

The Forrester Wave™: Hyperconverged Infrastructure, Q3 2020

The 11 Providers That Matter Most And How They Stack Up

by Naveen Chhabra

July 29, 2020

Why Read This Report

In our 35-criterion evaluation of hyperconverged infrastructure (HCI) providers, we identified the 11 most significant ones — Cisco, DataCore Software, Hewlett Packard Enterprise (HPE), Huawei, Microsoft, NetApp, Nutanix, Pivot3, Red Hat, Scale Computing, and VMware — and researched, analyzed, and scored them. This report shows how each provider measures up and helps infrastructure and operations (I&O) professionals select the right one for their needs.

Key Takeaways

Nutanix, VMware And Cisco Lead The Pack

Forrester's research uncovered a market in which Nutanix, VMware, and Cisco are Leaders; Hewlett Packard Enterprise, Microsoft, Huawei, Scale Computing, Pivot3, and NetApp are Strong Performers; and DataCore Software and Red Hat are Contenders.

Dependability, Flexibility, And Ease Of Operations Are Key Differentiators

As previous-generation technology becomes outdated and less effective, improved flexibility, ease of operations management, and faster service delivery will dictate which providers lead the pack. Vendors providing dependable services that are flexible and easy to operate can position themselves to successfully deliver to their customers.

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HCI Balances Simplicity And Flexibility To Become The New Default

Technology leaders live in an environment with rapidly changing business expectations. I&O pros look to HCI for a variety of benefits, including infrastructure flexibility, ease of operations, and faster delivery.¹ HCI systems originally targeted VDI workloads with relatively predictable resource demands. As the capabilities of HCI solutions improved, enterprises expanded their use to include major enterprise software, such as enterprise resource planning (ERP), analytics, and scale-out databases, along with an array of workloads running in a virtualized environment.² Every enterprise application poses distinct requirements — the latency, throughput, performance, volatility, and scalability of an online transaction processing application are different from those of a video analytics workload.³ Tech leaders expect the simplicity of an HCI system while demanding flexibility to configure the system to serve an application's specific needs. Achieving the just-right balance between simplicity and configurability is critical to deliver an optimal solution.

As a result of these trends, HCI customers should look for providers that:

- › **Package configuration flexibility with simplicity.** Complexity is inevitable in today's IT environment, which must support applications with distinct needs. An infrastructure built for a defined application won't automatically lend itself to other applications that exhibit different behaviors. Configurability can make the "art of impossible" possible; however, it almost always exacerbates complexity. Ironically, technology simplification is the other major force driving IT decisions. Vendors face a big challenge: how to package and deliver enterprise-class features without compromising simplicity. Balancing these is the key to success.
- › **Make IT operations a breeze.** Firms are deploying hyperconverged infrastructure in a variety of environments, including data centers, remote branches, and edge locations. IT leaders repeatedly highlight the need to seamlessly operate infrastructure across all deployments without extensive human involvement and must critically review management and operations capabilities with a lifecycle framework. While the HCI systems are easy to manage, the larger question is how well these systems integrate with your existing processes.
- › **Deliver a dependable technology.** Technology permeates every aspect of business, so the possibilities of crisis from failures grow exponentially. In a world full of uncertainties, disasters are waiting around the corner. Business and technology leaders are looking for technologies they can depend on to withstand not just the known failures — systems, devices, and components — but also the unknowns, such as ransomware attacks.⁴

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Evaluation Summary

The Forrester Wave™ evaluation highlights Leaders, Strong Performers, Contenders, and Challengers. It's an assessment of the top vendors in the market and doesn't represent the entire vendor landscape. You'll find more information about this market in "[Now Tech: Hyperconverged Infrastructure, Q2 2020](#)" and "Navigate The Choices And Experiences Of Hyperconverged Infrastructure."

