

DATA CENTER SOLUTIONS



Nobody Makes Better Data Center Equipment

Maximize availability, manageability and efficiency with cost-effective solutions from a dependable partner.

- Provide reliable, efficient power with battery backup
- Cool, organize, secure and connect critical systems
- Manage power and equipment from any location



Use our free
Data Center Audit
to reduce costs while
improving efficiency
and availability!

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Nobody Makes Better Data Center Equipment

They Just Make It More Expensive

At Tripp Lite, we build data center solutions to the most demanding specifications in the industry. In fact, 80% of Fortune 500 companies rely on us. From racks to PDUs, UPS systems, KVM switches and network cabling, you'll find everything you need to get the job done. And with Tripp Lite, you'll get more for your money.

Our data center specialists will help you design an integrated solution customized to fit your unique requirements. Through our free **Data Center Audit**, we assess your situation and provide actionable recommendations to ensure that your solution will provide the availability, manageability, efficiency and affordability you need to meet your goals.

The Data Center Audit Helps You:

- **DEFINE** objectives and technical requirements
- **EVALUATE** existing systems and infrastructure
- **EXAMINE** systems to ensure they're correctly powered, protected and configured
- **PLAN** airflow management and cooling
- **PREPARE** for growth and evolving IT requirements
- **MANAGE** servers and other devices from any location
- **REDUCE** operating costs
- **IMPROVE** efficiency and availability
- **CUSTOMIZE** a solution—and even individual products—to fit your application
- **INTEGRATE** components with existing systems

We'll provide a road map with detailed project requirements, bills of material, specifications, installation considerations and ongoing support options, including preventive maintenance, extended warranties, on-site service and rapid repair and replacement. We'll also provide clear alternatives that allow you to strike a balance between technical and budgetary considerations.

How to Begin

- Learn what Tripp Lite can do for your data center by reviewing this brochure and visiting tripplite.com/datacenter
- When you're ready to take the next step, contact us at solutions@tripplite.com or **888.447.6227**





UPS SYSTEMS & BATTERIES

EFFICIENT, RELIABLE POWER FOR HIGH-AVAILABILITY APPLICATIONS

- Protect critical servers and network equipment with perfect power and reliable, scalable battery backup
- Tripp Lite offers more than 100 highly efficient on-line and line-interactive UPS systems ideal for high-availability applications
- Options include 3-phase input, network management, pure sine wave output, hot-swappable power modules and built-in redundancy

RACK & COOLING SOLUTIONS

CONVENIENT, CONFIGURABLE SECURITY AND ORGANIZATION

- Quickly configure racks and cooling to maximize the performance, security and energy efficiency of servers and network hardware
- Tripp Lite offers more than 100 vendor-neutral, EIA-compliant rack enclosures, open frame racks, wall-mount cabinets, close-coupled cooling solutions, cable managers and rack accessories
- Tripp Lite solutions enhance hot-aisle/cold-aisle configurations for more efficient data center cooling



POWER DISTRIBUTION UNITS (PDUs)

NETWORK-GRADE POWER DISTRIBUTION

- Distribute power to servers and network equipment in high-density, high-availability environments
- Tripp Lite offers more than 100 basic, metered, monitored and switched rack PDUs in horizontal and vertical form factors
- Options include current monitoring, network interface, centralized management, automated alerts, remote outlet control, 3-phase input and automatic transfer switching

KVM, CONSOLE & MANAGEMENT SOLUTIONS

LOCAL AND REMOTE DEVICE AND POWER MANAGEMENT

- Control hundreds of servers and other devices from any location through a single console
- Tripp Lite offers more than 40 rack consoles, KVM switches and IP console servers. Options include remote access (KVM over IP), built-in LCDs, multiple users and Cat5/UTP cabling
- Tripp Lite also offers a full range of cost-effective remote management tools, environmental sensors and alarm detection systems



CABLES & CONNECTORS

DEPENDABLE NETWORK AND POWER CONNECTIONS

- Connect high-speed data networks and power outlets to switches, routers and servers in high-density environments
- Tripp Lite offers hundreds of cables, adapters and patch panels, all fully tested to meet or exceed the latest standards and available in a wide variety of lengths and colors
- Solutions include copper and fiber-optic patch cables, custom fiber trunk cables and space-saving power cords



