

# 2024-25 DCIG TOP 5

# ENTERPRISE CLOUD-BASED NAS CONSOLIDATION SOLUTIONS



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### Table of Contents

3	The Problem of Storage System Proliferation
3	The Problem of Location Proliferation
3	You Cannot Manage What You Cannot See
3	Cloud-based NAS Consolidation Enables Global Data Visibility
4	Cloud-based Storage Benefits
5	Distinguishing Features of DCIG TOP 5 Enterprise Cloud-based NAS Consolidation Solutions
7	Other Similarities Among the DCIG TOP 5 Enterprise Cloud-based NAS Consolidation Solutions
7	Differences Between the DCIG TOP 5 Enterprise Cloud-based NAS Consolidation Solutions
8	DCIG TOP 5 Enterprise Cloud-based NAS Consolidation Solution Profiles
9	Nasuni File Data Platform
10	CTERA Enterprise File Services Platform
11	NetApp Cloud Volumes ONTAP
12	Panzura CloudFS
13	Zadara zStorage
14	Inclusion and Evaluation Criteria for DCIG TOP 5 Enterprise Cloud-based NAS Consolidation Solutions

## Enterprise Cloud-based NAS Consolidation Solutions



Nasuni File Data Platform

CTERA Enterprise  
File Services Platform

NetApp Cloud Volumes

Panzura CloudFS

Zadara zStorage

*\*Products are listed with the licensee's product on top, followed by the other TOP 5 award recipients in alphabetical order.*

### SOLUTIONS EVALUATED

Acronis Cyber Infrastructure	OSNexus QuantaStor
Burst SoftNAS	OpenDrives Atlas Core
Cloudian HyperFile	Panzura CloudFS
Cohesity SmartFiles	Peer Software PeerGFS
CTERA Enterprise File Services Platform	Quantum StorNext
Dell EMC UnityVSA	Qumulo Core
Hammerspace	Quobyte
Hitachi Vantara HCP	Resilio Connect
IBM Storage Scale	Scality RING
LINBIT SDS	StoneFly SCVM
LucidLink	StorOne S1 Data Platform
Nasuni File Data Platform	Tiger Technology Tiger Bridge
NetApp Cloud Volumes ONTAP	VMware vSAN
Nexenta NexentaStor	WEKA File System
Nexustorage Nexfs	Zadara zStorage
Nutanix Unified Storage	

### FEATURES EVALUATED

- *Deployment Capabilities*
- *Data Protection Capabilities*
- *Product and Performance Management Features*
- *Technical Support*
- *Licensing and Pricing*

The pace of data growth continues to accelerate. The latest numbers suggest world-wide annual growth rates of 23.71% from more devices and applications generating data, larger file sizes, and the use of media files such as images and video.<sup>1</sup> For enterprises, the storage requirements are growing at an even faster pace of 42.2% annually!<sup>2</sup> Processing, protecting, and copying data for various uses add to the storage requirements and management challenges.

Data growth entails expenses for hardware, software, management, and maintenance. It impacts data management strategies for maintaining performance, security, backup, recovery, archiving, and governance of the growing data estate.

### The Problem of Storage System Proliferation

For many organizations, this rapid data growth has resulted in a proliferation of storage systems. The organic growth of NAS devices and file servers an organization adds over time for new locations, users, and applications further complicates data management. Organizations end up with a plethora of data silos without global visibility into the file data of its multiple underlying systems.

### The Problem of Location Proliferation

The data generated by distributed workforces and edge devices like video cameras further adds to the challenges. Industry studies suggest that by 2025, the edge will generate 75% of data outside the data center.<sup>3</sup> For distributed workforces, IT organizations must maintain capacity, availability, backup, and disaster recovery plans for hundreds or even thousands of locations, often with different technologies. The pandemic has only exacerbated data management challenges as organizations deal with work-from-home employees, contractors, and remote talent whose data must be stored and protected.

### You Cannot Manage What You Cannot See

As a result of these dynamics, organizations are often faced with the reality of not knowing the what and where of their data across the organization. This gap in knowledge, in turn, complicates data governance, analysis, security, compliance, and planning, which in turn impacts costs. This gap impacts ransomware exposure, which certainly worries every CIO. Further, scattered and unknown file data undermines AI workloads, which require complete data for optimum success. At the end of the day, this lack of visibility into an organization's data undermines IT's mission of providing the technical resources the organization requires to achieve its goals.