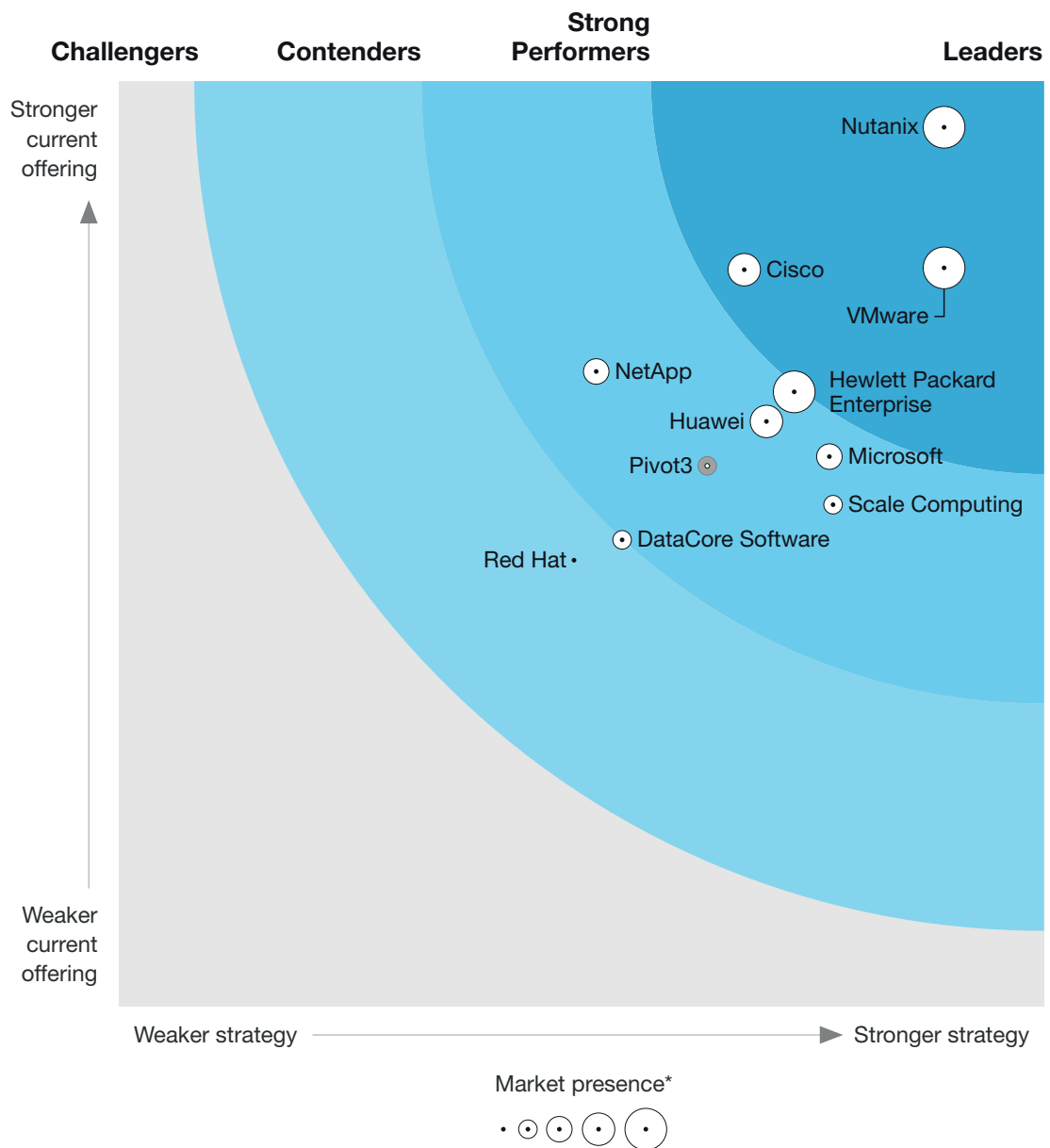
We intend this evaluation to be a starting point only and encourage clients to view product evaluations and adapt criteria weightings using the Excel-based vendor comparison tool (see Figure 1 and see Figure 2). Click the link at the beginning of this report on [Forrester.com](#) to download the tool.

