

SDU eScience User Forum

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| 12:00-12:05 | 1. Introduction |
| 12:05-12:30 | 2. Research Support and Training |
| 12:30-12:55 | 3. UCloud and Software Applications |
| 12:55-13:05 | Break |
| 13:05-13:30 | 4. Storage and Data Management |
| 13:30-13:55 | 5. National HPC Systems |
| 13:55-14:00 | 6. Final Thoughts |

SDU eScience center

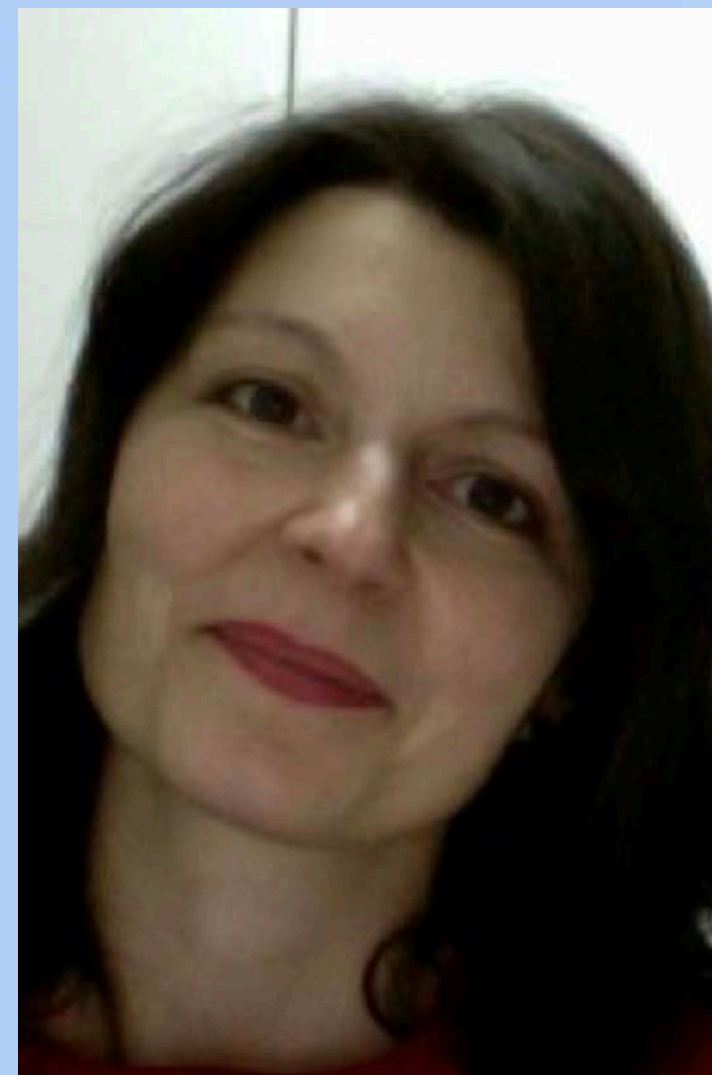
The team



Research Support



Emiliano Molinaro
(Team Leader)



Federica Lo Verso



Marjan Mansourvar



Erik Kjellgren

<https://escience.sdu.dk/index.php/sdu-front-office/>

support@escience.sdu.dk

Research Infrastructure



Martin L.R. Hansen
(Team Leader)



