



**Microsoft**

# PI – Monitoring Energy in the Data Center

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# Complexities in our Data Centers

Utilities

Infrastructure

Power Generation

HVAC

MECH

BACKUP

POWER



Servers & Network



OSIsoft.

Microsoft

# Microsoft Data Centers



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Greater energy-efficiency gains may be realized by optimizing the operation and efficiency of the data center as a holistic system.

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## Microsoft as an OSIsoft Customer: Data Center Innovation

# Microsoft Technology Centers

## Offerings

The MTCs marshal their premier resources into three unique offerings—  
Strategy Briefings, Architecture Design Sessions, and Proof-of-Concept workshops.



### Envision

#### STRATEGY BRIEFING

Create the right sales opportunity.



### Architect

#### ARCHITECTURE DESIGN SESSION

Deliver the details.



### Prove

#### PROOF-OF-CONCEPT WORKSHOP

Drive the deal home.

- 17 locations across the globe.
- Locally managed datacenters to build solutions in response to customer needs.
- OSIssoft enables all MTC sites to know their efficiency ratings and measure cost savings.



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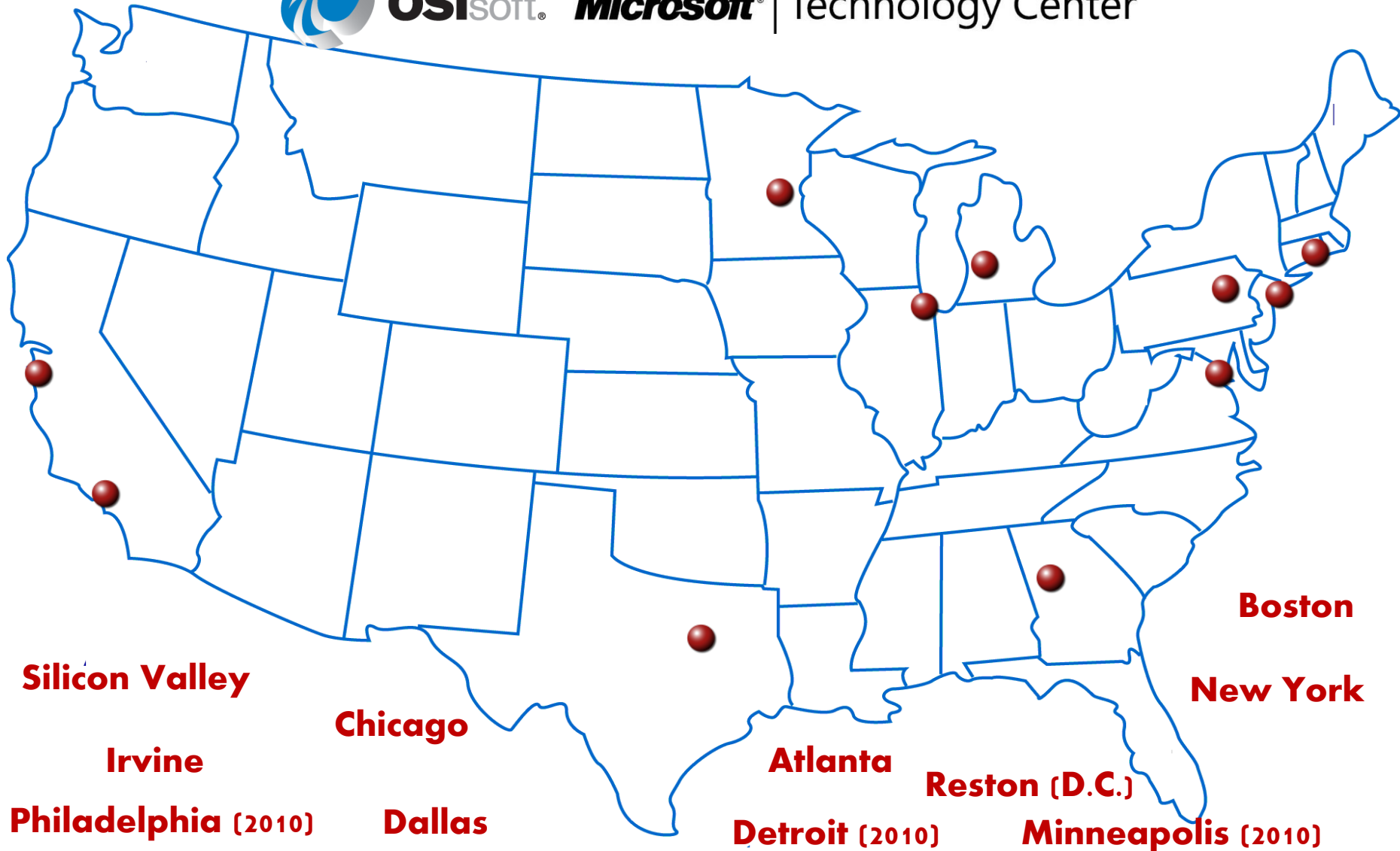
# PI in the U.S. Microsoft Technology Centers



