

U.S. Data Center Market - Industry 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 U.S. Data Center Market Report

The U.S. data center market by investment is expected to grow at a CAGR of approx. 3% during the period 2020–2026.

The market is witnessing growth on account of the growing popularity of IoT, the emergence of 5G networks, the COVID-19 pandemic, and the increasing demand for fast streaming of online entertainment content. During Q2 2020, some data center investments halted due to stringent rules imposed by the lockdown. The effect was identified to have lasted for at least a month across major data center development destinations in the US.

The following factors are likely to contribute to the growth of the U.S. data center market during the forecast period:

Impact of 5G Network on Edge Data Center Investments

Effect of Artificial Intelligence on Liquid Immersion & Direct-to-Chip Cooling Adoption

Increasing Procurement of Renewable Energy

Emergence of QLC NAND Flash Drives

Increased Adoption of 200/400GbE Switch Ports

The study considers the present scenario of the U.S. data center market and its market dynamics for the period 2020-2026. 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.

U.S. Data Center Market Segmentation

The U.S. Data center market research report includes a detailed segmentation by IT infrastructure, electrical infrastructure, mechanical infrastructure, cooling technique, cooling systems, general construction, tier standards, geography. The IT infrastructure market is growing due to increased investments in hyperscale infrastructure. Servers expect to generate the maximum revenue, followed by storage and network infrastructure segments. The high penetration of artificial intelligence-based infrastructure solutions due to exponential growth in data generation is likely to increase IT infrastructure demand. The increased adoption of all-flash storage arrays along with hybrid storage arrays is driving the storage systems market. High-performance operations aid the growth of flash storage systems in data centers that require strong I/O capabilities. The increased deployment of big data and AI applications support the development of all-flash storage systems. The increase in bandwidth requirements, consolidation of data centers, and virtualization are significant factors driving the demand for ethernet port switches, controllers, and adaptors.

The US market is likely to witness innovations in power infrastructure solutions to increase efficiency and reduce operational challenges. Datacenter operators such as Microsoft and vendors namely Rolls Royce Power Systems are exploring fuel-cell alternatives to data center generators due to increased concerns over carbon emissions. The diesel generator market expects to grow in the coming years, where fuel-cell could replace these systems by the end of the forecast period. In the US, the adoption of lithium-ion, nickel-zinc, and Prussian blue sodium-ion UPS batteries will contribute to the data center UPS market growth. The demand for switchgear and monitored and switched is also expected to continue to grow in the region.

Data centers in South Eastern US adopt free-cooling techniques, including chillers and evaporate cooling solutions. Virginia supports up to 5,500 hours of passive-free cooling methods annually, thereby reducing the application of chillers. On the other hand, Alabama and Florida support around 3,500 hours and 3,000 hours of free cooling,

respectively. South Eastern US is expected to observe investment in chillers supporting free cooling. The Western US supports around 6,000 hours of free cooling annually, which is decreasing water consumption. The region witnessed the development of several hyperscale data centers with a power capacity of over 20 MW. Facility operators in South Western US adopt cooling solutions supporting free cooling. Texas supports up to 3,500 hours of passive-free cooling methods annually, thereby reducing chillers' adoption. The region hosts several Tier III and Tier IV data centers with cooling redundancy ranging from N+1 to 2N.

Increased investments in mega facilities and hyperscale projects have boosted construction contractors' demand in South Eastern US. Infrastructure vendors are partnering with major contractors to increase revenue share. The availability of tax incentives and free cooling solutions is increasing the attractiveness for the development of data centers in the South Eastern US. Nevada, Oregon, California, and Utah have witnessed the development of new projects. South Western US is poised for growth in the coming years, with Arizona leading data center investment. Facilities in the Mid-Western US have implemented advanced infrastructure management systems and physical security systems. Several service providers prefer four layers of safety, whereas a few facilities have implemented five or more security layers due to the increasing demand for colocation services.

The U.S. data center market has observed a continuous decline in the number of Tier I and Tier II facilities over the last five years because of the increasing awareness of redundant infrastructure. The redundancy of Tier II data centers in power & the cooling systems infrastructure is mostly N+1. Most underdevelopment projects across the US fall under the Tier III category. There are more than 90 projects that were operational or under construction in 2020. Western and South-Eastern US has the highest number of Tier III projects in the US. Most new data centers are designed to be Tier III standards with minimum redundancy of N+1, which can be reconfigured up to 2N+2 redundancy. In 2020, over 30 facilities were built according to the Tier IV standards in the US. Western US leads the development of Tier IV data centers, followed by the South Eastern US and South Western US.

