The New World of IT Infrastructure Solutions

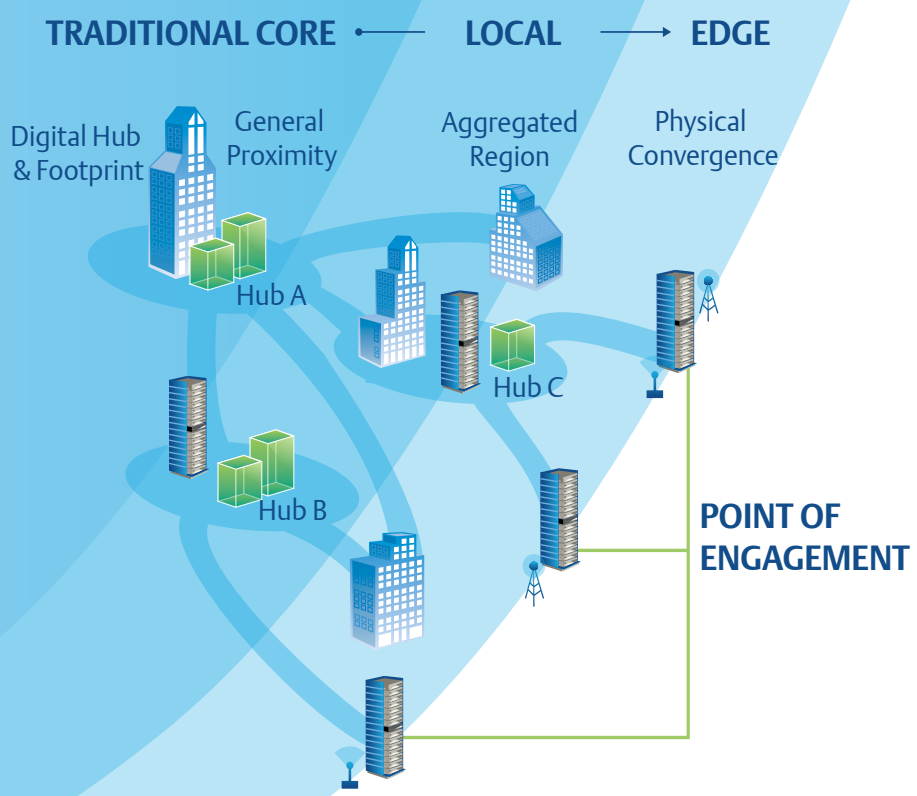
Enabling an IT Infrastructure as Dynamic as Your Business

EMERSON
Network Power

An Explosion of New IT Requirements

The age of big data is causing an explosion of new IT deployments, as well as changing the geographical distribution and types of locations where these systems are deployed.

This new generation of business requirements is creating new challenges for the IT organization. This IT infrastructure, which can now be located just about anywhere, needs to be deployed faster than ever to support business applications in industries such as banking, healthcare, education, manufacturing and retail, as well as many others. Now more than ever, IT infrastructure needs to be reliable, flexible, secure and operationally economical.



The number of network-related interactions today is staggering:

8,500,000,000 devices connected to the Internet

8,868 tweets per second during the MTV Music Video Awards

24 million unique users watched 15 million hours of FIFA World Cup multimedia content

3.6 Zettabytes consumed every day just in the US — 5.1 trillion hard drives worth of data

IT Infrastructure — Anytime, Anywhere

Enabling an IT Infrastructure As Dynamic As Your Business

IT managers are realizing the value of using a single manufacturer for integrated and complementary solutions. This approach results in improved availability, quicker deployments, increased staff efficiency, better security and reduced cost whenever and wherever needed. IT infrastructure solutions from Emerson Network Power deliver purposefully designed and meaningfully integrated hardware, software, and services that enable your IT Infrastructure to be as dynamic as your business.