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Technology Center



# MTC Datacenters

- APC driven 80 KVA UPS power and 100 KW Network Air cooling.
- Over 120 Dell and HP servers providing over 500 total cores
- 250 Tb of storage capacity across NetApp, EMC, HP and Dell storage systems
- Brocade 48000 directors for fibrechannel.
- Gigabit network over Procurve switches.



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# PI System for MTC Data Centers Solution...

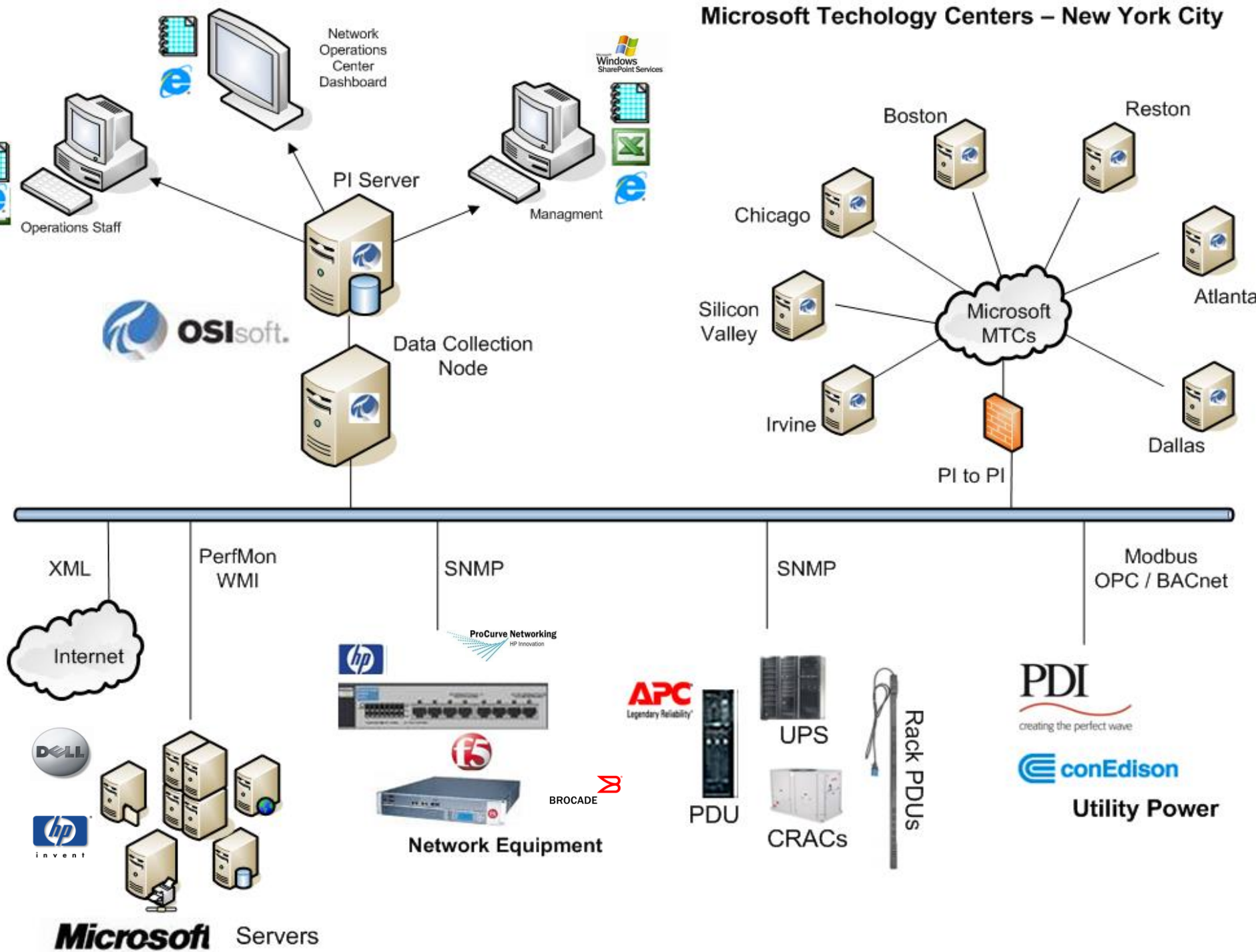
- Corporate Dashboard on SharePoint
  - PUE, Energy Costs, Carbon Footprint, Month-To-Date Totals
  - Site-to-Site Visualization and Analysis
  - U.S. aggregation of KPIs
- Converged data aggregation on a single platform
  - Power, HVAC, Servers and Applications, Environmental Sensors, Weather, and more...
  - Vendor Agnostic using Standards Based Protocols
  - Ad-Hoc Trending and Troubleshooting
- Automated Reporting – DataLink for Excel
  - Excel 2007 Ribbon Integration
  - Excel Services on MOSS 2007



