

# Ant Group Privacy Preserving ML on 3rd Gen Intel® Xeon® Scalable processors



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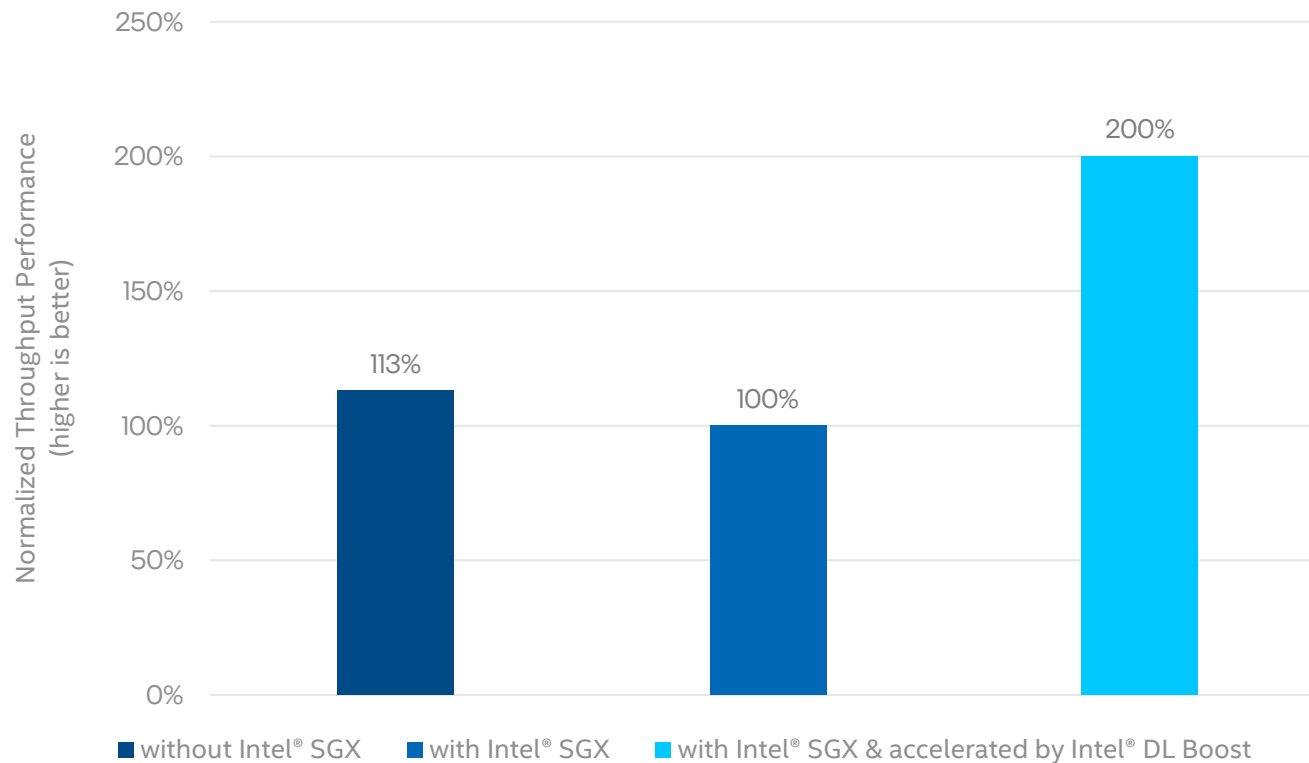
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# 3<sup>rd</sup> Gen Intel® Xeon® Scalable Processors

## Ant Group Privacy Preserving Machine Learning



Analytics Zoo PPML Inference Pipeline Performance



### Application

- More secure and distributed inference solution built with Analytics Zoo, better protected by Intel® Software Guard Extensions 2.0 (Intel® SGX) and Occlum\* (backed by Ant Group), and accelerated by Intel® Deep Learning Boost (Intel® DL Boost).

### Customer Impact

- The end-to-end distributed inference pipeline is more protected by Intel SGX 2.0 and Occlum.
- 2.1X better inference throughput using Intel DL Boost with Int8 compared to FP32 .<sup>1</sup>

### Performance Drivers

- Intel® DL Boost with Int8
- Intel® oneAPI Deep Neural Network Library (oneDNN)

1 – Performance results are based on testing done by Intel March 19, 2021. For complete testing configuration details, see Configurations section.

# Configurations

## Ant Financial Privacy Preserving Machine Learning Performance on 3rd Gen Intel® Xeon® Processor Scalable Family

Test Configuration: Test by Intel Corporation as of 03/19/2021. 2-node, Intel® Xeon® Platinum 8369B Processor, 2 sockets, 32 cores per socket, HT On, Turbo ON, Total Memory 1024 GB (16 slots/ 64GB/ 3200 MHz), EPC 512GB, SGX DCAP Driver 1.36.2, Mircode: 0x8d05a260, Ubuntu 18.04.4 LTS, 4.15.0-112-generic kernel  
Software Configuration: LibOS Occlum 0.19.1, Flink 1.10.1, Redis 0.6.9, OpenJDK 11.0.10, Python 3.6.9

Workload Configuration: Model: Resnet50, Deep Learning Framework: Analytics Zoo 0.9.0, OpenVINO 2020R2, Dataset: Imagenet, BS=16 per instance, 16 instances/2 socket, Datatype: FP32/INT8

All performance data is tested in lab environment.

For more information visit:

<https://intel.com/content/www/us/en/artificial-intelligence/posts/alibaba-privacy-preserving-machine-learning.html>

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