LRZ Linux Cluster Overview

The LRZ Linux Cluster consists of several segments with different types of interconnect and different sizes of shared memory. All systems have a (virtual) 64 bit address space:

- CooLMUC2 Cluster with 28-way Haswell-based nodes and FDR14 Infiniband interconnect, used for both serial and parallel processing
- Intel Broadwell based 6 TByte shared memory server HP DL580 "Teramem"
- CooLMUC3 Cluster with 64-way KNL 7210-F many-core processors and Intel Omnipath OPA1 interconnect, for parallel/vector processing
- IvyMUC Cluster with 8-way Ivy Bridge-based nodes and FDR14 Infiniband interconnect, used for parallel processing

Based on the various node types the LRZ Linux cluster offers a wide span of capabilities:

- mixed shared and distributed memory
- large software portfolio
- flexible usage due to various available memory sizes
- parallelization by message passing (MPI)
- shared memory parallelization with OpenMP or pthreads
- mixed (hybrid) programming with MPI and OpenMP