DELL EMC

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A NATIONAL GRID

Non-profit state enterprise runs a national grid and cloud infrastructure on Dell EMC PowerEdge servers powered by Intel Xeon Scalable Processors.

CSC

ICT Solutions for Brilliant Minds

IT services | Finland

Business needs

CSC needs a reliable server infrastructure to support a computing grid that serves researchers across Finland.

Solutions at a glance

- Dell EMC PowerEdge™ servers
- Intel® Xeon® Scalable Processors

Business results

- Enabling competitive scientific research across Finland
- Helping researchers succeed in their core competencies

On an annual basis, CSC serves the needs of approximately

1,500

researchers

When it went into service in 2016, FGCI had an aggregated peak capacity of about

400

teraflops

A national mission

The CSC – IT Center for Science is a non-profit state enterprise with a special mission. As part of Finland's national research system, CSC develops, integrates and provides high-quality information technology services to keep Finland at the forefront of scientific research.

As a keystone of its mission, CSC provides expertise and scalable technology solutions to support the nation's researchers. The company provides comprehensive scientific computing, data management, analysis and research administration solutions as well as training and expert support to Finnish higher education institutions, research institutes and companies.

CSC, which is owned by the Finnish state and higher education institutions, provides its services to its owners for no profit. The company's success is measured in terms of how much value it generates for the owners.

Powering the Finish Grid and Cloud Infrastructure

As part of its national mission, CSC coordinates the acquisition, installation, operation and maintenance of the hardware for the Finnish Grid and Cloud Infrastructure (FGCI). Jointly funded by the Academy of Finland and 13 Finnish research institutions, FGCI offers researchers an extensive distributed grid and cloud computing environment that supplements Finnish supercomputers, including those operated by CSC. Part of the capacity is used locally by individual research organizations, while the rest is shared via a joint grid and cloud interfaces.

The grid middleware provides scientists with the computational capacity for serial and parallel jobs, as well as jobs that require large amounts of memory. Via the FGCI, users are able to run their applications flexibly on computing resources hosted by different institutions. In addition to self-compiled applications, the FGCI has a selection of pre-installed and centrally managed applications.

In 2015, CSC and its university partners chose Dell PowerEdge servers powered by Intel® Xeon® Processors to serve as the basis for the FGCI distributed computing infrastructure. Three years later, in 2018, CSC and its stakeholders extended this relationship when they selected Dell EMC technology as the foundation for a major upgrade of the FGCI environment.

"It has been really cool to collaborate with Dell, and we look forward to future collaboration. We are interested in following how Dell products develop and how they fit for the needs of modern science."

Pekka Lehtovuori
Director, Services for Research, CSC

The clusters in the grid are based at Finnish universities and managed by CSC in cooperation with the university partners, according to Pekka Lehtovuori, director of services for research at CSC.

"With the Dell EMC systems, we have been able to build clusters in universities, which nicely match their needs," Lehtovuori says. "It is easy to marry the configurations of the systems, and we have been very, very happy with the Dell products in that kind of environment."

Streamlining deployment

To simplify and accelerate deployment of new servers in the FGCI environment, CSC takes advantage of Dell EMC deployment and its onsite “rack, stack, cable and label” services. ProDeploy provides full-service installation and configuration of both hardware and system software by certified deployment engineers.

“We like the rack-and-stack concept of Dell EMC,” Lehtovuori says. “The approach makes it easier to deploy several clusters at the same time in universities that have different administrator skills and different ways of documenting cables and servers. It is really important that the servers come from the vendor so that they are well documented and well labeled. We have been very happy with the quality of Dell EMC installation and delivery services.”

Keeping Finland competitive

As with the supercomputers that CSC operates, the Finnish Grid and Cloud Infrastructure helps keep Finland and its universities competitive in scientific research.

“The universities compete against each other, but overall we are in a global research race, and in order to get first place, you really need to collaborate in small countries like Finland,” Lehtovuori says. “We have been able to attract researchers from abroad to Finland because of the very competitive research environment, while keeping our own brains and knowledge in the country.”

Through its ability to deliver the right computing infrastructure for the FGCI, Dell EMC has played an important role in keeping Finland competitive in the global arena of scientific research, according to Lehtovuori.

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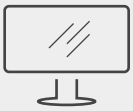
CSC

ICT Solutions for Brilliant Minds



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