Magic Quadrant for Primary Storage Platforms

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Primary storage users are embracing platform-native service capabilities for hybrid IT operations. I&O leaders should use this research to plan and execute a modern and resilient storage infrastructure platform for mission-critical applications.

Strategic Planning Assumptions

By 2027, consumption-based platform SLA guarantees will replace over 50% of product feature requirements in storage selection decisions, up from less than 5% in 2024.

By 2028, consumption-based storage as a service (STaaS) will replace over 33% of enterprise storage capital expenditure (capex), up from less than 15% in 2024.

By 2028, more than two-thirds of critical application primary storage infrastructure will employ cyber liability detection and protection capabilities, up from less than 5% in 2024.

Market Definition/Description

The primary storage platform (PSP) market addresses the need of I&O leaders to operate and support standardized enterprise storage products, along with platform-native service capabilities to support structured data applications. PSP products like primary enterprise storage arrays provide mandatory and common enterprise-class primary storage features and capabilities needed to support the platform. Platform-native services like storage as a service (STaaS) and ransomware protection, with PSP product capabilities, are required to support platform-native services. The PSP market has emerged at the convergence of two major enterprise storage market developments: the evolution of the PSP product market in conjunction with the demand for hybrid, multidomain platform-native storage services, extending on-premises services to public cloud, edge and colocation environments.

PSP products' foremost purpose is to support platform-native service capabilities and response time and input/output operations per second (IOPS)-sensitive structured data workloads. The storage operating system is the foundation for innovation and a path to a software-defined storage (SDS) architecture that enables hybrid platform services. SDS software abstracts and repurposes the vendor-owned storage operating system, storage management tools and AIOps capabilities from the vendors' proprietary hardware platform. This allows for improved flexibility in use with third-party infrastructure across one or more infrastructure domains (e.g., public cloud, edge domain locations).

SDS can operate on industry-standard hardware and hypervisors across different infrastructure domains with equal, and no less, or better capabilities to the vendors' on-premises external controller-based array functionality. AIOps-enabled SLA-based life cycle management and support outcomes are also offered with tangible and measurable guarantees by using storage-based telemetry tools and automation. Platform-native SLA-based operations and the vendors' API-centric centralized control plane are used for automated infrastructure management, as defined in **Market Guide for Infrastructure Consumption Services**.

Platform-native as-a-service offerings include data and storage management services such as ransomware protection. They also include the syndication and integration of in-house or third-party independent software vendor (ISV) products as part of their managed service offerings. PSP products and platform services are available in traditional capital expenditure (capex), subscription and consumption pay-for-use licensing.

PSP use cases include mission- and business-critical database workloads such as IBM Db2; Microsoft SQL; Microsoft Exchange and SharePoint; Oracle applications, including SAP HANA; payment systems; healthcare systems such as Epic; and in-house-developed transactional applications. Other use cases include application consolidation; support for virtual environments, hosted and/or managed virtual desktop infrastructure environments; support for persistent and protected storage for container environments; and hybrid platform-native IT operations that include or span on-premises, colocation, edge and public cloud infrastructure.

Mandatory Features

The mandatory features of the primary storage with platform services market include support for:

- Block-based STaaS offering available as a managed service or in conjunction with the end-user client as IT self-managed offering.
- AIOps for threshold-based operational monitoring and observability to support proactive actions and infrastructure health. AIOps functionality is integrated with the vendor's customer support capabilities, including digital analytics tools and problem resolution, capacity management, nondisruptive

workload simulation, placement and migration, asset utilization costs optimization, performance optimization, and both full and cross-stack observability and reporting.

- SDS architecture that separates the vendor's storage hardware from the storage operating software that manages the storage system and adjoining infrastructure. The SDS product supports on-premises storage and is integrated to a minimum of one hyperscale cloud platform server, storage or networking hardware to like or similar functionality and capabilities, as found in its on-premises appliance solution and integrated with vendor AIOps functionality. This allows customers to keep their data in the same vendor operating environment while providing portability between on-premises and adjacent multidomain infrastructure.

- Cyberstorage data resilience and protection capabilities that follows the NIST Cybersecurity Framework (CSF) for ransomware Identify, protect, detect, respond and recover capabilities. NIST CSF 2.0 includes additional changes and functions, including a sixth pillar: govern.

