

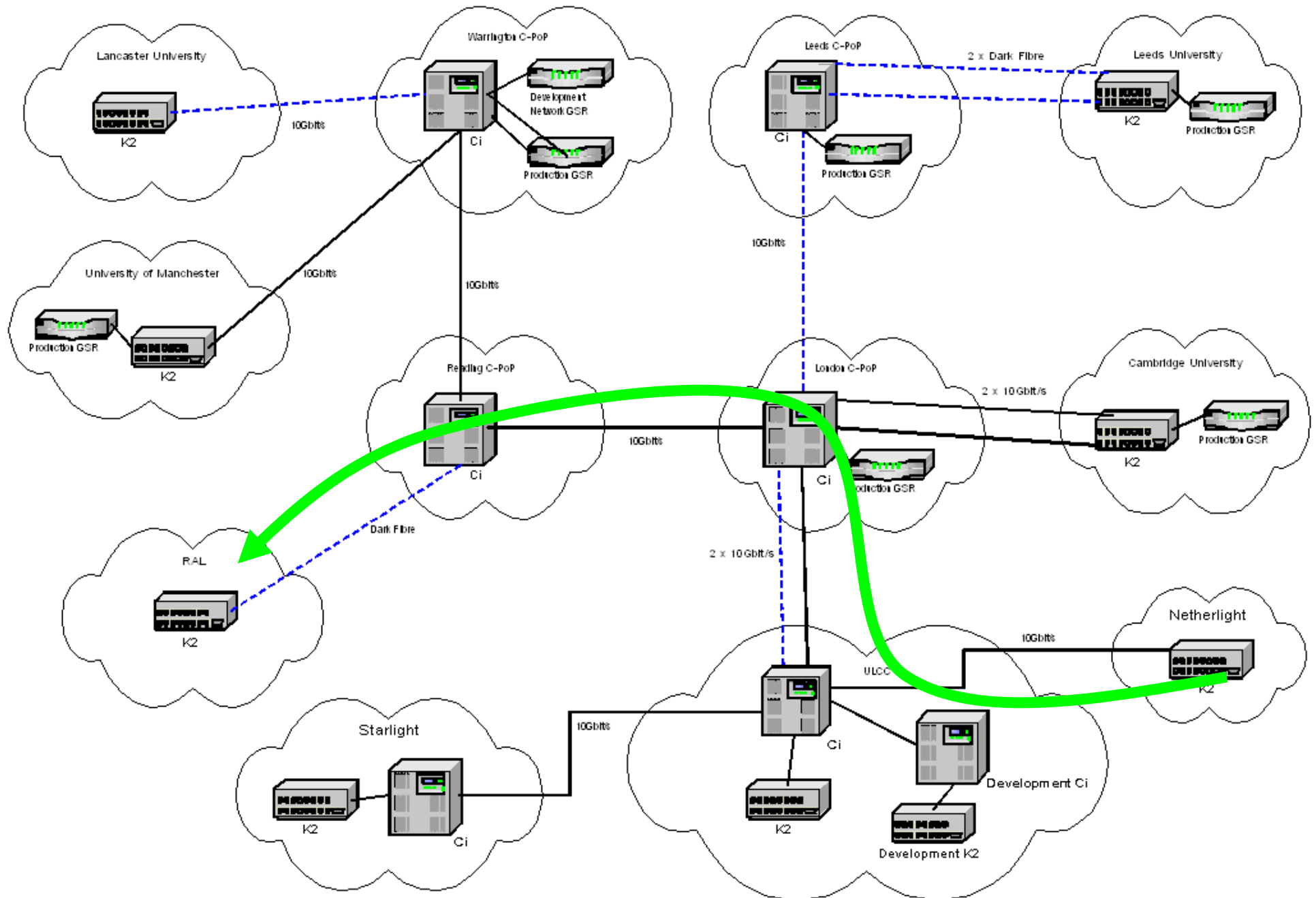


**GridPP**  
UK Computing for Particle Physics

# RAL Plans for SC2

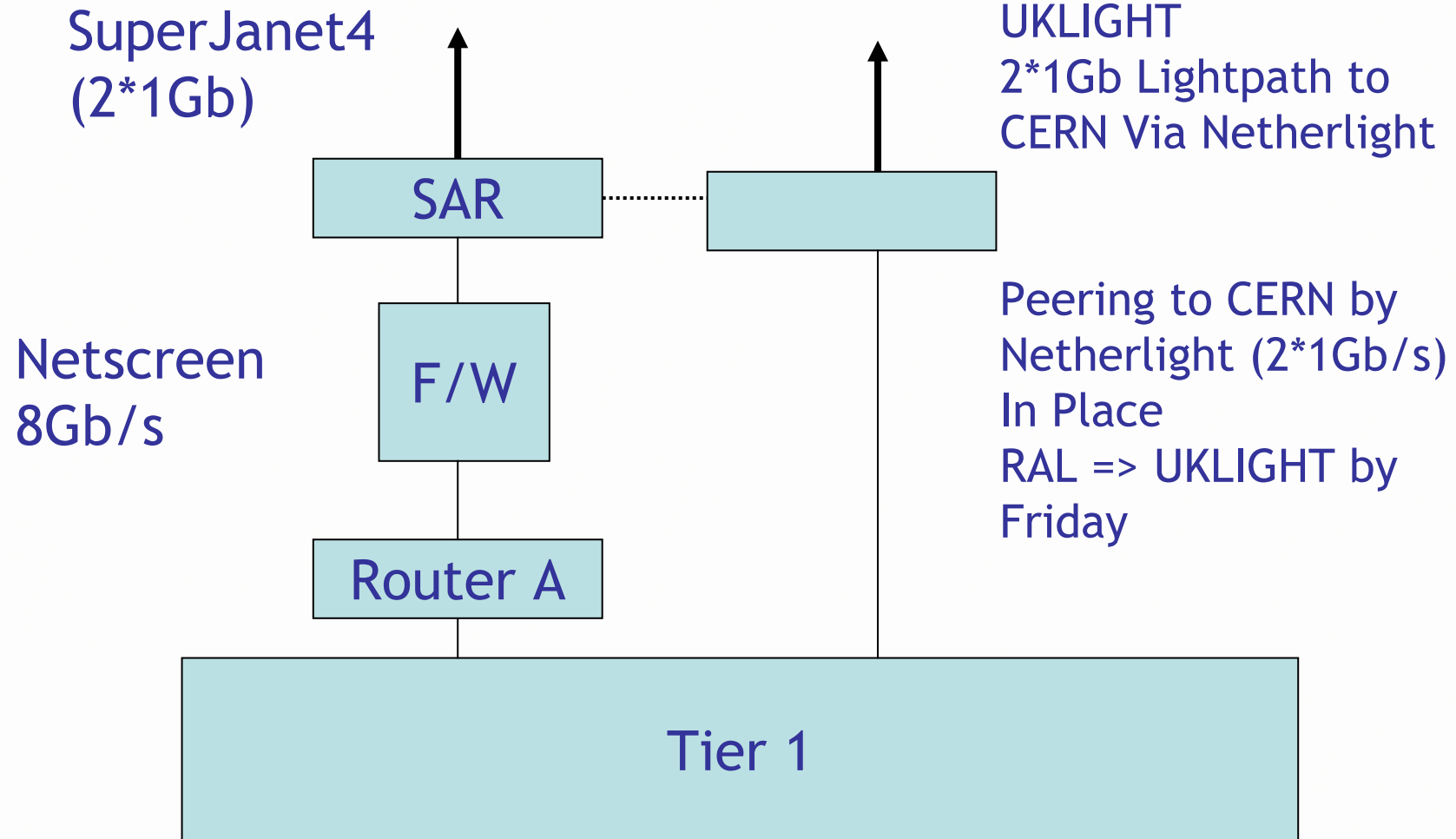
Andrew Sansum  
Service Challenge Meeting  
24 February 2005

