DataON

Microsoft Azure Stack HCI 2-Node Solution with Intel SSD Technologies

INTEL 3D NAND SSD QLC
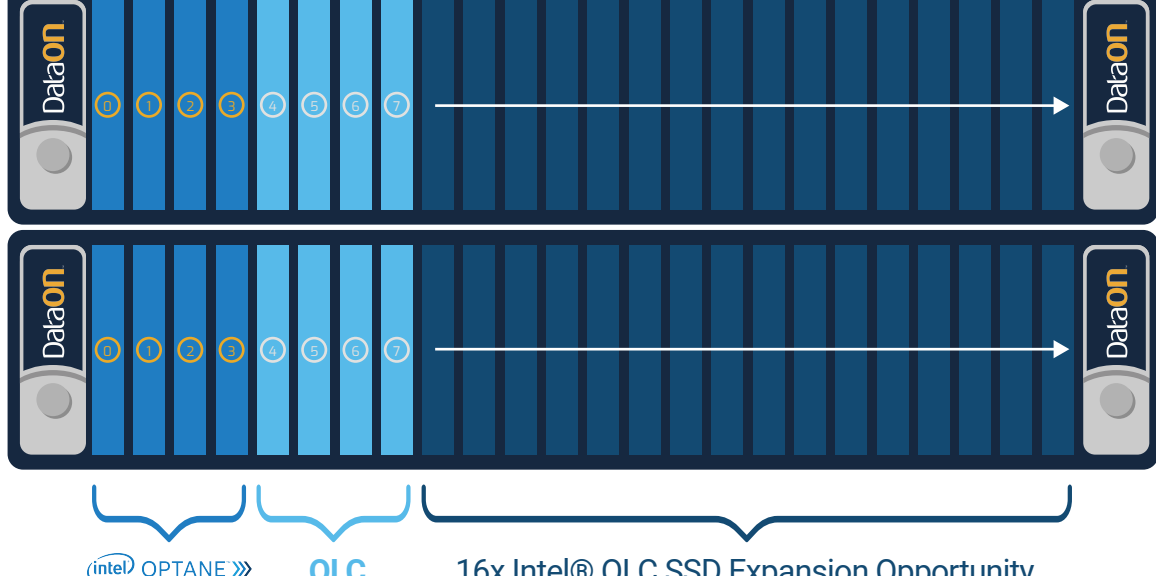
OPTANE DC

Intel® Optane™ SSD

Intel® QLC 3D NAND SSD

SOLUTION

Two 2U Nodes

Four Intel® Optane™ P4800X SSDs

Four Intel® D3-P4326 SSDs
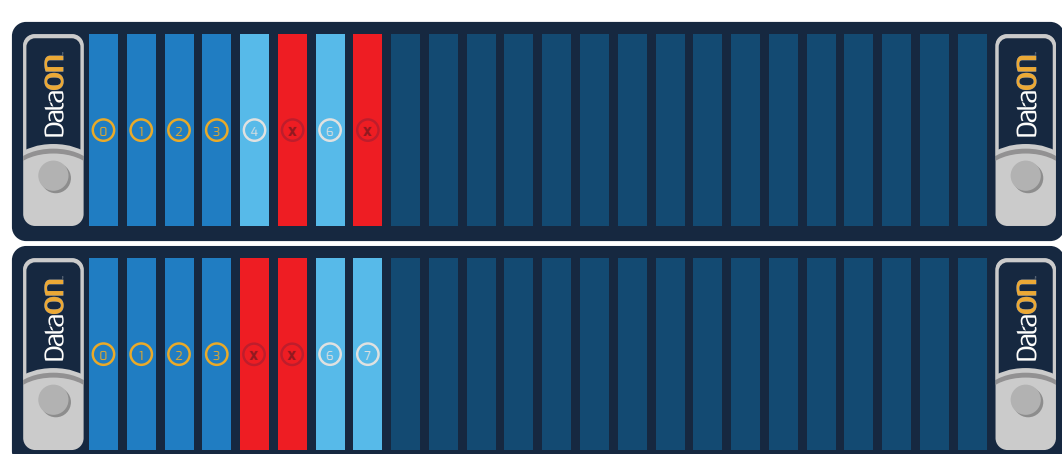
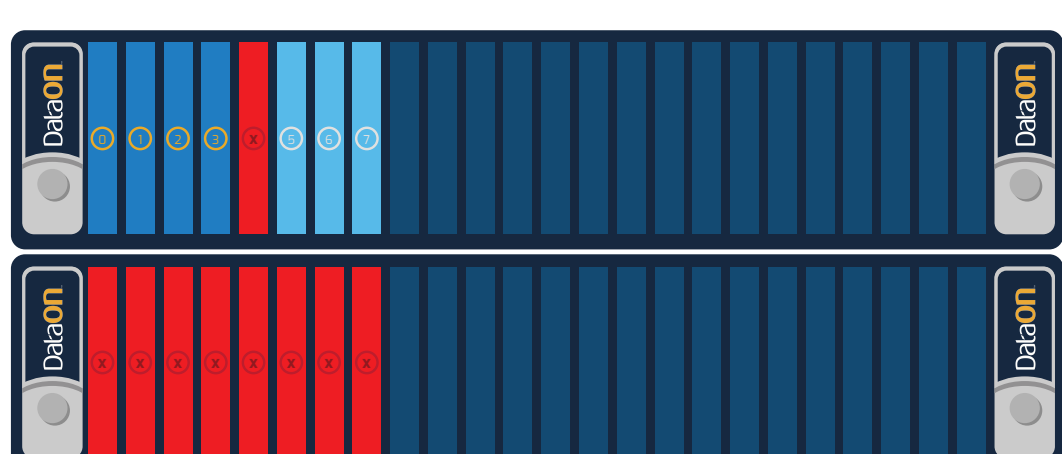Intel® OPTANE SSD   QLC   16x Intel® QLC SSD Expansion Opportunity

Let's look at a DataON HCI-224 two-node cluster

