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Magic Quadrant for Public Cloud Storage Services, Worldwide

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Summary

The market for public cloud storage services is increasingly being defined by a single dominant vendor. Enterprises should be wary of vendors that lack the track record required to continue developing such services at scale.

Market Definition/Description

Public cloud storage is infrastructure as a service (IaaS) that provides block, file and/or object storage services delivered through various protocols. The services are stand-alone but often are used in conjunction with compute and other IaaS products. The services are priced based on capacity, data transfer and/or number of requests. The services provide on-demand storage and are often self-provisioned. Stored data exists in a multitenant environment, and users access that data through the block, network and REST protocols provided by the services.

Format of the Vendor Descriptions

For ease of comparison, we have formatted the vendor description sections as thus:

Offerings: A list of the public cloud storage services offered by the vendor.

Locations: A description of data center locations, first grouped by countries with multiple regions followed by countries with single regions. We also describe the supported languages for portals, documentation and support.

Provider maturity: Cloud storage providers vary dramatically in their level of risk — the degree to which a customer can trust them to be secure, reliable, stable businesses. We provide a three-tier maturity model in "Inform Your Cloud Service Choice With Provider Maturity," and for each provider, we list its tier in that maturity model:

Tier 1 providers are global megavendors.

Tier 2 providers are engaged in a struggle for sustainability, with the largest hoping to break into the top tier. Tier 2 is divided into two categories:

Category A is composed of established technology vendors.

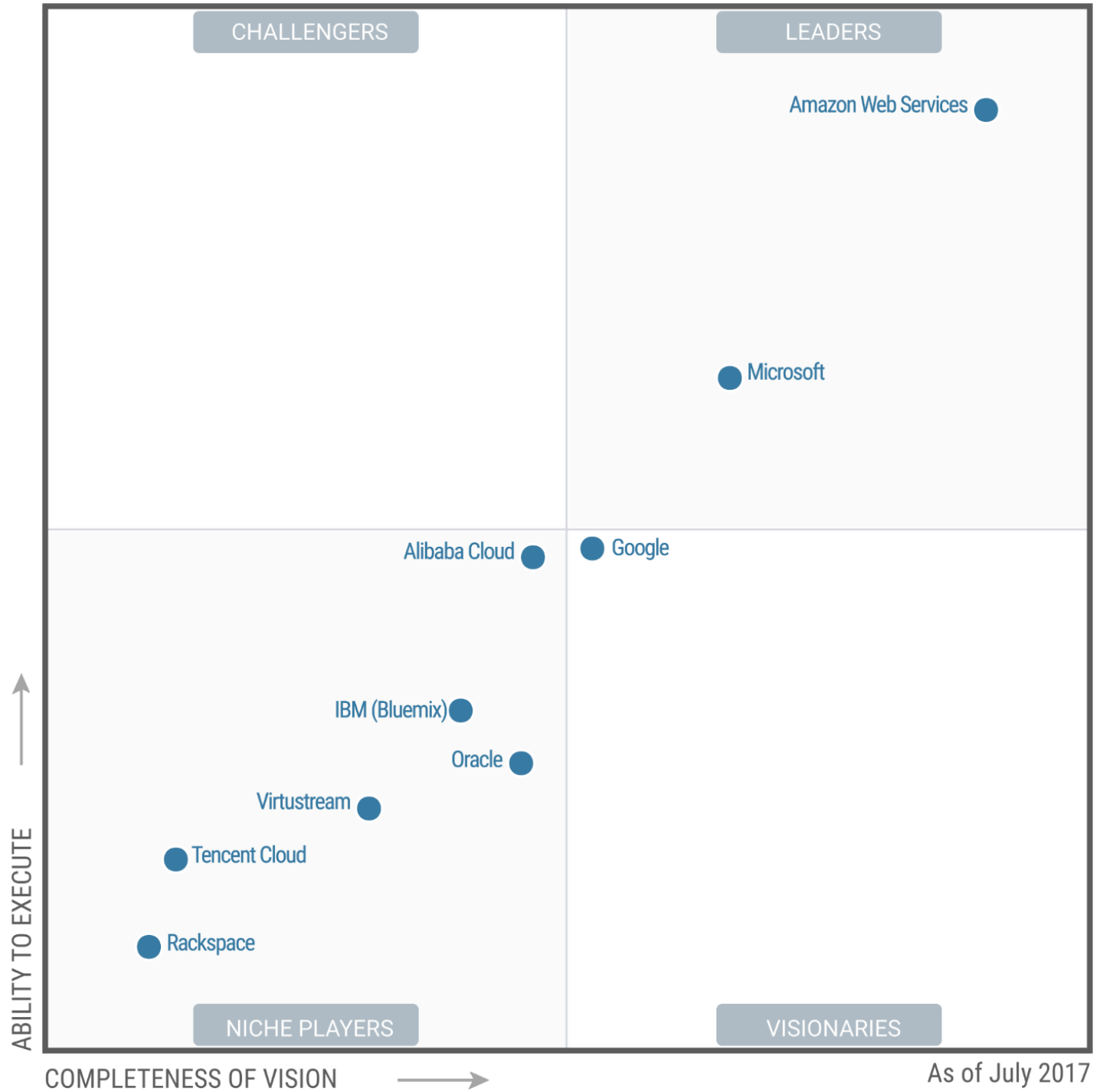
Category B consists of cloud-only (or cloud-primary) vendors that have grown enough to be significant.

