



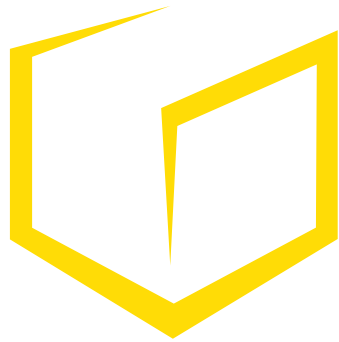
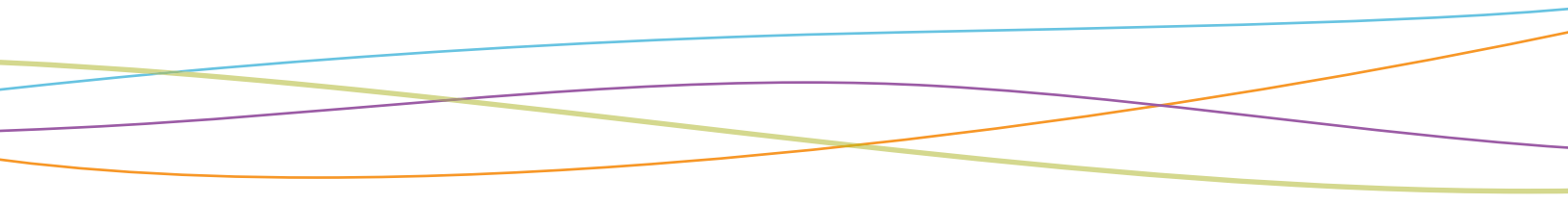
Expertise In this swiftly changing, technology-driven industry, plenty of companies are forced to react to remain relevant. At Geist, we stay ahead of our competition by constantly, actively evolving to meet the demands of our customers. Through technical expertise and skilled engineering, we provide leading-edge products and comprehensive solutions for our trailblazing customers.

Partnership Every employee is ready and eager to help solve our customers' problems. Accessible and responsive, our team is committed to delivering exceptional personal service and support every day — fulfilling our mission of providing a premier customer experience.

Tailored Geist has been customizing cost-effective solutions for clients for more than 65 years. It's part of our culture. We are committed to quickly meeting each specific customer need with technological expertise and unbeatable detail.

Quality Geist is dedicated to developing the highest performing products and most innovative solutions in the industry. From hand-soldered connections in our power strips, to enterprise level data center infrastructure management (DCiM) software, we consistently exceed our customers' expectations.

geistglobal.com



GEIST



MANAGE



A single point of access for managing mission-critical hardware.

Environet achieves the operational efficiencies for which Data Center Infrastructure Management (DCiM) solutions was intended.

Environet provides the data granularity required for efficient management of the data center. With unprecedented visibility and management over environmentals, power consumption and cooling, Environet transforms complexity into simplicity. Its interactive interface delivers critical information to drive knowledge-based decision making. Access to real-time, holistic information about assets, power, environment and process empowers users to proactively manage moves, adds and changes. With Environet, decisions are made with speed and confidence, not guesswork.

Environet's graphically rich interface and intuitive design make monitoring the data center easier than ever before. With SNMP, Modbus, BACnet and LONworks capability, Environet communicates in real-time with a variety of equipment from many manufacturers. Users can access Environet remotely through a Web-based user interface and Environet sends immediate notifications when an alarm condition is triggered.

Geist believes in arming users with the most essential DCiM functionality. By employing this targeted simplified approach, Geist has focused on developing Environet's strengths in four core areas.

Real-Time Monitoring

Few players in the industry capture and present data as quickly. Environet ensures users are aware of critical issues by activating alerts immediately. In a single mouse click, the details and exact location of the issue are determined so actions can be taken to address the problem. Historic data also allows users to analyze trends to better manage data center resources.

Capacity Planning

Every data center manager faces unique growth and expansion challenges. Whether it's power, cooling or physical space issues, Environet gives users the ability to visualize and simulate the requirements for a data center expansion before actually moving a single cabinet or device.

