

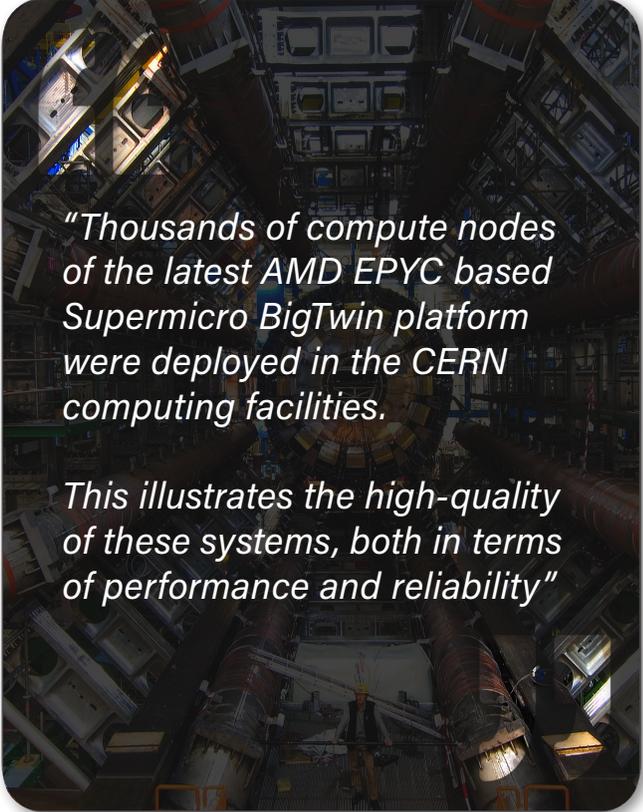
EMPOWERING CERN'S MISSION WITH ADVANCED ENTERPRISE

ENTERPRISE COMPUTING BUILT FOR CERN

International Computer Concepts, through its UK-based HPC partner Define Technology, deployed over 3,600 AMD EPYC-based nodes at CERN. Built for large-scale simulations and event reconstruction, the solution delivers high compute density, performance, and efficiency.

CERN, the European Organisation for Nuclear Research, is a global hub for over 17,000 scientists dedicated to exploring the universe's smallest particles. Using some of the world's most complex scientific instruments, CERN aims to deepen our understanding of the fundamental structure of our world. The discoveries made by CERN have significantly impacted fields such as medicine and computing.

International Computer Concepts (ICC), through its UK-based HPC partner Define Technology, collaborated with CERN to deliver a high-performance computing platform purpose-built for large-scale research. Engineered for scalability, efficiency, and intensive data workloads, the solution enhances CERN's ability to run complex simulations and process vast volumes of scientific data. This strategic collaboration strengthens CERN's computational infrastructure and supports its mission to push the boundaries of discovery in particle physics and beyond.



"Thousands of compute nodes of the latest AMD EPYC based Supermicro BigTwin platform were deployed in the CERN computing facilities."

"This illustrates the high-quality of these systems, both in terms of performance and reliability"

Compute Performance

Purpose-built systems designed to meet the demands of particle collision reconstruction & real-time analysis

Scalable Infrastructure

Over 3,600 nodes deployed to support CERN's evolving research & compute-intensive workflows.

Smart Efficiency

High-density architecture with shared power and cooling, engineered for performance without compromise.

Challenges

The pursuit of understanding the universe's building blocks demands immense computational power. CERN needs cutting-edge server, storage, and networking technologies, all while managing the overall power consumption of its vast computing environment.

Solution

CERN's technical team rigorously evaluated the latest technological advancements over several months, selecting partners that could deliver on performance, cost, and operational efficiency. Supermicro AMD BigTwin A+ 2124BT-HNTR servers were chosen to meet CERN's demanding requirements.

CERN procured over 900 BigTwin systems from integration partners Define Technology, totalling approximately 3,600 server nodes. These systems facilitate diverse simulations & workloads, including physics-event reconstruction and data analysis, essential for CERN's experiments.

Solution

The deployment of these servers led to noticeable performance enhancements in CERN's simulation applications. The high-density design of these systems, combined with AMD EPYC™ processors, resulted in lower-than-expected power usage due to shared cooling and power systems. The AMD EPYC™ CPUs accelerated application performance, enabling faster research progression.

"We have worked alongside Supermicro for many years, their attention to the design & engineering of the Supermicro BigTwin architecture has constantly increased. Thousands of compute nodes of the latest AMD EPYC based Supermicro BigTwin platform were deployed in the CERN computing facilities. This illustrates the high-quality of these systems, both in terms of performance and reliability."

Eric Bonfillou - CERN
IT Facility Planning & Procurement

Conclusion

CERN's collaboration with International Computer Concepts and Supermicro underscores the importance of strategic partnerships in pushing the boundaries of scientific research. With advanced computing solutions, CERN continues to pave the way for discoveries that enhance our understanding of the universe.

In Partnership with



With over 25 years of experience, ICC specializes in delivering customized IT solutions for cloud computing, high-performance computing, storage, GPU servers, and high-frequency trading. Their architecture-minded approach ensures clients receive tailored, future-ready infrastructure that empowers business success.

If you are interested in simplified IT management, scalable HPC resources, accelerated workloads and faster time to insight, talk to us today. Email: sales@icc-usa.com

