CASE STUDY

Protecting your technology investment.

How do you transform a legacy data center with more than 1,000 cabinets into a model of efficiency? One calculated step at a time.

Anthem's primary data center, built in 2002, was experiencing growing pains typical of many legacy data centers—ensuring newer, higher-density equipment has enough space, power and cooling—without increasing operational costs.

Anthem, Inc., the second largest managed health care company in the United States, operates four primary data centers. The largest is located at its corporate headquarters in Richmond, Virginia. This particular data center supports office spaces and numerous companywide business applications. The information technology (IT) staff, in partnership with facilities management, has carefully managed growth, but over time, found themselves facing higher energy costs and a growing dissatisfaction with their current equipment infrastructure provider.

> "I was able to take a tour (Capital One) and saw Chatsworth products everywhere, they talked about CPI's capabilities, products and value-added services as well."
>
> Dean Wagstaff, Director of Data Center Opertions, Anthem, Inc.

Anthem®

The cabinet solution includes CPI's GF-Series GlobalFrame® Gen 2 Cabinet with Vertical Exhaust Duct, Monitored eConnect® PDUs and cable management accessories.

Tackling the Challenge

The Richmond data center is 58,000 square feet (5388.3 square meters) and uses a traditional open air, hot aisle/cold aisle airflow strategy. Even though the data center uses only 10 percent of the building's overall square footage, it generates more than 82 percent of its electricity costs. In today's competitive market, such costs must be evaluated and improved, wherever possible.

Would it be possible to make dramatic improvements in such a large, established data center? Dean Wagstaff, Director of Data Center Operation, believed it was. With 30 years of experience in data center operations, Dean knew of several strategies for reducing energy use, but wanted to be sure to choose the best approach.

"Capital One was building a modern data center nearby. Through a networking opportunity, I was able to take a tour and saw Chatsworth everywhere," explains Wagstaff. "They talked about CPI's capabilities, products—particularly the cabinet and PDU—engineering, and value-added services as well. An unbiased opinion from those responsible for the site carried a lot of credibility."

US & Canada
+1-800-834-4969
Toronto, Ontario, Canada
+905-850-7770
chatsworth.com

techsupport@chatsworth.com

Latin America
+52-55-5203-7525
Toll Free within Mexico
01-800-01-7592
chatsworth.com.co

Europe
+44-1628-524-834
chatsworth.com

Middle East & Africa
Dubai, UAE
+971-4-2602125
chatsworth.ae

Asia Pacific
+86 21 6880-0266
chatsworth.com.cn

CPI
CHATSWORTH PRODUCTS

However, the Anthem team is very data-driven and needed to be sure the containment strategies and products, Wagstaff witnessed in a new build, would work for their existing one—without causing downtime.

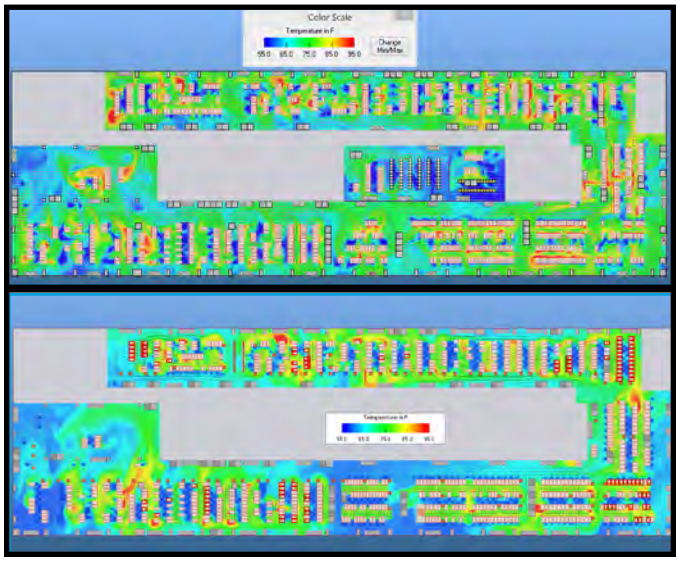
A key part of Anthem's managed growth strategy involved John Saunders, Anthem's Hardware Planner, who monitored, recorded and managed data center capacity manually for many years. This process only provided insight into past and current trends—not the future. If they took the leap to a new product and approach, would it pay off?

