Latvijas HPC kompetences centra atbalsts

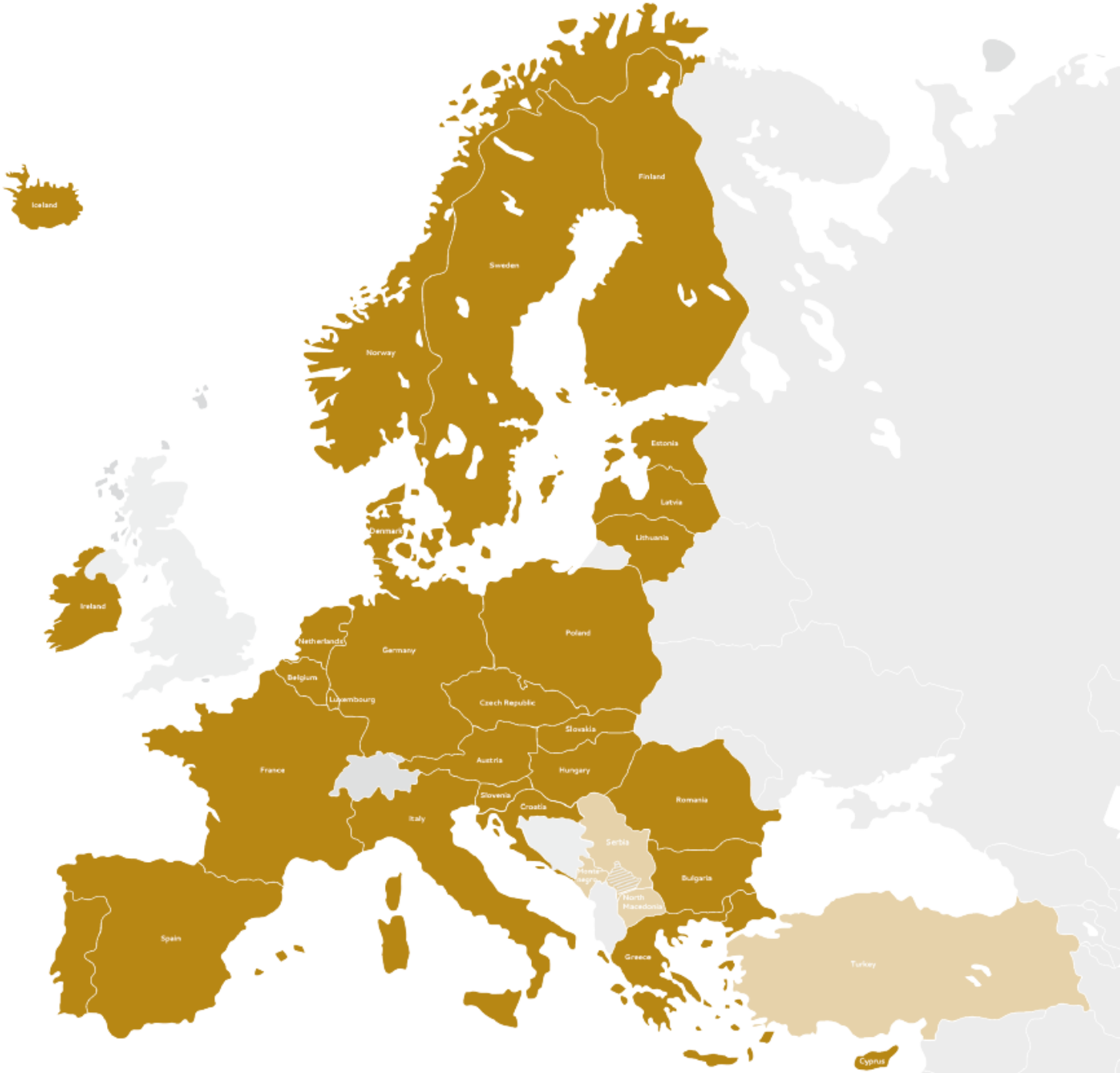
Latvijas HPC kompetences centrs
2024. gada 12. jūnijs

EuroHPC
Joint Undertaking

Lai uzlabotu Eiropas konkurētspēju, EuroHPC Joint Undertaking īsteno EuroCC projektu.

