

NETAPP AUTOMATES I.T. TASKS FOR FASTER APPLICATION DELIVERY WITH RED HAT.



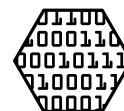
SOFTWARE AND SERVICES

Red Hat® Ansible® Engine

Red Hat OpenShift®
Container Platform

Red Hat Enterprise Linux®

NetApp, a data management technology company, sought to improve the speed and efficiency of its IT service delivery. The company automated manual, repetitive management processes and streamlined storage provisioning using Red Hat Ansible Automation and Red Hat OpenShift Container Platform. As a result, NetApp has dramatically reduced delays and human errors—eliminating hundreds of hours of manual work—and accelerated application delivery times from weeks to minutes.



DATA MANAGEMENT TECHNOLOGY

9,000 EMPLOYEES
45 OFFICES WORLDWIDE

“This project had occupied dozens of staff for weeks, with many more weeks to go. With Ansible, we completed it in two days.”

DAVID FOX
SENIOR UNIX ENGINEER, NETAPP

BENEFITS

- Achieved more efficient and accurate IT infrastructure maintenance
- Reduced application delivery time from weeks to minutes
- Gained support for evolution to modern, cloud-based application architecture



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“With Red Hat OpenShift, we can very quickly spin up compute resources for containerized applications, and we can do the same for storage with NetApp Trident. Using them together, we can deliver full-featured stacks in minutes or even seconds, instead of days or weeks.”

DAVID FOX
SENIOR UNIX ENGINEER, NETAPP

IMPROVING SERVICE EFFICIENCY

NetApp delivers data management solutions that help organizations use information to its full potential. The company’s globally distributed corporate IT environment includes four datacenters with 58PB of storage, production footprints in both Amazon Web Services (AWS) and Microsoft Azure, more than 5,300 servers—75% of which are virtualized—and 560 enterprise applications.

To meet a strategic directive to make the enterprise more lean and agile, NetApp’s corporate IT team continuously seeks to improve the efficiency of IT services and application delivery—for example, by adopting a DevOps software delivery approach and a hybrid cloud approach to infrastructure services.

However, this team faced significant challenges, such as the high level of time and effort required to manage infrastructure and delays in application delivery due to a lack of dynamic storage provisioning.

Similar to other IT organizations, NetApp was also hindered by repetitive, manual processes. For example, updating the network time protocol (NTP) clients of NetApp’s thousands of servers manually took about 5 minutes per machine or 25,000 total minutes. Traditional approaches, such as using scripts to iterate across servers with a stream editor, could not effectively account for high variations in configurations. As a result, this simple maintenance task would require 415 employee hours, or 52 8-hour work days, with high risk of inconsistency. Manual provisioning of persistent storage also prevented NetApp from achieving its goal of delivering software using a container- and microservices-based approach.

To overcome these challenges, NetApp needed a dynamic provisioning solution to support its in-house storage technologies, as well as a fully supported and integrated container platform. “We were looking for a scalable, consistent, and programmatic approach to eliminate manual work and human error,” said David Fox, senior UNIX engineer at NetApp.

AUTOMATING INFRASTRUCTURE AND PROCESSES

As an active open source participant and a long-time user of Red Hat software, NetApp decided to pilot Red Hat Ansible Engine, part of Red Hat Ansible Automation, in its NTP update project to eliminate repetitive manual tasks in configuration management. Ansible Engine is an agentless automation platform based on a powerful yet human-readable language that communicates with existing systems, applications, and tools. NetApp’s corporate IT team has used Ansible Engine to automate dozens of previously manual processes and continue to streamline its processes.

“Red Hat Ansible Automation was well-suited to templating the configuration files we needed for our NTP update to speed and automate the project. Once we saw what it could do, we started to see automation opportunities everywhere,” said Fox.

To address its dynamic storage provisioning challenge, NetApp combined Trident, an open source project it hosts and leads, with Red Hat OpenShift Container Platform, a solution for advanced application creation and delivery automation across private, public, and hybrid infrastructures. Trident lets applications that are provisioned and managed using the Kubernetes container orchestration engine—included in OpenShift—use storage resources on demand.

SPEEDING AND SIMPLIFYING I.T.

ACCELERATED INFRASTRUCTURE MAINTENANCE

NetApp streamlined the iterative configuration file changes required for the NTP project with Ansible Engine, cutting the work from weeks to days.

“This project had occupied dozens of staff for weeks, with many more weeks to go,” said Fox. “With Ansible, we completed it in two days: one day to write the new template and playbook, then one day to run it and restart the services. If we need to make standardized changes in our IT environment, we use Ansible to save hundreds of work hours.”

Ansible Engine also eliminates the human errors that inevitably occur in highly iterative manual tasks. “If I make an error in my Ansible Playbook, I’ll find and correct it when I test my code, then Ansible will run its delivery process, without opportunities for new errors to be introduced,” said Fox. “It really turns infrastructure maintenance into something more like a software application. It’s infrastructure as code.”

REDUCED DELIVERY TIME FROM WEEKS TO MINUTES

Eliminating the bottleneck created by manual processes for persistent storage provisioning has helped NetApp dramatically accelerate application delivery.

“With Red Hat OpenShift, we can very quickly spin up compute resources for containerized applications, and we can do the same for storage with NetApp Trident,” said Fox. “Using them together, we can deliver full-featured stacks in minutes or even seconds, instead of days or weeks.”

GAINED SUPPORT FOR BUSINESS EVOLUTION

Over the past five years, NetApp’s IT team has been on a journey to evolve their as-a-service delivery methods and shift to become more business- and service-focused. Automation and containerized applications play a key role in redirecting the resources reclaimed as a result of these efforts to more proactive, strategic IT initiatives.

“Red Hat technology is helping us revolutionize our hybrid cloud approach to build cloud capabilities with microservices running containers, through OpenShift with NetApp Trident, as well as API [application programming interface] provisioning,” said Fox.

MOVING TOWARDS SELF-SERVICE HYBRID CLOUD

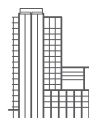
After its success with Ansible and OpenShift, NetApp is continuing to evolve its private cloud environment by using Red Hat OpenStack® Platform to offer self-service provisioning for its application developers and IT operations teams.

“No one at NetApp sat down and said, let’s use Ansible, OpenShift, and OpenStack together, but these tools have unique capabilities that help us solve real problems,” said Fox. “We have separate initiatives in a larger effort to increase velocity and efficiency, but it just happened that these tools fit our needs very, very well.”

NetApp’s corporate IT team is also evaluating using Red Hat Enterprise Linux Atomic Host as a foundation for containerized applications, as well as Red Hat CloudForms® for hybrid infrastructure management, to further streamline and speed its application and service delivery.

CUSTOMER CASE STUDY Data management technology company accelerates service delivery**ABOUT NETAPP**

NetApp is the data authority for hybrid cloud. The company empowers customers to simplify and integrate data management across cloud and on-premise environments to accelerate digital transformation. Together with its partners, NetApp provides a full range of hybrid cloud data services to help global organizations 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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