# The Critical Role of Software in Modern Data Center Operations

*How Schneider Electric's Software Portfolio Simplifies Data Center Management, From Small Closets to Hyperscale*

*By: Molly Gross, Principal, Power Solutions, LLC*

- *Why continuous monitoring now matters more than periodic maintenance*
- *EcoStruxure IT and EcoStruxure Data Center Expert, compared*
- *Extending visibility with NetBotz environmental monitoring*
- *Economic considerations and how Power Solutions can help*

## Executive Summary

Power and cooling infrastructure has always been the foundation of data center operations, but increasingly, the value of that infrastructure depends on the software layer that monitors it. A UPS that runs without monitoring is a black box between maintenance visits; a precision cooling system without visibility into load trends is a reactive repair waiting to happen. As AI workloads, hyperconverged infrastructure, and distributed IT footprints push power and thermal density beyond what many facilities were originally designed for, organizations that rely solely on scheduled preventive maintenance are increasingly exposed to failures that continuous monitoring would have caught early.

This white paper reviews the software layer Schneider Electric provides for critical power and cooling infrastructure: EcoStruxure IT, its cloud-based monitoring and predictive analytics platform, and EcoStruxure Data Center Expert (DCE), its on-premises counterpart. It covers what each platform does, how NetBotz environmental monitoring extends visibility beyond the UPS itself, the economic case for continuous monitoring, and how to think about the right choice for environments ranging from a single-rack IDF closet to a hyperscale data center.

Power Solutions, LLC, a Schneider Electric Certified Service Partner and APC Elite Data Center Partner, helps organizations evaluate, deploy, and configure the right monitoring platform for their environment — and provides ongoing support once it's in place.

## Introduction

In today's digital environment, the reliability of power and cooling infrastructure depends increasingly on the software that watches over it. UPS systems, batteries, and precision cooling equipment have always been the physical safeguard against outages — but knowing their real-time condition, rather than assuming it from the last preventive maintenance visit, is what determines whether a developing problem gets caught early or discovered during an actual failure.

This document explores the software platforms Schneider Electric provides to enhance visibility into critical power and cooling infrastructure, the environmental monitoring hardware that enhances EcoStruxure's capabilities, the economic reasoning behind investing in continuous monitoring, and how Power Solutions helps organizations put the right combination in place.

***Software Is No Longer Optional Infrastructure***

*Scheduled maintenance and reactive response were never a substitute for knowing an asset's actual condition day to day. As power and thermal density increase across data centers and distributed IT environments alike, continuous monitoring is what keeps a developing problem from becoming an outage.*

## The Growing Need for Continuous Monitoring

Most data centers and server rooms are still maintained on a schedule: annual or semi-annual preventive maintenance visits, battery replacements on a calendar cycle, and reactive response when something fails. That approach made reasonable sense when IT infrastructure was simpler and less densely packed. It makes less sense now.

AI workloads, hyperconverged infrastructure, and expanded IP systems have increased power density and thermal load in facilities that were designed for a different compute environment. A UPS sized correctly three years ago may be running at a meaningfully higher percentage of capacity today. A battery string that passed its last preventive maintenance visit may have lost capacity since. A cooling system that was adequate before a server refresh may be struggling with a load it wasn't designed for — and none of that shows up until someone goes looking, or until it fails.

The infrastructure itself usually isn't the problem. The problem is that scheduled maintenance and reactive response were never a substitute for knowing an asset's actual condition day to day — they were a starting point, built for an era before continuous visibility was practical.

## EcoStruxure IT: Cloud-Based Monitoring and Management

EcoStruxure IT is Schneider Electric's current cloud-based monitoring and management platform for critical power and cooling infrastructure. It provides real-time visibility into UPS load, battery health, environmental conditions, and device status across all monitored locations, from a single interface accessible on any device. Power Solutions' EcoStruxure IT page covers the platform in detail.

***What This Section Covers***

*- Real-time monitoring and predictive alerts*
*- Multi-site visibility*
*- Vendor-neutral and Li-Ion BMS integration*
*- Licensing and free trial access*

Connectivity to EcoStruxure IT is built into current-generation Schneider Electric equipment through the network management card (NMC). The platform itself is licensed separately and configured to the specific environment: the NMC handles data collection and communication, while EcoStruxure IT handles aggregation, analytics, alerting, and reporting.

