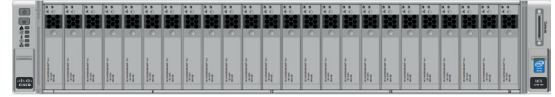




# Hyper-converged Solutions powered by DataCore Software and Cisco Servers



## Simple, Powerful & Scalable Solutions for Business Critical Applications

Companies need better performance and higher SLAs from their key applications. Hyper-converged infrastructure promises a faster and more reliable architecture for these applications. DataCore™ hyper-converged Virtual SAN software cost-efficiently delivers a highly available and high performance infrastructure for virtualized applications. Compared to other hyper-converged products, DataCore offers the following advantages:

- Integrates with existing storage infrastructure
- RAM for I/O acceleration, with more performance compared to Flash
- Scale-out storage by adding nodes or utilizing SAN

The net result is better performance and availability for databases, VDI and other virtualized applications.

## Lowest TCO Hyper-converged Solution

The DataCore / Cisco™ validated hyper-converged solution is easy to setup, manage and scale for a wide variety of business workloads. The solution has the following advantages:

- Fast deployment with DataCore's advance Smart Deployment wizard
- High performance, reliable UCS servers from Cisco
- Only 2 nodes needed for HA and stretch clusters; scales out to 64 nodes

The DataCore SDS platform, at the heart of the solution, integrates all storage, including hyper-converged, SAN and cloud storage to eliminate storage silos and future-proof your investment.

## DataCore Hyper-converged Virtual SAN Benefits:


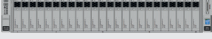


- HA requires only 2 nodes
- Built-in stretch cluster support
- RAM for I/O Acceleration
- Flash storage is optional
- Scale-out storage capacity with SAN or cloud storage
- Support for all major hypervisors
- Integrated architecture for non-virtual environments



## Use cases

	High-Performance Database and Analytics	Remote Office / Branch Office (ROBO) Sites	Disaster Recovery / Long-term Archive	Virtual Desktop Infrastructure (VDI)
Needs	Deliver predictable performance and scalability to support high-performance tier 1 applications	Simplify remote infrastructure and centrally manage with enterprise availability.	Ensure business continuity, prevent downtime and automate recovery operations	Make VDI predictable, cost-effective and risk-free, scaling users with ease.
Challenges	Providing infrastructure for reliable application performance of latency sensitive applications is hard to do, expensive and difficult to scale.	Dedicating Infrastructure at Remote Sites is too expensive for high availability and difficult to setup & manage.	Deploying reliable storage Infrastructure for Disaster Recovery and Archiving is too expensive.	Scaling storage I/O to meet the demands of VDI is expensive and leads to user complaints on performance
Solutions	DataCore powered Cisco Servers are optimized for performance with its High-Speed Caching, Random Write Accelerator and Auto-Tiering; all utilized to increase I/O & decrease latency.	DataCore powered Cisco Servers provide a highly available storage infrastructure with only 2 servers, which reduces TCO and eliminates storage complexity.	DataCore powered Cisco Servers provide low entry-point & better reliability for both disaster recovery and for long-term Archiving purposes.	DataCore powered Cisco Servers provide a low-cost, high-performance and scalable storage infrastructure to meet the demands of a growing VDI deployment

\* Sync mirroring, Async Replication, Auto-Tiering, Random Write Accelerator, High-Speed Caching, CDP, Deduplication/ Compression, Thin provisioning, Cloud Integration, Centralized Management, NAS/ SAN (Unified Storage support), Analysis & Reporting, etc