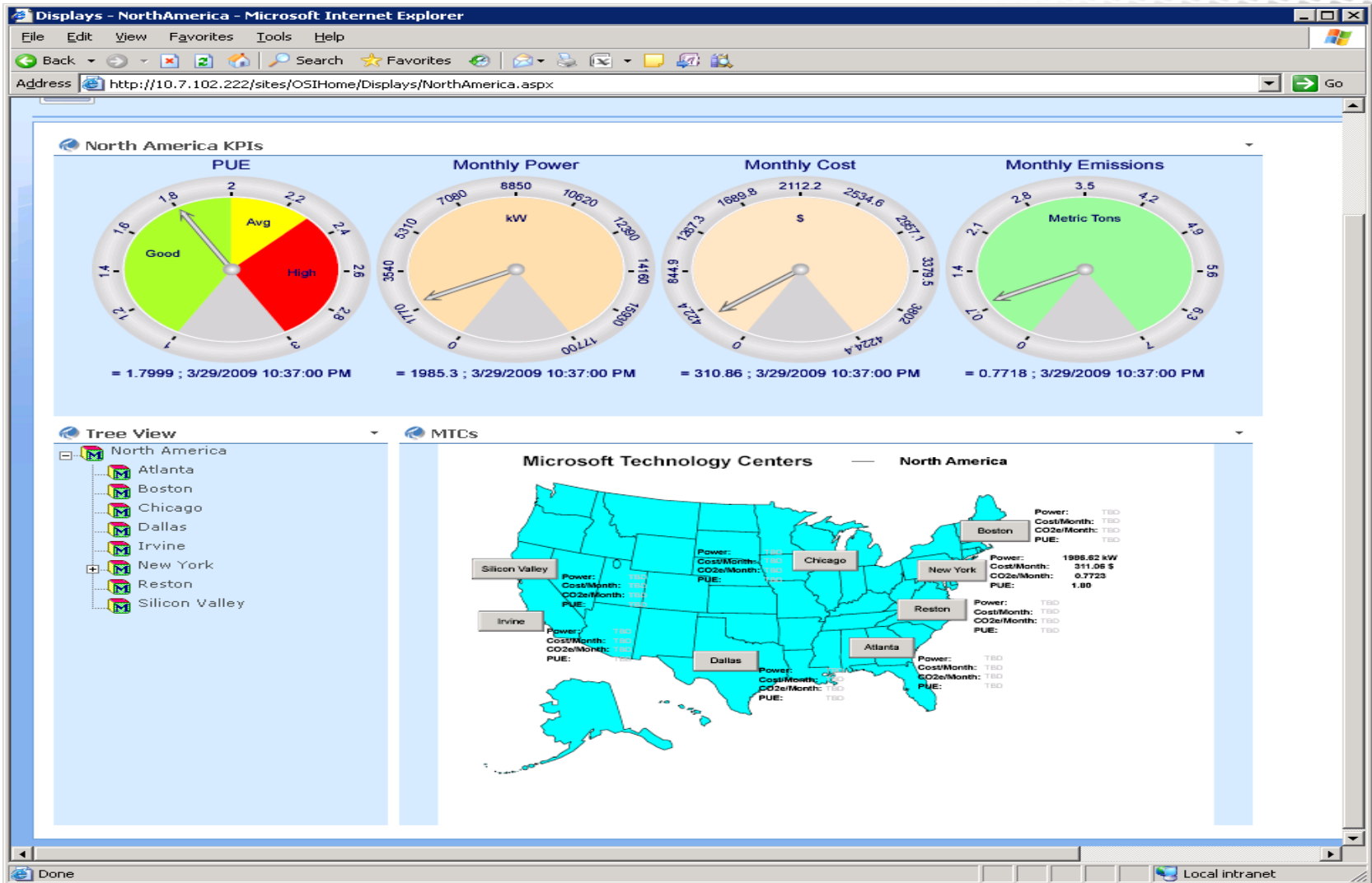
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# Microsoft Technology Centers – New York City



