

# GEIST

POWER. MONITOR. MANAGE.

ENVIRO NET

Success Stories



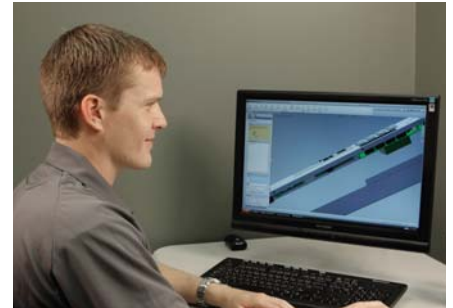
# Why *GEIST*



SUPERIOR SERVICE



UNLIMITED OPTIONS



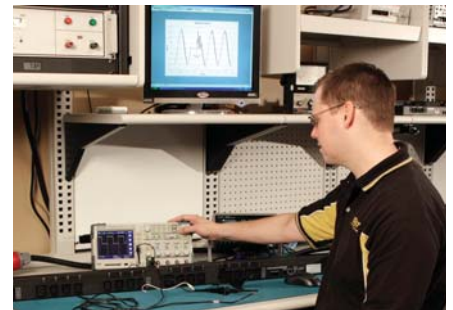
IN-HOUSE EXPERTISE



RAPID ORDER FULFILLMENT



COST-EFFECTIVE CUSTOMIZATION



QUALITY ASSURED

## INDUSTRY LEADER

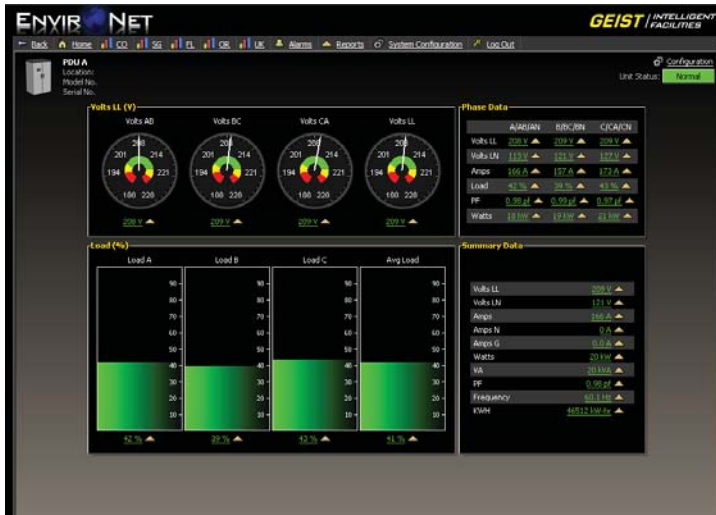
- established in 1948, 63 years of continuous growth
- privately held company, division of PCE, Inc.
- 14 office locations in US, China and Europe
- manufacturing facilities in US and UK
- installations on 6 continents
- partnerships in the UK, China, Taiwan, France, Australia and South Africa

# GEIST

**Customer Service & Support**  
Monday - Friday 7:30AM-6:00PM (CST)

Geist Manufacturing  
1821 Yolande Ave., Lincoln, NE 68521  
800.432.3219 | 402.474.3400 | F: 402.474.4369  
www.geistmfg.com | products@geistmfg.com

## DATA CENTER POWER & MONITORING SOLUTIONS



### POWER.

**Expansive Range** - 10A to 120A, 1 Phase and 3 Phase Delta and WYE, up to 43kW

**Total Flexibility** - Full technology suite covering metering, monitoring and switching

**Fully Optimized** - Local manufacturing for rapid customization creating optimum deployments

**Complete Solutions** - Worldwide approvals and connector types

### MONITOR.

**Cost Effective** - Full suite of Environmental Monitoring solutions, available integrated into Power Distribution Units or in dedication Environmental Monitoring units

**Comprehensive** - Full range of sensors covering temperature, humidity, airflow, dew point, water leak, DC battery status, door position and smoke detection

**Straightforward** - On-board web server with intuitive interface, powerful reporting and notification

### MANAGE.

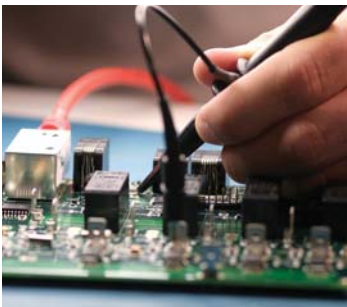
**Coordinated** - A comprehensive management system monitoring and controlling ALL aspects of the Data Center infrastructure

**Intelligent Consolidation** - Combine data from switchgear, RPPs, PDUs, generators, chillers, CRACs and environmental devices for energy usage analysis, PUE and DCIE

