SESSIONS
AGENDA-AT-A-GLANCE -

Tuesday, March 19 - Click to Expand

7:00am - 10:00pm

7:00 a.m. - 6:00 p.m. Registration Open

7:00 - 7:50 a.m. Breakfast for All Access Pass Holders - Sponsored by Electronic Transport

8:00 - 11:30 a.m. All Access Pass Workshops

11:30 a.m. - 12:30 p.m. Lunch for All Access Pass holders

12:30 - 12:55 p.m. New Attendee Welcome and Orientation

1:00 - 2:00 p.m. Educational Breakout Sessions

2:10 - 3:10 p.m. Educational Breakout Sessions

3:10 - 3:40 p.m. Refreshment Break - Sponsored by Electronic Transport

3:40 - 4:40 p.m. Educational Breakout Sessions

4:50 - 6:00 p.m. Speed Networking

6:30 - 8:00 p.m. Organized Networking Dinners

8:00 - 10:00 p.m. Women in Data Centers Meet-up

Wednesday, March 20 - Click to Expand

7:00am - 6:15pm

7:00 am - 6:00 p.m. Registration Open

7:00 - 7:50 a.m. Continental Breakfast - Sponsored by Electronic Transport

8:00 - 9:00 a.m. Opening Remarks & Keynote Address

9:10 - 10:10 a.m. Educational & Product Information Tech Talk Sessions

10:10 - 10:30 a.m. Refreshment Break - Sponsored by Electronic Transport

10:30 - 11:30 a.m. Educational & Product Information Tech Talk Sessions

11:30 am - 12:30 p.m. Networking Lunch

12:40 - 1:40 p.m. Educational & Product Information Tech Talk Sessions

1:50 - 2:50 p.m. Educational & Product Information Tech Talk Sessions

3:00 - 4:00 p.m. Keynote Address

4:15 - 6:15 p.m. Opening Reception

Thursday, March 21 - Click to Expand

7:00am - 6:00pm

7:00 a.m. - 6:00 p.m. Registration Open

7:00 - 7:50 a.m. Continental Breakfast - Sponsored by Electronic Transport

8:00 - 9:00 a.m. Keynote Address

9:10 - 10:10 a.m. Educational & Product Information Tech Talk Sessions

10:20 - 11:20 a.m. Educational & Product Information Tech Talk Sessions

11:20 a.m. - 12:20 p.m. Networking Lunch

12:00 - 6:00 p.m. Exhibit Hall Open

1:00 - 2:00 p.m. Dessert Reception in Exhibit Hall Lounge

12:30 - 5:30 p.m. Knowledge + Networking Stage Activities

4:00 - 6:00 p.m. Exhibit Hall Happy Hour

Friday, March 22 - Click to Expand

7:00am - 6:30pm

7:00 a.m. - 6:00 p.m. Registration Open

7:00 - 7:50 a.m. Continental Breakfast - Sponsored by Electronic Transport

8:00 - 9:00 a.m. Keynote Address

9:10 - 10:10 a.m. Educational & Product Information Tech Talk Sessions

10:10 - 10:40 a.m. Refreshment Break - Sponsored by Electronic Transport

10:40 - 11:40 a.m. Educational & Product Information Tech Talk Sessions

10:00 a.m. - 12:00 p.m. Student Program & Exhibit Hall Tour

12:00 - 1:00 p.m. Networking Lunch

12:45 - 4:30 p.m. Exhibit Hall Open + Expo-Only Pass Day

12:45 - 1:45 p.m. Dessert Reception in Exhibit Hall Lounge

12:45 - 4:30 p.m. Knowledge + Networking Stage Activities

5:00 - 6:30 p.m. Closing Networking Reception

SCHEDULE
AGENDA-AT-A-GLANCE -

TIME	
7:00AM	**7:00am** - Tuesday, March 19 - Click to Expand
	7:00am - Wednesday, March 20 - Click to Expand
	7:00am - Thursday, March 21 - Click to Expand
	7:00am - Friday, March 22 - Click to Expand

SESSIONS
TUESDAY, MARCH 19 - 19/03/2019

Data Center World
March 19-22, 2019
Phoenix Convention Center
Arizona

Breakfast for All Access Pass Holders - Sponsored by Electronic Transport

7:00am - 7:50am
Networking

Registration Open

7:00am - 6:00pm
Registration

All Access Pass Workshop: The 25kW Challenge! A Workshop in Achievable Energy Reduction

8:00am - 11:30am
Data Center Strategies & Delivery Models

Did you know that by 2020 data center energy consumption will reach nearly 73 billion kW per year -- producing a carbon footprint equal to the United States airline industry? You can improve efficiency and reliability of your facility, free up capacity, extend equipment useful life, and increase redundancy!

In this workshop, the creator of AFCOM's 25kW Challenge will show you how to track your total load kW, IT load kW, and facility load kW and calculate the energy savings to meet a 25kW reduction goal. It's all about starting with smaller, achievable goals and creating a sustainable culture in the organization that leads to longer term, bigger impacts.

Participants

Speaker: Kevin Kent - Data Center Operations Manager, The Ohio State University Wexner Medical Center

All Access Pass Workshop: Fundamentals of Data Center Design - Soup to Servers!

8:00am - 11:30am
Design, Build, Operate & Control 1

If you had to start a data center from scratch, would you know what to do? Would you know how to support the IT kit? Would you know how to evaluate the space for the data center? This workshop starts at the beginning and provides detailed insight into the things you would need to know to be more familiar with the design and support of the data center. What would you change? We will look at both facilities and IT topics that are relevant to all professionals at any stage of design. If you are planning on moving forward with industry certifications or just want to broaden your horizons for your career, this session is for you. Learn design, procurement, and implementation strategies. We'll create a comprehensive checklist with input from audience participation.

Participants

Speaker: Carrie Goetz - Global Technology Director, Paige DataCom

All Access Pass Workshop: Co-Location Bootcamp: Everything You Need to Know to Get it Right

8:00am - 11:30am
Design, Build, Operate & Control 2

Whether you're designing a data center from the ground up or trying to determine how a co-location strategy fits into your current planning, it's imperative to have the right information and the right tools to avoid making costly mistakes. In this workshop, our experts provide valuable insight into decision making on cloud strategies, workload provisioning, site selection, partnering, and more.

With a hands-on, interactive approach, workshop attendees will apply real-world best practices to their own data center strategies to create actionable plans for bringing back to the office.

Participants

Speakers: Kirk Killian - President, Partners National Mission Critical Facilities

Lunch for All Access Pass Holders

11:30am - 12:30pm
Networking

New Attendee Welcome & Orientation

12:30pm - 12:55pm
Networking

State of Emergency Preparedness - What's Needed to Ensure 24/7 Power During an Emergency

1:00pm - 2:00pm
IT Infrastructure Technologies

Is the data center industry prepared with a comprehensive plan that will keep emergency power systems operational through the duration, continuance or existence of an emergency utilizing "an all hazards approach" as mandated for the healthcare industry by CMS? To achieve this goal the existing fuel delivery infrastructure will have to be modified to compensate for fuel quality, flooding, corrosion and compliance issues. The session proposed would be a panel of experts in fuel and equipment to discuss known problems, review case studies, analytical data, different standards and other issues that will shape the equipment and methods to meet requirements of the future.

Participants

Speakers: Steve Burris - President, Petroleum Recovery Services

William Richards - President, Energy Technology Group

Larry Steckman - President, FOI Laboratory

Getting DCIM Right the First or Second Time Around: DirecTV's Case Study on the Industry's Struggles with DCIM

1:00pm - 2:00pm
Data Center Strategies & Delivery Models

For the last decade, the data center industry has struggled to successfully adopt DCIM software. DCIM solutions promised to drive out data center inefficiencies, help operators build a credible model for capacity planning, as well as tie together the IT and facilities management teams. Yet, the path to reaping those benefits could not be realized by simply purchasing software. As the messy work of implementation began, many organizations found that these tools would be more difficult to implement and more expensive than expected. Data Centers are data driving and we all rely on good manageable data, both historical and real time to make crucial decisions on growth, consolidation and migrations not to mention crisis management. In this session you will learn from the mistakes, adjustments and hindsight that DirecTV experienced in a two year plus battle to get DCIM working as a useful asset across multiple disciplines and departments.

Participants

Speakers: Peter Hunt - Senior Network Design Engineer, Entertainment Systems Labs, DCIMPro

Chris James - CEO, DCIMPro

GaN and Data Centers – A Small Change that Can Revolutionize the Industry

1:00pm - 2:00pm
Next-Generation Technologies

We live in an increasingly 'data and energy driven' world that is following with an increasing reliance on data centers to handle the deluge of information that must be stored and processed. Data centers currently account for about 3% of the world's energy use, a figure expected to quickly grow to 10%. Data center operators are faced with the challenge of making individual data centers more energy-efficient while increasing their compute capability. Lower energy costs as a result of reduced energy consumption could save them hundreds of millions of dollars every year. Gallium Nitride (GaN) power transistors will play a central role in this transition to greater energy efficiency by enabling the creation of smaller, lighter, lower cost, and more efficient power systems that are free from the limitations imposed by yesterday's silicon-based solutions. GaN technology will enable data center operators improve their own bottom line and help transform an energy and data-dependent world.

Participants

Speaker: Alain Bismuth - Vice President Data Center Business, GaN Systems

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Arizona

5 Ways MOPs Add Value to your Facility Excellence

1:00pm - 2:00pm
Design, Build, Operate & Control 1

Method of Procedure (MOP) is a must-have tool for critical facility management to maintain control over and gain visibility into their facility. Twenty-four percent (24%) of data center outages are caused by human error and 80% are directly related to manual errors. Good MOPs help you minimize these human errors, reducing the likelihood of downtime, and enables you to promptly rectify any errors. It's time to take MOPs beyond the traditional change control and documentation realm. Learn how to apply MOPs to improve efficiency, reduce risk, and gain operational excellence in your facility.

