

Working Effectively with HPC Systems

National Supercomputer Centre (NSC), Linköping University

SNIC-PRACE training

Online @NSC 20th Apr 2021, 10:00 - ca. 15:00

Working Effectively with HPC Systems



<https://www.nsc.liu.se/>



<https://www.snic.se/>



<https://training.prace-ri.eu/>

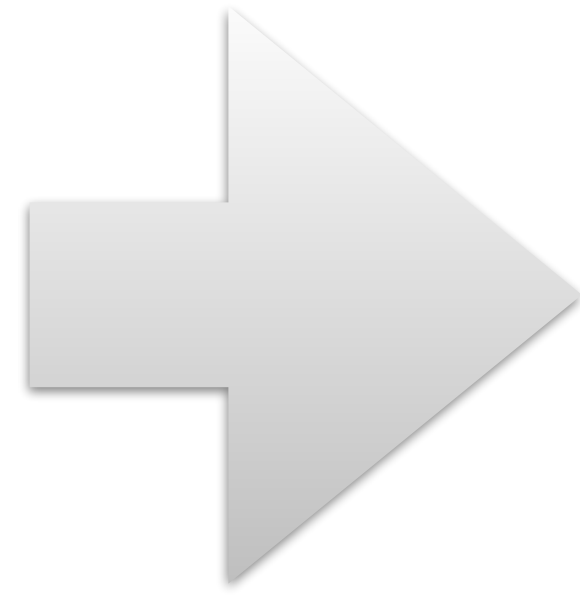
Introduction

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SNIC-PRACE training

Online @NSC 20th Apr 2021, 10:00 - ca. 15:00

General Information



https://www.nsc.liu.se/support/Events/HPC_course_2020/

also: <https://events.prace-ri.eu/event/1026/>

Open document for questions and answers during seminar:

[This is a clickable link, it was also sent out in email to registered participants](#)

Checking Q&A at end of sessions (optional breaks)

... all clickable links in seminar are underlined

Schedule

10:00 - 10:10 Introduction

Q&A at end of each session
(or optional break)

10:10 - 10:45 Tools at your End

10:45 - 11:20 HPC System Anatomy & Storage

11:20 - 12:00 Concept of Parallelism

12:00 - 13:00 ...*L u n c h*...

13:00 - 13:30 Software at HPC Systems

13:30 - 14:00 Ideas and Strategies for Organizing your Workflow

14:00 - 14:30 Interacting with the Slurm Queueing System

14:30 - ca15:00 Practical Examples & **Discussion**

Working Effectively with HPC Systems

- From general HPC, to NSC specific
- [Overview](#) for new users (general HPC & NSC)
- [Reminder](#) for more advanced users
- [Basic & brief](#), for more details, see [links](#)
- Opportunity for Q&A, discussion


... all clickable links in seminar are [underlined](#)

