StruxureWare for Data Centers

Data Center Infrastructure Management (DCIM) Software

Schneider Electric

Intelligent data center management without the complexity

From managing complex IT to cutting enterprise-wide energy and operating costs, you face daily data center challenges. Now, get the most from your data center and simplify operations with StruxureWare™ for Data Centers software. It's an advanced data center infrastructure management (DCIM) suite that gives you the end-to-end visibility you need to optimize, operate, and manage your data center from rack to row to room to building.

The bridge between facilities and IT

StruxureWare for Data Centers software provides a simple, integrated experience for many users and groups who manage both the facility and IT infrastructure environments, as well as executives who depend on their company's data center to provide business value. Not only does the software suite streamline operational efficiencies, it enables intelligent energy management for real OpEx savings.

StruxureWare for Data Centers software applications are unified across three levels to give the right information to the right users at the right time:

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

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

> 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.

StruxureWare for Data Centers benefits

> Adjust the facility's cooling needs when the IT loads change for optimal resource use.

> Track your carbon and resource use to cut costs.

> Optimize existing data center physical infrastructure to reduce OpEx and delay future CapEx.

> Display, monitor, and manage PUE across facilities/IT.

> Dynamic virtual machine management maximizes application and system availability.

> Monitor and automate equipment for reduced costs and highest availability.

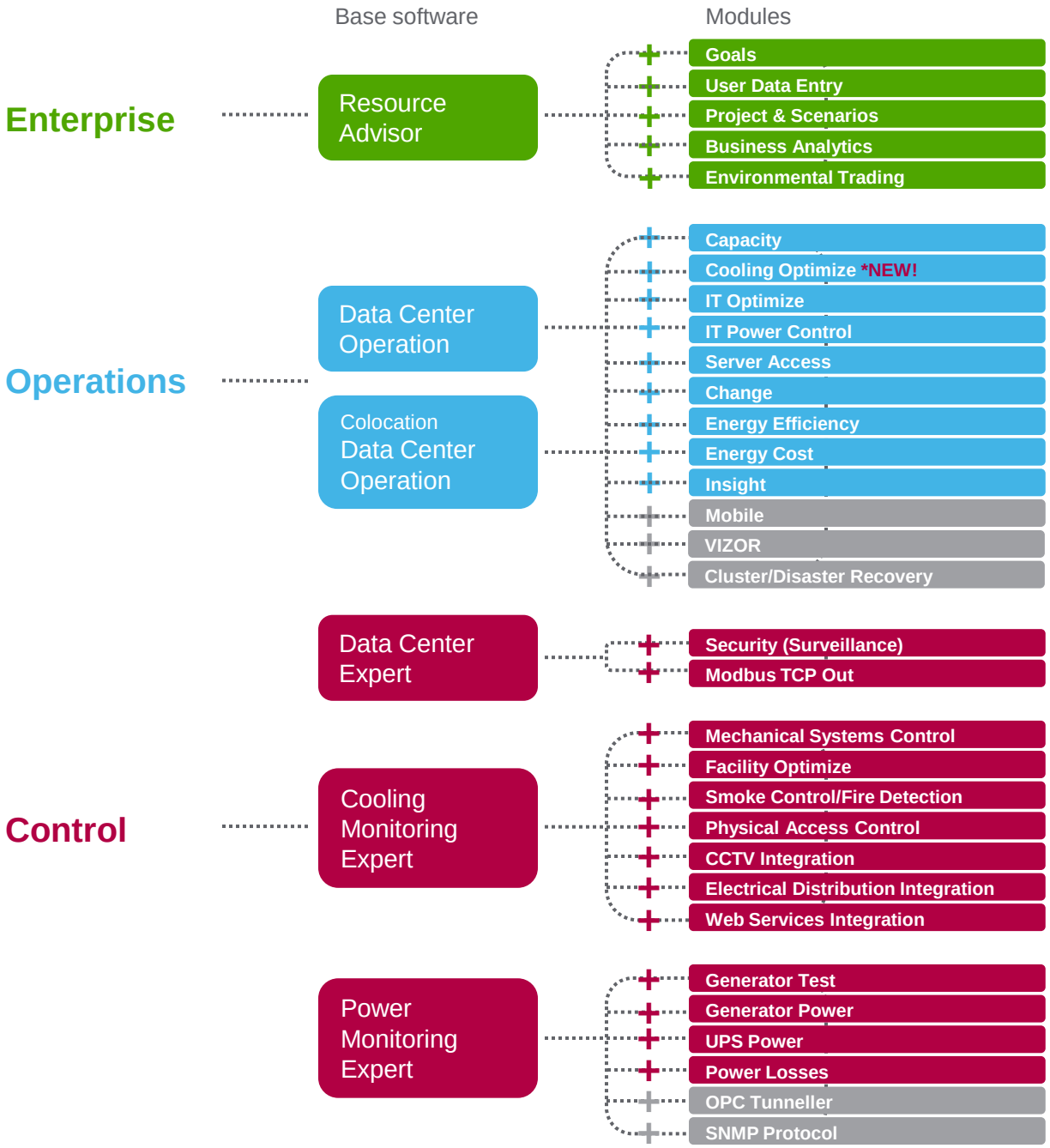
> Provide graphical representation of systems for proactive monitoring and management.

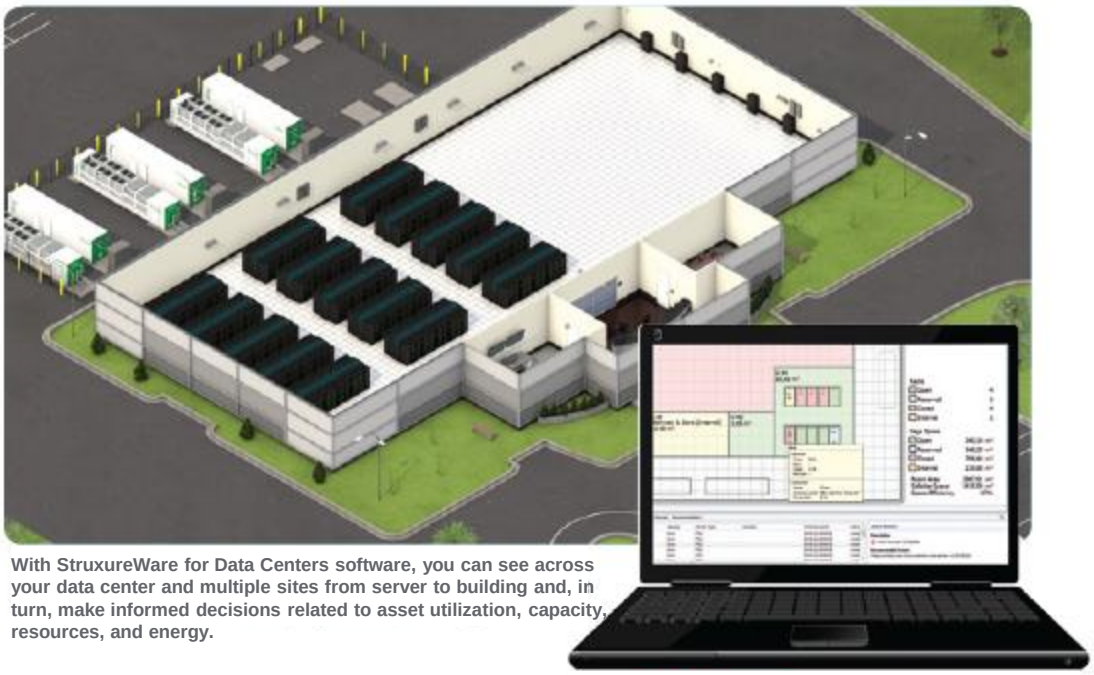
> Instantly calculate recommended IT installation locations for greater agility.

> Support your business process for space and cage management for multi-tenant facilities.