Tier 3 providers are emerging and risky; there are none on this Magic Quadrant.

Recommended mode and uses: We note whether the vendor's cloud storage offerings are likely to appeal to traditional, Mode 1 workloads or newer, Mode 2 workloads, or both.

Magic Quadrant

Figure 1. Magic Quadrant for Public Cloud Storage Services, Worldwide



Source: Gartner (July 2017)

Vendor Strengths and Cautions

Alibaba Cloud

Alibaba Cloud, a subsidiary of Alibaba Group, is a cloud-focused service provider with headquarters in China. It was established in 2009, and initially provided services to Alibaba Group's e-commerce businesses. This Magic Quadrant evaluation is focused upon Alibaba Cloud's international business, which is headquartered in Singapore, and our assessment was performed using the international service.

Offerings: Alibaba's cloud storage offerings include Object Storage Service (OSS) and Cloud Disks (block storage).

Locations: Alibaba Cloud operates in multiple regions in China and additionally has a presence in the U.S., Germany, Australia, Hong Kong, Japan, Singapore and the United Arab Emirates. It has local sales in the U.S. and China. The China service portal, documentation and support are in Mandarin. The international portal, documentation and support are only in English.

Provider maturity: Tier 2B. Alibaba Cloud is a market leader in China, but is a relatively recent entrant to the global market.

Recommended mode and uses: Alibaba Cloud appeals to Mode 2 buyers who seek infrastructure that supports agile workloads.

STRENGTHS

Alibaba Cloud is the current market share leader for cloud IaaS in China, and performs particularly well with Chinese digital businesses and agencies within the Chinese government. Alibaba Group has the financial wherewithal to continue investing in new regions, engineering efforts, and regional sales and marketing for Alibaba Cloud.

Alibaba Cloud's current portfolio of storage services demonstrates the vendor's potential to become an alternative to the global hyperscale cloud providers in select regions over time. Alibaba Cloud not only has a diverse set of capabilities – which today are already comparable to the service portfolios of other hyperscale providers – but also has begun to build out a broad global data center presence.

In China, Alibaba has built an impressive ecosystem consisting of managed service providers (MSPs) and independent software vendors (ISVs), and it has begun to attract a global ecosystem of MSPs and ISVs to its international offering.

CAUTIONS

Alibaba Cloud's international offering, with an English-language portal, was launched in mid-2016. It has a limited track record, and does not have the full capabilities or performance of the China offering. Alibaba's international offering has little in the way of unique differentiation compared with other hyperscale providers. Additionally, Alibaba Cloud's vision is inextricably tied to that of its global competitors; it takes liberal inspiration from competitors when developing service capabilities and branding.

Alibaba Cloud has rapidly expanded its offering to markets outside of China in the past 18 months, but the company does not have substantial mind share with buyers in those markets, as it is still building the required local talent, industry expertise and go-to-market capabilities.

Prospective international customers may perceive security and regulatory compliance concerns when using a Chinese company, even though Alibaba Cloud has undergone third-party audits.

Amazon Web Services

Amazon Web Services (AWS), a subsidiary of Amazon, is a cloud-focused service provider. It pioneered the cloud IaaS market in 2006 with the introduction of Amazon Simple Storage Service (S3), an object storage service.

Offerings: AWS has a broad range of cloud storage offerings that includes S3 (object storage), Glacier (cold storage), Elastic Block Store (EBS; block storage), Elastic File System (EFS; file storage), Snowball Edge (data transport and edge computing) and Snowmobile (data transport).

Locations: AWS offers storage services from multiple regions in the United States and has a presence in Australia, Brazil, Canada, Germany, India, Ireland, Japan, Singapore, South Korea and the U.K. The portal and documentation are provided in English, Dutch, French, German, Italian, Japanese, Korean, Mandarin, Portuguese and Spanish. It also operates independent regions dedicated to the U.S. federal government. There is a China region operated by Sinnet, which requires a China-specific AWS account. It has a global sales presence. The primary languages for support are English, Japanese and Mandarin, but AWS will contractually commit to providing support in a large number of other languages.

Provider maturity: Tier 1. AWS created the market for public cloud storage with the introduction of Amazon S3 in 2006.

Recommended mode and uses: AWS's storage services often appeal to Mode 2 buyers, but its storage services are increasingly being used for mission-critical, Mode 1 application workloads.

STRENGTHS

Amazon S3 is the largest public-cloud-based object storage service as measured by data under management. AWS has more insight than any other vendor on how customers use public cloud storage services at scale. This vast knowledge of customer usage and AWS's ability to both react to the market and build solutions ahead of the market forms the basis for its overall competitive strength.

AWS sets the boundaries in the market for public cloud storage services by which all other vendors operate. AWS's innovations with respect to cloud storage are frequently replicated by other vendors. When choosing AWS, customers are using a provider with the most innovative capabilities in the market even if it isn't the least expensive option.

AWS has the most mature set of capabilities for edge-based computing and migrating large datasets to the public cloud securely and easily. This is evident in AWS products such as Snowball Edge and Snowmobile, which provide secure, bulk data transport capabilities with the former also providing an AWS experience in a box.

