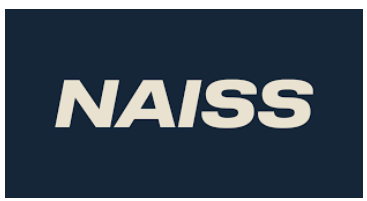
Introduction to HPC2N

HPC2N, Umeå University

September 13, 2023



UMEÅ UNIVERSITY

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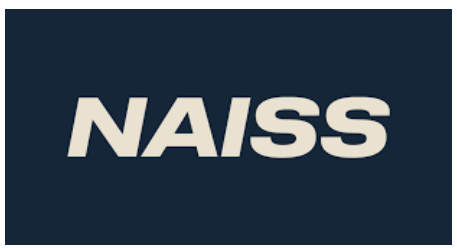
- A part of **National Academic Infrastructure for Supercomputing in Sweden (NAISS)**



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- Software for e-Science applications
- All levels of user support
  - Primary, advanced, dedicated
  - Application Experts (AEs)

Primary objective: to raise the national and local level of HPC competence and transfer HPC knowledge and technology to new users in academia and industry.

HPC2N (partners)

HPC2N is hosted by

UMEÅ UNIVERSITY

Partners:

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- Involved in several **projects and collaborations**

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- **User training and education program**
  - 0.5 – 3 days; ready-to-run exercises
  - Introduction to HPC2N and Kebnekaise
  - Parallel programming and tools (OpenMP, MPI, debugging, perf. analyzers, Matlab, R, MD simulation, ML, GPU, . . .)
    - **Using Python in an HPC environment**, 1 December 2023
    - **Introduction to Git**, 13-17 November 2023
    - **Introduction to running R, Python, and Julia in HPC**, 17-19 October 2023
    - **Workshop: Matlab in HPC**, 11, 18, 25/26 September 2023
    - **Introduction to Kebnekaise**, 21 September 2023

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    - **Introduction to Kebnekaise**, 21 September 2023
- Workshops and seminars

HPC2N (personnel)

Management

- Paolo Bientinesi, director
- Björn Torkelsson, deputy director
- Lena Hellman, administrator

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- Research Engineers under DDLS, HPC2N/SciLifeLab
  - System Developer, IT
  - Data Engineer
  - Data Steward

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System and support

- Erik Andersson
- **Birgitte Brydsö**
- Niklas Edmundsson (Tape coord)
- Ingemar Fällman
- Magnus Jonsson
- Roger Oscarsson
- **Åke Sandgren**
- Mattias Wadenstein (NeIC, Tier1)
- **Lars Viklund**

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- Contact through regular support
  - If you have a specific problem/question and/or need consultation

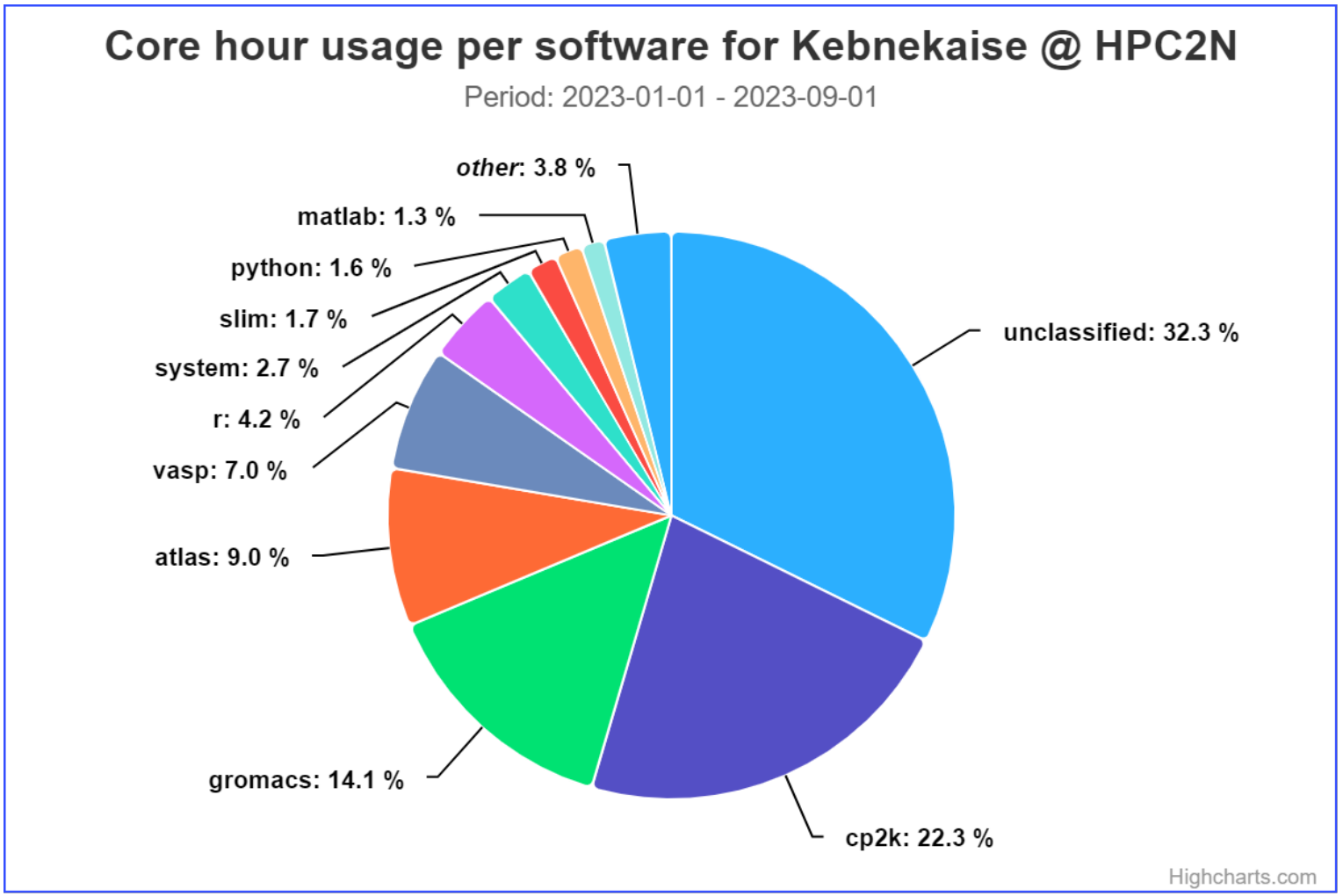
HPC2N (users by discipline)

- Users from several scientific disciplines:
  - Biosciences and medicine
  - Chemistry
  - Computing science
  - Engineering
  - Materials science
  - Mathematics and statistics
  - Physics including space physics
  - Deep learning and artificial intelligence

HPC2N (users by discipline, largest users)

- Users from several scientific disciplines:
  - Biosciences and medicine
  - **Chemistry**
  - Computing science
  - Engineering
  - **Materials science**
  - Mathematics and statistics
  - **Physics including space physics**
  - Machine learning and artificial intelligence (several new projects)

HPC2N (users by software)



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  - 2 dual NVIDIA A100 GPU nodes
  - one many-core AMD Zen3 CPU node

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Large Memory	20	Intel Xeon E7-8860v4, **4 x 18 cores**, **3072 GB**, EDR Infiniband

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- Also SweStore — disk based (dCache)
  - Research Data Storage Infrastructure, for active research data and operated by NAISS, WLCG

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- Projects are applied for through SUPR (https://supr.naiss.se)