**Simple to Deploy** - Vendor neutral protocols - SNMP, Modbus (485/232/IP), BACnet, LonWorks, OPC, Legacy (Veeder Root)

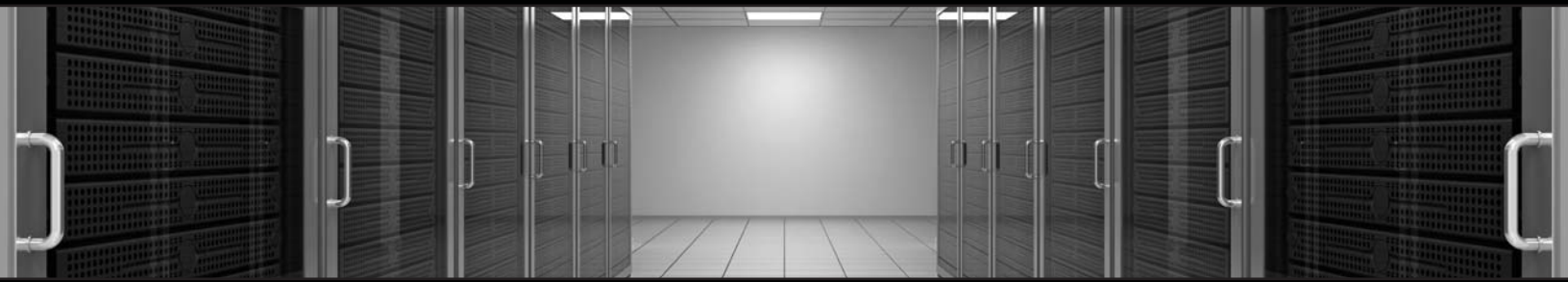
**Scalable** - Suitable for any facility, large or small

**Optimized** - Designed for your Data Center with fully interactive meaningful views and custom reports



RCU-O Control	
Group A	120.32 V
<input type="checkbox"/> Outlet	Name
<input type="checkbox"/> 1	Outlet 1
<input type="checkbox"/> 2	Outlet 2
<input type="checkbox"/> 3	Outlet 3
<input type="checkbox"/> 4	Outlet 4





## What is Environet?

Environet is a highly customizable, fully scalable system with a single point of access for all your monitoring needs. Environet provides monitoring, trending, alarming, and custom views of up to tens of thousands of monitored data points. The aggregated results are collected across your facilities and presented through a visually rich graphical user interface.

## Interactive Views

**Global View** - shows the status of all your facilities around the world.

**Dashboard View** - displays the top level of a facility. Includes: alarm sources, facility layout, your company brand, weather conditions, and key performance indicators.

**Equipment View** - represents each device with six different status colors for at a glance monitoring.

**Energy Spectrum View** - graphically represents the power density of each rack on a color changing floor plan.

**Thermographic View** - displays floor plans with color changing “hot spots” that represent temperature values.

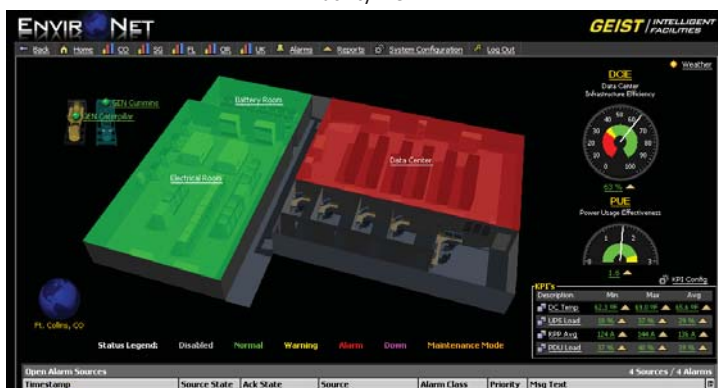
**Power One-Line** - shows each piece of equipment on your power one-line drawing. Each element has associated status, capacity, connectivity, and more.

**Side by Side Like Equipment Comparisons** – compare information regarding capacity, load balancing, efficiencies, and more across multiple pieces of similar equipment.

**BMS Integration / HVAC Views** – integrates fully with all major building management systems for display, trend, and alarm on the collected information.

**Event Analysis Reports** – see all data associated and recorded for a given event. View data before, during, and after the event occurred.

Facility View



## Alarm Management

- » Global Alarm Console
- » Local Dashboard Alarm Consoles
- » Alarm Notes and Instructions
- » Drill Down Alarm Grouping
- » User-defined Alarm Thresholds
- » Email, SNMP Trap, or SMS Notification

## Tools

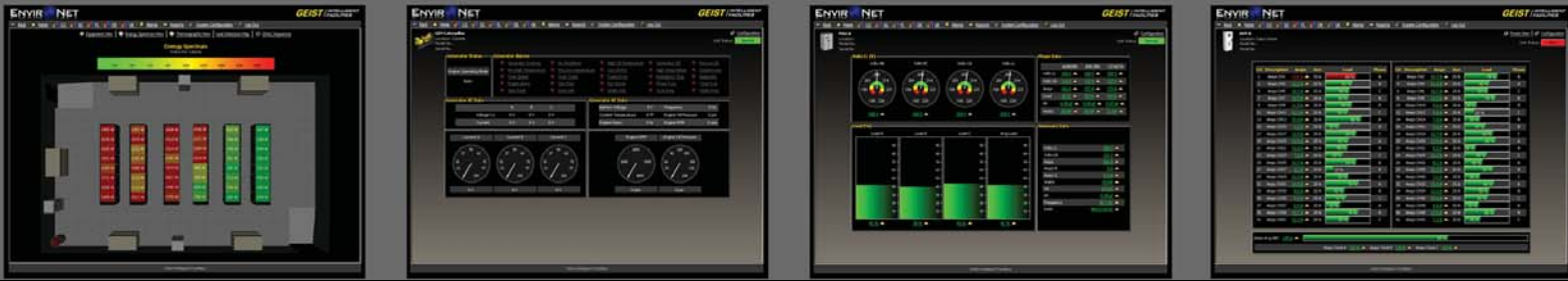
- » Power One-Line Diagrams
- » Power Capacity Planning
- » Energy Cost Analysis
- » Datacenter Documentation Storage
- » Custom Reporting
- » Custom Views
- » Key Performance Indicators
- » PUE / DCIE
- » Unique Views Per User

