

STULZ

DIGITRONIC SOFTWARE



STULZ Digitronic software – Complete control for more reliability and maximum efficiency in data centers

Innovative Data Center Infrastructure Management (DCIM)...

We want to give our customers the most efficient, most profitable air conditioning systems. And with this ambitious goal in mind, STULZ Digitronic Software GmbH – a joint venture between STULZ GmbH and Digitronic Automationsanlagen GmbH, which specializes in digitization and software development for mission-critical applications – was founded in 2014. Together, we offer air conditioning units with the very latest software solutions included, such as the CyberHub ECO.DC, which optimizes the operational reliability and energy efficiency of entire data centers. Digitronic Automationsanlagen GmbH has been developing and producing individual control systems, monitoring equipment and remote controls for energy producers and energy consumers for 25 years. Our customers include market-leading companies in the industrial and building automation sector.

...meets world-leading chilling and air conditioning technology.

For 40 years, STULZ has been one of the world's leading manufacturers of air conditioning solutions for mission-critical applications. For customers, air conditioning systems and chillers are developed and produced, individual air conditioning solutions planned, entire systems implemented and operation ensured with our own Service.

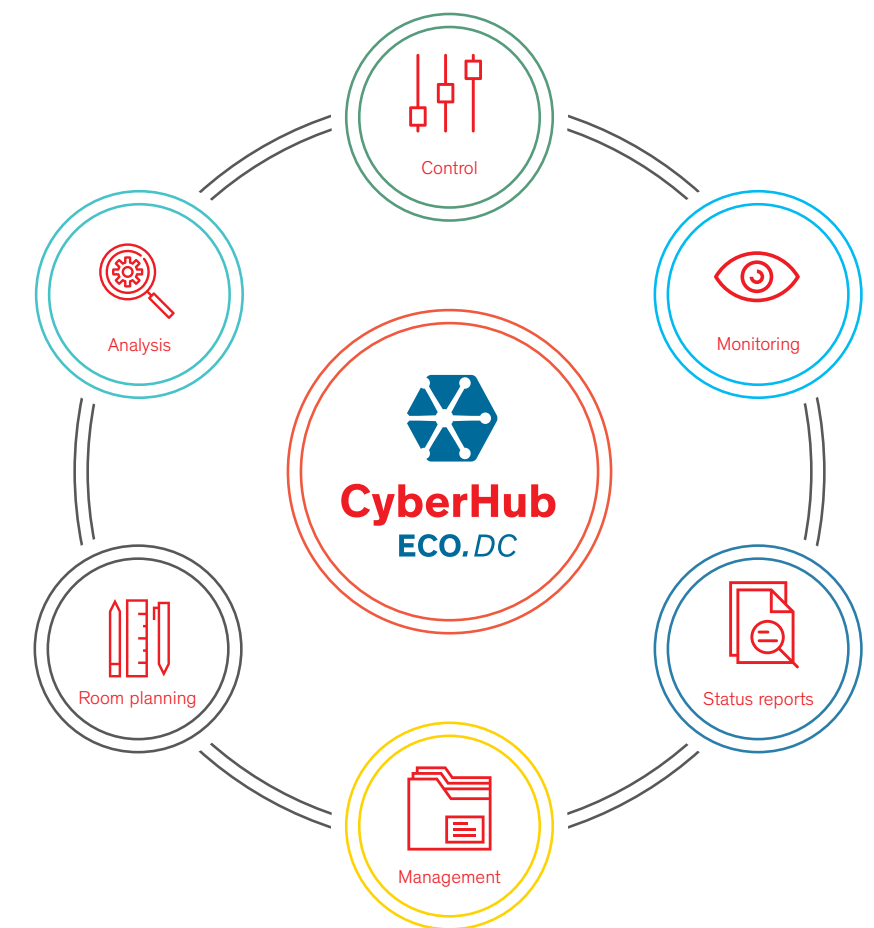


CyberHub ECO.DC: Complete control for more reliability and maximum efficiency

CyberHub ECO.DC is the latest generation of our Data Center Infrastructure Management solution. It monitors, plans and manages entire air conditioning systems and their connected infrastructure in data centers. With just a single central software solution, the operational reliability and energy efficiency of data centers is increased to the max.

CyberHub makes control child's play

- **Savings on operating costs**
Precisely track down potential savings and implement them immediately.
- **Maximum reliability**
Round-the-clock monitoring of measurement data (e.g. to avoid hot spots or energy overload).
- **One system for all data**
Collect measurement data from all energy consumers (e.g. electricity, gas, amounts of heat or cold), and collectively analyze them for the entire data center.
- **Scalability for a secure ROI**
CyberHub ECO.DC is individually adapted to the size of the data center and the required range of features. The software can be tested in small sections before installation.
- **Browser-based**
Implementation is not reliant on the operating system. Simple and intuitive handling on a desktop or mobile terminal device.