Automated Control

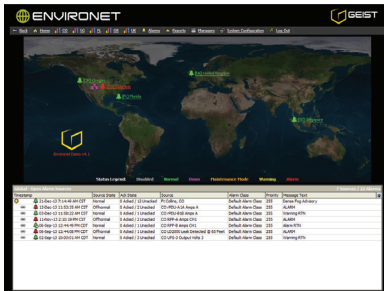
With the ability to address multiple protocols, Environet connects facility infrastructure equipment like CRAC units with environmental sensors to automatically respond to data center conditions. For example, multiple CRAC units linked with temperature sensors strategically placed in the data center can be programmed to adjust output when temperatures readings go above or below a programmed threshold.

Asset Management

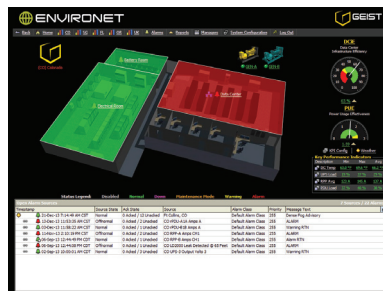
Environet allows equipment lists and device specifications to be tracked to the exact site in the data center. With Environet's Rack Viewer, users can see the specific configuration of each rack and evaluate performance metrics against manufacturers' suggested values. Drag-and-drop functionality makes assigning assets in the cabinet simple, and users can quickly calculate the impact new equipment has on power and cooling requirements.



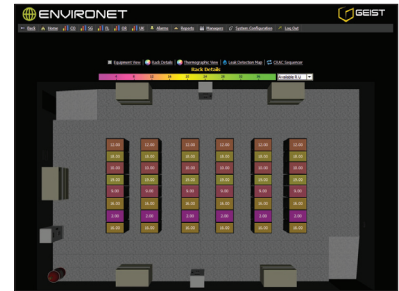
Interactive Views



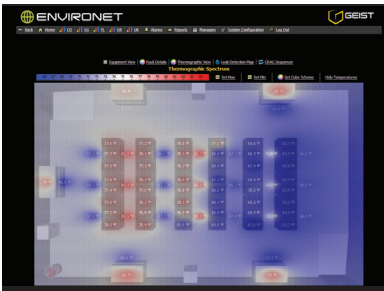
Global View
Shows the status of facilities around the world.



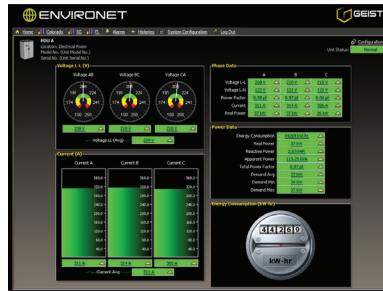
Dashboard View
Displays the top level of a facility. Includes alarm sources, facility layout, company branding, weather conditions and key performance indicators.



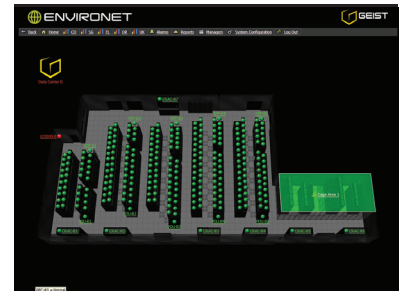
Floor Plan View
Depicts important rack details from a graphical top-level view. Information on available U space, kW and temperature are one click away.



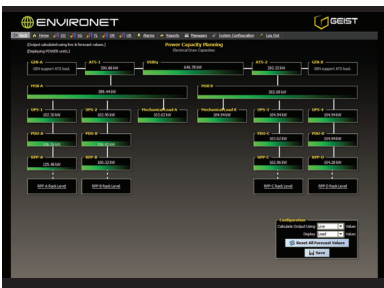
Thermographic View
Displays floor plans with color-coded temperature values to highlight "hot-spots."