## Supported Equipment

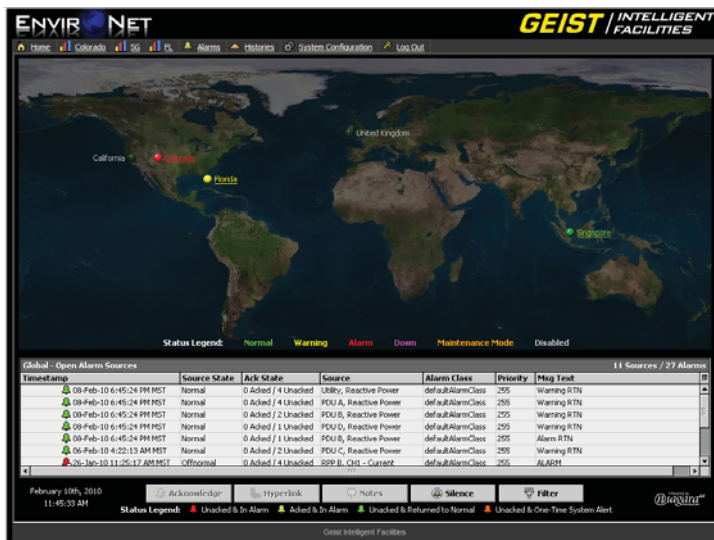
- » Chilled Water Systems
- » CRAC Units
- » Utility Power Meters
- » Switch Gear
- » Generators
- » Fuel Systems
- » ATSS, STSS
- » UPSs, PDUs, RPPs, BCMs
- » Rack PDUs
- » Battery Strings
- » Leak Detection
- » Fire Panels

## Communication Protocols

- » SNMP
- » Modbus
- » BACnet
- » LonWorks
- » Niagara
- » Hardwired I/O



Equipment View



Global View

## Environet Features and Benefits

**Custom views of all data** - Shows the most pertinent information based on your monitoring needs for faster, more efficient data collection.

**Extensive trend and historical records** - No more manual measurements! Saves time by automatically collecting and logging important data points.

**Full alarm management** - Gives you the flexibility to manage alarms remotely so no alarm goes unacknowledged.

**Industry leading monitoring and management features** - Monitor your facility proactively rather than reactively. The extensive tool set allows you to recognize problem areas before they cause downtime.

**Automated Reports** - Automatically generates required reports saving you time, while decreasing human error associated with running reports.

**Integration with all major BMS and NMS** - Easily works with current systems so there is no need to replace expensive equipment already installed.

**Multi-site capable** - Gives you a holistic view of your enterprise for maximum enterprise efficiency.

**Multi-user based views and permissions** - Increases efficiency by personalizing what information is displayed when you log in.

**Scalable from 10s of points to 10s of thousands of points** - Allows Environet to grow with your facility. Additional data points are easily added when you need to expand.

**Vendor / MFG neutral** - Works with existing equipment so you get reliable, efficient monitoring results.

**Control enabled** - Increases facility efficiency allowing you to realize your return on investment more fully.

## Case Study

*"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."*

### Environet Gives Hosting.com the Flexibility they Need

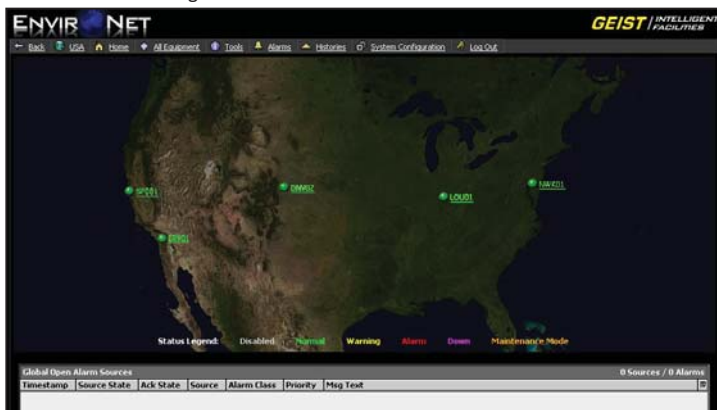
Being responsible for the uptime of over 65,000 websites is no easy feat—and it's a responsibility that Hosting.com takes seriously. Established in 1997, Hosting.com provides hybrid hosting solutions, enterprise colocation, cloud and dedicated hosting, managed hosting, disaster recovery, and business continuity services to a global customer base.

For over 13 years Hosting.com has experienced steady growth primarily due to their commitment to quality service and strong word of mouth promotion. This growth has resulted in the company expanding their hosting services to five data centers, nationwide. With this expansion came the need for consistency. Hosting.com's Data Center Facilities Director, Roman Flom, explains, "Company growth dictated the need to standardize on a single scalable platform that would allow our global NOC to monitor all of our locations using one interface." However, having five different data centers in four states across the nation, meant Hosting.com had some challenging requirements for their global NOC.