Tobias V. Volfing



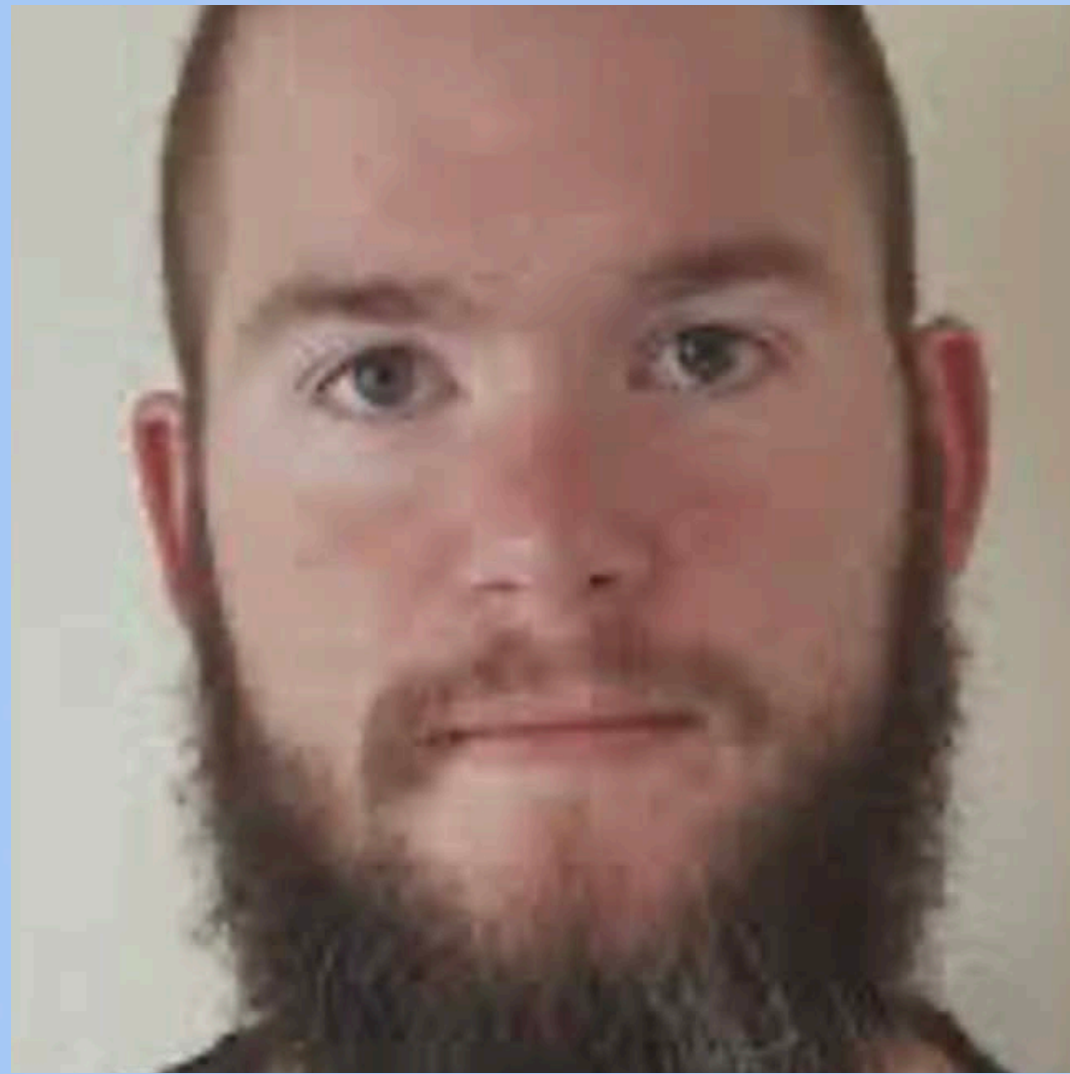
Erik B. Madsen



Jannick H. Visling

In collaboration with SDU IT, SDU Digital, SDU Technical Services

Research Cloud



Dan S. Thrane
(Team Leader)



