



Handle up to 1.39x More MySQL Transactions on Microsoft® Azure® Dds_v5 Virtual Machines vs. Dds_v4 VMs

Boost Database Performance with New Dds_v5 VMs Featuring 3rd Gen Intel® Xeon® Scalable Processors

When you host databases in the cloud, choosing the latest hardware available can help your organization get better online transaction processing (OLTP) performance from each virtual machine you support. No matter the size of your business and the sizes of OLTP databases you run, the latest Microsoft Azure Dds_v5 series VMs enabled by 3rd Gen Intel® Xeon® Scalable processors (Ice Lake) can boost performance over older Dds_v4 series VMs with older processors. Microsoft Azure Dds_v5 VMs use Intel Xeon Platinum 8370C processors in hyperthreaded configurations with up to 96 vCPUs and up to 394 GB of RAM and offer Intel Turbo Boost Technology 2.0, Intel AVX-512, and Intel Deep Learning Boost for data analysis.

In three sets of HammerDB benchmark tests using a TPROC-C workload to compare multiple sizes of databases on Microsoft Azure VMs, new Dds_v5 VMs enabled by 3rd Gen Intel Xeon Scalable processors delivered up to 1.39x more transactions per minute than Dds_v4 VMs with older processors.

Because Microsoft Azure Dds_v5 VMs can do more database work than VMs with older processors, selecting these new VMs can help your organization's bottom line by reducing the number of VMs you need to accommodate your database traffic.

Small Businesses Can Boost Database Performance on Small VMs

Smaller businesses—or larger organizations with small VM needs—can handle more MySQL database transactions per minute per VM by selecting Microsoft Azure Dds_v5 VMs with the latest processors. In database testing using the HammerDB benchmark suite, Azure Dds_v5 VMs enabled by 3rd Gen Intel Xeon Scalable processors with 8 vCPUs and a 22GB database handled 1.39x more transactions per minute (TPM) than a Dds_v4 VM did (see Figure 1).

Relative MySQL database performance with 8-vCPU VMs

Transactions per minute | Higher is better

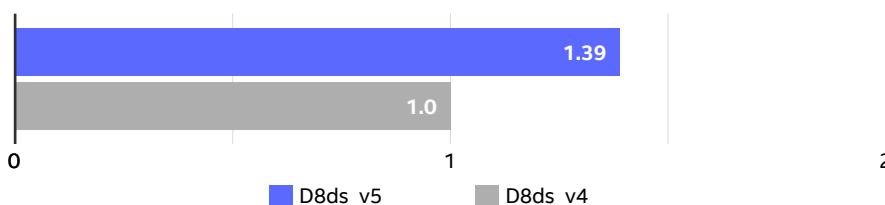


Figure 1. Relative MySQL database performance of the 8-vCPU Azure Dds_v5 VM and 8-vCPU Azure Dds_v4 VM types with a 22GB database.



MySQL



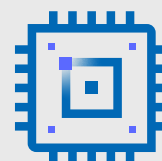
Support up to 1.39x more MySQL transactions per minute with 8-vCPU Dds_v5 VMs

vs. Dds_v4 VMs



Support up to 1.34x more MySQL transactions per minute with 16-vCPU Dds_v5 VMs

vs. Dds_v4 VMs



Support up to 1.20x more MySQL transactions per minute with 64-vCPU Dds_v5 VMs

vs. Dds_v4 VMs

Medium-sized Businesses Can Support More Database Users on Medium VMs

On medium-sized VMs, Azure Dds_v5 VMs offered similar MySQL database performance improvement over VMs with previous-generation processors. As Figure 2 shows, with 16 vCPUs and 45GB database size per VM, Microsoft Azure Dds_v5 VMs featuring 3rd Gen Intel® Xeon® Scalable processors handled 1.34x as many OLTP database transactions per minute as older Dds_v4 VMs.

Relative MySQL database performance with 16-vCPU VMs

Transactions per minute | Higher is better

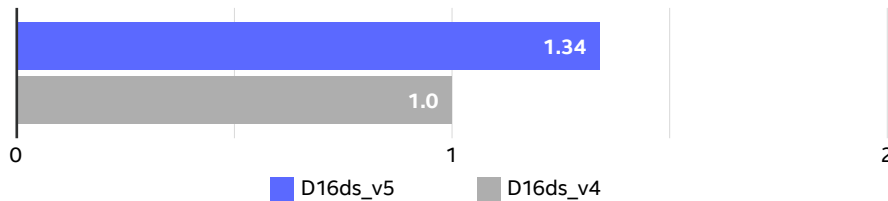


Figure 2. Relative MySQL database performance of the 16-vCPU Azure Dds_v5 VM and 16-vCPU Azure Dds_v4 VM types with a 45GB database.

Large Enterprises with Large Databases Can Handle More Database Work Per VM

Boosting the VM and database size up to 64 vCPU per VM with a 180GB database again provided similar results. Figure 3 shows that Microsoft Azure Dds_v5 VMs enabled by 3rd Gen Intel Xeon Scalable processors completed 1.20x as many transactions per second as Dds_v4 VMs using older processors.

Relative MySQL database performance with 64-vCPU VMs

Transactions per minute | Higher is better

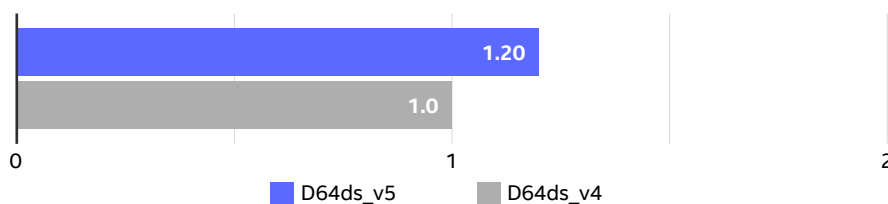


Figure 3. Relative MySQL database performance of the 64-vCPU Azure Dds_v5 VM and 64-vCPU Azure Dds_v4 VM types with a 180GB database.

These tests show that new Microsoft Azure Dds_v5 VMs enabled by 3rd Gen Intel Xeon Scalable processors can handle more database orders at various VM sizes to deliver a better experience for users accessing databases, while also reducing the number of database VMs organizations must host in the cloud to meet the performance levels they require.

Learn More

To begin running your websites on Microsoft Azure Dds_v5 virtual machines with 3rd Gen Intel Xeon Scalable processors, visit <https://intel.com/microsoftazure>.



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

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