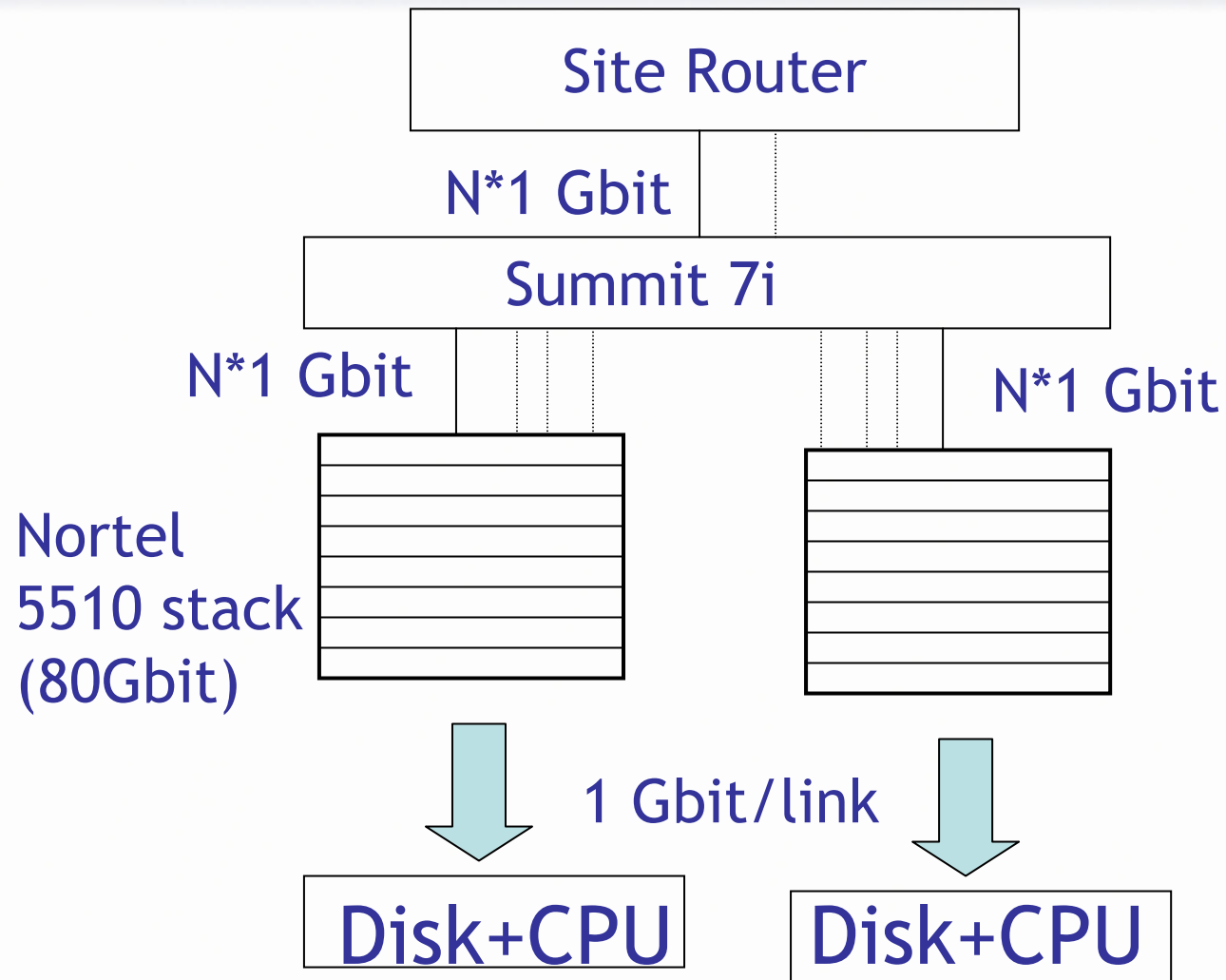
UKlight & the extended development network -  
Phase 1 & Phase 2





