



Accelerate Ansys Simulations with NVIDIA and Dell

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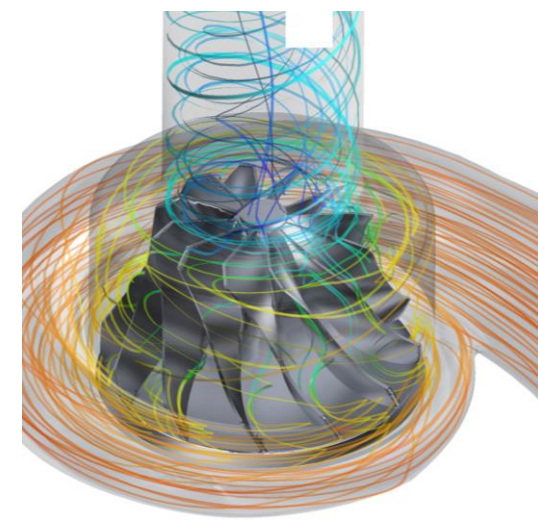
Fast and Accurate Simulations at Lower Hardware and Energy Costs

GPU Native Solvers – Multi GPU

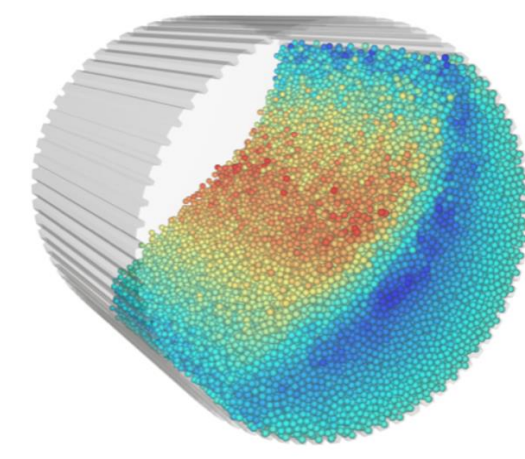
GPU Native Solver – Single GPU

GPU-Accelerated Solver

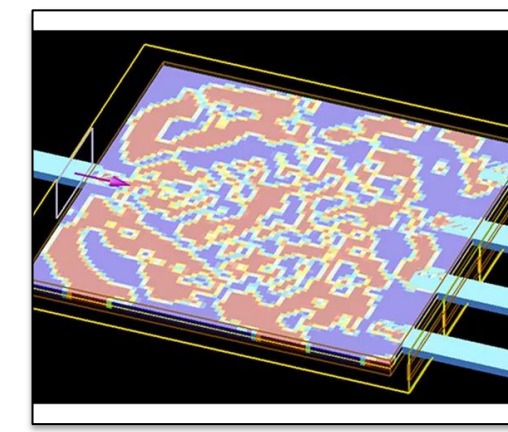
Accelerated
Ansys Software



Fluent



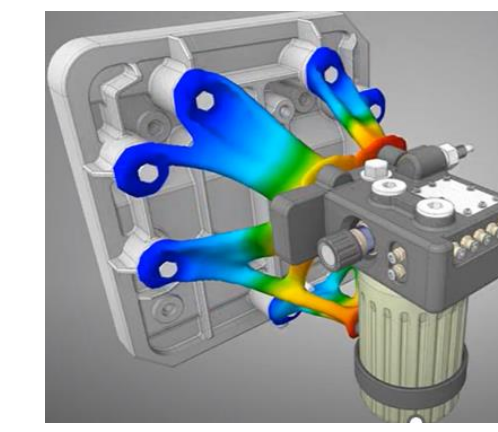
Rocky



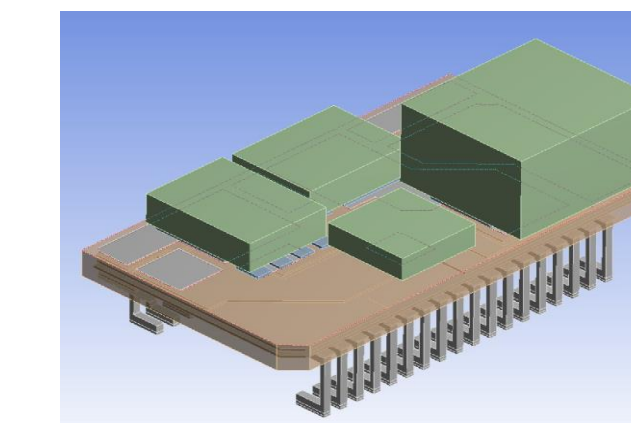
Lumerical



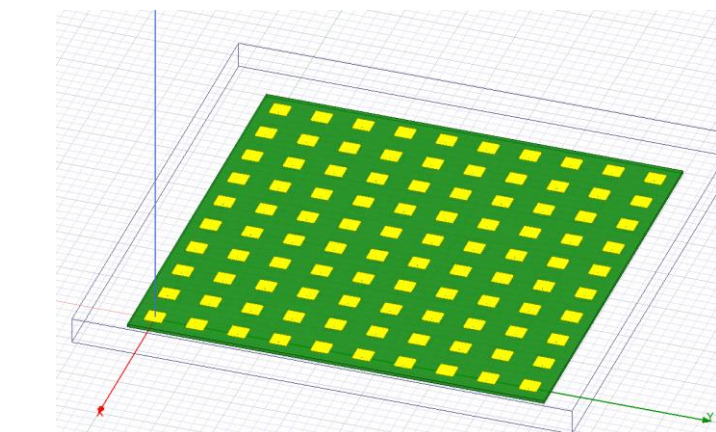
SPEOS



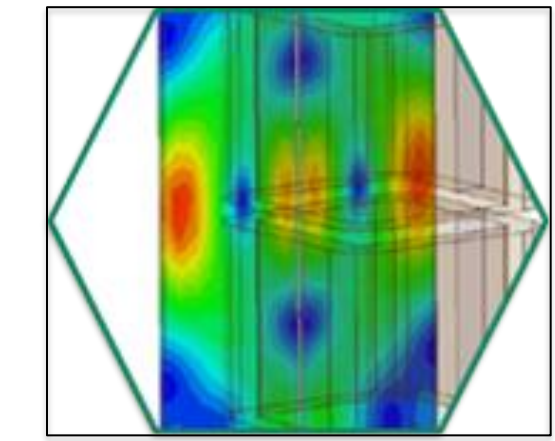
Discovery



Mechanical



HFSS



Maxwell

...