Participants

Speaker: Ajay Nagar - Founder and CEO, MOPstar

How to Save Money and the World with Your Building's Roof

1:00pm - 2:00pm
Resource Efficiency & Cost Control 1

In this day and age, we hear a lot about saving energy and being "green," reducing pollution, saving the environment, and making the world a better place. For a long time people have thought that they could either make environmentally friendly choices or economic ones. But that is a false choice. There are many new technologies and innovations that will both make your building a more enjoyable place for those living around it and working in it, while also using your company's resources very wisely. Your roof is the biggest the largest part of your building and it is pointed straight at the sun and rain. That means that most important factor for saving money and reducing pollution is your roof. You'll learn about this, and how to make wise choices on your roof at this session.

Participants

Speakers: Ryan Shinn - Western Group Marketing Director, CentiMark Corporation

Ralph McCorkle - Senior Project Manager, CentiMark

Power Conditioning and Airflow Optimization: Improving Availability, Resiliency While Reducing Energy Demand

1:00pm - 2:00pm
Resource Efficiency & Cost Control 2

When organizations first started evaluating greener data center infrastructure solutions, there was lots of hype surrounding improvements such as eco-mode UPS systems or evaporative cooling. While these previous green technologies improved efficiency, they may not have increased resiliency and/or sustainability. These issues can be resolved with power conditioning and improved airflow management – the next-generation of green technologies. For too long we've ignored the impact of power quality when it comes to non-UPS loads such as air handlers or LED lighting. We also haven't addressed the harmonics created by non-linear IT loads downstream of our UPS systems that reduce efficiency and equipment longevity. Most think a data center is optimized if it meets ASHRAE's minimum cooling guidelines. The reality is we can't optimize what we haven't measured and analyzed. Heat rejection equipment is also often overlooked. Static regain diffusers, for example, can draw air through heat rejection equipment using significantly less power.

Participants

Speaker: Andrew Graham - Director, Data Center Solutions, Critical Environments Group

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Farm-to-Robot - Moving Security from a Silo into the Twenty-First Century

2:10pm - 3:10pm
IT Infrastructure Technologies

Too often, security is kept in a silo and considered separate from systems, network, etc. Malicious actors are moving faster every day, and defenders have to consider security at every step of the process, not just trying to tack it on at the end. Rather than creating a system, network or data center and then asking your security team to make that system secure, we all need to update our thoughts and incorporate security every step of the way. In this world of automation and orchestration, that means that security has to be part of the automation, not a separate step afterwards. This session will look at some tips and tricks on how to think in a security-minded matter, focusing on security for systems deployments, but looking at security as a whole.

Participants

Speaker: Joel Sprague - Technical Solutions Architect, Cisco

Exploring Data Center and Edge Solutions of the Future

2:10pm - 3:10pm
Data Center Strategies & Delivery Models

The Open19 Foundation is creating a new way to build data centers and edge solutions – one that engages a community in support of a cross-industry common server form factor, resulting in flexible, economical data center and edge solutions for operators of all sizes. The Open19 standard is already being deployed in data centers and numerous additional use-case scenarios are being explored. This presentation will feature unique case studies, an exploration of the technological evolution, and future development plans. It will also present the Foundation's progress in the two years since its founding and examine deployment opportunities, potential build-outs, open-source accessibility and adoption in the rapidly growing edge and edge cloud.

Participants

Speaker: Yuval Bachar - Principal Engineer, Data Center Global Architecture, LinkedIn

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Transferring Knowledge: The Real In-House Training

2:10pm - 3:10pm
Professional Development

Every data center is unique and has its own quirks. Each has its own distinctive mechanical & electrical topology, policies, processes, procedures, software etc. The unique insight gained on-site working within a data center is invaluable. Much of this knowledge required can't be taught within a university or technical college. As new employees are brought on board, getting them trained within your particular data center and its quirks is imperative. In this session, we'll look at how this knowledge can be captured and transferred as well as some effective methods to get new staff members up to speed in no time.

Participants

Speaker: Nate Josephs - Senior Manager - Data Center Operations, Parallel Technologies

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Arizona

Maintenance is Risky: Here's How to Expose Risk…and Consequences Before You Take Action

2:10pm - 3:10pm
Design, Build, Operate & Control 1

Ever get stressed when you take a piece of equipment offline for maintenance? Maintenance is risky, regardless of how well you analyze your redundancies and predictive failure abilities. Understanding the consequence of failure is the key to more effective management. This talk outlines the perspective of two major data center operators as they incorporated consequence analysis into their maintenance planning. Knowing if it's safe to stop a cooling unit, or several simultaneously, prior to taking any action is useful. Knowing the business consequence of that action, by knowing exactly which racks will be affected and how, is transformative. Few maintenance activities trigger emergencies, but the ones that do can be catastrophic. Knowing the risks in advance let you address them in advance with infrastructure changes or spot cooling. Combining dynamic modeling, analytics, and machine learning can be the key to unlocking the consequences of failure, and providing the path to avoid it.

Participants

Speaker: Cliff Federspiel - Founder, President and CTO, Vigilent

Air Quality in Data Centers: People vs. The Machines

2:10pm - 3:10pm
Design, Build, Operate & Control 2

Indoor air quality is mostly associated with health and well-being of humans. However, in mission critical facilities, IAQ is being scrutinized less for humans and more for the health of the critical IT/datacom equipment. Free cooling is a standard design approach for many companies and higher allowable temperatures for IT/datacom equipment allows it to be used in many locations. This has led to energy savings and lower operational costs, but at the cost of equipment reliability. In addition to climatic conditions , other factors come into play, e.g., local and regional air quality. Regulatory changes are causing higher failure rates for electronic equipment located in regions with high air pollution levels. As use of free cooling expands, even locations with good outdoor air quality are experiencing higher failure rates. This doesn't mean that free cooling should not be considered where feasible; additional steps are required to assure reliable operation of datacom equipment.

Participants

Speaker: Christopher Muller - Technical Director, Global Mission Critical Technology Manager, Purafil, Inc.

For Most Data Centers, Liquid and Air Cooling Will Not be Mutually Exclusive

2:10pm - 3:10pm
Resource Efficiency & Cost Control 1

A recent report from Technavio indicates that the adoption of liquid-based cooling is high, as it is considered more efficient than air-based cooling. Globally liquid-based cooling is expected to grow at a remarkable rate through 2020, posting a CAGR of almost 16% during the forecast period. So, why is this level of adoption happening? Increasing rack densities lead by high performance computing (HPC) and the quest to improve efficiency are driving an increase in liquid cooling design strategies and deployment. While still relatively sparse, liquid cooling will become more prevalent, but this does not mean the end of air cooling. In this session, we'll discuss how to implement liquid cooling while maintaining appropriate air-cooling conditions and fully realize efficiency gains. Lastly, we'll discuss how to get started and get ahead of the market when it comes to improving cooling efficiency.

Participants

Speaker: Lars Strong - Senior Engineer, Upsite Technologies Inc.

Refreshment Break - Sponsored by Electronic Transport

3:10pm - 3:40pm
Networking

To Ops or Not To Ops – That Is The Question

3:40pm - 4:40pm
Data Center Strategies & Delivery Models

The era of digital transformation is now and with that in mind, the cloud has become central to the IT strategy of every organization. With year over year growth of over 25% in IT expenses, cloud computing is critical to the successful implementation of digital transformation to streamline operations and significantly reducing the costs for "keeping the lights on." With DevOps on cloud, the line between the development and operations team is blurred and there is a focused push towards "NoOps" by completely automating the deployment, monitoring and management of applications and the infrastructure. This push has started a debate in the industry on the future of IT Operations. Siva Perubotla, AVP Brillio, will discuss the future IT Ops and how to be prepared, as we rapidly sail into this yet unchartered territory.

Participants

Siva Perubotla - Global Delivery Head – Digital Infrastructure Services, Brillio

Understanding Persistent Connectivity: How IoT and Data Will Impact the Connected Data Center

3:40pm - 4:40pm
Next-Generation Technologies

We live in a persistently connected society. Once siloed, remote, inaccessible, and mostly underutilized data has become essential to our society and our individual lives. In fact, IDC estimates that by 2025, nearly 20% of the data in the global datasphere will be critical to our daily lives and nearly 10% of that will be hypercritical. Here's the reality - this isn't only impacting our lives; but it's changing our data centers as well. We're seeing smarter systems, integrated DCIM tools, IoT in the data center, even rack-level device connectivity. In this session, we're going to define IoT, analyze the core components of connected devices, how data is being generated, and where this all will impact and change the data center.

Participants

Speaker: Bill Kleyman - Director of Technology Solutions, EPAM Systems

How To Advance Your Data Center Career

3:40pm - 4:40pm
Professional Development

This session is geared towards anyone wanting to determine and/or advance their career including advancing into senior management. Do you want to advance your career to be a manager or a leader? Which of those are you? Can you be both? Do you want to improve your skills? If you answer yes to any of these questions, you should attend this session. John will also share his 30 years of successful mentoring, training, observations, and experience.

