

Danish Ministry of Education

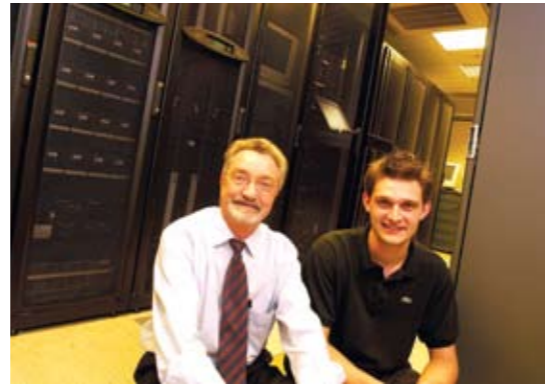
InfraStruXure® safeguards key server room, leaves room for growth

“At the Danish Ministry of Education, we handle data for approximately 3,000 Danish educational institutions. All this information is stored in our databases and we can’t afford to lose any of this data as a result of a power problem.

“That’s why we have to deploy the highest degree of protection and security. The InfraStruXure integrates our servers, cabling, UPSs, battery backup, cooling and monitoring in one modular system.

“I don’t imagine that we’ll be expanding or reducing the system in the future, but you can never entirely predict how things will develop and that’s why it’s so important that InfraStruXure is a scalable system. If we decide to increase the capacity or runtime of our InfraStruXure, we simply add more racks and modules to the system.

“We were also surprised to discover that the physical appearance of our data center is of great importance. Our server room was like many other server rooms: cold, boring and messy. With the InfraStruXure, it’s a completely different situation. It looks good, and at the same time everyone feels a greater responsibility



to keep things clean and organized. So looks do count—even in a server room.

“What APC has provided us with is a complete system that meets all of our regulations and standards. Our entire experience with APC has been characterized by high quality.”

—Vagn Lauersen, Chief Consultant
Christian Larsen, IT Officer
Danish Ministry of Education

Solutions for Server Rooms

Information technology is at the heart of your business. APC by Schneider Electric gives you the power to monitor and manage your server room with ease and confidence.



Get more information on APC by Schneider Electric solutions at www.apc.com

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Monitor the environment



Maintain availability



Manage the cooling



Proactively Monitor and Manage

Your Server Room in an Active Landscape

CUSTOMER PROFILE



Name: Bill McAllister

Position: Senior Systems Engineer

Company name: Brother International Corporation

Greatest challenge: Eliminating costly downtime in an off-unmanned setting

APC Keeps Brother's Downtime at Bay with Minimal IT Staff

What is your company's line of business?

Brother International Corporation is one of the premier providers of home and office products. Our product offerings include multifunction printers, fax machines, electronic labeling equipment, and other office electronics.

About how much could downtime potentially cost the company?

Warehouse operations run from our Memphis location, all the R&D data is stored here, and manufacturing runs off databases that are stored here. It's difficult to put a dollar figure on it, but downtime is extraordinarily costly.

Which APC solution did you choose for the Memphis facility?

APC recommended the new InfraStruXure® system. The solution was attractive to us because it provided the power redundancy we needed and we had the ability to replace a hardware component without having to take the system down.

What benefits of the InfraStruXure solution have you found most useful?

Before InfraStruXure, we were flying blind. I appreciate being able to monitor power and environment at the rack level, through APC's InfraStruXure Central software, and being able to tell how much load is on which leg of the circuit. Since we're not staffed 24 hours a day, I also greatly appreciate the network management notification feature.

And this solution fits in with the future of your company?

The entire facility is looking forward to greater uptime moving forward. The pay-as-you-grow scalability of the InfraStruXure fits in well with our future growth plans. APC's reputation for high-quality products provides us with an extra sense of security and confidence.

Read how APC by Schneider Electric helped solve other customers' server room issues at www.apc.com.



Consolidation, power over Ethernet, virtualization—these current IT trends are making traditional server rooms increasingly complex, remotely managed, and mission critical, all with the goal of increased efficiency in mind.

Meanwhile, your day-to-day job and overall goals remain the same. The question is, how are you supposed to decrease downtime, increase availability, enable these new technologies, and do it all without any drastic changes to the IT budget?