Common Features

The common features of the primary storage with platform services market include support for:

- Advanced AIOps real-time event streaming capabilities in support of monitored SLA threshold conditions that require automated, system-level (for example, nonhuman intervention) responses/actions to critical IT operational situations, such as cyberliability resilience, continuous cost optimization and productivity improvements

- Multiprotocol, disaggregated storage-compute architecture that supports online asymmetrical elastic scaling of capacity and compute, independent of each other, with elastic (increase or decrease) linear performance from a small number of compute and storage nodes to hundreds or thousands of storage and/or compute nodes without operational disruption

- Carbon dioxide emissions measurement and reporting capabilities, as measured by total kilograms of CO_2 per terabyte (kg CO_2/TB)

- Special-purpose or customized NVMe SSD products (captive NVMe SSD) for enhanced performance, endurance, management or other enhanced storage capabilities and data services

- Nondisruptive migration service of data from current array to future array with a 100% data availability guarantee

Magic Quadrant

Figure 1: Magic Quadrant for Primary Storage Platforms

Vendor Strengths and Cautions

Dell Technologies

Dell Technologies is a Leader in this Magic Quadrant. Its storage portfolio consists largely of PowerMax, PowerStore and PowerFlex SDS products, addressing midsize to high-end enterprise needs. PowerFlex is a scale-out offering for on-premises and hybrid cloud, including Amazon Web Services (AWS) and Microsoft Azure, branded as APEX Block Storage. Dell APEX Subscriptions offer block, file and data protection STaaS and are paired with data services such as ransomware protection. Dell APEX Navigator provides multicloud management and orchestration across public clouds and on-premises. The vendor's operations are geographically diversified, targeting high-end to midsize enterprise markets. During the last 12 months, Dell Technologies

offered a new 5:1 data reduction guarantee for PowerMax and PowerStore, a new PowerStore 3200Q product with a QLC NVMe solid-state drive (SSD) and usage monitoring.

Strengths

- Backed by its Future-Proof Program, Dell Technologies offers customers a leading 5:1 data reduction SLA guarantee for its PowerMax and PowerStore products.
- The vendor simplifies platform backup and restore by integrating its PowerMax and PowerStore offerings with PowerProtect Data Domain, providing customers with simplified platform deployment and a versatile multidomain data service capability.
- APEX Navigator provides a multicloud orchestration and provisioning capability that simplifies infrastructure platform management across on-premises and AWS public cloud.

Cautions

- Dell Technologies does not offer a single storage operating system that works across midrange, high-end and public cloud. This creates data management and platform complexity along with flexibility limitations to changing workload requirements.
- The vendor lacks IT operating model platform SLA guarantees, as compared to other vendors evaluated in this research that offer SLAs for ransomware detection, power consumption and energy efficiency.
- Dell Technologies' flash SSD support for its midrange and high-end enterprise products only scales to 30.6TB drives and has no offload engine functionality. In comparison, some competitors offer 60TB and 75TB drives with better power, space and cooling efficiencies, and data services assist capabilities.

Hitachi Vantara

Hitachi Vantara is a Challenger in this Magic Quadrant. Its storage portfolio consists of Hitachi VSP One Block and midrange appliances and its SDS offerings of VSP One SDS Block software for use on-premises or in AWS. Hitachi EverFlex is an IaaS managed STaaS consumption solution. Hitachi Vantara's operations are geographically diversified, with global enterprise clients in open systems and mainframe markets. Over the past 12 months, the vendor restructured its operations to focus exclusively on data platforms and data services It introduced 100Gb NVMe/TCP and 64Gb FC, advanced safe snap for ransomware protection, a compression accelerator module for a 4:1 data reduction guarantee, and a dynamic carbon reduction feature that proactively reduces power consumption based on utilization.

Strengths

- The vendor offers a sustainability SLA guarantee through its Hitachi Modern Storage Assurance program. It allows customers to upgrade to the next-generation Hitachi solution within five years of installation to support 30% to 40% carbon emission reduction objectives.
- Hitachi Vantara has enhanced its EverFlex consumption-based portfolio of services by simplifying customer onboarding to its managed subscription business.
- Its control plane, EverFlex Control, divides its functionality into modular components that focus on different aspects of IT operations, allowing customers to tailor benefits to platform needs.

Cautions

- Hitachi Vantara lags behind PSP competitors in offering a robust ransomware detection SLA guarantee.
- The vendor does not offer an on-premises SDS system that separates compute and storage resources, which prevents compute and capacity resources from independently scaling cost-effectively.
- Hitachi Vantara lags behind competitors in offering a cost-performant QLC SSD drive in lieu of hybrid hard-disk drive (HDD) systems for use in lowering backup and disaster recovery site costs.

HPE

Hewlett Packard Enterprise (HPE) is a Leader in this Magic Quadrant. HPE's portfolio includes the NVMe all-flash HPE GreenLake for Block Storage built on HPE Alletra Storage MP, HPE Alletra 9000 for mission-critical applications, and HPE Alletra 6000 and HPE Alletra 5000 for business-critical and general-purpose applications. HPE's operations are geographically diversified and most of its clients tend to be in small to midsize enterprise markets. In the past 12 months, HPE restructured its storage business into its HPE Hybrid Cloud business unit. It updated HPE GreenLake Private Cloud Business Edition to support its SDS disaggregated scale-out solution, HPE GreenLake for Block Storage. Additional enhancements include new OpsRamp capabilities for the vendor's AIOps platform.

