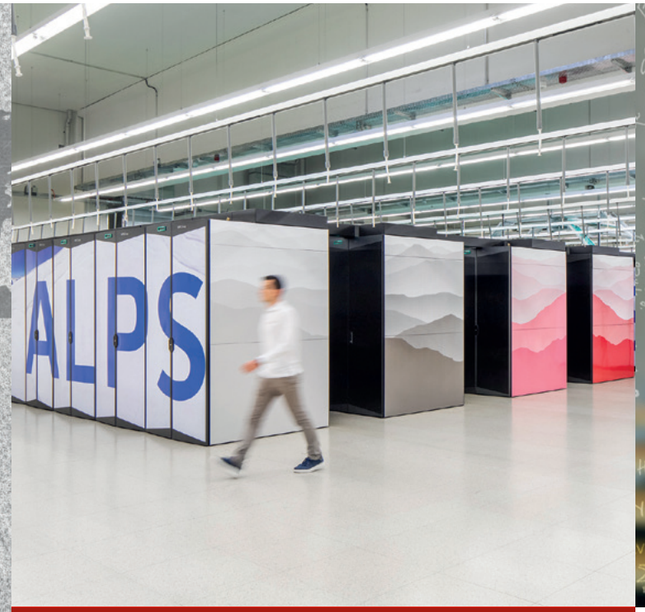

STAFF

TEAM **140 employees**

NATIONALITY **25 different countries**

OFFICIAL LANGUAGE **English**

The centre's activities are carried out by an international team. The backgrounds of the employees range from technical and administrative fields to information technology and science.

ANNUAL BUDGET

The Swiss Confederation funds the centre through the Board of the Federal Institutes of Technology and ETH Zurich. Important investments in computing infrastructure are possible by carrying the investment budget over different years. A specific budget for the development of applications and libraries is managed by the PASC initiative. About 8 Mio. CHF are financed through third party funding.

CSCS
Centro Svizzero di Calcolo Scientifico
Swiss National Supercomputing Centre

info@cscs.ch
www.cscs.ch

ETH zürich

Via Trevano 131
6900 Lugano
Switzerland

CSCS – Swiss National Supercomputing Centre

AN ENGINE FOR INNOVATION AND CUTTING-EDGE RESEARCH IN SWITZERLAND

CSCS
Centro Svizzero di Calcolo Scientifico
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CSCS

FOUNDING YEAR **1991**

LOCATION **Lugano**

OPERATOR **ETH Zurich**

ACTIVITY **Supercomputing**

The Swiss National Supercomputing Centre (CSCS) develops and provides high-performance computing (HPC) services essential to solving complex scientific and social problems.

Operating as a User Lab, CSCS promotes and fosters world-class leading-edge research. Its main task is to provide scientists with the computing infrastructure and the technical and scientific skills needed to best support their research.

CSCS's resources are available to national and international academia, as well as users from industry and the private sector.

USER LABORATORY

The computing resources of CSCS are made available to Swiss and international researchers free of charge through the User Lab, which consists of two main programs:

- The **User Program**, accessible globally, provides access to cutting-edge and innovative supercomputing resources through an open and transparent peer-review process.
- The **PASC Program** (Platform for Advanced Scientific Computing) supports Swiss researchers in software development, fostering innovation in supercomputing applications.

The User Lab allocates millions of computing hours to the scientific community each year.

SUPERCOMPUTERS

NAME OF MAIN SUPERCOMPUTERS **Alps**

MACHINE TYPE **HPE Cray EX**

CSCS operates several cutting-edge supercomputers and collaborates with renowned computing centres and leading hardware manufacturers worldwide to develop new supercomputing technologies.

"The installation of "Alps" was completed in 2024 starting production in January 2025.
"Alps" will enable Switzerland to reach new scientific frontiers in supercomputing and artificial intelligence."

BUILDING

OFFICE SPACE **2 600 m²**

MACHINE ROOM **2 000 m²**

OFFICE BUILDING **Minergie Standard**

The office building with its double-shell glass façade houses the offices and a conference room. The computer building has three floors: a resource deck, a distribution deck, and a 2 000 m² machine room.
The modular construction ensures maximum flexibility for expansion and adaptation to future technologies. CSCS is one of the most energy-efficient and sustainable supercomputer centres in the world.

COOLING SYSTEM

SYSTEM TYPE **Free cooling**

RESOURCE **Lake water**

The supercomputers and buildings are cooled by water extracted from Lake Lugano at the mouth of the River Cassarate, thereby appreciably reducing energy consumption and environmental impact.

LENGTH OF PIPELINE	2.8 km
HEIGHT DIFFERENCE	30 m
MAXIMUM FLOW RATE	760 l/s
EXTRACTION DEPTH	45 m
EXTRACTION TEMPERATURE	6 °C, max. 25 °C return

THIRD-PARTY SERVICES

CHIPP, CTA, Empa, ETH Zurich, MeteoSwiss, NCCR MARVEL, PSI, SDSC, SKA, USI, UZH

CSCS provides dedicated services to various Swiss scientific institutions and projects of national significance. For example, it supports MeteoSwiss for weather forecasting, operates a cluster for analyzing data from the Large Hadron Collider (LHC) at CERN in Geneva for the Swiss particle physics community, and manages a data archiving system for scientific data produced by PSI (Paul Scherrer Institute).

STORAGE

ONLINE **100 PB**

OFFLINE **240 PB on tape**

CSCS provides researchers with 100 PB of online storage for the analysis of data from scientific experiments and simulations.
In addition, two tape libraries of 120 PB each provide long-term archiving and backup.

INTERNET

CONNECTION SPEED **400 Gbit/s**

NETWORK PROVIDER **SWITCH**

DATA CENTRE BACKBONE **400 Gbit/s**

Thanks to optical connections running via the Sempione, San Gottardo and San Bernardino, the SWITCH network provider ensures connection to the various Swiss research institutes and the rest of the world with a connection of 400 Gbit/s.
A 400 Gbit/s data centre backbone provides data exchange within the centre between the supercomputers and the storage.

ELECTRICITY

AVAILABLE POWER **11 Megawatts**

UPGRADABLE **To 25 Megawatts**

The present electricity supply allows operation of up to 11 Megawatts. This capacity can be increased to a maximum of 25 Megawatts.
In an emergency, 960 batteries provide power to ensure the operation of key systems.