INTEGRATED RACKS

Our solutions enable your IT infrastructure to be:

Resilient and Highly Available	Rapidly Deployable and Scalable	Intelligent and Self-Optimizing	Secure and Safe	Economical and Efficient
So you can rely on your IT infrastructure when the business needs it	In order to minimize cost and effort to deploy new business applications	In order to spend less time on operational issues, more time on strategy	To control access to data and ensure operational safety	To help predict and manage your budget in a dynamic world

Racks and LCD Console Trays

- **Industry-standard rack enclosure systems save time and money on configuration and integration**
- **A wide range of rack styles, sizes and options to meet every site need**
- **Compact LCD Consoles provide local rack access**

Your rack cabling systems are the lifelines of your IT operations. Optimized cable management can enhance your operations:

- *Reduced signal interference*
- *Improved maintenance and serviceability*
- *Cooler performance*
- *A roadmap for growth*

Read the white paper for more information:

Applying Proper Cable Management In IT Racks: A Guide For Planning, Deployment And Growth at EmersonNetworkPower.com

Infrastructure management products that deliver protection and secure access to critical IT systems.

Emerson Network Power delivers data center racks, server rack cabinets, and enclosure solutions. They safeguard and support IT and networking equipment in computer rooms of all sizes, with rack enclosures that contain precision cooling, uninterruptible power, rack PDUs, and wiring management in a sturdy, lockable cabinet.

You need an access point that gives you simplicity, efficiency and ease of use. The Avocent® Console Server Family is here to help make your job easier. We offer you quick and easy access to multiple IT devices, making software upgrades, troubleshooting and system monitoring more convenient and less time consuming.

Emerson DCF™ Optimized Racks

The DCF optimized 19" data center rack system from Emerson Network Power integrates your computing hardware, power management technologies and peripherals. It provides superior design and flexibility, allowing optimal data center equipment performance and easy installation.

Emerson DCE™ Rack

The DCE Rack System has been designed to meet the flexibility, ease of installation, and delivery requirements needed by today's data centers. Choose from either the pre-configured rack selections or choose from our numerous factory installed accessories and configurations to customize your rack the way you need it, when you need it.

Avocent® Local Rack Access Consoles

The Avocent LRA KVM Family provides the simplicity, efficiency and ease of use to make it the perfect data center access point. The LRA line enables ease of access to multiple IT devices making software upgrades, troubleshooting and system monitoring convenient and less time-consuming.

Rack-based power distribution that puts you in control.

Emerson Network Power's next generation of rack PDUs provides the industry's highest availability and most intelligent power metering and distribution. Reliable and efficient power distribution units provide basic distribution, remote monitoring and control at the receptacle level. Simplified energy management, modular design and cost savings ensure that your data center — and your business — can operate at peak velocity and resiliency.

- **Flexible rack power distribution for a wide variety of IT applications**
- **High reliability for maximum availability and uptime**
- **Multiple monitoring options for high-level visibility**

MPX™ Adaptive Rack PDU

MPX is the most responsive and adaptive rack PDU available. This modular approach allows you to purchase only what you need, when you need it. Respond to rack equipment changes and dynamic capacities with hot-swappable modular output power, hot-swappable modular communications and modular input power. Rated up to 55°C/131°F for harsh rack environments.

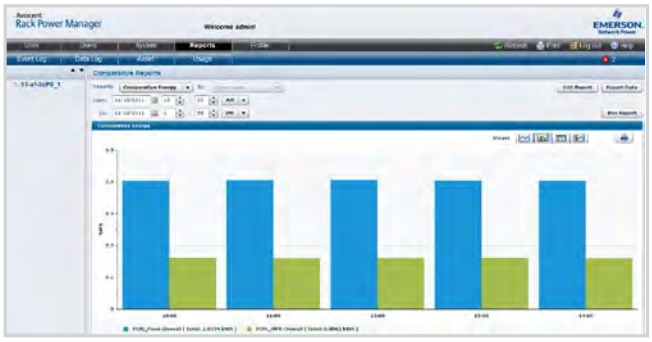
MPH2™ Managed Rack PDU

The most intelligent, high-availability line of managed rack PDUs. It offers remote monitoring and control capabilities as well as environmental input options, with multiple power input selections and output configurations. Features hot swappable communications module and a rating of up to 60°C/140°F for high temperature rack environments.

