

# Magic Quadrant for Hyperconverged Infrastructure Software

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By Jeffrey Hewitt, Philip Dawson, [and 2 more](#)

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HCI software stacks support software-defined infrastructure that spans compute, storage, networking and management. I&O leaders should regard HCI software as a technology that addresses requirements related to the core IT, business-critical, cloud, edge and virtual desktop infrastructure use cases.

## Market Definition/Description

Hyperconverged infrastructure (HCI) software provides virtualized compute, storage, networking and associated (cloud) management — from a single instantiation running on server hardware. When the first HCI platforms emerged a decade ago, they were sold primarily as alternatives to expensive and complex storage arrays for VMware environments. These initial HCI solutions were sold primarily as appliances by a single hardware vendor — what Gartner defined as hyperconverged integrated systems (HCIS; see [Market Definitions and Methodology: Integrated Systems](#)).

As the market has evolved, there has been a distinct bifurcation, with HCIS being the direction driven by hardware providers, and HCI software being driven by the software providers. The latter is the focus of this analysis and is distinct from the former, because it supports and is sold on server hardware solutions from multiple server providers. This HCI software has become the mechanism for driving a wider array of solutions. Some of those solutions focus on market niches that may align with specific use cases or particular geographies. Other HCI software solutions are focused broadly on more cloud-related functionality.

All HCI software, by definition, includes a certain set of functionality. Some of that functionality may be enabled by hypervisors, management tools and networking, or through only a storage platform combined with third-party software providers to complete the HCI software stack. That functionality is:

- Virtual compute, storage and networking, using a scale-out, shared-nothing architecture

- Unified, “single pane of glass” management for virtual compute, storage and networking resources; for the purposes of this analysis, although network management is required, it can be enabled through integrated, third-party software by the HCI software provider
- Local, direct-attached storage (DAS) in each node, used in place of a storage array
- Enterprise-grade, high-availability (HA) and mobility, for both compute and storage
- Enterprise-grade data services (e.g., deduplication, compression and erasure coding)
- Some level of choice of server and network hardware

The rapid growth of public cloud has transformed infrastructure. Typical IT organizations have some infrastructure in the public cloud, some in data centers and some at the edge. This brings hybrid cloud architectures to the fore. Now, almost every data center is a hybrid data center. Connectivity to and portability between on-premises infrastructures and the public cloud has become a more important design consideration for data centers.

As it has promised since it first appeared in the market, HCI software can be an enabling architecture for the hybrid cloud. Like public cloud infrastructure, HCI software is software-defined and API-driven, meaning that it can be managed using the same tools and techniques used to manage the public cloud. From this management perspective, HCI software is driving the hybrid-cloud evolution that has become the underpinning of hyperconvergence as an architecture. Some HCI software vendors have even begun to provide cloud services in their own right.

## Magic Quadrant

**Figure 1: Magic Quadrant for Hyperconverged Infrastructure Software**





Source: Gartner (December 2020)

## Vendor Strengths and Cautions

### DataCore Software

DataCore Software is a Niche Player in this Magic Quadrant. DataCore SANsymphony is used primarily for mission-critical, core IT and edge use cases. Its operations are focused in Europe, the Middle East and Africa (EMEA), as well as the Americas. Clients tend to be small and midsize enterprises (SMEs) in the manufacturing, communications and government sectors. During the past 12 months, DataCore has delivered scalability improvements, integration with backup software and improvements to DataCore Insight Services, its predictive analytics platform.

### Strengths

- DataCore is a pioneer in storage virtualization.

- DataCore integrates hyperconverged storage with storage area networks (SANs) and servers and supports the independent scaling of compute and storage resources.
- DataCore provides a robust set of data services and price-competitive, scaled-down solutions, including a two-node, high-availability configuration for remote office/branch office (ROBO) computer rooms, edge deployments and the data centers of SMEs.

### ***Cautions***

- DataCore has limited brand awareness, and primarily operates in Europe and North America, which limits its ability to reach and support customers outside of those areas.
- DataCore does not support one-click upgrades, making its upgrade process more complex than other vendors.
- DataCore HCI installations are generally smaller than those of its competitors, because the vendor has been focusing its HCI solution on midmarket enterprise needs.