This one features a unique mix of storage. **Intel® Optane™ SSD DC P4800X** in the front end **Intel® SSD D5-P4326 15.36TB QLC 3D NAND** to create a system that optimizes capacity, performance and cost.

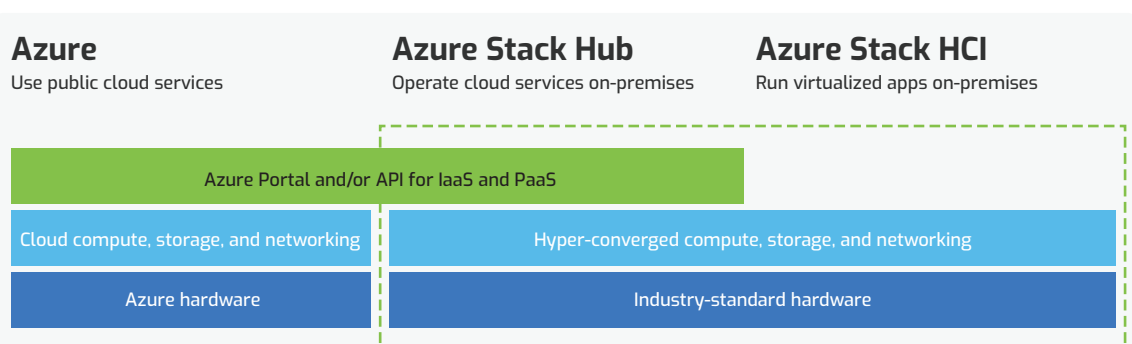## Two-node cluster drive failure and server failure

Two Drives Lost

Server & Drive Lost

DataON's two-node solution supports having both a drive failure and server failure at the same time.