CUSTOM PRODUCTS

RACKS, CABLES, POWER DISTRIBUTION UNITS AND UPS SYSTEMS BUILT TO YOUR SPECIFICATIONS

- With more than 2,500 products, Tripp Lite may already make exactly what you need
- But we know that off-the-shelf products aren't always ideal for every application
- Our in-house engineering team can deliver custom products quickly and affordably, without delaying your project or straining your budget
- Contact us for custom products tuned to match your technical specifications, cost requirements, facility, personnel and policies

Data Center and MDF (Main Distribution Frame)

Typical Environment, Challenges and Trends

- 6 to 100+ rack enclosures with servers, storage and network equipment
- Facility air conditioning (perimeter cooling) may be supplemented by row-based cooling
- Rack enclosures are arranged in hot-aisle/cold-aisle configuration to increase cooling efficiency
- In-rack single-phase UPS systems or centralized 3-phase UPS systems provide backup power
- Economy mode operation reduces operating costs
- Network-grade PDUs distribute power in each rack
- Wattage per rack has grown dramatically, requiring careful planning to address power and cooling

RECOMMENDED TRIPP LITE SOLUTIONS

UPS SYSTEMS & BATTERIES

- 1 In-Rack Power: SmartOnline™ and SmartPro® Single-Phase UPS Systems** provide up to 20kVA of reliable, efficient power with expandable battery backup to keep equipment operating through blackouts and other power problems.
- 2 Centralized Power: SmartOnline 3-Phase UPS Systems** provide up to 160kVA of reliable, efficient power with expandable battery backup and built-in N+1 redundancy to multiple racks.

RACK & COOLING SOLUTIONS

- 3 SmartRack™ Enclosures** come in 12U, 24U, 25U, 42U, 45U and 48U sizes, with a variety of depths, widths and custom options.
- 4 SmartRack Thermal Duct Kits** connect to SmartRack enclosures to remove hot air through an overhead duct to the HVAC/CRAC return air stream.
- 5 SmartRack Open Frame Racks** are available in 13U, 25U, 42U, 45U and 48U sizes. We stock 2-post, 4-post and heavy-duty models, with many custom options.
- 6 High-Capacity Cable Managers**
- 7 Cable Troughs and Cable Ladders** route cables between racks and across aisles, separating power and data.
- 8 Row-Based Air Conditioning Units** provide up to 33,000 BTU (9.7 kW) of close-coupled cooling in a 42U rack form factor.

POWER DISTRIBUTION UNITS

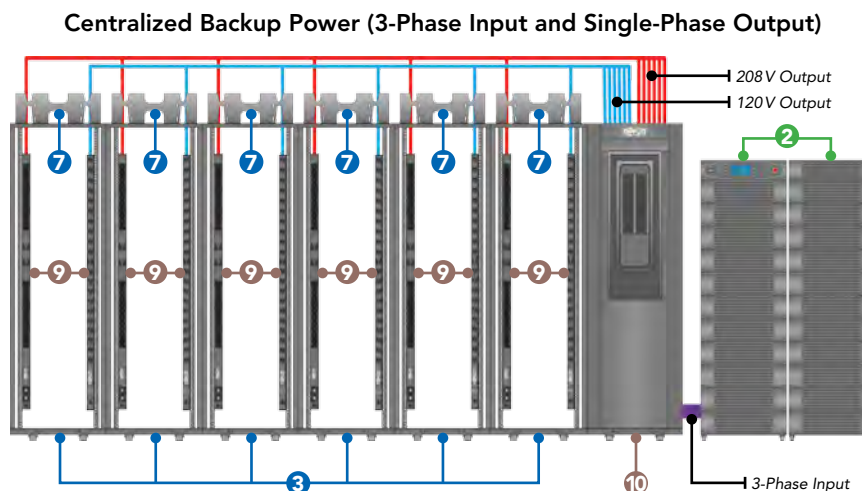
- 9 Network-Grade PDUs** are available with or without current monitoring, remote monitoring/alerts, remote outlet control and automatic transfer switching. We stock more than 100 single-phase and 3-phase models.
- 10 Power Distribution Centers** distribute single-phase and/or 3-phase power from 3-phase power sources. Available with or without a built-in bypass panel.