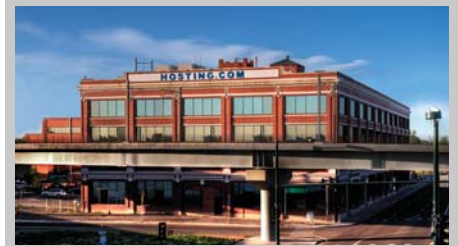
Hosting.com employs a diverse set of technologies from a number of equipment manufacturers. Finding a monitoring system that could successfully integrate different communication protocols was essential. Environet's vendor neutral platform allowed Hosting.com to integrate with their current technologies. Flom explains, "Communication types had both economic and operative perspectives in this decision making process."

The Environet system allows Hosting.com to use current equipment from a number of manufacturers without suffering the cost of equipment replacement. This vendor flexibility also allows Hosting.com to pick and choose equipment based on their needs rather than the system's needs. Environet gives them the freedom to choose the best technology for their data centers without compromising the quality of service they provide to their customers.

Hosting.com's centralized view shows all five locations



### Project Overview



#### Purpose

To design and implement a multiple site critical facilities infrastructure monitoring system that allows the end-user to remotely view and manage multiple sites from one 'pane of glass', or single web browser session.

#### Time Frame

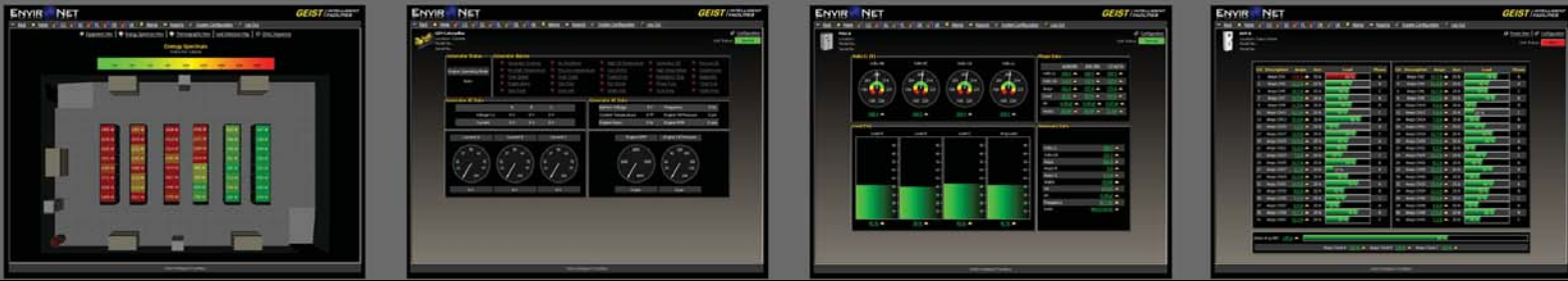
October 2009—May 2010

#### Five Locations

- (1) Colorado
- (2) California
- (1) Delaware
- (1) Kentucky

#### Managed Points

Over 7,000  
More than 160 devices monitored



Facility View

With any technology, there is a learning curve. The quicker users can learn how to properly and efficiently use a technology, the faster that technology becomes valuable. An intuitive, easy to use interface decreases the need for extensive—and often times costly—staff training. “We wanted a simple to understand user interface”, says Flom, “The Environet interface was the most intuitive of the platforms we evaluated.”

The drop down menus and icon-based interface made it easy for Hosting.com employees to navigate the system. In addition, the graphical layout and visual representations of data such as temperature, alerts, and energy usage makes recognizing problem areas fast and efficient.

## Deployment Cost

Installation costs for five data center sites can get expensive, quickly. Between technicians’ time, travel costs, hardware purchases, and other expenses, deployment cost is an important factor when choosing a monitoring system. According to Flom, “Deployment cost was a significant factor. We conducted an extensive pricing exercise and Environet was consistently presented as the more competitive solution both for initial deployment and incremental growth costs.”

Installation costs for five data center sites can get expensive,

Not only is Environet competitively priced for deployment, it also has a fast return on investment. With features like Power Capacity Planning and the CRAC Sequencer, Environet provides a number of ways to decrease operational cost, while increasing data center efficiency.

## Only the Best

Hosting.com knows quality service. As a company, it guarantees that all representatives are extensively trained in both the technical aspects of hosting solutions as well as customer service. They uphold superior standards for their customer relations which is why they have been able to rely on word of mouth and referrals to grow their business. Even with such high customer service standards, the Geist I.F. team was able to meet and surpass expectations. “The technicians and the project manager we worked with during the implementation were clearly experienced professionals and demonstrated a real personal interest in making sure we were satisfied with the system in its full scope.” Flom continues, “Further, our project manager was always accessible and eager to answer questions or make adjustments during the course of the project – considering the complexity of tying together multiple sites with varied equipment platforms this was reassurance.”

Geist I.F. satisfied Hosting.com’s numerous requirements. Environet monitors each Hosting.com facility while also providing a centralized monitoring platform that gives Hosting.com accurate, real-time visibility of all five data centers. And with a relationship that reflects the high standards and quality service of both companies, Hosting.com says they’re sure to expand their Environet system as they continue to grow.