Participants

Speaker: John Parker - Disaster Recovery and Global Data Center Operations Management, ESRI

SESSIONS
TUESDAY, MARCH 19 - 19/03/2019

Data Center World

March 19-22, 2019
Phoenix Convention Center
Arizona

Colocation: Introduction to Site Selection & Agreement Negotiation

3:40pm - 4:40pm
Design, Build, Operate & Control 1

The majority of colocation tenants engage colocation service providers and negotiate their own terms and agreements. Those tenants with experience procuring colocation space have learned the hard way how to identify the hurdles and pitfalls of the process. This session will provide an introduction to the process and details needed to execute an agreement that best supports data center operations integrity. Site selection seems simple enough, but the process needs to include internal drivers and barriers to data center decision making, deployment market options, service provider integrity, specific facility qualifications, network connectivity options, and others. Contract and SLA terms negotiation requires an understanding of colocation billing models, market rates, generally accepted lease or MSA terms, power rates and options, etc. Attendees will gain a better understanding for developing a colocation procurement process and strategy.

Participants

Alan Howard - Sr. Research Analyst, Cloud & Colocation Data Centers, IHS Markit

Merging Information Technologies (IT) and Operations Technologies (OT) for Better Resource Efficiency and Cost Control

3:40pm - 4:40pm
Design, Build, Operate & Control 2

Traditionally, data centers used to operate in silos. Operation Technology team (OT) looks after cooling, power, fiber optic, and security aspect of the data center, while Information Technology team (IT) looks after production servers, operating systems, and business continuity. This model has been around for decades. It worked well for legacy data centers. However, Edge computing, IoT, AI, and cloud computing have put more pressure on data center managers to work more efficiently and re-think the "silo models. With shortage of qualified and trained professionals, the "silos" model does not working anymore. This merging of operational technology (OT) and information technology (IT) is a critical challenge for many organizations. However, breaking down these silos is essential to drive resource efficiency and cut cost. This presentation shall discuss lesson learned, challenges, and benefits of blending IT and OT in one cohesive team.

Participants

Speaker: Duraid AlJailawi, P.Eng - Director of Engineering, Mission Critical Solutions

No Compressor, No Problem! A New Way to Efficiently Scale Your Data Center, Minimize Energy Use and Maximize Free Cooling Hours

3:40pm - 4:40pm
Resource Efficiency & Cost Control 1

This presentation touches upon three types of economizers, air-cooled, water-cooled, and dry-cooled; and briefly discusses the advantages and disadvantages of each. The bulk of the presentation consists of an in-depth look at water cooled economizers applied to packaged DX CRAC equipment. Properly designed systems of this type deliver compressorless cooling hours that are orders of magnitude greater than those hours delivered by dry coolers with pumped water or pumped refrigerant economizers. Today's computer room air conditioning (CRAC) equipment utilize redesigned DX coils, custom chilled water coils, oversized water cooled condensers, and custom piping circuits to minimize energy use and maximize run time hours without the use of compressors. Combining these advances with the use of variable speed EC fans and VFD driven compressors in the CRAC units, and with variable speed condenser water pumps, delivers one of the best annual PUE values of any system available today.

Participants

Speaker: Mike Lawler - General Sales Manager, DataAire

Speed Networking

4:50pm - 6:00pm
Networking

Organized Networking Dinners

6:30pm - 8:00pm
Networking

Women in Data Centers Meet-up

8:00pm - 10:00pm
Networking

SCHEDULE
TUESDAY, MARCH 19 - 19/03/2019

TIME	DATA CENTER STRATEGIES & DELIVERY MODELS	DESIGN, BUILD, OPERATE & CONTROL 1	DESIGN, BUILD, OPERATE & CONTROL 2	IT INFRASTRUCTURE TECHNOLOGIES	NETWORKING	NEXT-GENERATION TECHNOLOGIES	PROFESSIONAL DEVELOPMENT	REGISTRATION	RESOURCE EFFICIENCY & COST CONTROL 1	RESOURCE EFFICIENCY & COST CONTROL 2
7:00AM					**7:00am** - Breakfast for All Access Pass Holders - Sponsored by Electronic Transport			**7:00am** - Registration Open		
8:00AM	**8:00am** - All Access Pass Workshop: The 25kW Challenge! A Workshop in Achievable Energy Reduction	**8:00am** - All Access Pass Workshop: Fundamentals of Data Center Design - Soup to Servers!	**8:00am** - All Access Pass Workshop: Co-Location Bootcamp: Everything You Need to Know to Get it Right							
9:00AM										
10:00AM										
11:00AM					**11:30am** - Lunch for All Access Pass Holders					
12:00PM					**12:30pm** - New Attendee Welcome & Orientation					

SCHEDULE
TUESDAY, MARCH 19 - 19/03/2019

TIME	DATA CENTER STRATEGIES & DELIVERY MODELS	DESIGN, BUILD, OPERATE & CONTROL 1	DESIGN, BUILD, OPERATE & CONTROL 2	IT INFRASTRUCTURE TECHNOLOGIES	NETWORKING	NEXT-GENERATION TECHNOLOGIES	PROFESSIONAL DEVELOPMENT	REGISTRATION	RESOURCE EFFICIENCY & COST CONTROL 1	RESOURCE EFFICIENCY & COST CONTROL 2
1:00PM	**1:00pm** - Getting DCIM Right the First or Second Time Around: DirecTV's Case Study on the Industry's Struggles with DCIM	**1:00pm** - 5 Ways MOPs Add Value to your Facility Excellence		**1:00pm** - State of Emergency Preparedness - What's Needed to Ensure 24/7 Power During an Emergency		**1:00pm** - GaN and Data Centers – A Small Change that Can Revolutionize the Industry			**1:00pm** - How to Save Money and the World with Your Building's Roof	**1:00pm** - Power Conditioning and Airflow Optimization: Improving Availability, Resiliency While Reducing Energy Demand
2:00PM	**2:10pm** - Exploring Data Center and Edge Solutions of the Future	**2:10pm** - Maintenance is Risky: Here's How to Expose Risk…and Consequences Before You Take Action	**2:10pm** - Air Quality in Data Centers: People vs. The Machines	**2:10pm** - Farm-to-Robot - Moving Security from a Silo into the Twenty-First Century			**2:10pm** - Transferring Knowledge: The Real In-House Training		**2:10pm** - For Most Data Centers, Liquid and Air Cooling Will Not be Mutually Exclusive	
3:00PM	**3:40pm** - To Ops or Not To Ops – That Is The Question	**3:40pm** - Colocation: Introduction to Site Selection & Agreement Negotiation	**3:40pm** - Merging Information Technologies (IT) and Operations Technologies (OT) for Better Resource Efficiency and Cost Control		**3:10pm** - Refreshment Break - Sponsored by Electronic Transport	**3:40pm** - Understanding Persistent Connectivity: How IoT and Data Will Impact the Connected Data Center	**3:40pm** - How To Advance Your Data Center Career		**3:40pm** - No Compressor, No Problem! A New Way to Efficiently Scale Your Data Center, Minimize Energy Use and Maximize Free Cooling Hours	
4:00PM					**4:50pm** - Speed Networking					
5:00PM										

SCHEDULE
TUESDAY, MARCH 19 - 19/03/2019

TIME	DATA CENTER STRATEGIES & DELIVERY MODELS	DESIGN, BUILD, OPERATE & CONTROL 1	DESIGN, BUILD, OPERATE & CONTROL 2	IT INFRASTRUCTURE TECHNOLOGIES	NETWORKING	NEXT-GENERATION TECHNOLOGIES	PROFESSIONAL DEVELOPMENT	REGISTRATION	RESOURCE EFFICIENCY & COST CONTROL 1	RESOURCE EFFICIENCY & COST CONTROL 2
6:00PM					**6:30pm** - Organized Networking Dinners					
7:00PM										
8:00PM					**8:00pm** - Women in Data Centers Meet-up					

SESSIONS
WEDNESDAY, MARCH 20 - 20/03/2019

Data Center World
March 19-22, 2019
Phoenix Convention Center
Arizona

Continental Breakfast & Networking - Sponsored by Electronic Transport

7:00am - 7:50am
Networking

Registration Open

7:00am - 6:00pm
Registration

The State of the Data Center Industry – Annual Report

8:00am - 9:00am
Keynote Programming

AFCOM's highly anticipated annual report on the State of the Data Center Industry provides the most comprehensive look into the technologies, trends, and best practices that dominate the data center market. In addition to providing the most trusted insight into the adoption of new and existing technologies, the report provides C-level execs, facilities directors, and IT professionals with the tools and information to make reliable data center plans for the next year. In this keynote, we'll deliver an analytical look at the challenges and opportunities faced by today's data center, including cloud usage, edge computing, IoT, hyperscale, cooling, staffing, skill sets, and much more.

Participants

Speaker: Bill Kleyman - Director of Technology Solutions, EPAM Systems

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Physical Security at the Rack Level: Improving The Security of Your Cabinets

9:10am - 10:10am
IT Infrastructure Technologies

As the amount of data being stored grows exponentially, the risk of theft or corruption of that data grows as well. Industry and government have recognized that logically protecting data is not enough. Increased physical security of the servers holding that data is a critical part of the process to ensure data integrity and to ensure business and operational continuity. This presentation will discuss why increased physical security at the rack level aids in compliance to standards such as PCI-DSS, HIPAA, NERC CIP 014, FISMA, GDPR and others. We will discuss the pros and cons of the various solutions on the market today including standalone, wireless, networked and end to end solutions. We will review how these technologies are converging with other data center technologies such as PDUs, DCIM and BMS. We will review the various single and multi-factor authentication technologies such as pin, card and biometric and how they can be integrated with existing cabinets.

Participants

Speaker: Mike Fahy - Commercial Product Manager, Southco, Inc.

My Boss Said "Get to the Cloud," But Which Workloads Should I Leave On-Prem?

