

DeiC Facility for Interactive HPC

AU Tech Digital Infrastructure Committee

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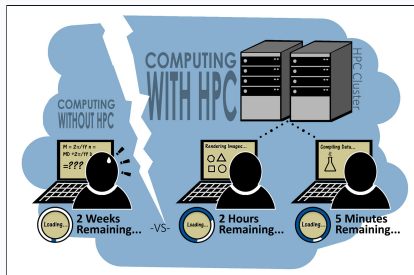
Center for Humanities Computing Aarhus|chcaa.io
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CENTER FOR HUMANITIES
COMPUTING AARHUS



BACKGROUND



Efficient use of computing platforms for running applications quickly

TRADITIONAL USERS

by default HPC *is not for all*: “you must learn to crawl before you can walk”

1. write code base for project
2. formulate batch script
3. submit to job queue

NEW USERS

new technologies (Big Data, AI) have created new users

- easy & interactive access
- collaborative development
- code and data sharing

for exploration, experimentation, debugging in a sandbox-like environment

NATIONAL HPC

November 2020: initiated a new HPC landscape in DK

Type	Function	Access	Compute
1	Interactive	interactive	CPU + GPU
2	Throughput	batch	CPU
3	Large memory	batch	CPU
4	Accelerated + Capability	batch	CPU + GPU + ...

DeiC Facility of Interactive HPC

- targeted at new users from social science and humanities ('novice users')
- other 'new' users of DeiC interactive computing facility

INTERACTIVE HPC

UCloud is a data-centric platform for interactive HPC

- Interactive access
- User experience
- Share & collaborate
- Security
- Competitive pricing



AU issues (partially solved)

- Level of ambition(-s) and propagation mechanism(-s)
- Access policy and resource allocation
- Integration with existing educational activities.

USE CASES

WORKSTATION

seamless access to a large flexible work station

COLLABORATION

share data with your collaborators in secure virtual environments

DATA SCIENCE

popular frameworks in everything from interactive notebooks to a Spark cluster for complex workflows

INTERACTIVE

GUI to give access to interactive HPC with preloaded apps and on-demand customization

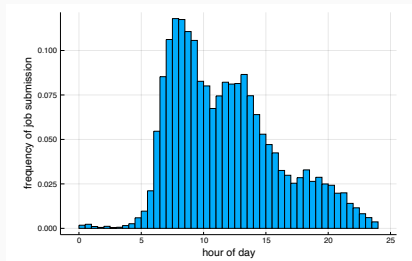
EDUCATION

student access with university credentials 24/7 with simple resource management

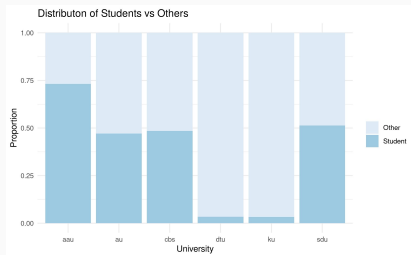
SECURITY

suitable for sensitive data analyses in compliance with GDPR regulations

UTILIZATION AND USERS

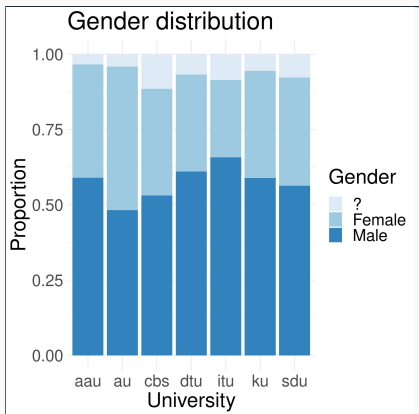


Frequency of job submissions during a day

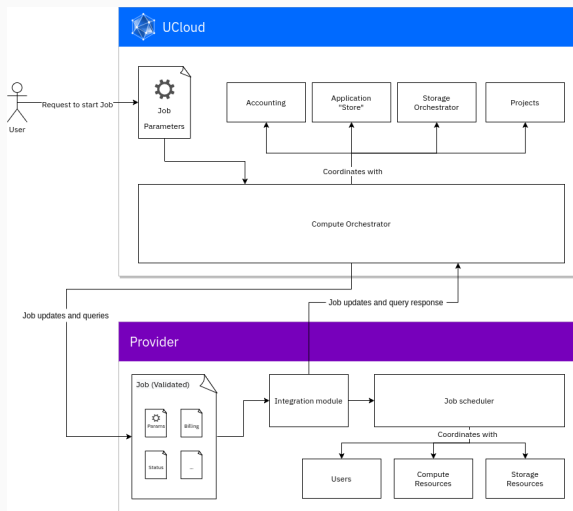


Distribution of students and employees at Danish universities.

USER DIVERSITY



OVERVIEW




```
1 if questions:
2     try:
3         answer()
4     except RuntimeError:
5         pass
6     else:
7         print('...')
```