

TRELLIS™ SITE MANAGER WITH INTELLIGENCE ENGINE

Real time data collection for monitoring business-critical infrastructure



FEATURES

- Collect and analyze real time data for monitoring business-critical infrastructure, environmental conditions and power consumption
- Collection either through a software application or hardware
- Send alarm notifications via SNMP, SMS and email
- Configure and manage alarm significance so they are addressed by importance
- View facility layout and actual asset utilization
- Comply with industry-approved efficiency metrics (PUE)
- Calculate utility cost—not just consumption—at the system and unit levels
- Customize the dashboard to exclude certain facility load parts in a mixed use facility
- Determine current and future energy needs based on historical data

Business Challenges

Today's data centers must run 24/7/365 and at the lowest cost of operations.

Energy utilization is a major portion of operations cost, hence, organizations need real-time visibility into their energy consumption. Together with associated productivity gains, data centers can realize lower operational costs and stay in compliance with regulatory requirements.

Solution Overview

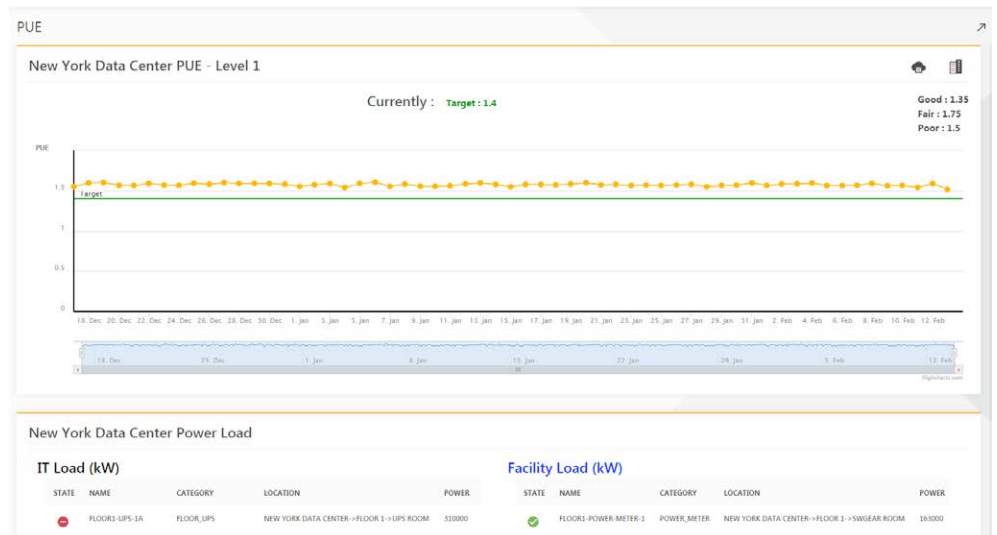
Trellis™ Site Manager keeps systems running at peak performance and ensures optimal use of time and resources. It tracks and reports on the health of facility-critical devices and provides information on power, cooling and environmental conditions, such as temperature, humidity, airflow and fluid leaks. With its built in data collection capabilities, via the *Trellis™* Intelligence Engine, no external devices are required to gather device-level data and trends. Site Manager collects real-time information and provides the ability to analyze trends and detailed insight into the status and health of the data center.

Site Manager is also the perfect tool to see the data center's power usage effectiveness (PUE) and data center infrastructure efficiency (DCIE), allowing the organization to adhere to industry-wide metrics set by The Green Grid and like organizations. The unified dashboard allows managers to view current and historical efficiency metrics, as well as calculate both consumption and costs—a feature perfect for data centers that are not yet properly instrumented for measuring facility and IT load. IT managers are able to use the information gathered to optimize energy usage, minimize energy waste and reduce utility costs.

Monitor Critical Devices Intelligently

With the *Trellis* Site Manager and *Trellis* Intelligence Engine, you can:

- See device status (Normal, In Alarm, Maintenance Mode, Not Responding) on a graphical floor plan and in real time to get a more comprehensive view of actual device health



- Configure data points for collection and assign data collection intervals
- Categorize and visualize data via Configure, Control, Support and Specification tabs
- Use Accelerated Polling to monitor trends during power outage and when running on battery power for maintenance
- Compare load with run time to provide additional measurement of load percentage versus available battery run time
- Control and command other devices to perform actions using an alarm as a trigger, minimizing need for personnel intervention (i.e., high temperature)
- Track aisle temperature in real-time during extended power outage via Cold Aisle Temperature Sensors and track aisle temperature
- Get notifications via SNMP, SMS or email, and based on working hours of facilities personnel so alarms are addressed to the right person, promptly
- Provide alarm attributes, filters, transitions, views (active and audit/calendar) as well as actions (acknowledgment, escalation, accelerations, etc.)
- Assign alarms and notification rules according to user role
- Suppress alarms so users won't need to spend time receiving and checking notifications from devices that send erroneous, intermittent alarms
- Use Summary View to see what alarm merits immediate attention and to see alarms side-by-side to understand their context, cause and relationship

