

Nordic e-Infrastructure Collaboration

NDGF-T1 network

Pre-GDB, 9 January 2017

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Collaboration

Old network

Old network up to last LHCOPN/LHCONE network was a star topology centered around one router in Copenhagen.

10G links to CERN, SARA, LHCONE and the 4 nordic countries terminated there. DWDM was used to distribute the signal, so it was a true OPN.

Problem: Too slow.

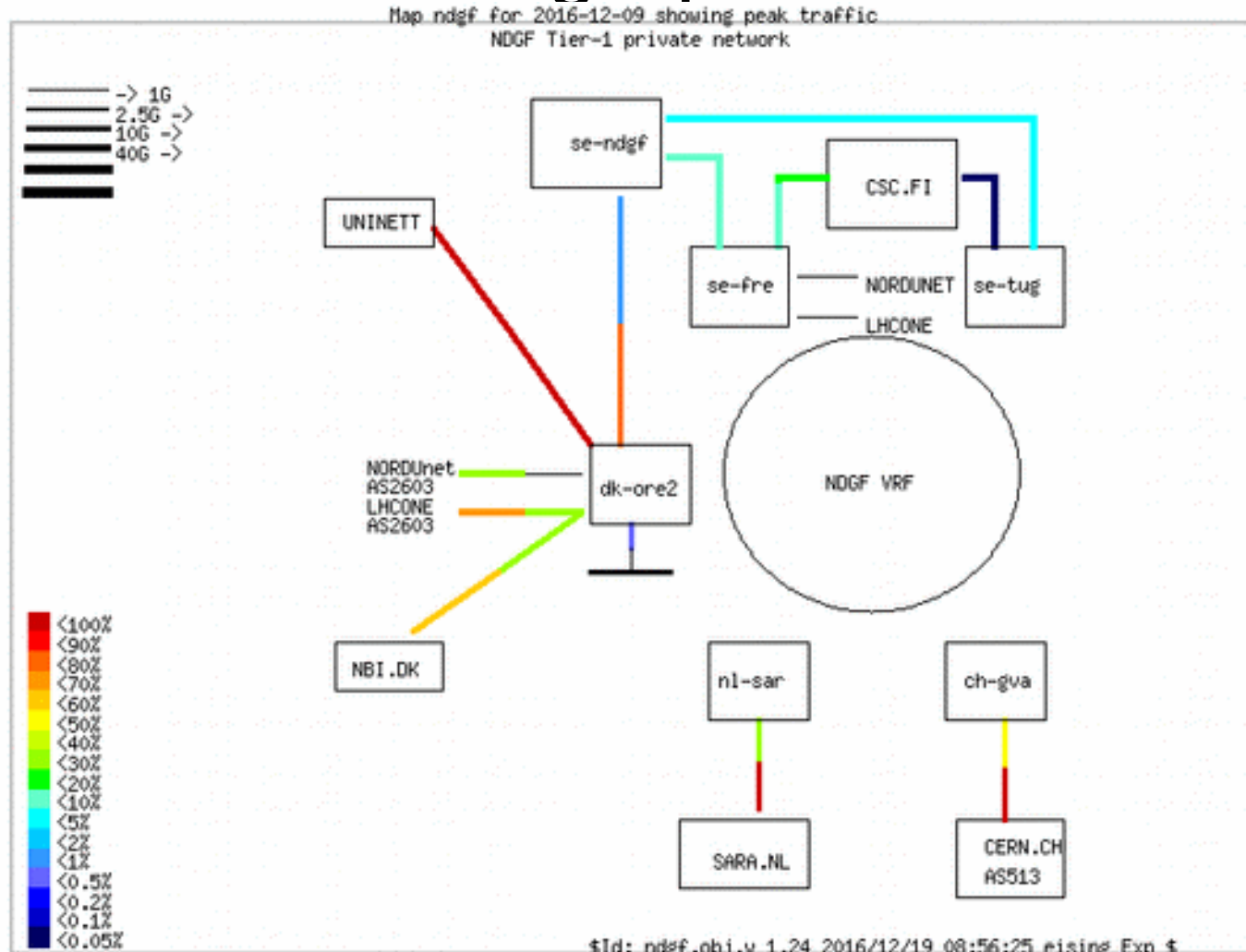
Plans for change

- Nordunet had pushed slowly for us to switch to MPLS based networking and during the NorduNet confurence this was agreed upon with Sunet and Funet.
- Uninett has a bandwidth problem and Forskningsnette isn't involved.

