THE RED REPORT:

CDW® PEOPLE WHO GET IT™

REDUCING INEFFICIENCIES WITH EFFECTIVE POWER AND COOLING.

DATA CENTER CLIMATE CHANGE.

SOLVED.

POWER–HUNGRY MACHINES ARE NEGATIVELY AFFECTING YOUR SERVER ENVIRONMENT.

We get it. And we've helped many companies get control over their data centers with a smart power and cooling strategy.

As data grows, so do data centers. And as data centers grow, so do their power demands. High–density blade servers can deliver more processing power in a smaller footprint, but they also bring higher power costs — three to five times as much as previous–generation equipment. With energy required both to power the computing infrastructure and to cool heat–generating servers, conservation isn't easy.

But as utility rates rise, power and cooling accounts for more of data center operating costs. IDC estimates that for every dollar spent on new hardware, companies must spend an additional 66 cents on power and cooling.[1] To keep these costs down, a complete power and cooling strategy is necessary. With the right solutions in place, you can get better control of your climate and your budget.

To learn more about how we've solved it before, call your CDW account manager or 800.800.4239

[1] IDC Analyze the Future white paper, *Delivering Improved Energy Efficiency for the Data Center*

COMPLICATIONS FROM CONSOLIDATION.

It might seem that reducing the number of physical servers in a data center can only bring good things. But without a cooling plan that matches the new environment, inefficiencies can add up quickly.

EXCESSIVE HEAT

When multiple servers are consolidated onto a single-blade server, high performance comes with high server-rack densities and high heat levels. Overall power consumption in the data center may be reduced, but hot spots are created.

EXCESSIVE COSTS

To counteract hot spots, cooling systems have to work harder than ever. This adds significant costs to the overall energy bill for data centers. Further increasing the costs, many systems are inefficiently deployed or improperly operated.

EXCESSIVE RISK

As power and cooling needs increase, older systems may not be able to keep up. And if they fail, the data center fails. By investing in power and cooling improvements, companies can lessen the risk of downtime caused by hardware failure.

30–60%

The amount of the data center utility bill that goes to support cooling systems.

Source: Eaton white paper, *Top 10 Ways to Save Energy in your Data Center*

THE ELEMENTS OF EFFICIENCY.

To truly optimize a data center, a multi–pronged approach that includes the right technology and the right management practices is necessary.

SERVER CONSOLIDATION

Power consumption can be drastically reduced by consolidating to blade servers. Compared to traditional rack servers, they can deliver the same processing power while requiring 20 to 40% less energy input.[1]

HIGH–EFFICIENCY POWER

Uninterruptible power systems provide power assurance and distribution. But previous–generation units only provided 85–90% efficiency. Upgrade for improved efficiency levels as high as 97%.[1]

RACK CONFIGURATION

Alternating equipment to allow for alternating aisles of cold air intake and hot air exhaust can help create a more uniform air temperature. Blanking panels can help ensure that air from hot aisles doesn't mix with air from cold aisles.

MODULAR COOLING

In an ever–changing data center, it is important to have cooling systems that can easily adapt to new environments. Modular systems can be moved from place to place and supplement traditional cooling to counteract hot spots.

90% AND HIGHER

The efficiency levels of the latest high–efficiency uninterruptible power systems.[2]

[1]APC white paper #46, *Cooling Strategies for Ultra–High Density Racks and Blade Servers*
[2]Eaton white paper, *Top 10 Ways to Save Energy in your Data Center*
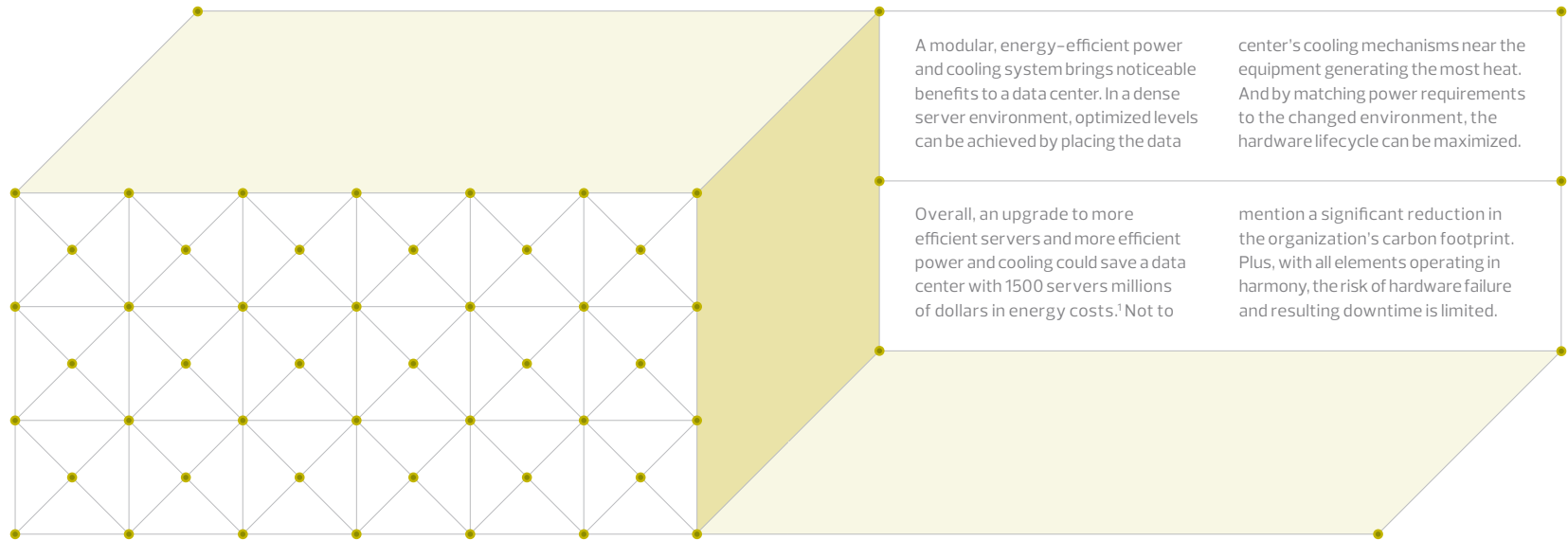
EVERYTHING IN ITS PLACE.

