

Expanded Education

LIVE Data Center Tours

Don't miss this opportunity to expand your education. The Live Data Center Tours will take place on Sunday, March 7, 2:00–4:00pm.

Cost: \$200

Live Data Center Tours run concurrently. Please choose only one.

LDCT01: Vanderbilt University

Scott Milliken, Data Center Manager, Vanderbilt University ITS

Vanderbilt University is a premier university and medical center located in Nashville. This tour will include a behind-the-scenes look at the operations of the ITS network operations center and primary campus data center. ITS is responsible for voice and core infrastructure services throughout the enterprise and data and television networks for the campus. It also provides hosting facilities for various departments, including more than 1,000 computational research nodes and 400 TB of shared storage.

A government-issued photo ID is required

LDCT02: Dolphini Networks

Michael Krause, Chief Executive Officer, Dolphini Networks

Dolphini Networks Data Center connects the World to Nashville and Nashville to the World. Dolphini CEO Michael Krause details that the data center itself is a Lucent-designed central office grade structure built to meet and exceed the power and cooling demands of today's IT enterprise class client. Dolphini is designed with dual power grid connectivity and is a green power partner with Tennessee Valley Authority.

Dolphini utilizes APC's InfraStruXure product line of cabinets, power management, power distribution and Symmetra power array with a Cisco powered core. Dolphini has connectivity to multiple fiber carriers and owns more than 16,000 miles of dark fiber in the greater Nashville area. Dolphini has also constructed a line-of-sight tower for future wireless transmission of services.

A government-issued photo ID is required

In-Depth Learning

Tutorials

These optional full-day tutorials provide attendees with professional training and insight into today's key data center management issues. Tutorials will take place on Monday, March 8, 9:00am–3:00pm and include a continental breakfast and lunch.

Cost \$250

Tutorials run concurrently. Please choose only one.

Tutorial 01: Optimizing Data Center Infrastructure to Reduce Cost, Maximize Performance and Deliver High Availability

Given by Emerson Network Power executives along with their customers and partners

Budget cuts, demands to support more equipment, new codes and standards imposed by Homeland Security and pressures to reduce energy use are plaguing most data center managers. But, even as resources are stretched to their limits, availability is still the number one measurement of success. As the data center evolves into a strategic business asset, there is no room for compromise. Pressures to cut costs or energy usage will never excuse unplanned downtime.

This session will take a comprehensive look at how to maximize availability even as you reduce costs. It will present strategies to help you design your data center for flexibility, address rising density, bullet-proof your availability, and gain valuable data from your infrastructure, including financial information. Experts from six of Emerson Network Power's centers of expertise, as well as customers and partners, will present strategies that relate to the complete data center life-cycle: design and deployment, operation, and ongoing management and planning. The session will also focus on strategies that relate to UPS and precision cooling systems, monitoring and management systems, batteries, surge suppression, power switching and controls, and generators.

Tutorial 02: Complete Data Center Redesign and Upgrade: A Case Study

Scott Jeppsen, Data Center Data Center Specialist, JR Simplot Company

Chad Forrey, Data Center Manager, JR Simplot Company

Mark Sachs, Telecommunications Manager, JR Simplot Company

One company upgraded its entire infrastructure from the floor they walk on to the air they breathe. A most impressive aspect of this process is that it was implemented in its entirety on top of the existing data center operation and with absolutely minimal downtime. This tutorial includes actual photographs and video of the installation and replacement of major data center operational and environmental components, along with the timeline. The upgrades included: replacing raised flooring; thermal dynamic testing; upgrading air conditioning units and the system itself from overhead to under floor; upgrading the power infrastructure, including an additional power feed, new transformers, a new generator, and new green flywheels, FPC distribution panels, and rack-mounted PDUs; new rack enclosures, KVMs, PDUs, and switches; new cable management systems; and new enforced data center standards.

Tutorial 03: Developing a Data Center Policies and Procedures Manual

Kelly Kleinfelder, Manager Network and Data Center Operations, StoneMor Partners LP

Jeffrey Bissonette, Vice President IT, Company StoneMor Partners LP

In today's world, with threats of cyber-terrorism, Web security breaches and other problems brought on by ingenuity and technology, a comprehensive policies and procedures manual is critical for data center survival. This tutorial will provide attendees with the information necessary to develop a comprehensive data center policies and procedures manual applicable to their own data center. It will cover what to include and how to address each area. Topics to be discussed are: data center and operations procedures, backup and recovery, network security, change management, and more.

Tutorial 04: The Data Center Interactive Forum

Moderated by Bick Group: Chris Scaglione, VP & IT Infrastructure Strategy Consultant and Jon Jonz, VP and Facilities Infrastructure Consultant.

Inspired by the overwhelming positive feedback from last fall's conference, this session is being offered again this spring. Attendees will have the rare opportunity to collaborate with other data center managers on a wide variety of subjects and to listen, learn and share solutions to today's top technological challenges. Breakout groups will be formed and participants will be exposed to unique experiences. Groups will present their findings and moderators will synthesize the discussion and provide a complete summary to all attendees. Be a part of this extraordinary opportunity to share information and establish valuable connections with your peers.

Educational Sessions

Educational sessions presented at this conference are strictly educational and do not cover specific vendor products and/or services. AFCOM reviews all speaker materials to ensure the high quality of these sessions.

CASE STUDIES TRACK

Hear from real data center managers as they discuss how they have overcome specific challenges, and utilized best practices, what they are doing to successfully complete projects on time and on budget, and how they have helped to keep their team motivated during a down economy.

CS01: Where Did My Old Data Go?

John T. Schroeder, DC Operations Manager, Pearson

Government and business expectations for the security of stored data have changed dramatically in our new e-commerce, outsourced and mobile technology environment. This presentation will draw on real-life examples of storage media gone missing. Learn how Pearson improved its operational practices through education, process improvement and IT tools, and discover how they met compliance issues and can now ensure that stored data does not end up in the hands of others when media is disposed of or reused.

CS02: Avoiding the Crisis of Continuing the Status Quo

Scott Milliken, Data Center Manager, Vanderbilt University

Shanmuga Sundaram, Director of Strategy and Planning, Vanderbilt University

Every data center manager has customers or internal departments that simply won't give up their own way of doing business no matter how it affects other areas. Operating under the status quo not only puts the entire data center at greater risk, but also creates a large number of operational inefficiencies. This presentation will examine how Vanderbilt University ITS was able to sell a data center change-in-practice to both technical and business leaders that everyone could live with. The key outcome of this change-in-practice was creating a road map for avoiding major capital outlay by continuing to live within the data center space that we have today.