The answer quickly becomes clear when you get a tailor-made server room setup from APC by Schneider Electric. Our modular, easy-to-install solutions allow you to implement an appropriate IT environment that meets your current and future needs, without breaking the bank in the process.

That means a more efficient way to assess your power needs, and guarantee availability, at any given time. That means a more efficient way to monitor physical threats. And, most of all, that means making sense of a high-density landscape that's getting more complicated by the day. After all, if you're upgrading your servers with the latest technology, why use the same old infrastructure to protect them?

Don't worry. Whether you're a small business or an enterprise branch office, we've got you covered with a full range of power (UPS), cooling, and accessories that can enhance your protection against downtime.

To meet these challenges, your network needs to be proactive in facing the most common challenges posed to the mission-critical server room:



Monitor the Physical Layer

Know if heat, dust, humidity, or other hazards are building up in any portion of the server room, and keep a visual record of personnel as they move between racks.



Maintain Availability

Identify power problems before they occur, using state-of-the-art software that dovetails with your physical infrastructure to predict problem areas.

Manage the Environment

Get instant notification of temperature fluctuations from an energy-efficient, row-based cooling solution that targets the heat at the rack level.

Protect the Power

With more than 10 million installed Smart-UPS® units, businesses count on APC for server power protection—and so can you.



APC Server Room Solutions: A Holistic Management Approach

Your server room's pain points are as interconnected as the components themselves—a cooling issue may be a contributing factor in your ongoing power problem, while, in fact, the whole mess may have its roots in a poor rack or enclosure setup.

APC products give you unprecedented visibility into the inner workings of your server room, allowing you to monitor your equipment with up-to-the-second information so you can effectively manage the environment, either remotely or from the rack itself. And while you'll derive the most benefit from a complete solution, each piece can be added easily, allowing you to complete your management puzzle as your budget allows.