Jonas M. Hinchley

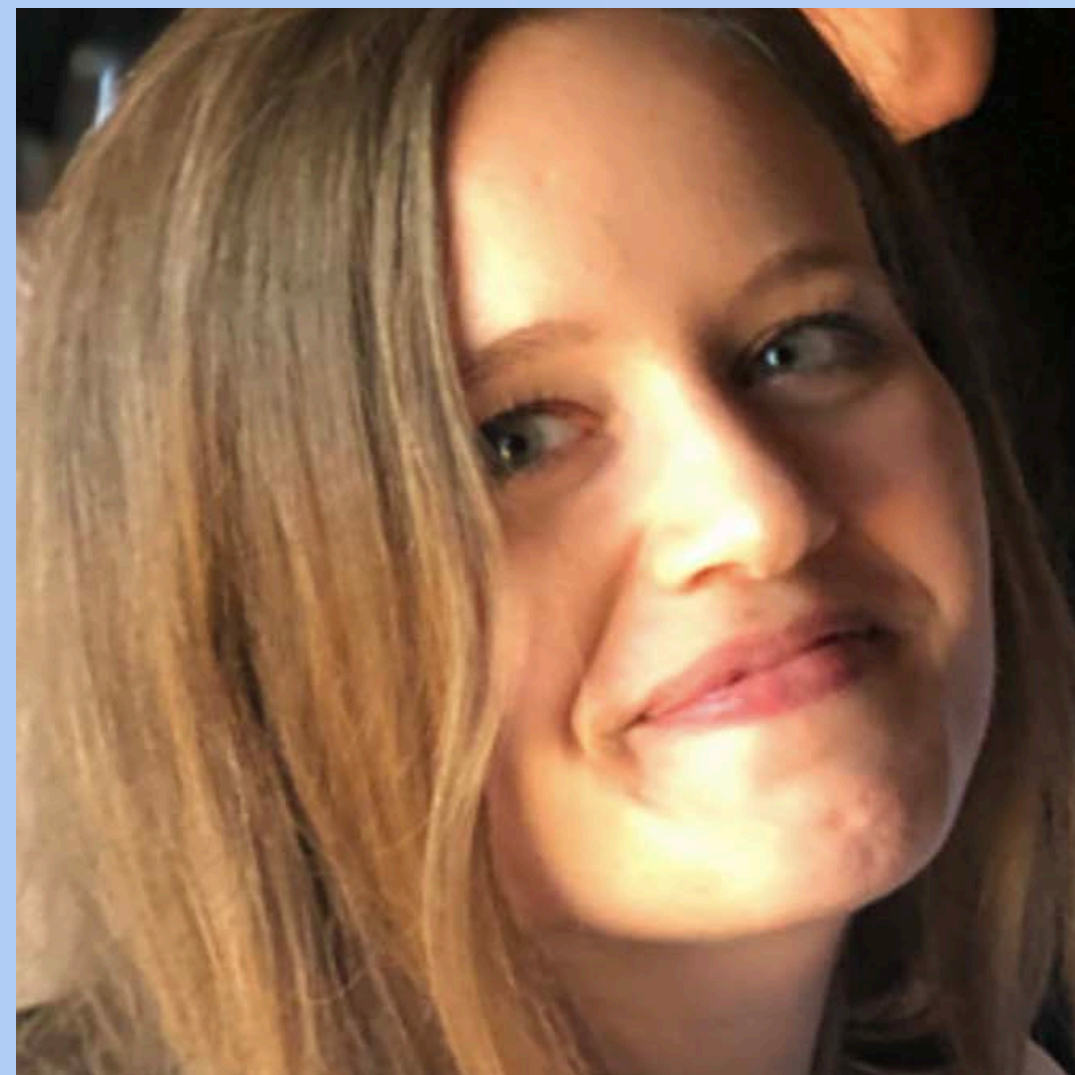


Henrik Schulz



Brian Alberg

Administration & Compliance



Johanne L. Hansen
(Center admin)



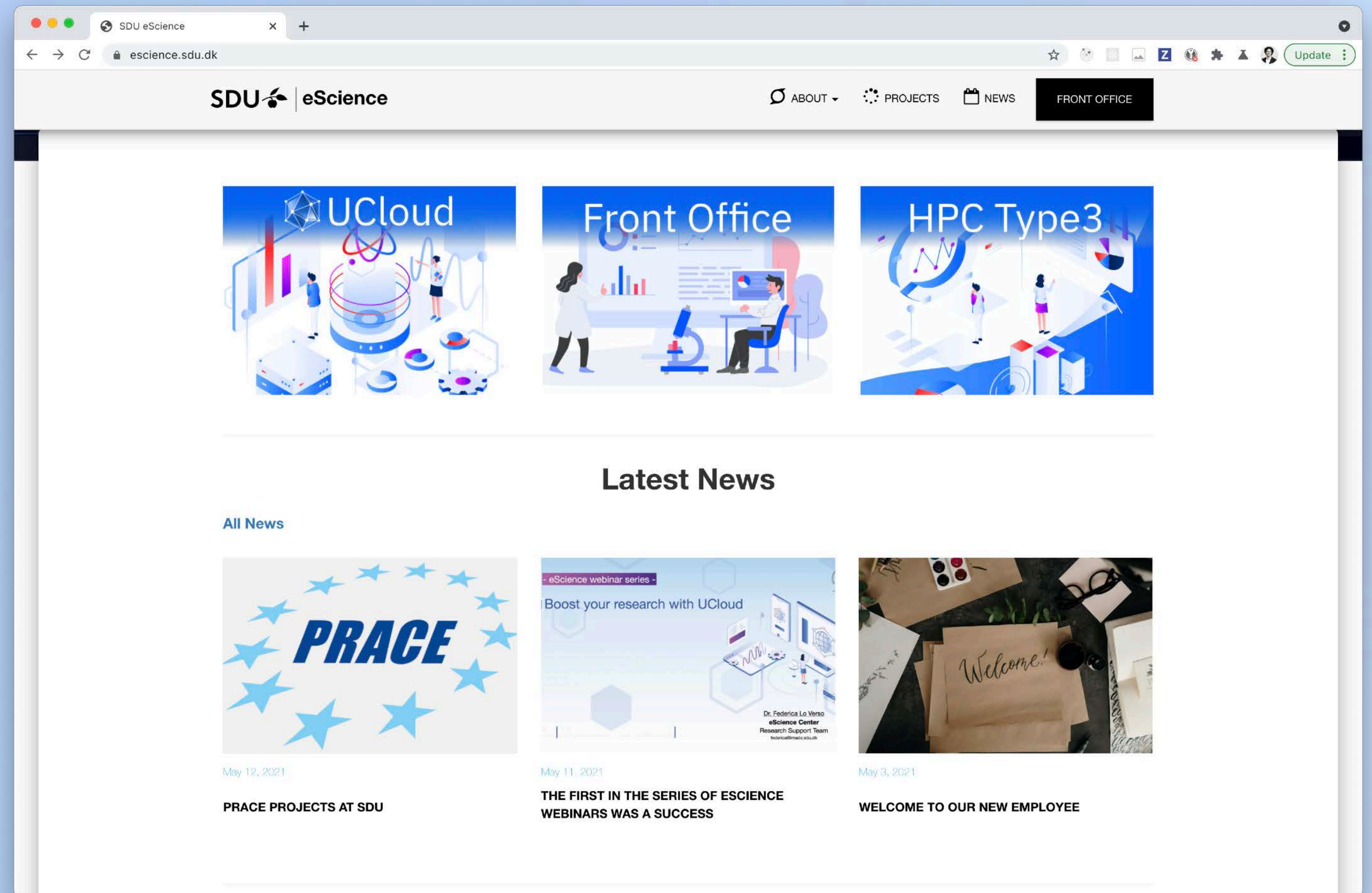
Bjørn H. Jakobsen
(Compliance officer)