EURO²

Nacionālie kompetences centri (NCC) ir HPC un saistīto tehnoloģiju kontaktpunkti savā valstī.



Meluxina supercomputer
LuxProvide

MareNostrum5 supercomputer
BSC

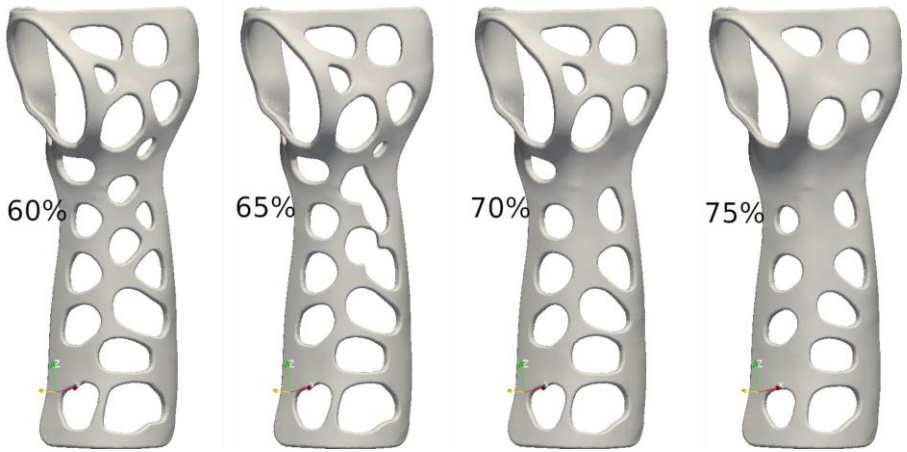
LEONARDO supercomputer
Cineca

LUMI supercomputer
CSC (Image credits: Fade Creative)

Karolina supercomputer
IT4Innovations

Discoverer supercomputer
Sofia Tech Park

castprint



Par **25%** samazināts laiks līdz klientam

Par **15%** samazinātas ražošanas izmaksas

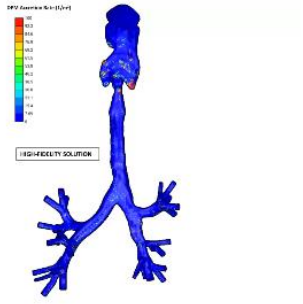
SUCCESS STORIES

HPC plays a key role in different sectors and industries enabling industrial and commercial companies to become more innovative and productive. This HPC impact is emerging also for SMEs enabling them to shift their business to a higher level. The presentation of the Success Stories below can inspire you with the results that could be achieved by using high-end HPC technologies and services.

The first tranche of the 16 FF4EuroHPC experiments was successfully concluded, meanwhile the second tranche generated 26 new success stories. In total, 42 success stories were produced in collaboration with 118 partners from 22 European countires.

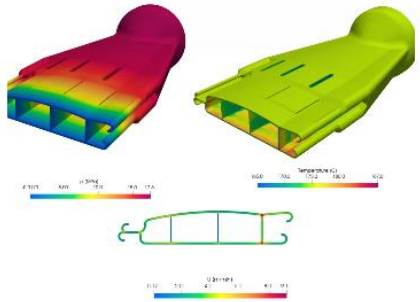
Let them inspire you!

Search by name... | Technology | Sector | Country

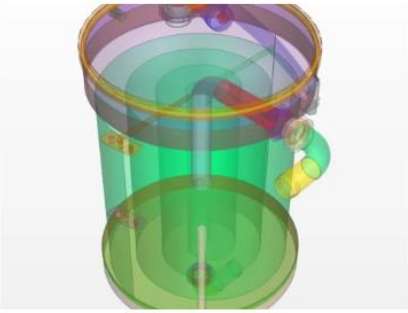


A Digital Twin for Airflow and Inhaled Drug Delivery in Human Airways
Read more

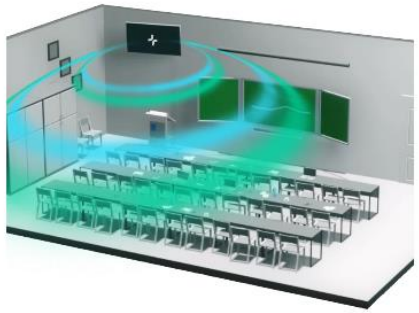
Boosting CFD Simulation of Thermal Equipment for Food Processing
Read more



