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Why Converged Infrastructure?

Three reasons to consider converged infrastructure for your organization
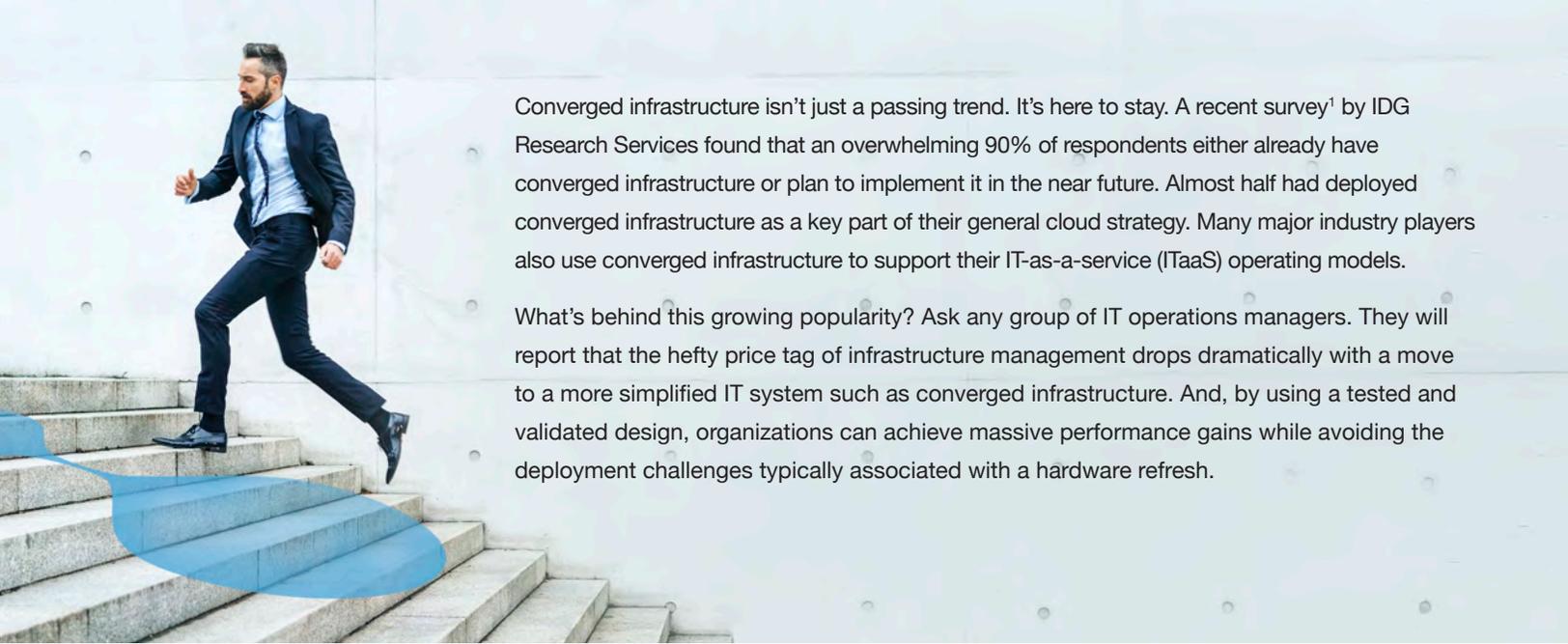
Converged infrastructure isn't just a passing trend. It's here to stay. A recent survey[1] by IDG Research Services found that an overwhelming 90% of respondents either already have converged infrastructure or plan to implement it in the near future. Almost half had deployed converged infrastructure as a key part of their general cloud strategy. Many major industry players also use converged infrastructure to support their IT-as-a-service (ITaaS) operating models.

What's behind this growing popularity? Ask any group of IT operations managers. They will report that the hefty price tag of infrastructure management drops dramatically with a move to a more simplified IT system such as converged infrastructure. And, by using a tested and validated design, organizations can achieve massive performance gains while avoiding the deployment challenges typically associated with a hardware refresh.

Defining converged infrastructure

Converged infrastructure combines servers, networking, and storage into a single optimized computing system that is centrally managed. It consolidates traditional storage components into a highly redundant, node-based storage platform that can be scaled out as needed. Today's converged infrastructure solutions utilize all-flash storage nodes to increase performance, reduce physical capacity requirements, and cut maintenance costs.

Converged infrastructure also helps minimize the drudgery of hardware integration and system maintenance and frees IT to experiment with software innovation. Additional advantages include increased IT responsiveness to business demands and an overall reduced cost of computing.

Converged or hyperconverged?

