

See Higher CPU Integer Performance with Amazon EC2 m6i Instances Featuring 3rd Gen Intel[®] Xeon[®] Scalable Processors

m6i Instances with 3rd Gen Intel Xeon Scalable Processors Delivered Better Estimated SPECrate[®]2017_int_base Scores Than m5 Instances with 2nd Gen Intel Xeon Scalable Processors

Whether a solution is on-premises or cloud-based, high integer performance is necessary for many applications to function smoothly. The SPECrate[®]2017 Integer benchmark measures integer performance, with higher scores representing higher throughput. The results of benchmarks like SPECrate[®]2017 Integer and similar can help guide the decisions of cloud customers faced with hundreds of instance options.

In Intel testing on Amazon Web Services (AWS) at multiple instance sizes, Amazon EC2 m6i instances enabled by 3rd Gen Intel Xeon Scalable processors delivered higher estimated SPECrate[®]2017_int_base performance than m5 instances with 2nd Gen Intel Xeon Scalable processors. Read on to see the performance differences that testing revealed.

Better Integer Performance for Small Instances

Figure 1 highlights the results of a small-instance comparison pitting a 4-vCPU m6i instance against a 4-vCPU m5 instance. The m6i instance featuring 3rd Gen Intel Xeon Scalable processors was the clear leader, delivering 27% more estimated integer performance than the m5 instance.

Normalized Estimated SPECrate[®]2017_int_base Scores on 4 vCPUs

Higher is better

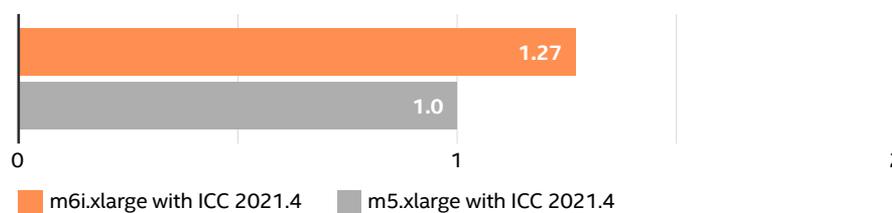


Figure 1. Relative est. SPECrate[®]2017_int_base performance of the 4-vCPU m6i instance vs. the 4-vCPU m5 instance. Higher numbers are better.

SPECrate[®]2017

Achieve up to 27% more est. SPECrate[®]2017_int_base performance with 4-vCPU m6i instances
vs. m5 instances

Achieve up to 23% more est. SPECrate[®]2017_int_base performance with 8-vCPU m6i instances
vs. m5 instances

Achieve up to 24% more est. SPECrate[®]2017_int_base performance with 16-vCPU m6i instances
vs. m5 instances

Better Integer Performance for Medium Instances

Figure 2 highlights the performance difference between a 16-vCPU m6i instance with new 3rd Gen Intel® Xeon® Scalable processors and an m5 instance with 2nd Gen Intel Xeon Scalable processors. Here again, the m6i instance came out on top, delivering 23% more estimated integer performance than the m5 instance.

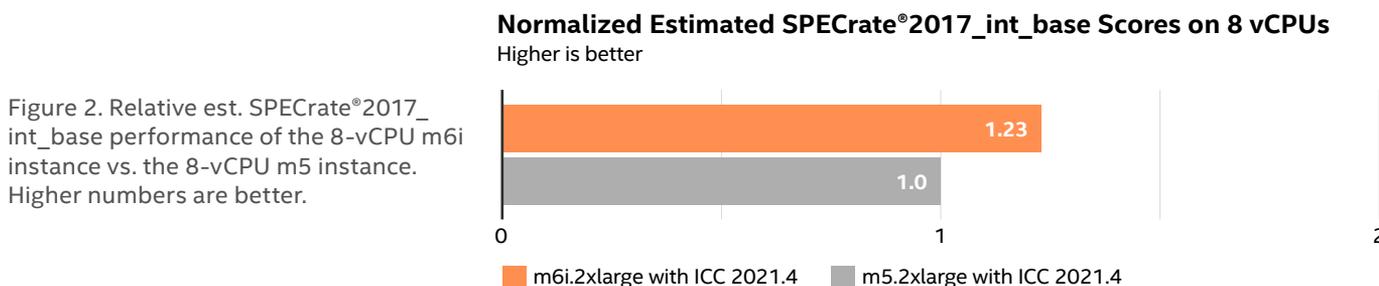


Figure 2. Relative est. SPECrate®2017_int_base performance of the 8-vCPU m6i instance vs. the 8-vCPU m5 instance. Higher numbers are better.

