

Reimagine File Services With Nutanix Acropolis File Services



Pain points associated with NAS:

- Separate infrastructure silo
- Complex to deploy
- Tedious to manage
- Forklift upgrades needed

IS IT TIME TO RETHINK FILE SERVICES?

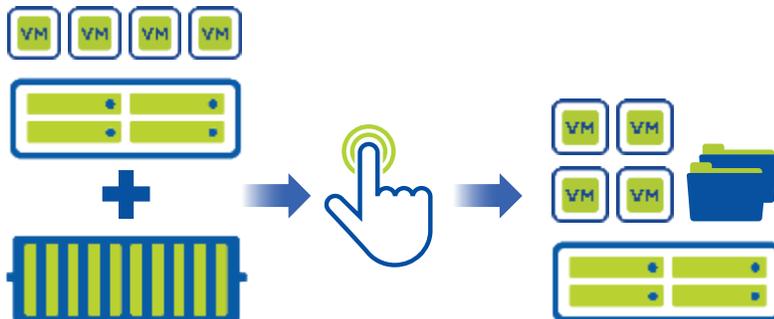
Businesses are increasingly demanding shared file services that are simple, scalable, and elastic. Unfortunately, today's network-attached storage (NAS) systems are complex to configure and manage, difficult to scale, and lack the elasticity needed to satisfy cloud needs. Each NAS system is a discrete silo of storage that must be separately provisioned and managed, adding to datacenter complexity. In addition, NAS administrators have to spend hours doing performance troubleshooting, and this problem gets exacerbated as each admin is increasingly being asked to manage more NAS systems.

As organizations adopt cloud services, user expectations rise. Users and IT teams want file services with easy access, always-on availability, and simple, automated scaling of capacity and performance. IT teams are learning the hard way that satisfying these demands with traditional NAS systems can be a time-consuming and budget-breaking endeavor that leaves users unhappy and administrators overworked. At the same time, file services in the public cloud may not be cost effective or mature enough for enterprise needs.

By delivering file, block, and container services from a single infrastructure, the Nutanix Enterprise Cloud Platform takes the idea of convergence to the next level. A single flexible and fully integrated infrastructure platform addresses the diverse compute and storage requirements found in most enterprises.

While many enterprises recognize the value of public cloud, the expense and lack of control of a public-cloud-only approach can be prohibitive. By deploying the Nutanix Enterprise Cloud Platform, organizations are creating cloud infrastructure that addresses enterprise needs and integrates with the public cloud at a fraction of the cost of public cloud services alone.

This white paper focuses on Nutanix Acropolis File Services (AFS), and it discusses how AFS is a file server solution built for the cloud era.



Nutanix Acropolis File Services converges virtualization and file services, eliminating the need for separate NAS appliances.



What customers value in EFS:

- Simple to deploy
- Simple to manage
- Scalable
- Elastic
- Integrated with other AWS services

What customers value in NAS:

- Control and compliance
- Flexible resiliency, availability and data protection
- Enterprise grade performance
- Advanced data reduction

Nutanix AFS combines the best attributes of both solutions.

FILE SERVICES FOR THE CLOUD ERA

In order to bring together the best attributes of public cloud solutions such as Amazon's Elastic File System (EFS) and traditional NAS devices, a new approach to file services that addresses the following requirements is needed:

- **Simple to deploy and manage.** It should be possible to deploy file services or a new share in minutes without significant storage expertise. Management should be easily automated, integrated with the rest of your management environment, and compatible with self-service.
- **Scalable.** File services for the cloud must be able to scale both performance and capacity easily. Because most NAS devices and file servers offer only limited scaling, organizations often have many different systems performing file services, adding to complexity and management overhead.
- **Elastic.** Users should be able to consume storage when they need it and free it for other purposes when they don't. It is impossible to make storage provisioned to NAS appliances or dedicated file servers available for other uses.
- **Reliable and resilient.** Because users expect that data will always be accessible, file services must be resilient to both planned and unplanned downtime.

File services capable of satisfying these requirements not only improve end-user satisfaction, but also greatly decrease the burden on IT administrators and streamline business processes.