Acceleration
Toolkit

NVIDIA CUDA

**NVIDIA
OptiX**

Hardware

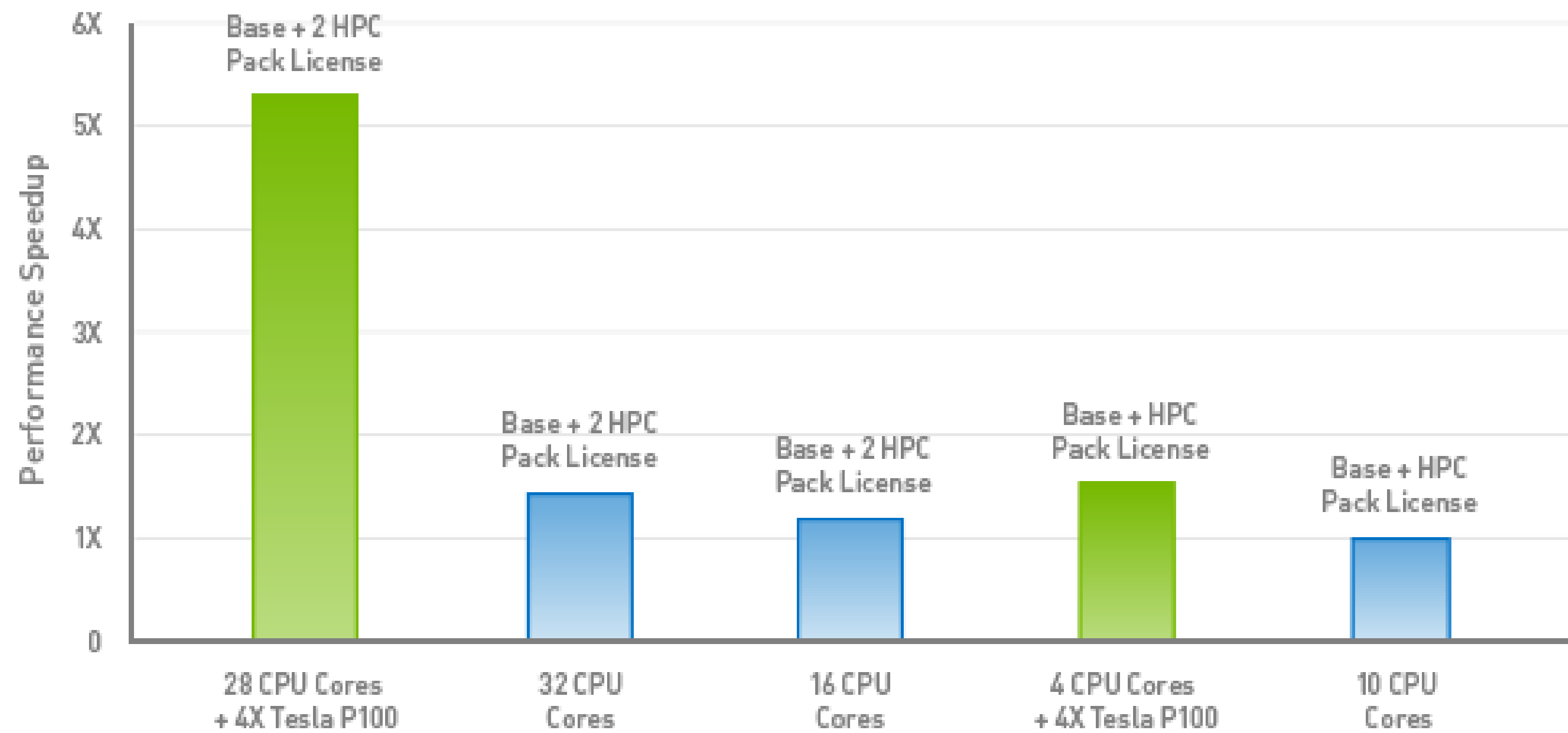


Migrating Fluent to GPU Native Solvers

