

# Streamline Your Data-Estate Modernization with Dell EMC™ Solutions for Microsoft® Azure® Stack HCI

## Improve Performance, TCO, and Manageability

Data doesn't drive business—*harnessed* data does. Database administrators (DBAs) and IT organizations are tasked with modernizing their businesses' data estates, but they are hampered by expensive-to-operate legacy hardware, shrinking budgets, and outdated management tools.


Hyperconverged infrastructure (HCI) solutions like Dell EMC™ Solutions for Microsoft® Azure® Stack HCI can help organizations surmount these challenges. Testing and evaluation conducted by Prowess Consulting showed that this solution can provide:<sup>1</sup>

- Near-linear scalability and performance to help meet current needs and future-proof against tomorrow's needs.
- Lower total cost of ownership (TCO) through preinstalled, original equipment manufacturer (OEM)-licensed operating systems and databases to save money and time on licensing and deployment.
- Modernization benefits that include greater reliability and cluster-aware, cloud-integrated management capabilities built into the solution.

Decommissioning legacy servers can free up IT budgets to reallocate to innovation. Moving to Dell EMC Solutions for Azure Stack HCI running Windows Server® 2019 and Microsoft® SQL Server® 2019 can help with all aspects of data modernization.



**86%**  
Faster to deploy a server<sup>2</sup>



**40**  
Fewer steps to deploy a server<sup>2</sup>



**31%**  
Less-expensive licensing<sup>2</sup>



**1**  
Source for hardware and software support<sup>2</sup>

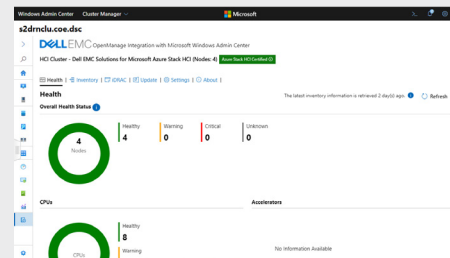
## Lifecycle Management

### Key Differentiators for Dell Technologies

Dell EMC™ OpenManage™ Integration with Microsoft® Windows® Admin Center is an extension for Windows Admin Center, which provides management and maintenance capabilities for clusters and HCIs based on Windows Server 2019.

With scalable monitoring and inventory capabilities, this integration simplifies the tasks of IT administrators and DBAs who use Dell EMC Solutions for Azure Stack HCI throughout the lifecycle of their SQL Server infrastructure.

Dell EMC OpenManage Integration with Windows Admin Center enables streamlined lifecycle management at the server level for Azure Stack HCI clusters based on Dell EMC™ AX nodes from Dell Technologies, and it uses Cluster-Aware Updating to orchestrate seamless BIOS, firmware, and driver updates, often with zero impact to the workloads running in virtual machines (VMs).



# Near-Linear Scalability and Performance for Microsoft® SQL Server® 2019

Our engineers totaled transactions per minute (TPM) and new orders per minute (NOPM) per VM across test runs of increasing numbers of VMs running SQL Server 2019 across the cluster. Both of these measurements are commonly used database-performance metrics, with TPM providing a metric for comparing performance between different versions of the same database engine (in this case, SQL Server 2019) and NOPM providing a means of comparing performance between different databases.

As the testing was conducted on new, well-tuned servers, these numbers represent good performance: the four-node Dell EMC AX-740xd cluster achieved 81,469 input/output operations per second (IOPS) at sub-millisecond median write latency (293 microseconds) with eight VMs running.<sup>1</sup> The hyperconverged platform showed near-linear scalability in the incremental load-test scenario, as shown in Figure 1—as workloads gradually increased, total performance grew correspondingly.<sup>1</sup>

