Announcements:

Sunday, September 11
• Don’t miss the Opening Reception this evening from 5:00–7:00pm in room Grand 8. The Data Center World Opening Party will provide you with ample opportunity to relax and network with your peers.

Monday, September 12
• The Peer Connection Luncheon will take place from 12:15–1:30pm in room Grand 7.
• The Data Center World Expo and Cocktail Reception will be located in Cypress Hall 1 and will take place from 4:15–6:45pm.

Tuesday, September 13
• The exhibit hall will open today at 11:30am and lunch will be provided in the expo hall. The Data Center World raffle ticket collection will begin today. Deposit your raffle tickets in sponsoring exhibitor’s booths during the expo hours of 11:30am–1:45pm. The raffle will take place from 2:15 to 2:30pm in the expo hall in Lounge A. You must be present to win! Only one prize per person will be collected.

Wednesday, September 14
• The closing session will take place today. Be sure to attend “When Disaster Strikes—Will You Be Prepared?” presented by AFCOM’s Data Center Institute Panel from 10:30–11:30am in room Grand 1.
PNNL’s Evolution in Data Centers and Monitoring

Ralph Wescott
Data Center Manager
August 30, 2011
PNNL performs basic and applied research to deliver energy, environmental, and national security solutions for our Nation.
Pacific Northwest National Laboratory located in Washington State is one of six national laboratories operated by Battelle.
PNNL

- A multiprogram research laboratory
- FY 2009 business volume $1.112B
- 4,900 staff
- 10,000 networked devices
- Unique laboratory equipment
- Scientific supercomputing
Information Sciences Building
ISB2/1

- Commissioned 1983 as main general purpose data center
- 3,000 sq ft
- 500kW UPS power
- 1ft raised floor
- Low ceiling (facility in basement)
- 4 x 20 ton traditional dry cooler CRACs
- 2 x 30 ton water side economizer CRACs
- Synapsense environmental monitoring and automated PUE calculations
- Upgraded from 2005 to present
Improve Airflow

➤ Before

➤ After
Row-Centric Networking

Before

After
Environmental Molecular Sciences Laboratory
EMSL/1119

- Commissioned 1997
- 8,000 sq ft
- Perimeter CRAC chilled water cooling
- 150kVA PMM’s using underfloor power distribution
- 2’ raised floor
- Unused ceiling plenum
Computational Sciences Facility  
CSF/1811

- 10,000 sq ft
- 3MW power, 500kW UPS
- Commissioned December 2009
- 3ft raised floor
- 5ft ceiling plenum
- Building chilled water (heat to aquifer and to “wet labs” for air refresh)
- 65F aquifer closed loop for rear door heat exchangers and heat dump if special circumstances require compressors
CSF

CSF 10,000 sq. ft. proposed layout of 400 computer cabinets
Pacific Northwest National Laboratory
Biological and Computational Sciences Facility
Computing Space 1811

CRAC-1-8

Return Temp.
71.6 °F

CRAC-1-8

71.6 °F  Space Temp
71 °F  Current Setpoint
71 °F  Temperature Setpoint
Local ON/OFF Switch  On
Supply Fan Status  Running
Alarm Status  Normal
☐ Alarm Reset

Cooling Valve
33 % Open
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