ASUS | BUSINESS

HOW ASUS IS LEADING THE WAY IN HIGH PERFORMANCE COMPUTING

Exploring ASUS' work through
an inspiring series of case studies

Amid the noise of AI, GenAI, the internet of things, machine learning and so much more, ASUS has been busy, quietly working away in the background to deliver the advanced compute performance required for such demanding applications.

This guide provides a snapshot into some of the innovations that ASUS has enabled across industries including scientific research, healthcare, manufacturing, finance, and data centres. All achieved with an unwavering focus on delivering the advanced computing power required to support complex and intricate tasks, analyse vast amounts of data at speed, and drive AI integration so customers can unlock their full potential now and in the future.

Lowering the barrier of entry to AI innovation with India's fastest HPC AI Supercomputer

Shakti Cloud provides a complete AI Platform for development, training and deployment. Shakti is India's first AI-centric cloud, designed to enable researchers, data scientists, and senior developers to outsource the challenges of high GPU costs, scalability, and software optimisation. With ASUS ESC N8-E11, a 7U dual-socket server powered by eight NVIDIA H100 Tensor Core GPUs, Shakti provides a high-performance and reliable platform to support intricate and complex processes, leaving users free of the limitations of on-premise hardware, and free to innovate.

Powering global research efforts for Certis, an integrated security services provider

Certis, an advanced integrated security services provider with an international presence, launched a research hub in 2019. The Certis Centre for Applied Intelligence (CCAI) is equipped with software and hardware capabilities for machine learning and deep learning in Artificial Intelligence, Robotics and Data Analytics. The hub is powered by ASUS Cloud Infra made up of ASUS ESC8000 G4 servers with a powerful GPU architecture that supports up to eight high-performance NVIDIA Quadro® and Tesla® GPU cards in a 4U chassis. CCAI has scalable and flexible system topology configuration options, enabling its training speed to increase exponentially.

The National Center for High-performance Computing (NCHC)

The latest high-performance computing system built by the National Center for High-performance Computing (NCHC) in Taiwan, Forerunner 1 provides the resources for anything from research topics such as climate prediction, to astrophysics simulation, molecular model simulation, and more. ASUS was integral in the construction of Forerunner 1, from data centre construction to cabinet installation, testing and onboarding. The project reached completion in just four months, with Forerunner 1's optimal performance approximately 3.5 petaflops, and coming #92 in the Green 500 in November 2023.

Five-times faster seismic processing

Howman Seismic Services processes raw seismic field data to produce subsurface imagery for near-surface model building, velocity analysis, residual statics, noise removal and more. To achieve this involves processing vast amounts of data, meaning the firm's always seeking next-generation solutions to support its need for raw compute power. With ASUS, Howman has improved performance by up to 5x, slashing the typical individual data-processing job time from eight hours to two. While less servers means reduced power consumption and running costs for cooling – improving the firm's environmental figures.

Levelling up the cloud gaming experience

Since 2019, Boosteroid has provided remote cloud-based access to PC video games across devices and platforms. Users can run video games on low-end or outdated, ultraportable devices, as well as on almost any platform or operating system. Latency, image quality, and overall smoothness of gameplay have been seen as critical metrics that make-or-break adoption of cloud gaming. Together with ASUS, Boosteroid has addressed these challenges by creating an optimal server infrastructure that ensures advanced cloud gaming experiences with ultra-low latency, high image quality, and flawless performance.

BOOSTEROID

Predicting natural disasters with HPC to better prepare recovery efforts

The Department of Earth and Sciences at National Cheng Kung University (NCKU) in Taiwan works to predict national disasters, playing a crucial role in supporting the country's disaster recovery system. To speed analysis, NCKU partnered with ASUS to create a high-performance computing platform for 3D full waveform seismic tomography projects. The platform delivers the high-network bandwidth, load-balancing and fault tolerance needed for high-speed connectivity, with hot-swappable design meaning the power supply can undergo maintenance and repair without shutting down the server, so key projects can operate around the clock.

Building the largest green-energy -powered AI-computing service centre in Taiwan

Ubilink – a new company founded by Foxlink Group, Ubitus and Foxlink Energy – joined forces with ASUS to advance Taiwan's AI revolution with the country's largest computing power centre. Built from the ground up and realised in just three months, the AI supercomputing centre has an impressive overall performance of 45.82 petaflops. It will offer public cloud services, AI computing power rentals and subscription-based cloud services for training large language models. This world-class data centre is also remarkable for handing customers the freedom to choose packages that draw only on renewable energy.

UBILINK

NVIDIA.

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Find out more, or request a remote proof-of-concept trial of ASUS' latest high-performance server technology.