The Solution

Wagstaff worked with Josh Shait, Enterprise Account Manager at Anixter, a CPI distributor partner, to order and evaluate cabinets and power products from several manufacturers. Various cabinet and Power Distribution Unit (PDU) samples were lined up. Everyone who would use them was asked to provide feedback. CPI was the clear winner.

Two CPI team members—Chris Kline, Regional Sales Manager, and John Thompson, Field Application Engineer—were then introduced to the Anthem data center team. After understanding their needs and challenges from a cabinet and PDU standpoint, they began to expand their focus on the data center as a whole.

Thompson developed Computational Fluid Dynamics (CFD) models of the current data center, along with new models illustrating the benefits of implementing CPI containment solutions. This was a game changer for Anthem.



CFD models showing Anthem's Richmond facility before (top image) and after (bottom image) illustrating the benefits of CPI Containment.

"I wanted to get away from opinions. I needed data-driven results," said Wagstaff. "Requirements for space and power are easy to see, but cooling is more difficult. The models provided a visual illustration. It takes everything into consideration and tells the story, allowing us to justify the changes."

The path to improvement began with a complete containment strategy at both the cabinet and aisle level, composed of CPI products that are now a standard specification for all Anthem data centers.

For airflow containment at the aisle level, the flexibility and onsite customization features of CPI's Build To Spec Kit (BTS) Hot Aisle Containment (HAC) contains the hot exhaust generated by existing, multi-vendor cabinets.

The cabinet solution includes CPI's GF-Series GlobalFrame® Gen 2 Cabinet with Vertical Exhaust Duct, Monitored eConnect® PDUs and cable management accessories. GlobalFrame Gen 2 Cabinets feature enhanced airflow management, with 78-percent perforated doors to support optimal airflow, while the Vertical Exhaust Duct guides hot exhaust air out of the cabinet. Monitored eConnect PDUs provide continuous monitoring of voltage, current, power and power-factor measurements for total PDU usage, as well as each branch phase for complete power consumption monitoring of the cabinet. Additionally, eConnect PDUs support two temperature and humidity probes providing temperature and humidity measurement at each cabinet, and feature Secure Array® IP Consolidation technology, which greatly reduces the number of networking ports required for the PDUs.

For airflow containment at the aisle level, the flexibility and onsite customization features of CPI's Build To Spec Kit (BTS) Hot Aisle Containment (HAC) contains the hot exhaust generated by existing, multi-vendor cabinets. The BTS Kit features a field-fabricated duct that is used over a contained hot aisle as part of a closed hot air return. Sliding aisle containment doors seal the ends of the aisles without adding any additional clearance requirements. This solution integrates with perimeter cooling, provides immediate improved cooling efficiency and is compatible with economization methods.

Anthem's data center team has also implemented a Data Center Infrastructure Management (DCIM) software to track and trend power, temperature and humidity at the rack level and to track assets. This insight—when combined with a solid cabinet ecosystem that provides power, cooling and security—has contributed to higher levels of operational efficiency, not only at the Richmond facility, but also at Anthem's new data centers.

> "Requirements for space and power are easy to see, but cooling is more difficult. The models provided a visual illustration. It takes everything into consideration and tells the story, allowing us to justify the changes."
>
> Dean Wagstaff, Director of Data Center Opertions, Anthem, Inc.

Sliding aisle containment doors seal the ends of the aisles without adding any additional clearance requirements. This solution integrates with perimeter cooling, provides immediate improved cooling efficiency and is compatible with economization methods.