StruxureWare for Data Centers Suite

The StruxureWare for Data Centers software architecture is scalable and modular to enable you to tailor the suite to your distinct business needs.





With StruxureWare for Data Centers software, you can see across your data center and multiple sites from server to building and, in turn, make informed decisions related to asset utilization, capacity, resources, and energy.

> Multi-site visibility: Get the enterprise view you need to streamline management

The right information at the right time

The StruxureWare for Data Centers software suite gives each user simple, easy access to the right information at the right time in order to make informed decisions related to resource optimization, energy management, and operational performance and efficiency.

A view that works for you

The StruxureWare Portal gives you an easy-to-read live overview of data center operations using widgets and data sets. Providing an overarching view of all other applications, it gathers the specific information you need to see based on your specific role and responsibilities.

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

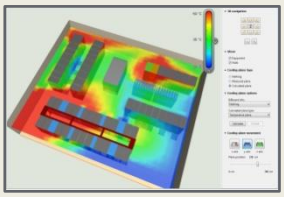
A closer look at StruxureWare for Data Centers

StruxureWare suites address unique business needs across buildings, industrial plants, and data centers. Each targeted suite delivers seamless integration with third-party offers and legacy systems as well as a scalable platform and consistent user experience.

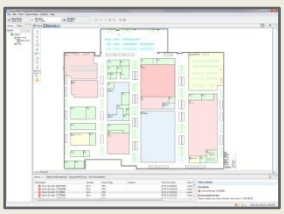
Part of this larger StruxureWare family, StruxureWare for Data Centers software includes applications that deliver the actionable information expert users, facility, and IT teams need to keep the data center operating with an ideal balance of high availability and optimal efficiency. Specifically, it comprises the following applications:

StruxureWare for Data Centers suite

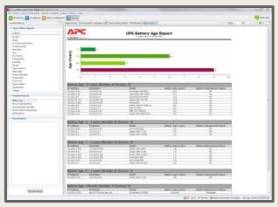
> Resource Advisor
Energy procurement service



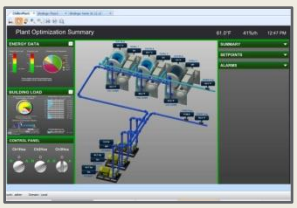
Data Center Operation >
Make informed data center decisions



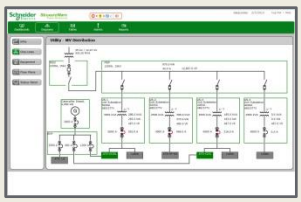
Data Center Operation for Colocation >
Manage colocation facilities cost-effectively



>Data Center Expert
Protect system uptime proactively



Cooling Monitoring Expert >
Look beyond the IT space



> Power Monitoring Expert
Ensure clean and high-quality power

StruxureWare Resource Advisor

Enterprise energy procurement and sustainability service

StruxureWare Resource Advisor

Energy and environmental reporting at your fingertips

This comprehensive Software-as-a-Service (SaaS) platform provides easy access to enterprise-wide energy, carbon, and other resource data, reports, and summaries. Advanced data capture capabilities deliver audit-grade information; customizable dashboards enable at-a-glance performance checks. Manage projects, make decisions, and drive your energy management and sustainability strategies with confidence.

Audited, verified and accurate data

Resource Advisor combines quality assurance and data capture capabilities into one energy and carbon management solution. Enterprises that depend on audited and verified data that other software or internal spreadsheets can't guarantee will appreciate Resource Advisor's uncompromising approach to data accuracy. Resource Advisor provides secure access to data, reports and summaries to drive your energy and sustainability programs.

Access your data

Resource Advisor's standard features provide plenty of functionality, but some users require additional customization to meet their specific needs. We work with you to build Resource Advisor to the specifications you prefer. You won't pay for features you won't use, and you'll have the ability to personalize and configure your experience for maximum efficiency.

Monitor the markets

Schneider Electric's energy analysts model key futures markets and dozens of energy index points across the globe. This analysis and information populates special updates aimed at keeping you well-informed of market opportunity and market risk.

Know your spend & usage

You and your stakeholders need accurate, timely spend and usage information. Resource Advisor delivers a robust set of tools to help collect, analyze and report on your cost and consumption at the macro or micro level.

Control your environmental impact

Facing pressure from around the globe to curb emissions and become more efficient by reducing water consumption and waste, companies require accurate and timely environmental reporting. Resource Advisor allows you to establish and track your carbon, water and waste footprints and communicate the results of your reduction efforts to key stakeholders.

StruxureWare Data Center Operation

A new level of business intelligence for your data center

Data Center Operation

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

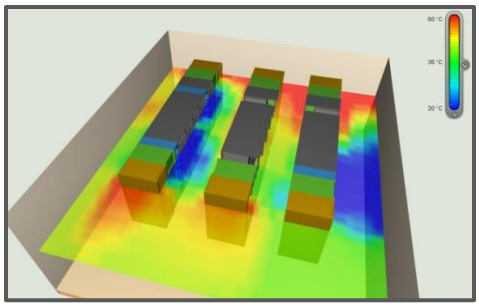
Make informed data center decisions

With the ability to integrate with both Schneider Electric and third-party equipment throughout the data center physical infrastructure, Data Center Operation bridges the gap between IT and facilities by providing complete visibility for proactive monitoring, streamlined management, and system control down to the server level.

Supports business planning

This application supports data center business processes and strategic decision-making by allowing stakeholders to manage data center assets, operational costs, and capital costs. It removes historical management silos and helps to create energy awareness across the entire data center physical infrastructure.

This visibility enables informed decision-making from a “building-to-server” perspective, which can be enhanced by product modules and enhancement options to scale to specific user requirements and flexibly meet business needs.



Analysis, optimization & operations

Data Center Operation enables vendor-agnostic 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.

> Extends the lifecycle of the data center through optimization of power, cooling, network and space capacities.

> Provides dynamic cooling optimization and intelligent control.

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

> Easily track and execute moves, adds, and changes of equipment in the data center through the workflow management tool.

> Software only server access and power cycling for remote management.

> Rack-level power capping for an optimized performance of server applications.

> Intelligent PUE/DCiE analytics at subsystem level.

StruxureWare Data Center Operation for Colocation

A new level of business intelligence for your data center

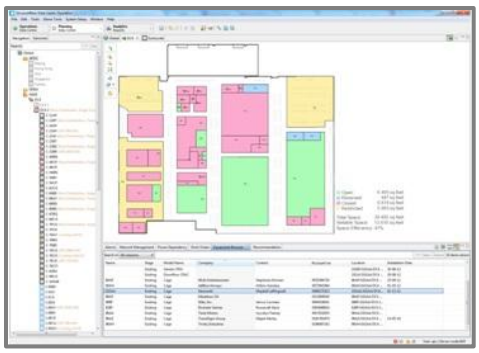
Data Center Operation for Colocation

Asset and cage space management for an optimized multi-tenant data center.

Data Center Operation for Colocation enables vendor-agnostic 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.

Visualization

Visualize new cages during the pre-sales phase for planning potential new customer cages and supporting the sales process



Data Center Operation for Colocation extends the usage of DCIM tools to the multi-tenant sales process, where it provides instant visualization of space available for selling on to tenants, broken down by used, reserved and available capacity, and identifies how much is required going forward.
This expands the user group of DCIM into the front office of the business - making it a driver for business development.

Optimizing the multi-tenant data center

Data Center Operation for Colocation transforms the way that multi-tenant providers are doing business by optimizing data center capacities and business processes, which in turn frees up valuable time to focus on developing the business.

> The application provides multi-tenant providers with a real-time status of their current data center capacities, in terms of data center power, cooling & space, and the ability to drill down further and identify any constraints for expansion.

> With cage space management the data center operator can 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 maintenance is made easy through a complete audit trail on all facility equipment and cages, the ability to create and track maintenance schedules by equipment and use impact analysis to ensure redundancy is maintained during maintenance.

