HPC Software - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

The HPC Software Market size is estimated at USD 10.75 billion in 2025, and is expected to reach USD 107.58 billion by 2030, at a CAGR of 58.52% during the forecast period (2025-2030).

Factors such as rising investments in the Artificial Intelligence (AI), the Industrial Internet of Things (IIoT), and engineering demand for Electronic Design Automation (EDA) are driving the market over the forecast period.

Key Highlights
- The surging demand for short product development cycles (PLCs) and a need to maintain persistent quality becomes nearly impossible to address in real time without using the right tools and advanced technologies.
- Countries across the globe, including Germany, the United States, the United Kingdom, Japan, and China, among others, have recognized the importance of such technologies as a significant driver of economic growth and are potential markets for HPC software, which support these initiatives while maintaining cost and performance efficiencies.
- The adoption of high-performance computing (HPC) systems with computer-aided engineering (CAE) software for high-fidelity modeling simulation is rising among various industries, such as automotive, discrete manufacturing, and healthcare robotics.
- Moreover, cloud-based HPC solutions are gaining traction due to their cost-effective pay-as-you-go pricing model. Predominantly, government agencies, research institutions, and universities are likely to benefit from cloud-based HPC solutions.

HPC Software Market Trends

Cloud Based High-Performance Computing Software is Driving the Growth

- Enterprises across regions are deciding to rent HPC applications via the cloud to solve complex mathematical modeling problems, as they see benefits beyond costs. As a result, cloud high-performance computing (HPC) has seen an uptick in the past few years.
- Cloud HPC offers scalable and cost-effective ways to process a large amount of data and run complex applications. Cloud computing providers are investing in research and development to introduce new software to meet the needs of businesses.
- For instance, in February 2023, Researchers at Amazon Web Services (AWS) launched a new software framework that can be used to create electromagnetic simulations on quantum computing hardware. It was developed to leverage the cloud-based high-performance computing (HPC) products and services available on AWS.
- Cloud HPC providers gain significant returns by maintaining competitive costs, rapid innovation, and portfolio expansions.
- For instance, in May 2023, CGG, a global technology, and HPC provider, announced that it signed a contract to be the exclusive HPC cloud partner of Biosimulytics, an Irish pharma software company that uses artificial intelligence (AI) to dramatically improve the speed, cost, novelty, and success rate in new drug development.
- In November 2022, Lockheed Martin and Microsoft announced the expansion of their strategic relationship to support the advancement of technology for the Department of Defense (DOD). The agreement was expected to focus on Classified Cloud innovations, Digital Transformation, and other advanced technological innovations. Such cloud-focused partnerships by the major vendors are expected to boost the demand for cloud HPC.

Asia-Pacific is the Fastest Growing Region

- The region is home to several large and emerging economies, including China, Japan, and India. These economies are heavily investing in HPC to accelerate their economic development. Moreover, the growing use of simulation in various industries, including manufacturing, healthcare, and others, drives the demand for HPC.
- The region's strong manufacturing industry and investments in technologies driving HPC, such as IoT and AI, will likely make it a lucrative market for cloud HPC vendors.
- Vendors have made significant investments to cater to Asia-Pacific's robust manufacturing sector, which increasingly relies on simulation and cloud computing to lower production costs and improve operational effectiveness to maintain their competitiveness in the global market.
- Specifically, China, Japan, South Korea, India, and Australia are creating huge potential for HPC software in the coming years. The Chinese government has declared to invest USD 47 billion in its semiconductor industry to cut out non-indigenous devices in manufacturing and design, which will eventually create potential space for high-performance computing technology in the country for the forecast period.
- In April 2022, Fujitsu announced the launch of its new service portfolio, "Fujitsu Computing as a Service (CaaS)," to accelerate digital transformation (DX) by offering access to the most advanced computing technologies via the cloud for commercial use. The company was expected to begin delivery of these new services to the Japanese market in October 2022.

HPC Software Industry Overview

Some regional and global players dominate the market with their technological expertise in high-performance computing software solutions. The global market for high-performance computing software is expected to be consolidated in nature. Amazon Web Services Inc., ANSYS, Inc., Dassault Systemes, Dell EMC, Google Inc., Hewlett Packard Enterprise Development LP, IBM Corporation, Intel Corporation, Microsoft Corporation, and Oracle Corporation are some of the major players in the current market. All these players are involved in competitive strategic developments such as partnerships, new product innovation, and market

expansion to gain leadership positions in the global high-performance computing software market.

In May 2023, IBM announced Cadence Design Systems, Inc. is leveraging high-performance computing (HPC) with IBM Cloud HPC to help develop its chip and system design software faster. Cadence can flexibly manage its compute-intensive workloads on-premises and in the cloud with the integrated IBM Spectrum LSF deployed in a hybrid cloud solution for HPC.

In May 2023, Quantum Machines announced its partnership with ParTec to launch a co-developed universal software solution for tightly integrating quantum computers into high-performance computing (HPC) environments.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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