### Cloud-based NAS Consolidation Enables Global Data Visibility

Cloud-based NAS consolidation, based on enterprise-class software-defined storage, takes a different approach to handling the growing accumulation of unstructured data. Cloud-based NAS consolidation migrates file data from multiple file servers and NAS devices into a cloud-based storage platform. The best solutions provide fast, flexible, usable, managed access for all an organization's end users and applications while addressing the challenges of data growth across the enterprise. Because software-defined storage serves as a foundation for cloud-based NAS consolidation solutions, these solutions capitalize on the benefits of SDS, such as:

# Enterprise Cloud-based NAS Consolidation Solutions

**For distributed enterprises, cloud-based NAS consolidation solutions allow an administrator to administer a broad set of file management services across cloud providers and hundreds or thousands of nodes, sites, and users from a single interface.**

**Scalability.** Especially for solutions using public cloud providers as the data store, the public cloud represents unlimited storage that can scale on demand without requiring capital hardware purchases. If new capacity is needed, an administrator can quickly turn this up. Organizations only pay for what they use, scaling up or down their storage capacity as their needs require.

**Flexibility.** In contrast to disparate storage systems and devices dispersed across multiple locations, a cloud-based NAS presents a single unified storage pool. This means administrators can allocate storage capacity dynamically to users, groups, and applications as needed. Many cloud-based NAS solutions allow organizations to leverage multiple cloud providers as well as on-premises private cloud solutions. Thus, organizations can align the placement of data with cost, compliance, or workload priorities.

**Global file management capabilities.** Global views, including permissions management, capacity utilization, and analytics, enable new opportunities for ensuring optimal performance and cost for managing an organization’s unstructured data. For distributed enterprises, cloud-based NAS consolidation solutions allow an administrator to administer a broad set of file management services across cloud providers and hundreds or thousands of nodes, sites, and users from a single interface. Administrators can apply data governance policies across their file estate. While the dynamics causing file growth still occur, these solutions give enterprises the tools to discover and manage files globally.

**Multi-protocol file support.** Cloud-based NAS consolidation solutions commonly support multiple file storage protocols. This flexibility allows organizations to select the best-fit protocol for each use case. Many cloud-based SDS solutions expand upon file sharing and collaboration features inherent within file storage protocols so that remote teams and users can collaborate on files from anywhere.

**Table 1  
Deployment Options**

Deployment Options. Check all that apply.

		Response percent	Response total
Pre-integrated appliance - On-premises (Hardware and Software)		80%	4
Software-defined Storage - On-premises (Commodity or select OEM servers)		100%	5
Storage-as-a-Service - On-premises (OPEX Model)		60%	3
Software-defined Storage - Public cloud array instance		80%	4
Storage-as-a-Service - Public cloud (user)		60%	3

Source: DCIG

## Cloud-based Storage Benefits

In addition to software-defined storage benefits, cloud-based storage systems bring additional benefits to organizations such as:

**Cyber-resiliency.** Cloud-based storage systems bring enhanced capabilities for ensuring data availability in the face of cyberattacks. These solutions leverage features like immutable storage, replication, snapshots, backups, and automated failover to both mitigate and recover quickly from a cyberattack or other unforeseen event.

## Enterprise Cloud-based NAS Consolidation Solutions

*Organizations can experience notable time and cost savings with cloud-based NAS consolidation, allowing IT staff to shift their attention to other activities that bring value to their organization.*

**Multicloud storage architectures.** As an alternative to relying on one cloud provider for all storage requirements, cloud-based NAS consolidation solutions can often utilize multiple cloud providers for vendor diversity and flexibility. Infrastructure managers can place file data in the cloud provider best suited to business priorities or make data available to specialized services within a cloud ecosystem. Further, organizations may choose a particular cloud provider because of regulatory compliance or data sovereignty requirements.

**Offloads storage infrastructure management.** For public cloud storage, much of the burden of storage infrastructure management moves from the customer organization to the cloud provider. Cost management (space, power, labor), complexity (performance management, networking, administration), and capacity planning (monitoring, acquiring, implementing) shifts out of the enterprise. By offloading these activities to the cloud provider, enterprises reduce IT costs for on-premises file data management.

