



OVERVIEW



Country or Region:
United States

Industry:
Data Center

Customer Profile:
Data Center Pulse (DCP) is a group of global datacenter operators, owners, and users. The community founded on the principles of sharing best practices amongst its exclusive membership.

Business Situation:
DCP, in collaboration with the Silicon Valley Leadership Group, and the Lawrence Berkeley National Laboratories needed to compare 13 different cooling solutions and configurations to validate best practices identified in the US DOE EPA data center report.

Solution:
PI Infrastructure was installed to enable collection, aggregation, archiving, analysis and visualization of operations test data.

- Benefits:**
- All operations test data was collected, archived, and accessed in one version of the truth.
 - PI adapted quickly to equipment and test scenario configuration changes
 - PI rapidly scaled to project data requirements.

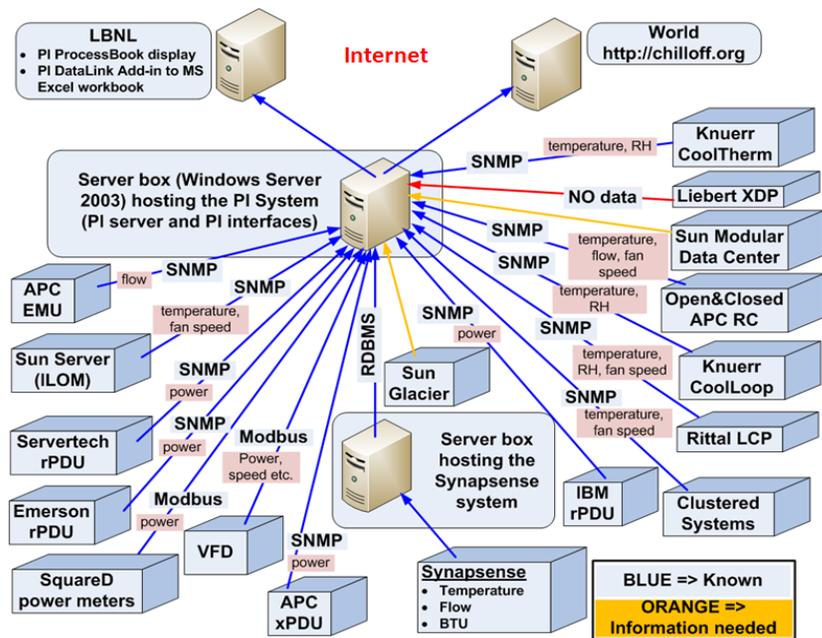
Data Center Facilities Monitoring

Initial Situation and Issues

The Chill Off 2 (CO2), is a side-by-side evaluation of the energy efficiency of leading cooling technologies. This demonstration project is being sponsored by Data Center Pulse, the Silicon Valley Leadership Group and Lawrence Berkeley National Labs.

The following are some of the major goals for CO2:

- Evaluate current cooling technology efficiencies with compute loads between 6kW-30kW/rack
- Compare cooling performance with various server air inlet and cooling water temperatures with a varying workload.



Chill Off 2 Architecture

One challenge was creating a controlled test environment that would enable equal comparative testing between the different solutions. Another challenge was testing in an identical manner to produce defensible, unbiased data and share this data with the data center community. Given these challenges an improved test data infrastructure was necessary. CO2 has a complex environment with most data points requiring high sampling rates. In addition, the data solution needed to be scalable, flexible and secure, allowing the team to focus on the test itself.

The Solution: PI Infrastructure

The OSIsoft PI infrastructure was implemented with approximately 5,000 measured points across 17 different device types spanning mechanical, electrical, plumbing, and IT. 94% of the power and thermal collection points were recorded every 30 seconds, the remainder at 1 minute intervals. Real-time information was available to analysts immediately either with OSIsoft's Processbook or Datalink for analysis or in OSIsoft's web dashboards in Microsoft Sharepoint. So valuable was the real time data infrastructure that the CO2 team declared that "OSIsoft was a critical component to the successful capture and analysis of Chill Off data" and that the CO2 team "could not have done it without them"