



Icelandic HPC National Competence Center for HPC & AI – Welcome & Workshop Objectives

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https://www.youtube.com/channel/UCWC4VKHmL4NZgFfKoHtANKg



IHPC National Competence Center for HPC & AI in Iceland















ING AND NATURAL SCIENCES

FACULTY OF INDUSTRIAL ENGINEERING, MECHANICAL ENGINEERING AND COMPUTER SCIENCE

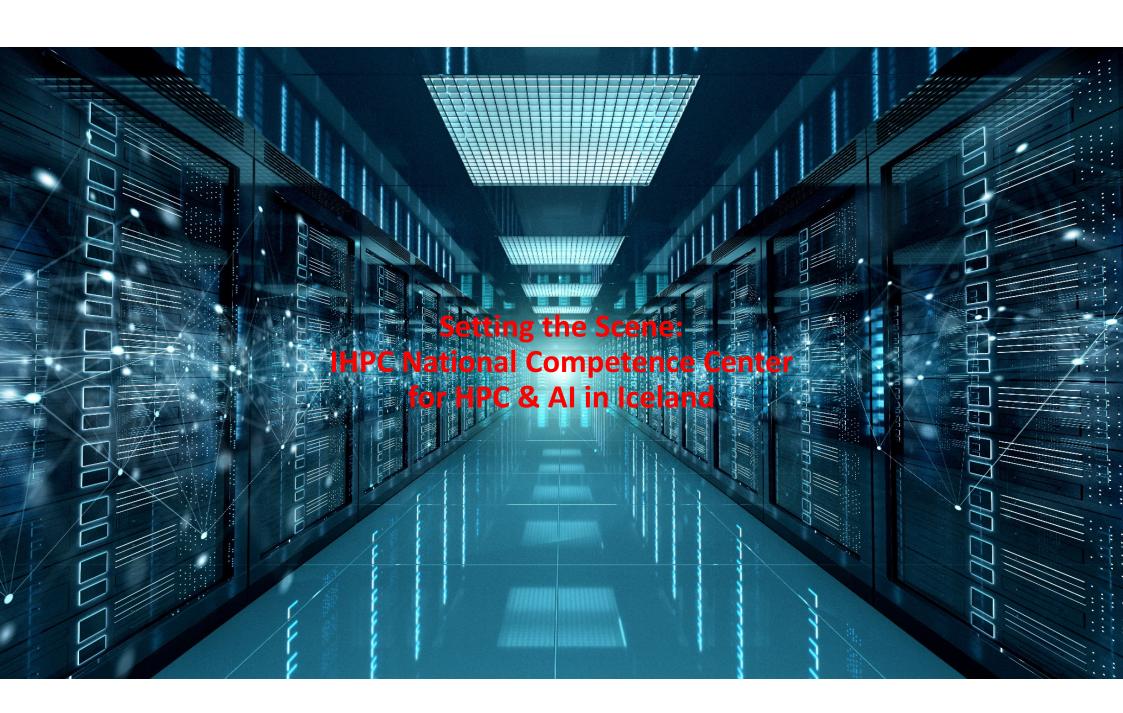












Executive Summary – Major Icelandic HPC Activities

HPC

nannís Icelandic National Infrastructure for HPC



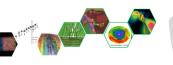
Proposals yearly required to obtain funds still

❖ Joint proposal from IHPC community

EuroHPC EuroCC National Competence Center for HPC & Al

- EU Project (09/2020-08/2022), 2 years
- Building Simulation and Data Labs (SDLs) of the IHPC Community of

Veðurstofa Íslands





- ❖ Organized around RANNIS proposals
- ❖ ~53 scientific experts & research group
- Uolceland/UoReykjavik, Iceland Geo Survey ÍSOR, Met Office & industry: Matis, etc.

EuroHPC LUMI Supercomputer in Finland



Supercomputer funded by Finland, Belgium, Czech Republic, Denmark, Estonia, Iceland, Norway, Poland, Sweden, Switzerland

❖ Co-Funds by EC and Iceland participation funds from:

Nolceland, UoReykjavik, and Hannes Jonsson & Egill Skulasor Teaching & Education in HPC & Ai

- University of Reykjavik
- ❖ University of Iceland
- ❖ Arctic Webinar Series (with US partners)





+ H2020 MSc in HPC Pilot (EduHPC proposal)



HÁSKÓLINN Í REYKJAVÍK



- ❖ Tactical: ~4 Joint PhDs with Juelich Supercomputing Centre in Germany (#1 HPC
- ❖ Tactical: EC Projects like DEEP-EST, EOSC-Nordic, RAISE Center of Excellence (CoE), etc.
- Strategic: Plans of building an Icelandic National Lab with international cooperation together with Industry (e.g. Kaiser Global, other investors)