### What EcoStruxure IT Does

- **Real-time monitoring**: UPS load levels, battery state of charge and health, input/output voltage and frequency, and environmental sensor data are continuously updated and accessible from any connected device.

- **Predictive alerts**: EcoStruxure IT uses AI-assisted analytics built on Schneider Electric's aggregated monitoring data lake — historical monitoring data collected across its entire customer base — to identify developing issues before they become failures, including load trending toward a threshold, degrading battery health, and environmental conditions approaching risk levels. Because the analysis draws on outcomes observed across many installations rather than a single site's own history, it can flag developing problems earlier than threshold-based alerting, which notifies only after a condition has already been reached on that one site.

- **Aggregated multi-site visibility**: All monitored locations appear in a single dashboard, eliminating the need for site-by-site monitoring visits.

- **Vendor-neutral monitoring**: EcoStruxure IT is not limited to Schneider Electric equipment. It monitors third-party UPS and environmental infrastructure alongside Schneider Electric installations, which is particularly useful for organizations with mixed installed bases.

- **Event history and compliance documentation**: Every event, alert, and maintenance action is logged and retained, supporting compliance documentation for regulated environments such as financial services and government, without manual record reconstruction.

- **Li-Ion BMS integration**: For UPS installations with Li-Ion batteries, EcoStruxure IT receives continuous cell-level data from the integrated battery management system, including state of charge, state of health, and temperature, without requiring a discharge test. See our Li-Ion TCO whitepaper for more on how BMS monitoring factors into the battery chemistry decision.

### Best Fit for EcoStruxure IT

EcoStruxure IT is the right choice for organizations that need monitoring visibility across multiple locations, have cloud-forward IT policies, or want the most capable predictive analytics available in the Schneider Electric software portfolio. It's well-suited to distributed environments — multi-location enterprises, multi-site healthcare organizations, multi-office professional services firms, and multi-department university systems with distributed infrastructure — where aggregated visibility across sites has real operational value. Organizations that prefer to keep infrastructure data on their own network rather than in the cloud have a separate option, covered later in this paper.

## Licensing and Getting Started

EcoStruxure IT is offered on a subscription basis, and organizations add devices and analytics capability as their infrastructure grows rather than committing to a fixed build-out up front. That's part of why the platform scales down as comfortably as it scales up: a single UPS in a small office is brought onto the platform the same way a fleet of a hundred systems is.

Schneider Electric also offers a free trial for organizations that want to see the platform running against their own equipment before committing — a practical way to evaluate live monitoring data from an existing UPS or environmental sensor before making a decision. Power Solutions can help set up a trial deployment and walk through what the dashboard looks like for a specific environment.

## Extending The Platform: NetBotz Environmental Monitoring

EcoStruxure IT's core data comes from the UPS itself, but a complete picture of a server room or data center environment usually needs more than power and battery data. Schneider Electric's NetBotz appliances are the hardware that extends monitoring into the physical environment around the equipment: temperature and humidity sensors, water and leak detection, door and access contacts, and camera-based visual monitoring, with dry-contact inputs available for tying in existing third-party alarms.

NetBotz appliances report into EcoStruxure IT (and into EcoStruxure DCE, covered below) alongside UPS and battery data, so a temperature fluctuation, an opened door, or a water sensor tripping shows up in the same dashboard and the same alerting workflow as a UPS or battery event, rather than as a separate system a facilities team has to check independently. For server rooms and IDF closets without existing environmental monitoring, adding a NetBotz appliance is typically the starting point for extending visibility beyond the UPS itself.

---

## EcoStruxure Data Center Expert: On-Premises DCIM

EcoStruxure Data Center Expert (DCE), formerly StruxureWare, is Schneider Electric's on-premises data center infrastructure management (DCIM)

platform. It provides monitoring, management, and capacity planning for power and cooling infrastructure from servers installed within the customer's own network, with no data leaving that network to reach the cloud.