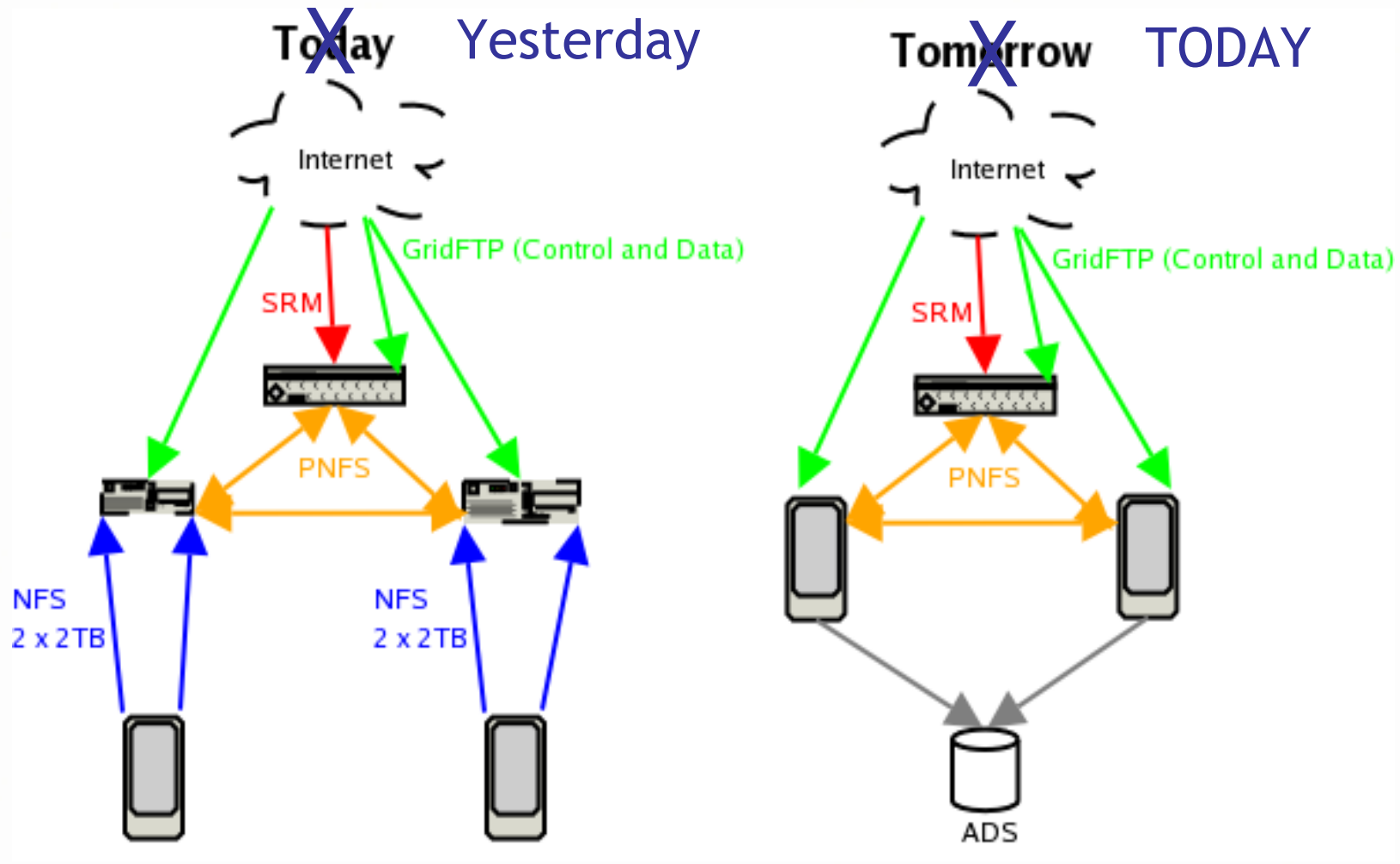
# Site Network







# dCache Evolution





# SC2 Disk Server

2 dCache  
Disk pools

2\*1Gbit uplink (1 in use)

Server: dual  
2.8Ghz Xeon

7501 chipset

U320 SCSI

1 Lun per device, ext2

EonStore

Eonstore

15+1 RAID 5  
250GB SATA

120MB/s

120MB/s



# dCache Versions

d-cache-core-1.5.2-33

d-cache-lcg-4.0.0-1

d-cache-opt-1.5.3-15

d-cache-client-1.0-34

vdt\_globus\_info\_server-VDT1.1.14rh7gcc3-4

vdt\_globus\_essentials-VDT1.1.14rh7gcc3-4.lcg1

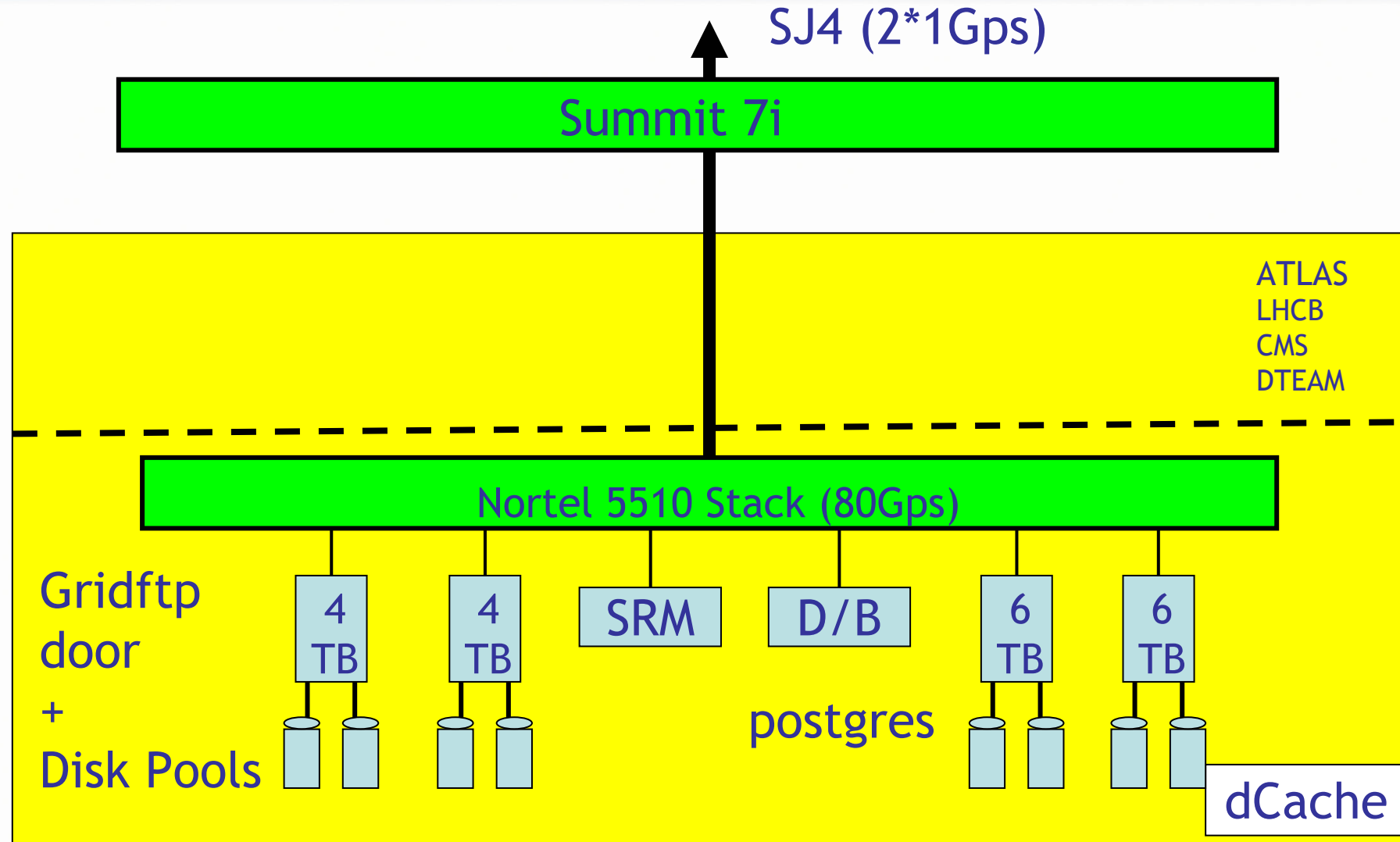
vdt\_globus\_sdk-VDT1.1.14rh7gcc3-4.lcg1