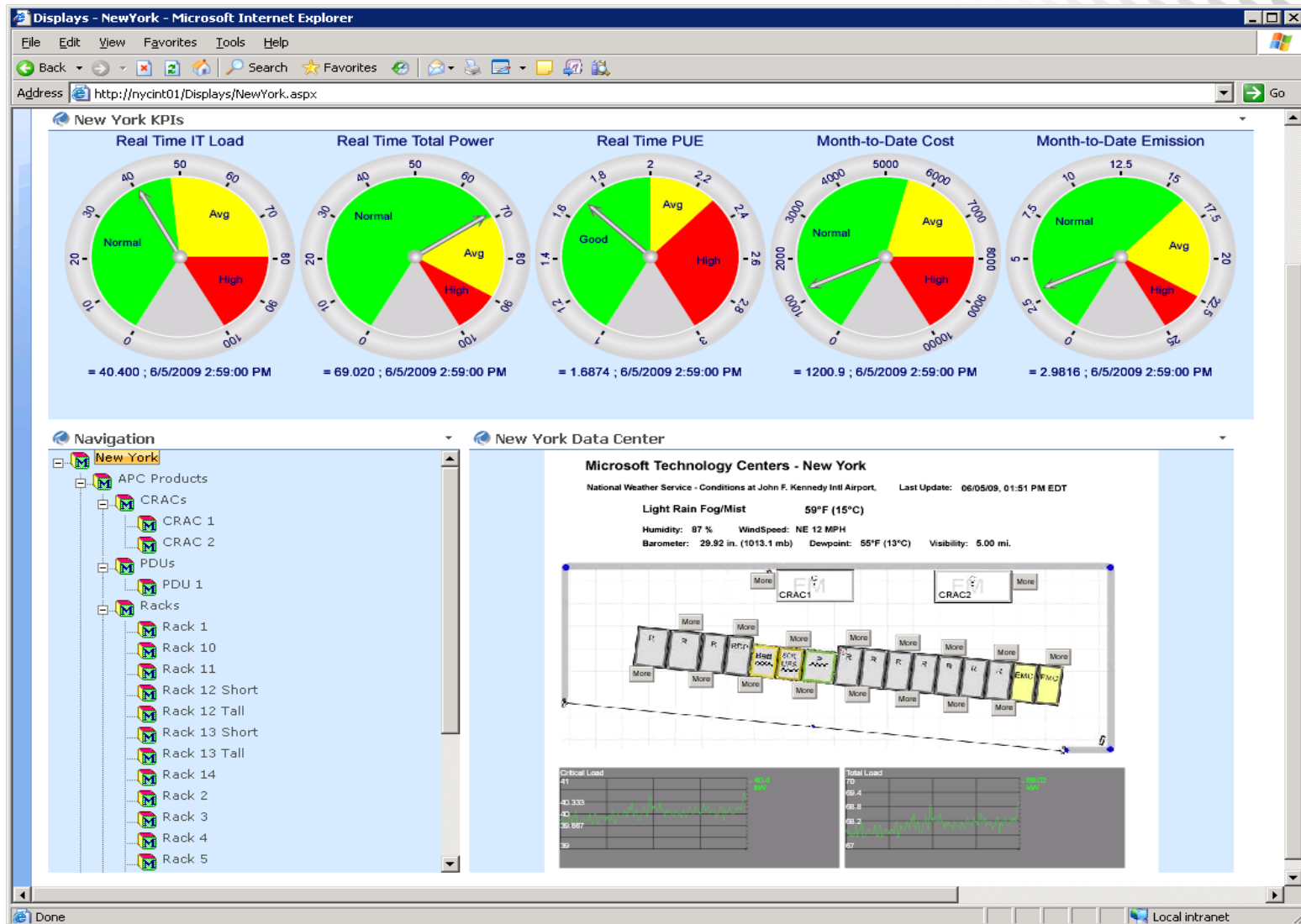
# NorthAmerica Dashboard



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