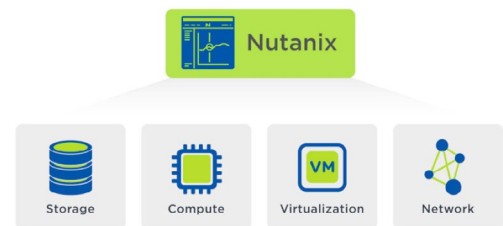




HYPER CONVERGED TECHNOLOGY

What is Hyper Converged Technology?

The term “Hyper Convergence” has been making more and more noise within the IT industry. Simply put, hyper converged technologies are solutions which collapse a number of disparate but complementary technologies together into a turn-key solution, often delivered as a single appliance. Such solutions take elements of compute, storage, networking and a virtualisation hypervisor to deliver a single appliance based solution to support a virtualised workload, and which removes the need for IT organisations to consider separate servers (the compute layer), separate storage platforms, and also separate server and storage interconnect devices – such as SAN fabric switches.



The Challenge Today

Virtualisation has moved into the mainstream, with most organisations having embraced this in whole or in part. Virtualisation is typically implemented using one of the main hypervisors such as VMWare with ESXi, Microsoft with Hyper-V and Citrix with XenServer. In addition, other hypervisors, such as KVM and KVM-derivatives have been increasingly adopted in recent years.

Before virtualisation, applications were deployed on physical servers and may have only consumed a fraction of the available system resource. We didn't want to add multiple applications together because although we would have achieved greater efficiencies of the physical platform now supporting multiple applications, the risk of these applications interfering with each other was considered too great a risk. Typical resource utilisation with such deployments could be as low as 10-30%. With virtualisation we could now run multiple applications together on the same physical platform, and use hypervisor technologies to provide absolute separation of operating environments to effectively appear as though each application had its own physical platform at its disposal. This immediately provided much greater efficiencies with organisations now able to run their physical platforms to greater than 75% utilisation. Thus the market turned to virtualisation technology, with VMWare being the leading company providing this hypervisor technology.

Virtualisation brings with it excellent flexibility and agility, and clearly the promise of realising greater efficiencies from the physical server estate. But the problems being realised by companies today is that the physical infrastructure (servers, storage and network) is inherently much less flexible and agile than the hypervisor software, and is often failing to meet the business needs.

This leads to problems where companies wish to either:

1) refresh their hardware platforms, or 2) scale their hardware platforms.

When companies invest in separate server and storage hardware, these inherently give challenges when looking to flex the operating environments to suit ever changing and evolving business needs. When adding in more compute resource (i.e. additional servers), how do you scale the storage platform to suit? If scaling the storage platform, at what point do you hit a physical expansion limit or a performance ceiling? How do you scale the server tier to suit the storage? And what about the networking layer?

Hyper Convergence – what a solution needs to look like

Hyper Converged Infrastructure (HCI) collapses a number of disparate but complementary technologies together into a turn-key solution, often delivered as a single appliance. Hardware should comprise industry standard components, such as Intel x86 based CPUs, industry standard disk drives and mother boards etc., and should not be constrained by custom build components or specialist hardware add-ons.

Beyond the hardware, the software architecture should also exhibit key attributes, such as:

- | | | |
|----------------------------|------------------------------|-----------------------|
| ■ Simple | ■ Scalable | ■ Automated |
| ■ Agile | ■ Increased Visibility | ■ Self Learning |
| ■ Distributed Architecture | ■ Elastic | ■ Open API Driven |
| ■ Self Healing | ■ Policy Driven | ■ Modular |
| ■ Non Disruptive Upgrades | ■ No Single Point of Failure | ■ Hypervisor Agnostic |
| ■ Real Time Analytics | | |

Nutanix

As the market leader in hyper-converged solutions, the Nutanix Xtreme Computing Platform integrates compute and storage resources into a single appliance. With a simple scale-out architecture, Nutanix delivers cost savings and predictable scalability for even the most intensive virtual workloads. The advanced architecture of the Nutanix platform enables high availability across all system components to an unlimited number of simultaneous users.

- Nutanix consistently delivers lower TCO than legacy infrastructure
- Uncompromisingly simple (30 to 60 minute deployment), and with rapid and seamless scalability
- The Nutanix distributed architecture enables consistent user experience and the flexibility to scale
- with a customer's needs

