



## Get started

### NetApp virtualization solutions

NetApp  
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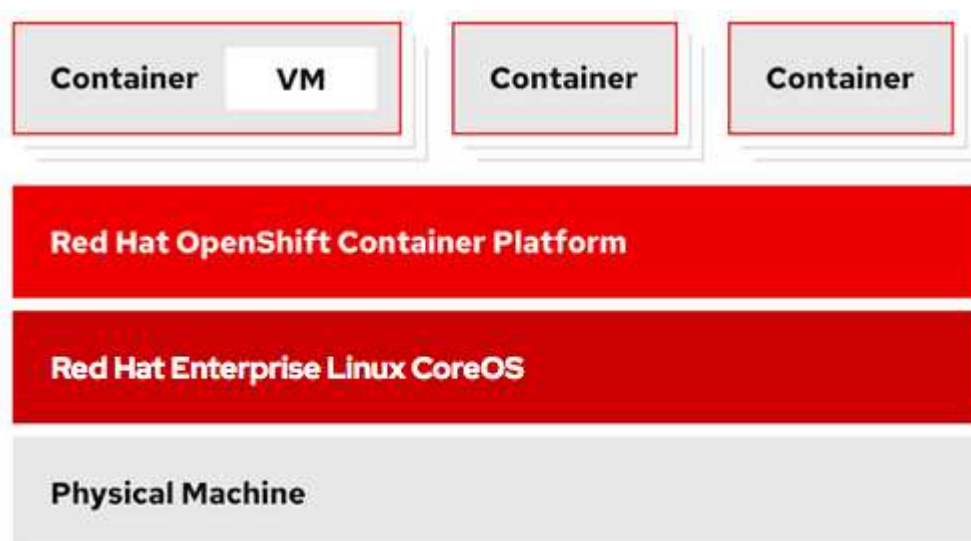
# Get started

## Learn about Red Hat OpenShift Virtualization with ONTAP

Learn about using Red Hat OpenShift Virtualization and ONTAP storage to run and manage VMs. Use Trident to enable live VM migration, VM disk cloning, and VM snapshots thereby simplifying infrastructure management and data protection.

Depending on the specific use case, both containers and virtual machines (VMs) can serve as optimal platforms for different types of applications. Therefore, many organizations run some of their workloads on containers and some on VMs. Often, this leads organizations to face additional challenges by having to manage separate platforms: a hypervisor for VMs and a container orchestrator for applications.

To address this challenge, Red Hat introduced OpenShift Virtualization (formerly known as Container Native Virtualization) starting from OpenShift version 4.6. The OpenShift Virtualization feature enables you to run and manage virtual machines alongside containers on the same OpenShift Container Platform installation, providing hybrid management capability to automate deployment and management of VMs through operators. In addition to creating VMs in OpenShift, with OpenShift Virtualization, Red Hat also supports importing VMs from VMware vSphere, Red Hat Virtualization, and Red Hat OpenStack Platform deployments.



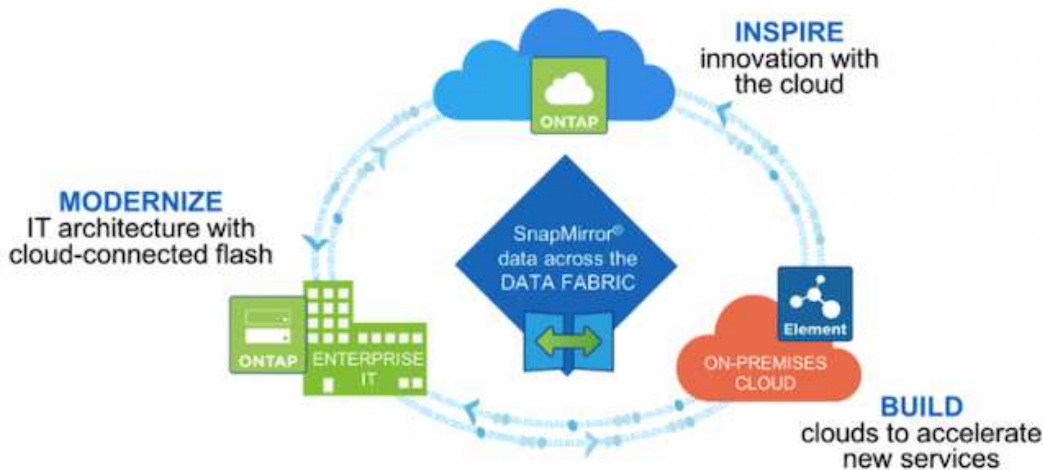
Certain features like live VM migration, VM disk cloning, VM snapshots and so on are also supported by OpenShift Virtualization with assistance from Trident when backed by NetApp ONTAP. Examples of each of these workflows are discussed later in this document in their respective sections.

To learn more about Red Hat OpenShift Virtualization, see the documentation [here](#).

## Learn about provisioning storage for applications deployed on Red Hat OpenShift

NetApp integrates with Red Hat OpenShift using the Trident Storage Orchestrator to provide persistent storage for containerized applications. Supported storage options include ONTAP-based systems such as AFF and FAS, and ONTAP Select and Cloud Volumes ONTAP for virtualized and cloud environments. Cloud-native services like

Amazon FSx for NetApp ONTAP, Azure NetApp Files, and Google Cloud NetApp Volumes are also supported.



