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Cloud Infrastructure: When A Data Center Is More Than Just A Data Center

Source: Panduit

At its very core, a data center is and always will be just that: a data center. But the growing popularity of the cloud is complicating matters and making physical infrastructure more critical than ever before. As a result, finding the right partner to assist you with the unique solutions you need to succeed in this lucrative market is paramount.

A data center is a data center is a data center. Until it's not. The advent of the cloud has had a profound effect on the traditional, on-premises data center, primarily by reducing the footprint of the actual physical structure.

This change has brought with it many disruptions, starting with the need to provide more power in an efficient and environmentally friendly way. But the challenges that come with building a data center connected to the cloud go beyond that including the need to rapidly deploy highly available, innovative solutions that drive usability and deliver safety and security for people and places.

Building out a cloud data center also requires working with companies that have a global reach supported by a worldwide partner ecosystem that creates a sustainable supply chain with regional in-market capabilities. Finally, a finished cloud data center has to be environmentally aligned through sustainable solutions such as power metering and containment that drive energy efficiency.

That's A Lot – Where Do I Begin?

The integrity of the physical infrastructure is foundational to any data center build, something that is exacerbated when incorporating cloud technologies. Traditional, on-premises data center infrastructure includes servers, of course, but this category also includes such things as networking routers and switches, storage systems, and firewalls, as well as server racks, redundant power sources, and cooling devices.

A cloud data center build differs from on-premises in that it decentralizes a significant portion of the computational load toward the edge of the network and closer to the source of the data. This requires distributors, contractors, installers, systems integrators, and VARs to evaluate where they fit with cloud providers. To make this evaluation, your organization needs to answer these five questions:

- How do you speed time to market for cloud providers?
- How do you protect the environment?
- How do you innovate to achieve these means?
- How do you care for the safety and security of people and places?
- How do you offer the scope and scale required to participate in this segment?

Finding the answers to these questions will help you position your company as a leader in the lucrative cloud data center market, keep and win business, and increase customer satisfaction along the way.

How To Speed Time To Market

Among the many lessons learned as a result of the COVID-19 pandemic is that the supply chain is far more important than anybody thought and any disruption to it can have catastrophic consequences. Partnering with a cloud provider that thoughtfully and intentionally manages its supply chain will help you avoid the pain that comes when you have a client ready to go but no product available.

One indicator of whether or not a company has a solid supply chain is its global reach. Work with partners that have a worldwide footprint in terms of manufacturing and warehousing. That allows for a very deep partner ecosystem that can support solutions, something that is incredibly important when working with cloud installations.

While it's not a simple process, some solutions providers are also innovating their solutions to help reduce the amount of time it takes to get the product out of the box, put together, and installed quickly. For instance, Panduit offers adjustable depth rack solutions designed to support network equipment found in data centers, telecommunication rooms, and lab environments.



Not only does the self-squaring, fully bonded rack provide the user with maximum flexibility when designing the network layout, it is ideal for cloud providers looking to minimize equipment, ensure quick installation, and prepare for future growth opportunities. The network equipment installation process is also reduced by way of the numerical rack unit identification feature of the rack. Additionally, these innovative rack solutions are flat packed, optimizing shipping space and cost as well as limiting packaging waste at the site following installation.

Panduit also offers market-leading pathway products that hold the cables for routing and cable management that snap together without additional tools. These come with different size options and features, offering a great deal of flexibility when building out a data center. This is just one more example of the type of innovation you should be looking for when choosing products that will help quicken an installation.

How A Cloud Infrastructure Data Center Protects The Environment

Now, more than ever, a company's attitude toward protecting the environment needs to be evaluated. Even if you're not making decisions based on sustainability, your clients are. Look for partners that are mindful and thoughtful about their manufacturing processes and facilities, ensuring they are an environmentally friendly organization.

