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7x24
7xChange

The end-to-end reliability forum.

www.7x24exchange.org

2006 SPRING CONFERENCE

End-to-End Reliability: **The Business Connection...**

June 4 - 7, 2006

JW Marriott Orlando, Grande Lakes

Orlando, Florida



What is 7x24 Exchange?

The leading knowledge exchange for those who design, build, use and maintain mission-critical enterprise information infrastructures, *7x24 Exchange* is a not-for-profit organization seeking to improve end-to-end reliability by promoting dialogue among these groups.

Founded on the assumption that often professionals involved with data center uptime issues work in isolation when dealing with technical, budget, political, and career issues. As a result of expensive, time-consuming, and, sometimes, painful trial and error processes, innovative practitioners evolved unique and creative ways of solving problems and building the organizational support needed for their implementation. However, many have been stymied because they did not have access or know how to communicate potential risks to senior management to avoid a downtime disaster occurrence.

7x24 Exchange members work together to advance the state-of-the-art in infrastructure reliability. By collecting and disseminating data on safeguarding information systems and alerting top management to the importance of proactive measures, members can protect their companies' information lifelines.

The Goal of 7x24 Exchange Conferences

The field of uninterrupted uptime has no textbooks. Before its founding in 1989 as the Uninterruptible Uptime Users Group, learning how to deal with uptime issues largely resulted from individual trial and error. Continuing this random rate of reliability improvement would increasingly restrict the potential productivity of the large, growing investment in computer and communication hardware and systems. It also would interfere with the increasingly critical dependence on information accessible through computers.

With 7x24 operations now common, how much higher will availability requirements be in five years? How can cost-effective, reliable responses be assured? When is a centralized application site requiring ultra-high availability viable? Addressing, and, hopefully, answering these and related strategic questions, *7x24 Exchange* conferences provide stimulating discussion forums. Collectively, we know much about the future options and alternatives available. With *7x24 Exchange*, that knowledge can be shared.

All program elements aim to increase the reliability and availability of an enterprise's information infrastructure by presenting case studies, new ideas, techniques and tools. Open dialogue between attendees and presenters is encouraged throughout. Further, by involving the many specialists from user and supplier/service organizations with formal and informal sessions, the experience is rewarding and enjoyable for all.

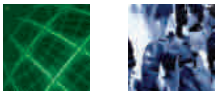
Who Should Attend and Why

This conference is designed for anyone involved with 7x24 infrastructures — IS, data center, disaster recovery and network/telecommunication managers; computer technologists; facility or building managers, supervisors and engineers. Vendors, consultants, or anyone concerned with uninterrupted access to critical information also will find the conference of value.

Attendees and their organizations benefit from the conference because proactive plans and cooperation from diverse functions are needed to improve reliability. By promoting a dialogue and clarifying the synergies among functions, past conferences have enabled teams of attendees from a given organization to better communicate the critical importance of a proactive approach to continuous uptime. Team members also were able to cover breakout sessions and network with other professionals in similar companies/industries with like problems.

Conference attendees benefit in three ways: professional development and advancement; increased recognition of their function's importance; and exposure to new ideas, contacts and resources. First-time attendees often discover that many companies face similar, if not identical, technical and organizational problems in their quest for higher availability levels. Those still unaware of this often view their situations as unique. However, they learn there are many common downtime risks and failure modes with solutions clustering around universal ideas and attitudes. *7x24 Exchange* conferences provide insights into what is being planned and done by others to mitigate or eliminate downtime risks. Recommended changes can then be justified, both on their practical merits and in the context of business arguments that have been successful elsewhere.





SUNDAY, JUNE 4

9:00 A.M. – 12:30 P.M.

Tutorial Session A: Fundamentals of Data Center Commissioning

This session will explore the key elements and issues that a project team needs to address in order to deliver an effective data center commissioning program. It will cover language, objectives, methods, team member roles, and success criteria that characterize an outstanding program. The session will include real-life examples of findings and corrective action. Participants are invited to submit examples of facility issues they have experienced so that the session can address how a commissioning program might prevent similar occurrences in future projects.

Dave DiQuinzio

Principal
Strategic Facilities, Inc.

12:00 NOON – 10:00 P.M.

Registration

1:00 P.M. – 3:00 P.M.

