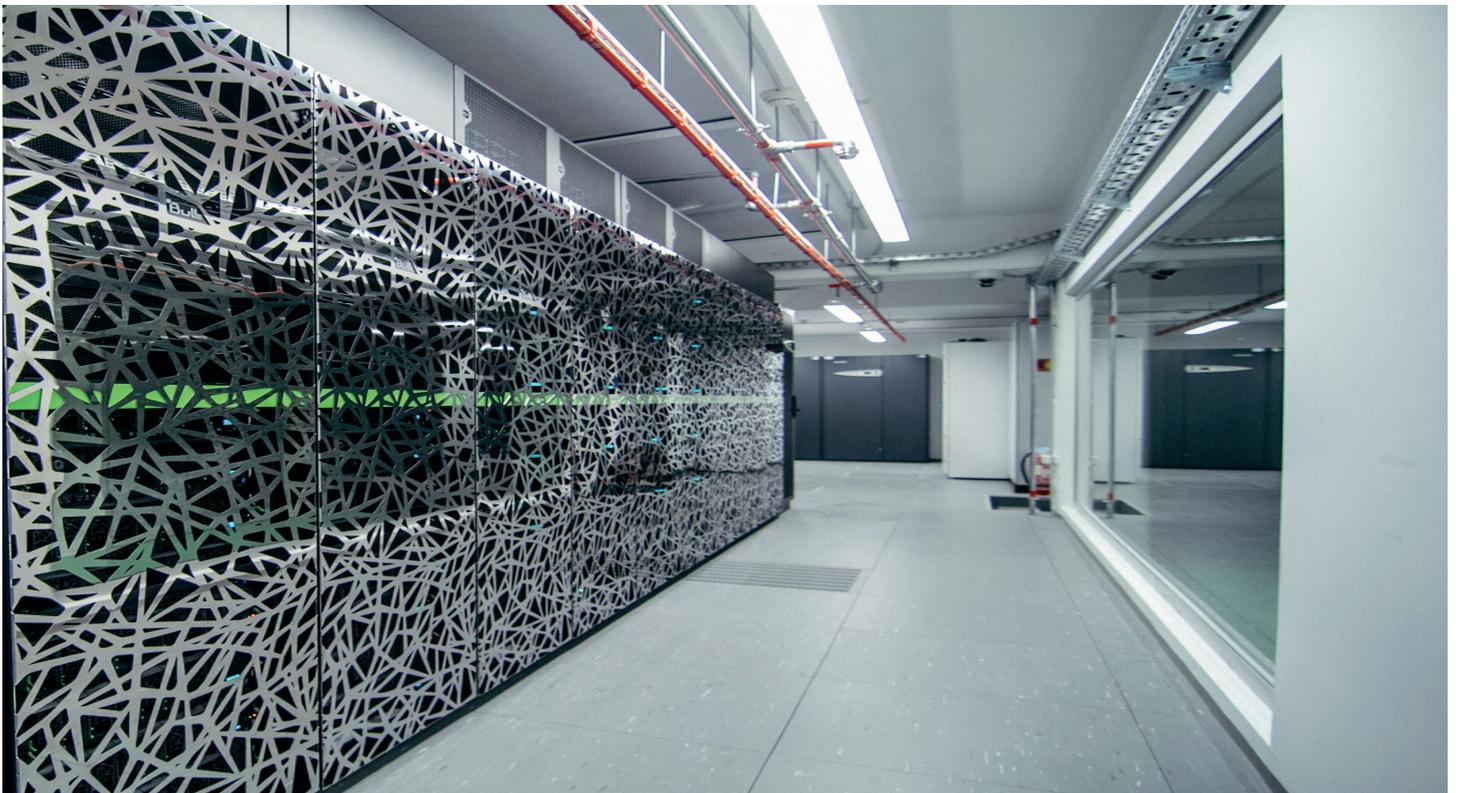


accelerate innovation and research with “BURA”, a supercomputer from Bull

The University of Rijeka takes a leap to join the 50 top research institutions in the world

Named after a very strong and gusty wind, which reaches its maximum strength when touching the Adriatic coast, BURA is the most powerful supercomputer in the Adriatic region. It provides students and scientists of the University of Rijeka with extraordinary opportunities for further education, biotechnological research, and scientific work.



