CITRIX

CITRIX | PROBLEM SOLVED

Citrix accelerates its automated testing environment with FlexPod® Data Center with NetApp® All Flash FAS to deliver virtualization solutions to market faster.

Citrix Systems Enhances Mobile Application Delivery in a Flash

In order to give its 300,000 worldwide customers faster solutions, software company Citrix Systems, Inc. sought to implement automated testing. Doing so would improve efficiency and help reduce costs by allowing developers to run tests in parallel and work on multiple releases at the same time. This required a technology that could keep up with multiple tests while driving down latency—for Citrix, the answer was a FlexPod Data Center with All Flash FAS.

Another NetApp
solution delivered by:

FlexPod
A Cisco and NetApp Solution

NetApp deduplication reduced storage requirements by

70-80%

Latency reduced from

5ms ▶
0.5ms

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∩ NetApp®

A LEADER IN MOBILE WORKSPACE SOLUTIONS

It is a rare and telling occurrence when a company's name or brand becomes synonymous with the product it sells. In the software world, Citrix Systems, Inc. (Citrix) is one of those unique companies. Its innovations in enabling mobile workstyles have been so significant that, when most people think of virtual application delivery, they think of Citrix.

Founded in 1989 and headquartered in Fort Lauderdale, Florida, Citrix has grown into a global technology leader with approximately 10,000 employees. More than 300,000 customers worldwide use its software to drive productivity and improve quality of life for workers around the globe.

CHALLENGE

Adopting DevOps through automated testing

Like most software companies, Citrix constantly improves and updates its products to deliver value to customers. Development and QA teams continually introduce new features and identify

and fix any bugs before new software versions or service packs are released into production. However, manual testing of software is time consuming and Citrix wanted to improve efficiency and move further into DevOps by introducing new capabilities for automation.

"The business set an aggressive goal for automating our software testing lifecycle," says Satish Sambandham, senior manager, Product Development at Citrix. Sambandham is focused on developing and testing the company's popular XenDesktop and XenApp product lines. "That will give us the flexibility to work on multiple releases simultaneously, reduce our costs, and help us identify QA issues sooner," he says.
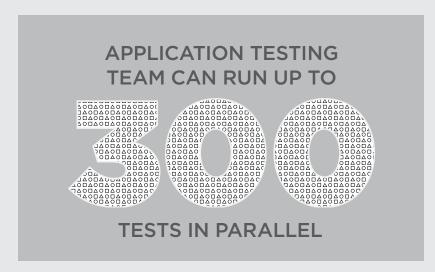
Sambandham was concerned, however, about the infrastructure requirements to support automated testing on a large scale. "We didn't have the CPU power or the storage I/O to run a lot of tests in parallel," he says. "To meet the business's goal for increased automated testing, we needed to drive down latency."

BUSINESS BENEFITS

- Accelerates time to market for new software versions and features

- Reduces test completion time by 20–30% with submillisecond latency

- Reclaims valuable developer time by providing reliable test results faster

- Helps to position Citrix to achieve its goal for increasing automation coverage

- Consumes up to 80% less storage with deduplication

NetApp®

CITRIX REALIZES THESE BENEFITS WITH NETAPP

APPLICATION TESTING TEAM CAN RUN UP TO

300

TESTS IN PARALLEL

LATENCY IS NOW CONSISTENTLY

<0.5ms

REDUCED TEST COMPLETION TIME BY

20-30%

SOLUTION

All-flash storage with submillisecond latency

Citrix evaluated a variety of flash storage solutions and ultimately chose NetApp because of its performance, flexibility, rich data management features, and the relationship between the two companies.

"Citrix has a long and fruitful history with NetApp, and we know that what is promised will be what NetApp delivers," says Sambandham. "Also, Citrix XenServer works very efficiently with NFS shared storage, which NetApp does natively well."

The team deployed NetApp All Flash FAS8060 storage systems running the clustered Data ONTAP® operating system for nondisruptive operations. The storage is part of a

FlexPod integrated infrastructure, which also includes Cisco servers and switches. "We're all about automation and making our data center more software-defined and easier to manage," says Sambandham. "The FlexPod platform fits right in with this vision."

NetApp software features are helping Citrix get the most value and uptime from its flash storage investment. "Other flash storage solutions we looked at didn't offer deduplication combined with a unified cluster architecture," says Sambandham. "Those features are important to us because they save us time and money."

BUSINESS BENEFITS

Faster, more reliable test results

Immediately after installing the NetApp All Flash FAS solution, Citrix noticed a drastic

improvement. Storage latency now consistently stays below .5 ms, reducing the time for tests to complete by 20–30%. "Before, we experienced latencies between 2 and 5 ms," says Sambandham. "Now we're delivering submillisecond response times to our developers."

Submillisecond storage latency also helps make tests more reliable, with fewer outliers. This capability frees engineers to increase automation coverage.

"We're more confident in our test results since we've moved to NetApp All Flash FAS, which allows engineers to spend more time on product quality improvements," says Sambandham.

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Testing on a larger scale

The team can now run up to 300 tests in parallel, and with increased frequency. Testing at scale is consistent, fast, and reliable, and tests no longer need to be extended or repeated. Testing is more efficient as well, with NetApp deduplication reducing storage requirements by 70–80% 🐦 and the FlexPod configuration improving scalability and reducing risk.

"Testing at scale has always been one of our major challenges," says Sambandham. "With NetApp and FlexPod, we can scale up or out as needed, and maintain low latencies even as we increase the number of concurrent tests."

Faster time to market

The ability to run more concurrent tests enables product development teams to work faster, ultimately speeding time to market for new software versions and features. By improving the timeliness and reliability of test results, Citrix can now concentrate on reaching its corporate objective for test automation.

Sambandham concludes, "Introducing NetApp all-flash arrays into our software development process reduced storage latency up to tenfold, allowing us to deliver response times to our developers in the range of 0.3 to 0.5 ms. NetApp all-flash arrays give our engineering team the scale-out capacity, performance, and nondisruptive operations we need to deliver new features in our flagship XenApp and XenDesktop product lines with utmost speed and quality."

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.

SOLUTION COMPONENTS

FLEXPOD DATACENTER COMPONENTS

NetApp All Flash FAS8060 storage systems

Cisco Unified Computing System B200 M4 blade servers

Cisco Nexus 5000 Series switches

NETAPP SOFTWARE

NetApp clustered Data ONTAP 8.3

NetApp OnCommand® Unified Manager

Deduplication

CITRIX SOFTWARE

Citrix XenApp

Citrix XenDesktop

Citrix XenServer

Citrix CloudPlatform

PROTOCOL

NFS

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