Snellius and Lisa

Synopsis

This page is the root entry point to technical and administrative documentation for (potential) users of the Dutch national supercomputer Snellius, and the Dutch national compute cluster, Lisa.

Snellius and Lisa, similarities and differences

Lisa and Snellius both are compute facilities, clusters on which compute jobs can be run that utilise one node, or multiple nodes in parallel in an orchestrated way. However, both systems are funded differently and consequently options and conditions for obtaining access to either or both of these systems may not be the same for all potential users. In addition, both compute facilities are definitely systems in their own right, with different node flavours and other resource features.

While both systems are optimised to match their specific resources, SURF strives to optimise commonality between the two systems from a user perspective. In our view, it should be easy for users to go from one system to another in either direction, or to have projects on both systems, without a steep learning curve.

Snellius

Snellius is the Dutch national supercomputer. Snellius is a general purpose capability system and is designed to be a well balanced system. If you need one or more of: many cores, large symmetric multi-processing nodes, high memory, a fast interconnect, a lot of work space on disk, or a fast I/O subsystem then Snellius is the machine of choice.

Snellius is accessible at the address:

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snellius.surf.nl
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For questions and requests please open a request at our ServiceDesk.

Information on getting access to Snellius can be found here.

Quick system overview

(see here for detailed hardware information)

#	Type of node	Characteristic
3	interactive login	16 cores/node 256 GiB memory/node
504	"thin" CPU	128 cores/node 256 GiB memory/node
72	high memory "fat" CPU	128 cores/node 1 TiB memory/node
2	very high memory CPU	128 cores/node 4TiB memory/node
2	very high memory CPU	128 cores/node 8TiB memory/node
36	GPU	72 CPU cores/node 4 attached NVIDIA A100/node
7	Service	16 CPU cores/node
Interconnect		

Infiniband HDR100 (100Gbps), fat tree

Lisa

The Lisa Cluster is meant for those in need of large computing capacities, but do not need the facilities of a real supercomputer. The system offers a large number of multi-core nodes.

Lisa is accessible at the address:

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lisa.surfsara.nl
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For questions and requests please open a request at our ServiceDesk.

Information on getting access to Lisa can be found here .

Quick system overview

(See here for detailed hardware information)

#	Type of node	Characteristic
2	interactive login CPU	16 cores/node 256 GiB memory /node
1	interactive login GPU	12 cores/node 4 GeForce 1080Ti/node
192	"thin" CPU (Gold 6130)	16 cores/node 96 GiB memory /node
96	"thin" CPU (Silver 4110)	16 cores/node 96 GiB memory /node
6	"thin" CPU (gold_6230R)	52 cores/node 384 GiB memory /node
1	high memory "fat" CPU	48 cores/node 2 TiB memory /node
23	GPU GeForce 1080Ti	12 CPU cores /node 4 GeForce 1080Ti/node
2	GPU Titan V	12 CPU cores /node 4 Titan V/node
29	GPU Titan RTX	24 CPU cores /node 4 Titan RTX/node
Interconnect		
CPU nodes	10 Gbit/s ethernet	
CPU nodes (gold_6230R)	2 x 25 Gbit/s ethernet	

GPU nodes	40 Gbit/s ethernet

Common elements

Batch and reservation system

Snellius and Lisa use the same batch system - SLURM - though at any time the supported *version* may diverge. Snellius and Lisa use the same accounting and budgeting tools, that are a site-specific add-on to the tools provided by SLURM.

Software, applications, libraries, and tooling to build your custom applications

SURF strives to have a large number of scientific application software packages, libraries, and associated tooling available on both systems. The supported version(s) of any particular application or library may diverge between Snellius and Lisa. The software is built in such a way that it is optimised for the node flavours and node-interconnect of each system. This may imply that specific optimising features are not applicable to either system.

- **Snellius and Lisa software overview**

Documentation

The overviews and guides listed below are generic in that their contents applies to both systems - and parts of it possibly even to other HPC infrastructures elsewhere.

- **HPC User Guide**