> The open system integrates tenant billing information into the DCIM system for mapping tenant assets, providing detailed power draw, total energy footprint and access to an instant impact analysis at the tenant level.

StruxureWare Data Center Expert

Centralized monitoring of the physical infrastructure

Data Center Expert

Instant fault notification and escalation enable quick resolution of critical infrastructure events.

Whether located in a data center, remote office, or campus environment, Data Center Expert and the Schneider Electric power, cooling, environmental, and security devices combine to provide a comprehensive centralized monitoring solution.

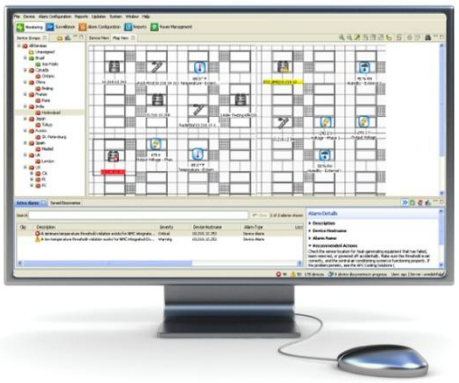
With Data Center Expert power readings, environmental readings and camera images from any site on your network are tied in together into a common management platform. Images and alerts from around the company can be instantly viewed and managed, trends analyzed, and problems averted, providing unparalleled physical threat management.

Integrated with Power and Building Management

Integrate with Building Management Systems and PowerLogic ION-Enterprise for information on the health of critical support systems in the electrical and mechanical rooms as well as power quality and electrical distribution**.**

Web Services API

Ready access to Data Center Expert alerts, data, reports and trending through existing dashboards – or create custom portals for financial, operational or other views**.**



Data Center Expert is easy to use and deploy with a user-friendly interface to monitor, manage and control the hundreds or thousands of devices a company might have from a wide range of manufacturers. These devices include equipment that provides power, cooling, security and environmental monitoring.

Centralized monitoring & alerts

> Multi-vendor support for monitoring any networked device from any manufacturer

> Real-time monitoring and instant fault notification and escalation enable quick resolution of critical infrastructure events.

> Centralized repository of critical information accessible by multiple users from anywhere on the network.

> Future trending for bringing new insights into your infrastructure's health, planning and budgeting.

> Customized alarming and escalation by device, by rack, or by location to the right people at the right time.

> Open and flexible architecture which expands with changing business needs through additional device licenses, add-on surveillance, operations, and control applications.

> Full software developer kit (SDK) allows for maximum flexibility through custom integration with other systems.

StruxureWare Cooling Monitoring Expert

Advanced cooling monitoring and automation at the building level

Cooling Monitoring Expert

Integrated monitoring, control, and management of energy, lighting, fire safety, and HVAC.

Save money by converging systems

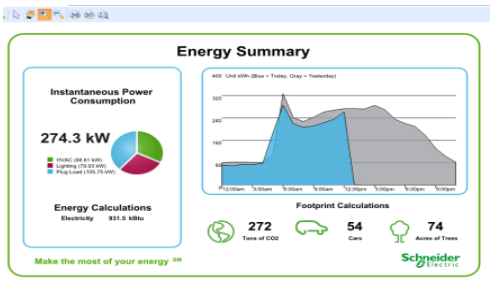
Cooling Monitoring Expert will provide intelligent management of your building's systems on one network - across your enterprise. This reduces the need for multiple systems and their associated hardware, software, training, and maintenance costs.

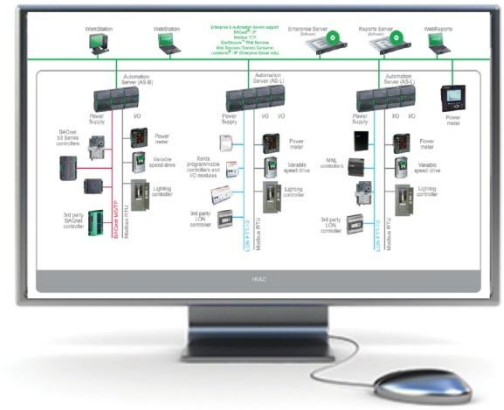
Protect people, property and investments

Cooling Monitoring Expert ensures that your people are comfortable and your buildings are secure. The system immediately responds to any event that falls outside the defined optimum range. Responses include controlling equipment, emailing alarms, or displaying proper procedures to bring the facility back into peak performance. Cooling Monitoring Expert is compatible with our existing field devices.

Making day-to-day operations easy

Cooling Monitoring Expert was designed to simplify day to-day operations and provide easy access to system critical information. Alarming, trending, scheduling, and reporting functionality are dramatically easier to use. Your facility managers can focus on optimizing the system, rather than just maintaining it.





Cooling Monitoring Expert software is an integration platform for monitoring, control, and management of energy, lighting, fire safety, security and HVAC. It is a powerful, easy-to-use platform that was engineered to ensure you have the most efficient, safe and effectively managed buildings on the planet.

Easy to use

Customized workspaces, stunning graphics capability, out-of-the-box functionality and a robust online help community make Cooling Monitoring Expert the most user-friendly system on the market. With Cooling Monitoring Expert WebStation, you can securely navigate your building management interface, view graphics, reports, trend charts, and manage alarms on-site or from any remote location from a standard web browser.

Ready for growth

Cooling Monitoring Expert's unique architecture and modular design ensures that the same robust functionality is available to a single building or a sprawling campus. Cooling Monitoring Expert will natively support every major communication standard in building automation and security management, including TCP/IP, LonWorks, BACnet, Modbus and Ethernet. This multi-lingual approach gives you the freedom to connect any equipment and the power to gather and analyze data to maximize operational efficiency.

StruxureWare Power Monitoring Expert

Advanced power monitoring and power quality analysis

Power Monitoring Expert

Specialized and focused power system intelligence for your entire power distribution infrastructure, to help you move beyond business as usual.

Power Monitoring Expert is a specialized power management system that provides power system intelligence for your entire data center. It enables relevant information sharing and user-to-user collaboration while controlling costs.

With deep insight into the operation of your electrical infrastructure, the system ensures your data center can be operated at the design level of reliability while minimizing energy costs and making the most of your current assets.

Power Monitoring Expert is designed to collect and manage data, helping you optimize your data center's performance. It provides the right combination of data and analysis tools to meet the unique needs of your data center.

Optimize power loading of equipment

Data center power distribution infrastructure is expensive and maximizing the use of this equipment is critical for minimizing capex. The right information allows facility operations to:
> Safely maximize the loading of power equipment without compromising reliability.
> Rebalance phase loading to ensure that the full capacity of the circuit is used.
> Identify and correct harmonic currents.

Decrease the duration of unplanned outages

> Quickly receive critical power system alarms.
> View the critical alarm history to create an action plan to resolve the issues.

Decrease the number of unplanned outages

> Identify and track over-subscribed capacity.
> Identify redundancy comprised IT branch circuits.
> Identify power equipment maintenance needs.
> Perform and document regular power equipment testing.
> Perform root cause analysis on electrical distribution system events to help reduce the probability of recurrent events.

Improve the effectiveness of maintenance activities

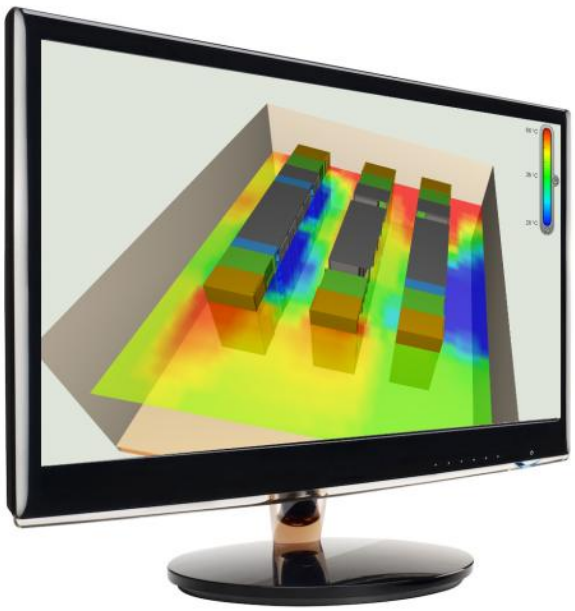
Ensuring that technicians have accurate information prior to, during, and after a maintenance activity is critical to minimizing technician error. View real-time electrical distribution system data for the complete maintenance cycle.