KVM, CONSOLE & MANAGEMENT SOLUTIONS

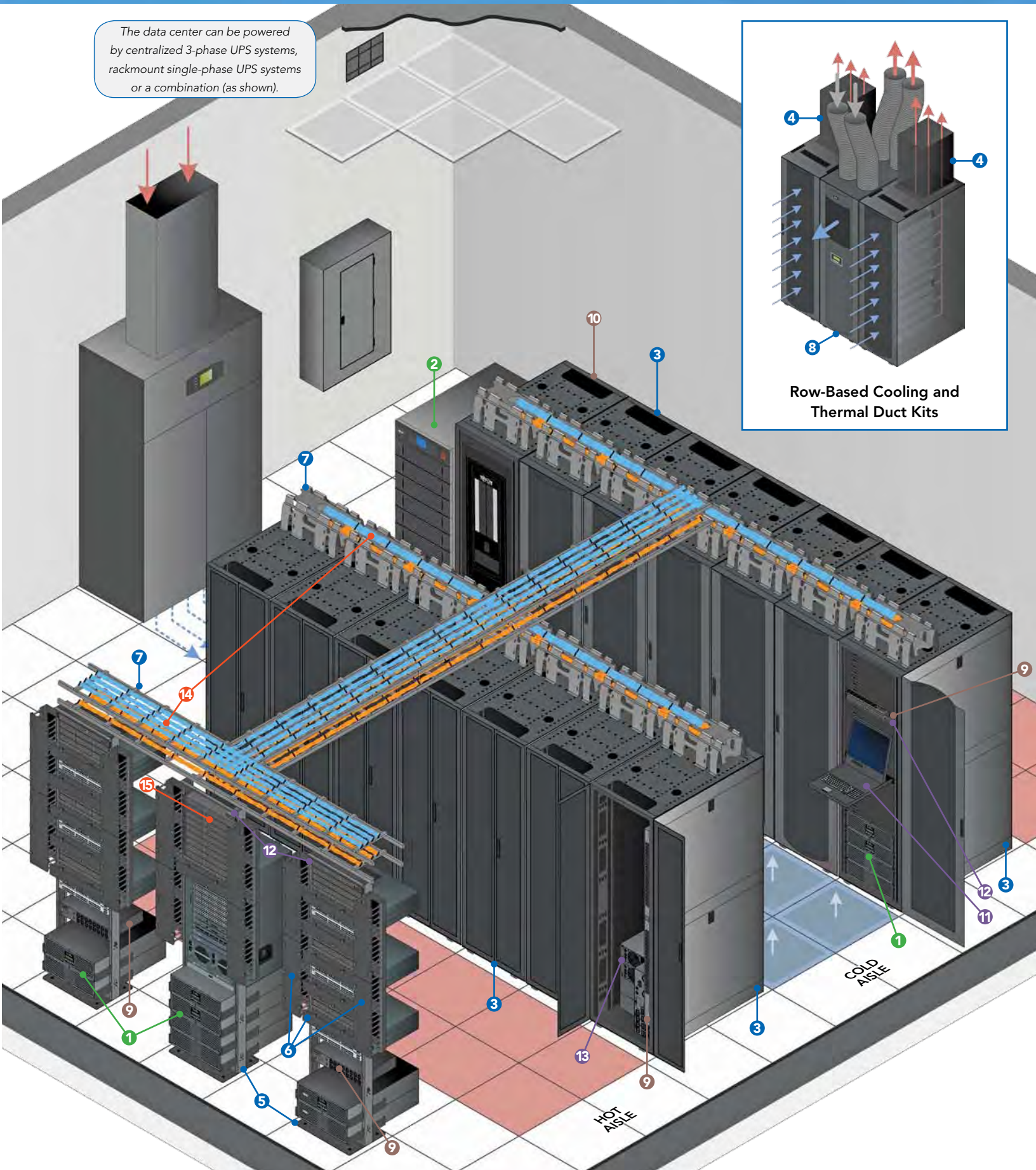
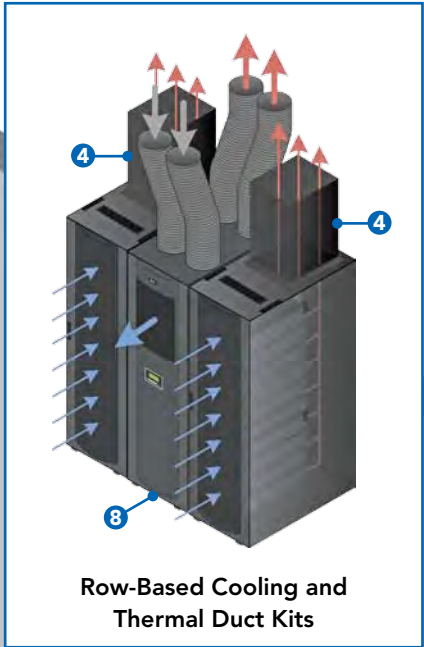
- 11 KVM Switches** control multiple servers from a single console. Available features include IP remote access, Cat5 cabling, multiuser access and LCD consoles that fold to store in 1U.
- 12 IP Console Servers** provide secure in-band and out-of-band remote access to all serial- and network-connected devices.
- 13 UPS Network Management Cards** enable standalone remote UPS monitoring and control via SNMP, Web, SSH or telnet, including centralized management via free PowerAlert software. Also support optional **Environmental Sensors**.