### **HUAYUN Data Group**

HUAYUN Data Group is a Niche Player in this Magic Quadrant. Its Archer OS and Maxta HCI software solutions are focused primarily on cloud, core IT and virtual desktop infrastructure (VDI) use cases. Its operations are focused mainly in China, and its clients tend to be SMEs in the education, healthcare, manufacturing and government sectors. HUAYUN Data Group's HCI software solution has expanded its support to KVM and VMware vSphere, and to a wide range of both x86 and ARM servers.

### ***Strengths***

- HUAYUN Data Group sells its HCI software solutions as a one-time perpetual license that can be appealing for more-cost-sensitive buyers, similar to those in some emerging markets.
- HUAYUN Data Group can provide an HA solution with a two-node cluster in an active/active configuration.
- HUAYUN Data Group provides extended offerings for ArcherOS and Maxta. These include backup to HUAYUN Data Group's cloud, a VDI solution featuring a multiple graphics processing unit (GPU) mode, ArIQ for automated operational monitoring and Archer CloudSuite as a cloud management platform (CMP).

### ***Cautions***

- IT leaders considering ArcherOS and Maxta may find that sales and support capabilities vary by location, due to HUAYUN Data Group's limited geographic footprint outside China.

- IT leaders seeking a solution for multiple geographies may be confused by HUAYUN Data Group's use of both the Archer OS and Maxta brands for different countries.
- Customers looking for the highest global brand recognition may consider HUAYUN Data Group to be insufficiently well-known to be invited to compete.

## **Microsoft**

Microsoft is a Visionary in this Magic Quadrant. Its Azure Stack HCI is a product in transition away from being embedded in the Windows OS. It is moving to one that is mainly focused on providing an HCI software solution that integrates on-premises and an edge service into the Azure cloud. Its operations are geographically diversified, and its clients tend to be midsize to large enterprises. This new version of Azure Stack HCI is offered as a subscription-based, cloud-managed solution, and it's based on the version of Hyper-V and the HCI stack used in the Azure Cloud.

### ***Strengths***

- Microsoft provides organizations a comprehensive edge, core data center and cloud portfolio, with many common components and familiar management tools.
- This product offers common management with the Azure Cloud Platform and the ability to use Azure cloud services, such as Azure Site replication, Azure Cloud backup and Azure Kubernetes.
- Microsoft's Azure Stack HCI is supported on a broad range of vendor systems and is available through Microsoft's rich selection of partners and system integrators (SIs).

### ***Cautions***

- Many organizations are unaware of Azure Stack HCI or confuse Azure Stack HCI with Azure Stack Hub, because it is insufficiently marketed and differentiated in Microsoft's broad portfolio.
- The new Azure Stack HCI 20H2 is different from the Azure Stack HCI product that's part of Windows Server Datacenter. Customers must choose which version they wish to use, with no clear way to transition between the two.
- Microsoft has yet to demonstrate that it can effectively market and deliver an HCI product that is not part of Windows Server.

## **Nutanix**

Nutanix is a Leader in this Magic Quadrant. Nutanix provides one of the most comprehensive HCI software capabilities and data services for on-premises and public cloud deployments. Its operations are geographically diversified, and its clients tend to be midsize and large enterprises and service providers. During the past 12 months, Nutanix has increased investment in its HCI sales organization, expanded support for server hardware OEMs, introduced Nutanix Clusters enabling customers to

achieve hybrid clouds, using HCI software and expanded as-a-service offerings. In addition, the vendor has expanded support for file, object and backup capabilities and has enhanced its application automation functionality.

### ***Strengths***

- Nutanix HCI deployments have been growing globally. It has one of the largest and most loyal HCI customer installed bases. Gartner clients continually express satisfaction with Nutanix HCI software, ease of operations with Prism management and overall support services.
- Nutanix HCI software and services are now supported in public cloud environments (Nutanix Clusters), providing hybrid cloud infrastructure, management and operations, from within a single, unified console. Furthermore, Nutanix software licenses are fully portable between on-premises and public cloud deployments.
- Nutanix HCI supports multiple hypervisors and covers a broad variety of customer use cases via integrated native storage services (Files and Objects), database management (Era), application life cycle management (Calm), microsegmentation (Flow), backup (Mine) and disaster recovery (Leap) services.

