APC®

Legendary Reliability®
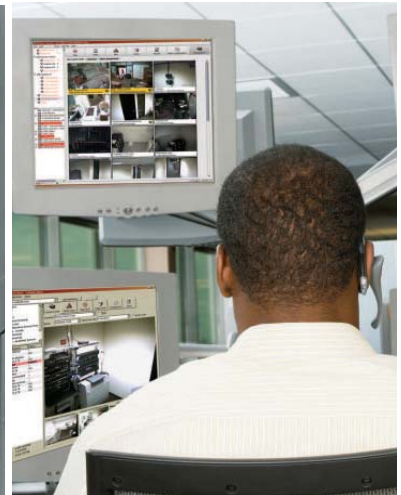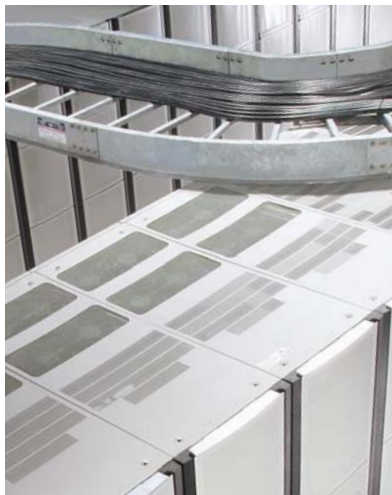
Data Centers, Server Rooms, and Wiring Closets | On-demand Architecture for Network-critical Physical Infrastructure

InfraStruXure™

DATA CENTERS **ON DEMAND**

Changing the way the world designs data centers – and now even better!

InfraStruXure™

DATA CENTERS **ON DEMAND**

In today's competitive economic environment, organizations are doing all they can to stay ahead of the competition. To do so they must be aware of the industry's most important business trends such as:

- IT Productivity
- IT Business Value
- Real Time Enterprise (Adaptive and Predictive)
- Supply Chain Automation and Optimization
- Data Warehousing and Mining
- Integrating/Enhancing Systems
- Wireless and E-Commerce
- Regulatory Compliance
- Data Security
- Outsourcing

In many cases this means adopting the latest equipment and new technology-dependent processes including:

- IT Environment Changes (Server Consolidation, Migration and Virtualization, SAN Deployment)
- IT Upgrades/Modification
- Real-Time IT (Adaptive and Predictive)
- New Technology Deployment (Blade Server, RFID, Grid & Utility Computing)
- New Enterprise Capabilities (CRM, KM, BI & Collaborative)
- Global Data Center Integration
- Converged Networks (VoIP, WLAN, Utility/Embedded Computing)
- Business Continuity/Disaster Recovery

InfraStruXure™ Improves Agility through Increased Speed of Deployment

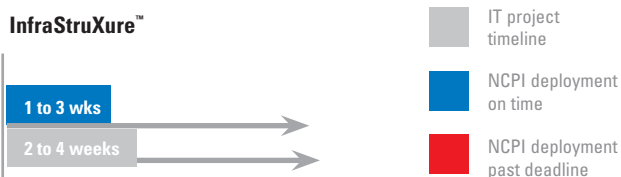**Traditional**

4 to 5 months	
2 to 4 weeks	

InfraStruXure™

1 to 3 wks	
2 to 4 weeks	

- IT project timeline
- NCPI deployment on time
- NCPI deployment past deadline
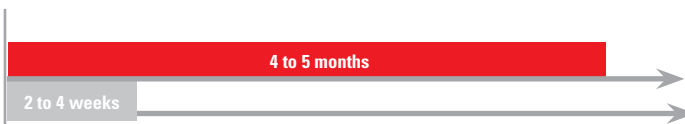
The InfraStruXure™ approach includes a revolutionary on-line design and modular system components that dramatically increase the speed of deployment. Now NCPI deployment can keep pace with the deployment of new IT projects.

Together, these business and technology trends are forging new types of IT environments. Although these environments are improving productivity, many are also creating new and unforeseen availability challenges. For instance, housing high-density blade servers in racks greatly increases the likelihood of **heat related downtime from hot spots and inadequate cooling**. *(See page 6 and 26 for more information on APC's cooling innovations).* Such equipment also places strains on the power supply, increasing the chance of hardware damage and data loss.

However, due to the fast pace of technology adoption, issues regarding availability and upfront costs are no longer sufficient to make adequate business decisions. Agility, or business flexibility, and low total cost of ownership (TCO) have become equally important to companies that will succeed in a global, ever-changing marketplace.

InfraStruXure™ fully integrates power, cooling, rack, management and services. This on-demand architecture allows the selection of standardized components to create a solution through modular and mobile configurations.

By utilizing APC Solutions and Resources, this award-winning, patent-pending approach provides increased availability, improved adaptability and speed of deployment, as well as lower TCO for all IT environments. APC Global Services help prevent problems through the entire lifecycle of the Network-critical Physical Infrastructure (NCPI.) Advanced software and other management devices ensure visibility and control over an entire NCPI, while resources, from white papers and application notes to expert support staff, help users stay informed about the latest trends in system availability.
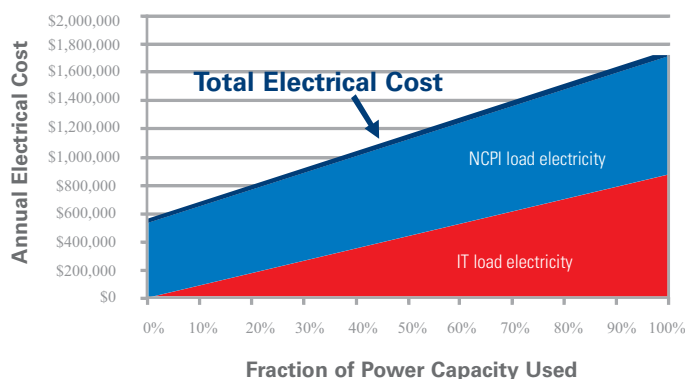

Standardization Improves Availability

NCPI must resolve three challenges: reduce Mean Time to Recover (MTTR), high density capability and reduce the chance for human error.

STANDARDIZE

■ Modularize	*To Eliminate…*
	One time engineering
■ Pre-test systems in the factory	Unique training requirements
■ Hot swappable components	On-site assembly
■ Pre-integrate power – cooling – rack	On-site testing
■ Management & diagnostics	Custom programming

Standardization accelerates learning at all levels, reducing human error

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InfraStruXure Reduces TCO Through Efficiency
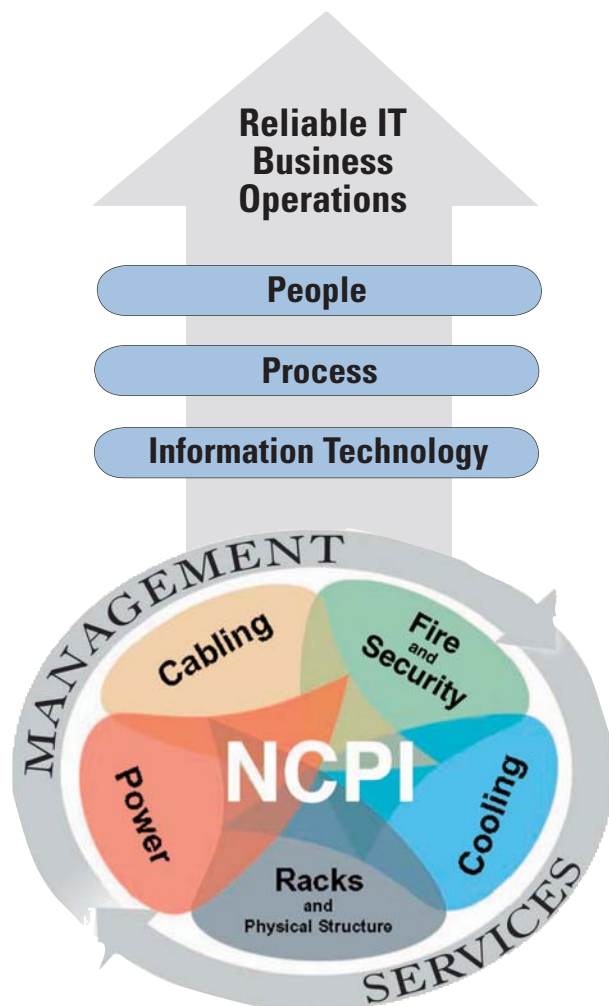

Total Electrical Cost

NCPI load electricity

IT load electricity

Annual Electrical Cost

Fraction of Power Capacity Used

Annual electrical cost for a typical 1 MW data center as a function of design capacity utilized

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"APC's InfraStruXure™ data center architecture featured the standardized approach we were looking for. It's the only data center power system we encountered whose fundamental architecture was based on pre-engineered and pre-tested building blocks designed to work in a truly integrated fashion."

John Halamka
Chief Information Officer
Harvard Medical School

Reliable IT Business Operations

People

Process

Information Technology

MANAGEMENT

Cabling

Fire and Security

Power

NCPI

Cooling

Racks and Physical Structure

SERVICES

Such agility is particularly important in the underlying, physical foundation of an IT system that ensures business continuity. Also known as Network-critical Physical Infrastructure (NCPI), this physical layer consists of power, cooling, racks and physical structure, security and fire protection, cabling, as well as the management and servicing of these elements.

Without an integrated and reliable NCPI, an IT system is not available. This impedes processes and the ability of employees to efficiently carry out their tasks, all of which weakens business profitability and competitiveness.

Traditional NCPI based on legacy architecture does not facilitate business agility. It is unable to keep up with unpredictable growth in server rooms and data centers because of its one-time-engineered, static approach. With its multiple-vendor components traditional NCPI also increases TCO, particularly through expensive service contracts.

Both these factors bring about erratic costs and poor budgeting ability. With limited IT budgets and no ability to allocate costs to business units, IT departments installing legacy systems try to predict what their NCPI requirements will be ten years from now and spend money on under-utilized systems that do not match current needs. By guessing power and cooling requirements five to ten years in advance and building that capacity today many organizations end up wasting capital and operational expenditures.

Modular Systems
p. 6

Modular systems are complete, pre- integrated systems that users can quickly and easily select for specific IT environments without spending the time needed for customization. They are an ideal solution to rapidly respond to IT trends such as increased density and converged voice/data applications.

Mobile Systems
p. 14

Data Centers On Demand

Mobile systems, such as APC's InfraStruXure Express, are true on-demand mobile data centers, which can be provided overnight and are capable of supporting up to 250 servers. These solutions are designed for businesses working on transitional IT projects or developing robust business continuity and disaster recovery programs.
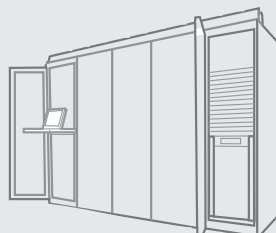
Conventional Systems
p. 16

For users that prefer to customize their NCPI, **Conventional systems** offer a complete range of individual components and services required to build a data center or server room. These systems have standard lead times and installation requirements that are typical in unique or large IT environments.

Built from standardized, modular components that are pre-engineered to work together, InfraStruXure™ enables organizations to install only what is required today, yet easily scale to meet future demands. APC NCPI solutions for data center and server room environments are also available in three types of configurations: Modular, Conventional and Mobile systems.

Reduced Capital Cost
Reduced Non-energy Operating Cost
Reduced Energy Cost

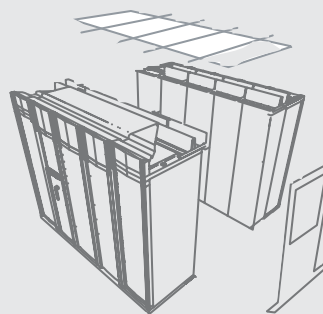**Total Cost of Ownership**

InfraStruXure™

Availability

Agility

High Density Capability
Reduced MTTR
Reduced Human Error

Deployment Speed
Ability to Scale
Ability to Reconfigure

INFRASTRUXURE™ SYSTEMS FOR HIGH DENSITY

The deployment of new technology such as blade servers and grid computing can easily create high-density environments. APC has a range of resources and solutions targeted specifically for high-density applications such as blade servers. All are designed to improve system **availability** and **agility**, allowing quick and effective deployment in data centers of all sizes while offering the lowest **total cost of ownership (TCO)**.