Strengths

- HPE's four-node 32-core CPU Alletra MP SDS disaggregated architecture allows customers to cost-effectively scale platform capacity and performance independent of each other, with a 100% data availability guarantee.
- HPE GreenLake for Block Storage (built on HPE Alletra Storage MP) customers can run the same storage software on-premises and in AWS, benefiting from storage standardization that simplifies data management and hybrid platform services.

- The HPE what-if workload simulation provides customers with fleetwide workload placement recommendations based on performance and available platform capacity.

Cautions

- The vendor lags behind competitors in offering a sustainability and cyber ransomware SLA guarantee.
- HPE's flash SSD support for its products only scales to 30.6TB NVMe drives, with no offload engine functionality to support platform requirements, compared to the 60TB and 75TB drives offered by competitors, with better power, space and cooling efficiencies and data assist capabilities.
- Some confusion is possible as to which product is best for certain workloads as HPE transitions and consolidates its storage portfolio to the HPE GreenLake for Block Storage built on HPE Alletra Storage MP product.

Huawei

Huawei is a Challenger in this Magic Quadrant. Its product portfolio includes the all-flash and hybrid OceanStor Dorado series, SDS OceanStor Pacific series and Huawei Cloud Stack (HCS) Elastic Volume Service (EVS) for STaaS. Huawei mainly operates in China, Latin America, Europe, the Middle East and Africa, and its clients tend to be in large enterprises, telecommunications and public clouds in China. Huawei is restricted from selling in North America. The vendor's products target a range of entry-level to high-end storage use cases. In the past 12 months, Huawei released two new high-capacity QLC SSD arrays, OceanStor 5310 and 5510; multilayer ransomware protection; and a knowledge-based AI assistant developed on the Huawei Pangu Weather AI model.

Strengths

- Huawei Multilayer Ransomware Protection offers a 99.99% detection rate on known variants by employing a collaborative network storage approach to reduce cyberthreats.
- Huawei provides a 100% data availability guarantee and a 5:1 effective capacity guarantee for its all-flash array products that are active for three years from date of warranty.
- Huawei's captive NVMe SSD FlashLink technology enables rapid introduction of higher drive capacities and, with ASIC-based offload engine functionality, supports improved performance, resilience and extended flash life.

Cautions

- Huawei is restricted from distributing in North America and, as a result, does not provide an SDS multicloud scale-out hybrid platform solution for AWS, Azure and Google Cloud Platform.
- The vendor's customer concentration and limited business exposure outside of its two primary vertical industries create a potential risk to ongoing operations, support and product availability in the event of an industry or local economic downturn.
- Multiple Huawei STaaS offerings and licensing options can be overly complex and confusing, depending on whether Huawei Cloud Stack or ElasEver is promoted by its sales teams.

IBM

IBM is a Leader in this Magic Quadrant. The IBM FlashSystem line includes the 5300, 7300 and 9500 products. All systems include the IBM custom NVMe SSD FlashCore Modules (FCM), which accelerate performance by offloading storage functionality, such as cyberthreat detection, to the flash device. IBM Storage Virtualize is the common storage controller software across the portfolio and is available on AWS and Azure. The IBM DS8900F is focused on the IBM mainframe storage infrastructure. All models are offered as STaaS. The vendor has global reach and positions its products from entry level to very large enterprises. During the last 12 months, IBM introduced the latest FCM4 for cyberthreat detection, VMware vSphere Virtual Volumes (vVols) with policy-based replication, and Flash Grid for workload partitioning and mobility.

Strengths

- The IBM Storage Assurance consumption program provides flat subscription pricing that includes life cycle managed technology upgrades, along with a performance guarantee.
- IBM's Flash Grid workload mobility, partitioning and nondisruptive migration solution guarantee provides efficient asset management and continuous workload optimization across platform requirements.
- The vendor offers an energy-efficiency guarantee based on wattage per raw terabyte and the ability to continuously monitor throughout the workload life cycle.

Cautions

- IBM does not offer a capacity-optimized QLC-based array that is priced to compete against hybrid HDD arrays.
- The vendor does not offer file service support on any of its block storage products.
- IBM does not offer an on-premises FlashSystem that separates compute and storage resources.

IEIT SYSTEMS

IEIT SYSTEMS is a Niche Player in this Magic Quadrant. IEIT SYSTEMS has a broad portfolio of entry-level to high-end storage products, including the midrange AS5300/AS5500G5 and high-end NVMe all-flash array HF18000G5. The vendor's operations are largely concentrated in China, with most of its revenue generated in-country. Its clients are mainly in the midmarket enterprise and SMB market segments. In the past 12 months, IEIT SYSTEMS introduced a four-controller hardware design, scaling up to 48 controllers. It also developed and released its own 61TB QLC NVMe SSD drive that doubles the node capacity. In addition, the vendor's new ransomware recovery solution prevents deletion before the policy-based expiration period is reached.

