

IBM Research – Zurich accelerates innovation with Deep Computing solutions



IBM scientists in Zurich, Dr. Costas Bekas (left) and Dr. Alessandro Curioni, used an IBM Blue Gene/P system to conduct a record-breaking experiment to validate nine terabytes of data in less than 20 minutes.

IBM Research – Zurich is the European branch of IBM Research. It is one of eight such facilities around the world tasked with pushing the boundaries of science, technology and business to make the world work better. The Zurich lab was created in 1956 and works closely with scientists, engineers, academics, and industrial partners to conduct cutting-edge research in fields such as nanotechnology, semiconductor materials, life sciences, and advanced data storage technology.

Challenge

IBM Research – Zurich needed to upgrade its eight existing servers to reduce power consumption and overall footprint. Furthermore, the IT department wanted to provide scientists with more computing power and faster retrieval of stored research data. This new infrastructure would support complex computer simulations such as those performed for IBM's Battery 500 project, which aims to create a powerful new lithium-air battery that can power an electric car for 500 miles between charges, thereby reducing oil dependency.

Solution

IBM Research – Zurich deployed a Deep Computing solution consisting of IBM Blue Gene/P and its predecessor, Blue Gene/L, both running Linux, to dramatically boost processing power with a power-efficient, footprint-saving design. An IBM System Storage DS4000 enterprise disk storage device provides capacity for 17 terabytes of research data, while an IBM System Storage SAN40B-4 fiber channel SAN switch enables fast retrieval of stored data.

Benefits

- Increased processing power from 1.3 teraflops to 33 teraflops
- Boosted storage capacity and data transfer speeds
- Reduced power consumption and data center footprint



Solution components

- IBM Blue Gene®/P
 - IBM Blue Gene/L
 - IBM System Storage® DS4000
 - IBM System Storage SAN40B-4 switch
 - Linux®
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“These powerful IBM solutions have allowed us to provide new levels of support for the high demands of our cutting-edge research projects.”

— Dr. Frank Bagehorn, Manager, IBM Zurich
Research Laboratory Information Services

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Produced in the United States of America
June 2010
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