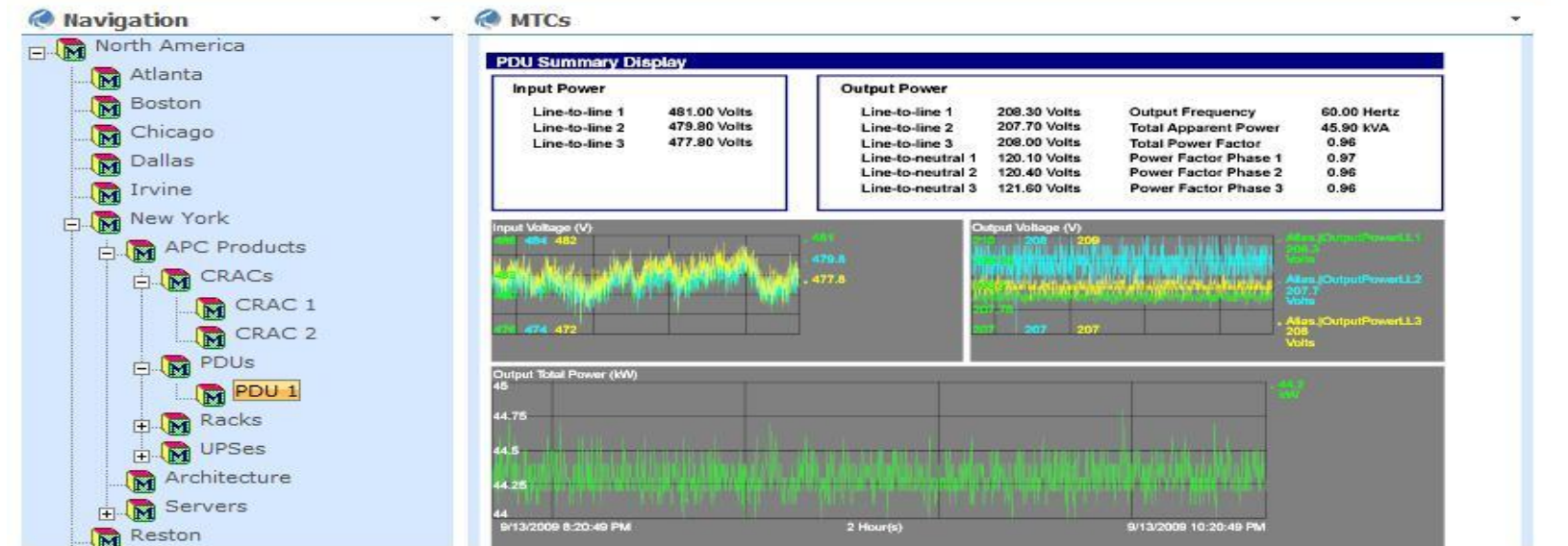
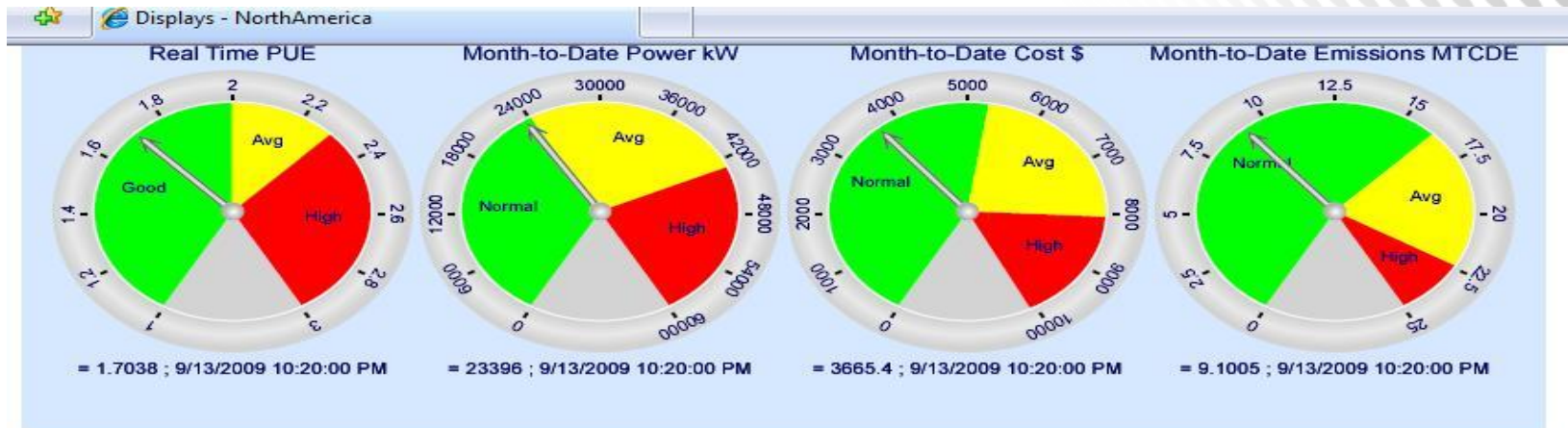
# New York Datacenter Dashboard