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FIGURE 1 Forrester Wave™: Hyperconverged Infrastructure, Q3 2020**THE FORRESTER WAVE™****Hyperconverged Infrastructure**

Q3 2020



*A gray bubble indicates a nonparticipating vendor.

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FIGURE 2 Forrester Wave™: Hyperconverged Infrastructure Scorecard, Q3 2020

	Forrester's weighting	Cisco	DataCore Software	Hewlett Packard Enterprise	Huawei	Microsoft	NetApp
Current offering	50%	3.98	2.52	3.32	3.16	2.97	3.43
Platform support	25%	3.66	2.92	2.16	2.84	2.78	2.50
Solution scalability	20%	4.00	3.20	3.00	3.00	2.60	3.40
Storage functions	30%	4.20	2.00	3.40	2.90	2.60	3.10
Manageability and ease of operations	15%	4.00	1.00	4.40	3.20	3.80	4.60
Professional services and consulting	10%	4.00	4.00	5.00	5.00	4.00	5.00
Strategy	50%	3.38	2.72	3.65	3.50	3.84	2.58
Product strategy	60%	2.30	1.20	3.20	2.50	3.50	2.30
Customer feedback	40%	5.00	5.00	4.32	5.00	4.34	3.00
Market presence	0%	3.50	1.50	4.20	3.10	2.50	2.70
Installed base	50%	3.00	1.00	3.40	4.20	3.00	3.40
Partners	50%	4.00	2.00	5.00	2.00	2.00	2.00

All scores are based on a scale of 0 (weak) to 5 (strong).

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FIGURE 2 Forrester Wave™: Hyperconverged Infrastructure Scorecard, Q3 2020 (Cont.)

	Forrester's weighting	Nutanix	Pivot3*	Red Hat	Scale Computing	VMware
Current offering	50%	4.75	2.92	2.41	2.71	3.99
Platform support	25%	4.46	2.82	2.32	2.82	4.06
Solution scalability	20%	4.40	1.40	1.40	3.60	4.00
Storage functions	30%	5.00	3.50	3.60	2.40	3.70
Manageability and ease of operations	15%	5.00	3.20	1.10	2.40	4.40
Professional services and consulting	10%	5.00	4.00	3.00	2.00	4.00
Strategy	50%	4.46	3.18	2.46	3.86	4.46
Product strategy	60%	4.10	2.40	1.20	3.10	4.10
Customer feedback	40%	5.00	4.34	4.34	5.00	5.00
Market presence	0%	4.80	1.90	1.00	2.00	4.30
Installed base	50%	4.60	1.80	1.00	1.00	4.60
Partners	50%	5.00	2.00	1.00	3.00	4.00

All scores are based on a scale of 0 (weak) to 5 (strong).

*Indicates a nonparticipating vendor

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Vendor Offerings

Forrester included 11 vendors in this assessment: Cisco, DataCore Software, Hewlett Packard Enterprise, Huawei, Microsoft, NetApp, Nutanix, Pivot3, Red Hat, Scale Computing, and VMware (see Figure 3).

FIGURE 3 Evaluated Vendors And Product Information

Vendor	Product evaluated	Product version evaluated
Cisco	HyperFlex	4.02a
DataCore Software	SANsymphony for HCI	10.0 PSP 10
Hewlett Packard Enterprise	HPE SimpliVity	v4.0.1
Huawei	FusionCube	6.0
Microsoft	Azure Stack HCI	N/A
NetApp	NetApp HCI	2.10
Nutanix	Nutanix AOS	AOS 5.16
Pivot3	Acuity	10.4
Red Hat	Red Hat Hyperconverged Infrastructure for Virtualization	RHHI-V version 1.7
Scale Computing	HC3	Hypercore v8.8
VMware	VMware vSAN	vSAN 7

Vendor Profiles

Our analysis uncovered the following strengths and weaknesses of individual vendors.