Strengths

- IEIT SYSTEMS' unique chassis and four-controller frame design with autonomous load balancing is unique among competitors, allowing customers to linearly scale up to 48 controllers in a highly resilient and performant-guarantee manner.
- The vendor's in-line I/O antiransomware service identifies infected objects and can automatically roll them back through snapshots to minimize the impact of ransomware.
- IEIT SYSTEMS' Infinistor AIOps tool provides performance workload planning and simulation, enabling customers to continuously optimize their environment.

Cautions

- IEIT SYSTEMS is relatively unknown outside the China market, where most of its customers are based, making it difficult for global storage enterprise customers to justify choosing the vendor over established global brands.
- IEIT SYSTEMS lags behind competitors in offering a multidomain platform strategy for use in major global public clouds, limiting its consideration as a viable option for expanded hybrid data center deployments.
- The vendor lags behind competitors in integrating and offering an ecosystem of market-leading independent software providers, such as ransomware recovery and autorecovery, as part of a platform data services strategy.

Infinidat

Infinidat is a Challenger in this Magic Quadrant. Its two primary products, InfiniBox and InfiniBox SSA G4, are based on its common InfuzeOS and Neural Cache architecture. InfuzeOS enables hybrid multicloud platform capabilities based on the vendor's InfuzeOS Cloud Edition SDS product for use in AWS and Azure environments. Infinidat is a private company focused primarily on large enterprises and service providers in North America, EMEA, and the Asia/Pacific and Japan region. In the last 12 months, updates include Mobius life cycle management for controller upgrade, enhancements to its InfiniVerse AIOps tool, a new InfiniSafe Cyber Detection offering for VMware environments, and new Automated Cyber Protection solutions. Additionally, SSA Express enables clients to nondisruptively enable a fully integrated all-flash SSA in the InfiniBox hybrid platform. Infinidat also announced its F1400T enterprise SSA all-flash platform starting at 155TB of usable storage.

Strengths

- Infinidat is a well-established storage brand in the service provider and very high-end global enterprise market, where its multi-dozen-petabyte capacity typically supports consolidation of several applications onto a single system. It is also known for its high-quality service and support.
- The Infinidat SSA Express solution provides clients with additional capabilities, such as consolidating multiple smaller, point product flash array requirements into a single cost-effective InfiniBox hybrid array with all-flash SSA capabilities.
- The vendor's subscription-based InfiniSafe Cyber Detection for VMware provides a 99.99% guarantee for recovery in less than one minute, regardless of data size, from immutable snapshots after a cyberattack.

Cautions

- Infinidat lacks a midrange product making it difficult for customers to justify choosing it as a single supplier for their storage platform environment.
- Infinidat's InfuzeOS is based on an on-premises three-node, active-active-active controller architecture, limiting the SDS InfuzeOS Cloud Edition version to a single-node architecture for use in AWS and Azure public clouds.
- Infinidat's flash SSD support is limited to 15TB drives, compared to market leaders that offer 30TB, 60TB and 75TB drives and have better power, space and cooling efficiencies.

NetApp

NetApp is a Leader in this Magic Quadrant. Its products include AFF A-Series, AFF C-Series, ASA A-Series, ASA C-Series, FAS storage arrays, E-Series, EF-Series and the ONTAP Select (CVO) SDS offering. The NetApp Hybrid Cloud business segment supports a range of on-premises and cloud customers, from midsize to large global enterprise clients. During the last 12 months, NetApp expanded ONTAP availability and data protection with the BlueXP disaster recovery service. Its BlueXP classification service classifies data based on metadata or actual data content parameters for governance and compliance, and the BlueXP backup and recovery service provides data protection for either on-premises or cloud targets, without the need to deploy backup software or hardware. ONTAP Select was expanded from eight to 16 nodes on VMware ESXi, along with support for VMware ESXi 8.0.2, KVM hypervisor and NVMe/TCP.

Strengths

- NetApp offers a Ransomware Recovery Guarantee to recover the immutable backup snapshot for its file/unified (AFF) and block (ASA) products. The NetApp Ransomware Recovery Assurance Service is required at the time of system purchase to activate this guarantee.

- NetApp simplifies IT operations data center activities by expanding its Keystone strategy with an Equinix Metal service offering. It bundles space, power, cooling and full-stack infrastructure elements, as well as a performance guarantee.
- The vendor's BlueXP control plane sustainability dashboard enables customers to monitor, report and take action on sustainability insights in order to manage energy consumption and carbon emissions.

