Large-scale EXecution for Industry & Society
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Press Release

LEXIS: novel computing systems at IT4Innovations and LRZ

Advancing the state of the art is the main goal of the EU funded project LEXIS. It is steadily moving along the path towards a successful convergence of HPC and Cloud technologies.

We are delighted to announce that the project is proceeding according to its roadmap. The goals were achieved on time, thanks to seamless cooperation and the new experimental components installed at the supercomputing centres IT4Innovations (CZ) and LRZ (DE).

The most important newly installed systems are Burst Buffer servers which provide several TB of very fast NVMe storage. The servers contain state-of-the-art CPUs and experimental NVDIMM memory modules. This provides significant acceleration for workflows that process large data sets on Cloud and HPC infrastructure. The Burst Buffer solution was deployed with the help of ATOS as technology provider and partner of the project. Both centres, IT4Innovations and LRZ, installed two of the Burst Buffer servers each. One of the servers at IT4Innovations is equipped with a Bittware 520N FPGA card. Its power will be exploited, for example, for acceleration of compute-intensive tasks and processing of high-bandwidth data streams.

IT4Innovations also procured and deployed an experimental Cloud infrastructure which consists of a CEPH storage cluster with 120 TB of RAW capacity, 6 virtualisation nodes and 100 Gbps Ethernet as interconnection network. The hardware will be used for a proof-of-concept deployment of OpenStack. This IaaS Cloud-Computing resource will be integrated with the orchestration platform developed within LEXIS. The latter orchestration solution relies on the YORC middleware by ATOS, making the handling of complex scientific software workflows in LEXIS easy and efficient.

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The LEXIS project will build an advanced engineering platform at the confluence of HPC, Cloud and Big Data which will leverage large-scale geographically-distributed resources from existing HPC infrastructure, employ Big Data analytics solutions and augment them with Cloud services.

You can find more detailed information about LEXIS at www.lexis-project.eu or by following us on LinkedIn, Twitter and Facebook.