vdt\_globus\_info\_essentials-VDT1.1.14rh7gcc3-4



**GridPP**  
UK Computing for Particle Physics

# Production dCache SRM



24 February 2005

RAL SCZ Plans

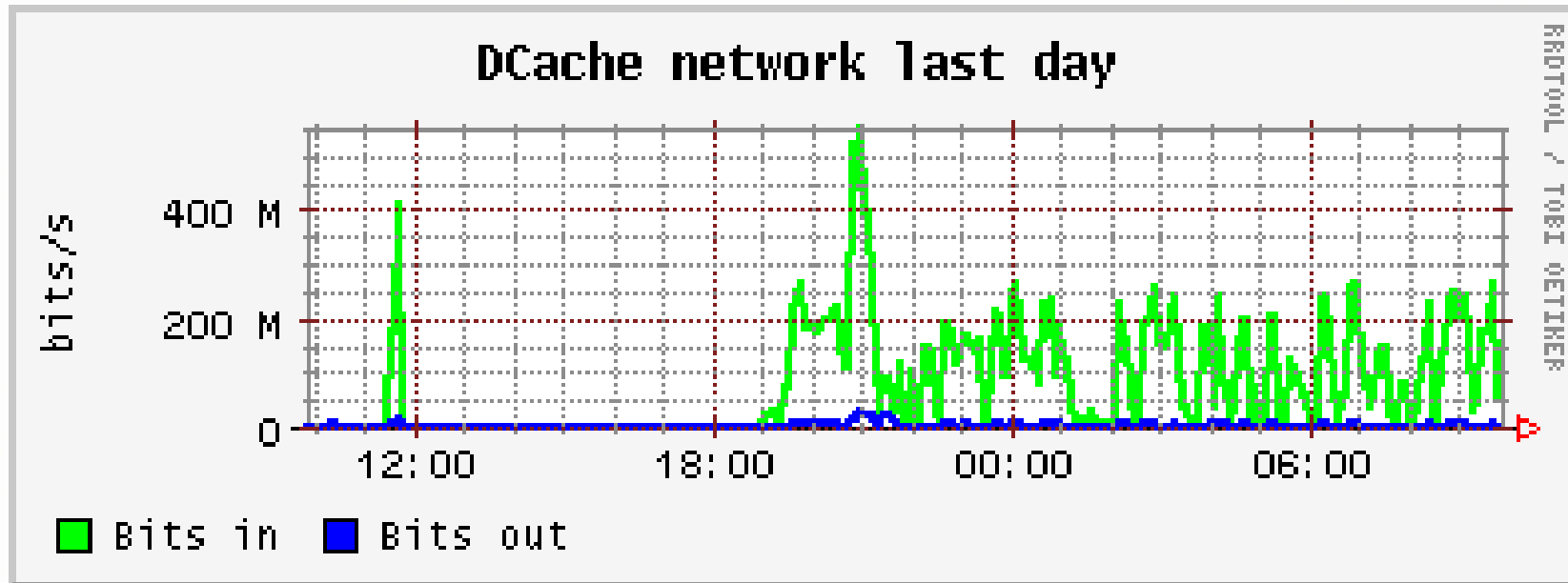






**GridPP**  
UK Computing for Particle Physics

# CMS dCache Network Load

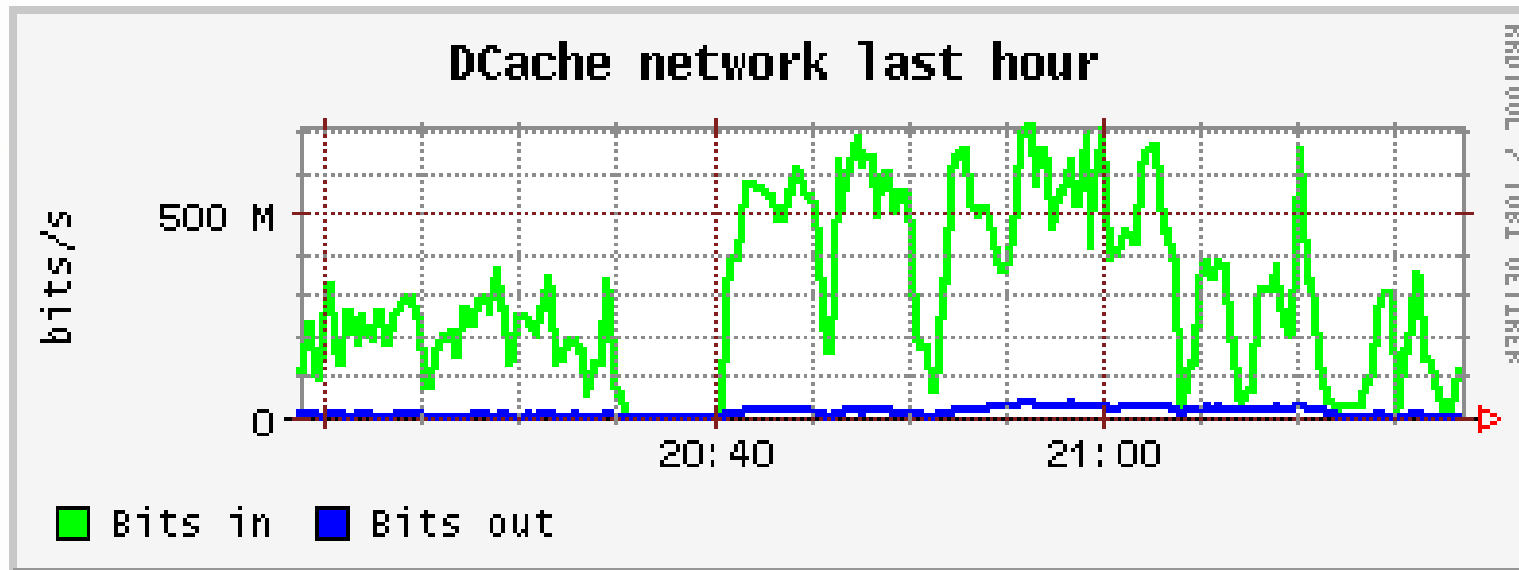


At peak: 500Mb/s sustained until RAL caught up with CERN stager. Not yet optimised - RAL lightly loaded



