Cool Vendors in Storage and Backup and Recovery

The continuous growth of unstructured data, the adoption of new workloads and the increased need for cloud data protection are challenges for infrastructure and operations leaders. I&O leaders need to continuously evaluate new vendors that use innovative approaches to address these challenges.

Overview

Key Findings

- The need to support, implement and protect cloud infrastructure poses new challenges and opportunities for infrastructure and operations leaders.

- Emerging workloads use artificial intelligence, machine learning, big data and high-performance computing, which require large-scale object and file deployments that introduce greater complexity into data center infrastructures.

- New vendors are entering the market with innovative approaches to protect cloud environments, consolidate large file and object storage environments and centralize global storage for remote access.

Recommendations

I&O leaders responsible for data center infrastructure must:

- Adopt a holistic approach to cloud infrastructure protection and recovery by broadening their focus to emphasize recovery of an entire application and cloud services environment.

- Increase large-scale file and object storage by evaluating new approaches in storage and data protection that reduce costs, simplify operations and provide new scale-out capabilities.

- Improve global file access by implementing solutions that enable access and consolidation of global file services across the WAN as a new approach to WAN acceleration or file replication.

Analysis

This research does not constitute an exhaustive list of vendors in any given technology area, but rather is designed to highlight interesting, new and innovative vendors, products and services. Gartner disclaims all warranties, express or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose.

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What You Need to Know

The storage and data protection market is continuously evolving to address new and existing challenges in enterprise IT, including:

- Exponential data growth

- Hybrid cloud adoption

- Edge data centers

- Cloud migration and application development

- Adoption of containerized ecosystems

Infrastructure and operations (I&O) leaders must face these challenges in ways that reduce costs, while enabling business innovation at scale.

Gartner client inquiries and the 2020 Magic Quadrant for Distributed File Systems and Object Storage vendor surveys indicate storage infrastructure based on distributed file systems and object storage is growing rapidly, in terms of the number and capacity of deployments. These systems are becoming the platforms of choice to address the growth of unstructured data across on-premises and cloud environments, as organizations demand scalability, flexibility, availability, automation and programmability.

I&O leaders are seeking extensible on-premises and cloud-based storage products to address and support an increasing number of digital business use cases. They must continuously implement solutions that reduce acquisition, operational and management costs, while optimizing enterprise functionality. I&O leaders are exploring the capabilities of cloudlike pricing models for on-premises and hybrid infrastructure solutions.

I&O leaders must also meet increasingly demanding recovery point objective (RPO) and recovery time objective (RTO) requirements for cloud workloads. Customers expect all applications and data to be available at any time or location.

The cool vendors in this research enable I&O leaders to address the following critical needs:

- **Enhance the quality and experience of cloud application backup and recovery.** As organizations migrate many applications to the cloud and develop new applications in the cloud, vendors such as Appranix enable an innovative approach to recovering cloud environments.

- **Simplify management and cost-effective deployment of large-scale file and object storage environments.** Vendors such as VAST Data simplify the management of exabyte-scale file and object storage deployments, while reducing costs across flash environments.

- **Improve centralized data access for file storage-intensive applications across the WAN.** Vendors such as Vcinity enable remote data access across the globe. This is especially valuable for data-intensive applications that traditionally require remote copy and distribution of data to solve performance and latency issues.

Appranix

Boston, Massachusetts, U.S. (www.appranix.com)

Analysis by Jerry Rozeman

Why Cool: Appranix provides resiliency for cloud-native applications by consistently capturing and protecting the entire environment. This includes applications and data, as well as namespaces; Kubernetes environments; cloud infrastructure, including virtual machines (VMs), networks, load balancers and cloud domain name systems (DNSs); storage configurations; data stores; and identity and access management (IAM). Appranix provides intelligent mapping and detection of all elements in a cloud environment, enabling I&O leaders to recover entire environments or granular elements in production. In addition, Appranix can reproduce the entire environment as a secondary cloud environment for test and development or for disaster recovery purposes. Appranix differentiates itself by using an infrastructure-as-code mechanism to capture, detect, protect and recover the cloud infrastructure environment, the application, and its associated data. Appranix can be deployed from several marketplaces or customers can create an account directly under their SaaS offering.

Challenges: Appranix is available only as a SaaS service from Amazon Web Services (AWS) or Google marketplace or under Red Hat in the container catalog lacking support for Microsoft Azure. Although Appranix offers cross or multicloud recovery for container applications running on K8s, EKS or GKE, it does not offer multicloud recovery or mobility for VMs. Appranix does not provide protection for SaaS-based services (e.g., Office 365) or physical and on-premises environments.

Who Should Care: Backup administrators, cloud application migration teams and data security teams (or people responsible for application and data protection, governance or resilience for cloud-based environments) should consider evaluating Appranix. Secondary cloud application developers focusing on container- and microservices-based architectures should also consider evaluating Appranix. In addition, I&O teams that are looking for new approaches to accelerate and simplify data protection for cloud-based environments should evaluate Appranix.

VAST Data

New York, New York, U.S. (www.vastdata.com)

Analysis by Julia Palmer

Why Cool: I&O teams are pressured to address the unprecedented growth of unstructured data (file and object) with limited data center resources and budgets, while accommodating a wide variety of existing and emerging workloads. VAST Data has developed its unstructured data storage solution, based on an innovative, "disaggregated and shared-everything" topology. This approach enables independent scaling of data processing and storage capacity. Thus, it provides I&O leaders with the ultimate disaggregated scalability.

