

TDDE65: Quick reference for Sigma

VER. 2026-03-30

!! See also NSC presentation slides + website and TDDE65 lab compendium !!

Before starting

SSH to Sigma: `ssh [Sigma username]@sigma.nsc.liu.se`

- Load compiler module:
`module load buildenv-intel/2023.1.0-oneapi`
- Select today's reservation, example:
`userreservation tdde65-2026-04-08`

Recommended compiler

C `icc / mpiicc`
C++ `icpc / mpiicpc`

OpenMP: Add flag `-fopenmp`

SLURM commands

- `projinfo`
- see info about all projects you are member of.
- `listreservations`
lists available reservations.
- `userreservation`
set a reservation as default for this login session.
- `salloc/ompsalloc`
request compute nodes when needed
This is the **recommended way** to work in this course
- `squeue` (`-u` for your user, `-A` for a particular project)
lists jobs, SLURMs view
- `sbatch`
submits a jobscript to run later on the compute nodes.
- `scancel`
cancels/deletes a job.
- `interactive`
create interactive shell on compute nodes.
- `jobsh`
ssh-like access to allocated nodes / job.

Using salloc

```
salloc <RESOURCE SPEC> mpprun ./bin [args]
ompsalloc <RESOURCE SPEC> ./bin [args]
```

Resource specification

- `-N` asks for a number of nodes, example (2 nodes, 64 cores): `-N2` (normally not used)
- `-n` asks for a number of tasks, example (16 tasks, 16 cores): `-n16`
- `-c` ask for a number of cores per task (for use with OpenMP):
Example: `ompsalloc -c10` (> OpenMP run with 10 threads)
- `-t`, format is either minutes or hh:mm:ss, example: `-t60` or `-t1:00:00`

For debugging

Build with `-g` flag. Run in interactive mode:

- `interactive <RESOURCE SPEC>`

DDT

- `module load arm-DDT/25.1.2`

Graphical debugger, requires a ThinLinc session and **interactive** mode.

- `ddt -mpi=intel-mpi -n 4 ./bin [args]`

ITAC

Build with `mpiicc -trace`

Start with `salloc + mpprun`

Analyze trace file (.stf) with `traceanalyzer [trace file name]`

ThinLinc Client

- `module load course/TDDE65`
- `tlclient`

Reservations for project LiU-compute-2026-7

- `listreservations`

tdde65-2026-04-08 from 2026-04-08T15:15:00 to 2026-04-08T17:00:00
tdde65-2026-04-15 from 2026-04-15T13:15:00 to 2026-04-15T15:00:00
tdde65-2026-04-21 from 2026-04-21T10:15:00 to 2026-04-21T12:00:00
tdde65-2026-04-28 from 2026-04-28T10:15:00 to 2026-04-28T12:00:00
tdde65-2026-04-29 from 2026-04-29T15:15:00 to 2026-04-29T17:00:00
tdde65-2026-05-06 from 2026-05-06T13:15:00 to 2026-05-06T15:00:00
tdde65-2026-05-08 from 2026-05-08T08:15:00 to 2026-05-08T10:00:00
tdde65-2026-05-13 from 2026-05-13T13:15:00 to 2026-05-13T17:00:00
tdde65-2026-05-20 from 2026-05-20T13:15:00 to 2026-05-20T15:00:00

`userreservation devel`