**GridPP**  
UK Computing for Particle Physics

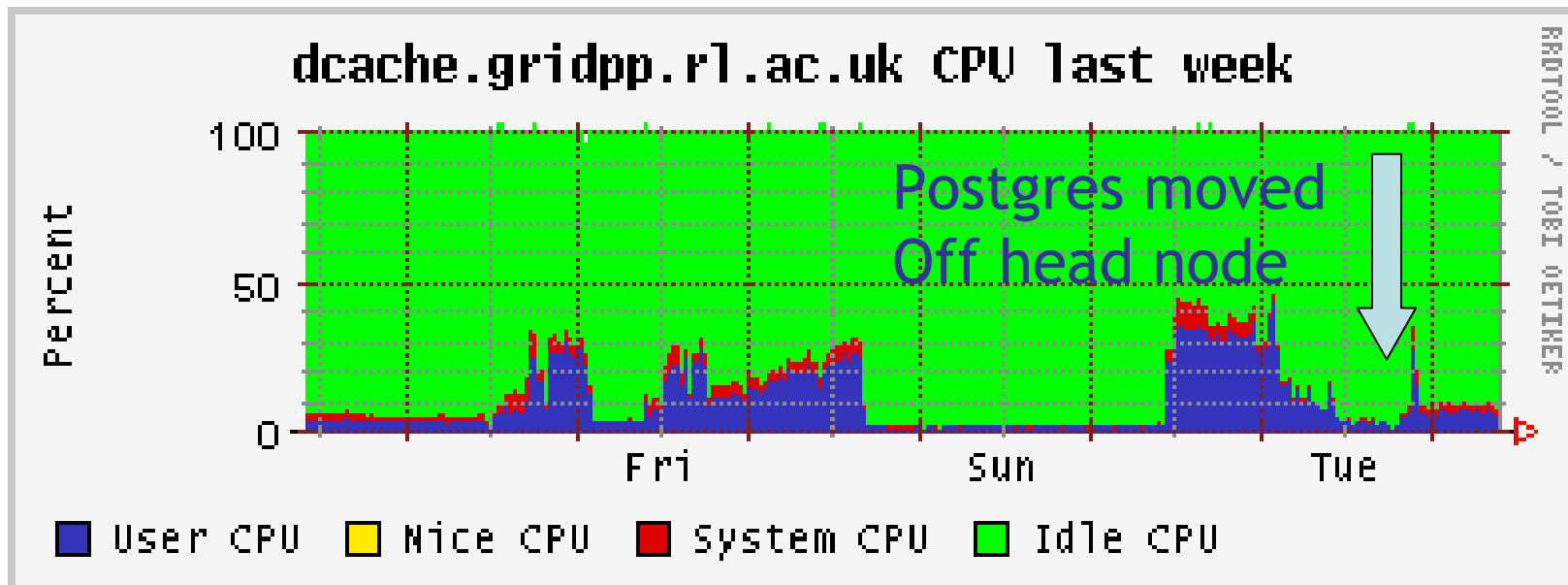
# CMS Production Network Load



At peak: 500Mb/s sustained (full end to end including cataloguing etc) until RAL caught up with CERN stager.  
Not yet optimised - RAL lightly loaded



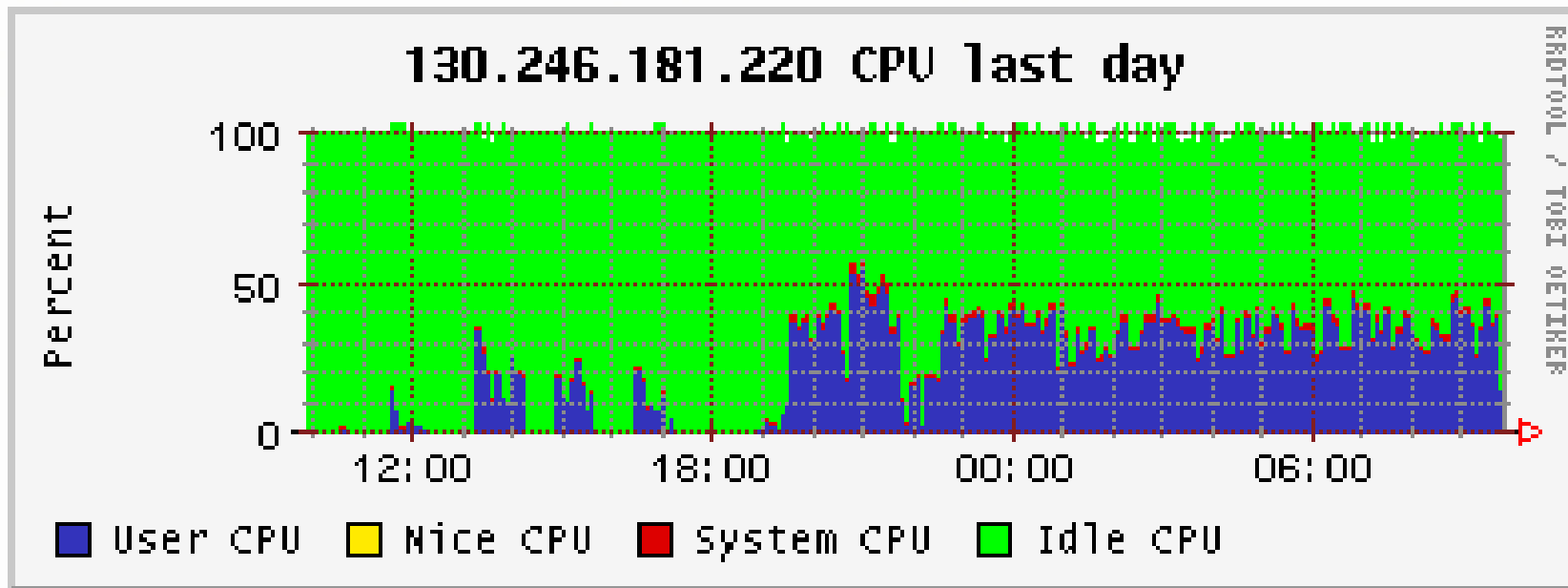
# SRM Server Load



Postgres CPU load very high - mainly waiting on update.  
Needs tuning?