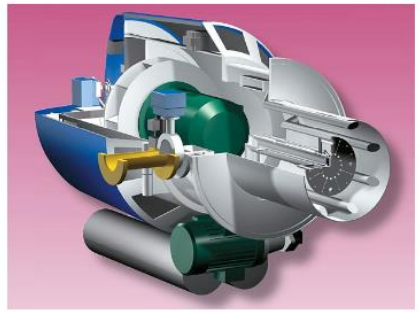
High Performance Computing for Profile Extrusion
Read more



Solving Ambitious Challenges in Wastewater Treatment Using HPC in CFD Simulation
Read more



Accessible Acoustic Simulations for Better Sound Experiences
Read more



High-Fidelity Modelling of a Hydrogen-Fired Industrial Combustor
Read more

https://www.ff4eurohpc.eu/en/success-stories/

Fortissimo Plus (FFplus) Will Foster Innovation in Industry with HPC and AI

FFplus will support European small and medium-sized enterprises (SMEs) and startups in testing new applications of high-performance computing (HPC) and artificial intelligence (AI). Initiated by the EuroHPC Joint Undertaking, the project will build on the transformative successes of the Fortissimo and FF4EuroHPC projects.

Published
May 02, 2024

< See all press releases

Funding and project details

FFplus was developed in response to the call DIGITAL-EUROHPC-JU-2023-SME-01, whose goal is to support the competitiveness and innovation potential of SMEs.

The project is funded by the Digital Europe Programme (DEP), an EU funding program that is bringing digital technology to businesses, citizens, and public administration, with a total budget of up to EUR 30 million.

FFplus started on May 1, 2024 and will run for a period of 48 months.

Tiešsaistē: https://www.hlrs.de/press/detail/fortissimo-plus-ffplus-will-foster-innovation-in-industry-with-hpc-and-ai