DI-STRIP® Basic and High Power Rack PDU

The most robust and comprehensive line of basic rack PDUs in easy to use configurations. Designed to meet a broad range of power distribution requirements for IT and other applications.

MPH2™ and MPX™ intelligent rack PDUs can be managed both locally and remotely. Metering of all electrical information down to the outlet, phase, bank or rack PDU level as well as integration with environmental sensors makes these rack PDUs the backbone of rack level power consumption and environmental information.



AC Power — Uninterruptible Power Supplies

- **Protect against downtime and data loss due to power problems**
- **Flexible monitoring and communication capabilities for high level visibility**
- **High efficiency operation for increased energy savings**

Your computing performance depends on resilient, deployable, intelligent, economical POWER at the network edge.

1. Improve Resiliency

2. Deploy Rapidly

3. Utilize Intelligent Control

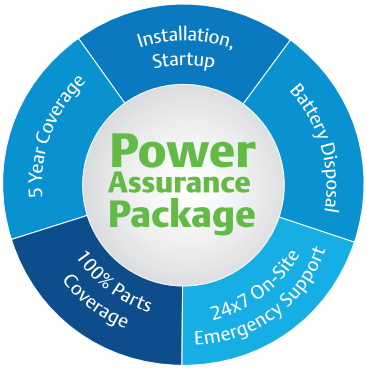
4. Manage Cost

A complete line of UPS that will give you the security of knowing your IT systems are fully protected from any power problems.

Emerson Network Power offers Liebert® uninterruptible power supplies for every size IT application from desktop to enterprise data center — with capacities from 350VA to 1200kVA.

Emerson offers a broad selection of UPS with models including desktop and workstation UPS, rack-mount, network and large facility UPS.

Power Assurance Package: Offers lifecycle power management for network edge UPS systems to eliminate the worry surrounding power performance, installation, disposal, emergency parts, labor, travel and maintenance. It helps reduce IT responsibilities to save time and money.



- 5 year protection plan
- Installation, startup
- Old UPS/battery disposal
- Parts, labor, travel

The bottom line is power protection you can always rely on, no matter what the situation.

- **Desktop UPS** — for workstation and point of sale applications, desktops and servers.

Liebert® PSP™ UPS (350-650VA)

Economical, full featured UPS that delivers cost-effective power protection in a compact package. The UPS provides battery-backed outlets and a surge protection-only outlet.

Liebert PSA™ UPS (500-1500VA)

Economical line-interactive UPS that offers full-featured power protection for small office computers and electronic equipment.

AC Power — Uninterruptible Power Supplies

- **Rack-based UPS** for server, network switching and routing applications.

Liebert® PSI™ UPS (1000-3000VA)

This compact, line-interactive UPS system is designed especially for IT applications such as network closets and small data centers.

Liebert GXT4™ UPS (500-10,000VA)

Recommended to protect mission-critical equipment, Liebert GXT4 is a true on-line UPS that delivers continuous, high-quality AC power with no break when transferring to battery.

- **Modular Row-based UPS** — modular configurations available for completely redundant system controls, battery modules and monitoring. Options available for small to mid-size data centers.

Liebert APS™ UPS (5-20kVA)

The Liebert APS UPS is a modular power protection solution for 5 – 20kVA applications. The UPS can be free-standing or rackmounted, and provides mission-critical availability while reducing costs and maintaining flexibility for the future.

- **Room and site-based UPS** — with best in class availability, and efficiency for protection of sensitive electronics in large data centers and hosting facilities.