By IT Infrastructure

Servers

Storage

Network

By Electrical Infrastructure

UPS Systems

Generators

Transfer Switches and Switchgears

PDU's

Other Electrical Infrastructures

By Mechanical Infrastructure

Cooling Systems

CRAC & CRAH Units

Chiller Units

Cooling Towers, Dry Coolers, & Condensers

Economizer & Evaporative Coolers

Other Units

Racks

Others Mechanical Infrastructure

By Cooling Technique

Air-based Cooling Technique

Liquid-based Cooling Technique

By General Construction

Core and Shell Development

Installation and Commissioning Services

Engineering and Building Designs

Physical Security

DCIM/BMS

By Tier Standards

Tier I & II

Tier III

Tier IV

INSIGHTS BY GEOGRAPHY

In 2020, the South Eastern US data center market witnessed significant investments from enterprise and cloud service providers such as Apple, Facebook, Microsoft, and Google. The region is a developed data center market in the US. Around 35 projects were opened or under development in the region in 2020, with colocation service providers investing over USD 3.5 billion. Virginia is among the largest and the most active data center market in the U.S. It is also the leading market for data centers worldwide due to its strong connectivity through fiber-optic infrastructure. The construction of new facilities in the region is expected to offer new IT opportunities and support infrastructure vendors. The region hosts several Tier III and Tier IV facilities, which are powered with redundant systems. South Eastern US is likely to experience a rise in the number of edge data centers.

By Geography

US

South Eastern US

Western US

South Western US

Mid-Western US

North Eastern US

INSIGHTS BY VENDORS

The U.S. data center market comprises several IT, electrical, and mechanical infrastructure providers. Product innovations are likely to play a vital role in gaining market share. The US data center market is witnessing intense competition, with solution providers offering innovative products to provide maximum efficiency, scalability, and reliability. Cisco Systems, Dell Technologies, Hewlett Packard Enterprise (HPE), ABB, Caterpillar, Cummins, Schneider Electric, and Vertiv are among the prominent IT and support infrastructure providers in the market. The market is witnessing high investments in hyperscale data center development, growing competition among construction contractors to attain million-dollar contracts, as well as strong revenue opportunities for sub-contractors operating across states in the market.

Key Data Center Critical (IT) Infrastructure Providers

Cisco Systems

Dell Technologies

Hewlett Packard Enterprise (HPE)

IBM

Lenovo

NetApp

Key Data Center Support Infrastructure Providers

ABB

Caterpillar

Cummins

Eaton

Schneider Electric

STULZ

Vertiv Group

Key Data Center Contractors

AECOM

CORGAN

DPR CONSTRUCTION

Holder Construction Group

Jacobs Engineering Group

Syska Hennessy Group

Turner Construction

Key Data Center Investors

Apple

Amazon Web Services (AWS)

CyrusOne

Compass Datacenters (Root Data Center)

Digital Realty

Equinix

Facebook

Google

Microsoft

NTT Global Data Centers (RagingWire Data Centers)

Switch

Vantage Data Centers

Other Prominent Critical (IT) Infrastructure Providers

AcceleStor Technologies

DataDirect Networks (DDN)

FUJITSU

Hitachi Vantara

Huawei Technologies

Infortrend Technology

Inspur

Intel

Micron Technology

MiTAC Holdings

Nimbus Data

Pivot3

QNAP Systems

Quanta Cloud Technology (Quanta Computer)

SAMSUNG

Seagate Technology

Silk Cloud Data Platform (Kaminario)

Super Micro Computer

Synology

Toshiba

VIOLIN (StorCentric)

Western Digital

Wiwynn (Wistron)

Other Prominent Support Infrastructure Providers

Airedale International Air Conditioning

Asetek

Bloom Energy

Condair Group

Cormant

Cyber Power Systems

Data Aire

Delta Electronics (Delta Power Solutions)

FNT Software

Generac Power Systems

Green Revolution Cooling (GRC)

Hitec Power Protection

KOHLER

Legrand

Mitsubishi Electric Corporation

Natron Energy

Nlyte Software

Rittal

Rolls-Royce Power Systems AG

Trane (Ingersoll Rand)

Tripp Lite

Yanmar Group (HIMOINSA)

ZincFive

Other Prominent Construction Contractors

Arup Group

Balfour Beatty US

BlueScope Construction

Clune Construction

Fluor Corporation

Fortis Construction

Gensler

Gilbane Building Company

HDR Architecture

HITT Contracting

Hoffman Construction

JE Dunn Construction Group

Linesight

Morrison Hershfield

Mortenson Construction

Rogers-O'Brien Construction

Structure Tone Organization

The Walsh Group

Other Prominent Data Center Investors

Aligned Energy

COPT Data Center Solutions (COPT DCS)

CoreSite Realty

Cyxtera Technologies

DataBank

Data Foundry

DC BLOX

EdgeCore Internet Real Estate

EdgeConneX

Flexential

FIFTEENFORTYSEVEN CRITICAL SYSTEMS REALTY

GIGA Data Centers

H5 DATA CENTERS

Iron Mountain

Quality Technology Services (QTS Realty Trust)

Stream Data Centers

Sabey Data Center

STACK INFRASTRUCTURE

T5 Data Centers

KEY QUESTIONS ANSWERED

1. How big is the United States data center market size?
2. How many data centers are in the US region?
3. Who are the key players in the US data center market?
4. What are the key factors driving the growth of the US data center market?
5. Which cooling systems are likely to generate the largest revenues in the U.S. data center market during the forecast period?
6. What will be the cumulative revenue opportunities for construction contractors & sub-contractors in the US market during 2021–2026?

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