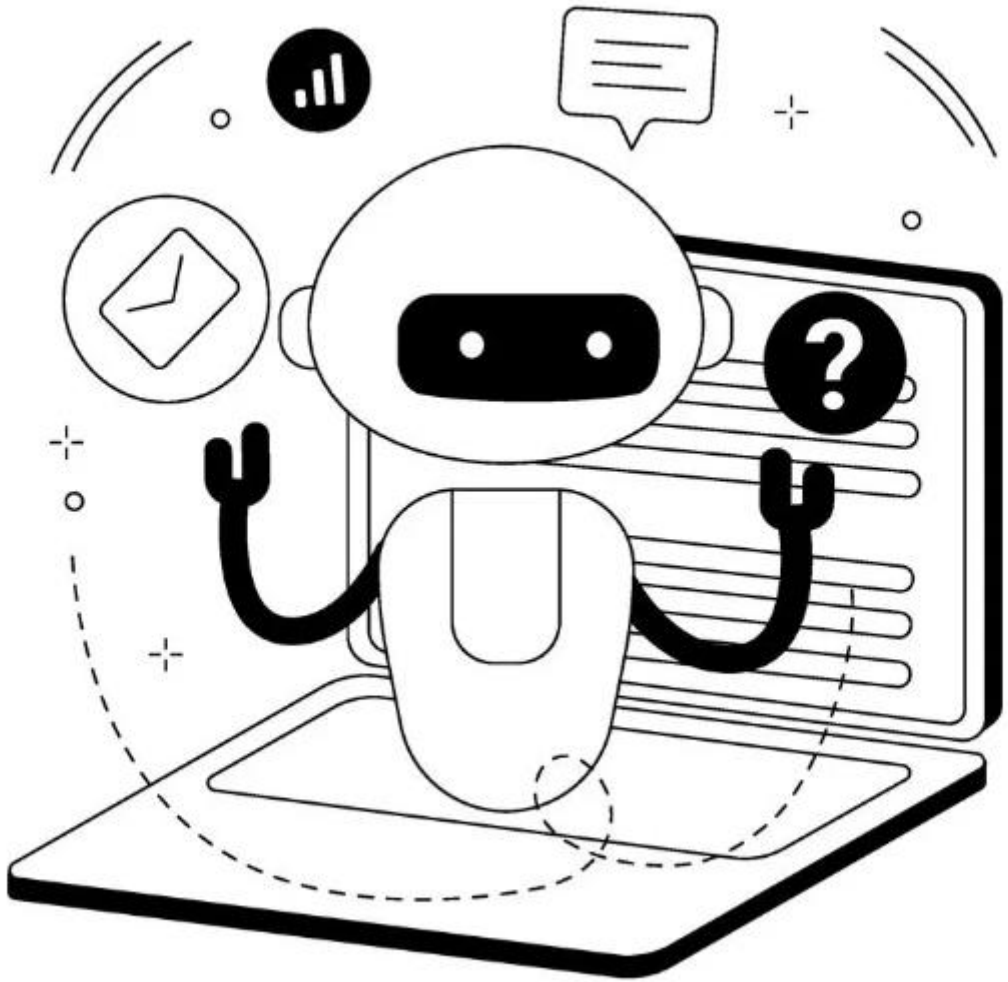
STUDENTI SUPERDATORĀ ATTĪSTA DIGITĀLUS RISINĀJUMU PROTOTIPUS

Noslēdzoties mācību gadam, noslēdzas arī studiju programma “Inovatīvu digitālu risinājumu radīšana HPC izaicinājumos”, kurā studentiem apgūt superdatoru palīdzēja RTU HPC centrs.

Pirmajā Rīgas Tehniskās universitātes (RTU) organizētajā programmā «Inovatīvu digitālu risinājumu radīšana HPC izaicinājumos» studenti attīsta lietotājiem draudzīgas lietotnes un vietnes, algoritmus, izstrādnes shēmas, vāc, apkopo un kartē liela apjoma datus un trenē mākslīgo intelektu, lai piedāvātu digitālu risinājumu prototipus dažādu Latvijas uzņēmumu un Bērnu klīniskās universitātes slimnīcas izaicinājumiem. Lai palīdzētu Latvijas studentiem gūt augsta līmeņa digitālās prasmes, nākamais izaicinājums tiks organizēts rudenī.

prezentē risinājumu jaunuzņēmuma «Bruntor» izaicinājumam. Foto: Linards Reinis Rozītis, RTU

Tiešsaistē: https://hpc.rtu.lv/2024/05/studenti-ar-hpc-attista-digitalus-risinajumu-prototipus/



Tiešsaistē: https://www.forbes.com/sites/alexanderpuutio/2024/03/22/what-ceos-need-to-know-about-the-next-frontier-of-ai-ai-agents/

Latvijas HPC kompetences centrs «SuperS»

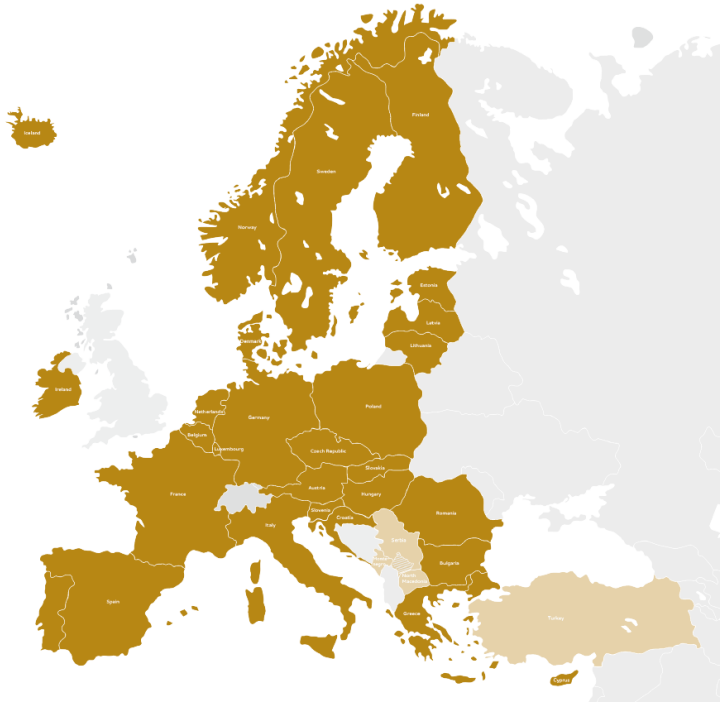
info@eurocc-latvia.lv

EURO

SuperS

Pakalpojumi

- Konsultācijas
- Ekspertu piesaiste HPC projektiem
- Projektu izstrādes atbalsts
- Individualizēti semināri organizācijām
- Atbalsts piekļuvei lielajiem superdatoriem
- Mācību kursi
- Jaunumu ziņu lapa