**Reduces infrastructure hardware costs.** By moving their unstructured data to centralized cloud storage, organizations can eliminate the expenses and procurement cycles for NAS devices and file servers across their locations. For the data center especially, less hardware translates into less physical space, which means a smaller footprint and reduced energy and cooling costs when compared to legacy solutions.

**Reduces administrative costs.** As noted above, cloud-based NAS consolidation enables administrators to centrally manage storage resources across the data landscape from a single interface. This model simplifies storage administration and reduces the need for multiple tool sets to manage different NAS devices and file servers. Cloud-based NAS solutions often include automation features for common data management tasks. Organizations can leverage APIs to integrate their cloud storage solution into third-party automated workflows.

**Global file access.** Cloud-based file storage enables access to file data from anywhere in the world with an internet connection. For remote locations, the ideal cloud-based NAS solutions cache copies of active files at the edge on a virtual or physical appliance, which are then synchronized to a master file stored in the cloud. Administrators can configure permissions for teams and groups to ensure data security.

These benefits and more provide organizations with a global, centralized file platform that addresses the needs of scalability, costs, governance, compliance, security, analysis, and decision-making in the context of an avalanche of accumulating data. Further, organizations can experience notable time and cost savings with cloud-based NAS consolidation, allowing IT staff to shift their attention to other activities that bring value to their organization. Finally, because cloud-based NAS solutions incorporate new cloud technologies as they become available, enterprises future-proof their storage infrastructure with cloud-based NAS solutions. Future-proofing that ensures the enterprise IT organization is adaptable and capable of meeting changing business needs in the years ahead.

### Distinguishing Features of DCIG TOP 5 Enterprise Cloud-based NAS Consolidation Solutions

DCIG identified 31 companies offering products meeting DCIG's definition of a SDS-based NAS consolidation solution. Using feature-based analysis and comparisons of data derived from publicly available sources, vendors, and DCIG's own experience, DCIG's TOP 5 Enterprise Cloud-based NAS Consolidation Solutions share these characteristics that distinguish them from the other vendors DCIG evaluated.

**Robust support.** DCIG TOP 5 providers display robust support capabilities compared to the other evaluated solutions. All DCIG TOP 5 vendors provide 24x7x365 availability for trouble resolution as compared to 60% of the other solutions being assessed. Each DCIG TOP 5 provider offers at least four-hour response times to reported troubles, with most offering one-hour response times or better for mission-critical issues. Enterprises can utilize a knowledge base for online self-support, and all winners provide the opportunity for an assigned account manager.

*DCIG TOP 5 winners evidence notable support for strong encryption technologies.*

**Tables 2 & 3**  
**Support Availability and Response Times**

What is the availability of the product's support staff? Check all that apply.

	Response percent	Response total
Business Day (local time)	100%	5
8am EST to 8pm PST	100%	5
24x7 (no US holidays)	100%	5
24x7x365	100%	5

Statistics based on 5 respondents.

What is the response time of a support request through any communication medium (phone, web, email, chat, etc)? Check all that apply

	Response percent	Response total
Next Business Day	100%	5
Next Day	100%	5
Same Business Day	100%	5
Same Day	100%	5
4 Hour Support	100%	5
1 Hour Support	80%	4
Immediate (15 minutes or less)	60%	3

Statistics based on 5 respondents.

Source: DCIG

**Encryption support.** DCIG TOP 5 winners evidence notable support for strong encryption technologies. All winners offer both in-flight and at-rest encryption, compared to 61% and 73% of the other evaluated solutions, respectively. Each of the DCIG TOP 5 winners provides AES-256 at rest encryption for the strongest level of encryption security.

**SMB and NFS support.** All DCIG TOP 5 solutions show strong support for the latest versions of SMB and NFS when compared to the other evaluated solutions. These are the protocols used by most enterprise applications to address file-based storage. The most recent versions bring benefits of performance, new features, security enhancements, and storage management improvements over previous versions. Most DCIG TOP 5 solutions support cross-protocol access to the same data store.

**Capacity optimization techniques.** Capacity optimization techniques such as compression and deduplication help organizations save money on their growing storage costs by reducing the amount of physical storage needed to store unstructured data. Each of the DCIG TOP 5 solutions uses these capacity techniques on its data stores, which helps organizations efficiently store data on the cloud platform.

