

SOLUTION BRIEF

Application data and storage management for cloud native applications

Astra's family of products provides application storage management and data provisioning for stateful cloud native applications powered by NetApp's trusted data protection technology.



The need to manage persistent storage

Your organization, company, or division has embarked on an app modernization and digital transformation journey, resulting in wide adoption of containers and Kubernetes. You are either lifting and shifting your existing applications to containers, refactoring them as microservices, or developing and running your new cloud-native application on Kubernetes. You are responsible for delivering the same data protection levels, business continuity guarantees (RPO and RTO), disaster readiness, audit, and retention requirements for modern apps that you provide for your traditional applications running on VMs or bare metal. What if you had a comprehensive set of products that provides application storage management and data provisioning that features easy, on-demand, self-serve provisioning capabilities, a high degree of automation for manageability, and infinite scale that can support the storage requirements of Kubernetes. Those product must also must meet the high standards required for data-intensive enterprise apps –secure, efficient, resilient, high performing, multiprotocol support.

Introducing NetApp® Astra™

Astra enables teams to focus on delivering cloud-native applications with full confidence in their data infrastructure. Astra presents a consistent data management experience across hybrid cloud Astra's family of products includes:

- **Astra Control:** Application-aware data management for Kubernetes, available both as a fully managed service and self-manage software.
- **Astra Trident:** Data connectivity to persistent data stores for Kubernetes applications
- **Astra Data Store:** Kubernetes native unified data storage platform for file and block, containers and VMs
- **Storage Platforms:** CVS for Google Cloud Platform, ANF, ONTAP and Astra Data Store
- **Cloud Insights:** Analyze Kubernetes topology to improve storage utilization and optimize performance and resources

Whether you're moving applications to or across clouds, or taking them back into your own data centers, Astra Control offers a consistent end-user experience via a UI and a rich, well-documented API that doesn't change no matter which cloud or Kubernetes distribution you're using.

Key benefits

- Manage, protect, and migrate your Kubernetes applications easily and quickly within and across multi hybrid clouds.
- Address data protection, disaster recovery (DR), audit, and migration requirements for your business-critical modern apps.
- Visualize the real-time protection status of your applications.
- Use a consistent set of well-defined APIs to implement your backup, DR, and migration workflows no matter where your Kubernetes clusters are hosted.
- Deploy a simple and easy-to-use Kubernetes application and data-management platform for multi hybrid clouds.
- Use a Kubernetes native unified data store for both file and block, containers and VMs

Astra use cases

- **Data protection with snapshots**
With Astra you can take application-aware snapshots for local data protection. If you accidentally delete or corrupt your data, you can revert your applications and associated data to a previously recorded snapshot within the same Kubernetes cluster.
- **Disaster recovery with remote backup**
With Astra you can take a full application-aware backup of your application and state which can be used to restore your application with its data to a different Kubernetes cluster in the same or a different region addressing your DR use-cases.
- **Application portability for cloud bursting and migration with instant active clones**
With Astra you can 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**
With Astra you can support any containerized workload with the full set of enterprise data management services and tools you are used to
- **Build application as a service platforms for DevOps**
With Astra you can create elastic, software-defined, self-serve platforms that deliver automated, repeatable services which removes complexity from developers