EURO

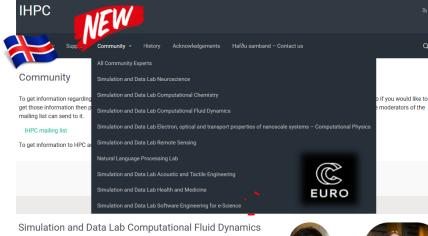
EuroCC Activities – Selected Benefits towards Bottom-Up Community Building

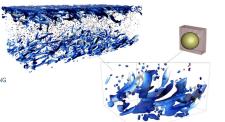




[1] Icelandic HPC Community Web page

- Simulation & Data Lab Communities
 - Experts w.r.t. **HPC in domain-specific topics**
- Based on extensive community experience
 - Juelich Supercomputing Centre in Germany works with the model for ~16 years









Simulation and Data Lab Computational Chemistry

Advancement of theory and methodology for atomic scale simulations, with broad ranging applications for chemistry and physical chemistry, reaction rat

nulation of solvated molecules and the solid / liquid interface

[3] IHPC SimDataLab Computational Chemistry Web Page

[4] Juelich Supercomputina Centre, Simlabs

The Simulation and Data Lab computational fluid dynamics (SimDataLab CFD) is leading parallel computing in Computational fluid dynamics in Iceland at the University of Iceland. The SimDataLab is Iceland's representative in the international projects in CFD and parallel computing. SimDataLab CFD aims to develop parallel code applications in CFD and support users who have already developed parallel application codes. SimDataLab CFD participates in the European project network in parallel computing and has an infrastructure and access to powerful parallel systems in-memory optimization, processing system architecture, high scalability, and have performance optimization computer nodes

[2] IHPC SimDataLab CFD Web Page



Workshop Objectives

F2F WORKSHOP

Bring together a diverse group of Icelandic and international stakeholders to discuss the role of HPC and related areas within Iceland without losing sight of its international links.

PERFORM COMMUNITY BUILDING

Perform community building in developing new successful joint activities between academia and industry, potentially creating new joint Simulation and Data Labs or collaborations.



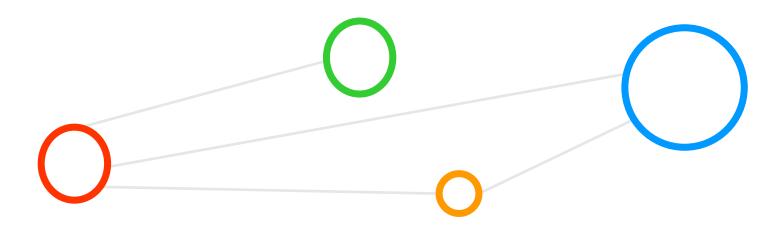
DOCUMENT COMPETENCIES

Document competencies, achievements, activities, and lessons learnt from participating stakeholders of Icelandic HPC efforts and associated international activities.

RECOMMENDATIONS

Identify best practices and core principles with a set of recommendations for developing the future Icelandic HPC ecosystem, including necessary skills, funding opportunities, applications, Centre of Excellences, community events, and sustainable infrastructure developments.

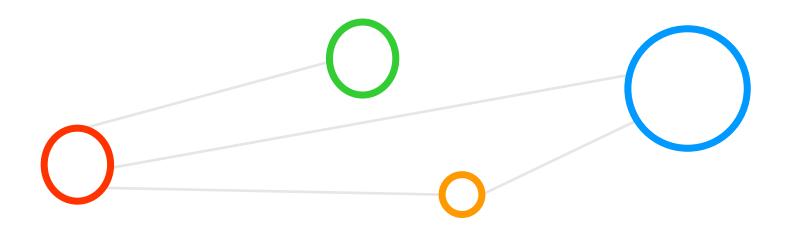
Selected References



Selected References

- [1] Icelandic HPC Community Web Page, Online: ihpc.is/community
- [2] Icelandic HPC Simulation and Data Lab Computational Fluid Dynamics (CFD), Online: https://ihpc.is/simulation-and-data-lab-computational-fluid-dynamics/
- [3] Icelandic HPC Simulation and Data Lab Computational Chemistry, Online: https://ihpc.is/simulation-and-data-lab-computational-chemistry/
- [4] Juelich Supercomputing Centre (JSC) Simulation and Data Labs, Online: https://www.fz-juelich.de/ias/jsc/EN/Expertise/SimLab/simlab_node.html

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MSc P. Glock (now INM-1)



MSc C. Bodenstein (now Soccerwatch.tv)



MSc G.S. Guðmundsson (Landsverkjun)



PhD Student Reza