Workshop Organization

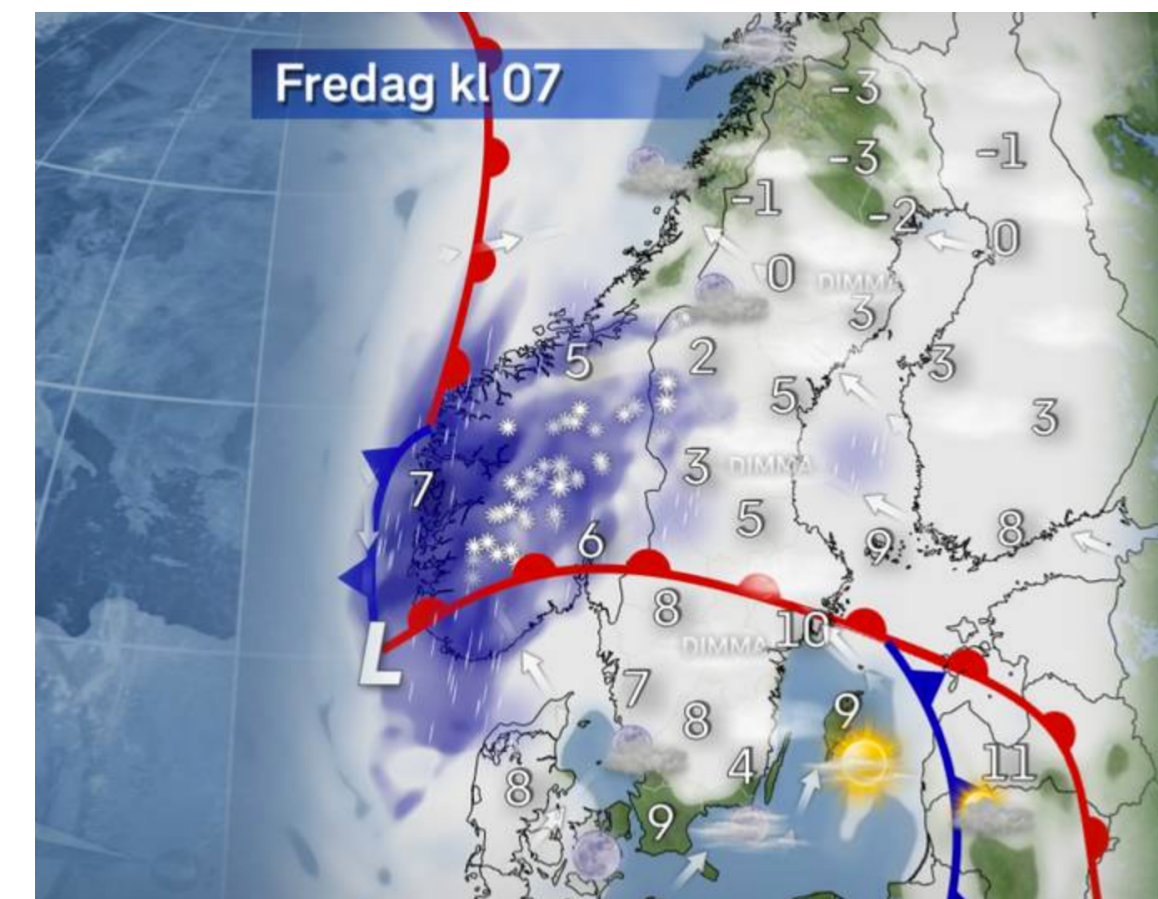
- **Weine Olovsson (Materials science)**
Presentations, Q&A
- **Hamish Struthers (Climate research)**
Presentations, Q&A
- **Peter Kjellström (HPC / parallel computation)**
Examples, Q&A
- **Torben Rasmussen (Computational chemistry)**
Q&A
- **Wei Zhang (Computational science, parallel prog.)**
Q&A

National Supercomputer Centre (NSC)

NSC is part of:

-  **SNIC** Swedish National Infrastructure for Computing (10 Univ.)
- **li.u** LINKÖPING UNIVERSITY liu.se

NSC partners: SAAB, SMHI, MET Norway



NSC: Quick Overview

Current Director: Matts Karlsson, Jun 2016 -

~ **40** people (not all full-time)

Mostly **system experts** and **application experts**

- Provide computational resources
- Software installation (global / local)
- Troubleshooting / advice
- Training (SNIC, local and other)

