Data center infrastructure management (DCIM) software

StruxureWare Data Center Operation software

End-to-end management and operation of the physical infrastructure, from the IT systems to the building

Schneider Electric

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Answer the global call for energy efficiency.

As the global specialist in energy management, Schneider Electric™ is paying attention to the familiar mantra at companies around the world: "We need to do more with less." This call to action applies to all areas of conducting business, including running a business-centered data center. Managers at all levels, including data center and IT managers, are looking for meaningful ways to permanently reduce energy consumption and boost performance for the sake of the environment as well as the bottom line.

Today's energy crisis is no longer a future concern; the crisis is upon us. In short, the energy supply very soon will fail to meet the world's ever-increasing energy demand, which is expected to double by 2050. We simply can't change the earth's finite generation of energy capacity, as we have learned the hard way in recent decades, nor can we supplement that supply with alternative means as quickly as needed.

Companies around the world have begun to take note of the role of data centers in this imbalanced equation. As Eric Woods, Research Director, Pike Research, points out, "In the same way as the world is coming to realize the true cost of a carbon economy, the energy costs of IT are becoming visible for the first time. The information and communications technologies (ICT) industry is believed to be responsible for approximately 2 percent of global CO_2 emissions, and its energy consumption is rising rapidly, with data centers representing the fastest-growing contributor."

Saving energy with active energy management architecture

We're all past efficiency talk. Now, we need efficiency tools — tools that facilitate real change. That's where Schneider Electric steps in — globally — with EcoStruxure™ integrated hardware and software system architecture.

EcoStruxure architecture is a pre-tested configuration of the software, hardware, and services offered by Schneider Electric across five domains of expertise: power, process, IT room, buildings, and security. It acts as a solution ecosystem, delivering compatibility across key application areas and leveraging open standards across both Schneider Electric and third-party offers.

EcoStruxure architecture takes multiple, siloed systems and adapts them to an integrated solution to reduce energy usage, minimize risk, and prepare your organization for the energy demands of the next century. EcoStruxure system architecture allows you to see, measure, and manage energy use across your data centers, industrial plants, and buildings, with guaranteed compatibility among your critical energy domains.

And because EcoStruxure integrated system architecture is scalable and can be applied to both existing facilities and new construction, you can leverage it to achieve up to 30 percent savings on expenses across your entire enterprise, starting today.

> **Today's energy crisis is no longer a future concern; the crisis is upon us.**

Intelligent energy management without the complexity

StruxureWare™ software applications and suites enable EcoStruxure architecture. Specifically, it allows users to see, measure, and manage efficiency across buildings, industrial plants, and data centers, realizing up to 30 percent savings in capital and operational expenditures, including energy.

Powerful and innovative software applications are unified from shop floor to top floor across three levels to maximize efficiency:

Control level: Experts, on site or remotely, can control process performance and ensure business continuity in real time, while tracking energy consumption in a highly ergonomic and secured environment.

Operations level: Functional managers can optimize operations, energy, and assets through smart analytical tools, often spanning multiple sites.

Enterprise level: C-level executives can drive their sustainability strategy efficiently, choosing the best scenario that meets their business objective to conserve enterprise-wide resources.

StruxureWare software suites address specific challenges across buildings, industrial plants, and data centers. Each suite provides easy integration with third-party offers and legacy systems, an open, scalable platform, and a consistent user experience.

StruxureWare software applications and suites simplify integration time, improve reliability, enhance visibility to energy information, and streamline operational efficiency.

The key to data center energy savings

StruxureWare for Data Centers is the specific management software suite designed to plan, monitor, and operate the data center from server, to rack, to row, to room, and to building. A unique DCIM offer, it combines previously disparate offerings for monitoring, automation, planning, and implementation to provide a multifaceted, complete view of all data center functions.

The result? A simple, integrated experience for many users and groups who manage both the facility and IT infrastructure environments. Not only does the software suite streamline operational efficiencies, it enables intelligent energy management, helping data centers play a critical role in responding effectively to the energy crisis.

> StruxureWare for Data Centers software is designed to plan, monitor, and operate the data center from server, to rack, to row, to room, and to building.