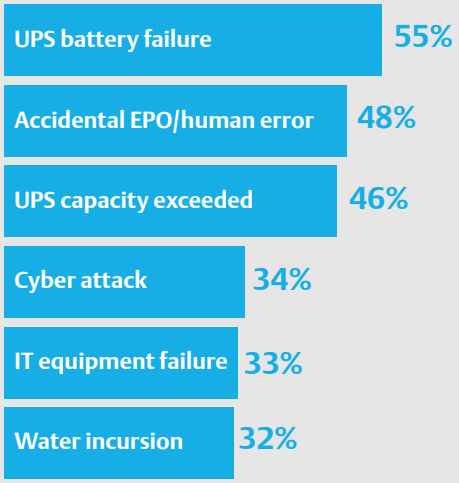
Liebert APM™ UPS (15-90kVA/kW)

The row-based Liebert APM is a transformer-free, on-line UPS that provides modular hardware scalability and N+1 redundancy.

Liebert *e*XM™ UPS (10-250kVA/kW)

The Liebert *e*XM UPS promises efficient and economical operation with a flexible power system that is optimized to meet the unique demands of midsize IT applications.

Six Most Common Causes of Data Center Downtime



Source: 2013 study of data center outages, Ponemon Institute

ENERGY STAR® qualified UPS products use an average of 35% less energy than their standard counterparts.

The following UPS products have been tested and qualified to bear the ENERGY STAR mark: Liebert GXT4, Liebert APS, Liebert APM.

Remote Management and Control Room Solutions

- **Secure in-band/out-of-band access and management of systems through serial, KVM and service processor ports.**
- **Centralized management of IT systems and infrastructure through a single interface.**
- **Standardizes infrastructure management and offers scalability to meet growing business needs.**

Avocent DSView™ 4.5

DSView™ management software delivers the complete data center control necessary for the 24/7 data center.

Learn more about Avocent Access and Control Solutions at: ***EmersonNetworkPower.com/AvocentKVM***

Remote Management and Access Solutions

Remote management solutions provide IT professionals with centralized, secure access and control of multi-vendor systems and from any location at any time.

Avocent® Universal Management Gateway

The Avocent Universal Management Gateway is the first converged data center appliance that enables true, real-time, integrated monitoring, access and control across IT and facilities systems in a secure and centralized manner.

Avocent MergePoint Unity™ KVM over IP Switch and Serial Console Switch

The Avocent MergePoint Unity switch enables remote access to KVM, USB and Serial connections, and provides IT administrators a complete remote management solution to access and control servers, networking equipment and other connected devices.

Avocent ACS Advanced Console Server

The Avocent ACS provides the out-of-band performance and reliability necessary to remotely manage IT assets such as servers, routers, switches and serial power devices even during network outages.

Control Room Solutions

Control Room solutions enable users with instant, high-definition access to critical systems from extended distance. Avocent products are designed to deliver an “at the box” experience for demanding high-resolution and no latency applications in the broadcast, industrial, government, health care and finance industries.

The Avocent Matrix High Performance KVM is a solution for environments where security and quality are paramount. The Matrix solution is a self contained high performance switching system, that supports both digital and analog video input, as well as switching of USB devices, audio and microphone.

The Avocent HMX High Performance KVM delivers industry-leading image quality and flexibility. Avocent HMX is a digital system that utilizes standard IP network switching for extension.

Smart Solutions Integrated Infrastructure

Data center Infrastructure solutions combine rapid deployment, energy savings and proven design.

All data centers, regardless of size, have distinct operational and business objectives. Until now, balancing data center best practices for capacity, space utilization, availability and efficiency has been difficult without making sacrifices. That's why Emerson Network Power developed the Smart Solutions family of data center infrastructure offerings.

SmartCabinet™ Solution

The SmartCabinet for branches from Emerson is a turn-key solution that contains all supporting infrastructure needed to properly deploy IT at the branch.

