

NetApp automates IT tasks for faster application delivery with Red Hat

NetApp

Software and services

Red Hat® Ansible®
Automation Platform
Red Hat OpenShift®

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 Platform and Red Hat OpenShift. 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.



Technology

12,766 employees
45 offices

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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David Fox
Senior UNIX Engineer, NetApp



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Senior UNIX Engineer, NetApp

Improving service efficiency to deliver applications faster

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 116.2PB of storage, production footprints in the public cloud, and more than 6,002 servers—82% of which are virtualized—supporting 417 enterprise applications owned by IT, 729 corporate applications in total.

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 with Red Hat

As an active open source participant and a long-time user of Red Hat software, NetApp decided to pilot Red Hat Ansible Automation Platform in its NTP update project to eliminate repetitive manual tasks in configuration management. Ansible Automation Platform provides agentless automation based on a powerful yet human-readable language that communicates with existing systems, applications, and tools.

“Red Hat Ansible Automation Platform 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 deployed Red Hat OpenShift, a solution for advanced application creation and delivery automation across private, public, and hybrid infrastructures. This environment supports Trident, an open source project it hosts and leads, that lets Kubernetes applications—the container technology included in OpenShift—use storage resources on demand.

Speeding and simplifying IT delivery and management

Accelerated infrastructure maintenance

NetApp's corporate IT team has used Ansible Automation Platform to automate dozens of previously manual processes. For example, NetApp streamlined the iterative configuration file changes required for the NTP project with Ansible Automation Platform, 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 Red Hat Ansible Automation Platform, 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 Automation Platform to save hundreds of work hours."

Red Hat's automation technology also helps NetApp eliminate the human errors that inevitably occur in highly iterative manual tasks to support an infrastructure as code (IaC) approach. "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.

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."

Established foundation for hybrid cloud

Over the past eight years, NetApp's IT team has been on a journey to evolve their as-a-Service delivery methods 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 support our hybrid cloud approach with API [application programming interface] provisioning and microservices running containers on Red Hat OpenShift with NetApp Trident," said Fox.

Moving towards self-service hybrid cloud

After its success with Red Hat technology, NetApp is continuing to evolve its private cloud environment by using NetApp HCI and Ansible Automation Platform to build self-service provisioning for its application developers and IT operations teams. NetApp's corporate IT team also continues to use Ansible Automation Platform to introduce new self-service capabilities and automate issue responses.

"Red Hat Ansible Automation Platform and Red Hat OpenShift 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."

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.



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About Red Hat



Red Hat is the world's leading provider of enterprise open source software solutions, using a community-powered approach to deliver reliable and high-performing Linux, hybrid cloud, container, and Kubernetes technologies. Red Hat helps customers integrate new and existing IT applications, develop cloud-native applications, standardize on our industry-leading operating system, and automate, secure, and manage complex environments. Award-winning support, training, and consulting services make Red Hat a trusted adviser to the Fortune 500. As a strategic partner to cloud providers, system integrators, application vendors, customers, and open source communities, Red Hat can help organizations prepare for the digital future.



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