

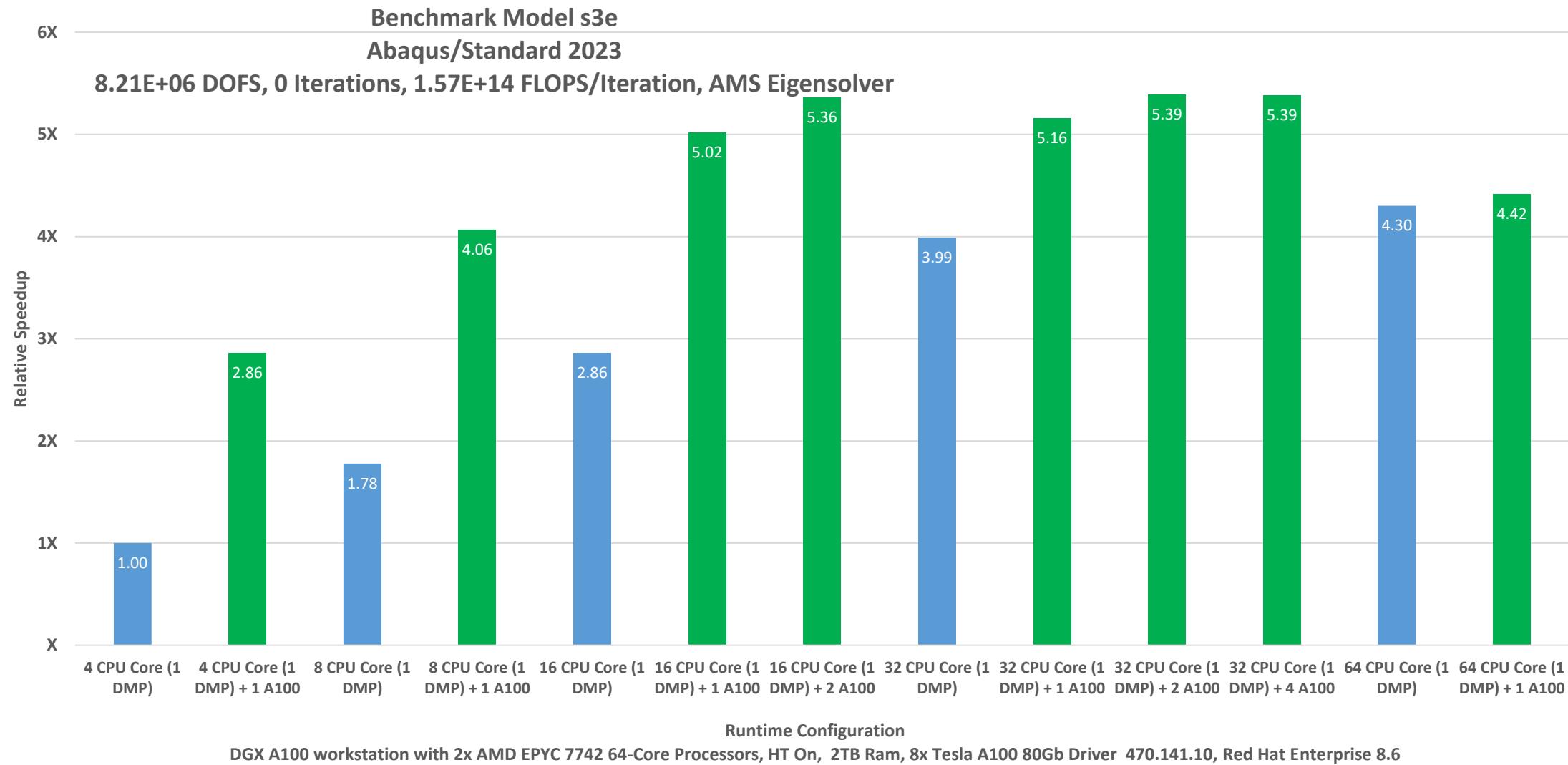
Abaqus/Standard 2023 Benchmarks

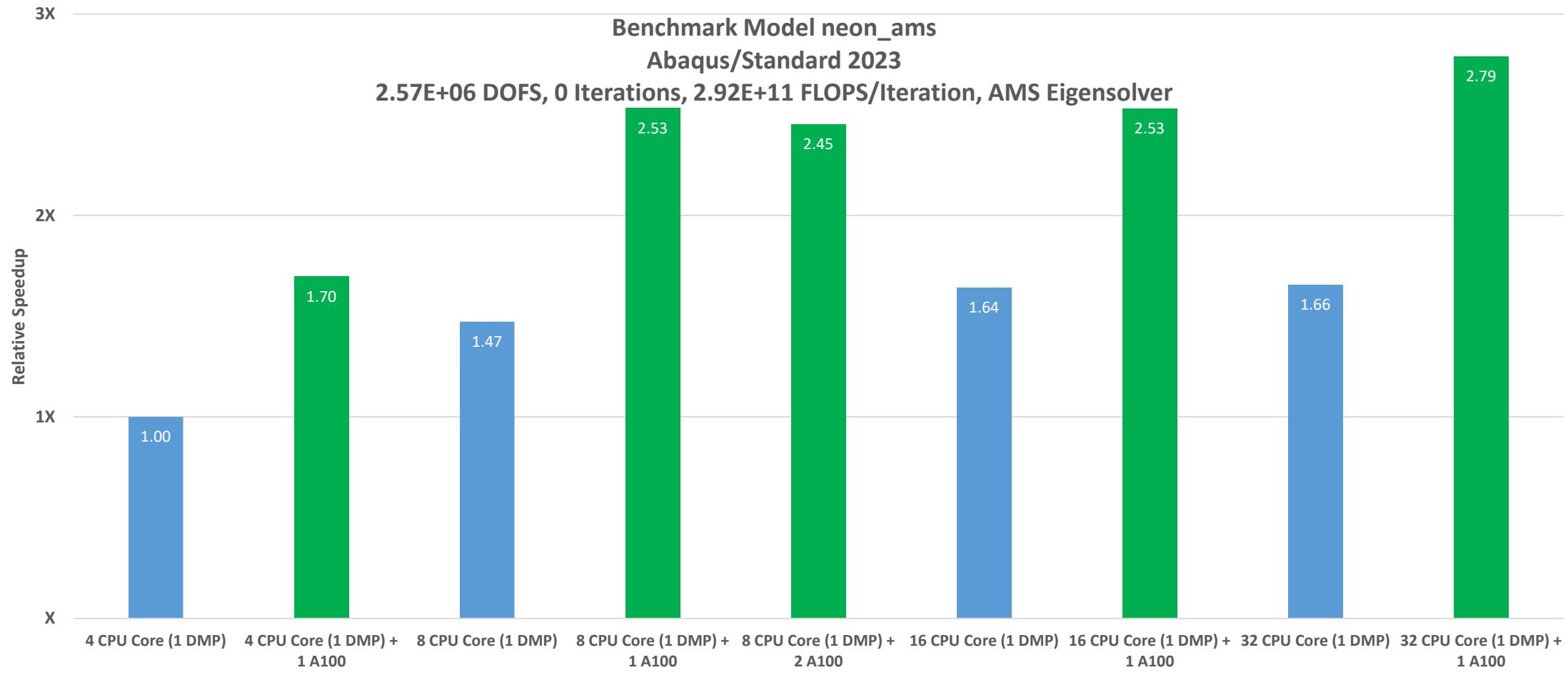
Run on Nvidia DGX A100 machine provided by Nvidia

All charts show scaling of Abaqus/Standard workflows for CPU and
compare with addition of GPU Acceleration