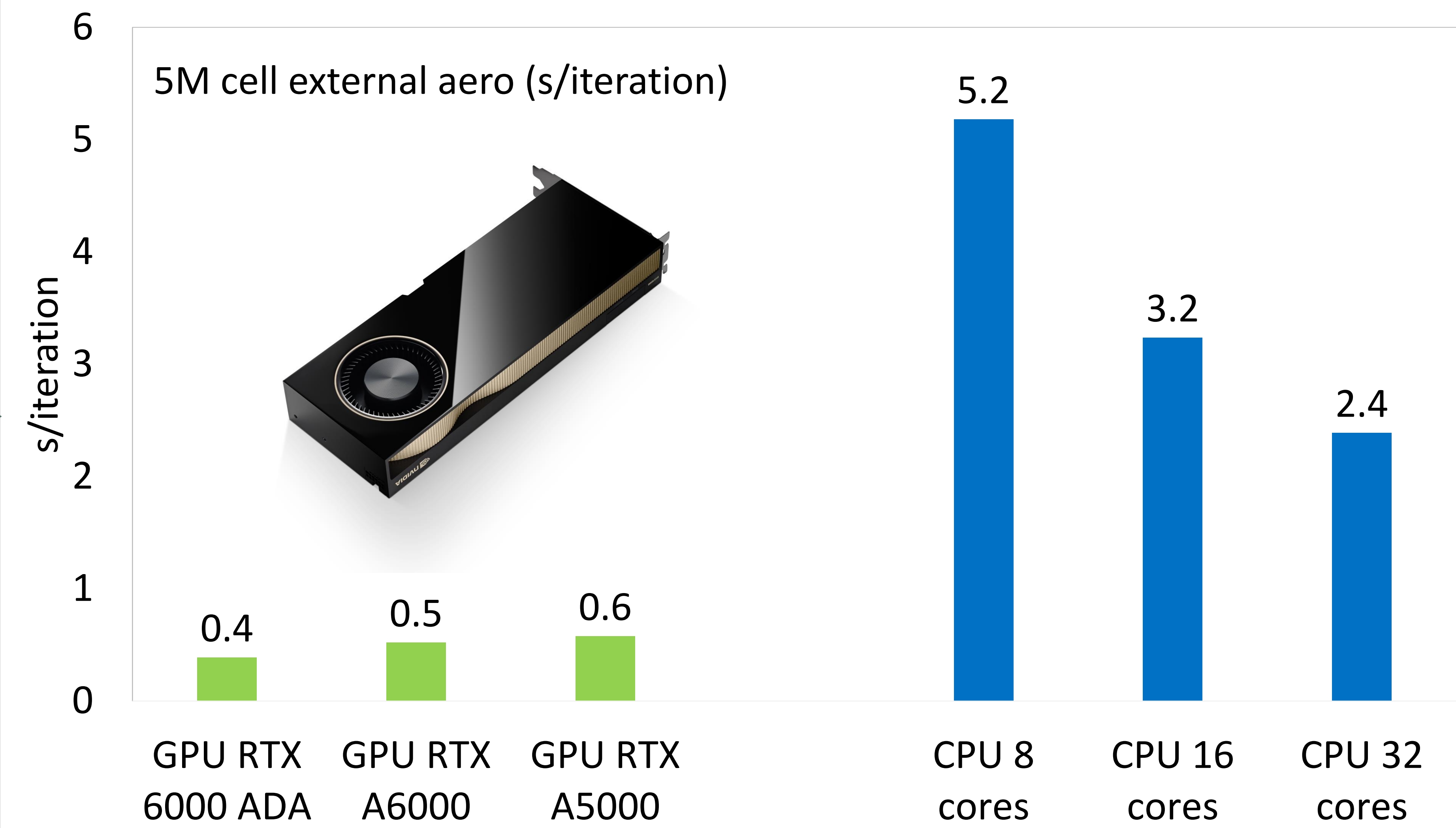
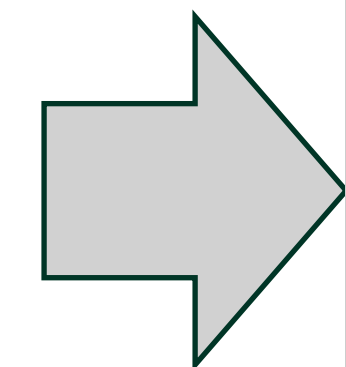
Off loading to GPU (before 2022R1)