CAUTIONS

Gartner clients may spend a significant amount of time negotiating large, storage-centric agreements for lower-than-published pricing with AWS only to soon find that the negotiated price is no better than market pricing due to AWS reducing the public price of its services. The result is

that clients will need to spend additional time renegotiating and will not have the same leverage as they did before committing to AWS's storage services.

AWS leads the market in setting complex pricing, which is often adopted by other vendors. These complex models are difficult to understand and predict, particularly when request charges, input/output operations per second (IOPS), data transfer and throughput need to be considered to appropriately match workload characteristics to infrastructure.

Clients seeking to discontinue use of AWS or otherwise export large quantities of data will incur additional fees when attempting to use offline export methods. Exporting data from AWS through offline means using Snowball results in inordinate bandwidth charges even though no public network is used.

Google

Google, a U.S.-based provider of internet, advertising, search and cloud computing services, entered the public cloud storage market in 2010.

Offerings: Google provides Persistent Disk (block) and Google Cloud Storage (object).

Locations: Google offers storage services from multiple locations in the United States and has a presence in Australia, Belgium, Japan, Singapore, Taiwan and the U.K. Google has a global sales presence. Support is available in English and Japanese. The portal is available in English, Dutch, French, German, Italian, Polish, Spanish, Turkish, Russian, Portuguese, Korean, Japanese, Mandarin and Thai. Documentation is available only in English.

Provider maturity: Tier 1. Google Cloud Storage is a strategic offering within Google's larger suite of cloud-based infrastructure and application services, but the business is significantly smaller comparison to Google's core business.

Recommended mode and uses: Google Cloud Storage is best for Mode 2 workloads such as cloud-native applications, as a repository for analytics-focused data, and for machine learning and content distribution.

STRENGTHS

Google offers a compelling range of support options, including low-cost, role-based, per-seat pricing that requires no long-term commitment. This enables simple modification of support levels as applications move from development to production. Response times range from eight hours for development down to 15 minutes for business-critical applications.

Google enables the integration of storage with data analytics and machine learning to derive greater value from stored data. Examples include Cloud Vision for image analysis, BigQuery enterprise data warehouse, Cloud Dataproc managed Spark and Hadoop service, and Cloud Machine Learning Engine.

Google uses a common set of APIs across all object storage offerings. This provides simpler integration options for application development. It also enables simpler migration of data across storage tiers. Supported vendors include Avere Systems, Commvault, Dell EMC, Veritas Technologies and more than 25 additional partners.

CAUTIONS

The vast majority of Gartner's mainstream enterprise clients are not considering Google Cloud Storage. These enterprises do not perceive Google as a legitimate supplier of enterprise-IT-focused infrastructure services. Google's lack of critical enterprise-focused capabilities, such as a managed file system service, compounds this perception.

Google has aggressive geographic expansion plans in terms of data centers, but its ability to effectively serve enterprise customers in the expansion regions will be impacted by Google's smaller field sales and support staff compared with its competitors. Despite Google's expansion plans, the company has no offerings in key international regions including China, South Korea and the Middle East.

Google offers a wide range of discounts from published pricing for large-scale use of its cloud storage services in order to win enterprise business that would otherwise go to the other hyperscale vendors. This sort of discounting practice makes it more difficult for enterprises to negotiate long-term contracts.

IBM (Bluemix)

IBM is a U.S.-headquartered, global supplier of technology hardware, software and services. The company is in the process of migrating the SoftLayer brand to the Bluemix brand, which includes a rich portfolio of analytics services and tools including IBM Watson.

Important note: IBM currently operates two independent object storage platforms: a legacy service and a newer offering. The legacy offering, which will eventually be deprecated, is based on OpenStack Swift. The newer offering is referred to as Cloud Object Storage (COS) and is based upon its 2015 acquisition of Cleversafe.

Offerings: IBM offers file and block-based storage, in addition to its COS, in both dedicated and multitenant deployments.

Locations: IBM delivers storage services from data centers in the U.S.; two data centers, each, in Australia, Canada and the Netherlands; as well as single data centers in Brazil, England, France, Germany, Hong Kong, India, Italy, Japan, Mexico, Norway, Singapore and South Korea. IBM provides documentation and support in Cantonese, English, French, German, Italian, Japanese, Korean, Portuguese and Spanish.

Provider maturity: Tier 2A. Bluemix is a strategic asset within IBM.

Recommended mode and uses: IBM's offerings are appropriate for Mode 1 backup, archive and disaster recovery services; Mode 1 applications being migrated to the cloud; and Mode 2 applications, in particular those enabled by IBM's analytics capabilities.

STRENGTHS

IBM's COS has an overwhelmingly positive reputation among customers for being capable of storing massive quantities of unstructured data at scale. This is based largely on its object storage deployments in an enterprise's on-premises data centers, but COS also underpins IBM's public cloud object storage service.

As a well-established company, IBM offers broad, global support for 24 regional data centers, and is particularly strong in native-language availability of documentation, web portals, and customer support, enabling single-supplier cloud storage services for both global and non-English speaking regional customers. IBM pricing for all Bluemix products includes unlimited access to technical support.

IBM has a solid understanding of enterprise customer business and technical requirements and priorities, particularly for on-premises, mission-critical production applications. This gives IBM unique capabilities to support the migration of these applications to hybrid and all-cloud deployments.

CAUTIONS

Integration of the Cleversafe acquisition as a business unit within Bluemix has been slow and incomplete. Though international expansion is scheduled, COS (formerly Cleversafe) is available only in the U.S. and Europe. Most glaringly, identity and access management (IAM) capabilities to restrict or provide granular access to data are missing.