Contact us

<https://escience.sdu.dk>

escience@sdu.dk

support@escience.sdu.dk



User Forum

- for SDU researchers and users
- **Listen to feedback from the users on the services offered by the eScience center**
- **Listen to suggestion from the users on new services and support/training material**

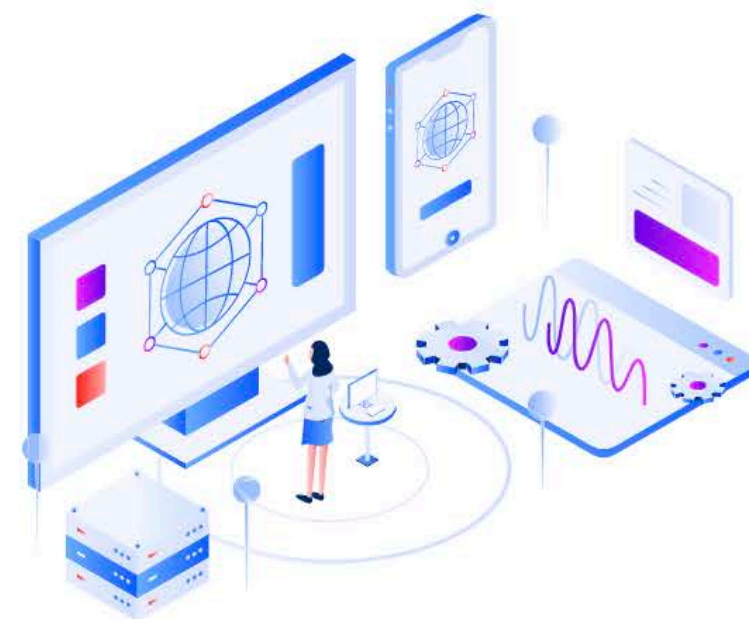
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RESEARCH SUPPORT