InfraStruXure™
DATA CENTERS **ON DEMAND**

NCPI Challenges
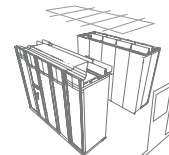
All InfraStruXure Systems are scalable to hundreds of racks, from small to large data centers

NCPI Trouble Areas
To demonstrate the value of IT to business, many organizations have begun to deploy new technology, such as blade servers. Without adequate cooling this leads to hot spots, as well as poor power distribution and limited management.

Unknown Data Center Capabilities
The move towards increased IT productivity is leading to server consolidation and virtualization. As a result many organizations are operating with unknown data center capabilities or oversized NCPI.

Limited Time to Deploy
Only adaptable enterprises will prosper in today's competitive economic times. Business moves so quickly there is limited time to deploy new technology.

Need for Special IT environment
A poorly maintained technology room environment will have a negative impact on server room operations. There is now a need for special or expensive IT environments for new technology adoption.

APC has a range of resources and solutions targeted specifically for high-density applications such as blade servers. All are designed to improve system availability and agility, allowing quick and effective deployment in data centers of all sizes while offering the lowest total cost of ownership (TCO).

Model ISXT120KHD1R (shown). Other size models available. Please visit www.apc.com for more information.

Enhance the security of your InfraStruXure™ system. Protect your NCPI from physical and environmental threats. (see page 24 for more information)

Blade Ready Assessment Service

Are you ready for blade servers? APC has the resources to help you understand and implement high density in your IT environment.

BLADE READY™

Before investing in expensive new equipment, make sure you understand the current physical limits of your IT environment. Conducted by APC Global Services Professionals, a Blade Ready Assessment Service supplies you with the information necessary to design your facilities for optimal performance. It includes the following:

- *an analysis of the ability of the current installation to support blades*
- *an analysis of the data calculating the current power and cooling constraints*
- *measurement of existing airflow conditions*
- *measurement of existing temperature conditions using thermal imaging*
- *measurement of the current power and cooling capacity at the room level and at the row level*
- *recommendations for expanding total blade capacity and*
- *recommendations for increased density deployment*

InfraStruXure InRow Systems

InfraStruXure Systems can cool densities of all levels, from low to very high, using new data center InRow cooling solutions.

Eliminate air mixing and hot spots (shown here) with InRow cooling solutions.

- Placing the unit in the row of racks moves the source of cooling closer to the heat load. This eliminates air mixing and provides a predictable cooling architecture
- Hot swappable fans allow unit to remain operational if a fan replacement is required
- Modular design provides scalable solutions to add cooling as demand increases
- Variable speed fans reduce energy consumption during off-peak cooling periods
- Rack inlet control guarantees inlet temperature to IT equipment

LOWER CAPITAL COSTS THROUGH RIGHT-SIZED COMPONENTS AND "SYSTEM-LEVEL" PRICING

SERVICES
- Turn-key installation services enable quick deployment and minimal impact to existing infrastructure

MANAGEMENT
- Enhanced management increases availability by providing a floor-layout view with kW per rack of the data center environment
- Alarm alerts users of potential problems, such as heat thresholds being exceeded, eliminating the possibility of an overloaded circuit

SECURITY AND ENVIRONMENTAL
- Digital video monitoring enables you to easily monitor individual racks to entire data centers to determine "who did what when," improving your response to resolution time

COOLING
- Designs are based on major OEM blade server manufacturers products to minimize the engineering time required in integrating and pre-testing the systems
- New air containment systems increase cooling predictability in extreme high-density environments with rack-level solutions that neutralize the hot exhaust air at the rack or row level
- Scalable, self-contained rack enclosure with cooling capacity for high-density servers in space constrained and/or uncontrolled environments
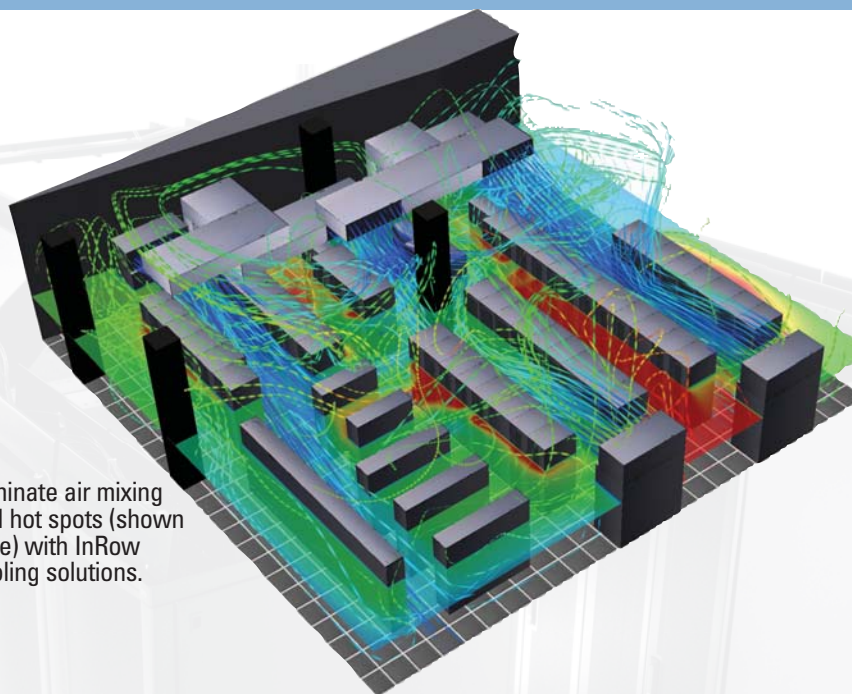
RACK
- Enclosure design enables a variety of cooling options to ensure high availability at any density
- New high density rack-mount PDUs improves availability with higher rack-power capacity in a smaller form-factor
- The core building block for InfraStruXure™ systems

POWER
- Vendor-specific systems for optimal performance environment
- Hot-swappable, user-replaceable modules lower mean-time-to-recovery (MTTR)
- Scalable design lets you buy what you need now, then add power or runtime capabilities later
- Ability to support up to 25kW in a single rack

INFRASTRUXURE™ SYSTEMS FOR 1ST TIME DATA CENTER USERS

The challenges of improving, and even maintaining IT productivity, have put un-experienced pressures on today's IT and Facility Managers. Converging networks (with major upgrades and modifications) while ensuring strong business continuity and disaster recovery strategy is an overwhelming task. APC InfraStruXure™ Systems are ideal for departments with limited experience or resources in designing, operating and building data centers and server rooms, to **increase availability, improve agility, and decrease TCO.**

Modular Systems
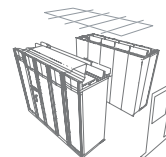
NCPI Challenges

No Experience or Limited In-House Skill Set

Regulatory and compliance trends have forced many organizations to focus on business continuity and disaster recovery. Yet many have no experience with designing, building or operating data centers.

Unpredictable Growth

The need to improve IT productivity is leading to IT modifications and upgrades. This in turn creates unpredictable growth and poor or unknown availability levels.

Limited Data Center Space for NCPI

To keep up with the competition many organizations want to implement wireless and e-commerce applications, yet have limited data center space for the necessary VoIP equipment.

APC has a range of resources and solutions targeted specifically for first-time data center users. All are designed to improve system availability and agility, allowing quick and effective deployment in data centers of all sizes while offering the lowest total cost of ownership (TCO).

All InfraStruXure™ Systems are scalable to hundreds of racks, from small to large data centers

Enhance the security of your InfraStruXure™ system. Protect your NCPI from physical and environmental threats. (see page 24 for more information)

Model ISXT216KPS1RSX (shown). Other size models available. Please visit www.apc.com for more information.

Management

Whether managing a single device, multiple devices, or a mixture of device types, APC management solutions are easy to use and deploy.

Installation Service

Purchasing Installation Services from an APC certified field service engineer allows you to take advantage of project engineering expertise gained from years of experience designing and implementing complex infrastructure solutions. An APC certified installation and commissioning of your solution ensures your equipment is configured for optimal performance, saving you time and money and extending the life of your hardware solution. With the option of installation packages or individual service components, our installation services are structured in such a way as to allow you to pick and choose what you would like APC to do for you.

The APC Design Portal for Wiring Closet and Server Room systems is a fast and easy way to customize your system as needed ensuring product compatibility for ease of integration.

SYSTEM IMPROVES AGILITY BY SHIPPING FULLY ASSEMBLED WITH QUICK-CONNECT COMPONENTS AS WELL AS MANY MOBILE/TURNKEY FEATURES TO SPEED DEPLOYMENT TIME

SERVICES
- Pre-engineered systems meet the needs of a particular application, minimizing design and installation time

MANAGEMENT
- Unique Rack Manager allows you to quickly check the status of rack components without entering the rack or going to a workstation
- Tailor pre-configured systems to meet custom requirements to simplify design process and minimize design time
- Metered rack-mount power distribution equips on-site installers with the ability to monitor the aggregate current draw as equipment is connected to the unit

SECURITY AND ENVIRONMENTAL
- Access control systems for each rack ensure that only authorized personnel can access key resources, reducing risk of sabotage or human error

COOLING
- Range of cooling solutions (In-row cooling, cooling distribution units, ventilation systems, and air removal systems) offers "right-sized" rack, row- and room-level designs
- Ships fully assembled for quick deployment, with integrated caster to enable easy mobility (rolls into place)

RACK
- Easier installation with toolless rail design, access to rack feet, and improved cable management features (larger roof access and accessories)
- Rack based design provides a compact footprint for better utilization of floor space
- Overhead cable management helps eliminate cable stress and maintain a neat, organized cable layout within an enclosure or rack
- The core building block for InfraStruXure™ systems

POWER
- Integrated UPS and power distribution minimizes cost and offers compact footprint
- Online, redundant power protection
- Scalable power and runtime for space-constrained server rooms and voice and data networks

INFRASTRUXURE™ SYSTEMS FOR DATA CENTER RESTRUCTURING

Mergers and acquisitions, outsourcing and business process innovation all make the world of business an unpredictable place. In response, data centers today have to be more **agile and available, while keeping a low TCO**. Whether you are moving from a traditional data center, adding a disaster recovery center, or even in the process of server consolidation or business expansion, APC's pre-engineered solutions take the guesswork out of data center NCPI design.

Modular Systems
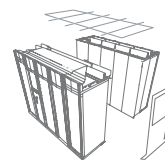
InfraStruXure™
DATA CENTERS **ON DEMAND**

NCPI Challenges

Oversized or Undersized NCPI
Business concerns such as worker efficiency, outsourcing and productivity are creating the need for on-demand, real-time enterprises. Economic uncertainties often lead to either oversized or undersized NCPI.

Fear of Change in the Data Center
Improved business processes, innovation and re-engineering all require new technology deployment such as blade servers, RFID and Grid Computing. This in turn creates hot spots, power distribution problems and a lack of integrated manageability.

Unpredictable Costs
New enterprise capabilities such as CRM and knowledge management often highlight a lack of standardization in IT systems. The results include unpredictable costs and the inability to budget.

Service Execution and Costs
Mergers and acquisitions are leading the IT trend of global data center integration, yet poor execution of service or expensive service contracts can hinder this process.

APC has a range of resources and solutions targeted specifically for data center restructuring applications. All are designed to improve system availability and agility, allowing quick and effective deployment in data centers of all sizes while offering the lowest total cost of ownership (TCO).