GPU-native Solver Fluent 2023R2
-- 13x faster than 8-core CPU

Ansys Fluent (Boeing Landing Gear) Performance on CPU and GPU Systems

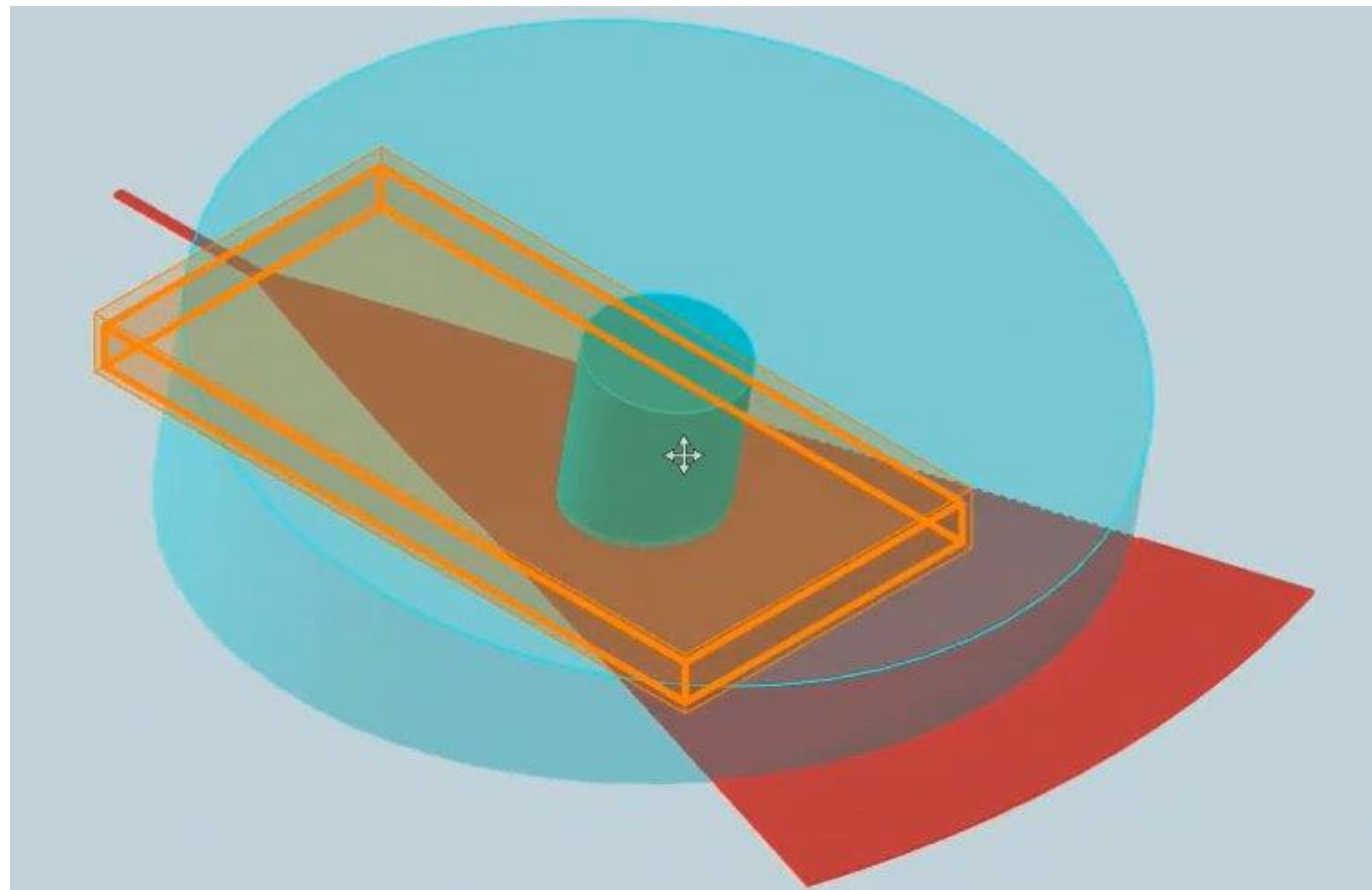


Dual Intel Xeon Haswell-EP E5-2698 v3 2.3GHz, 16-cores | Tesla P100 | 256 GB RAM | CentOS 7.2 64-bit | Ansys Fluent 18.1 | Boeing Landing Gear Analysis, Double Precision, 15M mixed cells, 100 iterations