EcoStruxure DCE is a current, actively supported platform — Schneider Electric continues to market and sell it, not a legacy product being phased out. The choice between EcoStruxure IT and EcoStruxure DCE is a deployment-model decision, not a capability-tier decision: both monitor the same underlying data, and "on-premises" describes where that data lives, not how it's accessed or how many buildings it can cover. DCE is reachable from any device connected to the customer's network — there's no dedicated terminal or single workstation requirement — and an organization or campus with multiple buildings tied together on a private network gets the same unified, multi-building view that a cloud platform would provide. The difference is that the data never leaves the organization's own network to get there.

### What EcoStruxure DCE Does

- **On-premises monitoring:** UPS load, battery health, environmental conditions, and device status are monitored with the same core data as EcoStruxure IT, delivered from infrastructure within the customer's network.
- **Capacity planning:** EcoStruxure DCE includes capacity planning tools that model power and cooling headroom, floor space, and infrastructure utilization — useful for data center managers planning for growth or consolidation.
- **Vendor-neutral:** Like EcoStruxure IT, EcoStruxure DCE monitors third-party infrastructure alongside Schneider Electric equipment.
- **Integration with existing IT systems:** On-premises deployment simplifies integration with internal ITSM, BMS, or CMDB systems where cloud-based data exchange creates policy or security complications.
- **Environmental monitoring:** Like EcoStruxure IT, EcoStruxure DCE integrates with NetBotz appliances for temperature, humidity, water leak,

door/access, and camera-based monitoring within the same on-premises environment.

### Best Fit for EcoStruxure DCE

EcoStruxure DCE is the right choice for organizations that prefer to keep infrastructure monitoring data on their own network rather than in the cloud. That's typically a company policy or comfort-level decision — many organizations have internal cybersecurity policies, data governance frameworks, or network architectures that make an on-premises deployment the more comfortable fit, independent of what's technically required.

Multi-building organizations are a strong fit for DCE provided an organization's buildings share a private network, DCE covers all of them with the same unified visibility a cloud platform would provide, while keeping the data inside the organization's own network throughout.

The one meaningful capability difference between the two platforms is analytical depth. DCE monitors and reports against fixed thresholds, evaluated against that individual installation's own data. EcoStruxure IT's predictive analytics instead draw on Schneider Electric's aggregated data lake — historical monitoring data collected across its entire customer base — to flag developing issues based on patterns observed across many installations, not just a threshold check on a single site.

---

### Side by Side

| Factor | EcoStruxure IT | EcoStruxure Data Center Expert |
|---|---|---|
| **Deployment** | Cloud-hosted or hybrid | On the customer's own network |
| **Accessibility** | Any device, any location | Any device connected to the customer's network |
| **Vendor neutrality** | Yes — monitors third-party infrastructure | Yes — monitors third-party infrastructure |

| Factor | EcoStruxure IT | EcoStruxure Data Center Expert |
|---|---|---|
| **Predictive analytics** | Advanced — AI-assisted, using Schneider Electric's cross-customer data lake | Standard threshold-based alerting |
| **Scalability** | Subscription-based; scales without added hardware | Subscription-based; scales without added hardware |
| **Best fit** | Organizations without an existing private network across sites, or that want the deepest predictive analytics available | Organizations that prefer to keep data on their own network |
| **Schneider Electric support** | Current platform — actively developed | Current platform — actively developed |

## Choosing The Right Platform

In practice, the decision comes down to one question: does the organization prefer, or need, to keep infrastructure monitoring data on its own network? If so, EcoStruxure DCE is the right platform, and it will cover every building on that network just as completely as EcoStruxure IT covers multiple locations from the cloud. If not, EcoStruxure IT is typically the better choice: deeper, AI-assisted predictive analytics, and no on-premises server to maintain for the monitoring system itself.

For organizations that are genuinely uncertain, the right starting point is a conversation about requirements: how many locations need coverage, what the internal data governance preferences are, and what level of predictive capability the facilities and IT teams need day to day. Power Solutions works through that evaluation as part of a monitoring assessment.