Comprehensive, Across-the-Board Monitoring

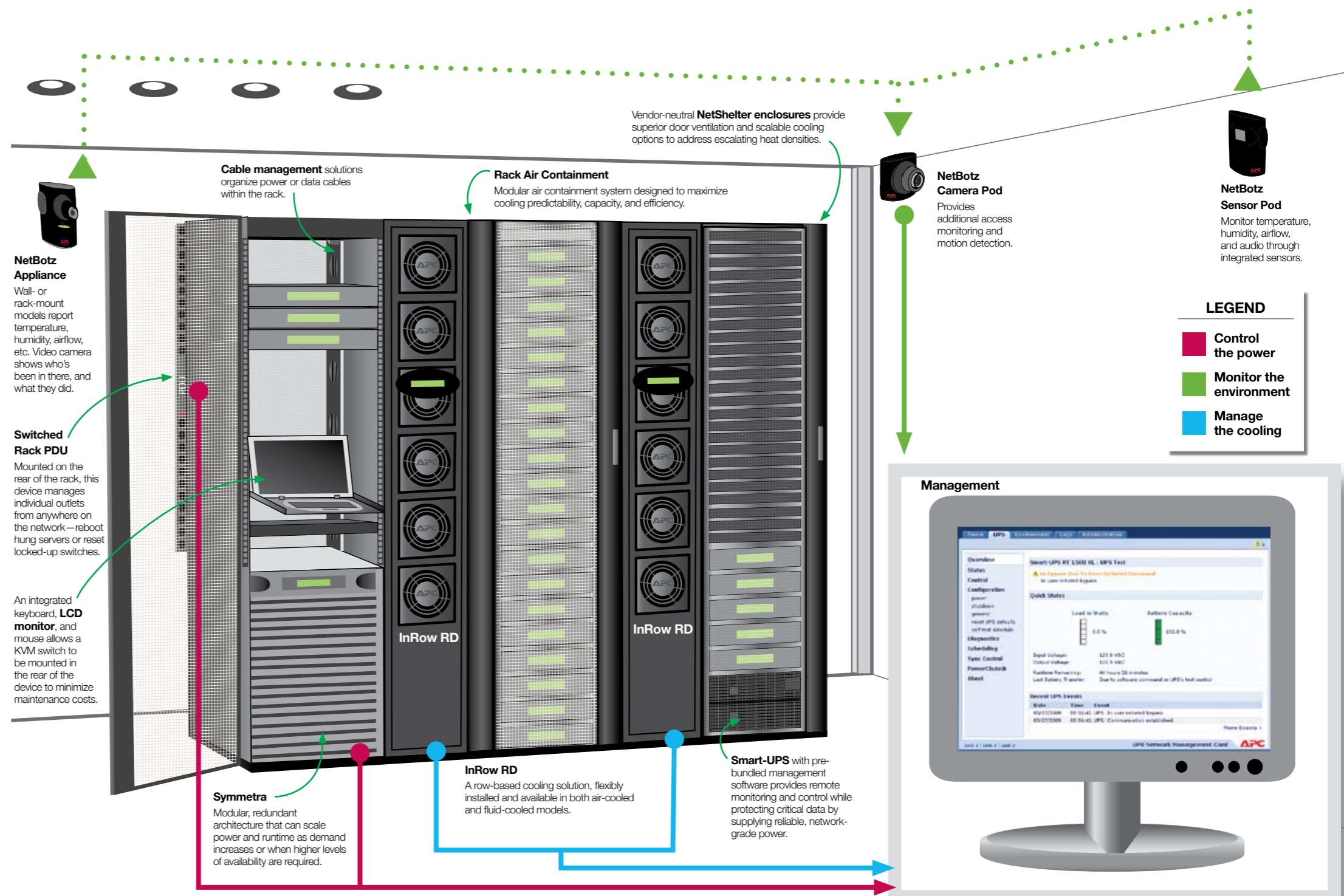
- NetBotz® sensor pods make you immediately aware of air conditioning failures, fires, leaking pipes, smoke, condensation, and other hazards, giving you time to respond to problems before they become catastrophic. And if problems do occur, recorded video clips from the NetBotz color cameras show you exactly what happened.
- Network Management Cards put your UPS units and InfraStruXure® air conditioning units on the network with dedicated IP addresses, allowing you to check such vital signs as fan speed and battery life and giving you the option of remotely and securely managing them through a Web browser, CLI, or SNMP.
- InfraStruXure Central is your go-to management technology, giving you a centralized archive for real-time data streaming in from your company-wide infrastructure devices. For more information, see our Featured Technology on page 6.

Making Constant Availability the Norm

- Armed with included PowerChute® management software and on-board management capabilities, APC Smart-UPS® and Symmetra® units give you instant notification of critical events and the ability to respond remotely. Additionally, they come in a full range of highly efficient line-interactive, double-conversion online, and modular, scalable, and redundant models.
- APC switched rack power distribution units (PDU) fit a broad range of server room scenarios, giving IT operators real-time oversight and control over the power draw of their rack equipment. Individual outlet control lets you reboot locked-up equipment, and in the event of a power outage, you can utilize time delays to avoid overloads on recovery.

Contain the Heat; Close-Couple the Cooling

- Sitting inches from your sensitive IT equipment puts the InRow® RD in the perfect position to closely couple its cooling with the heat load, and thus prevent any exhaust air from recirculating. Its efficient design allows for rapid installation, and its variable speed fans and capacity modulation will noticeably reduce operating costs.
- The APC Rack Air Containment System (RACS) is the answer to cooling problems caused by deploying high-density loads into unsuspecting IT environments. The modular system works with APC NetShelter® SX enclosures and InRow cooling units to force air to pass through a cooling unit, where it is conditioned before it's re-released.



> APC server room products send you real-time data on power, cooling, and environmental conditions over the existing IP network. Check on remote environments just by looking at your monitor.

Centrally Monitor Your IT Assets

nfraStruXure® Central provides an efficient way for organizations to manage their company-wide physical infrastructure by creating a centralized repository for critical power, cooling, and environmental data.

Available on a range of hardware platforms, this central archive can be accessed by multiple users, from anywhere on the network, to give you unprecedented access to pertinent network data. While the console application is easy to use, it is also a powerful tool that will simplify the way you manage your physical infrastructure.

