



# **New Data Center Challenges Require New Solutions**

**Data Center Architecture. Inside and Out.** 

Data centers are mission-critical facilities. A silo-based approach to designing, deploying and managing these infrastructures is becoming increasingly inadequate, as consolidation, virtualization and automation initiatives continue to grow more pervasive.

A unified approach to physical and logical systems architecture is imperative to pave the way for solutions that fully address the need for availability, agility, integration and security. The introduction of progressive and innovative infrastructure solutions for data centers is necessary to enable operations flexibility, converged data applications, and greater energy and space efficiencies.

Because data centers will continue to face stringent demands, and due to the complexities of these demands on physical infrastructures, next generation architecture must address both physical and logical layers to effectively drive business advantages and overall success.

## **Unlock Data Center Potential**

Overcome Challenges. Optimize Advantages.

Businesses depend on data and information to realize success, yet today's data centers have become far more than information processing sites. As the nerve center of successful business operations, they must evolve to accommodate a broad array of rapidly changing demands:

- Robust and diverse applications
- Multiple geographies
- Greater performance requirements
- Real-time data and services delivery
- Rising energy costs

- Availability and flexibility
- Space limitations
- Compliance with industry standards
- Sustainability

The potential for risk increases with consolidation of multiple systems and convergence of new technologies. For example, failure of cooling equipment can lead to server failure, which in turn results in downtime that then interrupts business operations.

To avoid these interdependent risks, a unified management system must leverage a physically mapped logical network to provide the monitoring and reporting capabilities that are crucial to efficient infrastructure diagnosis and troubleshooting. The ability to view both the physical and logical topology of an infrastructure extends real-time intelligence through both layers.

A unified approach to infrastructure architecture can also simplify asset management by enabling:

- Managed movement of network switches, servers, applications and resources from site to site
- Tracking of network connections, security systems, energy usage and other important assets to identify and resolve problems before they affect general operations
- The ability to automate the collation of device, system and administrative data across the network into a configured management database
- Real-time security integration with logical network design to speed isolation, notification and resolution of potential security breaches





#### **Kev Benefits**

- Leverage real-time information to enhance visibility, security, safety and compliance across the enterprise
- · Reduce infrastructure and systems complexities while increasing functionality and manageability of mission critical capabilities
- · Achieve flexibility through deployment of a platform-agnostic, open standards-based architecture
- · Improve productivity and customer satisfaction by delivering higher levels of availability and reliability
- · Converge and optimize critical systems, leveraging and reusing existing assets/ investments for maximum ROI
- Drive tangible infrastructure and business process improvements while reducing operational costs and mitigating risk
- · Create a sustainable infrastructure for securing energy efficiencies and establishing global best practices

#### **Unified Physical Infrastructure<sup>SM</sup>**











communication computing

control

## **Panduit's Unified Physical Infrastructure**<sup>SM</sup>: **A Guiding Vision**

#### For a Smarter, Unified Business Foundation

The growing interdependence of systems and applications, and the increased demands that they place on physical infrastructures, requires the integration of traditionally disparate and proprietary systems. This trend is dramatically changing infrastructure design, management strategies and effective synchronization of critical systems, opening the door for seamless convergence and interoperability of all core business systems.

Panduit provides flexible, end-to-end solutions for the physical infrastructure that drive operational and financial advantages, allowing businesses to minimize risk and heighten agility. Tailored by industry and customized by application, Panduit solutions span the core systems necessary to transform a business, from data center to facility operations, to next generation intelligent buildings.

Panduit has developed the industry's most comprehensive and holistic approach to a Unified Physical Infrastructure<sup>SM</sup> and can help enterprises align, converge and optimize critical systems - communication, computing, control, power and security - to build a smarter, unified business foundation.

This approach enables the use of an open standards-based, service-oriented architecture framework and is designed to deliver tangible infrastructure and business process improvements for increased functionality, interoperability and manageability of mission critical operations across the enterprise.



# **Empowering the Data Center** as a Unified Physical Infrastructure™

Minimize Risk. Maximize Performance.

Panduit understands today's vital business and technology challenges and how they impact data centers. Panduit's Data Center Solutions embody the next wave of systems integration and risk management by aligning and harmonizing critical systems to support the delivery of secure, energy-efficient, always-on-real-time data and services.

Driven by the industry's most comprehensive approach to physical infrastructure unification, Panduit can help manage integration of key elements with solutions that enable systems consolidation and network convergence, reducing the risks associated with availability, interoperability and security. Panduit combines best practice methodologies, physical and logical architectures, end-to-end support, and a comprehensive portfolio of solutions to deliver robust, scalable physical infrastructure that facilitates the deployment of technologies to meet current and future requirements:

- Effective management of real-time data delivery, visibility and control
- · Convergence of new technologies and applications
- Enhances the security of the physical layers of the infrastructure
- Leveraging of operational efficiencies through process improvement and resource management
- Enhances network documentation

### **Unified Physical Infrastructure<sup>™</sup>**







# **Connect. Manage. Automate.**

#### **Panduit's Full Range of Data Center Solutions**

Based on the principles of a Unified Physical Infrastructure<sup>SM</sup> approach, Panduit is the industry's only single source supplier of complete end-to-end solutions for evolving data centers.