Make informed data center decisions.

At the core of the StruxureWare for Data Centers suite is StruxureWare Data Center Operation, the physical infrastructure management application. Unlike other DCIM platforms, it provides an integrated dashboard that facilitates vendor-neutral inventory management. What's more, this dashboard displays real-time device failures and data within the data center physical infrastructure layout, as well as recommendations on how to resolve issues.

StruxureWare Data Center Operation bridges the gap between IT and facilities by providing complete visibility from the building level all the way down to the server level. As a result, it allows C-level executives, data center managers, and facility managers alike to have complete insight and control over their data center's daily operations in order to make informed decisions related to capacity planning, equipment changes, and availability. It's a powerful tool for simulation through the creation of "what if" scenarios across the data center physical infrastructure (e.g., the impact of server placements on power and cooling).

Not only does the software suite streamline operational efficiencies, it enables intelligent energy management, helping data centers play a critical role in responding effectively to the energy crisis. The ability to make such informed decisions from a "building-to-server" perspective can be multilayered with the addition of optional modules created to meet specific user requirements, including:

> **Capacity:** Simulation, planning, and optimization of infrastructure capacities to right-size the data center

> **IT Optimize:** Gain insight into IT power consumption and utilization to increase efficiency and decrease cost

> **Change:** Fully integrated workflow management for IT physical infrastructure

> **Energy Efficiency:** Intelligent power usage effectiveness (PUE) analytics at the subsystem level

> **Energy Cost:** Instant overview of rack energy usage

> **Insight:** Comprehensive tool for customizing report designs to visualize data

> **Dashboard:** Live overview of data center operations using widgets and data sets

> **Mobile:** Wireless operation of your data center allowing for real-time tracking of adds, moves, and changes

> **VIZOR:** On-the-go access for smartphone and tablet applications

> StruxureWare Data Center Operation bridges the gap between IT and facilities by providing complete visibility from the building level all the way down to the server level.
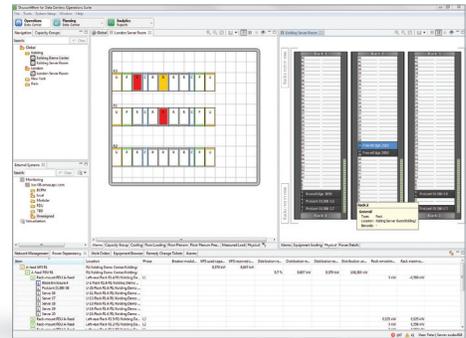
A new level of business intelligence for your data center

With its capability of communicating with building, enterprise, and network management systems, StruxureWare Data Center Operation optimizes energy and cost efficiencies and aids in short- and long-term planning and provisioning of data center equipment and resources.

Operation

StruxureWare Data Center Operation enables vendor-neutral inventory management with real-time device failures and data shown within your data center physical layout, as well as recommendations on how to resolve issues. Its capabilities include the following:
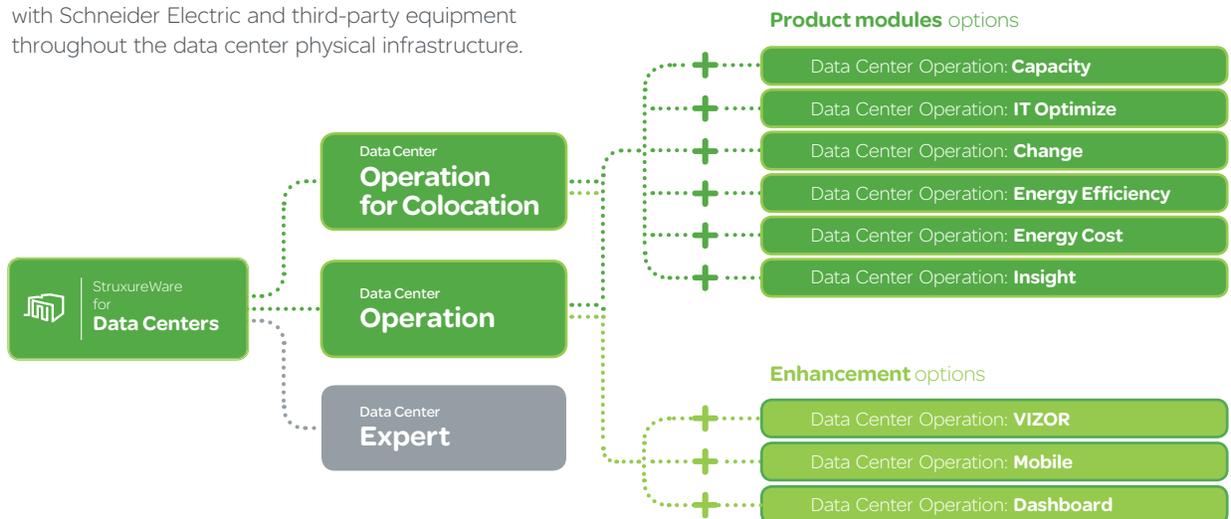
> A location-based drill-down view provides a structured overview of data center locations, from a global to local view down to single assets.

