

IDC MarketScape

IDC MarketScape: Worldwide Scale-Out File-Based Storage 2019 Vendor Assessment

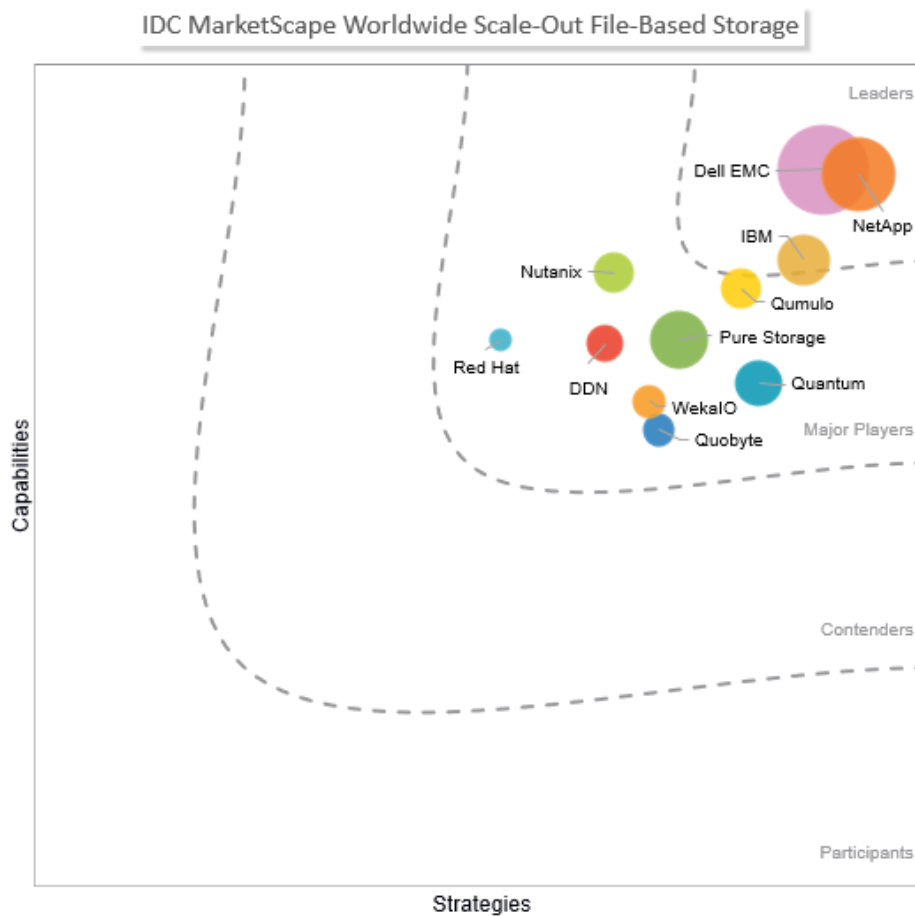
Amita Potnis

THIS IDC MARKETSCAPE EXCERPT FEATURES NETAPP

IDC MARKETSCAPE FIGURE

FIGURE 1

IDC MarketScape Worldwide Scale-Out File-Based Storage Vendor Assessment



Source: IDC, 2019
Please see the Appendix for detailed methodology, market definition, and scoring criteria.

IN THIS EXCERPT

The content for this excerpt was taken directly from IDC MarketScape: Worldwide Scale-Out File-Based Storage 2019 Vendor Assessment (Doc # US45355019). All or parts of the following sections are included in this excerpt: IDC Opinion, IDC MarketScape Vendor Inclusion Criteria, Essential Guidance, Vendor Summary Profile, Appendix and Learn More. Also included is Figure 1.

IDC OPINION

IDC believes that file-based storage (FBS) will continue to evolve to address the needs of traditional and next-generation workloads. As an example, many traditional file system providers consider artificial intelligence (AI), deep learning (DL), and machine learning (ML) as potential areas of growth. To address the specific performance requirements, traditional file system providers partner with accelerator technology providers such as NVIDIA to bring robust infrastructure for AI/DL/ML workloads. Today, performance at scale, non-disruptive upgrades, seamless extension to public cloud, flexibility in deployment models, and so forth are expected of any file storage solution.