Cautions

- NetApp does not offer a competitive ransomware detection SLA guarantee, notwithstanding its ransomware recovery guarantee, for block storage platform applications.
- NetApp's flash SSD support for its ASA and AFF series of products only scales to 30.6TB drives, compared to the 60TB and 75TB drives offered by competitors with better power, space and cooling efficiencies.
- NetApp does not offer an on-premises SDS system that separates compute and storage resources, which prevents compute and capacity resources from independently scaling cost-effectively.

Pure Storage

Pure Storage is a Leader in this Magic Quadrant. Its arrays include the FlashArray family (//X, //XL, //C, //E and //ST), spanning a range of price/performance workloads. Its multicloud SDS Cloud Block Store is available on AWS and Azure. The Evergreen//One platform provides STaaS subscriptions, including a new AI assistant, Evergreen//One for AI and DRaaS. Pure Storage targets small to very large enterprise customers, mostly in North America, Europe, and select Asia/Pacific and Latin American countries. In the last 12 months, the vendor added a 75TB QLC direct flash module (DFM) and 36.6 TB TLC DFMs to further improve storage energy efficiency and rack space. New AIOps-enabled Pure1 SLAs include power, energy efficiency and space, cyber recovery and resilience, and zero data loss guarantees.

Strengths

- Leveraging Pure1, Pure Storage takes a proactive SLA approach to its managed STaaS Evergreen//One subscriptions by offering customers meaningful platform guarantees that provide favorable IT operations' benefits.
- Pure Fusion's control plane is embedded into its Purity operating system, eliminating external cloud communication and AIOps dependencies for fleet management and proactive support.
- The vendor's captive NVMe SSD DFM enables Evergreen//One to drive more frequent flash hardware innovation, new SLAs and data management improvements.

Cautions

- Pure Storage lags behind competitors in customer diversification outside of the U.S., making it harder for customers to justify selecting it over more established vendors in those regions.
- Its capex-based Evergreen//Forever program markedly increases storage array asset platform and support costs to enable modern life cycle management objectives.
- Pure Storage does not offer an on-premises SDS system that separates compute and storage resources, which prevents compute and capacity resources from independently scaling cost-effectively.

Zadara

Zadara is a Niche Player in this Magic Quadrant. Its zStorage offering includes Virtual Private Storage Arrays (VPSAs) and Virtual Storage Controller (VSC) and an Object Storage product. VSC integrates with its patented key value store and the Zadara zCompute machine instances to provide flexible block storage for various workloads. The vendor primarily works with a portfolio of global managed hosting service providers, but also does some business directly with enterprise customers. Zadara is a private company operating globally, in North America, South America, EMEA and the Asia/Pacific region. Recent updates in the last 12 months include Extended XCOPY for VMware, an improved encryption cipher and an improved provisioning portal to simplify operations.

Strengths

- Zadara's business model provides customers with a global and highly skilled managed service provider channel, well-versed in managing and supporting platform consumption services as a managed service.
- Zadara's solution leverages a cost-effective object store and a disaggregated key value architecture for tiering storage capacity.
- The vendor's architecture reduces overall physical hardware waste by leveraging a flexible life cycle management strategy. It is based on composable commodity hardware that can be repurposed dynamically anywhere in a multi-tenant-hosted STaaS environment.

Cautions

- Zadara is limited in the number of favorable IT operating model platform SLAs it offers natively, such as ransomware protection and recovery.
- Zadara is a relatively small vendor in terms of size of operation and coverage among larger and more visible competitors, making it challenging for customers to justify choosing it over larger and brand-recognized vendors.

- The vendor’s STaaS platform depends on Zadara’s managed service providers to offer third-party integrated and supported independent software vendor (ISV) partner data services.

Vendors Added and Dropped

We review and adjust our inclusion criteria for Magic Quadrants as markets change. As a result of these adjustments, the mix of vendors in any Magic Quadrant may change over time. A vendor's appearance in a Magic Quadrant one year and not the next does not necessarily indicate that we have changed our opinion of that vendor. It may be a reflection of a change in the market and, therefore, changed evaluation criteria, or of a change of focus by that vendor.

Added

Zadara

Dropped

DDN (Tintri) was dropped because it did not meet the minimum requirements and inclusion criteria for platform-native services.