## Case Study

*"Customization was the number one factor. We needed the ability to display data with a product that was highly flexible, customizable, and easy for our employees to use."*

### CoSentry is Covered with Environet

For over ten years, CoSentry has provided businesses with resiliency solutions from disaster recovery and managed technical services to hosting and data center services. As a top tier technology utility, CoSentry allows businesses to operate seamlessly if there is a small incident or a full-scale disaster. With three regional facilities and a combined total of 125,000 square feet, CoSentry is responsible for protecting their clients' business operations. To make sure their clients are covered, CoSentry implemented Environet environmental monitoring systems in their regional facilities.

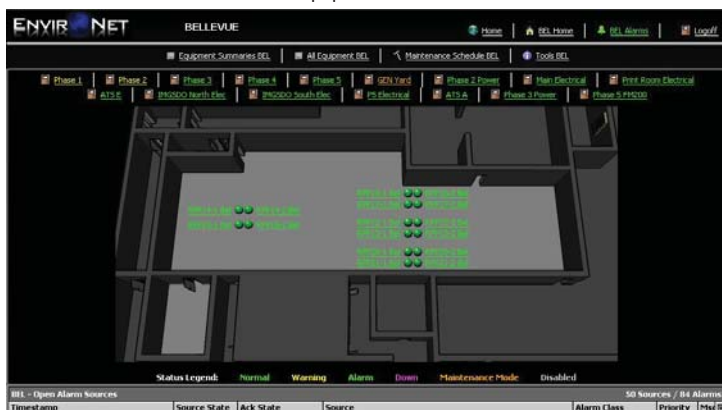
#### Out with the Old, In with the New

Before implementing Environet, CoSentry took manual recordings, often referred to as "sneaker reports", to measure electrical circuits feeding customer servers. These manual recordings required personnel to walk to each meter, take a live recording, and then report the reading for billing verification purposes.

However, there are a number of downfalls to manual recording. Taking recordings manually can be time consuming for the personnel responsible for taking the readings, costly for the company that has to pay personnel to take recordings, and it is potentially inaccurate due to human error. In addition, manual reporting is an ineffective way to record data because it only provides a single measurement in time and does not provide data for other times of the day or month.

CoSentry began searching for an environmental monitoring system that could help combat these challenges. Above all, CoSentry wanted a monitoring system with the ability to display data in an easy-to-use, intuitive interface that could also be customized to their needs. According to Dave Suhr, Bellevue Site Manager, "Customization was the number one factor. We needed the ability to display data with a product that was highly flexible, customizable, and easy for our employees to use."

Equipment View



### Project Overview



#### Purpose

To integrate current technologies with a customized monitoring system capable of generating custom reports and sending notifications when an alarm condition is met.

#### Time Frame

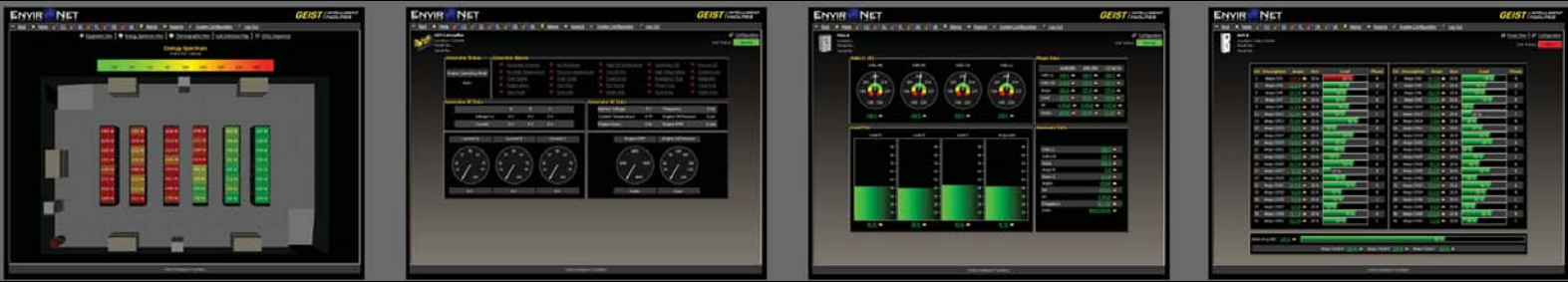
January 2009–Present  
Providing ongoing support

#### Two Locations

Nebraska  
Missouri

#### Managed Points

Over 47,000  
Over 160 monitored devices



Facility View

CoSentry decided to implement a customized Environet system to gather live data per circuit and automatically generate bills for customers. Environet helped condense CoSentry's access points to make monitoring more efficient. Suhr says, "Environet provided a single location for all the information. Now thousands of points of information were available in real time. Reports are now based on actual real time and are available via a click of the mouse." With no more sneaker reports, personnel can focus on other priorities, readings are highly accurate, and CoSentry can monitor their mission critical facilities with even more confidence. In fact, the most helpful feature according to Dave Suhr is the notification. "Last night a customer lost power in a cabinet and I knew right away."—and this means fewer surprises for Dave when he comes into work.

Suhr also finds Environet's reporting function useful. Suhr runs reports to show power usage and overages of clients.

"While the different unique views, from individual to summary pages are nice, the reporting function is especially helpful for our application."

Suhr says his experience with both the Environet system and the Geist I.F. team has been a positive one. "The staff has been very helpful. They were able to make changes to suit our needs", says Suhr. With all the features and functionality of the Environet system, Suhr sees a future application for Environet as CoSentry expands.