The Results Are In

Since implementation three years ago, Anthem has experienced significant improvements.

The combination of a CPI's containment strategy and the replacement of legacy Computer Room Air Handlers (CRAHs) has allowed Anthem to operate the CRAHs at 50 percent, rather than the previous 100 percent—saving thousands annually. The new air handlers have Variable Frequency Drives (VFDs), saving energy while working in concert with a slow, upward migration of the chilled water temperature. This increase, coupled with the increased supply air temperatures made possible by air containment, continue the domino effect in savings and efficiencies.

Thompson explains it this way, "Running a data center without airflow management is like trying to cool your house in the summer with the AC on and all of the windows open. Containment lets you close the windows and that reduces cooling cost".

Anthem's facilities team is also reaping the benefits. By standardizing on a product that provides high capacity and high reliability, the installation and deployment of new equipment has minimal impact on internal customers.

Ongoing Journey

"So far, we've implemented strong airflow management, upgraded CRAHs to variable speed fans, increased room temperature and reduced air volumes to closely match equipment requirements. We will continue investing in air containment strategies, resulting in increased yearly savings, which are already outstanding. Overall, it has been a great investment." said Wagstaff.

CPI's post-sale support is critical to the long-term running success. Thompson and Kline return regularly, update the models twice a year and confirm successes so that the IT staff can plan next steps.

Wagstaff is quick to explain that the improvements are steps along a journey. Saunders agrees, "A few years ago we decided to begin using floor grommets. We put one in, then we had only 900 more to go. But you have to start somewhere. Same with chimney cabinets. It's the future for this data center."

It's been said that the journey of a thousand miles begins with a single step. Anthem's journey is well-planned, carefully executed and strongly supported by a solid partnership between Anthem, Anixter and CPI.

CPI's Monitored eConnect® PDUs support two temperature and humidity probes providing temperature and humidity measurement at each cabinet, and feature Secure Array® IP Consolidation technology, which greatly reduces the number of networking ports required for the PDUs.

About Anthem:
Anthem, Inc. is one of the nation's leading health benefits companies, offering broad range of medical and specialty products. One in eight Americans receives coverage for their medical care through Anthem's affiliated plans. Anthem develops the technology, solutions and programs that give consumers greater access to care, working with providers to ensure a quality health care experience for consumers and easing cost challenges by advancing affordability in the health care industry. www.anthem.com

About Chatsworth Products
At Chatsworth Products (CPI), it is our mission to address today's critical IT infrastructure needs with products and services that protect your ever-growing investment in information and communication technology. We act as your business partner and are uniquely prepared to respond to your specific requirements with global availability and rapid product customisation that will give you a competitive advantage. At CPI, our passion works for you. With over two decades of engineering innovative IT physical layer solutions for the Fortune 500 and multinational corporations, CPI can respond to your business requirements with unequalled application expertise, customer service and technical support, as well as a global network of industry-leading distributors. Headquartered in the United States, CPI operates from multiple sites worldwide, including offices in Mexico, Canada, China, the United Arab Emirates and the United Kingdom. CPI's manufacturing facilities are located in the United States, Asia and Europe.
www.chatsworth.com

CHATSWORTH PRODUCTS

While every effort has been made to ensure the accuracy of all information, CPI does not accept liability for any errors or omissions and reserves the right to change information and descriptions of listed services and products.

©2018 Chatsworth Products, Inc. All rights reserved. Chatsworth Products, Clik-Nut, CPI, CPI Passive Cooling, eConnect, Evolution, GlobalFrame, MegaFrame, OnTrac, QuadraRack, RMR, Saf-T-Grip, Secure Array, SeismicFrame, SlimFrame, TeraFrame and Velocity are federally registered trademarks of Chatsworth Products. CUBE-iT, EuroFrame, Motive and Simply Efficient are trademarks of Chatsworth Products. All other trademarks belong to their respective companies. 03/18 MKT-60020-704