Spur Digital Growth with a Single Global Rack-Level Power Distribution Solution

A Vertiv Application Brief

VERTIV™

Overview

Why Rack Densities Are Growing

Data center teams are densifying racks to support digital business initiatives for their organizations and customers, including:

- Artificial intelligence/machine learning
- Augmented reality/virtual reality
- Big data analytics
- Cloud services and high-volume data storage
- Cryptocurrency
- Digital gaming
- Industrial Internet of Things initiatives
- Streaming media
- Telehealth

Speed, Standardize and Scale with Vertiv™ Geist™ Upgradeable Rack PDUs with Combination Outlet C13/C19

As organizations fast-track digital business initiatives, rack densities are growing at colocation and enterprise data centers. An Uptime Institute survey of IT and data center managers found that the mean average density per rack was 8.4 kilowatts in 2020, up from 5.6 kilowatts per rack in 2017.[i]

This voracious demand for compute is due to fast-paced digital growth that has accelerated during the pandemic. Organizations across all industries have accelerated customer interactions, supply chain processes and internal operations at a rate of three to four years and product innovation at a rate of seven years.[ii] In addition, advances in high-performance computing are enabling organizations to more easily process the compute-intensive workloads required for data-driven services, such as artificial intelligence, augmented and virtual reality, wherever they want to.

As a result, edge deployments are growing, as organizations store data and run workloads near users. Streaming media and digital gaming services, for example, need to be delivered close to users to deliver the ultra-low latency, high-quality experiences that users expect. This trend will only grow as 5G rollouts provide more organizations with ultra-high bandwidth and speeds. While cloud workloads can take up to 100 milliseconds to process, edge and 5G will be able to ultimately push processing down to under one millisecond.

Simplifying Data Center Operations with Flexible Rack-Level Power Distribution

So, what does the trend of densifying racks mean for data center, IT and facilities teams? These teams are facing increased pressure to plan for and support fast-paced growth. When it comes to deploying racks and fulfilling their power requirements, teams need to:

Increase deployment speeds: Teams are standing up and equipping more data center space than ever. Between 2020 and 2025, the colocation industry will add close to 2,000 MW of new data center capacity each year,[iii] providing customers with faster access to compute capabilities than building their own space. In fact, global spending on data center infrastructure across all sectors is projected to reach $200 billion in 2021, an increase of six percent from the year before.[iv]

In addition, enterprises are extending distributed networks with more edge deployments to store, orchestrate and manage vast data volumes. They're harnessing edge capabilities to deliver a better experience, increase operational resilience, and abide by regional data privacy and regulatory compliance requirements.

All of these developments mean that colocation and enterprise teams need to move faster to set up, equip and refresh equipment in data center and edge space. Vertiv™ Geist™ Upgradeable Rack PDUs with Combination Outlet C13/C19 provide teams with much-needed business flexibility that they can use to increase deployment speeds. There's no need to align rPDU specifications against rack requirements, plan for an exact number of C13 and C19 outlets or stock adapters. Teams can simply use Vertiv Geist Upgradeable Rack PDUs with Combination Outlets C13/C19 to support new racks and configurations, whether they use C14 or C20 plugs.

Standardize processes across facilities: Data center teams strive to standardize and simplify processes, from buying and installing equipment to managing it. By so doing, they can reduce costs and increase operational efficiencies. As a result, many data center teams have developed standard rack configurations and want to purchase and deploy rPDUs that work with all of them.

In the past, data center teams would have overprovisioned rPDUs with C13 and C19 outlets, so that they had units ready to go at a moment's notice. However, this could easily lead to overstocking issues if business needs change, increasing costs and leading to obsolete inventory.

With Vertiv™ Geist™ Upgradeable Rack PDUs with Combination Outlet C13/C19, teams no longer have to make suboptimal choices. They can purchase a single solution that works with all of their rack configurations both now and in the future, simplifying purchasing, deployment and inventory management. In addition, that means that teams can also reap more value from rPDUs by using them for their full lifespan, rather than replacing them with units that have the right outlets.

Scale across facilities: Digital growth means that teams need to buy equipment for more facilities than ever, from large data centers to edge sites. While teams are accustomed to standardizing processes across data centers in a single region, global deployments have different requirements.

Teams that are scaling rPDUs across multiple countries need to find a model with a universal design that supports common worldwide AC power configurations and outlets that can accommodate both C14 and C20 plug types. Beyond simplifying purchasing processes, teams that deploy a standard solution such as Vertiv Geist™ Upgradeable Rack PDUs with Combination Outlets C13/C19 globally are typically able to negotiate preferred pricing and servicing terms for volume orders. They also can tap Vertiv's global service presence to schedule routine maintenance and emergency support, keeping uptime high.

Enterprises overseeing edge sites struggle with standardization due to the hardware diversity at these locations. Edge sites can range from single racks to network and server closets to mini and modular data centers, and teams need to equip them all.

With Vertiv™ Geist™ Upgradeable Rack PDUs with Combination Outlet C13/C19, teams can simplify and standardize rPDU deployments across edge sites. They gain a flexible solution that grows with business needs, supports different rack configurations and can be as easily installed in edge sites as it can in data centers.

Conclusion

Digital demands are increasing, creating data center team uncertainty about how best to plan for growth. Teams want to future-proof equipment deployments, while simplifying day-to-day operations across individual data centers, edge sites and networks of facilities. In addition, they want to maximize total cost of ownership for rack-level power distribution, to avoid wasted spending.

Vertiv™ Geist™ Upgradeable Rack PDUs with Combination Outlet C13/C19 meet these requirements, enabling teams to speed deployments, standardize processes across facilities and scale across regions.

Future-proof rack-level power distribution today.

[i] *Uptime Institute Global Data Center Survey 2020, page 11, https://uptimeinstitute.com/2020-data-center-industry-survey-results*

[ii] *Laura LaBerge, Clayton O'Toole, Jeremy Schneider, and Kate Smaje, "How COVID-19 Has Pushed Companies Over the Technology Tipping Point and Transformed Business Forever," Survey, McKinsey, October 5, 2020, https://www.mckinsey.com/business-functions/strategy-and-corporate-finance/our-insights/how-covid-19-has-pushed-companies-over-the-technology-tipping-point-and-transformed-business-forever*

[iii] *"Jabez Tan on the Global Data Centre Market," Structure Research, Data Center Knowledge/The Data Center Podcast, reprinted on Structure Research website, January 13, 2021, https://structureresearch.net/blogs/jabez-tan-on-the-global-data-centre-market/*

[iv] *"Gartner Says Worldwide Data Center Infrastructure Spending to Grow 6% in 2021," press release, October 7, 2020, https://www.gartner.com/en/newsroom/press-releases/2020-10-07-gartner-says-worldwide-data-center-infrastructure-spending-to-grow-6-percent-in-2021*