Generator (Optional)

Symmetra MW

- Ideal for large data centers, complete buildings, healthcare and other critical facility protection requirements
- Can be scaled for rigorous and changing electrical demands
- Provides increased availability through internal N+1 configurability, predictive failure notification and multi-module paralleling features
- Best-in-class efficiency and reduction in rating of electrical infrastructure- wires, transformers and generators
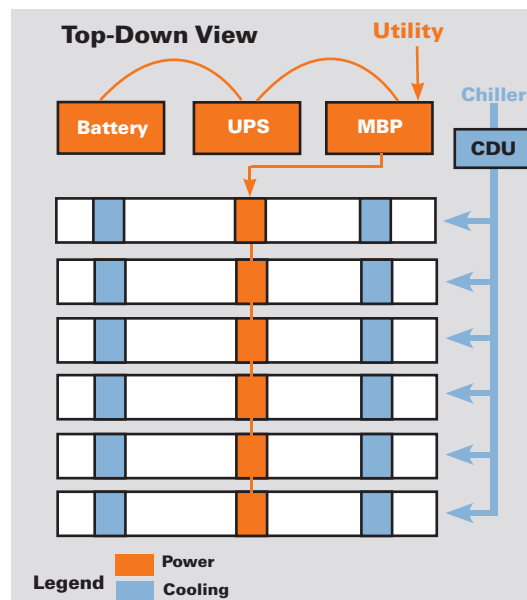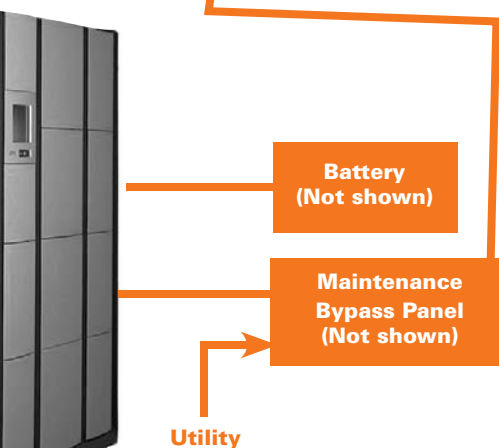
Enhance the security of your InfraStruXure™ system. Protect your NCPI from physical and environmental threats. (see page 24 for more information)

All InfraStruXure Systems are scalable to hundreds of racks, from small to large data centers

THESE SYSTEMS IMPROVE SPEED OF DEPLOYMENT AND YOUR ABILITY TO ADDRESS EVER CHANGING BUSINESS NEEDS– MAKING IT IDEAL FOR TECHNOLOGY ROLL-OUTS, REFRESHES OR CHANGES TO YOUR IT ENVIRONMENT.

SERVICES
- Installation services provide expertise to ensure appropriate project execution eliminating human error

MANAGEMENT
- Minimize implementation time by quickly integrating your new design into existing management system
- Next generation tool validates design to ensure proper configuration

SECURITY AND ENVIRONMENTAL
- Monitor critical environmental conditions, allowing for earlier detection and faster problem resolution

COOLING
- New In-row cooling systems offer predictable cooling to the IT environment. These systems closely couple cooling with the heat load which eliminates mixing and hot air recirculation into sensitive IT equipment
- In-row air conditioning system with a horizontal airflow pattern specifically designed for hot aisle/cold aisle configurations
- Warm exhaust air is drawn from the hot aisle, cooled, and distributed into the cold aisle, ensuring that equipment inlet temperatures will be constant and adequate for proper operation

Cooling Distribution Unit (CDU) and Chiller
Not shown

RACK
- Compact rack design improves mobility within your facility
- Vendor-neutral enclosure improves adaptability for diverse IT environment
- Advanced cooling, rack-mount power distribution and cable management for server and networking applications
- The core building block for InfraStruXure™ systems

Battery (Not shown)

Maintenance Bypass Panel (Not shown)

Utility

Top-Down View

Utility

Battery | UPS | MBP

Chiller

CDU

Legend ■ Power ■ Cooling

POWER
- Fault-tolerant and internal N+1 configurability with predictive failure notification
- Best-in-class efficiency decreases TCO
- Modular power components, manageable external batteries and self-diagnosing features greatly reduce mean time to repair (MTTR)

Project Management

APC Project Management Services are designed to assist you with rollout of large-scale projects, allowing you to focus on your core business objectives. Our industry experienced project managers are trained to guide project coordination, communication and project budget management to assure your projects are completed on schedule and within budget, avoiding costly over-runs saving you both time and money.

INFRASTRUXURE™ SYSTEMS FOR VOIP

If you are planning to deploy (or have deployed) Voice over Internet Protocol (VoIP) or IP Telephony, your converged network carrying data and voice becomes very critical. Your tolerance for downtime becomes zero. APC InfraStruXure™ Systems provide end to end protection for your Network Critical Physical Infrastructure (NCPI) and can significantly **improve network availability, improve wiring closet agility, and decrease overall TCO.**
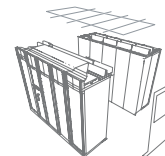
InfraStruXure™
DATA CENTERS ON DEMAND

NCPI Challenges

Various Voltage Requirements
To increase IT productivity, organizations install converged networks, which leads to power problems such as various voltage requirements and increased loads.

Lack of Visibility and Control
Although converged networks simplify IT environments, there is often a lack of visibility and control over the system, whilst increased power loads create over heating.

Poor or Unknown Availability
IT business value is one of the main reasons why converged networks are implemented, yet VoIP equipment demands higher levels of availability than traditional telco networks.
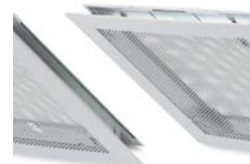
Limited NCPI Space
One barrier to availability is the housing of VoIP in small, irregular shaped rooms that do not have adequate ventilation.

APC has a range of resources and solutions targeted specifically for VoIP applications. All are designed to improve system availability and agility, allowing quick and effective deployment in data centers of all sizes while offering the lowest total cost of ownership (TCO).

All InfraStruXure™ Systems are scalable to hundreds of racks, from small to large data centers

Model ISXT15KVS1RSX (shown). Other size models available. Please visit www.apc.com for more information.

Enhance the security of your InfraStruXure™ system. Protect your NCPI from physical and environmental threats. (see page 24 for more information)

Additional enhancement: **Wiring Closet Ventilation Unit** (see page 29 for more information)

Improve Availability and Agility of your VoIP Network with Enhanced Security Features
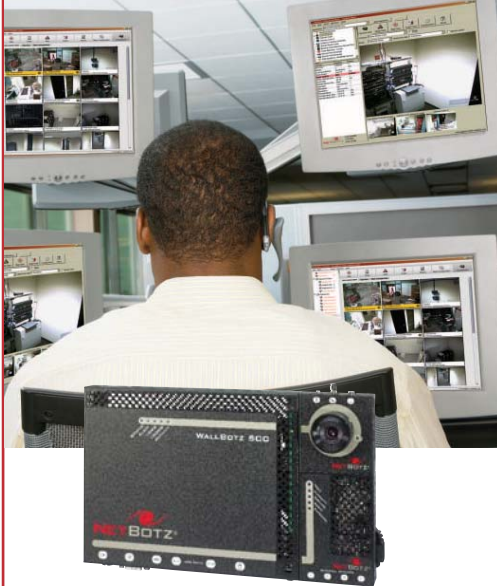
APC NetBotz™ intelligent network appliances provide active monitoring and early warning of environmental and human factors which threaten the availability of your Network-critical Physical Infrastructure (NCPI). Our monitoring solutions adapt to your needs with modular expandability, easy 3rd party sensor integration, and customized alert policies and notification.

See page 24 for more information.

Network Integration Service

Allowing us to help plan rack configuration and perform the actual server migration and cable management will ensure your solution is configured for optimal airflow and performance.

From server migration and cable management to software installation and configuration, APC Global Services Network Integration Engineers can assist in all tasks associated with your move to a new system.

Having your APC management software installed by our APC Certified Software Engineers will ensure proper integration into your existing monitoring system, letting you monitor your network the way you need to.

SYSTEMS THAT ARE DESIGNED AND IDEAL FOR VOICE OVER IP APPLICATIONS

SERVICES
- Ships fully assembled with quick-connect components as well as many mobile/turnkey features to speed deployment time

MANAGEMENT
- Tailor pre-configured systems to meet custom requirements to simplify design process and minimize design time
- Minimize implementation time by quickly integrating your new design into existing management system
- Manage your system locally or remotely with the system-level management device (Rack Manager)

SECURITY AND ENVIRONMENTAL
- Enhance the system with access control systems for each rack ensures that only authorized personnel can access key resources, reducing risk of sabotage or human error

COOLING
- Enhance your system with our new in-row, scalable cooling for expansion and consolidation of your VoIP networks
- Ability to add new air removal system which integrates local management for increased availability

RACK
- New racks improve operating agility with multi-use wide designs that can be used for both networking and server applications
- Design makes assembly quick and easy - requires only one person to fully assemble each unit
- Easily route, manage, and access large numbers of data cables with integrated rear cable management channels
- The core building block for InfraStruXure™ systems

POWER
- Double conversion on-line topology protects data by supplying reliable, network-grade power for optimal availability
- Unlimited extended-runtime can be added to comply with aggressive runtime demands of "always on" business-critical systems

INFRASTRUXURE™ EXPRESS
THE BEST WAY TO GET NCPI OVERNIGHT

Mobile Systems

InfraStruXure™
DATA CENTERS ON DEMAND

AVAILABILITY
Increases availability of IT networks with Tier IV level design

AGILITY
In-stock, immediately deployable mobile data center with no site limitation. Increases adaptability with an open architecture configurable to any IT environment

TOTAL COST OF OWNERSHIP (TCO)
Enables IT projects that were previously cost prohibitive

The InfraStruXure™ Express is the ideal platform for processing data and performing communications technology functions in nontraditional places or under challenging circumstances. With built-in redundancy and an integrated network operations center, InfraStruXure Express is ideal for quick deployments, disaster recovery plans, and business continuity initiatives.

InfraStruXure™ Express data centers are designed to meet today's challenges quickly, efficiently, and cost effectively.

▶ On-Demand Mobile Data Center Capable of
Supporting 125 – 250 Servers

▶ **Power**
- Accepts up to 2 utility feeds as "normal power"
- Equipped with a 120kW Prime Rated Generator
  (configurations to 400kW)
- Designed to export electrical power to meet external needs

▶ **UPS**
- Features a 2 (N+1) 40kW UPS system
  (other configurations available)
- Provides 4.5 minutes of battery time at full load

▶ **Cooling**
- Features 50kW of precision cooling
- 17kW of additional cooling (capacities up to 50kW,
  resulting in 50kW-2N)
- Complete humidification system including water tank

▶ **Management**
- Features InfraStruXure™ Manager for monitoring
  critical functions

▶ **Fuel Options**
- Incorporates flexibility in the selection of diesel fuels
    - Operates on fuel stored in its "day-tank", and/or
    - Can use fuel stored in a tractor's saddle tanks and/or
    - May connect to an external "skid tank"

▶ **Fire Detection**
- Includes a cross-zone fire detection system
- Independent detection zones above and below the floor
- Incorporates photoelectric and ionization detectors

▶ **Fire Suppression**
- Utilizes FM-200 fire extinguishing agent
- Fire suppression tanks for fire detection zone

▶ **Access Control**
- Proximity card readers and HID security card technology
- Hardware and software for reliable security

▶ **Command and Control**
- Incorporates a Network Operations Control center

▶ **Security**
- Optional security cameras for internal/perimeter security

▶ **Satellite**
- Optional satellite link (with speeds to suit your needs)

Conventional Systems

InfraStruXure™
DATA CENTERS **ON DEMAND**

The majority of conventional systems are considered Engineer To Order (ETO) solutions that have unique engineering requirements, custom designs and configurations for specific data center needs. This requires time and resources to perform, and is typical for larger projects with megawatt specifications.

APC's Conventional Systems center on our diverse team of experts that assist in enabling specific customer problems or complex projects that call for skilled individuals in NCPI.

- Application Engineers
- Field Engineers
- Configuration Team
- Regulatory Compliance Engineers
- Project Engineering
- Custom Engineering

"I feel that you should always get a quick response when you call APC, yet I still take the time to explain the problem thoroughly."

