ExaNeSt – The Nest For ExaScale

- **ARMv8, UNIMEM** Partitioned Global Address Space (PGAS)
  - low energy compute
  - low overhead communicate
  - FPGA-assisted acceleration
- **Network**: unified compute & storage, low latency
- **Storage**: distributed, *in-node* non-volatile memories
- Real **Applications**: Scientific, Engineering, Data Analytics
- Data Centre **Infrastructure** (Power and Cooling): Total Liquid Cooling, Liquid Cooled AC to 48V to POL
- **Prototype**: 1K cores, 16GBytes DDR4 per FPGA
Prototypes & Ambition

- Hot Water Cooling (>50C), Heat Capture Functions
- 100kW cabinets (small footprint), 1.0x PUE, >0.9 ERF Potential
- 48V DC Power Distribution
- Potential for High Density Data Centres or Modular Facilities:

1MW of HPC

OUR AMBITION!

In 40ft ISO or 10mx2.4m

4x(ARM+FPGA) per n
16x n per u
2kW-3.2kW per u
Short Depth Cabinets

ExaNest ; Peter Hopton http://TheCoolingGuy.me