CABLES & CONNECTORS

- 14 Network Cables (Copper and Fiber)**
- 15 Network Patch Panels (Copper and Fiber)**



The data center can be powered by centralized 3-phase UPS systems, rackmount single-phase UPS systems or a combination (as shown).



Server Room

Typical Environment, Challenges and Trends

- 1 to 6 rack enclosures with servers, storage and network equipment
- Room access controlled by keypad or card reader
- Supports a small/medium business or branch office
- Temperature regulated by facility air conditioning
- Row-based air conditioning may supplement or replace facility air conditioning
- Portable air conditioning units target overheating racks or equipment hot spots
- Network-grade PDUs distribute power to equipment in each rack enclosure
- In-rack single-phase UPS systems or centralized 3-phase UPS systems provide backup power
- Economy mode operation reduces operating costs
- Effective cable management increases airflow and reduces cooling costs
- Remote access allows IT staff to monitor and manage equipment from anywhere, reducing labor and travel costs while assuring uptime

RECOMMENDED TRIPP LITE SOLUTIONS

UPS SYSTEMS & BATTERIES

- 1 **In-Rack Power: SmartOnline and SmartPro Single-Phase UPS Systems** provide up to 20kVA of reliable, efficient power with expandable battery backup to keep equipment operating through blackouts and other power problems.
- 2 **Centralized Power: SmartOnline 3-Phase UPS Systems** provide up to 160kVA of reliable, efficient power with expandable battery backup and built-in N+1 redundancy to multiple racks.

RACK & COOLING SOLUTIONS

- 3 **SmartRack Enclosures** come in 12U, 24U, 25U, 42U, 45U and 48U sizes, with a variety of depths, widths and custom options.
- 4 **SmartRack Thermal Duct Kits** connect to SmartRack enclosures to isolate and remove hot air through an overhead duct to the HVAC/CRAC return air stream.
- 5 **SmartRack Open Frame Racks** are available in 13U, 25U, 42U, 45U and 48U sizes. We stock 2-post, 4-post and heavy-duty models, with many custom options.
- 6 **High-Capacity Cable Managers** organize and secure large quantities of patch cables.
- 7 **Cable Troughs and Cable Ladders** route cables between racks and across aisles, separating power and data.
- 8 **Row-Based Air Conditioning Units** provide up to 33,000 BTU (9.7 kW) of close-coupled cooling in a 42U rack form factor. They are completely self-contained and can be fully installed by IT staff. Precise cooling adjustments eliminate inrush spikes, save energy and reduce operating costs.
- 9 **Portable Air Conditioning Units** provide up to 12,000 BTU (3.4 kW) of close-coupled plug-and-play cooling. They can cool a small room or focus cool air on an overheating rack or device through a flexible output duct.

POWER DISTRIBUTION UNITS

- 10 **Network-Grade PDUs** are available with or without current monitoring, remote monitoring/alerts, remote outlet control and automatic transfer switching. We stock more than 100 single-phase and 3-phase models.
- 11 **Power Distribution Centers** distribute single-phase and/or 3-phase power from 3-phase power sources. Available with or without a built-in bypass panel.

