

## Tutorial for new users

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### Part 1 (overview)

Aim: support MPG scientist in data analysis, development etc.

MPCDF operate:

- several mid-range compute clusters,
- long-term storage tape archives,...
- remote-visualization infrastructure (hardware, software)
- see webpage ([docs.mpcdf.mpg.de](https://docs.mpcdf.mpg.de))

Systems:

- HPC systems (Raven, Cobra, Draco), 5 year renewal cycle
- Manage Linux clusters owned by various institutes
- RVS (remote visualization): [rvs.mpcdf.mpg.de](https://rvs.mpcdf.mpg.de), purely browser based, OpenGL rendering
- Jupyter notebook service
- HPC performance monitoring service ([hpc-reports.mpcdf.mpg.de](https://hpc-reports.mpcdf.mpg.de))
- Data service: <https://gitlab.mpcdf.mpg.de> (also wikis, issues, boards) Sign-in: [selfservice.mpcdf.mpg.de](https://selfservice.mpcdf.mpg.de) ; allows guest accounts
- owncloud: [datashare.mpcdf.mpg.de](https://datashare.mpcdf.mpg.de) (sign-up: [selfservice.mpcdf.mpg.de](https://selfservice.mpcdf.mpg.de), allows guest accounts)
- Account at mpcdf: [www.mpcdf.mpg.de](https://www.mpcdf.mpg.de) (For users - new users) **Needs approval by director or representative**

Accessing the clusters:

- Login through gateway machine ([gatezero.mpcdf.mpg.de](https://gatezero.mpcdf.mpg.de))
- Uses 2-factor authentication; needs OTP token
- Machines to connect: raven, cobra, draco e.g. `ssh raven.mpcdf.mpg.de`

Software on the cluster:

- wide range of compilers & libraries
- pre-built applications
- activate through environment modules
- containers: "last resort" solution if software cannot be compiled
- Charliecloud & Singularity are available

Filesystems:

- `/u` home, code, config
- `/ptmp` High performance FS (50-100GB/s)
- cross-mounts between the clusters (`/raven` `/cobra` `/draco`)

Resource manager / scheduler:

- SLURM