13 June 2024: HPC basic course on-site at Wageningen University. (NCC Netherlands) Did you recently start using the High Performance Computing Cluster (HPC Anunna)? Do you have some basic Linux knowledge but want to know more about how things work on Anunna? Join the free 5 hours course on the basics of the HPC. You will be set to work on computing tasks to gain insight and experience with Anunna. The course is organized by SRF and WDCC with contributions from WUR scientists experienced on Anunna.

13 June 2024: Seminar Solving Optimisation Problems Using the NISQ Era Quantum Computers (NCC CZ) Hybrid format: The third seminar in the Quantum Computing series will address one of the possible future practical applications of quantum computers – solving optimisation problems. The most promising algorithm in this area appears to be the Quantum Approximate Optimization Algorithm (QAOA), which will be the main focus of this talk. More information

14 June 2024: Energy Efficient Computing Webinar Vol. 6: Improving energy efficiency of parallel applications using MERIC : Complex parallel applications show different hardware requirements during their execution. This dynamic behavior can be exploited for energy savings by changing the hardware power knobs to fit the configuration to the application's needs. The open-source runtime system MERIC is designed to minimize the energy consumption of the HPC infrastructure, executing a parallel application by dynamic tuning of a wide range of hardware power knobs. The idea of dynamic tuning comes from the Horizon 2020 project READEX, under which the development of the MERIC runtime system started. The MERIC and associated tools perform a detailed analysis of complex application behavior, identify the optimal hardware settings concerning energy consumption and runtime, and provide dynamic tuning during the application runtime. **Speaker**: Ondřej Vysocký (IT4I, NCC Czech Republic **Registration Link**: https://forms.office.com/e/2QM3MMYFND

17-19 June 2024: Kokkos training days (CoE EoCoE-III) onsite: Kokkos is a long-term sustainable software catalyst for GPU computing, which offers performance portability over a wide range of hardware. The CEA-backed CExA project intends to adapt it for European hardware and applications. Gysela-X, EoCoE's fusion code, is one of the demonstrator applications involved in the CExA project.This in-person event will be hosted at CEA's Maison de la Simulation. It will give you the opportunity to learn more about Kokkos, meet Kokkos developers, share about your experience, and join the Kokkos community.You can find more information, including the detailed agenda and registration link, on this page: https://indico.math.cnrs.fr/event/12037/overview

18 June 2024: The OpenGadget code for Cosmological Simulations (CoE SPACE), online: The training is addressed to HPC experts from all domains interested in evolving their codes to "exa-scale". The audience will benefit from the training, discovering how a different community is solving computational problems and implementing algorithms. Conversely, the benefits for the speakers will come from the audience observations, discussions, suggestions, and even error spotting. More information here and registation here.

19-21 June 2024: Training Sprint MaX school: materials and molecular modelling with QUANTUM ESPRESSO* , (organized by MaX, in collaboration with: NCC Czechia, NCC Austria, NCC Slovakia, NCC Slovenia, NCC Poland and NCC Hungary) online: more information: https://www.max-centre.eu/news-events/max-school-materials-and-molecular-modelling-quantum-espresso
20 June, 2024: HPC Advanced course on-site at Wageningen University. (NCC Netherlands):Join the free 5 hours course on the basics of the HPC. You will be set to work on computing tasks to gain insight and experience with Anunna. Register here: https://eurocc-netherlands.nl/calendar/hpc-advanced-course/

24-26 June 2024: Hackaton Simulation of Weather and Climate in Europe (CoE EDiWACE3) on-site in Amsterdam, Netherlands: The event is targeted at weather and climate modellers at all career stages. The participants will bring their own codes to the hackathon and work in teams, together with HPC experts, to improve the performance of their code. This will be the second of four ESiWACE3 hackathons, and the goal of this event is to assist climate scientists with optimising earth-system models (ESMs). More informationen: https://www.esiwace.eu/events/2nd-esiwace3-hackathon