From basic to high-level technical support



NATIONAL HPC SYSTEMS

Request access to storage and computing resources



DATA MANAGEMENT

Transfer and share research data



UCLOUD PLATFORM

Boost your research with interactive HPC



TRAINING & TUTORIALS

Sign in for our thematic workshops and training programs



NEW SOFTWARE APPLICATIONS

Request specific software applications

Documentation & Service Desk

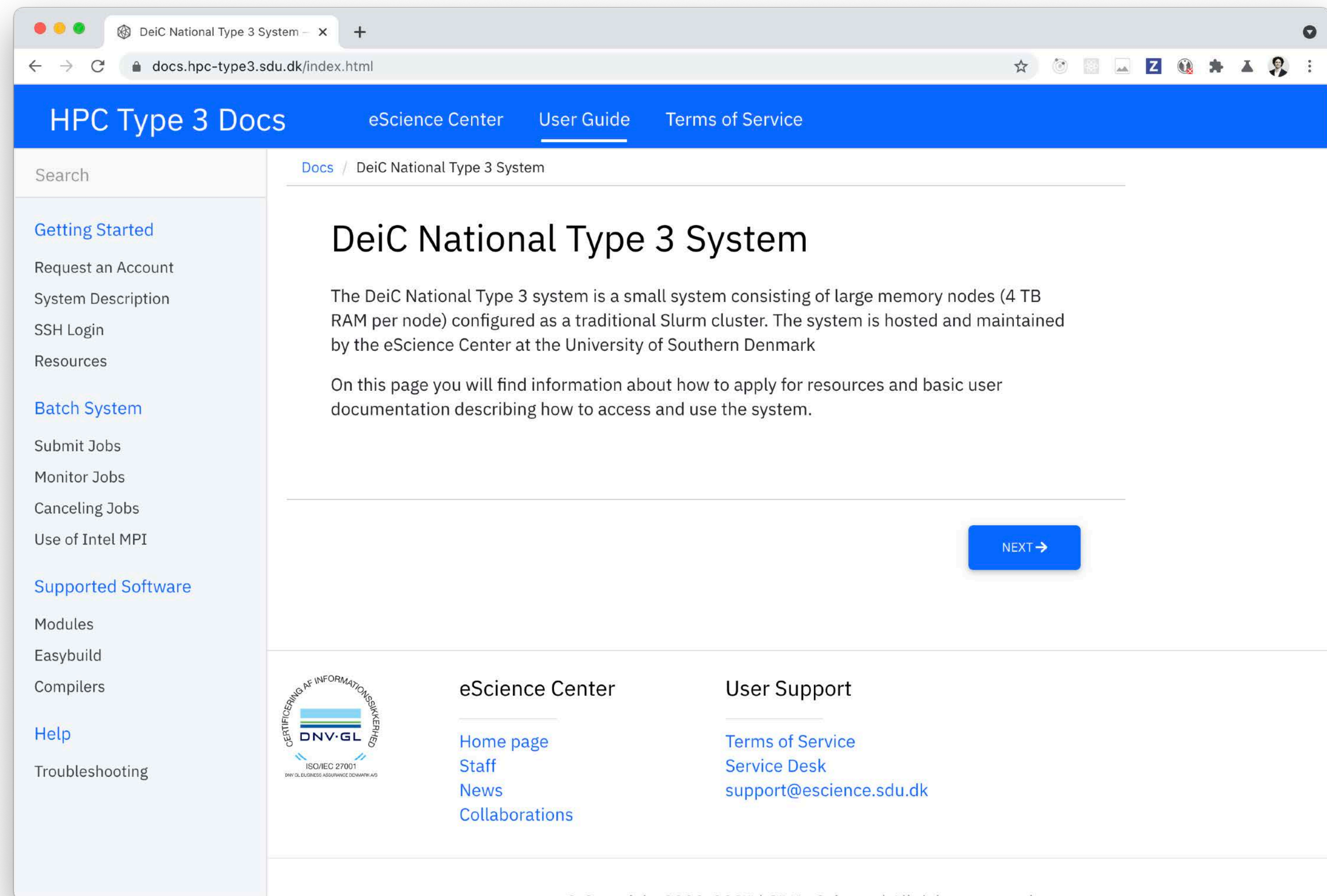
Documentation site:

<https://docs.hpc-type3.sdu.dk>

<https://docs.cloud.sdu.dk>

SDU eScience service desk:

<https://servicedesk.cloud.sdu.dk>



Support @ eScience

- Support new users
- Access / transfer / archive data
- National HPC systems / LUMI
- Install / setup new software
- Optimise software
- Develop new solutions for research
- Support for funding/resource applications
- Training / workshops
- Support for teaching / virtual classrooms
 - ★ Share data/code/virtual environment with students
 - ★ Coder, R Studio, JupyterLab, Knime, ...