*DCIG TOP 5 solutions show broad support for directory service and authentication features.*

### Other Similarities Among the DCIG TOP 5 Enterprise Cloud-based NAS Consolidation Solutions

In addition to the characteristics that distinguish the DCIG TOP 5 Enterprise Cloud-based NAS Consolidation Solutions from the others, the DCIG TOP 5 solutions also share the following product features:

**Multi-factor authentication.** Each of the DCIG TOP 5 winners supports multi-factor authentication (MFA). MFA provides an additional level of security above a username and password before the storage solution grants access.

**Role-based access control (RBAC).** RBAC allows IT administrators to assign specific roles with predefined privileges that limit access and permissions to what is necessary for a user to accomplish in their job role. All DCIG TOP 5 vendors provide RBAC as an additional layer of data security.

**Space-efficient snapshots.** Space-efficient snapshots reduce backup storage requirements and, therefore, minimize storage costs for point-in-time copies of unstructured data used to recover from a data loss event. Each of the DCIG TOP 5 winners provides space-efficient snapshot capabilities.

**API-based integration.** Enterprises look for solutions that integrate well with their existing infrastructure. REST APIs facilitate integration of SDS data storage with external applications. Each of the TOP 5 solutions provides REST APIs.

**Auto-tiering.** Most organizations possess different types of drives that differ in capacity, speed, and cost. Auto-tiering features automatically select storage media based on predefined policies. All DCIG TOP 5 solutions provide auto-tiering features.

**Directory services integration.** DCIG TOP 5 solutions show broad support for directory service and authentication features. Directory service permissions can be used to manage what data is visible to the authenticated user. All DCIG TOP 5 solutions support AD/LDAP integration, and most support Kerberos authentication for data security.

**Automated storage provisioning.** For new applications, automated storage provisioning saves enterprises time, money, and effort by automating the workflow of provisioning data storage. All DCIG TOP 5 solutions include automated provisioning features.

### Differences Between the DCIG TOP 5 Enterprise Cloud-based NAS Consolidation Solutions

DCIG TOP 5 solutions differ from one another in the following ways:

**Pre-integrated appliances.** Some organizations prefer integrated, turn-key solutions that include the necessary hardware and software for an enterprise storage solution. Several TOP 5 solution providers offer turn-key solutions that cover the hardware and software needed for on-premises deployments that complement cloud-based storage.

**Storage as a Service (STaaS).** Some of the DCIG TOP 5 winners offer their solution as a service. Many enterprises value this licensing model as it brings cost predictability, advanced support features, and additional benefits to their cloud-based storage solution.

**Vendor-owned cloud.** Some of the DCIG TOP 5 solutions offer their own cloud storage services. The benefit of such vendor-owned and managed cloud is that the storage vendor can optimize its storage for enterprise customers and it brings additional benefits of data security, protection, and management that enterprises find attractive.

## Enterprise Cloud-based NAS Consolidation Solutions

**File system characteristics.** The DCIG TOP 5 vendors characterize their file system architecture differently between a distributed, global, or parallel file system. Parallel file systems, in particular, are associated with high-performance computing.

**CSI support.** Some of the DCIG TOP 5 winners provide a Container Storage Interface (CSI) driver that enables persistent storage for containerized workloads.

**Mixed OS and hypervisor support.** DCIG TOP 5 winners vary in the operating systems and hypervisors they support.

**Immutability and WORM support.** Storage administrators value immutability and WORM (Write Once, Read Many) features because they ensure that once data is written, it cannot be changed. DCIG TOP 5 providers differ in their inherent support of immutability and WORM capabilities for stored data.

**Predictive analytics.** Predictive analytics provide enhanced storage management capabilities. Analytics can identify issues before they become issues, improve storage performance, and improve overall storage efficiencies. DCIG TOP 5 winners vary in their predictive analytic features.

**Quality-of-Service Support.** Quality-of-Service (QoS) features ensure organizations can prioritize storage performance for critical applications. Without QoS, lower-priority workloads could dominate resources. Most TOP 5 solutions include QoS features.