Decrease your energy-related OPEX

> Measure and report on IT branch circuit energy usage for billing purposes.
> Quantify and track the cost of power losses in the power distribution system.
> Track power usage effectiveness in real-time and over time.

StruxureWare™ Data Center Operation

Data Center Infrastructure Management (DCIM) software for proactive data center life cycle management, optimizing existing capacities through intelligent resource and energy analysis, coupled with impact analysis, based on asset tracking and documentation.



A new level of business intelligence for your data center infrastructure management

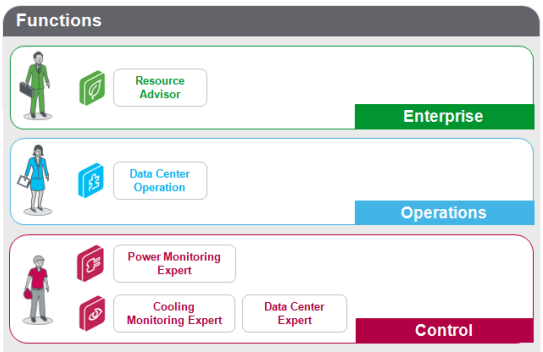
Schneider Electric

StruxureWare™ Data Center Operation

Part of StruxureWare for Data Centers

StruxureWare for Data Centers

- an integrated suite of management software applications for balancing the demands of availability and efficiency throughout the data center lifecycle.



A new level of business intelligence for your data centre physical infrastructure management

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

The suite addresses specific challenges across data centers through:

> Easy integration with third-party offers and legacy systems.

> An open, scalable platform.

> A consistent user experience.

A DCIM suite

Data Center Infrastructure Management (DCIM) systems collect and manage data about a data center's assets, resource use and operational status throughout the data center lifecycle.

This information is then distributed, integrated, analyzed and applied in ways that help managers meet business and service-oriented goals and optimize the data center's performance

DCIM solution benefits

> A holistic DCIM suite managing all aspects of the data center

> Leverages and optimizes the existing infrastructure

> Provides robust, scalable and integrated software solutions

> Created by people who builds data centers daily

DCIM releases the potential for energy savings

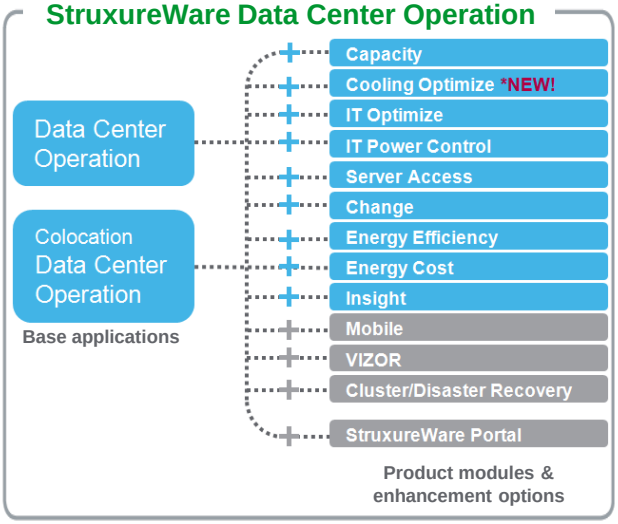
StruxureWare™ Data Center Operation

A new level of business intelligence for your data center

Data Center Operation

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

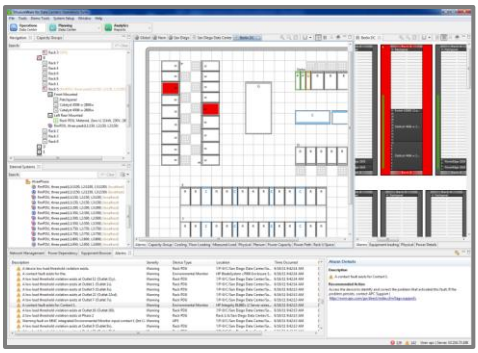
Data Center Operation forms the base layer of software, available either as an enterprise or a colocation base module, which other modules and enhancement options can be added onto.



Data Center Operation is a scalable Data Center Infrastructure Management (DCIM) framework that can run on any physical or virtual server.

A DCIM application

Data Center Operation enables vendor-agnostic 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.



AT A GLANCE

> 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 offering support for incomplete routes and patch panel to patch panel mapping.

> Virtualization capabilities through integrations with VMware vSphere and Microsoft System Center Virtual Machine Manager 2008.

> The Power Usage Effectiveness (PUE) calculator supplies information on daily utilization of energy.

> For instant updates on the go, Data Center Operation: Mobile provides access to information from Data Center Operation via handheld PDA.

StruxureWare™ Data Center Operation for Colocation

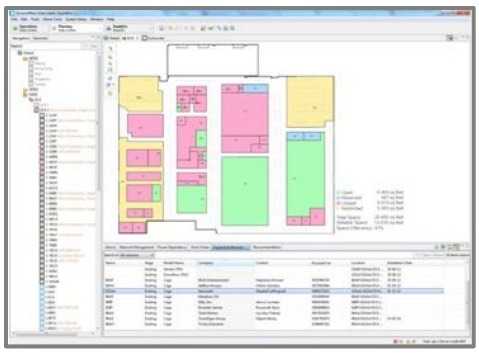
A new level of business intelligence for your data center

Data Center Operation for Colocation

Asset and cage space management for an optimized multi-tenant data center.

Data Center Operation for Colocation enables vendor-agnostic 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.

Visualize new cages during the pre-sales phase for planning potential new customer cages and supporting the sales process



Data Center Operation for Colocation extends the usage of DCIM tools to the multi-tenant sales process, where it provides instant visualization of space available for selling on to tenants, broken down by used, reserved and available capacity, and identifies how much is required going forward.
This expands the user group of DCIM into the front office of the business - making it a driver for business development.

A DCIM application

Data Center Operation for Colocation transforms the way that multi-tenant providers are doing business by optimizing data center capacities and business processes, which in turn frees up valuable time to focus on developing the business.

AT A GLANCE

> The application provides multi-tenant providers with a real-time status of their current data center capacities, in terms of data center power, cooling & space, and the ability to drill down further and identify any constraints for expansion.

> With cage space management the data center operator can 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 maintenance is made easy through a complete audit trail on all facility equipment and cages, the ability to create and track maintenance schedules by equipment and use impact analysis to ensure redundancy is maintained during maintenance.

> The open system integrates tenant billing information into the Data Center Infrastructure Management (DCIM) system for mapping tenant assets, providing detailed power draw, total energy footprint and access to an instant impact analysis at the tenant level.

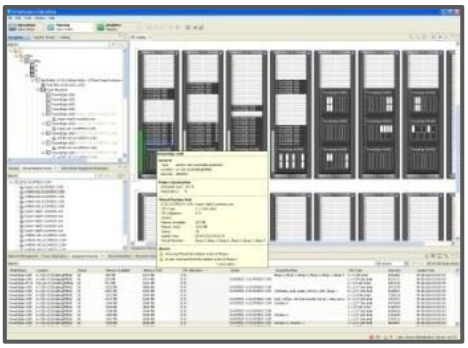
Data Center Operation: Capacity

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

Data Center Operation: Capacity

Extending the lifecycle of the data center through optimization of power, cooling, network and space capacities.