IBM has yet to announce any transition plans for the legacy OpenStack Swift-based object storage service, but a migration will need to occur. Customers of the legacy platform should assume that such a migration will not be completely transparent and seamless. At minimum, extensive application compatibility testing will be required.

IBM lags leading suppliers in leveraging availability zones, which provide greater resilience, data protection and performance during localized disasters. With the exception of Australia, Canada, the Netherlands, the U.K. and the U.S., IBM operates a single data center for public cloud storage services in each of the served countries.

Microsoft

Microsoft has a well-rounded portfolio of IaaS (compute, storage and network) offerings. Rapid global expansion and hybrid cloud enablement have been the cornerstone of Microsoft's cloud strategy. Compared with the 2016 iteration of this Magic Quadrant, Microsoft has declined in its position relative to other vendors largely due to its lack of original innovation in this market over the past year.

Offerings: Microsoft offers object storage (Hot and Cool Blob storage), file storage and block storage (standard and premium, either managed or unmanaged).

Locations: Microsoft refers to Azure data center locations as "regions." There are multiple Azure regions in the U.S., Canada, the U.K., Germany, Australia, India, Japan and South Korea, as well as regions in Ireland, the Netherlands, Hong Kong, Singapore and Brazil. There are also two regions for the U.S. federal government. (The two Azure China regions are part of a separate service operated by 21Vianet Group. Documentation is available in English, French, German, Italian, Spanish, Portuguese, Japanese, Korean and Mandarin. Service portals are available in those languages, plus Czech, Dutch, Hungarian, Polish, Russian, Swedish and Turkish.)

Provider maturity: Tier 1. Microsoft is the second-largest among the hyperscale cloud storage providers.

Recommended mode and uses: Microsoft addresses a broad set of Mode 1 and Mode 2 use cases, including archiving, backup, content distribution, application development, cloud native applications and big data analytics.

STRENGTHS

Microsoft has the widest availability of storage offerings across the globe among its peers, with its storage services being available in more than 30 locations around the world and with customer support being available in nine languages, which enhances its appeal to both global and local customers.

Microsoft's existing relationships with enterprises often influences which public cloud provider to choose, even if that relationship is based on services such as Office 365. This relationship between Microsoft and enterprises is often characterized by a history of local field representatives having an in-depth understanding of an enterprise's challenges, both from technical and business perspectives.

Microsoft is taking a much more open approach to interoperability with non-Microsoft technologies on Azure. This has resulted in Microsoft embracing platforms that are of benefit to its customers that would have been anathema a short few years ago. Examples include Azure's support for Linux, Docker and a recently announced Network File System (NFS) service with NetApp.

CAUTIONS

Microsoft is frequently late to market with cloud storage capabilities first introduced elsewhere, reflecting a lack of original innovation and a vision that follows the other hyperscale public cloud providers.

The ecosystem of third-party developers building on Microsoft Azure's storage services is small relative to AWS. If developers build on Azure's storage APIs, Azure is often second to AWS in terms of release timeline and overall adoption. The limited developer mind share presents challenges to enterprises that will eventually seek a broad range of opportunities to consume cloud storage services.

Gartner clients frequently lament being oversold by Microsoft, which results in a need to find ways to use Azure credits. Microsoft has made it easier for customers with existing enterprise agreements to add Azure services to it through aggressive upfront discounts. Customers should be wary of the sustainability of these discounts as well as overcommitting resources through high upfront monetary payments.

Oracle

Oracle is a late entrant to the IaaS market, but it is a well-established provider of enterprise IT services across a range of software and hardware products, and now has cloud-based offerings of many software products.

Important note: Oracle currently operates two independent IaaS platforms: a legacy service and a newer offering. The legacy offering, which will eventually be replaced, is known as Oracle Public Cloud (OPC). Oracle's current platform is known as the Bare Metal Cloud Services (BMCS).

Offerings: Oracle offers Bare Metal Cloud Block Volume Service, Bare Metal Cloud Object Storage Service, Object Storage (legacy service) and Archive Storage (legacy service).

Locations: The BMCS operates data centers in the U.S. Oracle's legacy service has a presence in the U.S., the U.K. and the Netherlands. Oracle has sales, customer support, technical support, portal and documentation in English for both services. The legacy service provides sales and portals in Cantonese, French, German, Italian, Japanese, Korean, Mandarin, Portuguese and Spanish.

Provider maturity: Tier 2A. Oracle is a large technology vendor with a broad solution portfolio, but is a highly focused, niche provider of public cloud storage services primarily focused on Oracle database and application customers.

Recommended mode and uses: Oracle's OPC offering is suited for Mode 1 customers of Oracle databases and applications, while BMCS is suited for both Oracle's Mode 1 customers and Mode 2 customers with cloud-native applications and batch computing requirements that benefit from bare-metal servers.

STRENGTHS

Oracle is on a long journey of migrating much of the company's enterprise software business from a perpetual-license model to a cloud-service-based subscription model. Oracle has the financial resources required to deliver these cloud-based offerings and to support geographic expansion.

Oracle has deep knowledge of the entire infrastructure stack for Mode 1 workloads that leverage Oracle databases and enterprise applications. This gives Oracle significant advantages in data protection, application availability and recovery for Oracle applications.

