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Data Center Chip Market by Offerings (GPU, CPU, FPGA, Trainium, Inferentia, T-head, Athena ASIC, MTIA, LPU, Memory (DRAM (HBM, DDR)), Network (NIC/Network Adapters, Interconnects)) – Global Forecast to 2030

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Abstracts

The global data center chip market is expected to grow from USD 206.96 billion in 2025 to USD 390.65 billion by 2030, growing at a CAGR of 13.5% from 2025 to 2030.

The expansion of data center capacity is one of the primary drivers of growth in the data center chip market. With the growing demand for more digital services, organizations handle more significant volumes of data and are adopting emerging technologies, increasing the demand for data center capacity. This expansion comes from the proliferation of data-intensive applications, the birth of cloud computing, the rise in the number of IoT devices, and the trend of increased data-based decisions.

Generative AI in the Application segment to grow with the highest CAGR during the forecast period

The data center chip market is expected to experience a high growth rate in the Generative AI segment due to the rapid adoption of generative models such as GPT-4, DALL-E and Stable Diffusion across industries. In real-time, these models require massive computational power to generate high-quality content, such as text, images, and videos. The deployment of Generative AI for applications such as content creation, drug discovery, and design automation increases the demand for high-performance data center chips in various organizations. Companies like NVIDIA and AMD continue developing specific GPUs with highly improved tensor cores optimized to suit the parallel processing demands that the generative model requires. The growth in the

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market for custom AI accelerators, specially designed to fit generative tasks, such as those of Cerebras and Graphcore, is fueling its rapid growth. The capability to deal with the high computation of Generative AI models in reducing latency and energy consumption is a key factor fueling the accelerated growth in this market.

The AI processor is expected to have the largest market share in the processor market during the forecast period.

AI processor includes GPU, CPU, and FPGAs. Data center chips primarily contain the central processing unit, often called processors, as they have most of the computation work in executing processes to process data. These processors perform arithmetic and logical operations, perform input/output operations on the commands, and supervise the activities among other components in the data. Currently, the modern trend is for multicore processors with improvements in performance and decreasing power consumption through the execution of different tasks at a given time. A GPU is a powerful processor, which can handle multiple tasks simultaneously, making them ideal for accelerating complex computations, including machine learning, deep learning, and data analysis. It accelerates tasks that require lots of data and heavy processing, thus making it possible to execute big computing applications faster and more efficiently.

North America is expected to have the second-largest market during the forecast period.

North America took the second-largest market share of data center chip market share in 2024. The presence of prominent technology firms and data center operators is driving the market across the North American region. The region hosts companies such as NVIDIA Corporation (US), Intel Corporation (US), Advanced Micro Devices, Inc. (AMD) (US), and Google (US). Cloud service providers include Amazon Web Services, Inc. (AWS) (US), Microsoft Azure (US), and Google Cloud (US). These data centers are further backed by AI infrastructure to provide real-time services worldwide. The region also hosts several startups set up in the area for delivering data center chips for data centers, which include SAPEON Inc. (US), Tenstorrent (Canada), Taalas (Canada), Kneron, Inc. (US), SambaNova Systems, Inc. (US). Many modern data centers in this region are equipped with state-of-the-art AI hardware. The presence of large-scale data centers and leading data center chip developers in the area are driving the market growth.

In determining and verifying the market size for several segments and subsegments gathered through secondary research, extensive primary interviews have been

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conducted with key officials in the data center chip market. Following is the breakup of the profiles of the primary participants for the report.

By Company Type: Tier 1 – 40 %, Tier 2 – 40%, and Tier 3 – 20%

By Designation: Directors –40%, Managers- 40%, and Others – 20%

By Region: North America– 40%, Asia Pacific – 20%, Europe- 30%, and RoW – 10%

The report profiles key players in the data center chip market and analyzes their market shares. Players profiled in this report are NVIDIA Corporation (US), Advanced Micro Devices, Inc. (AMD) (US), Intel Corporation (US), Micron Technology, Inc. (US), Google (US), SK HYNIX INC. (South Korea), AWS (US), Samsung (South Korea), Texas Instruments Incorporated (US), Alibaba (China), Analog Devices (US), Monolithic Power Systems, Inc., (US), STMicroelectronics (Switzerland), Sensirion AG (Switzerland), Honeywell International, Inc. (US), AKCP(US), Bosch Sensortec (Germany), Renesas Electronic Corporation (Japan), Infineon (Germany), Diodes Incorporated (US), Imagination Technologies (UK), Graphcore (UK), Cisco Systems, Inc. (US), Dell Inc. (US), Huawei Technologies Co., Ltd. (China).

Research Coverage

The report defines, describes, and forecasts the data center chip market based on component, data Center size, application, end-user, and region. It provides detailed information regarding drivers, restraints, opportunities, and challenges influencing its growth. It also analyzes competitive developments such as product launches, acquisitions, expansions, contracts, partnerships, and actions carried out by the key players to grow in the market.

Reasons to Buy This Report

The report will help market leaders and new entrants with information on the closest approximations of the revenue numbers for the overall data center chip market and the subsegments. It will also help stakeholders understand the competitive landscape and gain more insights to better position their businesses and plan suitable go-to-market strategies. The report also helps stakeholders understand the market pulse and provides information on key market drivers, restraints, challenges, and opportunities.

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The report provides insights on the following pointers:

Analysis of key drivers (Expansion of data center capacity, Surging demand for high data volumes and pressing need for fast and efficient data processing, Continuous advancement in machine learning and deep learning technologies, Rising focus on parallel computing in AI data center), restraints (Shortage of skilled professional, High cost associated with data center GPUs), opportunities (Emergence of sovereign AI, Emergence of FPGA-based Accelerator), and challenges (High energy consumption of data centers, Security concerns associated with data centers) influencing the growth of the data center chip market.

Product Development/Innovation: Detailed insights on upcoming technologies, research & development activities, and new product & service launches in the data center chip market

Market Development: Comprehensive information about lucrative markets – the report analyses the data center chip market across varied regions

Market Diversification: Exhaustive information about new products & services, untapped geographies, recent developments, and investments in the data center chip market

Competitive Assessment: In-depth assessment of market shares, growth strategies, and offerings of leading players NVIDIA Corporation (US), Advanced Micro Devices, Inc. (US), Intel Corporation (US), Micron Technology, Inc. (US), SK HYNIX INC. (South Korea), among others in the data center chip market strategies.

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