- AFF and FAS systems run NetApp ONTAP and provide storage for both file-based (NFS) and block-based (iSCSI) use cases.
- Cloud Volumes ONTAP and ONTAP Select provide the same benefits in the cloud and virtual space respectively.
- Amazon FSx for NetApp ONTAP, Azure NetApp Files, and Google Cloud NetApp Volumes provide file-based storage in the cloud.
- NetApp Element storage systems provide for block-based (iSCSI) use cases in a highly scalable environment.



Each storage system in the NetApp portfolio can ease both data management and movement between on-premises sites and the cloud, ensuring that your data is where your applications are.

The following pages have additional information about the NetApp storage systems validated in the Red Hat OpenShift with NetApp solution:

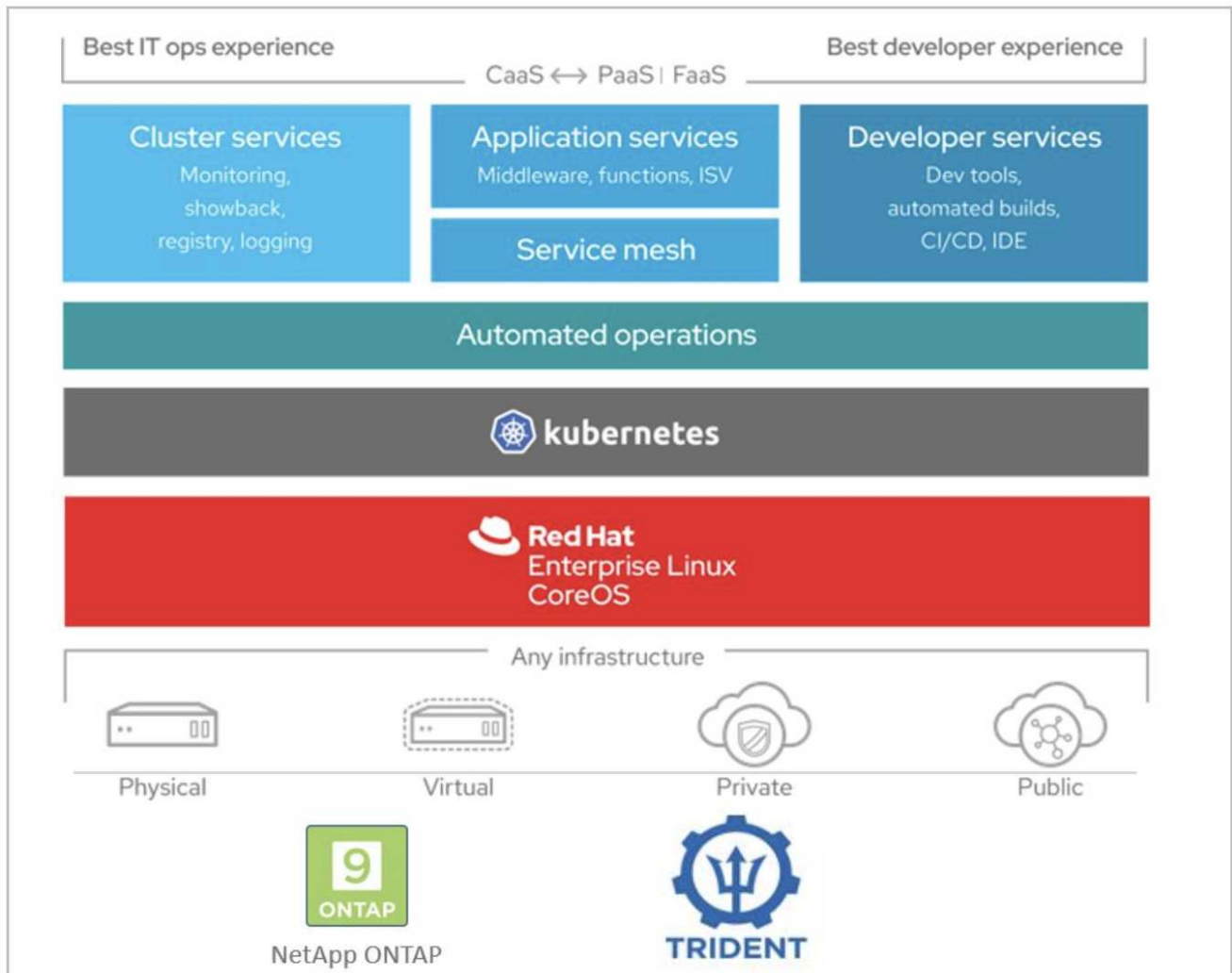
- [NetApp ONTAP](#)
- [NetApp Element](#)

## Learn about NetApp Trident integration with Red Hat OpenShift

Learn about NetApp Trident protect that has been validated for application and persistent storage management for the OpenShift Virtualization solution.

Trident, an open source storage provisioner and orchestrator maintained by NetApp and NetApp Trident

protect help you with orchestrating and managing persistent data in container based environments, such as Red Hat OpenShift.



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

- [Trident Documentation](#)
- [Trident protect documentation](#)

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