



Success Story

SUSE Enterprise Storage

Institute of Physics, Jagiellonian University

Frustrated by the cost and inflexibility of monolithic enterprise storage solutions, the Institute of Physics at the Jagiellonian University deployed SUSE® Enterprise Storage based on open source Ceph technology to provide a software-defined storage landscape. The solution removes the dependence on a single vendor, enables the Institute to add capacity faster and in a more granular way, and creates a sustainable platform for data storage that eliminates the need for major investments every few years.



Overview

The Marian Smoluchowski Institute of Physics offers advanced scientific education and research facilities to undergraduate and postgraduate students. The Institute is part of the Jagiellonian University in Poland, founded in 1364 and today providing education to more than 40,000 students in 80 fields of study across 16 faculties.

Challenge

Physics is increasingly a data-driven science. Each year, the Institute of Physics at the Jagiellonian University needs to store and manage larger amounts of data from

experiments and simulations. Traditionally, the Institute had used enterprise storage solutions, and while these performed well, they presented a major challenge in terms of economic sustainability.

Marek Nogaj, System Administrator at the Marian Smoluchowski Institute of Physics, said: "As a public institute, we have a very tightly controlled budget, and finding money for large investments is always difficult. For purchases over a specific value, we need to run an official tendering process lasting up to six months, which is frustrating for students and researchers with immediate needs for capacity."

Most departmental budget comes from small grants to research teams, making it difficult to plan and manage capacity—not only because of the large investment required to replace storage solutions every few years, but also because of the high cost of upgrading during the cycle.

Solution

Seeking greater flexibility, easier management, and more granularity in adding

Institute of Physics, Jagiellonian University at a Glance:

The Institute of Physics at the Jagiellonian University offers undergraduate and postgraduate courses in physics. Part of Poland's oldest university, the institute is an internationally renowned center of excellence.

■ Industry and Location

Education, Poland

■ Product and Services

SUSE Enterprise Storage

■ Results

- + Enhanced flexibility and cost-efficiency of data storage
- + Eliminated vendor lock-in, keeping future procurement options open
- + Increased scalability and ease of management

"SUSE Enterprise Storage gives us the same or higher quality in terms of availability, but at much lower cost than our previous storage solution."

MAREK NOGAJ

System Administrator
Institute of Physics, Jagiellonian University

“This is a future-proof solution that can evolve over time without the need for major reinvestment, so it fits our financial scenario much better.”

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storage capacity, the Institute set out to deploy a software-defined storage solution that would eliminate vendor lock-in and the need to make major investments in completely new solutions every few years.

“Software-defined storage puts the intelligence and sophistication in the software layer, so we can use ordinary, off-the-shelf disks underneath,” said Marek Nogaj. “This also means we can mix and match different types of storage capacity from different vendors.”

Wary of remaining dependent on any individual vendor, the Institute wanted to deploy an open source solution and identified Ceph as the leading software-defined storage platform. By choosing to deploy SUSE Enterprise Storage, powered by Ceph, the Institute has kept its options open while gaining enterprise-class support from SUSE.

“The initial implementation took only one day, and the support before, during and after has been excellent,” said Marek Nogaj. “SUSE Enterprise Storage gives us high availability, but at a much lower cost than our previous storage solution.”

The Institute will continue to use its previous enterprise storage solution for several years to depreciate its investment. All new storage requirements will be served by SUSE Enterprise Storage, which the Institute has deployed on mid-range servers from HPE and Dell. In the future, the

Institute will expand storage using hardware from other (including local) vendors.

“Right from the start, we wanted full confidence that the SUSE solution would give us flexibility in buying new capacity from different vendors,” said Marek Nogaj. “We can already see that SUSE Enterprise Storage will enable us to expand the environment in any way we choose without large investments or delays.”

Starting with a 20 TB deployment, the Institute initially used its software-defined environment to back up servers and to store surveillance video from CCTV. It is now adding data from new scientific experiments and will also use SUSE Enterprise Storage to host its large server virtualization platform.

Results

Before deploying SUSE Enterprise Storage, the Institute of Physics faced significant restrictions in expanding its storage capacity. Its previous storage solution required expansion in set increments using only vendor-approved hardware—the cost of which often exceeded the value of grants to research teams. “With SUSE Enterprise Storage, we can add capacity of any type at any time we choose, making it easy to serve the needs of our academic community,” said Marek Nogaj. “This is a future-proof solution that can evolve over time without the need for major reinvestment on a regular cycle, so it fits our financial scenario much better.”

While end-users experience no difference in terms of performance or availability between the new software-defined landscape and the previous enterprise storage, the flexibility and ease of management have both dramatically improved for the system administrators.

“SUSE Enterprise Storage automates most of the management and automatically rebuilds the cluster if we add or remove storage,” said Marek Nogaj. “We see this as a test-bed for a potential wider deployment of the technology in the University, and the results so far are extremely promising.”