# Postgres Server Load

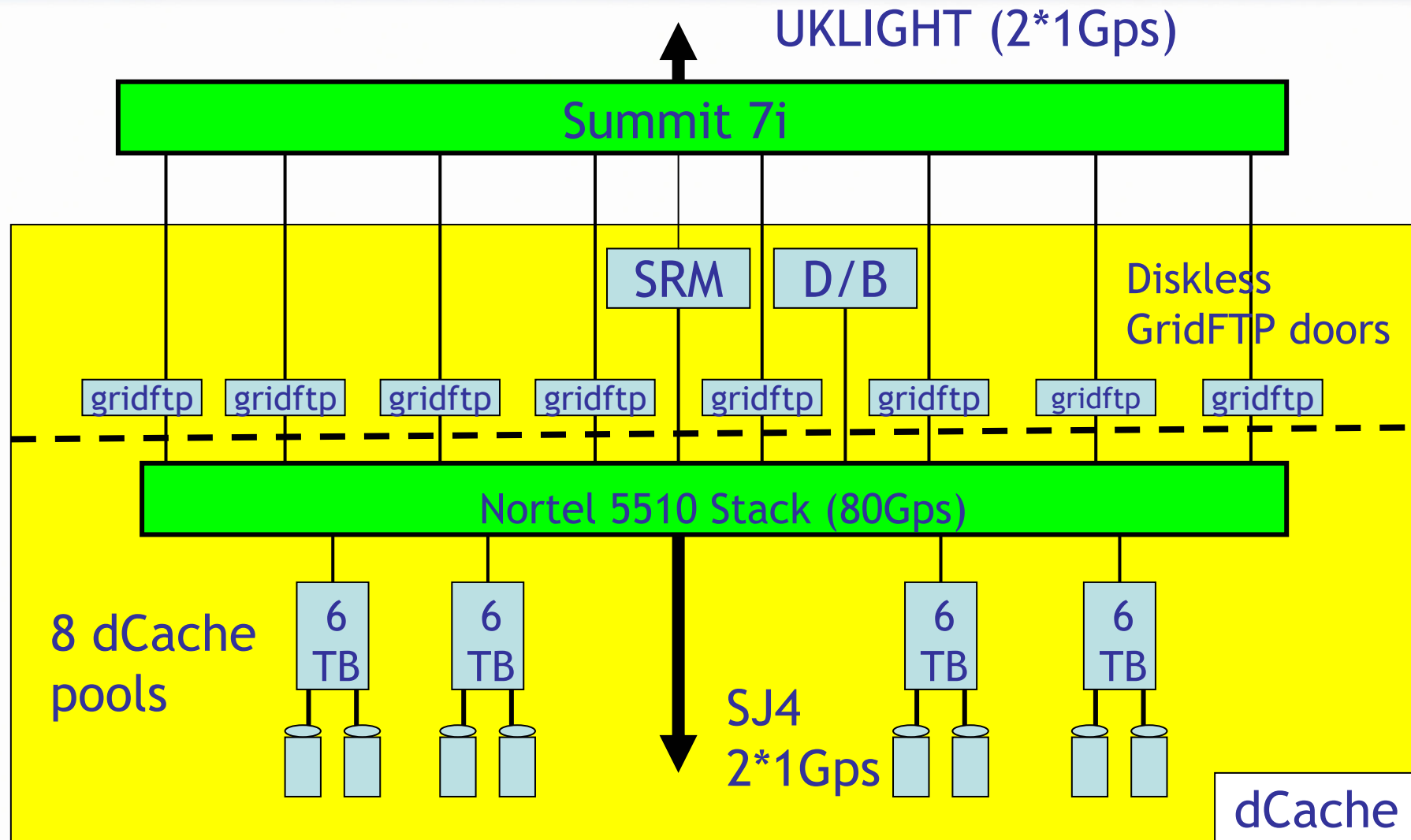




- Build another PRODUCTION dCache SRM
- Build from kickstart - therefore quick
- Build on PRODUCTION SRM experience
- Build in production monitoring
  - Exception monitoring (SURE/NAGIOS)
  - Ganglia Monitoring
  - helpdesk
  - Etc etc
- Build modular - avoid bottlenecks
- Decouple network transfers from disk servers - allows easier network/kernel tuning

