

EXECUTIVE SUMMARY

SQL Server on Hyperconverged Infrastructure

- Changing database requirements are driving the push toward HCI.
- Unlike traditional infrastructures, HCI combines compute, memory, and storage.
- HCI simplifies infrastructure, eases scalability, and offers robust data protection.
- HCI for SQL Server eliminates storage and networking complexities.
- Cisco helps businesses simplify the move from traditional infrastructure to HCI.

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Robert Michael Moore, SME, Cisco

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Overview

Hyperconverged infrastructure (HCI) offers businesses a modern architecture to improve performance, availability, and flexibility of their systems, while simplifying server deployments. When used with SQL Server, HCI makes it easier for businesses to deploy and scale highly available and performant enterprise database applications.

Context

Michael Otey discussed the advantages of HCI, and how SQL Server applications might benefit from this modern infrastructure. Robert Michael Moore discussed how Cisco can help businesses move from existing infrastructures to HCI with minimal disruption to business processes.

Key Takeaways

Changing database requirements are driving the push toward HCI.

Businesses are looking to HCI as a way to keep up with the changing needs and expectations driving today's database trends.

Database Trends Driving HCI

- 24/7 availability
- Performance in line with consumer applications
- Massive data growth of 30% to 50% annually
- Faster and more flexible development, such as DevOps and containerization
- Cloud integration
- Increased complexity
- Drive to lower costs

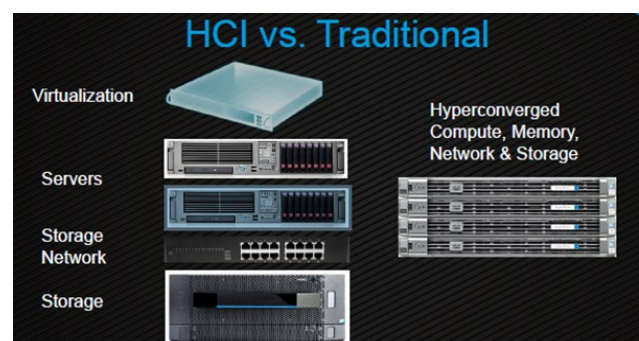
If you have a SQL Server query, [users] just expect that it should perform like a Google search, and they don't understand why it doesn't.

Michael Otey

Unlike traditional infrastructures, HCI combines compute, memory, and storage.

In traditional infrastructures, compute, memory, and storage are housed on different systems, creating a potentially complex, multi-part, multi-vendor solution with lengthy deployment times, individual system management, and remote storage.

HCI combines these same three components on a single box and enables businesses to further build out the infrastructure using building blocks linked together through high-speed networking. This leads to a quick-to-deploy, simpler, often single-vendor solution that has centralized system management and local storage.



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HCI simplifies infrastructure, eases scalability, and offers robust data protection.

HCI offers several benefits over traditional architecture: simplified infrastructure, easy scalability, built-in data protection, and fast deployment. Alongside improved service and support, these benefits are among the reasons why 85% of respondents told Enterprise Strategy Group they are currently using or planning to implement HCI solutions.

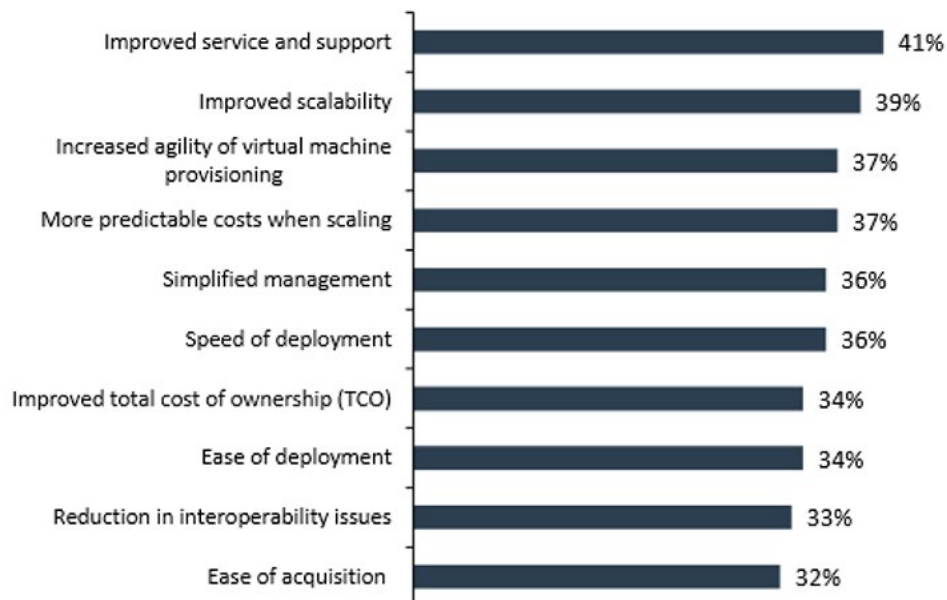
Michael Otey recommends looking for HCI solutions that:

- **Adjust for compute or input/output (I/O) intensive workloads**, as different workloads

have different needs. This allows for configuration to best optimize the workloads.