CS03: DR–Roll Your Own!

Kori Youngblood, Data Center Manager, Gordon Food Service

Many voices in the industry would tell you that the best option for disaster Recovery would be to find a third-party hosting facility and a consulting firm to create, manage, and run your DR plans. Not only is it possible to do this work in-house, but it will most likely be cheaper (and perhaps better) to design, implement and maintain disaster recovery plans within your own shop. This session will discuss the transformation Gordon Food Service has gone through from having no recovery capabilities to holding a full rehearsal of over 180 applications running at their DR site. Included will be a look at some of the benefits, such as better control and use of IT assets and the risks for doing DR internally.

CS04: IRS Data Center Operations

Anthony McMahon, Director, ECC, Department of the Treasury

This presentation will provide a detailed overview of the nation's tax processing data centers, remote locations, staff, and infrastructure. Attendees will gain an understanding of what it takes to complete a successful tax filing season of processing more than 156 million individual and 50 million corporate tax returns each year. Attendees will also learn the mechanics of maintaining operational control of more than 1,200 employees and an infrastructure disbursed into 55 locations. The presentation will also provide a detailed description of the process through which both paper and electronically filed returns go.

CS05: ITIL and Service Management

William J. Gillespie, VP and CTO, WellSpan Health

John Jacoby, Data Center Operations Manager, WellSpan Health

This presentation will discuss our experiences in implementing ITIL at WellSpan in order to improve our service-level management, and change our other IT disciplines, while at the same time manage costs. We will speak to the changes we have made as a result of ITIL, such as the adoption of a change advisory board, and the steps required to implement ITIL across the organization. Attendees will hear the specific results we have seen, as well as the metrics we have used to measure improvements and ROI.

CS06: DiaGrid: Multi-Campus Supercomputing from Unused Cycles

Jason Stowe, Founder and CEO, Cycle Computing

John Campbell, Associate Vice President of Information Technology, Purdue University
At Purdue, the demand for computational power needed for research rapidly outpaced the budget for new servers and the space to run them. At the same time, most machines across campus were used less than half of the time. The challenge was to harness these unused computational cycles for multiple colleges while building a framework that maintained scalability and ease of use. Purdue collaborated with Cycle Computing to build DiaGrid, a grid of idle campus computers/servers to provide computational capacity to researchers. DiaGrid's motto became "No Cycle Left Behind." By partnering with other campuses across Indiana, Purdue increased its total capacity to more than 177 teraflops, which is equal to a \$3 million supercomputer requiring

several thousand square feet of data center space. Today, with 28,000 processors, DiaGrid offers two million computing hours per month. Also, the research clusters within DiaGrid average about one percent to two percent at idle, providing one of the highest utilization levels ever. This session will discuss the journey that brought Purdue and Cycle Computing together to form DiaGrid.

CS07: Live Data Center Upgrades—Best Practices Followed and Learned

Todd Gale, Regional Data Center Manager, ViaWest, Inc.

This presentation reviews a series of major upgrades at one of ViaWest's largest data centers and how best practices were applied to ensure that the upgrades were completed as planned, with no interruption of services or customer impact. We explore how growth presents opportunity, and how leveraging good design attributes can provide a stable platform on which to launch major system upgrades and system expansions. We also discuss the impact of vendor and contractor selections, application of methods of procedures and other industry procedures and their impact on successful projects.

CS08: Data Center Ecosystem

Kevin Barney, Data Center Manager, UCSF

The fast pace of Data Center growth and strict requirements of availability and efficiency requires that IT and Facilities Managers work together to plan, operate and manage the whole data center eco-system. This case study will examine how collaboration between the two groups can lead to increased productivity and better performance relative to availability and efficiency goals and how the lack of cooperation between the two groups can lead to a breakdown in effective data center operations.

CS09: Achieving Modular Design: Planning for Data Center Growth

Mike Andrea, Director, Strategic Directions Group Brisbane, Australia

This session presents a modular-designed, pay as you grow case study from a truly world class data center in Australia. The Polaris data center is a brand new \$200 M Tier 3+, 65,000 square foot facility and home to state government, banking and multinational organizations. Polaris is a colocation facility that has been designed to support the IT master plan for the city of Springfield and allow for very significant growth in all areas of operation, without affecting the 24x7x365 operational requirements. The clever, modular design allows for the upgrading of power, cooling and associated supporting services in logical, affordable steps and avoids the back-to-the-drawing-board challenges that occur when data centers reach their initial capacity.

DATA CENTER MANAGEMENT TRACK

With the integration of IT and business, management has never been as important as it is today. From staffing to processes and more, data center managers are responsible for maintaining an efficient data center at a low cost. Learn from management experts how to identify potential problems, motivate employees and manage recovery.

DCM01: Cloud Computing: Walk Before You Run (Theme: Cloud Computing)

Robert Klotz, VP Technology, Akibia

Akibia recently surveyed more than 60 CIOs from Fortune 1000 companies. Many of them listed cloud computing as a subject that intrigues them but won't make the budget cut—at least not this year. The touted benefits of cloud computing are significant—reduced costs and increased efficiency. But, cloud computing solutions are in their earliest stages. In fact, very few vendors are currently delivering enterprise-ready technologies that provide true cloud computing. Instead, it's important to take advantage of existing investments in the data center that can put you on the path to cloud computing. This session will address the best ways to leverage existing infrastructure and stepping stone solutions to get to the cloud. A discussion of how to further leverage virtualized storage, WAN optimization and software as a service will take place. We'll also discuss how these solutions—a solid IT strategy and a roadmap that allows for growth—will prepare companies for the point in time when actual cloud computing solutions have matured.

DCM02: Fueling Disaster Preparedness (Theme: Disaster Recovery)

Robert Leamy, Consultant, Patriot Clean Fuel

Craig Sullivan, General Manager, Patriot Clean Fuel

What you don't know could shut down your entire facility. The diesel that fuels your emergency power system degrades up to 26 percent in 28 days. How many days has it been since your emergency backup power system was refueled? How many days will it be until your facility location loses primary power? By implementing a proactive diesel fuel management program, facility management teams will ensure full-load operation during a power crisis. This presentation will cover the following topics: why good diesel is delivered and bad diesel is stored, fuel contamination-cause and remediation, and preventative maintenance program requirements for diesel fuel. This best practices session will equip data center personnel with actionable information that will give measureable results for facility security and fiscal prudence.