9:10am - 10:10am
Data Center Strategies & Delivery Models

IT and data center professionals are under incredible pressure to meet digital transformation goals, and "getting to the cloud" is typically an important component. The C-Level has never liked the fact that, in traditional data centers, they have to build (and pay for) infrastructure that can handle max application demand which their organization rarely needs. The promised elasticity of cloud is enticing, but in reality there are a number of pitfalls that are too-often overlooked. Moving to the cloud is complicated and takes a different set of knowledge from managing everything on-prem. Some workloads are fairly static while others are quite variable, and placing the wrong one in the wrong place can be costly to the organization, both in performance and real dollars. This presentation will outline how to identify which workloads to move, which to leave alone, and how to move workloads to ensure that the organization gets maximum value from its cloud journey.

Participants

Speaker: Mor Cohen - Chief Technology Officer, Cloud, Turbonomic

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It's Time to Aim Lower: Zero Latency at the Edge Is Achievable at Scale

9:10am - 10:10am
Professional Development

The edge computing market is full of hype. Megawatts of hype. Gigawatts of hype. But when you push aside the marketing buzz, most of what's being done in edge computing is rather modest in scope: small micro datacenters that will move parts of the cloud a bit closer to users. The goal—zero latency at the mobile edge—and there are three components to achieving it: Accelerating LTE airlink speed, eliminating the latency in network "back ends," and moving content much closer to end users using a proven peering/colocation model. Anton Kapela, Chief Technology Officer of EdgeMicro, will delve into these three components, helping you understand the importance of adopting what already works in order to achieve the zero latency goal.

The Secret Weapon for Smarter IT: Agile Construction

9:10am - 10:10am
Design, Build, Operate & Control 1

Agile construction methodologies are dramatically changing how IT infrastructure is being built. Those construction practices will, in turn, give CIOs more flexibility in how they do IT planning and save money on a fast-growing aspect of their budgets at the same time. In this presentation, Nancy Novak, SVP of Construction for Compass Datacenters, will discuss how the melding of new technical capabilities and processes are placing more control in the hands of IT to get the data center that addresses their needs in months and not years.

Participants

Speaker: Nancy Novak - SVP of Construction, Compass Datacenters

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Lessons Learned in Custom Generator Set Data Center Installations: Enclosures, Extreme environments, Maintenance and More!

9:10am - 10:10am
Design, Build, Operate & Control 2

In this session, the two speakers will discuss applications where challenges arose installing generator sets in extreme environments that had concerns of high elevation, high and low temperatures, dusty environments while investigating both indoor and outdoor generator set installation solutions. The presenters will discuss best practices for designing and selecting value added options for generator set installations and also best practices applying to maintenance of these systems.

Participants

Speakers: Ryan Murphy - Business Development Manager - Mission Critical, MTU Onsite Energy

Nicholas Paolo - Business Development Manager, MTU Onsite Energy

SESSIONS
WEDNESDAY, MARCH 20 - 20/03/2019

Data Center World

March 19-22, 2019
Phoenix Convention Center
Arizona

Monetizing Energy Assets for Data Centers: Increasing Reliability, Improving Grid-Resiliency, and Earning Revenue Through Demand-Side Energy Management

9:10am - 10:10am
Resource Efficiency & Cost Control 1

The data center industry's push over the last decade toward a more efficient and sustainable future has come at a serendipitous time when energy markets in the US and Canada are working to reduce demand via energy efficiency investments while integrating distributed energy resources (DERs) onto their energy grids in an attempt to diversify their fuel mixes. In this session, we will examine how data centers can take advantage of this pivotal time and monetize their existing energy assets through demand-side energy management. We'll also explain how data centers can increase their own reliability and help maintain grid resiliency while earning significant revenue by participating in demand response and energy efficiency programs. Included in the presentation will be a detailed explanation of what demand-side energy management is as well as an examination of best practices currently being implemented by leading data centers in North America.

Participants

Speakers: Ray Berkebile - Director of Operations, CPower Energy Management

Danielle Bond - Senior Engineer, CPower Energy Management

Nate Soles - National Account Executive, CPower Energy Management

Refreshment Break - Sponsored by Electronic Transport

10:10am - 10:30am
Networking

How to Properly Do Rack Power Distribution Unit (PDU) Planning for IT Equipment

10:30am - 11:30am
IT Infrastructure Technologies

Participants

Speaker: Joseph Prisco - Sr. Technical Staff Member, IBM

Using CFD Modeling as a Decision Support Tool to Gain a Competitive Edge in the Co-Lo Market

10:30am - 11:30am
Data Center Strategies & Delivery Models

A common design approach for high density data centers utilizes a non-raised floor design with air delivered from one side of the room to supply air to the rack inlets, and hot aisle containment delivering return air back through a ceiling return plenum. This design approach introduces some airflow management complexities that should be reviewed and analyzed prior to implementation. In this webinar we will use CFD modeling to review one of these designs and discuss the issues associated with insuring the design is efficient and reliable under all operating conditions.

Participants

Speaker: Paul Bemis - President & CEO, Applied Math Modeling, Inc.

Don't Get Left Behind: Cabling Designs You Can Trust to Support Speeds of 40G to 400G

10:30am - 11:30am
Next-Generation Technologies

Present specific structured cabling designs to work with optics from 40G to 400G. Show cabling solutions to connect current generation of optics (40G & 100G) with a road map to connect NextGen optics (200G & 400G) with existing cabling plant. Also show cabling designs to breakout signals like 40G to 4x 10G or 100G to 4x 25G. Demonstrate the advantages of using singlemode fiber in the data center as it relates to the NextGen of optics.

Participants

Speaker: Dave Fredricks - Data Center Infrastructure Architect, CABLExpress

Shift Left: Moving the Commissioning Needle to Compress Construction Schedules

10:30am - 11:30am
Design, Build, Operate & Control 1

In today's quest for even faster deployment for mission critical facilities, it is imperative to find opportunities to reduce risk and compress schedules … but how can we do that in increasingly shortened timelines? By shifting commissioning activities left and creating fully functioning systems, it's resulting in faster commissioning and less risk in the end.

Participants

Speaker: Mike Fernholz - Engineering Services Manager, JE Dunn Construction

Can Your Data Center Become Energy Efficient? Our Planet is Counting On It!

10:30am - 11:30am
Resource Efficiency & Cost Control 1

Continuous rapid growth and adoption of data hungry IT equipment is escalating the need for greater amounts of energy to keep data centers running and highly available. Researchers estimate 50 billion new devices will be connected to the internet by 2020 and will surpass 100 billion devices by 2025. The data center industry will be one of the top five energy consumers in the world, with 65% of power generation supplied by burning fossil fuels, producing 14% of global carbon emissions. Humans have generated a 33% increase in atmospheric carbon emissions since the onset of the industrial revolution and climatologist from around the world conclude this is the number one reason for continuous global warming. Data centers are a corner stone in the global economy with the expectation of 4,000 new mega data centers in the US by 2020. The ominous challenge must be a paradigm shift from rapid explosive data center growth to effectively and responsibly reducing data center energy consumption.

Participants

Speaker: Kevin Kent - Data Center Operations Manager, The Ohio State University Wexner Medical Center

Wholesale Power Market Dynamics and Renewable Energy Supply

10:30am - 11:30am
Resource Efficiency & Cost Control 2

The discussion will focus on regulated vs. deregulated electricity markets and the impact of power market structure locating data centers. We'll discuss various approaches (as-produced, fixed contracts, load following, at the zone) to long-term power cost with or without renewable energy. We'll highlight a new arrangement data centers are employing to procure renewable energy from offsite projects, achieve renewable energy goals, manage their exposure to commodity prices, and increase budget certainty. The discussion will also highlight the role of intermediaries in these markets, and the structures and tools they can provide to achieve a more attractive allocation of risk among corporations, projects and intermediaries.

Participants

Speakers: Yashar Barut - Director, Global Commodities, Citigroup Energy Inc.

Sturgis Sobin - Associate, Global Commodities, Citigroup Energy

Lunch & Networking

11:30am - 12:30pm
Networking

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Data Center World

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Data Center Infrastructure Operational Best Practices

12:40pm - 1:40pm
IT Infrastructure Technologies

This presentation covers the best practices associated with infrastructure operations for the data center and includes security, mechanical systems, electrical systems and facility maintenance policies and procedures for a mission critical facility. We review critical facility code, design, and operational standards to specifically address facility conceptual design, space planning, building construction, and physical security best practices.

Participants

Speaker: Steven Shapiro, P.E. - Partner, EYP Mission Critical Facilities

Building the "Edge": What Can Recent Projects Tell Us?

12:40pm - 1:40pm
Data Center Strategies & Delivery Models

Industry terms "Digitization," "Cloud," and "IoT" have been around for long enough for companies to understand how the technology can impact our organizations but the impact of the today' hot technology – Edge Computing – is still relatively unknown. But is Edge Computing right for your organization and are you ready to implement the technology? In particular, what Edge Computing mean for an organization's data center? In this session, we'll use three "Edge" projects executed in 2018 as guides as we explore the main drivers behind "edge" projects and why it was necessary for the businesses to create "edge" data center. We'll also look at some of the technologies employed from the IT, network and infrastructure perspectives as well as execution methodologies for bringing "Edge" projects online.

Participants

Speaker: Tim Kittila - Director - Data Center Operations, Parallel Technologies

Cybersecurity and Data Breaches from a Business Lawyer's Perspective

12:40pm - 1:40pm
Professional Development

The session covers recent data breach cases, the significant change to the legal landscape that is occurring in the cybersecurity and data breach arena and the fact that no company, whether small, medium or large, is immune from liability. It discusses current and future cybersecurity/data breach legislation and the FTC's role in regulatory and enforcement actions related to cybersecurity and data breaches. It covers steps that businesses can take to protect themselves before, during and after a data breach and the legal significance of cybersecurity best practices. Finally, it discusses liability for third party vendor breaches and the ins and outs of cyber insurance.