## Customer Testimonials

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

— V.P. of Technical Operations

## Case Study

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

### Expedient Chooses Environet

Expedient and its affiliates operate a national network of six data centers located in Baltimore, Boston, Cleveland, Indianapolis, Pittsburgh, and Richmond. 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.

#### What led Expedient to Environet?

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 his 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."

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 data centers. Expedient uses Environet to monitor leak detection, BCMs, 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



### Project Overview



Expedient Data Center

#### Purpose

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

#### Time Frame

April 2008—present  
Providing ongoing support

#### Six Locations

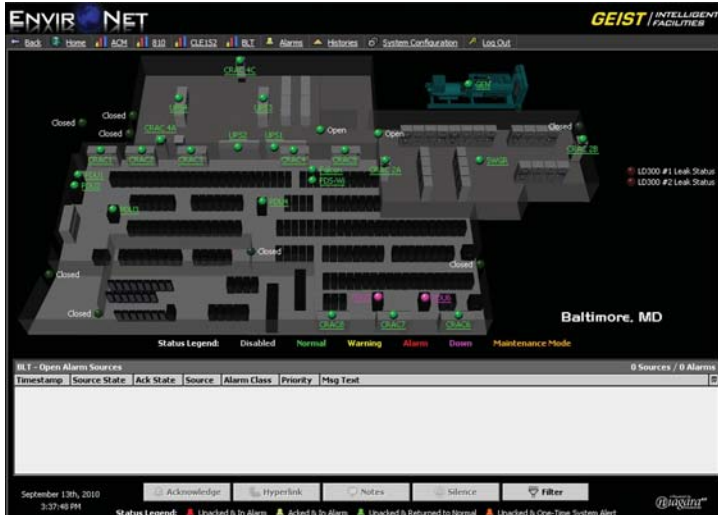
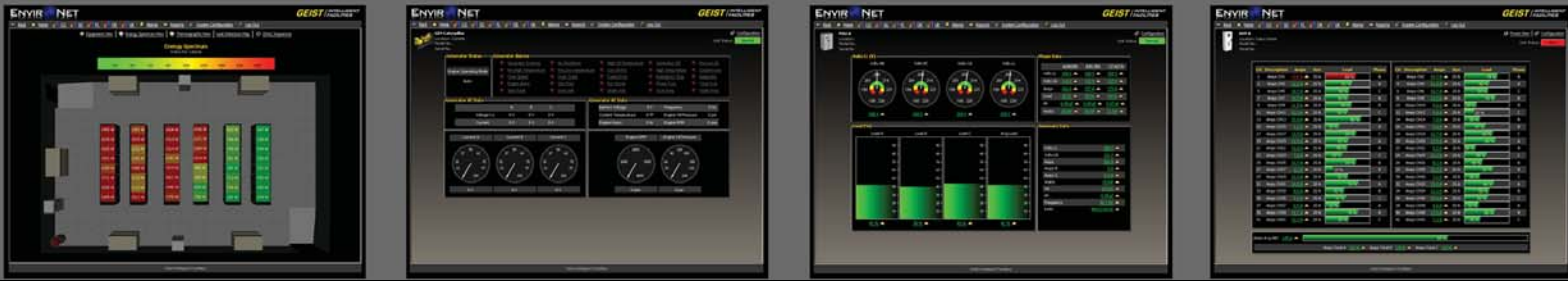
- (1) Massachusetts
- (2) Pennsylvania
- (2) Ohio
- (1) Maryland

#### Managed Points

Over 25,000

Facility View





Facility View

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 Expands

Within the past year, Expedient replaced its previous monitoring system with Environet. Expedient has been extremely pleased with this solution. Initially, Expedient merely 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. The company is now considering moving a couple more sites to Environet.

“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 I.F. has a good understanding of our business, and they have been able to work with us to find technical solutions to meet our needs.”



## Customer Testimonials

“In our Atlanta data center the entire electrical infrastructure is being monitored by Environet. This includes UPS systems, ATs, Generators, PDUs and RPPs all the way down to the branch circuit level. 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 to be proactive rather than reactive in monitoring growth. Other advantages include the ability to monitor multiple sites using one web based graphical interface. This approach has aided our NOC by simplifying and shortening the learning curve for using this product.”

—Director of Data Center Operations

## Case Study

*“There is so much flexibility in the product’s ability to store data, warn, and alarm. These features allow us to perform trend analysis and to be proactive rather than reactive in monitoring growth.”*

### BCD Travel Finds a Solution with Environet

For more than thirty years, BCD Travel has been a recognized leader in providing travel services in a variety of industries. With more than 13,000 professionals focusing on quality travel management, BCD Travel boasts a proven track record of superior service with a 95% client retention rate.

With core services including travel management, meeting management, and travel industry consulting, BCD Travel is known for their empowered management practices, customer customization, and partnership approach to business. Providing automated tools and processes ensure that their travel agents focus on service delivery not complex booking procedures. BCD Travel implements online booking tools and continually improves online adoption, centralized support, operational excellence, and workflow technologies to provide superior performance across borders. To maintain the quality service their clients have come to expect, BCD Travel relies on the upkeep of numerous data centers spanning multiple continents.

#### A New Addition

In 2008, BCD Travel decided to expand their data centers in North America by building a new data center in Atlanta, Georgia. To monitor this data center, BCD Travel needed a highly reliable, comprehensive system. Previously, the company’s data centers employed rudimentary monitoring systems that used analog signals such as temperature and humidity as well as dry contacts for status of equipment.