New network

- 20Gbit/s guaranteed, all the way from Geneva. MPLS over the redundant NorduNet backbone. Bursting allowed, if there is spare bandwidth.
- 10 or 20 Gbit/s connections to each site.

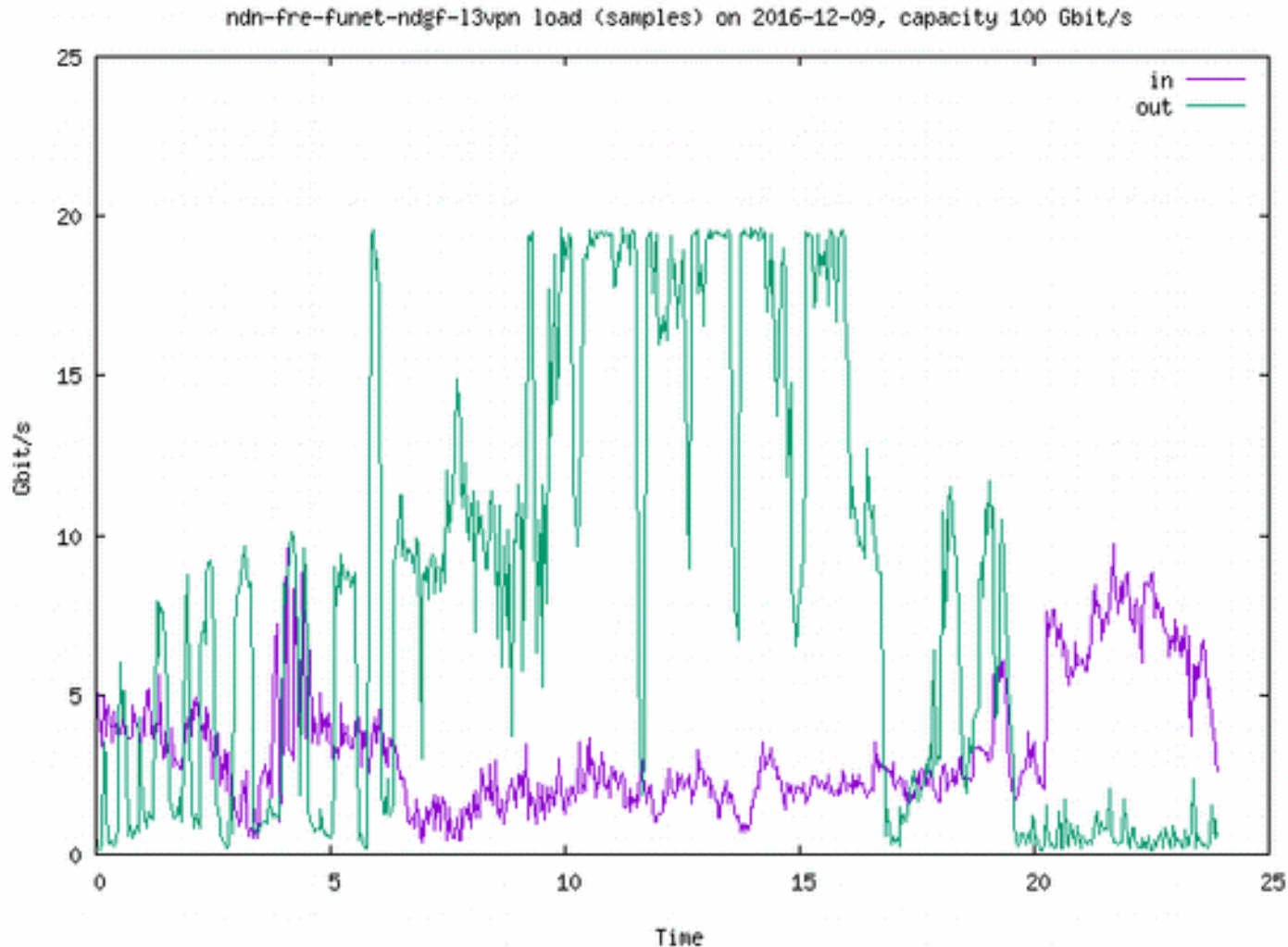
New network as a graph



2.12.2016, Alice tests the new network

- 2.12 Alice decided to fetch one file 46000 times, á 460 megabytes per read.
- The dCache pool with the primary copy wimpered and fell over (out of memory)
- The file got a second copy to another pool.. that promptly fell over.
- The third copy went to a machine with 40G connection to the switch: The 20G link to CERN filled.

9.12.2016, new network put to the test





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