Real-time monitoring, user-defined reports, private networking, advanced security, and instant fault notification enable you to assess and resolve critical issues as they occur. Then, as your business needs change, you can extend the capabilities of the platform by including additional device licenses and add-on surveillance, not to mention the capabilities of the Capacity and Change Management modules.

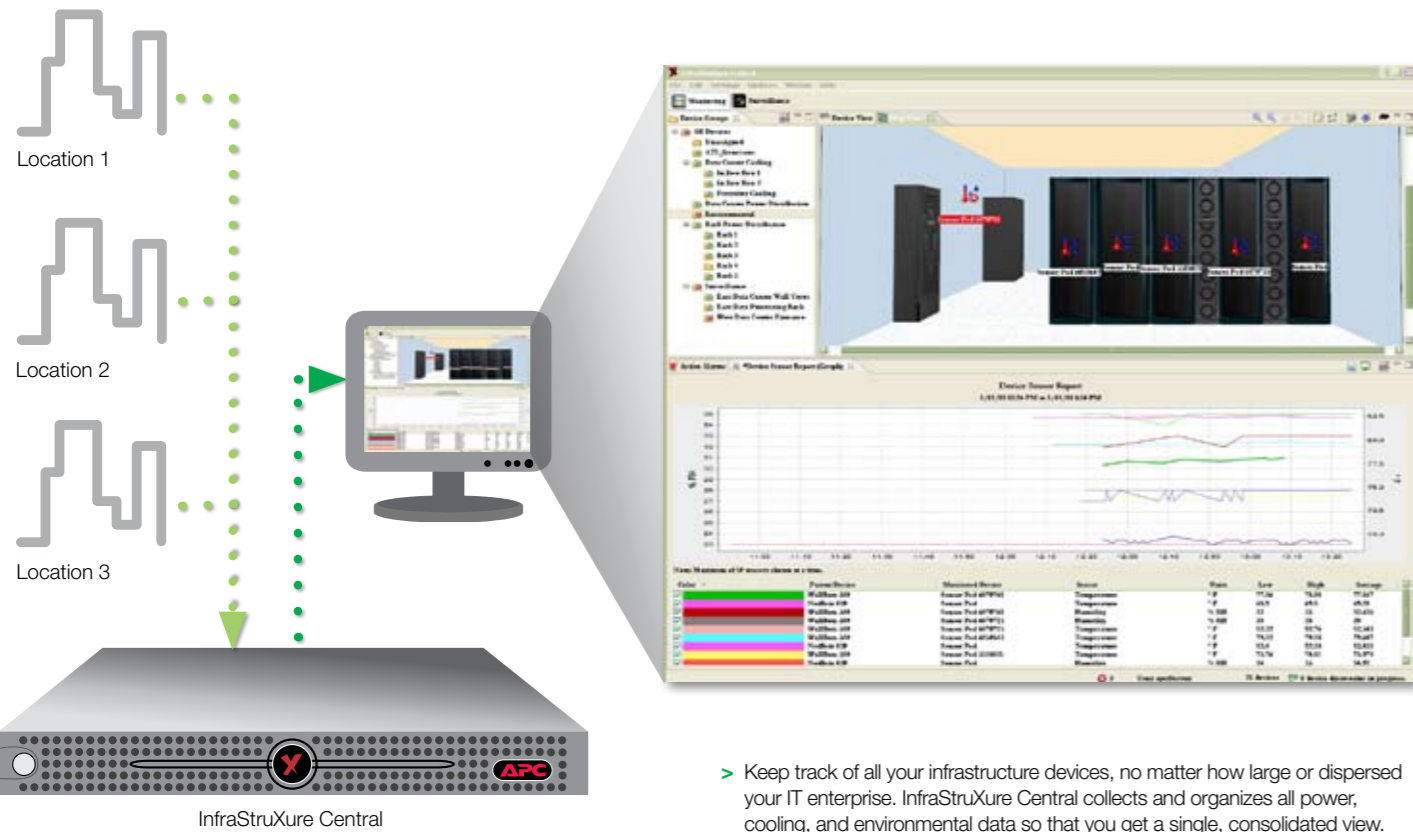
APC Remote Monitoring Service

Don't want to manage your server room, or simply don't have the time or money?