**Multi-protocol support.** Most DCIG TOP 5 solutions provide S3-compatible object storage. The combination of file and object protocol support enables storage systems to support legacy enterprise applications and new cloud-native applications. Two of the winners support block storage protocols as well. The ability to support multiple protocols offers expanded possibilities for cloud-based storage consolidation.

### DCIG TOP 5 Enterprise Cloud-based NAS Consolidation Solution Profiles

Each of the DCIG TOP 5 Enterprise Cloud-based NAS Consolidation Solution Profiles highlights several notable features or capabilities that make the product attractive to organizations.



*Leveraging the scalability and inherent protection of cloud storage, Nasuni provides unlimited storage capacity, fast file access, data protection, centralized storage management, and multi-site file sharing for any number of users and locations.*

### Nasuni File Data Platform

Natively built for the cloud, the Nasuni File Data Platform places the object store at the center of its software-defined architecture. Enterprises can replace legacy file infrastructure consisting of multiple file servers, NAS, data protection, and management tool sets with a single global file system. Leveraging the scalability and inherent protection of cloud storage, Nasuni provides unlimited storage capacity, fast file access, data protection, centralized storage management, and multi-site file sharing for any number of users and locations.

Notable features that helped Nasuni earn a DCIG TOP 5 award include:

**Cloud architecture.** Nasuni integrates with all popular cloud storage providers as well as leading solutions used for private cloud storage. This gives organizations the flexibility to use the cloud solution(s) best for their organization. Nasuni's patented UniFS Global File System organizes file data, metadata, and snapshots within cloud storage. The Nasuni Orchestration Center (NOC) serves as the control plane, providing file synchronization, monitoring, analysis, and tuning of an organization's file platform. The NOC also presents enterprise file data as a single global namespace. With the Nasuni Management Console (NMC), administrators can centrally manage all file data services.

**Edge performance.** Organizations deploy Nasuni Edge instances as a VM that replaces traditional file servers and NAS. This edge instance serves as a lightweight access point to cloud storage. Nasuni supports popular hypervisors such as VMware ESXi, Microsoft Hyper-V, and Nutanix AHV. Nasuni dynamically caches active files for users and applications for fast access. Caching also removes the problem of cloud latency and egress fees while reducing the local storage footprint. Nasuni Access Anywhere, an add-on service, addresses the need for fast file access for remote workers.

**Data security and protection.** Nasuni encrypts all data, metadata, and snapshots in transit and at rest with AES-256 encryption. On top of this, Nasuni utilizes a Zero Trust security framework that requires users and applications to be authorized, authenticated, and validated to access data. Nasuni supports 2FA, RBAC, and AD/LDAP integration. A full set of governance, compliance, and security options can be configured by the administrator.

Nasuni protects data from ransomware attacks with continuous versioning. With continuous versioning, Nasuni takes frequent snapshots of file changes on Nasuni Edge VMs. Snapshots are compressed, encrypted, and chunked, then kept secure as encrypted, immutable objects in cloud storage. Removing the need for a separate backup process, the NMC displays all available recovery points. Administrators can quickly recover down to one minute granularity a previous file, folder, volume, or system down to just before an attack occurred. Ransomware Protection, one of several Nasuni add-on services, provides enhanced detection, mitigation, and response capabilities to shorten the timeline of a ransomware attack.

*Administrators can oversee devices, users, deployments, and data stores worldwide through the CTERA .Portal, which serves as the central management console for effectively managing enterprise file data.*

### **CTERA Enterprise File Services Platform**

With the CTERA Enterprise File Services Platform, organizations can unify remote users, branch offices, and cloud file services into a single operating environment that combines the benefits of local file services with the advantages of unified cloud object storage. For flexibility on object storage, CTERA works with all major cloud providers. Alternatively, enterprises can deploy CTERA within a customer-owned or CTERA-managed private cloud. Administrators can oversee devices, users, deployments, and data stores worldwide through the CTERA Portal, which serves as the central management console for effectively managing enterprise file data.

Notable features that helped CTERA earn a DCIG TOP 5 award include:

**CTERA Edge Filers.** Organizations can simplify IT at the edge by replacing legacy file servers and NAS appliances with virtual or physical CTERA Edge Filers. The CTERA Edge Filer becomes an all-in-one solution for branch office storage, file collaboration, and backup. CTERA's intelligent caching of active files provides fast file access plus infinite storage capacity with minimal hardware at the edge. Streaming technologies allow users to access large files in cloud storage without copying the entire file locally. And for remote workers, CTERA Drive lets users access and collaborate on any file from any device or location.