Participants

Speaker: Kathy Winger - Attorney at Law, Law Offices of Kathy Delaney Winger

Legionella Bacteria and Microorganisms in Data Center HVAC Systems

12:40pm - 1:40pm
Design, Build, Operate & Control 1

The number of diagnosed cases of Legionnaires' disease has more than quadrupled since 2000, but this disease is still under reported. Legionella bacteria and other microorganisms can thrive in evaporative cooling systems and cooling towers. Are data centers at risk? The answer may be surprising. A number of new standards and guidelines have been published to help prevent, evaluate and control Legionella bacteria in building systems. This session will cover the history of Legionnaires' disease and review requirements and implementation techniques of management programs including ASHRAE – 188, CDC and OSHA guidance. It will also provide perspective on risks to occupants working in data centers with large evapoative air coolers or cooling towers.

Participants

Speaker: Rob Rottersman, MS, CIH - Principal, Ramboll

Evolving Data Centers: Integrating Risk Mitigation into Operational Savings

12:40pm - 1:40pm
Design, Build, Operate & Control 2

This presentation explores an case study approach with an integrated design and facility management team to develop and deliver methods for energy and operational savings that result in the mitigation of risk and the evolution of a Smarter Data Center. This team has integrated over 25 years of relationship into an innovation that has delivered $100 million in savings over the past 10 years. The concept to reality is comprised of analytical data mining, realistic solutions and key behavioral change that evolve into the corporate core values for sustainability and energy conservation. The facts speak volumes of how simple day to day operations are the biggest opportunities to mitigate risk; save energy, reduce carbon footprints and provide value to stockholders, clients and employees.

Participants

Speaker: Jeffrey Goetz - Director of Operations, Sustainability & Energy Management, Fluor

Single-Phase, Liquid Immersion Cooling (SLIC): Driving Hyperscale Economies to the Pico-Edge

12:40pm - 1:40pm
Resource Efficiency & Cost Control 1

We'll review the underlying concepts required to understand Single-phase, Liquid Immersion Cooling, how to implement high capacity data & compute capacity at the network edge by utilizing this new technology. We'll also explore how operators can lever this same technology to dramatically increase their density and compute while simultaneously reducing costs in typical data center applications. We'll review a business case including deployment and operations costs associated with this technology.

Participants

Speaker: Gary Testa - President & CEO, Engineered Fluids

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Data Center World

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Driving Change: Lower Tiers, Tax Laws, and Shake-Ups

1:50pm - 2:50pm
Data Center Strategies & Delivery Models

For sure, 2019 will be the year of change. More colos will sprout up in smaller cities. More colos will provide lower tier services. Tax law changes will impact balance sheets for leased data centers. IT becomes increasingly redundant due to the edge. Blockchain moves verification out of the data center. Procurement needs more IT skills, and IT needs more help. Waste (electrical and water) come to the forefront of compute. What will your data center look like in 2019? Cloud? Colo? Build? Retrofit?

Participants

Speaker: Carrie Goetz - Global Technology Director, Paige DataCom

The Impact of Next-Gen Technologies Such as Hybrid Cloud, IoT, Edge Computing, Blockchain, and Cryptocurrency on the Data Center Industry

1:50pm - 2:50pm
Next-Generation Technologies

We will dicuss expert insights on how next-generation technologies are impacting the data center industry both from a supply/demand perspective, as well as the competitive landscape.

1) Where are DC providers seeing the largest threats? Public cloud vendors? Edge computing impact on demand? How is the shift to public/hybrid cloud architectures driving growth?

2) Retail vs. wholesale colocation providers: Change in market strategy? Potential synergies?

3) Hybrid cloud impact, growth opportunity, and outlook: How high are the barriers to entry?

4) The competitive landscape: Winners and losers, ongoing market consolidation, and an examination of the largest existential threats and opportunities to the data center industry

5) Emerging technologies and their impact on the future outlook of the data center industry. The impact of edge computing; Iot and IIoT; blockhain; and cryptocurrency

6) Cybersecurity's impact on the data center industry

Participants

Moderator: Dany Bouchedid - CEO, COLOTRAQ

Speaker: Lisa Marks-Canty - CEO, ChainNinja Blockchain Solutions

Speaker: Michael Levy - Director, Product Management, Data Center Solutions, Rackspace Inc.

Speaker: Tina Gravel - SVP Global Channels and Alliances, Cyxtera

Project Pitfalls - Common Issues IT Should Avoid When Planning and Implementing a New Project

1:50pm - 2:50pm
Design, Build, Operate & Control 1

Geared to IT centric attendees who have involvement or responsibility for a construction or remodel project, this educational session will take a holistic view of a project from planning through implementation. The focus will be educating the IT centric professional about subjects they may not be entirely comfortable with. Topics will include: understanding the vast number of design/construction/AHJs involved and why it matters; setting management expectations early; budgeting; holistic project scheduling vs construction only; and other issues.

Participants

Speaker: Tad Davies - Principal, Bick Consulting Services

Let's Change the Culture About Electrical Safety in Data Centers

1:50pm - 2:50pm
Design, Build, Operate & Control 2

When data center technicians work on energized equipment, they put their lives and others around them at risk. Why? To some extent the answer lies in human nature. It is infinitely easier to do the same thing over and over -- even if it is obviously wrong -- rather than make changes on an institutional level. And if those changes may interrupt business flow, they are even less likely to become enacted. But perhaps by analyzing how things are done now, who is at risk, and what is at stake, we can start to take steps forward to be a safer industry for everyone involved in it.

Participants

Speaker: Phillip Sandino - Vice President of Data Center Operations, RagingWire

Theoretical vs. Practical Examination of Airflow and Pressure Behavior

1:50pm - 2:50pm
Resource Efficiency & Cost Control 1

A practical approach to thermodynamics, data center math, and what it means to your facility. A cost effective approach to achieving target PUE.

Participants

Peter Matte - Senior Vice President, Ascent, LLC.

PUE <1.1 Tier 3 Data Center Using Passive Rear Door Heat Exchangers and Free Direct Evaporative Cooling

1:50pm - 2:50pm
Resource Efficiency & Cost Control 2

To push the boundaries of innovation and lead the way in sustainability, Infosys undertook a case study of a Tier 3, 300kW data center in Bangalore, India to show that PUE of <1.1 was attainable using direct evaporative cooling with rear door heat exchangers (RDHX). The PUE of 1.06 was achieved with the initial installation, but the PUE increased due to excessive air leaks around the RDHX caused by movement and changes in the rack mounted components. This resulted in air leaks bypassing the RDHX and necessitating the use of the chilled water loop to reduce the water temperature through the RDHX. The effectiveness of current refinements will be presented as well as the resultant PUE. In addition to the design used in this case study, a related alternative configuration will be discussed which will allow more flexibility in the loading of the data center racks while maintaining the low PUE and passive nature of the liquid-air heat exchangers.

Participants

Speaker: Chris Caylor - Director, Product Development, Wakefield-Vette

The FedEx Mandate: The Virtual Data Center of Tomorrow

3:00pm - 4:00pm
Keynote Programming

In order to meet corporatewide demands for efficiency, FedEx has embarked on a plan to reduce data center management costs through a hybrid platform strategy, increased automation, and unique partnerships that include outreach to local university students for managed services. FedEx technology executive Gary Bronson shares the company's next-generation plans for managing workloads both on-premise and through partners; increasing the use of automation and data science; and outsourcing non-critical functions – while also helping build a new generation of IT and data center professionals.

Participants

Speaker: Gary Bronson - Vice President of IT Operations, FedEx

Opening Reception

4:15pm - 6:15pm
Networking

SCHEDULE
WEDNESDAY, MARCH 20 - 20/03/2019

TIME	DATA CENTER STRATEGIES & DELIVERY MODELS	DESIGN, BUILD, OPER-ATE & CONTROL 1	DESIGN, BUILD, OPER-ATE & CONTROL 2	IT INFRA-STRUCTURE TECHNOLOGIES	KEYNOTE PRO-GRAMMING	NETWORKING	NEXT-GENERATION TECHNOLOGIES	PROFESSIONAL DEVELOPMENT	REGISTRATION	RESOURCE EF-FICIENCY & COST CONTROL 1	RESOURCE EF-FICIENCY & COST CONTROL 2
7:00AM						**7:00am** - Continental Breakfast & Networking - Sponsored by Electronic Transport			**7:00am** - Registration Open		
8:00AM					**8:00am** - The State of the Data Center Industry – Annual Report						
9:00AM	**9:10am** - My Boss Said "Get to the Cloud," But Which Workloads Should I Leave On-Prem?	**9:10am** - The Secret Weapon for Smarter IT: Agile Construction	**9:10am** - Lessons Learned in Custom Generator Set Data Center Installations: Enclosures, Extreme environments, Maintenance and More!	**9:10am** - Physical Security at the Rack Level: Improving The Security of Your Cabinets				**9:10am** - It's Time to Aim Lower: Zero Latency at the Edge Is Achievable at Scale		**9:10am** - Monetizing Energy Assets for Data Centers: Increasing Reliability, Improving Grid-Resiliency, and Earning Revenue Through Demand-Side Energy Management	

