

DRAGNET GPU Cluster Specifications

Raw, theoretical specifications of the cluster. More details can be found in the tender offer.

[Cluster benchmark numbers](#) (absolute max achievable speeds for applications)

This is what the cluster looks like (except that we have 6x LAG (red) in place):

Nodes

- 1 head node
- 1 processing node
- 23 worker nodes

Head Node (1)

`dragnet.control.lofar`: login, home dirs + file server (installed programs) (NFS), job scheduling

- Intel Xeon Haswell-EP E5-1620 v3, 4 cores (8 hw threads), 3.50 GHz
- 32 GiB RAM
- 2x 1 Gb eth network
- 2x 4 TB storage (RAID-1, i.e. 4 TB netto)

Processing Node (1)

`dragproc.control.lofar`: central post-processing, database, reliable storage, secondary/backup

node for login/file server/job scheduling

- dual Intel Xeon Haswell-EP E5-2630 v3, 16 cores (32 hw threads), 2.40 GHz
- 128 GiB RAM
- 2x 1 Gb eth network
- 10 Gb eth network
- 8x 4 TB storage (RAID-6, i.e. 24 TB netto) on /data

Worker Nodes (23)

drg[01-23].control.lofar: bulk data processing, receive data from COBALT, scratch storage

- dual Intel Xeon Haswell-EP E5-2630 v3, 16 cores (32 hw threads), 2.40 GHz
- 4x NVIDIA GeForce GTX Titan X, 12 GiB RAM each (all GPUs total: 565.25 TFlop/s (FP32))
- 128 GiB RAM
- 2x 1 Gb eth network
- 10 Gb eth network
- 56 Gb FDR infiniband network
- 4x 4 TB storage (dual RAID-0, i.e. 16 TB netto; all nodes total: 368 TB) on /data1 and /data2
(Note: local per node and not redundant!)

Networking

- infiniband
- 10 Gb ethernet
- dual 1 Gb ethernet

Infiniband

- Mellanox MSX 6025F-1SFS - 36 port unmanaged FDR infiniband switch
- 5x 56G LAG to COBALT infiniband switch (~280 Gb)

10 Gb Ethernet

- Supermicro SSE-X3348S Ethernet Switch; Ports: 48x 10 Gb, 4x 40 Gb, 2x 1 Gb
- 6x 10G LAG to LOFAR Core 10 Gb network

1 Gb Ethernet

- 2x Supermicro SSE-G2252 Ethernet Switch

Support

- 4 years support contract on the complete system (delivery was on Thu+Fri 9+10 July 2015)

- delivery + installation

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