25-26 June 2024: EuroCC2 AI for Science Bootcamp (CC Germany, NCC Montenegro, NCC Sweden), online: The AI for Scientific Computing Bootcamp provides a step-by-step overview of the fundamentals of deep neural networks and walks attendees through the hands-on experience of building and improving deep learning models for applications related to scientific computing and physical systems defined by differential equations. The material will cover more advanced topics such as physics-informed neural networks (PINNs) and operator learning and make use of tools like NVIDIA Modulus to develop and train the models. This online bootcamp is a hands-on learning experience where you will be guided through step-by-step instructions with teaching assistants on hand to help throughoutMore information: https://www.hlrs.de/training/2024/bc-ai-nvBSCW URL Registration: Site Event: SE-000315 (openhackathons.org)

25 June - 4 July, 2024: The CSC Summer School in High-Performance Computing 2024, onsite at Espoo/Finland (NCC Finland): Summer School brings together undergraduate and graduate students and postdoctoral researchers in different disciplines of scientific computing from all over the world. The contents consist of lectures and hands-on training on parallel programming, code optimization and other necessary skills in development of scientific software. Registration: https://ssl.eventilla.com/summerschool2024

EURO

SuperS

Labdien!

Turpinām jauno tradīciju un reizi mēnesī dalāmies ar jaunākajiem notikumiem superdatoru pasaulē.

Kā izmainītos Tava uzņēmuma/pašvaldības ikdiena, ja izdotos ieviest inovācijas un īstenot vispārdrošākos sapņus: efektivizēt ražošanas procesus? Ieekonomēt laiku un naudu? Modelēt laika ziņu ietekmi uz lauksaimniecībā izmantojamo augsni?

Superdatori, kas saukti arī par augstas veiktspējas skaitļošanas ierīcēm (High-Performance Computing (HPC)), par 1000 reizēm pārspēj Tava biznesa portatīvā datora jaudas.

Piesakies bezmaksas konsultācijai SuperS

Superdatoru ziņas Latvijā

Gada HPC ekspertu notikums ir klāt - 4th Baltic HPC and Cloud Conference.

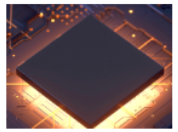
Zinātnes universitāšu studenti izzina HPC noslēpumus

Superdatorā radīts mūsdienīgs latviešu valodas rīks "Grāmatiņš"

- RTU piedāvā bezmaksas tālākizglītības kursus augsta līmeņa digitālo prasmju pilnveidei
- LU Skaitliskās modelēšanas institūta pētnieks Kirils Surovovs pārbaudīja OpenFOAM bibliotēkas mērogojamību, salīdzinot piemērus uz Latvijas superdatoriem un Luksemburgas superdatora MeluXina, kurš ir 12. jaudīgākais superdators ES.

Eiropas mēroga aktualitātes

13 atvērti projektu konkursi, kā uzņēmumiem piesaistīt Eiropas finansējumu



Tiešsaistes bezmaksas seminārs: CFD izmantošana HPC (27.-29.05.)

Pēdējā brīža iespēja: pilsētbūvniecības modelēšana un vizualizācija superdatorā. HiDALGO2

- **Papildu finansējuma iespējas uzņēmumiem, pētniekiem, industrijai, attīstot digitālās tehnoloģijas:** EARSC, the Copernicus Climate Change Service (C3S) and the Copernicus Atmosphere Monitoring Service (CAMS) are looking for use cases for CAMS and C3S data products and services related to public health, energy, the United Nations Sustainable Development Goals (SDGs) and the Paris Agreement. Find out more about this open call here . The call closes on April 05th 2024.
- **Eiropas Komisijas jaunumi:** The second Horizon Europe strategic plan 2025-2027: What Horizon Europe's strategic plan is and how it is developed.

Mācības Latvijā

HPC kompetences centrs "SuperS" piedāvā bezmaksas mācības, lai apgūtu prasmes, kas nepieciešamas superdatoru izmantošanai. CUDA, MATLAB, Solidworks - mācības, kuras iecienījuši mūsu klienti. Plašāk par mācību iespējām>>

Daļu no mācībām var skatīties jau tagad tiešsaistē - EuroCC Latvija YouTube kanālā. Piemēram, Creating and Training Neural Networks with MATLAB.

