

Trends in Data Center Cooling - IO



Copyright © 2013 IO Data Centers



IO Blog



Trends in Data Center Cooling

September 29th, 2010 / admin / 0 comments

SHARE 

LIQUID COOLING

In the early days, liquid cooling was used in mainframe computers. Now, companies are developing several types of rack-level liquid-cooling solutions that bring chilled water or liquid refrigerant closer to the server itself.

Rack-level liquid-cooling solutions include rack doors with sealed tubes filled with chilled water that cool the air leaving the server; sealed racks featuring a connected closed-liquid cooling system, where the contained airflow passes through a heat exchanger at the rack bottom; modular, in-row liquid-cooling units mounted at the rack base; and overhead coolers where liquid coolant is routed through sealed plates at the top of the CPU.

USING LAKE & SEA WATER

Initial construction costs for these data centers are high, since longer pipes and more powerful pumps must be installed to connect and bring water in from the source. But using naturally-cooled water provides a huge long-term savings in electricity, since these data centers do not need water chillers.

AIR-SIDE AND WATER-SIDE ECONOMIZERS

Air-side and water-side economizers save energy by using outside air for cooling purposes. On cool days, air-side economizers provide "free cooling" to data center rooms. Fans bring in cool, filtered air from outside, and expel hot air ejected from the servers. On hot days, evaporative cooling is used to cool the incoming air.

Water-side economizers use outdoor air to cool water that is supplied to air-conditioning and liquid-cooling systems in the data center. Air-side and water-side economizers are best used in dry climates where there is little humidity.

It's important to note that each technology has its own drawbacks. The effectiveness of cooling solutions depends on many factors, including the

data center's location and local climate, the construction and design of the data center, and the technologies used. Each data center has a different set of specifics that must be considered in choosing an appropriate cooling solution.

Tags: Data Center Cooling

Leave a Reply

Your email address will not be published. Required fields are marked *

Name *

Email *

Website

Comment

You may use these HTML tags and attributes: <abbr title=""> <acronym title=""> <blockquote cite=""> <cite> <code> <del datetime=""> <i> <q cite=""> <strike>

POST C



www.io.com