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



Integration with VMware and Microsoft System Center Virtual Machine Manager

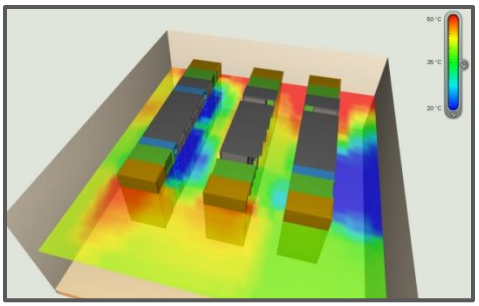
> The integrations provide insight into how virtual machines relate to physical servers and their location, automatically migrating virtual machines to secure host environments from faulty infrastructure enabling customers to maintain Service Level Agreements and view and manage network health.

Integration with Cisco UCS

> Power capping can be set for the rack, either as automatic global power capping for all racks, or as individual settings for specific servers, but with the difference of knowing your real-time physical capacity constraints.

A DCIM product module

Data Center Operation: Capacity predicts the optimal location for physical infrastructure and rack-based IT equipment based on the availability and capacity requirements; and user defined requirements such as redundancy, network and business use grouping.



AT A GLANCE

> 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.

> Data Center Operation: Capacity calculates the airflow and temperature inside the data center based on live sensor and temperature data and displays it in a 3D view, making it easier to locate hot spots.

Data Center Operation: Cooling Optimize

Dynamic cooling optimization

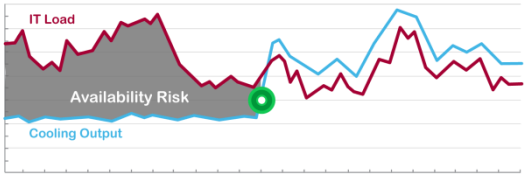
Data Center Operation: Cooling Optimize

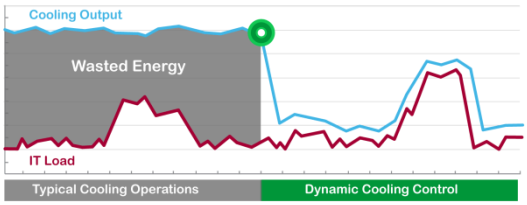
Dynamic cooling management and optimization

Data Center Operation: Cooling Optimize continuously optimizes airflow in the data center facility, delivering improved reliability and availability.

Cooling Optimize is a closed-loop system that reacts to real-time data, automatically identifies and eliminates hot spots and helps diagnose potential facility risks.
The application balances the need for cooling with the lowest possible energy expenditure, delivering immediate cost savings and the right amount of cooling within the data center.

The application provides facility managers with control over desired temperatures and visibility into thermal conditions. It employs intelligent software which constantly adjusts cooling as environmental conditions change.



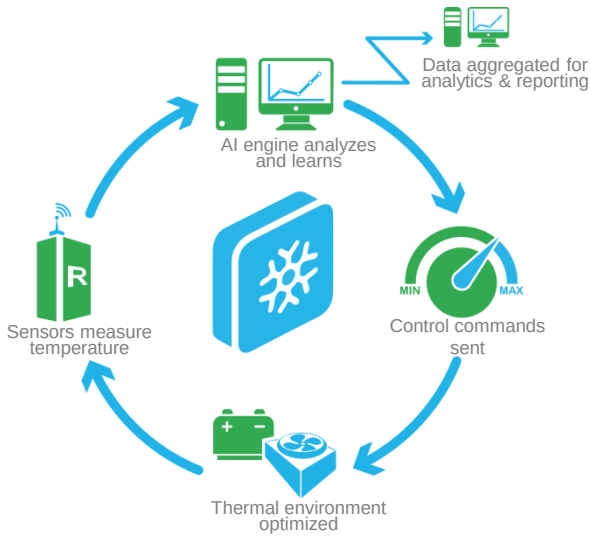


This real-time response to temperature-affecting events, such as equipment moves, upgrades or IT load swings, stabilizes air flow and solves the complex puzzle of cooling resource allocation.

A DCIM product module

Cooling Optimize utilizes a dense array of temperature sensors to determine exactly where the heat load is within the data center. Data is wirelessly transmitted to network gateways, aggregated, and sent to a purpose-built appliance where it is analyzed by control software. Control commands are then delivered to the cooling equipment.

As IT load changes, the built-in machine learning automatically adjusts cooling output to match the dynamic data center environment.



AT A GLANCE

> Cooling Optimize is a closed-loop system that reacts to real-time data, which reduces the chances of downtime.

> Automatically removes up to 95% of hot spots, and helps diagnose potential facility risks.

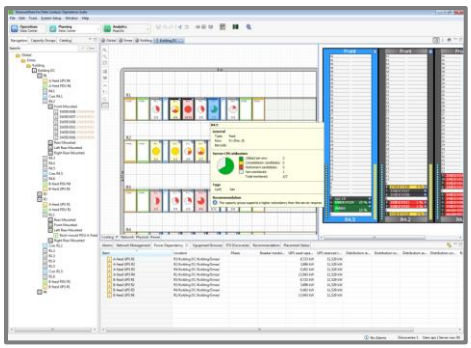
> Constantly adapts cooling to varying IT loads through the use of its artificial intelligence engine.

Data Center Operation: IT Optimize

Gain insight into IT power consumption and utilization to increase efficiency and decrease cost

Data Center Operation: IT Optimize

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



Provides IT auto discovery and monitoring for up to the minute asset management.

Extending the data center life cycle through:

> Accurate understanding of IT assets
> Freeing up available capacity
> Delaying CapEx investments and reducing OpEx
> Significant efficiency gains
> Automated and detailed inventory

Integration with Cisco UCS

> Provides auto-discovery of assets managed by Cisco UCS Manager, enabling data center managers to monitor the CPU/power utilization along side utilization at the physical infrastructure.

A DCIM product module

Data Center Operation: IT Optimize increases utilization of infrastructure and IT assets through accurate, detailed energy consumption profile of data centers, server by server and rack by rack.

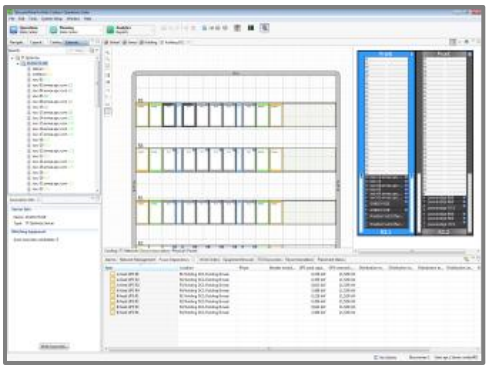
AT A GLANCE

> Data Center Operation: IT Optimize monitors IT asset utilization and power consumption to help reduce costs associated with over-provisioning, underutilization, 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.

> At the core of Data Center Operation: IT Optimize is the Genome™ library, which continually discovers and monitors individual IT components and collects information to keep track of server specific information.

The information forms the building blocks for understanding IT energy consumption and how it impacts the business.