- Can be implemented as a primary or secondary level of support to predict, track, and remediate site problems.
- Cost-effective, pay-as-you-go solution that doesn't require any additional hardware.

With InfraStruXure Central, you get ...

- Real-time device monitoring and immediate event notification, enabling quick assessment of critical situations.
- Third-party device support—monitor any networked SNMP-compliant device regardless of vendor.
- A centralized alert repository that lets you access historical alerts from several appliances through one central database. Sort alerts by type, date, appliance, and/or device group.
- Advanced reporting—users can generate reports from any monitored device, create and save custom reports for visibility at any time, and schedule reports to recur automatically.
- Minimize your response time to critical physical infrastructure situations—receive alerts via mobile phones (SMS), Web applications (HTTP Post), and e-mail.
- Add-on surveillance application enhances visibility of a company's critical assets, and creates a centralized searchable repository of all surveillance events.



> Keep track of all your infrastructure devices, no matter how large or dispersed your IT enterprise. InfraStruXure Central collects and organizes all power, cooling, and environmental data so that you get a single, consolidated view.

Schneider Electric Critical Power and Cooling Services: Experience You Can Use

Exploring your options, from server room layout to picking technology. Working within a budget. Installing and configuring the equipment as painlessly as possible, with minimal engineering.

These are just a few areas where you can put our services to work for you, saving you time and money, and cementing your IT department's place as the reliable backbone of the business you support.

Our services are there to provide support at every stage of your server room's life cycle, from the early planning stages through the eventual hardware replacement. And each stage is as important as the next—by inviting us into the formative planning process, you ensure greater success in the later phases, and a solid foundation to build upon.

In the same way, maintaining your server room is the only way to ensure that your equipment will operate the way you need it to and with the efficiency you expect from our products.

Among the tools and services we offer:

- Site survey and assessment services, including a customized report with the optimized facility plan for your site, to supply you with the necessary information to design your facilities for optimal performance.
- Free online design and planning tools to help you develop a server room that meets your requirements.
- Project management services to guide project coordination, facilitate communication, and manage the project budget to ensure your projects are completed on schedule and within budget.
- Network integration assistance, to help you transition from your current setup to your new APC solution, from server migration and cable management to software integration.
- Preventive maintenance services, including an examination of your system design to ensure optimal performance and prevent problems before they occur.
- On-site services, bringing APC engineers to your location swiftly to isolate and correct the problem in as little time as possible, minimizing downtime.
- Remote monitoring services, 24 hours a day, designed to keep your system running at optimal performance.