SCHEDULE
WEDNESDAY, MARCH 20 - 20/03/2019

TIME	DATA CENTER STRATEGIES & DELIVERY MODELS	DESIGN, BUILD, OPERATE & CONTROL 1	DESIGN, BUILD, OPERATE & CONTROL 2	IT INFRASTRUCTURE TECHNOLOGIES	KEYNOTE PROGRAMMING	NETWORKING	NEXT-GENERATION TECHNOLOGIES	PROFESSIONAL DEVELOPMENT	REGISTRATION	RESOURCE EFFICIENCY & COST CONTROL 1	RESOURCE EFFICIENCY & COST CONTROL 2
10:00AM	**10:30am** - Using CFD Modeling as a Decision Support Tool to Gain a Competitive Edge in the Co-Lo Market	**10:30am** - Shift Left: Moving the Commissioning Needle to Compress Construction Schedules		**10:30am** - How to Properly Do Rack Power Distribution Unit (PDU) Planning for IT Equipment		**10:10am** - Refreshment Break - Sponsored by Electronic Transport	**10:30am** - Don't Get Left Behind: Cabling Designs You Can Trust to Support Speeds of 40G to 400G			**10:30am** - Can Your Data Center Become Energy Efficient? Our Planet is Counting On It!	**10:30am** - Wholesale Power Market Dynamics and Renewable Energy Supply
11:00AM						**11:30am** - Lunch & Networking					
12:00PM	**12:40pm** - Building the "Edge": What Can Recent Projects Tell Us?	**12:40pm** - Legionella Bacteria and Microorganisms in Data Center HVAC Systems	**12:40pm** - Evolving Data Centers: Integrating Risk Mitigation into Operational Savings	**12:40pm** - Data Center Infrastructure Operational Best Practices				**12:40pm** - Cybersecurity and Data Breaches from a Business Lawyer's Perspective		**12:40pm** - Single-Phase, Liquid Immersion Cooling (SLIC): Driving Hyperscale Economies to the Pico-Edge	

SCHEDULE
WEDNESDAY, MARCH 20 - 20/03/2019

TIME	DATA CENTER STRATEGIES & DELIVERY MODELS	DESIGN, BUILD, OPERATE & CONTROL 1	DESIGN, BUILD, OPERATE & CONTROL 2	IT INFRA-STRUCTURE TECHNOLOGIES	KEYNOTE PRO-GRAMMING	NETWORKING	NEXT-GENERATION TECHNOLOGIES	PROFESSIONAL DEVELOPMENT	REGISTRATION	RESOURCE EF-FICIENCY & COST CONTROL 1	RESOURCE EF-FICIENCY & COST CONTROL 2
1:00PM	**1:50pm** - Driving Change: Lower Tiers, Tax Laws, and Shake-Ups	**1:50pm** - Project Pitfalls - Common Issues IT Should Avoid When Planning and Implementing a New Project	**1:50pm** - Let's Change the Culture About Electrical Safety in Data Centers				**1:50pm** - The Impact of Next-Gen Technologies Such as Hybrid Cloud, IoT, Edge Computing, Blockchain, and Cryptocurrency on the Data Center Industry			**1:50pm** - Theoretical vs. Practical Examination of Airflow and Pressure Behavior	**1:50pm** - PUE <1.1 Tier 3 Data Center Using Passive Rear Door Heat Exchangers and Free Direct Evaporative Cooling
2:00PM											
3:00PM					**3:00pm** - The FedEx Mandate: The Virtual Data Center of Tomorrow						
4:00PM						**4:15pm** - Opening Reception					

SESSIONS
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Data Center World

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Arizona

Continental Breakfast & Networking - Sponsored by Electronic Transport

7:00am - 7:50am
Networking

Registration Open

7:00am - 6:00pm
Registration

Coming Untethered: Digital Natives and the Changing Workforce

8:00am - 9:00am
Keynote Programming

The ubiquity of mobile devices has changed not only how we communicate, but also has resulted in significant behavioral and values changes among younger digital natives. These values and behaviors are beginning to show up in the workplace, including a desire for "bring your own device" and open social media policies, as well as a desire for flexible and remote work options. These shifting values are beginning to spread to older workers as well, leaving managers at a loss for how to respond. Device connectivity is also changing interpersonal communications, leaving workers with a marked deficit in the "soft skills" so important to an organization. This can cause unforeseen conflicts among remote and in-house workers. This keynote will address these changing values and behaviors of untethered workers, and the impacts on the data center industry.

Participants

Speaker: Julie Albright - Digital Sociologist, University of Southern California

New UPS Batteries - Keep Up So You Can Keep on Backin' Up

9:10am - 10:10am
IT Infrastructure Technologies

New back-up battery chemistries are driving a shift in the market because of desirable new capabilities. But how do you safely and reliably deploy for best outcomes? UPS users need to understand the battery standards and practices in order to make decisions on where, when and how to deploy these different battery chemistries. Standards for recommended practices are changing even for traditional battery chemistries and additional standards are being developed for the new chemistries. This presentation will give users the knowledge they need about current and new battery chemistry standards that guide best practices in the use of stationary batteries. Battery chemistries covered include multiple lead-acid types, lithium-ion and nickel-zinc. The good news is that industry and standards organizations are staying on top of the sea-change in stationary battery chemistries. Recommended best practices and the standards behind them from the IEEE, UL and NFPA will be covered.

Participants

Speaker: Dan Lambert - Senior Product Manager, ZincFive

The Evolution of Rapid Data Center Deployment

9:10am - 10:10am
Data Center Strategies & Delivery Models

The construction of large scale colocation data centers has been accelerating globally and in particular in the US. Lowering construction capital expenses, improving infrastructure utilization, and better scalability are all important to data center operators. They have found the "sweet spot" for data center build-outs that fully leverage economies of scale. Given colocation vendors do not see a revenue stream until their first tenant moves in, time to market is imperative. The use of factory-built, pre-assembled data center modules or "building blocks" has been at the forefront of achieving rapid data center deployments. It has resulted in significant cost reductions over "stick-built" facilities — and a corresponding drop in colocation pricing over the last few years. This session explores choices in deploying functional building blocks (power distribution and cooling building blocks) with particular attention to their form factor (containerized vs. skid mounted).

Participants

Speaker: Hector Diaz - Strategic Director – Mission Critical Sector, Intermountain Electronics, Inc.

Edge Computing: Building the Network of the Future

9:10am - 10:10am
Next-Generation Technologies

The gazillion breathless blog posts about the edge computing "revolution" can easily obscure the fact that very little edge computing infrastructure is actually being built today. That's true at least for the kind of edge infrastructure that promises to underpin autonomous vehicles, augmented reality, and other applications of the future. The deployments to date have been pilot projects, as companies (mostly the big telcos) try to understand how exactly this new architecture can help them. Should enterprise data center teams even care about edge at this point? We think they should. But the best way to understand whether you should or shouldn't care about edge computing is to hear about it from people on the ground. The speakers on this panel spend most of their waking hours on the frontlines of this new infrastructure buildout. They've all been leading thinkers and technologists in the data center and cloud industry, and today they are writing its next chapter.

Participants

Moderator: Yevgeniy Sverdlik - Editor-in-Chief, Data Center Knowledge

Speaker: Cole Crawford - CEO and Founder, Vapor IO

Speaker: Lance Crosby - CEO and Chairman, StackPath

Speaker: Ihab Tarazi - CTO, Packet

The Power of Data to Change Data Center Operations

9:10am - 10:10am
Design, Build, Operate & Control 1

Bloomberg's 5,000 software engineers have a mission to architect and deploy systems that fulfill the needs of leading global financial market participants. My basic day-to-day responsibility is to ensure the data center rubber meets the road by managing several 24/7 groups that keep the lights on and provide the first line of defense against problems. We use *data* to help do that, and you should, too.

Participants

Speaker: Bill Skinner - Operations Services Manager, Bloomberg LP

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Digitizing Data Center Infrastructure Management Using SDX (Software Defined Everything)

9:10am - 10:10am
Resource Efficiency & Cost Control 1

The world is getting digitized at a rate never seen before. Digitization is driving not only the emergence of a new era of companies but also disruption of many established companies. Only those businesses that can transform quickly will survive. Transformation needs to happen in every department of a company including the data center. Today, customers have a choice to select their infrastructure provider. They can either select a public service provider or select their internal IT provider. Key differentiation factors are speed and experience. The only way to achieve speed, reduce cost, and enhance the overall experience is by digitizing every process and technology, including transforming people. In this session, you will learn how Cisco IT transformed itself via its SDX (software-defined everything) program and the value/benefit achieved through this transformational journey. The audience will learn which key technology, process, people, and organization changes Cisco IT underwent to drive the transformation.

Participants

Speaker: Ashish Nanjiani - IT Director, CISCO

Improving Efficiency, Reliability and Life-Time Cost of Data Centers Using DC Technology

9:10am - 10:10am
Resource Efficiency & Cost Control 2

This session presents a real case study that compares AC and DC technologies for powering a typical data center and outlines the main advantages and limitations of each technology. The study aims in providing an analysis which will cover genuine figures about both technologies. A comprehensive analysis was conducted to evaluate the advantages of utilizing DC grid technology to power up data centers. The study presents an energy efficiency analysis which has been conducted for an existing AC powered data center and compared against a similar-in-kind modeled DC powered data center via utilizing simulation software. Moreover, the study examines the life time cost of AC & DC data centers in which energy efficiency, foot print, Capex and Opex analysis were conducted and the resulted saving in monetary value was calculated.