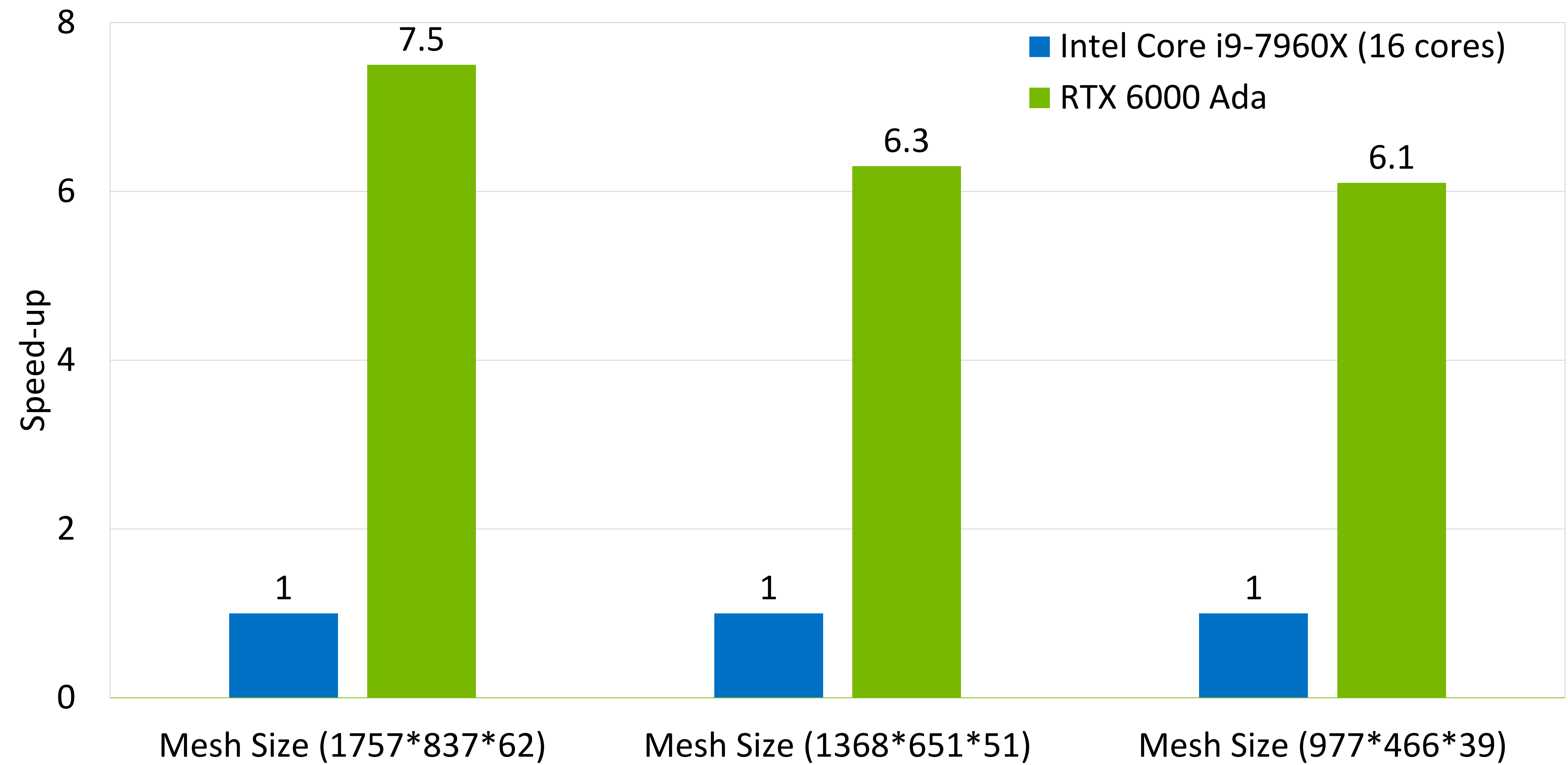


Lumerical FDTD Simulation Acceleration

Optical grating coupler model



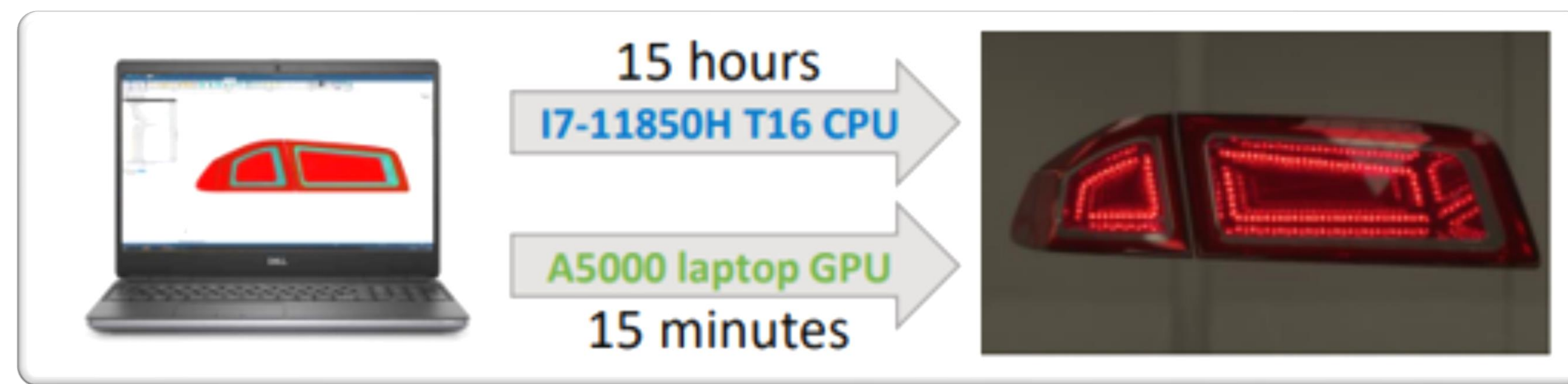
