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WHITE PAPER

hyperconverged infrastructure

What is hyperconverged infrastructure?

Hyperconverged infrastructure is a software-defined type of infrastructure that integrates computing power, storage, networking and virtualization on one commodity hardware platform. The hyperconverged infrastructure performs and is managed as one single system. The solution is supported by a single vendor. Hyperconvergence offers the benefits of simplified IT infrastructure design, decreased administration budget and reduced vendor management effort to highly virtualized IT environments.

From legacy IT to converged infrastructure

Convergence has been the main trend in IT for quite some time already. Convergence brings distributed hardware components back together. It is a trend that is the logical result of the virtualization wave that hit the data center. In the traditional take on IT servers, storage and networking are managed in separate siloes of systems and operations. Typically, this creates a situation with several administrators maintaining relationships with several hardware vendors, each taking care of purchasing, provisioning and supporting their part of the infrastructure. In such an environment, instead of keeping its focus on innovation, the IT department as a whole is mainly spending time and budget on keeping the lights on.

Virtualization offers an opportunity to achieve more efficiency in supporting the evolving business needs with IT. However, the growing amount of virtual workloads - and the data that comes with them - inevitably leads to the overprovisioning of resources. Adding more hardware doesn't solve the problem, but only brings more complexity to the data center. Virtualization causes an increasing need for storage capacity. The traditional relationship between a physical server and storage evolves into a situation where many virtual machines all rely on the same storage. The result is easily predictable: issues with performance and capacity.

Converged infrastructure systems were created to solve these issues. A converged infrastructure system combines several hardware components - typically compute, storage and networking -

The result is one comprehensive system that contains the whole story: compute, storage, networking and virtualization – supported by one single vendor.


into a single pre-engineered appliance, using commodity components, while eliminating the infamous compatibility issues of the traditional siloed IT environment. It offers a dynamic take on the efficient and easy provisioning and management of IT resources, needed to successfully support a company's rapidly evolving needs. A converged infrastructure appliance offers a fairly simple design for an IT infrastructure and is typically offered by a single vendor. This allows the IT department to focus its attention on maintaining the relationship with one, rather than three or more suppliers.

From converged to hyperconverged infrastructure

Hyperconvergence is the next step in the evolution of converged infrastructure. 'Hyper' refers to the hypervisor, the virtual machine manager of a virtualization technology, allowing

multiple operating systems to share a single hardware host. Hyperconvergence adds the virtual infrastructure aspects to the converged infrastructure. The result is one comprehensive system - again supported by a single vendor - that contains the whole story: compute, storage,





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networking and virtualization. In other words, a hyperconverged infrastructure doesn't only combine servers, storage and networking, but takes the convergence of those hardware components to the next level, by integrating the hypervisor itself.

As a consequence, hyperconverged infrastructure differs quite a lot from converged infrastructure. In essence, hyperconverged infrastructure is soft-

ware-defined. It enables automation to improve the operational efficiency of IT. A converged system can simply be described as the combination of separate hardware components, designed to work together. A hyperconverged infrastructure, however, is modular in nature and engineered to offer effortless scalability through the addition of nodes. A hyperconverged infrastructure is based on compute, storage and networking, combined on a commodity x86 platform. A hyperconverged infrastructure consists of a single x86 resource pool, eliminating the need for discrete IT components and offering the optimal environment for virtual applications. With hyperconverged infrastructure, scaling out is no longer a matter of adding storage, memory or computing power. All it takes is adding or removing appliance nodes to meet changing business demands.

On top of that, hyperconverged infrastructure also simplifies administration. The traditional model of siloed IT requires several expert teams, each managing their part of the stack. Hyperconverged infrastructure acts as a single system, allowing its management to be taken care of by a single IT support team. This allows for a centrally managed virtual IT environment, offering an efficient way to reduce IT administration overhead and boosting operational efficiency. In fact, in a hyperconverged infrastructure, the IT management focus is aimed at the virtual machine - the application - rather than on the infrastructure itself. Furthermore, the single vendor model helps the organization to streamline the relationship with its infrastructure solution supplier, making it easier to purchase, implement, manage and support the infrastructure. The single vendor model eliminates complexity, compatibility issues and the costs that come with them.

ABOUT econocom

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