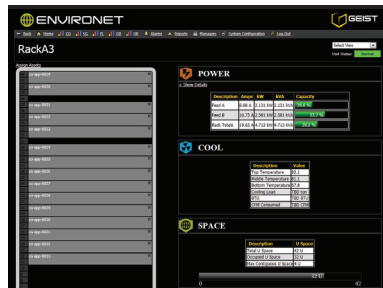
Single Device View
Represents each device with six different status colors for at-a-glance monitoring.



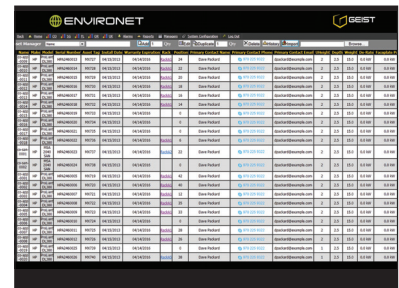
Side-by-Side Like Equipment Comparison
Compare information regarding capacity, load balancing and efficiencies across multiple pieces of similar equipment.



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



Rack-Level Graphics
Quickly visualize critical power, cooling and space data at the rack level. Asset drag-and-drop functionality makes placing assets in the rack simple. Immediately calculate how additions to each individual rack impact power and cooling requirements.



Asset Database
For users who already track their assets, Environet offers quick and easy import of each individual asset. Itemized assets are added to the database and assigned to the rack and U space where it is installed.

Integration Team

Geist recognizes customer satisfaction as its number one priority in every Environet implementation. A lead project manager and a dedicated team of programmers are assigned to manage the project from initial scoping through implementation and support. This allows the Geist team to cultivate relationships and gather a clear understanding of the client's goals and priorities throughout the build process.

The dedicated team relies on a proven implementation plan that uncovers all the critical DCiM requirements of the customer. The plan starts with a thorough sitewalk and ends with detailed checklist of tested functionality. Factory installation services are customized per system and may include the following deliverables:

- Onsite consulting, recommendations and general topology review.
- Wiring review with an electrician of customer's choice.
- Communication verification, termination, and troubleshooting.
- Installation and setup of all Geist DCiM provided equipment and software.
- May include installation of 3rd party equipment purchased through Geist DCiM.
- Environet system quality review.
- Integration of Environet with customer's email, SNMP, network, and other information systems.

Client Testimonials

“ The technicians and the project manager were clearly experienced professionals and demonstrated a real personal interest in making sure we were satisfied with the system in its full scope.

— Data Center Facilities Director ”

“ There is a lot of flexibility in the product's ability to store data, warn and alarm. These features allow us to perform trend analysis and be proactive rather than reactive in monitoring growth.

— Director of Data Center Operations ”

“ It's a phenomenal product, able to scale quickly and priced well. When we work with global projects we want to make it as easy as we can.

— Sr. Operations Manager ”

Customer Case Study

Expedient Chooses Environet

Nine Locations

- (1) Massachusetts
- (2) Pennsylvania
- (3) Ohio
- (2) Maryland
- (1) Indianapolis

Managed Points

- Over 84,500 points
- Over 400 devices

Purpose

To implement a cost effective monitoring system that is scalable and easy to deploy.



Expedient and its affiliates operate a national network of eight data centers located in Baltimore, Boston, Cleveland, Indianapolis, Pittsburgh and Columbus. The company boasts thousands of nationwide clients who use Expedient's secure and redundant data center facilities to fully manage their networks' critical applications.

Expedient also offers an array of fully managed network hosting services including Managed Backup for disaster recovery and Colocation Hosting. Backing up this management functionality is a powerful, extensive, award-winning Ethernet network. Equipment and facility monitoring can be crucial to round-the-clock operations at Expedient's multiple data centers. According to Ken Hill, Expedient's vice president of technical operations, equipment and facility monitoring is essential to the company.

"Our customers rely on our organization to provide reliable data-center services at all times," explains Hill. "It is imperative that we have in-depth visibility of our infrastructure systems and elements to ensure that we detect and resolve problems in a proactive and timely manner."

What Led Expedient to Environet?