Oracle offers high performance at a compelling price with respect to its bare-metal block storage service, which is enabled by its implementation of nonvolatile memory express (NVMe) and solid-state drive (SSD)-based storage. The predictable performance and simplified pricing of the service is welcomed compared with the complex models of Oracle's competitors.

CAUTIONS

Oracle is in the midst of a total rewrite of its IaaS offerings, which include cloud storage services. The first-generation cloud IaaS is being replaced with BMCS. While Oracle may position the services as complementary and interoperable, customers will need to migrate to BMCS. The impact and process for migrating applications and data between the legacy and current services is unclear at this time, as Oracle has no method or practice made public so far.

Oracle has limited geographical presence for cloud storage services, particularly BMCS, and cannot support data sovereignty compliance for countries outside North America. Oracle's current strategy is to focus primarily on Oracle databases and applications, and therefore is poorly positioned in the near term to act as a one-stop shop for global companies adopting a cloud-first or cloud-only strategy.

Oracle doesn't offer a publicly documented process or rules for applying credits for failure to achieve SLAs. All agreements for the application of credits are custom and negotiable, making it more difficult for enterprise customers to compare Oracle offerings against those of its competitors.

Rackspace

Rackspace is primarily a web hosting and managed service provider that has been offering OpenStack-based public cloud services. In the past two years, it has changed its strategy from being a provider of cloud services to being a managed service provider across a spectrum of clouds.

Offerings: Rackspace offers Cloud Files and Cloud Block Storage.

Locations: Rackspace public cloud services are offered in data centers in the central and eastern U.S., the U.K., Australia and Hong Kong. Support is provided in English only. The portal and documentation are available only in English.

Provider maturity: Tier 2B. Rackspace's cloud strategy has evolved over time, and today its primary focus is to provide managed services for its partner cloud services rather than to promote its cloud offering.

Recommended mode and uses: OpenStack-based development testing environments, backup and content distribution are potential use cases to explore.

STRENGTHS

Rackspace has a competitive professional and managed service team that can provide a white-glove approach to implementing and managing storage-centric cloud use cases, such as backup, content distribution, archiving and disaster recovery.

Clients with stringent performance or host security needs can make use of RackConnect to integrate their cloud storage environments with dedicated servers that can be spun up in its cloud in a single-tenanted manner.

Rackspace's cloud file service has native integration with the Akamai content delivery network (CDN), which has presence in over 70 countries, to serve content to users with low-latency access from a large set of edge locations globally.

CAUTIONS

Rackspace continues to de-emphasize its native cloud storage services over those of its partners – AWS and Microsoft Azure. Customers considering its native public cloud storage services should be prepared for service discontinuity in the future and have a clear exit strategy in place to move data to other supported clouds.

While there is intense competition among the top cloud providers to launch new products, there has been limited innovation from Rackspace in its storage offerings in the past 12 months – the service operates in a "maintenance mode" currently.

There continues to be a steady migration of customers away from Rackspace's own cloud storage service. Its cloud storage footprint – in terms of petabytes of data managed – is a tiny fraction of the hyperscale cloud providers, further raising questions about its ability to compete in the long term in this space.

Tencent Cloud

Tencent Cloud is the cloud computing subsidiary of Tencent, based in Shenzhen, China. Tencent Cloud was established in 2010; its cloud services were fully commercialized and became generally available in 2013.

Offerings: Tencent Cloud offers cloud block storage and cloud object storage.

Locations: Tencent Cloud has three regions in China – north, east and south – and a presence in Hong Kong and Singapore. Support and documentation are offered in Mandarin only.

Provider maturity: Tier 2B. Tencent has a strong presence within China with differentiated capabilities to serve gaming, media and startup companies, but it lacks broader appeal to enterprise IT buyers.

Recommended mode and uses: Tencent is a viable provider for use cases such as content distribution, big data analytics and disaster recovery.

STRENGTHS

Tencent is a large, diversified internet company with huge economies of scale. It is one of the world's largest providers of gaming, video and social networking services through its QQ and WeChat products. It has been offering cloud services since 2013 and has a rich portfolio of IaaS, big data analytics and artificial intelligence (AI) services.

Tencent's cloud object storage is tightly integrated with several value-added services that it provides, such as a rich media transcoding platform and CDN services. It has more than 500 edge locations and three regions across China to deliver low-latency content.

Tencent has strategic partnerships with Oracle and Kingdee, through which it resells their SaaS products as well as enabling low-latency storage access to those applications that run on top of Tencent Cloud. This will benefit customers in maintaining a single vendor relationship, as well as in integrating SaaS and IaaS services more closely. Many enterprise clients use Tencent for low-latency access to WeChat.

CAUTIONS

Tencent has low mind share and trust as an enterprise-class cloud provider outside China; and even within China, its presence is limited to the gaming, media and entertainment industries. Moreover, its customer portal and support haven't been localized well to serve the needs of global customers.

While Tencent has expanded its data center footprint outside China, it hasn't globalized its talent pool. Its partner ecosystem is limited outside China, and has limited understanding and expertise in Mode 1 application modernization.

Tencent's product development prioritizes the new functionalities of the product much more than its usability. As a result, Tencent's monitoring, alerting and information life cycle management capabilities are very basic currently and more focused on monitoring virtual machines (VMs) than the data that resides in its block and object stores.