“With BURA, Croatia has the fastest supercomputer in the Adriatic region, one of the most powerful systems in the world”

Professor Zlatan Car, Vice Rector of the University of Rijeka and Head of the Centre for Advanced Computing and Modelling

The context

A dynamic development

Beyond its natural role in higher education and research, the University of Rijeka firmly believes that its development is closely linked to its openness to society and to the world. The University encourages international collaborations in all shapes and forms, through exchanges and joint research projects with more than 80 organizations worldwide. The University is dedicated to transferring the latest information technologies and up-to-date knowledge into the business sector and the local community, with the aim of ensuring the transition of the region into a knowledge-based society.

[Involved in digital transformation](#)

The challenge

To serve a large eco-system

The BURA supercomputer is used in biotechnological and biomedical research, nano-science, civil engineering and natural sciences. In addition, it is expected that the supercomputer will be available for institutions and companies from abroad who have already expressed their interest, in the field of business and local government. The University of Rijeka has already initiated negotiations with partners from the industry, as the equipment will be used for commercial purposes as well. Thanks to its new supercomputer, the University of Rijeka's ambition is to join the 50 top research institutions in the world.

[Joining the top research institutions.](#)

The solution

Atos innovation & partner synergy

The BURA supercomputer is based on Bull technologies, the Atos brand for technology products and software. BURA achieves a performance of 239 teraflops. It is based on Bull B720 servers with Direct Liquid Cooling technology. The BURA supercomputer is cooled using the so-called “free-cooling” technique, which uses outside air up to a temperature of 24°C, making BURA an outstandingly energy-efficient system.

BURA consists of 288 nodes, each node containing two Intel® Xeon® E5-2690 v3 processors, i.e. a total of 6,912 processor cores. BURA has over 18 terabytes of RAM and a disk capacity of 850 terabytes. It includes two large memory nodes based on Bull S6310 servers with 16 processors for memory-demanding applications.

The BURA supercomputer takes up just a hundred square meters of space at the Centre for Advanced Computing and Modelling. It is located in a new, water-cooled data centre built in cooperation with MEP, a local company from Rijeka. BURA and its Datacenter was delivered and installed by our Slovenian partner SmartIS, who is also taking care of support. BURA will be protected by video surveillance and a modern fire protection system

BURA is part of the project entitled “Development of Research Infrastructure at the Rijeka University Campus”, and financed by the EU. [Atos - combining technology and expertise.](#)

The results

Ahead of expectations

According to the HPCG benchmark, the BURA supercomputer is ranked #48 in the world. BURA is also a “green” supercomputer according to the Green 500 benchmark, which places it among the leaders in the world. Atos and partner SmartIS delivered the system in 90 days only, when the contractual deadline was 150 days. Moreover, the BURA supercomputer exceeded initial expectations with 16% more performance and 56% less energy consumption. With its excellent technical characteristics, the BURA supercomputer is ready to accelerate research and innovation in Croatia and beyond.

[#1 supercomputer in the Adriatic region.](#)

References

“While bio-informatics research will be one of the main areas of activity, other areas will also be covered. The equipment will be used on projects dealing with the production of drugs, to simulate how drugs function in human cells, as well as for DNA analysis. We have already launched cooperation with the Rijeka Clinical Hospital Centre, but the supercomputer will not serve only scientists from Rijeka. We have established cooperation with the Ruder Bošković Institute, the Faculty of Electrical Engineering and Computing in Zagreb, as well as with the University of Split.”

Professor Zlatan Car,

Vice Rector of the University of Rijeka and Head of the Centre for Advanced Computing and Modelling.



About the University of Rijeka

The University of Rijeka was established in 1973 as a logical expansion of higher education institutions in western Croatia. Its roots date back to the 17th century with the founding of Rijeka's Jesuit Secondary School. Since its foundation, it has undergone a series of transformations that were mainly the result of changes in national higher education policies. Today the University integrates nine faculties, one art academy, four departments, and ensures their uniform and coordinated action. Its mission includes the continuous encouragement of international competitiveness in all areas of scientific, artistic and professional activity. Through active collaboration with the industry and partnerships for community development, the University contributes to the socio-cultural transition into a knowledge society. Its vision is to have the University of Rijeka enter among the top 500 European universities, and so its objective is a dynamic development that systematically and methodically encourages mobility and the development of research careers, and nurtures the talents and entrepreneurial energy of each individual.

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