

# STAR-CCM+ Benchmark Results for BoxClusterNXi/DSN

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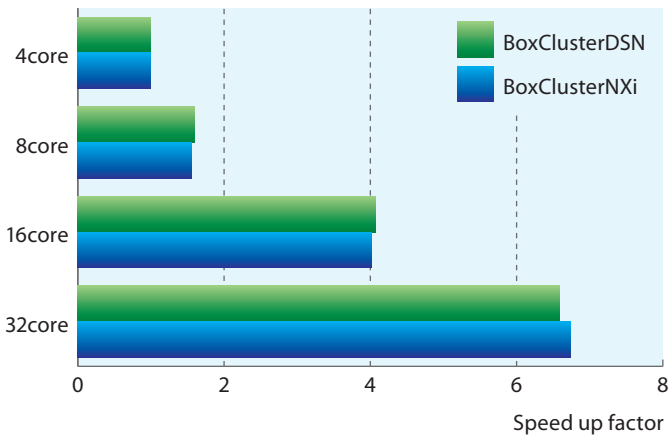
The benchmark test of CD-adapco's STAR-CCM+ v4.02 has been performed on both **BoxClusterNXi** (released) and **BoxClusterDSN** (new system scheduled to launch in July 2009, 32core 192GB memory in one box system). The good scalability has been shown in both systems below for multi core environment.

Two models are used for benchmarking the STAR-CCM+ 4.02.007. Each model has following characteristics:

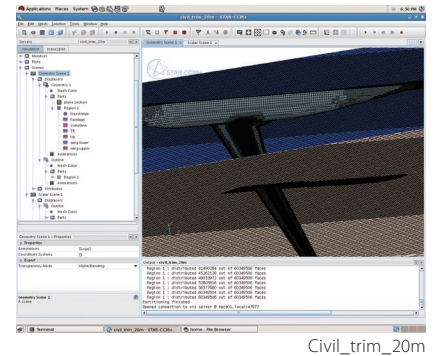
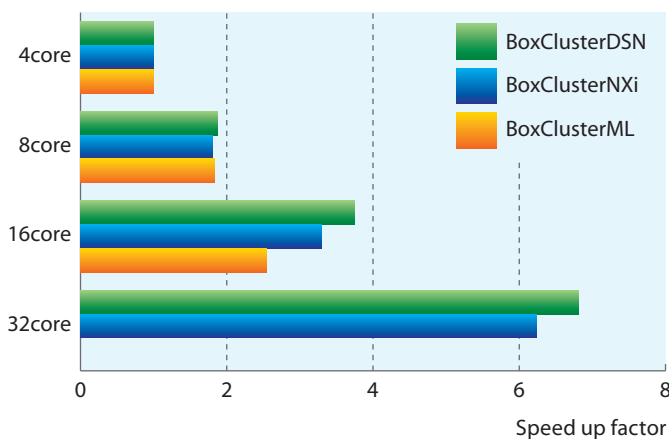
| Model    | Civil_trim_20m | Lemans_poly_17m |
|----------|----------------|-----------------|
| Cells    | 20,229,005     | 17,231,394      |
| Faces    | 60,349,506     | 114,159,241     |
| Vertices | 20,274,462     | 95,305,955      |

Each model has run 20 iterations and the solver time as recorded as the benchmark results below. The scalability of each model for **BoxClusterNXi** and **BoxClusterDSN** has also shown as a graph.

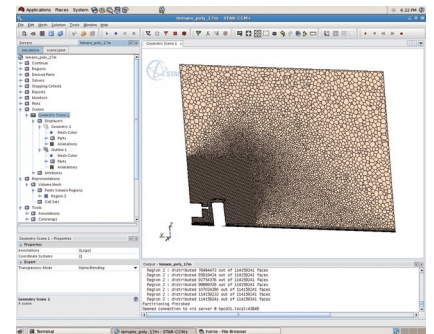
## Civil\_trim\_20m



## Lemans\_poly\_17m



Civil\_trim\_20m



Lemans\_poly\_17m

| No. of core | Solver time / iteration (sec) |               |
|-------------|-------------------------------|---------------|
|             | BoxClusterNXi                 | BoxClusterDSN |
| 4           | 203.4                         | 242.1         |
| 8           | 131.2                         | 151.3         |
| 16          | 50.7                          | 59.5          |
| 32          | 30.2*                         | 36.8          |

\* For BoxClusterNXi, two systems were connected together via GbE cable.

| No. of core | Solver time / iteration (sec) |               |              |
|-------------|-------------------------------|---------------|--------------|
|             | BoxClusterNXi                 | BoxClusterDSN | BoxClusterML |
| 4           | 88.3                          | 116.2         | 133.28       |
| 8           | 48.9                          | 62.2          | 72.73        |
| 16          | 26.7                          | 31.0          | 52.52        |
| 32          | 14.2*                         | 17.1          |              |

\* For BoxClusterNXi, two systems were connected together via GbE cable.