



## Complete decision support system workloads faster using new Microsoft Azure Edsv5-series VMs featuring 3<sup>rd</sup> Gen Intel Xeon Scalable processors

Compared to Edsv4-series VMs featuring older Intel processors, the newer VMs completed DSS workloads in less time

Decision support system (DSS) workloads collect raw information and turn it into actionable insights that help companies of all kinds make better business choices. The fresher the data, the more valuable it is. If you are running your DSS workloads in the cloud, choosing a VM that can complete them more quickly can be advantageous.

We tested the DSS workload performance of two types of Microsoft Azure VMs: Edsv5-series VMs featuring 3<sup>rd</sup> Gen Intel® Xeon® Scalable processors and Edsv4-series VMs featuring 2<sup>nd</sup> Gen Intel Xeon Scalable processors. We looked at three sizes from each series and found that for all of them, the latest-generation Edsv5-series VMs completed the workloads in less time. This increased query speed could translate to less VM uptime, saving on business costs. It might also mean getting important information earlier, which could improve decision-making.



**Up to 22% faster decision support performance**  
on 8-vCPU VMs\*



**Up to 20% faster decision support performance**  
on 16-vCPU VMs\*



**Up to 24% faster decision support performance**  
on 64-vCPU VMs\*

*\*compared to Edsv4-series VMs*

## About our testing

We tested two generations of Azure VM clusters at three sizes:

- A ten-node cluster of Edsv5-series VMs featuring 3<sup>rd</sup> Gen Intel Xeon Platinum 8370C processors
- A ten-node cluster of Edsv4-series VMs featuring 2<sup>nd</sup> Gen Intel Xeon Platinum 8272CL processors

Figure 1 shows the size specifications of the VM clusters we tested.

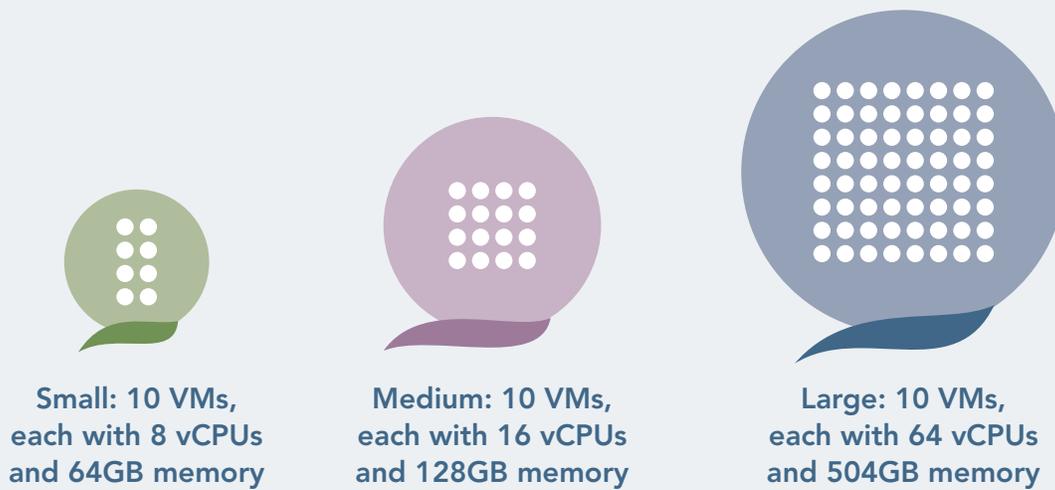


Figure 1: Key specifications of the Microsoft Azure Edsv5- and Edsv4-series VM clusters we tested. Source: Principled Technologies.

We tested the VM clusters in the East US region with a 1TB dataset. We tuned each VM's executor count, core count, and memory per executor. For additional configuration information, see the [science behind the report](#).

## About the DSS workload we used

Decision support systems are applications designed to improve a company's decision-making abilities. After analyzing large amounts of data, the application can present decision-makers with the best possible next steps. DSS can help project sales, manage inventory, or even decide on a patient's treatment plan.<sup>1</sup> To determine how VMs might handle these workloads, we used a TPC-DS-derived benchmark that simulated a decision support system. It queried our 1TB dataset and reported results in terms of query response time. Because we derived our workload from the TPC-DS benchmark, it is not comparable to TPC-DS results.



## Test findings

As Figure 2 shows, for small VMs with 8 vCPUs, the Edsv5-series VMs achieved a speed 22 percent higher than that of the Edsv4-series VMs.

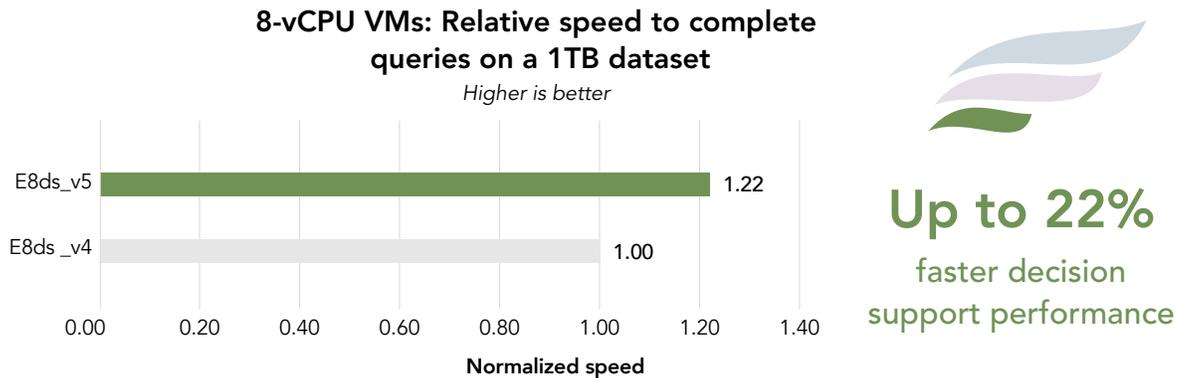


Figure 2: Comparison of the speed at which each of the small Edsv5 VMs completed the DSS workload, relative to the completion time of the Edsv4 VMs. Greater speed is better. Source: Principled Technologies.

