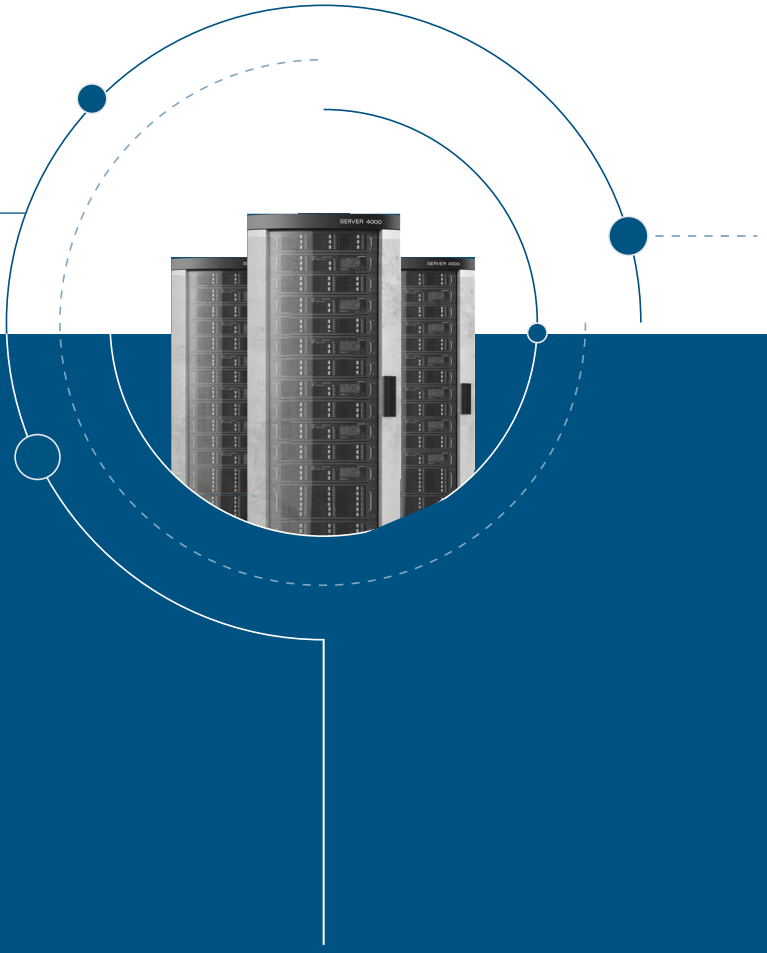
MITIGATING SUPPLY CHAIN CHALLENGES

IN YOUR DATA CENTER BUILD

The landscape for any complex build-outs, including data centers, has changed considerably in the past few years. Supply chain challenges and labor shortages mean that increased up-front planning is critical to getting the best prices for products and completing your projects on schedule.

Bringing a distributor in at the outset of your planning process can help by giving you a more realistic picture of your project lead times. It can also bring much-needed expertise to the entire project-planning stage, which can positively impact your bottom line.

A Changing Landscape for Data Center Builds



The last few years have permanently shifted the way that companies deal with large-scale construction projects. This is especially true for projects like data centers, which rely on the availability of multiple different types of materials – everything from basic construction materials like concrete and steel to specialized data center equipment like switchgear. Previously, companies could design a build using their preferred equipment options and then immediately begin the build process, trusting that the materials they needed would be available when they needed them.

> *The pandemic and resulting complications it caused with the global supply chain have really changed the long-term planning process for all different types of construction projects.*
>
> *We now have extended lead times for many critical components, fiber optic cabling especially. When essential equipment isn't available it will bring a build to a complete halt, which has a huge impact on the overall timeline and budget."*
>
> Chris Coats - *Strategic Account Manager, Graybar*

It's now vital to get more people involved from the very first stages of the build-planning process. With up-to-date information about product availability early enough in the design phase, changes can be made to the project specifications, and product substitutions can be considered if a particular product won't be readily available.

Graybar can perform a materials risk assessment on the entire bill of materials (BOM) for even the most complex, far-ranging data center builds.

Challenges Unique to Data Center Builds

Most construction projects are impacted by supply chain and labor issues, but data center builds have a few unique challenges, as all the products used in their builds must work well together as a cohesive system, and product substitution later in the build may be difficult if, not impossible.

These component shortages currently present the largest challenges to data center builds:

Fiber Optic Cable Shortages

Data centers are like small cities, with multiple buildings and internal locations. Each location requires connectivity both to the other locations on site and to the outside world. Without the ability to provide connectivity via both inside and outside the plant fiber, the data center cannot function.

Power Distribution Unit (PDU) Shortages

Data centers also require a tremendous amount of power, and specialized PDUs. PDUs are used to distribute power to all onsite devices, including servers and computers, as well as networking and storage equipment. In a data center with hundreds of racks, each will require at least two PDUs, which are usually specific to the types of servers in use.

Switch Gear Shortages

The switch gear in a data center operates as a circuit breaker would in a home, providing active energy protection and electrical reliability. Increasingly, switch gears are required to be extremely sophisticated and handle more critical functions, such as automatically reconfiguring distribution pathways to change between utility power and backup power sources in the event of an outage.

These three critical pieces are all experiencing supply-chain-related shortages or extended lead times, which can dramatically impact your production schedule. Other essential data center products with fluctuating availability include racks and wire management systems.

> ***Lead times are no longer linear. If something is 40 weeks out today, that does not mean that it will be 40 weeks out in 3 days when you're ready to place the order."***
>
> Brett Nordstrom - Strategic Account Manager, Graybar

When Should You Bring a Distributor In?

So, when exactly should you bring a distributor into the conversation regarding your data center build? In our experience, the right time is about two years out from your planned completion date, at a minimum.

"Data center builds are running about five years right now, from the time you identify the plot of land to the day you go live," says Coats. "In those first years, it's mostly about planning and permitting, but once that stage is completed, we want to be looped into the process, so we can help you build out the project specification document. That way we can help you select the products, suppliers, and even the contractors that are going to work best for your particular situation.

The Graybar Advantage

The US currently leads the world in hyperscale data centers and is projected to do so through at least 2026. These complex builds have a wide range of products and trades represented, and Graybar has the depth of experience in all areas of the specification and build-out process.

> ***We have established relationships with most manufacturers that supply data center-related products, meaning that not only can we usually get you the best pricing for your products, but we can also help you select on similar products that could also meet your needs, potentially at a better price or with a shorter lead time."***
>
> Rich King - Vice President – Sales, Graybar

Our nationwide distribution network also means that we can get those products onsite for you when you need them, keeping your build on schedule.

Want to find out more about how Graybar and Vision Technologies can help facilitate your data center build?

Contact a Vision Technologies data center infrastructure expert today to help you speed up deployment, scale across the nation with staffing and resources, reduce rework while minimizing costs, and gain peace of mind.

Contact us at *visiontechnologies.com/AIDataCenters*

Hyperscale vs Co-Location Data Center Build

There are two common types of data center build-out, and Graybar assists companies with both types. A hyperscale data center is a large-scale facility that is built and operated by a single company. The company builds a hyper-scale data center to support its own operations and services. These data centers typically have a huge number of servers and storage systems and are designed to handle an extremely high level of traffic and data processing.

A co-location data center is a data center that is owned and operated by a third party and is available for rent to other organizations. (Think of this more like you renting an empty apartment that needs to be furnished. The basic utilities are in place, but you choose and install the furniture.)

Co-location data centers typically offer a range of services including server hosting, storage, and networking. They are designed to be both flexible and scalable to meet the needs of a variety of different clients.