Usage of IT4Innovations' Karolina Cluster

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EUROPEAN UNION
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Karolina Cluster

- Login Nodes: `login[1-4].karolina.it4i.cz`
  SSH/VNC to one of them to start compute jobs

  Attention:
  `login.karolina.it4i.cz` is selecting login nodes by round robin!

- Compute Nodes:
  - Universal compute node `cn[001-720]` (2x AMD Zen 2 EPYC 7H12, 256 GB)
  - **Accelerated compute node** `acn[01-72]` (2x AMD Zen 3 EPYC 7763 1 TB + 8x NVIDIA A100 40 GB)
  - Data analytics node `sdf1` (32x Intel Xeon-SC 8268 24 TB)
  - Cloud compute node `cln[01-36]` (2x AMD Zen 2 EPYC 7H12 256 GB)

More information in our documentation on ▸ Hardware Overview and ▸ Compute Nodes.

SSH/VNC Access

Instructions on SSH are in our documentation for:

- Linux/Mac: ▸ Accessing the Clusters
- Windows: ▸ PuTTY

For a GUI interface, use VNC:

1. Select one login node and log on: `login[1-4].karolina.it4i.cz`
2. Start VNCServer: `$ vncserver` (note the returned port `:#`)
3. Establish a SSH tunnel connecting the remote port `:#` to your localhost
4. Start a VNCViewer and connect to selected port on localhost

Instructions for VNC with Linux, Mac and Windows clients are ▸ here

Module System

Load software, tools, and libraries with `module` command:

- Show avilable modules:
  ```
  $ module available
  ```
- Show currently loaded modules:
  ```
  $ module list
  ```
- GCC 12.1.0:
  ```
  $ module load GCC/12.1.0
  ```
- Intel MKL 2022.1:
  ```
  $ module load imkl/2022.1.0
  ```

Reservation 07-12-2022

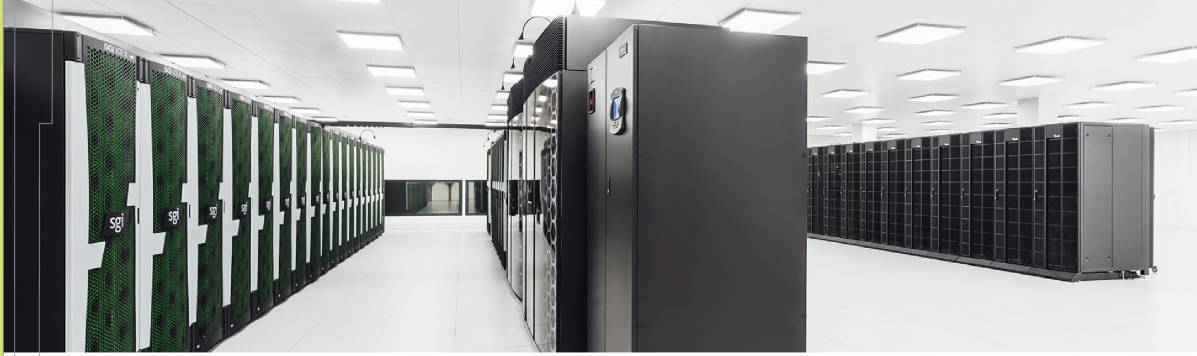
- Start a compute job with one GPU and one MPI process:
  ```
  $ qsub -A DD-22-69 -q R1636211 -l
  select=1:ngpus=1:mpiprocs=1,walltime=8:00:00 -I
  ```
- Start a compute job with one GPU, one MPI process and two OpenMP threads:
  ```
  $ qsub -A DD-22-69 -q R1636211 -l
  select=1:ngpus=1:mpiprocs=1:ompthreads=2,walltime=8:00:00 -I
  ```
- Start a compute job with two GPUs, two MPI processes and four OpenMP threads:
  ```
  $ qsub -A DD-22-69 -q R1636211 -l
  select=1:ngpus=2:mpiprocs=2:ompthreads=4,walltime=8:00:00 -I
  ```

Note: Commands are one line!

Reservation 08-12-2022

- Start a compute job with one GPU and one MPI process:
  ```
  $ qsub -A DD-22-69 -q R1636217 -l
  select=1:ngpus=1:mpiprocs=1,walltime=8:00:00 -I
  ```
- Start a compute job with one GPU, one MPI process and two OpenMP threads:
  ```
  $ qsub -A DD-22-69 -q R1636217 -l
  select=1:ngpus=1:mpiprocs=1:ompthreads=2,walltime=8:00:00 -I
  ```
- Start a compute job with two GPUs, two MPI processes and four OpenMP threads:
  ```
  $ qsub -A DD-22-69 -q R1636217 -l
  select=1:ngpus=2:mpiprocs=2:ompthreads=4,walltime=8:00:00 -I
  ```

Note: Commands are one line!



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