Case Study
Automotive Manufacturing



Continental speeds AI learning for safer vehicles

Auto parts manufacturer improves AI training time by 70% on Platform Equinix

Equinix interconnects NVIDIA AI and IBM storage cluster to accelerate AI data access and time to market for connected and autonomous vehicles.

Challenge

Continental's Advanced Driver Assistance Systems (ADAS) team needed to process more than 150 terabytes (TB) of data to inform design decisions that would increase the safety for connected and autonomous vehicles and, ultimately, save lives. The team needed to pull image and sensor data from vehicles in different geographies including Europe, America and Asia, and store and process it in a connected central repository that could be quickly accessed by hundreds of engineers anywhere in the world. Continental leveraged Platform Equinix® to build and interconnect its artificial intelligent (AI) NVIDIA DGX™ GPU (graphics processing unit) cluster and IBM Elastic Storage System 3000 in record time.

"With the performance, flexibility and scalability of the new GPU cluster, Continental improved AI training time by 70% using IBM Spectrum® Scale and NVIDIA DGX systems on Platform Equinix."

- Balázs Lóránd, PhD, Head of AI Development Centre at Budapest, Continental AG, Business Area Autonomous Mobility

About Continental

Continental develops pioneering technologies and services for sustainable and connected mobility of people and their goods. Founded in 1871, the technology company offers safe, efficient, intelligent and affordable solutions for vehicles, machines, traffic and transportation. Continental generated sales of €37.7 billion in 2020 and currently employs around 193,000 people in 58 countries and markets. In 2021, the company celebrated its 150th anniversary.

Continental.com

About Equinix

Equinix (Nasdaq: EQIX) is the world's digital infrastructure company™, enabling digital leaders to harness a trusted platform to bring together and interconnect the foundational infrastructure that powers their success. Equinix enables today's businesses to access all the right places, partners and possibilities they need to accelerate advantage. With Equinix, they can scale with agility, speed the launch of digital services, deliver world-class experiences and multiply their value.

Equinix.com

"Continental is optimizing ADAS solutions to increase AI learning accuracy for higher levels of safety, resulting in zero crashes, injuries and fatalities. By placing our IBM storage and NVIDIA GPU cluster in an Equinix "AI-ready" data center in just two weeks, we had the infrastructure and interconnection we needed to increase the number of AI experiments by 14x, speeding our time to market."

- Robert Thiel, Principal Architect and Guild Master Computer Vision & Artificial Intelligence, Continental AG, Business Area Autonomous Mobility

Solution

Continental leveraged its NVIDIA DGX and IBM Elastic Storage System (ESS) 3000 to accelerate the development and training of neural networks. The data is collected in different locations around the world, then processed, labeled, selected and made ready to be used for AI trainings and uploaded to the IBM ESS 3000, which (like part of the raw data) is in the Equinix Frankfurt International Business Exchange™ (IBX®) data center. Once the data was placed in the Equinix data centers in Frankfurt, Germany, and uploaded to the Continental cloud, thousands of Continental engineers around the world worked collaboratively to tag, structure, analyze and process huge amounts of data and develop new AI learning models on demand. This process must be extremely efficient; otherwise car manufacturers can't begin vehicle production due to software delays.

The Continental AI supercomputer cluster is based on NVIDIA DGX enterprise-class servers that consist of high-performance GPUs. In addition, the IBM ESS 3000, which is highly compatible with NVIDIA DGX servers, is an enterprise-grade parallel file system that provides Continental superior data resiliency, scalability and control. Systems integrator SVA implemented the overall integration of the IBM storage solution in the cluster. And Equinix Smart Hands® remote management installed the hard disks that captured the data from the test drives.

Equinix IBX data centers and personnel provided the infrastructure and expertise to deploy Continental's supercomputer cluster infrastructure in just a couple of weeks. Equinix Global Solutions Architect (GSA) expertise helped Continental design and deploy its supercomputer cluster and associated IBM storage on Platform Equinix, including optimizing its cabling paths for lower latency and increased performance. Continental leveraged Equinix Cross Connect to interconnect its cluster cages to extend already existing LANs, and Equinix Fiber Connect to connect the infrastructure between Equinix IBX and Continental data centers. As connectivity was a top priority, housing the cluster at the Equinix Frankfurt (FR6) data center was appealing because it was next door to Continental's existing ADAS infrastructure.