Vēlies saņemt jaunumus par mūsu mācībām?

> *Kā apēst ziloni? Var katru dienu pa mazam gabaliņam vai izmantot HPC.*

News

EuroCC Workshop HPC and Industry Application at IT2024

Registration is open for the upcoming EuroCC Training Event – High Performance Computing and Industry Applications. This event is organized in alignment with the 28th International Information Technology IEEE Conference [...]

Read more

Finnish start-ups have an exceptional competitive advantage – "This is something that should be announced more loudly," says Harri Koskimäki from Candour Oy

Photo: Candour Candour Oy, which is developing a method of facial recognition, has taken a giant leap towards internationalisation by gaining access to a supercomputer. With Business Finland's financial support, [...]

Read more

Leveraging high-performance computing in satellite product development

Photo: ICEYE ICEYE is a Finnish space sector company that operates SAR (synthetic aperture radar) satellites. Instead of using conventional cameras, satellite images are taken with microwave radars which enable [...]

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Major time savings with high-performance computing in fire engineering

Photo: Ramboll When a fire breaks out, reacting fast and taking effective action is absolutely crucial in saving lives. There is no time to lose. This is why the fire [...]

Read more

Towards safer navigation and fully automated vessels with AI technologies

Photo: Groke Groke Technologies is a Finnish company that focuses on developing intelligent methods for autonomous navigation to improve safety at sea. High-performance computing (HPC) plays a vital role in [...]

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82nd International Scientific Conference of the University of Latvia 2024

We invite you to submit a title of presentation for the scientific conference by February 4th

NCC Latvia is co-organizing a section of 82nd International Scientific Conference of the University of Latvia "Use of High Performance Computing in Numerical Simulations". The section will be held in a [...]

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Latvijas Digitālais Akselerators

Pieteikties

Fokuss

Uzņēmumu un publiskā sektora digitālā transformācija, lai radītu jaunus biznesa modeļus un klientu pieredzi ar jaunu digitālo produktu palīdzību. Jaunu digitālo platformu, preču un pakalpojumu pētniecība un attīstība.

Eiropas Digitālās inovācijas centrs

ATTĪSTA LATVIJAS IT KLASTERIS

Pieteikties

Fokuss

Biznesa procesu digitalizācijas un e-komercijas risinājumu pilnveidošana un ieviešana.

https://www.digitallatvia.lv/edic-latvija/edic-atbildibas/

https://hpc4sme.eu

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info@eurocc-latvia.lv

Lai uzdotu jautājumu vai sarunātu tikšanos!

SEKO

x.com/EuroccLatvia
www.linkedin.com/company/eurocclatvia/

Lai ērti uzzinātu jaunumus!

APMEKLĒ

www.eurocc-latvia.lv

Lai pieteiktos ziņu lapai un uzzinātu vairāk!

Gaidāmie notikumi | Jūnijs - Jūlijs

LAMPA

sarunu festivāls

13. jūnijā 11:00 - 13:30
Informatīvs seminārs par superdatoriem ar iespēju apskatīt RTU superdatoru IZM Datu centrā.

13. jūnijā 14:00 - 16:00
HPC iespējas zinātniekiem, doktorantiem, studentiem.

6. jūlijā no plkst. 18:30 līdz 20:30
RTU nākotnes plostā (Cēsu pils dīķī)

EURO SuperS

Paldies!

EuroHPC Joint Undertaking

Šis projekts ir saņēmis finansējumu no Eiropas Augstas Veiktspējas Skaitļošanas kopuzņēmuma saskaņā ar granta līgumu Nr. 101101903. Kopuzņēmums saņem atbalstu no Digitālās Eiropas programmas, kā arī no Vācijas, Bulgārijas, Austrijas, Horvātijas, Kipras, Čehijas Republikas, Dānijas, Igaunijas, Somijas, Grieķijas, Ungārijas, Īrijas, Itālijas, Lietuvas, Latvijas, Polijas, Portugāles, Rumānijas, Slovēnijas, Spānijas, Zviedrijas, Francijas, Nīderlandes, Beļģijas, Luksemburgas, Slovākijas, Norvēģijas, Turcijas, Ziemeļmaķedonijas Republikas, Islandes, Melnkalnes un Serbijas.