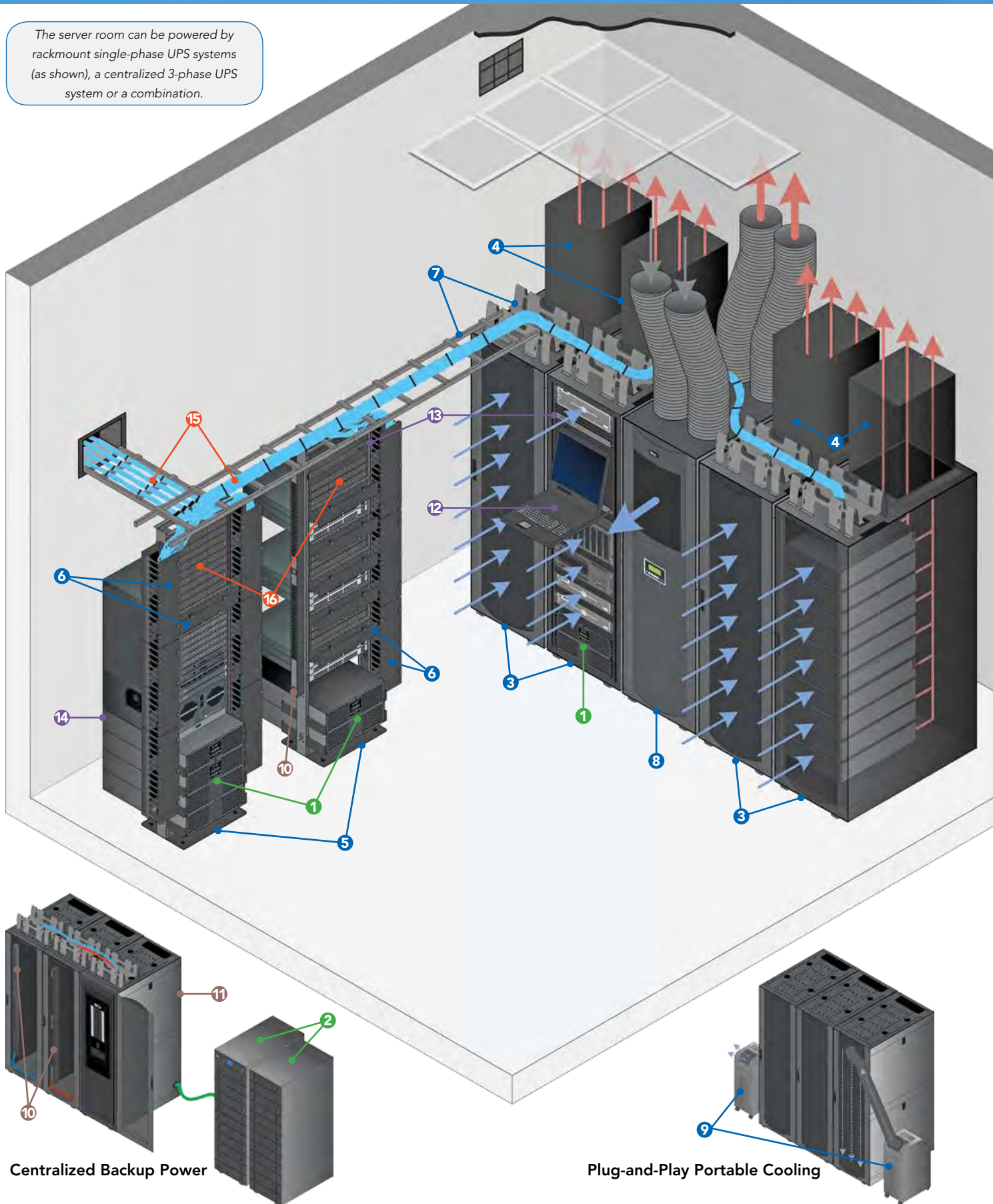
KVM, CONSOLE & MANAGEMENT SOLUTIONS

- 12 **KVM Switches** control multiple servers from a single console. Available features include IP remote access, Cat5 (UTP) cabling, multiuser access and built-in LCD consoles that fold to store in 1U.
- 13 **IP Console Servers** provide secure in-band and out-of-band remote access to all serial- and network-connected devices.
- 14 **UPS Network Management Cards** enable standalone remote UPS monitoring and control via SNMP, Web, SSH or telnet, including centralized management via free PowerAlert software. Connect optional **Environmental Sensors** to monitor temperature, humidity and dry contact devices.

