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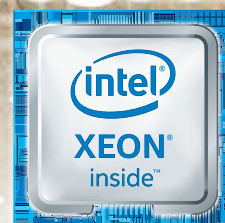
# Hyper-converged data center equipment virtualizes and consolidates compute, storage and sometimes even networking, but is it the best way forward?

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# Hyper-convergence poised to transform traditional data centers

The emerging wave of hyper-converged data center equipment is causing interest amongst enterprise IT professionals. Hyper-convergence tightly integrates compute and storage, or even networking, virtualizing it all onto a single standard server platform.

But what are the business and IT drivers behind moving to hyper-converged solutions; and what are the advantages of deploying them? We asked the experts.

## Why choose hyper-convergence?

The push towards a hyper-converged infrastructure (HCI) approach is primarily being driven by the need for simplicity, flexibility and speed, explains Duncan Epping, Chief Technologist, Storage & Availability, VMware EMEA.

**“CIOs can no longer wait six weeks for a change process to be completed to request additional storage capacity. They need it today rather than tomorrow, in order to stay ahead of competition,”** he says.

In essence, hyper-converged infrastructures deliver the building blocks for the Software-Defined Data Center (SDDC), based on three key design principles - simplicity, flexibility and speed, he says, adding, **“Initially, these solutions were primarily intended for virtual desktop infrastructure (VDI) environments, but the technology has now expanded. Hyper-converged solutions now fit almost every use-case for IT in the enterprise, ranging from business-critical apps to demilitarized zones (DMZs) and anything in between.”**

Usman Chaudhry, an expert on Integrated and Converged Infrastructure at Fujitsu, explains that hyper-converged equipment leads to a lower total cost of ownership (TCO) and faster return on investment (ROI) through a number of factors, including: consolidating compute, storage and networking, which means less hardware to power, cool and stack in your data center.

Secondly, says Chaudhry, most HCI solutions have a single GUI for common administration and management tasks, freeing up IT staff. And thirdly, simplified architecture leads to less cabling and less hardware to monitor, patch, fix and manage.

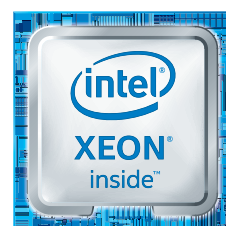
Another advantage of HCI, according to Gunnar Menzel, Vice President & Chief Architect Officer, Infrastructure Services at Capgemini, is that:

» organizations usually only have to deal with one vendor, and don't need to have an in-depth technical knowledge of how the infrastructure is built.«

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»Due to all parts being pre-selected and pre-configured, organizations are tied into the vendor's specifications and, as such, there is no ability to tweak the solution.«



## Emerging technologies

Chaudhry notes that a lot of the HCI startups are now maturing, such as Nutanix, Simplivity and Springpath. However, he says they don't have the same brand power, customer base and reputation as the giants like VMware and Microsoft, though Nutanix is rising up in the HCI market.

He says some solutions are interoperable at the hypervisor layer, and others are aiming to be hypervisor agnostic, **"but most, if not all, lack the richness of traditional storage vendor features and functionality"**.

Mark Collier is Chief Operating Officer at OpenStack Foundation. His view is: **"Generally, you see hyper-converged options that are focused on particular infrastructure ecosystems. VMware was among the first with its VxRail product focused on vSphere operators, and EMC has storage-focused hyper-converged products."**

**"Microsoft's AzureStack appliance is still a year or more away, but it'll focus on the Microsoft Server ecosystem. Within the OpenStack ecosystem, there are offerings from Breqwatr, QCT, Stratoscale, and Transcirus, among others,"** he adds.

## Drawbacks of hyper-convergence

Collier feels that, whilst convenience and speed to deployment are the primary drivers, the drawbacks are twofold. **"First, one size does not fit all, and you might have a particular workload that demands something not available in a cookie-cutter option. Second, hyper-converged is still pretty new, so options can be limited, and you might discover unpleasant surprises along the way,"** he comments.

There may also be vendor lock-in issues, says Capgemini's Menzel.

**"Due to all parts being pre-selected and pre-configured, organizations are tied into the vendor's specifications and, as such, there is no ability to tweak the solution."**

VMware's Duncan Epping, adds: **"The big question then remains: what is the drawback of adopting hyper-converged infrastructure? From a technological perspective, there is no clear drawback in my opinion. The only question CIOs need to consider before deployment is whether their IT processes can adapt to this new way of delivering infrastructure."**

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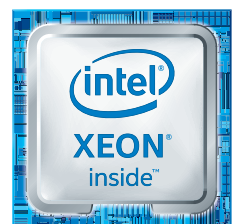
## HCI use cases

Menzel says one of the biggest use cases for HCI is in organizations that are looking to upscale rapidly. **"This could be to run 100 VMs for server workloads, or up to 205 VMs for VDI workloads."**

Fujitsu's Usman Chaudhry adds, **"SMBs, schools and colleges are adopting HCI appliances that converge their sub-200 VMs and 50TB of storage into a neat little 2U appliance. Web-scale and gaming companies have most of their workloads suited to this scale-out architecture which puts an equal demand on compute as it does on storage."**

But he adds, **"Most large corporates and enterprises still tend to rely largely on scale-up architectures, such as the traditional three-tier architecture, which allows them to scale their storage independently of their compute or a converged infrastructure solution. Having said that, some have begun to experiment and dedicate very specific workloads to HCI solutions."**

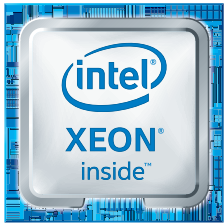
So how about you - is your data center infrastructure ready to support hyper-convergence?



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