Support for hybrid cloud and multicloud capabilities are a must for any storage platform, especially FBS. As customers strategize infrastructure road maps with cloud-first strategy, it is imperative that file-based storage solutions offer the flexibility of deployment on-premises as well as in the public cloud.

As enterprises undertake digital transformation, they will also be looking to modernize their IT infrastructures to reduce storage silos and provide data visibility and control. Metadata-based tools that connect content to context to provide granular and predictive reporting on where data is stored, define access and retention policies, and more are expected to be integrated offerings in file systems.

In this IDC MarketScape, IDC assesses the present commercial FBS suppliers (suppliers that deliver software-defined FBS solutions as software or appliances much like other storage platforms) landscape. Cloud-based storage services based on FBS are not included in this IDC MarketScape. This IDC MarketScape assesses 11 scale-out FBS suppliers that are "owners of intellectual property (IP)." IDC analyzed the capabilities and business strategies of scale-out FBS suppliers that it considers to be representative of the market. It should be noted that 5 of the 11 vendors assessed in this MarketScape were established after 2015, thus indicating a continued need for modern file systems and new capabilities.

IDC MARKETSCOPE VENDOR INCLUSION CRITERIA

This IDC study assesses the capabilities and business strategies of leading suppliers in the scale-out FBS market segment. This evaluation is based on a comprehensive framework and a set of parameters that gauge the success of a supplier in delivering an FBS solution in the market.

To make this list, the suppliers need to have a scale-out file-based storage platform that:

- **Conforms to IDC's taxonomy.** According to *IDC's Worldwide SBS, SDS, and FOBS Storage Solutions Taxonomy, 2018* (IDC #US43579118, March 2018), they leverage an FBS data organization scheme.
- **Has supplier as the owner of intellectual property (IP).** The participating supplier has developed the FBS solution in-house or owned by way of an acquisition and is owner of intellectual property of that platform.
- **Has a deployment model.** The FBS solution is primarily sold as software and hardware (appliance or gateway) and may additionally be available as a service.
- **Was generally available in 2019.** The FBS solution was generally available as a current offering at the time IDC undertook this study in 3Q19.
- **Has revenue.** The product generated \$10+ million in revenue in 2018.
- **Has capacity deployed.** If revenue requirements were not met, participants must have proven customer deployments of 600TB or greater in support of high-performance workloads in addition to traditional file-based workloads (such as home directories).

ADVICE FOR TECHNOLOGY BUYERS

In this IDC MarketScape, 5 of the 11 vendors evaluated were established post 2015. While relatively new, most of them have had success in high-performance type environments, which are growing faster than other segments of the file storage market. As the market progresses, vendors should keep in mind that to succeed they need to have a strategy for the following:

- **High-performance workloads.** FBS use cases are no longer simply traditional collaboration or file share-type workloads. Increasingly customers are looking at FBS as a dense, performant, and cost-effective alternative for newer high-growth (in terms of revenue and capacity) workloads such as unstructured data analytics, IoT, and artificial intelligence (AI)/machine learning (ML)/deep learning (DL). The ability to offer an FBS solution viable for traditional as well as next-generation workloads is important to sustain existing customer base and satisfy high-growth areas.
- **Hybrid cloud storage.** With customers adopting a cloud-first strategy and hyperscalers investing in public cloud file services, traditional vendors must up their ante in offering their FBS solutions across on-premises and private/public cloud deployment locations.

VENDOR SUMMARY PROFILES

This section briefly explains IDC's key observations resulting in a vendor's position in the IDC MarketScape. While every vendor is evaluated against each of the criteria outlined in the Appendix, the description here provides a summary of each vendor's strengths and challenges.

List of Participating Vendors

Table 1 shows the list of vendors and their classifications.

TABLE 1

List of Suppliers and Their Classifications

IDC MarketScape Category	Supplier Name	Product Evaluated (Older-Generation Product)
Leaders	Dell EMC	Isilon
	IBM	Spectrum Scale
	NetApp	ONTAP
Major Players	DDN (DataDirect Networks)	EXAScaler
	Nutanix	Files
	Pure Storage	FlashBlade
	Quantum	StorNext
	Qumulo	Qumulo
	Quobyte	Quobyte
	Red Hat	Red Hat Gluster Storage
	WekaIO	WekaIO

Notes:

Vendors are listed in alphabetical order as per category.

