



# Scale to meet Microsoft SQL<sup>®</sup> Server analytical demands consistently with Azure<sup>®</sup> Ev4-series Virtual Machines

Azure Eds\_v4-series VMs, feature Intel<sup>®</sup> Xeon<sup>®</sup> Platinum 8272CL processors.



## Save weeks of analytics query time in Microsoft SQL Server with Microsoft Azure Eds\_v4 virtual machines (VMs)

Choosing the right Azure instance for your data warehouse databases is important to ensure you can meet the analytical demands of your organization and business insights. Every business has differing database, workload size, and performance needs. When moving database analytics work to the cloud, it's important to consider the type of processor that will be driving your workloads.

To get a better idea of how these results can relate to the real world, consider the following hypothetical scenario. Each night, a company has a four-hour window in which to analyze data on a 300GB database. The company uses this analysis to generate reports for executives each morning and to drive other business processes throughout the day.

### Consistently Faster Time to Insights

The Azure Eds\_v4-series VMs, offering vCPUs powered by 2<sup>nd</sup> Gen Intel<sup>®</sup> Xeon<sup>®</sup> Scalable 8272CL processor vCPUs, consistently delivered great performance to meet analytic query demands and scaling with only an average cost increase of 17%.

**Strongest Performance:** Azure E16ds\_v4 virtual machines, multi-streamed query workloads by as much as 1.54x faster than Azure E16s\_v3 VMs.

**Entry Level Benefits:** Azure E4ds\_v4 VMs, multi-streamed query workloads by as much as 1.39x faster than Azure E4s\_v3 virtual machines.

**Larger Scale, Consistent Performance:** Azure E64ds\_v4 virtual machines, multi-streamed query workloads by as much as 1.53x faster than Azure E64s\_v3 virtual machines.

Based on the results of single-stream tests, we calculate that a new E64ds\_v4 VM would enable this organization to run 252 query sets within their analysis window each night. By contrast, the E64s\_v3 VM would complete just 184 query sets in the same time frame (27% fewer).

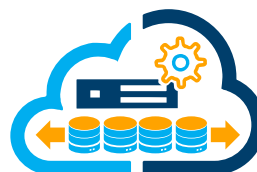
Alternatively, if this company only needed to complete 184 query sets each night, the new E64ds\_v4 VM would enable them to finish their work in just 2.9 hours, shrinking the analysis window by 1.1 hours, compared to the older E64s\_v3 VMs. Over the course of a year, this company would save 401.5 hours (16.7 full days) worth of analysis time per year; while maintaining the same rate of analysis they could get with the E64s\_v3 VM, enabling them to save money on VM uptime.

By choosing these new Eds\_v4 instances, your organization can more quickly complete work that can lead to key decisions that can improve your business and help it grow. And, because the new Azure Eds\_v4 instances save big on time, it means choosing them for your SQL Server can ensure your dollar goes further.

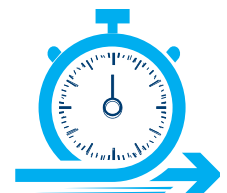
## Process more database analytics without longer wait time



Consistently better performance across instance sizes



Scale up queries and data without drastically increasing query times



Complete SQL analytics queries up to 1.54x faster

Microsoft SQL analytic workloads running with the newest Azure Edsv4 series VMs, powered by the 2<sup>nd</sup> Gen Intel® Xeon® Scalable processor, consistently completed their multi-streamed query workloads by as much as 1.54x faster than older Azure v3 series VMs.

