HPC Serbia

National Competence Center for High-Performance Computing



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Overview of HPC Serbia

- HPC Serbia is EuroCC2's national competence center for HPC/HPDA/AI
- EuroCC2 was appointed by the EuroHPC Joint Undertaking
- Acting as a hub to promote and facilitate HPC uptake and related technologies across industry, academia, and public administration
- HPC Serbia consists of two institutions:
 - Institute of Physics Belgrade
 - University of Belgrade School of Electrical Engineering







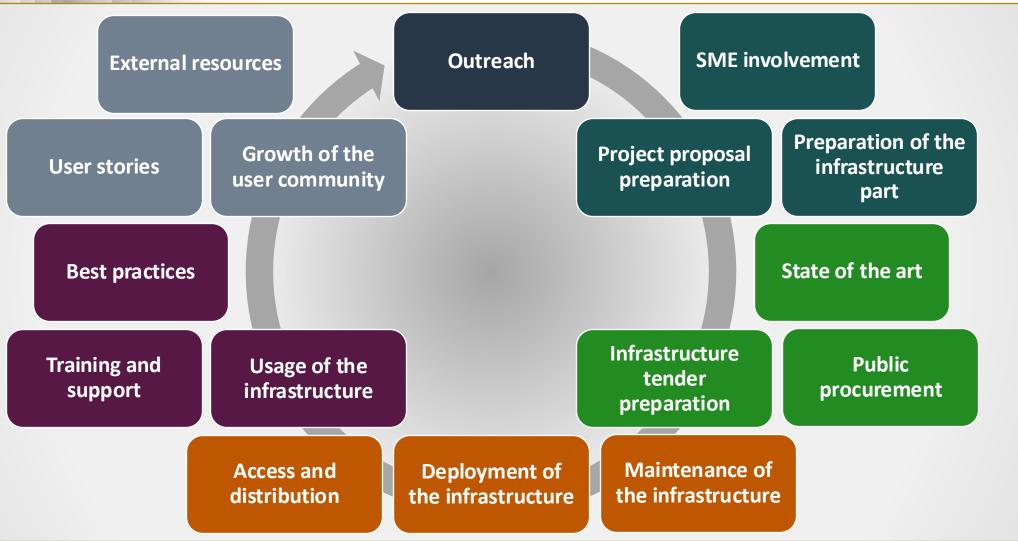
Main activities of HPC Serbia

- Training and Skills Development
- Services to and Interaction with Industry
- Services to and Interaction with Academia
- Services to and Interaction with Public Administration
- Service Portfolio and Competence Management
- Collaboration
- Awareness Creation and Communication
- NCC Management

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Main activities practically





Outreach

- HPC Serbia website and Facebook page (https://hpc.rs
- More than 250 posts in the last 2 years
- Presence in the newspapers
- Present in the main national events





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<u>rs)</u>	Las Europerto	500	
	th Bed 2024 Seven Al Factories	1 20th Nov 2024 New TOP500 list	7th Nev 2024 HPC Serbia Featured in Newspapers
Unde has s host Fect deph Euro Gree Spair Five depl	SuroHPC Joint artaking (EuroHPC JU) the first European Al ories, which are set to be oyed next year across pe: In Finland, Germany, ce, Italy, Luxembourg, n, and Sweden. selected hosting sites will sy brand-new Al- inze	The latest 64th editions of the TOP500 and Green500 lists were released this Monday, 18 November 2024, at the Supercomputing Conference SC in Atlanta, USA. All operational EuroPPC supercomputers have been ranked among the top 268 supercomputers worldwide. The EuroPPC is also committed to p	Yesterday, the Serbian daily newspaper Evening News (Večernje novosti) published a story about HPC Serbia and Serbia's involvement in EuroHPC projects. The article, tited They Paved the Way for Supercomputers, features an interview with Dr. Antun Bala2, the leader of HPC Serbia. Dr. Bala2 highl
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Project proposal preparation