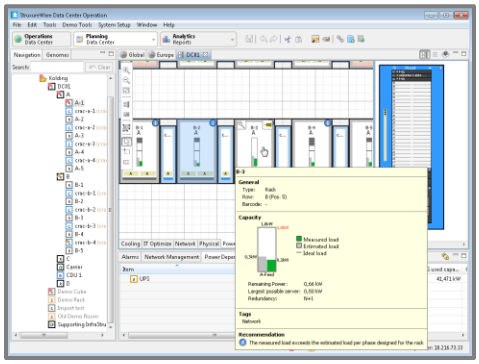


Data Center Operation: IT Power Control

Rack-level power capping for an optimized performance of server applications

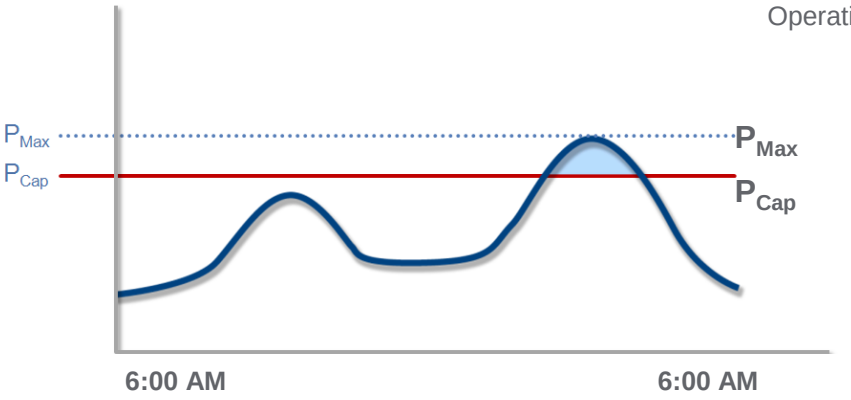
Data Center Operation: IT Power Control

An add-on module for Data Center Operation: IT Optimize



Real-time temperature and power data for accurate policy configuration.

Moderate energy savings achievable through always-on power cap



Powered by: intel DCM

A DCIM product module

Data Center Operation: IT Power Control, powered by Intel® DCM, delivers rack-level power capping for an optimized infrastructure and delayed physical equipment investment.

AT A GLANCE

> Increased rack densities are achieved through power capping of servers and racks, reducing over-provisioning and enabling operation of the data center closer to the capacity limit without compromising availability and safety margins.

> Redistribution of power density according to criticality levels are easily implemented through the use of rack based policy configurations, ensuring power savings and delayed physical equipment investments.

> Business continuity is maintained in the event of a UPS failing, as power capping ensures that business critical racks and servers maintain their power supply and no breakers are inadvertently tripped.

> The software requires Data Center Operation: IT Optimize.

Data Center Operation: Server Access

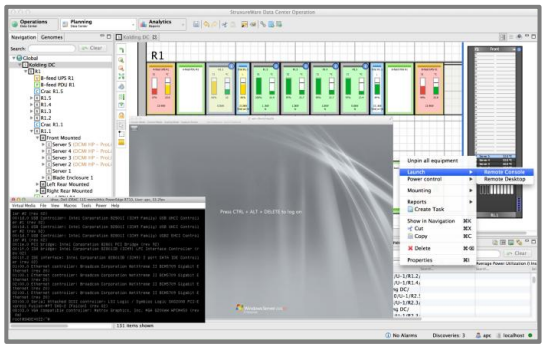
Full server lifecycle access and power cycling for remote management

Data Center Operation: Server Access

An integrated part of the StruxureWare for Data Centers solution

Software only server access within your Data Center Infrastructure Management (DCIM) solution.

Eliminate the need for traditional hardware-based KVM (keyboard, video, monitor) switch technology through the use of a software only solution, reducing deployment cost by more than 50%.



Rapid to deploy, easy to use.

A DCIM product module

Data Center Operation: Server Access provides full lifecycle access to the server Operating System (OS) and the Base Management Card (BMC) for controlling multiple IT devices from a single console, allowing users to control input and output server operations via remote management.

> Power cycling enables users to remotely access servers when they are offline, and power up/down or restart servers, even when the server OS is down.

>Server Access enables both in-band and out-of-band access to servers.

> Access the BIOS (basic input/output system) or the BMC directly from the DCIM software to solve hardware problems preventing a server from booting normally.

> The software provides automatic discovery of servers for quick and accurate IT asset management.

> Server Access is a software only application that requires no additional hardware or cabling. It eliminates the need to purchase KVM switches and other expensive hardware that consume data center space and power.

Remote server access alternatives

Legacy options		Now
HARDWARE	**FIRMWARE**	**SOFTWARE**
Install hardware: > KVMs > PDUs > Management Gateways	Install: > Vendor specific server management	Install: > Data Center Operation: Server Access
Expensive hardware Complex deployment High cost	Not cross platform Vendor lock-in Lower cost	Easy deployment Vendor-neutral Lowest cost

Powered by: Intel® Virtual Gateway

Data Center Operation: Change

Fully integrated workflow management for your IT physical infrastructure

Data Center Operation: Change

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

The change dashboard shows past, future and pending changes to assist with resource and workload balancing, and avoid scheduling conflicts.

Integration with BMC Remedy

> Ensures relevant information is shared and flowing between Data Center Operation: Change and the market leading process management system.
> Associate BMC Remedy change tickes with Data Center Operation: Change work orders, as well as view and filter BMC Remedy tickets for an overview of current work load.

A DCIM product module

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 for inadvertent downtime.

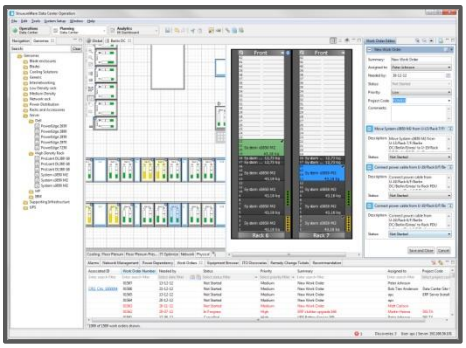
AT A GLANCE

> 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 lifecycle.

> The optional Data Center Operation: Mobile provides you with your operational changes while on the data center floor, enabling barcode scanning and ensuring data integrity, as well as improved operational efficiency.

> Gain total transparency of physical equipment changes by user in the data center through Data Center Operation: Change.

> Track asset moves, adds and changes by date/time, owner and work orders for view, print and export.



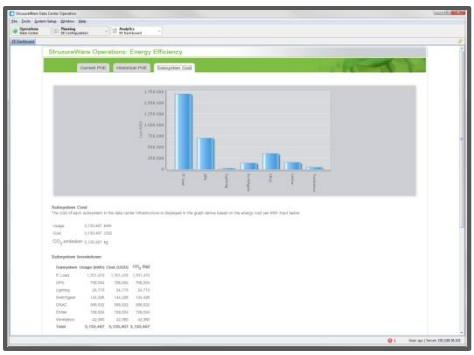
Data Center Operation: Energy Efficiency

Intelligent PUE/DCiE analytics at subsystem level

Data Center Operation: Energy Efficiency

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

Provides insight into energy losses and cost of energy at subsystem level, providing details of which subsystem draws the most costs.



Carbon footprint - Shows the CO2 footprint for each energy sub-system, for instant measurement of impact on the environment.

A DCIM product module

Data Center Operation: Energy Efficiency provides current and historical Power Usage Effectiveness (PUE) and Data Center Infrastructure Efficiency (DCiE) values, enabling a fact-based understanding of how much power is devoted to driving the installed IT equipment compared with the total facility consumption.

AT A GLANCE

> It provides a detailed insight into how effectively energy is utilized down to subsystem level.

> Provides 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/DCiE, as well as detailed subsystem cost analysis.

> Available via Data Center Operation, which enables integrations with Data Center Expert for monitoring purposes and 3rd party enterprise systems.

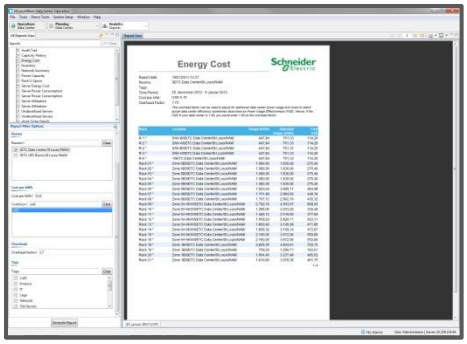
Data Center Operation: Energy Cost

Instant overview of rack energy usage

Data Center Operation: Energy Cost

Cost analysis of energy use on a kW/h basis, detailed to the rack level, for calculating cost of energy consumption for specified equipment and aid in charge back and efficient budgeting

Customized reports can easily be shared with all stakeholders through support of various file formats (html, csv, excel and pdf).



