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Hyperscale Data Center Market - Global Outlook and Forecast 2021-2026

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Abstracts

In-depth Analysis and Data-driven Insights on the Impact of COVID-19 Included in this Global Hyperscale Data Center Market Report

The hyperscale data center market by investment is expected to grow at a CAGR of 4.02% during the period 2021–2026.

The ongoing COVID-19 pandemic is creating a high demand for hyperscale data centers across all regions. As most global workforce shifts to remote working, hyperscale facilities are gaining high traction in the data center market. The increasing adoption of digitalization, rising investments from telecommunication & service providers, and government initiatives towards the digital economy are significant factors for the hyperscale data center market growth. In terms of hyperscale construction, Apple, Facebook, Google, AWS, Microsoft, Alibaba, Baidu, OVH, and China Telecom are investing billions of dollars in the market.

The following factors are likely to contribute to the growth of the global hyperscale data center market during the forecast period:

Mergers & Acquisition Fueling the Growth of the Hyperscale data center market.

Cloud and Connectivity Driving Demand for Hyperscale Data Centers

Wholesale Colocation Demand Boosting Hyperscale Facility Development

Tax Incentives to Surge the Hyperscale Investment

The study considers the present scenario of the Hyperscale data center market and its market dynamics for the period 2021?2026. It covers a detailed overview of several market growth enablers, restraints, and trends. The report offers both the demand and supply aspects of the market. It profiles and examines leading companies and other prominent ones operating in the market.

HYPERSCALE DATA CENTER MARKET SEGMENTATION

The global hyperscale data center market research report includes a detailed segmentation by IT infrastructure, electrical infrastructure, mechanical infrastructure, cooling systems, cooling technique, general construction, geography. The market for server infrastructure has witnessed strong growth in the past two years. The competition between branded and ODM server suppliers will continue because multiple enterprises opt for server infrastructure based on open community designs (OCP). Server systems based on x86 architecture dominated the market with about 85% of the hyperscale data center market share. The increase in demand for server shipments will continue to grow moderately as enterprises are likely to move to the cloud or colocation platforms for their IT infrastructure operations during the forecast period.

The UPS systems are widely adopted to provide backup power for cooling systems installed in the facility. The adoption of lithium-ion batteries is likely to increase during the forecast period. For instance, GPX Global Systems' data center facilities in India are equipped with Lithium-ion batteries from Eaton. The contribution from colocation providers will be high in terms of lithium-ion UPS solutions. Vendors are also continuously innovating with UPS solutions to boost efficiency and reduce cost. With the emergence of nickel-zinc batteries and sodium-ion batteries, the adoption of 48V DC UPS systems will continue to grow depending on the effectiveness of these solutions.

In data center projects, the investment in cooling systems is expected to be 15–20% of the overall cost, depending on the facility design and IT load. The facilities in Southeast Asia, China, India, Australia, the Middle East, and Africa are likely to prefer air-cooled chillers or chilled water systems or a combination of both air and water-based cooling techniques. Free cooling chillers that facilitate partial cooling using outside air are also highly preferred by several facilities. Tier IV facilities adopt the 2N+1 redundant configuration for cooling systems. For instance, Equinix's London 10 data center facility is built with hybrid dry air coolers and chillers, with the N+2 redundancy for chillers and CRAH units with N+20% redundancy.

Chiller units are the significant consumers of electricity in data centers that require a reliable and dedicated power supply. Most of the facilities that operate in warm climatic conditions are expected to implement free cooling chillers with smart technologies since they enable operations based on outside temperatures. The adoption of chiller units is expected to be higher in APAC and MEA than in North America, Western Europe, Nordic, and Eastern Europe. For instance, Stack Infrastructure Chicago CHIO2 data center is equipped with N+1 redundancy of air-cooled chillers with integral free-cooling and a rack power density of 7-8 kW per rack.

The installation and commissioning process is carried out by engineering contractors, vendors, and data center operators. Installation and commissioning are important aspects of data center development. The growth in greenfield facilities will generate more revenues for installation and commission service providers. Installation should be carried out based on the tier design of the facility.

Segmentation by Infrastructure

- IT Infrastructure
- Electrical Infrastructure
- Mechanical Infrastructure
- General Construction

Segmentation by IT Infrastructure

- Server
- Storage
- Network

Segmentation by Electrical Infrastructure

- UPS Systems
- Generators

Transfer Switches & Switchgears

PDUs

Other Electrical Infrastructure

Segmentation by Mechanical Infrastructure

Cooling Systems

Racks

Other Mechanical Infrastructure

Segmentation by Cooling System

CRAC & CRAH Units

Chiller Units

Cooling Towers, Condensers & Dry Coolers

Economizers & Evaporative Coolers

Other Cooling Units

Segmentation by Cooling Technique

Air-Based Cooling Technique

Liquid-Based Cooling Technique

Segmentation by General Construction

- Core & Shell Development
- Installation & Commissioning Services
- Engineering & Building Design
- Physical Security
- DCIM/BMS

INSIGHTS BY GEOGRAPHY

The North American hyperscale data center market is leading the global hyperscale data center growth, with around 40% of the total number of hyperscale projects in the overall hyperscale industry. Virginia and Texas are the major markets for hyperscale data center operations, followed by Oregon, Ohio, Georgia, and Utah. In 2020, hyperscale data centers in North America added over 2 GW of power, including new facilities that opened in 2020 and are expected to be operational by June 2021.