TECHNOLOGY STACK

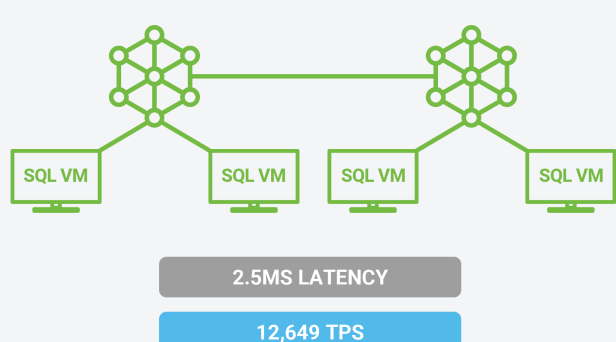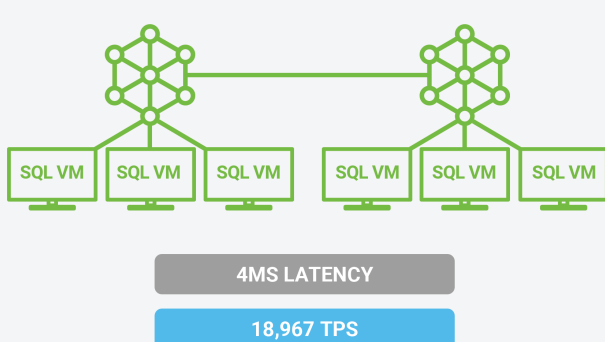| Azure	Azure Stack Hub	Azure Stack HCI
Use public cloud services	Operate cloud services on-premises	Run virtualized apps on-premises
Azure Portal and/or API for IaaS and PaaS		
Cloud compute, storage, and networking	Hyper-converged compute, storage, and networking	
Azure hardware	Industry-standard hardware	
	On-premises	

Azure Stack HCI

Microsoft brought their existing HCI technology into the Azure Stack family so their customers can run virtualized applications on-premises with direct access to Azure management services such as backup and disaster recovery.
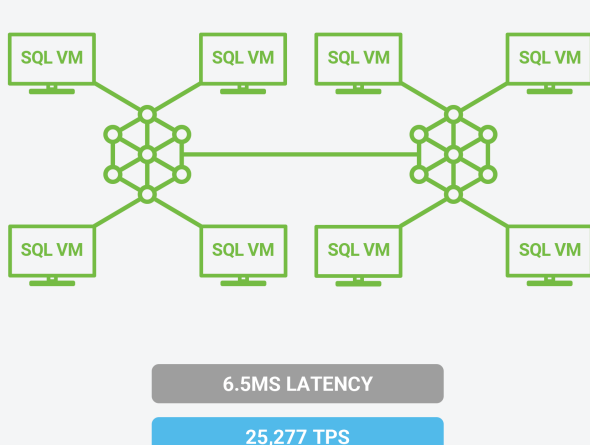
Efficiently scales for edge applications

2 NODES | 2 VM'S PER NODE | 4 VM'S TOTAL

SQL VM   SQL VM   SQL VM   SQL VM

2.5MS LATENCY

12,649 TPS

2 NODES | 3 VM'S PER NODE | 6 VM'S TOTAL

SQL VM   SQL VM   SQL VM   SQL VM   SQL VM   SQL VM

4MS LATENCY

18,967 TPS

2 NODES | 4 VM'S PER NODE | 8 VM'S TOTAL

SQL VM   SQL VM   SQL VM   SQL VM

SQL VM   SQL VM   SQL VM   SQL VM

6.5MS LATENCY

25,277 TPS

Throughout these tests, we clearly see the benefit of having the Intel® Optane™ SSDs in this mix, they're taking the brunt of the writes, freeing up the Intel® SSDs for responsive reads as the capacity tier.

Even as we doubled the workload to eight SQL Server VMs hitting this HCI cluster, latency moved up only a little, showing this configuration to be well-suited for workloads that may burst from time to time.

CONCLUSION

For this project, we ran a series of SQL tests on the system to illustrate the performance workloads that are commonly found in edge and SMB use cases. Our goal was to understand how effectively Microsoft Azure Stack HCI in this DataON cluster was able to leverage hardware to bring about the desired results. Specifically, this means providing a solution that offers a rare combination of performance and value.

Overall, the DataON K2N-224 two-node HCI cluster with Intel® Optane™ SSDs and Intel D5-P4326 QLC SSDs was simple to deploy, easy to use, and powerful enough for a wide range of workloads. Its price point also makes it available to a wide swath of users. On top of that, this solution has been validated with Azure Stack HCI, certified for Windows Server 2019, and validated as an Intel Select Solution.

StorageReview

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