

# Data centre essentials: remote power management and real-time monitoring

A White Paper from Raritan

## Increase Operational Efficiencies and Security With Remote Power Management and Server Access

They say that life happens in a blink of an eye. In the case of Choice Hotels International, which operates more than 6,300 hotels worldwide, life happens at a much faster pace. At the heart of one of the world's largest lodging companies is its global reservation system. When someone checks in or out, a room is looked at, or a reservation is made, the transaction

is promptly processed via Choice's data center. The challenge of course is that any downtime not only means lost revenue, but dissatisfied customers. This challenge is all too familiar for many corporations; fortunately, a solution exists whereby a virtual presence within an offsite data center is created.

### Leveraging Remote Intelligent Power Management

Before you can successfully leverage remote intelligent power management, you must first determine what requirements are necessary for an existing in-cabinet PDU. These requirements might include:

- Reliable power delivery.
- Remote outlet-level monitoring of both power and energy.
- An easy-to-use web interface.
- Efficient support for servers and devices, including existing (and / or future) monitoring solutions.
- The ability to unplug a server or device virtually.

The last listed requirement is arguably the most important for corporations interested in managing their data centers remotely. Through a web-based GUI, data center managers are able to not only monitor sensors remotely, but they are able to

report and plot values in real-time. This information is then leveraged to optimize the data center environment for maximum efficiency levels.

For example, with two PDUs in each cabinet, both ingoing and outgoing air temperatures, as well as humidity levels, can be monitored and adjusted to ensure proper operations during all seasons. When combined with any DCIM or Power IQ energy management software, the latter abilities are given an analytics boost that tracks power consumption trends for every server. These trends provide early indicators of potential server issues, so that the potential malfunctions can be resolved before they are realized. Once remote monitoring is in place, corporations will need to achieve remote server access, to further optimize security, reliability, and operational efficiencies.

### Achieving Secure Remote Server Access

Digital KVM switches in a colocation data center simultaneously create a graphical user interface, while also providing secure access to any servers and devices that use an Internet browser. Through Raritan's Command Center SecureGateway, a single console view is created to provide server

access via an established secure gateway that goes straight through the KVM. When combined with existing PDUs, KVM switches are able to increase productivity and security, while also providing a complete picture of the entire data center, including micro details at the cabinet-level.

Additional benefits include:

- Increased uptime.
- Exceeding established SLAs.
- Enhanced operation efficiencies.
- The ability to unplug a server virtually.
- Outlet-level power switching is achieved.
- Reduction in operational costs.
- Improved operational insights, including data gathered across individual devices and multiple power sources.

### The Bottom Line: KVM Switches Deliver Additional Benefits to Existing PDU Solutions

If corporations want to enjoy the benefits of remote data center monitoring and access in real-time, then they need to leverage the power of both in-cabinet PDUs and KVM switches. While a PDU can provide the ability to remotely power-down a server, KVM switches offer numerous security, productivity, and operational benefits. Together, these two vital tools give operations staff a complete macro and

micro picture of the entire data center. From a server's locational data, to the network port that it is using, KVM switches and PDUs, coupled with DCIM software provides corporations with the capabilities needed to successfully manage power, space, moves, changes, and equipment additions. When life operates at the blink of an eye, the latter abilities are vital to successfully managing data centers remotely and virtually.



As temperatures continue to rise in the summer months and energy clusters form, data center managers find themselves preparing for the upcoming "outage season." In fact, from June to August more data centers experience outages than during any other time of the year. These outages are due, in part, to the rapidly rising increase in power demands that

can no longer be met by an archaic power infrastructure. In addition to their fight to avoid outages, data centers are left fighting external temperatures that can wreak havoc on ill-prepared facilities. Fortunately, there is a bit of good news; with the right tools savvy data center managers can beat the summer heat and avoid the brownouts that are lurking behind every heatwave.

### Select the Right Tools to Monitor Summer Heat Waves and Energy Surges

Fighting brownouts starts with a good spring cleaning. No, this doesn't mean hiring a qualified crew to clean the data center, it means completing an annual or quarterly health management check. During this spring cleaning inspection, data center managers should identify which units are no longer operating at efficient levels. They should also ensure that real-time data analytics have been installed via an infrastructure management (DCIM) tool, such as Power IQ. The latter tool enables data center managers to efficiently monitor and utilize existing data center power infrastructure. They can also review health maps, cooling charts, and vital reports in real-time. These insights allow data center

managers to more effectively respond to real-time power trends and loads.

Speaking of power trends, the right power distribution methods can go a long way towards preventing unwanted and costly data center outages. Raritan's PX intelligent rack PDU Series is much more than a simple power distribution tool. In fact, the PDU series offers real-time power monitoring, enhanced data center infrastructure management, and environmental sensors that actively assess interior and exterior conditions. With outlet switching, three-phase power distribution, and individual outlet metering, the PX Series is the trusted tool of the world's largest data center operators.

### Leverage Real-Time Monitoring to Act Before a Summer Outage Strikes

Did you know that the average cost of a data center outage is \$28,900? However, when the outage impacts a large company, such as Delta Airlines infamous 2017 outage, the costs can be upwards of \$100 million. With these costly factors lurking, data centers need to leverage real-time monitoring tools if they want to collect the actionable data needed to maximize cooling efficiency and power usage during brownout season. Unfortunately, a recent study revealed that 32 percent of data managers lack the

tools needed to gather, analyze, and react to actionable data sources. Additionally, as many as one in five data centers only leverage rack level thermal sensors coupled with spreadsheets to maximize their cooling efficiency. The latter scenarios set the stage for costly data center outages.

The solution to avoiding unwanted outages requires data centers to use tools that are specifically designed to combat excessive energy consumption and an over extended

power grid during the summer months. Raritan's PX 5000 Series PDUs are equipped with bi-state latching relays, which means that they consume 70 percent less energy than a conventional alternative. Additionally, the PDUs use outlet sequencing to minimize in-rush current overloading. The bi-state latching relays can also be set to retain an on / off state permanently, which ensures that critical power is maintained in the unlikely event of a PDU failure. Increased

metering accuracy that is measured on all power load types, including real-world loads, offers the insights that data centers need to identify power feeds, lower the risks of unexpected downtime, and reduce errors. These benefits coupled with remote power controls give data center managers the capabilities that they need to instantaneously reboot hung servers or provision outlets for new devices.

### The Bottom Line: Effective Tools to Mitigate the Risks of Summer Outages

The moral of the story is simple: if data center managers want to avoid the risks associated with a predicted uptick in brownouts, then they need to take the right steps to ensure that they are properly prepared. These steps include using the right tools, such as the Raritan PX intelligent PDUs, which are designed to effectively help

data centers avoid outages. Through real-time data monitoring and power distribution tools that provide outlet switching, accurate metering, and environmental sensors, data center managers can effectively beat the summer heat and avoid unexpected downtime.



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