

Pre-Configured Physical Infrastructures Save Time, Aid Validation When Building or Expanding the Data Center

AS MORE BUSINESSES CONSOLIDATE DATA CENTERS, organizations are challenged to bring IT services into production faster to maximize ROI and provide a dynamic workload environment. Cloud computing allows users to provision the compute, storage, and network resources in a fraction of the time of traditional and virtual servers.

A unified approach to physical and logical systems architecture is imperative for solutions to fully address the need for availability, agility, integration and security. Because of this, as a recent survey from IDG Research Services shows, interest is growing in new pre-configured physical infrastructure designs that reduce the risks associated with building or expanding the data center.

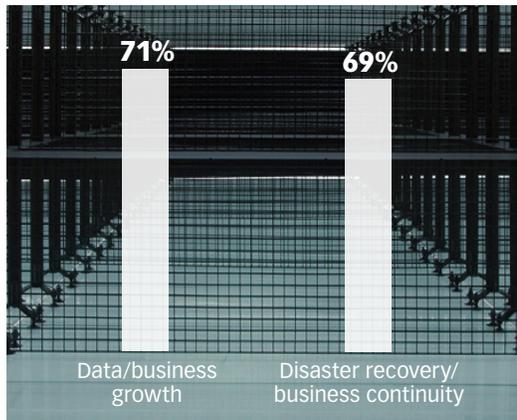
IDG Research Services conducted the survey to gain insight into networking professionals' plans and attitudes regarding physical infrastructure design when building or expanding a data center. One hundred and six qualified global networking professionals from a cross-section of industries participated in the August 2012 survey.

Majority Planning to Build or Modify a Data Center

The majority of respondents say they make physical infrastructure decisions in-house (69%). This data would seem to indicate that the majority of companies have either in-house expertise in implementing layer one infrastructures and/or rely heavily upon the manufacturers of layer one infrastructures to recommend and provide the best solutions.

Nearly two-thirds (64%) report that their companies have plans to build or modify one or more data centers, with 21% planning to begin the project within six months, 27% within seven to 12 months and 20% in more than 12 months from the time of the survey. This data is consistent with market trends that the majority of data centers are dynamic entities that are continually growing and being updated as business demands increase and technology evolves.

BIGGEST DRIVERS FOR DATA CENTER CONSTRUCTION OR EXPANSION



When it comes to data center construction or expansion, data/business growth (71%) and disaster recovery/business continuity (69%) are the biggest drivers of these initiatives. Other drivers, according to survey participants, include data center/server consolidation (58%) and virtualization (52%).

When planning for data center construction or expansion, companies place a high priority on scalability/upgradability (82%). Reducing the risk of deployment (65%) is a critical/high priority for respondents. Consistency of deployment across multiple sites is a critical/high priority for survey participants. These priorities are expressed against the backdrop of a dynamically growing and evolving data center.

According to the IDG Research Services survey, reducing total cost of ownership (TCO) and maintaining network reliability are the top physical infrastructure challenges when building or expanding the

data center. More than half (53%) also cite planning for and/or predicting power and cooling needs.

Not surprisingly, all of the above data indicates the need for substantial understanding of all data center layers in the planning process. Clearly, layer one infrastructure—the foundation and framework for the data center—is paramount when considering the scalability/upgradability and reduced-risk priorities that survey respondents deem as critical. Expanding on the survey data, this indicates companies are relying on internal decision makers as opposed to systems integrators to make layer one decisions. So, there is clearly an onus on decision makers to remain current, not only on active equipment advancements, but also with physical infrastructure solutions.

When asked to identify the phases that most often impede or slow down data center construction or expansion plans, the top four answers are planning (54%), needs assessment (37%), design (33%) and installation (28%), which again supports the notion that the foundation—the physical layer requirements—of data center construction plays a significant role. When planning and designing a data center, the physical space constraints are the primary factors to developing a design, and the lion's share of installation chores revolve around putting in place the physical layer infrastructure.

Pre-Configured Physical Infrastructures Speed Deployment and Reduce Risk



More than 80% of companies surveyed are not yet leveraging a pre-configured/POD approach to physical infrastructure design. POD is defined as a grouping of pre-configured cabinets designed for a specific data center application. For the purposes of the IDG Research survey and this white paper, a “pre-configured” approach to physical infrastructure is defined as one utilizing validated, optimized and value-engineered self-contained cabinets and/or POD configurations that are delivered “rack ‘n’ roll” ready with components such as pre-installed, thermal ducting; grounding and bonding; patch panels and kitted power strips; and color-coded and pre-labeled cabling kits.

According to the survey, predictable performance that is fast and repeatable and ensured integration of all physical infrastructure components are considered the top benefits of a pre-configured approach to physical infrastructure design.

Eighty-five percent of respondents cite predictable performance as a critical/high priority. Another important benefit is assured integration of all physical infrastructure components, with 75% citing this as a critical/high priority. Data center managers appreciate the pre-validation and testing of pre-configured physical infrastructure as it reduces the overall risk of the data center project.



INTEREST IS GROWING IN NEW PRE-CONFIGURED PHYSICAL INFRASTRUCTURE DESIGNS THAT REDUCE THE RISK OF BUILDING OR EXPANDING THE DATA CENTER.

Anecdotally, survey respondents from organizations with larger data centers note specific needs such as:

"We will need to deploy identical sites with identical needs and very little support on-site."

"We standardize ... if that can assist in quick deployment, integration and cost efficiency."

