

Modius® *OpenData* v3.3

Product Overview of Modius®
OpenData for Unified Data
Center Monitoring & Analysis



Modius Inc.

832 Folsom, Suite 1001
San Francisco, CA 94107
888.323.0066

info@modius.com
www.modius.com

July 2010

modius®

Modius *OpenData* Provides Unified Data Center Monitoring

Modius provides a consolidated view across the entire physical layer of all data centers by unifying real-time performance data from all power distribution, cooling, air management equipment, environmental sensors and IT devices

THE CHALLENGE

Unified monitoring and analysis for IT infrastructure—servers, storage, networking equipment—is now commonplace in most IT departments thanks to the latest generation of system management tools. However, the physical layer of the data center—often referred to as Mechanical Electrical Plant (MEP)—generally lacks this type of unified monitoring.

The diverse equipment used for power distribution, cooling, air management and environmental sensors are generally monitored by a variety of separate, rigid and proprietary systems specific to their device category, or tracked manually on spread sheets with regular rounds and readings (i.e. ‘sneaker power’).

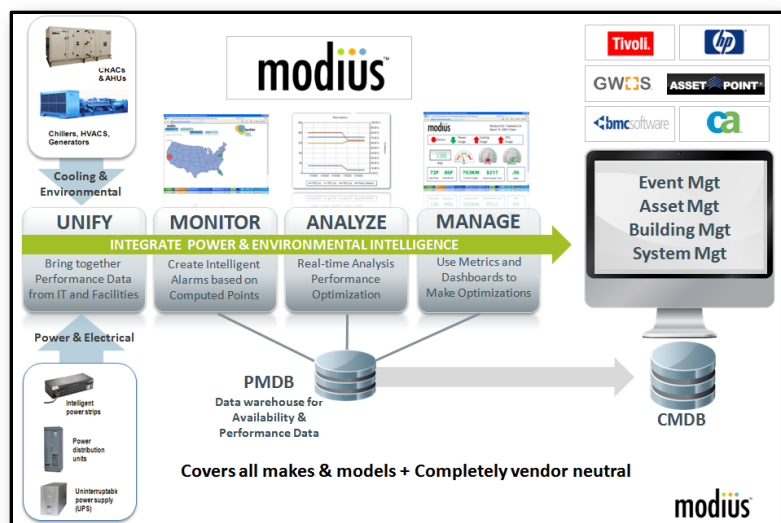
TODAY’S DATA CENTERS FACING NEW PRESSURES

Without a consolidated view of all data center infrastructure operations, managers do not have a single system or data set in order to help optimize the performance of their data centers, particularly in relation to growing IT demand. This lack of a consolidated view makes it hard for operators and managers to respond to the increasing pressure on data centers from:

- Rising energy costs (per kWh prices)
- Hard limits on power access in many geographic regions
- Rising regulatory pressures for energy consumption reporting (e.g. PUE, DCiE, etc.)
- Increasingly dynamic data centers with virtualized IT loads
- Rising power densities from multi-core servers and blade systems
- Limited visibility to micro and macro capacity and redundancy limitations

THE MODIUS SOLUTION

Modius *OpenData* solves this problem by unifying real time performance data from all the equipment typically found in data center environments, including a full range of typical ‘heavy equipment’ (such as UPS, CRAC, Genset, PDUs), as well as ‘lighter



equipment' (such as iPDU's and wireless temperature sensors) from the range of equipment providers including APC, Emerson, RFCODE, and Server Tech.

The Modius OpenData solution provides core functionality for:

- Real-time unified event and alarm management of MEP equipment from all vendors
- Trended data for instant feedback of adds, moves, changes and rapid response to pending issues
- Multi-site data collection for remote monitoring of all data centers, call centers, server closets and mechanical yards from a 'single pane of glass'
- Comprehensive performance analysis and 'Operational BI' for an entire network of DCs
- Consolidated management dashboards and performance metrics