> A network management tool offers support for incomplete routes and a patch panel to patch panel mapping.

> Virtualization capabilities through integrations with VMware vSphere™ and Microsoft® System Center Virtual Machine Manager ensure that virtual loads always have healthy host environments.

> The PUE calculator supplies information on daily utilization of energy to help monitor and streamline energy use.

> StruxureWare Data Center Operation is a scalable DCIM framework that can run on any physical or virtual server.

> Data Center Operation: Mobile provides access to StruxureWare Data Center Operation information via handheld PDA for instant updates on the go.

> An optional dashboard provides a rack-front view for status of data center operations, while uniquely showing device details and asset attributes within the physical layout.

Instant overview of data center operations through inventory management, PUE calculator, real-time device alarms, and location-based drill-down

Our scalable software portfolio for data centers

StruxureWare Data Center Operation software integrates with Schneider Electric and third-party equipment throughout the data center physical infrastructure.

StruxureWare for **Data Centers**

Data Center **Operation for Colocation**

Data Center **Operation**

Data Center **Expert**

Product modules options

Data Center Operation: **Capacity**

Data Center Operation: **IT Optimize**

Data Center Operation: **Change**

Data Center Operation: **Energy Efficiency**

Data Center Operation: **Energy Cost**

Data Center Operation: **Insight**

Enhancement options

Data Center Operation: **VIZOR**

Data Center Operation: **Mobile**

Data Center Operation: **Dashboard**

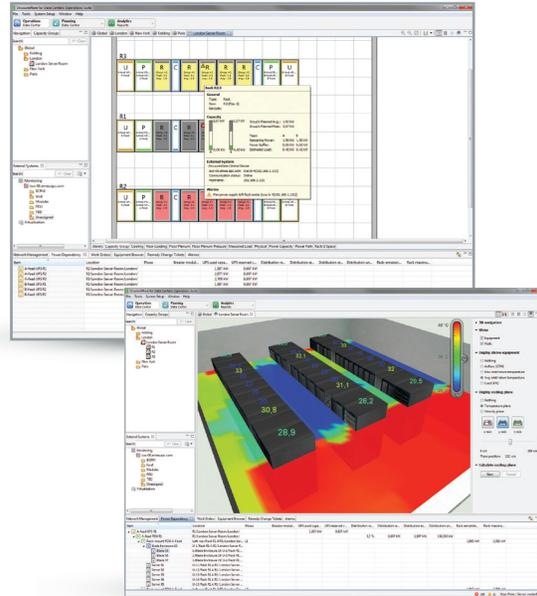# A closer look at the product modules for StruxureWare Data Center Operation

Optional modules allow you to scale the platform to your specific business needs:

Capacity

Planning and optimizing utilization of actual physical infrastructure capacities via shared data center model enables efficient equipment provisioning and right-sizing of your data center.