Director of Data Center Operations, Tom Dileo says, “We began to search for a comprehensive product suite that would integrate with our new infrastructure through multiple protocols such as SNMP, ModBus, LonWorks, etc. We also required a friendly Web based graphical interface which would present a clear view of the status of our entire infrastructure.” Implementing a system that monitored their new data center efficiently, accurately, and comprehensively was imperative.



Facility View



### Project Overview



CRAC Sequencer

#### Purpose

To implement a comprehensive monitoring system capable of integrating with multiple communication protocols while maintaining a visually pleasing and intuitive user interface.

#### Time Frame

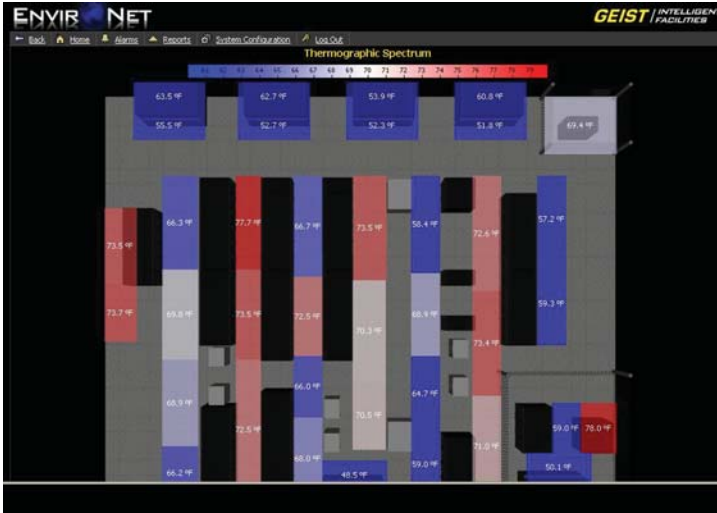
October 2008—present  
Providing ongoing support

#### Five Locations

- (2) Georgia
- (1) Florida
- (1) Costa Rica
- (1) Missouri

#### Managed Points

Over 5,000



Thermographic View

Dileo recalls that, “[BCD Travel’s] selection of Geist I.F.’s Environet solution was made based on the integration capabilities, intuitive interface, and for the company’s genuine desire to work with us to customize a solution based upon our needs, wants and desires.”

### Flexible Monitoring

After implementing Environet, BCD Travel was impressed by the flexibility of the comprehensive system. “There is so much flexibility in the product’s ability to store data, warn, and alarm. These features allow us to perform trend analysis and to be proactive rather than reactive in monitoring growth.” Dileo notes.

The customization of the system allowed BCD Travel to make adjustments based on their needs. “I asked for an automated way to start/stop our individual HVAC units

based on defined temperature thresholds. The team delivered this request without any hesitation or trouble”, says Dileo.

In addition to meeting BCD Travel’s customization and integration needs, Environet’s automated start/stop function for the HVAC system started showing a return on investment almost immediately. In just over a year, employing the automated CRAC Manager has decreased the six CRAC unit’s runtime by approximately 20%. That translates into an annual savings of over \$23,000—and that’s just one of many ROI measures.

Not only did Geist I.F. provide a quality product and fast ROI, but working with the Geist I.F. team was an exceptional experience. “I consider our relationship with Geist I.F. a true partnership. They have been there for us right from the start, from design phase to providing a comprehensive solution at a reasonable price point.”



### Customer Testimonials

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

— Sr. Operations Manager

## Case Study

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

### Environet and GameStop: A Win/Win Partnership

How does the world's largest video-game retailer stay on top of its game? With more than 6,100 brick-and-mortar stores throughout 18 countries, an international website, GameStop.com, and a top ecommerce website for games, EBgames.com, GameStop faced a global challenge: How to effectively monitor the multifaceted divisions of its company without compromising security and reliability. To tackle this challenge, GameStop joined forces with Environet from Geist I.F.

#### What GameStop was looking for...

Like most companies today, GameStop supports its multitude of retail stores through regional head offices. Any one of these offices might be responsible for 300 or more retail locations.

Each regional office maintains its own Information Technology (IT) infrastructure to support sales, customer service and communications within its stores. The equipment, facilities and capabilities in each office vary depending on several factors:

**Location.** Environmental influences can be major players. An office in Australia will naturally face challenges to keep equipment cool, whereas an office in Ireland might worry about the effects of humidity. In addition, some locations might face greater security concerns than others.

**Workload.** Hosting IT services for a multitude of individual branch locations requires flexibility and scalability to deal with the varied needs of those locations. While one region might add branch locations more quickly than others, another region may have to process more traffic. GameStop classifies its regional offices' IT facilities in three categories based on the level of each facility's IT support: data centers, data rooms, or data closets.

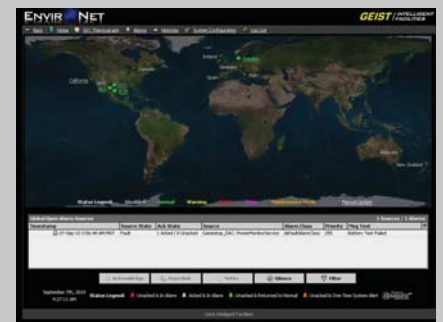
**Staffing.** GameStop's regional offices run lean with minimal personnel, so efficiency is mandatory. The offices aren't open 24x7, so issues that might crop up during night or weekend hours, such as power failures, floods or security breaches, can be detrimental to GameStop's operations.