Participants

Speaker: Abdullah Alharbi - Data Center Engineering Specialist, Saudi Aramco

Optimizing SSD Storage Technology to Address the New Data Center Landscape

10:20am - 11:20am
IT Infrastructure Technologies

Cloud and enterprise data centers are destined to become increasingly virtualized - needing to deal simultaneously with the demands of multiple tenants and supporting an array of workloads. So the way their storage resources are implemented clearly needs to change dramatically. In most cases data centers' processing and networking capabilities are relatively underutilized, while data storage hardware is being pushed to its limits. Overcoming this issue will need a disaggregated approach, with the storage element separated from processing and networking elements. By doing this, higher degrees of utilization, along with accelerated data throughput and fully deterministic operation will be derived. The proposed presentation will show how disaggregation of data storage can be enabled via NVMe-over-Fabric technology. Details will be given of how this allows SSD architectures to be optimized for specific workload characteristics - in terms of performance, power budget and cost of ownership.

Participants

Speaker: Shahar Noy - Senior Director of Product Marketing for Data Center Storage Solutions, Marvell Semiconductor Inc.

How to Plan for Colocation: Supplementing On-Premises & Stairway to Cloud

10:20am - 11:20am
Data Center Strategies & Delivery Models

Understanding how to strategically plan, evaluate and select colocation will enable a wise data center manager to guide his company to intelligently procure colocation as a supplement to on-premises data centers and a pathway to public cloud adoption. Forward-thinking data center managers who understand new delivery models like colocation and cloud enhance their value to their organizations, while those who only preserve the status quo sometimes get left behind. This session explores ways wise DC managers can formulate and execute strategies for colocation use (and understand when it shouldn't be used) to enhance organizational and professional value.

Participants

Speaker: Kirk Killian - President, Partners National Mission Critical Facilities

The Emerging Era of Cognitive Security

10:20am - 11:20am
Next-Generation Technologies

Participants

Speaker: Sean Brown - Senior Manager, IBM

Challenges with Firestopping and Airflow Containment in Data Centers

10:20am - 11:20am
Design, Build, Operate & Control 1

During a building fire, flames and smoke travel through gaps created by penetrations through floor and wall assemblies. Fire protection containment systems help restore the integrity of these assemblies to reduce risk of facility damage. However, is there a connection between the systems used to seal these penetrations and a building's overall performance ... beyond firestopping? Could firestop systems impact airflow and help improve efforts to pressurize a data hall for proper function of suppression systems or even help improve energy efficiency? What do owners and designers need to know to address these issues? This presentation will address these questions.

Participants

Speaker: Chris Kusel - Global Engineering Director, Hilti

Stranded Capacity: The Silent Killer of Data Centers

10:20am - 11:20am
Design, Build, Operate & Control 2

According to a recent Business Insider publication, companies are wasting over $62 billion in paying for data center and cloud capacity they don't need. Companies and organizations are routinely limited in their data center capabilities because of squandered power, cooling, and space within their facilities. This stranded capacity is slowly choking data centers, preventing IT, Real Estate, and Facilities teams from being able to effectively use their technology spaces. In this session, Christian Pruett will share about challenges people face with stranded capacity in their facilities. He will identify some of the most common causes of wasted resources, share strategies and tactics for addressing stranded capacity issues, and teach attendees how to holistically view data centers to maximize efficiency and minimize costs through waste.

Participants

Speaker: Christian Pruett - Director, Data Center Services, Arrow Electronics Inc.

SESSIONS
THURSDAY, MARCH 21 - 21/03/2019

Data Center World
March 19-22, 2019
Phoenix Convention Center
Arizona

Cannabis Grow Facilities Applying Data Center Technology (Three Case Studies)

10:20am - 11:20am
Resource Efficiency & Cost Control 1

Cannabis grow facilities utilize rapidly evolving technology, much of which is familiar to the data center industry. This session includes 3 case studies: an outdoor facility in CA and indoor facilities in CA and MA. Many configurations are viable, including one resembling Yahoo's notorious chicken coop data center. Significant and reliable electrical power and purified water is required. Precision control and timing of lighting color and intensity, light deprivation, temperature and humidity is key to high-value yield. Boilers warm RO water and cooling technology ranges from custom CRAC units to water-wall evaporative cooling. Backup generators and ATSs are deployed. Critical systems are commissioned. Whereas IT equipment does not produce humidity or attract insects, plants do. Infrastructure failures can result in $150,000 of crop value loss. Speed to market, energy efficiency, effective seed-to-sale tracking for regulatory compliance and security drive the bottom line.

Participants

Speakers: Michael Fluegeman - Principal, Director of Engineering, PlanNet

Jim Strano - Vice President/ Principal, PlanNet

Lunch & Networking

11:20am - 12:20pm
Networking

Exhibit Hall Open

12:00pm - 6:00pm
Exhibit Hall Hours

Knowledge + Networking Stage Activities

12:30pm - 5:30pm
Knowledge + Networking Stage

Dessert Reception in Exhibit Hall Lounge

1:00pm - 2:00pm
Networking

Exhibit Hall Happy Hour

4:00pm - 6:00pm
Networking

SCHEDULE
THURSDAY, MARCH 21 - 21/03/2019

TIME	DATA CENTER STRATEGIES & DELIVERY MODELS	DESIGN, BUILD, OPERATE & CONTROL 1	DESIGN, BUILD, OPERATE & CONTROL 2	EXHIBIT HALL HOURS	IT INFRA-STRUCTURE TECHNOLOGIES	KEYNOTE PROGRAMMING	KNOWLEDGE + NETWORKING STAGE	NETWORKING	NEXT-GENERATION TECHNOLOGIES	REGISTRATION	RESOURCE EFFICIENCY & COST CONTROL 1	RESOURCE EFFICIENCY & COST CONTROL 2
7:00AM								**7:00am** - Continental Breakfast & Networking - Sponsored by Electronic Transport		**7:00am** - Registration Open		
8:00AM						**8:00am** - Coming Untethered: Digital Natives and the Changing Workforce						
9:00AM	**9:10am** - The Evolution of Rapid Data Center Deployment	**9:10am** - The Power of Data to Change Data Center Operations			**9:10am** - New UPS Batteries - Keep Up So You Can Keep on Backin' Up				**9:10am** - Edge Computing: Building the Network of the Future		**9:10am** - Digitizing Data Center Infrastructure Management Using SDX (Software Defined Everything)	**9:10am** - Improving Efficiency, Reliability and Life-Time Cost of Data Centers Using DC Technology

SCHEDULE
THURSDAY, MARCH 21 - 21/03/2019

TIME	DATA CENTER STRATEGIES & DELIVERY MODELS	DESIGN, BUILD, OPERATE & CONTROL 1	DESIGN, BUILD, OPERATE & CONTROL 2	EXHIBIT HALL HOURS	IT INFRASTRUCTURE TECHNOLOGIES	KEYNOTE PROGRAMMING	KNOWLEDGE + NETWORKING STAGE	NETWORKING	NEXT-GENERATION TECHNOLOGIES	REGISTRATION	RESOURCE EFFICIENCY & COST CONTROL 1	RESOURCE EFFICIENCY & COST CONTROL 2
10:00AM	**10:20am** - How to Plan for Colocation: Supplementing On-Premises & Stairway to Cloud	**10:20am** - Challenges with Firestopping and Airflow Containment in Data Centers	**10:20am** - Stranded Capacity: The Silent Killer of Data Centers		**10:20am** - Optimizing SSD Storage Technology to Address the New Data Center Landscape				**10:20am** - The Emerging Era of Cognitive Security		**10:20am** - Cannabis Grow Facilities Applying Data Center Technology (Three Case Studies)	
11:00AM								**11:20am** - Lunch & Networking				
12:00PM				**12:00pm** - Exhibit Hall Open			**12:30pm** - Knowledge + Networking Stage Activities					
1:00PM								**1:00pm** - Dessert Reception in Exhibit Hall Lounge				
2:00PM												
3:00PM												

SCHEDULE
THURSDAY, MARCH 21 - 21/03/2019

TIME	DATA CENTER STRATEGIES & DELIVERY MODELS	DESIGN, BUILD, OPERATE & CONTROL 1	DESIGN, BUILD, OPERATE & CONTROL 2	EXHIBIT HALL HOURS	IT INFRASTRUCTURE TECHNOLOGIES	KEYNOTE PROGRAMMING	KNOWLEDGE + NETWORKING STAGE	NETWORKING	NEXT-GENERATION TECHNOLOGIES	REGISTRATION	RESOURCE EFFICIENCY & COST CONTROL 1	RESOURCE EFFICIENCY & COST CONTROL 2
4:00PM								**4:00pm** - Exhibit Hall Happy Hour				

SESSIONS
FRIDAY, MARCH 22 - 22/03/2019

Data Center World

March 19-22, 2019
Phoenix Convention Center
Arizona

Continental Breakfast & Networking - Sponsored by Electronic Transport

7:00am - 7:50am
Networking

Registration Open

7:00am - 6:00pm
Registration

The Case for Hybrid Migration

8:00am - 9:00am
Keynote Programming

When it comes to data center migration, there are many different approaches to choose — from relocations to cloud and consolidations. Another option is to be both on premise and in the public cloud, where data and applications can be stored across various infrastructures and environments locally or on the internet. In this keynote, Oath CTO Atte Lahtiranta will speak to taking a hybrid approach for data center migration. He will share experiences from Oath's own data centers, which are some of the most cost-efficient in the industry, also housing hundreds of thousands of physical and virtual compute resources globally, connected via a multi-terabit network backbone.