Continental's corporate infrastructure division leveraged Platform Equinix regional hubs by colocating in five IBX facilities in EMEA, Asia and the U.S. to securely deploy and effectively scale its infrastructure to meet the demands of its connected and autonomous vehicle testing environment. The solution

About NVIDIA

NVIDIA's (NASDAQ: NVDA) invention of the GPU in 1999 sparked the growth of the PC gaming market and has redefined modern computer graphics, high performance computing and artificial intelligence. The company's pioneering work in accelerated computing and AI is reshaping trillion-dollar industries, such as transportation, healthcare and manufacturing, and fueling the growth of many others.

More information at Nvidianews.nvidia.com

About IBM

IBM Spectrum Scale software and Elastic Storge System provide a high-performance global data platform that solves modern data challenges with a single source of truth and a global data fabric. IBM innovation and industry-leading software-defined storage management and data services provide workload agility and faster insights for AI and business results. IBM storage connects multiple applications with different interfaces with multiple data sources in a single managed solution, with the efficiency, protection and security designed to meet global enterprise requirements.

IBM.com

implemented Equinix Connect and Equinix Fabric™ software-defined interconnection for on-demand, global connectivity to internet service providers (ISPs), IT infrastructure, and network and cloud providers.

"For this type of project, you need an end-to-end balanced system and a very flexible environment. Equinix provided the environment, infrastructure and expertise from its architects and engineers we required to build the Continental solution in a very professional way."

-Jens Hoschke, Sales Manager Storage Solutions, Automotive and Industrial Accounts, IBM Deutschland GmbH

Sustainability was also an important criteria for Continental when selecting Equinix as its partner. Being carbon neutral across its entire value chain is a goal for each Continental project. As the world's digital infrastructure company™, Equinix has the responsibility to harness the power of technology to innovate and contribute to a more accessible, climate neutral and sustainable future.

"Having 100% certified green energy was a priority for us, especially for this type of high-performance, supercomputer/AI environment. Following Continental's sustainability framework, the project team was very happy to see that Equinix could provide us with the necessary resources to run AI trainings much faster with greater optimization and sustainably."

-David Enenkel, Head of IT Operations, Continental / Deputy Local IT Manager, Continental AG, Business Area Autonomous Mobility

Value realized

Continental ultimately chose Equinix because it exceeded the company's needs for space, power, cooling and connectivity, enabling Continental to bring its ADAS solutions to market faster. Equinix also enabled Continental to design its environment for a hybrid approach to be "future-proof," with on-ramps to extend to the cloud.

Faster deployment time

All the infrastructure components and connected ecosystems of business and technology partners, such as OEMs and companies that provide innovative services, were already on Platform Equinix, enabling the entire Continental deployment to be completed in just two weeks.

Improved AI training time
AI model training that used to take weeks now takes only days—a 70% reduction. Continental can run 14 times more deep learning trainings per month, in less time per training.

Room to scale
Continental's supercomputer/storage cluster provides enormous compute capacity with several hundred GPUs, and more than 150 TB of distributed storage.

Global interconnected platform
On Platform Equinix, Continental leveraged high-bandwidth, low-latency interconnection for its supercomputer cluster infrastructure, connectivity to its backbone network, and easy access to cloud providers and smart mobility ecosystem partners.

Sustainable infrastructure
Continental understands that being a sustainable and responsible business increases its ability to innovate and meet the future—adding value to the company. This is why sustainability is firmly integrated in its corporate strategy and is a key driver of innovation. Equinix can provide Continental with a sustainable global platform to build its digital infrastructure and reach its goal of a carbon-neutral supply chain.