Number of cores for baseline depends on the model

Q4 2022



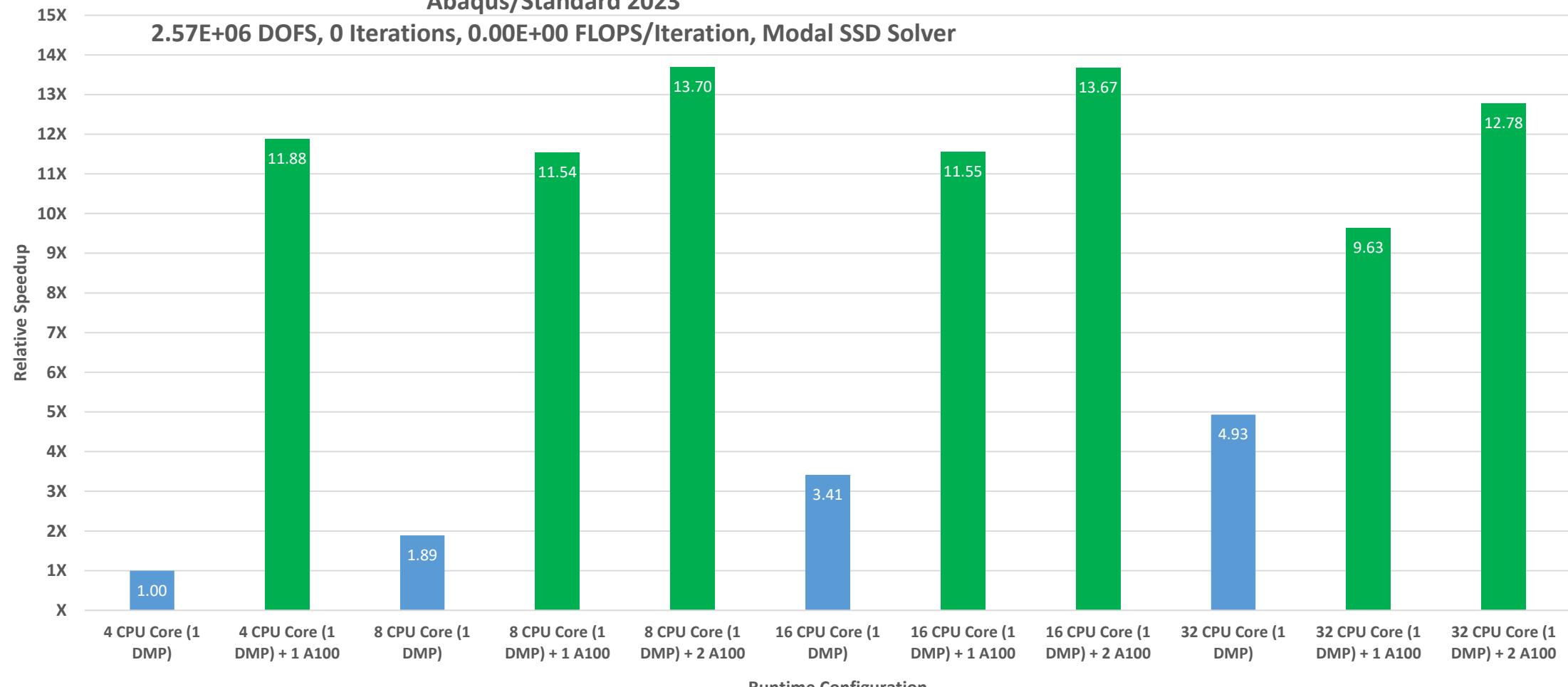


DGX A100 workstation with 2x AMD EPYC 7742 64-Core Processors, HT On, 2TB Ram, 8x Tesla A100 80Gb Driver 470.141.10, Red Hat Enterprise 8.6

