NetApp Storage Integrations Overview

NetApp Solutions

NetApp
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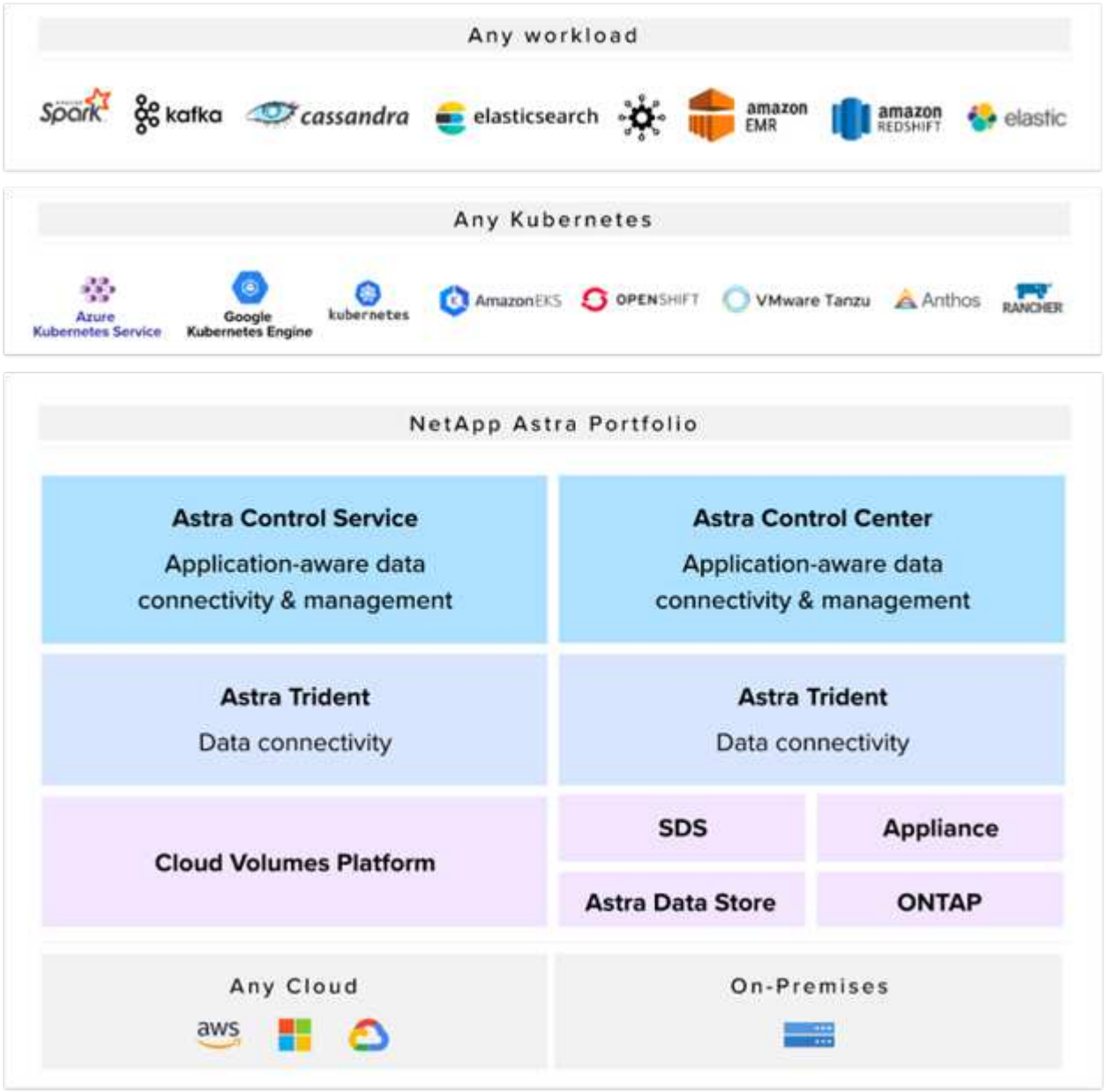
NetApp Storage Integration Overview

NetApp provides a number of products to help you orchestrate, manage, protect, and migrate stateful containerized applications and their data.



NetApp Astra Control offers a rich set of storage and application-aware data management services for stateful Kubernetes workloads powered by NetApp data protection technology. The Astra Control Service is available to support stateful workloads in cloud-native Kubernetes deployments. The Astra Control Center is available to support stateful workloads in on-premises deployments of Enterprise Kubernetes platforms like Red Hat OpenShift, Rancher, VMware Tanzu etc. For more information visit the NetApp Astra Control website here.

NetApp Astra Trident is an open-source and fully-supported storage orchestrator for containers and Kubernetes distributions like Red Hat OpenShift, Rancher, VMware Tanzu etc. For more information, visit the Astra Trident website here.

