

Cloud Components

Spotlight Report



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MARCH 2024

Cloud Components Benchmark Overview

Cloud components are hardware, software and networking components purchased by enterprise customers for internal cloud service delivery or by third-party providers (public or private) that deliver cloud services to end customers.

TBR's *Cloud Components Benchmark* provides business-centric analysis through qualitative and metric-based comparisons of key vendors in the cloud components market segment. The report covers 11 leading vendors in the hardware and software spaces, tracking strategies, revenue and revenue growth across subsegments of software components and hardware components.

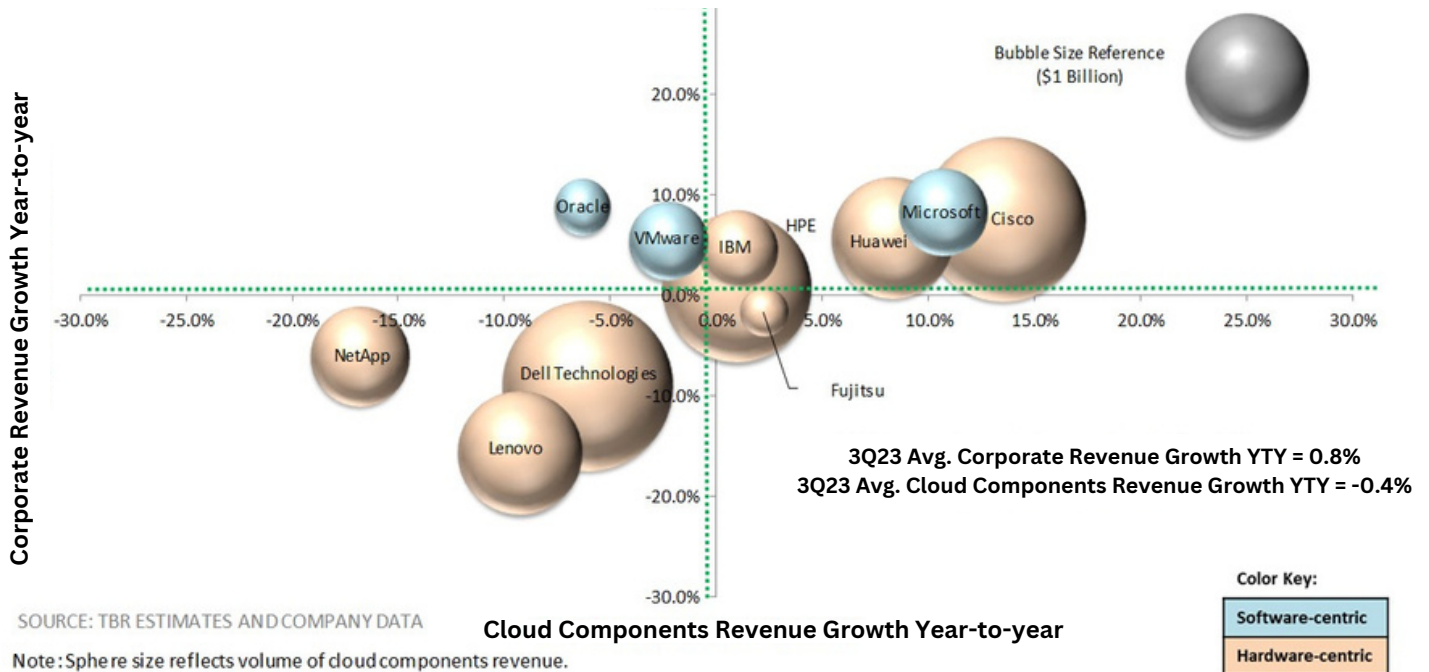
[Click here to view the report's research topics and a full list of vendors covered.](#)

Cloud Components Revenue and Growth

Average vendor revenue growth was flat in 3Q23 but will be driven by AI server demand and software acquisitions in the coming quarters

Average cloud components revenue among benchmarked vendors was flat on a year-to-year basis in 3Q23. Market leaders continued to grapple with sluggish demand in certain hardware markets, namely storage, but reported strong interest in AI servers, which will flow through vendor financials in 2024. On the software side, acquisitions, including Cisco's pending purchase of Splunk, will shape the market. Cisco will rise on the cloud software components leaderboards once the deal closes.

3Q23 CORPORATE REVENUE GROWTH VS. CLOUD COMPONENTS REVENUE GROWTH



“While sluggish demand in core market segments like storage weighed down average cloud components revenue growth in 3Q23, vendors are poised to post strong growth rates in 2024, owing to acquisitions and increased demand for AI hardware.”

