

Compute node partitions

The compute nodes Lise in Berlin (blogin.hlrn.de) and Emmy in Göttingen (glogin.hlrn.de) have the following partitions:

Lise (Berlin)

Partition (number holds cores per node)	Node name	Max. walltime	Nodes	Max. nodes per job	Max. jobs (running / queued) per user	Usable memory MB per node	CPU	Shared	NPL per node hour	Remark
standard96	bcn#	12:00:00	1204	512	16 / 500	362 000	Cascade 9242		14	default partition
standard96:test	bcn#	1:00:00	32 dedicated +128 on demand	16	1 / 500	362 000	Cascade 9242		14	test nodes with higher priority but lower walltime
large96	bfm#	12:00:00	28	4	16 / 500	747 000	Cascade 9242		21	fat nodes
large96:test	bfm#	1:00:00	2 dedicated +2 on demand	2	1 / 500	747 000	Cascade 9242		21	fat test nodes with higher priority but lower walltime
large96:shared	bfm#	48:00:00	2 dedicated	1	16 / 500	747 000	Cascade 9242		21	fat nodes for data pre- and postprocessing
huge96	bsn#	24:00:00	2	1	16 / 500	1522 000	Cascade 9242		28	very fat nodes for data pre- and postprocessing

12 hours are too short? See [here](#) how to pass the 12h walltime limit with job dependencies.

Emmy (Göttingen)

Partition (number holds cores per node)	Node name	Max. walltime	Nodes	Max. nodes per job	Max. jobs per user	Usable memory MB per node	CPU, GPU type	Shared	NPL per node hour	Remark
standard96	gcn#	12:00:00	924	256	unlimited	362 000	Cascade 9242		14	default partition
standard96:test	gcn#	1:00:00	16 dedicated +48 on demand	16	unlimited	362 000	Cascade 9242		14	test nodes with higher priority but lower walltime
large96	gfn#	12:00:00	12	2	unlimited	747 000	Cascade 9242		21	fat nodes
large96:test	gfn#	1:00:00	2 dedicated +2 on demand	2	unlimited	747 000	Cascade 9242		21	fat test nodes with higher priority but lower walltime
large96:shared	gfn#	48:00:00	2 dedicated +2 on demand	1	unlimited	747 000	Cascade 9242		21	fat nodes for data pre- and postprocessing
huge96	gsn#	24:00:00	2	1	unlimited	1522 000	Cascade 9242		28	very fat nodes for data pre- and postprocessing
medium40	gcn#	48:00:00	368	128	unlimited	181 000	Skylake 6148		6	
medium40:test	gcn#	1:00:00	32 dedicated +96 on demand	8	unlimited	181 000	Skylake 6148		6	test nodes with higher priority but lower walltime
large40	gfn#	48:00:00	11	4	unlimited	764 000	Skylake 6148		12	fat nodes
large40:test	gfn#	1:00:00	3	2	unlimited	764 000	Skylake 6148		12	fat test nodes with higher priority but lower walltime
large40:shared	gfn#	48:00:00	2	1	unlimited	764 000	Skylake 6148		12	for data pre- and postprocessing
gpu	ggpu#	12:00:00	3	3	unlimited	764 000	Skylake 6148 + Tesla V100		12	see GPU Usage

Which partition to choose?

If you do not request a partition, you will be placed on to the default partition, which is **standard96**.

The default partitions are suitable for most calculations. The `.test` partitions are, as the name suggests, intended for shorter and smaller test runs. These have a higher priority and a few dedicated nodes, but are limited in time and number of nodes. Shared nodes are suitable for post-processing. A job running on a shared node is only accounted for its core fraction (cores of job / all cores per node). All non shared nodes are exclusive to one job, which implies that full **NPL** are paid.

Details about the CPU/GPU types can be found below.
The network topology is described [here](#).

The available home/local-ssd/work/perm storages are discussed in [File Systems](#).

An overview of all partitions and node statuses is provided by: `sinfo -r`
To see detailed information about a nodes type: `scontrol show node <nodename>`

List of CPUs and GPUs at HLRN

Shortname	Link to manufacturer specifications	Where to find	Units per node	Cores per unit	GHz per core
Cascade 9242	Intel Cascade Lake Platinum 9242 (CLX-AP)	Lise's compute partitions	2	48	2.4
Cascade 4210	Intel Cascade Lake Silver 4210 (CLX)	Lise's login nodes	2	10	2.2
Skylake 6148	Intel Skylake Gold 6148	Emmy's compute partitions	2	20	2.3
Tesla V100	NVIDIA Tesla V100 32GB	Emmy's compute partitions	4	640/5120*	

*Tensor Cores / CUDA Cores