I use a friendly and professional tone with my customers to help build a strong relationship. I once had an issue where a customer received an incorrect solution and solving it came down to either providing a makeshift response on site or bring the bullet and paying for what the customer needed. It cost substantial dollars, but we supplied the right answer and gained a satisfied customer.

Brad Perkins says "Field Service Eng. online"
Westport, MA

"My focus is on InfraStruXure™ and the support and configuration of three phase UPSs. Understanding my client's exact needs so that I can supply the perfect solution is critical."

Elsebeth Soendergaard │ Configuration Team
Kolding, Denmark

"I know that quiet customers are not necessarily happy customers. For this reason, I constantly ask myself, " Is this solution best for this particular client?"

Tetsuji Yamamoto │ Country Services Manager
Tokyo, Japan

FACTORY ACCEPTANCE TESTING (FAT) LAB

APC announces a new Factory Acceptance Testing (FAT) Lab at its company headquarters in West Kingston, RI.

APC's new Factory Acceptance Testing (FAT) Lab provides customers with Factory Acceptance Testing of power systems for customers and parties involved in the design/build/specification process such as Consulting Engineers and Contracting channels. The FAT Lab also conducts Performance Testing, which provides an ideal venue to see demonstrations of APC Symmetra® MW's innovative modular design. Symmetra MW is the largest available static UPS and is ideal for large systems greater than 200 racks.

Specific testing performed at the FAT Lab includes System Efficiency Testing; Steady-State Load and Step Load Tests; Input Frequency and Input Voltage Variation; Utility Failure; Battery Performance; and Faults on System Inputs and Outputs.
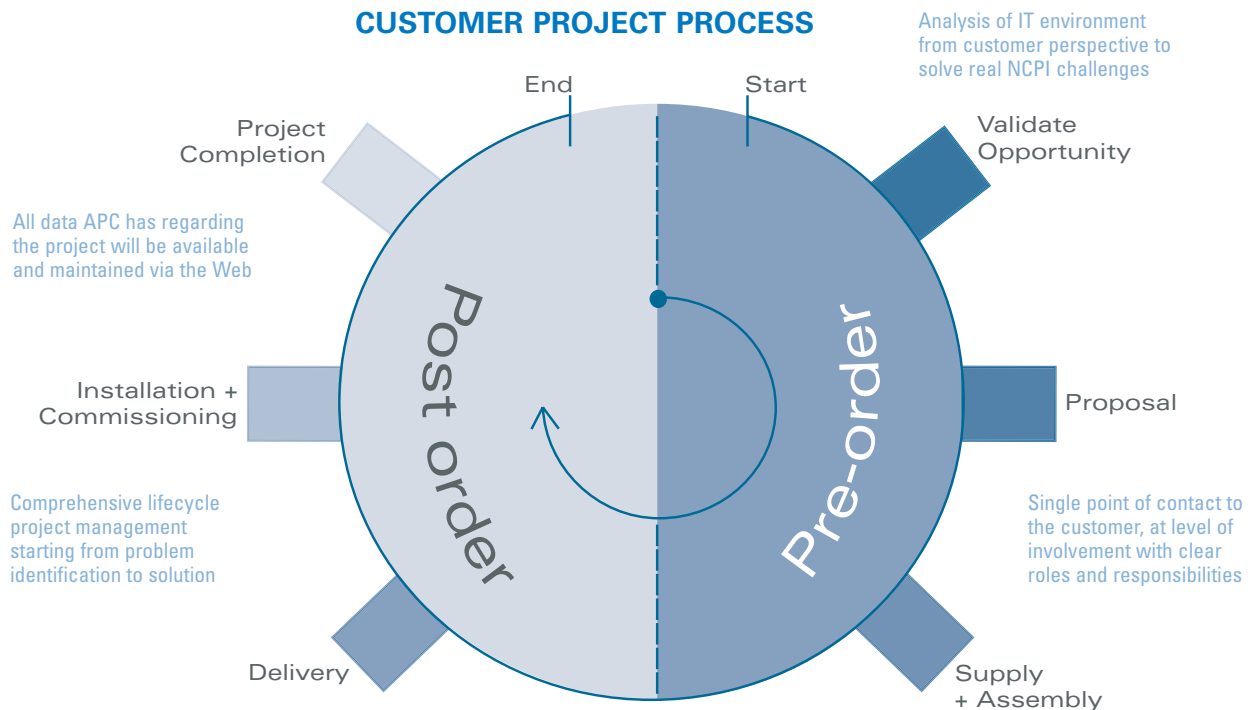

THERMAL TEST LAB

APC Thermal Test Lab enables testing of any type system in extreme environmental situations. This helps to ensure optimum availability, even for the most unique, conventional configuration.

APC Thermal Test Lab in Kolding, Denmark exemplifies our commitment to solving data center and server room challenges. This comprehensive thermal test lab contains two integrated chambers that allow concurrent simulations of both indoor and outdoor environment, fully supporting worldwide electrical power requirements.

CUSTOMER PROJECT PROCESS

End

Start

Project Completion

Validate Opportunity

Analysis of IT environment from customer perspective to solve real NCPI challenges

All data APC has regarding the project will be available and maintained via the Web

Post order

Pre-order

Installation + Commissioning

Proposal

Comprehensive lifecycle project management starting from problem identification to solution

Single point of contact to the customer, at level of involvement with clear roles and responsibilities

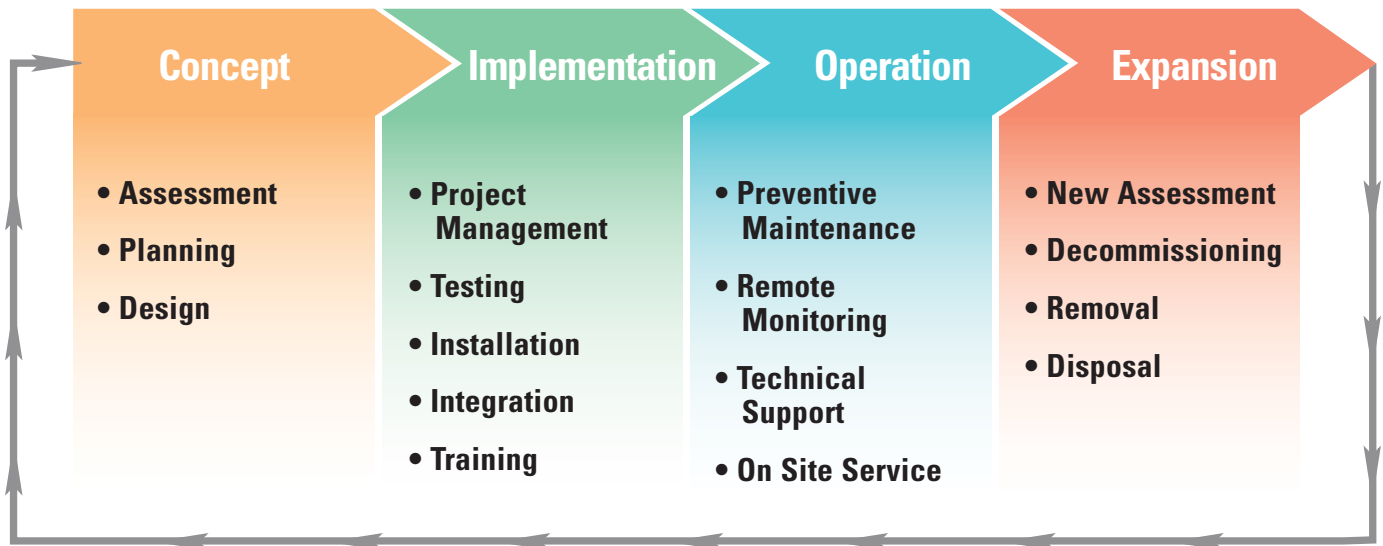Delivery

Supply + Assembly

SERVICES

In the complex world of today's data center, APC's service philosophy remains simple: by maximizing system availability we ensure maximum customer satisfaction. In fact, APC Global Services (AGS) exceeds the industry standards for efficiency, adaptability, and speed of response.

Building upon APC's advanced product engineering and predictive management software, AGS prevents problems throughout the life cycle of the data center, with services such as planning and installation, remote monitoring, and preventive maintenance. Staying a step ahead of industry trends and requirements, AGS supports your investment from the time of product purchase throughout the life of the hardware.

Our adherence to a rapid escalation of response policy and a defect correction and avoidance process ensures both customer satisfaction and continual system improvement. When you purchase from APC, you benefit from APC's active research and development program, as well as from a group of highly trained experts committed to maximizing and maintaining your system availability.

Concept

- Assessment
- Planning
- Design

Implementation

- Project Management
- Testing
- Installation
- Integration
- Training

Operation

- Preventive Maintenance
- Remote Monitoring
- Technical Support
- On Site Service

Expansion

- New Assessment
- Decommissioning
- Removal
- Disposal

APC Defect Correction and Avoidance Process

Part of APC's commitment to Total Quality Management (TQM) is our adherence to a rigorous defect correction and avoidance process. When a customer notifies us of a problem, the process begins – but not ends – with our escalation policy. Additionally, our rapid response team of product experts, the AGS Tiger Team, reports their findings to APC Platform Engineering. This, in turn, triggers problem identification and resolution within APC's research and development division, manufacturing, and with APC suppliers. Once corrective action is determined it is put into place by Product Management. The process comes full circle when Product Management reports on the correction to the AGS Regional Manager, so he or she can share the outcome of the defect correction and avoidance process with the customer who had the initial problem.
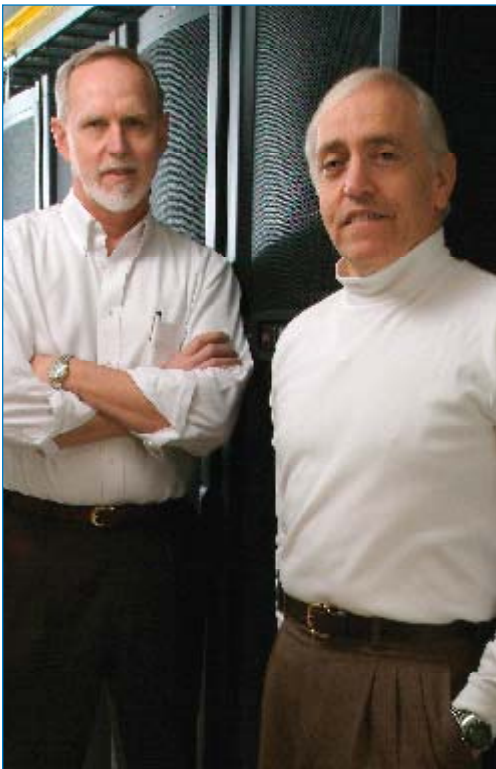
Time Warner Cable

"APC support is consistent and rock solid. APC responds to our needs and the reliability of the support is a key cornerstone of our relationship moving forward. We have had the InfraStruXure™ installed for several months now and we have basically ignored it. Such a stable solution allows us to focus on the task of exceeding the expectations of our customers."