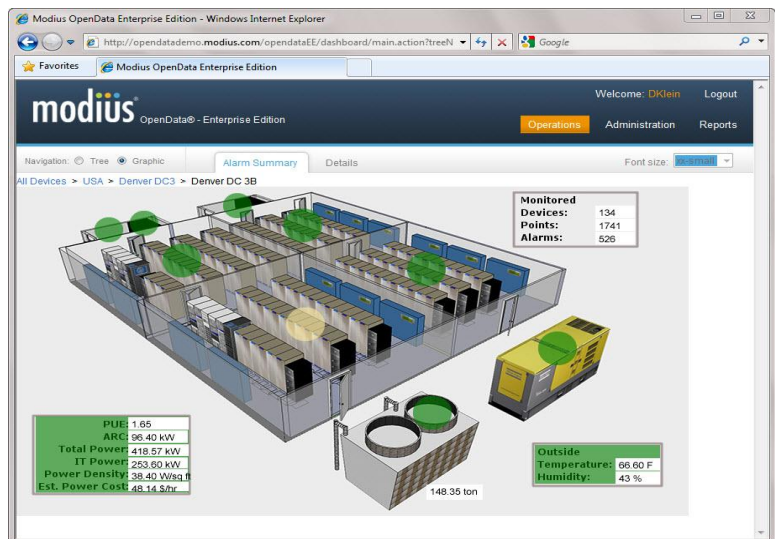
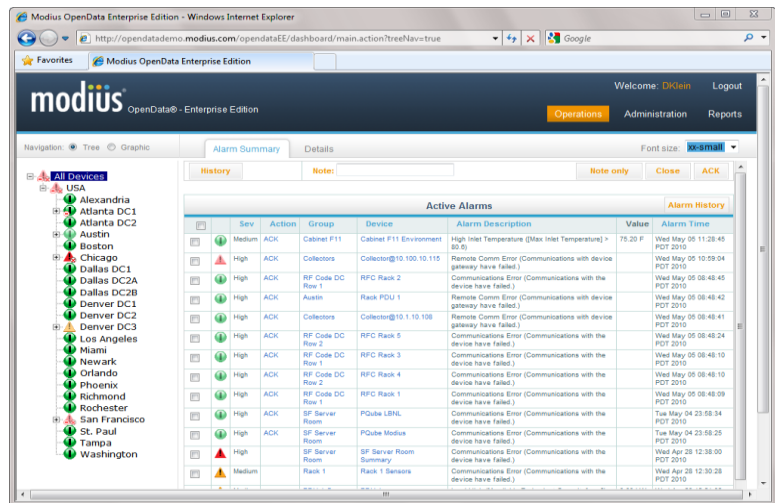
UNIFIED ALARM MANGEMENT

The Modius *OpenData* Graphical User Interface (GUI) allows the user to drill down to each device and identify which alarm points are being collected, how they are correlated, distributed, their polling rates, and which "real-time" alarms are critical requiring immediate action.

Typical users of the Modius solution are looking to unify several existing point solutions (e.g. 'homegrown monitors', BMS, PMS, Battery, NMS, Fire&Safety) into a single interface. In addition, they may be looking to leverage Modius OpenData for "multi-site" capabilities to consolidate real time data from multiple locations into a single repository of easily accessed information about availability, capacity, and performance intelligence.

GRAPHICAL NAVIGATION

The Modius solution can also present alarm and performance data inside graphical navigation screens that allow users to quickly see where problems may lie within their data centers.



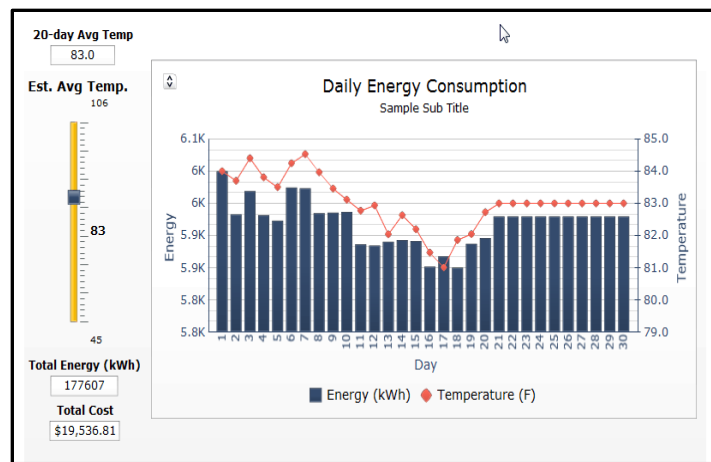
This screen shot shows a typical data center environment that has been configured to monitor everything from the generators and chillers in the mechanical yard, to the UPS and perimeter cooling units inside the data center, to the individual racks of IT equipment.

