

Nutanix Hyperconverged Software for Cisco UCS Platforms

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Introduction

Businesses need to innovate faster as they compete in the marketplace with other fast-moving companies. The pressure for change is causing many business organizations to evaluate new technologies to gain a faster business cadence.

Doing business the same way it has always been done is no longer an option, as business and IT leaders struggle to keep up with rivals.

Business managers are realizing that it's more important to get the work done more efficiently than it is to tune and optimize customized data center infrastructure. They are looking for ways to reduce the complexities associated with the systems they have – and to simplify IT for the next wave of applications.

The path to business transformation is often extremely difficult. Many customers are growing increasingly frustrated with the compute and storage “silos” that are embedded inside their on-premises data center. These businesses are suffering from a case of inherited infrastructure – resulting in a smorgasbord of systems assembled by many years of disparate IT decisions.

Their company's aging infrastructure isn't responsive to fast-changing business conditions, and those systems cannot support the peaks of computing demand that may arise quickly. The goal of business transformation is to grow market share, and to avoid damaging the company brand during the transformation process.

Companies that are reinventing their business model are placing extreme pressures on today's business organizations to address new customers in new ways. Here are three real-world business examples:

- Retail companies are quickly trying to develop mobile and omni-channel strategies as sales in brick-and-mortar establishments decline.
- Financial institutions are finding themselves competing with born-on-the-web financial services companies.
- Health-care companies are trying to manage and gain insights from decades of patient information. The same health-care companies are working to gather actionable insights from a variety of Internet of Things (IoT) devices, including wearables and telemetry sensors.

Why Use Hyperconverged Systems?

Many businesses have discovered that hyperconverged infrastructure (HCI) systems simplify data center infrastructure, while bringing the scalability and IT flexibility that many businesses associate with cloud computing.

Hyperconverged systems combine compute, storage, software and networking capabilities in the same virtualized systems platform, so that work is assigned quickly to available resources, without delay. By allowing applications to flow from one set of resources to another, hyperconverged systems turn virtualized infrastructure into efficient platforms that support the ebb and flow of changing business conditions.

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The table below highlights the primary technology features of hyperconverged systems, and shows the business benefits associated with those features.

Table 1: Hyperconverged systems key features and business benefits

1. Combines compute and storage	Reduces systems acquisition costs
2. Uses SDI (software-defined infrastructure)	Improves IT flexibility, business agility
3. Processes work more efficiently	Achieves business results in less time
4. Close proximity of system components	Better use of data center floor space
5. Improves systems management	Better operational efficiency for IT staff

Moving to hyperconverged systems with unified management simplifies IT, making infrastructure more efficient and controllable than it is under aging, siloed data center infrastructure. Hyperconverged systems can be viewed as a single resource, allowing administrators to have a unified view of the entire system. This improves IT staff efficiency, reducing the time and cost for installing, deploying and maintaining the systems. They do not need to be tuned and optimized, and workloads scale up easily and quickly.

For customers, this provides a cloud-like on-premises infrastructure, with increased workload mobility and scalability that allows demand for compute and storage to be met more easily.

Deployment Models for Hyperconverged Systems

Hyperconverged systems can be deployed in the cloud or on-premises, giving companies more control over their critical applications and data as their business demands grow. The flexibility of a hyperconverged system allows enterprises to change their business model much more quickly than before.

The business benefits of hyperconverged systems are well known: Hyperconverged systems reduce operational costs because they can help eliminate standalone “silos” of compute and storage. These silos have prevented work from moving freely across the data-center infrastructure. Hyperconverged systems can also reduce the total amount of data center floor space required to support current workloads.

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Nutanix Brings Its Hyperconverged Software to the Cisco UCS Platform

Nutanix brings a software-defined approach to on-premises resources, which is efficient and adaptable to new and changing business conditions. Focused on hyperconverged solutions since its founding in 2009, Nutanix has delivered its hyperconverged software on Nutanix hardware appliances and on a variety of OEM systems platforms.

Now, Nutanix is bringing its hyperconverged software solution to the Cisco UCS hardware platform. Customers will now have the option to acquire the Nutanix hyperconverged software from channel partners – in a “meet-in-the-channel” strategy.

Rapid deployment and ease of management are two of the attributes that Nutanix is highlighting for its hyperconverged software solution. The ability to link to public clouds supports high availability for business-critical data – while allowing businesses to maintain local control of applications and data. This is important for data security and data-governance reasons, because many businesses are required by government regulations to keep data in a country or geographic region.

Security is a top-of-mind concern for IT managers, who want to ensure better security and availability within their installed infrastructure. Nutanix hyperconverged software supports EAL2-level security standards and NIST standards, both of which are requirements for many federal and international customer sites.

For storage purposes, Nutanix supports the addition of storage-only “nodes” within large Cisco UCS clusters. Importantly, Nutanix provides built-in support for Tier 1 storage services, including de-duplication software and data compression. Typically, Tier 1 services are provided by storage hardware providers.