Up to 7X faster vs.16-core CPU



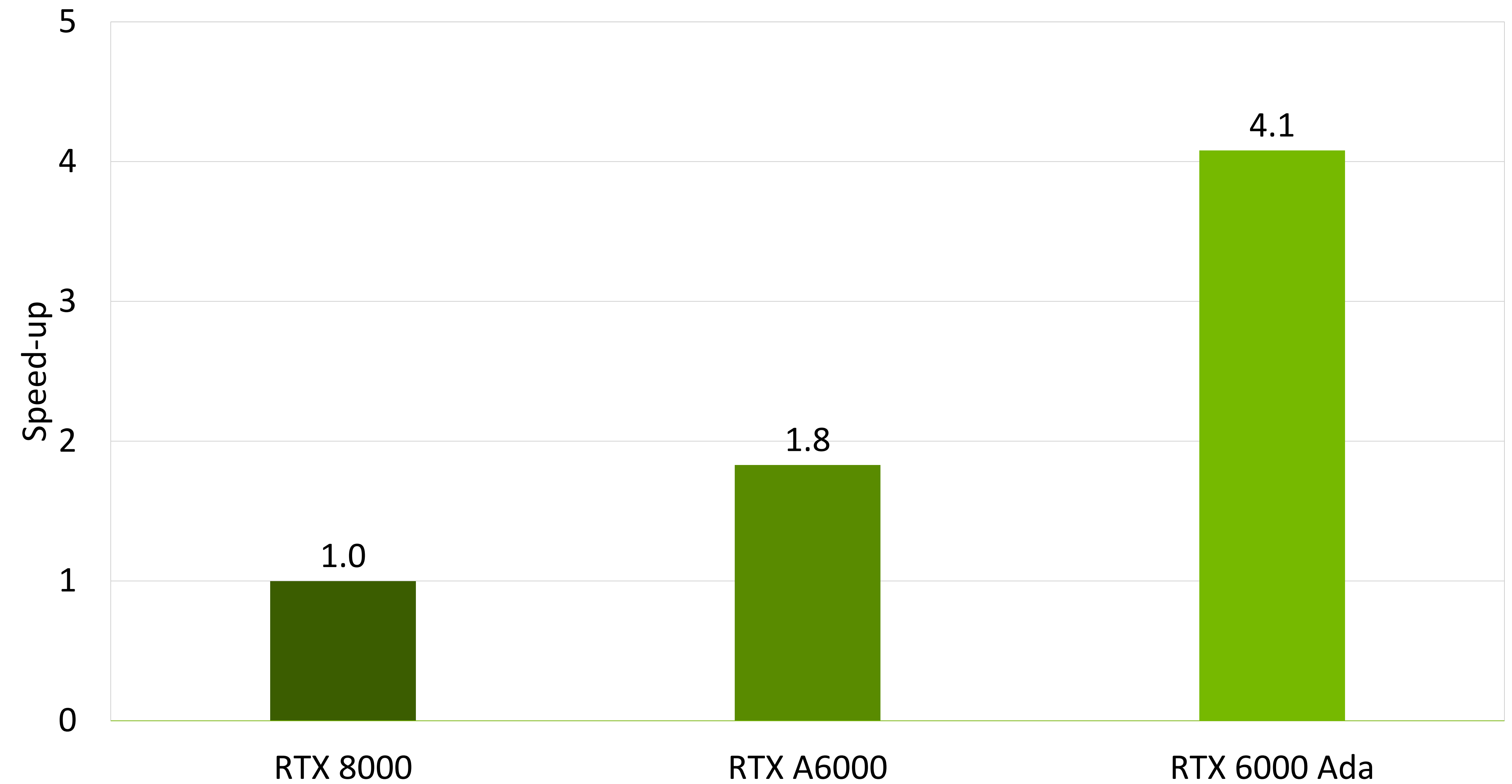
Ansyes Speos: Physics-Based Optical Simulation

