

2022

STATE OF THE **DATA CENTER:**

Colocation Emerges as
Interconnection Hub of Choice
in Hybrid, Multicloud Landscape



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As businesses continue the shift to hybrid, multicloud IT environments, colocation has emerged as an increasingly important part of the mix — delivering the flexibility, reliability and proximity to an expansive and interoperable ecosystem that is now a requisite for modern IT infrastructure.

The IT landscape has become far more diverse as companies ramp up digitization, strive for greater business agility and pursue new revenue-generation models. Companies flocked to public cloud to transform IT and achieve cost and scalability advantages while still maintaining robust on-premises environments for certain applications and workloads, whether due to compliance reasons or in avoidance of the hefty egress charges associated with moving data out of the cloud. More recently, organizations have discovered that a one-size-fits-all cloud strategy is not the answer, opening the door to multicloud infrastructure and adding yet another wrinkle to the already complex IT ecosystem.

In the meantime, colocation services have evolved to mirror many of the perceived advantages of cloud, especially in areas like compliance, cost, managed services, performance and reliability. According to the 2022 State of the Data Center report, conducted by CIO on behalf of CoreSite, colocation capabilities are generally given equal footing with cloud and on-premises architectures. And in many cases, colocation is now considered the more effective approach to address interoperability challenges arising from a hybrid, multicloud IT world. In response, organizations are dramatically stepping up deployment of applications and workloads to colocation data centers, securing their place as a foundational IT infrastructure component.

The 2022 State of the Data Center report examines findings, compiled from an annual quantitative survey of 300 IT executives as well as in-depth interviews with seven IT/business leaders. This year's results confirm a continuing trend line: Colocation plays an established and expansive role in IT modernization, serving as both a catalyst for innovation and as an interoperability hub.

An increasingly diverse IT ecosystem

Companies continue to migrate to public cloud for a variety of reasons, including a preference for the OpEx model over capital expenditures in addition to cost and scalability benefits.

“The reason for colocation comes down to financial benefit and scalability — the typical things you think about when going to the cloud,” said an IT leader in a financial services firm. “In essence, you are able to run an environment cheaper, you’re able to stay more focused on core competencies, but it always comes down to budget, budget and more budget.”

This is especially true for workloads governed by regulatory compliance and privacy mandates or when

cloud latency undermines a real-time response, like what is required for content streaming applications.

Even when public cloud is the right platform, no single cloud addresses the full compendium of needs, which has led organizations to adopt hybrid, multicloud architectures. The 2022 State of the Data Center report found that 94% of respondents are either currently using a hybrid model or plan to adopt a hybrid IT model within the next year, relying on a combination of public cloud and colocation resources.

Other independent research confirms the mass adoption of a hybrid, multicloud architecture, with colocation remaining front and center.

Gartner® projects, “by 2025, 85% of infrastructure strategies will integrate on-premises, colocation, cloud and edge delivery options, compared with 20% in 2020.”¹ IDC also sees a hybrid cloud approach as an inevitability for businesses, with different modes of adoption to be determined by IT decision-makers, based on use case.²

The rise of the hybrid, multicloud model has a downside: There is greater management complexity across cloud borders as well as challenges related to interoperability, security, cost and data integration. Nutanix research shows that while multicloud adoption will surge to 64% over the next three years, organizations are mired in complexity. Nutanix further reports that 87% anticipate that successful implementation will be tied to simpler management across mixed-cloud infrastructures.³

Addressing those interoperability and integration challenges is colocation’s sweet spot.

“The cloud-first, cloud-only mantra is gone. Companies are realizing that not everything works in the cloud and not everything belongs in the same cloud,” says Maile Kaiser, senior vice president of sales and marketing for CoreSite. “This interoperability requires low latency and high bandwidth to move data between systems. Colocation companies like CoreSite can provide an interconnection solution with native access to the public cloud onramps and edge compute sites along with an ability to scale private infrastructure.”

Why the shift to colocation?

According to the 2022 State of the Data Center Report, colocation is not only firmly established as a central pillar of the hybrid IT mix, it is being chosen more often to support critical areas. In this year’s survey, respondents called out improved security, reliability, cost and performance as the primary reasons to transition to a colocation model.

When asked about the top reasons to move workloads to colocation, 38% of 2022 State of the Data Center respondents cited performance and speed – specifically, the ability to locate compute closer to the edge, nearer to

customers and users. Thirty-seven percent of respondents were searching for a reliability advantage, including guaranteed uptime and redundancy, coupled with access to diverse power and network sources – a combination that reduces business disruption resulting from natural disasters. Last year, stability, redundancy and uptime advantages were the biggest drivers to move to colocation (52%) and it was even higher in 2020 at 58%.