Leaders

- › **Nutanix is marching with a vision to serve enterprise IT beyond just HCI.** Nutanix has maintained its position atop the HCI market with its innovation, R&D investment, sales momentum, partnerships, and acquisition of new customers from all segments and geographies. Since our previous Forrester Wave evaluation, Nutanix has launched a series of adjacent offerings, including Nutanix Files, Nutanix Objects (S3-compatible storage), and Nutanix Xi services.⁵ Its products consistently maintain ease of use and management across its products and services portfolio.

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Nutanix has launched a partner-centric secondary storage program called Nutanix Mine that extends native storage management to secondary storage and backup.⁶ This vendor partners with HPE GreenLake in a model where HPE delivers Nutanix products in a pay-per-use services mode. It has a clear, impressive roadmap for its product lines.

Nutanix is aggressively pursuing its mission by serving its clients with a growing set of data center infrastructure products as well as managed services under the Nutanix Xi brand. Nutanix clients are increasingly adopting the Acropolis Hypervisor (AHV), and we expect to see an increase in the list of HCI features and capabilities for its native virtualization technology grow as well. This, along with a growing bouquet of maturing Nutanix Xi services, will make Nutanix HCI a more natural choice for AHV deployments versus vSphere environments.

› **VMware is capitalizing on its massive installed base and a strong partner ecosystem.**

VMware vSAN is a software-defined, hardware-agnostic HCI solution integrated with the vSphere hypervisor. All VMware hypervisor installations include vSAN bits; customers just need to activate the HCI functions. VMware goes to market with partner server vendors that split into two categories. First, most server vendors certify respective hardware and brand it as a vSAN ReadyNode.⁷ Second, a few vendors, such as Dell Technologies, Fujitsu, and Hitachi Vantara, have developed deeper integration with vSAN for improved lifecycle management. These are partnered appliances.⁸ VMware Cloud on Amazon Web Services (AWS) hosts the same HCI stack that customers deploy on-premises. VMware dedicates a large R&D team to vSAN development and integration with applications from its ecosystem partner vendors. Based on its architecture, licensing, and go-to-market strategy, VMware continues to gain significant market momentum.

vSAN works only with VMware's own hypervisor. This is a limiting factor for companies that need or desire alternate hypervisors. VMware and the server vendors spend a significant amount of time in validation and certification. Despite that, reference customers mentioned that vSAN deployment faces first-time deployment issues because of missing or deprecated device drivers. VMware clients have large-scale vSAN deployments; however, reference customers shared concerns about significant predeployment planning, testing, and the length of time it took them to stabilize vSAN operations.

› **Cisco HyperFlex is feature-rich and future focused but confined to its installed base.**

Cisco HyperFlex supports multiple hypervisors, and its CSI interface offers persistent storage for containers. It includes many enterprise-class features, such as stretched cluster and logical availability zones, making the HyperFlex stack highly dependable. It supports GPUs on the HyperFlex system. Cisco Intersight, a software-as-a-service (SaaS) tool hosted and managed by Cisco, provides a multifunctional management interface. Clients can execute operational tasks such as installation, upgrades, and active management of several HyperFlex clusters spread across multiple data centers. Cisco Intersight doubles as a quorum for a two-node HyperFlex cluster, typically deployed in a remote office and branch office (ROBO) location.⁹ Cisco now offers an

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optional hardware accelerator card for inline deduplication; Cisco HyperFlex is available only as a native appliance. Clients interface with Cisco for all hardware and software support. Reference customers expressed satisfaction with Cisco's Technical Assistance Center support services.

Cisco has great inherent strengths in networking, and this has influenced the HyperFlex offering, but adding a storage quality-of-service (QoS) capability would improve it. Cisco HyperFlex isn't available as software; thus, Cisco's solution isn't an option for customers that have standardized on competitive server hardware platforms.