Powered by NVIDIA RTX Technology















NVIDIA RT CORE with OptiX Raytracing. Real-time, physically accurate rendering



RTX 6000 Ada Up to 4X faster vs. previous gen



Dell Precision Product Family

	3000 Series			5000 Series		7000 Series		
Mobile	<p>Take your ideas to new heights</p>  <p>3480</p>	<p>Take your ideas to new heights</p>  <p>3580</p>	<p>Ignite your creativity</p>  <p>3581</p>	<p>Power your creative zone</p>  <p>5480</p>	<p>Where elegance meets performance</p>  <p>5680</p>	<p>Push your purpose to the next level</p>  <p>7680</p>	<p>Push your purpose to the next level</p>  <p>7780</p>	
Tower	<p>Small, but without sacrifice</p>  <p>3280 Compact</p>	<p>Smart performance and design</p>  <p>3480 SFF</p>	<p>Smart performance that scales</p>  <p>3680 Tower</p>			<p>Perfected to your vision</p>  <p>5860 Tower</p>	<p>Power your productivity</p>  <p>7875 Tower</p>	<p>Ultimate power and scalability</p>  <p>7960 Tower</p>
Rack							<p>Ultimate performance and security in a 2U form factor.</p>  <p>7960 Rack</p>	

Dell + NVIDIA

Additional Resources

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The Future of Engineering Computation

GPU acceleration continues to revolutionize desktop workstation capabilities.

🕒 November 10, 2023

Engineering workstations continue to increase their computing power, with the latest GPUs from NVIDIA – notably, the NVIDIA RTX™ 6000 Ada Generation graphics cards – providing a tremendous boost when it comes to simulation.

In some recent presentations, Ozen Engineering’s MingYao Ding, VP of engineering and principal, at Sunnyvale, CA-based Ozen Engineering, outlined how GPU acceleration is improving simulation workflows.

Ozen provides engineering simulation software and training; and serves as an Ansys Simulation channel partner. In October, Ding presented a session at the virtual Digital Engineering Design & Simulation Summit titled “The Future of Engineering Computing—From Workstations to the Cloud.”

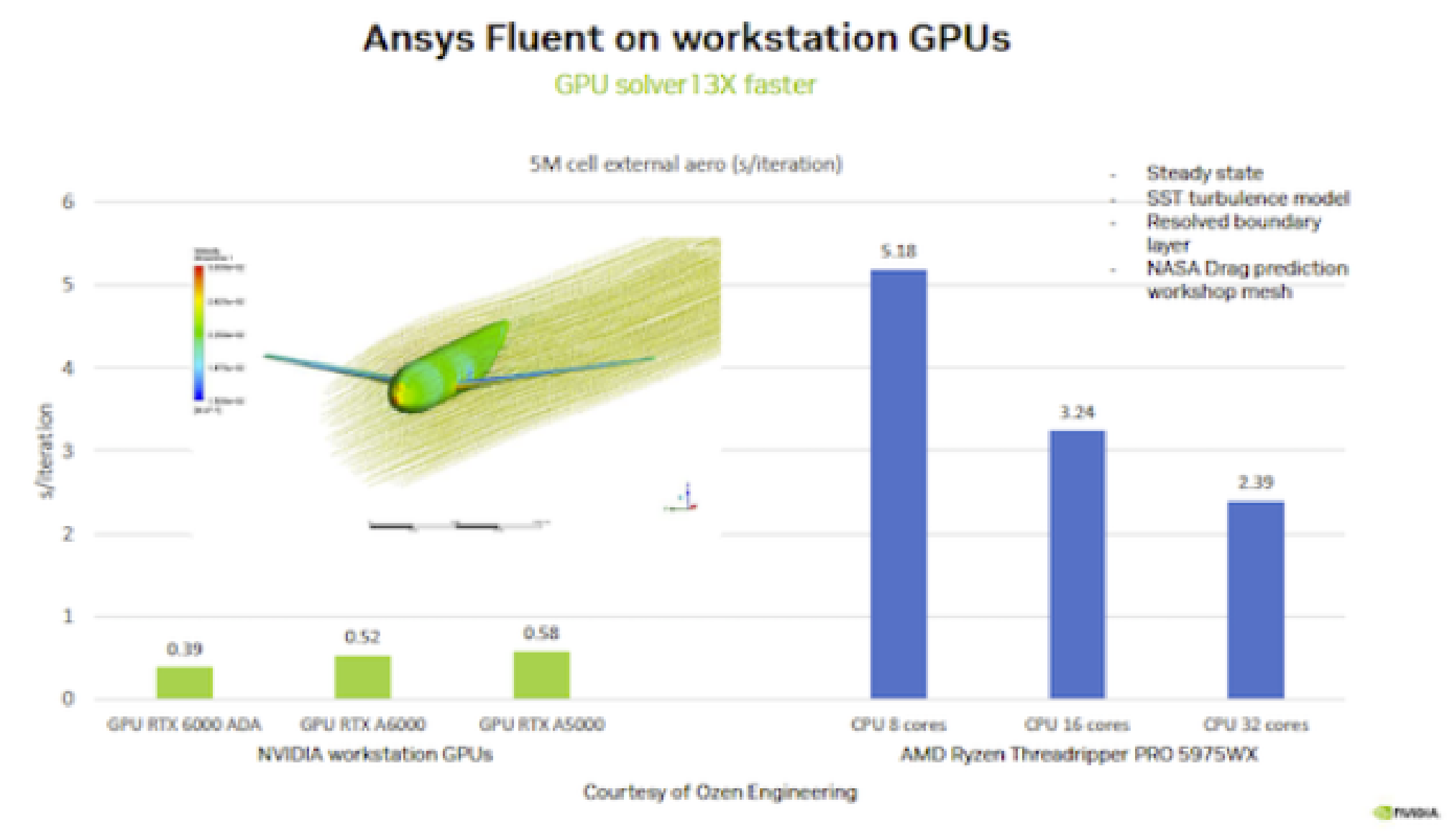
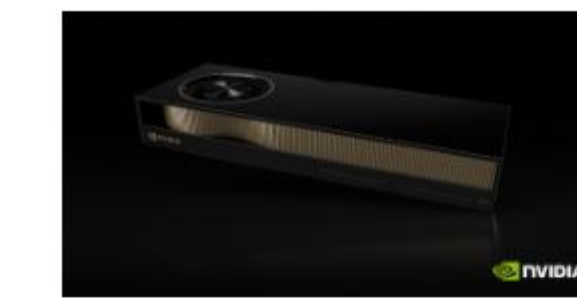