AFS: FILE SERVICES FOR THE CLOUD

AFS is a software-defined scale-out file storage solution that addresses a wide range of use cases, including user profiles, home directories, and departmental shares. By combining the flexibility of server virtualization with the distributed storage of the Nutanix Enterprise Cloud Platform, Nutanix provides file services that combine the best attributes of NAS and public cloud services, while overcoming their limitations.



AFS Delivers Resiliency and Self-Healing

AFS offers the highest level of resiliency and self-healing capabilities. When a failure occurs, full data redundancy is quickly and automatically restored without administrator involvement. As a cluster grows it becomes even more resilient.

In addition to built-in resiliency, AFS provides integrated and automated backup and disaster recovery, which replicates data to a secondary Nutanix cluster. Backup can also be performed to a public cloud.



AFS Simplifies Management

Because multiple services—file services, virtualization, block services, and so on—are consolidated on Nutanix Enterprise Cloud Platform, managing the overall datacenter infrastructure becomes simpler as well. All services are managed from a single interface (Nutanix Prism) without specialized skills, making AFS management much simpler than a typical NAS appliance which requires specialized storage expertise.

As with EFS and other public cloud services, configuration is accomplished in a matter of a few clicks, and AFS can be upgraded in a single click.

And—like EFS—AFS scales out, eliminating the management overhead that results from having a large number of separate NAS devices or file servers. Administrators no longer have to spend hours of time tuning and load balancing.



AFS Offers Superior Elasticity

One of the things that enterprises love about the public cloud is elasticity. Capacity and performance can be consumed whenever it's needed—for a special project for example— and then released when it's not.

AFS running in a Nutanix Enterprise Cloud environment offers much greater elasticity than conventional NAS. Because AFS has access to the entire storage pool of a Nutanix cluster, file services are able to grow and shrink capacity and performance as needs change. This is made possible by the underlying Nutanix Distributed Storage Fabric (DSF) which consolidates the storage across all the nodes in the cluster together as a single pool simplifying capacity planning and providing advanced data reduction and data management.

Rather than having separate resource pools in the datacenter to meet the needs of file services, block services, virtualization and so on, all services can share the same pools of available storage and CPU resources, simplifying resource planning and increasing utilization.



AFS Is Efficient

Because it is integrated with the Nutanix Enterprise Cloud Platform, AFS delivers more efficient, and flexible file services than NAS solutions or public cloud services. Organizations can deploy AFS as part of an existing Nutanix cluster, leveraging existing free resources at no additional cost. And because Nutanix provides advanced data reduction features, AFS uses capacity very efficiently.

Consolidating multiple workloads and services on Nutanix Enterprise Cloud yields maximum efficiency and resource utilization, making it extremely cost effective. AFS running on the Nutanix Enterprise Cloud Platform brings the best of the enterprise and cloud worlds together, creating a superior file services solution for next-generation IT.

CLOUD STORAGE



	AFS	EFS	NAS
MANAGEMENT			
Simple Configuration	👍	👍	
Scale Out	👍	👍	Limited
Integrated Mgmt Environment	👍	👍	
ELASTICITY			
Performance	👍	👍	Limited
Capacity	👍	👍	👍
RESILIENCY			
Self-Healing	👍	👍	👍
Flexible Data Protection	👍		👍
Self-Service Restore	👍		👍
EFFICIENCY			
Deploy On Existing (no added cost)	👍	NA	
Data Reduction	👍		👍
Consolidation	👍	👍	
COMPATIBILITY			
On- prem applications	👍		👍



T. 855.NUTANIX (855.688.2649) | F. 408.916.4039
info@nutanix.com | www.nutanix.com | [@nutanix](https://twitter.com/nutanix)

Nutanix makes infrastructure invisible, elevating IT to focus on the applications and services that power their business. The Nutanix enterprise cloud platform leverages web-scale engineering and consumer-grade design to natively converge compute, virtualization and storage into a resilient, software-defined solution with rich machine intelligence. The result is predictable performance, cloud-like infrastructure consumption, robust security, and seamless application mobility for a broad range of enterprise applications. Learn more at www.nutanix.com or follow us on [Twitter@nutanix](https://twitter.com/nutanix).

©2017 Nutanix, Inc. All rights reserved. Nutanix is a trademark of Nutanix, Inc., registered in the United States and other countries. All other brand names mentioned herein are for identification purposes only and may be the trademarks of their respective holder(s).