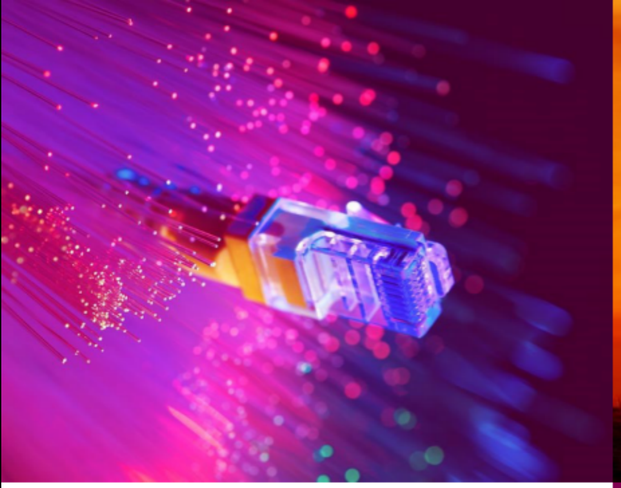


LUMI overview

Towards exascale solutions in Green function methods and advanced DFT


CSC – Finnish expertise in ICT for research, education and public administration

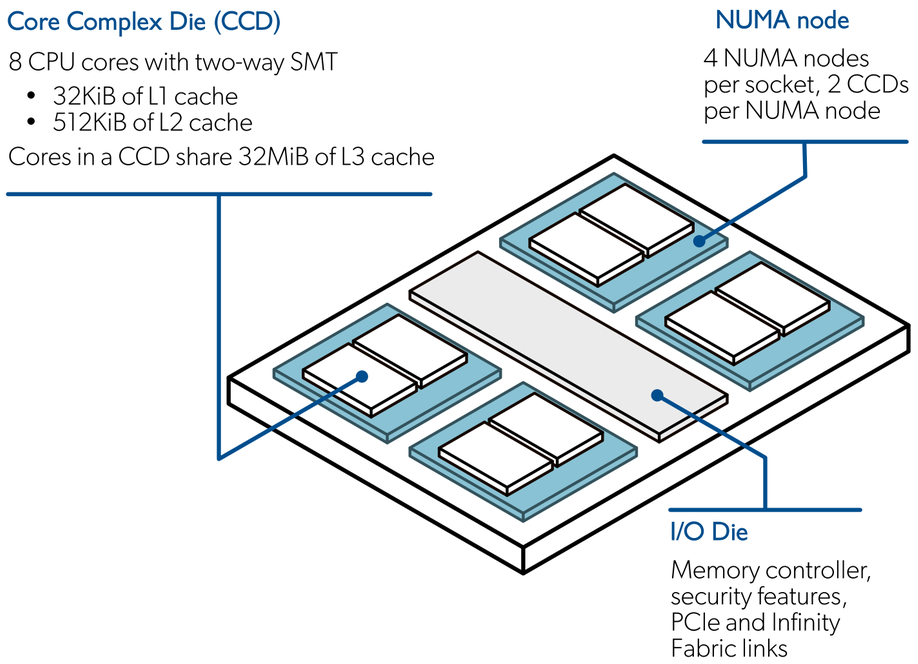
Brief LUMI overview

LUMI supercomputer

- LUMI is pan-European supercomputer funded by EuroHPC Joint Undertaking and the LUMI consortium
  - Finland, Sweden, Norway, Denmark, Iceland, Estonia, Belgium, Poland, Czech, Switzerland
- CPU partition: ~1500 nodes with AMD 128 core CPUs
- GPU partition: ~3000 nodes, each with 4 AMD MI250X GPUs
  - Currently, the fastest system in Europe and 3rd in the world
- Hosted in CSC datacenter in Kajaani (~600 km north of Helsinki)

LUMI CPU nodes

- Two CPUs per node
  - Base frequency 2.45 GHZ, turbo 3.5 GHz
  - Support 2-way SMT
- Each NUMA domain has 16 CPU cores
- Two memory channels assigned for each NUMA domain
  - Max bandwidth for NUMA domain
- Single 200 Gb/s network link per node



AMD EPYC CPU

LUMI GPU nodes

- Four MI250X cards per node
  - Effectively 8 GPUs per node
- Four 200 Gb/s network links per node directly on GPUs