Virtustream

Virtustream, a U.S.-based subsidiary of Dell Technologies, is focused solely on cloud services and software. Virtustream was founded in 2008. It was acquired by EMC in July 2015 and combined with EMC's managed services and some cloud-related assets, before EMC was acquired by Dell in September 2016. Virtustream announced a cloud storage service in 2016 and is a new addition to this Magic Quadrant as a result.

Offerings: Virtustream offers an archive-focused object storage service based on Dell EMC's storage appliances.

Locations: Virtustream has multiple data centers in Australia, Canada, France, Germany, Japan, the Netherlands, the U.K. and the U.S. It has sales presence in Australia, Germany, India, Ireland, Japan, Lithuania, the U.K. and the U.S. Virtustream's service portal is provided in English, German, Japanese, Portuguese and Spanish. Documentation and support are provided in English only.

Provider maturity: Tier 2A. Virtustream is a strategic asset for a large technology vendor, but a highly focused niche provider.

Recommended mode and uses: Virtustream's Storage Cloud is best-suited for Mode 1 archive workloads supported by EMC's Isilon, Data Domain, CloudArray and CloudBoost products.

STRENGTHS

Virtustream has weathered the challenges of being acquired twice within a short period of time and is thriving as a business under Dell, its new host. Virtustream is one of seven businesses under Dell Technologies and includes Dell EMC and VMware as its peers. Virtustream is using the expansive reach of the combined companies to sell to more customers than previously possible.

Virtustream, along with Dell EMC, its sister company, is able to offer attractive pricing and support options for Isilon and Data Domain customers that utilize Virtustream's cloud storage service, because the companies control both the storage service and products.

Virtustream is unique in that it has a distinct focus on Mode 1 use cases, such as archiving and backup, and mission-critical workloads such as SAP, Oracle and, recently, Epic. As a result of this focus, Virtustream has developed significant enterprise credibility that is sorely lacking from other some vendors in this Magic Quadrant.

CAUTIONS

Large parts of Virtustream's storage service are underpinned by Dell EMC's Atmos, an object storage product that hasn't experienced significant software engineering since 2012. Virtustream also leverages Dell EMC's Elastic Cloud Storage (ECS) and has built cloud management capabilities, but Atmos has major scalability challenges, particularly as it relates to metadata management.

The size of Virtustream's cloud storage business is small compared to its business focused on SAP and Oracle workloads. Virtustream's cloud storage service is not positioned as a general-purpose platform and is not widely used for application development use cases that involve cloud-native capabilities.

The primary use cases for Virtustream's cloud storage service include tiering from Dell EMC's on-premises storage products and backup to the cloud. But these use cases account for negligible amounts of data stored in public cloud storage services overall, reflecting a modest market opportunity for Virtustream's cloud storage forays.

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

Tencent Cloud: Tencent began offering an object-storage-based service and now qualifies for this Magic Quadrant.

Virtustream: Virtustream began offering an object-storage-based service and now qualifies for this Magic Quadrant.

Dropped

AT&T: AT&T is discontinuing its cloud storage service and recommends that customers transition to services from other vendors. As a result, AT&T no longer qualifies for this Magic Quadrant.

Inclusion and Exclusion Criteria

To be included in this Magic Quadrant, a vendor must meet the following minimum requirements:

Sell object-based, public cloud storage as a stand-alone service, without the requirement to use any managed services (including guest OS management), or to bundle it with managed hosting or compute services. The vendor may also sell a private, single-tenant version built on its architecture.

Offer RESTful APIs for data access.

Offer self-provisioning with on-demand access and transparent capacity addition.

Offer clearly defined data security, reliability and availability as part of an SLA with a minimum of 99.9% availability for the core object service.

Offer resilient and secure network capabilities, including the option for dedicated network connections.

Offer metered pricing for capacity, data transfer and/or requests at a granular level (for example, per gigabyte per month for capacity, per gigabyte transfer per month for bandwidth, per 1,000 HTTP requests).

Have an established global presence with object storage services in at least two geographic regions consisting of North America, EMEA, Asia/Pacific and South America.

Have an object-based cloud storage offering in general availability by 31 January 2017.

Offer consolidated billing and provide 24/7 customer support (including phone support).

Honorable Mentions

Backblaze: Backblaze operates B2, a public cloud-based object storage service. B2 is only deployed in one region and thus does not qualify for this Magic Quadrant.

CenturyLink: CenturyLink operates a public cloud-based object storage service, but is only deployed in one region and thus does not qualify for this Magic Quadrant.

Fujitsu: Fujitsu operates K5, a cloud IaaS platform. K5's object storage offering is only available in one region and thus does not qualify for this Magic Quadrant.

Joyent: Joyent operates Triton, part of which is an object storage service. The object storage service is only available in one region and thus does not qualify for this Magic Quadrant.

NTT: NTT operates a public cloud-based object storage service, but is only deployed in one region and thus does not qualify for this Magic Quadrant.

Evaluation Criteria

Ability to Execute

We analyze the vendor's capabilities across broad business functions. We give high ratings to vendors that have expanded their products across a wide range of use cases and applications, improved their service and support capabilities, and focused on improving enterprise applications. Ability to Execute reflects the market conditions and, to a large degree, it is our analysis and interpretation of what we hear from clients and vendor references. Our focus is assessing how a vendor participates in the day-to-day activities of the market.