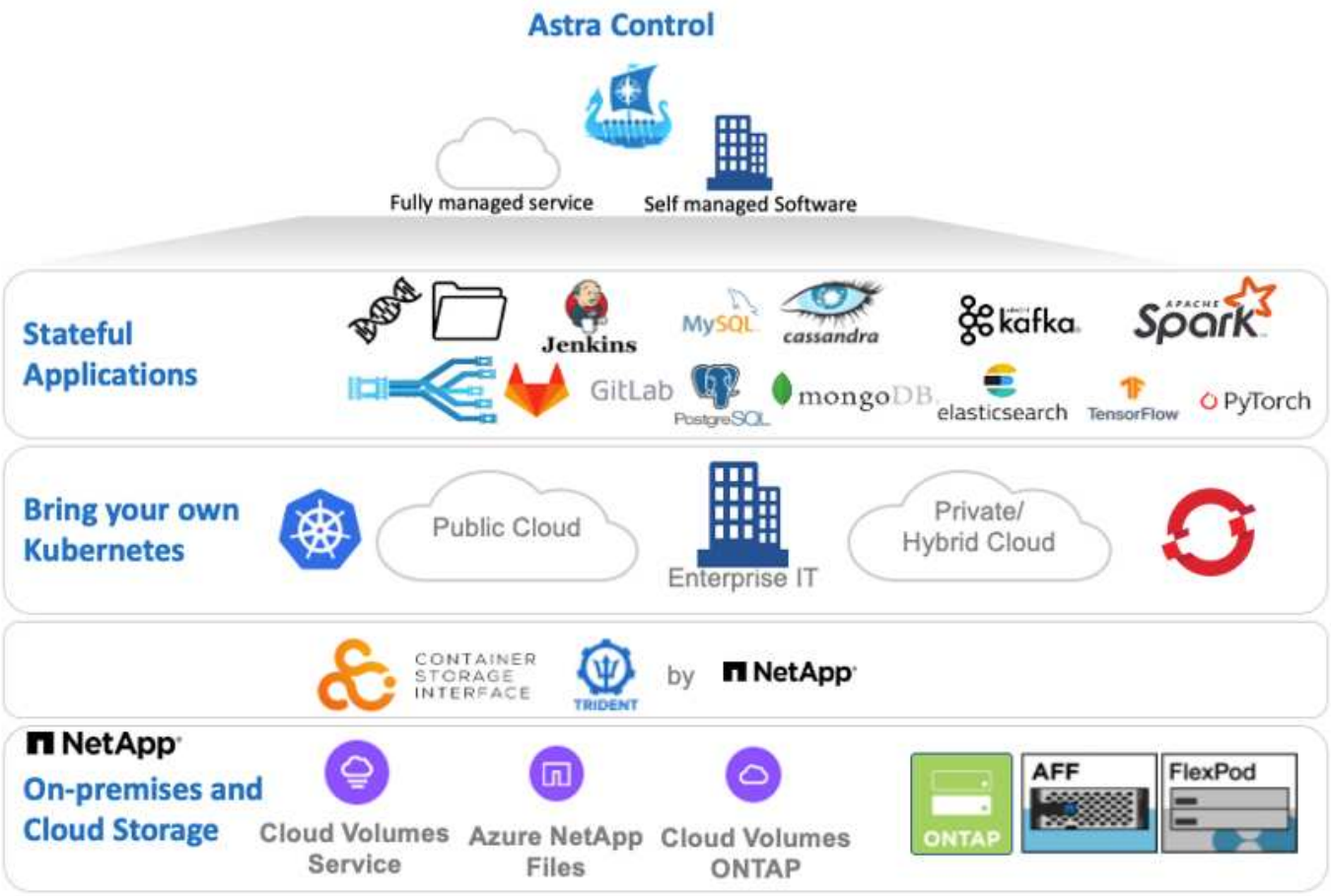
The following pages have additional information about the NetApp products that have been validated for application and persistent storage management in the DevOps with NetApp solution:

- NetApp Astra Control Center
- NetApp Astra Trident

Next: Use-case Validations: DevOps with NetApp Astra.

NetApp Astra Control overview

NetApp Astra Control Center offers a rich set of storage and application-aware data management services for stateful Kubernetes workloads deployed in an on-premises environment and powered by NetApp data protection technology.



NetApp Astra Control Center can be installed on a Kubernetes cluster that has the Astra Trident storage orchestrator deployed and configured with storage classes and storage backends to NetApp ONTAP storage systems.

For more information on Astra Trident, see this document here.

In a cloud-connected environment, Astra Control Center uses Cloud Insights to provide advanced monitoring and telemetry. In the absence of a Cloud Insights connection, limited monitoring and telemetry (seven days worth of metrics) is available and exported to Kubernetes native monitoring tools (Prometheus and Grafana) through open metrics endpoints.

Astra Control Center is fully integrated into the NetApp AutoSupport and Active IQ ecosystem to provide support for users, provide assistance with troubleshooting, and display usage statistics.

In addition to the paid version of Astra Control Center, a 90-day evaluation license is also available. The

evaluation version is supported through email and the community Slack channel. Customers have access to these resources, other knowledge-base articles, and documentation available from the in-product support dashboard.

