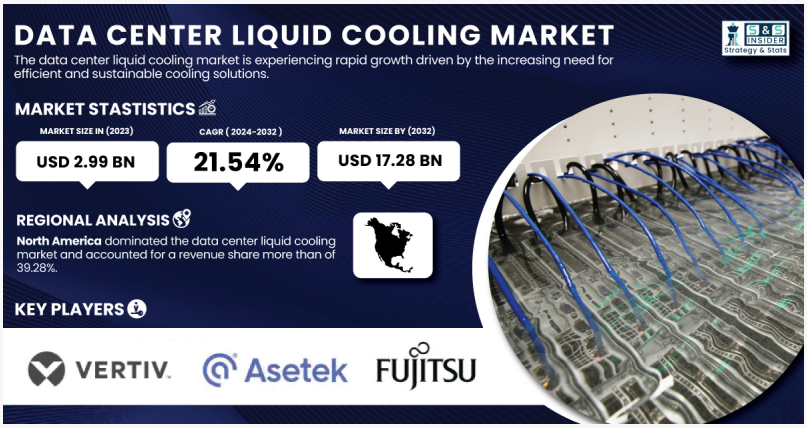
Data Center Liquid Cooling Market to Exceed USD 17.28B by 2032 Due to Rising Demand for Efficiency

The Data Center Liquid Cooling Market was USD 2.99 Bn in 2023 and is expected to reach USD 17.28 Bn by 2032, growing at a 21.54% CAGR from 2024 to 2032.



AUSTIN, TX, UNITED STATES, January 31, 2025 /EINPresswire.com/ -- The Data Center Liquid Cooling Market size was USD 2.99 billion in 2023 and is expected to reach USD 17.28 Billion by 2032, growing at a CAGR of 21.54% over the forecast period of 2024-2032.

The Data Center Liquid Cooling Market is growing rapidly due to the demand for energy-efficient, sustainable cooling in high-performance computing.

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Some of Major Keyplayers:

- Schneider Electric - EcoAisle Liquid Cooling System
- Vertiv Group - Liebert VIC (Vertiv Immersion Cooling)
- Asetek - RackCDU Direct-to-Chip Liquid Cooling
- CoolIT Systems - Direct Liquid Cooling (DLC) Solutions
- Rittal GmbH - LCP DX Liquid Cooling Package
- Fujitsu Limited - Liquid Immersion Cooling System
- Submer - SmartPodX Immersion Cooling
- Iceotope Technologies - Ku:l Immersion Cooling
- Nortek Air Solutions – ServerCool Liquid Cooling
- Midas Green Technologies - Immersion Cooling System
- Green Revolution Cooling (GRC) - CarnotJet Immersion Cooling System
- Chilldyne - Negative Pressure Liquid Cooling System

- Huawei Technologies - FusionModule2000 Liquid Cooling
- Dell Technologies - Direct Liquid Cooling Solution
- Supermicro – SuperBlade with Liquid Cooling
- Lenovo - Neptune™ Liquid Cooling
- LiquidStack - Two-Phase Liquid Cooling System
- IBM Corporation - Cool Blue Liquid Cooling
- Advanced Cooling Technologies, Inc. (ACT) - Heat Pipe Heat Exchangers
- Alfa Laval - Heat Transfer Systems for Data Centers

Rapid Growth of Data Center Liquid Cooling Driven by Efficiency and Sustainability

The data center liquid cooling market is growing rapidly due to the need for energy-efficient and sustainable cooling solutions. Pushing the adoption of liquid cooling forward are rising data generation, AI workloads, and cloud computing. Liquid cooling offers superior heat dissipation and energy efficiency as compared to the traditional air-cooling systems, and major players like Google and Microsoft, alongside startups like Submer and Iceotope, lead the way through innovative, modular solutions. Liquid cooling also advances sustainability by avoiding carbon emissions, as well as improving power use effectiveness (PUE), of which successful case studies such as Alibaba Cloud's Hangzhou data center demonstrate extreme operational savings.

Segment Analysis

By Component
The Solution segment led the market, accounting for a significant revenue share of 58.23% in 2023. It is a growing need for advanced cooling technologies, including direct-to-chip and immersion cooling systems, to manage the high heat load in hyperscale and colocation data centers. This is on top of the accelerating needs of AI workloads, cloud computing, and other types of high-performance computing applications.

The Services segment is expected to grow at the highest CAGR over the forecast period. As more and more data centers start adopting liquid cooling systems, the demand for specialized services in terms of system deployment, support, and consulting has increased to a great extent. The complexities associated with the technologies of liquid cooling, in addition to edge and hyperscale data center installation, require experienced guidance and support for successful implementation and maintenance.

By Data Center Types
Hyperscale Data Centers dominated the market in 2023, accounting for 42.78% of the revenue share. These data centers generate a lot of heat because the server environment in them is so high-density; hence, the need for high-end cooling systems. The technology giants such as Google, Microsoft, and AWS have been first movers in terms of liquid cooling technologies to gain operational efficiency and sustainability.

Colocation Data Centers are expected to experience the highest CAGR due to the increasing demand for affordable IT infrastructure services from small and medium enterprises (SMEs). The ability of liquid cooling systems to maintain higher server densities and comply with energy efficiency standards makes them ideal for colocation facilities, which must meet the varying needs of multiple customers.

By Account Type
- Solution
- Services

By Application
- Wholesale
- Enterprise
- Hyperscale
- Colocation
- Others

By End-Use
- IT & Telecom
- Retail
- Healthcare
- BFSI
- Media & Entertainment
- Others

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Regional Analysis
North America is currently the dominant region in the data center liquid cooling market, holding a revenue share of more than 39.28% in 2023. This is largely because of the presence of key hyperscale operators, including Google, Microsoft, and Amazon Web Services (AWS), which create a high demand for advanced cooling technologies in the region. High growth in AI, cloud computing, and big data workloads in North America, combined with higher server densities, has increased the demand for efficient thermal management solutions.

Asia-Pacific region is expected to witness the highest CAGR during the forecast period. This is backed by an accelerated digitalization approach, an evolving cloud-based landscape, and steady investments in hyperscale and colocation data centers. All three countries in East Asia--China, India, and Japan--are facing heavy data traffic and are also struggling with rising use of IoTs and 5G network installations, where strong cooling techniques play a huge role.

Recent Development

- June 2024 – Perstorp has partnered with Intel's Open IP Advanced Liquid Cooling team to develop a new synthetic thermal management fluid for immersion cooling. The advanced solution uses Intel's SuperFluid technology to boost cooling capacity from 500W to 800W per chip.

- May 2024 – STULZ Modular, a subsidiary of STULZ GmbH, has collaborated with Asperitas to explore the potential of immersion cooling technologies in high-density data centers. Their focus is on creating a modular data center concept utilizing immersion cooling for both indoor and outdoor deployments.

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