Simulation, planning, and optimization of infrastructure capacities to right-size the data center

Data Center Operation: Capacity predicts the optimal location for physical infrastructure and rack-based IT equipment based on the availability and requirements of physical infrastructure capacity and user-defined requirements such as redundancy, network, and business use grouping. It reduces stranded capacity through optimized use of the physical infrastructure and avoids unplanned downtime. With its sophisticated simulation based on live data, **Data Center Operation: Capacity** proactively analyzes the impact of changes before they occur, enabling informed decision-making and planning, ensuring that your physical infrastructure provides the required capacity for current and future needs. Device details and asset attributes are shown within the physical layout.
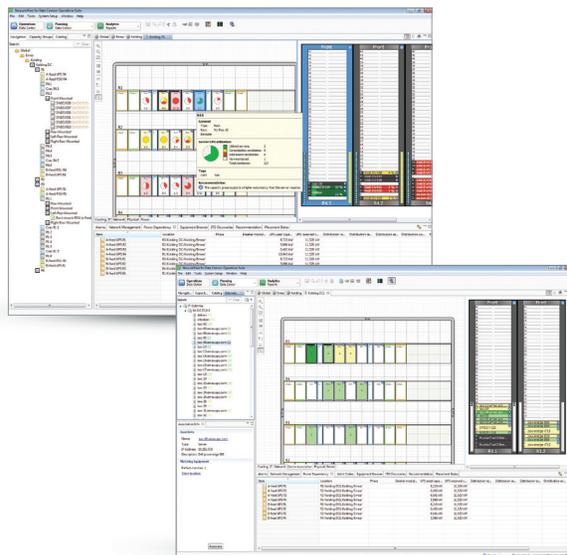

Planning and optimizing utilization of actual physical infrastructure capacities via shared data center model enables efficient equipment provisioning and right-sizing of your data center.

IT Optimize

Increased utilization of infrastructure and IT assets through accurate, detailed energy-consumption profiles of data centers — server by server and rack by rack.

Data Center Operation: IT Optimize monitors IT asset utilization and power consumption to help reduce costs associated with over-provisioning, under-utilization, and imbalanced power and cooling throughout the data center. Business-critical analytics tie IT costs to business groups for chargeback; provide critical information for build vs. buy decisions; and track capacity at the rack, row, and room level.
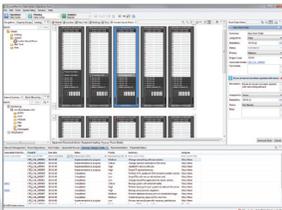

Reduce IT system energy usage through in-depth optimization of server-utilization for increased data center performance.

Change

Workflow management facilitates easy tracking and execution of moves, adds, and changes of equipment in the data center.

Fully integrated workflow management for your IT physical infrastructure

Data Center Operation: Change enables operators to gain control over the data center environment by implementing organized moves, adds, and change work processes, significantly reducing the risk of inadvertent downtime. With its automated workflow system, operators can assign work orders, reserve space, track status, and extract an audit trail for complete visibility and history into the change life cycle. The **Data Center Operation: Mobile** (see page 8) provides you with your operational changes while on the data center floor, enables bar code scanning, and ensures data integrity, as well as improved operational efficiency.

Workflow management allows for easy tracking and execution of moves, adds, and changes of equipment in the data center.

Energy Efficiency

Identify efficiency losses and enable improved PUE/DCiE values at subsystem level with full insight into energy usage costs.

Intelligent PUE/DCiE analytics at subsystem level

Data Center Operation: Energy Efficiency provides current and historical PUE values, enabling a fact-based understanding of how much power is devoted to driving the installed IT equipment compared with the total facility consumption. It provides a detailed insight into how effectively energy is utilized down to subsystem level, as well as an understanding of how to improve energy efficiency. Subsystem data can either be measured or estimated, also allowing customers with few power meters to benefit from the application. The Web-based dashboard view includes efficiency data on current and historical PUE, as well as detailed subsystem cost analysis.
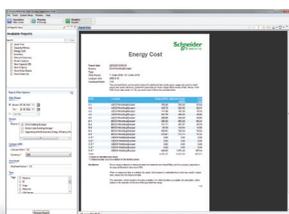

Full insight into current and historical energy efficiency for facilities identifies efficiency losses and enables improved PUE/DCiE values at subsystem level.

Energy Cost

Cost analysis of energy use on a kW/h basis, detailed to the rack level, aids in calculating cost of energy consumption; therefore benefitting chargeback and efficient budgeting.