DCM03: Data Center Resiliency (Theme: Disaster Recovery)

Tom Clark, CBCP Director, IT Infrastructure Continuity Services, Liberty Mutual

Two measures of a successful enterprise are its abilities to access information and mitigate business interruptions. The cost of supporting, protecting and recovering critical business applications is increasing significantly every year. Disaster recovery is no longer enough; you have to simplify the complexity of the infrastructure. Attendees will be taught a methodology for determining threats and risks facing the IT infrastructure that result in the need for resiliency; how to improve business resilience, business continuity, and reduce operational risk; and a phased approach to achieve data center resiliency.

DCM04: Data Center Disaster Recovery Unplugged (Theme: Disaster Recovery)

Donna Manley , IT Sr. Director, University of Pennsylvania

For a data center manager, a disaster is like an out-of-body experience. Everyone becomes so caught up with what is going on in the heat of the moment that it is really critical for someone

(the data center manager) to step back and lead the recovery effort. This session discusses real-life situations and techniques for managing major data center disasters and understanding what can be done proactively to either prevent or make the event more manageable.

DCM05: Fire Detection Technologies (Theme: Disaster Recovery)

Max McLeod, National Business Development Manager, Siemens Building Technologies

This presentation will provide an overview of current fire detection technologies and their application along with future technologies that are currently under development. Included will be fire principles, code requirements, construction challenges, and application solutions.

DCM06: Disaster Recovery Strategies in a Down Economy (Theme: Disaster Recovery)

Steve Merkel, Director, Solutions Engineering, Latisys

In an economic downturn, data center managers and corporate management need to make tough budget decisions. During these times, it is all too easy for disaster recovery projects to fall by the wayside. But, unfortunately, disasters do not always wait until the next budget cycle. This session will educate and inform attendees about emerging technologies and services that enable cost-effective disaster recovery options for businesses, even in the strictest of budget climates.

DCM07: Juggling Security of Multiple Data Center Components (Theme: Security)

Henry He, Technical Marketing Engineer, Ixia

Threats to networks, online applications, mobile devices and critical infrastructure are accelerating. Sophisticated hackers are attacking applications due to flaws in robustness, customer-facing apps, etc., creating a huge burden for data center staff. Security and end-to-end performance are vital factors in the successful design of data centers. The increased complexity and heterogeneity of networks has led to a higher risk of exposure to security flaws and vulnerabilities, while system or service failures can lead to a cascade of financial, technical and legal consequences.

This session will discuss best practices for preemptive testing across multiple devices, which can comprise a data center, as well as evaluate a holistic approach for testing security that can be used at every development stage, network level and interface within an enterprise.

DCM08: Information Security Best Practices (Theme: Security)

Gordon Arnold, Product Manager, STSM Software Architect: Tivoli Security Tivoli Software, IBM

With data breaches making headlines, and with new and growing threats coming from disgruntled insiders, viruses/worms, corporate espionage, cyber terrorism and information warfare, there is a heightened concern over information assurance. Today, largely invisible enemies launch daily attacks on nearly every major corporation and government agency and rapidly adapt their tactics to address countermeasures. As the threat model evolves, traditional perimeter security measures are no longer adequate to protect sensitive information. It is time for enterprises to consider a number of time-tested techniques and principles to prepare for such

electronic warfare. This session presents the newest techniques that help address evolving computer security threats.

DCM09: Maintenance of Non-Traditional Computing Environments (Theme: Security)

Rich Hill, President, Data Clean Corporation

Not only has computing changed dramatically over the past decade, but so have the environments in which we perform our computing. While the traditional raised-floor, drop-ceiling, one-owner data center certainly still exists, there are many other environmental configurations that can now be considered typical or commonplace. New and different architectural configurations demand different maintenance protocols. This session addresses the unique considerations for cleaning and maintenance required to ensure safe and reliable computing in non-traditional facilities, such as factory production areas, wiring closets, areas without under-floor or ceiling plenums, colocation facilities and warehouses. This material presented will track and reference the newly proposed ASHRAE Datacom Environment Contamination Levels.

DCM10: Demystifying ITIL V2/V3 (Theme: Standards)

Robert Ryan, Principal, IBM

This session will provide a practical, tactical approach to understanding ITIL, and how the ITIL framework can be adopted to improve data center operations while lowering costs. This includes a discussion of the critical elements of the ITIL framework that should be adopted by data center managers, beginning with an initial, ITIL-compliant business case analysis and moving through ITIL adoption and maturation.

DCM11: Beyond Tiers: Using ITIL Concepts to Evaluate Data Centers (Theme: Standards)

Richard L. Sawyer, Senior Principal, HP Critical Facility Services, Delivered by EYP MCF

There are three components that deliver data center availability: IT systems, facility infrastructure and the operations staff. Benchmarking the contribution to availability of all three has been traditionally difficult because different guidelines have been used for each. Some standards were highly proprietary, not universally approved and subject to the arbitrary definitions of those who developed them. With the advent of ITIL, IT management has been able to assess their capabilities for providing services with a tool that lends definition to a truly continuous improvement program. Using the same ITIL concepts, facility support for delivering IT services can be assessed in the same language employed by the IT end-user, providing clarity and direction in benchmarking. For the first time, end-to-end availability can be assessed and addressed using the IT capability maturity model for both IT systems and facility infrastructure design, management and operations. This presentation provides the foundation for bringing both IT and facilities together to achieve a common goal: delivering quality services in a cost-effective, repeatable manner by employing practices based on accepted ITIL principles.

DCM12: The Yellow Brick Road to Data Center Availability and Uptime (Theme: Standards)

Jon Lorton, National Data Center Management Specialists, Avocent Corp.

How do ITIL, ITAM, ITOM and ITSM increase system availability and uptime in the data center? Bringing standard processes into your data center reduces risk and increases availability. This session discusses the ITIL V3 framework and associated processes and how it applies to the management of assets in the data center. The future of data center management requires a philosophical change in data center ownership and integration into frameworks such as ITIL. This session dives into how data center managers can design systems that take advantage of standard frameworks to manage both the software and logical information and physical systems in the data center.