REASONS TO MOVE FROM ON-PREMISES TO COLOCATION

Performance/Speed — Locating compute closer to the edge and/or your customers/users



Reliability — Guaranteed uptime with redundant environmental systems, diverse power and network sources, reduced threat from natural disasters



Security — Improving physical security



Access to managed services — 24/7 access to consulting services and remote support



Scalability — Scale resources without raising capital expenses



Cost — Lowering power costs generated by servers and cooling



Space savings — Optimizing space in your office and/or reducing data center footprint



Staffing — Difficulty in recruiting and retaining staff with necessary skills



Compliance — Colocation providers are required to maintain data center compliance with regulators



Not a core competency — Refocusing efforts and capital on the core business functions



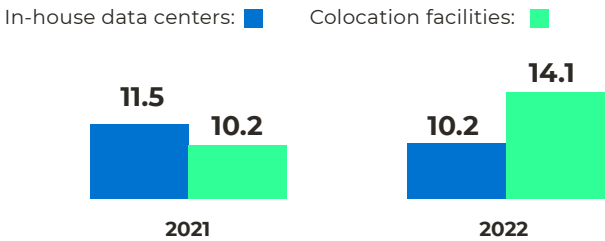
Another major shift this year: In 2022, there was a swing to shift staffing to business-critical projects as a result of using colocation, cited by 151 respondents, a spike of about 50% when compared to only 100 in 2021.

For workloads that require customized configurations, colocation was the deployment model of choice. Respondents said they opted for colocation to tailor environments for specific workload requirements. This is not readily possible with public cloud providers and a standard, virtualized IT stack.

“For a lot of applications, we need specialized servers and specialized operating systems that colocation providers are willing to operate,” said a senior vice president of technology and operations at a financial services company. “It’s like a warehouse of exotic technologies, and the public cloud can’t operate like that. The whole idea behind public cloud is uniformity, scale, and to achieve a good total cost of ownership along with pricing and cost structure.”

With colocation now seen as a more robust option than on-premises IT infrastructure and on par with cloud capabilities, companies are enlisting fewer on-premises data centers and more colocation facilities in 2022. (See On-Premises vs. Colocation Data Center chart.)

AVERAGE NUMBER OF ON-PREMISES VS. COLOCATION DATA CENTERS



Across the board, the 2022 State of the Data Center report found colocation data centers surpassing on-premises data centers for the most prominent workload and application deployments. For example, nearly half (48%) of respondents said they were directing websites and web apps to colocation data centers, compared to 31% targeting on-premises data centers, and significantly up from the 36% cited in the 2021 State of the Data Center report.

Mobile apps, customer relationship management (CRM), storage/archive/backup/file server and content delivery/media processing workloads were also much more likely to be deployed in a colocation facility compared to an on-premises data center, according to this year’s research. Comparatively, last year’s report found disaster recovery/high availability (42%), content delivery/media processing (39%) and business intelligence (BI)/data warehouse/data analytics (37%) most likely to be deployed in a colocation model.

Respondents cited a variety of business drivers for moving workloads to colocation data centers, but interconnection to service providers and customers within specific ecosystems and business workflows was a primary motivator for 29% of respondents. Regional proximity also ranked as a reason to move to colocation data centers. In fact, the desire to shore up compute resources at the edge was a major factor compelling nearly a quarter (24%) of respondents to embrace colocation as opposed to ramping up investments in internal data centers, the CIO research found.

“Customers historically have come to a colocation data center to host their infrastructure, with the expectation that security, infrastructure, resiliency and redundancy would look the same or better than what they would get in their own space,” says CoreSite’s Kaiser. “Now they realize that to operate better as a business, they need lower latency and closer connectivity to customers, partners and providers in addition to those table stakes mentioned above.”

Top 5 Benefits of Using a Colocation Provider

- 1 More options, flexibility and agility
- 2 Cost savings: no data center to build and manage
- 3 Free up IT staff for support of revenue-generating tasks
- 4 Storage, redundancy and business continuity
- 5 Burst and scalability

There are other reasons behind this year's surge in colocation adoption: Current supply chain issues are making it difficult to get equipment required to scale internal data centers while the cost to maintain on-premises environments is too high without economies of scale. The need to support remote workers is now a permanent requirement, and colocation data centers provide an efficient and cost-effective digital supply chain to support hybrid work.