**Data security.** From the endpoint to the cloud, CTERA encrypts all data with AES-256, FIPS 140-2 validated encryption with keys generated and managed by the customer. Additionally, the CTERA platform works from a zero-trust security model. CTERA fully supports features such as WORM, RBAC, AD/LDAP integration, and multi-tenancy. Further, infrastructure managers can leverage CTERA's cloud-to-cloud, cross-region, and cross-account replication to protect data from bad actors and unforeseen events.

CTERA's Ransom Protect provides real-time detection and blocking of ransomware attacks on edge filers. Ransom Protect can detect and block an attack within 30 seconds. With unlimited file versioning and CTERA's immutable snapshots, organizations can rapidly recover from an attack to a known good state. In addition, CTERA limits the spread of malware through signature-based anti-virus scanning that checks for known malware threats before transferring file data into the global file system.

**Concurrent multi-cloud file system.** With CTERA Cloud Storage Routing, organizations can concurrently place file data across multiple cloud providers, cloud regions, data centers, and buckets using policy-based decision-making. CTERA Zones allow enterprises to logically segment their global file system into logical units by tags such as geographic area, business unit, or department to control who can see and access data within their global namespace. These features prevent data leakage between groups and ensure data sovereignty compliance.

*CVO also helps organizations reduce expenses by providing visibility into cloud resource costs.*

### NetApp Cloud Volumes ONTAP

NetApp represents a well-known name in storage technologies and data management software. NetApp developed its proprietary operating system ONTAP to provide data management and software services for its storage products. NetApp Cloud Volumes ONTAP (CVO) extends ONTAP's data management capabilities to cloud environments by running its ONTAP data management software in the cloud as an SDS appliance. IT organizations deploy CVO through NetApp's BlueXP, which serves as the control plane for managing all CVO instances. Locally, NetApp Cloud Volumes Edge Cache provides fast access to active files. For NetApp environments, CVO delivers the benefit of simplifying the consolidation of file data in the cloud, while BlueXP offers the dashboard for overseeing data stores across the cloud and on-premises.

Notable features that helped NetApp earn a DCIG TOP 5 award include:

**Simple multicloud file management.** CVO supports multiple cloud platforms, including AWS, Microsoft Azure, and Google Cloud Platform. With point-and-click functionality, administrators can manage cloud storage across multiple cloud accounts. Administrators can easily create a new CVO instance by simply clicking on a new location from the available list of public cloud providers and then choosing a custom or preconfigured CVO system. Again, using point-and-click, administrators can protect new CVO instances by scheduling a snapshot schedule that automatically creates lightweight, immutable snapshots for each volume. Using drag-and-drop, an infrastructure manager can replicate data to a different environment or create automatic backups to object storage.

**Multi-protocol access.** In addition to NFS and SMB file protocol support, administrators can configure CVO volumes for access via iSCSI, NVMe-TCP, and Amazon S3 client protocols. This allows organizations to consolidate and manage universal storage across multiple clouds. Further, organizations can place file, block, and object stores within public cloud accounts that best support cost and performance priorities. NetApp simplifies administration by giving IT departments a unified interface for managing multiple storage protocols across multi-cloud and hybrid-cloud environments.

**Multi-cloud cost efficiencies.** NetApp Cloud Volumes ONTAP offers multiple features that help organizations lower cloud costs by storing data efficiently. Features that minimize the overall cloud storage required include data compression, data compaction, and volume deduplication. Storage tiering brings cost efficiencies by automatically moving inactive data to lower-cost storage tiers. CVO also helps organizations reduce expenses by providing visibility into cloud resource costs. For example, organizations can integrate cloud monitoring applications like AWS Cost Explorer with CVO to track cloud resource consumption. Administrators can also identify and track expenditures by different applications or departments. Monitoring cloud costs as they occur helps enterprises avoid surprise invoices.