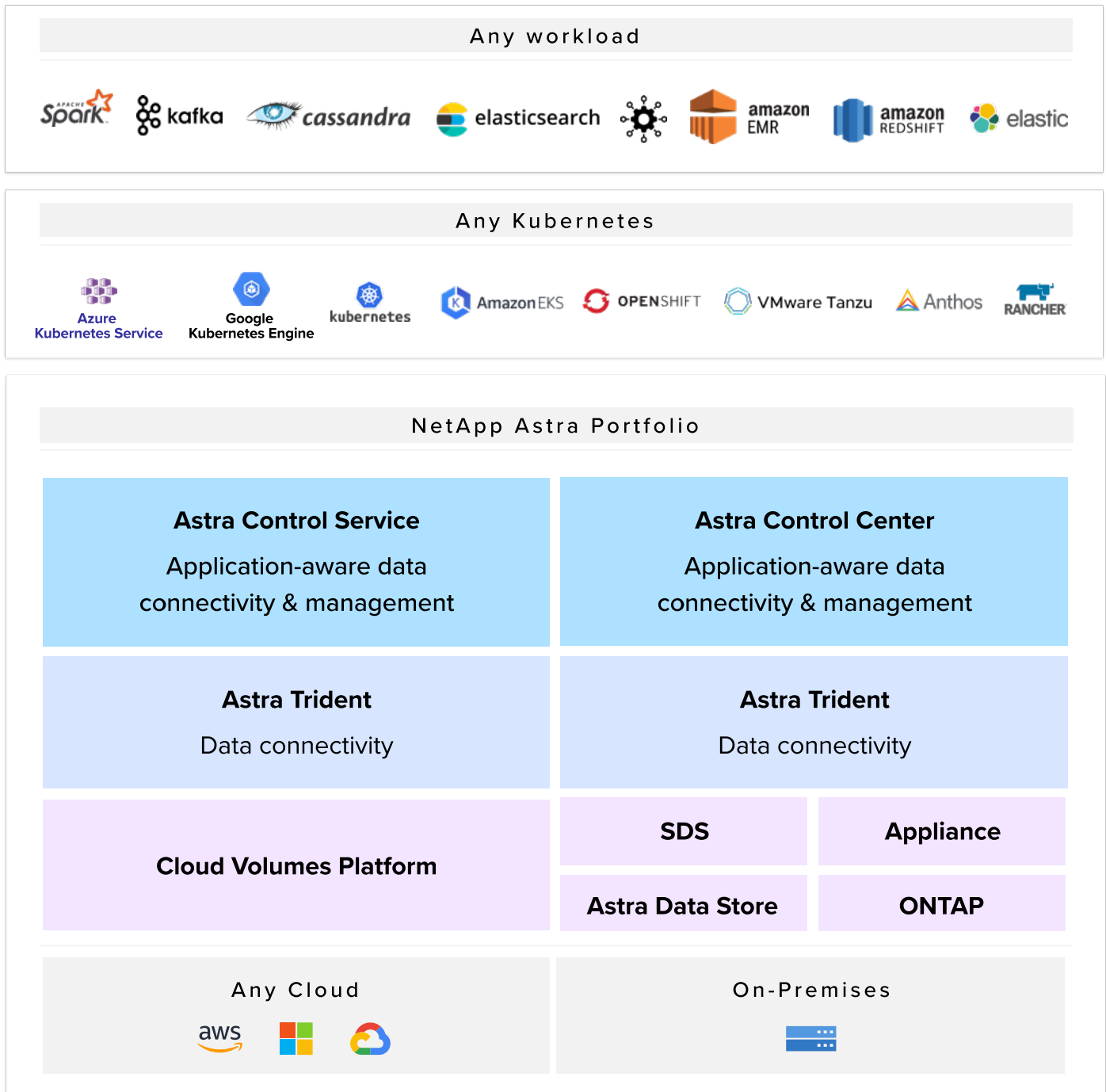


Figure 1 - NetApp Kubernetes family of products

“Having managed data rich stateful applications on Kubernetes and knowing the complexity involved, we’re thrilled to have NetApp’s Astra Control to simplify operations for small and large deployments alike.”

- Skottie Miller, Technology Fellow and VP of Platform & Services Architecture, DreamWorks Animation

Key features

- **Application focus**

From the outset, Astra Control has focused on the application as the provider of data services and management. This focus is because well-architected Kubernetes applications implement loosely coupled microservices that are deployed in containers. These applications often use multiple backing datastores so that developers have the freedom to choose the datastore best suited for the microservice instead of using a large single datastore for the entire application. As a result, providing wholistic data management needs to account for all state, data, and configuration backing the microservices that implement the application instead of individual pods and containers.

Astra Control application awareness for a range of popular applications (PGSQL, MySQL, Jenkins, etc.) intelligently identifies application boundaries and discovers them. Snapshot applications (including all of their Kubernetes resources and data volumes) provide local data protection. Backup and restore of full applications across and within clouds enables business continuity after a disaster. And migrating and moving applications uses active cloning to re-instantiate applications across clusters and clouds with their state and data intact.

- **Consistent experience no matter where Kubernetes is running**

Astra Control is designed to provide a consistent set of user interfaces (APIs and UIs) that abstract the diversity and complexity of adapting to the rapidly evolving multi hybrid cloud world where our customers increasingly find themselves. A broad set of similar but ultimately different toolsets, APIs, and UIs causes friction and inability to deliver much-needed data management functionality in a cloud-native world across all environments in which our customers run Kubernetes. We designed Astra Control so that our customers don't have to learn and relearn how to manage Kubernetes in their environment or to develop a patchwork of scripts and admin tools to accomplish these tasks, which don't scale as they scale their Kubernetes deployments.

- **Kubernetes Native**

Astra Data Store provides a unified shared file service for containers and VMs with the most advanced enterprise data management available in software-defined storage and we think it can really help you accelerate the adoption of cloud-native apps within your organizations.

- **Simple with your choice of deployment**

Once customers register their Kubernetes clusters, Astra Control automatically discovers all applications running in the clusters, provisions storage and storage classes using NetApp® Trident, and displays a rich catalog of data-management functionality that can be used with just a few clicks.

Astra Control offers a flexible deployment model to meet your IT infrastructure needs. As such it is available as a fully managed service or can be downloaded and run privately in your own IT environment.

The fully managed service is service operated by NetApp and does not require an expert-level Kubernetes skillset to use. There is no need to set up and provision servers and VMs for running Astra Control, no software to download, install, manage, patch, upgrade, and license.

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. www.netapp.com