"Pre-configuration would be optimal for our lean/low-budgeted IT team ... just need to ensure it is secure and complies to both Safe Harbor and European Data Protection laws."

More than 70% also cite fast, repeatable deployments as a strong benefit. Survey respondents who rate themselves very likely to leverage a pre-configured approach repeatedly cite the reason to be ease/speed of design/implementation, consistent design, lower TCO, ease in multisite deployment, simpler logistics and support.

With a pre-configured solution, one respondent says, there is "no need to spend valuable IT resources designing an already-successful data center stack." Another adds, "I can save time, have guaranteed expertise and a better warranty."

Some respondents express concerns about implementing a pre-configured physical infrastructure design. One reservation is, "We would like to define every time the best solution to put in place—one size does not fit all." In this vein, a few others wondered if their companies were too small to benefit from a pre-configured solution.

According to Jeff Paliga, director of global solutions for Panduit, "There's not going to be a one size fits all solution, so we will work with clients to identify how we can help speed the process and ensure they can deploy a fully validated solution."

In addition to the survey findings, John Stanley, senior analyst for datacenter technologies and eco-efficient IT at 451 Research LLC of New York, notes, "Every virtual machine and cloud service runs on real IT gear somewhere in the world, so physical infrastructure issues like power, heat and connectivity are still critically important. Deploying IT hardware in pre-configured cabinets can reduce set-up times and ensure that all components are optimized to work together."

Respondents to the IDG survey indicate the items with the greatest appeal for being pre-configured are cable management (87%); power strips (86%); patch panels (81%); pre-defined, tested racking strategy designed to optimize power, stability, cooling and space (80%); and pre-sized, labeled patch cable kits with cabling instructions (80%). The varying answers seem to suggest that an à la carte method of customizing specific pre-configured components would generate the broadest appeal among potential buyers.

Pre-configured physical infrastructures are flexible solutions. "The strategy is to be responsive to our customers' needs," says Paliga. The pre-configured solution does facilitate the speed of deployment, but does not prevent the ability to tweak according to customer needs.

Panduit is a pioneer of pre-configured physical infrastructure design, with data center solutions that integrate the physical infrastructure systems needed in an optimized data center deployment. Panduit Pre-Configured Physical Infrastructures arrive ready to be deployed, reducing the time required for planning, designing, procuring and installing, as well as TCO.



Pre-Configured for Rapid Deployment

Pre-configured solutions appeal to customers that need to maximize speed, as well as those that need validation and pre-testing that the solution will work as intended. "This is about repeatability, consistency, speed to deploy. We have a proven network configuration that customers can repeat as a standalone modular cabinet, a block," says Paliga.

When building, modifying or managing data centers, companies used to be focused above all on uptime, adds Paliga. So, many data centers were overprovisioned for space and speed and underprovisioned for efficiency. Now, they have to become more efficient with their spending and budget. "Pre-configured modules or PODs help data center managers plan.



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— John Stanley
senior analyst
451 Research LLC

They know their requirements and can actively make a decision from a capacity standpoint so they have more visibility and control," he says.

For companies that require speed of deployment above all else, the most appealing potential benefits include cost management and reduced time spent on planning and deployment. "The companies that need the fastest speed of deployment tend to embrace the pre-configured concept," says Paliga. "They're all about turning up applications faster without increasing risk."

Pre-Configured for Validation and Pre-testing

For companies that require validation and pre-testing above all, the benefits of pre-configured architecture include predictable performance, as well as pre-defined, tested racking strategy designed to optimize power, stability, cooling and space.

With so much riding on the success of data center optimization and upgrade initiatives, companies are increasingly looking to their vendors and service providers to have the right ecosystem in place to fill their needs, says Stephen E. Steeves, global solutions marketing manager for Panduit. "Companies are driving a lot more expectation down to their partner/vendor community. Because these systems are becoming more complex, with storage and network computing residing together, they're looking for help. "They need uptime, security and performance, and they're driving that requirement down to the vendor community," says Steeves.



Panduit Solutions Can Help

Panduit employs a consultative approach to identify customer needs and engage appropriate partners in a collaborative fashion to serve our customers. Panduit's robust ecosystem of architects, consultants, engineers, designers, systems integrators, contractors and distributors offer a full portfolio of lifecycle services. Panduit Advisory Services creates detailed data center infrastructure specifications that consider the interdependency of power, space and cooling to eliminate overprovisioning and minimize costs due to mistakes or inability to integrate components.

Our partners are trained on relevant services to plan and design, build and deploy and maintain and operate to deliver predictable and measurable results.

Panduit Pre-Configured Physical Infrastructures offer the following benefits:

- **Arrive factory designed, tested and validated to improve:**
 - Assessment time up to 80%
 - Planning time up to 80%
 - Design time up to 80%
 - Fulfillment time up to 90%
 - Deployment time up to 65%
- **Optimized performance**—Designed specifically to optimize power, cooling, space, speed and performance, reducing operating risks.
- **Sustainability**—Offer enterprises an IT solution that reduces energy consumption and arrives pre-configured to reduce packaging waste.
- **Scalability**—Designed to grow without affecting existing equipment by simplifying maintenance and upgrades, and enabling a migration path from 10G to 40G/100G.

Panduit's Pre-Configured Physical Infrastructure offerings are based on proven reference architectures that map the logical to physical layer. These solutions are pre-engineered, tested and validated to lower the infrastructure speed of deployment, enhance thermal performance, decrease energy usage and reduce TCO, resulting in reduced risk and increased sustainability. ■