Colocation's workload mix

There appears to be a major shift of workloads out of public cloud and, in some instances, on-premises environments. In turn, colocation data center workloads are swelling. Public cloud deployments are currently bearing the brunt of this mass migration, particularly in areas such as storage, BI and test development, this year's research found.

TOP WORKLOADS MOVING FROM PUBLIC CLOUD TO COLOCATION

Content delivery/media processing applications

84%

Collaboration and communications solutions

83%

Business intelligence/data warehouse/data analytics initiatives

78%

Colocation appears to be the major beneficiary of workload and application migration, with positive movement, but particularly in areas like mobile, web, storage and enterprise resource planning (ERP), the research found. "The primary reason we used colocation services is to give us the business continuity and disaster recovery for our ERP solution," said the CIO for a higher education company.

In particular, colocation is morphing into an early test environment for applications in cutting-edge areas like artificial intelligence (AI) and machine learning (ML).

While respondents to this year's report indicated that data warehousing and AI/ML workloads are likely to remain on-premises, many see a case for transitioning over time to colocation data centers, potentially for test and model training and to deliver edge capabilities for real-time data ingestion and analytics.

"The colocation facility makes sense for the data warehouse because it's really about the scalability," said a vice president of IT operations for a biotech company. "There's so much data that we are generating, we need the capacity of colocation."

A respondent who is a global financial services SVP pointed to the robustness of emerging AI workloads as a reason to consider colocation data centers. "There is an evolving concept now in the AI space that more would need to be done at the edge, wherever that data happens to be related to AI and ML," he said. "That necessitates having it in colocation as well. Federated learning is the driver for AI workloads in colocation."

External research confirms a surge of interest in colocation as demand for edge compute capacity scales to meet the needs of innovative AI/ML applications. According to 451 Research, multi-tenant data centers (MTDCs), including colocation providers that have built out onramps and an ecosystem to integrate with hyperscaler cloud services, are gaining traction for internet of things (IoT) and AI workloads, which increasingly require high-performance compute, storage and network horsepower at the edge.⁴

Similarly, Uptime Institute's Global Data Center Survey 2022 found that 61% of respondents plan to increase edge computing capabilities, in part driven by IoT and AI workloads, with 18% expecting to use a mix of private facilities and colocation.⁵

Workloads currently not deployed in a colocation facility are also potential repatriation candidates moving forward, the respondents to the 2022 State of the Data Center report said. Core business applications, collaboration solutions, content delivery and CRM workloads top the list

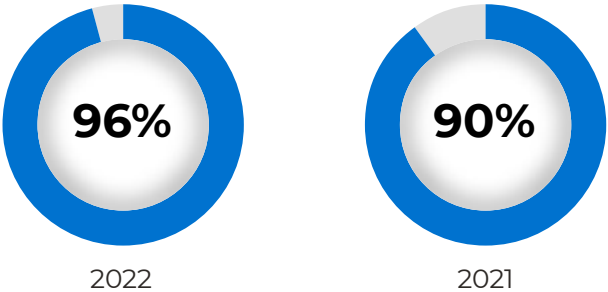
of those being considered for migration, the research found. In last year's report, BI/data warehouse/data analytics, web sites and apps/databases were the top workloads expected to move to colocation over the ensuing 18 months. AI/ML applications and data analytics are the most likely workloads to make their way to a colocation model over the next 12 months, the 2022 report found.

Among those enterprises considering a move to colocation data centers, the availability of managed services is a top-tier attribute sought when considering potential providers. In fact, managed services was cited as a key requirement for colocation providers by 30% of this year's respondents, compared to only 16% in 2021; the availability of managed services has also surged as the number one attribute since 2020, the research found.

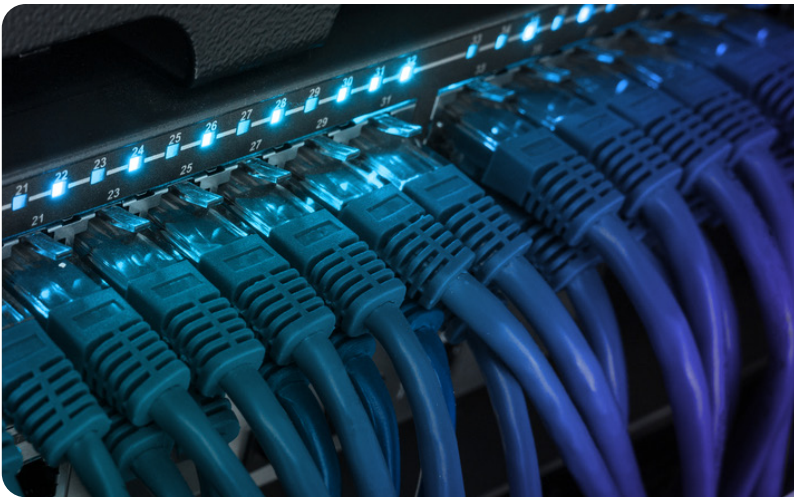
The need for managed service options is acute, but enterprises are not necessarily looking for colocation providers to directly provide those services, says CoreSite's Kaiser, as there are so many specialized service offerings. "Our customers tell us it is more important for colocation providers to deliver access to a varied ecosystem of managed service offerings including managed network, security, compute and storage, because the ecosystem is a critical component of the customer's architecture."

