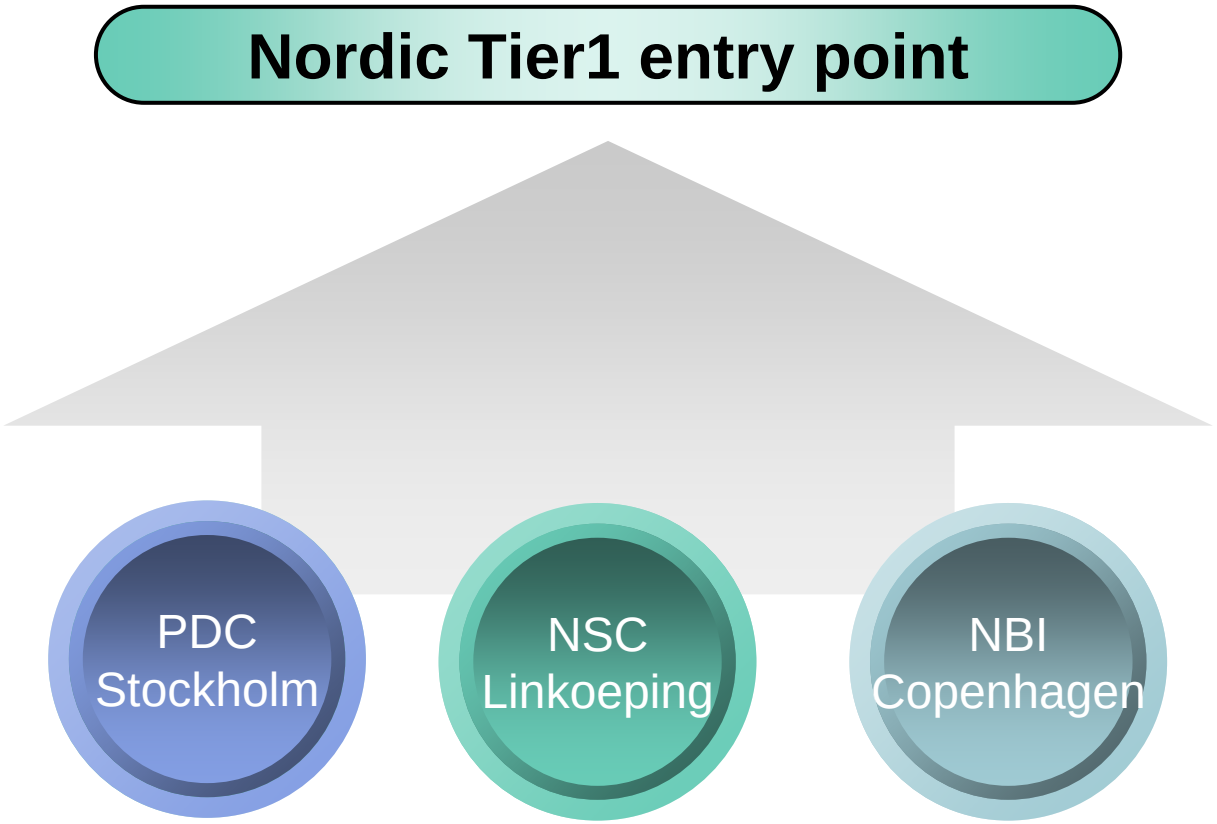
Nordic Tier1 Specifics

1. Distributed over a wide area (700 km between NBI and PDC)
2. Different resource ownership/funding
3. Heterogeneous hardware- and software-wise
4. Enjoys good “regular” network connectivity
5. Already serves a large number of users
   a) Computing resources are available via ARC to Nordic and LHC users and via LCG to LHC users
   b) Storage resources are mostly occupied with ATLAS data, accessed via GridFTP by all the ATLAS VO members

First Test: SC3

- Participation (1st phase)



Challenges (SC3 1st phase)

1. Network: setup, test
2. Storage: move away ATLAS data
3. SRM access: evaluate solutions
4. LFC

1. Network issues

- CERN is not prepared for multiple IP numbers per Tier1
  - Various solutions are being considered on the Nordic side, might need network providers intervention
- Possibility to get a dedicated 1 GB line from CERN to the entry point, but a shared 10 GB might provide a better service
  - Tests are under way
- Each site has 1 GB to the node
- Reasonably achievable rate: 150 Mbps

2. Storage arrangement

- Storage capacity varies from site to site, totals ~50 TB of disk-only space
- Only PDC has a suitable tape facility for SC3 Phase 1
  - In fall: 90 TB of tape storage at NSC, HPC2N, PDC
- Most disk space and servers are presently occupied by ATLAS
  - Will have to move them to a non-SC3-engaged location, ensure the move is transparent to ATLAS

3. SRM

- First phase, throughput test: start with disk-only facilities; add tape storage later
- Two possible SRM solutions: DPM and dCache (no CASTOR)
  - Evaluation is under way
  - None is meant for a widely distributed service
  - So far haven't manage to get source of either
- Most likely, will manage to use DPM for the SC3 phase 1, but will have to come with something more appropriate for later stages
  - Specifications of CERN SRM are most welcomed

4. LFC

- Not evaluated yet, no problems foreseen: will be a single catalog located at the entry point

Issues (for SC3 phase 1)

- Unclear procedure: what exactly will happen, how and how many file transfers will be initiated, and how the file registration to LFC will happen (as FTS can not register files by itself)
- Still unclear Phase 2 requirements – certainly, system administrators are **NOT** happy about the “VO box” idea
- So far, no Tier2 tests are foreseen; even if such will be scheduled in fall, ARC data management tools will be used for Tier1-Tier2 data transfer
- In general, tools and services offered/required by CERN are not suitable for distributed centers
- Distribution implies heterogeneity, but most RPMs are available only for SLC3; sources (RPMs, tarballs, anything) are badly needed
  - Meanwhile, SC3-engaged sites will wipe out current installations and temporarily install SLC3 – except for those that run RHEL
- Participation in SC3 means (hopefully temporary) degradation of the existing services, as resources will have to be removed from the common usage, and manpower will be re-assigned as well
- Last, but not least: bad timing. July in Scandinavia is like August in France.