



NVIDIA Pascal GPUs to Double Speed of Europe's Fastest Supercomputer

NVIDIA Tesla Platform Will Help Swiss Scientists Solve Complex Problems

SAN JOSE, CA - **GPU Technology Conference** -- NVIDIA today announced that [Pascal™ architecture](#)-based [NVIDIA® Tesla® GPU accelerators](#) will power an upgraded version of Europe's fastest supercomputer, the Piz Daint system at the Swiss National Supercomputing Center (CSCS) in Lugano, Switzerland. The upgrade is expected to more than double Piz Daint's speed, with most of the system's performance expected to come from its Tesla GPUs.

Piz Daint, named after a mountain in the Swiss Alps, currently delivers 7.8 petaflops of compute performance, or 7.8 quadrillion mathematical calculations per second. That puts it at No. 7 in the latest TOP500 list of the world's fastest supercomputers. CSCS plans to upgrade the system later this year with 4,500 Pascal-based GPUs.

Pascal is the most advanced GPU architecture ever built, delivering unmatched performance and efficiency to power the most computationally demanding applications. Pascal-based Tesla GPUs will allow researchers to solve larger, more complex problems that are currently out of reach in cosmology, materials science, seismology, climatology and a host of other fields.

Pascal GPUs feature a number of breakthrough technologies, including second-generation High Bandwidth Memory (HBM2) that delivers three times higher bandwidth than the previous generation architecture, and 16nm FinFET technology for unprecedented energy efficiency. For scientists with near infinite computing needs, Pascal GPUs deliver a giant leap in application performance and time to discovery for their scientific research.

The upgrade will enable CSCS scientists to do simulations, data analysis and visualizations faster and more efficiently. Piz Daint will be used to analyze data from the Large Hadron Collider at CERN, the world's largest particle accelerator. The upgrade will also accelerate research on the Human Brain Project's High Performance Analytics and Computing Platform, which currently uses Piz Daint. The project's goal is to build neuromorphic computing systems that use the same principles of computation and cognitive architectures as the brain. The upgrade will also facilitate CSCS research in geophysics, cosmology and materials science.

"We are taking advantage of NVIDIA GPUs to significantly accelerate simulations in such diverse areas as cosmology, materials science, seismology and climatology," said Thomas Schulthess, professor of computational physics at [ETH Zurich](#) and director of the [Swiss National Supercomputing Center](#). "Tesla accelerators represent a leap forward in computing, allowing our researchers to solve larger, more complex problems that are currently out of reach in a host of fields."

"CSCS scientists are using Piz Daint to tackle some of the most important computational challenges of our day, like modeling the human brain and uncovering new insights into the origins of the universe," said Ian Buck, vice president of Accelerated Computing at NVIDIA. "Tesla GPUs deliver a massive leap in application performance, allowing CSCS to push the limits of scientific discovery."

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