Tutorial Session B: Fluid Mechanics 101: Fundamentals of Cooling Airflow in a Data Center

This tutorial session will introduce basic concepts of air velocity, airflow rate, pressure, and temperature distribution as applied to raised-floor data centers. You will be shown why the flow distribution through the perforated tiles is usually not uniform. It is governed by the air velocity and pressure variation under the raised floor. By calculating this variation, you can predict the airflow coming out of each perforated tile. Such a calculation allows you to study the effect of variables such as: layout of the CRAC units and the perforated tiles, the height of the raised floor, and the presence of obstructions under the raised floor. Many examples will be presented to develop an understanding of the physical processes and to draw practical conclusions. The tutorial will show how to create a computational model of a data center layout and calculate the corresponding airflow and temperature distribution.

Suhas V. Patankar, Ph.D.

Professor of Mechanical Engineering
University of Minnesota and
President, Innovative Research, Inc.

3:00 P.M. – 5:00 P.M.

Tutorial Session C: Basics of Standby Power Generation with an Update on New Technologies

In mission critical applications, reliability of the standby power system is crucial. This session will explain the basic operation of standby power with a focus on maximizing system reliability. Topics include critical system design points, importance of scheduled maintenance, and new standby power technologies. These include bi-fuel technologies that address generator run time concerns and integrated paralleling technologies addressing cost effect N+1 solutions. The goal of the session is to present a practical working knowledge of generator operation and concepts that impact system reliability. This session is designed specifically for practicing professional engineers and mission critical facility managers.

Mike Kirchner

Training Manager
Generac Power Systems

5:00 P.M. – 10:00 P.M.

Registration (continued)

6:00 P.M. – 10:00 P.M.

WELCOME RECEPTION

SPONSORED IN PART BY: **CATERPILLAR®**

Join us for a buffet reception with open bar accompanied by soft music. This is an excellent opportunity to dialogue with conference presenters, meet new people, network, welcome first time attendees, renew old acquaintances, and meet the board members.





MONDAY, JUNE 5

7:00 A.M.

Registration & Breakfast

Check in, pick up your name badge, conference materials and enjoy a hot buffet breakfast.

8:30 A.M.

Welcome and Opening Remarks

Bob Cassiliano, *7x24 Exchange* chairman will open the conference, provide an overview, review meeting logistics and address general housekeeping items.

9:00 A.M.

Keynote Address: Cisco Systems Data Center Migration

Cisco Systems operates enterprise production data centers and business data centers around the world, in earthquake country, in hurricane country, in snow country and globally. Please join Brad Boston, Cisco's CIO, as he discusses the issues, challenges and opportunities of developing and operating a world-class datacenter for a global company.

Brad Boston

Chief Information Officer
Cisco

10:00 A.M.

Refreshment Break

CONFERENCE BREAKS HAVE BEEN

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10:30 A.M.

Hunting Mighty Milliwatts: How to Monitor These Elusive Creatures, With Their Potentially Catastrophic Energy, BEFORE They Can Cause a Major Power Failure.

This session provides an explanation of the physics and technology behind identifying the elusive Mighty Milliwatt, how they grow explosively into Megawatts, and the practical continuous monitoring systems to find them, now made possible by the new technology.

Ross Kennedy

Managing Director
QHI Group LTD

11:30 A.M.

Optimal Test Strategies for Standby Diesel Engine-Generators

Diesel Engine-Generators (DEGs) are a key element of nearly all mission-critical facilities. Routine testing of DEGs is performed with the intention of achieving the highest possible reliability and availability. All actions have both positive and negative consequences, and it is possible that a poorly structured test program would reduce the reliability of DEGs.

Steve Fairfax and Prof. Mike Golay present an analysis of DEG testing using fault trees. The results are used in the construction of a test strategy that produces the desired benefits while controlling negative outcomes. The results may be contrary to some widely held beliefs. The results show that some test practices may actually reduce reliability and availability.

Stephen A. Fairfax

President
Mtechnology

Michael Golay, Ph.D.

Professor of Nuclear Engineering
MIT Nuclear Engineering Department





12:30 P.M.

Lunch and Networking

1:45 P.M.