- EuroHPC JU calls
 - Development and benchmarking
 - Traditional HPC access calls (regular, extreme scale, AI and data-intensive)
 - Al factory access calls
- European Commission calls
- National calls (Science/Innovation Fund of the Republic of Serbia)
- Infrastructure part preparation and design of the computing infrastructure

Deployment of the infrastructure

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- Collaboration with the SCLoTHiFi project (ERC grant)
 - Deployment of the PARADOX-V cluster
- Partnership with the CTRUST project (Science Fund of the Republic of Serbia)
 - Deployment of the PARADOX-GPU cluster
- Partnership with the PolMoReMa project (Science Fund of the Republic of Serbia)
 - Upgrade of the PARADOX-IV cluster
- Procedure to access resources
- Evaluation panel established
- Access policies and terms of use
- Support for the everyday use of resources







Growth of the community



- Success in attracting new communities of interest and maintaining engagement with previously established connections
- Engaged with 24 distinct user communities
- 8 national SMEs were actively involved, including Syrmia, Al Software, Moonstruck, 60seconds, Reputeo, Neural Factory, Coming, and Čikom.
- 9 new connections originated from the academic sector
- 5 with public administrations: UNDP in Serbia, RHMZ, AMRES, GIZ, MIT-RS
- 2 big companies: HPE and IBM
- Frequently used services: consulting, training, access and usage support

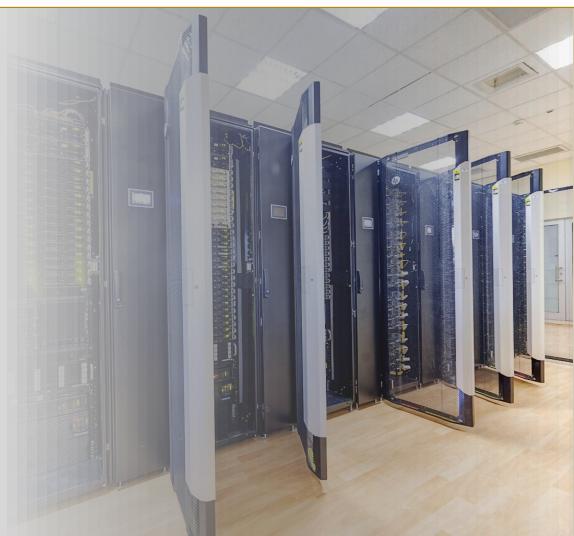
PARADOX cluster

- Common name for computer equipment installed at the Institute's Scientific Computing Laboratory
- Since 2005, 5 major upgrades
- High-Performance Computing
- High-Performance Data Analysis
- High-Throughput Computing
- Artificial Intelligence



Usage of PARADOX cluster

- Major scientific communities
 - Computational physics
 - Computational chemistry
 - Climatology
 - Astrophysics
 - Computational sciences
- Collaboration with Public Administration
- Collaboration with SMEs





Regional collaboration



- 15 years of collaboration
- SEEREN Research and Education Networking
- SEE-GRID GRID e-Infrastructure Development
- HP-SEE Regional HPC initiative
- VI-SEEM Virtual Research Environment
- NI4OS-Europe Open Science Cloud



Highlights of recent collaboration



- The first regional training event in collaboration with NCC Turkey, NCC North Macedonia, NCC Montenegro (555 participants)
- Use of High-Performance Computing in Numerical Simulations (NCC Latvia)
- Serbia's participation in the EuroHPC AI factory call (NCC Greece, NCC North Macedonia, NCC Montenegro)
- Localizations and promotion of the HPC4SME tool (NCC Slovenia)
- Lobbying for a call and working on EuroCC4SEE proposal (NCC Turkey, NCC North Macedonia, NCC Montenegro, NCC Bosnia and Herzegovina, NCC, NCC Germany)



Thanks!



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