CABLES & CONNECTORS

- 15 **Network Cables (Copper and Fiber)**
- 16 **Network Patch Panels (Copper and Fiber)**

The server room can be powered by rackmount single-phase UPS systems (as shown), a centralized 3-phase UPS system or a combination.



Network Closet/IDF (Intermediate Distribution Frame)

Typical Environment, Challenges and Trends

- 1 to 3 open frame racks containing network and/or telecommunications equipment
- Connects local systems to the WAN
- Room access controlled by keypad or card reader
- Supports a branch office or a section of a large building or campus
- Often unmanned in remote locations, but must be protected from unauthorized access
- Small rooms (~200 square feet) make it difficult to reach equipment and maintain adequate airflow
- Dense cabling may obstruct airflow and limit access
- IT staff must be able to access equipment remotely for maintenance and troubleshooting

RECOMMENDED TRIPP LITE SOLUTIONS

UPS SYSTEMS & BATTERIES

- SmartOnline and SmartPro Single-Phase UPS Systems** provide up to 20kVA of reliable, efficient power with expandable battery backup to keep equipment operating through blackouts and other power problems. **SmartOnline Hot-Swappable UPS Systems** prevent downtime during maintenance and repair by routing all power connections through a detachable PDU with a bypass switch.

RACK & COOLING SOLUTIONS

- SmartRack Open Frame Racks** are available in 13U, 25U, 42U, 45U and 48U sizes. We stock 2-post, 4-post and heavy-duty models, with many custom options.
- High-Capacity Cable Managers** organize and secure large quantities of patch cables.
- Cable Ladders** route cables between racks and across aisles, separating power and data to limit interference.
- Portable Air Conditioning Units** provide up to 12,000 BTU (3.4 kW) of close-coupled, plug-and-play cooling. They are completely self-contained, can be fully installed by IT staff and do not require special outlets, ductwork, water tanks or drains. They can cool a small room or focus cool air on an overheating rack or device through a flexible output duct.

POWER DISTRIBUTION UNITS

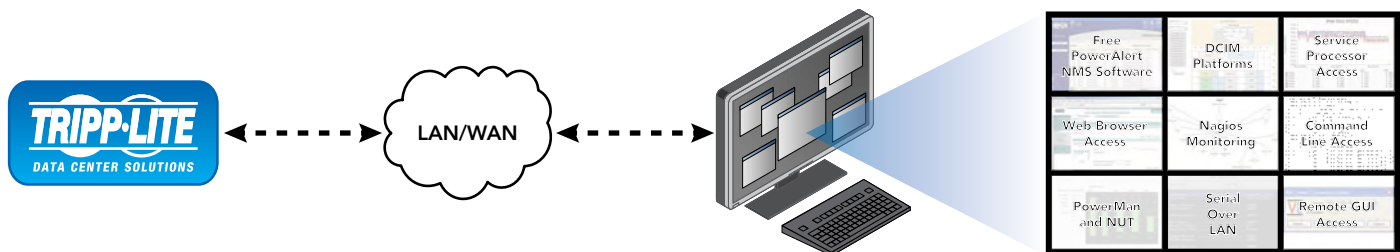
- Network-Grade PDUs** are available with or without current monitoring, remote monitoring/alerts, remote outlet control and automatic transfer switching. We stock more than 100 single-phase and 3-phase models.