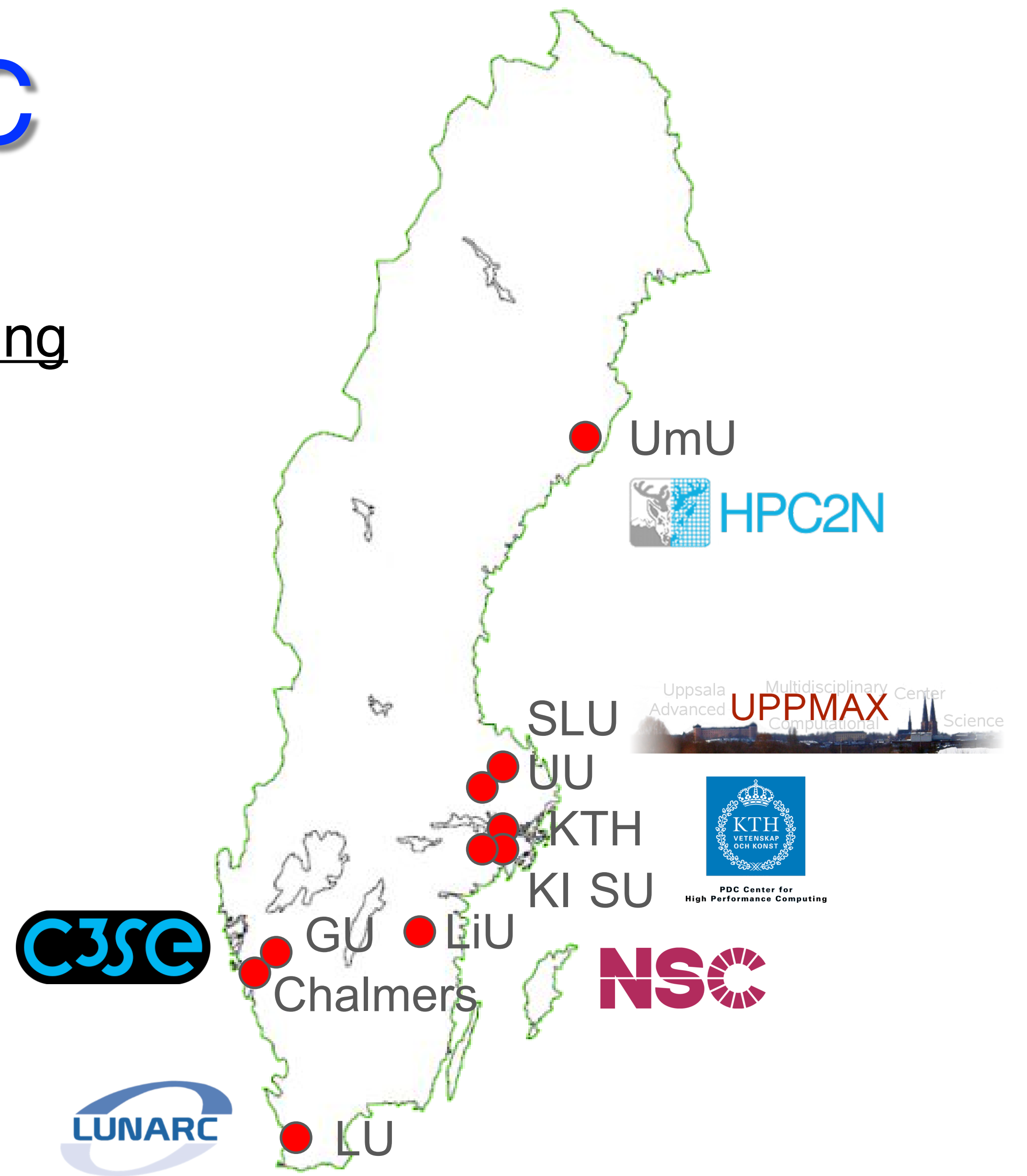


SNIC

Swedish National Infrastructure for Computing

10 universities & 6 HPC centers:

- Chalmers [C3SE](#)
- Göteborg
- Karolinska
- KTH [PDC](#)
- Linköping [NSC](#)
- Lund [LUNARC](#)
- SLU
- Stockholm
- Umeå [HPC2N](#)
- Uppsala [UPPMAX](#)



NSC Academic Clusters

32 cores/node

Tetralith (2018 -) 1908 x 2 x 16 cores, Intel Xeon Gold 6130



(2020 -) 170 x T4 GPU-nodes

Top500 no. 111 (74)

Sigma (2018 -) 110 x 2 x 16 cores, Intel Xeon Gold 6130 “same” as Tetralith



(2020 -) 2 x V100 GPU-nodes

BerzeLiUs (2021 -) Nvidia DGX SuperPOD, 60 x 8 A100 GPUs



*Knut and Alice
Wallenberg
Foundation*