*Enterprises deploy Panzura nodes as virtual machines on the hypervisor of choice with the ability to scale up to and beyond 100 nodes.*

### Panzura CloudFS

Panzura CloudFS simplifies the management of unstructured data and files for complex enterprises. Panzura does this through patented cloud-native technology that supports both on-premises and hybrid cloud use. With CloudFS, enterprises leverage a single, authoritative data set held in a private or public cloud and organized into a global file system. A global namespace provides a unified view of these file resources. The result is a centralized file services platform well-suited for cloud-based NAS consolidation, global file collaboration, active archiving, and disaster recovery.

Notable features that helped earn Panzura a DCIG TOP 5 award include:

**Intelligent caching and synchronization.** Local Panzura nodes deliver fast file access through intelligently cached data. Enterprises deploy Panzura nodes as virtual machines on the hypervisor of choice with the ability to scale up to and beyond 100 nodes. To reduce the total storage footprint and file transfer times, Panzura deduplicates and compresses data and only transmits deltas for cloud storage. Low latent synchronization means that at 60-second intervals, CloudFS synchronizes globally, across all nodes, new and changed data and metadata. CloudFS also integrates with the Panzura Edge Access app, where users can access files directly from their smart device or web browser.

**Highly available.** Locally, enterprises can deploy another Panzura node as a failover VM should a single node fail. Globally, organizations can deploy a Panzura node in their private or public cloud. For a site outage, CloudFS reroutes traffic to this cloud-based node. IT departments can eliminate the risk of a cloud provider outage through cloud mirroring where failover occurs to a secondary cloud during a primary cloud outage. Cloud mirroring also ensures the mirroring of snapshot data, further enhancing resiliency.

**Ransomware resiliency.** Panzura CloudFS encrypts data both in transit and at rest with AES-256 bit encryption. Further, CloudFS applies immutability to cloud-stored data. With immutability, ransomware cannot change stored data. CloudFS writes file changes as new, immutable stored data blocks and takes frequent immutable snapshots reflecting all changes. Should a ransomware attack occur, administrators can leverage the most recent snapshot to quickly recover files, folders, or even entire file systems. This enables organizations to quickly resume normal business operations.

**Administration and compliance ease.** Panzura Data Services (PDS) provides a single, unified view of the global file network. With PDS, administrators can search, audit, analyze, monitor, and report on all file data. PDS storage metrics present consumption, active users, and frequently accessed files. Organizations can also monitor health metrics such as data movement, and cloud connectivity. This global visibility helps organizations effectively manage their growing data while demonstrating regulatory compliance.

*With Zadara, businesses can step out of the multi-year planning, budget, and Capex procurement cycles along with the responsibilities of managing ongoing storage infrastructure.*

### Zadara zStorage

Zadara's patented Virtual Private Storage Array (VPSA) combines the power of enterprise-class storage with the convenience of the cloud. Zadara makes VPSA available via a Storage-as-a-Service (STaaS) model and is a DCIG TOP 5 STaaS provider. Enterprises may deploy Zadara VPSA within a cloud-based, hybrid cloud, or on-premises private cloud storage solution. Whatever the deployment scenario, Zadara provides an extensive set of enterprise-class file storage features, 24x7x365 proactive monitoring, a 100% uptime guarantee, and simple pay-per-use billing.

Notable features that helped Zadara earn a DCIG TOP 5 award include:

**Consumption-based pricing.** With Zadara, businesses can step out of the multi-year planning, budget, and Capex procurement cycles along with the responsibilities of managing ongoing storage infrastructure. Zadara VPSA provides a consistent experience to end users and applications because of tunable dedicated resources. These resources include the mix of drive media, RAID level, and IO engine. Infrastructure managers can expand or shrink these resources as business needs require while only paying for the storage they use. Zadara manages all maintenance, monitoring, and updates while non-disruptively replacing hardware and software components over time. Additionally, enterprises can expand their Zadara storage solution with Zadara's zCompute or zNetwork services.

**zStorage Cloud.** Built from the ground up for public cloud deployments, Zadara storage consists of co-located and near-co-located facilities interconnected with public cloud providers throughout the world. The Zadara storage infrastructure consists of its own storage stack consisting of proprietary software and open source components. Co-location provides low-latency access, and Zadara's interconnection with cloud providers opens expanded possibilities for multi-cloud architectures. Zadara provides free data transfer between Zadara locations. The storage architecture Zadara deploys with cloud providers is the same storage architecture it deploys on-premises in private data centers.

