

From cooling to icooling

Energy Efficiency Optimization Solution iCooling@AI

Introduction

Energy efficiency optimization solution iCooling@AI is a data center cooling system optimization solution based on AI algorithms. By analyzing the operating parameters of the cooling system, IT load, and external environment, the energy efficiency model of the data center is trained by AI technology. Finally, the optimal PUE parameter combination is deduced and delivered. It can reduce the average annual PUE by 8% to 15% ①.

Scenarios

- Medium- and large-scale data center: chilled water cooling system
- Medium- and large-scale data center: Huawei AHU/EHU cooling system

Features

Simple

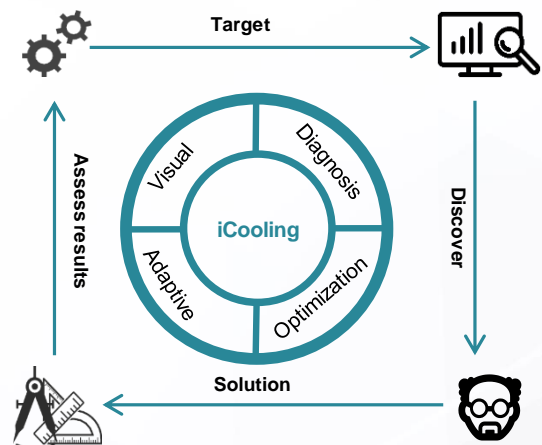
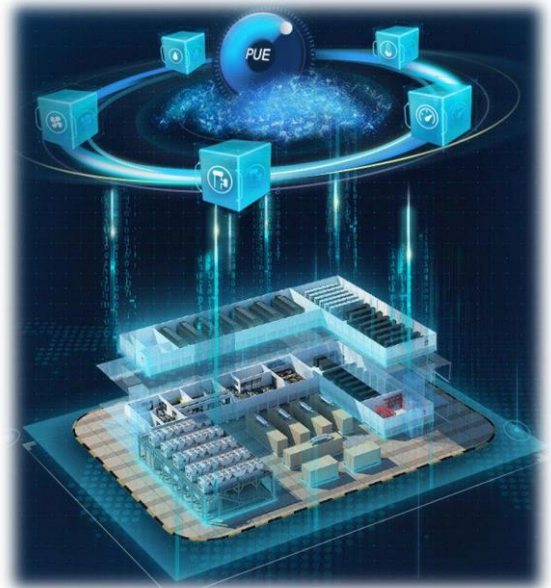
- Simplified hardware reconstruction and simple deployment based on Bayesian network algorithm + deep neural network AI algorithm + prior-verified experience data
- Adaptive algorithm effectively works throughout the whole lifecycle without multiple re-deployment.

Green

- System-level energy efficiency optimization of whole cooling system, saving energy by 8% to 15%.

Reliable

- Do not directly operate physical devices. Deliver energy-saving instructions through the BA system.
- Supporting manual intervention and system rollback.
- The AI inference process complies with DC O&M specifications (refrigerating system parameter range), and inference result meets the SLA requirements.



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Requirements

| | Necessary conditions | Condition Description |
|---|------------------------|---|
| 1 | Cooling mode | Air-cooled chilled water, water-cooled chilled water, Huawei AHU/EHU |
| 2 | Data quality | Sensors, flowmeters, and electric meters must meet the precision requirement ① and be deployed as required. |
| 3 | Equipment Requirements | Water chillers, cooling tower fans, chilled water pumps, and cooling pumps use variable-frequency architecture, providing better optimization effect. |

- ① Energy saving effect in large-scale water-cooled chilled water scenarios
② For details about precision requirements, contact Huawei engineers.