Vince Pombo │ Vice President of Engineering │ Rich Flanders │ Director of Engineering
Time Warner Cable

Needs Assessment Service

Power Assessment, Cooling Assessment , Thermography, Blade Readiness

Our APC Authorized Field Service Engineer will visit your site and collect data pertaining to electrical loads, wiring practices, power quality, existing power protection equipment and environmental conditions

- Customized report
- Environmental inspection
- Labor and travel expenses included

Project Management

Installations, Upgrades and Removals

Our industry experienced project managers are trained to guide project coordination, communication and project budget management to assure your projects are completed on schedule and within budget

- Written summary report
- Single point of contact
- Labor and travel expenses included

SERVICES

Factory Acceptance Testing

Factory pre-tested system reduces downtime

An APC Certified Field Service Engineer will verify all connections within the system have been made according to factory specification, and that it is functioning correctly in all modes of operation, ensuring optimal performance and extending the life of the product

- Equipment positioning
- Physical assembly
- Installation verification

Assembly

Vital Resources, Expertise, and Tools

From rack assembly to module installation and internal wiring, APC will put together all the pieces of your solution

- Labor and travel expenses included
- Logistics coordination
- Module installation

Start Up

5x8 Service Scheduling, 24x7 Upgrade option

An APC Certified Field Service Engineer will verify all connections within the system have been made according to factory specification, and that it is functioning correctly in all modes of operation, ensuring optimal performance and extending the life of the product

- Functional and installation verification
- Labor and travel expenses included
- APC solution operational training

Network Integration

Software Integration, Server Migration and Cable Management

From server migration and cable management to software installation and configuration, APC Global Services Network Integration Engineers can assist in all tasks associated with your move to a new system

- APC certified software engineer
- Labor and travel expenses included
- 24x7 off-hours service scheduling

Customer Orientation/Training

Learn from industry-proven professionals about topics ranging from power quality to infrastructure cooling requirements

Remote Monitoring

Expert outsourced monitoring via APC's InfraStruXure™ Manager

An APC professional service that securely monitors your power systems and surrounding environment from a remote 24x7 operation center, responding to events according to a predefined customer escalation procedure

- On-demand trending reports
- Online Alarm/Event Reports
- Environmental Monitor and Alarm notification

On Site Services

4-hour Response, Next-day Response, Next Business Day Response

APC On Site Services are designed to get you the help you need on location to bring your business back up and running in a time frame compatible with your business requirements

- On site troubleshooting
- Parts included
- Labor and travel expenses included

Preventive Maintenance

Quarterly, Semi-annually, Annually and Battery Replacement

Proper care and regular maintenance will help you avoid unnecessary downtime, saving you time and money

- System cleaning and environmental inspection
- Corrective maintenance
- Free firmware upgrades and logistics coordination

MANAGEMENT

Whether managing a single device, multiple devices, or a mixture of device types, APC management solutions are easy to use and deploy. The solutions work together and independently, allowing you to monitor devices locally over existing IT networks or the Web, and to be notified of problems within the system via email or pager gateway notifications. They provide information on issues affecting system availability, reduce the burden of system management and adapt to changing business needs.
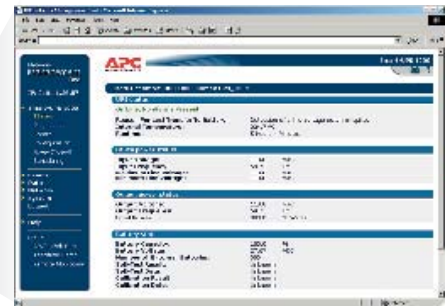
UPS MANAGEMENT

UPS Network Management Cards

Embedded management of UPSs protecting servers and networking equipment

Available with environmental monitoring and out-of-band capabilities

- Manage your UPS over the network
- Mass configuration wizard
- Reboot equipment remotely

BATTERY MANAGEMENT

Battery Management System

Smart-charging and remote battery management for stationary batteries

Both base unit and expansion module available. Battery harnesses available in a variety of lengths.

- Individual battery monitoring and charging
- Ripple current monitoring
- Browser-accessible

SERVER ACCESS MANAGEMENT

Console Port Servers

Secure, remote management and system recovery for servers and networking equipment

8-port, 16-port, 32-port horizontal; 42-port vertical

- In-band and out-of-band management reduces response time, improves efficiency, and maximizes uptime
- Comprehensive security support protects IT assets from hackers and other unauthorized individuals
- Multi-session capabilities allows concurrent usage by more than one administrator for fast and effective troubleshooting
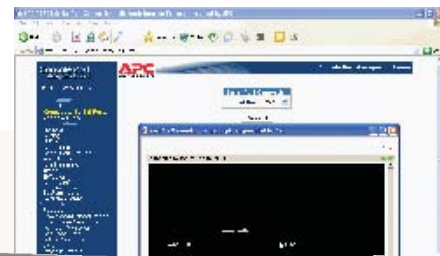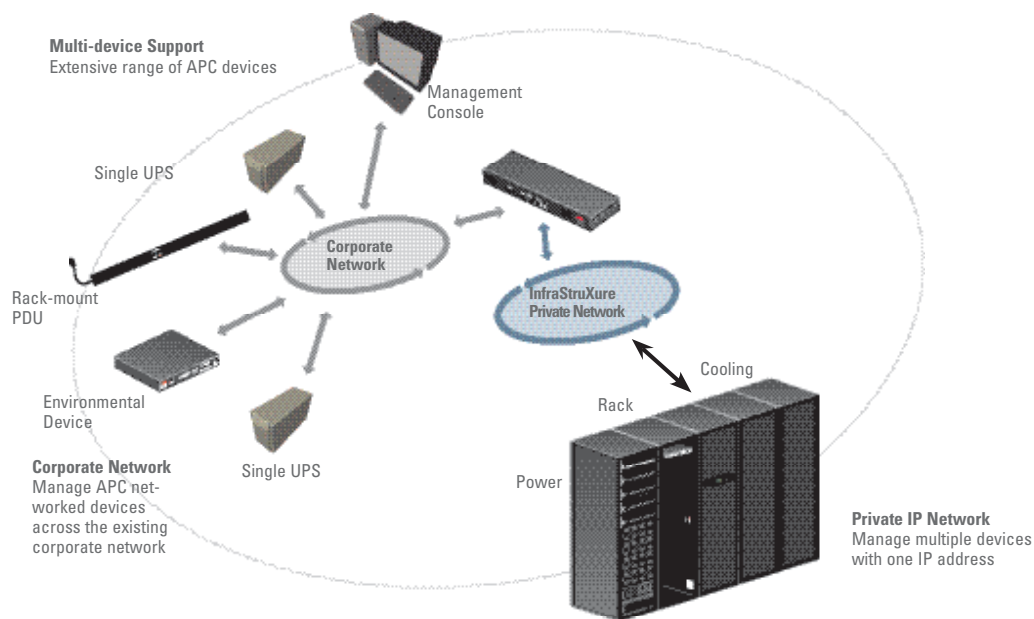
InfraStruXure™ Manager

Centralized, Web-accessible management of your APC Network-critical Physical Infrastructure

Appliance with licenses for 25, 100, 500 or 1000 devices

- Centralized management enables you to monitor and configure the entire APC infrastructure from a single console
- Concurrent deployment and updates of managed devices decreases set-up time by simultaneously configuring settings or upgrading firmware for multiple devices
- Manage network and building management systems from a single system
- Integrates with InfraStruXure Designer for

ease of navigation and improved monitoring, minimizing errors and cost
- kWatt per rack instrumentation and thresholds allow for quick assessment of power consumption and power availability in racks
- Load balancing increases power availability
- Battery and runtime reports facilitate timely replacement of UPS batteries and pinpoint UPSs requiring additional runtime

Manage APC Devices on the Corporate or Infrastruxure™ Network

Multi-device Support
Extensive range of APC devices

Management Console

Single UPS

Corporate Network

InfraStruXure Private Network

Rack-mount PDU

Cooling

Rack

Environmental Device

Power

Corporate Network
Manage APC networked devices across the existing corporate network

Single UPS

**Private IP Network**
Manage multiple devices with one IP address

InfraStruXure™ Incident Management Module

Notification and event analysis for managing Network-critical Physical Infrastructure

Add-on module for APC InfraStruXure™ Manager

- Prioritized urgency level, alerts the user to impact, urgency and priority of individual events threatening availability
- Incident acknowledgement, enables fast and thorough incident review allowing users to take ownership of alarms
- Incident history reports, monitor resolution times and workloads
- Workload management, helps designate appropriate people, manage individual workloads and enable accountability
- Customized escalation policies, helps establish and confirm a policy appropriate to your organization ensuring the right people are notified for fast problem resolution
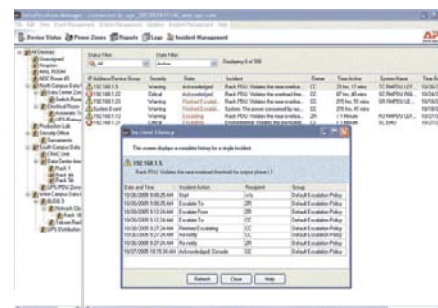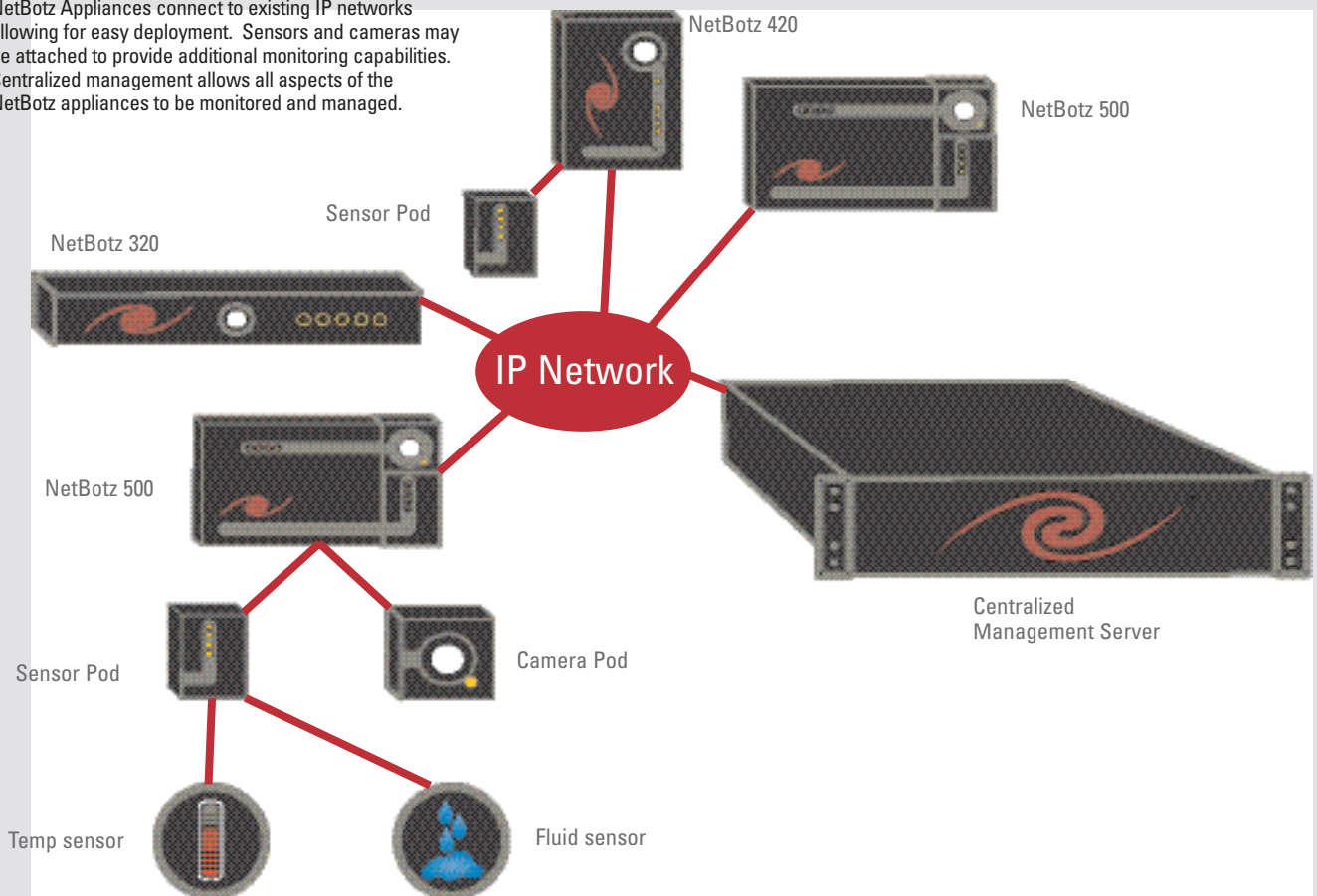
SECURITY AND ENVIRONMENTAL

Real time monitoring of your IT infrastructure for physical threats should be a key component of IT administrators' overall strategy to ensure availability and prevent downtime. APC's Security and Environmental monitoring solutions provide the capability of detecting and alarming when a threat has been identified. From a single IP enabled device, administrators can monitor for environmental threats such as temperature, humidity, leak as well as intrusion detection and real-time video surveillance.