Strong Performers

- › **Hewlett Packard Enterprise SimpliVity is a strong solution but has had R&D setbacks.** After acquiring SimpliVity, Hewlett Packard Enterprise standardized its solution on HPE servers only. HPE has leveraged the high popularity of its servers and further pushed the envelope by limiting new sales of the SimpliVity solution to its ProLiant DL and Apollo servers. That's a significant change from SimpliVity's prior stance of certifying its stack for multiple server manufacturers. HPE's strong sales and support machinery gives SimpliVity much more market traction than it had prior to the acquisition. HPE SimpliVity offers a rich set of global multisite data management functions anchored by an always-on global deduplication and compression architecture. It includes a comprehensive set of backup/recovery features, snapshot management capabilities, disaster recovery (DR) capabilities, and LAN/WAN optimization. HPE customers utilize the SimpliVity solution for a variety of use cases, including mission-critical business applications, ROBO deployments, virtual desktop infrastructure (VDI), and running a set of standard commercial-off-the-shelf applications. HPE's architecture lends itself to benefits like efficiency and storage savings without any custom configuration.

HPE reference customers expressed their concerns about the reduced pace of product innovation and a feeble roadmap. However, they were excited about the improving support quality since the SimpliVity acquisition. Customers seek a point of view and clarity from HPE on two fronts. First, when and why they should choose between the SimpliVity or Nimble storage-based disaggregated HCI, and second, when and why they should choose a Nutanix-based or SimpliVity-based GreenLake offering. HPE GreenLake offers a Nutanix hyperconverged managed service solution in addition to SimpliVity.

- › **Microsoft is a good fit for companies that want a homogenous hybrid infrastructure.** Microsoft's HCI offering is Azure Stack HCI; it's a reincarnation of the Storage Spaces Direct that the company has been offering with Windows Server Data Center 2016. Azure Stack HCI supports Microsoft's Hyper-V hypervisor only. Microsoft bundles a number of innovative capabilities around data management, resiliency, performance, and higher storage efficiency into Azure Stack HCI, a part of Windows Server 2019 edition. The centralized management console, Windows Admin Center, provides easy management and operations of Azure Stack HCI. Azure Stack HCI supports a range of in-server media types such as NVMe and Intel Optane in addition to supporting an external JBOD.¹⁰

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It's easy for firms invested in Microsoft's operating system to embrace Azure Stack HCI, but those that have standardized on either a VMware or Red Hat hypervisor can't use Azure Stack HCI because of lack of integration. Microsoft reference customers raised concerns about the additional license requirements as they upgrade to a server with a higher core count.

- › **Huawei is strong in several geographies and is a good fit for its telco clients.** Huawei brands its hyperconverged offering as FusionCube. It comes as a packaged solution that's vertically integrated with Huawei's own infrastructure and includes Huawei's KVM-based hypervisor FusionSphere and its proprietary software-defined storage FusionStorage; FusionCube supports VMware's hypervisor in addition to FusionSphere. FusionCube has gained significant traction with existing Huawei enterprise customers, especially those in the telecom industry in mainland China, Southeast Asia, EMEA, and Latin America. Huawei partners with enterprise software vendors like Oracle and SAP to certify their applications on FusionCube.

FusionCube's interface is easy to navigate and operate, but based on the use cases it performs and serves, it appears to be disjointed. IT admins have to navigate multiple interfaces. Several storage capabilities are difficult to find and therefore a hurdle to the ease of management that its clients are looking for. Reference customers highlighted support quality issues. As a company, Huawei claims to invest more than 14% of revenues in R&D, but budgeting R&D to improve user experience and support services would serve it well.

- › **Scale Computing serves firms with a cost-effective, enterprise-grade ROBO solution.** Scale Computing's solution, Scale HC3, is built on the KVM hypervisor and sold either as an appliance priced per node or as a software solution through OEMs like Lenovo and managed service providers. It has proven to be a sound choice for small and medium-size businesses, edge environments, ROBO users, retailers, and distributed enterprises. While Scale Computing focuses on such deployments and use cases, its customers have also deployed the solution to build large single clusters. Scale Computing offers HC3 as a managed service hosted in Google Cloud; firms can use this cloud-hosted instance as a data replication and a DR target. The solution offers data services, easy installation, and streamlined management. Scale Computing has a smaller revenue base but a large installed base relative to its revenues.