These two terms are often used interchangeably, but there are significant differences. Converged infrastructure refers to an optimized, tightly integrated collection of IT components offered by one or more technology vendors that includes compute, storage, and networking resources. It simplifies management, offers quick deployment, and scales with ease.

Hyperconverged infrastructure (HCI) is based on a hypervisor-centric architecture and includes compute, networking, virtualization, and storage in a single box from a single vendor. This can be attractive from a simplicity standpoint, but there are drawbacks. For example, all of the hardware elements are tightly coupled and cannot be scaled independently from one another. Therefore, when you need to add more of a single element, such as storage, you cannot simply add storage capacity by itself. You must add an entire system building block, including compute, memory, and networking resources, in addition to the desired storage capacity.

For systems that need to scale while delivering consistent and predictable high performance, converged infrastructure is the answer. It provides the ability to more rapidly and flexibly provision infrastructure and services than either traditional or hyperconverged systems. Here are the top three reasons you should consider making converged infrastructure the cornerstone of your infrastructure strategy.

Three Reasons to Consider CI For Your Organization

REASON 1: Position IT to better meet the needs of the business

Converged infrastructure creates a more reliable, productive IT environment. With traditional systems, companies often struggle to make sure all of the hardware elements are optimized to deliver the performance required by a diverse set of workloads. With converged infrastructure, the integration of components is already completed from day one, guesswork is eliminated, and infrastructure management is simplified. Complexity is reduced through the use of preintegrated hardware, virtualization, and management automation tools. Workflows are optimized so that application services can be delivered more quickly and more easily than ever before.

There are other benefits to converged infrastructure that can make big changes in your organization in the long run. For example, an IT employee whose days are filled with tedious, repetitive maintenance tasks will enjoy a major change with converged infrastructure. With far less maintenance than traditional IT and legacy systems, IT professionals are able to refocus their efforts on more creative ways to use technology to help the business.

REASONS TO MAKE THE CHANGE

How do you know for sure that your business is ready for converged infrastructure? Here are some signs for which to watch:

1. Your IT is unwieldy and unable to adjust to new requests from lines of business.

2. You are experiencing lengthy deployment times that cause projects to get stuck in limbo.

3. Too much staff is utilized and too much budget is spent on IT system maintenance.

Today's IT departments are not only expected to spend less, but also expected to make more. As one industry expert noted, "Companies are asking their IT departments to generate revenue; they aren't just there to keep the machinery humming."

Greater IT staff productivity, reduced costs, and fewer maintenance issues all make converged infrastructure a reliable choice for companies that want to better meet business demands.

REASON 2: Gain agility to keep up with evolving business demands

How can companies attain the agility they seek in a fast-moving market? According to the IDG survey, nearly two-thirds of respondents indicated that "ease of management" was the top expected benefit from adopting converged infrastructure. Another big benefit was "greater centralization to create more efficient economies of scale, faster IT response, increased flexibility, and reduced costs." These results also indicate that IT professionals are looking for a solution that is predesigned and prevalidated for optimal functionality.

The ultimate goal of convergence is to simplify the data center so it's easier to meet the ever-changing demands of the business. As converged infrastructure technologies continue to evolve, IT can count on a reliable way to deliver the flexibility and agility business users demand.

CONVERGED INFRASTRUCTURE PROVIDES:

Faster provisioning.

Allows new solutions to be deployed more quickly and more easily than ever before.

Scalability and elasticity.

Enables data center capacity to be adjusted quickly to meet the needs of growing businesses.

Faster IT response.

Provides the ability to respond quickly to changes in the marketplace or to changes within the business.

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REASON 3: Build a foundation for a hybrid cloud future

Converged infrastructure enables enterprises to more easily implement private cloud solutions and can serve as an enabling platform for private and public cloud computing services, including infrastructure-as-a-service (IaaS), platform-as-a-service (PaaS), and software-as-a-service (SaaS) offerings. Companies that deploy a hybrid cloud strategy also enjoy greater flexibility and scalability.

Hybrid cloud is taking off

A recent study indicated that the hybrid cloud market is growing at an annual compound rate of 29% from 2014 through 2019.[2] Hybrid cloud has clearly established itself as a viable option for IT organizations that want to create new, flexible, and responsive IT resource environments and see the cloud as the most viable way to achieve this goal.

The hybrid cloud approach calls for seamless data management across cloud resources. This enables IT organizations to complement a private cloud with a public cloud strategy that minimizes risk and helps avoid the potential of losing control of valuable data. With hybrid cloud, enterprises can store their sensitive data in a secure environment while taking advantage of public cloud services for extra scale and agility. Because of its support for virtualized applications and advanced automation, converged infrastructure is the perfect runway for hybrid cloud deployments.