DCM13: Best Practices for Managing the Explosion of Digital Content (Theme: Standards)

Anand Babu Periasamy, Co-Founder and CTO, Gluster

With the rise in digital content comes the need for companies to find new ways to increase their storage capabilities without sacrificing performance. Because of this, companies are now looking to implement high-performance storage that is scalable and flexible, easily allowing users to customize the file system to match specific workload profiles through a simple Web-based interface. One approach to managing storage in these data-intensive environments is to ensure that metadata is fully distributed, eliminating the need for a central metadata server. This removes a common performance bottleneck, particularly for very large volumes of digital content with millions of files, and also eliminates having the metadata server as a central point of failure. This presentation will discuss the benefits of fully distributing metadata, as well as best practices for scalable, flexible storage that can work within an existing architecture and manage the user specific workload requirements.

DCM14: Addressing Applications Threats in a Virtual Environment (Theme: Virtualization)

Robert Grapes, Chief Technologist, Cloakware

How will your internal controls over financial reporting be affected by virtualization? Will you be able to prove that the application running in your cloud today is the same application that was running there yesterday? While the benefits of virtualization are clear and measurable—thus making for easy business justification, customer pull for the technology and a viable market for vendor solutions—what isn't so clear are the security ramifications of deploying critical application infrastructure in a virtual environment. Today most security conversations are focused on attempting to map the virtual environment's currently known security techniques, yet most of those techniques also rely on the physical security layers. This session will go beneath the surface of application security and discuss risk mitigation by applying the appropriate security techniques—like control flow and data transformations, debugging resilience, and as software-based key and algorithm protection techniques—to address the threats facing applications in a virtual environment.

DCM15: Building a Virtual Data Center (Theme: Virtualization)

Brett Coover, Chief Technology Officer, Extropy Group

Cher Chronis, Director of Marketing, Extropy Group

Terms like cloud computing, grid computing and virtual data center have recently become buzzwords in the technology industry. These concepts are being heavily promoted as ideal data center solutions that are not only flexible but also reduce costs and risk. What exactly does this mean for you, and how do these concepts apply to your needs today? This presentation will focus on a real-world approach to building an enterprise-class data center that is truly virtual.

Discussion topics will include implementation involving networks, storage, physical infrastructure, and of course server/computer resources as related to VDC. Also included will be discussions on the differences between technology options and how to select the best solutions. The session will conclude with our recommendations for VDC implementation strategies and how to avoid the pitfalls associated with implementation. With the right knowledge, plan and execution, you can lead your market in data center capabilities.

DCM16: Wireless Approaches to Environmental Monitoring (Theme: Virtualization)

Chris Gaskins, VP, Product Development, RF Code

New technologies are changing how data centers monitor and manage the environmental factors that affect their data center assets. Data centers are packing more expensive equipment into tighter spaces, using more energy to run and requiring more resources to cool. Aside from the rising costs associated with more power and cooling and the growing calls for environmental compliance, there is another issue. A major environmental failure, if not caught early, can jeopardize the IT assets that run the business. Session attendees will learn about new real-time technologies that can help prevent such failures without the hefty price tag of traditional solutions. Focusing on wireless approaches, this session will examine what the newest best practice approach to environmental monitoring looks like, from infrastructure requirements to specific monitoring capabilities. Discover why an electrician or cabling expert is no longer a data center manager's best friend.

DCM17: How to Install New Hardware and/or Software with Zero Downtime

Joop Janssen, Services Director, Stratus Technologies

Implementing new hardware or software in the data center carries the risk of causing unscheduled downtime, either during the deployment or when the new element is online. Although application availability is an increasingly important quality in data centers, availability factors are usually not considered until after a new application is implemented. This session will advocate a new mentality for planning hardware and software installation that factors in availability from the outset. It will also include a case study of a large financial institution that avoided compromising performance and introduced a point of potential failure into its data center by weighing availability during planning.

DCM18: Building a Self-Service Data Center

Stephen Elliot, Vice President of Strategy, CA Inc.

Your business units need servers to develop, test and support your applications and services. New projects require funding from budgets and hardware procurement cycles that can take weeks. Your teams are spending much of their time on the labor-intensive and time-consuming tasks required to configure and provision physical, virtual and cloud resources for these requests. Join us as we discuss the next generation in data center automation—the self-service data center. Learn how this approach improves productivity, frees IT administrators to perform more high-value work, reduces the wait time for resources and improves time-to-market and service quality by ensuring configuration compliance from development through production.

DCM19: Best Data Center Practices

Mark Levin, Senior Partner, Metrics Based Assessments LLC

What are world-class data centers doing to operate mainframes and servers (Windows, UNIX, and Linux) more efficiently and cost-effectively than their peers? This session will present a description of best practices for all areas of the data center. Included will be a discussion of how a data center's size, technical configuration and workload affect achievement of best practices. Mega data centers are able to capitalize on their size to streamline operations using the latest technologies. Surprisingly, even some very small data centers have learned how to operate so efficiently that outsourcing vendors cannot touch them. Session attendees can readily adopt many of the best practices discussed during the session.

DCM20: The Value Added Reseller (VAR) Advantage

Allen Johnston, VP, Johnston Technologies Inc.

Who is my best choice as a resource for products and services, factory rep or reseller? Value added resellers (VAR) have the capability to solicit and provide best practice products and services to meet the client's wide range of specific needs, versus the restricted agent relationship dictated by the manufacturer. This presentation will address the advantages of aligning relationships with your local free agent reseller.

DCM21: Outsourced Staffing

Eric Gallant, Data Center Consultant, Lee Technologies

Today's business leaders are continually faced with increasing volumes of data combined with more demanding requirements for data storage and retention, availability, energy efficiency and security—all while doing more with less. Information has become the true universal business currency, placing the data center at the heart of the IT infrastructure.

In the past, IT segmented its teams to allow for specialization and consequently increased the cost basis for IT operations. But, today's leaders are consolidating the teams that support their data center, including facility support, thereby creating a more efficient and cost-effective business environment. In addition to this movement, the data center talent pool is rapidly dwindling, and finding the right personnel to staff your data center will inevitably get harder and more time consuming. Join this session, which answers the who, why, when, where and how questions about data center outsourcing.

DCM22: Systems Skills Shortage: What We Are Doing About the Inevitable

Jean-Michel Christopher, Western Area Service Director, JT Packard

The U.S. workforce is declining, and the median age will be 42 in 2020. There is a shortage of individuals with the skills and degrees necessary to meet the current and future needs of our industry. This presentation will look at the steps to take in order to create a successful training pipeline for technical personnel for your data center. Covered topics include picking the correct candidates, setting goals/milestones, career paths, on-the-job training programs, evaluation processes, outside training programs, and the accreditation of training programs. Attendees will leave this presentation with tools and a direction to help survive the systems skills shortage.