Scale Computing has ambitious roadmap plans, and achieving them will position its offerings for mission-critical application deployments. Scale Computing offers a low-cost, reliable solution, especially for ROBO locations, but it won't appeal to IT leaders standardized on a Microsoft Red Hat or VMware hypervisor and looking for a consistent platform across data center and remote locations.

- › **Pivot3 offers a robust hyperconverged solution for the video surveillance market.** Built on a platform originally tailored for video surveillance applications that demand effective and efficient storage management, Pivot3 has been delivering HCI for broader enterprise requirements for a few years. It offers two editions: Acuity Data Center Edition and Acuity Surveillance Edition. Pivot3 can deliver consistent and predictable performance using NVMe flash, and its Acuity Cloud software can be hosted natively on AWS. The Acuity Cloud enables the use of public cloud for backup and

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recovery and recently added security policy management capabilities to serve data encryption needs. Pivot3 strategically partners with Lenovo to go to market in areas like Asia Pacific and the Middle East. Pivot3 didn't provide reference customers for this evaluation, but clients that we spoke with gave high ratings for its product, focus, and customer service, all of which the company achieves by focusing on fundamentals.

Pivot3's solution has much broader acceptance in the surveillance market than in the data center use deployment. Because of its hyperfocus on the surveillance market, this vendor has recently come under pressure due to reduced overall spending. Pivot3 declined to participate in the full Forrester Wave evaluation process.

- › **NetApp provides a strong technology solution but not a clear message.** NetApp acquired SolidFire in 2016 and continues to sell it as a standalone all-flash storage offering but has also used the technology to enter the HCI market. NetApp HCI is available only as an appliance; its solution architecture is different from others in the industry. Its disaggregated architecture enables easy, independent, and large scale-out of compute and storage nodes. Based on the SolidFire Element OS, NetApp now has one of the most comprehensive storage QoS systems in this market. Built on a credit system, it accommodates spikes in infrastructure demand and ensures that applications meet defined service levels. NetApp supports consumption of public cloud and creation of a hybrid cloud storage infrastructure using the rest of its portfolio offerings, but not yet with NetApp HCI. NetApp has leveraged its position in storage infrastructure to drive sales of NetApp HCI. It has leveraged its existing intellectual property (IP), along with that obtained from SolidFire, to bring service provider partners on board for its HCI offering.

One limitation of NetApp's architecture is that it starts with a pricier minimum configuration of four nodes. It's not a viable option for ROBO deployments where companies are looking for a self-managing resilient system with a much smaller footprint. It does, however, support the solution on certified hardware vendors such as Quanta and SuperMicro.

Contenders

- › **DataCore Software enhances the value of existing storage infrastructure.** DataCore Software has served the storage virtualization use case for years, consolidating and managing storage arrays into a single autotiered pool. Its HCI offering, Hyperconverged Virtual SAN, leverages existing software assets and offers the unique ability to pool existing storage area network (SAN) capacity into an HCI deployment. It can scale compute and storage independently by using external storage for capacity and tiering. It's only available as software and is licensed by storage capacity. DataCore Software supports one of the smallest HCI configurations in the market, requiring only two nodes for a cluster — ideal for ROBO deployments. It performs compression and deduplication as a post-process, which has its own pros and cons. It has fully functional public-facing REST and PowerShell APIs that users and partners can leverage to manage DataCore Software instances, integrate them into existing workflows, and automate those processes. Its users continue to benefit

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from operational simplicity by using the familiar vCenter console. One of DataCore Software's strengths is helping its clients through all lifecycle stages — presales, sales, and support — and migrating customers from SAN to HCI without disruption.