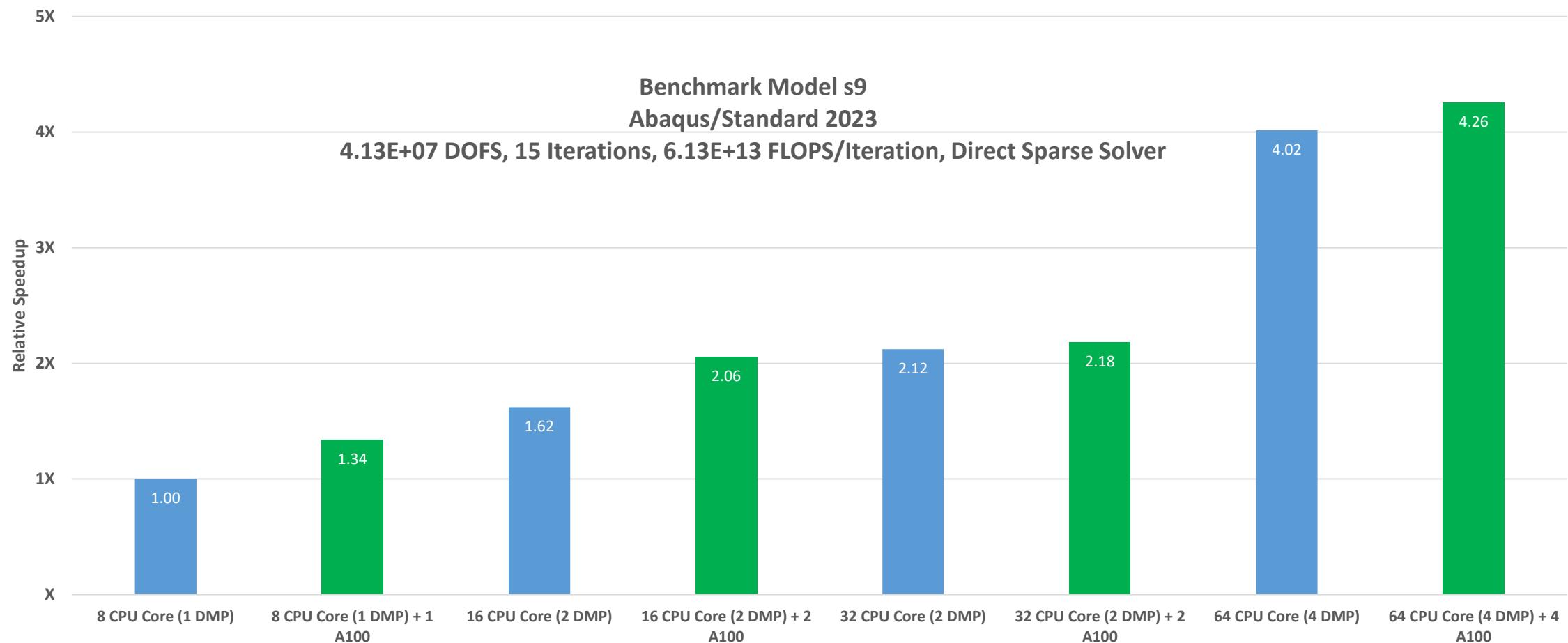
Benchmark Model neon_modal_ss

Abaqus/Standard 2023

2.57E+06 DOFS, 0 Iterations, 0.00E+00 FLOPS/Iteration, Modal SSD Solver



DGX A100 workstation with 2x AMD EPYC 7742 64-Core Processors, HT On, 2TB Ram, 8x Tesla A100 80Gb Driver 470.141.10, Red Hat Enterprise 8.6



Runtime Configuration

DGX A100 workstation with 2x AMD EPYC 7742 64-Core Processors, HT On, 2TB Ram, 8x Tesla A100 80Gb Driver 470.141.10, Red Hat Enterprise 8.6

12X

10X

Relative Speedup

X
2X
4X
6X
8X
10X
12X

Benchmark Model s2b
Abaqus/Standard 2023

1.86E+06 DOFS, 12 Iterations, 4.78E+13 FLOPS/Iteration, Direct Sparse Solver

4 CPU Core (1 DMP) 4 CPU Core (1 DMP) + 8 CPU Core (1 DMP) 8 CPU Core (1 DMP) + 16 CPU Core (1 DMP) 16 CPU Core (1 DMP) 16 CPU Core (2 DMP) + 1 A100 16 CPU Core (2 DMP) + 2 A100 32 CPU Core (2 DMP) 32 CPU Core (2 DMP) + 2 A100