**Connectivity and Cabling** – Comprehensive end-to-end copper and fiber cabling systems that offer ease of deployment and proven performance to ensure availability, reliability and scalability of mission critical systems.

**Cabinets, Racks and Cable Management** – A portfolio of innovative products with modular designs that offer greater thermal management and energy efficiency, as well as accessibility, flexibility and effective space utilization while managing, showcasing and protecting equipment.

**Physical Infrastructure Management** – Visibility and control for monitoring, managing and automating of networks through intelligent asset identification and tracking to the physical layer.

**Zone Cabling** – A complete line of products for open office architecture applications, telecommunications enclosures, data centers, wireless deployments and network integration of building automation systems. Designed to optimize network flexibility, accessibility and efficiency.

**Routing** – Manage and protect high performance communication, computing and/or power cables under floors and through overhead channels to ensure system performance, reliability, scalability and reduced cost of ownership.

**Grounding** – A visually verifiable and dedicated grounding path to maintain system performance, improve network reliability and protect both personnel and equipment.

**Labeling and Identification** – Printers and software systems for more effective asset management, safety compliance and simplification of moves, adds and/or changes.

**Power Over Ethernet (PoE)** – Extend PoE over a wide range of locations and applications to offer network design flexibility and enhanced system reliability, as well as decreased installation and operating costs.



### **The Panduit Difference**

### **Realize Benefits Across the Enterprise.**

Panduit provides the ability to align the physical infrastructure to the logical systems infrastructure by creating reference architectures that are mapped to industry-wide best practices.

All of Panduit's solutions meet or surpass rigorous quality management standards to assure compliance with industry requirements. Our unique, robust partner ecosystem combined with our lifecycle services offer innovative modeling, predictable execution and operational excellence.

Panduit is the only vendor in the industry with a fully integrated physical infrastructure solution portfolio. For example, Panduit's comprehensive data center infrastructure, ranging from high speed data connectivity, thermal management, cable management and infrastructure management software, provides an integrated solution designed as a "system" rather than discrete components. Specifically, Panduit's data center cooling systems enable both application uptime assurance and energy conservation by applying our fully integrated infrastructure. From our small diameter C6A cable to our Cool Boot floor grommets to our chimney equipped cabinets designed through computational fluid dynamics, we address cooling from a solutions perspective. This comprehensive approach to infrastructure design, deployment and management allows benefits to be realized across the entire enterprise.





### Real-World Solutions to Ensure the Success of Our Customers

With a proven reputation for excellence and technology innovation, a robust ecosystem of global partners and long-term alliances with top industry leaders, Panduit is a valuable, trusted partner offering strategic vision and real-world solutions to ensure the success of our customers.



#### **Innovative Technology Leadership**

Panduit is an industry leader in developing innovative technology solutions that meet the rapidly evolving needs of our customers around the world. Our commitment to continued leadership is supported by significant ongoing investment, dedicated manufacturing facilities, strategic technology alliances and collaborative R&D with other industry leaders.



#### **Global Business & Commitment**

Panduit's ongoing commitment to excellence and our technology alliances with key industry leaders such as Cisco Systems, EMC, Emerson, IBM, etc., enables our highly skilled and knowledgeable global sales, systems engineering and technical support teams to engage with critical customer challenges that range from initial problem determination all the way to resolution. Local specialists, trained to global standards and competencies, provide consistent regional support that brings value to local business. Our global value chain, which combines manufacturing, distribution and service, provides prompt responses to customer-related issues, and streamlines procurement and delivery to any global destination.



#### **Best-in-Class Partner Ecosystem**

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. Our partners are trained on relevant services to Plan & Design, Build & Deploy, and Maintain & Operate to deliver predictable and measurable results.



#### **Worldwide Alliances**

Panduit has established long-term strategic alliances with top global industry leaders such as Cisco Systems, EMC, HP, IBM, Liebert and Rockwell Automation to develop and integrate innovative, holistic solutions for our customers. We continually invest in relationships and resources for solving our customers' greatest business challenges.



#### **Eco-Sustainability & Global Citizenship**

With a long-standing commitment to environmental excellence, Panduit continually develops and implements solutions designed to protect, replenish and restore the world in which we live and operate. This commitment is demonstrated by Panduit's LEED-certified new world headquarters and future green building plans using its own revolutionary Unified Physical Infrastructure<sup>SM</sup> vision to enable convergence of critical systems for driving sustainability.