NETBOTZ MONITORING SOLUTION

NetBotz Appliances connect to existing IP networks allowing for easy deployment. Sensors and cameras may be attached to provide additional monitoring capabilities. Centralized management allows all aspects of the NetBotz appliances to be monitored and managed.

NetBotz 420

NetBotz 500

Sensor Pod

NetBotz 320

NetBotz 500

IP Network

Centralized Management Server

Sensor Pod

Camera Pod

Temp sensor

Fluid sensor

Surveillance

Create a visual record of who enters secure areas and what they do while there

Wall- and rack-mount appliances with cameras

- Capture video in response to motion, door opening, and more
- Sort and search recorded clips by many criteria

Environmental

Protect your Network-critical Physical Infrastructure from environmental threats

Wall- and rack-mount appliances

- Protect against damage due to heat, humidity, water, smoke, dust, and much more
- Multiple thresholds for each sensor allowing for notifications at the informational, warning and critical levels
- Various types of alert actions allow notifications to be sent to SNMP managers, email systems, and web servers

Access Control

Network appliances enabling remote and local authentication for your APC rack enclosure

Proximity-enabled rack access system

- Audit trail allows for troubleshooting and record-keeping
- Local authentication for front and rear door of rack
- Access alarms based on remotely configurable settings

Accessories and Sensors

Extend the capabilities of your monitoring appliances

Pods, external sensors, cables, and mounting brackets

- Position sensors at desired monitoring points
- Support wide variety of analog and digital sensors via dry contact, 4-20mA, 0-5V
- Mounting and deployment hardware supports flexible placement of appliances and pods

Centralized Management

Central server that enables management and monitoring all of your NetBotz® appliances

Standard and enterprise servers available

- Centralized management, configuration and administration gives you a 24x7 real-time view into the status of your environment
- For use in a single data center, multiple data centers, or IDF/MDF closets

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PHYSICAL THREAT
NETBOTZ MONITORING SOLUTIONS ADDRESS MULTIPLE RISK AREAS

Environmental Disruption

The #1 physical cause of downtime at remote locations, environmental problems go beyond worries of fires and floods. Ventilation and power are key points of exposure and become more so as equipment density increases.

Human Error

We call this the "unspoken epidemic" because no one likes to discuss human error and the tremendous impact it can have on availability. However, it's the second greatest physical cause of downtime in remote or unsupervised locations because systems are often housed in janitor closets, wiring closets, and other less-than-optimal settings.

Physical Theft

As assets become smaller and more efficient, they become more attractive targets to steal. Physical attacks against digital assets are often overlooked and are a source of real concern.

Sabotage

On everyone's minds as a result of current events, terrorism must be given due consideration, regardless of cost.

There may be threats within your own building from disgruntled employees who may strike and, without any prevention, succeed.

COOLING

Ensuring the proper environment for IT systems is essential to maintaining high availability. Regardless of application, IT equipment produces heat that can be damaging to both uptime and the longevity of your investment. Data center cooling has become increasingly unpredictable due to the use of blade servers and other high-density equipment.

APC promotes in-row cooling, where the cooling unit is moved closer to the source of heat generation, and containing the hot aisles of the data centers to address this challenge.

APC cooling solutions are tailored to meet the needs of your environments, from wiring closets and server rooms to data centers of all sizes. Scalable solutions, including air distribution/fans, portables, and precision cooling systems, are available to provide the right solution to meet the unique cooling requirements your environment demands, from low to very high densities.

MODULAR / HIGH DENSITY AIR CONDITIONING

InfraStruXure™ InRow SC

InRow predictable air conditioning for wiring closets and server rooms

- Placing the unit in the row of racks moves the source of cooling closer to the heat load. This helps to eliminate air mixing and provides a predictable cooling architecture
- Self-contained, air cooled solution allows for plug-and-play installation to minimize installation time and costs
- Network manageable via Web, SNMP, and Telent
- Automatic restart in the event of a power outage
- Freeze up protection maximizes availability
- Dual ducted design increases cooling efficiency
- Condensate pump and duct kit included
- Available in DX

InfraStruXure InRow RC

InRow air conditioning for medium to large data centers including high density applications

- Draws power from UPS for power protection with dual feeds for redundancy
- Hot-swappable fans allow unit to remain operational if a fan replacement is required
- Modular design provides scalable solutions to add cooling as demand increases
- Variable speed fans reduce energy consumption during off-peak cooling periods
- Rack inlet control guarantees inlet temperature to IT equipment

InfraStruXure InRow RP

InRow precision air conditioning for medium to large data centers including high density applications

- Humidity is managed through a self contained steam canister humidifier for maximum efficiency and ease of maintenance
- Modular design provides scalable solutions to add cooling as demand increases
- Variable speed fans reduce energy consumption during off-peak cooling periods
- Rack inlet control guarantees inlet temperature to IT equipment
- Available in chilled water or DX

InfraStruXure Cooling Distribution Unit (CDU)

Flexible chilled water distribution system for the InfraStruXure™ InRow RC

- Flexible piping allows quick deployment and startup
- Seamless piping minimizes the risk of fluid leaks in the data centers
- Allows isolation of cooling circuits for servicing
- Provides a central point for fluid balancing

Hot-Aisle Containment System (HACS)

**Hot-aisle containment for high-density configurations**

• Hot air containment eliminates hot spots by preventing hot air recirculation into sensitive IT equipment

• Scalable densities allow for higher density cooling to be achieved by integrating the Hot-aisle Containment System with in-row architecture

• Scaleable design allows for quick deployment of high density clusters and addresses changing needs and future expansion with pay-as-you-grow architecture

Temperature

65°	70°	75°	80°	85°	F

18°	21°	24°	27°	30°	C
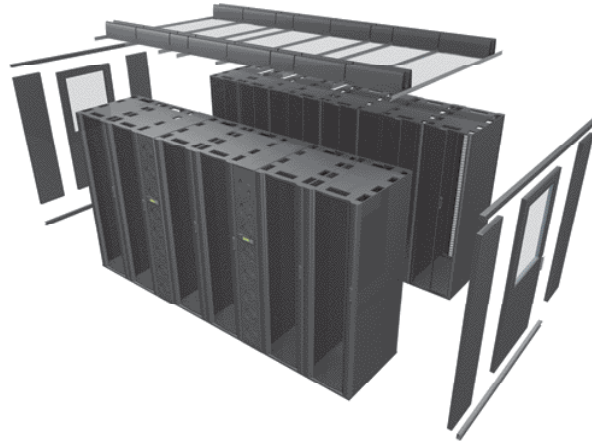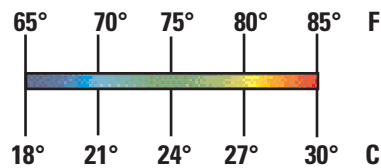
Hot exhaust air from the IT equipment is contained within the hot aisle to eliminate mixing for a predictable cooling architecture. Hot air is removed via the InRow cooling units and discharged to the room.
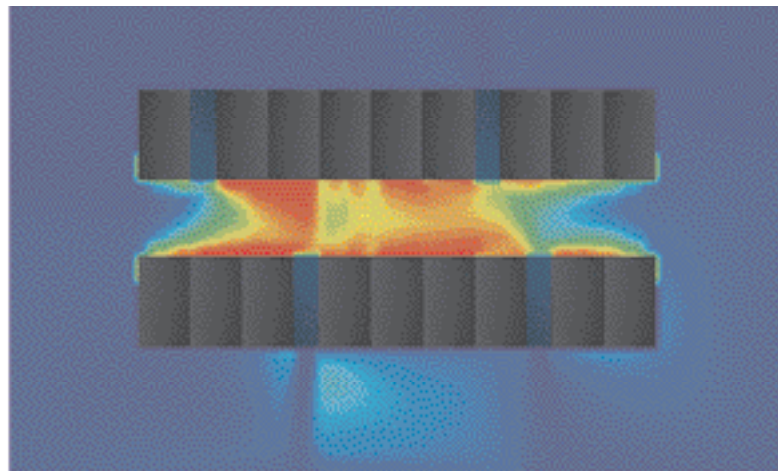
Rack Air Containment System (RACS)

Modular, flexible containment system designed to maximize InRow cooling predictability, capacity, and efficiency

• Increases InfraStruXure™ in-row cooling efficiency

• Allows for higher InfraStruXure in-row cooling capacity

• Increases cooling predictability within the IT environment

• Retrofitable to existing in-row and NetShelter® SX rack installations

• Full containment version provides isolation for installed IT equipment from installation environment

• Full containment version reduces audible noise

COOLING

ROOM AIR CONDITIONING

NetworkAIR™ FM

Modular floor mount precision air conditioning for environmentally sensitive equipment areas

- Direct drive motors allow integral fan/motor assembly to be factory balanced, lowering vibration and expedites startup
- Variable frequency drives allow for soft starting of fans, saving energy during power up
- Redundant group control allows up to 4 groups of precision air conditioners to communicate with each other for redundancy, demand fighting prevention, mode assist, and global sharing of certain settings

*Subject to regional availability

NetworkAIR™ PA 4000

Portable, self-contained air conditioning solutions for wiring closets and server rooms

- Portable, compact design provides flexibility to move the unit wherever cooling is required
- Network manageable via web, SNMP, or Telnet
- Automatic restart feature returns unit to its last operating status in the event of a power failure
- On/off scheduling
- Freeze up protection
- Condensate pump and duct kit included
- Dual ducted design

*Subject to regional availability
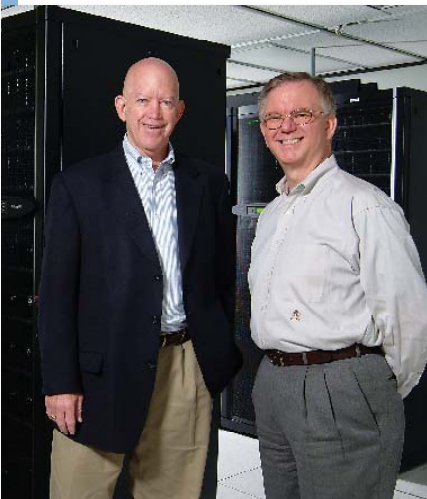
BE AEROSPACE

"We decided to purchase the APC NetworkAIR™ to handle our precision air requirements. The NetworkAIR units are high quality. Compared to some of APC's precision air competitors, the APC NetworkAIR costs less and has a much faster delivery time. In addition, it was much easier for us to deal with one vendor to integrate the data center solution and we felt we would get better support from APC. We figure that our consolidation project has contributed significantly to our cost reduction efforts. APC InfraStruXure™ and NetworkAIR are key components which have helped us to realize these savings."

