

# DataON Kepler Three-Node (K3N) Hyper-Converged Switchless Solutions

## Benefits

- Simplified storage deployment without the network complexity of switch solutions
- Same resiliency and performance as a solution with a switch
- Substantial cost savings on multiple ROBO and edge deployments
- K3N solutions support three-way mirroring for greater resiliency

## Ideal applications

- Running production workloads
- Data centers running on tight budgets or in space constrained environments
- Multiple ROBO and edge deployments in:
  - Retail outlets
  - Healthcare facilities
  - Manufacturing
  - Logistics and warehousing
  - Power and utilities offices
  - Media and entertainment

## Introduction

DataON Kepler three-node (K3N) switchless hyper-converged solutions for Azure Stack HCI are ideal for small/medium-sized businesses (SMB), remote office/branch office (ROBO), edge, and IoT deployments. DataON Kepler switchless solutions simplify storage networking environments and reduce cost with direct-attached connectivity, eliminating the need for storage network switches, and can be optimized for high performance with all-NVMe storage or balanced capacity and storage with flexible hybrid NVMe cache and SSD/HDD storage. Customers find these hyper-converged infrastructures essential in cost-sensitive environments or ROBO and edge deployments.

## Simplified switchless connections

DataON K3N switchless solutions for Azure Stack HCI provide data resiliency by spreading copies of the volumes quickly across multiple nodes whether performing reads or writes, repairs or optimizing data and easily connect directly from node to node via one or two dual-port 25/40/100 GbE RDMA adapters on each node (See Figure 1). Without the complexity of switch networking, this full mesh interconnect means less management and risk that switch failures or reboots might cause an interruption to the interconnect network traffic with relatively little difference in performance.

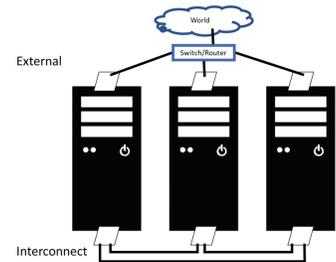


Figure 1: DataON Kepler switchless solutions: full mesh interconnect architecture

## Three-node, three-way mirroring, and more resiliency with DataON K3N solutions

Previously, switchless solutions were limited to two-node server configurations. Constrained to two-way mirroring fault tolerance in two-node switchless solutions, many companies had to weigh cost versus additional resiliency. For example, if both nodes were to fail or one went down with a drive-failure in the second, this might result in data loss or significant downtime—especially if used in production environments or remote locations without on-site administrators or Azure cloud and/or off-premises backup/disaster recovery systems. Aware of the dilemma many of its customers face, DataON has worked extensively with Microsoft to develop Kepler three-node (K3N) switchless solutions (See Figure 2).

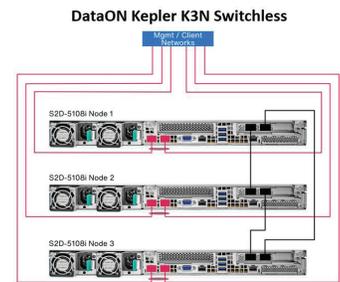


Figure 2: DataON K3N-108 switchless solution consisting of three S2D-5108 direct-attach server nodes

DataON K3N switchless solutions deliver an additional layer of resiliency with three-way mirroring previously only found on standard DataON HCI solutions. In the event of a two-node failure or one-node failure and second-node drive-failure, a DataON K3N switchless solution configured with three-way mirroring will stay up and running and not incur data loss. For many IT administrators, this kind of resiliency is an absolute must.

## Scale easily from two to three-nodes without updating your networking infrastructure

A key strategic advantage to DataON Kepler switchless solutions is scalability and ease of deployment. Organizations that purchase a DataON Kepler solution can easily add an additional node when planning to scale out. An administrator can create new three-way mirror volumes and safely migrate the data from the older two-way mirror-configured volumes in a simple and quick process.

#### 4K Random 100% Read (8 Core)

	K3N-108 (3-Way Mirror)
Switchless	1,299k
Switch	1,234k

#### 4K Random 70% Read/30% Write (8 Core)

	K3N-108 (3-Way Mirror)
Switchless	412k / 176k
Switch	427k / 183k

Figure 3: DataON K3N-108 performance\*

## Delivers comparable performance and reliability compared to switch solutions

In VM Fleet testing\*, DataON K3N-108 solutions (three-way mirror configuration) performed comparably to those configured with a switch (See Figure 3). DataON Kepler switchless solutions also eliminate both the cost of a switch and an additional potential point of failure, making it a more reliable and affordable solution for organizations that only require two or three-node deployments.

## Designed for SMB, ROBO, edge and IoT deployments

For SMB, ROBO, edge and IoT deployments, DataON Kepler switchless solutions offer substantial savings, greater ease of deployment and better reliability for organizations with smaller data centers or those that have numerous national or worldwide locations that require localized on-premises solutions like financial institutions (bank branches), retail, power and utilities, healthcare, logistics companies, and manufacturers.

## Hybrid cloud-ready with Microsoft Azure Stack HCI

DataON Kepler switchless solutions are validated for Azure Stack HCI to help customer replace aging servers and storage without lengthy design and build times. It features the same Hyper-V based software-defined compute, storage, and networking as Azure Stack. Built-in integration with Azure makes it easy for IT staff to start using Azure for cloud management and security services, including offsite backup, site recovery, file synchronization, and cloud-based monitoring. This can help organizations save on disaster and recovery solutions and provide another layer of resiliency for SMB, ROBO and edge deployments.

## Manage and monitor with DataON MUST and Windows Admin Center

DataON Kepler switchless solutions include DataON MUST, a management utility software tool that provides a high level of infrastructure visibility, monitoring, and management for Windows Server-based hyper-converged systems, networking and storage. It can be used standalone or as a native extension for Windows Admin Center to provide end-to-end HCI monitoring and management capabilities from a single pane of glass. It adds to the Windows Admin Center experience by adding capabilities such as historic data reporting, disk mapping, system alerts, and call home services.

\*Each DataON K3N-108 node configured with 2x Intel® Xeon® Silver 4214Y processors with 8-cores at 2.4GHz, 256GB memory, 8x 4TB Intel® NVMe SSD and 2x Mellanox ConnectX-4 dual-port 40GbE RDMA adapters. Switch: 2x Mellanox Spectrum SN-2100 40GbE RDMA



[www.dataonstorage.com](http://www.dataonstorage.com)

[sales@dataonstorage.com](mailto:sales@dataonstorage.com)

1.714.441.8820

Copyright © 2019 DataON. All Rights Reserved. Specifications may change without notice. DataON is not responsible for photographic or typographical errors. DataON, the DataON logo, MUST, and the MUST logo are trademarks of DataON in the United States and certain other countries. Other company, product, or services names may be trademarks or service marks of others.

## About DataON

DataON is a hybrid-cloud computing company focused on delivering Microsoft Azure Stack HCI, on-premise storage system, intelligent edge appliances, and cloud-based Microsoft Azure Services. Our company is helping enterprises and customers who have made the "Microsoft choice" to modernize their IT with Microsoft applications, virtualizations, and data protection through a complete and turnkey experience. With over 650 HCI clusters and 150PB of storage deployed, DataON enterprise-level solutions are designed to provide the highest level of performance, manageability, and security offered. DataON is a Microsoft Gold Partner, Microsoft Cloud Service Provider (CSP), and an Intel Platinum Partner.