Segmentation by Geography

- North America
  - US
  - Canada
- Latin America
- Western Europe
- Nordic
- Central & Eastern Europe
- Middle East & Africa
- APAC

China & Hong Kong

Australia & New Zealand

India

Japan

Rest of APAC

Southeast Asia

INSIGHTS BY VENDORS

Arista Networks, ATOS, Broadcom, Cisco Systems, Extreme Networks, Hewlett Packard Enterprise, Hitachi Vantara, Huawei Technologies are some of the IT infrastructure providers in the hyperscale data center market. HPE is one of the leading vendors in the market with a share of around 16%, closely followed by Dell Technologies. The hyperscale data center market is witnessing significant revenue contributions from ODM server manufacturers such as Quanta Systems (QCT), Wistron (Wiwynn), and Inventec. Vendor offerings are concentrated on the cloud, big data, artificial intelligence, and IoT-based application workloads.

Prominent IT Infrastructure Providers

Arista Networks

ATOS

Broadcom

Cisco Systems

Extreme Networks

Hewlett Packard Enterprise (HPE)

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Hitachi Vantara

Huawei Technologies

IBM

Inspur

Inventec

Juniper Networks

Lenovo

NEC Corporation

NetApp

Oracle

Pure Storage

Quanta Cloud Technology

Super Micro Computer

Wistron (Wiwynn)

Prominent Support Infrastructure Provider

ABB

ALFA LAVAL

AIREDALE INTERNATIONAL AIR CONDITIONING

Asetek

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Bosch Security Systems (Robert Bosch)

Caterpillar

Cummins

Condair Group

Delta Group

Eaton

Green Revolution Cooling

HITEC Power Protection

Jones Engineering Group

KOHLER (SDMO)

Legrand

Mitsubishi Electric Corporation

Nlyte

Nortek Air Solutions

Rolls-Royce Power Systems

Piller Power Systems

Rittal

Schneider Electric

Trane (Ingersoll Rand)

STULZ

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Vertiv Group

Prominent Construction Contractors

AECOM

ACECO TI (KKR INVESTMENT GROUP)

Arup Group

Bouygues

Cap Ingelec

Corgan

CSF Group

DPR Construction

Faithful+Gould

Fluor Corporation

Fortis Construction

Gensler

Gilbane Building

HDR Architecture

Holder Construction

ISG

Jacobs Engineering Group

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Mercury Engineering

M+W Group

Kirby Group Engineering

Larsen & Turbo (L&T)

Linesight

Mace Group

Morrison Hershfield

Mortenson Construction

Red-Engineering

Structure Tone

Syska Hennessy Group

Winthrop

Key Data Center Investors

Apple

AWS (Amazon Web Services)

CyrusOne

Digital Realty

Equinix

Facebook

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GDS Holdings

Google

Microsoft

NTT Global Data Centers (NTT Communications)

Prominent Data Center Investors

21Vianet - (Century Internet Data Center)

Africa Data Centres

Ascenty

Aligned Energy

Aruba

Bridge Data Centres

Chayora

Cologix

Colt Data Centre Services (COLT DCS)

Compass Data Centers

COPT Data Center Solutions

CoreSite Reality

Canberra Data Centres

Etisalat Group

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- Global Switch
- Keppel Data Centres
- NEXTDC
- URBACON DATA CENTRE SOLUTIONS
- QTS Realty Trust
- ST Telemedia Global Data Centres
- Shanghai Athub
- Scala Data Centers
- Tenglong Holdings Group (Tamron)
- Turkcell
- Teraco Data Environments
- Vantage Data Centers

New Entrants in the Hyperscale Data Center Market

- AdaniConneX
- ARCHER DATACENTERS
- Aquila Capital Investmentgesellschaft
- Cirrus Data Solutions
- Digital Edge DC
- Echelon Data Centers

Global Technical Realty

IXAfrica

Mantra Data Centers

PointOne

Stratus DC Management

KEY QUESTIONS ANSWERED:

1. How big is the hyperscale data center market investments?
2. What is the growth of hyperscale data centers in the US region?
3. What is the market size of hyperscale data centers in terms of area?
4. Who are the key investors in the hyperscale data center market?
5. What are the key factors driving the growth of the hyperscale data center market?

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