KVM, CONSOLE & MANAGEMENT SOLUTIONS

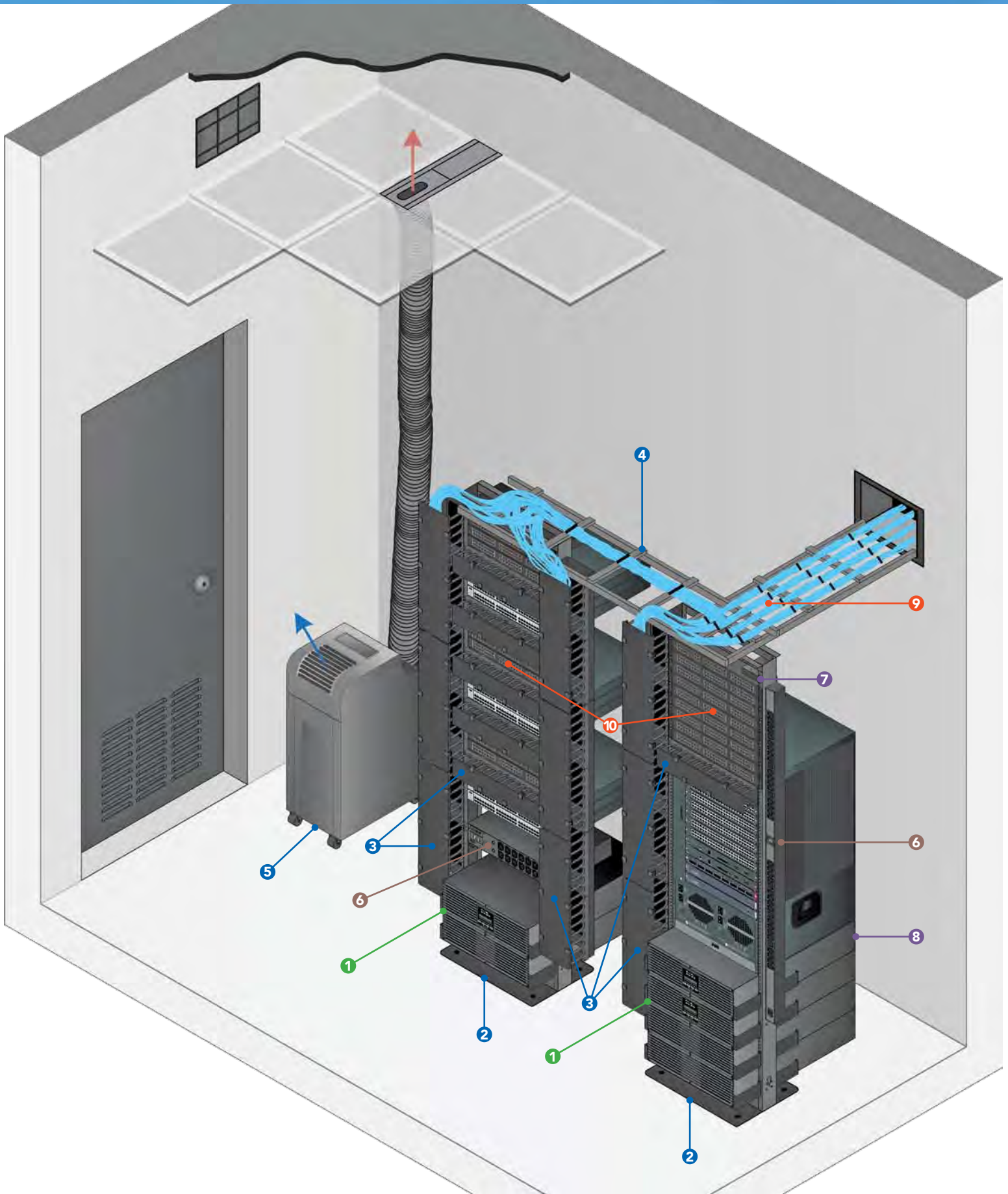
- IP Console Servers** provide secure in-band and out-of-band remote access to all serial- and network-connected devices.
- UPS Network Management Cards** enable standalone remote UPS monitoring and control via SNMP, Web, SSH or telnet, including centralized management via free PowerAlert software. Connect optional **Environmental Sensors** to monitor temperature, humidity and dry contact devices.

CABLES & CONNECTORS

- Network Cables (Copper and Fiber)**
- Network Patch Panels (Copper and Fiber)**



Tripp Lite provides a wide range of remote management solutions for installations of any size, including power, device and asset management. With Tripp Lite's vendor-neutral approach, network managers can use their preferred tools to manage systems and infrastructure.



Remote Cabinet

Typical Environment, Challenges and Trends

- 1 wall-mount rack cabinet with network equipment
- Facility air conditioning where available
- Locations not designed for IT equipment
- Traditional solutions are too large/disruptive
- Equipment must be protected from unauthorized access
- Remote access reduces time to troubleshoot and manage

RECOMMENDED TRIPP LITE SOLUTIONS

UPS SYSTEMS & BATTERIES

- SmartOnline and SmartPro UPS Systems** provide reliable, efficient power with expandable battery backup to keep equipment operating through blackouts and other power problems.

