# Access and Overview of HPC Systems

For conditions and procedure for getting access to the systems see the bottom of the page.

## Hardware Overview

### System Name | Architecture | Total Numbers | Max Job Limits | How to get access
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SuperMUC-NG | ("Skylake") | 48 | 96 | 6336 | 304128 | 3168 | 152064 | 48h | micro, general | login skx. supermuc.lrz.de
SuperMUC-NG Fat Nodes | Intel Xeon ("Skylake") | 48 | 96 | 32 | 1536 | 8 | 384 | tbd | test, general, large | login skx. supermuc.lrz.de
SuperMUC-NG Cloud | Intel Xeon ("Skylake") + 2x Nvidia V100 | 48 | 96 | 32 | 1536 | 8 | 384 | tbd | test, general, large | login skx. supermuc.lrz.de
SuperMUC Phase 1 Fat Nodes | Intel Xeon E7-4870 ("Westmere") | 40 | 256 | 205 | 8200 | 52 | 2080 | 192h | fat, fatter | login wmr. supermuc.lrz.de
SuperMUC Phase 1 Thin Nodes | Intel Xeon E5-2680 ("Sandy Bridge") | 16 | 32 | 9216 | 147456 | 4096 | 65538 | tbd | test, general | login sb.supermuc.lrz.de
SuperMUC Phase 2 Big Nodes | Intel Xeon E5-2697 v3 ("Haswell") | 28 | 256 | 8 | 224 | 8 | 224 | 6h | test, micro, general | login hw. supermuc.lrz.de
SuperMUC Phase 2 Haswell Nodes | Intel Xeon E5-2697 v3 ("Haswell") | 28 | 64 | 3072 | 86016 | 512 | 14336 | 48h | test, micro, general | login hw. supermuc.lrz.de
SuperMUC Phase 2 Remote Visualization | Intel Xeon E5-2650 v2 ("Ivy Bridge") + Nvidia GPU K20x | 16 | 128 | 8 | 128 + GPU | 64 | 800 | 48h | test, submit job | login sb.supermuc.lrz.de
SuperMUC Phase 2 Remote Visualization | Intel Xeon E5-2697 v3 ("Haswell") + Nvidia GPU K40 | 28 | 256 | 3 | 84 + GPU | 28 | 2080 | 48h | test, submit job | login hw. supermuc.lrz.de
Linux Cluster CoolMUC-2 | Intel Xeon E5-2690 v3 ("Haswell") | 28 | 64 | 3072 | 86016 | 512 | 14336 | 48h | test, micro, general | submit job
Linux Cluster CoolMUC-3 | Intel Xeon Phi (Knights Landing) | 64 | 96 | 148 | 9472 | 25 | 1600 | 48h | mpp3 | login lxlogin8.lrz.de
Linux Cluster IvyMUC | Intel Xeon E5-2650 ("Ivy Bridge") | 16 | 96 | 148 | 9472 | 25 | 1600 | 48h | mpp3 | login lxlogin10.lrz.de
Linux Cluster Teramem | Intel Xeon E7-8890 v4 ("Broadwell") | 96 | 6144 | 1 | 96 | 1 | 96 | 48h | inter | login lxlogin5.lrz.de, lxlogin6.lrz.de, lxlogin7.lrz.de
Machine Learning Systems | GPU Cloud | 128 | 128 | 128 | 128 + GPU | 1 | 1 | 12h | submit job | login www.datalab.lrz.de
Machine Learning Systems | DGX-1 and DGX-1v | 8 | 128 | 128 + GPU | 2 | n.a. | n.a. | 12h | contact servicedesk, www.datalab.lrz.de
### How to get access to the resources:

- **SuperMUC and SuperMUC-NG**: Scientists in Europe are eligible, proposals for computing time are reviewed.
  - German scientists applying for less than 35 Mio CPUh apply here: [https://www.lrz.de/services/compute/supermuc/access_and_login/](https://www.lrz.de/services/compute/supermuc/access_and_login/).
  - For more than 35 Mio CPUh please apply at the GCS (Gauss Centre for Supercomputing) Website [http://www.gauss-centre.eu/large-scale-application](http://www.gauss-centre.eu/large-scale-application).
  - Other European scientists apply via the PRACE Website [http://www.prace-ri.eu/prace-project-access/](http://www.prace-ri.eu/prace-project-access/).
  - Storage available for SuperMUC: WORK: 3.5 PB/15 PB for all users, GPFS
  - **Linux Cluster**: All members from Bavarian Universities are eligible, no computing budget limits, users are served on a "first-come-first serve" basis.
    - For a proposal see here: [https://www.lrz.de/services/compute/application/](https://www.lrz.de/services/compute/application/).
    - Storage available for Linux Cluster: HOME: 5 GB / WORK: 5TB / SCRATCH: 1400TB, GPFS for all users
  - **Machine Learning System**: Access on request. Please submit an Incident Ticket at the service desk [https://servicedesk.lrz.de/de](https://servicedesk.lrz.de/de)
  - **LRZ Computing Cloud**: All members of the Munich Universities are eligible (TUM, LMU, FHM). Please apply here: [https://www.cloud.mwn.de/](https://www.cloud.mwn.de/)
  - **VMs**: Virtual Machines on request. Please submit an Incident Ticket at the service desk [https://servicedesk.lrz.de/de](https://servicedesk.lrz.de/de)