



# Improve SQL Server Scale-Up Performance by up to 100% with VMware Cloud™ on AWS i3en instances with 2<sup>nd</sup> Gen Intel® Xeon® Scalable Processors

## VMware Cloud on AWS i3en Instances Feature Intel Cascade Lake Processors

### Boost Performance and Capacity in New i3en Instance Types of VMware Cloud on AWS, Featuring 2<sup>nd</sup> Gen Intel® Xeon® Scalable Processors

Demanding database workloads benefit from more processing power that can handle more orders per minute. Because VMware Cloud on AWS i3en instances run on servers featuring 2<sup>nd</sup> Gen Intel Xeon Scalable processors with more cores and more memory than i3 instances, selecting i3en instances allows admins to add more vCPUs to achieve greater overall database performance per instance.

In Microsoft SQL Server database scale-up testing comparing VMware Cloud on AWS offerings, new i3en instances enabled by Intel Xeon Platinum 8259CL processors outperformed i3 instances with older processors, processing up to 19% more the orders per minute in an 8-vCPU comparison. Even with the same number of vCPUs, the i3en instance outperformed the older i3 instance—but because of the additional cores in 2<sup>nd</sup> Gen Intel Xeon Scalable processor-enabled servers, the new i3en instance is able to scale to support 96 vCPUs, three times the maximum 32 vCPUs the i3 instances support without hyperthreading (disabled due to the L1TF processor vulnerability). Due to the increased number of vCPUs, the i3en with 92 vCPUs achieved double the database orders per minute compared to the maximum 32 vCPUs users can get on the older i3 instances.

These scale-up performance tests on a single instance show that organizations selecting VMware Cloud on AWS i3en instances featuring 2<sup>nd</sup> Gen Intel Xeon Scalable processors can support more customers and even gain the ability to host significantly larger SQL Server VMs than organizations selecting older i3 instances.

### Support More E-commerce Customers per Instance

When selecting the hardware configurations that drive your VMware Cloud on AWS instances running SQL Server databases, choosing underlying hardware that takes advantage of newer technology can directly translate to increased customer support for your business.

In a head-to-head comparison with the same number of vCPUs, AWS i3en instances enabled by 2<sup>nd</sup> Gen Intel Xeon Scalable processors offered up to 19% more SQL Server orders per minute than an older VMware Cloud on AWS i3 instance in DVD Store 3 tests.

This means that organizations looking to support more customers on fewer instances can do so by selecting VMware Cloud on AWS i3en instances featuring 2<sup>nd</sup> Gen Intel Xeon Scalable processors.



Microsoft SQL Server



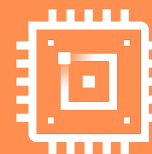
**Support 19% more customer orders**

*at 8 vCPUs*



**Up to 100% more orders per minute**

*(92 vCPUs on i3en vs. max 32 vCPUs on i3)*



**Host larger databases**



### VMware Cloud on AWS Scale-Up Performance: i3 vs i3en SQL Server on Windows Running DVD Store 3

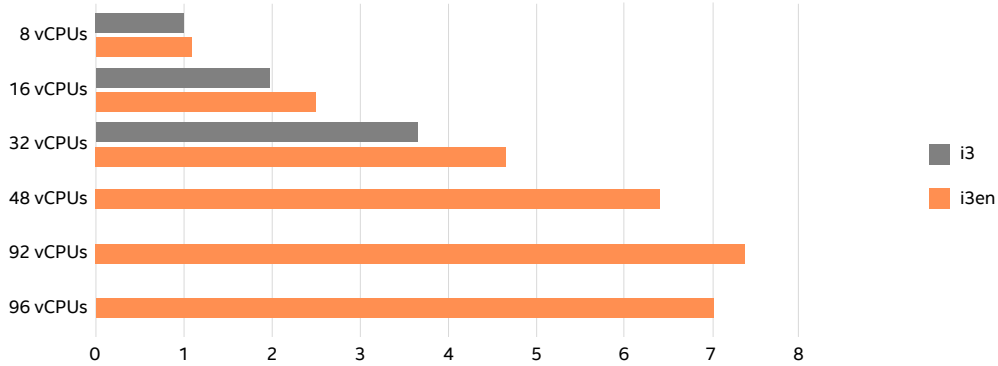


Figure 1. SQL Server scale-up performance results from DVD Store 3 testing comparing AWS i3 to newer i3en instances.

## Double Performance per Instance with Expanded Processing Power

Scaling up performance by increasing vCPU counts is another way to assess the capabilities of hardware. In scale-up tests, new VMware Cloud on AWS i3en instances doubled performance compared to older i3 instances, handling nearly twice the SQL Server orders per minute comparing highest-performing vCPU counts. New i3en instances featuring 2<sup>nd</sup> Gen Intel® Xeon® Scalable processors can achieve this dramatic increase in performance because they can take full advantage of both a higher number of cores and hyperthreading (without vulnerability).

## Host Larger Databases

VMware Cloud on AWS i3en instances are designed for storage-dense workloads with high performance requirements, and the increased storage capacity and performance improvements in 2<sup>nd</sup> Gen Intel Xeon Scalable processors make it possible to support larger SQL Server databases. By choosing VMware Cloud on AWS i3en instances enabled by 2<sup>nd</sup> Gen Intel Xeon Scalable processors, organizations can support more customers on fewer instances and achieve greater e-commerce performance no matter which database size fits their needs.

## Learn More

To begin your SQL Server database deployments on VMware Cloud on AWS i3en instances featuring 2<sup>nd</sup> Gen Intel Xeon Scalable processors, visit <http://intel.com/AWS>.

For more test details, visit <https://www.vmware.com/techpapers/2020/sqlserver-vmconaws-i3en-perf.html>.



Performance varies by use, configuration and other factors. Learn more at <https://intel.com/benchmarks>.

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