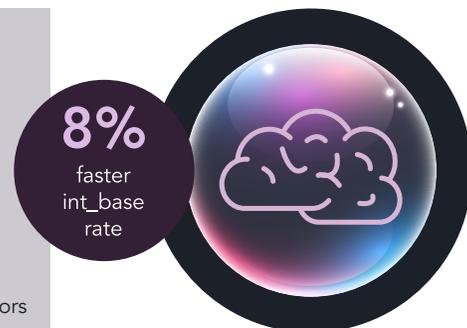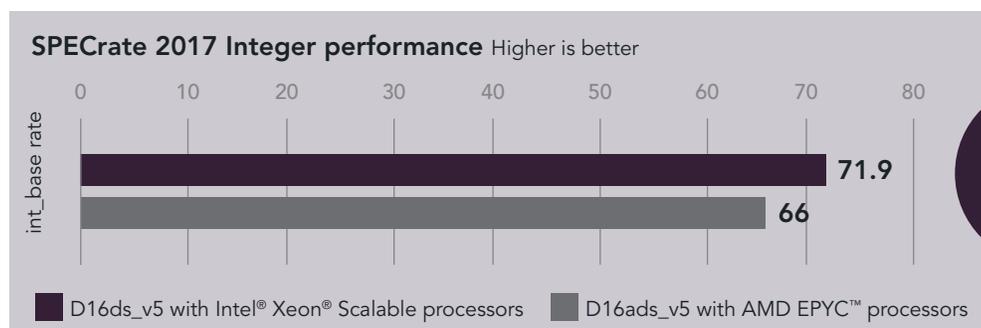# Get a clearer picture of potential cloud performance by looking beyond SPECrate 2017 Integer scores
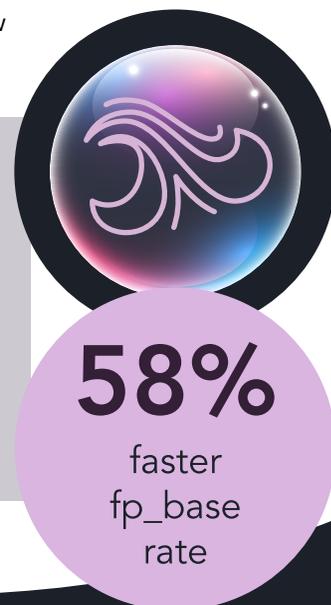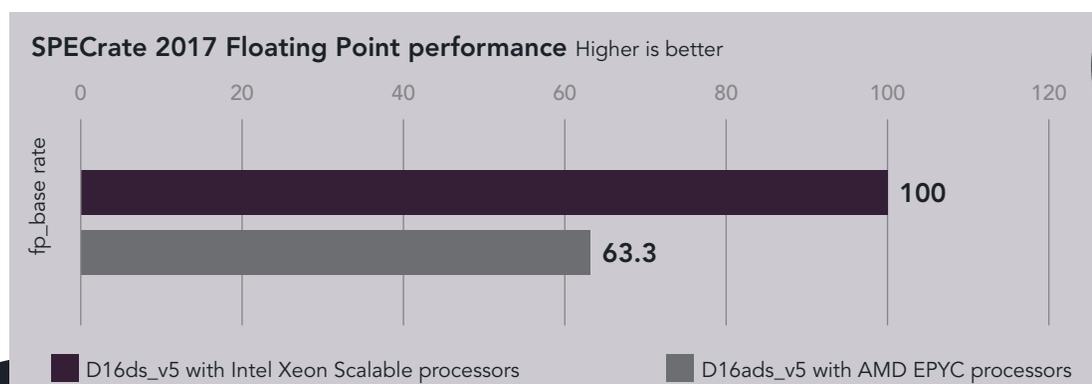
with SPECrate 2017 Floating Point

When we ran SPECrate 2017 Floating Point workloads on two Microsoft Azure VMs, the performance differences varied considerably from SPECrate 2017 Integer scores

What's the best way to gauge cloud instance performance? Using an industry-standard benchmark from the SPEC CPU 2017 benchmark package, such as SPECrate 2017 Integer, can deliver good compute performance data. But it may not paint the same picture as workloads more directly representative of your applications.

Running SPECrate 2017 Integer—which uses a broad range of applications that target the processor, memory, and compilers—we saw the following results on the Azure VMs we tested:

SPECrate 2017 Integer performance Higher is better

int_base rate

| 0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 |

71.9

66

■ D16ds_v5 with Intel® Xeon® Scalable processors   ■ D16ads_v5 with AMD EPYC™ processors

8% faster int_base rate

As another part of the SPEC CPU 2017 package, the SPECrate 2017 Floating Point suite includes 13 floating point workloads, such as explosion modeling, fluid dynamics, molecular dynamics, weather forecasting, computational electromagnetics, and regional ocean modeling. We saw the following results, which the benchmark reports as an aggregate of the workloads:

SPECrate 2017 Floating Point performance Higher is better

fp_base rate

| 0 | 20 | 40 | 60 | 80 | 100 | 120 |

100

63.3

■ D16ds_v5 with Intel Xeon Scalable processors   ■ D16ads_v5 with AMD EPYC processors

58% faster fp_base rate

Why test with SPECrate 2017 Floating Point?

Engineering workloads, technical calculations, and financial transactions all rely on floating point calculations as opposed to integer calculations. By testing this more specific type of performance, organizations that run these workloads could have better luck choosing a cloud VM that optimizes the performance they need.

Get the bigger picture when you branch out to specific workloads.

Learn more about the other real-world workloads we ran at https://facts.pt/odi9nGQ

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