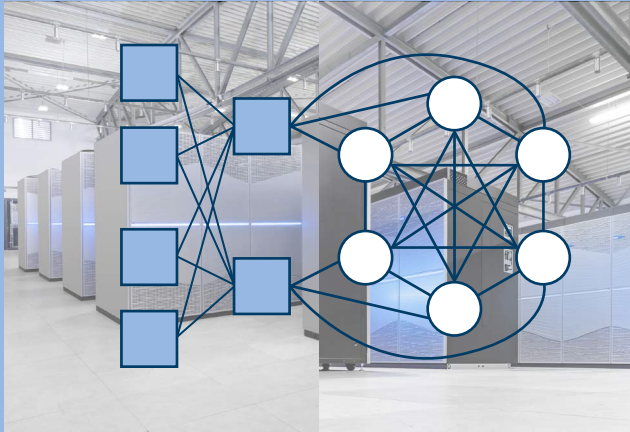


# JUWELS

## TIER-0 MODULAR SUPERCOMPUTER



### JUWELS Module Supercomputer

- Combines versatile CPU-based cluster with large node count with extreme-scale GPU capabilities
- Follows the path demonstrated by the JURECA modular supercomputer and the DEEP series of projects
- Applications can be mapped to individual modules or distributed across both
- Project partners: Eviden, NVIDIA, ParTec

### System architecture

#### Cluster module:

- 48 Intel Skylake cores per node (20 on GPU nodes), total of 120,528 CPU cores + 2,240 CPU cores on the GPU nodes
- Total of 269 TB main memory
- 12 PF/s peak performance

#### Booster module:

- 48 AMD EPYC cores per node, total of 44,928 CPU cores
- 4x A100 GPUs per node (total of 3744 GPUs) with 4x HDR200 HCAs for balanced communication performance
- Total of 150 TB GPU memory, 479 TB main memory
- 73 PF/s peak performance (GPUs) + 1 PF/s (CPUs)

#### Fabric:

- Pruned EDR/HDR fat tree + HDR Dragonfly+
- 40 Tb/s cross-module communication bandwidth

### Software

- Unified software stack leveraging EasyBuild
- Rocky Linux
- SLURM batch system with ParaStation resource management
- GCC / NVHPC compilers
- ParaStation MPI / Open MPI



JUWELS Cluster module



JUWELS Booster module