Says Hill: "We had experience with several monitoring systems, and Environet was scalable, cost effective and relatively easy to deploy. The functionality surpassed other devices that we evaluated." Since making the decision to invest in Environet, Expedient has deployed its products in six of its eight data centers. Expedient uses Environet to monitor leak detection, BCMs, UPSs, generators, HVACs, switchgear, ATs, humidity and wireless temperature systems.

Expedient benefits from Environet in a number of ways. According to Hill, "Environet provides us with the ability to monitor and measure power consumption and watt densities within our data centers...the product reduced our cabling costs and gave us flexibility with the placement of sensors. For example, the wireless temperature and humidity sensors can be placed anywhere within the facility in minutes. If we have a specific area of concern, we can install a sensor and collect environmental information immediately."

Expedient replaced its previous monitoring system with Environet. Expedient has been extremely pleased with this solution. Initially, Expedient needed to integrate more temperature monitoring at its sites, but as the company learned more about Environet, its needs and scope began to steadily increase.

"Environet allows us to add modular components to meet our needs as we grow," Hill says. "Some of the competing products carried a higher initial cost that consumed additional capital resources up front."

"The support staff has been excellent to work with over the past few years," Hill says. "Geist DCIM has a good understanding of our business and they have been able to work with us to find technical solutions to meet our needs."

Racknet Product Family

Overview

Manage IT and white space with a single point of integration. The Racknet family offers vendor-neutral options to integrate and manage a variety of mission-critical equipment. User-defined graphics, calculations and reports allow for a holistic view of the entire data center.

Racknet is designed primarily to give visualization to rack level data and white space. Racknet can be set up and configured by users or by a professional installer and is capable of being 100 percent user maintained. Racknet uses an SNMP auto-discovery tool to make configuration fast and easy, while template devices make adding equipment to the system simple. Racknet is shipped pre-installed on a server for quick set up.

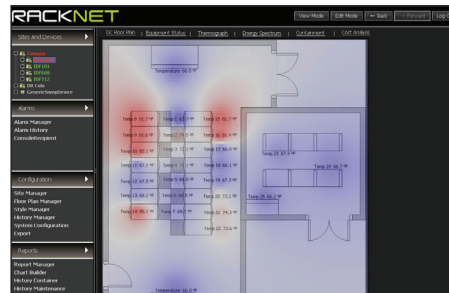


Racknet-A



Racknet-S

Features and Benefits



Aggregated Views of Data

Display one view of all monitored equipment with a combination of pre-configured, user-defined graphics to create a holistic view of enterprises and highlight areas to improve efficiency.

Math Functions and Collections

Generate live views such as highs, lows, averages, costs, usages, etc. and associate them with dashboards and other views.

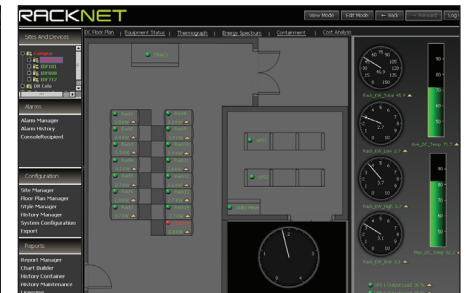


Alarm Notification

User-defined thresholds provide quick alarm notification with three escalation levels. Recognize problems before they become catastrophic.

Single Access Point for Integration

Racknet communicates via SNMP, BACnet and the oBIX API for seamless integration with larger management systems.



Reporting and Histories

Build and generate unique reports (e.g., customer monthly power usage, high/low/average temperatures, monthly capacities, monthly PUE/DCIE). Visually display data in various chart types for easy interpretation. Save time by automatically generating the reports.

Racknet Models

Racknet-Aggregator (Racknet-A): Racknet-A connects to GNET via 48 aggregation ports to collect critical data from Geist products. Racknet-A provides visibility to data from Geist power strips in a centralized location. It prevents users from having to set up IP addresses on the production network and saves space on costly network switches. Racknet-A communicates via SNMP and supports up to 1,000 devices.