Deploying Enterprise (Intel) – Level High Density Computing Facilities – Part 2

In the second of a two part discussion, the Intel project delivery team will address both the results of the two completed projects in Santa Clara, CA, and Jones Farm, OR. The presentation will cover two specific areas of the now-completed works.

First, the start-up and initial six-month operation run at the facility, and how the facilities have stood up to the original construction and IT model used to justify and build them. Second, we'll discuss where the models are being adjusted and why. The presentation will also address the most common questions that the team was asked during Q&A and privately after the conference, such as provisioning methodology and techniques for the server farms and systems.

William P. Mazzetti Jr., P.E.

Director of Engineering Services & Chief Engineer
Rosendin Electric, Inc.

Jeffrey J. Davis

Strategic Planning/Partnership/Development
ISTG/GFS

2:45 P.M.

Make Your Own Sundae Break

Talk about cooling down your system...

Don't miss this *7x24 Exchange* conference tradition complete with all the trimmings.

3:15 P.M.

CO₂ Mission Critical Cooling System – Imperial College (London, UK)

The leaps and bounds made by the world of I.T. in server technology, driven by the needs of commerce, industry and education, have seen the expansion of blade server technology on the I.T. market. "Blades" generate phenomenal heat loads of up to 20/30kW per equipment rack, which presents the services engineer with an almost impossible cooling task. Join us as we discuss innovative methods used to tackle these and other cooling issues.

Ronald I. Johanning, PE

Project Manager
Affiliated Engineers, Inc.

Guy Hutchins

Sales and Marketing Director
Trox AITCS

David Leatherbarrow

CEO
Trox AITCS

4:15 P.M.

7X24 INFORMATION EXCHANGE

First time attendees, a great experience awaits you! We look forward to welcoming you to the Spring Conference. This informal networking session will offer first time attendees an opportunity to gain a perspective about *7x24 Exchange*.

6:30 P.M. – 10:30 P.M.

HOSPITALITY SUITES

You and your guest are invited to visit the hosting companies that support *7x24 Exchange*. Food, fun and games in a vibrant high-energy environment will be the emphasis.

American Power Conversion, Danaher Power Solutions, Eaton, Emerson Network Power and Square D.





TUESDAY, JUNE 6

7:00 A.M. **Breakfast**

8:30 A.M. **Opening Remarks**

Bob Cassiliano will review day one highlights, recognize the conference Corporate Leadership Program sponsors and give a 7x24 Exchange update.

9:00 A.M.

Keynote Address: The Data Center Value Proposition

In a time of ever tightening budgets, continually demonstrating the business value of any IT Operations is crucial to success and in some cases its very existence. John Samanns, Principal of Technology Planning for Vanguard, discusses best practices for developing and maintaining a strong linkage between Business and technology, focused mainly on how Data Center Operations organizations can provide both exemplary day to day operations and value added services.

In this keynote, the topics will be: focusing on business driven decision making, demonstrating relevance through operational excellence, and moving the data center from a utility to a value added service provider. Through the presentation of real world examples, Mr. Samanns will highlight how Data Center Operations teams can develop and maintain a business driven technology strategy now and into the future.

John Samanns

Principal, Technology Planning
Vanguard Group

10:00 A.M. **Refreshment Break**

10:30 A.M.

Energy Use Trends in Data Centers

In the traditional enterprise-type data center higher density has been a noticeable trend in the past two years, but reliability is still the major driver. However, in the new internet/search engine/supercomputing-type data centers, energy conservation and the ability to cool high-density racks are the primary drivers rather than high reliability. Since energy represents about half of the operating costs in these facilities,

data center designers need to develop innovative ways to reduce energy consumption. This includes utilizing building performance simulation tools such as Computational Fluid Dynamics (CFD) Modeling, Energy Modeling and Life-Cycle Cost Analysis.

William Kosik, P.E., CEM, LEED® AP

Managing Principal
EYP Mission Critical

11:30 A.M.

Securing the Physical Layer of Communication Data in the Data Center

Professionals face many challenges with ensuring uninterrupted uptime. Some efforts are focused on measures relating only to the inside of the facility while others zero in on connectivity, availability and performance measures from one facility to another. Who is paying attention to security measures at the physical layer of fiber optic communications?

This briefing will cover downtime caused by Third Party Interference (TPI) when a communications bundle is damaged by an event such as construction activity. The affects and avoidance of illegal data tapping will also be addressed. Case Studies will be introduced and real-time security technology will be presented.