- **Have built-in data protection** that automatically replicates data between nodes to provide a robust enterprise-level data protection solution.
- **Are all flash and/or hybrid storage**, which offers the high levels of performance today's databases need. Storage features should also include deduplication, compression, snapshotting, thin provisioning, and cloning.
- **Provide high-performance network connectivity** for the connected nodes, allowing the business to take advantage of the benefits of HCI.

Which of the following factors drove your organization to deploy – or consider deploying – a hyperconverged technology solution(s)? (Percent of respondents, N=299)



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HCI for SQL Server eliminates storage and networking complexities.

HCI offers SQL Server users a number of advantages, including elimination of storage and networking complexities. Because HCI internal storage is available, there is no longer a need to use different logical unit storage (LUN) or redundant array of independent disks (RAID) levels for each log and data file. Networking is also simplified, as switches, zones, virtual private networks (VPNs), and multi-pathing are no longer necessary to get the best performance out of the database.

Additional benefits of HCI for SQL Server include accelerated data and log file access and improved tempdb performance.

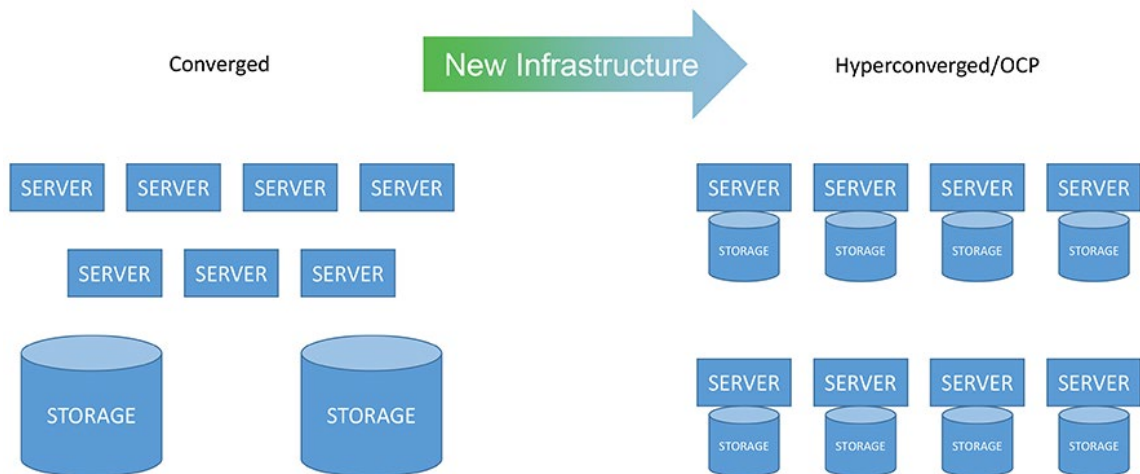
Workloads that previously ran on different systems can be combined on a single HCI, reducing the number of servers and ultimately lowering data center costs. SQL Server licensing costs may also be lowered if combining workloads decreases the number of instances of SQL Server that are needed.

HCI also offers complete support for SQL Server available technologies, including automatic data protection, support for AlwaysOn for failover clustering and availability groups, and log shipping. Native and third-party backup tools are also supported.

Cisco helps businesses simplify the move from traditional infrastructure to HCI.

Moving from traditional infrastructure to a more modern architecture, such as HCI, can bring businesses numerous benefits, such as increased scalability, improved performance, and cost savings. At the same time, legacy systems are often complex and moving them can be extremely disruptive.

Cisco helps businesses with an infrastructure refresh, lifting applications out of older, more expensive infrastructures and placing them in HCI.



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The HyperFlex M5 Nodes—engineered on fifth-generation Cisco unified computing system (UCS)—enable businesses to migrate to HCI quickly and easily using software-defined implementation. The flexible solution helps enterprises with data-intensive workloads use HCI to maximize performance and I/O.

Infrastructure refresh is one of the least risky, least disruptive, biggest bangs for the buck [change] that you can do for your IT organization.

Robert Michael Moore

HCI WITH ALL FLASH AND 40GBPS FABRIC NETWORK



BUILT FOR DATA INTENSIVE WORKLOADS

Biographies

Michael Otey

Senior Contributing Editor, *Windows IT Pro* and *SQL Server Pro*

Michael Otey is a senior contributing editor for *Windows IT Pro* and *SQL Server Pro* and is president of TECA a technical writing, content creation, software-development and consulting company in Portland, Oregon. Michael is a former SQL Server Microsoft MVP. He covers data center, SQL Server, Windows Server, virtualization, hardware, storage, Azure, the hybrid cloud, systems management, VMware vSphere, containers, and PowerShell.

Robert Michael Moore

SME, Cisco

Robert Michael Moore (Mike) has been combining application designs with infrastructure architectures for the past 25 years. His technology perspective gained from experience is that adopted innovations are rooted in business value. If value is found, adoption happens quickly. Conversely, the complete opposite is true and deserving of equal attention when making IT decisions. Today at Cisco, Mike participates on multiple teams. He helps lead efforts to simplify and drive costs out of traditional data center applications without business disruption. He also focuses on progressing application designs such as serverless and distributed ledgers; continuing to validate business value from technology innovations.