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Cisco UCS Hardware Models Supported

Nutanix software supports a range of Cisco UCS platforms, including the C-Series rack-optimized systems and B-Series bladed Cisco systems. This gives customers a choice of form-factors to deploy – either in data center racks, or on blades. Both types of form-factors are widely installed within the Cisco UCS base.

Nutanix’ decision to bring its hyperconverged software to Cisco UCS was based on three major factors: Cisco is among the top five server suppliers worldwide, with a growing installed base in enterprise data centers and cloud service provider (CSP) data centers; growing customer interest in the option

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to run Nutanix software for Cisco UCS; and growing interest from third-party channel partners addressing the hyperconverged marketplace.

Nutanix has certified its software to work on the Cisco UCS platform, and fully supports this software solution on rack-mounted and bladed UCS systems. As announced, the Nutanix software runs on the Cisco UCS C220-M4S 1U rack server; the Cisco UCS C240-M4L 2U rack server; Cisco UCS C240-M4SX 2U rack server, and the Cisco UCS B200-M4 half-width blade server.

Nutanix' Software for Distributed Data and Workload Management

Nutanix' Acropolis and Prism software bring the benefits of hyperconverged architecture to Cisco's networked UCS systems, which are widely deployed in enterprise data centers, and in service providers' data centers.

Together, Acropolis and Prism bring a streamlined approach to assigning and managing tasks, data and workflows across multiple, linked systems. Applications move quickly and easily to available resources, as needed – and can be scaled up as business conditions change.

Nutanix Acropolis for Distributed Storage

Acropolis is a distributed data plane that allows virtualized workloads to move quickly and easily across multiple hardware building-blocks, or nodes, for UCS platforms that are also running Nutanix software. This technology, which leverages the Nutanix AHV and the Distributed Storage Fabric, avoids the complexity that was built into many of the older legacy "silos" within customers' data centers.

VMware ESXi, Microsoft Hyper-V and Nutanix AHV hypervisors.

This reflects real-world customer environments, making it highly relevant to today's workplace installations running Windows and Linux workloads on virtualized infrastructure. When installed on Cisco UCS systems, this hyperconverged environment provides a powerful, flexible infrastructure that benefits from Cisco's extensible architecture and interconnect fabric that links many UCS systems together.

Nutanix' Distributed Storage Fabric (DSF) simplifies the way data management is done in virtualized environments. Storage is pooled across a

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Nutanix cluster, so that data can be stored in hard drives (HDDs) and solid-state drives (SSDs) across the entire cluster of UCS systems.

This solution supports backup and HA/DR (high availability/disaster recovery) by allowing the storage of critical data in the public cloud. The Nutanix software runs applications on-site – and performs back-up into a public cloud (e.g., Amazon AWS or Microsoft Azure). This approach also supports disaster recovery plans by allowing business data to be restored to the UCS systems from the cloud. Importantly, Tier 1 data services, such as de-duplication and data compression, are supported, avoiding the need to install special software for those Tier 1 functions.

Nutanix Prism for Unified Workload Management

Nutanix Prism is a distributed management plane that applies advanced data analysis to streamline and simplify the tasks of managing workflows. It applies advanced data analytics and heuristics to optimize the way workflows run across servers, storage and storage networks in a virtualized infrastructure. Prism presents a unified view of all resources under management, across a cluster of systems.

The use of software-defined technology eliminates the need to have separate, siloed management solutions for servers, storage networks, storage and virtualization. It is a key asset in reducing compute/storage silos in the data center, and in reducing IT staff time associated with managing many repetitive, time-consuming tasks.

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Nutanix' Approach to Deployment and Support

Business customers want to see that work gets done quickly and efficiently. They are not interested in the ongoing process of tuning and tweaking software to achieve maximum performance. Business and IT leaders want their organization's IT teams focused on driving innovation and supporting the business, not tuning systems.

Two primary tasks of IT are deploying new systems and supporting all existing systems. The Nutanix solution addresses both aspects: deployment and support. By managing data and workflows within a completely virtualized infrastructure, deployment of applications is done in a flexible and automated way. This avoids the time and cost of reinstalling software on new hardware in order to scale up critical applications on more compute and storage resources.

The support model for Nutanix on Cisco UCS helps customers address concerns and pinpoint potential problems for quick resolution. Nutanix provides full support for the Nutanix software – and it provides first-call support for hardware-related requests. This allows a single contact call from the customer



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to initiate all support requests related to a specific inquiry. Nutanix will take responsibility for referring hardware support issues to TSANET.org (Technical Support Alliance Network), as it coordinates with Cisco and with channel partners to streamline support. This reduces the amount of time and cost that would otherwise be spent to handle support issues.

Driving Infrastructure Change to Support Business Goals

The ability to leverage and manage technology for business advantage is highly prized – but it is often difficult to achieve. Aging infrastructure for servers and storage, built for another era of computing, has to change to address today's mobile-enabled, cloud-enabled workloads.

Business managers realize that they need to reduce complexity in the data center to get faster results. They need to reduce operational costs for management tasks, while reducing data-center space usage, and reducing data-center power/cooling costs. One way to achieve this business goal is to move to hyperconverged software, combining system building-blocks for compute, storage and networking.

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