With a strategic power and cooling system in place, the whole data center can run smoothly and efficiently. And when the data center is more efficient, operating costs are reduced.

A modular, energy-efficient power and cooling system brings noticeable benefits to a data center. In a dense server environment, optimized levels can be achieved by placing the data center's cooling mechanisms near the equipment generating the most heat. And by matching power requirements to the changed environment, the hardware lifecycle can be maximized.

Overall, an upgrade to more efficient servers and more efficient power and cooling could save a data center with 1500 servers millions of dollars in energy costs.[1] Not to mention a significant reduction in the organization's carbon footprint. Plus, with all elements operating in harmony, the risk of hardware failure and resulting downtime is limited.

$86,000

The energy cost savings from a mere 10% reduction in power consumption in a data center with 1000 servers.[1]

[1] Eaton white paper, *Top 10 Ways to Save Energy in your Data Center*

FEATURED SERVICE:

POWER & COOLING AUDIT

We can help you find inefficiencies in your data center with a Power and Cooling Audit. This onsite audit provides a foundation for your comprehensive data center optimization plan. It includes a power and utilization efficiency audit to help determine where energy is being wasted and a power analysis to gauge the current usage of your HVAC system. Using these findings, our power, cooling and rack solution architects can recommend a comprehensive solution for your data center's specific needs.

1. **Discover energy inefficiencies**
2. **Review use of current system**
3. **Recommend solutions**

Power, cooling and rack solution architects: We're here to help with expertise in high–density and perimeter cooling solutions, enterprise UPS, power distribution, system monitoring software and more.

WHY PEOPLE WHO GET IT NEED PEOPLE WHO GET IT.

When it comes to managing energy use, the biggest drain can be on your own energy. That's why we offer you more than just products. We offer you the people and the plan to turn them into real solutions. The breadth and depth of our product and service offerings are extensive. And with decades of experience, our solution architects can help you develop a power and cooling plan that fits your needs and your budget. It's more than just boxes. It's power and cooling. Solved.

To learn more about how we've solved it before, or to speak with a solution architect about technologies for your business, contact your CDW account manager or call 800.800.4239

Or, visit CDW.com/energize

The People
Your dedicated CDW account manager is backed by a team of certified power, cooling and rack solution architects.

The Products
Our wide–ranging partnerships give you access to thousands of technology products in every area, including data center optimization, security, mobility, business continuity and more.

The Plan
We offer a variety of services that makes the most of your investment and makes your job easier.

FEATURED PARTNERS

A Global Leader in Power–Availability Solutions
A Schneider Electric company, APC is known for quality, innovation and support. With more than 100,000 employees in more than 130 countries, APC continuously invests in research and development to bring you efficient and innovative products. We work with APC to bring you comprehensive power solutions to improve manageability, availability and performance.

Power Protection for Every Application
With more than 85 years of industry experience, Tripp Lite is an established manufacturer of power protection, network control and connectivity solutions, from the desktop to the data center. Their complete line of over 3000 products provide power protection and networking support for any size installation. Tripp Lite is a trusted partner for all your power protection and connectivity needs.

Intelligent, Integrated Data Center Solutions
Emerson Network Power delivers a full range of Liebert UPSs and PDUs, from individual products to integrated systems that keep network closets, computer rooms and data centers up and running. With solutions from Liebert, we can help you sustain critical operations that simply can't go down.

HP Ranks #10 on the 2010 Fortune 500
To provide protection for servers, computer systems and other critical network equipment, HP has developed a series of UPSs, ranging from 750VA to 12000VA. These UPSs enhance reliability and ensure high availability and uptime, while accompanying power management software continuously monitors and manages the UPS. HP is a 2010 CDW Partner of the Year.

Partnerships, Certifications & Awards
· APC Integrated Design Consultant for Data Center
· APC Sales Associate
· APC Sales Professional for Data Center
· Emerson Advanced Cooling and Three-Phase UPS Certification
· Tripp Lite–Certified Sales Engineer

To see how APC, Tripp Lite, Emerson and HP can help create data center efficiencies, contact your CDW account manager or call 800.800.4239

Or, for more information, visit CDW.com/energize