DCM23: The Electromagnetic Threat to Data Centers: A New Form of Terrorism?

Jim Danburg, Director of Security and Continuity, Emprimus Critical Infrastructure Protection

There are perpetrators who are now using devices to emit high frequency pulses that can disable data center equipment (including Servers and SANs, as well as support systems) and cause data disruption, and corruption, from a distance. Additionally, there are other electromagnetic threats, and both technical sanctioning bodies and Congress now recognize their potential impact. This presentation will focus on the history of these threats and how they impact data centers. It will also discuss how an organization can utilize best practices and a practical scheme of graduated protection, to protect its' organization's CDA (Critical Data Assets), along with the potential impact upon regulatory compliance that this disruptive technology represents.

DCM24: Managing your Infrastructure/Environment through Automation

Larry Lozon, General Manager, AIS Group, CTI

This session explores the growing use of advanced sensing and measurement technologies such as near field communications, radio frequency identification, biometric authentication and various environmental sensors to increase security, audit tracking, asset tracking, performance and cost effectiveness in today's complex computing environments.

FACILITIES/GREENING TRACK

Energy efficiency is a major concern in the data center. Data center managers are now taking on the task of going green. Whether you are building, remodeling or maintaining your data center, or even going green, use this track to learn more about how to do it in the most efficient and cost-effective way possible.

FG01: Carrier Neutral Fiber and the Future of the Data Center (Theme: Cabling)

Hunter Newby, CEO, Allied Fiber

Broadband stimulus is currently under review and the continued demand for bandwidth and diversity affect data centers and data center managers. In order to fully understand the implications, it is essential to examine three requirements of any data center: fiber (network options), power and cooling. With content and data requirement demands increasing, data centers will need to position their facilities to accommodate this growth. In addition, more

bandwidth, networks and dark fiber available for lease means more competition for transport and transit networks. How can data center managers ensure that competitive fiber, transport and transit networks remain available and grow within their facilities? This session explores how network demands, competition and the broadband stimulus will affect data center managers and provide insight and guidance into what to consider as they continue to navigate the data center infrastructure space.

FG02: Migrating to IP-Based Physical Security in the Data Center (Theme: Cabling)

Andy Jimenez, VP of Technology, Enterprise Cabling Solutions, Anixter

Businesses are expecting lower costs. Managers are expected to do more with less. Security threats pose unfortunate risks. Government regulations are requiring audit trails. End users are demanding near constant availability with feature-rich content at a low cost. And with the center of it all, data centers need to be managed to meet rising global demands. The consolidation of building systems can help meet these demands and lead to increased financial benefits. The physical security market is leading the migration to IP-based systems for increased return on investment. This creates a gradual integration of building systems and IT departments and promotes a unified approach to security and data infrastructures. The standardization provided by IT cabling infrastructures allows for the interoperability and backward compatibility between traditional and IP-enabled security devices. This presentation provides information about the consolidation of building systems and what is needed to understand and prepare for the changes that will need to happen in the data center.

FG03: Going Green Through Optical Connectivity (Theme: Cabling)

Doug Coleman, Manager, Standards and Technology, Corning Cable Systems

The United States Environmental Protection Agency (EPA) reports that data centers consumed 1.5 percent of U.S. electricity in 2006, and that percentage could double in the next five years. Green data center initiatives are now in progress to reduce energy consumption, increase energy efficiency and minimize environmental effects. Optical connectivity enhances green data center installations by utilizing high-port-density electronics with very low power and cooling requirements, in addition to providing premier pathway and space performance in racks, cabinets and trays to support high-cooling efficiency when compared to copper connectivity. This session will show how optical connectivity will help pave the way to a greener data center.

FG04: What You're Missing by Only Measuring Energy Efficiency (Theme: Power/Cooling)

Traci Yarbrough, Product Marketing Manager, Aperture Technologies, an Emerson Network Power brand

Energy efficiency has achieved widespread recognition as a method for reducing costs and improving performance in the data center; however, many IT professionals fail to realize that improving energy consumption is only one aspect of managing an efficient data center. This session will discuss three distinct types of efficiency in the data center—energy, resource and personnel efficiency—and how to manage each aspect to optimize overall efficiency and performance. Discover data center performance management strategies that enable maximizing the benefits of energy efficiency initiatives, while simultaneously reducing heat densities and

space requirements to improve data center operations and achieve the highest level of data center maturity: optimization.

FG05: PUE Hype and Setting Realistic Expectations (Theme: Power/Cooling)

Steven Carlini, Senior Director, Data Center Global Solutions, APC by Schneider Electric
Victor Avelar, Senior Research Analyst, APC by Schneider Electric

Companies around the globe are publishing PUE values that are close to perfection, but are these numbers achievable in a real-world production data center? This session will help attendees filter out the hype, understand the science behind PUE, and set realistic expectations for their own data centers. Learn about the three types of losses in data centers, sources of error, and the various ways of reporting PUE. Beyond the basic calculations, you will examine what factors could increase or decrease your PUE and set you on track for improving your data center efficiency.

FG06: Why PUE Is Not Enough: How to Measure TRUE Success in the Data Center(Theme: Power/Cooling)

Dr. Joe Polastre, Co-Founder and CTO, Sentilla Corporation

Defined as the ratio of total power entering a data center to power consumed by the IT systems within it, power usage effectiveness (PUE) has become widely used as a measure of data center energy efficiency since its introduction by the Green Grid in 2007. But, is PUE alone really the standard by which all data centers should be judged? Truth is, everyone has a different idea about how work is defined in the data center. Each organization needs a specific approach, tailored for its unique business needs, to create metrics that lead to effective data center management. This session shows how organizations can personalize their data center measurement techniques to get a true view of the energy use and specific energy needs of the data center.

FG07: Increasing ROI Through Utility Incentives (Theme: Power/Cooling)

AJ Howard, Senior Analyst, Energy Market Innovations, Inc.

Energy saving opportunities in the data center are increasingly viewed as a valuable resource by many utilities. Data center managers can learn to leverage this resource by working with utilities to access incentives that can increase the ROI of potential efficiency projects, which can free up new capacity and even postpone the costly construction of a new facility. This presentation will provide an overview of the world of utility incentives for improving data center energy efficiency. Participants will learn why utilities pay companies to save energy, what data center incentives are available in different markets, and—where specific incentives are not yet available—how to work with local utilities to take advantage of custom incentives.