Revenue from products evaluated impacts bubble size.

Revenue from other portfolio products not evaluated and does not impact bubble size.

Source: IDC, 2019

NetApp

NetApp is positioned as a Leader in this 2019 IDC MarketScape for worldwide scale-out file-based storage.

Headquartered in Sunnyvale, California, NetApp's ONTAP file-based storage offering was launched in 1992. NetApp's FBS solutions are delivered as a hybrid (FAS series) or all-flash array series (AFA series) appliance or software-only (ONTAP Select) offerings. NetApp ONTAP is also available in the public cloud as an integrated offering through Microsoft called Azure NetApp Files. The FBS offering is available on other public cloud services in the form of Cloud Volumes Service for AWS and Cloud Volumes Service for Google Cloud.

NetApp's FBS offering runs in a unified platform with functionality such as storage efficiency, data protection, security, high availability, integrated replication, backup, and tiering. More recently, NetApp introduced solutions to support AI/ML/DL workloads called NetApp ONTAP AI in partnership with NVIDIA. NetApp ONTAP AI integrates DGX servers, NVIDIA Tesla V100 GPUs, and NetApp AFF A800 storage system with Cisco networking and servers. The company claims that the AFF A800 system has been verified with seven DGX servers and has demonstrated sufficient performance headroom to support more DGX servers without impacting storage throughput or latency.

NetApp's extended product portfolio that includes Active IQ, StorageGRID, and HCI makes for a valuable proposition for existing and potential customers, providing its customers the flexibility to deploy ONTAP across on-premises and cloud, telemetry data to proactively maintain system health, and long-term low-cost storage.

Strengths

NetApp's FBS offering is a very well-established offering in the market with worldwide adoption across several workloads and use cases. NetApp has an extensive and loyal customer base that is well skilled in the use of ONTAP and may lead to adoption of ONTAP in the public cloud.

Challenges

NetApp's overall success in the FBS space and its execution on its expanded portfolio has been the company's highlights. IDC's interviews with several NetApp customers have indicated that given the scale of the company's offering, on occasion the wait to get appropriate customer support is longer than expected.

Consider NetApp When

Customers in need of an FBS on-premises and hybrid cloud strategy should consider NetApp because of its expanded product portfolio, investment, and vision.

APPENDIX

Reading an IDC MarketScape Graph

For the purposes of this analysis, IDC divided potential key measures for success into two primary categories: capabilities and strategies.

Positioning on the y-axis reflects the vendor's current capabilities and menu of services and how well aligned the vendor is to customer needs. The capabilities category focuses on the capabilities of the company and product today, here and now. Under this category, IDC analysts will look at how well a vendor is building/delivering capabilities that enable it to execute its chosen strategy in the market.

Positioning on the x-axis, or strategies axis, indicates how well the vendor's future strategy aligns with what customers will require in three to five years. The strategies category focuses on high-level decisions and underlying assumptions about offerings, customer segments, and business and go-to-market plans for the next three to five years.

The size of the individual vendor markers in the IDC MarketScape represent the market share of each individual vendor within the specific market segment being assessed.

In the case of a supplier with multiple products in the same market segment, IDC has worked with the supplier to select the product that most closely resembles the tactical strengths (capabilities) and strategic direction (strategies) of the supplier and the one that can be used as the lens through which the supplier's position in the market can be ascertained, provided the product meets the inclusion criteria for the IDC MarketScape. This can impact the size of the bubble, as only the revenue for the evaluated product is included, and not the supplier's overall revenue for that market segment.

Therefore, while certain suppliers are at an advantage given their size and broader portfolio offerings, IDC recognizes that smaller suppliers with a single product and whose primary focus in the file-based storage market may be limited to specific verticals also play an important role by bringing to market potentially disruptive technologies.

Note that certain suppliers (Quobyte, Red Hat, etc.) are pure-play software vendors, while the other suppliers sell a mix of hardware and software, mostly as hardware appliances. Pure-play software typically represents 25-50% of the total revenue, so associated server revenue is added to compare the size of the bubbles directly with the appliance vendors.