### ***Cautions***

- Nutanix HCI is a premium solution, and might not be the most cost-effective solution for scaled-down and edge deployments.
- Nutanix Clusters is a relatively nascent offering, with customer production deployments based on the Amazon Web Services (AWS) public cloud.
- Nutanix continues to reinvest its HCI revenue streams to fund its growth and, as a result, is not yet profitable by GAAP standards. The company expects to appoint a new CEO in January 2021.

### **Pivot3**

Pivot3 is a Niche Player in this Magic Quadrant. Pivot3's HCI software solution, Acuity, is designed for mission-critical, large-scale, video-based workloads, such as analytics, surveillance, VDI and visualization. Its operations are geographically diversified, and its clients tend to be midsize to large enterprises, educational institutions, and governments. Pivot3 has enhanced its Intelligence Engine to provide autohealing, quick node rebuild, and intelligent monitoring and analytics capabilities to address the data protection and system availability requirements for large-scale HCI deployments.

### ***Strengths***

- Pivot3's Acuity is well-suited to support large-scale, video-based workloads as mission-critical infrastructure for such use cases as security and surveillance.

- Pivot3 has successful HCI installations spanning airport, campus, casino, city, federal facility and transit facility environments.
- Pivot3 delivers automation and artificial intelligence (AI) technologies to facilitate management at scale for nontechnical users.

### ***Cautions***

- Pivot3's HCI software solution may be less compelling than cheaper solutions for use cases that are not deemed to be mission-critical or are smaller in scale.
- Although Pivot3 can be purchased on a global basis through Lenovo, for customers seeking only brands with the highest global brand recognition, Pivot3 may not be invited to compete.
- For IT leaders seeking solutions outside of video surveillance or VDI, Pivot3's HCI may not be a shortlisted solution, because it is a lesser-known, but still viable, option beyond these two use cases.

### **Sangfor Technologies**

Sangfor Technologies is a Niche Player in this Magic Quadrant. Sangfor's HCI software solution is designed for data center modernization, enterprise applications, cloud transformation, VDI, and backup and disaster recovery. Although geographically diversified across the Asia/Pacific (APAC) region and EMEA, its operations are focused around China, and its clients tend to be midsize to large enterprises in core verticals. In particular, 2020 will focus on end-to-end security and support for ARM, as well as x86 platforms for private and managed cloud infrastructure.

### ***Strengths***

- With its own hypervisor, Sangfor HCI provides a secure, managed, cost-competitive alternative for SMEs.
- Organizations in China, where more than 80% of Sangfor HCI sales occur, will benefit from a mature support organization. This can meet client needs in the local market, leveraging expansion and contact across APAC and EMEA.
- Sangfor has developed an industry-vertical approach to the market. It creates partnerships with independent software vendors (ISVs), deploying sales teams and developing knowledge of regulations to meet the needs of manufacturing, government, healthcare and education organizations across China and out.

### ***Cautions***

- Local support resources may be limited outside China and may not qualify across the rest of EMEA and APAC.

- Sangfor has limited integration with ecosystem partners outside of China, when compared with its larger international competitors.
- Sangfor has not been proved in edge locations with its offerings.

## **Scale Computing**

Scale Computing is a Niche Player in this Magic Quadrant. Its HC3 product is primarily focused on the edge, core-IT and VDI use cases. Its operations are primarily focused in the U.S. and EMEA, with some penetration in Asia, its clients tend to be SMEs in retail, industrial, education, local government and healthcare. During the past 12 months, Scale Computing has expanded its support for server hardware OEMs, introduced the HE150 as a low-cost edge solution, and introduced integrated VDI and resilience solutions.