Inclusion and Exclusion Criteria

Inclusion Criteria

To be included in this Magic Quadrant, vendors were required to:

- Produce and have released their own storage controller operating system product (sometimes referred to as “data management software”) and/or an SDS product that decouples controller software from its hardware appliance, for general availability for the period of June 2022 through 31 May 2024, to support all Critical Capabilities use cases.
- Have PSP data services that can either be organically developed by vendors or in joint partnership with an ISV, but primarily branded, offered and supported by the PSP vendors effective 31 May 2024.
- Be available and supported in at least three of the major primary storage market geographies among the Asia/Pacific region, Japan, EMEA, Latin America and North America, by either direct, service provider or channel sales.
- Have generated greater than $250 million in recognized primary storage billing revenue (excluding support revenue) over the last four quarters as of 31 March 2024 and/or have an installed base of a minimum of 500 active on-premises enterprise storage customers within the large or midsize enterprise, or have generated over $50 million in total annual revenue run rate contract value reported on 31 March 2024, *or* have an installed base (either direct to end users or through service providers) of at least 200 active customers within the midsize and large enterprise markets. (Gartner defines the midsize market as being 500 to 999 employees, and the large enterprise market as being 1,000 employees or greater.)
- Have PSP products and services that are sold under the vendors’ brand or through service providers without the requirement to bundle it with other vendors’ storage products in order for the PSP product to be commercially usable in mission- or business-critical production use cases.
- Have produced or, in partnership, released a vendor-managed hybrid platform block STaaS data service infrastructure offering (e.g., backup, disaster recover, cyberprotection) in at least two of the largest primary storage market geographies listed above that can be used with on-premises and public cloud infrastructure, along with offering integrated AIOps capabilities for use in the vendors’ central control and data planes.

The primary storage arrays, SDS product offerings and platform capabilities evaluated in this research include hybrid storage arrays, solid-state arrays (SSAs) and/or SDS products that scale up, scale out and may have unified storage architectures. Because these products have different availability characteristics, performance profiles, scalability, ecosystem support, pricing and warranties, they enable users to tailor solutions for operational needs, plan new application deployments, forecast growth rates and/or implement storage asset management strategies.

Exclusion Criteria

Vendors and/or their products were excluded from this Magic Quadrant if they had:

- PSP storage array and/or SDS products that are designed to support primarily unstructured data workloads managed by dedicated scale-out file systems and object storage protocols
- PSP services exclusively provided, managed and supported by third parties (e.g., first-party services) instead of by the vendors
- PSP products (e.g., storage controller operating system) must not depend on a third party or an OEM license
- SDS options excluded from this market, as follows: (1) software that eliminates shared storage by simply mirroring internal flash or HDD disks between hypervisors; (2) open-source licensed software that is not directly vendor-owned IP; (3) where SDS is part of HCI; (4) whereby storage services are created and delivered per policy-controlled virtualization software; (5) storage software that is not available on-premises or as the majority share of vendors’ primary storage revenue; and (6) hyperconverged infrastructure software
- PSP storage arrays and/or SDS products that are designed and marketed specifically as solutions to support custom-made or limited use cases only (for example, video surveillance or video rendering and content production, and high-performance computing)

- Third-party ISV data services that are not integrated, managed, supported and branded as a PSP vendor offering, integrated with its respective control plane
- Public cloud storage services offered by IaaS or PaaS providers, including cloud service providers that integrate vendors' core PSP IP, such as a storage controller operating system

Evaluation Criteria

Ability to Execute

Gartner analysts evaluate PSP vendors on the quality and efficacy of the processes, systems, methods or procedures that enable IT provider performance to be competitive, efficient and effective, and to positively impact revenue, retention and reputation within Gartner's view of the market. We evaluate the capabilities of the products and offerings available to the market, as well as the core goods and platform services that compete in and/or serve the market. This includes current product and service capabilities, quality, feature sets, skills, etc.

Table 1: Ability to Execute Evaluation Criteria

Evaluation Criteria ↓	***Weighting*** ↓
Product or Service	High
Overall Viability	Medium
Sales Execution/Pricing	High
Market Responsiveness/Record	Medium
Marketing Execution	Medium
Customer Experience	High
Operations	Medium

Source: Gartner (September 2024)

Completeness of Vision

Gartner analysts evaluate PSP vendors on their ability to convincingly articulate logical market-driven platform-native services statements. This includes current and future market direction, innovation, customer needs, and competitive forces, and how well they map to Gartner's view of the market. We also assess the ability to understand customer needs and translate them into products and services. Vendors are also evaluated on how well they show a clear vision of their market — that is, listen to and understand customer demands, and shape or enhance market direction/changes with their added vision.

Table 2: Completeness of Vision Evaluation Criteria

Evaluation Criteria ↓	***Weighting*** ↓
Market Understanding	High
Marketing Strategy	High
Sales Strategy	High
Offering (Product) Strategy	High

Evaluation Criteria ↓	***Weighting*** ↓
Business Model	Medium
Vertical/Industry Strategy	Medium
Innovation	High
Geographic Strategy	Medium

Source: Gartner (September 2024)

Quadrant Descriptions

Leaders

Vendors in the Leaders quadrant have the highest composite scores for their Ability to Execute and Completeness of Vision. A Leader has broad market share across major geographies, brand awareness and enterprise credibility. Leaders are market-driven — they envision the market over time, and make the long-term investments needed to drive platform-native technologies, capabilities and ecosystem partnerships. These vendors demonstrate a clear understanding of platform market needs and how product features, combined with platform business model innovation, will transform IT operations. Leaders are innovators and thought leaders, with well-articulated plans that customers and prospects can depend on for their PSP infrastructures and strategies. In addition, Leaders have a strong presence in major geographical regions, established financial performance and leading-edge investments in platform initiatives.

