

Asia-Pacific Data Center GPUs Market: Focus on Application, Product, and Country - Analysis and Forecast, 2024-2034

<https://marketpublishers.com/r/AA408D4C3359EN.html>

Date: June 2026

Pages: 0

Price: US\$ 3,250.00 (Single User License)

ID: AA408D4C3359EN

Abstracts

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This report will be delivered in 7-10 working days. Introduction to Asia-Pacific Data Center GPUs Market

The Asia-Pacific data center GPUs market is projected to reach \$44.6 billion by 2034 from \$6.7 billion in 2024, growing at a CAGR of 20.80% during the forecast period 2024-2034. In APAC, surging demand for high-performance computing—powered by AI, deep learning, and big-data analytics—is fueling GPU adoption as specialized “workhorses” for complex tasks. Advances in memory capacity, processing power, and power-efficiency are accelerating growth. Collaborations between GPU vendors and cloud providers, plus hyperscale data-center expansion, are bolstering supply-chain resilience, while R&D investment drives sustainable, compliant innovations for a scalable digital ecosystem.

Market Introduction

The data-center GPU industry in Asia-Pacific (APAC) is expanding at a revolutionary rate as businesses in the region compete to use graphics processing units' (GPUs') parallel processing capabilities. Previously limited to graphic rendering, GPUs have become essential tools for speeding up compute-intensive tasks like big data analytics, high-performance computing (HPC), machine learning (ML), and artificial intelligence (AI). Rapid industry digital transformation in APAC, including in the fields of finance, healthcare, manufacturing, e-commerce, and public services, is creating an

unprecedented need for GPU-accelerated infrastructure that can power real-time inference, train large language models, and simulate challenging scientific and engineering problems.

Key market players, including global leaders and rising regional vendors, are increasing their reach through strategic alliances with cloud service providers and system integrators. Virtualised GPU instances are being introduced by public-cloud platforms such as AWS, Microsoft Azure, Google Cloud, Alibaba Cloud, and Tencent Cloud, allowing businesses to use high-performance computing on a pay-as-you-go basis. In the meantime, hyperscalers, academic institutions, and major corporations looking for specialised GPU clusters for predictable workloads and data-sovereignty needs are increasingly adopting on-premises deployments.

APAC's infrastructure trends are influenced by both efficiency and performance. In order to maintain ideal thermal profiles in high-density racks, cutting-edge cooling techniques like liquid immersion and direct-to-chip cold plates are used in conjunction with advancements in GPU architectures, which provide increased memory bandwidth, tensor cores for AI matrix operations, and mixed-precision computing. Simultaneously, the emergence of disaggregated and composable GPU fabrics allows for dynamic accelerator resource pooling, increasing utilisation rates and reducing total cost of ownership.

Investments in GPU-driven data centres are being stimulated by government initiatives and incentive programs, including Singapore's Green Data Centre Grant, South Korea's Digital New Deal, India's National AI Mission, and China's "New Infrastructure" plan. These regulations are speeding up research and development of next-generation GPU designs, software toolchains, and management platforms, as well as increasing venture capital investments in AI firms. APAC is positioned to become a global centre for GPU-accelerated innovation, propelling both economic growth and technological leadership, as businesses and public sector entities continue to boost GPU deployments.

Market Segmentation

Segmentation 1: Data Center GPUs Market (by Application)

Hyperscale

Colocation

Enterprise

Others

Segmentation 2: Data Center GPUs Market (by Product)

Conventional GPUs

Accelerated GPUs

Segmentation 3: Data Center GPUs Market (by Country)

Japan

India

China

Australia

South Korea

Rest-of-Asia-Pacific

APAC Data Center GPUs Market Trends, Drivers and Challenges

Trends

Rapid uptake of AI-optimized GPUs (NVIDIA Blackwell, AMD MI300) for generative AI and LLM training

Disaggregated and composable GPU architectures enabling flexible resource pooling

Growth of virtualized GPU instances in public clouds (AWS, Azure, GCP) across APAC regions

Deployment of “micro-clusters” at edge and regional PoPs for localized inference

Increased use of liquid-cooled and immersion-cooled GPU racks to manage rising power densities

Drivers

Explosive demand for AI/ML workloads in finance, healthcare, and manufacturing

National AI strategies (e.g., China’s AI 2.0 roadmap, India’s AI Mission) fueling data-center upgrades

Cloud provider expansion into APAC, offering GPU-as-a-Service and hybrid-cloud GPU solutions

Growth in high-performance computing (HPC) for scientific research and digital twins

Enterprise digital transformation and competitive pressure to leverage real-time analytics

Challenges

Skyrocketing power consumption and cooling requirements driving OPEX up

Global GPU supply constraints and long lead times for next-gen accelerators

High capital expenditure for dense GPU deployments, with ROI pressure

Talent shortages in GPU-accelerated systems design, deployment, and operations

Data-sovereignty and cross-border compliance complicating centralized GPU farm deployments

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