define tech

CERN

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Eric Bonfillou
CERN IT Facility Planning and Procurement

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.

In partnership with Define Technology and Supermicro, CERN leverages advanced enterprise computing solutions to support groundbreaking research in particle physics. This collaboration is crucial as CERN continually updates its computational resources to keep pace with the expanding search for the universe's origins.

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.

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

BENEFITS

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, and their attention to the design and 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 of the CERN IT Facility Planning and Procurement

CONCLUSION

CERN's collaboration with Define Technology 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.

If you are interested in simplified IT management, scalable HPC resources, accelerated workloads and faster time to insight, talk to us today.