Jeff Adams

Director of Security
Oasis Security

12:30 P.M. **Lunch and Networking**

1:45 P.M.

Managing Mission Critical Facilities

We all know that today's data centers are more and more mission critical. At this session you will learn about how leading edge companies manage their data centers for efficient and reliable operations. From speaking with dozens of visionary data center managers, Mr. Feinleib will describe what they see is needed in a management system to effectively manage their mission critical facilities.

Harold Feinleib

Founder and Vice President of Product Development
Aperture Technologies





2:45 P.M. **Refreshment Break**

3:15 P.M.

Applying Modern Construction Management Techniques to Data Center Build Outs

Your company has made the decision to build a data center; you have been tasked with the responsibility to manage the process. Following common practice, you will assign internal resources and then begin the design process by hiring an architect, engineer, and other consultants to develop the overall program and to transform your firm's requirements into design document and drawings. At the end of that process, you will send those documents out to bid to retain either a construction manager or general contractor to build the design.

There is an alternative approach-one that brings you the insight and expertise that comes from building and managing millions of square feet of mission critical space. An approach that ensures you are provided with accurate budgets, commitment to build your facility for those estimates, constructability analysis, and schedules based on hands-on, in-the-field experience.

The approach that provides you these benefits is to select a mission critical construction manager as the first step in your consultant selection process. On board from the very beginning, a mission critical construction manager provides you with site and building analysis, a database of actual costs, insights from lessons learned, and logistics planning based on extensive experience with a knowledge of mission critical construction. Your mission critical construction manager provides all this and more.

Kevin O'Brien

Executive Vice President
Structure Tone

Terence P. Deneny

Director of Technology
Structure Tone

Joseph J. Cribbin

Vice President, Construction
Structure Tone

4:15 P.M.

Pass the Mike Session

This session addresses questions previously submitted on registration forms and those which surfaced during the conference. 7x24 Exchange encourages all attendees to step up to the microphone and state their case. Attendee participation and open dialogue has made this a valuable session over the years.

Dennis Cronin

Center of Excellence – Mission Critical
Gilbane

6:30 P.M. – 10:00 P.M.

VENDOR SPONSORED EVENT

Reggae...Mardi Gras...Asta La Vista Baby...

All aboard the 7x24 express for the ride to Universal Studios' "City Walk" where 7x24 guests will have dinner in Bob Marley's and Pat O'Briens. Marley's is an authentic representation of the Kingston site, which was Bob's home and now serves as a museum and the world-wide headquarters of the Bob Marley Foundation.

Pat O'Brien's is an exact replica of the famed New Orleans watering hole where it's Mardi Gras 365 days a year. The venues are connected so you can visit, eat and experience both establishments. After dinner it's off to the Terminator 2 exhibit in 3-D which ends with a live show customized for 7x24 Exchange attendees that will have you saying "Asta La Vista Baby".

So let your dread locks down and beware of flying beaded necklaces as we present a night At "Universal Studios Orlando".

Special thanks to the following organizations for making this event possible:

ABB, American Power Conversion, Cummins, Danaher Power Solutions, Eaton, Power Distribution Inc, Russelectric, SIEMENS and Square D.





WEDNESDAY, JUNE 7

7:00 A.M.

Breakfast

8:30 A.M.

Opening Remarks

Bob Cassiliano will review highlights from day two and address housekeeping items of interest.

8:45 A.M.

Keynote Address: IT Future Technologies & Direction

The IT industry has undergone incredible changes over the last two years. What will be the leading trends in IT hardware for the next two to 5 years? How will blade servers, small form factor, very high density disk storage, and high performance network infrastructures influence your IT strategy? Please join Paul Perez, Vice President of Storage, Infrastructure, and Networking for Hewlett Packard's Industry Standard Server Group, detail next generation compute, storage, and infrastructure technologies critical to your company's information technology strategy.

Paul Perez

Vice President, Storage Infrastructure & Networking
Hewlett Packard

9:45 A.M.

Refreshment Break

10:15 A.M.