Each 'hot spot' on the graphical navigation screen allows the user to drill into the specific alarms or performance history for each device or piece of equipment being monitored. Real-time hot spots will flash when problems are detected by the system.

PERFORMANCE REPORTING AND ANALYSIS

Modius OpenData provides a full range for report templates as well as tools for 'ad hoc' or customized reporting. The centralized data repository for OpenData collects and trends all native points from all devices and any user-defined inter- or intra-site calculated points across the entire enterprise. The data is normalized with common time signatures, and then provides advanced analytics in a variety of report types, including:

- Trended time-series analysis
- Comparative bar charts
- Heat maps / Bubble charts
- Correlation charts

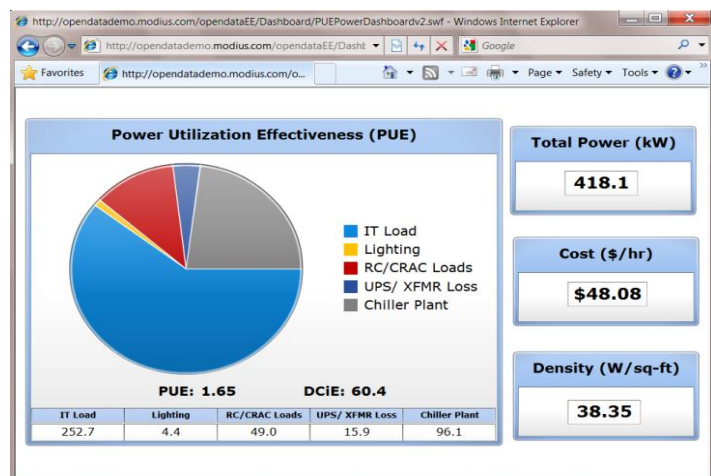


Modius OpenData also provides a web-services API that allows the user to utilize their preferred reporting package including Crystal, BusinessObjects, Cognos, JasperSoft, MicroTrends, etc.

MANAGEMENT DASHBOARDS

In addition to onboard reporting, Modius OpenData also provides flexible management dashboards that allow users to track specific management metrics and KPIs over time.

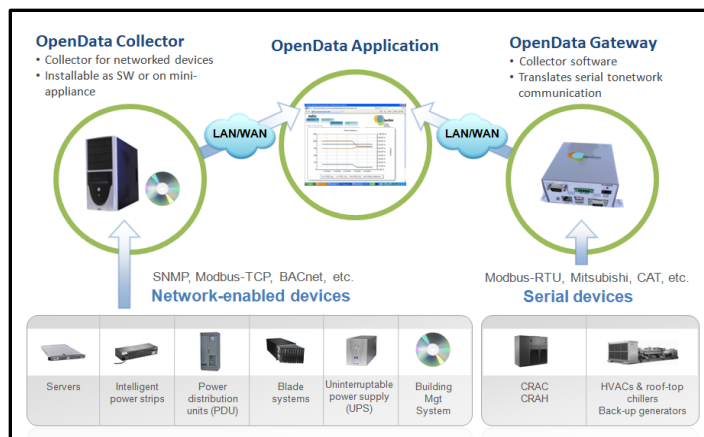
Modius OpenData comes standard with a variety of dashboards pre-built, but it is also easy for either the Modius team or the users themselves to create new dashboards specific to the business initiatives they are trying to track.



UNIVERSAL DEVICE COVERAGE

The Modius OpenData solution is able to unify this data by collecting data across the disparate communication protocols used at the physical layer, including:

