

iris cluster characteristics

Computing: 196 nodes, 5824 cores; 96 GPU Accelerators - $R_{peak} \approx 1082,47$ TFlops

Storage: 4260 TB (GPFS) + 1300 TB (Lustre) + 3188TB (Isilon/backup) + 600TB (backup)

@ Internet

Uni.lu
Internal Network

Uni.lu (Belval)
Iris cluster

@ Restena
UL external

UL internal
(Local)



ULHPC Site router

2x 10 GbE

2x 40 GbE QSFP+

10 GbE SFP+

lb1, lb2...

Load Balancer(s)

(SSH ballast, HAProxy,
Apache ReverseProxy...)

access1



access2

2x Dell R630 (2U)
(2*12c Intel Xeon E5-2650 v4 (2,2GHz)

User Cluster Frontend Access

Fast local interconnect
(Fat-Tree Infiniband EDR)
100 Gb/s

adminfront1



adminfront2

slurm1 puppet1 dns1

brightmanager1 ...

dns2 puppet2 slurm2

... brightmanager2

2x Dell R630 (2U)
2*16c Intel Xeon E5-2697A v4 (2,6GHz)

storage1

Dell R730 (2U)
(2*14c Intel Xeon E5-2660 v4 @2GHz)
RAM: 128GB, 2 SSD 120GB (RAID1)
5 SAS 1.2TB (RAID5)



storage2

2 CRSI 1ES0094 (4U, 600TB)
60 disks 12Gb/s SAS JBOD (10 TB)

sftp/ftp/pxelinux, node images,
Container image gateways
Yum package mirror etc.

CDC S-02 Belval - 196 computing nodes (5824 cores)

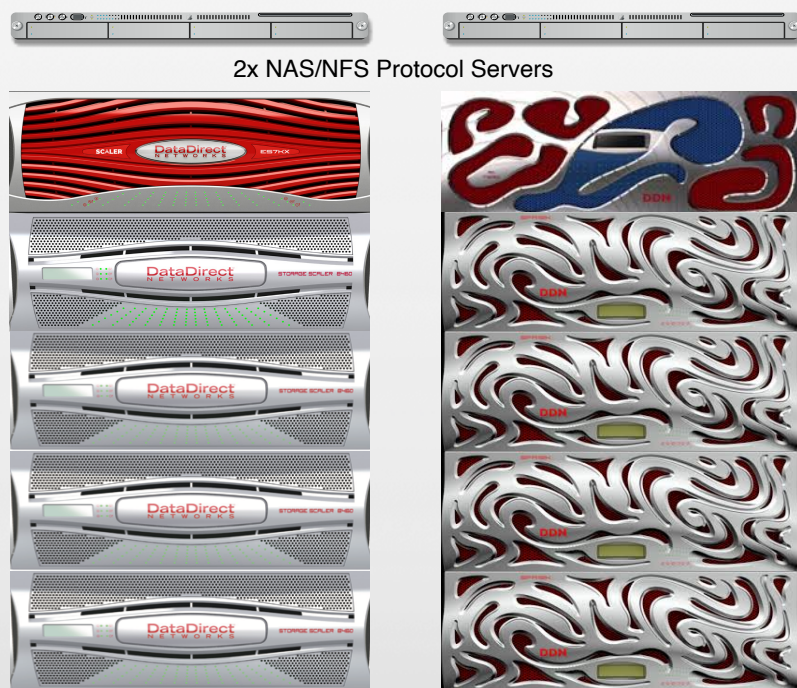


42 Dell C6300 encl. - 168 Dell C6320 nodes [4704 cores]
108 x (2 *14c Intel Xeon Intel Xeon E5-2680 v4 @2.4GHz), RAM: 128GB / 116,12 TFlops
60 x (2 *14c Intel Xeon Intel Xeon Gold 6132 @ 2.6 GHz), RAM: 128GB / 139,78 TFlops

24 Dell C4140 GPU nodes [672 cores]
24 x (2 *14c Intel Xeon Intel Xeon Gold 6132 @ 2.6 GHz), RAM: 768GB / 55,91 TFlops
24 x (4 NVidia Tesla V100 SXM2 16 or 32GB) = 96 GPUs / 748,8 TFlops

4 Dell PE R840 bigmem nodes [448 cores]
4 x (4 *28c Intel Xeon Platinum 8180M @ 2.5 GHz), RAM: 3072GB / 35,84 TFlops

GPFS/SpectrumScale Storage (\$HOME, projects data) 4260 TB (raw), 3408 TB (effective)



DDN GridScaler 7K (24U)
1xGS7K base + 4 SS8460 expansion
350 disks (6 TB SAS SED, 35 RAID6 pools)
28 disks SSD (400 GB, 14 RAID1 pools)

DDN GridScaler 7990 (24U)
1xGS7990 base + 4 SS9012 expansion
360 disks (6 TB SED NL-SAS, 36 RAID6 pools)
10 disks SAS-SSD (3.2 TB, 1 RAID6 pool)

EMC ISILON NAS Storage (3188TB)



DDN / Lustre Storage (1300 TB)