Recommended Solutions for Typical Customer Scenarios

	Standard-density	High-density	Ultra-high-density
Rack	NetShelter® 4-Post Open-Frame Rack <ul style="list-style-type: none"> Advanced power distribution and cable management features for server, networking, and telecom applications. 	NetShelter SX 42U 600mm wide x 1070mm deep Enclosure <ul style="list-style-type: none"> Compact width optimizes server room space, and 42U height allows you to easily roll it through doorways. 	NetShelter SX Enclosures (42U-48U, 600mm and 750mm wide) <ul style="list-style-type: none"> Advanced cooling, power distribution, and cable management for server and networking applications.
PDU	Metered Rack PDU <ul style="list-style-type: none"> Manage power at the rack level with pinpoint control. Monitor power draw. 	Switched Rack PDU <ul style="list-style-type: none"> Manage power at the rack level with pinpoint control. Monitor power draw and control outlets remotely. 	Switched Rack PDU <ul style="list-style-type: none"> Manage power at the rack level with pinpoint control. Monitor power draw and control outlets remotely.
UPS	Smart-UPS® (750-5000VA) <ul style="list-style-type: none"> Includes PowerChute® Management Software. Tower and rack optimized form factors. Add-on management capability. 	Smart-UPS RT (1kVA-20kVA) <ul style="list-style-type: none"> Scalable runtime. Rack/tower convertible. Integrated UPS remote management for all models above 3kVA. 	Symmetra® LX (4-16kVA) <ul style="list-style-type: none"> Modular, redundant architecture that can scale power and runtime as demand increases or when higher levels of availability are required. Embedded UPS management.
Management	Network Management Cards <ul style="list-style-type: none"> Remotely, securely manage power distribution, cooling, and UPS through a Web browser, CLI, or SNMP. 	InfraStruXure® Central <ul style="list-style-type: none"> Collects and organizes all power, cooling, and environmental data, giving users a single, consolidated view and reporting capabilities. Real-time device monitoring and immediate event notification, enabling quick assessment of critical situations. 	InfraStruXure Central with Capacity Manager and Change Manager <ul style="list-style-type: none"> Collects and organizes all power, cooling, and environmental data, giving users a single, consolidated view and reporting capabilities. Intelligent modeling and analysis provides users with the optimal location for new data center equipment and the impact of planned changes.
Monitoring	NetBotz® 200 <ul style="list-style-type: none"> Room-level environmental monitoring for temperature, humidity, smoke, and more. Basic color video surveillance. 	NetBotz 320 with door switch kit <ul style="list-style-type: none"> Room- and rack-level environmental monitoring for temperature, humidity, smoke, dust, and more. Basic color video surveillance. Expansion capabilities to add more sensors and cameras. 	NetBotz Room 455 with rack access <ul style="list-style-type: none"> Room- and rack-level environmental monitoring for temperature, humidity, smoke, dust, and more. Advanced video surveillance. Expansion capabilities to add more sensors and cameras.
Cooling	InRow® <ul style="list-style-type: none"> Closely couples cooling with heat load, preventing exhaust air recirculation to sensitive IT equipment. 	InRow <ul style="list-style-type: none"> Closely couples cooling with heat load, preventing exhaust air recirculation to sensitive IT equipment. 	InRow RD with containment <ul style="list-style-type: none"> Closely couples cooling with heat load, preventing exhaust air recirculation to sensitive IT equipment. Contains and conditions exhausted air to maximize cooling predictability, capacity, and efficiency.
Server Access	16-Port Multi-Platform Analog KVM Switch <ul style="list-style-type: none"> Manage multiple servers with just one keyboard, monitor, and mouse. 	Rack LCD Monitor Keyboard Mouse <ul style="list-style-type: none"> Integrated keyboard, 15" or 17" LCD monitor, and mouse allows a KVM switch to be mounted in the rear of the device to minimize support and maintenance costs. 	Rack LCD Monitor Keyboard Mouse, Console Port Servers <ul style="list-style-type: none"> Integrated keyboard, LCD monitor, and mouse allows a KVM switch to be mounted in the rear of the device to minimize maintenance costs. Remote management of servers and other devices, providing access, activity monitoring, event logging, and automated configuration.

Racks

NetShelter® 4-post open-frame rack

NetShelter® SX rack enclosure

Management

UPS network management & environmental monitoring cards

InfraStruXure® Central with Capacity and Change Manager

PDUs

Metered Rack PDU

Switched Rack PDU

Cooling

InRow®

InRow® RD*

*available Q3 2008

UPSs

Smart-UPS®

Smart-UPS® RT

Symmetra® LX

Server Access

KVM Switch

Rack LCD Monitor Keyboard Mouse, Console Port Server

Environmental Monitoring

NetBotz® cameras and room monitors

For complete technical specifications and further details on APC products, go to www.apc.com/products