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UCloud

User Experience



Interactive HPC



Share & Collaborate



Research Data



Security



Apps on UCloud

App Index

UCloud

My Workspace

Files

Shares

Apps

Runs

Activity

Admin

cloud.sdu.dk/app/applications/overview

Update

Featured

BURAI

v1.3.2-1

by Satomichi Nishihara

FEATURED APPLIED SCIENCE

Coder Java

v1.48.2-1

by coder.com

DEVELOPMENT FEATURED

Django

v3.2.3

by Django Software Foundation

DATA ANALYTICS FEATURED

Intertext

v0.1.0-5

by Douglas Duhaime, Peter Leonard

DIGITAL HUMANITIES FEATURED

Mongo Express

v0.54.0

by MongoDB Inc.

DATA ANALYTICS FEATURED DEVELOPMENT

CentOS Xfce

v7

by Emiliano Molinaro <molinaro@imada.sdu.dk>

FEATURED

CosmoMC

vMay2020-3

by Antony Lewis, Sarah Bridle

FEATURED NATURAL SCIENCE

FreeCAD

v0.18.4-1

by Federica Lo Verso <federica@imada.sdu.dk>

FEATURED APPLIED SCIENCE

MATLAB

v2020a-1

by MathWorks

DATA ANALYTICS FEATURED

NetLogo

v6.1.1

by Federica Lo Verso <federica@imada.sdu.dk>

FEATURED SOCIAL SCIENCE

Charticulator

v2.0.3-1

by Donghao Ren, David Tittsworth

DATA ANALYTICS FEATURED

Dash

v1.18.0

by Plotly

FEATURED DATA ANALYTICS

GROMACS

v2020.6b

by University of Groningen, Royal Institute of Tec...

NATURAL SCIENCE FEATURED

MinIO

v2020-10-28

by MinIO, Inc.

FEATURED DATA ANALYTICS

oTree

v3.2.2

by Daniel Li Chen, Martin Walter Schonger, Chris ...

SOCIAL SCIENCE FEATURED

Show All

Engineering

ANSYS

v2020.R2-1

by Ansys Inc.

ENGINEERING

ANSYS Electronics De...

v2020.R2-1

by Ansys Inc.

ENGINEERING

COMSOL

v5.4-6

by COMSOL Inc.

ENGINEERING APPLIED SCIENCE

Robot Operating System

v2.0-dashing

by Emiliano Molinaro <molinaro@imada.sdu.dk>

ENGINEERING APPLIED SCIENCE

Show All

Data Analytics

Charticulator

v2.0.3-1

by Donghao Ren, David Tittsworth

DATA ANALYTICS FEATURED

Dash

v1.18.0

by Plotly

FEATURED DATA ANALYTICS

Django

v3.2.3

by Django Software Foundation

DATA ANALYTICS FEATURED

KNIME

v4.1.4

by KNIME Team

DATA ANALYTICS

MariaDB Server

v10.6.1-dev

by MariaDB Foundation

DATA ANALYTICS

Show All

Social Science

Kodningslab.dk

v2.4.1

by Lotte Kramer Schmidt <lkramer@health.sdu.d...

NetLogo

v6.1.1

by Federica Lo Verso <federica@imada.sdu.dk>

FEATURED SOCIAL SCIENCE

oTree

v3.2.2

by Daniel Li Chen, Martin Walter Schonger, Chris ...