Image courtesy of Ansys and NVIDIA.



[AI Drives Robotics and Automotive Configurators at CES 2024](#)
🕒 January 15, 2024
NVIDIA delivers special address at the Consumer Electronics Show



[HPC Performance on the Desktop: NVIDIA A800 40GB Active GPU](#)
🕒 January 15, 2024
The new NVIDIA GPU provides powerful, double-precision capabilities for demanding engineering simulation workflows.



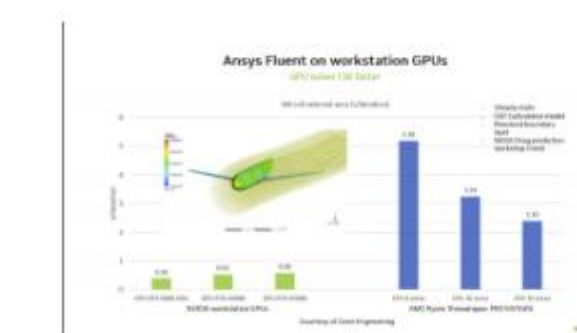
[Tower of Power: Dell Debuts 96-core Professional Workstation](#)
🕒 December 8, 2023
The Precision 7875 leverages NVIDIA RTX™ Ada-generation GPUs to support high-end simulation, visualization and AI workflows.



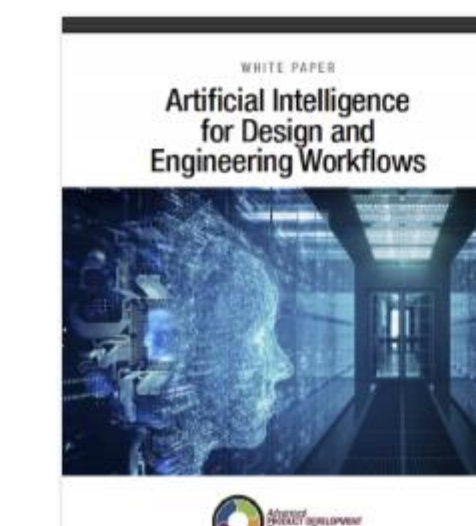
[Autodesk AI Takes Center Stage at AU](#)
🕒 December 8, 2023
Design and simulation workflows poised to benefit from AI integration

[AOUSD Gets Ready to Expand OpenUSD for More Workflows](#)

🕒 November 10, 2023
Founding members NVIDIA and Autodesk discuss the potential for OpenUSD in engineering



[The Future of Engineering Computation](#)
🕒 November 10, 2023
GPU acceleration continues to revolutionize desktop workstation capabilities.



[Artificial Intelligence for Design and Engineering Workflows](#)
🕒 October 25, 2023
In this white paper, learn how artificial intelligence and machine learning can improve design and simulation.

<https://www.digitalengineering247.com/topic/category/engineering-resource-center>