Evan Stewart, CIO and Sam Villegas, Partner Relations, **BE Aerospace**

Rack Air Removal Unit

Value and performance heat removal solution for high density loads

- Ducted exhaust system removes hot air to prevent re-circulation and eliminate air mixing
- Power or temperature controlled fan speed ensures proper amount of heat removal
- Zero 'U' solution mounts to the rear of the rack leaving valuable rack space free
- Supports up to 16.5kW
- Integrated LCD display and network manageability

Air Removal Unit Ducting Kit converts rack air removal unit to ceiling to duct air from the room

Rack Air Distribution Unit (ADU)

Air distribution for power dense enclosures and low-pressure areas

- Raised floor duct pulls supply air directly into the enclosure to prevent re-circulation and air mixing before reaching equipment
- Minimizes temperature differences between the top and bottom of enclosures
- Delivers air to equipment in the rack where floor tile velocity is inadequate for proper cooling

Rack Side Air Distribution Unit (SADU)

Air distribution for networking equipment with side to side airflow

- Allows for greater security and organization by allowing racks to be placed adjacent to one another without impeding airflow
- Extends equipment life by pulling conditioned air from the front of the rack and distributing the proper inlet temperatures to side air intakes of networking equipment
- Delivers air to equipment in the rack where floor tile velocity is inadequate for proper cooling

Wiring Closet Ventilation Unit

Rapidly deployable wall and ceiling mount heat removal for wiring closets

- Wall and ceiling mount options provide installation flexibility
- Dual fans provides fault tolerance in the event of fan failure
- Selectable fan speed provide optimization of performance
- Dry contact outputs allow remote failure notification for enhanced availability
- Designed for simple, fast installation

The APC NetShelter® is the only framework for InfraStruXure™ solutions. Once concerned with environmental design at the room-level, consulting engineers now direct their attention to power distribution, cooling, and cable management at the rack level. The driving force behind this shift is technology compaction, as today's IT equipment is designed with efficient rack-mounting capabilities to maximize the utilization of valuable floor space. The ideal rack enclosure maximizes flexibility with a progressive, non-proprietary feature-set as well as an extensive line of scalable accessory products to address current needs and adapt to future technology trends. APC NetShelter® rack systems provide the most progressive feature-set available in a vendor-neutral rack environment while allowing the user the flexibility to quickly adapt to emerging trends. Available in a variety of heights, widths, and depths, NetShelter racks and enclosures support applications ranging from branch offices and wiring closets to enterprise data centers. With an extensive line of leading-edge power distribution, cooling and cable management accessories, APC offers the most comprehensive rack solutions to protect the critical components of the IT environment.

ENCLOSURES

NetShelter® SX

Enclosure offering advanced cooling, power distribution, and cable management for server and networking applications

600mm wide x 1070mm deep, 42U or 48U, including casters, doors, inherent grounding, installation guide, levelling feet, mounting hardware, roof and side panels

• Increased door ventilation and other cooling options to accommodate higher density applications

• Facilitates overhead cable management

• Multi-vendor equipment compatibility

NetShelter® SX Wide

These wider models are ideal for networking applications where demanding cable management requirements reside or for a mix of server and networking equipment in the same enclosure

750mm wide x 1070mm deep, 42U or 48U, including casters, doors, inherent grounding, installation guide, levelling feet, mounting hardware, roof and side panels

• Facilitates front to rear and vertical cable management

• Increased room for rack PDU mounting and access

• Multi-vendor equipment compatibility
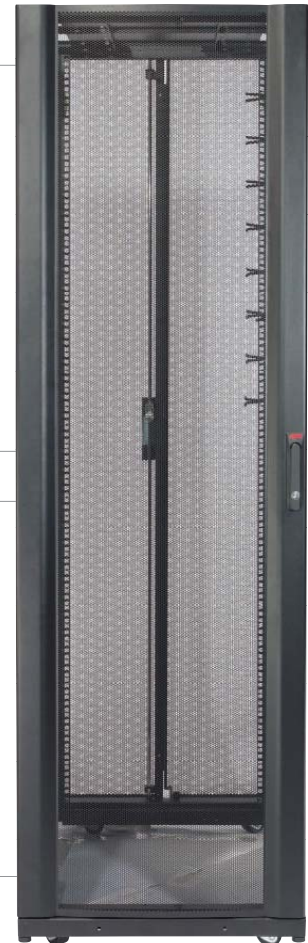
RACK POWER DISTRIBUTION

Metered Rack Power Distribution Unit

Power distribution units that monitor the aggregate power consumption of connected equipment

Up to 14.4kW, horizontal or vertical-mount

• Local current monitoring display

• Alarm thresholds and network management

Switched Rack Power Distribution Unit

Power distribution units that remotely control power to individual outlets and monitor the aggregate power consumption

Up to12.5kW, horizontal or vertical-mount

• Remote Individual Outlet Control

• Power sequencing

• Alarm thresholds and network management

• Flash upgradeable

Pictured - Metered Rack PDU

RACK ACCESSORIES

1U Modular Toolless Blanking Panels

Modular 1U plastic blanking panels allow quick and easy installation in any EIA-310-D compliant square hole mounting rail rack or enclosure

• Toolless mounting

• Available in quantities of 10 or 200

Cable Containment Brackets

Cable management accessory to help eliminate cable stress and maintain a neat, organized cable layout within an enclosure or a rack

Includes 4 flat brackets, installation guide, mounting hardware and 4 C brackets

• Facilitates rear/vertical cable management

• Organizes data and power cables

• Provides mounting options for PDUs

OPEN FRAME RACKS

Open Frame Racks

Low cost mounting solutions with advanced power distribution and cable management features for server, networking, and telecom applications, where security at the individual rack level is not required

2-Post and 4-Post Models

• Unobstructed airflow

• Fast, easy access to installed equipment

• Numbered U positions

2U Horizontal Cable Organizer w/ Pass-Thru

Cable management accessory to help eliminate cable stress and maintain a neat, organized cable layout within an enclosure or a rack

Includes mounting hardware

• Facilitates front cable management

• Front to back feed-through holes

• Integrated front cable hoops

Cable Tree

Rear cable management trough designed for the NetShelter® SX rack

Includes installation guide, mounting hardware, mounting straps and one tray

• Facilitates rear/vertical cable management

• Organizes data and power cables

• Works with both the 42U and 48U models

Side Channel Cable Trough

Cable management accessory to help eliminate cable stress and maintain a neat, organized cable layout within an enclosure or a rack

Includes installation guide and mounting straps

• Adjustable mounting depth

• Facilitates side cable management

• Toolless mounting

Vertical Cable Organizer for NetShelter® OU Channel

Cable management accessory to help eliminate cable stress and maintain a neat, organized cable layout within an enclosure or a rack

• Toolless mounting

• Facilitates rear/vertical cable management

• Occupies 0U of rack space

Recessed Rail Kit

Mount networking and server equipment in the same rack or enclosure

Includes installation guide and mounting hardware

• Adjustable mounting depth

• Multi-purpose mounting rails

• Multi-vendor equipment compatibility
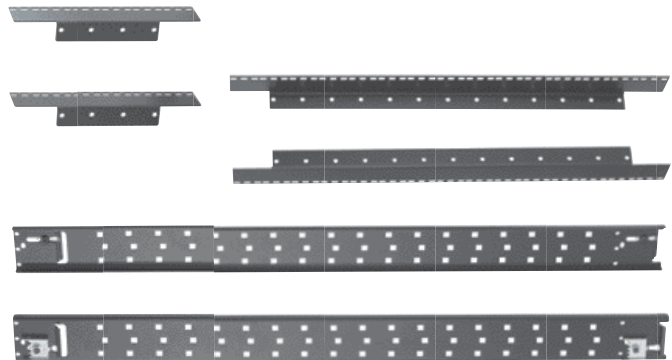
Rack KVM

Manage multiple servers with just one keyboard, monitor and mouse

Analog, Analog CAT-5, and IP KVM switches available

• Troubleshoot servers and diagnose problems when the network is down

• Minimize space requirements, hardware costs, and power consumption

• Access servers in remote locations with IP KVM solutions

Rack LCD Monitor Keyboard Mouse

1U rack-mountable integrated keyboard, monitor and mouse

Includes cable management arm, rack-mounting brackets and user manual

• Low power consumption and cooling requirements

• Integrated touchpad pointing device

• On-Screen Display (OSD) capability

NetBotz™ Rack Access PX

Network appliance enabling remote and local authentication for your APC rack enclosure

Proximity-enabled rack access system

• Audit trail allows for troubleshooting and record-keeping

• Local authentication for front and rear door of rack

• Access alarms based on remotely configurable settings

RACK CONNECTIVITY

Patch Panels

Manufactured to industry standards, to keep networks up and running

12 – 96 Ports, LAN and Telco

• Wire Management

• EIA/TIA Approved

• 110/Krone Termination
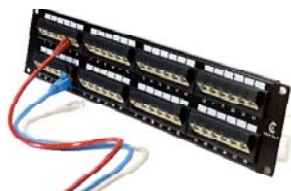
Network Cables

High quality networking cables that keep networks up and running

Cat 5, Cat 5e, and Cat 6

Data Distribution Cable

World's first factory tested, pre-terminated 24 pair Cat5e cabling solution

24 Pair, Cat5e PVC cable, with 6 pre-terminated connections in varying lengths

POWER

Symmetra PX (see description on page 36)

Power is vital to the Information Age. Without electricity, the machines that create, transmit, or store our data, help us communicate, entertain us, or assist us in a multitude of ways cease to operate. Today, every company depends on electronics to do business, and the effects of power-related downtime grow much more costly every day.

APC power solutions cover a wide range of business requirements. The more mission-critical the application, the higher the business need for minimized downtime, mandating continued operation through outages of any length. Some organizations might not require such high availability, but require automatic, safe shutdown of important software and operating systems, keeping important data secure. Any power solution should, at the very least, prevent physical damage to hardware from transients (surges, spikes, sags, etc.).

Over 15 million customers worldwide have turned to APC, the global leader in power availability solutions. Look through the following pages and contact us at any time to experience Legendary Reliability™.

NETWORK AND SERVER UPS

Smart-UPS® RT

Double conversion on-line power protection for space-constrained server rooms, voice and data networks

1-10kVA, Rack-Mount 2U-6U

- Hot-swappable/user-replaceable batteries ensure continuous operation of the load
- Scalable runtime: matching battery packs can be added to increase the runtime to the desired amount
- Hot-swappable battery replacement system minimizes downtime
- Manageable via PowerChute® Business Edition or UPS Network Management Card

Smart-UPS® XL

4th generation line-interactive power protection for servers, and voice and data networks

1400-3000VA Rack-Mount 2U-5U

- Hot-swappable battery replacement system minimizes downtime
- Manageable via PowerChute® Business Edition
- Matching battery packs can be added to meet changing needs

Symmetra® is designed as a high availability system for mission-critical applications. N+1 redundancy ensures maximum uptime and near continuous availability. The modular design makes the Symmetra easy to scale, service, and manage.
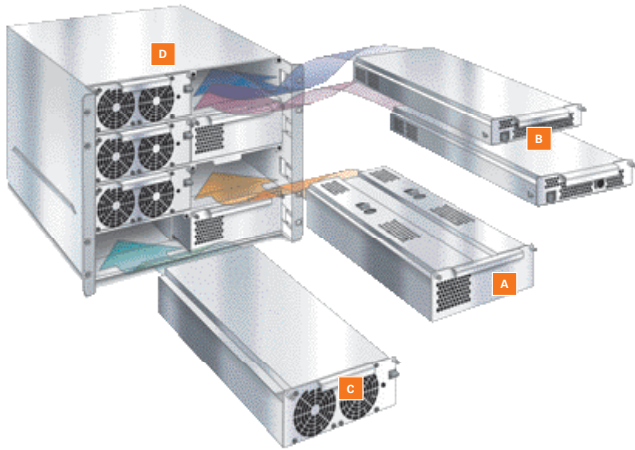
A **Battery Module:** Scalable for more runtime, hot-swappable for easy replacement , N+1 redundant

B **Intelligence Modules:** Redundant Intelligence Modules that are hot-swappable

C **Power Module:** Provides flexibility to scale power, adds N+1 capability, hot-swappable

D **Robust Frame with Automatic & Manual Bypass Switch:** Enables the UPS to transfer the load to utility power, without interruption, in case of heavy overload or faulty conditions

Symmetra® LX

High-performance, redundant power protection for space-constrained server rooms, voice and data networks

4-16 kVA N+1 Rack-Mount

• Scalable power and runtime provides flexibility and lowers initial costs

• User-serviceable modules lower cost of ownership and mean time-to-recovery (MTTR)

• Manageable via UPS Network Management Card

DATA CENTER AND FACILITY UPS

Smart-UPS® VT

Performance 3-phase power protection with scalable runtime for small data centers

10 to 40kVA (10-30kVA in 208V, 20-30KVA 480V)

• New rack-based versions, with integrated power distribution available (208V/400V/480V)

• Scalable runtime with hot-swappable batteries for increased availability

• Low total cost of ownership (TCO) is achieved through best-in-class efficiency

POWER

Symmetra® PX

High-performance, redundant power protection with scalable power and runtime for data centers

10-80kW N+1

- Scalable power and runtime for flexibility and lower cost
- User-replaceable modules for ease of service
- Rack-based design speeds deployment

Symmetra® MW

High-performance, redundant power protection with scalable power and runtime for data centers and facilities

400kW to 1.6MW

- Easy system expansion with load sharing and scalable power modules provides adaptability to changing environments
- N+1 redundant fault-tolerant design provides high availability
- Self-diagnosing function and modular level repair reduce mean time-to-recovery (MTTR)

SCUDERIA FERRARI

"APC's InfraStruXure™ system provides us flexibility for our various computing power requirements, diverse software applications and deployment challenges, while providing a highly available data center. Today, our installed CFD calculation processes require hundreds of kW of power. APC and its InfraStruXure state-of-the-art modular solution supports us today and has the adaptability we need as we grow in the future."