FG08: 4160 Volts: The Green 480 (Theme: Power/Cooling)

Mike Mosman, VP, CTO, CCG Facilities Integration Inc.

This presentation explores the benefits of using 4160 volts, a medium voltage, instead of 480 volts, a low voltage, for electrical service entrance into large data centers. Such benefits include

increased safety due to lower arc flash, economic value due to smaller feeder sizes, and greater dependability due to more reliable breaker operation.

FG09: Data Centers and Green Initiatives (Theme: Green)

Mark Evanko, Principal – Engineer, BRUNS-PAK

Data centers have been recognized by the United States Department of Energy as one of the largest consumers of electrical source power. The trend of increased data center power consumption has inspired many legislative initiatives designed to control, monitor and regulate the demand. Accordingly, data center planning and design have focused on energy efficiency initiatives, including green initiatives, PUE/DCIE calculations, LEED certification, carbon footprint reduction and virtualization. This session explores the trends, initiatives and considerations associated with optimizing data center green options.

FG10: The Data Center of the Future – Going Green (Theme: Green)

Anthony Wanger, President and Founder, i/o Data Centers

This presentation discusses how the latest technologies and data center designs are contributing to a dramatically more efficient, flexible and reliable data center. Attendees will learn how thermal storage, ultrasonic humidification, LED technology, passive lighting, PV solar and variable-speed plug fans all contribute to a reduction in carbon emission. In addition, attendees will learn about the latest innovations in high-density colocation and modular data centers.

FG11: Data Center Power Savings (Theme: Green)

Herman Chan, Director, Power Products, Raritan

Data center power usage effectiveness (PUE), developed by The Green Grid, has received a lot of attention. But how do you use PUE to minimize wasted power? How do you identify stranded power and thereby possibly delay the construction of a very expensive new data center? How do you justify for management the investment to gather detailed power information? This session will reveal the answers to these questions through a detailed discussion about deploying smart PDUs with outlet-level monitoring and environmental sensors, developing a plan to gather information, and making the most of that information once it has been gathered.

FG12: How to Test Your Data Center's Grounding System (Theme: Green)

John Howard, VP, Business Development, Lyncole XIT Grounding

No one questions the fact that the grounding system for a facility is critical. Along with being critical for equipment operation and power quality, it also dissipates the electrical surges collected by the surge suppression (AC, RF, Telco) and lightning protection systems. Recognizing the importance of the grounding system, this presentation will cover the basics of two common methods of testing, present a one-line electrical diagram explanation of test theory, and discuss the common testing mistakes. Regardless of your role in construction and/or maintenance, you will learn ground testing concepts and how to evaluate testing results.

FG13: Power Management: Where to Measure and What is the ROI (Theme: Green)
Ted Behrens, Director of Product Management, Chatsworth Products, Inc.

As energy prices continue to grow in conjunction with greater energy demands brought on by data centers and looming cloud initiatives, this seminar will focus on methods of measuring power and how to use these measurements to drive more efficient decisions within the IT environment.

FG14: Building Next-Generation Data Centers (Theme: Green)
Philippe Michelet, Data Center Architect, 3Com / H3C

Data centers are critical corporate assets that connect applications, storage and services in the enterprise. Today's data centers face a number of challenges as enterprises increasingly centralize their core business applications and operations in an effort to help reduce costs, while at the same time support new services. Many organizations are currently struggling to support these new requirements with legacy technology that is simply not up to the task of addressing these burgeoning requirements. A new breed of next-generation data center platforms, coupled with new technologies like network virtualization, promise to help data center managers tackle these new requirements while also simplifying overall operations. This session discusses these new platforms and what their role is in building a next-generation data center.

FG15: Streamlining Data Center Moves
Richard Muirhead, Chairman and CEO, Tideway Systems

This presentation discusses what to consider when conducting a data center move, including how to alleviate the associated challenges and risks, as well as ways to make the move a more seamless, cost-efficient process by establishing a baseline as the critical first step. Attendees will learn how creating such a baseline and mapping out the data center infrastructure allows data center managers to see what's under the hood and transform their data center move from a process that takes months to one that takes mere weeks.

FG16: 3 Source Static Switch—Taking Redundancy to the Next Level
Rex Withers, VP Engineering, Thomas & Betts Power Solutions

This presentation describes the difference between classical two-source static switch applications and the application of three-source static switches to provide an additional layer of redundancy in the event of the failure of any two sources, any two points of failure in the hardware, or any combination thereof. The presentation will also outline the benefits found in three-source switch topography, including space savings, energy efficiency and total cost of ownership.

FG17: Electrical Safety and Your Data Center
Martin D. Conroy, Senior Vice President, Tier4 Data Center Group

With respect to electrical priorities in the data center, reliability, availability and capacity are at the top of the list. One area that is often missed or overlooked is electrical safety. Where does electrical safety fit into the design, operation and management of your data center? Are you

aware of your risks and responsibilities concerning electrical? Are you compromising electrical safety with your data center's standard practices? This presentation provides an introduction and overview of electrical safety standards and requirements that every data center manager should know.

FG18: Transformer-Based vs. Transformerless UPS Systems

David Sonner, Senior Director, Product Marketing, Emerson Network Power

Recently, transformerless UPS designs have been positioned as a more compact and efficient power protection solution for today's fast-changing IT environments. This session reviews key design differences between transformer-based and transformerless UPS systems and analyzes the effect of these differences on UPS performance and reliability. It reviews the two approaches in terms of adaptability, reliability/availability, robustness, output, operating costs and total cost of ownership to help attendees understand the trade-offs inherent in each approach and select the design that best meets the specific objectives and requirements of a particular facility.

ROUNDTABLES TRACK

Peer learning can be essential to running an efficient data center with zero downtime. These roundtable sessions give you the opportunity to interact with other attendees and learn from their widespread experience in everything from operations to facilities management. These sessions will be run by a panel of experts, with an open-forum style that provides an atmosphere for frank discussions about the following topics:

RT01: The Data Center Energy Crisis

Speakers:

Rajan Battish, Principal, BKM Mission Critical Facilities

Doug Coleman, Manager, Standards and Technology, Corning Cable Systems

Herman Chan, Director of Power Solutions Business Unit, Raritan, Inc.