RACK & COOLING SOLUTIONS

- SmartRack Wall-Mount Rack Enclosures** house rackmount IT equipment and provide convenient, locking storage for any other equipment that should be off the floor, out of the way and secure. Cabinet sizes range from 5U to 26U. An extra-deep model for standard 1U servers and an optional caster kit for floor-standing applications are also available.

POWER DISTRIBUTION UNITS

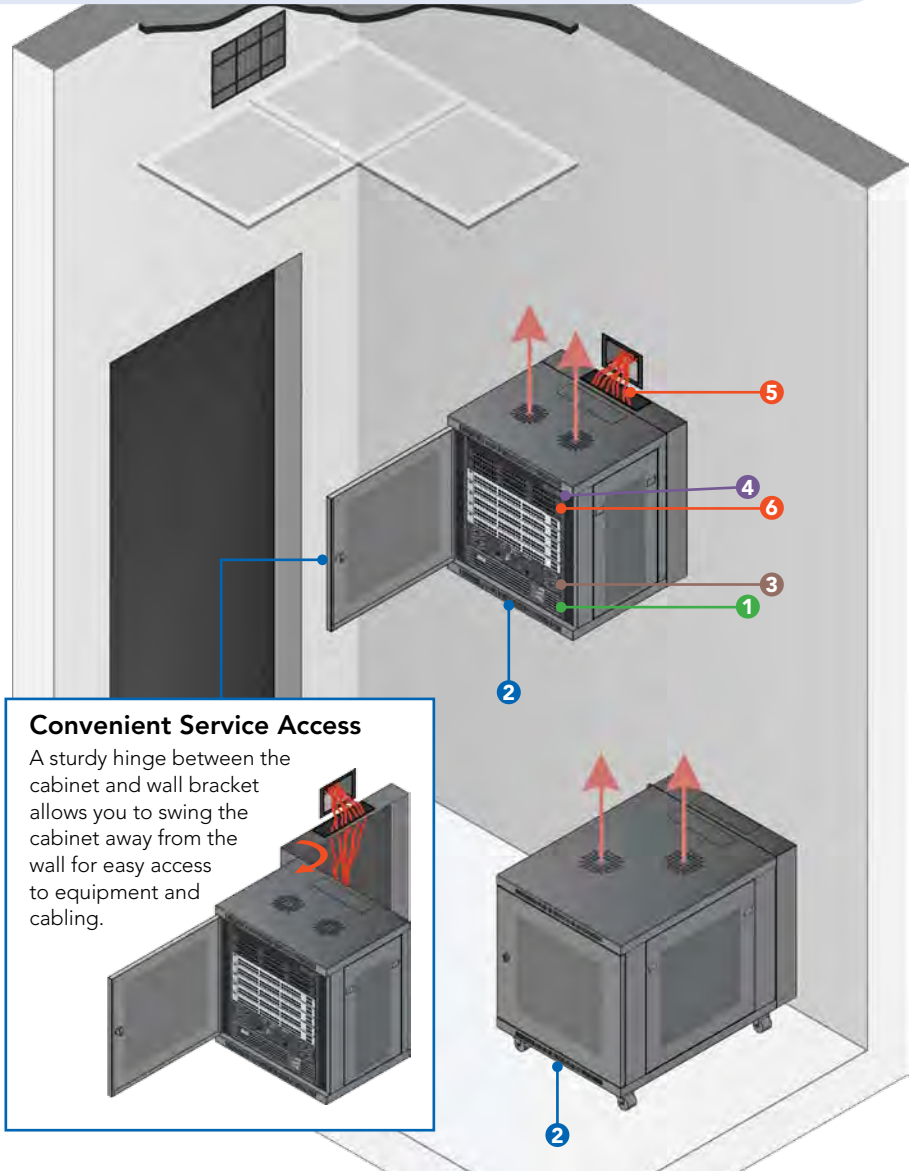
- Hot-Swap PDUs** prevent downtime by adding hot-swap capability to any UPS system up to 3kVA.

KVM, CONSOLE & MANAGEMENT SOLUTIONS

- Compact IP Console Servers** provide remote access to serial- and network-connected devices.

CABLES & CONNECTORS

- Cables** provide reliable network and power connections.
- Network Patch Panels**



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