Racknet-Aggregator Server (Racknet-AS): Racknet-AS includes the full feature set of the Racknet product line. It can be used with third-party equipment, has 48 aggregation ports for direct connection and offers full customization capabilities.

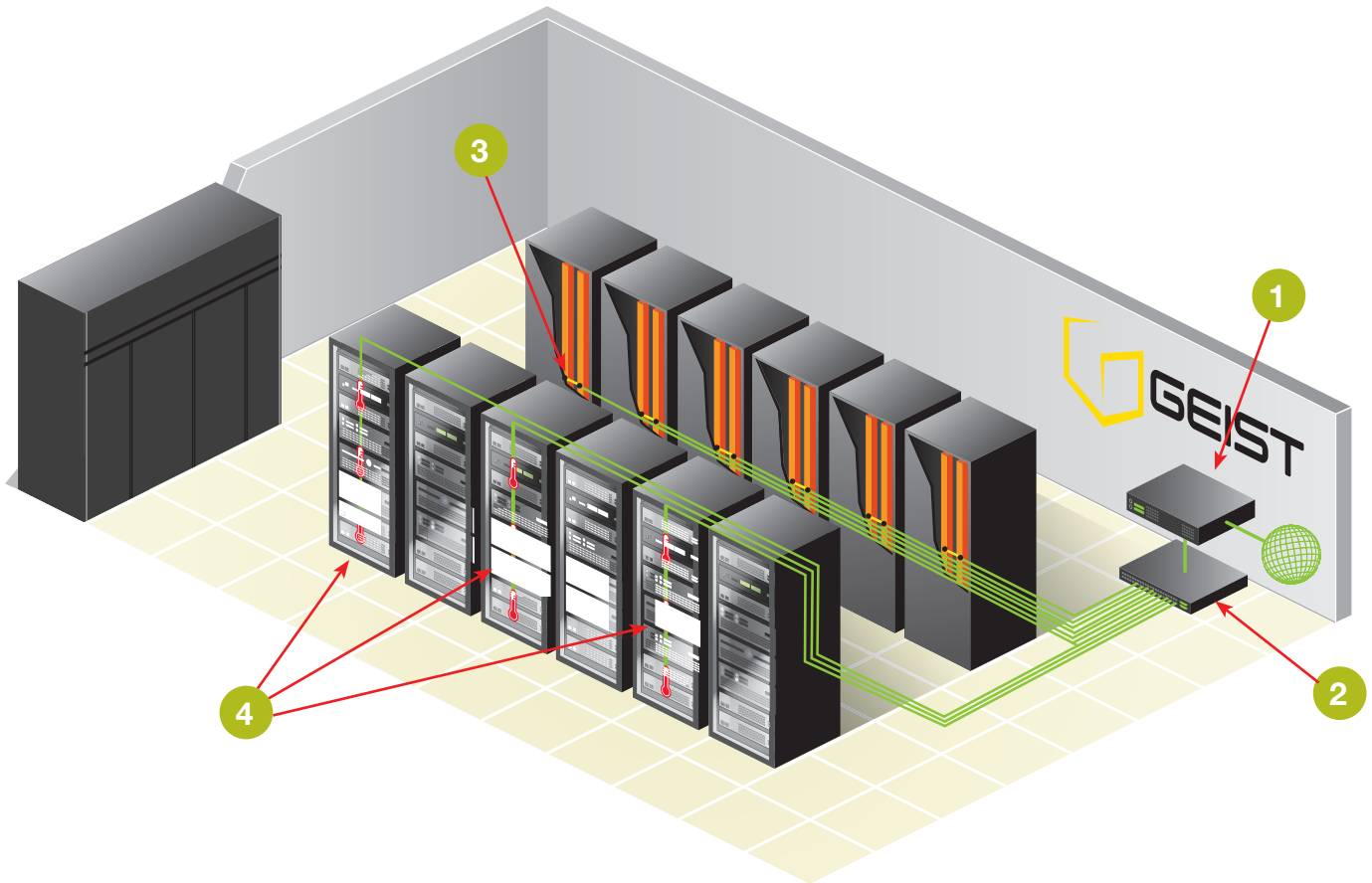
Racknet-Server (Racknet-S): Racknet-S gathers data from Geist products as well as third-party equipment. It also allows users to fully customize graphics and collections. In addition, Racknet-S comes with the ability to derive values from monitored points to create meaningful views of data.