SOCIAL SCIENCE FEATURED

Show All

ClaudioPica#7566

UCloud Docs

https://cloud.sdu.dk/app/applications/details/dash/1.18.0/

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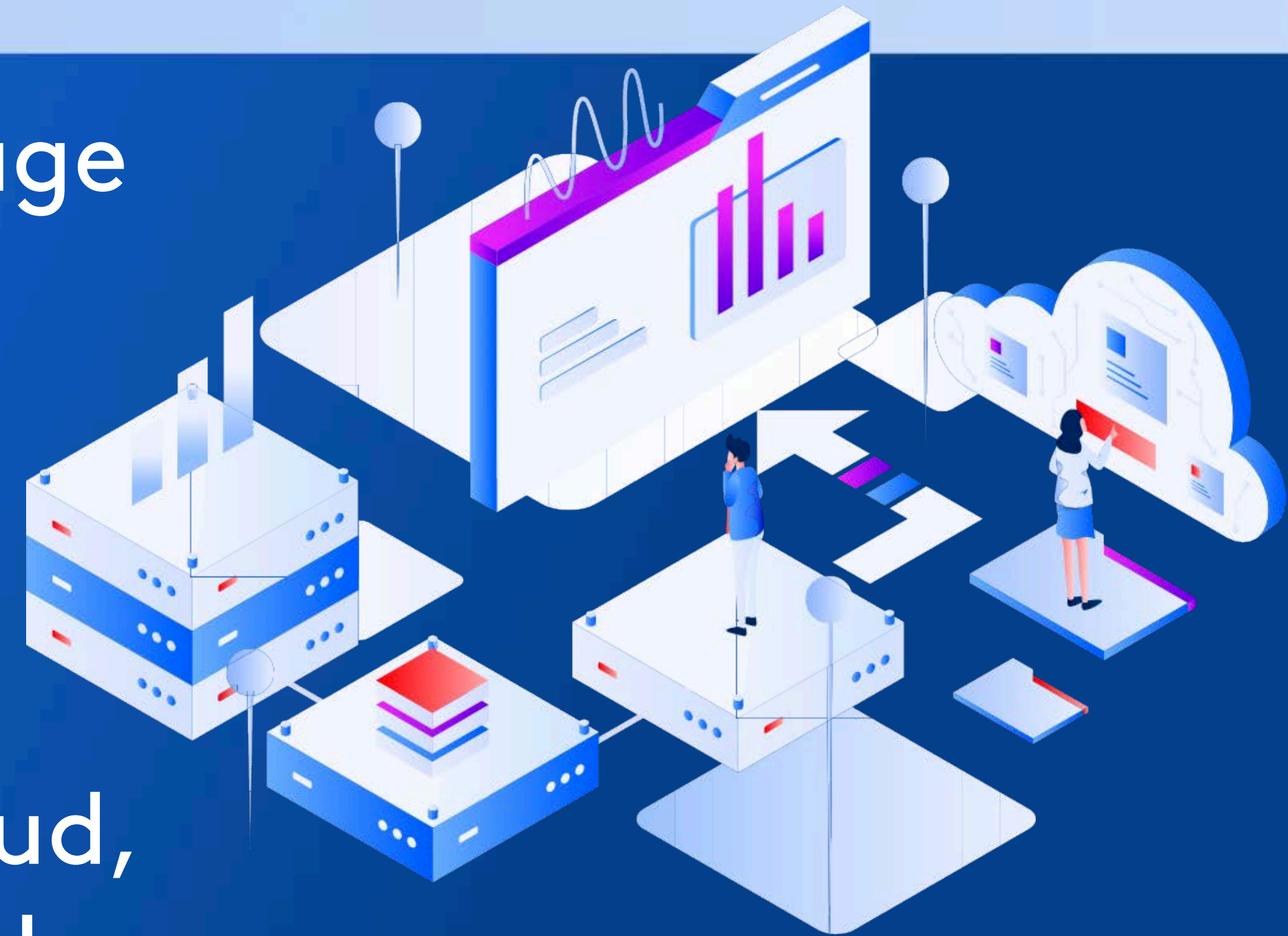
Storage / Research Data

Durable, resilient and secure storage

Supports large volume and variety of research data

Can be accessed directly via UCloud, and the other HPC systems at SDU

Soon also as a “dropbox”-like folder



Data Management

- Easy access to data
 - Access data from national/international archives and HPC centers
 - Support for personal /sensitive data (DPAs, DMPs, etc)
- Fast and secure data transfer
- Efficient data archiving
 - Support for data organization through databases
 - Assistance in identifying data ready to be archived
 - Assistance in the data movement from primary storage to archive and vice versa for fast data recovering.

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National HPC

Type 1



Type 4 ???

Type 2

Compurerome 2.0	GenomeDK	Sophia
Xeon Gold 6230 Cascade Lake, 40 cores, 192 GB	AMD EPYC Rome 7452, 64 cores, 512 GB	AMD EPYC 7351, 32 cores, 128 GB