### ***Strengths***

- Scale Computing offers extremely low-cost solutions that require limited hardware investment for edge locations. It provides resource-efficient, full-stack software, including Scale Computing's own Kernel-based Virtual Machine (KVM)-based hypervisor.
- Scale Computing is highly rated in peer reviews, with a large number of reviews and case studies.
- Scale Computing is investing in ease of use and zero-touch management to enable customers to manage widely distributed infrastructure and applications.

### ***Cautions***

- Scale Computing uses its own KVM-based hypervisor solution, so existing skills and licenses are not transferable.
- Scale Computing has limited brand recognition. Customers that require a global brand may not include Scale Computing in their evaluations.
- Scale Computing has limited offerings for organizations seeking a single-vendor, core-to-edge-to-cloud solution, with support for only one cloud vendor.

## **StarWind**

StarWind is a Niche Player in this Magic Quadrant. The StarWind HyperConverged Appliance (HCA) is primarily focused on edge and mission-critical use cases for distributed data centers. Its operations are global, with a focus on North America and Europe, and its clients tend to be SMEs in education, government and healthcare sectors. Recently, the vendor has added support for all flash nodes, nonvolatile memory express over fabrics (NVMe-oF) over TCP and AI functionality delivered by StarWind ProActive Premium Support.



**Strengths**

- The vendor has good HCI and storage expertise, and its full-featured product can address most use-case scenarios.
- StarWind has one of the highest scores for overall customer satisfaction.
- StarWind has introduced innovation in the hardware and software HCI layers, which makes it an attractive price/performance option for SMEs.

**Cautions**

- StarWind is one of the smaller vendors in this research in terms of revenue and geographic coverage, which may limit its ability to gain traction in the global market.
- StarWind HCI deployments tend to be smaller than those of its competitors, because the vendor has been focusing on the midmarket enterprise needs.
- The vendor does not offer preintegrated HCI bundling by major server OEM manufacturers.

**StorMagic**

StorMagic is a Niche Player in this Magic Quadrant. Its SvSAN product is primarily focused on edge and mission-critical use cases for distributed data centers. Its operations are geographically diversified, with a focus on North America and Europe, and its clients tend to be midsize to large enterprises in retail, manufacturing and government sectors. StorMagic is now part of HPE Complete program as a replacement for HPE StoreVirtual software. Recently, StorMagic introduced multisite, push-button software deployment, a subscription pricing model, and cloud-enabled Witness as a Service and Key Management as a Service.

**Strengths**

- StorMagic is gaining steady traction for the edge data center use case through the OEM's relationship with HPE and Lenovo.
- Gartner clients find StorMagic to be one of the most cost-effective solutions for edge, ROBO or scaled-down HCI deployments.
- StorMagic enables customers to use any server hardware, support multiple hypervisors and heterogeneous nodes, as well as the ability to add compute-only nodes, without additional licenses.

**Cautions**

- StorMagic is lacking brand recognition, especially outside North America and Europe, which limits its ability to reach and support customers in those areas.

- StorMagic is not designed for large core data centers or cloud deployments, and it does not have all of the enterprise HCI features, such as data reduction, snapshots, remote replication, hybrid cloud integration and AI functions.
- Some StorMagic customers have identified slowness and inefficiencies in support service capabilities.

## **VMware**

VMware is a Leader in this Magic Quadrant. Its VMware vSAN is mainly focused on providing an HCI software solution as a part of an extensive product portfolio that extends into virtual application management on-premises, at the edge and in the cloud. Its operations are geographically diversified, and its clients tend to be midsize to large enterprises. VMware has expanded its HCI-as-a-Service capabilities from AWS and IBM Cloud to enable customers to run VMware HCI in six of the largest hyperscale environments.

### ***Strengths***

- VMware has jointly engineered hybrid cloud support with public cloud providers, including AWS, Azure, GCP, Oracle Cloud, Alibaba Cloud and IBM Cloud to support HCI deployments in those public cloud environments supported by a service consumption model.
- VMware's significant software installed base ensures that there is a large pool of I&O talent with VMware management tools skills from which to hire.
- VMware is an \$11 billion company (based on its FY20 results). It has a global reach, so long-term support risks related to corporate viability are relatively low, compared with smaller providers.

