SIMPLIFY CONTAINER STORAGE MANAGEMENT

NetApp Trident, a Kubernetes-based storage provisioner for Red Hat OpenShift

SOLUTION BRIEF

Organizations adopting OpenShift achieved 66% faster application development life cycles and 38% reductions in IT infrastructure and development platform costs per application.

IDC WHITEPAPER
THE BUSINESS VALUE OF
RED HAT OPENSHIFT, OCTOBER 2016

"The long-term partnership between Red Hat and NetApp has positioned us at the forefront of the enterprise migration to the cloud. Our innovative and proven solutions, from Red Hat Enterprise Linux to OpenStack and OpenShift, position our customers to fully enable the data fabric and realize the benefits of hybrid cloud."

VICE PRESIDENT
GLOBAL AND STRATEGIC ALLIANCES,
NETAPP

INTRODUCTION

Organizations today work to rapidly deliver solutions that allow them to meet quickly evolving business requirements and address competitive pressures. To support this, they are turning to technologies such as containers, Kubernetes, and programmable infrastructures for continuous integration/continuous deployment (CI/CD) and DevOps transformations.

For enterprises that deploy these technologies, persistent storage across containers is essential to maximize the number of applications in the model. An integrated solution that combines NetApp Trident, a dynamic storage provisioner, with Red Hat® OpenShift, and works with NetApp leading storage platforms, simplifies storage management and helps reduce application development time by eliminating time-consuming and error-prone handoffs between teams. The solution facilitates the data mobility required for cloud-native applications.

Unlike competitive application container orchestration and dynamic storage provisioning plugins, NetApp Trident integrates with Kubernetes' persistent volume (PV) framework. Red Hat OpenShift with Trident provides a unified interface for dynamic provisioning of persistent volumes to applications across storage classes. These can be assigned to any of the storage platforms from NetApp, delivering the optimal storage management capabilities and performance for each application.

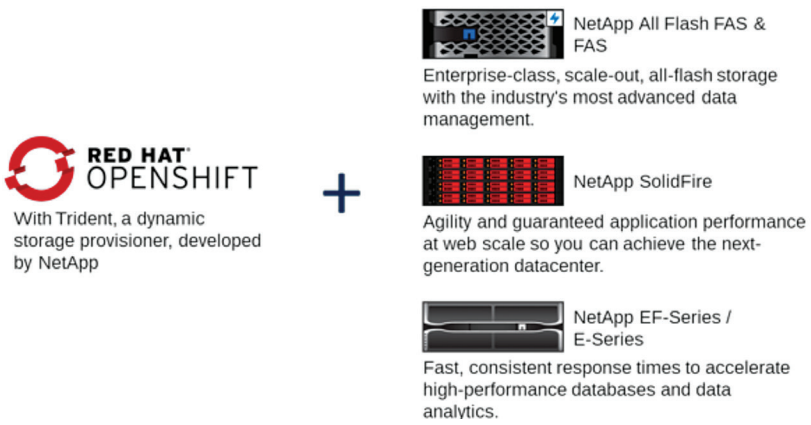

Figure 1. Trident, a dynamic storage provisioner, with Red Hat OpenShift

OPEN SOURCE DYNAMIC STORAGE PROVISIONER

Trident is an open source project created by NetApp for the Kubernetes community as an external provisioner that monitors Kubernetes volumes and completely automates the provisioning process. It can be deployed on a physical server, a virtual host, or a Kubernetes pod. Examples of common use cases that can take advantage of persistent storage support for Kubernetes are:

- DevOps teams who want to accelerate the CI/CD pipeline.
- Traditional enterprise applications deployed in a hybrid cloud.
- Cloud-native applications and microservices.

ABOUT NETAPP

NetApp is the data authority for hybrid cloud. We provide a full range of hybrid cloud data services that simplify management of applications and data across cloud and on-premises environments to accelerate digital transformation. Together with our partners, we empower global organizations to unleash the full potential of their data to expand customer touchpoints, foster greater innovation, and optimize their operations.

ABOUT RED HAT

Red Hat is the world's leading provider of open source software solutions, using a community-powered approach to provide reliable and high-performing cloud, Linux, middleware, storage, and virtualization technologies. Red Hat also offers award-winning support, training, and consulting services. As a connective hub in a global network of enterprises, partners, and open source communities, Red Hat helps create relevant, innovative technologies that liberate resources for growth and prepare customers for the future of IT.

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In addition to basic persistent volume integration, Trident also provides advanced capabilities designed to provide storage deployment flexibility for your containerized applications. With it, you can:

- Configure storage through a simple Representational State Transfer application programming interface (REST API) with unique abstractions that tie specific capabilities to Kubernetes storage classes.
- Protect and manage application data with NetApp enterprise-class storage. Existing storage objects, such as volumes and logical unit numbers (LUNs), can be easily used by Trident.
- Optionally, use different NetApp storage back ends. Deploying each with a different configuration allows Trident to provision and consume storage with different characteristics and costs and present that storage to container-deployed workloads in a straightforward fashion.

RED HAT OPENSHIFT CONTAINER PLATFORM

Red Hat OpenShift Container Platform brings Linux® containers and Kubernetes to the enterprise. The platform helps organizations develop, build, deploy, and manage new and existing applications across physical, virtual, or public cloud infrastructures. It accelerates application development with automated workflows that make it easy to move from source code to production-ready container images for deployment. Red Hat OpenShift Container Platform is built on open source standards and is a secure, proven, and reliable container platform for organizations of any size.

NETAPP AND RED HAT STRATEGIC ALIGNMENT

NetApp and Red Hat are leading the path to containerized application development, deployment, and execution through active development and leadership in the Kubernetes community. Red Hat and NetApp are committed to providing solutions with OpenShift, OpenStack®, and Ansible®, based on open source community-driven innovation.

Both organizations are charter members of the Cloud-Native Computing Foundation (CNCF) and have contributed to the community. NetApp invests heavily in Red Hat integration and testing across its market-leading storage solutions. Red Hat and NetApp have extensive joint research and development, business, and IT partnerships that span more than 15 years. NetApp was awarded Red Hat's North American ISV Partner of the Year for 2017. Because of these efforts, customers benefit from solutions that are proven to work together.

CONCLUSION

With Red Hat OpenShift and the Trident dynamic storage provisioner, you can benefit from ongoing innovations in the open source community that reduce time to market for new features and avoid vendor lock-in. Using this combined solution, you will gain:

- **Speed.** Develop and deploy applications faster with rapid iterative testing.
- **Efficiency.** Developers spend more time developing and less time worrying about resource provisioning. Streamlined execution lets both IT and operations scale their support for more and faster innovation.
- **Flexibility.** Trident enables dynamic provisioning of storage classes across the entire portfolio of NetApp ONTAP, SolidFire, and E-Series storage platforms.
- **Portability.** Red Hat OpenShift docker container-based apps run seamlessly on private, public, and hybrid cloud deployments.

NEXT STEPS

For more information, contact your local NetApp or Red Hat sales rep.
You can learn more at netapp.io.
To learn more about the Red Hat and NetApp strategic alliance, visit https://www.redhat.com/en/partners/strategic-alliance/netapp-strategic-alliance.