

Omnicom Group's Unit 7 Data Center Goes Lean and Green with Raritan's Server and Power Management Solutions



When Unit 7's data center cooling unit went on the fritz during their IT Director John Fouke's year-end holidays, a power strip with built-in intelligence and Internet connectivity was able to email critical details about the problem. Fouke, in turn, was able to remotely access additional information on the current temperature in the server room through sensors connected to the power strip. He assessed that the room's temperature was far too high and was able to selectively power down servers and devices remotely until the cooling unit was repaired. While he was logged in, Fouke also checked the vitals of his data center equipment which was supporting a number of creative teams working over the holidays on a new online marketing campaign that was launching in the new year.

All done from Fouke's home – disaster averted, and vacation saved.

"Raritan solutions provide Unit 7 complete visibility into the data center – from the power strip to a server's BIOS – and secure access from anywhere."

– John Fouke, IT Director, Unit 7

When Fouke joined Unit 7, a groundbreaking relationship marketing agency, part of the Omnicom Group, his first and foremost challenges were the space and power constraints presented by the existing server room. The large air conditioning unit perched precariously above valuable IT assets was all the motivation he needed to map out a new physical layout.

Unit 7 also wanted to enhance its data center with an emphasis on energy-saving virtualization and other green computing technologies, while continuing to ensure performance and security.

Customer	<p>Unit 7, a New York City relationship marketing agency, part of the global holding company, Omnicom Group, Inc.</p> <p>Clients include some of the world's top marquee brands, including Pfizer, Reliant Energy and Bristol-Myers Squibb.</p>
Challenges	<ul style="list-style-type: none"> ▶ Physical space constraints and inadequate power in the server room ▶ Over- and under-utilization of servers ▶ Poor visibility of servers' energy use and temperatures in the racks ▶ Lack of centralized management tools to monitor, access and control data center assets from anywhere
Solutions	<p>Power Management Dominion® PX™ Intelligent Rack PDUs Power IQ™ Energy Management Software</p> <p>Remote Access and Control Dominion KX II KVM-over-IP switches CommandCenter® Secure Gateway</p> <p>Asset Tracking and Intrusion Detection CommandCenter NOC</p>
Results	<p>Unit 7 built a new data center – tripling its previous space. Using Raritan's data center management solutions, the IT team:</p> <ul style="list-style-type: none"> ▶ Plotted server and device locations for maximized utilization and power efficiency ▶ Enhanced remote access and intrusion management capabilities ▶ Simplified IT management through centralized access and management of core IT assets ▶ Determined the baseline energy usage of its new data center, analyzed device-level data, and took corrective actions. Unit 7 now tracks energy usage of its servers and temperature throughout its server racks – automatically and continuously ▶ Improved operations uptime

Pushing the Envelope

"We clearly identified that we had a physical environment issue," said Fouke. "We had a large air conditioning unit installed over the room and that's not a good spot because of the chance for leaks and condensation falling on our servers. We were very tight on space, so it was important to look at virtualization to gain more computing power in less space. And with only a certain amount of power available in our multi-tenant building, we wanted to have some kind of power management in play."

Unit 7's previous server room was essentially a large closet with one relay rack and three full-size racks of network switches, routers, servers and backup batteries. As new services and applications were needed to support the agency, new servers were shoehorned in.

"Our EVA rack, where our virtual infrastructure runs, was an entire rack. We had a second rack with Apple Xserves and Raid units – which support our graphic artists and production people," Fouke said. "We had Cisco network gear. We probably had eight physical servers and more than a dozen virtual servers. And we completely and utterly exhausted the physical space that we had."

Unit 7's goals in mapping out the new server room included maximized utilization of servers and physical space, as well as reduced power consumption and energy costs. After a product demonstration and consultation with Raritan's engineers, Unit 7 opted for several Raritan products – including access solutions CommandCenter Secure Gateway and Dominion KX II; power management solutions Dominion PX and Power IQ, and monitoring solution CommandCenter NOC. The Raritan solutions would provide Unit 7 complete visibility into the data center – from the power strip to a server's BIOS – and secure access from anywhere.

Mapping Out a Successful Migration

In designing the new center, Fouke expanded the physical space to achieve better cooling, and plotted a transition path for each server using Raritan's PX PDU intelligent power management solution. "We built out a new room physically and then installed racks for our gear and plotted a transition path for which server would go where," Fouke said, adding, "We used the PX units to give us accurate information on each server's power usage, and planned it out to where we would have good redundancy."

Raritan's PX, an intelligent power distribution unit, uniquely collects both real-time information on rack-level and outlet-level power consumption, as well as temperature and humidity information via optional plug-and-play sensors. Power information can be easily read at the rack or from any Web browser. The detailed, device-level power information on Unit 7's servers gathered by the PX is analyzed using Raritan's Power IQ energy management software.



Power IQ supports "what if" analysis, tracks energy changes and identifies underutilized or idle servers. According to Fouke, the installation of Raritan's power management solutions was simple. "We used the virtual appliance version of Power IQ and setup was easy." The virtual appliance runs on an existing Unit 7 VMware® server – saving the agency rack space, energy and hardware costs.

Power IQ also is being used to manage Unit 7's multiple PX intelligent power strips deployed throughout the data center. It enables the IT team to perform bulk firmware updates, and configure and monitor the health of the PDUs conveniently from a single Web interface.

The Move to the New Data Center

The combined Power IQ-Dominion PX solution's ability to determine rack capacity based on actual loads was particularly helpful for Unit 7's move to the new data center.