### *ISX Central and Older Platforms*

*Organizations running ISX Central or older Schneider Electric monitoring platforms should be aware that those systems are no longer actively developed or supported. Both EcoStruxure IT and EcoStruxure DCE represent current-generation platforms with active development and support. If your monitoring infrastructure predates either of these platforms, a transition is worth planning — the monitoring capability gap between older platforms and current options is significant.*

## Monitoring at Every Scale

A common assumption is that monitoring software is mainly a large-data-center concern. For distributed organizations, it's often the opposite: a single server room in a branch office or a small campus building is less likely to have dedicated IT staff on-site, less likely to already have monitoring in place, and more likely to be the location where an undetected UPS problem turns into an extended outage before anyone notices.

That risk doesn't scale down with the size of the room. A closet with a single UPS and a handful of network devices benefits from the same continuous visibility as a full data center, and an outage at a small, unstaffed site is often

just as disruptive to the business it supports as one at the main facility. EcoStruxure IT's subscription model is built to scale down to exactly that case — a single UPS reports to the platform just as effectively as a fleet spread across dozens of locations, without requiring the infrastructure investment a facility-wide rollout once did.

## Economic Considerations

The case for continuous monitoring is ultimately an economic one. The cost of an undetected failure — emergency service calls, expedited parts, unplanned downtime, and in some cases data loss — is almost always higher than the cost of catching the same problem early through routine monitoring. A battery that's flagged for replacement before it fails under load is a scheduled maintenance event; the same battery failing during a utility outage is an emergency, often at a worse time and a higher price.

Monitoring also changes how maintenance itself is budgeted. Instead of replacing batteries and components on a fixed calendar cycle regardless of actual condition, organizations with continuous visibility can shift toward condition-based maintenance — replacing parts when the data shows they need it, not simply when a preventive maintenance schedule says so. Over the life of a UPS fleet, that shift tends to reduce both unnecessary early replacements and unplanned emergency ones.

The clearest economic case is at distributed sites without dedicated on-site IT staff, where the cost of an undetected failure includes not just the repair itself but the time before anyone notices there's a problem at all. For those environments, the value of monitoring often has less to do with the platform's list price and more to do with what an extended, undetected outage would otherwise cost.

## Innovative Solutions

The direction of this software layer is toward more automated interpretation of data, not just more data. EcoStruxure IT's AI-assisted predictive analytics compare a given installation's readings against Schneider Electric's aggregated data lake — historical monitoring data collected across its entire customer base — rather than simply flagging when a fixed threshold is

crossed on that one site. That's what separates EcoStruxure IT from older, threshold-only monitoring tools, and it's the same direction the rest of the industry is moving in. Pairing that analytics layer with NetBotz environmental monitoring extends the same predictive approach beyond the UPS itself, to the room the UPS sits in.

For organizations evaluating monitoring for the first time, the practical starting point is usually the free trial covered earlier in this paper: seeing live, AI-assisted monitoring data from existing equipment tends to make the case for a platform more directly than a features list can.

## Conclusion

Software has become as central to critical power infrastructure as the UPS, batteries, and cooling equipment it monitors. Whether an environment calls for cloud-based predictive monitoring across multiple sites or a supported on-premises DCIM platform, the underlying goal is the same: replacing a snapshot taken during the last maintenance visit with a continuous, accurate picture of how the infrastructure is actually performing.

Power Solutions can help evaluate the right approach, handle deployment and configuration, and provide ongoing support. Learn more on our EcoStruxure IT page or our EcoStruxure DCE page, or browse our resources library for more on critical power infrastructure topics.

*Power Solutions, LLC is a national vendor-agnostic solutions provider of power products and services for IT, manufacturing facilities, and telecommunications applications. As a value-added reseller for more than 20 different manufacturers, we help you configure the best solution for your specific application. With access to such a wide range of power products and services for both AC and DC applications, we offer customized turn-key solutions that simplify project execution and procurement with a single point of contact. Think of us as an extension of your IT and facilities departments ready to help you solve any type of power problem or complete a new power project. When you need help with your power infrastructure, call us first. Whether it's your switchgear, data center, cooling, a remote closet, a DC site, or a battery replacement, we're ready to help. Visit our website or contact us sales@power-solutions.com or call 800-876-9373.*

Power Solutions | PO Box 100 | Barrington | RI | 02806

power solutions