

Operations in NDGF-T1 (and SE-SNIC-T2)

Erik Edelman

`erik.edelmann@csc.fi`

Nordic e-Science Infrastructure Collaboration / CSC – IT center for Science



NDGF & NeIC: Background

- Nordic DataGrid Facility (NDGF) was founded 2002 to coordinate the cooperation between Finland, Sweden, Norway and Denmark to create a Tier-1 for ATLAS and ALICE.



NDGF & NeIC: Background

- Nordic DataGrid Facility (NDGF) was founded 2002 to coordinate the cooperation between Finland, Sweden, Norway and Denmark to create a Tier-1 for ATLAS and ALICE.
- A few years ago, NDGF was reorganized into NeIC (Nordic e-Infrastructure Collaboration)
 - Maintaining NDGF-T1 still biggest project within NeIC

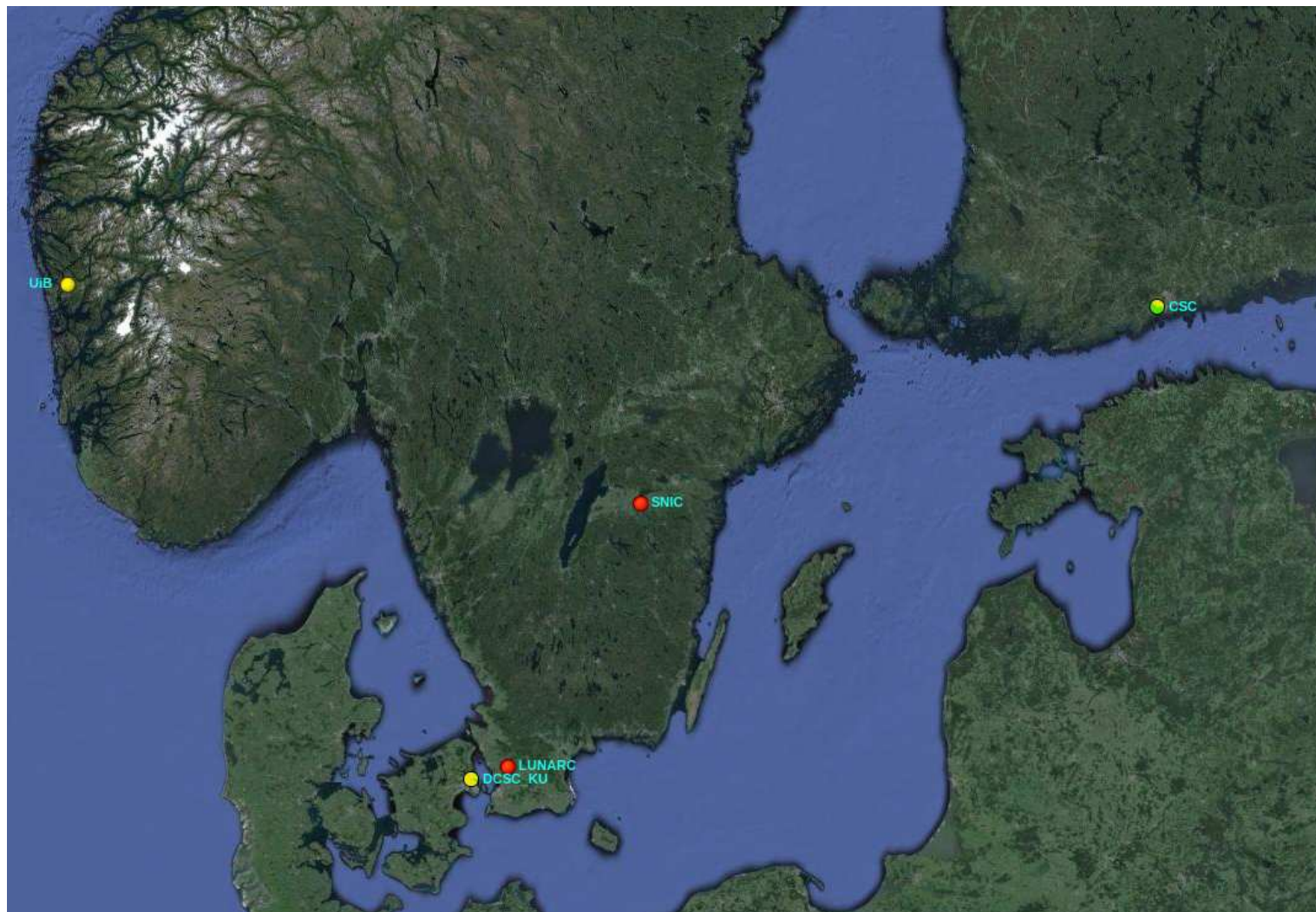


NDGF & NeIC: Background

- Nordic DataGrid Facility (NDGF) was founded 2002 to coordinate the cooperation between Finland, Sweden, Norway and Denmark to create a Tier-1 for ATLAS and ALICE.
- A few years ago, NDGF was reorganized into NeIC (Nordic e-Infrastructure Collaboration)
 - Maintaining NDGF-T1 still biggest project within NeIC
- In addition to the NDGF-T1, there's a few T2:s in the Nordics
 - FI-HIP-T2 for CMS
 - NO-NORGRID-T2 for ATLAS
 - SE-SNIC-T2 for ALICE and ATLAS
 - Sometimes hard to distinguish from NDGF-T1
 - 20 % of swedish ALICE CPU hours contributed to NDGF-T1, 80 % contributed to SE-SNIC-T2.