– TBR Senior Analyst Catie Merrill,
 co-author of *Cloud Components Benchmark*

Cloud Components Vendor Spotlights Excerpt

Dell Technologies

Dell Technologies' cloud components revenue declined in the midsingle digits on a year-to-year basis in 3Q23, driven by lower demand for storage. However, interest in AI servers appears to be high, particularly among cloud service providers, and Dell Technologies reported price increases across both AI-optimized and traditional servers in 3Q23. These dynamics will support Dell Technologies' Infrastructure Solutions Group (ISG) and cloud components revenue in the coming quarters.

Cisco

Cisco is a hardware-centric vendor due to its networking incumbency, but the company is effectively diversifying its portfolio and revenue mix with both inorganic and organic software assets. The pending acquisition of Splunk will help Cisco shift its revenue mix toward higher-value subscription software and supplement its AI-based observability platform. The Splunk acquisition is currently under regulatory review but is expected to close in mid-2024.

Hewlett Packard Enterprise

Customers' ongoing pursuit of hybrid IT deployments as part of a subscription model is driving GreenLake adoption and revenue. For context, HPE ended FY2023 with 29,000 HPE GreenLake cloud platform customers, and this momentum, coupled with mounting AI demand, will support HPE's future revenue performance. Accelerated processing units (APUs), including GPU-based servers, represented 25% of HPE's total server orders in FY2023.

Cloud Software Components Excerpt

Broadcom officially takes over VMware and doubles down on core virtualization stack, which is sold as a subscription

After several months of navigating a series of regulatory roadblocks, Broadcom completed its acquisition of VMware on Nov. 22, 2023. As part of the deal, VMware joins Broadcom under the Broadcom Software Group alongside existing infrastructure assets from CA Technologies, Symantec and Brocade, which collectively continue to grow revenue in the high single digits on a year-to-year basis. Forecasting a \$12 billion contribution from VMware in the span of 11 months, Broadcom management has hit the ground running with new portfolio and go-to-market initiatives designed to consolidate the VMware portfolio around core virtualization assets that help customers build on-premises private clouds and run applications across environments, all sold as a subscription. The long-awaited suspension of VMware's perpetual license sales is a top change for VMware, but there are several other new changes Broadcom will make to help VMware become a leaner, more focused organization committed solely to the core virtualization stack.

Divestitures: VMware has a rich history of acquiring assets that complement its SDDC (Software Defined Data Center) portfolio. Broadcom has announced it will divest all assets deemed noncore, and this currently includes EUC and Carbon Black. VMware's EUC portfolio largely comprises Horizon for virtual desktop infrastructure (VDI) and App Volumes, an application delivery offering. We suspect the EUC business, specifically App Volumes, is a small driver of VMware's cloud components revenue and will have minimal impact on the overall business. However, changes in licensing are still bound to be a challenge as trusted vSphere customers also using Horizon will have to switch to a different license for their VDI instances, and in general, disruption in licensing is something Broadcom will have to navigate. Divesting the Carbon Black business should be less of an issue, as Carbon Black did not appear to be effectively integrated with VMware to begin with and both companies have struggled to drive synergies.

VMware Partner Advantage: Broadcom is morphing the VMware Partner Advantage Program into the Broadcom Advantage Program, and VMware's 18,000-plus reseller partners now must reapply to participate in the new program. The details around the program still seem relatively vague, and we suspect many reseller and service provider partners are facing an uncertain future around their VMware businesses. Broadcom management also intends to focus on VMware's top 2,000 accounts, making it impossible for partners to tap into VMware's more lucrative customer base.

Cloud Hardware Components Excerpt

Amid a cyclical downturn in the server and storage markets, cloud hardware providers with competency in networking have been increasingly focused on cloud networking, understanding that the proliferation of AI and cloud scaling will continue to drive demand in the space

Over the past two quarters cloud server and storage revenues have contracted due primarily to ongoing customer inventory digestion. Aggregate server revenue declines of 9.4% and 7.2% in 2Q23 and 3Q23, respectively, have been steeper than the storage revenue declines of 4.3% and 3.7%, respectively, in the same periods. At the same time, demand for cloud networking has increased substantially, driven by growing data center connectivity requirements associated with the scaling of cloud data centers and the proliferation of AI workloads. These trends have led to average benchmarked vendor cloud networking revenue growth of 21.6% and 14.2% year-to-year in 2Q23 and 3Q23, respectively.

As such, cloud networking vendors are increasing their focus on the segment to mitigate top-line erosion. Additionally, the cloud networking segment tends to be more profitable than the cloud server and storage segments, so as cloud networking revenue as a percentage of total cloud hardware revenue increases, cloud hardware margin profiles improve.

