

Erlangen Regional
Computing Center



FRIEDRICH-ALEXANDER
UNIVERSITÄT
ERLANGEN-NÜRNBERG

Introduction to HPC Systems at RRZE

<https://hpc.fau.de>



Who are we?

■ TIER 2 academic **HPC computing center**



- 2 main and 4 special purpose systems
- In total 1659 nodes and 134 GPGPUs
- 4 people for software and support
- 2 system administrators




■ Associated computer science **research group**

- Performance Engineering
- Performance Modeling
- **Tool development**
- Sparse and stencil solvers



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- 728 compute nodes
 - 2x Intel Xeon E5-2630 v4 @ 2.2GHz (10 cores per socket + **SMT**)
 - 64 GB RAM
 - Intel OmniPath interconnect:
≈ 100Gbit/s bi-directional
 - Lustre-based parallel filesystem:
≈ 1 PB capacity
 - **No** local disks
 - Batch system  MEGWARE Turm
 - Vendor:



How to get an account?

- Each user gets an own account:
 - m85q00**xx**
 - \$HOME with 10GB capacity (NFS)
- Contact via private Zoom chat:
 - Thomas Gruber
 - Gerald Mathias
 - Carla Guillen
- Please prepare passport or identification card

- Connect to dialog server:
ssh m85q00XX@cshpc.rrze.fau.de
- Nomachine NX with KDE3:
 - Protocol SSH
 - Use the system login
 - Authentication by Password
 - Start KDE3: starttde
- Connect to frontends of meggie:
ssh meggie

- Software environment:
 - CentOS with common `module` software system
 - Intel compiler/mpi/mkl module: `intel64`
 - Intel OneAPI module: `oneapi`
 - LIKWID module: `likwid/5.0.1`
- **All compilation must be done on frontends**
Compute nodes don't have any headers

Open two shells:

- Compilation
- Running

- Interactive batch job:

```
srun -N x -t 08:00:00 \  
--reservation=PRACE-dayY \  
-C hwperf \  
--pty /bin/bash -l
```

Y = {1,2,3}

Hardware
counter access

Inherit modules
from frontend
and more

- Always exclusive access to nodes