delivers infrastructure as code for fully automated cluster and workload management

- **Granular QoS:** automatically ensures that performance guidelines are met for all applications

- **Self-healing:** creates resilience with autohealing from failures with zero-touch recovery

2 NetApp data management

Empower developers with automatic support for a broad set of apps

- **File services and data management for scale-out compute:** provides shared file services and automated application-aware data protection and disaster recovery so users can confidently build and deploy any enterprise app on Kubernetes

- **Fits into your existing environment and eliminates data silos:** supports your existing VMs and containers, microservices-based **and** traditional workloads; serves all major K8s distributions; provides file **and** block storage; runs on your choice of hardware

- **Integration with NetApp Cloud Insights:** delivers observability, analytics, and monitoring for workload and infrastructure optimization

3 Run workloads with agility

Get dynamic storage that matches the flexibility of Kubernetes

- **Scale-out:** adjusts with your Kubernetes growth so you can easily run cloud-native applications at enterprise scale

- **Data and application portability across clusters and hybrid clouds:** fulfills the Kubernetes "build once, deploy anywhere" promise, including your choice of public clouds, with a consistent user experience

- **Data efficiency:** controls cost as you scale through inline deduplication and compression features

Astra Data Store helps you:

- **Go faster.** Keep developers focused on code to deliver new customer experiences and compete better.

- **Quicker ROI.** Storage efficiencies, workload consolidation, and full automation lower operating cost for faster ROI.

- **Minimize risk.** Build on an enterprise-grade data management foundation to secure and protect data and lower production risk

Key use cases for Astra Data Store

Cloud-native application portability for cloud bursting and migration with instant active clones
Move an entire application along with its data from one Kubernetes cluster to another, no matter where the clusters are located.

Build business-critical Kubernetes applications
Support any containerized workload with the full set of enterprise data management services and tools you're used to.

Build Kubernetes "application as a service" platforms for DevOps
Create elastic, software-defined, self-serve platforms that deliver automated, repeatable services, which removes complexity from developers.

Unmatched expertise for your business-critical cloud-native workloads

Why NetApp for Kubernetes?

- We've been part of every transformation in the industry—from physical hardware to VMs and now containers and Kubernetes. We're invested in helping our customers through their data center modernization journey so they can get the agility, speed, and flexibility to support business change.

- We're committed to the burgeoning cloud-native space:

  - Platinum member of the Cloud Native Computing Foundation (CNCF)

  - Key contributor to Kubernetes storage special interest groups (SIGs), the Data Protection Working Group, and the container storage interface (CSI)

  - Creators of NetApp Astra Trident, the first operator based storage orchestrator for Kubernetes, providing native, integrated persistence for tens of thousands of stateful applications today

- We're the only storage native in all the major public clouds.

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