DataCore Software's customers still need to get into the weeds of storage operations. It will benefit by further automating and abstracting storage-focused operational tasks that clients want vendor technology to manage for them. For those not intimately familiar with DataCore Software's offerings, its key value messaging may not be very clear, but it essentially revolves around maximizing the availability, performance, and utilization of current and future storage assets.

- › **Red Hat suffers from two distinct competing product lines.** Red Hat has two distinct HCI offerings based on use cases and industry verticals. It bases the first, Red Hat Hyperconverged Infrastructure for Virtualization (RHVI), on its Red Hat Linux, KVM, and Gluster Storage and the second, Red Hat Hyperconverged Infrastructure for Cloud (RHIC), on Red Hat OpenStack and Ceph Storage. The vendor focuses RHIC on serving cloud implementation for its telco clients but aims RHVI at general-purpose IT deployments. Despite Red Hat's wide customer base, RHVI hasn't gained significant momentum because of a limited support matrix. While it provides a strong combination of hypervisor and OS, its capabilities are limited, especially around resiliency, QoS, scale, ease of operations, and security-related requirements.

Red Hat RHVI is a good platform for enterprises with capabilities and skills around running open source platforms, but it's not a platform for customers that would expect their vendor to have a vision on hybrid cloud and deliver on that vision. By maintaining two solution stacks — RHVI and RHIC — Red Hat has put itself in a tough spot. Because these stacks have little in common, it can't cross-leverage its R&D investment. Customers shouldn't expect Red Hat's pace of innovation to match those of its competitors.

Evaluation Overview

We evaluated vendors against 35 criteria, which we grouped into three high-level categories:

- › **Current offering.** Each vendor's position on the vertical axis of the Forrester Wave graphic indicates the strength of its current offering. Key criteria for these solutions include storage services, scalability, manageability, and ease of operations.
- › **Strategy.** Placement on the horizontal axis indicates the strength of the vendors' strategies. We evaluated each vendor's vision and roadmap, license or purchase options, R&D, customer feedback on product capabilities, account management, and support quality.
- › **Market presence.** Represented by the size of the markers on the graphic, our market presence scores reflect each vendor's go-to-market partnerships, engagement with resellers, and partnerships with other technology ecosystem vendors in the data center infrastructure market.

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Vendor Inclusion Criteria

Forrester included 11 vendors in the assessment: Cisco, DataCore Software, Hewlett Packard Enterprise, Huawei, Microsoft, NetApp, Nutanix, Pivot3, Red Hat, Scale Computing, and VMware. Each of these vendors has:

- › **Currently available HCI software.** We required that the evaluated version of each product be available for general purchase, not in beta or restricted availability, by April 21, 2020. We applied the same policy to features and point upgrades, including only features that were currently shipping. This stricture had significant effects on products that, while they have impressive technology roadmaps and may score better in the future, didn't have the required features in production as of the submission cutoff date. Forrester evaluated only software capabilities, as many vendor solutions are available as either bundled appliances or software that runs on multiple hardware platforms. As a result, we excluded from this evaluation hardware offerings from Dell Technologies, HPE, Fujitsu, Hitachi Vantara, Lenovo, and SuperMicro that participate in the HCI appliance market.¹¹
- › **Hyperconverged functions offered on industry-standard servers.** The evaluation covers hyperconverged functions on industry-standard servers, not proprietary architecture.
- › **Referenceable customers.** Forrester required that vendors supply at least three reference customers that use the product version we evaluated. The Forrester team conducted calls with each client to gather input about the vendors and their offerings.
- › **The ability to demonstrate the product.** An integral part of the Forrester Wave evaluation is a product demo, which we record for reference. We specify a minimum set of tasks that the vendor must perform. For HCI vendors, this encompassed critical operational tasks, including initial setup, creating a virtual machine (VM), integrated operations management for compute and storage, adding capacity, scaling operations, setting up replication, data protection, QoS policies, performance management, hybrid cloud environment, and shutting down a node to prove the resilience of the system. We encouraged vendors to show additional features beyond the required script.