Racknet-Virtual Machine (Racknet-VM): Racknet-VM is a virtual interface with the same features as Racknet-S. Along with the current selection of Racknet appliance versions, users now have the option to deploy Racknet-VM in their existing virtual environment.

Racknet-Environmental (Racknet-E): Racknet-E allows users to rapidly deploy a complete environmental monitoring network solution in just hours. Racknet-E combines high-end data center management software and fully integrated environmental sensors to alert managers when heat or humidity levels threaten sensitive data center equipment. The bundled solution can be fitted with wireless or wired sensors; each preprogrammed sensor reports temperature and/or humidity readings through the Web accessible graphical user interface.

Features and Benefits	Racknet-A	Racknet-AS	Racknet-S / Racknet-VM	Racknet-E
Support for all Geist hardware	x	x	x	upgrade
Support for all 3rd party power strips		x	x	upgrade
Support for all 3rd party SNMP devices		x	x	upgrade
48 aggregation ports for GNET connections	x	x		
Bundled with environmental hardware				x
Auto configuration of IP address for connected equipment (DHCP Server)	x	x		
SNMP and BACnet output of all collected data	x	x	x	x
Support for up to 1,000 devices and 15,000 data points	x	x	x	x
Geist equipment global firmware updates	x	x	x	x
Alarm, Trend, Report on all collected data	x	x	x	x
User defined graphical views		x	x	x
User defined collection objects for associations of data		x	x	x
HTTP pass-through of all GNET devices	x	x		
Appliance form factor	x	x	x	x
Virtual Machine option			x	

Racknet Application Diagram



Application Diagram

1. **Racknet-AS** – Collects data from specified equipment then stores, aggregates, reports and displays the data on a secure Internet connection for multiple user remote access. Captures data from up to 48 unique Ethernet connections. Allows users to create an independent network to collect intelligent PDU and environmental sensor data without connecting to the data center network.
2. **Concentrator** – Combines up to 48 unique Ethernet lines to deliver a single data line to the Racknet-AS. By utilizing multiple Concentrators users can target thousands of unique points to create a sophisticated monitoring network for large data centers.
3. **Intelligent PDUs** – Supplies power to critical data center equipment. In addition, the intelligent PDU sends performance metrics as well as data captured from environmental sensors to Racknet for collection.
4. **Temperature/Humidity/Dewpoint Sensors (GBB15/GTH3D)** – Measure critical environmental elements and send data through intelligent PDU ports. The Geist's sensors shown can daisy chain similar units to create a sensor network.

	Environet	Racknet
Capacity		
Number of Points Scalability	unlimited enterprise	up to 15,000 multi-device
Communication		
SNMP	X	X
BACnet	X	with converter
Modbus	X	with converter
LONworks	X	with converter
Hardwired I/O	X	with converter
oBIX API	X	X
Design & Configuration		
System Configuration	turnkey	user capable
Vendor Neutral	X	X
Consulting Services	X	additional
Professional Installation	X	additional
Support Contract	X	additional
Custom Built Features	X	N/A
Features		
Chart Builder	X	X
Notification & Alarms	X	X
Report Manager	X	X
Energy Cost Analysis	X	capable
Power One Line	X	capable
PUE/DCiE	X	capable
Unique Floor Plans & Views	X	capable
Key Performance Indicators	X	capable
Power Capacity Planning	X	capable
Asset Management	X	capable
Integration		
Raised Floor/White Space	X	X
Electrical/Mechanical Rooms	X	capable
Fire Suppression Systems	X	capable
Building Management Systems	X	capable
Network Management Systems	X	capable
Security Systems	X	capable
Other Custom Systems	X	capable