**Scalable multi-tenant platform.** Enterprises and cloud providers can leverage Zadara for scalable storage consolidation on Zadara-certified storage hardware. VPSA scales out to hundreds of nodes and thousands of drives for multi-petabyte storage. Complementing its scalable capacity, VPSA's support for SMB, NFS, object, and block storage protocols enables the platform to consolidate a wide range of workloads. Zadara VPSA multi-tenancy features include both logical and physical separation. Administrators can dedicate storage devices and CPUs to specific tenants or departments. Service providers and their tenants can centrally oversee their file estate through VPSA's dashboard. Technology buyers will also find that VPSA integrates a full set of data protection and security features, including encryption, MFA, RBAC, replication, snapshots, and mirroring. Zadara's Backup to Object (B2O) and Remote Clone capabilities facilitate recovery from ransomware incidents.

### Inclusion and Evaluation Criteria for DCIG TOP 5 Enterprise Cloud-based NAS Consolidation Solutions

In this report, DCIG specifically focused on SDS-based solutions possessing the following characteristics. DCIG identified thirty-one different solutions meeting these inclusion criteria:

- Commercially available as of October 1st, 2023.
- Sufficient, publicly available information available for DCIG to make an informed decision.
- The solution must support file protocols either natively or via provider-supported gateway.
- The solution must be available as software-defined storage (SDS) software-only product that can be installed on hardware from multiple OEMs, or as a VM, or deployed in the cloud.
- The product may also be available as a pre-integrated software and hardware appliance from the solution provider.

To arrive at the DCIG TOP 5 solutions included in this report, DCIG went through a seven-step process to come to the most objective conclusions possible.

1. DCIG established which features would be evaluated.
2. The features were grouped into five general categories.
3. DCIG identified solutions that met DCIG's definition of an SDS product.
4. A survey was created and completed for each solution. Vendors were given the opportunity to review and complete the survey.
5. DCIG weighted each feature to establish a scoring rubric.
6. DCIG evaluated each solution based on information gathered in its survey.
7. DCIG ranked the solutions using standard scoring techniques.

DCIG evaluated each of these solutions in the following areas:

- **Deployment capabilities.** Evaluated the capabilities concerning on-premises deployment options, cloud provider deployment options, cloud provider targets supported, storage protocols supported, virtual environments supported, and self-certifications of equipment, operating systems, and applications.
- **Data protection capabilities.** Evaluated solution capabilities supporting availability, encryption, replication, and snapshot features.
- **Product and performance management features.** Evaluated options to manage the underlying hardware and optimize it for performance. Examples include dashboard views, predictive analytics, storage optimization, quality of service features, auto-tiering capabilities, and directory service integration.
- **Technical support.** Evaluated the availability and technical support options of the solution provider. Examples include self-service documentation, support availability, response time commitments, options to open cases, escalation support, and proactive problem resolution.
- **Licensing and pricing.** Evaluated the relative ease of doing business through flexibility and simplicity in contract lengths, pricing elements, and bundled pricing options.

## Enterprise Cloud-based NAS Consolidation Solutions

Vendors of some of the solutions covered in this DCIG TOP 5 report are or have been DCIG clients. In that vein, there are some important facts to keep in mind when considering the information contained in this TOP 5 report and its merit.

- All research was based upon publicly available information, information provided by the vendors, and/or the expertise of those evaluating the information.
- No vendor paid DCIG any fee to research this topic, to include its solutions in DCIG's research, or arrive at predetermined conclusions.
- DCIG did not guarantee any vendor that its solution would receive a DCIG TOP 5 designation.
- No vendor was privy to how DCIG weighted individual features. In every case, the vendor only found out the rankings of its solution after the analysis was complete.
- DCIG conducted no hands-on testing to validate how or if the features worked as described.
- No negative inferences should be drawn against any vendor or solution not covered in this DCIG TOP 5 report.
- It is a misuse of this DCIG TOP 5 report to compare solutions included in this report against solutions not included in it. ■

### Sources referenced October 2023

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### About DCIG

The Data Center Intelligence Group (DCIG) empowers the IT industry with actionable analysis. DCIG analysts provide informed third-party analysis of various cloud, data protection, and data storage technologies. DCIG independently develops licensed content in the form of DCIG TOP 5 Reports and Solution Profiles. Please visit [www.dcig.com](http://www.dcig.com).



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