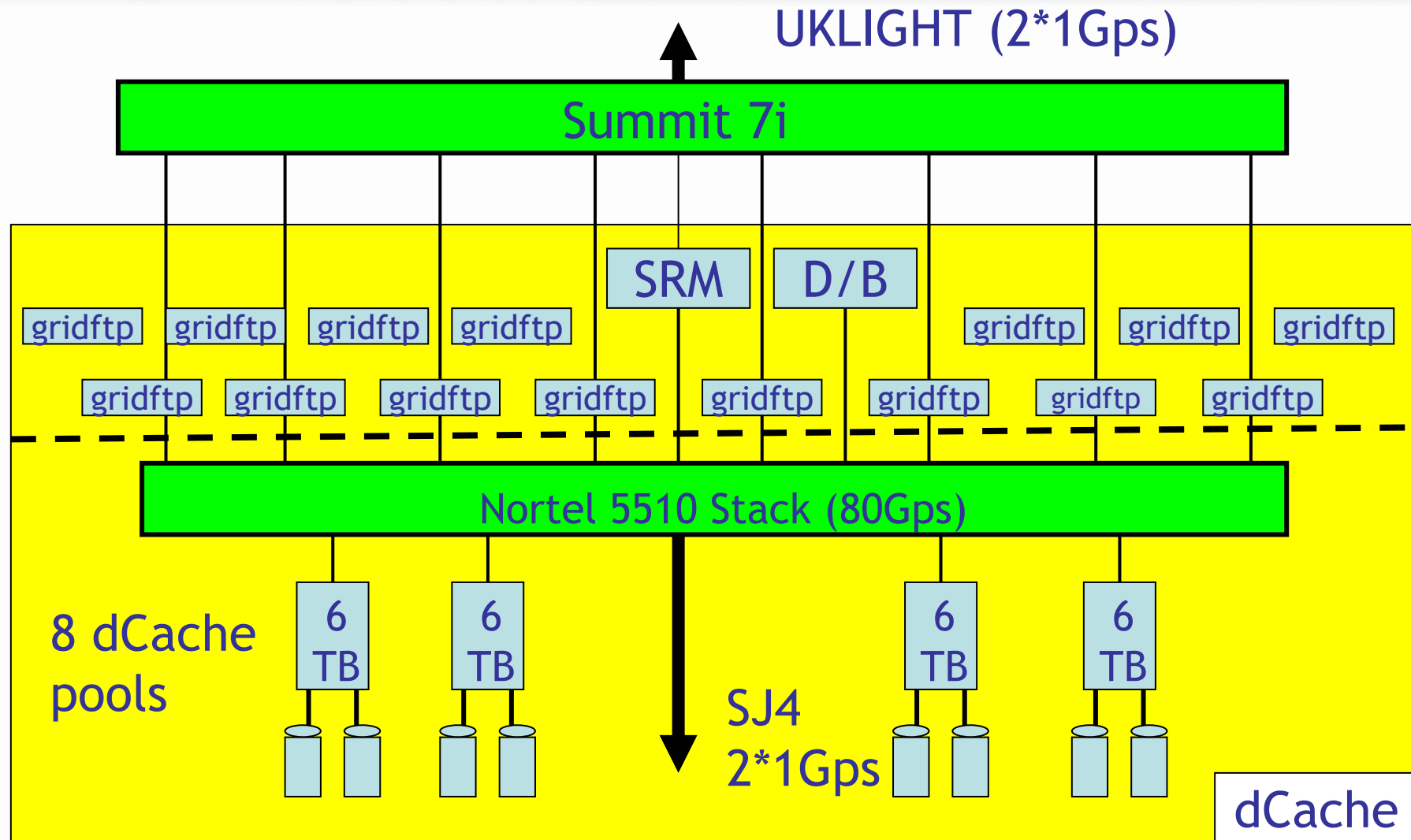


# SC2 dCache SRM



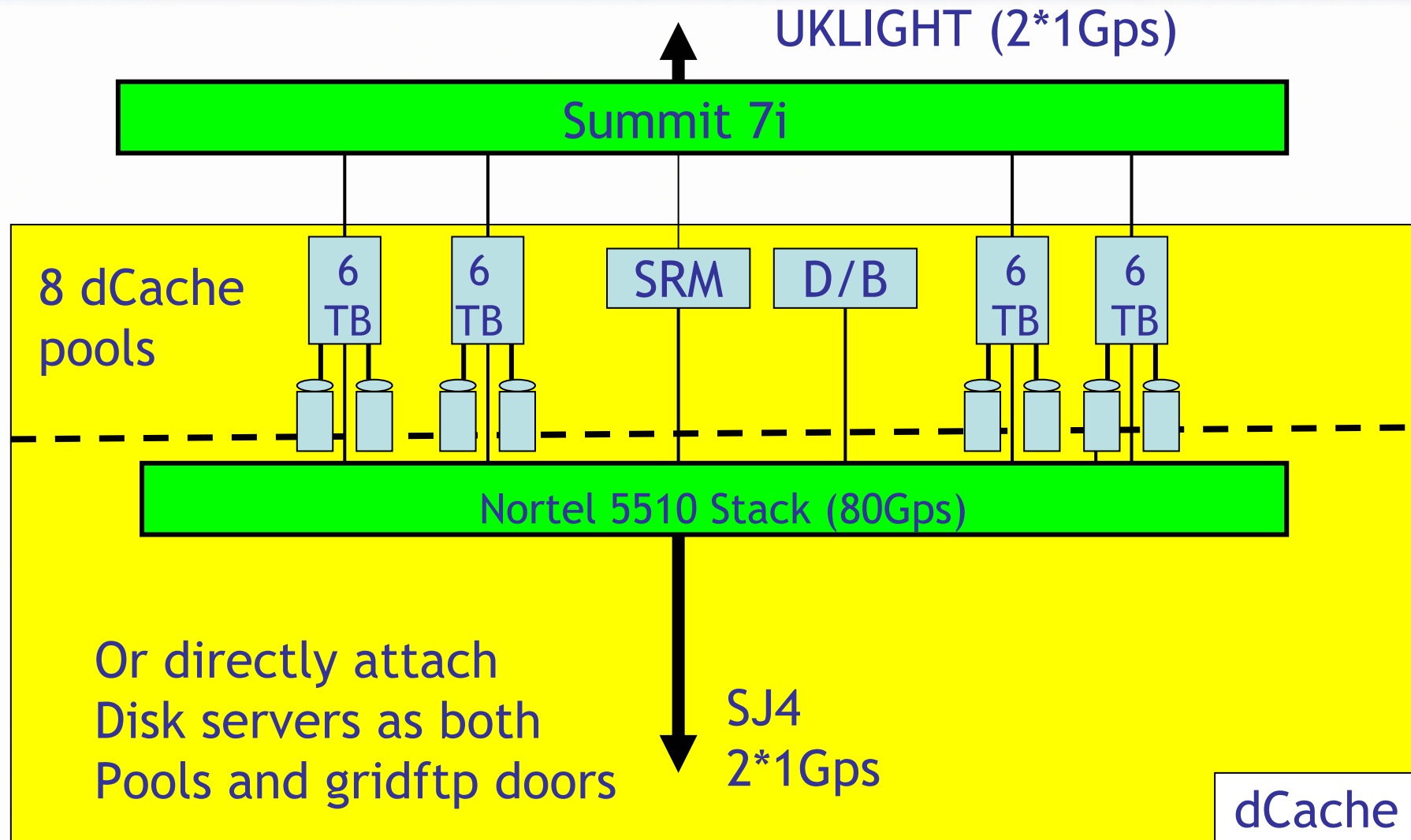


# SC2 dCache SRM





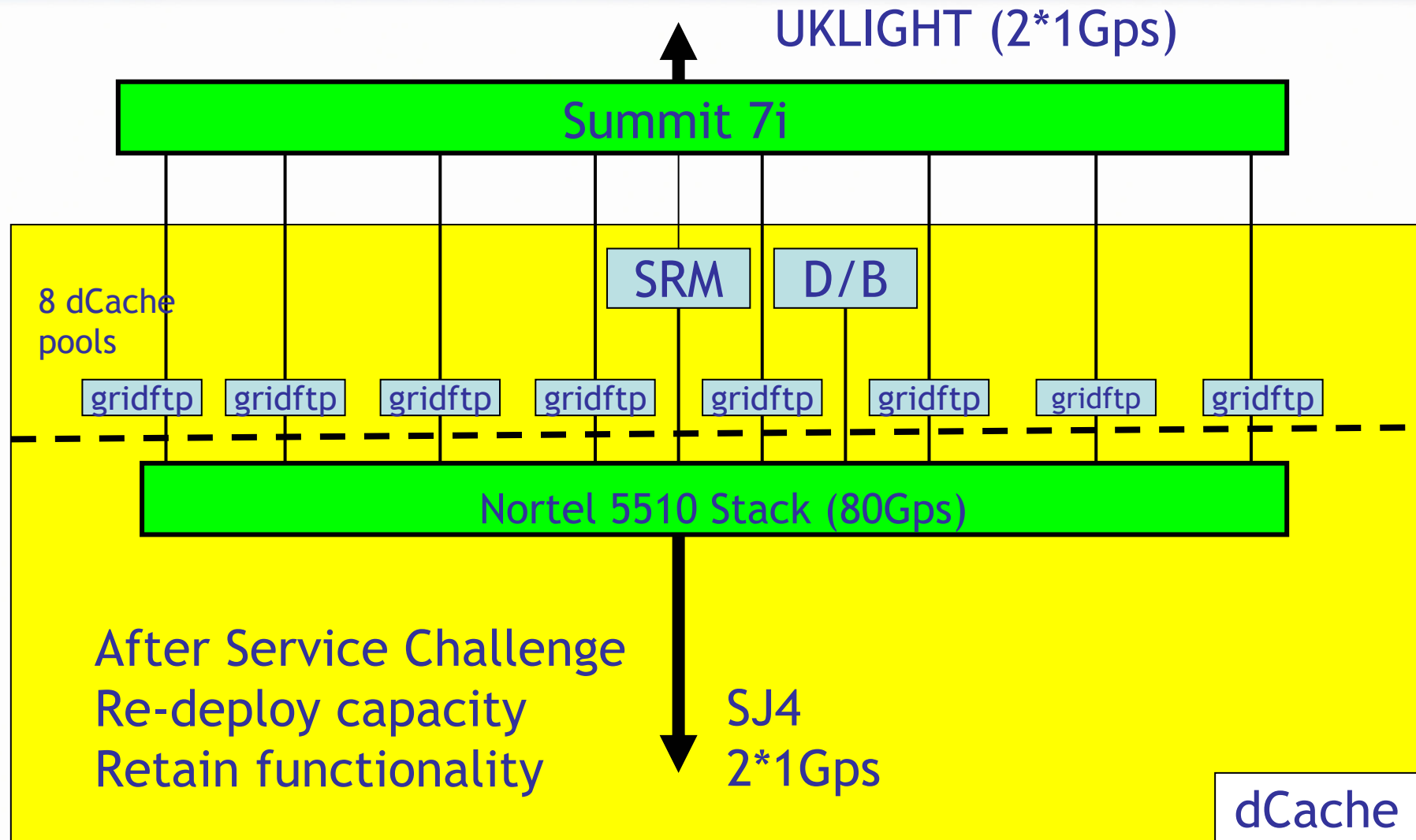
# SC2 dCache SRM





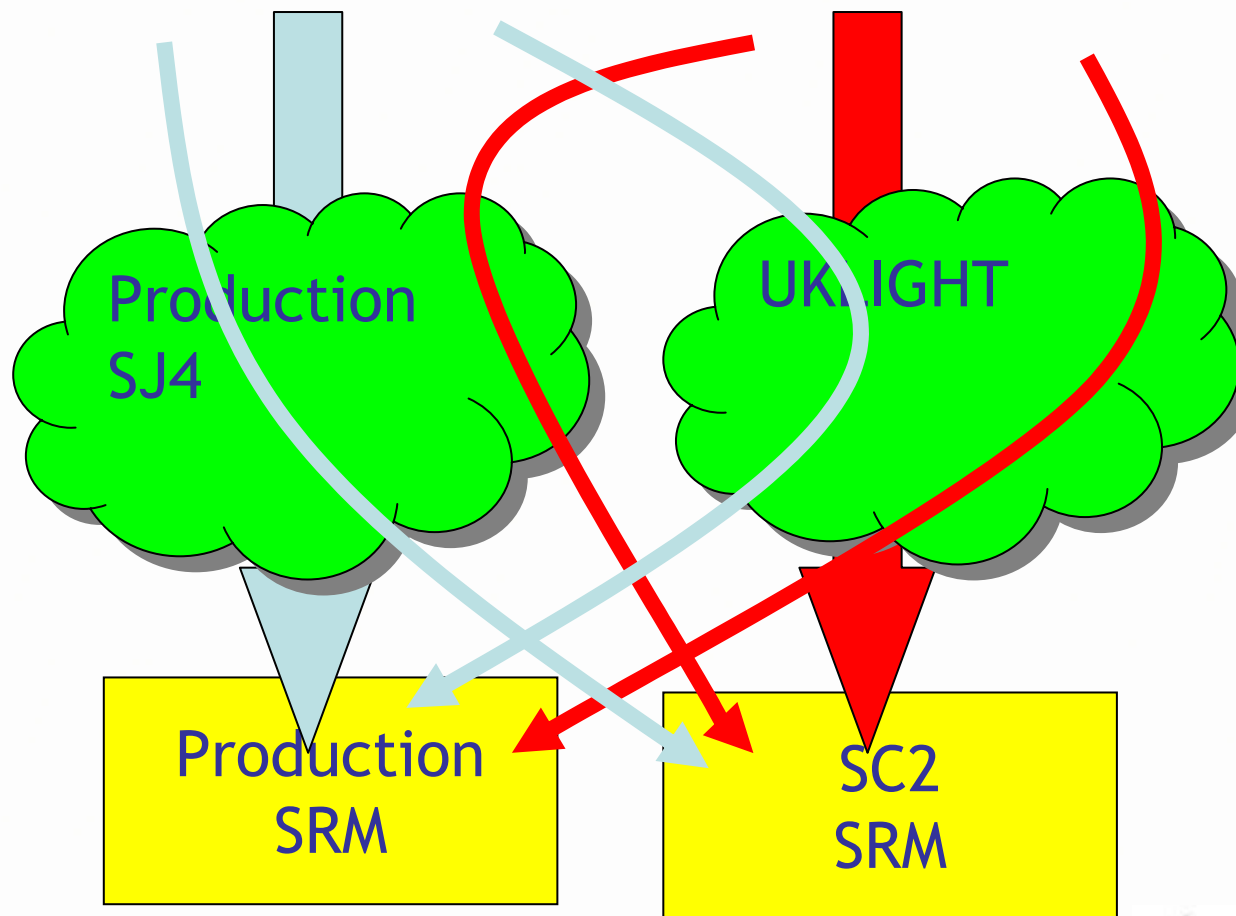


# SC2 dCache SRM





## Experiment Production    Service Challenges





# MSS Integration

- Back end from dCache to MSS (STK plus RAL ADS) written and tested. Just beginning experiment testing (CMS initially).
- MSS still bottlenecked at MSS cache disk - probably will not exceed 60MB/s (writing) until new hardware delivered (in time for July).
- Will not commit to MSS testing for SC2, but may turn dCache MSS back end on at some stage in SC2 and see what we can achieve.



- **Network**
  - Access agreement for UK Light
  - Peering agreed with NetherLight
  - Attach to UKLIGHT 25 February
  - Start throughput tests to CERN, W/B 28 Feb?
- **Hardware**
  - All hardware now drained from production
  - Extra NICs purchased
  - Disk Stress tests complete H/W ready to deploy
- **dCache SRM**
  - Just starting deployment (2-3 days)
  - Ready for SRM tests from CERN to RAL W/B 7 March
  - Peak load test 2Gb/s sometime in W/B 14 March