Capacity: 1.5-16kW
Rack size: 13U, 24U, 42U vs. 48U
Type: Single rack
Floor: Primarily non-raised

Key Applications: Computer rooms; network closets; data centers

SmartRow™ Solution

SmartRow solves a problem all too common to IT management, addressing IT needs without building new data center space. Think of SmartRow as a data center in a row – a simple, fully integrated row-based infrastructure.

Capacity: 20-36kW, 3-10 racks
Type: Self-contained
Floor: Primarily non-raised

Key Applications: Small data centers; remote sites; disaster recovery

SmartAisle™ Solution

The SmartAisle offering optimizes infrastructure deployment and management with an intelligent row-based system that integrates data center racks, power, row cooling, aisle containment, monitoring and control technologies for spaces with up to 40 racks.

Capacity: Most cost effective up to 400kW
Type: Open
Floor: Raised, non-raised

Key Applications: Small and medium data centers; high-density zones in all data centers; new or retrofit

SmartMod™ Solution

The SmartMod enclosure is pre-engineered from the ground up to provide a complete power and cooling infrastructure, along with configuration flexibility that typical data center containers cannot provide.

Capacity: 30-675kW, 6-28 racks
Type: Self-contained
Floor: N/A

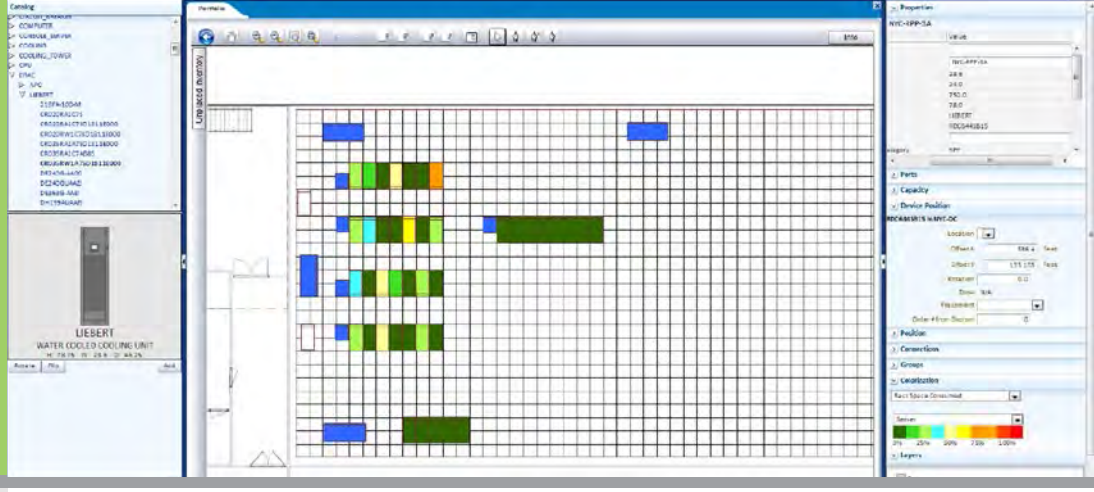
Key Applications: Supplemental data center capacity; remote data centers; disaster recovery

- **Rapidly deploy a comprehensive data center infrastructure solution.**
- **Keep infrastructure on pace with equipment changes, with systems that operate together and can be quickly reconfigured.**
- **Reduce energy consumption compared to a data center with conventional design, perform less maintenance and reduce the costs of adding new equipment.**

"Using the SmartRow system we did not have to sacrifice availability and we gained efficiency, so we found that the SmartRow system gave us the best of both worlds. SmartRow saved Pasco County significant dollars. We are able to utilize an average room, we did not have to build a special computer room to install this. That saved us money in raised floor, that saved us money in fire suppression, and that saved us money in room cooling."

—Todd Bayley, Technical Architect-Network information Technology Department, Pasco County, FL
Pasco County Case Study. CH-00021.