### ***Cautions***

- VMware's offerings are among the most expensive in the market, so they are less competitive when cost is a primary concern.
- IT leaders who purchase vSAN as software may find only the configuration of vSAN to be challenging, because of the multiple network and storage design considerations that must be taken into account.
- VMware vSAN does not support other hypervisors beyond ESX.

## **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.

## **Dropped**

Cisco was dropped due to changes in the inclusion criteria, which exclude HCIS solutions (those will be covered in other Gartner publications).

Dell EMC was dropped due to changes in the inclusion criteria, which exclude HCIS solutions (those will be covered in other Gartner publications).

HPE was dropped due to changes in the inclusion criteria, which exclude HCIS solutions (those will be covered in other Gartner publications).

Huawei was dropped due to changes in the inclusion criteria, which exclude HCIS solutions (those will be covered in other Gartner publications).

Red Hat was dropped due to a narrowing of its focus to only three use cases.

## **Inclusion and Exclusion Criteria**

The inclusion criteria represent the specific attributes that analysts believe are necessary for inclusion in this research. To qualify for inclusion, vendors need to meet the following criteria.

### **Functional Criteria**

Included HCI software vendors must:

- Provide an integrated software stack, which includes unified management, and software-defined compute, storage and, optionally, networking.
- Combine virtual machine (VM) and software-defined storage resources, both running on the same physical servers, as the primary deployment method.
- Virtualize local, internal and direct-attached storage, rather than shared, networked storage, such as a SAN and/or network-attached storage (NAS).
- Provide a mechanism to pool internal and direct-attached primary storage across servers into logical, abstracted virtual storage.
- Develop the storage and data management services integrated in the offering.

### **Business Criteria**

Eligible HCI software vendors must:

- Provide evidence for each product to be evaluated of a minimum of 50 production customers brought to revenue. At least 25 in each of at least two of the major geographies (the Americas, EMEA and the APAC/Japan region) in the 12 months ending 30 June 2020.
- Deliver complete Level 1 (call center/service desk) and Level 2 (escalation) support either directly or through a contracted service provider to facilitate quick and easy problem resolution. However, Level 3 (engineering) support can be delivered separately, based on vendors' engineering partnerships.
- Deliver solutions that meet user requirements in at least four of the use cases identified in "Critical Capabilities for Hyperconverged Infrastructure."
- Have delivered the product or products to be evaluated in the Critical Capabilities research in general availability by 30 June 2020.
- Provide HCI software that is portable to, sold within the past year to, and supported and qualified on branded x86 server hardware of at least two server providers beyond any white-box or server hardware branded and badged with the HCI software provider's logo. At least one of those two server providers must be one of the top 10 x86-based server OEMs worldwide based on server vendor revenue estimates for 2020 published by Gartner. Those providers are Dell, HPE, Inspur Electronics, Lenovo, Cisco, Huawei, Super Micro Computer, H3C, Fujitsu and Oracle.
- Own the software IP that enables the management functions and SDS for their solution.

## Evaluation Criteria

### 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, etc., 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, and the financial and practical success of the business unit. It also involves the likelihood that the individual business unit will continue investing in the product, offering the product and advancing the state of the art in 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:** The 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, and promote the brand and business. This also involves increasing awareness of the products, and establishing 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 (SLAs), etc.

**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.

**Table 1: Ability to Execute Evaluation Criteria**

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

Source: Gartner (December 2020)

## Completeness of Vision

**Market Understanding:** The 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 preemptive 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.

**Table 2: Completeness of Vision Evaluation Criteria**

<i><b>Evaluation Criteria</b></i> ↓	<i><b>Weighting</b></i> ↓
Market Understanding	High
Marketing Strategy	Medium
Sales Strategy	Medium
Offering (Product) Strategy	High

<b><i>Evaluation Criteria</i></b> ↓	<b><i>Weighting</i></b> ↓
Business Model	Medium
Vertical/Industry Strategy	Medium
Innovation	High
Geographic Strategy	Medium

Source: Gartner (December 2020)

## Quadrant Descriptions

### Leaders

Leaders will typically be able to execute strongly across multiple geographies, verticals, use cases and deployment models. They will have a support and channel organization that ensures a high-quality customer experience, regardless of whether the solution is purchased directly or through resellers, integration partners or OEMs.