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Supplemental Material

Online Resource

We publish all our Forrester Wave scores and weightings in an Excel file that provides detailed product evaluations and customizable rankings; download this tool by clicking the link at the beginning of this report on Forrester.com. We intend these scores and default weightings to serve only as a starting point and encourage readers to adapt the weightings to fit their individual needs.

The Forrester Wave Methodology

A Forrester Wave is a guide for buyers considering their purchasing options in a technology marketplace. To offer an equitable process for all participants, Forrester follows [The Forrester Wave™ Methodology Guide](#) to evaluate participating vendors.

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In our review, we conduct primary research to develop a list of vendors to consider for the evaluation. From that initial pool of vendors, we narrow our final list based on the inclusion criteria. We then gather details of product and strategy through a detailed questionnaire, demos/briefings, and customer reference surveys/interviews. We use those inputs, along with the analyst's experience and expertise in the marketplace, to score vendors, using a relative rating system that compares each vendor against the others in the evaluation.

We include the Forrester Wave publishing date (quarter and year) clearly in the title of each Forrester Wave report. We evaluated the vendors participating in this Forrester Wave using materials they provided to us by May 19, 2020, and did not allow additional information after that point. We encourage readers to evaluate how the market and vendor offerings change over time.

In accordance with [The Forrester Wave™ Vendor Review Policy](#), Forrester asks vendors to review our findings prior to publishing to check for accuracy. Vendors marked as nonparticipating vendors in the Forrester Wave graphic met our defined inclusion criteria but declined to participate in or contributed only partially to the evaluation. We score these vendors in accordance with [The Forrester Wave™ And The Forrester New Wave™ Nonparticipating And Incomplete Participation Vendor Policy](#) and publish their positioning along with those of the participating vendors.

Integrity Policy

We conduct all our research, including Forrester Wave evaluations, in accordance with the [Integrity Policy](#) posted on our website.

Endnotes

¹ Base: 872 global infrastructure technology decision makers (working at companies of 20-plus employees) whose firm is planning, implementing, or expanding a hyperconverged compute and storage technology. Source: Forrester Analytics Global Business Technographics® Infrastructure Survey, 2019.

² Base: 872 global infrastructure technology decision makers (working at companies of 20-plus employees) whose firm is planning, implementing, or expanding a hyperconverged compute and storage technology. Source: Forrester Analytics Global Business Technographics Infrastructure Survey, 2019.

³ See the Forrester report "[Hyperconverged Infrastructure And You.](#)"

⁴ See the Forrester report "[Design For Dependability By Embracing A Future Of Trusted Technology.](#)"

⁵ See the Forrester report "[The Forrester Wave™: Hyperconverged Infrastructure, Q3 2018.](#)"

⁶ Source: "Mine," Nutanix (<https://www.nutanix.com/products/mine>).

⁷ The VMware website is dedicated to the certified ReadyNodes. Its customers can view the certified hardware options online themselves. Source: "vSAN ReadyNode," VMware (<https://vsanreadynode.vmware.com/>).

⁸ See the Forrester report "[Navigate The Choices And Experiences Of Hyperconverged Infrastructure.](#)"

⁹ For example, banks operate in a ROBO model, where branch offices may be either a large office location separate from the corporate headquarters or a very small remote branch location.

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¹⁰ JBOD (just a bunch of disks) generally refers to a collection of hard disks that have not been configured to act as a redundant array of independent disks (RAID) array.

¹¹ Vendors like Cisco, Dell, and HPE have a portfolio of offerings that includes both the servers and the software stack for an HCI solution. Cisco has its UCS server offering and HyperFlex software. Dell sells the VxRail appliance based on VMware vSAN and also sells PowerEdge, the XC-series server line for HCI. Likewise, HPE has its DL360 and DL380 line of servers and HPE SimpliVity, the software behind HCI. As this Forrester Wave evaluation focuses on software capabilities, we included HyperFlex (formerly Springpath), VMware vSAN, and HPE SimpliVity.

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