On Jan. 9, 2024, HPE and Juniper announced they had entered into a definitive agreement through which HPE intends to acquire Juniper Networks for approximately \$14 billion in cash. The planned acquisition is expected to close in late 2024 or early 2025 should the agreement receive regulatory and Juniper shareholder approval. If the acquisition closes, HPE's networking capabilities, especially around AI-enabled networking, will expand dramatically, making HPE's networking portfolio competitive with Cisco's and threatening Cisco's dominance in cloud networking.

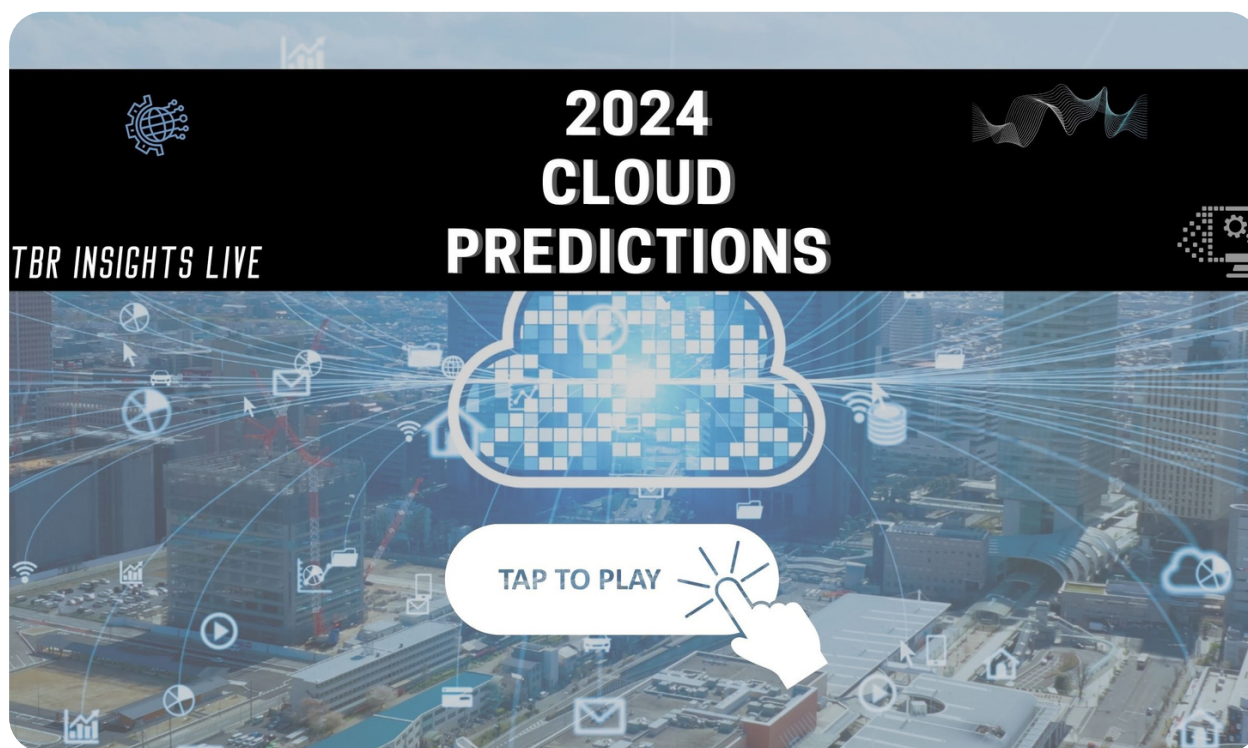
However, incumbent benchmarked cloud networking players, like HPE and Cisco, are increasingly threatened by semiconductor vendors that continue to develop their own cloud-viable networking solutions. For instance, Broadcom has a wide portfolio of Ethernet switches and continues to innovate in data center connectivity, while NVIDIA, with its leading InfiniBand networking solutions, has gained significant traction in the market. Notably, Microsoft Azure became the first public cloud provider to incorporate NVIDIA's AI stack, including InfiniBand.

Additionally, other major cloud service providers, like Amazon Web Services (AWS), continue to invest in their own silicon development teams and have created custom cloud networking solutions to reduce their reliance on OEMs, a trend TBR expects to persist and gain momentum in the years to come.

Cloud Components Benchmark Vendor Coverage

- Cisco
- Dell Technologies
- Fujitsu
- Hewlett Packard Enterprise
- Huawei
- IBM
- Lenovo
- Microsoft
- NetApp
- Oracle
- VMware

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