niagara⁴

for Data Center

Infrastructure Management

TRIDIUM

Data Centers, Energy Conservation & PUE

The amount of digital information stored in data centers around the globe has been rising exponentially for decades and will likely continue to do so for decades to come. Fortunately, energy consumption by data centers is not rising along the same very steep curve. The reason is that collective Power Usage Effectiveness (PUE) by data centers has been rising too.

PUE compares the total amount of energy used by a facility to just the energy delivered to computing equipment. The ratio number gives data center operators a sense of just how much they are paying for cooling, lighting, environmental monitoring and other infrastructure services – in other words, for all the building services Niagara Framework® was designed to monitor and control.

$$PUE = \frac{Total\ Facility\ Power}{IT\ Equipment\ Power}$$

Niagara Framework is a software platform for normalizing and integrating operational data and enabling remote, centralized two-way monitoring and management of equipment and whole systems. In the context of Data Center Infrastructure Management (DCIM), a Niagara-based console offers:

▶   Detailed insight into operations
▶   Customizable interactive and highly visual interface to make informed decisions and proactively manage moves, adds and changes
▶   Site-level to enterprise-wide data to help drive operational excellence and improve uptime and reliability
▶   Mitigation of downtime risk by enabling you to identify and resolve issues before they become critical.

Tridium designs our software and hardware to deliver products that are secure by default. Our processes are calibrated according to ISA 62443-3-3, Security Level 4 for Critical Infrastructure. A more complete description of the cybersecurity defenses built into Niagara Framework is available in our "Niagara Primer for IT Professionals."
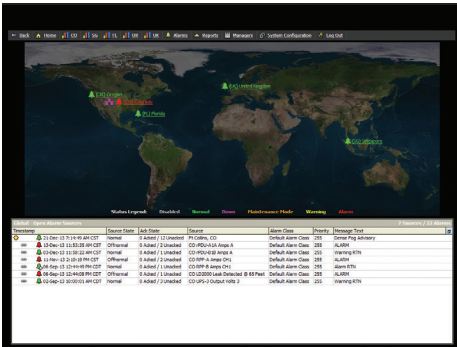
Data Center Integration Architecture Powered by Niagara 4
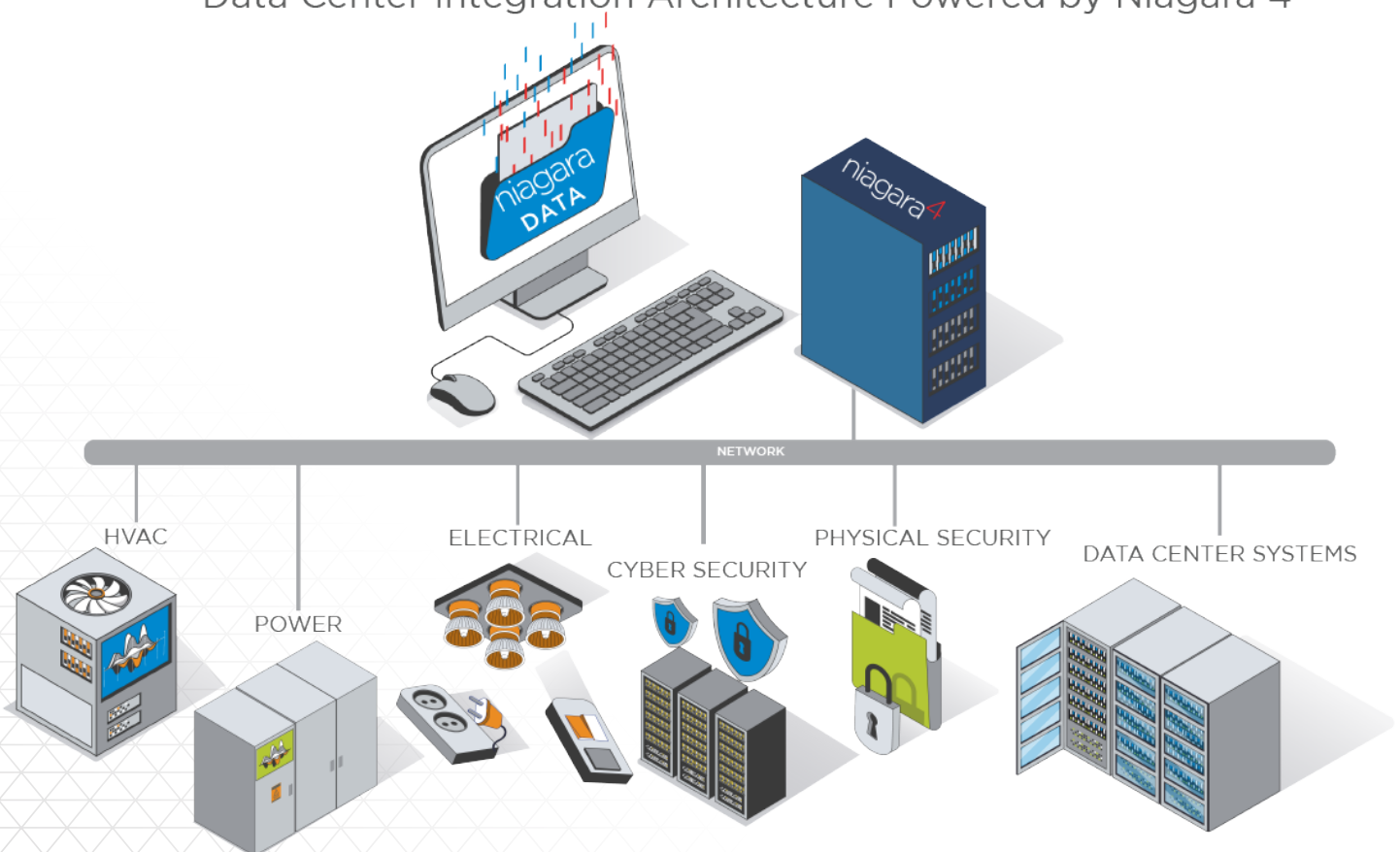
DCIM VISUALIZATIONS
Powered by Niagara Framework