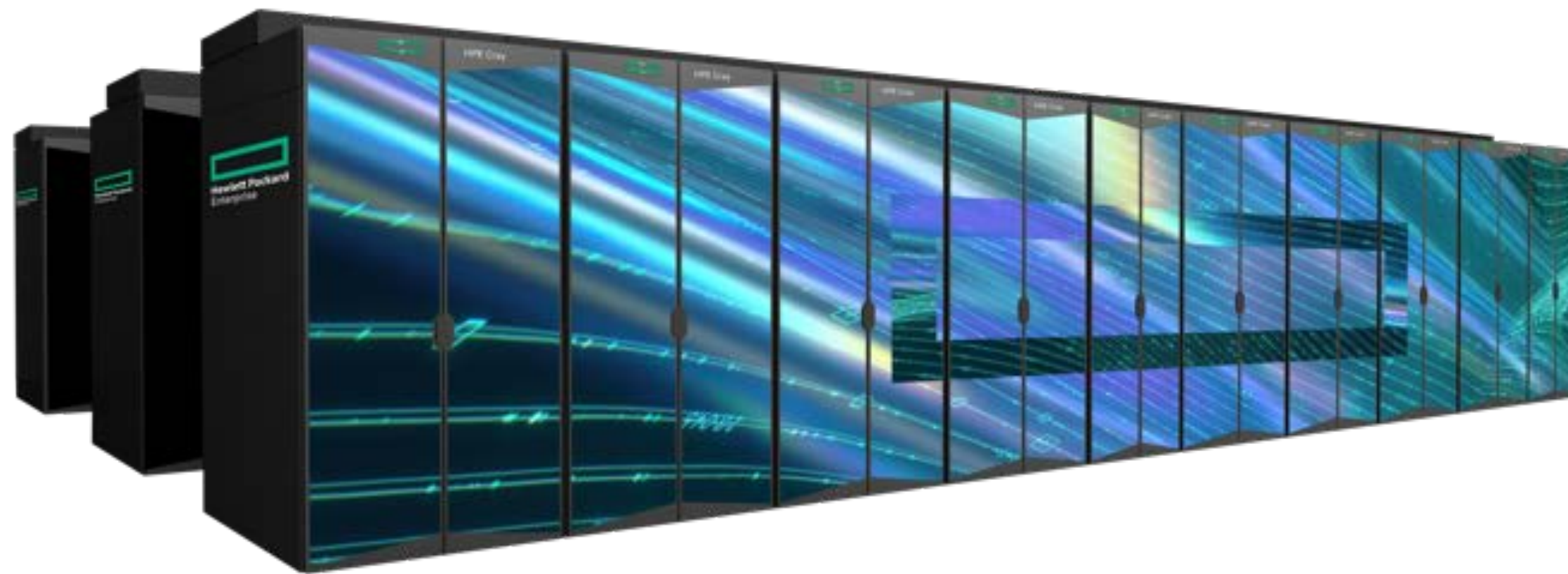
Type 3

DeiC HPC3 “Hippo”

- 4x Lenovo SR645 + FE
- 2x AMD 7742 - Zen2 Epyc “Rome”
- 64cores, 256MB l3 cache, 2.25Ghz
- 4096 GB DDR4-3200 LRDIMM
- 100Gb/s Infiniband HDR ConnectX-6
- IBM ESS GL1c 1,098 PB @ 6,5 GB/s



LUMI: one of the fastest supercomputers in the world



- LUMI will be an **HPE Cray EX** supercomputer manufactured by **Hewlett Packard Enterprise**
- Peak performance over **550 petaflop/s** makes the system one of the world's fastest

1 system

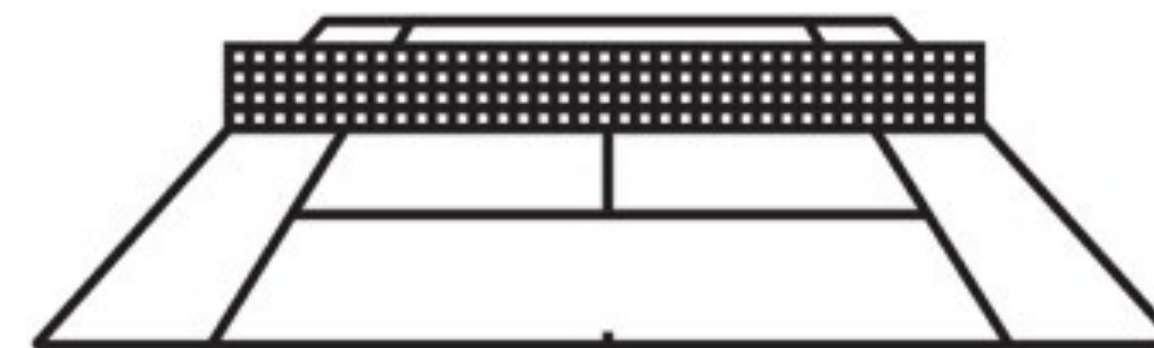
550 Pflop/s

Peak Performance

Computing power
equivalent to

1 500 000

Modern laptop computers



Size of a tennis court

Modern platform for
High-performance
computing,
Artificial intelligence,
Data analytics

Based on GPU technology

Final words

