United Kingdom High Performance Computing Market Report and Forecast 2025-2034

Market Report | 2025-06-29 | 116 pages | EMR Inc.

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Report description:

The United Kingdom high performance computing market size was approximately USD 2.12 Billion in 2024. The market is assessed to grow at a CAGR of 5.20% between 2025 and 2034, reaching a value of USD 3.52 Billion by 2034.

Key Trends in the Market

The use of parallel data processing to perform complex calculations at very high speeds is called high performance computing. It relies on an interconnected computer architecture, comprising of computer servers, networking components, and data storage space to perform quadrillions of calculations per second. It is used extensively in various industries like media and entertainment, oil and gas extraction, healthcare, and financial services, among others.

- High performance computing enables the formulation of better disaster management strategies by forecasting the potential impact of natural calamities on people and public infrastructure, which supports the United Kingdom high performance computing market demand. This enables better predictions about natural events and helps minimise the risk of economic loss. For instance, the EU-funded ChEESE project leverages supercomputing to assess and predict accurate disaster scenarios.

- The testing of advanced AI models for safety and performance has boosted UK's reliance on high performance computing. In November 2023, the government announced an investment of USD 273 million for the development of an AI supercomputer, that will drive innovations in drug discovery and clean energy. The UK's increasing investment in AI supercomputers to compete with superpowers like the U.S. and China and further enhance its technological infrastructure is expected to boost the United Kingdom high performance computing market growth.

- High performance computing is helping researchers in studying unexplored areas of science, which is one of the key United Kingdom high performance computing market trends. For example, on-screen examination of very small particles using this

technology has made it simpler to understand the structure of chemical elements. Also, astronomers and scientists are discovering new planetary bodies and stars with the help of HPC (high performance computing), which is revolutionising the existing knowledge of various academic disciplines.

United Kingdom High Performance Computing Market Segmentation

The EMR's report titled "United Kingdom High Performance Computing Market Report and Forecast 2025-2034 offers a detailed analysis of the market based on the following segments:

Market Breakup by Component

- Hardware
- Software
- Services

Market Breakup by Deployment

- On-Premises
- Cloud

Market Breakup by End Use

- BFSI
- Aerospace and Defence
- Media and Entertainment
- Energy and Utilities
- Manufacturing
- Healthcare
- Others

Market Share by Deployment

As per the United Kingdom high performance computing market analysis, the deployment of cloud HPC is expected to gain momentum during the forecast period. This is because it does not stand the risk of becoming obsolete as technology advances or remain underutilised when workload declines. It is a cost-effective solution to data processing and storage that comes at flexible pricing options and enables higher cost savings. Companies seeking additional security of data can opt for private cloud solutions or hybrid clouds to maintain privacy of data. The shift to cloud based HPC offers benefits in terms of scalability and services (additional services), which is impacting the rate of its adoption.

Market Share by End-Use

The healthcare sector is expected to account for a significant United Kingdom high performance computing market share. This is because supercomputers can tabulate unstructured data easily and generate new diagnostic ideas using patterns undetected by humans. It can also predict diseases before their onset by analysing biomarker data obtained from DNA/RNA reports. By simulating medical experiments and test results, it is fastening the process of drug discovery while removing biases of human judgement. Without high performance computing, cancer research would cease because bioinformatics, which forms the core component of cancer research, is highly dependent on large amounts of data. This is true not only in the healthcare sector, but

also in the BFSI and manufacturing sector, where the use of HPC is expected to increase to prevent credit card fraud and enable efficient product designing.

Competitive Landscape

The comprehensive EMR report provides an in-depth assessment of the market based on the Porter's five forces model along with giving a SWOT analysis. The report gives a detailed analysis of the following key players in the United Kingdom high performance computing market, covering their competitive landscape and latest developments like mergers, acquisitions, investments, and expansion plans.

Hewlett Packard Enterprise Development LP

Hewlett Packard Enterprise Development LP was founded in 1939 and is headquartered in Texas, United States. It is world leader in manufacturing personal systems and printing products. It has six business units through which it operates. This includes Compute, HPC & AI, Financial Services, Intelligent Edge, Corporate Investments, Storage, and Other.

IBM Corp.

IBM Corp., one of the world's leading IT companies, was incorporated in 1911 and is headquartered in New York, United States. It is engaged in providing hybrid cloud systems, artificial intelligence support, and business services. It operates through its four business segments which includes Software, Infrastructure, Consulting, and Financing.

NVIDIA Corporation

NVIDIA Corporation was incorporated in 1998 and is headquartered in California, USA. It operates through its Computing & Network, and Graphic business unit. It has led various breakthroughs in accelerated computing and is helping companies in virtual collaboration by its tools like NVIDIA Omniverse. It is also engaged in the development of driverless cars and modern chips for AI factories.

Other United Kingdom high performance computing market players include Intel Corporation, Microsoft Corp., ATOS SE, Dell Technologies Inc., Fujitsu Limited, Lenovo Group Ltd., and NEC Corporation, among others.

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