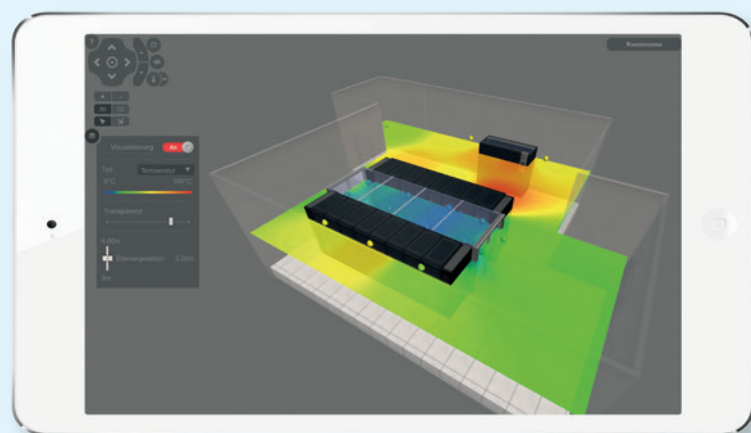


Collecting, analyzing and documenting data. For optimum transparency.

CyberHub ECO.DC collects all the relevant operating data, analyzes them in detail and documents them plainly and clearly. This way, you have all the relevant data such as the cooling and power supply of your data center at your fingertips, and have optimum control of your air conditioning systems and their infrastructure at all times.

Monitoring 24/7, 365 days a year

CyberHub ECO.DC monitors your data center around the clock. This not only greatly enhances reliability – it also reveals previously undiscovered potential savings and enables them to be exploited. Almost no data are left unrecorded, thanks to the high degree of compatibility. CyberHub ECO.DC supports numerous industry standard protocols, and therefore functions as a higher-level system that can display and analyze a wide variety of information.



3D visualization – uncovering weak points!

The CyberHub ECO.DC software generates 3D thermal images of your data center with just a few clicks. This way, you can adapt your air conditioning immediately and flexibly to the current IT heat load.

- Operating costs can be reduced by up to 30 % without jeopardizing reliability.
- The static pressure in the raised floor is measured for optimum cooling and reducing power consumption.
- Alarm protection against overheating: The thermal image provides a constant overview of the servers' operating state. Hot spots are tracked down, and the air conditioning can be adapted immediately.

Monitoring the power supply – the ability to react fast!

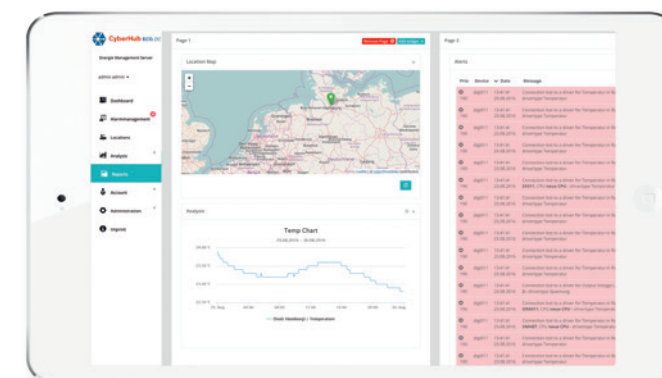
- Maximum reliability: CyberHub ECO.DC helps ensure reliable data center operation.
- With the appropriate measuring equipment and associated protocol (Modbus, SNMP, D-Bus, M-Bus), sources of errors are displayed.
- Power shortages are detected at an early stage.
- Integrated, intelligent PDUs (power distribution units) can determine and analyze server loads.
- Status reports can be relayed to different recipients.
- Thermal images are generated quickly and simply, and the integration of temperature sensor values renders thermal imaging cameras superfluous.

Status reports – individualized and automated

Individual status reports are created in the system, generated automatically or manually, and sent. This saves you a lot of work, as the manual collection and preparation of data can be dispensed with.

- **Content:** All the relevant key performance indicators, diagrams or alarm histories of the past period
- **Design:** Customized company design
- **Distribution list:** Selected internal and external recipients

This feature is especially useful for colocations, where customers expect individual proof of compliance with their SLAs (Service Level Agreements).