Participants

Speaker: Atte Lahtiranta - Chief Technology Officer, Oath

Is Your Data Center Prepared for Disaster? 8 Key Steps to Create a Successful Disaster Recovery Plan

9:10am - 10:10am
IT Infrastructure Technologies

This discussion focuses on an organization's ability to recover from an outage which can be loss of a single technology or a catastrophic event. Learn methods to determine which of the various disaster recovery solutions (internal data center, colocation, cloud, etc.) are best for your organization. Understand a successful methodology which includes key steps to building an appropriate DR solution, and how to identify and rank your organization's critical technology services. This presentation will also address risks related to data center geography, how to properly measure capacity, impacts of IT virtualization, and the differences between risk, operational compliance, and a business impact analysis.

Participants

Speaker: Jeff Gilmer - Senior Partner and Vice President, Excipio Consulting, LLC

TBD

9:10am - 10:10am
Data Center Strategies & Delivery Models

TBD

The Slow Death of the Public Network

9:10am - 10:10am
Next-Generation Technologies

The public network has held up well over the years, but today's latency intensive cloud-delivered applications are taking their toll. In this presentation, Compass Datacenters' CEO, Chris Crosby, will examine the current status of the public network and the alternatives that are arising to take its place. Among the topics included in this discussion will be the reason for the public network's decline, the future successors to the PN and their requirements and how major cloud providers will become their own network providers. The presentation will also explore the unique obstacles that providers will need to address in the development and operation of their private network structures.

Participants

Speaker: Chris Crosby - CEO, Compass Datacenters

So You Want to be a CyberCrime Fighter? Inspiring Others through Outreach

9:10am - 10:10am
Professional Development

With a projection of 1.8 million unfilled cybersecurity jobs expected by 2020 (Frost & Sullivan, 2017) the cybersecurity skills gap simply cannot be ignored. While hackers are growing in number and sophistication, those fighting back are facing a talent shortage. Many organizations are taking action, and you can too. Learn how outreach programs play a critical role in addressing the skills gap.

Participants

Speaker: Heather Ricciuto - Academic Outreach Leader, IBM

Making the Case for Base-8 Cabling

9:10am - 10:10am
Design, Build, Operate & Control 1

With the addition of all the new high-speed network options this past year, no wonder it's easy to get confused on how best to prepare your fiber infrastructure to handle it. The good news is you get to re-use some of your cable plant for these newer technologies. The bad news is many of those legacy patch panels and cables in your data center will finally make a trip to the dumpster. Developing a base-8 fiber backbone for your "go forward" connectivity has many advantages to help future proof your data center as well as support the many new high-speed ports that are out on the market. We'll explore the current state of affairs for fiber port speeds as it relates to the data center and look at the advantages that a Base-8 cabling approach can meet today's and tomorrow's challenges.

Participants

Speaker: Tom Hodson - Solutions Architect, Total Cable Solutions

If It's Free Cooling, Then Why Am I Paying So Much?

9:10am - 10:10am
Resource Efficiency & Cost Control 1

The project team for a new data center in central Colorado wanted to take advantage of the dry climate, so indirect evaporative cooling (IEC) seemed a perfect fit. Site constraints and owner's project requirements limited the available mechanical options, however. Packaged IEC equipment was not a viable solution, so the team chose to use enhanced closed-circuit fluid coolers as the primary cooling source. This approach allowed for the mechanical system to operate in FREE COOLING mode for 80% of the year, providing an annualized PUE of approximately 1.4. This was not achieved without a cost, however. The design team is now working with the owner on several control strategies to create a balance between energy savings and water utilization…in an effort to minimize the cost of "FREE COOLING."

Participants

Speaker: Gary Johnson, Jr., PE, CxA - Partner, TiePoint-bkm Engineering, LLC

Refreshment Break - Sponsored by Electronic Transport

10:10am - 10:40am
Networking

SESSIONS
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Data Center World

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Choosing a Public Cloud Platform – Choose Between AWS, Azure and Google Cloud Based on On-Premises Workloads, Security Restraints and Data Analytics Requirements

10:40am - 11:40am
Data Center Strategies & Delivery Models

Participants

Speaker: Anuj Varma - Founder, President, Anuj.com - The Brand Name in Independent Tech Consulting

Battery Tech Training: A 10-Year Perspective for the Preparation and Delivery of a Battery Technician Training Curriculum

10:40am - 11:40am
Professional Development

This session will present a summary of the success and challenges in the preparation and implementation of training based on IEEE 1657. The IEEE document defines the areas of recommended knowledge for installers and maintainers of stationary batteries and related systems to the extent that they affect the battery. The purpose of the IEEE document is to provide an outline of the necessary items that should be covered by those developing training programs for stationary battery installation and maintenance personnel.

Participants

Speaker: Edward Rafter - Senior Associate, George Butler Associates

Latest Developments in Data Center Sensor-Based Tracking

10:40am - 11:40am
Design, Build, Operate & Control 1

Data center professionals are typically among the first to deploy new technologies. However, the data center industry may be lagging behind when it comes to the latest in RFID tags and other sensors. Learn how data center operators and other industries have simplified and centralized data collection generated by low-cost sensor-based tracking programs used for safety protocols, maintenance activities, creating and maintaining audit trails for regulatory compliance, and triggering immediate alerts and notifications for activities that may be out of environmental ranges or handled in ways outside of acceptable parameters. Case studies include uses in healthcare, pharmaceuticals, manufacturing, retail, and the food chain.

Availability Analysis for Data Center Evaluation

10:40am - 11:40am
Design, Build, Operate & Control 2

The discussion will start with an understanding of the process and level of detail is required for various types of facility analysis from design evaluation to full facility availability analysis. A presentation on the full availability analysis process will be discussed in detail. Next a presentation to discuss the calculations involved and what they mean. Finally, using the calculations, it will be discussed a number of ways to improve facility availability. Lastly, a question and answer session will be accommodated.

Participants

Speaker: Juan Orosco - Chief Technology Officer, TrendPoint Systems, Inc.

Liquid Immersion Cooling; Three Case Studies Show Compelling Data for Power Savings

10:40am - 11:40am
Resource Efficiency & Cost Control 1

As data equipment both becomes more powerful (more watts per processor) and more densely packed (more processing per rack), the use of a liquid system for cooling will get increasingly more attention. There must be at least one compelling reason to alter the existing thinking about having any liquid within the data space. One of the reasons might include the need for greater density of the data equipment, or it might be to reduce the cost of cooling. Liquid cooling addresses both of these issues. The increase in density will depend on your hardware, and your results may vary. This presentation will directly report exactly how the power to cool your data is used, in different actual systems, from a large central plant to direct ambient-air-over, to direct liquid immersion. While you may leave the presentation not yet a convert of this new version of the technology, you will at least have seen the data showing why liquid immersion cooling should be considered.

Participants

Jack Kolar - Vice President, Mission Critical Products, TAS

Smarter, Greener, Leaner: How Four Data Centers Improved Resource Efficiency and Cost Control

10:40am - 11:40am
Resource Efficiency & Cost Control 2

Learn how customers are managing data center complexity by simplifying rack management and driving inefficiency our of data centers. Topics that will be addressed: Major challenges facing IT leaders when it comes to properly monitoring and controlling data center resources; understanding new solutions aimed at reducing complexity while improving data center operations and infrastructure visibility; how four data centers are using intelligent management solutions like: High-Density Power Deployed – deploying 30KW cabinets with limited space; Colo Deployment – confidently manage remote data centers globally; Capacity Utilization – benchmark and roll-out IT devices effectively and quickly; Data Center Consolidation – reliably add, move, and change assets

Participants

Speaker: Nicolas Sagnes - Product Manager, Raritan

Lunch & Networking

12:00pm - 1:00pm
Networking

Exhibit Hall Open + Expo-Only Pass Day

12:45pm - 4:30pm
Exhibit Hall Hours

Knowledge + Networking Stage Activities

12:45pm - 4:30pm
Knowledge + Networking Stage

Dessert Reception in Exhibit Hall Lounge

1:00pm - 1:45pm
Networking

Closing Networking Reception

5:00pm - 6:30pm
Networking

SCHEDULE
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7:00AM								7:00am - Continental Breakfast & Networking - Sponsored by Electronic Transport			7:00am - Registration Open		
8:00AM						8:00am - The Case for Hybrid Migration							
9:00AM	9:10am - TBD	9:10am - Making the Case for Base-8 Cabling			9:10am - Is Your Data Center Prepared for Disaster? 8 Key Steps to Create a Successful Disaster Recovery Plan				9:10am - The Slow Death of the Public Network	9:10am - So You Want to be a Cyber-Crime Fighter? Inspiring Others through Outreach		9:10am - If It's Free Cooling, Then Why Am I Paying So Much?	

SCHEDULE
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10:00AM	**10:40am** - Choosing a Public Cloud Platform – Choose Between AWS, Azure and Google Cloud Based on On-Premises Workloads, Security Restraints and Data Analytics Requirements	**10:40am** - Latest Developments in Data Center Sensor-Based Tracking	**10:40am** - Availability Analysis for Data Center Evaluation					**10:10am** - Refreshment Break - Sponsored by Electronic Transport		**10:40am** - Battery Tech Training: A 10-Year Perspective for the Preparation and Delivery of a Battery Technician Training Curriculum		**10:40am** - Liquid Immersion Cooling; Three Case Studies Show Compelling Data for Power Savings	**10:40am** - Smarter, Greener, Leaner: How Four Data Centers Improved Resource Efficiency and Cost Control
11:00AM													
12:00PM				**12:45pm** - Exhibit Hall Open + Expo-Only Pass Day			**12:45pm** - Knowledge + Networking Stage Activities	**12:00pm** - Lunch & Networking					

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1:00PM								1:00pm - Dessert Reception in Exhibit Hall Lounge					
2:00PM													
3:00PM													
4:00PM													
5:00PM								5:00pm - Closing Networking Reception					