"In the new location, we tripled the physical space and improved cooling and airflow. We split out the rack power appropriately so that the most power-hungry unit was properly allocated in the new space," Fouke said. "The cooling was designed to meet the cooling requirements of the space. As you pack things tighter you have heat problems that are tough to deal with. If you have a looser environment, where servers are separated by some physical space, it's a little bit easier to keep components cool."

Dominion PX proved its worth almost immediately during Unit 7's move to the new data center space. "On the migration weekend when we had to move our entire environment, we identified one full rack that was way over its power spec. The batteries would cut out," Fouke said. "The PX helped us determine where that power spike was, so that we could spread the load better. Without having the power readout information on the PX, we couldn't have pinpointed the problem area."

Managing IT Energy

With Power IQ, Unit 7 was able to calculate the energy costs of its data center. Using Power IQ power usage reports, Unit 7 calculated that its data center, including lights and cooling, consumes about 10 to 15 percent of the agency's overall energy.



"Now that we have a baseline, and know the energy efficiency of each device in the data center and airflow dynamics, we can make improvements," said Fouke. "We are tweaking the room's cooling and airflow environment. We have made simple changes, such as installing server rack blanking plates so that cool air at the equipment intakes doesn't mix with hot exhaust air."

Power IQ's device-level metering and reporting helped Unit 7 identify additional candidates for physical-to-virtual server migration. "Power IQ and PX helped us identify three more 1U servers with low processor usage, which we will virtualize and, as a result, will help us realize additional energy savings," he said. Power IQ has also helped Unit 7 find available capacity on its racks.

By having accurate, detailed information, Fouke had enough data points to make the decision to tweak the temperature in the data center to run hotter by 5 degrees without impacting optimal operations – thereby saving money.

"Pinpoint reporting of a single IT device's energy consumption is now easy, and relatively clear to understand. Trending is also now possible within the DC," added Fouke. "The top three things that we track are active power, last month cost per day, and temperature and humidity over time. Our level of understanding of the data center equipment power usage went from partial with a lot of guessing, to a deep and granular insight. More work and analysis are needed, but we're on a green path. This is not an end run. We now have the tools."

Simplified and Centralized Access and Management of IT Infrastructure

The marketing agency relies heavily on its small IT group to keep things operating smoothly and seamlessly for both clients and staff. That means maximum IT operations uptime and security. "Email, for example, has got to be 24/7, or as close as possible," said Fouke.

"If we have any downtime, it's bad. Our IT infrastructure needs to support our internal employees – including creative, accounting and production teams – as well as hosted services and online marketing programs for clients. We require 24/7 computing muscle."

For managing its IT infrastructure, Unit 7 selected Dominion KX II, Raritan's enterprise-class KVM-over-IP switch that provides multiple users with secure remote control of servers. Authenticated and concurrent users can access and control servers whether off-site, on-site, or at the rack. Though Dominion KX II and Dominion PX are both self-contained systems that can be installed and operated separately, they can also be used with CommandCenter Secure Gateway (CC-SG), Raritan's centralized device management solution that gives IT administrators integrated, secure access and control at the application, operating system and BIOS-level.

Through a single sign on, CommandCenter Secure Gateway provides Unit 7 consolidated discovery, access and control, power management and auditing of all elements of an IT infrastructure, including virtual servers, physical servers, blades, networking equipment and other power devices. With CC-SG, Unit 7 users can log on to a single IP address and view all IT assets from a single screen, organized in a logical view of their choosing.

CC-SG is particularly helpful in a virtualized data center because it helps track the migration of data between virtual and physical machines – uniquely delivering accurate, real-time infrastructure views.

For its network performance needs, Unit 7 installed Raritan's CommandCenter NOC (CC-NOC), an availability and performance management solution that also provides intrusion detection and vulnerability scanning from a single dashboard. In addition to network and systems performance monitoring, CC-NOC also provides hardware and software asset tracking, report generation and email alerts with a link to the problem server, so administrators can get additional information on the affected server with a single click of a mouse.

Fouke points to intrusion management and centralized management as the favored features of his Raritan equipment.



"I would say that it's already better with the new data center and that the Raritan products certainly help, particularly with the management of energy usage and of the physical IT infrastructure," Fouke said. "Our next challenge is to look outside the data center for energy savings. We are looking at printers, copiers, lighting, etc. for additional cost and energy savings opportunities. We'll also look for other opportunities inside the data center by keeping an eye on the trend reports that Power IQ generates for us."

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– John Fouke, IT Director, Unit 7

"Intrusion management and central management are really important to me," he said. "The ability to have an aggregate view of all of my network devices, no matter where they are, so that I can remotely control the environment gives me a lot of fine granular control, even if I'm at home on the weekend."

Measurable Improvement, Meaningful Savings

Fouke considers the new data center and the Raritan solutions a big improvement over Unit 7's previous setup. He estimates that by moving to virtualization and fine-tuning the data center using Raritan's power management tools, he has probably generated close to 50 percent savings in terms of energy use and dramatically improved reliability.

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Raritan is a leading provider of secure IT infrastructure management solutions that provide IT directors, managers and administrators the control they need to increase data center productivity, enhance branch office operations and increase overall power management efficiency. In over 50,000 locations around the world, our integrated secure in-band and out-of-band server access, control and power management products help companies better monitor and manage server access, utilization and energy consumption. Raritan's OEM division provides advanced embedded hardware and firmware for server and client management, including KVM over IP, IPMI, intelligent power management and other industry standards-based management applications.

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