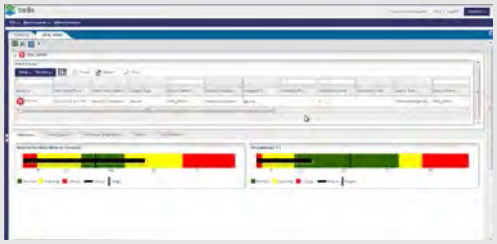
Monitoring and Management



- **Centralized site monitoring provides real-time monitoring and control.**
- **The time required to identify and resolve issues with critical infrastructure devices is reduced, increasing availability of the data center.**
- **Enhanced visibility improves monitoring, analysis, control and execution of processes.**

"Emerson has grown from its roots as a critical facilities equipment provider, learned the nuances required of a successful software and services provider, and emerged as one of the leading DCIM solutions on the market today"

IDC MarketScape: Worldwide Data Center Infrastructure Management (DCIM) 2015 Vendor Analysis



Improve visibility, efficiency, availability and operational costs.

Emerson Network Power partners with our customers to understand and solve their IT and data center imperatives and deliver industry-leading Data Center Infrastructure Management (DCIM) solutions to improve visibility, efficiency, and availability while reducing operational costs.

Trellis™ Platform Solution

Improve operations with accurate and real-time visibility into the data center operations from wherever you are.

***Trellis* Inventory Manager** Design and manage floor layout. View all properties, capacities, and connections for each asset. Plan future device placement.

***Trellis* Site Manager** View critical IT infrastructure and facility layout, and manage asset utilization. Manage utility cost at the system and unit levels.

***Trellis* Power System Manager** Manage the active power path and status of each device along this path. Monitor system capacity and utilization. Use historical trends to perform accurate capacity forecasts.

***Trellis* Process Manager** Standard workflow with four processes based on best practice. Ability to level workload among staff. Align data center changes with internal processes.

***Trellis* Mobile Suite** Provides complete data center visibility anywhere, anytime. Identify devices from the floor via image recognition and bar coding technologies. Make all moves, adds, and changes right from the data center floor.

***Trellis* Power Insight Application** Receive notifications via on screen and SNMP. View sorted or filtered alarms. Summary view of individual devices.

Monitoring Solutions

Liebert® Nform™ Monitoring and control of virtually any piece of critical support equipment — whether located in the next room or in a facility on the other side of the country. The web-based system provides centralized oversight of Liebert precision air, power and UPS units, as well as many other analog or digital devices. Features include real-time monitoring and control, data analysis and trend reporting, and event management.

Avocent® Rack Power Manager Enables access and control capabilities to maintain and control rack PDU deployments, as well as power trending and reporting for planning and management.

Global Service Capabilities

Emerson Network Power understands that it is critical to ensure all equipment is properly installed and performing as designed. Whether you are commissioning new equipment, maintaining existing systems or assessing the performance of your data center infrastructure, Emerson Network Power professionals have the expertise it takes to keep your site is operating as safely and effectively as possible.

PROJECT

When launching new facilities or powering up new equipment you want to do it right — right from the start.

- **Commissioning**
- **Startup services**
- **Acceptance testing**
- **DCIM services**
- **Engineering services**
- **Project management**
- **Code compliance**

MAINTENANCE

Services to ensure business critical infrastructure operates efficiently, safely and reliably.

- **Preventive and corrective maintenance**
- **Remote services and monitoring**
- **Equipment upgrades and replacements**
- **Repair services**
- **Spare parts**

PERFORMANCE

Full range of professional services designed to help aging facilities operate at peak performance

- **Engineering services**
- **Assessment services**
- **Inspection services**
- **Safety and compliance**
- **Battery replacements**

- **Complete life-cycle approach from project launch to ongoing maintenance and performance optimization.**
- **Partner with customers bringing people, expertise and unmatched application insight together.**
- **The result: complete global service capabilities covering everything from day-in, day-out operations to long-term planning.**

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