This evaluation should start with your partner's solutions set. For example, consider hot aisle/cold aisle containment within a data center, which is all about optimally designing, structuring, and building out the physical infrastructure that houses all the equipment that requires power and cooling. To do this properly requires computational fluid dynamics (CFD) that uses numerical analysis and data structures to analyze and solve problems that involve fluid flows. Partnering with a cloud provider that can use CFD to create a heat map will help you manage the elements in a cloud data center and optimize it so that it uses less power and by extension has a positive impact on the carbon footprint.

Another consideration when evaluating a partner's commitment to the environment is its packaging design. How does the company package and ship its product, and does it use packaging that is designed to maximize the amount of space it takes up? Is the company transporting its product in a way that has a positive impact on the environment?

We are entering a time when more and more people care about the environment and both working with companies and being a company that cares about the world can be a huge differentiator.

Keeping Everything And Everyone Safe And Sound

The importance of a secure data center can't be overstated. The ability to mitigate hacking and ensure that no unauthorized access to a data center occurs is obvious, but what about the importance of the role of physical security?

When vetting partners, be sure to look for one that can provide solutions beyond cybersecurity. Consider something as simple as access control at the cabinet level. Does your partner offer solutions that employ card readers to ensure that only authorized and certified people are accessing the physical infrastructure? Do their solutions come with sensors that help users understand who may have gained access to the infrastructure and whether it's authorized or not?

Cloud data centers require moving from a highly centralized to more of a distributed model and being able to monitor, manage, and control that from afar is very important. The unique solutions that allow for all of this require a great deal of power, and with power comes risks.

Look for partners with solutions that will ensure your employees are safe with basic concepts such as grounding and bonding. While cybersecurity grabs the headlines, something as simple as cable cleats can save the day in the event of a power surge which is incredibly dangerous for the employees working in some of these environments.

Scope And Scale: Is Bigger Better?

Partners that offer a breadth of solutions become a one-stop shop that will allow you to build out data centers quickly and cost-effectively because they have the buying power, labor, and technical expertise needed to do so. Additionally, you can buy on value, not price.

Choose a partner with a value proposition that targets the cloud provider directly and allows for you to play a vital role when delivering and executing the building of cloud data center infrastructure. Working together will drive successful outcomes for your company, cloud providers, and the entire ecosystem that serves them.

Panduit Can Help

When working on cloud data center buildouts you need to avoid partners who make empty promises as this will be a death knell for your business. You need to look for partners who have a thought-out plan in place based on market analysis that allows them to stay ahead of market volatility. The right partner won't over-promise – rather they will help you manage your way through the process until you are completely satisfied.

Panduit cloud infrastructure solutions reduce assembly and installation time by over 30%, facilitating faster deployments and reducing up-front costs. Equipment racks with toolless adjustable rails, flexible, adaptable cable management solutions, and overhead pathways that enable drop placement according to your design and ensure proper bend radiuses so that your infrastructure goes in quickly, are delivered on schedule, according to your design, and reliable over time.

Panduit's electrical and network infrastructure solutions ensure a safe and secure operating environment for your employees and partners and provide greater system availability and improved uptime. With access control supported by our Gen5 PDU platform, only authorized and qualified personnel gain access to cloud assets. Further, VeriSafe's absence of voltage accelerates the process to determine it's safe to proceed by determining not only that power is cut but that no energy is stored, making maintenance personnel more efficient while ensuring their safe access.

The cloud is changing the way data center infrastructure is built and managed. High-frequency trading, cloud gaming, and other compute-intensive applications are driving the need for density-optimized data centers located remotely, close to the edge to reduce latency and lag. This shift from a centralized to a distributed model brings with it a whole set of new requirements when populating racks with compute, storage, and networking infrastructure. Evolution to high-density rack servers, higher speed top-of-rack switches, and space-optimized cabling infrastructure that are manageable and scalable enables data center operators to deliver a reliable, secure, and overall improved end user experience.