To understand more about the Astra portfolio, visit the Astra website.

For a detailed installation and operations guide on Astra Control Center, follow the documentation here.

Astra Control Center automation

Astra Control Center has a fully functional REST API for programmatic access. Users can use any programming language or utility to interact with Astra Control REST API endpoints. To learn more about this API, see the documentation here.

If you are looking for a ready-made software development toolkit for interacting with Astra Control REST APIs, NetApp provides a toolkit with Astra Control Python SDK, which you can download here.

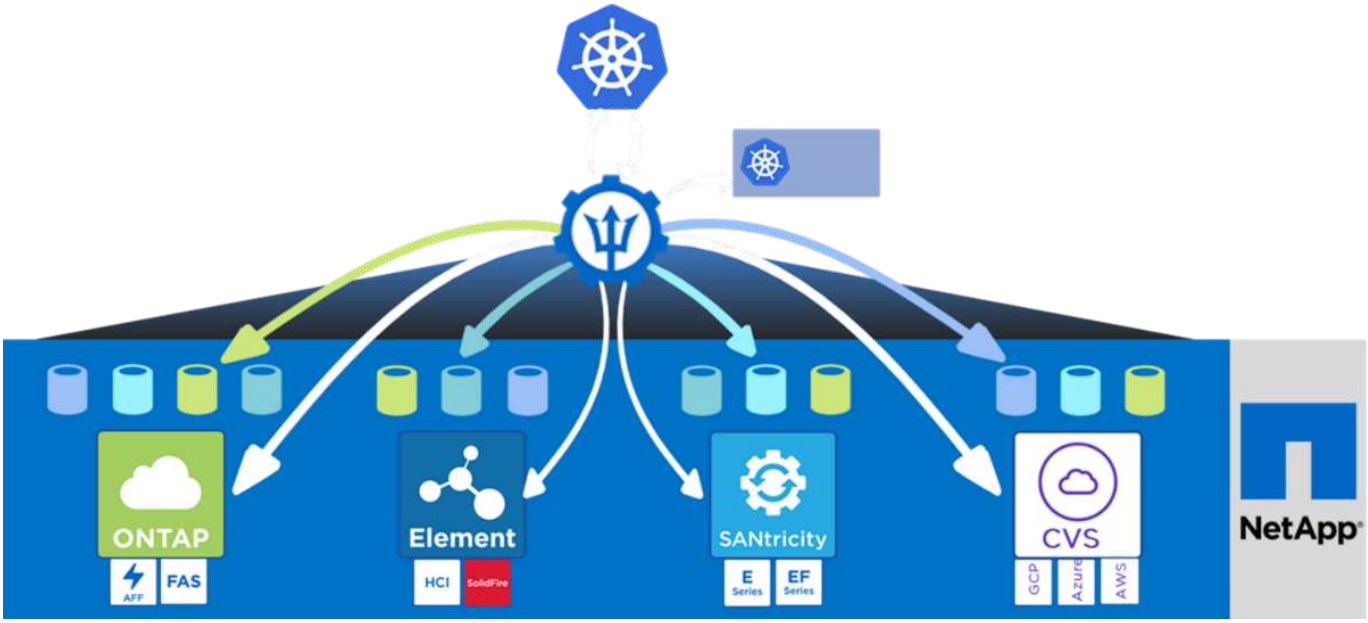
If programming is not apropriate for your situation and you would like to use a configuration management tool, you can clone and run the Ansible playbooks that NetApp publishes here.

Next: Use-case Validations: DevOps with NetApp Astra

Astra Trident Overview

Astra Trident is an open-source, fully supported storage orchestrator for containers and Kubernetes distributions like Red Hat OpenShift, VMware Tanzu, Anthos by Google Cloud, Rancher etc. Trident works with the entire NetApp storage portfolio, including the NetApp ONTAP and Element storage systems, and it also supports NFS and iSCSI connections. Trident accelerates the DevOps workflow by allowing end users to provision and manage storage from their NetApp storage systems without requiring intervention from a storage administrator.

An administrator can configure a number of storage backends based on project needs and storage system models that enable advanced storage features, including compression, specific disk types, or QoS levels that guarantee a certain level of performance. After they are defined, these backends can be used by developers in their projects to create persistent volume claims (PVCs) and to attach persistent storage to their containers on demand.



Astra Trident has a rapid development cycle and, like Kubernetes, is released four times a year.

The latest version of Astra Trident is 22.04 released in April 2022. A support matrix for what version of Trident has been tested with which Kubernetes distribution can be found here.

Starting with the 20.04 release, Trident setup is performed by the Trident operator. The operator makes large scale deployments easier and provides additional support, including self healing for pods that are deployed as a part of the Trident install.

With the 21.01 release, a Helm chart was made available to ease the installation of the Trident Operator.

Refer to the documentation here to install and use Astra Trident.

Next: Use-case Validations: DevOps with NetApp Astra.

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