Building Information Modeling – A Case Study for a Truly Virtual Data Center

This case study will discuss BIM (Building Information Modeling) – what it is and how it can positively affect the project in terms of design, construction and facility management. The presentation will focus on specific benefits from a tier IV data center for a Fortune 500 client ranging from improved visualization and coordination to estimating and schedule efficiency. Finally, the presentation will discuss how to properly manage BIM and maximize the benefits to construction as well as provide a cost analysis of the process.

Doug Clough

Project Manager
Holder Construction

11:00 A.M.

Incident Management: Identifying and Applying Lessons in Real-Time

All too often incidents that occur in critical environments are treated as single anomalies. This creates a missed opportunity. By fully understanding and documenting the root cause of an incident the possibility of reoccurrences can be eliminated. When an incident occurs, it is imperative to collect as much real-time information as possible. The data gathered can then be analyzed to determine the cause.

A "command center" can help drive communications and data collection. The goal of this presentation is to explore incident management, reporting and tracking best practices that help ensure 100 percent uptime and reliability. Sample templates and policies will be shared to help facility managers develop effective incident management plans. Specifically what kinds of information need to be collected, and how to manage communications and post-incident analysis will be explored.

Ray Alvarez

Project Engineer
Jones Lang LaSalle

12:00 NOON

Conference Adjourns





TWO QUICK STEPS TO REGISTRATION:

1. Conference Registration

Complete a Conference Registration Form for each participant, on-line or mail or fax a copy of the Conference Registration Form on page 10 to:

7x24 Exchange

322 Eighth Avenue, Suite 501
New York, NY 10001

Phone: 646-486-3818

Fax: 212-645-1147

www.7x24exchange.org

To guarantee early bird rate, registrations must be received by May 12, 2006.

2. Hotel Reservations

To take advantage of *7x24 Exchange's* special rates at the JW Marriott Orlando Grande Lakes please call Marriott Reservations at 1-800-576-5750 and ask for the *7x24 Exchange* Conference room rate of \$179.00 single or double.

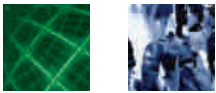
Conference rates are available from June 2, 2006 through June 8, 2006. To ensure rate availability, reservations must be received by May 12, 2006. After May 12, 2006, rooms and rates are subject to space availability and current hotel rates.

Please note that there are a limited number of rooms available at the group rate which will be reserved on a first come first served basis. *7x24 Exchange* makes every effort to reserve the appropriate number of room nights for attendees, however we cannot be responsible if the room block sells out prior to May 12, 2006. In the event of a sell out *7x24 Exchange* will recommend nearby accommodations.



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4040 Central Florida Parkway
Orlando, FL 32837





WHAT MEMBERS ARE SAYING

"7x24 is a well focused, valuable organization with great educational benefit"

"There are always new products and services"

"The conference allows you to manage more effectively"

"I plan to bring other staff members to gain knowledge of current research and trends"

"Very informative speakers & presentations"



VENDOR/CONSULTANT POLICIES & PROCEDURES

Information Tables and Pop-Up Displays

All vendors and consultants are encouraged to participate in 7x24Exchange.

However, the group is primarily driven by user interest. Tables are provided at the conference for the distribution of product literature, educational material and other useful information at no cost. Display signs are not permitted on literature tables. Overt selling at 7x24 Exchange meetings and the use of 7x24 Exchange membership lists for direct selling are prohibited.

Conference sponsors at the Key level or higher will be permitted to occupy one full six foot table for literature and/or a pop up display at no cost. Non sponsoring companies can set up pop up displays for a fee.

If you wish to coordinate a display please contact Brandon Dolci at 646-486-3818. All displays MUST be registered with 7x24 Exchange by May 12th and accompanied by one full conference registration by a representative of the company.

Hospitality Suites

Hospitality suites/demo rooms are permitted on Monday, June 5, 2006 between the hours of 6:30PM and 10:30PM. All hospitality suite hosts must be a Key member of the 7x24 Exchange Corporate Leadership Program (CLP). In order to be recognized by 7x24 Exchange vendors must complete a suite registration form.

As always, hosting a hospitality suite gives vendors, direct access to the conference attendees and provides the opportunity to promote products and services in an enjoyable relaxed environment.

If you are interested in hosting a suite on Monday, June 5, 2006, please contact Brandon Dolci at 646-486-3818 x 108 before May 12th.



Silver Members



Key Members



Contributor



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