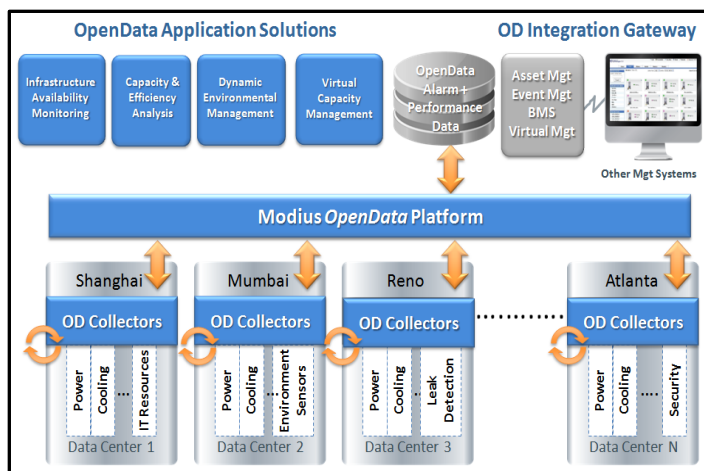
- Modbus
- BACnet
- SNMP
- Proprietary protocols such as Mitsubishi and CAT
- Dry contacts



Because Modius OpenData works across all major device protocols, the solution is uniquely able to capture data from all major device categories and equipment vendors. For equipment that is not accessible on the network (via network communication cards), Modius provides a serial-to-network gateway to ensure that all equipment in the data center is fully monitored. Modius OpenData can also capture data from existing systems, such as a BMS, which allows operators to leverage the legacy systems that are already in place.

DESIGNED FOR MULTI-SITE REMOTE MONITORING

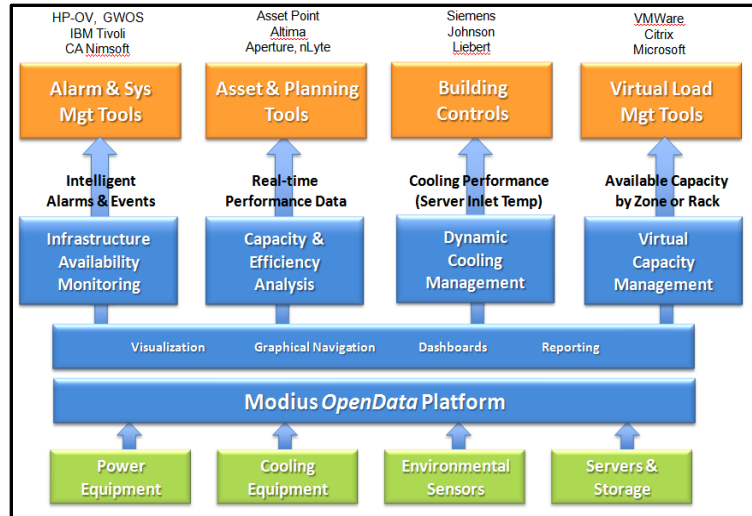
The Modius solution is unique in the industry for being designed from the ground up for remote or multi-site monitoring. The solution utilizes a flexible set of ‘collectors’, which are small, independent, intelligent software instances that can be installed at all remote sites. The software can live on a PC, server white-space or the before mentioned gateway boxes. The Collectors can be deployed in any quantity required to cover all sites, from server closets to the data center’s mechanical yard. Each collector then communicates with the central application to pass data securely so that it can be stored and accessed from a central repository. This unique architecture makes the solution infinitely scalable for even the largest of enterprises, MSPs, or Co-Location facilities.



INTEGRATION ACROSS THE DATA CENTER ECOSYSTEM

In addition to being designed for multi-site monitoring, the Modius OpenData solution is also designed to integrate to a variety of other management tools in the data center, including network management systems, asset management and planning tools, building management and controls systems, and virtualization management systems.

By using Modius OpenData to collect all the data from the physical layer of the data center, it allows the operator to “collect once and reuse many times” to minimize the high-cost of instrumentation and data access. This ability to federate data to other systems relies on the Modius OpenData approach to collect and completely normalize data so there is a “single record of truth” that the other tools can leverage.



NEXT STEPS

Modius OpenData can either be installed comprehensively across the targeted critical facility, or tactically to address a single issue. Regardless, once the flexibility, scalability, ease-of-deployment and TCO are realized, incremental growth is unavoidable. In some cases customers can and will expand deployments themselves enjoying the independence from service providers which they have felt in servitude to previously.

For more information feel free to contact Modius sales in regards to collateral, presentations, live demos, technical consultations, customer referrals and prospect proof-of-concepts.

CONTACT MODIUS

Modius Inc.

832 Folsom, Suite 1001
San Francisco, CA 94107
888.323.0066

info@modius.com

www.modius.com