For medium VMs with 16 vCPUs, the Edsv5-series VMs achieved a speed 20 percent higher than that of the Edsv4-series VMs (Figure 3).

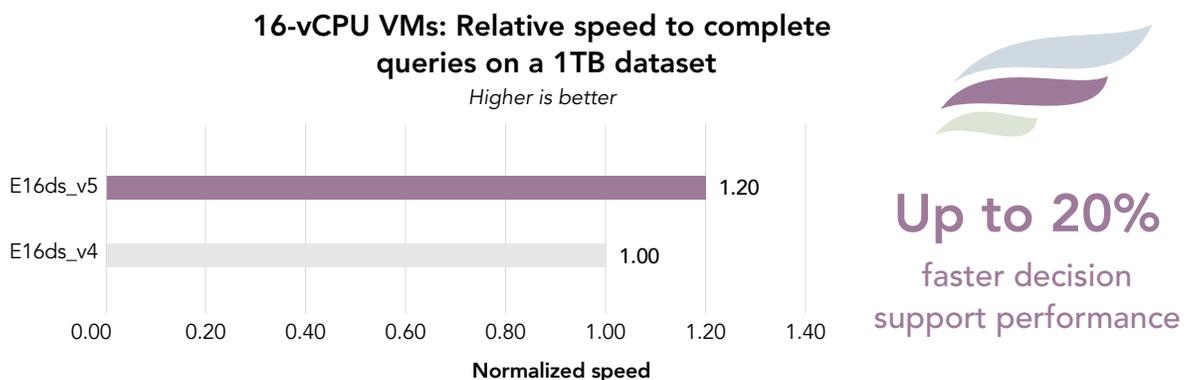


Figure 3: Comparison of the speed at which each of the medium Edsv5 VMs completed the DSS workload, relative to the completion time of the Edsv4 VMs. Greater speed is better. Source: Principled Technologies.

Figure 4 displays our results for large VMs with 64 vCPUs: the Edsv5-series VMs achieved a speed 24 percent higher than that of the Edsv4-series VMs.

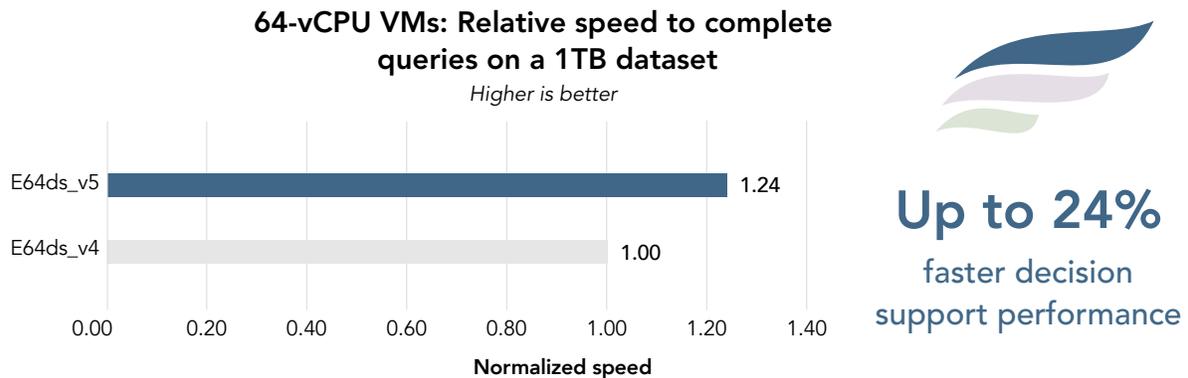


Figure 4: Comparison of the speed at which each of the large Edsv5 VMs completed the DSS workload, relative to the completion time of the Edsv4 VMs. Greater speed is better. Source: Principled Technologies.



### About Microsoft Azure Edsv5-series VMs

Azure Edsv5-series VMs feature 3<sup>rd</sup> Generation Intel Xeon Platinum 8370C processors. According to Microsoft, the VMs also offer the following specifications:<sup>2</sup>

- Up to 104 vCPUs and up to 672 GiB of RAM
- All-core turbo clock speed of up to 3.5GHz
- Intel Turbo Boost Technology
- Intel Advanced-Vector Extensions 512 (Intel AVX-512)
- Intel Deep Learning Boost

To learn more, visit <https://docs.microsoft.com/en-us/azure/virtual-machines/edv5-edsv5-series>.



## Conclusion

Decision support systems can help your business make sense of your information; speeding DSS query times can help you make timely decisions with that information. When we tested Azure VM clusters in three sizes, we found that newer Edsv5-series VM clusters with 3<sup>rd</sup> Gen Intel Xeon Scalable processors completed DSS queries up to 24 percent faster than Edsv4-series VM clusters with older processors. By saving time on completing queries, your organization could spend less on VM uptime. Faster decision support performance for your business could also mean gaining relevant information more quickly to make critical decisions.

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1. "What is a decision support system (DSS)?" accessed July 12, 2022, <https://www.techtarget.com/searchcio/definition/decision-support-system>.
  2. Microsoft, "Edv5 and Edsv5-series," accessed July 5, 2022, <https://docs.microsoft.com/en-us/azure/virtual-machines/edv5-edsv5-series>.

Read the science behind this report at <http://facts.pt/8lrWNLk> ►



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