Antonio Calabrese   Head of the Information Systems
Scuderia Ferrari

SYMMETRA® MW PRODUCT OPTIONS

Maintenance Bypass Panel line-up and match panel that Incorporates a static bypass switch to facilitate transfers from UPS to bypass

External Bypass Static Switch Line-up and match design transfers the load from a preferred source to an alternate source without interrupting the supply to the load

InfraStruXure™ Power Distribution Unit

Configured to order, factory-assembled power distribution for space constrained medium to large data centers

3-phase 40, 60, 80, 150kW

• Wraparound system bypass isolates UPS from critical load*

• Local or Web-based monitoring for ease of management

• Front and rear access facilitates service

*Not applicable for 60 or 150kW PDU

Subject to regional availability

Smart Distribution Panel with Automatic Transfer Switch

Manages and delivers redundant power paths to the InfraStruXure™ system

• The power distribution panel is integrated into the ATS, eliminating the need to install a separate distribution panel

• Monitors and controls APC's Standby Power Generation via the network
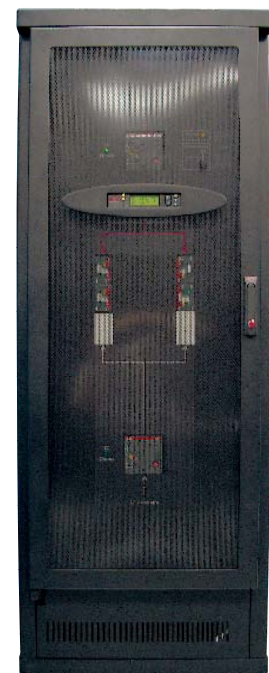
Standby Power Generator

Diesel or fuel cell back-up power solutions for extended runtime needs

Sizes up to 200kW

• Increase runtime requirements from minutes to days

• Increases availability by monitoring generator status, runtime, and fluid levels (even when the generator is off)

• Automatically performs generator tests scheduled via network connection

| RACK 1 | RACK 2 | RACK 3 | RACK 4 | STANDALONE STORAGE UNIT |
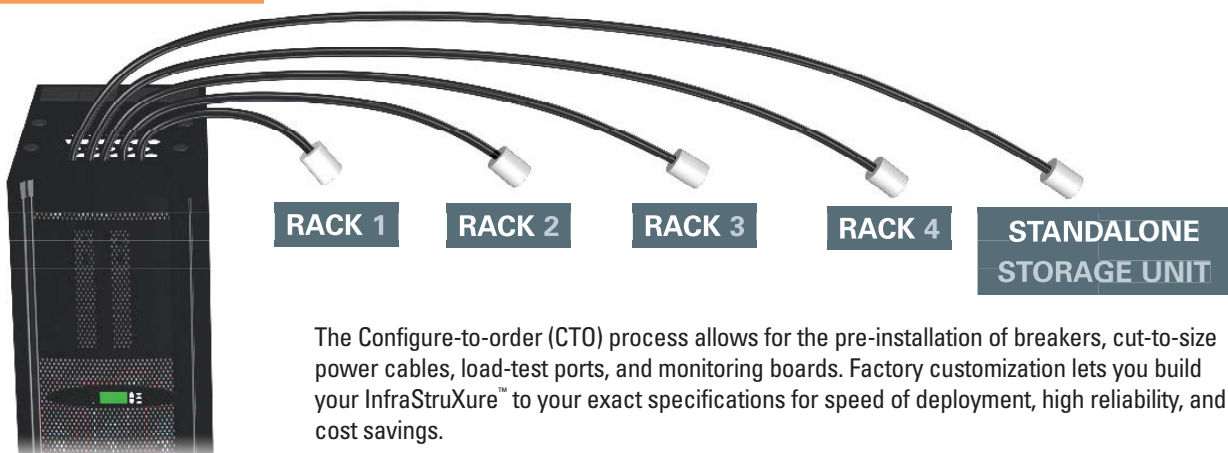
The Configure-to-order (CTO) process allows for the pre-installation of breakers, cut-to-size power cables, load-test ports, and monitoring boards. Factory customization lets you build your InfraStruXure™ to your exact specifications for speed of deployment, high reliability, and cost savings.

APC DESIGN TOOLS

Choose from one of our pre-integrated InfraStruXure™ solutions, or specify your requirements and get a Price, Value, and Performance Recommendation

Available via APC Sales or your preferred APC Partner

APC Estimator

The APC Estimator is a budgetary tool for data centers providing a high level recommendation for InfraStruXure™ solutions. These customized systems are then built from standardized components which are modular, manageable and pre-engineered to work together.

Plan and design your entire network-critical physical infrastructure

InfraStruXure™ Designer - an advanced tool for customized solutions

- **Rack Application Types** - Automatically populates racks with accessories, power distribution and environmental management products matching selected application type thus providing expert guidance based on APC best practice

- **Row Based Design** - Helps specify available IT rack positions and provides support for multiple cooling and power solutions within a single room

- **Supports new and existing data center environments -** Providing a planning and design tool for the whole data center life cycle

- **InfraStruXure™ Manager Integration -** Seamlessly integrating the floor layout into InfraStruXure Manager speeding deployment and giving a graphical representation of the data center

- **Flexibility -** Flexibility through free workflow and iteractive design providing ability to configure equipment in any order at any time during the design process

Online Learning : Data Center University

DCU offers industry leading education for IT professionals, facilities managers, engineers and others involved with the Network-critical Physical Infrastructure (NCPI) of data centers. Our courses are developed by actual data center executives with decades of combined experience running some of the world's most advanced data centers. The courses address the core competencies required for Data Center Design, Build and Operations (DCDBO). Data Center University's curriculum centers around the education you need to solve real world issues in the data center.

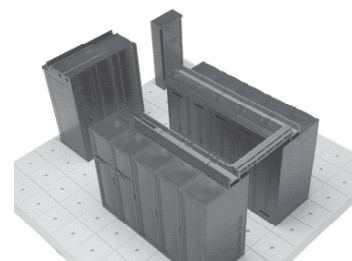**www.datacenteruniversity.com**

◆ **IEEE**
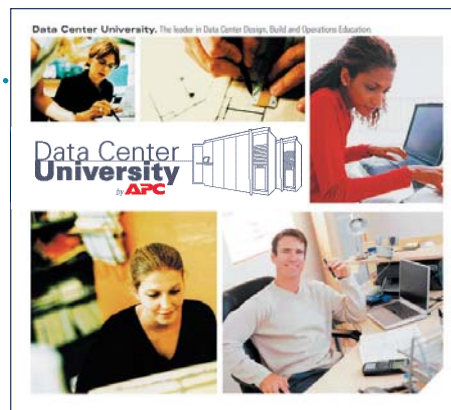
APC White Papers

Do you and your staff know the top ten planning mistakes to avoid? The easiest way to improve cooling without spending a cent? Find these answers and more – in our latest selection of white papers. APC has spent almost $70 million researching solutions to tomorrow's server problems. We talked to thousands of customers from Baltimore to Beijing and saw the good, the bad, and the ugly measures customers took in their data center planning. In many cases, turnover and budget cuts resulted in no plan at all. Take advantage of our valuable research today:

- WP-116: **Standardization and Modularity in Network-critical Physical Infrastructure**
- WP-117: **Network-critical Physical Infrastructure: Optimizing Business Value**

Visit **http://www.apc.com/products/infrastruxure/index.cfm**

NCPI Science Center

With more than 80 "must-read" white papers published on data center issues and technologies, our NCPI Science Center is actively investigating the problems of today and tomorrow. With lab-testing and field research to back up over 200 years of combined experience, there's no data center issue this tenacious team can't handle.

Download samples of their latest work at

Visit **http://www.apc.com/tools/isx/tcoindex.cfm**

InfraStruXure TCO Calculator

The InfraStruXure™ Total Cost of Ownership Calculator will compare APC InfraStruXure lifecycle costs to conventional Legacy data center architecture lifecycle costs.

Visit **http://www.apc.com/products/infrastruxure/index.cfm**

BLADEREADY™ Program Assures Peace of Mind

APC's BLADE READY™ Program unites complementary NCPI technologies to deliver products, solutions and services for blade NCPI environments.

Blade server power densities exceed the power and cooling capacities of virtually all data centers and produce a tremendous amount of heat. They also present unique challenges to the interoperability of your Network-critical Physical Infrastructure (NCPI). APC's BLADE READY™ Program unites complementary NCPI technologies to deliver comprehensive interoperable products, solutions and services for blade NCPI environments.
To ease your blade implementation and enable operational excellence, look for industry vendors that carry the BLADE READY logo. To learn more:

Visit **www.BladeReady.com** or contact us via email: **ProgramDirector@BladeReady.com**

InfraStruXure™ Multimedia Tour

Register for an interactive InfraStruXure™ tour

This self-paced, online tour is a quick and easy way to learn about InfraStruXure's™ innovative approach to Network-critical Physical Infrastructure.

Explore InfraStruXure for data centers on demand, and discover the very real benefits of its fully integrated power, cooling and environmental management within a rack-optimized design.

Surf the top level of typical InfraStruXure configurations, or drill down to the component level. Learn just what you need to know, at your own pace.

Start with a typical configuration and register. Once in the tour, you may view other configurations.

Visit **http://www.apc.com/products/infrastruxure/index.cfm**

Fuel Cell Technology

Need extra runtime that you can rely on? Constrained by local generator restrictions? Check out our new, Fuel Cell based extended runtime option, fully integrated into the InfraStruXure™ architecture, and featuring the additional runtime you need for peace of mind!

Visit an APC Demo Center today! See the latest modular systems and NCPI solutions in one of our many APC demo centers around the world. Contact your local APC Sales Representative for details and appointment.

Since 1981, APC has been a global leader in power availability solutions, setting the industry standard for quality, innovation, and support. From its corporate headquarters in West Kingston, Rhode Island, APC operates sales offices throughout the world and manufacturing facilities on four continents and distribution facilities on five continents. APC ships products to over 150 countries.

Over 15 million satisfied customers worldwide depend on APC's Legendary Reliability™. Propelled by real-world experience and a drive towards technological innovation, APC has the experience, scale, global presence, and stability to respond to emerging IT availability needs.

As the recipient of hundreds of awards worldwide, APC is recognized for excellence in both its business and product performance. Every year since 1999, APC has been named to the Forbes Platinum 400 list of the Best Big Companies in America. For 11 years in a row, APC has received the Channel Champion award in the UPS category.

Learn how multiple power problems can wreak havoc with your electronic equipment. Download the FREE APC White Paper "Standardization and Modularity in Network-critical Physical Infrastructure". Visit us online at **http:// promo.apc.com** and enter key code **g309x**.

NQA ISO 9001 REGISTERED COMPANY NQA ISO 14001 REGISTERED COMPANY

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