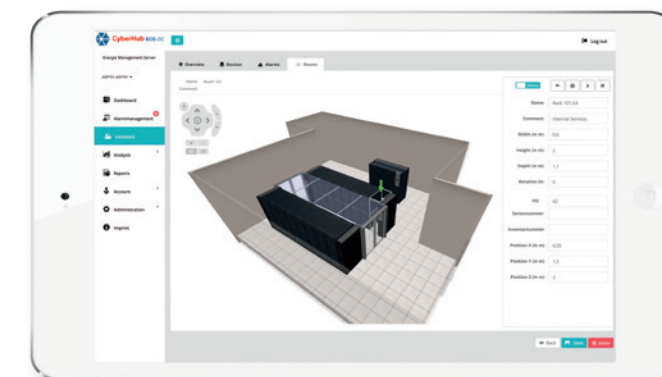


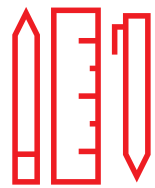
Management – simple and uncomplicated

All components (e.g. racks or servers) are assigned certain names, comments, serial numbers and inventory numbers, because control calls for good organization. At the same time, you remain flexible, because the entire system can easily and quickly be extended to include new components.

Servers, UPSs, switches and NAS can be linked to your browser console, and therefore opened directly from the program.

The result:
Manage the entire infrastructure with just one system.





Room planning included

The Room Overview facilitates the planning of racks and servers.

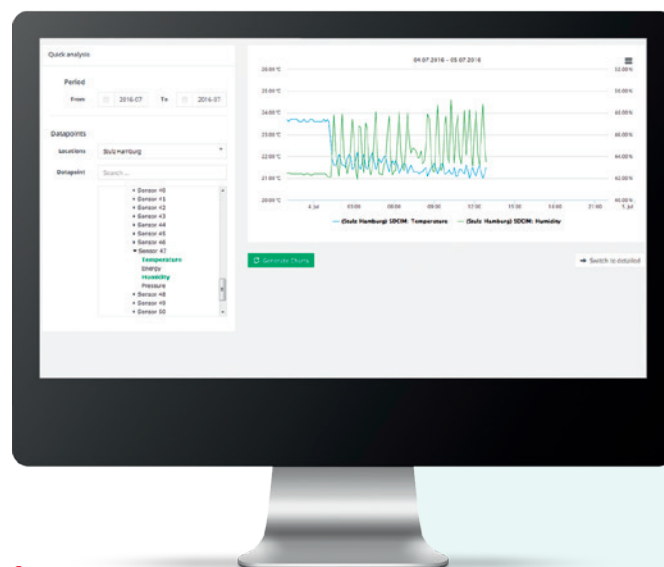
CyberHub ECO.DC enables you to find suitable spaces for servers very easily. It also checks how many height units are available in a room or a server installation.

Continuous monitoring also helps to ensure fast, uncomplicated planning, e.g. by keeping an eye on phase utilization in the data center, so that server loads can be distributed between the appropriate phases.



Analysis: Protect and make savings with big data

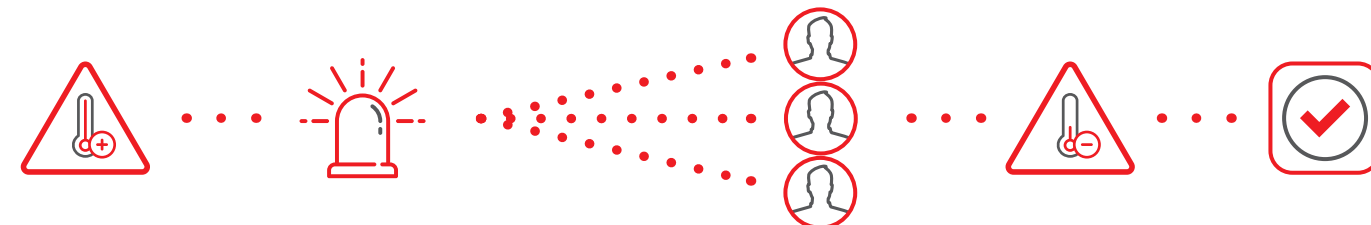
CyberHub ECO.DC continually collects data and uses them to create easily comprehensible diagrams. You will therefore be able to recognize and minimize risks that pose a threat to data center reliability.



At the same time, it reveals potential savings that were previously hidden from view. Appropriately measured, the energy consumption of each energy consumer can be individually checked – helping to lower operating costs in the case of new investments. The payback time for new investments can also be rapidly calculated and backed up by a before/after comparison of measurement data.

Alarm Manager

With the aid of the Alarm Manager, you can individually configure limit values for warnings and alarms, and so determine when to trigger a warning, and when to trigger an alarm.