The report is based on measured data if available, otherwise adjusted nameplate values.

> **Energy charge back** - Shows the cost of energy consumption for specified equipment on room and customer level, for aiding charge back.
> **Calculations based on PUE** - Includes an overhead factor or Power Usage Effectiveness (PUE) for calculating actual energy usage.
> **Adapt to local costs** - Provides the option of calculating energy usage based on local costs and currency.

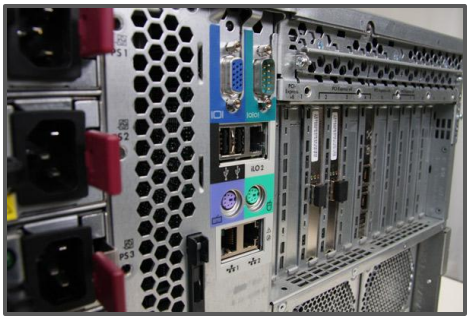
A DCIM product module

The Data Center Operation: Energy Cost module 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.

AT A GLANCE

> 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 Power Usage Effectiveness (PUE). The report can be customized based on optional groupings by use of tags, such as department, tenant, purpose, density etc.



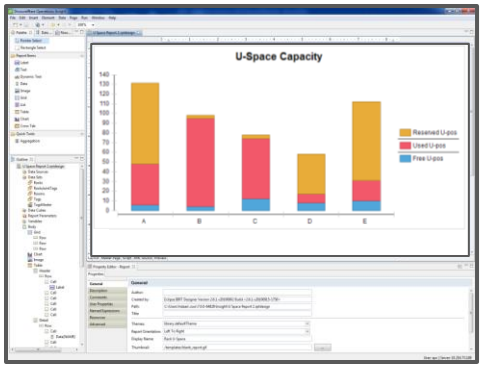
Data Center Operation: Insight

Comprehensive tool for customizing report designs to visualize data

Data Center Operation: Insight

User-friendly report design tool to meet individual business needs.

Configure and design custom reports complete with data obtainable from Data Center Operation, web services or external databases.



Advanced report designer, built on BIRT, allows you to design any report within minutes using drag and drop functionality.

> **Export of reports** - Customized reports can easily be shared with all stakeholders using various file formats (html, csv, excel and pdf).

> **Large pool of templates** - Choose between a large selection of report templates, or design your own customized template and save it for future use

> **Report building with external data points** - Allows building of reports that combine Data Center Operation data with any external data points obtainable via web services or databases

A DCIM product module

Data Center Operation: Insight is a report generator tool that allows for customization to individual business needs supported by a large community.

AT A GLANCE

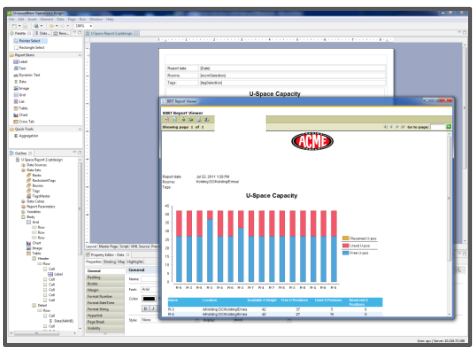
> Provides reporting capabilities with transparency into key performance indicators.

> Advanced report designer that allows you to design any report within minutes using drag and drop functionalities.

> Customized reports built in Data Center Operation: Insight can be published in Data Center Operation with instant availability to all users or exported to various file formats.

> Allows creation of reports that combine data from Data Center Operation with any external data point obtainable via web services or databases.

> Large set of plug-ins, templates and customizations available online. Consultants available world-wide.



Data Center Operation: Mobile

Wireless operation of your data center

Data Center Operation: Mobile

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

Eliminate manual data entry and reduce errors by adding, moving and retiring devices whilst on the move.

A DCIM enhancement option

Data Center Operation: Mobile, based on Motorola MC75 hardware, provides you with your data center inventory while on the data center floor.

AT A GLANCE

> The integrated barcode scanner makes light work of implementing work orders and identifying equipment.

> Using your wireless network, Data Center Operation: Mobile automatically synchronizes server locations, ensuring data integrity, removing human error and improving operational efficiency.

> Work online or offline to access work orders and asset data whilst on the move in the data center.

> Always keep your physical data center updated and synchronized with Data Center Operation: Mobile

Provides alarms, alarm descriptions and recommended actions via Data Center Operation: Mobile for data center operations on the go.

Data Center Operation: VIZOR

High level data center key parameters on the go via your tablet or smart phone.

Data Center Operation: VIZOR

Key data center capacity parameters on power, cooling, space, and network as well as high level values on data center utilization straight to your smart phone or tablet.

Data Center Operation: VIZOR can currently run on Apple iPhone®, iPad®, Blackberry®, or Android-based devices.

Providing key data center capacity parameters on power, cooling, space, and network as well as high level values on data center utilization on the go.

A DCIM enhancement option

Data Center Operation: VIZOR delivers key data center capacity parameters straight to a wireless device such as Apple iPhone, iPad, Blackberry, or Android-based smart phone devices.

AT A GLANCE

> High level values of data center utilization at a glance.

> Shows key performance indicators on power, cooling, space, and network within the data center.

> Drill down view into any location or room and predict the remaining capacity based on current growth rate in your data center.

> Access to complete asset inventory and details straight to your smart phone device or tablet. Graphical overview of power, cooling, space, and network.

> Access to complete asset inventory and details straight to your smart phone device or tablet.

Overview of network capacity displayed on Apple iPad.

Available on the App Store

Data Center Operation: Cluster Node

For high availability and disaster recovery

Data Center Operation: Cluster Node

Provides a back-up node for resuming operation in the event of a disaster with the option to host DCIM software elsewhere.

Disaster recovery

You can configure an up-to-date backup recovery server in a remote location for resuming operation in the event of a disaster.

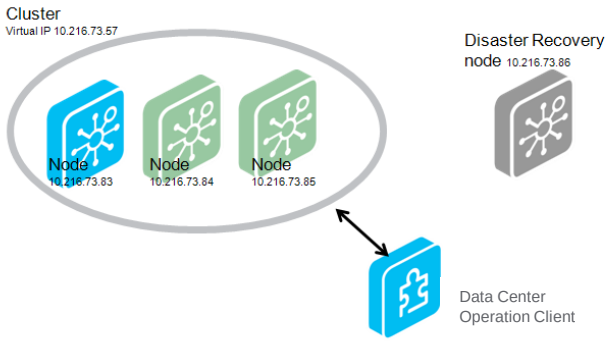
You can add a disaster recovery node to a clustered environment or to a stand-alone Data Center Operation server. However, disaster recovery requires a Cluster node for high availability and disaster recovery license.

PostgresSQL streaming replication is used to move data to the disaster recovery node.

The connection between the Data Center Operation server or cluster and the disaster recovery node must be stable and quick enough to transfer a full backup.

A DCIM enhancement option

The Cluster Node enables you to run Data Center Operation in a clustered environment with multiple servers, leading to improved performance. For improved data security, you can add an offsite disaster recovery node.



Cluster setup

When running Data Center Operation in a clustered environment, each node in the cluster (besides the initial Data Center Operation server) requires a Cluster node for high availability and disaster recovery license, ie. a cluster setup with 3 servers requires:

> 1 x Data Center Operation license
> 2 x Cluster node for high availability and disaster recovery licenses

Running Data Center Operation in a clustered environment requires low network latency. Therefore, it is generally recommended to have the clustered servers installed on the same data center site/subnet. All nodes in the cluster setup must have a static IP address.

If your setup includes a disaster recovery node, you can have a firewall between the cluster and the disaster recovery node.