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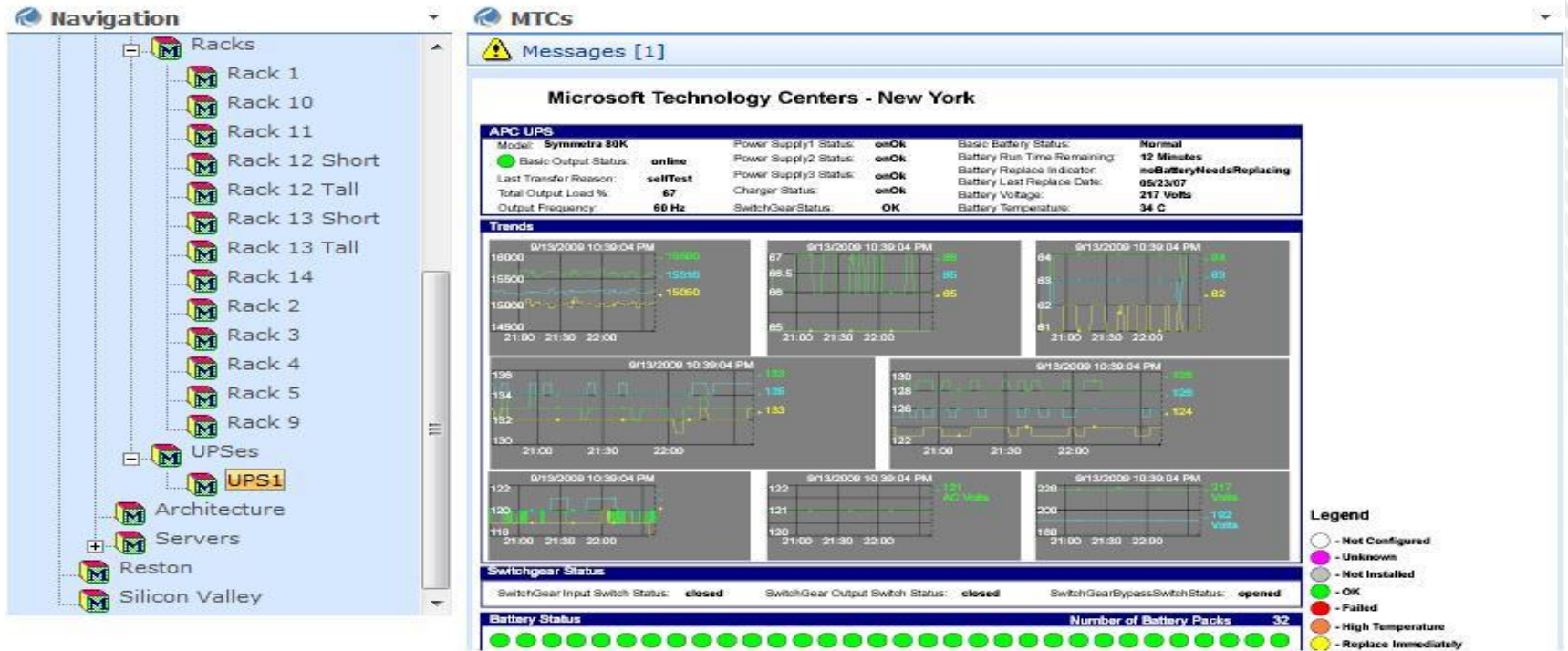
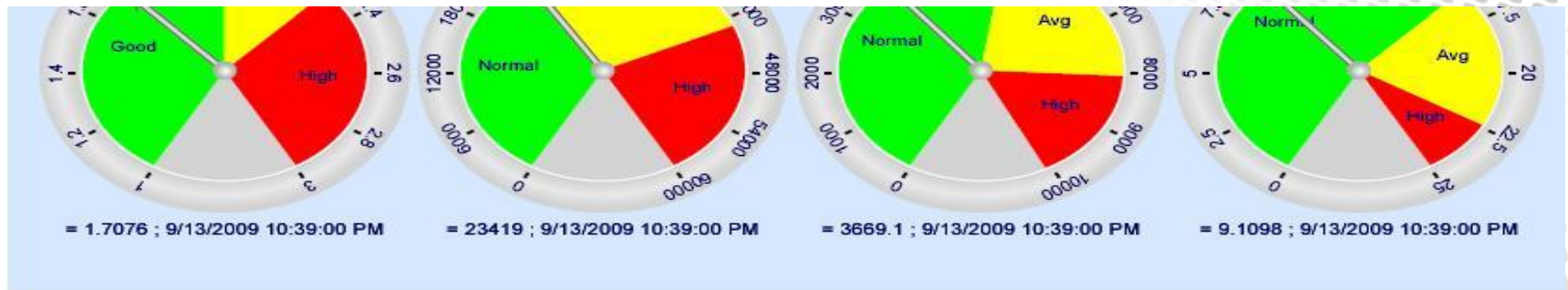
# PDU Summary Dashboard



