



CZECH REPUBLIC IN THE EOSC ARENA

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EOSC-hub Week

Prague, May 10, 2019



Roadmap for Large Research, Development and Innovation Infrastructures in the Czech Republic

Ministry of Education, Youth and Sports

CESNET – originally NREN, computing & storage services now e-infrastructure

- long-term involvement in EGI projects
- distributed computing infrastructure MetaCentrum
- federated architecture, AAI
- partner in EOSC-Pilot and EOSC-Hub



CERIT-SC – computing and data storage infrastructure

- emphasis on experimental use of the e-infrastructure
- strategic partner and capacity provider to MetaCentrum
- partner in EOSC-Hub; partner to other RIs



IT4I - involved in PRACE and ETP4HPC activities

- 2PFLOPs installed, 10PFLOPs expected in 2020

CESNET

- owned by universities and academy of science
 - also source of co-funding for projects
- RI (research infrastructure) funded by Ministry of Education by two projects
 - operations of e-infrastructure
 - investments to hardware and research part of RI

Provided services

- national academic network, connection to Geant network, lambda and photonic services
- distributed computing infrastructure grid, cloud
- data storage backup, Filesender, owncloud
- collaboration support and multimedia
- security services and research
 - CSIRT, monitoring, FIM

distributed computing and storage
resources

resources provided/owned by
CESNET, CERIT-SC, Universities,
Czech Academy of Science

- also Ris, e.g. ELIXIR

federated approach - AAI, identity
management

unified management, monitoring,
user support

currently 18.000 CPU cores (x86_64)

- HTC and SMP servers
- compute nodes with NVIDIA GP-GPU

6 PB disk storage - scratch, home

- NFS, GPFS
- HDFS for Hadoop/Spark
- object storage Ceph

additional 3.000 CPU cores and 4 PB
for EGI/LHC



Various computing environments

- grid computing - batch systems, PBSPro
- cloud computing - OpenNebula, OpenStack
- map-reduce computing - Hadoop, Spark
- large application portfolio

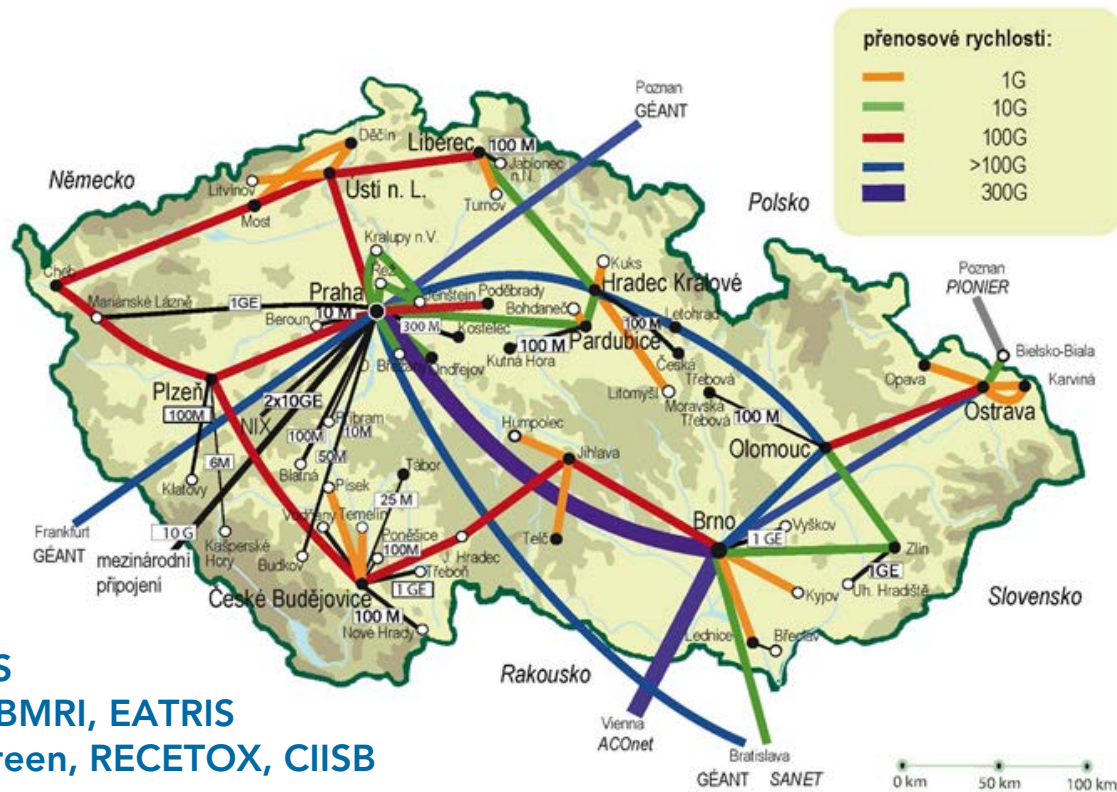
Supported international communities

- LHC, Auger, CTA, Belle
- ELIXIR - VI ELIXIR, EXCELERATE
- ESA - Sentinel data
- in EOSC projects - ELIXIR, ICOS, ELI

