

## DESIGN AND IMPLEMENTATION OF RAIDIX-BASED STORAGE SYSTEM AT TOMSK POLYTECHNIC UNIVERSITY



*Joint solution for storing TPU academic data was developed by Intant team, RAIDIX engineers and IT department of the University.*

Tomsk Polytechnic University (TPU) is one of Russia's leading public research universities with focus on applied science and technology. It was founded in 1896 as Tomsk Technological Institute of Emperor Nicholas II and at that time became the 4th technical university in the country and the 1st engineering higher school in the Asian part of Russia. Currently TPU is included in the QS World University Ranking as well as top ten universities in the country.

More than 1500 scientists and academics are involved in the educating process with more than 13 570 students and postgraduates of the University from Russia and abroad. TPU includes 10 research and engineering schools, 3 scientific and educational centers, 52 scientific laboratories. The University has scientific career center that coordinates and supports research work of students and young scientists, manages and coordinates scientific events.

Tomsk Polytechnic University is a key high school for the largest state corporations, including Gazprom, Rosatom, JSC "Information satellite systems" named after academician M. F. Reshetnev, "Microgen", "System operator - Unified Energy Systems", "RAO East Energy systems" and others.

## Challenge

The University launched the overall update of the IT hardware and planned to introduce new Russian software products along the way. The main objective of the project was to design All-Flash storage and accelerate all elements of the University IT infrastructure.

Russian software companies were considered primarily and it was decided to choose the most advanced IT solutions, including managing SSD drives.

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## Solution Provider

Complex storage solution was presented by Intant company, one of the leading system integrators of West Siberia and RAIDIX partner from 2017.

Intant company develops automation solutions, applicable in various fields, such as production, technology, information, management, financial and others. In addition to infrastructure projects, the company supplies hardware components, provides technical support and services.

With RAIDIX software, the integrator offers high-performance storage systems with flexible scalability and local support. They are designed to improve infrastructure of enterprises based on the load, storage volume and development plan.

## Solution

University team, on the one hand, and Intant engineers, experienced in implementing and maintaining platforms of different manufacturers, on the other hand, compared various All-Flash solutions to find the optimal one.

Upon the results of the tests, the specialists chose the most promising DC configuration with SSD drives managed by RAIDIX. Supermicro hardware platform applied in the project was based on RAIDIX recommendations and University experience of working with existing data storage systems.

Network nodes were connected via internal PCIe and Ethernet buses. The cache exchange was arranged over the InfiniBand network, which provides the required fault tolerance. Support for all major operating systems, Fibre Channel, InfiniBand, iSCSI interfaces and platforms virtualization functions were ensured.

## Business impact

First All-Flash array in the TPU is successfully used to store academic databases. As a pilot project, it shows excellent results in terms of speed and performance.

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Storage systems by Intant based on RAIDIX software allowed the University to obtain fast data processing, high availability of documentation and multimedia content, uninterrupted and reliable operation of the hardware and software complex. The storage architecture allows easy complement of new storage nodes in the future without any downtime.