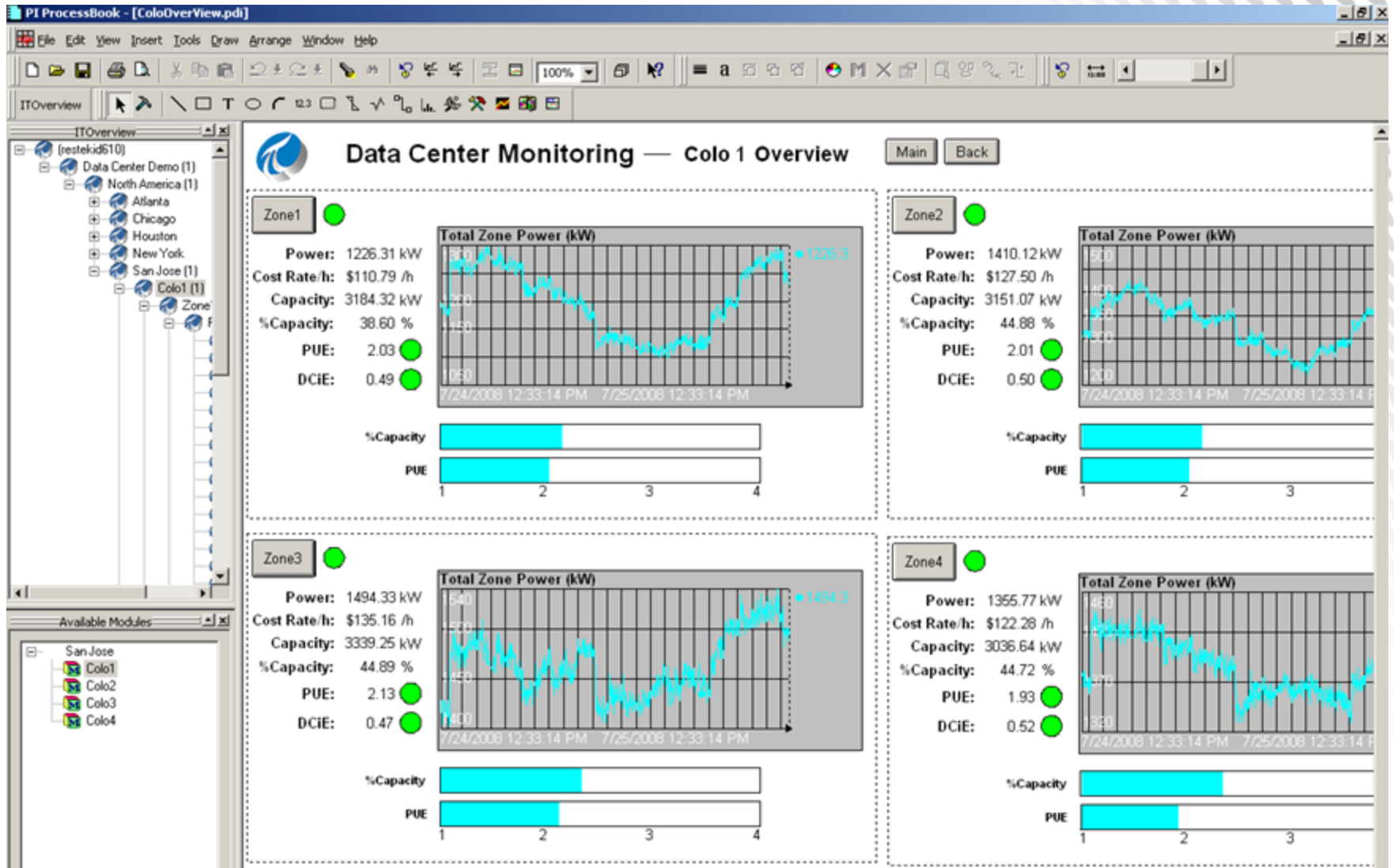
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# UPS Summary Dashboard