Mark Evanko, Principal Engineer, BRUNS-PAK

RT02: Disaster Recovery

Speakers:

Michael Kirchner, Training Manager, Generac Power Systems

Kelly Kleinfelder, Manager Network and Data Center Operations, StoneMor Partners

Robert Leamy, Consultant, Patriot Clean Fuel

Tom Clark, Director, Liberty Mutual

Max McLeod, Business Development Manager, Siemens Industry Inc.

Craig Sullivan, General Manager, Patriot Clean Fuel

RT03: Power Management

Speakers:

Mitch Medford, CEO, RF Code

Michael Dortch, Acting Director, Focus Research

RT04: Emerging Technologies

Speakers:

Alex Bakman, Founder & CEO, Vkernel
Sean Derrington, Director, Storage Management & High Availability, Symantec
Robert Klotz, Vice President of Technology, Akibia
Hunter Newby, CEO, Allied Fibes
Anthony Wanger, President, i/o Data Centers

RT05: ITIL

Speakers:

David Cole, Manager Data Center Maintenance Management & Education Services, PTS Data Center Solutions
Jon Lorton, Data Center Management Specialist, Avocent Corp
Robert Ryan, Principal, IBM Global Business Services
Richard Sawyer, Senior Principal, HP Critical Facilities Services

RT06: Data Center Security

Speakers:

Henry He, Technical Marketing Engineer, Ixia
Hezi Moore, CTO, Reflex Systems
Ken Owens, VP Security and Virtualization Technology, Savvis Communication
Gordon Arnold, Senior Technical Staff, IBM

RT07: Software Management

Speakers:

Stephen Elliot, VP of Strategy, CA
Chris Gaskin, VP of Product Development, RF Code
Bob Quillin, Senior Director Products Marketing, EMC Corporation

RT08: Cyberterrorism

Speakers:

TBA

PRODUCT INFORMATION SESSIONS

Please note: These product-specific sessions are presented by official Data Center World Expo exhibitors and will run concurrently with educational sessions.

Product Information Sessions (as of 11/13/09)

P01: Simulate Airflow and Temperature to Meet Your Cooling Challenges

Suhas Patankar, President, Tile Flow

You can now create a computer simulation of your entire data center's airflow and temperature distribution to identify and overcome cooling problems. The simulation will also show you how to save energy and create a green data center. The software product TileFlow allows you to model your data center and calculates the air velocities and temperatures. TileFlow is

delightfully easy to use, runs very fast, and produces useful plots. The presentation will include a live demonstration of the capabilities of TileFlow, show a spectacular display of the results, and thus convey the power of simulation.

P02: Who's Killing Who? Not-so-Smart Data Center Decisions

Carrie Higbie, Global Director Data Center Solutions & Services, Siemon

This presentation is based on various decisions and long-term effects from all departments, including facilities, networking, servers and security. There are better ways to make these decisions. We will review case studies, standards and better ways to make the business case for all data center components.

P03: Using Branch Circuit Monitoring to Improve Data Center Efficiency

Dave Mulholland, VP Marketing, Service, PDI

PDI will discuss its patented branch circuit monitoring system which, since 2000, has evolved into a platform that will allow you to manage all aspects of power in your data center. There will also be a discussion on how to raise your PDI Q by implementing smart monitoring solutions throughout your data center.

P04: Improving Data Center Thermal Efficiency Using CoolSim Airflow Modeling

Paul Bemis, President, Applied Math Modeling, Inc.

Improving data center thermal efficiency provides the benefits of lower overall PUE, reducing operating costs, and increasing the overall resilience to cooling unit failure. Strategies such as cold aisle containment, hot aisle containment, and in-row cooling are all techniques that can improve data center thermal efficiency when used appropriately. But, modeling the effect of these scenarios can only be done with a CFD modeling tool like CoolSim. Come see how CoolSim can help you quickly, easily and cost-effectively predict the outcome of changes to your data center.

P05: Why Containerized Power/Cooling Infrastructure Is to the Data Center Industry as the Boeing 737 is to the Airline Industry

Martin Olsen, Vice President, Business Development, Active Power

Containerized power/cooling infrastructure is to the data center industry what the Boeing 737 is to the airline industry. Why? Both products are highly repeatable solutions with commoditized operations, maintenance and parts. Containerized power/cooling systems are pre assembled and tested offsite, taking the guesswork out of the installation and commissioning phase that end users typically run up against with a conventional brick-and-mortar data center build-out. Come hear about the performance benefits of a containerized approach versus a traditional brick-and-mortar data center and how containerization can substantially reduce capital expenditures on electrical and mechanical infrastructure.

P06: Monitoring 3.0: Dispelling the Myths about Real-Time Asset and Environmental Monitoring

Chris Gaskins, Vice President, Product Development, RF Code

Active RFID makes it possible to know the precise location, movement activity, environmental conditions and complete history of a data center asset—in real time. The profound effect this instant information has on cooling/heating decisions, asset security, inventory processes, and lease and maintenance costs will change how you manage your assets. RF Code will demonstrate its wire-free asset management and environmental monitoring solutions, which leverage active RFID to reduce time/costs of managing your assets.

P07: Efficient Row-Based Cooling...Without Compromise

Fred Stack, VP, Marketing, Liebert Precision Cooling Business, Emerson Network Power

Today, cooling is a hot topic among data center managers. As heat densities and cooling costs rise, data center managers are looking for more efficient cooling solutions that still maintain a high level of availability and reliability. Liebert utilizes advanced technology in row-based cooling to minimize energy consumption, while still providing the industry's best in reliability, serviceability, controls and trouble-free operation. This session will feature Liebert's row-based cooling solutions that effectively and efficiently address cooling issues without compromising availability or performance.

P08: Data Center Efficiency from the Ground up

Herman Chan, Director, Power Solutions Business Unit, Raritan, Inc.

The United States House of Representatives has passed a carbon cap-and-trade bill, and the Senate is working on climate and energy legislation. Now is the time for data centers to document energy consumption and establish baselines. With detailed and accurate power usage information, IT and facilities managers can identify and prioritize efficiency measures. The presentation will move from rack PDUs upstream to panel boards, identifying technical and operational approaches to reducing power consumption (including changes to wiring infrastructure), the use of environmental sensors, and changing end-user behavior with reporting and chargebacks.