Instant overview of rack energy usage

Data Center Operation: Energy Cost provides an energy usage report, which shows energy consumed within the data center by the kWh and cost per kWh, detailed to the rack level. The energy usage is based on metered data, gathered over a specified period of time. If no metered data is available, estimated power draw will be calculated based on the power draw of the individual IT assets or nameplate values. The Energy Usage Report provides the option of including an overhead factor accounting for energy losses through PUE. The report can be customized based on optional groupings by use of tags, such as department, tenant, purpose, density, etc.
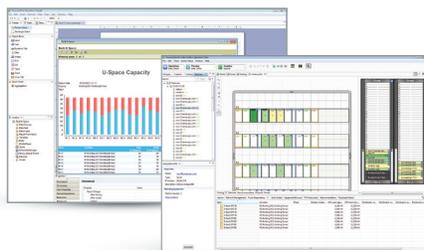

Cost analysis of energy use on a kW/h basis, detailed to the rack level, aids in calculating cost of energy consumption for specified equipment; therefore sustaining chargeback and efficient budgeting.

Insight

A report generator customized to meet your individual business needs, tracking data center capacity utilization with transparency into data center key performance indicators.

Data Center Operation: Insight is an advanced report design tool that provides unlimited options for customizing and visualizing data center reports to match your business needs. The module itself provides default templates, data sources, data sets, and filter parameters, while providing the option of generating individual designs. Reports designed in **Data Center Operation: Insight** allow for combining data from StruxureWare Data Center Operation with any external data point obtainable via Web services or databases. Any report can be published in StruxureWare Data Center Operation or to a number of different file formats.
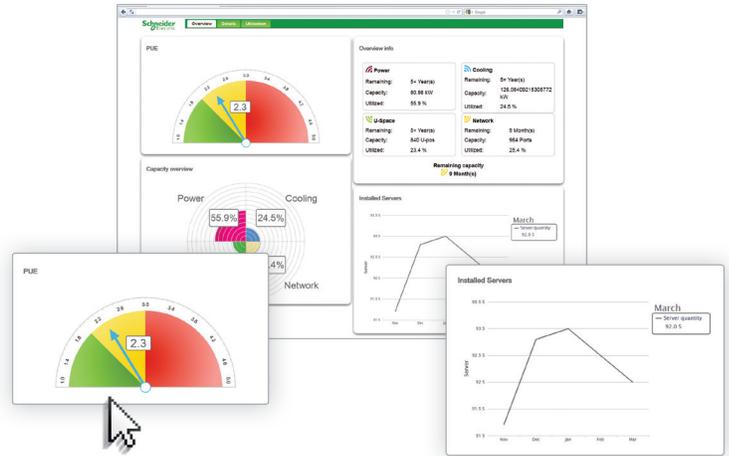

User-friendly report design tool to meet individual business needs to configure and design custom reports complete with data obtainable from StruxureWare Data Center Operation, Web services, or external databases.

Dashboard

Easily configurable Web dashboards create transparency to data center key performance indicators.

Data Center Operation: Dashboard provides transparency to data center key performance indicators and business metrics, displaying customizable information for a high-level overview of data center operations. StruxureWare Dashboard is configured via a choice of predefined portlets, and provides the option to create custom portlets through an integrated, easy-to-use configurator. The portlets are based on a comprehensive and detailed charting library, enabling the user to easily add interactive charts and graphs to the StruxureWare Dashboard. The open source environment, based on the Liferay® platform, provides the option to display Web content and metrics from other applications, such as Power Monitoring Expert, Building Expert (Continuum™ or TAC Vista™), and StruxureWare Data Center Expert.

Easily configurable Web dashboards create transparency to data center key performance indicators.

VIZOR

View key capacity indicators on your smartphone or tablet.

High-level data center parameters on the go via your tablet or smartphone

Data Center Operation: VIZOR provides key data center capacity parameters on power, cooling, space, and network, straight to a smartphone or tablet, while delivering predictions of remaining capacity based on current growth rate. Observing your data center on the go is made easy with a drill-down function into any location or room.

Its simple user interface enables you to gain quick access to a complete overview of asset inventory in the data center. (Currently available for iPhone®, iPad®, and Android™-based phones).

