intel®

HOW TO DELIVER COMPUTE AND MEMORY INTENSIVE WORKLOADS AT LOW TCO

Discover the advantages of choosing Amazon EC2* instances featuring the Intel® Xeon® Scalable processor

Intel® Xeon® Scalable processors offer:

Up to

2.25x

higher performance/$ for memory bandwidth intensive applications[1]

Up to

1.85x

higher performance/$ for floating point intensive applications[2]

Find out more about building value on your critical workloads by reading this Intel eGuide.

Achieve incredible performance per dollar on demanding workloads with AWS* and Intel

Running your business-critical workloads in the cloud gives you access to highly performant compute and memory resources. You need to ensure, though, that your platform is cost effective too.

By using Amazon EC2 instances featuring **Intel® Xeon® Scalable processors**, you can get **up to 2.25x higher performance per dollar**[1] as estimated using the STREAM_OMP Triad benchmark. **For floating point maths**, m5 instances featuring the Intel Xeon Scalable processor deliver **up to 1.85x the performance per dollar**[2] according to estimated results from the SPEC*rate2017_fp_ base benchmark.

The Intel Xeon Scalable processor has built-in features to accelerate your workload. For example:
- **Intel® Advanced Encryption Standard New Instructions (Intel® AES-NI)** accelerates encryption and decryption.
- **INT8** enables software to be accelerated by reducing the precision of the calculations, discarding unnecessary detail.
- **Intel® Advanced Vector Extensions 512 (Intel® AVX-512)** offers **512-bit vector instructions** to accelerate applications that intensively use floating point calculations.
- **Intel® Turbo Boost Technology** enables you to run cores faster than the base operating frequency, so you can accelerate performance when you need it most.

Amazon EC2 instances featuring the Intel Xeon Scalable processor are available now. Get more performance for every dollar you spend on AWS, by running your most demanding applications on Intel® processors.

[1] **Amazon EC2 m5.4xlarge**, McCalpin Stream (OMP version), (Source: https://www.cs.virginia.edu/stream/FTP/Code/stream.c); Intel ICC 18.0.3 20180410 with AVX512, -qopt-zmm-usage=high, -DSTREAM_ARRAY_SIZE=134217728 -DNTIMES=100 -DOFFSET=0 –qopenmp, -qopt-streaming-stores always -o $OUT stream.c, RedHat Enterprise Linux 7.5, Kernel 3.10.0-862.el7.x86_64, OMP_NUM_THREADS : 8, KMP_AFFINITY : proclist=[0-7:1], granularity=thread, explicit, Score 81216.7 MB/s, measured by Intel on 12/6/18

Amazon EC2 m5a.4xlarge, McCalpin Stream (OMP version), (Source: https://www.cs.virginia.edu/stream/FTP/Code/stream.c); Intel ICC 18.0.3 20180410 with AVX2, -DSTREAM_ARRAY_SIZE=134217728, -DNTIMES=100 -DOFFSET=0 –qopenmp -qopt-streaming-stores always -o $OUT stream.c, RedHat Enterprise Linux 7.5, Kernel 3.10.0-862.el7.x86_64, OMP_NUM_THREADS : 8, KMP_AFFINITY : proclist=[0-7:1], granularity=thread,explicit, Score 32154.4 MB/s, measured by Intel on 12/6/18

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[2] **Amazon EC2 m5.4xlarge**, SPECrate2017_fp_base CPU1.0.2, Intel ICC Version 18.0.2 20180210, RedHat Enterprise Linux 7.5, Kernel 3.10.0-862.el7.x86_64, 16 copies, Estimated Score 57.7, measured by Intel on 12/6/18

Amazon EC2 m5a.4xlarge, SPECrate2017_fp_base CPU1.0.2, AOCC1.0/LLVM, RedHat Enterprise Linux 7.5, Kernel 3.10.0-862.el7.x86_64, 16 copies, Estimated Score 27.7, measured by Intel on 12/6/18

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Performance results are based on testing as of the date set forth in the configurations and may not reflect all publicly available security updates. See configuration disclosure for details. No product or component can be absolutely secure.

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