Use Case	Base Hardware Configuration	2 Node Summary	64 Node Summary
High-Performance Database and Analytics	 <b>Cisco UCS C240</b> <b>CPU</b> 2 x Intel® Xeon® E5-2695 v3 2.3 GHz (14 cores each) <b>Memory</b> 24 x 32 GB RAM <b>Flash</b> 2 x 2.6 TB PCIe <b>Disk</b> 22 x 1.2 TB 10K RPM SAS <b>Optional</b> Cisco Nexus 5000 Series Converged Network Switch	<b>Up to 1,000,000 IOPS</b> <b>Compute:</b> <b>116 Ghz</b> • 56 cores <b>RAM:</b> <b>1,536 GB</b> <b>Storage Capacity:</b> <b>58.4 TB</b> • 10.4 TB Flash (PCIe) • 48 TB SAS HDD	<b>Up to 32,000,000 IOPS</b> <b>Compute:</b> <b>3712 Ghz</b> • 1,792 cores <b>RAM:</b> <b>49,152 GB</b> <b>Storage Capacity:</b> <b>1,868.8 TB</b> • 332.8 TB Flash (PCIe) • 1,536 TB SAS HDD
Remote Office / Branch Office (ROBO) Sites	 <b>Cisco UCS C240</b> <b>CPU</b> 2 x Intel® Xeon® E5-2660 v3 2.6 GHz (10 cores each) <b>Memory</b> 12 x 32 GB RAM <b>Flash</b> 4 x 800 GB SSD <b>Disk</b> 12 x 1.2 TB 10K RPM SAS <b>Optional</b> Cisco Nexus 5000 Series Converged Network Switch	<b>Up to 500,000 IOPS</b> <b>Compute:</b> <b>94 Ghz</b> • 40 cores <b>RAM:</b> <b>768 GB</b> <b>Storage Capacity:</b> <b>27.2 TB</b> • Flash: 3.2 TB (SSD) • 24 TB SAS HDD	<b>Up to 16,000,000 IOPS</b> <b>Compute:</b> <b>3,008 Ghz</b> • 1,280 cores <b>RAM:</b> <b>24,576 GB</b> <b>Storage Capacity:</b> <b>870.4 TB</b> • Flash: 102.4 TB (SSD) • 768 TB SAS HDD
Disaster Recovery/ Long-Term Archive	 <b>Cisco UCS C240</b> <b>CPU</b> 2 x Intel® Xeon® E5-2630 v3 2.4 GHz (8 cores each) <b>Memory</b> 8 x 16 GB RAM <b>Disk</b> 12 x 4 TB 7.2K RPM NL-SAS <b>Optional</b> Cisco Nexus 5000 Series Converged Network Switch	<b>Up to 100,000 IOPS</b> <b>Compute:</b> <b>69 Ghz</b> • 32 cores <b>RAM:</b> <b>256 GB</b> <b>Storage Capacity:</b> <b>88 TB</b> • 0 TB Flash • 80 TB NL-SAS	<b>Up to 3,200,000 IOPS</b> <b>Compute:</b> <b>2208 Ghz</b> • 1,024 cores <b>RAM:</b> <b>8,192 GB</b> <b>Storage Capacity:</b> <b>2,816 TB</b> • 0 TB Flash • 2,560 TB NL-SAS
Virtual Desktop Infrastructure (VDI)	 <b>Cisco UCS C240</b> <b>CPU</b> 2 x Intel® Xeon® E5-2695 v3 2.3 GHz (14 cores each) <b>Memory</b> 24 x 32 GB RAM <b>Flash</b> 1 x 3.2 TB PCIe <b>Disk</b> 12 x 1 TB 7.2K RPM NL-SAS <b>Optional</b> Cisco Nexus 5000 Series Converged Network Switch	<b>Up to 750,000 IOPS</b> <b>Compute:</b> <b>116 Ghz</b> • 56 cores <b>RAM:</b> <b>1,536 GB</b> <b>Storage Capacity:</b> <b>28.4 TB</b> • Flash: 6.4 TB (PCIe) • 22 TB NL-SAS	<b>Up to 24,000,000 IOPS</b> <b>Compute:</b> <b>3712 Ghz</b> • 1,792 cores <b>RAM:</b> <b>49,152 GB</b> <b>Storage Capacity:</b> <b>908.8 TB</b> • 204.8 TB (PCIe) • 704 TB NL-SAS
<b>Performance Notes:</b>	Storage performance ratings per node would be half of the 2 node case and IOPs scale beyond 2 nodes linearly to 64 nodes. Storage performance based on IOMeter using 4K blocks with mixed R/W workloads and scales linearly. Total compute is based on 90% of total available CPU capacity.		



## Case Study - Retail Solution for Large Restaurant Chain (ROBO)

A large restaurant chain with over a thousand locations wanted a highly available, small footprint & low cost infrastructure. The company runs a number of applications on-site (point-of-sale, order scheduling, etc.) because it cannot have its restaurants grind to a halt due to data center or WAN outages.

They wanted a solution that didn't lock them into a particular hardware vendor and supported a lower cost virtualization platform (in this case Microsoft Hyper-V™). They evaluated many alternatives before deciding that DataCore Hyper-converged Virtual SAN was the right solution. In addition to being hardware & hypervisor agnostic, DataCore only needs two servers for HA (compared to three or four nodes for other products), accelerates I/O using RAM directly on the servers (eliminating the need for Flash storage, reducing costs) and supports auto-tiering, allowing a mix of flash and disk if even more performance is required. By dramatically reducing costs, as well as the space needed for a highly available infrastructure, DataCore Virtual SAN is the ideal solution for remote and branch sites.

For additional information, please visit [www.datacore.com](http://www.datacore.com) or email [info@datacore.com](mailto:info@datacore.com)

Copyright © 2015 by DataCore Software Corporation. All Rights Reserved. DataCore, the DataCore logo and SANsymphony are trademarks or registered trademarks of DataCore Software Corporation. Other DataCore product or service names or logos referenced herein are trademarks of DataCore Software Corporation. All other products, services and company names mentioned herein may be trademarks of their respective owners.