1.00

5.44

1.84

7.25

3.21

8.12

2.91

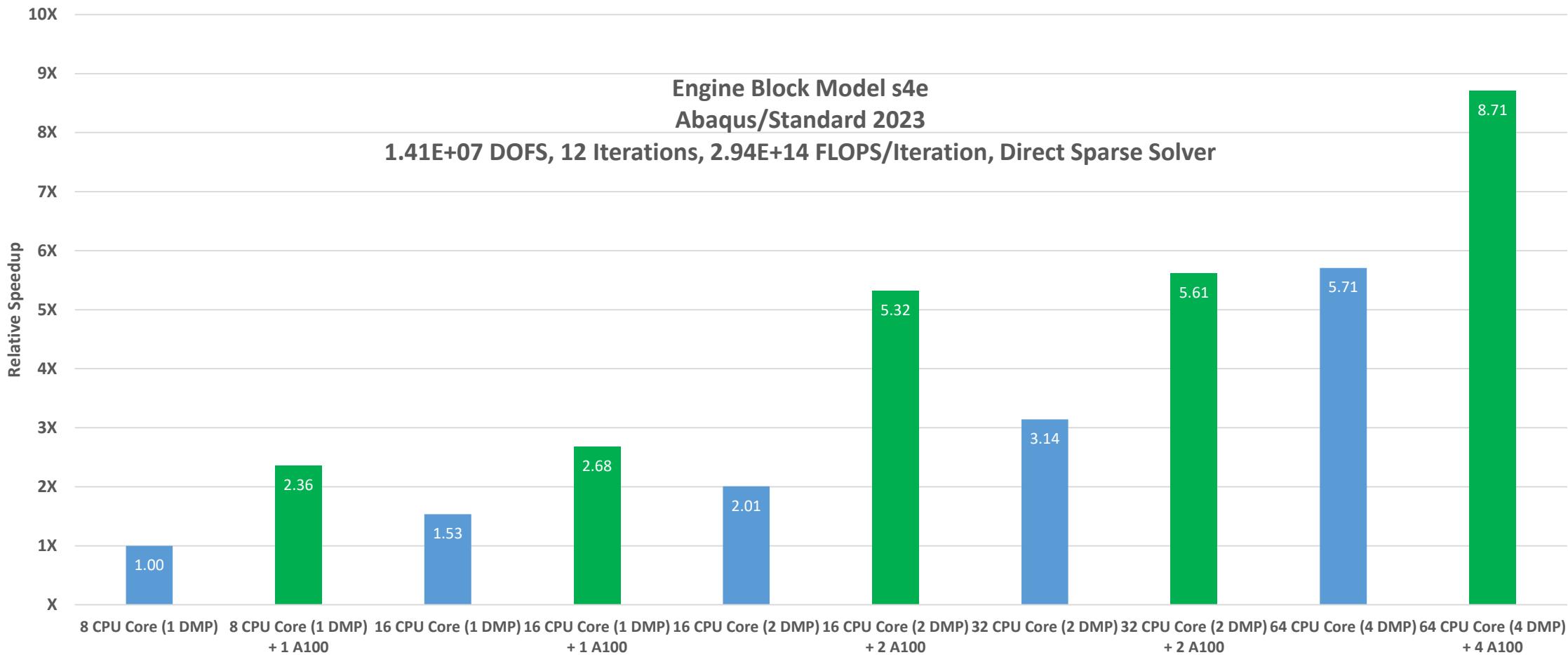
9.71

4.97

11.25

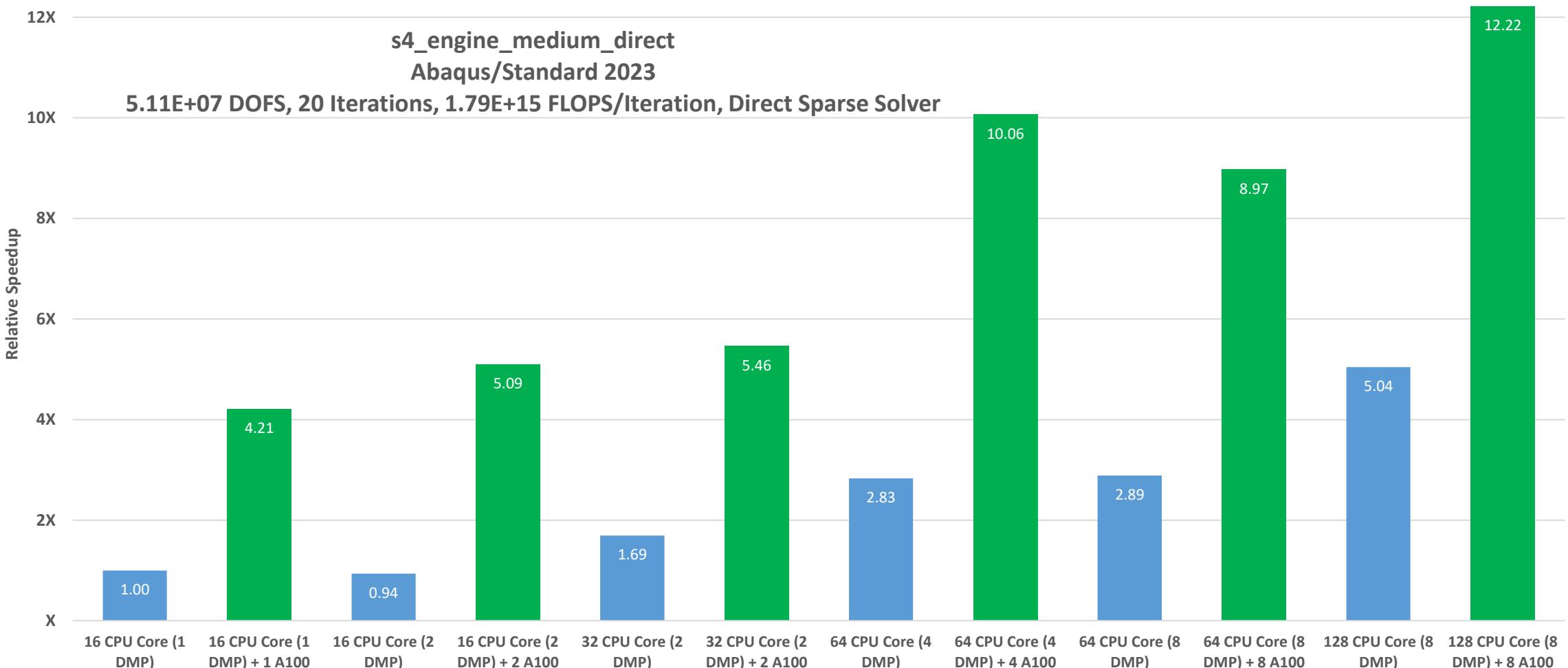
Runtime Configuration

DGX A100 workstation with 2x AMD EPYC 7742 64-Core Processors, HT On, 2TB Ram, 8x Tesla A100 80Gb Driver 470.141.10, Red Hat Enterprise 8.6



Runtime Configuration

DGX A100 workstation with 2x AMD EPYC 7742 64-Core Processors, HT On, 2TB Ram, 8x Tesla A100 80Gb Driver 470.141.10, Red Hat Enterprise 8.6

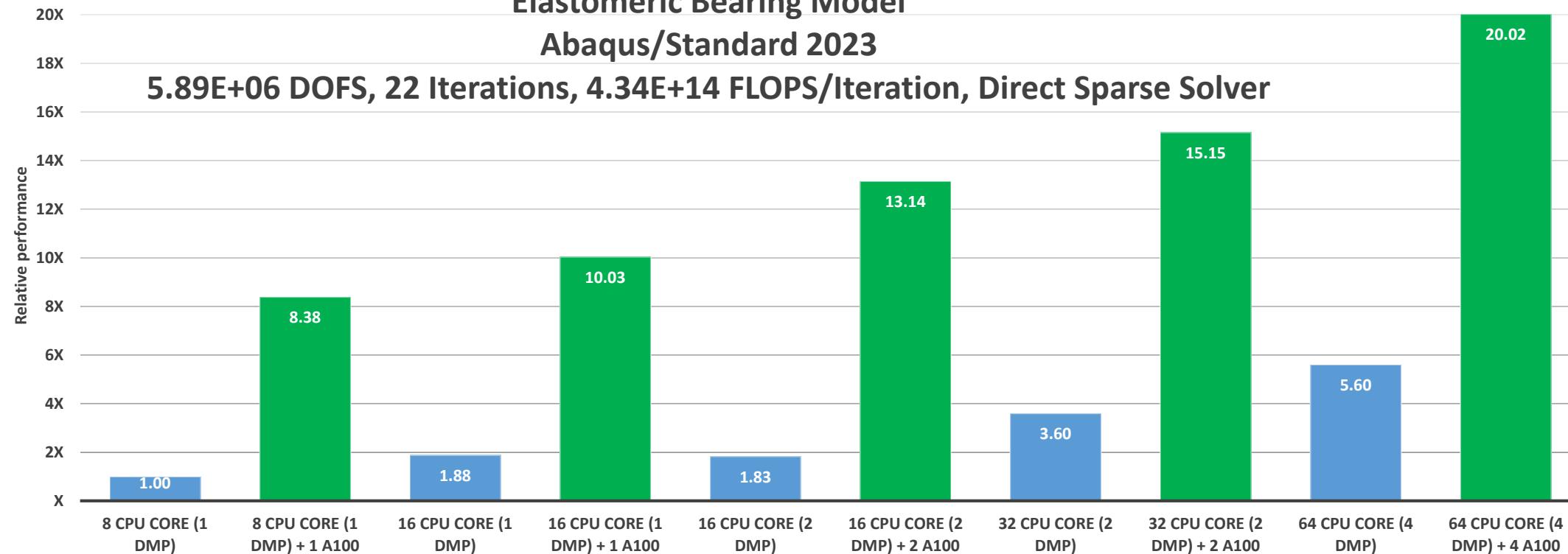


DGX A100 workstation with 2x AMD EPYC 7742 64-Core Processors, HT On, 2TB Ram, 8x Tesla A100 80Gb Driver 470.141.10, Red Hat Enterprise 8.6
5.11E+07 DOFS, 20 Iterations, 1.79E+15 FLOPS/Iteration, Direct Sparse Solver

Elastomeric Bearing Model

Abaqus/Standard 2023

5.89E+06 DOFS, 22 Iterations, 4.34E+14 FLOPS/Iteration, Direct Sparse Solver



Runtime Configuration

DGX A100 workstation with 2x AMD EPYC 7742 64-Core Processors, HT On, 2TB Ram, 8x Tesla A100 80Gb Driver 470.141.10, Red Hat Enterprise 8.6