Increase ROI

With the *Trellis*™ Site Manager, organizations are able to:

- Use the unified dashboard to see real-time data, energy usage and operating efficiency together. Key information helps determine system peak performance, maximize energy usage and minimize energy waste
- Customize dashboards so users can enter data manually if the data center is not properly instrumented for measuring total facility or IT load
- Gauge efficiency and comply with current and historical industry-approved efficiency metrics (PUE)
- Compute real-time power consumption (kW/hour) for a device and determine ways to balance capacity and demand within the data center
- Eliminate readings from one or more devices when making PUE and DCIE calculations in a mixed use (office space + data center) data center facility
- Configure source and currency details that facilitate utility cost calculations at the system and unit levels so you can determine actual costs, not just consumption
- Understand capacity usage to ensure business-critical services are always running while lowering operating costs

BENEFITS

- Ensure business-critical continuity with comprehensive event management and alarm notifications
- Accurately understand real-time energy consumption (kW/hours) and cost of operating subsystems
- Improve performance efficiency and reduce risk of unplanned downtime
- View PUE and DCIE to ensure compliance with efficiency metrics by The Green Grid
- Promote efficient and effective use of support personnel, including site engineers and technicians, by sending them in—only when necessary
- Reduce time spent sorting through inbox messages with an intelligent summary of priority issues
- Highlight issues that need urgent and immediate attention and provide real-time, meaningful information that addresses the needs of senior management

Specifications - Trellis™ Site Manager

Workstation Requirements

Operating System:

- Microsoft® Windows® 7
- Microsoft® Windows® 2012
- Red Hat® Enterprise Linux version 7.x

Hardware Requirements:

- Dual-core Intel® Pentium® 4 CPU at 2.8 GHz
- 8 GB RAM, LAN connection

Browsers for the Trellis™ platform user interface:

- Mozilla® Firefox® version 31.0 or higher
- Google Chrome™ version 40.0 or higher
- Microsoft Internet Explorer® 9 and 10 with standard mode (compatibility mode is off) and 11

Browsers for the symbol portal:

- Microsoft Internet Explorer® 9 and 10 (with compatibility mode on) and 11

Browsers for 3D features:

- Microsoft Internet Explorer® 11, Chrome and Firefox

Server Requirements Hardware Recommendations:

DATA SIZE GUIDELINES	SMALL	MEDIUM	LARGE	ENTERPRISE
Concurrent users	10	20	50	100
Devices	2,000	20,000	100,000	200,000
Power Connections	1,000	10,000	60,000	100,000
Data Connections	2,000	10,000	60,000	100,000
Monitored Datapoints	1,000	10,000	40,000	140,000

FRONT MACHINE	SMALL	MEDIUM	LARGE	ENTERPRISE
Processor	Intel® Xeon® 2.6 GHz 8M L3 cache			
CPU count	1	2	2	2
CPU cores	4	4	4	8
Memory (GB) DDR3 1333 MHz	32	32	40	44
Disk throughput	> 500 MB/s (sequential) [un-cached]			
Storage	300 GB Enterprise class			
Ethernet	> 80 MB/s			

BACK MACHINE	SMALL	MEDIUM	LARGE	ENTERPRISE
Processor	Intel® Xeon® 2.6 GHz 8M L3 cache			
CPU count	1	2	2	2
CPU cores	4	4	4	8
Memory (GB) DDR3 1333 MHz	24	32	32	32
Disk throughput	> 500 MB/s (sequential) [noncached]			
Storage	*300 GB Enterprise class for base installation			
Ethernet	> 80 MB/s			

Machine Specifications:

SPECIFICATION	DATAPOINTS PER MINUTE				
	10000	20000	30000	40000	50000
CPU Manufacturer	Intel(R)	Intel(R)	Intel(R)	Intel(R)	Intel(R)
CPU Model	Xeon(R)	Xeon(R)	Xeon(R)	Xeon(R)	Xeon(R)
CPU Speed * (GHz) 8M L3 Cache	2.4	2.4	2.4	2.4	2.4
CPU Count	1	1	1	1	1
CPU Cores (per CPU)	2	3	3	4	4
Memory (GB) DDR3 1333MHz	2	3	3	4	5
Disk Throughput	500 MB/s (sequential) [uncached]	500 MB/s (sequential) [uncached]	500 MB/s (sequential) [uncached]	500 MB/s (sequential) [uncached]	500 MB/s (sequential) [uncached]
Storage	25 GB *	35 GB *	35 GB *	50 GB *	50 GB *
Ethernet	> 50 MB/s	> 50 MB/s	> 50 MB/s	> 50 MB/s	> 50 MB/s

Specifications - Trellis™ Intelligence Engine

Operating System:

- Ubuntu 14.04 LTS
- Red Hat Enterprise Linux version 7.2

Trellis™ Intelligence Engine can be installed on:

- Physical Hardware
- HyperV
- ESX

Supported Protocols:

- SNMP v1, v2, v3
- Modbus
- BACnet
- Velocity
- Redfish
- OPC-UA