More than 2000 active users



ELI, COMPASS, SUSEN, PALS
HiLase, FermiLab, CEITEC, BBMRI, EATRIS
ELIXIR, Biolmaging, OpenScreen, RECETOX, CIISB
Lindat/Clarín, LMNT, NCMG, Czech Polar, CzechGeo, ...



ROADMAP OF LARGE INFRASTRUCTURES FOR RESEARCH, EXPERIMENTAL DEVELOPMENT AND INNOVATION OF THE CZECH REPUBLIC FOR THE YEARS 2016–2022



Physics	19
Energy	6
Enviromental sciences	5
Biomedical sciences	10
Social sciences on Humanities	7
E-Infrastructures	1

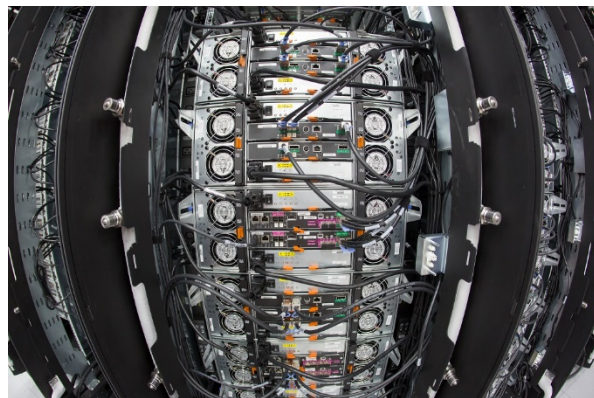
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**LARGE RESEARCH
INFRASTRUCTURES**

More information:

www.vyzkumne-infrastruktury.cz



Title: e-infrastructure CZ

Acronym: e-INFRA CZ

Host institution: CESNET, A.L.E.

Partners:

Masaryk University (Brno)

VSB – Technical University of Ostrava

Responsible person: Jan Gruntorád

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Phase: in operation

Nature: distributed



VSB TECHNICAL
UNIVERSITY
OF OSTRAVA

IT4INNOVATIONS
NATIONAL SUPERCOMPUTING
CENTER




Starting in 2020 e-INFRA CZ will be funded by one consolidated project

Collaboration with research infrastructures

- ELIXIR - already running national RI ELIXIR, started project EOSC Life (CERIT-SC)
- ELI - started project PaNOSC (CESNET as third-party of EGI.eu)
- RECETOX – national collaboration, new RI plans

National activities related to EOSC

- AAI - CESNET and CERIT-SC active partners in the general AAI activities, specifically in ELIXIR and LifeScience AAI, system Perun
 - clouds - shared cloud infrastructure MetaCloud (CESNET and CERIT-SC), OpenNebula and OpenStack, long-term site in FedCloud
 - storage - CESNET storage infrastructure as support action for FAIR projects
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- A decorative horizontal bar at the bottom of the slide, composed of a series of small, blue, rectangular blocks of varying heights, creating a pixelated or digital effect.

EOSC-Pilot



- governance model, architecture design
- identification of necessary services
- CESNET involved as third-party partner
- provide basic elements of EOSC infrastructure
 - services developed by different projects
 - integration of services provided by ESFRIs
 - unified access and support, common authentication mechanisms, improve interoperability

EOSC-Hub



- build common e-infrastructure from services provided by EGI, EUDAT, INDIGO

■ EOSC Life and PaNOSC (INFRAEOSC-04)

- LifeScience AAI, cloud evolution, support for cloud use- cases

■ to-be started EOSC-Synergy (INFRAEOSC-05)

- EOSC integration

■ Partner in INDIGO-Next (INFRAEOSC, submitted)

■ PRACE and ETP4HPC

- IT4Innovations, representing CZ in EuroHPC JU



- Czech Republic extensively involved in EOSC and preceding e-infrastructure activities
- The three national e-infrastructures – CESNET, IT4Innovations and CERIT-SC – currently undergoing transformation into e-INFRA CZ
 - Coordinated by CESNET
- Intensive collaboration with other Research Infrastructures and Research Infrastructures users



Have a nice stay in Prague!