## Complete SQL Server Analytics faster, even with higher organizational query demands

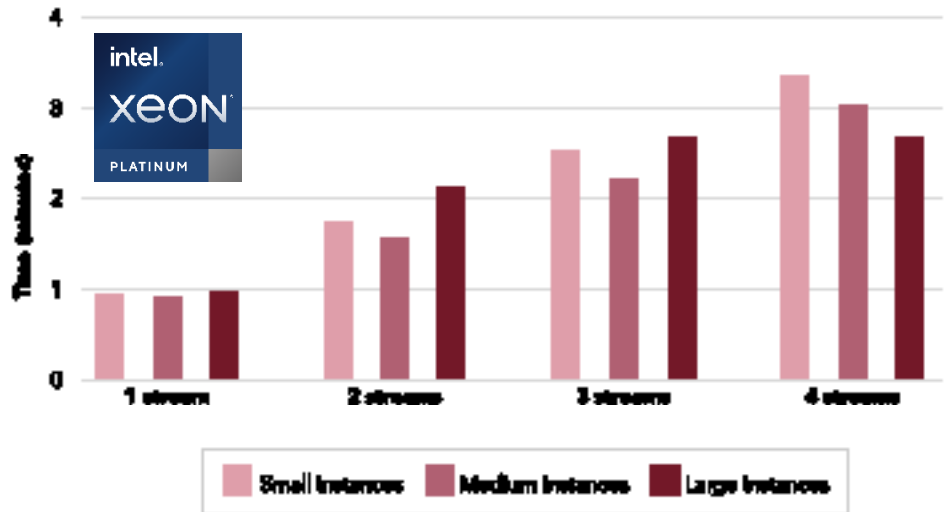
To show how the Intel Xeon Platinum 8272CL processor-based VMs scale in performance, a measure of how much time in seconds, various Eds\_v4 instances took to complete a range of simultaneous SQL analytical query “streams” was captured. These streams represent different business organizations/users querying their SQL database simultaneously for analytical insights from their data. The more data streams you can support concurrently, the more data you can analyze at once.

1.32 – 1.39  
times as fast  
for small  
instances

1.48 – 1.54  
times as fast  
for medium  
instances

1.36 – 1.53  
times as fast  
for large  
instances

**Eds\_v4 instances: Query times across increasing stream counts**  
*Low-time is better*



**Figure 1. The chart shows consistent scaling of Eds\_v4-series over small, medium, and large VMs. As the demands of more query streams increase and larger database sizes scale, the time to complete these simultaneous query streams remained similar and low.**

Further, executing the queries faster means you can use that analysis sooner to gain insights that will help you take action to improve your organization. Whether your work requires processing single query streams or multiple streams concurrently, you should see a significant performance increase with the new Azure Eds\_v4 instances.

At every data point, the new Eds\_v4 SQL Server instances powered by Intel Xeon Platinum 8272CL processors were faster than the older Es\_v3 instances powered by Intel Xeon processors E5-2673 v4. For each VM size, as we increased the number of concurrent data streams up to four, the relative performance advantage remained similar and in many cases improved.

## Time to insight performance that more than justifies the cost

The performance findings suggest the Eds\_v4 instances can complete data warehouse workloads anywhere from 1.32 to 1.54 times as fast as the Es\_v3 virtual machines. Yet, at the time of this writing, all sizes and specifications of the Eds\_v4 VMs, powered by 2<sup>nd</sup> gen Intel Xeon Platinum 8272CL processors, cost just 1.17 times more, than the Es\_v3 virtual machines. By investing in Eds\_v4 instances as opposed to Es\_v3 instances, you could be getting better performance for your money.

## Learn More, Process the Facts, Move Faster

Full 3rd party test report, visit <http://facts.pt/ikpqek2>

Specific 3rd party test results and configurations, visit <http://facts.pt/ccqc4xe>

Begin your SQL deployments on Azure Ev4-series with 2<sup>nd</sup> Gen Intel Xeon Platinum 8272CL processors, visit:

<https://azure.microsoft.com/is-is/pricing/details/virtual-machines/sql-server-enterprise/>



Software and workloads used in performance tests may have been optimized for performance only on Intel microprocessors.

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Performance results are based on testing as of dates shown in configurations and may not reflect all publicly available updates. See backup for configuration details. No product or component can be absolutely secure. Your costs and results may vary.

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