



Solution Brief

Accelerate Application Delivery Lifecycle with DevOps

Quickly build and deploy applications

Key Benefits

Transform the Process

Implement a collaborative culture in which IT operations and development engineers work together across the entire service lifecycle—from design through development to production support.

Accelerate the Development Cycle

Automate infrastructure provisioning to accelerate code development, build/test, and staging/production to eliminate traditional long lead times for new projects.

Make Developers More Productive

Leverage APIs and open source tools and APIs to automate development processes and streamline test activities.

Contain Storage Costs

Optimize infrastructure with storage efficiencies to easily scale to meet changing business demands, all while making critical data available to development teams.

Overcoming Traditional Development Challenges

For the last few years, developers have been at the epicenter of a fundamental shift, not only in how code is developed but where it's developed. Traditionally, code development has been characterized by a lengthy requirements gathering and justification process, followed by long periods of coding, testing, and integration—followed by accumulation and justification of changing requirements. However, to remain competitive in today's fast-paced environment, organizations can no longer afford scalability bottlenecks, provisioning delays, or lack of proper test and automation tools. Instead, organizations are now shifting to a new development paradigm—DevOps.

DevOps

The shift to DevOps—the blending of development and operations—represents a major change in how software is developed. This development methodology allows continuous streams of code development in which requirements are addressed in near real time. It is no longer enough to generate bug-free code. Instead, developers are leading the charge in writing code that can create, store, manage, modify, protect, analyze, and reuse data at a scale that was previously considered unachievable.

Development teams are now able to expedite application creation using automated, repeatable workflows, in a collaborative environment. DevOps uses self-service provisioning—both on the premises and in the cloud—to get the resources they want, when they need them, in ready-to-use development workspaces. With a strong emphasis on open source resources and using APIs for integration, developers can access a rich set of tools to streamline application development and testing.

- Accelerate time to market for new applications and services.
- Reduce risk with improved code quality.
- Streamline development with repeatable processes and best practices.
- Improve collaboration across development teams.

With a pay-as-you-go model, better collaboration, and less code reworking, DevOps is now a mission-critical function for many organizations. Developers are paid to write code—that is what they do best. And with a self-service environment, they are shielded from back-end complexities.

The Economics of DevOps

The economics of application development has changed. Time and materials for application development in 2015 were estimated at \$3.8B and estimated to grow to \$5.05B in 2020.¹ Organizations now need to plan for significant data growth on the order of 3 to 5 times per generation, with typical storage requirements increasing 5 to 10 times from code to build. To rein in costs, organizations must evaluate alternate business models to drive cost efficiencies across their storage infrastructure while making existing data available to development teams. By shifting “cool” or “cold” data from tier 1 to tier 2 storage, organizations can better manage time to market and storage IT costs.

NetApp and DevOps

NetApp was an early adopter of DevOps with an internally created environment: CodeEasy. By enabling automated provisioning of development and QA workspaces for a 2,000-strong, geographically dispersed development community, we achieved significant operational and productivity improvements. With CodeEasy, NetApp achieved our goals by managing our data more efficiently, rather than increasing resources across the development teams. We use the public cloud where it makes sense, with NetApp® Private Storage to maintain control of our data. And to further protect our intellectual property, we implemented a DevOps private cloud environment.

NetApp Solutions

NetApp software has been helping developers for years. With the move to DevOps, organizations can address common pain points in which most workflows benefit from automation, the rich set of APIs, and data management services that optimize storage usage.

NetApp technologies integrate with the Perforce Helix version management system to automate the entire workflow required to produce a release. By combining the system with NetApp EF-Series all-flash arrays, engineers save time and improve performance when checking files in and out of Perforce.

NetApp CodeEasy Toolkit

The NetApp CodeEasy Toolkit is a DevOps methodology using NetApp Snapshot® and FlexClone® technologies to dramatically save developer checkout and build time and significantly reduce storage usage. The toolkit automates steps to create and manage developer FlexClone workspaces and easily fits into most DevOps environments with few to no changes.

OnCommand Workflow Automation

NetApp OnCommand Workflow Automation makes it easy to quickly create simple or complex workflows on the premises and in the cloud. Because the solution is included with the NetApp clustered Data ONTAP® operating system, storage administrators can create storage workflows for the most frequent tasks and make them available to consumers for one-click automation. By automating time-consuming, complex processes, organizations can meet cost-saving objectives, a common goal when moving data to the cloud.

OnCommand API Services

Using Representation State Transfer APIs, NetApp OnCommand® API Services let you integrate third-party infrastructure-monitoring tools to monitor and manage NetApp storage. With this benefit,

included with clustered Data ONTAP, IT organizations can view the entire infrastructure with a single tool. Organizations can also continue to use vendor-provided tools on an as-needed basis to troubleshoot issues with specific infrastructure components.

OnCommand Cloud Manager

NetApp OnCommand Cloud Manager is included with Data ONTAP to manage hybrid cloud storage environments. OnCommand Cloud Manager includes the NetApp Cloud ONTAP® Storage Service, NetApp Private Storage for Cloud, and NetApp Cloud ONTAP for Amazon Web Services. Cloud Manager provides a single management interface independent of your data location and eases the day-to-day requirements of configuring, provisioning, and monitoring each of your active virtual and hardware storage nodes. With visibility into the resources consumed by each instance, Cloud Manager monitors and tracks cloud resource utilization. You can use this information later in assessing your environment.

All Flash FAS

NetApp All Flash FAS delivers extreme performance in DevOps environments, with millisecond latency to accelerate databases and speed data processing. With the dramatic impact that flash can have on application response time, bandwidth, and I/O throughput, developers can accelerate workloads without compromising the way data is deployed, managed, and protected across their environment. And flash storage plays a critical role in making high storage I/O achievable with the least amount of risk and the lowest cost.

Learn More About DevOps

Get started on the path to developer efficiency by automating common, repeatable storage processes with consistent best practices and processes. A worldwide team of experts is ready to help you maximize the effectiveness and increase the value of your storage investment for years to come.

About NetApp

Leading organizations worldwide count on NetApp for software, systems and services to manage and store their data. Customers value our teamwork, expertise and passion for helping them succeed now and into the future.

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