

# StruxureWare Data Center Operation



## Data Center Operation: Cooling Optimize

### Dynamic cooling management and optimization

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.

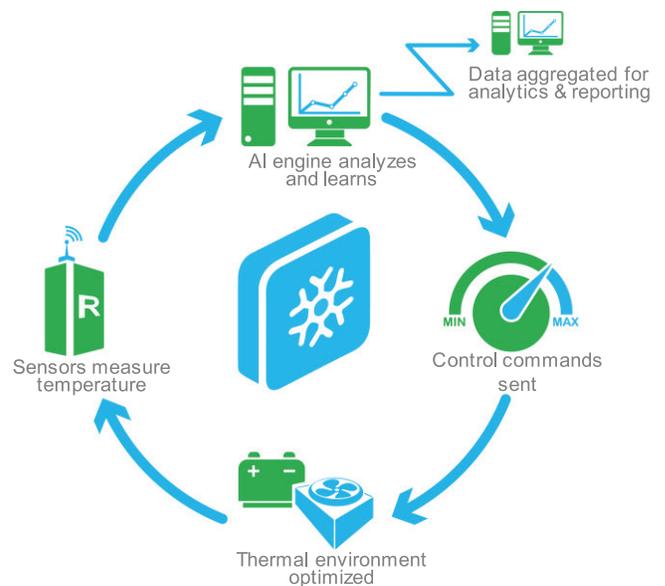


This real-time response to temperature-affecting events, such as equipment moves, upgrades or IT load swings, stabilizes air flow and solves the complex puzzle of cooling resource allocation.

### 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.

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### Features and Benefits

<b>Cost savings</b>	
Energy savings	Delivers up to 40% cooling energy savings through optimized use of existing cooling equipment.
Extended equipment life	Efficient use of cooling equipment reduces the need for maintenance and extends equipment life.
<b>Manageability</b>	
Intelligent thermal management	Rack-level temperature data is wirelessly transmitted to network gateways, aggregated, and analyzed by intelligent software, which individually regulates the on/off settings and fan speeds in the cooling equipment.
Influence map	Provides great insights into the influence of individual cooling units on the temperature in every part of the data center.
Reclaim cooling capacity	Continuously optimized cooling capacity allows for additional IT load and increased IT capacity in the data center.
Dynamic optimization	Thermal airflow is constantly adapted to match real-time needs created by the dynamic environment in a data center.
<b>Availability</b>	
Uptime protection	Immediate identification and elimination of hot spots protects uptime and ensures business can continue as planned.
Risk mitigation	In the event of an emergency, cooling units will automatically run at maximum capacity and ensure a cool facility, even if Cooling Optimize is unable to connect to and adjust the cooling units.
Manual override	Provides operators with the ability to manually manage cooling resources, and override the system.
Existing cooling infrastructure	Works with your existing infrastructure; direct expansion (DX), chilled water, economizers and evaporative cooling methods, and under floor, overhead, ducted and unducted airflow environments.
Wireless temperature sensors	Utilizes a range of wireless temperature sensors to determine the exact position of the heat load within the data center.
<b>Reports</b>	
Benchmark report	Verifies energy and cost savings, as well as greenhouse gas reductions, achieved through the use of dynamic cooling management.
Temperature compliance report	Identifies if rack temperatures have complied with required set points, and the time period that racks have been in violation of the set point limits, enabling easy detection of potential physical infrastructure irregularities.

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