Mobile

Handheld, wireless bar code scanner aids in viewing, creating, and instantly synchronizing changes on the go

Wireless operation of your data center

Data Center Operation: Mobile provides you with your data center inventory while on the data center floor. The integrated bar code scanner makes light work of implementing work orders and identifying equipment. **Data Center Operation: Mobile** automatically synchronizes server locations, ensuring data integrity, removing human error, and improving operational efficiency.

Handheld, wireless bar code scanner for viewing, creating, and instantly synchronizing changes on the go. Based on Motorola® MC75 hardware.

Peace-of-mind software services

Schneider Electric has the services you need to protect your investment, efficiency, and availability. Our comprehensive software services portfolio, which supports third-party integrations, is designed to ensure your applications receive the care they need to operate at optimal levels — at all times — from installation to ongoing operations.

Software installation

We offer Software Installation Services that will accelerate the value of your newly purchased StruxureWare for Data Centers application. We use repeatable industry best practices for installing and registering in accordance to manufacturer specification. The service is fulfilled by highly skilled and certified field service engineers, ensuring that all software products are installed correctly and are ready for use in your dynamic data center. We recognize the importance of smooth and successful startup. By choosing our Software Installation Services, you will increase your efficiency by decreasing your time to deployment.

Software configuration

By choosing Software Configuration Services, you gain the most value from your new StruxureWare for Data Centers application investment. By quickly and precisely configuring the system to emulate your unique data center, you will be able to take advantage of the features and benefits of the tools included in the software. In turn, you can make critical decisions that will save you time and money. Our certified field service engineer will configure the application down to the rack and row level, including IT devices for your as-purchased solution. Our services manage the complete deployment of your software, giving you the data you desire to run an efficient data center today, while planning for tomorrow.

Software integration

The Software Integration Service provides planning, designs, and project management for the integration of StruxureWare for Data Centers software products into your existing system, providing you with a customized view into your existing applications. Our highly skilled and certified software engineers will utilize industry best practices to integrate or enhance our StruxureWare for Data Centers applications to meet your individual business requirements.

Software education

Are you interested in learning more about your StruxureWare for Data Centers tool set and want to be empowered with the knowledge to make educated changes? If so, our Software Education Services provide you with expert training, enabling you to get the most from your investment by learning operational skills and best practices for your solution. Our Education Services are designed to provide a practical learning experience for professionals with real-life, hands-on exercises. Training focuses on key features of StruxureWare Data Center Operation, thereby allowing you the ability to pick and mix training services to meet your needs and availability.

We also offer Post Configuration Review, which provides you with a review of how the StruxureWare for Data Centers application was configured, enabling you to quickly take control of your environment. This approach to transfer knowledge lowers your cost of implementation by maintaining your operations in house.

> We offer comprehensive software services that accelerate the value of your newly purchased StruxureWare for Data Centers application.

Optimize data center capacities and drive the multi-tenant sales process.

Colocation providers are also under constant pressure to do more with less energy. StruxureWare Data Center Operation for Colocation is a vendor-neutral software application, uniquely designed for the multi-tenant space, with built-in business tools that turn your colocation data center into a key driver of business development.

Transform the way you do business

StruxureWare Data Center Operation for Colocation makes running your multi-tenant data center easier, more efficient, and more profitable than ever before. By minimizing wasted space, capacity, and energy, you can keep your customers happy, your bottom line secure, and your sales team busy.