Challengers

Vendors in the Challengers quadrant participate in the broad primary storage market and execute well enough to be a serious threat to vendors in the Leaders quadrant. Challengers have solid products with which to compete on features, but lag behind Leaders in platform business model innovation and consistent investments in leading-edge platform-enabled product capabilities, marketing, sales strategies and business model innovation to support the transition to a platform-native service market leader.

Visionaries

Vendors in the Visionaries quadrant deliver innovative products that address operationally or financially important end-user problems on a broad scale, but have not yet demonstrated the ability to capture meaningful market share, sustainable profitability or market momentum. Visionaries are frequently privately held companies and acquisition targets for larger, established companies. The likelihood of acquisition often reduces the real versus perceived risks associated with installing their systems. Visionaries in this market have limited portfolios with a limited focus on certain geographies or vertical industries.

Niche Players

Vendors in the Niche Players quadrant are often narrowly focused on specific geographical markets, vertical industry segments or limited use cases. This quadrant may also include vendors that are ramping up their product and platform offerings, or larger vendors that are having difficulty developing and executing on their vision against new market demands.

Context

This Magic Quadrant represents vendors offering platform-native services and storage arrays — either HDD hybrid or SSAs, or SDS solutions, developed internally. When choosing a primary storage system, infrastructure and operations (I&O) leaders must consider:

- Platform-native services investment
- Integration with public and hybrid clouds for hybrid platform capabilities that stretch beyond on-premises
- The ability to integrate third-party ISV products and services
- Ease of management and continuous improvement in productivity and efficiencies, using AIOps to enhance IT operations
- A comprehensive set of data services to enhance IT operations

I&O leaders must also ensure that primary storage systems, SDS solutions and platform capabilities are acquired at the right price points using industry benchmarks, while choosing the appropriate acquisition model — capex or as-a-service consumption (operating expenditure [opex]) for the organization. Preference should be given to vendors that provide written SLA guarantees as to IT operating model outcomes, such as productivity and storage asset

management, data availability, continuous optimization, and cyber resilience. Furthermore, those that have a competent partner network should also be given preference; this will ensure that solution design, installation and managed services are flawless, and that support is integrated with the use of AIOps tools.

Internally, I&O leaders must work with application owners to align IT priorities and outcomes to business demands. The primary storage market is shifting from traditional IT budgeting processes and capex sourcing to cloud-like, platform-native service consumption, as well as metrics-based IT operating model SLA sourcing. I&O leaders must reexamine their long-term infrastructure platform requirements through this lens and choose a vendor- and partner-based approach that effectively aligns storage solutions with desired IT operating model outcomes. The storage industry is undergoing a sea change unlike anything before this time, so it's critically important that I&O leaders develop a hybrid platform strategy that will guide this period of transformation. (For further details, see **Stop Buying Storage, Embrace Platforms Instead**.)

Market Overview

The market for PSPs addresses the need of I&O leaders to operate and support standardized enterprise storage infrastructure PSP products, along with platform-native services capabilities as a modern IT operating model experience for structured data applications. PSP is a fundamental market recast to address near- and long-term on-premises cloud operating model demands and changes in IT buying trends related to hybrid platform (aka hybrid cloud) and data storage service requirements.

Platform services include as-a-service consumption-based pay-for-use licensing and PSP product capabilities that support platform-native services and IT operating model SLAs. The PSP market has emerged at the convergence of two major enterprise storage market developments: the evolution of the PSP products market in conjunction with the demand for hybrid, multidomain platform-native storage infrastructure services, extending on-premises services to public cloud, edge and colocation environments.

Gartner defines primary storage platforms as dedicated PSP products and platform-native services for SSAs or hybrid storage arrays, structured block data pay-for-use consumption-based offerings, and SDS software. SDS software abstracts and repurposes the vendor-owned storage operating system, tools and AIOps-based capabilities from the vendor's proprietary hardware platform for improved flexibility in use with third-party infrastructure across one or more infrastructure domains (e.g., public cloud, edge domain locations). SDS can operate on industry-standard hardware, hypervisors, and either on-premises, hybrid platform, or in the public cloud, with equal or better capabilities of the vendor's on-premises external controller-based array functionality.

