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Data Center Rack Market – Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Component (Solution, Service), By Rack Type (Cabinets/ Enclosed Racks, Open Frame Rack), By Data Center Size (Large Data Centers, Small and Mid-sized Data Centers), By Rack Height (42U and Below, 43U up to 52U, Above 52U), By Industry Vertical (BFSI, Manufacturing, IT & Telecom, Retail, Healthcare, Media & Entertainment, Others), By Region & Competition, 2021-2031F

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Abstracts

The Global Data Center Rack Market is projected to expand significantly, from USD 4.99 Billion in 2025 to USD 8.47 Billion by 2031, demonstrating a robust 9.22% CAGR. A data center rack serves as a standardized structural frame or enclosure specifically designed to securely house, organize, and protect IT equipment such as servers, storage modules, and networking switches within a data center. The primary impetus for this market growth stems from the exponential increase in global data generation, which in turn drives a critical need for scalable storage infrastructure. Additionally, the rapid proliferation of hyperscale facilities and the growing adoption of high-performance computing to support artificial intelligence workloads are fundamentally propelling the demand for resilient and adaptable rack solutions.

Market Driver

The rapid expansion of hyperscale and cloud computing infrastructures stands as a key

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driver for volume growth in the data center rack market. As major technology corporations extensively develop larger facilities for cloud operations, the demand for physical enclosures to house servers scales in direct proportion to facility capacity, fueling a construction boom that requires standardized, quickly deployable rack units. For instance, under-construction activity in primary North American data center markets reached a record high of nearly 3.9 gigawatts in H1 2024, a 69% increase year-over-year, and Microsoft's capital expenditures driven by cloud and AI surged to $20 billion in the first fiscal quarter of 2024, directly translating into substantial orders for server cabinets. Simultaneously, the surging demand for high-density racks to support AI and high-performance computing (HPC) workloads is significantly reshaping product specifications and increasing unit value. AI applications, utilizing heavier and hotter GPUs, necessitate reinforced structures and integrated liquid cooling manifolds, requiring racks engineered for extreme weight bearing and advanced thermal management, with operators now planning for power densities ranging from 50 kW to 100 kW per rack. This shift moves the market towards specialized, higher-margin rack solutions designed to handle the intense thermal and physical demands of next-generation computing.

Market Challenge

The inability to effectively manage escalating thermal output presents a formidable bottleneck for the Global Data Center Rack Market. As rack power densities rise to accommodate heavy computational workloads, existing legacy infrastructure often reaches its physical limit in dissipating the resulting heat. This thermal ceiling restricts the ability of facility operators to deploy high-density racks at scale, compelling them to artificially limit the amount of IT equipment installed per enclosure. Consequently, the market experiences a deceleration in volume growth, as the demand for advanced rack architecture is physically constrained by the facility's incapacity to maintain safe operating temperatures for the housed equipment. This infrastructure gap forces organizations to pause or delay procurement while attempting to address these deficiencies. In 2025, 34% of data center operators reported that their current cooling solutions were inadequate to meet their facility's needs, underscoring a widespread operational stalling point where the deployment of modern, high-density racks hinges on complex and time-consuming facility retrofits. These delays directly impede market momentum, as the lead time required to upgrade cooling and power systems prevents the immediate installation of new rack units.

Market Trends

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A significant market trend is the accelerating transition toward taller and deeper high-density rack enclosures, as next-generation hardware requirements outgrow standard cabinet dimensions. This structural shift is primarily driven by the physical footprint of emerging rack-scale computing platforms that integrate power shelves and manifolds directly into the frame. Manufacturers are designing enclosures with extended depth to accommodate vertical power delivery systems that traditional cabinets cannot house, with industry roadmaps projecting rack densities to exceed 300 kW by 2026, forcing a departure from legacy form factors and allowing for the consolidation of localized power distribution within the rack boundary. Concurrently, the development of ruggedized and compact racks for edge computing is expanding the market into non-traditional environments. As data processing increasingly shifts towards industrial and telecommunication sources, operators require enclosures capable of withstanding harsh conditions such as vibration and dust. These specialized units feature smaller footprints to fit space-constrained locations while ensuring equipment protection; by 2029, 60% of edge computing deployments are expected to involve artificial intelligence, driving the demand for resilient infrastructure in decentralized settings, a trend that prioritizes form-factor flexibility and physical durability over the massive scale typically found in core facilities.

Key Market Players

Schneider Electric SE

Rittal GmbH & Co. KG

Eaton Corporation plc

Vertiv Group Corp.

Dell Technologies Inc.

Emerson Electric Co.

Panduit Corporation

Legrand S.A.

Intel Corporation

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Chatsworth Products, Inc.

Report Scope

In this report, the Global Data Center Rack Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Data Center Rack Market, By Component

Solution

Service

Data Center Rack Market, By Rack Type

Cabinets/ Enclosed Racks

Open Frame Rack

Data Center Rack Market, By Data Center Size

Large Data Centers

Small

Mid-sized Data Centers

Data Center Rack Market, By Rack Height

42U and Below

43U up to 52U

Above 52U

Data Center Rack Market, By Industry Vertical

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- BFSI
- Manufacturing
- IT & Telecom
- Retail
- Healthcare
- Media & Entertainment
- Others

Data Center Rack Market, By Region

- North America
  - United States
  - Canada
  - Mexico
- Europe
  - France
  - United Kingdom
  - Italy
  - Germany
  - Spain
- Asia Pacific
  - China

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India

Japan

Australia

South Korea

South America

Brazil

Argentina

Colombia

Middle East & Africa

South Africa

Saudi Arabia

UAE

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Data Center Rack Market.

Available Customizations:

Global Data Center Rack Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

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Detailed analysis and profiling of additional market players (up to five).

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