Instead of capacity uncertainty constantly holding your business back, StruxureWare Data Center Operation for Colocation affords unprecedented visibility and control over your multi-tenant data center's key processes. Now, you can identify expansion constraints and model the impacts of any changes to your data center infrastructure, so you know exactly how much space you can lease now and in the future.
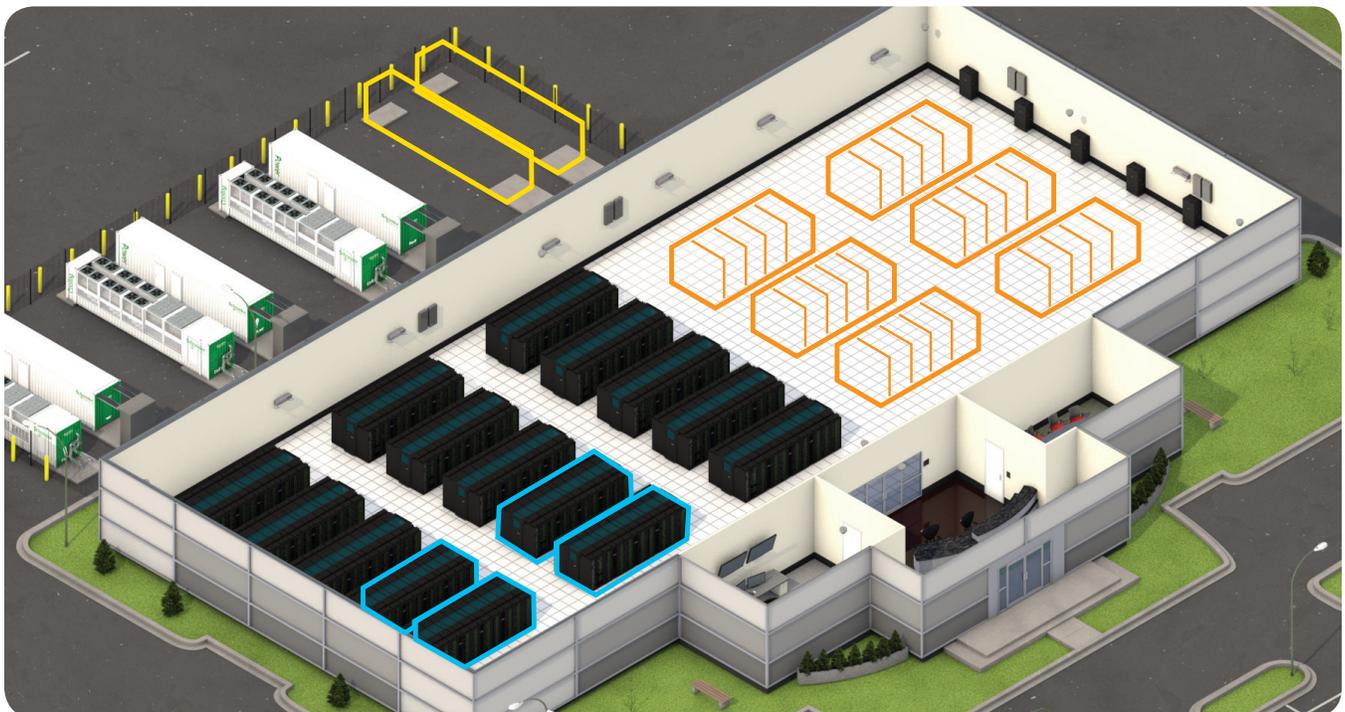
End-to-end management and real-time planning capabilities, without the complexity.

StruxureWare Data Center Operation for Colocation features capabilities specially designed for the multi-tenant data center, including:

> Space, Power, Cooling and Tenant Inventory Reporting — Get real-time visualization of current power, cooling, and spatial capacities (total vs. sold capacity) with the ability to drill down further to identify any expansion constraints.
> Cage Space Management — Import CAD drawings, apply grid-based naming for floor mount equipment, utilize cage drawing tools and cage power modeling, and visualize the solution in 3D.
> Facility Management — Ensure fool-proof facility maintenance through complete audit trails that track maintenance schedules for all facility equipment.
> Tenant Management — Receive detailed power draw and total energy footprint figures, with an in-depth analysis of tenant impact in the event of downtime, plus integrated billing support.

> Know exactly how much space you can lease now and in the future.

Business-wise, future-driven data centers.

Today's data centers no longer are just cost centers. Instead, they can contribute significantly to overall business value. DCIM software enables the business to respond more quickly to market demands, support cost-saving and energy-efficient approaches — such as virtualization and unified computing — and streamline operational processes.

What's your most pressing business need?

1 Planning a new data center or retrofit?

StruxureWare Data Center Operation shows you the current physical state of the data center, and **Data Center Operation: Capacity** simulates the effect of future physical equipment adds, moves, and changes, to answer:

> Where is the next physical or virtual server placed?