Cost savings, greater flexibility

Ongoing data security concerns and sovereignty requirements are causing IT departments to take a closer look at their cloud plans. Administrators need to know where their data lives and who is managing it at all times.

By combining a converged infrastructure platform with public cloud services, you can create a single seamless solution that delivers trusted data protection plus the elasticity to meet unpredictable demands for IT resources. For example, new cloud services can be added in seconds without sacrificing data security, enabling IT teams to scale workloads on demand. Another plus: By allowing workloads to move between private and public clouds as computing needs change, hybrid cloud provides new opportunities for reducing capex and opex when compared with traditional IT models.

Make The Move to Converged Infrastructure With Flexpod

FlexPod is best in class

Now that you know some of the benefits of converged infrastructure, what's your next step? Consider FlexPod®: the Cisco and NetApp® converged infrastructure platform that is flexible, massively scalable, and easy to deploy and consolidates all your application and data requirements.

FlexPod streamlines your servers, networking, and storage in a cost-effective IT infrastructure that accelerates deployment, centralizes management, and automates operations. FlexPod brings the performance, agility, and economics required by today's business.

HYBRID CLOUD MARKET IS GROWING AT AN ANNUAL COMPOUND RATE OF

29%[3]

2019

2018

2017

2016

2015

2014

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The FlexPod Advantage: Now and in the Future

Performance

FlexPod with All Flash FAS delivers. This innovative solution, which includes the latest Cisco UCS servers, Cisco Nexus switches, and NetApp all-flash storage, consistently offers high-performance delivery of fast and secure business-critical applications. Other benefits include:

- High-caliber performance with real bottom-line implications
- Superior decision making through better information access
- Increased revenue opportunities from faster business transactions
- Better overall response times to business-critical SAP, Oracle, and Microsoft enterprise applications

208%
SQL RESPONSE TIMES THROUGH UCS WITH M4 PROCESSORS[3]

Agility

A more fluid business environment and profit pressures demand infrastructure that can keep up. FlexPod has responded with a design that allows users to deploy new hardware and software in just minutes. FlexPod also supports both private and hybrid cloud designs, thereby increasing efficiency and agility, and it scales seamlessly to meet the enterprise's emerging needs:

- Ready for use in under 60 minutes with infrastructure automation[5]
- Integrated and standardized components that reduce application deployment from months to weeks
- 83% faster provisioning with Cisco ACI architecture[3]
- 20% to 30% reduction in application testing time[3]

83%
FASTER PROVISIONING WITH CISCO ACI[3]

Economics

The streamlined IT and IT management approach of FlexPod lower operating expenses by minimizing the need for specialized skills and the maintenance required to tune databases. A smaller footprint means additional savings through reduced power, cooling, and data center space. FlexPod with All Flash FAS also brings data reductions with in-line deduplication and compression:

- 76% ROI in just 17 months[3]
- Free storage controller upgrade
- Performance of flash at the price of disk[3]

76%
ROI IN JUST 17 MONTHS[3]

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THE NUMBERS ADD UP

$4M
Up to 4 million IOPS with 1ms latencies on All Flash FAS[3]

20x
Up to 20x faster enterprise application performance on All Flash FAS.[4]

All Flash FAS delivers 685,281.71 IOPS at 1.23ms average response time (ART)[4]

#5
All Flash FAS was rated #5 in SPC-1 "Top Ten" by performance, with the second best ART (1.23ms) and SPC-1 LRT (0.48ms) in the top 5[4]

4x
4x improvement in storage IOPS and 4x improvement in SQL Server CPU utilization[3]

208%
faster SQL Server response time with FlexPod Advantage[3]

100+
world record benchmarks for Cisco UCS, including SPECCINT2006:

SPECint_rate_base=1760 Best 2-socket x86-architecture result, representing a 27.5% increase[4]

Converge with FlexPod Today

With FlexPod you can:

- Position IT to better meet the needs of the business
- Gain agility to keep up with evolving business demands
- Build a foundation for a hybrid cloud future

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1. IDG Research Services, "Converged Infrastructure: Reaching Maturity, Meeting Business Demands," 2015.
2. Sandler Research, "Global Cloud Market 2015-2019," 2016.
3. NetApp Spotlight on Technologies: FlexPod Advantage: Performance, Agility, Economics, NetApp.com/us/media/ds-flexpod-advantage.pdf.
4. Cisco, "Cisco UCS Servers Claim Nine New World Records on Industry-Standard Benchmarks," 2016.
5. Applies to specific designs.

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