Product or Service — We evaluate the capabilities of the products or solutions offered to the market. Key considerations for the cloud storage services market are how well the products/services address enterprise use-case needs, the breadth of the products (in terms of functional capabilities) and how well they scale. Specific characteristics considered include:

- Breadth of storage services

- Depth and functionality of the various storage services

- Value-added services

Overall Viability (Business Unit, Financial, Strategy, Organization) — This is an assessment of the organization's overall financial health, the financial and practical success of the business unit, and the likelihood that the individual business unit will continue to invest in the product and advance the state of the art in the organization's product portfolio. Specific characteristics considered include:

- Profitability, revenue growth, investments and financial health

Sales Execution/Pricing — We evaluate a 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. Specific characteristics considered include:

- Total number of paying customers
- Number of customers added during the past 12 months
- Petabytes under management, and object growth
- Go-to-market strategy
- Sales mix (direct versus indirect)
- Competitiveness and diversity of pricing options

Market Responsiveness/Record – This focuses on the vendor's 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 provider's history of responsiveness. Specific characteristics considered include:

- New product launches during the past 12 months
- Product alignment to market needs
- Track record of new product success

Customer Experience – We evaluate a vendor's ability to deal with postsales issues. Because of the specialized nature of the cloud storage market and the mission-critical nature of many storage environments, customers expect vendors to escalate and respond to issues in a timely fashion with dedicated and specialized resources, and to have relevant detailed expertise. Another consideration is a vendor's ability to deal with increasing global demands. Additional support tools and programs are indications of a maturing approach to the market. Specific characteristics considered include:

- Level of satisfaction based on reference checks and Gartner inquiries

Operations – We consider the ability of the organization to meet its goals and commitments. Factors include the quality of the organizational structure, such as skills, experiences, programs, systems and other vehicles that enable the organization to operate effectively and efficiently on an ongoing basis. Specific characteristics considered include:

- Commitment to the cloud business so far
- Organizational structure
- Scale of operations
- Track record
- Quality of presales and postsales teams
- Quality of professional services team

Table 1. Ability to Execute Evaluation Criteria

Evaluation Criteria	Weighting
Product or Service	High

Evaluation Criteria	Weighting
Overall Viability	High
Sales Execution/Pricing	Medium
Market Responsiveness/Record	High
Marketing Execution	Not Rated
Customer Experience	Medium
Operations	Low

Source: Gartner (July 2017)

Completeness of Vision

Completeness of Vision distills a vendor's view of the future, the direction of the market and the vendor's role in shaping that market. We expect the vendor's vision to be compatible with Gartner's view of the market. A vendor's vision of the evolution of the data center and of the expanding role of cloud storage services are important criteria. In contrast with how we measure Ability to Execute criteria, the ratings for Completeness of Vision are based on direct interactions with vendors.

Market Understanding – We evaluate a technology provider's ability to understand buyers' needs, and to translate those needs into an evolving roadmap of 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 wants and needs with their added vision receive high ratings. Specific characteristics considered include:

- Long-term strategy and execution
- New product launches during the past 12 months
- Product alignment with market needs
- Ability to sustain a differentiated offering

Sales Strategy – This considers the vendor's strategy for selling products. Does it use 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? Specific characteristics considered include:

- Key strategies to grow market share
- Quality of direct sales force

Quality of technology and channel partners

Key positioning messages

Marketing outreach programs and channels for delivering them

Offering (Product) Strategy — We evaluate a vendor's product roadmap and architecture, which we map against our view of enterprise requirements. We expect product direction to focus on catering to emerging enterprise use cases for the public cloud. Specific technologies may include connectivity management, IAM, application enhancements, and emerging solutions for enterprise cloud storage deployment and related technologies. Specific characteristics considered include:

Breadth of offerings spanning block, file and object storage services

Integration with peripheral services

Business Model — This assesses a vendor's approach to the market. Does the approach enable the vendor to scale the elements of its business (for example, development, sales/distribution and manufacturing) cost-effectively from startup to maturity? Does the vendor understand how to leverage key assets to grow profitably? Can it gain additional revenue by charging separately for optional, high-value features? Other key attributes of the business model are reflected in how the vendor uses partnerships to increase sales. The ability to build strong partnerships with a broad range of technology partners and associated system integrators demonstrates leadership. Specific characteristics considered include:

Profitability

Revenue growth

Adjacent offerings/services

Viability of current execution strategy

Vertical/Industry Strategy — This measures the vendor's strategy to direct resources, skills and offerings to meet the specific needs of individual market segments, including vertical markets. Specific characteristics considered include:

A diverse mix of customers (with an emphasis on enterprise customers)

Vertical-specific offerings

Industry-specific compliance adherence

Industry-specific ISVs and channel partners

Innovation — This measures a vendor's ability to move the market into new solution areas, and to define and deliver new technologies. In the cloud storage service market, innovation is key to meeting rapidly expanding requirements and to keeping ahead of new (and often more-agile) competitors. Specific characteristics considered include:

New services/functionalities during the past 12 months

Track record of innovation so far

Roadmap

Ability to monetize the innovation

Geographic Strategy – We measure the vendor's ability to direct resources, skills and offerings to meet the specific needs of geographies outside its headquarters or native geography, either directly or through partners, channels and subsidiaries as appropriate for that geography and market.

