

Global High-Performance Computing (HPC) Market Size Study & Forecast, by Component (Servers, Storage, Networking Devices, Software, Services, Cloud) and Deployment (On-Premise, Cloud) and Regional Forecasts 2025-2035

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Abstracts

Market Definition and Overview

The Global High-Performance Computing (HPC) Market is valued approximately at USD 57 billion in 2024 and is projected to expand at a robust CAGR of 7.20% during the forecast period 2025-2035. HPC refers to the use of supercomputers and parallel processing techniques for solving complex computational problems across diverse sectors such as scientific research, aerospace, automotive, energy, and defense. These systems integrate high-capacity servers, storage, networking devices, specialized software, and cloud solutions to deliver rapid data processing, sophisticated simulations, and large-scale analytics. The rising demand for real-time data analysis, digital transformation, and AI-driven applications is significantly propelling the adoption of HPC systems worldwide.

The surge in demand for HPC solutions is largely driven by the increasing complexity of computational workloads in industries ranging from life sciences to financial services. According to industry statistics, global investments in AI and big data analytics have consistently escalated, creating a parallel requirement for high-performance computing infrastructure. Technological innovations, such as heterogeneous computing architectures, GPU acceleration, and advanced cooling solutions, provide lucrative opportunities for market growth. Nevertheless, high capital expenditure and energy-intensive operations pose challenges that may restrain market expansion during the forecast period of 2025-2035.

The detailed segments and sub-segments included in the report are:**By Component:**

Servers

Storage

Networking Devices

Software

Services

Cloud

By Deployment:

On-Premise

Cloud

By End-Use:

Healthcare & Life Sciences

Aerospace & Defense

Automotive

BFSI

Energy & Utilities

Academic & Research Institutions

Other Industries

By Region:

North America

U.S.

Canada

Europe

UK

Germany

France

Italy

Spain

Rest of Europe

Asia Pacific

China

India

Japan

Australia

South Korea

Rest of APAC

Latin America

Brazil

Mexico

Middle East & Africa

UAE

Saudi Arabia

South Africa

Rest of Middle East & Africa

Servers to Dominate the Market

Servers are projected to dominate the HPC Market, capturing the largest share due to their pivotal role in delivering computational power for intensive workloads. The adoption of multi-core processors, GPU-accelerated servers, and high-memory architectures has amplified performance capabilities, making them indispensable across research, defense, and industrial applications. While storage and networking solutions continue to expand in importance, servers remain the cornerstone of HPC deployments, facilitating real-time analytics and scalable simulations essential for strategic decision-making.

Cloud Deployment Leads in Revenue Contribution

Currently, cloud-based HPC solutions contribute the highest revenue, fueled by their flexibility, cost efficiency, and scalability. Organizations are increasingly leveraging cloud infrastructures to bypass high upfront capital investments, enable on-demand computational resources, and support hybrid HPC architectures. On-premise deployments maintain a strong presence in security-sensitive sectors like defense and

finance, yet cloud adoption is accelerating, reflecting broader trends in digital transformation and enterprise IT modernization.

The key regions considered for the Global HPC Market study include North America, Europe, Asia Pacific, Latin America, and the Middle East & Africa. North America dominated the market in 2025, driven by the presence of major technology vendors, advanced research facilities, and substantial investments in AI and big data analytics. Asia Pacific is expected to be the fastest-growing region during the forecast period, owing to increased digital transformation initiatives, expanding cloud infrastructure, and government support for high-performance computing projects in countries such as China, India, and Japan.

Major market players included in this report are:

IBM Corporation

Intel Corporation

NVIDIA Corporation

Dell Technologies

Hewlett Packard Enterprise

Cisco Systems, Inc.

Lenovo Group Limited

Oracle Corporation

Microsoft Corporation

Atos SE

Cray Inc.

Fujitsu Limited

Huawei Technologies Co., Ltd.

AMD Inc.

SGI International

Global High-Performance Computing (HPC) Market Report Scope:

Historical Data – 2023, 2024

Base Year for Estimation – 2024

Forecast period - 2025-2035

Report Coverage - Revenue forecast, Company Ranking, Competitive Landscape, Growth factors, and Trends

Regional Scope - North America; Europe; Asia Pacific; Latin America; Middle East & Africa

Customization Scope - Free report customization (equivalent to up to 8 analysts' working hours) with purchase. Addition or alteration to country, regional & segment scope*

The objective of the study is to define market sizes of different segments & countries in recent years and to forecast the values for the coming years. The report is designed to incorporate both qualitative and quantitative aspects of the industry within the countries involved in the study. The report also provides detailed information about crucial aspects, such as driving factors and challenges, which will define the future growth of the market. Additionally, it incorporates potential opportunities in micro-markets for stakeholders to invest, along with a detailed analysis of the competitive landscape and product offerings of key players. The detailed segments and sub-segments of the market are explained above:

Key Takeaways:

Market Estimates & Forecast for 10 years from 2025 to 2035.

Annualized revenues and regional-level analysis for each market segment.

Detailed analysis of the geographical landscape with country-level analysis of major regions.

Competitive landscape with information on major players in the market.

Analysis of key business strategies and recommendations on future market approach.

Analysis of the competitive structure of the market.

Demand side and supply side analysis of the market.

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