> Will I still have power or cooling redundancy under fault or maintenance conditions?

> Do I need to spread out my blade servers to get reliable operations?

> What will the impact of new equipment be on my redundancy and safety margins?

> Can existing power and cooling equipment accommodate new technologies?

2 Ensuring highest availability?

Visibility and transparency are fundamental to protecting system availability without compromising efficiency. StruxureWare Data Center Operation's end-to-end view enables comprehensive monitoring and proactive management of risks before they affect availability.

3 Optimizing your servers?

Today, server optimization is being deployed all the way down to the CPU-level, focusing on IT power consumption and ensuring that server sprawl is reduced. **Data Center Operation: IT Optimize** also includes real-time monitoring of server status for information on utilization, uptime, power consumption, and costs.

The detailed information enables instant identification of under-utilized or idle servers, and is ideal for consolidating or retiring servers and virtual machines. **(See chart below)**

4 Virtualizing your data center?

StruxureWare Data Center Operation gives IT room operators the ability to support load shifting as one concrete way to save energy and, in turn, operational cost. Integration directly with the VM manager enables sharing of power, cooling, and other data, allowing safe, automated placement of new and existing VMs. It also communicates in real time with the leading virtualization platforms: VMware vSphere and Microsoft System Center Virtual Machine Manager. The software's built-in automated response capabilities ensure that virtual loads always have healthy host environments. With your VMs on healthy hosts, you can focus on running your data center more efficiently.

5 Meeting energy regulations?

The StruxureWare Data Center Operation energy-related modules (Energy Efficiency and Energy Cost) generate current and historical Power Usage Effectiveness (PUE) values so you know at any time how much power you need to run the IT equipment in relation to the facility's energy use at large. Armed with this understanding, as well as energy cost reporting capabilities right down to the rack level, you can manage energy consumption proactively and effectively.

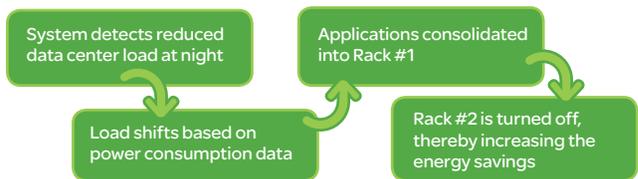**Saving energy through Data Center Operation's VM integrations**

Traditional approach

Reduced data center load at night → No changes made to IT, power, and cooling systems

Energy savings > NONE

Vs.

Updated approach

System detects reduced data center load at night → Load shifts based on power consumption data → Applications consolidated into Rack #1 → Rack #2 is turned off, thereby increasing the energy savings

Energy savings > HIGH

For more information ...

Get an in-depth look at Schneider Electric DCIM software and StruxureWare Data Center Operation!

Demo:

Visit *www.apc.com/software* to learn more about StruxureWare for Data Centers and StruxureWare Data Center Operation!

Read:

Visit *whitepapers.apc.com* to download:

"How Data Center Infrastructure Management Software Improves Planning and Cuts Operational Costs" (White Paper #107)

"Avoiding Common Pitfalls of Evaluating and Implementing DCIM Solutions" (White Paper #170)

"Virtualization and Cloud Computing: Optimized Power, Cooling, and Management Maximizes Benefits" (White Paper #118)

"Guidelines for Specification of Data Center Power Density" (White Paper #120)

"Allocating Data Center Energy Costs and Carbon to IT users" (White Paper #161)

"Estimating a Data Center's Electrical Carbon Footprint" (White Paper #66)

View:

Visit *tv.schneider-electric.com* to watch our StruxureWare for Data Centers videos and customer testimonials!

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- www.youtube.com/user/SchneiderCorporate
- tv.schneider-electric.com
- www.apc.com/software
- DCIMsupport.apc.com
- blog.schneider-electric.com/datacenter

Contact us:

To find out more about StruxureWare Data Center Operation, please do not hesitate to contact us. The Schneider Electric Sales team can give you all the background information you need to make an informed and smart investment in DCIM software.

Call 800-800-4272

Make the most of your energy ℠

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