ALICE sites in NDGF



Sites: Finland

- CSC
 - Owned by Helsinki Institute of Physics (HIP), hosted by CSC
 - 768 cores
 - Shared with local ALICE users, and CMS
 - Number of ALICE jobs limited by batch queue system to 600



Sites: Finland

- CSC
 - Owned by Helsinki Institute of Physics (HIP), hosted by CSC
 - 768 cores
 - Shared with local ALICE users, and CMS
 - Number of ALICE jobs limited by batch queue system to 600
 - Will be decommissioned by the end of this year.
 - Current plan: Replace it with a cloud resource at CSC.
 - We don't yet know the answer to questions starting with "How".



Sites: Finland

- CSC
 - Owned by Helsinki Institute of Physics (HIP), hosted by CSC
 - 768 cores
 - Shared with local ALICE users, and CMS
 - Number of ALICE jobs limited by batch queue system to 600
 - Will be decommissioned by the end of this year.
 - Current plan: Replace it with a cloud resource at CSC.
 - We don't yet know the answer to questions starting with "How".



Sites: Sweden 1/2

- SNIC
 - National Supercomputer Center, Linköping, Sweden
 - Old cluster decommissioned one month ago.



Sites: Sweden 1/2

- SNIC
 - National Supercomputer Center, Linköping, Sweden
 - Old cluster decommissioned one month ago.
 - New replacing cluster promised.
 - 40×2 E5-2660@2.20GHz CPUs (640 cores, capacity $\sim 2.5 \times$ old cluster)
 - Shared with ATLAS.



Sites: Sweden 1/2

- SNIC
 - National Supercomputer Center, Linköping, Sweden
 - Old cluster decommissioned one month ago.
 - New replacing cluster promised.
 - 40×2 E5-2660@2.20GHz CPUs (640 cores, capacity $\sim 2.5 \times$ old cluster)
 - Shared with ATLAS.
 - ETA: “Reasonably soon”/“Any day now”.



Sites: Sweden 2/2

- LUNARC
 - Center for scientific and technical computing for research at Lund University, Lund, Sweden
 - Old cluster decommissioned before Christmas.



Sites: Sweden 2/2

- LUNARC

- Center for scientific and technical computing for research at Lund University, Lund, Sweden
- Old cluster decommissioned before Christmas.
- New replacing cluster with 3776 cores
 - Like the old it will be shared with ATLAS and other stuff.
 - Promised to be available by mid January this year.



Sites: Sweden 2/2

- LUNARC

- Center for scientific and technical computing for research at Lund University, Lund, Sweden
- Old cluster decommissioned before Christmas.
- New replacing cluster with 3776 cores
 - Like the old it will be shared with ATLAS and other stuff.
 - Promised to be available by mid January this year.
 - I'm still optimistic we'll get it before mid March.



Sites: Denmark

- DCSC/KU
 - Danish Center for Scientific Computing / Københavns Universitet
 - Backend: ARC
 - 5080 Cores in total
 - 832 cores shared with ATLAS.



Sites: Denmark

- DCSC/KU

- Danish Center for Scientific Computing / Københavns Universitet
- Backend: ARC
- 5080 Cores in total
 - 832 cores shared with ATLAS.
- Technical problems, mostly due to LoadLeveler:
 - Fairsharing broken \Rightarrow most resources goes to ATLAS
 - Accounting broken (reported CPU times way too small).
 - LoadLeveler to be replaced?



Sites: Norway

- UiB
 - Universitet i Bergen
 - Backend: PBS/Torque
 - New cluster since last summer.
 - 1040 cores and growing; 768 cores for ALICE



CPU resources, summary:

- Traditionally, we've been struggling to meet pledges.



CPU resources, summary:

- Traditionally, we've been struggling to meet pledges.
- End of last autumn, weekly average usually $\geq 100\%$ of our pledge

