

United States Data Center Cooling - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2024 - 2030)

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Abstracts

The United States Data Center Cooling Market size is estimated at USD 3.20 billion in 2024, and is expected to reach USD 8.5 billion by 2030, growing at a CAGR of 18.90% during the forecast period (2024-2030).

The increasing demand for cloud computing among SMEs, government regulations for local data security, and growing investments by domestic players are some of the major factors driving the demand for data centers in the country.

Key Highlights

Under Construction IT Load Capacity: The IT load capacity of the US data center rack market is expected to reach 24,000 MW by 2029.

Under Construction Raised Floor Space: The country's construction of raised floor area is expected to increase to 80 million sq. ft by 2029.

Planned Racks: The country's total number of racks installed is expected to reach 4,035,000 units by 2029. Northern Virginia is expected to house the maximum number of racks by 2029. In 2022, the average annual temperature in the United States was 11.8 °C. Depending upon climatic conditions, the DC cooling is done in the DC facilities.

Planned Submarine Cables: More than 90 submarine cable systems connect the United States, and many are under construction. One such submarine cable, which is estimated to start service in 2025, is Gold Data-1; it stretches over 2,333 km with

landing points from Naples to the United States.

United States Data Center Cooling Market Trends

The IT & Telecommunication Segment Holds the Majority Share

Early entrants had a significant impact on digital transformation, influenced by the pandemic, by offering digital products and services or by using digital processes more than their competitors engaged in digital transformation.

Among US corporate infrastructure decision-makers, 94% have at least one cloud deployment, with hybrid or multi-cloud solutions more common. Nearly 74% of US infrastructure decision-makers claim that their organizations are adopting containers as a platform as a service (PaaS) in on-premises or public cloud environments. The adoption of the cloud is expected to increase significantly.

Some of the US cloud providers include AWS, Microsoft, and Google. Among enterprise infrastructure decision-makers who use at least one type of cloud deployment, 94% use at least one type of cloud deployment, with the majority being hybrid or multi-cloud.

In the United States, cloud storage is growing due to the growing demand for cost-effective data backup, storage, and backup in every business and the need to manage the data generated by the increasing use of mobile phones.

With the rise of the digital economy and increased internet usage in the United States, the need for data storage and processing has increased. The proliferation of hybrid cloud service providers has increased demand for colocation services and increased rack utilization.

The number of IoT devices utilizing network connections from telecommunication providers is likely to generate huge amounts of data. For instance, connected consumer device unit shipments in the United States reached more than 800 million units in 2023. By 2025, IoT connections in the United States are projected to grow to more than 4 billion. In the United States, the average monthly mobile data speed is projected to reach 534 Mbps by 2029 through 5G service. Such instances in the market are expected to create more need for data centers, boosting the demand for data center cooling infrastructure manufacturers in the coming years.

Liquid-based Cooling is Expected to Be the Fastest Growing Segment

In data centers, liquid cooling offers many benefits, and it is an attractive option for cooling computing environments with high performance. The use of liquid cooling has been shown to be more energy efficient compared to conventional air conditioning. It reduces the need for overcooling and improves the energy efficiency of data centers by providing precise temperature control.

Technologies such as Artificial Intelligence and Machine Learning are integrated into liquid cooling systems to optimize cooling efficiency and anticipate maintenance needs. They facilitate the efficient operation of data centers and help to reduce their downtime.

The United States has been at the forefront of developments in liquid cooling technologies for data centers and other applications. Immersion cooling has gained significant attention in the United States, particularly in high-performance computing (HPC) and cryptocurrency mining operations. Innovative immersion cooling solutions have been introduced to the market by several companies, and they are an efficient solution for data centers in terms of maximizing heat efficiency and reducing energy consumption.

Technological advancements have helped reduce the water consumption of data centers by more than 15% in tropical climates and 80% in green areas, making liquid cooling easier to maintain, scale up, or be affordable. Energy used for liquid cooling may be recycled to heat buildings and drinking water, while advanced artificial refrigerants can significantly reduce the carbon footprint of air conditioners.

The implementation of 5G in the country has led to an increase in the consumption of data, which has triggered the growth of data centers in the country. The use of 5G network capabilities by various end-user industries would contribute to future developments and capabilities of wireless internet connectivity in the United States.

Data from Accenture estimates that the information/communication sector using 5G will contribute about USD 251 billion to the country's GDP from 2021 to 2025, followed by USD 190 billion from real estate, rental, and leasing, USD 187 billion from business and professional services, and USD 159 billion from the manufacturing industry. Such improvements in the market propel the growth of data centers and, consequently, boost the demand for DC cooling infrastructure in the country.

United States Data Center Cooling Industry Overview

The upcoming DC construction projects in the country will increase the demand for data center cooling in the coming years. The US data center cooling market is moderately fragmented. Market players include Stulz GmbH, Rittal GMBH & Co.KG, Schneider Electric SE, Vertiv Group Corp., and Mitsubishi Electric Hydronics & IT Cooling Systems S.p.A. These major players, with a prominent market share, focus on expanding their regional customer base.

April 2024: Carrier Global Corporation partnered with Strategic Thermal Labs to develop direct-to-chip cooling technology. Under this partnership, Carrier will leverage the advancement in direct-to-chip technology and incorporate it into the data center cooling solutions.

December 2023: Vertiv completed the acquisition of Cooltera Ltd, a manufacturer of coolant distribution units (CDU) and secondary fluid networks (SFN). This acquisition is expected to improve the existing DC cooling solutions offered by the company.

Additional Benefits:

The market estimate (ME) sheet in Excel format

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