InRow® RD: Predictable Cooling for the Unpredictable Environment

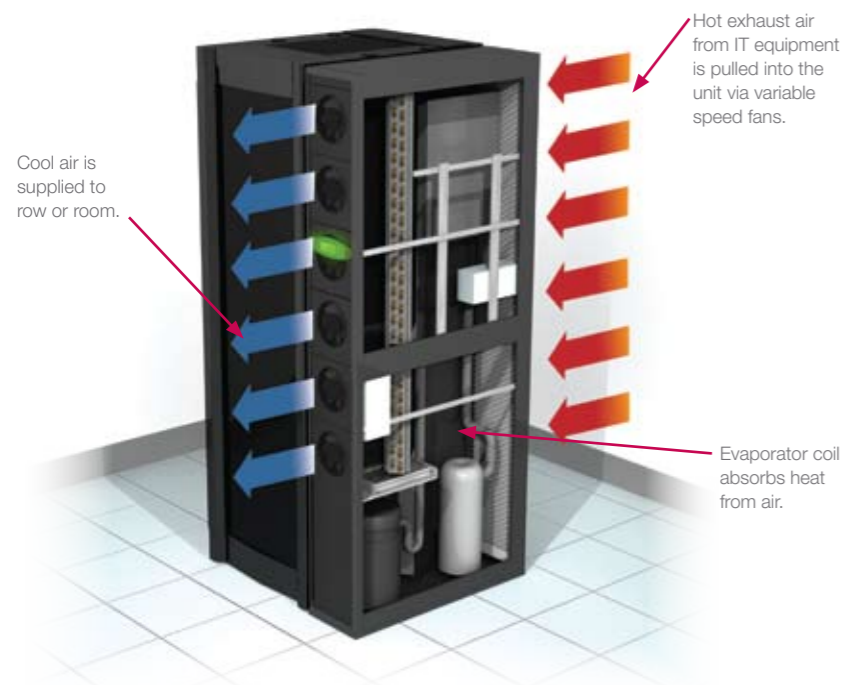
Size, flexibility, functionality—every aspect of the InRow RD was made to complement your typical server room setup, accommodate growth, and allow you to deploy high density with confidence.

The revolutionary Close Coupled Cooling™ design of this energy-efficient unit is also what makes it so easy to accommodate. Instead of being located on the end of a row or on a cooling island, the InRow RD is poised to capture hot exhaust air directly from the IT equipment—so cooling becomes more predictable. And with energy-saving functions such as variable speed fans, capacity modulation, and a row-based form factor, you can count on lower operating costs.

Also, with InRow RD, you'll get:

- Built-in condensate pump to ensure continuous operation.
- Hot-swappable, variable-speed fans.
- The ability to monitor current and available cooling capacity in real-time.
- Predictive fault notification.
- Heat rejection up to 10kW with waterless design.
- Built-in management capabilities.
- The choice between a fluid- or air-cooled solution.

InRow RD Airflow



> The InRow RD is powerful enough to provide dedicated, predictable air conditioning for spaces with no cooling, or as a supplement to overloaded comfort systems.



Looking for more information about one of our products? Curious to see how our solutions work in a real-world environment? Want to see a NetBotz® device in action?

APC online tools, research guides, and online courses give you all the background you need to make informed decisions and smart investments.



■ CHECK OUT . . . APC online resources

APC has a host of online tools to help you clarify your requirements and explore your options:

- **InfraStruXure® Design Reference Gallery**
Jump-start your server room design. View an online portfolio of “reference designs” that match for your specific criteria.
www.apc.com/products/infrastruxure/designgallery
- **Online Selectors**
The APC Online Selector Tools cut right to the chase to recommend the products that best meet your needs, saving you time and hassle.
All the Selector tools are accessed via the “Selectors” tab in the top menu bar at www.apc.com
- **Test Drive**
See products like the InRow® SC, InfraStruXure Central, and NetBotz 500 in action, with live images sent right to your desktop to show you the functions you can expect from our products.
<http://testdrive.apc.com>



■ READ . . . APC Data Center Science Center research

Take advantage of more than 100 “must read” white papers addressing a wide range of topics, from strategies for dealing with environmental issues to practical how-to guides for typical server room situations, such as:

- Accounting and Tax Benefits of Modular, Portable Data Center Infrastructure (#115)
- Avoiding Costs From Oversizing Data Center and Network Room Infrastructure (#37)
- NetShelter® SX Cable Management Guidelines (#137)



■ LISTEN . . . Research guides on podcast

The most productive 20 minutes (or so) you'll spend all week. With dozens of “Tech Talk” podcasts available, listen to the experts discuss the latest solutions to today's biggest challenges:

- Ten Steps to Solving Cooling Problems Caused by High Density Server Deployment (#42)
 - Rack Powering Options for High Density (#29)
 - Understanding EPO and its Downtime Risks (#22)
- Visit the APC Podcast Portal at www.apc.com/podcast



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