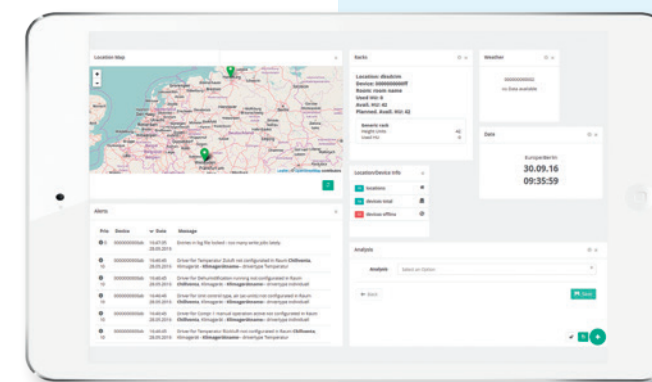


Moreover, threshold values can be defined for selected warnings. If the values exceed or drop below a defined limit, the system issues a warning, so that action can be initiated quickly and critical situations nipped in the bud. To make sure that a warning or alarm does not go unnoticed, the Alarm Manager offers an escalation stage and acknowledgment feature.

After a set time without acknowledgment of a warning or alarm by a user, the system also notifies various other entities. This ensures that each warning and alarm is noted, and the data center can continue to operate reliably.

Dashboards

Thanks to the Dashboard feature, you will see important key performance indicators and values immediately at a glance.



Key performance indicators at a glance

- Recognize shortages: Dashboard of all relevant measurement data to prevent shortages.
- Reliability in detail: Dashboard of values from individual rooms in the data center quickly indicates whether normal operation is assured.
- Gain an overview: The Dashboard is shown as an “Energy Cockpit”, which displays all energy consumers clearly and at a glance.

Easy installation during ongoing data center operation

The CyberHub software can be implemented both on a physical server and on a virtual machine (VM).

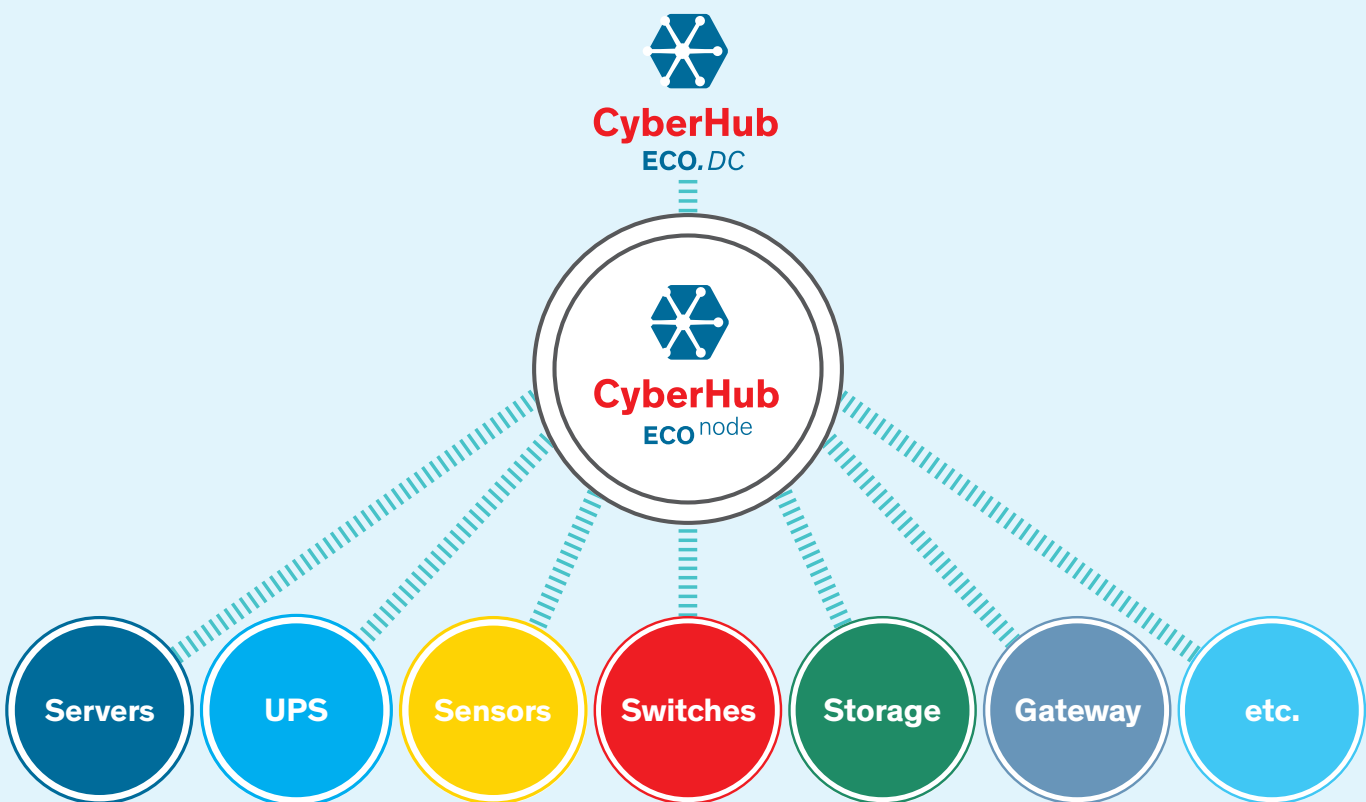
The software can be installed at any time during on-going data center operation, as it consists of only two components:

- Real-time visualization of the data center and measurement data (CyberHub ECO node)
- Database for the analysis feature and status reports (CyberHub ECO.DC-Server)

As an option, wireless sensors may be used for temperature and pressure, for easy installation without wiring. The system does not need to be adapted for this: temperature and pressure can be measured immediately using plug & play.

Connectivity and security

CyberHub ECO.DC consists of a node that is responsible for collecting sensor data, and a server that stores and analyzes these data.



Encryption

Communication between the CyberHub ECO node and CyberHub ECO.DC is RSA-encrypted. This encryption is available both for the online version and the locally installed LAN version.



Online version (SaaS)

The CyberHub ECO.DC is available as "Software as a Service" (SaaS). You install the CyberHub ECO node on a physical server or a virtual machine, or have suitable hardware with the CyberHub ECO node, which sends all collected data to the CyberHub ECO.DC server when there is an internet connection. This server is hosted in Germany and conforms to German data protection provisions.

The online platform offers you access to all the features of your CyberHub ECO.DC, wherever you are in the world.



LAN version

Alternatively, CyberHub ECO.DC can also be available as a completely autonomous solution.

The CyberHub ECO node and CyberHub ECO.DC server can also be installed locally. This way, all the features of the online version are available to you locally.



Service – even simpler and more efficient

Make use of our services, which can assist you with installation and during ongoing operation – and make your work easier.

Software installation

Complete or partial installation: you decide which information is relevant for you. And we take care of installation and setting up all the required features:

Option 1: Software installation

Option 2: Software installation incl. setting up rooms and servers

Option 3: Complete installation including a varied range of measuring modules and sensors, and setting up CyberHub ECO.DC

Demand-based air conditioning, site energy analysis

Your air conditioning systems work efficiently if they are adapted to the actual demand of your IT.

Rises in room temperature, reduced airflow rates, etc. – our Service Team flags up energy savings without jeopardizing your IT's operational reliability.

After consulting you, we take the necessary optimization measures together with you. Potential energy savings of up to 30% can be achieved, guaranteeing a short investment payback time.

CyberHub at a glance

Operational reliability

CyberHub ECO.DC runs on standard hardware and software and therefore keeps system maintenance simple. Our Service will be happy to help you at any time.

Compatibility

Thanks to web technology, CyberHub ECO.DC can be used on many different platforms. The system runs on the Windows and Linux operating systems, and displays data via any common browser.

Independent

CyberHub ECO.DC is not dependent on any particular make or manufacturer, and uses the most popular protocols for communication.

Integration

An API interface means CyberHub ECO.DC can easily be integrated in existing systems. Ready installed measurement sensors can continue to be used. Of course, our team is at your disposal for support and help with installation.

Intuitive handling

Installation of the software is simple, and the clear layout makes it user-friendly at all times.

Security

Encrypted communication between the CyberHub ECO node and CyberHub ECO.DC server in the LAN and online versions.

Scalability

Only use those modules and features of CyberHub ECO.DC that you actually need.

Made-to-measure installation

You decide how much support you need for installing the software. We will be happy to help you all the way to complete installation.

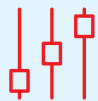
Energy efficiency

Continuous monitoring optimizes processes in the data center and reduces energy consumption.



STULZ Digitronic Software GmbH

Auf der Langwies 1
65510 Hünstetten-Wallbach
Germany
Tel. +49 6126 94535-0
Fax +49 6126 94535-9
mail@stulz.digitronic.com
www.stulz.digitronic.com



Technical data subject to change without notice. 1100417 V1.0 09-16 en · © STULZ Digitronic Software GmbH