P09: 400V: The New Frontier for Power Distribution in the Data Center

Richard Draper, Cyberex Product Manager, Thomas & Betts Power Solutions

Fred Miller, Director of Product Management and Marketing, Thomas & Betts Power Solutions

Cyberex introduces a revolutionary new remote power panel (RPP) design for the data center. This high-power RPP explores the new higher voltage power distribution frontier of 400 volts. As data centers clamor for ways to increase their power density at the rack level, the industry has taken a two-pronged approach of increasing both the current and voltage ratings of the distribution equipment. Now, the equipment to do this is available from Cyberex.

P10: How Multistack Modular Chillers Can Protect Your Data

Mark Platt, President & CEO, Multistack LLC

Data centers have clearly defined critical cooling needs. Multistack has a 20-year track record supporting the extreme redundancy needs of data centers. The Multistack modular concept allows you to match the number of chillers running with the demands of your facility, managing energy costs 24-hours a day. There is a reason why Multistack air-cooled and water-cooled modular chillers protect data in more than 175 U.S. embassies worldwide, and this session will provide the details.

P11: Watching Your Assets Track Themselves

Larry Lozon – AIS Group, CTI

This session will define, explore and update the current state of asset tracking within data center environments. Given an ever-increasing set of challenges involving asset management, a key aspect of any effective program involves tracking the up-to-the-minute status of assets, including their location and state. By utilizing the latest automation advances in RFID, it is now possible to build asset intelligence that is real-time in nature and provides users with deep insight and mastery over their computing, storage, and network assets.

P12: Improve Decision Making and Reduce Expenses through Data Center Performance Optimization

Traci Yarbrough, Director of Product Marketing, Aperture – Emerson Network Power

To effectively manage today's data center both IT and facilities need to work together, running their operations and making decisions off the same foundation of information. Only with a single, authoritative set of information and holistic view can the data center be optimized with service levels increased and costs decreased. In this session, you will see how a comprehensive data center management product suite – including monitoring, asset tracking, workflow, capacity planning and resource management – can help your organization optimize the performance of your data center(s) and achieve these goals.

P13: Data Center Maintenance Management Software – Computerized Maintenance Management for the Data Center

Dave Cole, Manager, Data Center Maintenance Management and Education Services, PTS Data Center Solutions

This presentation will discuss computerized maintenance management systems and present DCMMS, an innovative software application from PTS Data Center Solutions that was specifically designed for managing data center maintenance. The software allows the user to manage assets and parts, estimate and manage maintenance costs, track recurring problems to pinpoint those that may lead to more critical issues and generate work orders with the details needed to properly perform preventative maintenance.

P14: Total Hot Aisle Containment within a Major Colocation Facility

Carl Cottuli, Vice President, Marketing, Wright Line

Typically, colocation facilities include a raised computer room floor, forgo airside economization and wouldn't even dream of being classified as green.

That's not the case with Advanced Data Centers (ADC)! Learn how ADC and Wright Line have completely embraced hot-aisle containment in it's LEED Platinum pre-certified data center. This presentation will focus on a rack-neutral independent containment system that can be deployed in a variety of data center environments.

P15: Data Center Solutions: Migration, Virtualization, Modernization, Consolidation and IT Architecture

Erni Moore, Director of Data Center Solutions, Extropy

As technology evolves, your data center will need to transition to keep up with the increasing demands of your business and transform from a cost center into revenue producer. Many IT executives are faced with the decision of how to make the data center more efficient while reducing costs. In this product session, you will learn the benefits of transforming your data center to meet business needs through migration/relocation, virtualization, consolidation, and IT architecture enhancements.

P16: Next Gen 10Gig - The Future is ON!

Michael York RCDD, CSI, Specification Engineer, Leviton Network Solutions

This presentation will focus on the structure of the telecommunications industry, the process for new technology development of structured cabling systems, the hot topic issue of ScTP vs. UTP, and the next-generation 10 gigabit Ethernet cabling systems.

P17: Comprehensive Data Center Monitoring

Matt Lane, President Geist Intelligent Facilities, Geist Manufacturing
Brad Wilson, Chief Technical Director, Geist Manufacturing

Everyone wants a comprehensive data center monitoring system but what exactly is all inclusive? How much information, what systems, and how many points are desirable to monitor? What power, HVAC, environmental, and IT equipment should be monitored? This presentation will discuss these issues and show examples using the Environet management system by Geist Intelligent Facilities, as well as power and environmental monitoring solutions by Geist.

P18: Enterprise Infrastructure Solutions for Achieving Simplified Data Center Operations and Optimum Performance

Ian Seaton, Technology Marketing Manager, Chatsworth Products Inc.

Providing integrated global management of the IT architecture, CPI offers Enterprise Infrastructure Solutions that present the components necessary to access, monitor and control equipment and devices around the world from a single location, while also supplying the ultimate equipment protection and thermal results. By combining CPI's comprehensive product choices, a complete personalized enterprise solution can be built without compromising on pre-configured solutions that limit the ability to meet existing and evolving data center needs.

P19: 3Com/H3C Data Center Portfolio Leader

John Gray, 3Com Enterprises Product Marketing Manager, 3Com Corporation

3Com approaches the modern data center with an architectural vision that revolves around the concepts of operational simplification, superior performance, energy efficiency and lower TCO. Our goal is to deliver high-performance products that significantly reduce the cost and complexity of acquiring, securing and managing data center network infrastructure. From our high-end data center switches to world-class security, routing management, this session will discuss why some of the world's largest enterprises are partnering with 3Com to solve their emerging data center networking requirements.

P20: Optimizing the Data Center with Continuous Monitoring & Measurement

Craig Compiano, CEO & President, Modius, Inc.

The goal of this product information session is to help data center managers (both IT and facilities managers) better understand the business value of measuring data center performance characteristics and the considerations that are important to developing a measurement scheme. By measuring more performance indicators in more places, more easily, Modius gives companies online visibility to energy consumption and capacity utilization across all their critical computing locations.

P21: An Alternative to Spot Cooling Solutions That Maximizes Efficiency and Reliability

Nick Gangemi, Regional Sales Manager, Data Aire, Inc.

Increasing heat densities and cooling costs have given rise to a number of proposed solutions being offered to data center managers. Some do a good job solving part of the problem but none offer a comprehensive solution. Unity Cooling by Data Aire maintains the highest level of reliability and availability while maximizing energy efficiency of the entire cooling system. By dynamically following the IT cooling load, we are able to provide real-time cooling consumption detail while maintaining exact thermal control based on the actual IT cooling demand.