Building and Running applications on SuperMUC-NG

Environment Modules

Environment modules are used on the LRZ HPC systems to manage the environment variables in shells and scripting languages. They also permit to provide multiple versions of packages. With the installation of SuperMUC-NG, LRZ gradually changes its software deployment process from manually built packages to automated builds with Spack.

- See: Environment Modules

Programming Environment on compute nodes

Because the operating system on the compute nodes is "diskless", the programming environment is not complete there. Typically you have to compile and link on the login nodes. Also you have to load the following module, if you want to use limited functions of the compilers on the compute nodes:

```bash
module load slurm_setup
```

Compilers

Intel, gnu and PGI compilers are available.

- see: Compilers and Languages for HPC
- see: Most important Intel Compiler Options and Directives

Optimization

- see: Tuning and Optimization for HPC

Libraries

- see: Numerical Libraries for HPC Applications
- see: IO Libraries and Tools for HPC Systems
- Execute command: module avail

Parallel Execution

- see: Parallel Execution Environments for HPC Systems

Software

- see: HPC Software and Programming Support