

Diamond Light Source Site Report

James Thorne
Scientific Computing Team



Diamond Light Source



COVID-19 Impact

- All experiments cancelled except those related to the pandemic.
- Remote access via VPN, SSH and NoMachine.
- Huge increase in use of remote access methods, Zoom, Slack, Teams.
- Hardware installation delays.

Storage (2019)

- Lustre03 500 TB
- GPFS01, 900 TB, 16 GB/sec
- GPFS02, 5 PB, 40GB/sec
- GPFS03, 10 PB, 60GB/s
- NetApps

Storage (now)

- ~~Lustre03 500 TB~~
- ~~GPFS01, 900 TB, 16 GB/sec~~
- GPFS02, 7 PB, 40GB/sec
- GPFS03, 10 PB, 60GB/s
- NetApps

Compute (2019)

- Univa Grid Engine
- 5,760 cores
- 254 nodes
- NVIDIA GPUs
 - 8 V100
 - 192 P100
 - 24 K80
 - 24 M2090



Compute (Soon)

- Decommissioned oldest hardware
- Purchased new Supermicro and Lenovo nodes
 - 7,688 cores
 - 116 V100S GPUs
- UGE (for now)

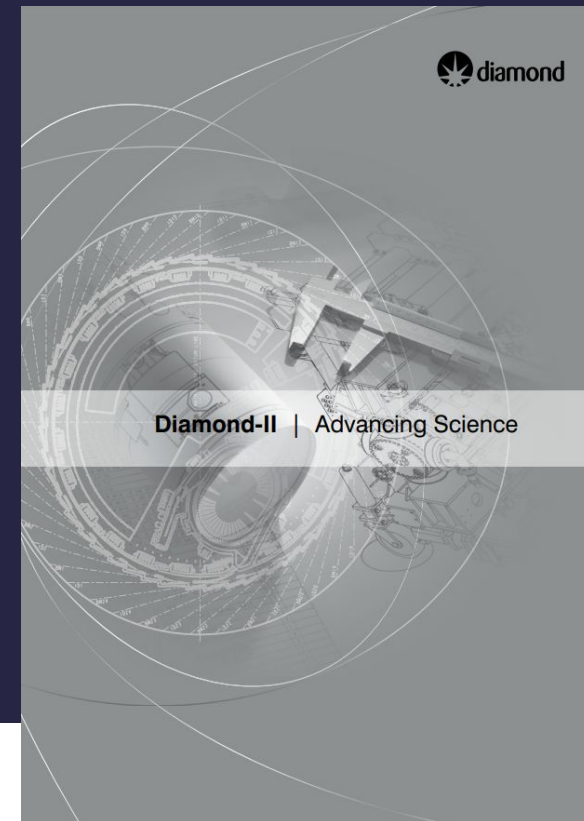
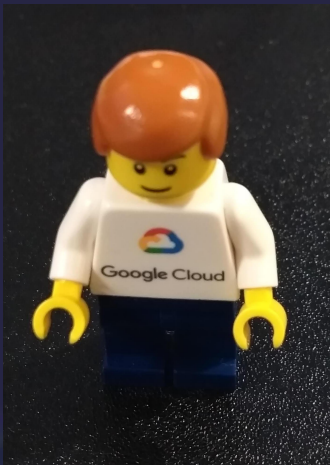


Kubernetes

- Production apps include JupyterHub, Singularity registry, Gitlab runners, Python DASK.
- “Clusters as a service”
 - Web portal
 - Auto-scaling
 - HTCondor on k8s works
 - Slurm?
 - Portable to other clouds
- Contact Chris Reynolds or Mihai Duta.

The future

- Higher data rate detectors
- Diamond-II
- Kubernetes, HTCondor, Slurm(?)
- The future is (still) cloudy



Diamond-II Cell Layout

