



## Performance Snapshot

# 3rd Generation Intel® Xeon® Scalable Processors for HPC in Manufacturing



Most commercial and open source software is engineered to perform optimally on Intel® Xeon® processor architecture, thanks to our 20+ years of engagement with the global software community.

# 1 oneAPI

And using Intel® oneAPI's open, unified programming model together with [Intel® oneAPI Toolkits for HPC](#) (built on familiar, proven CPU tools), developers can more easily optimize CAE codes for their HPC environments.

## Reach New Heights of Application Performance

Design engineers challenge the limits of computing with simulation and modeling applications that help pinpoint design flaws and produce higher-quality, better-performing products. Running these applications faster means more time to iterate and improve designs, as well as reduced time to market.

3rd gen Intel® Xeon® Scalable processors power computer-aided engineering (CAE) applications across a range of disciplines to improve performance and accuracy, helping engineers reach key insights faster.

## Performance Results

Computer-aided engineering (CAE) applications perform significantly better on 3rd generation Intel® Xeon® Scalable processors than previous generations, and our advanced microarchitecture delivers higher performance per core, improving value for commercial software.



Ansys® LS-DYNA®

up to **48%**  
better performance vs. previous gen<sup>1</sup>

Ansys® Fluent®

up to **54%**  
better performance vs. previous gen<sup>1</sup>

CONVERGE

up to **52%**  
better performance vs. previous gen<sup>1</sup>

NUMECA

up to **61%**  
better performance vs. previous gen<sup>1</sup>

OpenFOAM

up to **51%**  
better performance vs. previous gen<sup>2</sup>

Altair Radioss®

up to **47%**  
better performance vs. previous gen<sup>1</sup>

# Value & Benefits

Better-performing computer-aided engineering applications deliver cascading benefits for manufacturers:

- **Design teams** can develop better-performing products faster
- **HPC solution architects** increase system value and business impact
- **Developers** can realize the full value of hardware, and develop and deploy their software with peace of mind
- **Business leaders** can get products to market faster, improving ROI on commercial design software

#### Performance Results:

1 See [105] at [www.intel.com/3gen-xeon-config](http://www.intel.com/3gen-xeon-config). Results may vary.

2 See [108] at [www.intel.com/3gen-xeon-config](http://www.intel.com/3gen-xeon-config). Results may vary.

Performance varies by use, configuration and other factors. Learn more at [www.intel.com/PerformanceIndex](http://www.intel.com/PerformanceIndex). Performance results are based on testing as of dates shown in configurations and may not reflect all publicly available updates. See backup for configuration details. No product or component can be absolutely secure.

Intel contributes to the development of benchmarks by participating in, sponsoring, and/or contributing technical support to various benchmarking groups, including the BenchmarkXPRT Development Community administered by Principled Technologies. Your costs and results may vary. Intel technologies may require enabled hardware, software or service activation. Some results may have been estimated or simulated. Intel does not control or audit third-party data. You should consult other sources to evaluate accuracy. All product plans and roadmaps are subject to change without notice. This offering is not approved or endorsed by OpenCFD Limited, producer and distributor of the OpenFOAM software via [www.openfoam.com](http://www.openfoam.com), and owner of the OPENFOAM® and OpenCFD® trade marks. Statements in this document that refer to future plans or expectations are forward-looking statements. These statements are based on current expectations and involve many risks and uncertainties that could cause actual results to differ materially from those expressed or implied in such statements. For more information on the factors that could cause actual results to differ materially, see our most recent earnings release and SEC filings at [www.intc.com](http://www.intc.com).

# Key Features

See how 3rd Generation Intel® Xeon® Scalable Processors compare to the previous generation:

- Up to 40 cores per socket
- 8 DDR4 3200 MT/s memory channels
- Configured to support up to 6TB of system memory, per processor
- Support for Intel® Optane™ Persistent Memory 200 Series
- Built-in HPC and AI acceleration with Intel® AVX-512 and Intel® Deep Learning Boost
- Enhanced performance with Intel's latest CPU microarchitecture
- PCIe Gen4 support with 64 lanes/socket, 16 GT/s acceleration
- Built-in Intel® Speed Select Technology for granular control over CPU performance

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Contact your Intel account executive for details on 3rd generation Intel® Xeon® Scalable processor performance for your specific workloads and environment.

## 3rd generation Intel® Xeon® Scalable processors resources for HPC

- [Product Brief:](#) 3rd Generation Intel® Xeon® Scalable Processors for HPC
- [Product Infographic:](#) 3rd Generation Intel® Xeon® Scalable Processors for HPC
- [Performance Infographic:](#) HPC applications on 3rd generation Intel® Xeon® Scalable Processors

## Intel HPC resources for Manufacturing

- [Video:](#) Powering Altair® Radioss in the Cloud
- [Case Study:](#) JSP Boosts Engineering Simulations
- [White Paper:](#) Accelerating Ansys® Fluent®

# Intel® Select Solutions for Manufacturing

Intel® Select Solutions for Simulation & Modeling offer an easier path to deployment for HPC users in manufacturing via quick-to-deploy infrastructure that significantly reduces complexity. These solutions provide verified interoperability with common CAE applications, ensuring the performance thresholds needed for scaling across the cluster.

For more information, please read our [Intel® Select Solutions for High Performance Computing](#)