Better Integer Performance for Larger Instances

As Figure 3 shows, at the 16-vCPU instance size, an m6i instance featuring 3rd Gen Intel Xeon Scalable processors outperformed a 16-vCPU m5 instance by approximately the same margin as it did at the 8-vCPU instance size.

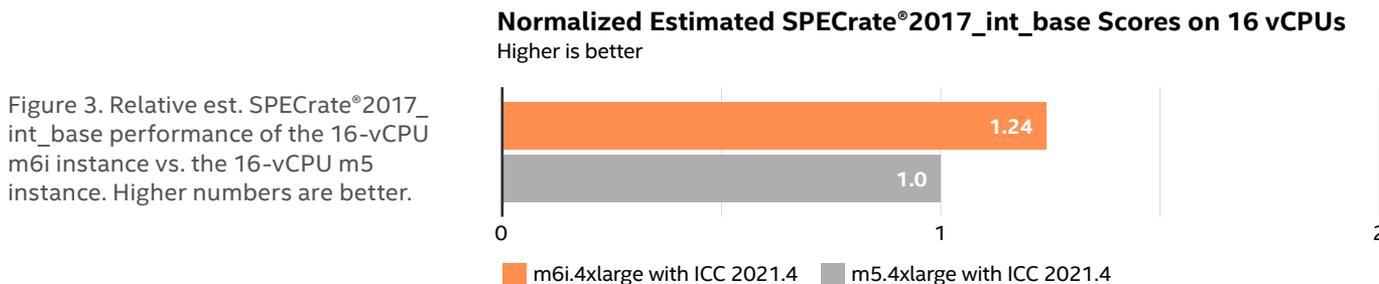


Figure 3. Relative est. SPECrate®2017_int_base performance of the 16-vCPU m6i instance vs. the 16-vCPU m5 instance. Higher numbers are better.

At each of the three sizes Intel tested, Amazon EC2 m6i instances enabled by 3rd Gen Intel Xeon Scalable processors delivered higher estimated SPECrate®2017_int_base performance than m5 instances with older processors. This clear performance boost can help guide organizations seeking to optimize their cloud investment.

Learn More

To get started running your CPU-intensive workloads on Amazon EC2 m6i instances enabled by 3rd Gen Intel Xeon Scalable processors, go to <https://aws.amazon.com/ec2/instance-types/m6i/>.

Tests performed by Intel on Oct.-Dec. 2021. All configs: AWS us-east-2, EBS 512GB, up to 10Gbps network BW, Ubuntu 20.04.3 LTS Kernel 5.11.0-1022-aws, cpu2017 v1.1.8, ICC 2021.4 revB_8GBqkmallo, -xCORE-AVX512, ic2021.1-lin-core-avx512-rate-20201113_revB.cfg. All m5 VMs: Intel Xeon Platinum 8259CL CPU @ 2.50GHz. All m6i VMs: Intel Xeon Platinum 8375C CPU @ 2.90GHz. m5.xlarge: 4 cores, 16GB RAM, up to 4.75 Gbps Storage BW, 4 workload copies; m6i.xlarge: 4 cores, 16GB RAM, up to 12.5 Gbps storage BW 4 workload copies; m5.2xlarge: 8 cores, 32GB RAM, up to 4.75 Gbps storage BW, 8 workload copies; m6i.2xlarge: 8 cores, 32GB RAM, up to 12.5 Gbps storage BW, 16 workload copies; m5.4xlarge: 16 cores, up to 4.75 Gbps storage BW; m6i.4xlarge: 16 cores, up to 12.5 Gbps storage BW, 16 workload copies.