#### Centralized Monitoring

This factor was the starting point for GameStop's partnership with Geist I.F. GameStop wanted to implement a centralized monitoring system, based in its global operations center, which is open around the clock. That way, GameStop could head off problems such as water damage, equipment damage or security lapses that might otherwise result from after-hours events such as flooding or power failures at a branch location. As GameStop's senior operations manager, Justin Newcom's challenge was finding a way to support all of the company's locations without disrupting individual office operations or burdening individual offices through additional IT demands.



### Project Overview



Dashboard View

#### Purpose

To implement a centralized monitoring system that is globally accessible, seamless to integrate, and easy for new users to learn.

#### Time Frame

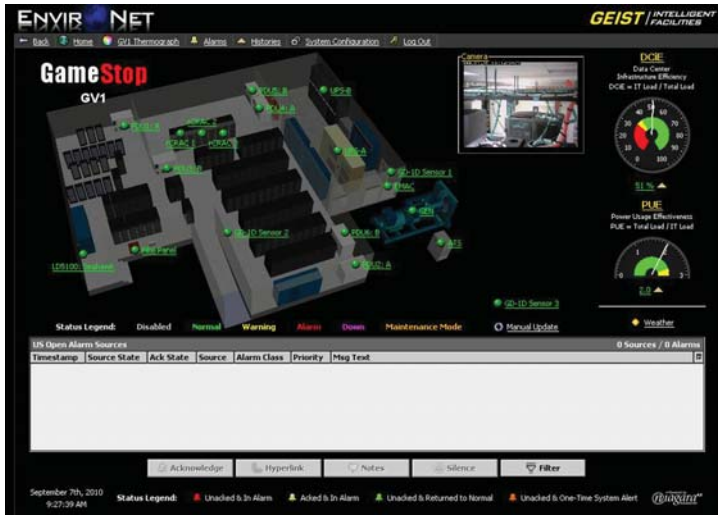
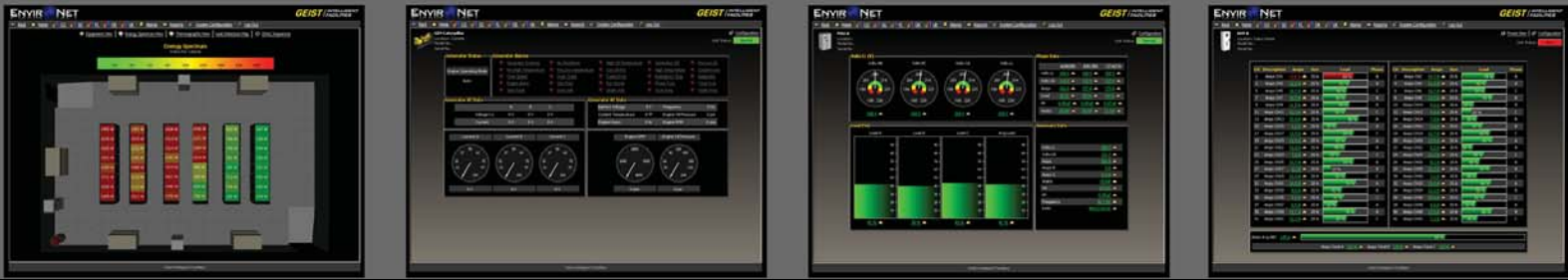
September 2008—present  
Providing ongoing support

#### Four Locations

- (1) Texas
- (1) Sweden
- (2) Italy

#### Managed Points

Over 10,000



Facility View

## Finding Global Solutions

GameStop's goal was twofold:

- (1) Give GameStop the ability to monitor and manage its regional facilities by providing granular, robust notification and alarm systems that respond quickly and help prevent problematic events;
- (2) implement a centralized monitoring system that works with any equipment already in place.

According to Newcom, two factors played into GameStop's decision to select Environet. "One, we like the interface — the way it shows the datacenter layout, the simple red light/green light methodology," he says. "Two, the solution is very scalable. We have Environet, we hook in our other facility management systems, which give us information

from the remote offices, and now we have a single pane of glass out to the other locations from our main system. We can then expand at our own pace." GameStop plans to expand Environet. The retailer is making plans to install additional devices in its regional offices in Germany, Australia, Canada, Ireland, Italy and New Zealand.

## Increasing Efficiency

What's the next move for GameStop? Newcom plans to use Environet to help the company become even more efficient. Additional measurements such as data center infrastructure efficiency (DCIE) and power usage effectiveness (PUE) will be added so that GameStop can calculate costs from facility level down to the server-cabinet level. The company can then use these calculations to realistically estimate the cost of projects, such as virtualization.

Newcom is pleased that Environet gives GameStop the ability to show all types of Return on Investment and hardware costs. And he appreciates the first-rate customer service. Working with Geist I.F. is "more of a partnership," he states. "They're easy to contact and easy to work with. We run ideas by them, and they respond right away."

As for the Environet solution: "It's a phenomenal product, able to scale quickly and easily, and priced well. When we work with global projects we want to make it as easy as we can."