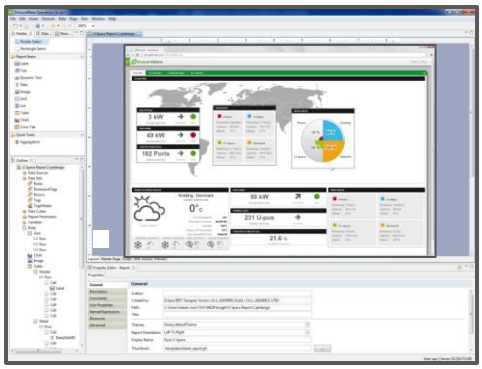
StruxureWare Portal

Live overview of data center operations using widgets and data sets.

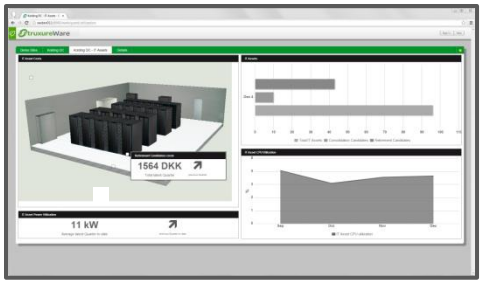
StruxureWare Portal

Easy-configurable web dashboards creating transparency to data center key performance indicators.

Choose between more than 20 data center metrics to create transparency and an instant overview of key data center information



The widgets displaying data center metrics can easily be re-used on the company's intranet or website.



A DCIM enhancement option

The StruxureWare Portal provides transparency to data center key performance indicators and business metrics, displaying customizable information for a high-level overview of data center operations.

AT A GLANCE

> The StruxureWare Portal 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 display.

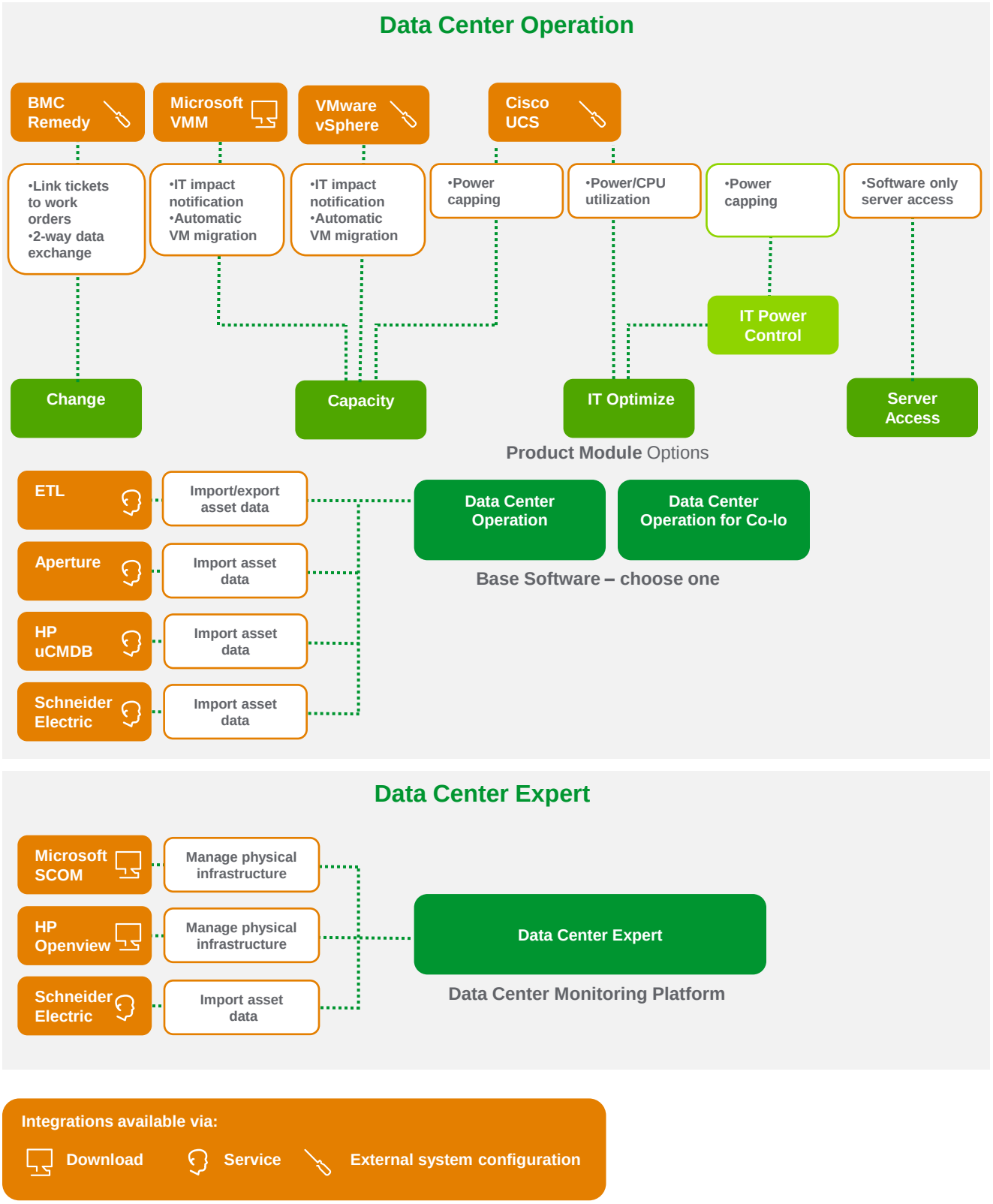
> Built on an open platform, the user-friendly interface allows anyone to quickly configure a dashboard showing management-level information.

> The open source environment, based on the Liferay platform, provides the option to display web content and metrics from several applications, such as Data Center Operation, Power Monitoring Expert, Building Operation and Data Center Expert.

> Provides simple drag and drop functionalities that opens up for modifications to match individual customer themes, designs and brand guidelines. The application works in all modern browsers, as well as with Apple iPhone®, iPad®, and Android-based devices. .

Integrations

StruxureWare Data Center Operation & Expert.



Peace-of-mind software services

Schneider Electric offers a comprehensive portfolio of services to protect your investment, efficiency, and availability. Our software services are designed to ensure your applications receive the care they need to operate at optimal levels — at all times — from installation to ongoing operations.

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

Software Installation

> Accelerates the value of your newly purchased StruxureWare for Data Centers software via our repeatable, industry best practices for installing and registering in accordance to manufacturer specification.
> Ensures that all software products are installed correctly by a highly skilled field service engineer and are quickly ready for use in your dynamic data center.

Software configuration

> Configures the system quickly and precisely to emulate your unique data center, in turn allowing you to make critical decisions that will save you time and money.
> Gives you the data you need to run an efficient data center today, while planning for tomorrow.

Software integration

> Provides planning, designs, and project management for the integration of StruxureWare for Data Centers software into your existing software or system, providing you with a customized view into your existing applications.

Software education

> Offers expert training to enable you to get the most from your investment by learning operational skills and best practices for your solution.
> Allows you to focus on key features of StruxureWare for Data Centers

For more information…

Additional resources

Visit whitepapers.apc.com

Read more about the technology and research behind StruxureWare for Data Centers.

> How Data Center Infrastructure Management Software Improves Planning and Cuts Operational Costs (#107).

> Avoiding Common Pitfalls of Evaluating and Implementing DCIM Solutions (#170).

> Virtualization and Cloud Computing: Optimized Power, Cooling, and Management Maximizes Benefits (#118).

> Guidelines for Specification of Data Center Power Density (#120).

> Allocating Data Center Energy Costs and Carbon to IT Users (#161).

> Estimating a Data Center's Electrical Carbon Footprint (#66).

View videos

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

> www.youtube.com/user/SchneiderCorporate
> tv.schneider-electric.com

Read our Blogs

Discussing challenges and trends of DCIM, and inviting you to join in.

> Blog.schneider-electric.com/datacenter

Follow us on Twitter

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Need additional information?

Check out our webpages or DCIMsupport for answers to your questions.

> **www.apc.com/struxureware**
> **DCIMsupport.apc.com**