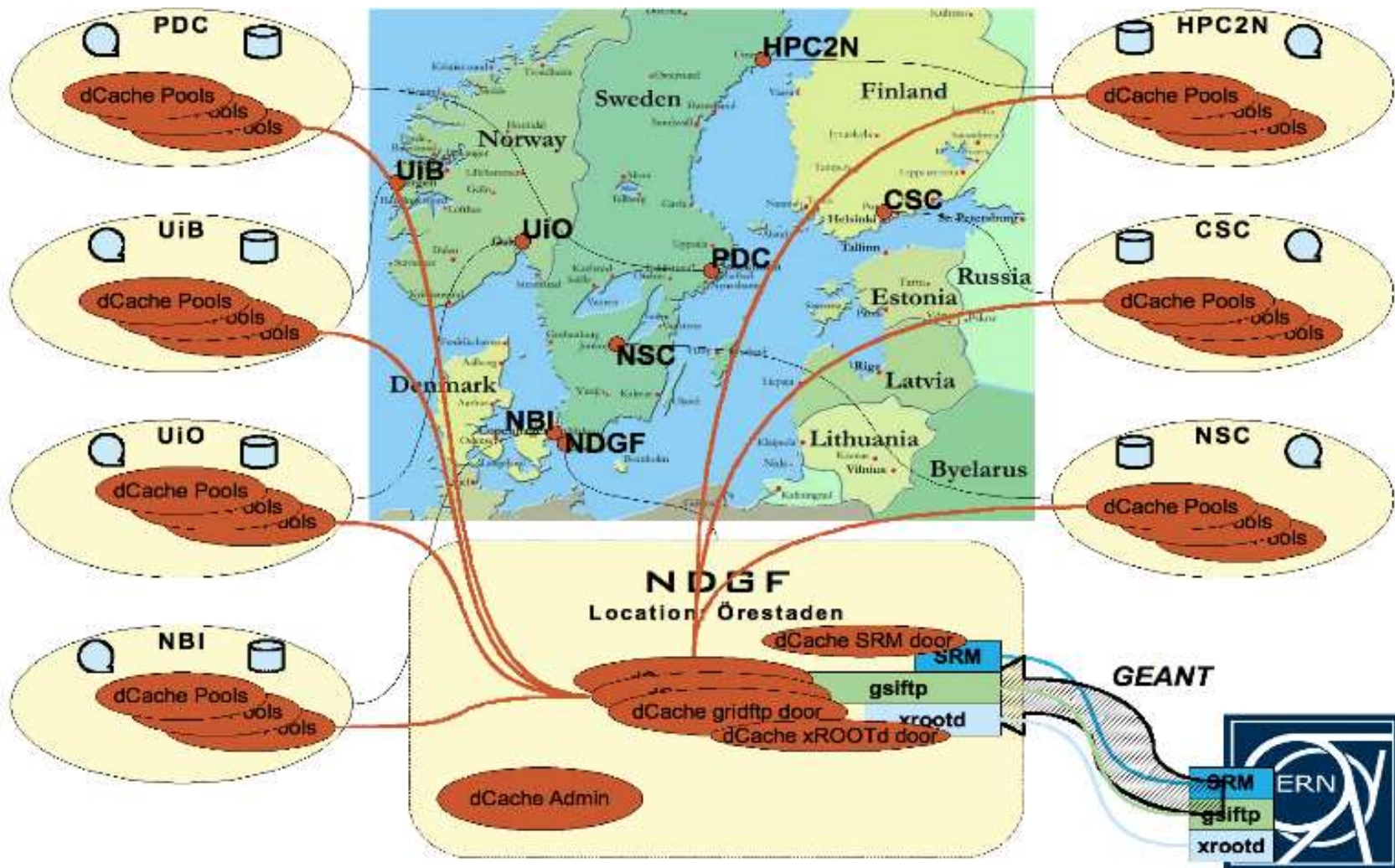


CPU resources, summary:

- Traditionally, we've been struggling to meet pledges.
- End of last autumn, weekly average usually $\geq 100\%$ of our pledge
- ... but last few weeks have been catastrophic
 - Hopefully, Sweden will return soon.

Storage:

- Many small sites looks like one big site
- dCache



IPv6

- 2 of 3 current VOBoxes has IPv6 enabled
- dCache:
 - IPv6 support in development.
 - “When will it be done?”: question of priorities.
 - Is there a hard deadline?

SAM

- NDGF hasn't been in the Service Availability Monitoring for ALICE for years



SAM

- NDGF hasn't been in the Service Availability Monitoring for ALICE for years
- ...because we haven't had any CREAM-CEs



SAM

- NDGF hasn't been in the Service Availability Monitoring for ALICE for years
- ...because we haven't had any CREAM-CEs
- Could CREAM SAM jobs be sent via the WMS-ARC interoperability system?
 - HIP has experience with that – used for CMS



SAM

- NDGF hasn't been in the Service Availability Monitoring for ALICE for years
- ...because we haven't had any CREAM-CEs
- Could CREAM SAM jobs be sent via the WMS-ARC interoperability system?
 - HIP has experience with that – used for CMS
- But it was decided we'll wait for the new SAM system



SAM

- NDGF hasn't been in the Service Availability Monitoring for ALICE for years
- ...because we haven't had any CREAM-CEs
- Could CREAM SAM jobs be sent via the WMS-ARC interoperability system?
 - HIP has experience with that – used for CMS
- But it was decided we'll wait for the new SAM system
- \Rightarrow If the new SAM system can be made working for NDGF, we'll definitely be very interested.