Specific characteristics considered include:

- Percentage of revenue beyond the home market

- Global locations from where services are offered

- Presales/postsales teams beyond the home market

- Strength of global channel partners

Table 2. Completeness of Vision Evaluation Criteria

Evaluation Criteria	Weighting
Market Understanding	High
Marketing Strategy	Not Rated
Sales Strategy	Medium
Offering (Product) Strategy	High
Business Model	Medium
Vertical/Industry Strategy	Low
Innovation	Medium
Geographic Strategy	High

Source: Gartner (July 2017)

Quadrant Descriptions

Leaders

Public cloud storage leaders offer innovative storage offerings built on a scalable platform, with global data centers and established credibility as a business. Leaders thoroughly understand the needs of large-enterprise organizations, and can engage those organizations with services as effective as traditional on-premises storage solutions with competitive pricing. Leaders provide

partnerships and/or vertical-industry offerings that satisfy not only generic storage requirements, but also complete information management environments integrated with applications operating on-premises, in private clouds or on a public cloud.

Challengers

Challengers are well-positioned to serve current market needs. Their services are targeted at a particular set of use cases, and they have a successful track record. They may have significant market share, and are likely to have many reference customers. They make significant investments in the business, with long-term plans that may enable them to become market leaders. The scope of their short-term ambitions is not as broad.

Visionaries

Visionaries introduce products that challenge the status quo of the market. They may lead by pricing, product features or expansion into an underserved portion of the cloud storage market. Visionaries lack the Ability to Execute at the level of vendors in the Leaders quadrant. They are poised to improve their Ability to Execute in areas of financial health, customer base and a workforce that demonstrates high competence in the cloud storage service market.

Niche Players

Niche Players may be excellent providers for the use cases in which they specialize, but may not serve a broad range of use cases or have an ambitious roadmap. Some are relatively new entrants to this market, or have not yet gained significant market share. Some may have solid leadership positions in adjacent markets, but are still in the relatively early stages of developing capabilities in cloud storage IaaS.

Context

Public cloud storage poses unique challenges compared with enterprise data center equivalents. One of the most difficult challenges is moving data in and out of IaaS environments. Some vendors, such as AWS, have made significant efforts to support importing and exporting data using both physical devices (Snowball) and network connections (S3 Transfer Acceleration) using access points at the edge. But not all vendors provide such services and the export of data can be particularly challenging when time, bandwidth and dataset sizes are significant factors.

Gartner does not recommend that organizations simply select from vendors in the Leaders quadrant, but in the case of public cloud storage there is significant risk in not selecting a vendor with massive scale, deep ability to address enterprise requirements and a positive outlook for longevity. Upheaval in the market for public cloud IaaS has seen enterprises needing to evacuate data from providers that are either suspending service altogether or otherwise scaling back their operations. That's not an enviable state to find yourself in as an enterprise.

There's another subtle aspect that enterprises should be wary of: the service provider that neither ceases nor reduces its operation in a publicly noticeable manner. These service providers are the ones that are most at risk for *eventually* shutting down. The telltale sign is a failure to innovate. It isn't able to deliver new features and services to address evolving market requirements because keeping up with AWS, Google and Microsoft is a herculean task.

Market Overview

Public cloud storage services provide block, file and/or object storage resources for use by applications and users. These services are fundamentally similar to platforms that are commonly found in enterprise data centers, but with significant differences focused on how the resources are provisioned, accessed and billed. Public cloud storage resources are provisioned in a fraction of the time of the enterprise data center and are more like metered utilities in which users pay for what they provision and consume, rather than capitalized expenditures. Lastly, public cloud storage services expose programming interfaces that allow organizations to programmatically provision resources through automation tools and frameworks.

The use cases for public cloud storage are quite similar to those found in the enterprise data center. Block storage is typically used for databases, analytics and transactional workloads. File-based storage in the public cloud is accessible via NFS and SMB protocols and supports use cases such as analytics and file sharing. Object storage is less commonly found in enterprise data centers, but the use cases focused on large-scale, unstructured data remain consistent.

Consumption of Public Cloud Storage Services

The vast majority of public-cloud-based storage consumption is associated with applications from within public cloud IaaS environments, rather than from within enterprise data centers. Big data workloads from distributed computing applications such as Hadoop and Spark are the largest drivers of data to public cloud storage services in recent years. As such, providers are now tailoring their storage services for these workloads in terms of performance and efficiency of querying.

Hybrid and Multicloud

New entrants to the market for public cloud storage services are offering innovative new products with compelling characteristics from the perspective of enterprise features and price.

Gartner is tracking an emerging market of vendors that are delivering public cloud storage services from within colocation facilities such as those offered by Equinix. These colocation facilities have low-latency network access to a wide array of infrastructure services from the hyperscale vendors such as AWS, Google and Microsoft.

NetApp, Nimble Storage (now a Hewlett Packard Enterprise company) and Wasabi are vendors employing low-latency interconnects such as Microsoft's ExpressRoute and AWS's Direct Connect to offer alternatives to the cloud storage primitives such as block, file and object storage provided by established hyperscale vendors.

In the case of NetApp, it's currently working closely with Microsoft to offer NFS as a managed service on the Azure platform. NetApp has a long history of providing high-quality network-attached storage (NAS) products to enterprises in on-premises deployments. The company is leveraging its legacy to bring enterprise-grade NAS capabilities to the public cloud.

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.



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