To optimize price and performance, the VAST Data cluster was designed for nonvolatile memory express over fabrics (NVMe-oF)-powered, low-latency networking that leverages the latest NVMe protocol capabilities. The VAST Data cluster consists of stateless, front-end VAST, containerized server nodes (responsible for data-intensive operations and services) and NVMe back-end controllers. NVMe VAST Storage enclosures are outfitted with Storage Class Memory (SCM) 3D XPoint SSDs for performance-sensitive data and metadata operations and cost-effective quad-level cell (QLC) flash for persistent storage.

VAST Data servers serve file and object protocol requests from network file system (NFS) v3 — including NFS over remote direct memory access (RDMA) — simple storage service (S3) and server message block (SMB) clients. In addition, the vendor announced support for NVIDIA GPUDirect technology to accelerate path to transfer data between GPU memory and NVMe storage devices. All VAST servers in a cluster mount the storage devices in the cluster via NVMe-oF. The shared-everything approach allows all the data and metadata, across all enclosures, to be globally accessible by all VAST stateless servers. In addition, VAST introduced Global Similarity Data Reduction. This promises to bring the highest efficiency for QLC-based consolidation platform and to eliminate the need for storage tiering. These features enable I&O leaders to achieve global hyperscalelike high availability, efficiency and linear-scale data services.

Challenges: Despite its differentiated approach, VAST Data will face difficulties gaining widespread market adoption and scaling its business globally during the next few years. The VAST Data platform may struggle to attract mainstream enterprise users, because most of its unstructured data workloads will not benefit from the extremely high performance of the VAST Data platform. I&O leaders might find it challenging to justify the investment in the new, consolidated platform. In addition, the product is designed for multi-petabyte-scale, single data center deployments and does not offer edge or hybrid cloud capabilities and data services. Thus, the product only applies to a small subset of unstructured data needs. I&O leaders might also be concerned with its lack of enterprise-grade features, its limited ecosystem qualifications and its lack of global support beyond North America.

Who Should Care: VAST Data will appeal to I&O leaders in the public, enterprise and service provider sectors. Those seeking to consolidate storage for unstructured data workloads with a single data platform (including workloads that require low latency and high throughput) should investigate VAST Data for its ability to be "tuned for everything." I&O leaders who are building IT

services for unstructured data applications will find that VAST Data addresses their needs for distributed file systems and object storage. Its platform uses a consolidated design that enables greater scale and efficiency, compared with other all-flash, unstructured storage platforms.

Vcinity

San Jose, California, U.S. (vcinity.io/)

Analysis by Julia Palmer

Why Cool: As data becomes increasingly dispersed between data centers, public clouds and the edge location, storage technologies must enable remote data access at local speeds. Vcinity Ultimate X (ULT X) is a networking acceleration solution with a built-in distributed file system (IBM Spectrum Scale or Luster). It can be deployed across a WAN, such as endpoint network-attached storage (NAS) devices presenting Network File System (NFS) and SMB shares locally. This occurs without actually copying the data. The Vcinity RDMA over WAN solutions removes layers of the Transmission Control Protocol/Internet Protocol (TCP/IP) stack and enables accelerated access to remote file datasets with locallike latency. It provides a highly efficient data access mechanism without downloading, copying or caching data and without high-latency file transfers. Although Vcinity is not sharing many details about the core intellectual property of its product, we assume the solution leverages port buffering, advanced flow control and data parallelization. This can result in significant performance improvement for file replication across the WAN. Vcinity is available as ULT X hardware appliances and as a software-only version, enabling it to run on commercially available servers, VMs and public cloud environments.

Challenges: Vcinity joins the crowded market of unstructured data solutions by both competing and complementing established file data services products. Although Vcinity's architecture is innovative, it is only valuable to I&O leaders who don't want to continue to, or cannot colocate data and application services in the same location. Its solution addresses access problems only for large file datasets. In addition, I&O leaders must demonstrate clear business outcomes and ROI when proposing enhancements to its existing file services solution and data transfer methods with Vcinity. Although Vcinity's acceleration technology provides clear market value for the emerging hybrid cloud workloads, the company must increase partnerships, marketing and sales presence to reach its target audience.

Who Should Care: I&O leaders who require faster access to files across geographically distributed locations will find Vcinity's offering to be beneficial. Cloud architects tasked with designing global file services (across edge, cloud and data center locations) that enable collaborative, data-intensive, latency-sensitive, file-based workloads will benefit from its real-time access to shared file systems over a long-haul network. Vcinity will appeal to many global enterprise market segments that leverage emerging workloads, such as media and entertainment, service providers, financial services, oil and gas, research, and government.

Evidence

Vendor surveys from the 2020 Magic Quadrant for Distributed File Systems and Object Storage.

Gartner has fielded more than 6,000 inquiries about storage and backup and recovery vendors in 2020.

Recommended by the Authors

2020 Strategic Roadmap for Storage

Hype Cycle for Storage and Data Protection Technologies, 2020

Magic Quadrant for Data Center Backup and Recovery Solutions

Critical Capabilities for Data Center Backup and Recovery Solutions

16 Tips to Enhance Your IT Disaster Recovery Program

How to Reduce Backup and Recovery Software Costs — Now and in the Future

Recommended For You

サービスとしてのディザスタ・リカバリのマーケット・ガイド

The Agile Supply Chain Imperative: Empowering Agile and Self-Forming Teams

Ask These Four Questions About Enterprise 5G

Facilitating Collaborative Goal Setting

Market Guide for Intranet Packaged Solutions

Supporting Initiatives

Data Center Infrastructure

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