



Case Study:  
CERN LHC Project

BIOS IT provides the accelerated enterprise technology that supports the biggest discoveries in particle physics.

2019 | [www.bios-it.com](http://www.bios-it.com)



As featured in  
The CEO Magazine 2019



## SUMMARY

BIOS IT provides the accelerated enterprise technology that supports the biggest discoveries in particle physics, delivering over 50PB of storage to CERN for the Large Hadron Collider (LHC) project and over 20K CPU cores in collaboration with partners Supermicro® and Promise Technology. As a long standing contributor to the LHC project and their centralised IT infrastructure, we provide a wide range of systems and are a key strategic partner that continues to introduce significant changes in CERN's technology. The CERN Large Hadron Collider is the largest, most powerful particle accelerator, and is one of the biggest and most complex experimental facilities ever built.

## THE GOAL

Facing budget limitations and energy efficiency initiatives alongside growing demands for greater processing power and capacity in the datacentre, organisations like CERN, seek solutions that help lower their power consumption and operational costs while enhancing the scalability of their IT infrastructure.

## THE SOLUTION

Supermicro® Twin servers are a smart, yet affordable investment for enterprises and institutions that need to build, expand or future-proof advanced computing infrastructures. BIOS IT integrated 20k CPU cores at CERN based on the Twin architecture, which is the foundation of many of the most advanced server platforms in HPC. Recognising that CERN requires storage solutions that are flexible, reliable, and minimise the complexity of hardware deployment and operation, BIOS IT also integrated 50PB of storage in collaboration with partners Promise Technology, who create innovative solutions tailored to the unique needs of highly specific verticals.

BIOS IT provides CERN with early access to the latest technology samples, and work collaboratively to benchmark and compare a wide range of technologies to ensure we select the optimal SKUs to deliver the right performance at the right price point. Holding, benchmarking and soak testing the entire system at BIOS IT's own lab facility, ensures stability and optimal performance once delivered on-site to CERN and reduces time to production vastly. BIOS IT's custom-built solutions are tailored to the particular application and environment requirements, allowing research companies such as CERN to rapidly adapt their infrastructure to changing needs and service delivery models, accelerating deployment in a demanding and ever-evolving industry.

## ABOUT CERN

At CERN, the European Organisation for Nuclear Research, physicists and engineers are probing the fundamental structure of the universe. They use the world's largest and most complex scientific instruments to study the basic constituents of matter – the fundamental particles. The particles are made to collide together at close to the speed of light. The process gives the physicists clues about how the particles interact, and provides insights into the fundamental laws of nature.

To read CEO Magazine's feature interview with CERN Director General Fabiola Gianotti visit [www.bios-it.com/case-study/cern](http://www.bios-it.com/case-study/cern)

## KEY FIGURES

50PB

STORAGE INSTALLED

20,000

CPU CORES DELIVERED

"IF WE NEED TO BUILD  
A CUTTING-EDGE  
SUPER CONDUCTOR,  
WHAT WE DO IS  
DEVELOP A SUITABLE  
INDUSTRY  
PARTNERSHIP.  
WE WORK TOGETHER,  
WE GROW TOGETHER."

FABIOLA GIANOTTI  
CERN DIRECTOR-GENERAL