I&O leaders are strategically recalibrating their IT infrastructure operating demands for mission- and business-critical storage infrastructure requirements. The biggest impact of these demands is with enterprise storage, shifting from sourcing product features to platform service SLAs. Platform-native services and consumption-based STaaS offerings, as highlighted in the **Market Guide for Infrastructure Consumption Services**, form the foundation for these new primary storage demands. I&O leaders navigating this landscape face a complex decision-making process as they extend beyond physical data center boundaries and traditional primary storage solutions to include hybrid cloud operating model capabilities that stretch to public cloud and edge domains.

The enterprise storage infrastructure platform, its technological capabilities and its platform-native services are designed to store and manage structured data efficiently and securely. It provides modern consumption-based licensing, new software-defined capabilities, advanced infrastructure intelligence, new hybrid SDS disaggregated architectures, and the protocols necessary to operate and support enterprise data application infrastructure requirements. It includes API-centric control and data storage management service planes for diverse hybrid, multi-infrastructure-domain IT operations.

Platform services solve critical IT operating model problems by integrating data services with primary storage capabilities to deliver IT operating model SLAs that address: productivity, cyber resilience, asset management efficiencies and sustainability, continuous innovation and workload optimization, and policy-based autonomous outcomes. The platform integrates advanced AI-enabled IT operations SLA guarantees that support IT business outcomes. Complementary data planes increase the utility of the platform by integrating data services, whether organically or through third-party partnerships, to enable high levels of up-the-stack IT as-a-services innovation such as backup, disaster recovery, cyber resiliency, data migration, archive, governance and databases.

The market's defining attributes embrace the core elements of a pay-for-use consumption-based model and then leverage it to a hybrid multi-infrastructure-domain platform for storage infrastructure and data services.

The PSP market is an evolution and replacement for traditional on-premises capex sourcing, budgeting, orchestration and IT operations management. I&O leaders view it as a credible and sustainable path to gain on-premises access to a spectrum of hybrid platform-native benefits for mission- and business-critical application infrastructure.

Evaluation Criteria Definitions

Ability to Execute

Product/Service: Core goods and services offered by the vendor for the defined market. This includes current product/service capabilities, quality, feature sets, skills and so on, whether offered natively or through OEM agreements/partnerships as defined in the market definition and detailed in the subcriteria.

Overall Viability: Viability includes an assessment of the overall organization's financial health, the financial and practical success of the business unit, and the likelihood that the individual business unit will continue investing in the product, will continue offering the product and will advance the state of the art within the organization's portfolio of products.

Sales Execution/Pricing: The vendor's capabilities in all presales activities and the structure that supports them. This includes deal management, pricing and negotiation, presales support, and the overall effectiveness of the sales channel.

Market Responsiveness/Record: Ability to respond, change direction, be flexible and achieve competitive success as opportunities develop, competitors act, customer needs evolve and market dynamics change. This criterion also considers the vendor's history of responsiveness.

Marketing Execution: The clarity, quality, creativity and efficacy of programs designed to deliver the organization's message to influence the market, promote the brand and business, increase awareness of the products, and establish a positive identification with the product/brand and organization in the minds of buyers. This "mind share" can be driven by a combination of publicity, promotional initiatives, thought leadership, word of mouth and sales activities.

Customer Experience: Relationships, products and services/programs that enable clients to be successful with the products evaluated. Specifically, this includes the ways customers receive technical support or account support. This can also include ancillary tools, customer support programs (and the quality thereof), availability of user groups, service-level agreements and so on.

Operations: The ability of the organization to meet its goals and commitments. Factors include the quality of the organizational structure, including skills, experiences, programs, systems and other vehicles that enable the organization to operate effectively and efficiently on an ongoing basis.

Completeness of Vision

Market Understanding: Ability of the vendor to understand buyers' wants and needs and to translate those into products and services. Vendors that show the highest degree of vision listen to and understand buyers' wants and needs, and can shape or enhance those with their added vision.

Marketing Strategy: A clear, differentiated set of messages consistently communicated throughout the organization and externalized through the website, advertising, customer programs and positioning statements.

Sales Strategy: The strategy for selling products that uses the appropriate network of direct and indirect sales, marketing, service, and communication affiliates that extend the scope and depth of market reach, skills, expertise, technologies, services and the customer base.

Offering (Product) Strategy: The vendor's approach to product development and delivery that emphasizes differentiation, functionality, methodology and feature sets as they map to current and future requirements.

Business Model: The soundness and logic of the vendor's underlying business proposition.

Vertical/Industry Strategy: The vendor's strategy to direct resources, skills and offerings to meet the specific needs of individual market segments, including vertical markets.

Innovation: Direct, related, complementary and synergistic layouts of resources, expertise or capital for investment, consolidation, defensive or pre-emptive purposes.

Geographic Strategy: The vendor's strategy to direct resources, skills and offerings to meet the specific needs of geographies outside the "home" or native geography, either directly or through partners, channels and subsidiaries as appropriate for that geography and market.