IDC MarketScape Methodology

IDC MarketScape criteria selection, weightings, and vendor scores represent well-researched IDC judgment about the market and specific vendors. IDC analysts tailor the range of standard characteristics by which vendors are measured through structured discussions, surveys, and interviews with market leaders, participants, and end users. Market weightings are based on user interviews, buyer surveys, and the input of IDC experts in each market. IDC analysts base individual vendor scores, and ultimately vendor positions on the IDC MarketScape, on detailed surveys and interviews with the vendors, publicly available information, and end-user experiences in an effort to provide an accurate and consistent assessment of each vendor's characteristics, behavior, and capability.

Market Definition

IDC classifies FBS platforms as part of the scale-out file- and object-based storage (FOBS) market segment. IDC uses the classification scheme to classify newer software-based file- and object-based storage platforms.

Scale-out FOBS refers to FOBS solutions that use a distributed data placement mechanism to span multiple independent server hosts or controllers while presenting a single data access namespace. Such architectures are also called shared nothing (or shared data) architectures. Such architectures allow for flexible scalability in performance and capacity independent of each other using commodity components. Data sharing and distribution mechanisms (such as local and geographic replication and local and distributed erasure coding) account for one or more concurrent component failures. Scale-out FOBS solutions are made up of two variants: scale-out FBS solutions and scale-out FBS solutions. There are two principal differences between the two types: how data is organized and how data is accessed.

Scale-out FBS solutions use distributed file systems with hierarchical structures to organize and store data. These structures are akin to mechanisms used by monolithic file systems, which in most cases, follow a root directory (folder) and inverted tree structure. In contrast, scale-out FBS solutions use flat structures to organize data. Such structures are higher-level structures in which data is often organized using an "account, container, and object" approach wherein "objects" are analogous to "files" in FBS

solutions. Accounts, containers, and objects are referenced by a metadata repository that stores and manages attributes of data stored in that structure. The level at which FBS solutions operate varies from platform to platform. Many FBS solutions operate on a per object level (i.e., allow each object to be treated independently, as far as policy management is concerned), whereas others operate at a container or account level (i.e., only allow policies to be applied at a container or account level). Several FBS solutions also leverage NoSQL databases as metadata repositories and persistent data stores (instead of storing chunks in the file systems).

LEARN MORE

Related Research

- *Worldwide File-Based Storage Forecast, 2018-2022: Storage by Deployment Location* (IDC #US44457018, December 2018)
- *Enterprises to Adopt Cloud-Native Applications in Next 12 Months: Drivers Include Security, Costs, Big Data AI/ML Initiatives* (IDC #US44448818, November 2018)
- *Data Management: Success with a Method to the Madness* (IDC #US44415618, November 2018)
- *Red Hat Acquires NooBaa - Makes a Shift from Storage to Hybrid Cloud Data Management* (IDC #lcUS44484218, November 2018)
- *Worldwide Composite Media Workloads (Compute and Storage) Infrastructure Forecast, 2018-2022* (IDC #US44281818, October 2018)
- *Micro Focus Sells SUSE Business to Private Equity Backer* (IDC #lcUS44101118, July 2018)
- *Growth of File Storage Services in the Public Cloud* (IDC #US44002318, June 2018)

Synopsis

This IDC study represents a vendor assessment model called the IDC MarketScape. This study is a quantitative and qualitative assessment of the characteristics that assess a vendor's current and future success in the said market or market segment and provide a measure of the vendor's ascendancy to become a leader or maintain leadership. IDC MarketScape assessments are particularly helpful in emerging markets that are often fragmented, have several players, and lack clear leaders.

The scale-out FBS market subsegment, which is part of the file and FBS market, is an example of a maturing and expanding market. In this IDC MarketScape, IDC attempts to assess the capabilities and strategies of key vendors of scale-out FBS solutions. IDC expects that market forces such as fierce competition and buyer demand will accelerate the metamorphosis of this market into a mature market with a few dominant vendors and some disruptive start-ups.

"A new digitized world demands an infrastructure that is extremely scalable and flexible in terms of delivery models and supports new high-performant uses cases such as analytics and content delivery," said Amita Potnis, research manager in IDC's Storage team. "FBS platforms hold the promise and the potential to support end users along this path of digitization. In this competitive market, vendors offering FBS platforms with the most compelling value proposition via a long-term strategy, research and development plan, and flexible delivery models will survive."

About IDC

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