The visualizations rendered below were created by Niagara Partner Continual Energy Inc. using a HTML5-based graphics add-on to Niagara 4.
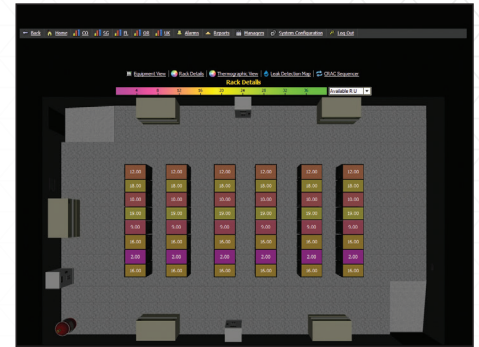

Global View
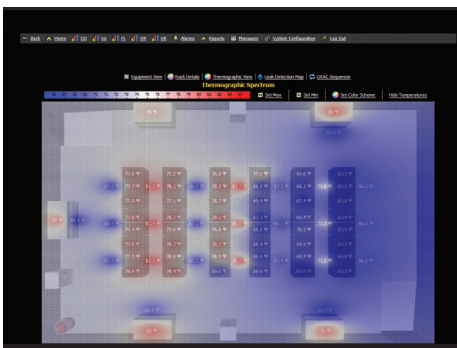Shows the status of facilities around the world.

Dashboard View
Displays the top level of a facility. Includes alarm sources, facility layout, company branding, weather conditions and key performance indicators.

Floor Plan View
Depicts important rack details from a graphical top-level view. Information on available U space, kW and temperature is one click away.
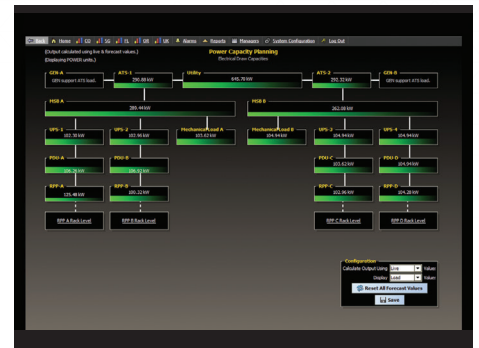

Thermographic View
Displays floor plans with color-coded temperature values to highlight hot spots.

Single Device View
Represents each device with six different status colors for at-a-glance monitoring.
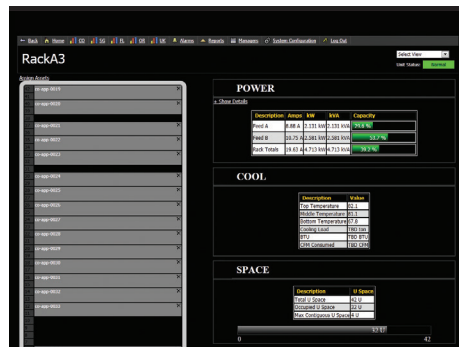

Capacity Planning
Allows assumptive loads and creates simulated views of the effects.

Equipment Comparison
Compares information regarding capacity, load balancing and efficiencies across multiple pieces of similar equipment.

Rack-Level Graphics
Displays critical power, cooling and space data at the rack level. Placing assets in the rack is simple drag-and-drop. Users can immediately calculate how additions to each individual rack impact power and cooling.
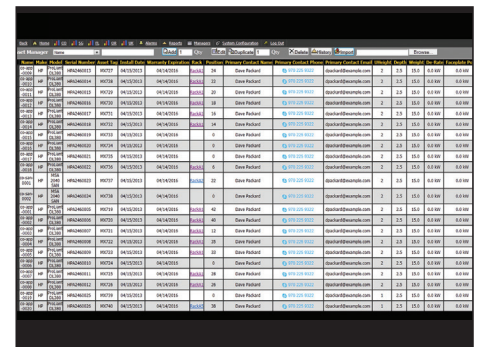
Asset Database
Allows quick and easy import of each individual asset for users who already track their assets. Itemized assets are added to the database and assigned to the rack and U space where they are installed.

TRIDIUM

Tridium advances an *open* approach to the challenges of systems integration and data normalization & interoperability. Our Niagara Framework® software products and JACE® devices allow diverse monitoring, control and automation systems to communicate and collaborate in buildings, data centers, manufacturing systems, smart cities and beyond. We create smarter, safer and more efficient enterprises and communities—bringing intelligence and connectivity to the network edge and back. You can buy Tridium products through many partners and distribution channels, including equipment manufacturers (OEMs), industrial product distributors, independent systems integrators, independent software vendors (ISVs) and other technology companies. Our open distribution business model and open protocol support allow a vendor-neutral application compatible with devices and systems throughout the world.

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