Results

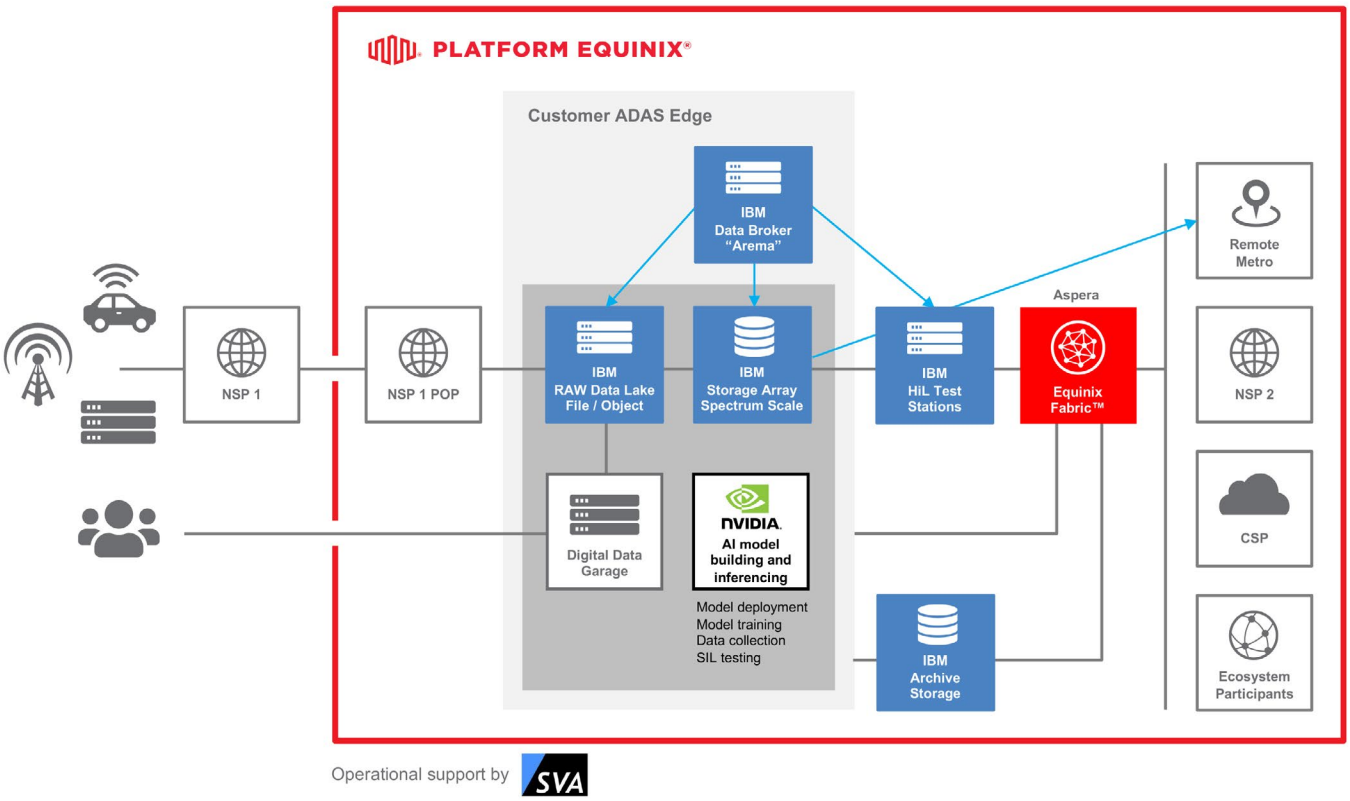
Faster deployment time
Implemented preliminary version of the Continental AI supercomputer cluster in two weeks

Improved AI training time
Lowered AI model training by 70%, from weeks to days

Room to scale
Infrastructure to grow compute and storage capacity by 20%

Global interconnected platform
High-bandwidth, low-latency interconnection to infrastructure and smart mobility ecosystems

Sustainable infrastructure
Sustainable infrastructure for a carbon-neutral supply chain



Power your digital leadership at Equinix

On Platform Equinix®, digital leaders bring together all the right places, partners and possibilities to create the foundational infrastructure they need to succeed. On a single global platform, place infrastructure wherever you need it. Connect to everything you need to succeed. Seize opportunity with agility, speed and confidence.

Questions? Equinix.com/Contact-Us

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