In addition to access to managed services, colocation providers are now expected to provide native, direct connections to the major cloud providers – a requirement cited by 96% of respondents to the 2022 report, continuing an upward trend from the 90% in 2021.

CIOS EXPECT NATIVE, DIRECT CONNECTIONS TO MAJOR CLOUD SERVICE PROVIDERS



In lieu of costly network builds, native direct connections enabled through a colocation provider deliver on-demand access to a private connection between dedicated infrastructure and public cloud providers simultaneously. Direct connections offer an array of benefits, including more robust security, reduced latency, lower costs and greater reliability.



"The benefit of partnering with a [colocation provider] is just giving us more options, more flexibility. In some cases, it is the ability to still maintain a technology stack that we want. Sometimes, they would help us with our provisioning and supply chain needs. We would not have to decommission and put ourselves in a time box where it would come to no choices in that we would have to go to the cloud, which would require a lot of reworking and changing our tech stack."

**– Survey respondent,
global financial services company**

What to look for in a colocation provider

As companies navigate the colocation landscape, there are core considerations to keep in mind when evaluating potential partners. Critical areas of differentiation include:



Direct connections: Native onramps optimize hybrid cloud's value. A private connection between a company's dedicated infrastructure and cloud providers can quickly inflate the total cost of data center operations when accounting for multiple internet service providers and multiple clouds. The ideal approach allows for a one-to-many connection, dramatically simplifying network architecture and reducing connectivity costs.

A software-defined network interconnection platform, like the Open Cloud Exchange® (OCX) from CoreSite, can serve as the centerpiece of a direct-connect strategy, enabling enterprises, network providers and IT service providers across industries and specialty areas to connect and deliver solutions to an ever-expanding digital ecosystem. "For our selected colocation partner, we have a list of seven vendors of which they need to be able to provide cross connects to," said the vice president of IT at a publishing company. "That's a level of redundancy that we just can't afford to duplicate on-premises."



Edge compute advantage: Enterprises need to reach their end users and partners with increasingly larger workloads and with real-time requirements. Traditionally, customers would connect to cloud providers over the internet or via a private connection to a remote location to access compute and storage solutions. They now realize that some real-time applications can't run adequately over a certain distance. This necessitates more compute at the edge. "You can choose a colocation that is in a geographically correct space, which delivers an advantage for getting closer to customers or further away from your own data centers," said a healthcare company IT leader.

Top 5 Attributes Sought in a Colocation Provider

- 1 Security
- 2 High availability/disaster recovery
- 3 Easy to work with/reputation/customer service
- 4 Visibility around service level agreements
- 5 Diverse geographic locations



Expansive ecosystem: Colocation providers with facilities and customers in multiple geographic locations can support a robust ecosystem of partners, and thus accommodate the rapid growth and scale of customers' private infrastructures in large, highly connected data center campuses.



Well-positioned for innovation: With the convergence of wireless and wireline technologies, 5G use cases will demand colocation advantages to support the acceleration of data collaboration, including AI/ML and data analytics applications. Enterprises need to seek out colocation partners that can accommodate these connectivity innovations. "We are looking for the possibility of interesting connectivity such as cellular amplified connectivity – not just high-speed, high-bandwidth, low-latency connectivity," contends one respondent at a SaaS provider. "I would expect that for multiple carriers as well as alternative out-of-band connectivity to my infrastructure-as-a-service from my colocation provider."

As companies embrace a hybrid, multi-cloud future, interoperability challenges can make or break IT infrastructure and, even worse, be a major disruption to ongoing operations. Aligning with the right colocation partner reduces complexity and ensures resiliency, all while accelerating profitable and scalable digital business.

Learn more about CoreSite's colocation offerings at **CoreSite.com**.

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