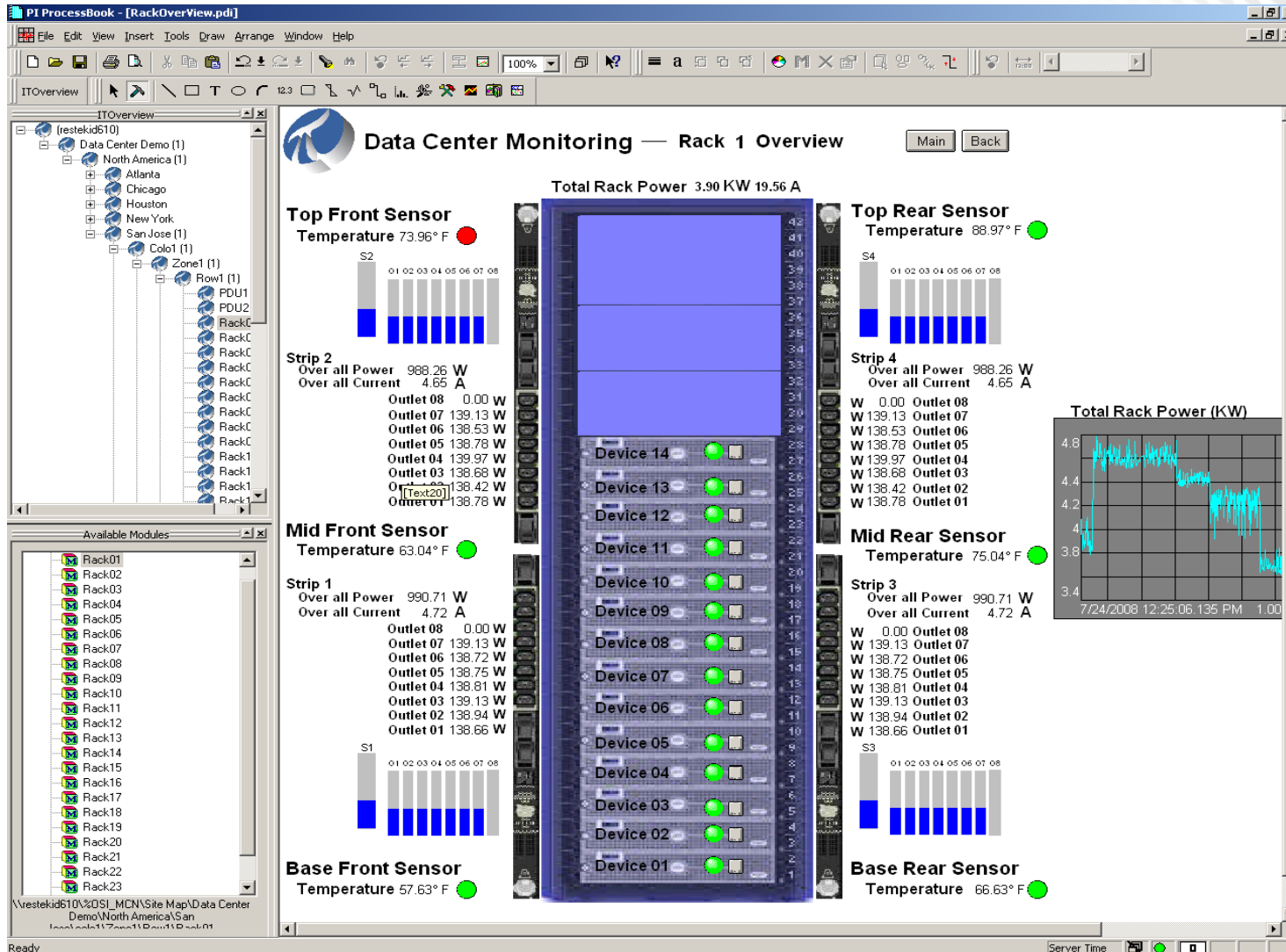
# Power Usage



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# Rack Detail



- Power
- Temperature
- Humidity
- Capacity



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# Mobility Integration

- “PI in your hand”
- Transpara Visual KPI software.
- Use Windows Mobile 6.5 as a platform to integrate data center PI metric data.
- Can use platform to build event driven alerts.



# Microsoft on PI in the Data Center

“We are using the **OSIsoft PI System to monitor all the critical points within our data centers**, and in turn are laying the foundation for a **high-availability, global Live infrastructure.**”

“**The return on investment is tremendous.** We are enabling innovation through increased collaboration, social networking and commerce—leading to breakthroughs in software plus services. We are setting industry standards **with increased utilization of facility resources, real time business continuity, and green computing technologies.** As we continue to expand our Live services, the combination of **OSIsoft and Microsoft technologies** are bringing new levels of performance and reliability to our world-class data centers.”



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