### Challengers

Challengers are typically vendors with achievements that, although significant, are based on a narrower subset of the market, having gaps in geographic coverage, product portfolios and use cases. These vendors have the potential to establish themselves across the broader, global market, but have not yet done so.

### Visionaries

Visionaries are typically vendors that are focusing on strong innovation and product differentiation, with the potential to significantly disrupt the market if execution improves. These may be smaller vendors with limited reach or achievement to date, or larger vendors with innovation programs that are still unproven.

### Niche Players

Niche Players are typically vendors with market programs focused on a limited set of geographic locations, deployment models, customer segments or use cases. These vendors have met the inclusion criteria and may address their specific market category effectively.

## Context

HCI software is not limited to a system (hardware appliance) deployment model. Software-only/bring-your-own-server, reference architectures, cloud and as-a-service deployments are growing. Vendors with HCI software often rely on OEM partnerships and server certifications to provide greater choice and an improved support experience.

I&O leaders should estimate the component growth requirements to determine the need for asymmetrical scaling. The proof of concept (POC) should include a careful analysis of performance during node failures, the increase in risk during node failures and the time to recover from node failures.

As HCI software has evolved, the integrated support of orchestration tools such as Kubernetes has increased across many providers. The intent is to provide an interface that goes beyond HCI itself to facilitate the automated deployment of containerized applications. The actual use of these orchestration tools supported by HCI software appears to be in an early phase, but it has become a requirement for some customers that expect to leverage that container management capability in the near future.

The adoption of HCI-based solutions continues to grow; however, outside smaller organizations, HCI has not yet become a full-service platform for IT services across all workloads. I&O leaders should evaluate HCI software solutions because of the fit for their particular use cases, growth expectations and application architecture direction. Adopting technology innovation must be business-led, not technology-driven. There is no ideal integrated system or “endgame” infrastructure. New hardware and software innovations will continue to appear, moving the goalposts, and pushing the boundaries of infrastructure design and delivery.

Simplified management capabilities for infrastructure running whether it is in enterprise data centers, at a colocation facility, at the edge or in the public cloud is one of the broader goals that leading HCI software providers are looking to meet.

## Market Overview

The HCI software market has two distinct customer types that align with current market conditions.

- Those seeking solutions that extend to solving more hybrid and public-cloud-related challenges
- Those looking to solve more niche-related use cases or geographically based challenges

Some HCI software vendors continue to expand their deployment options to include more cloud providers, such as Amazon, Google and Microsoft, with the intent to be turnkey private/hybrid cloud. For those HCI software providers, this emphasizes a focus on tools and capabilities to monitor, secure, manage, optimize, and govern diverse on-premises, cloud and edge deployments. Other HCI software vendors look to provide specific use-case advantages or high-touch, regionally appealing



solutions in an attempt to establish an effective niche approach in alignment with HCI software market trends.

Many partners in the HCI software market are also competitors, and I&O leaders must remain cognizant of the sometimes conflicting priorities and incentives of HCI software vendors and their partners, as well as rapidly expanding HCI software partner networks. Full-stack infrastructure software suppliers, such as Microsoft, Nutanix and VMware, pose interesting partnership challenges, because each has significant HCI software opportunities in its substantial installed base of customers.

Vendors that have more hypervisor-neutral — or at least hypervisor-flexible — offerings may have advantages for customers that want to avoid hypervisor lock-in. I&O leaders pursuing multihypervisor strategies should carefully evaluate the ability of solution providers to deliver simplicity at the management layer.

**Potential HCI Market Disruption:** Cloud providers Amazon, Google, Microsoft and Oracle could ultimately disrupt the entire HCI software market. They are further extending their cloud offerings to on-premises infrastructure with offerings such as Amazon Outposts, Google Anthos, Microsoft Azure Stack Hub and Oracle Cloud Infrastructure. Meanwhile, I&O leaders will have an alternative to public cloud and private data centers by leveraging IaaS providers that use simpler-to-manage HCI software for their own infrastructures.

## 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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