Total average TPM and NOPM per test iteration

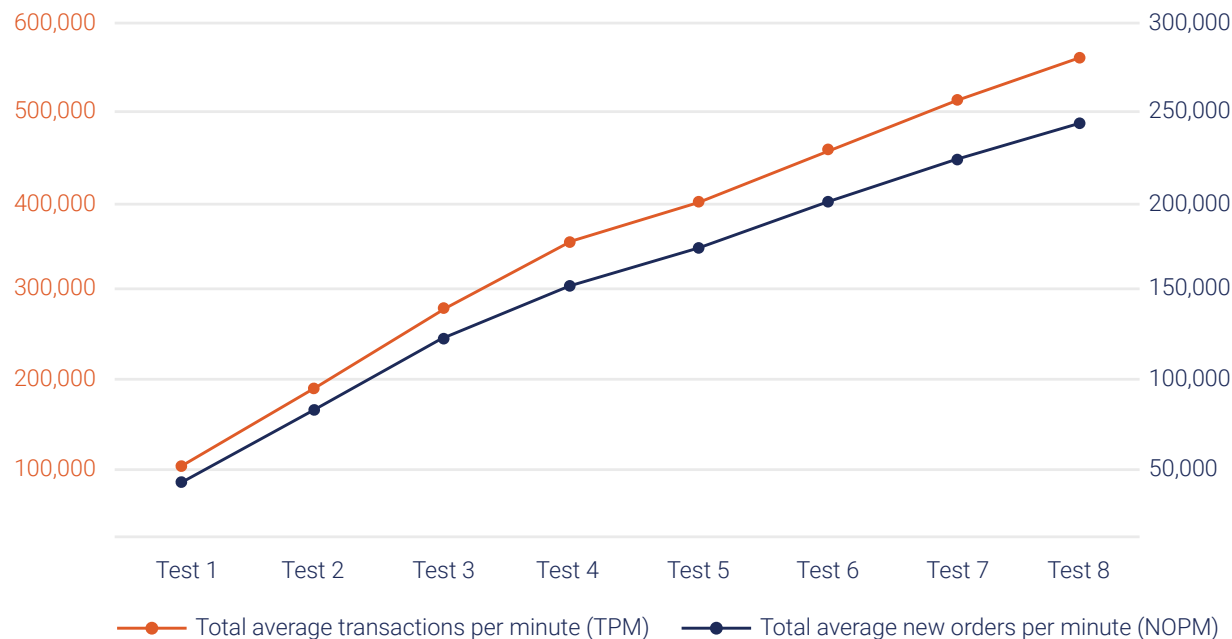


Figure 1. Total average TPM and NOPM per test iteration<sup>1,3</sup>

The analysis in this document was done by Prowess Consulting and commissioned by Dell Technologies.

Results have been simulated and are provided for informational purposes only. Any difference in system hardware or software design or configuration may affect actual performance.

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Windows Server 2019

# TCO and Modernization Benefits

Dell EMC Solutions for Azure Stack HCI come optionally preinstalled with Windows Server 2019, with special discounted Microsoft OEM licensing.

Windows Server 2019 OEM licensing from Microsoft and preinstallation from Dell Technologies can cut operating system licensing costs by up to 31 percent and deployment time by up to 86 percent compared to traditional licensing and deployment.<sup>2</sup>

Dell EMC™ ProDeploy can provide 66 percent faster time to deploy, accelerating time to value.<sup>3</sup> And these servers are eligible for Dell ProSupport™ IT-management services that support the entire solution—both hardware and software—reducing management effort and cost.

Moving legacy SQL Server workloads to new HCI hardware consolidates physical server footprint, simplifies management, and provides higher reliability for the workloads on which business depends.

## Learn More

### ["Modernize or Perish: Dell EMC Solutions for Microsoft Azure Stack HCI Throw a Lifeline to Your Database Workloads"](#)

<sup>1</sup> Prowess Consulting. "Modernize or Perish: Dell EMC Solutions for Microsoft Azure Stack HCI Throw a Lifeline to Your Database Workloads." October 2020. [www.prowesscorp.com/project/modernize-or-perishdell-emc-solutions-for-microsoft-azure-stack-hci/](http://www.prowesscorp.com/project/modernize-or-perishdell-emc-solutions-for-microsoft-azure-stack-hci/).

<sup>2</sup> Prowess Consulting. "Streamline Your Server Deployments by Choosing Dell EMC™ PowerEdge™ Servers with Preinstalled Microsoft® Software." November 2019. [www.prowesscorp.com/project/dellemc-poweredge-windowsserver-report/](http://www.prowesscorp.com/project/dellemc-poweredge-windowsserver-report/).

<sup>3</sup> Principled Technologies. "Bring new systems to production readiness faster and with less effort from in-house administrators." Commissioned by Dell Technologies. February 2017. <https://facts.pt/YU95pg>.