Responding to High Efficiency Challenges: Data Centre Energy Saving Solutions

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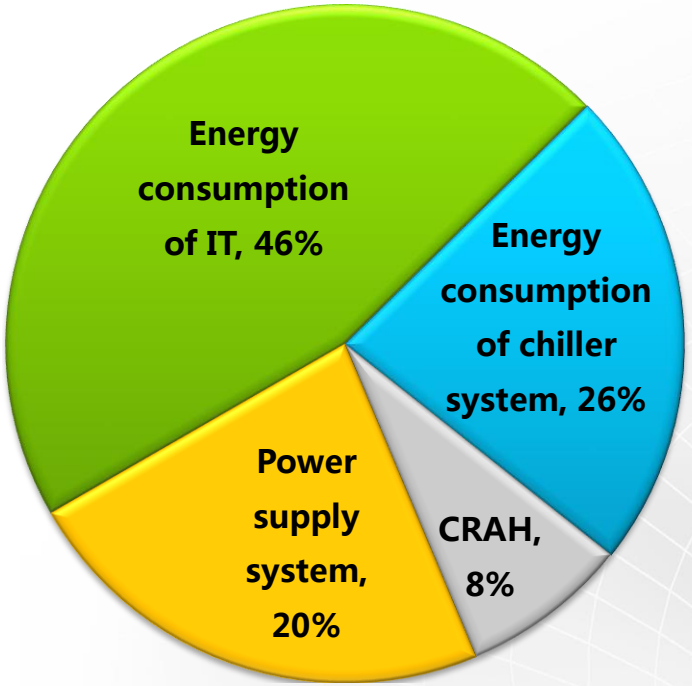
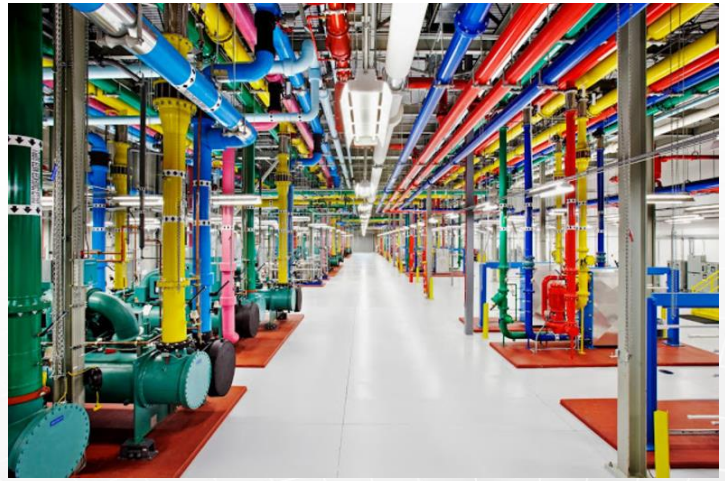
Typical Energy Consumption Inside Data center

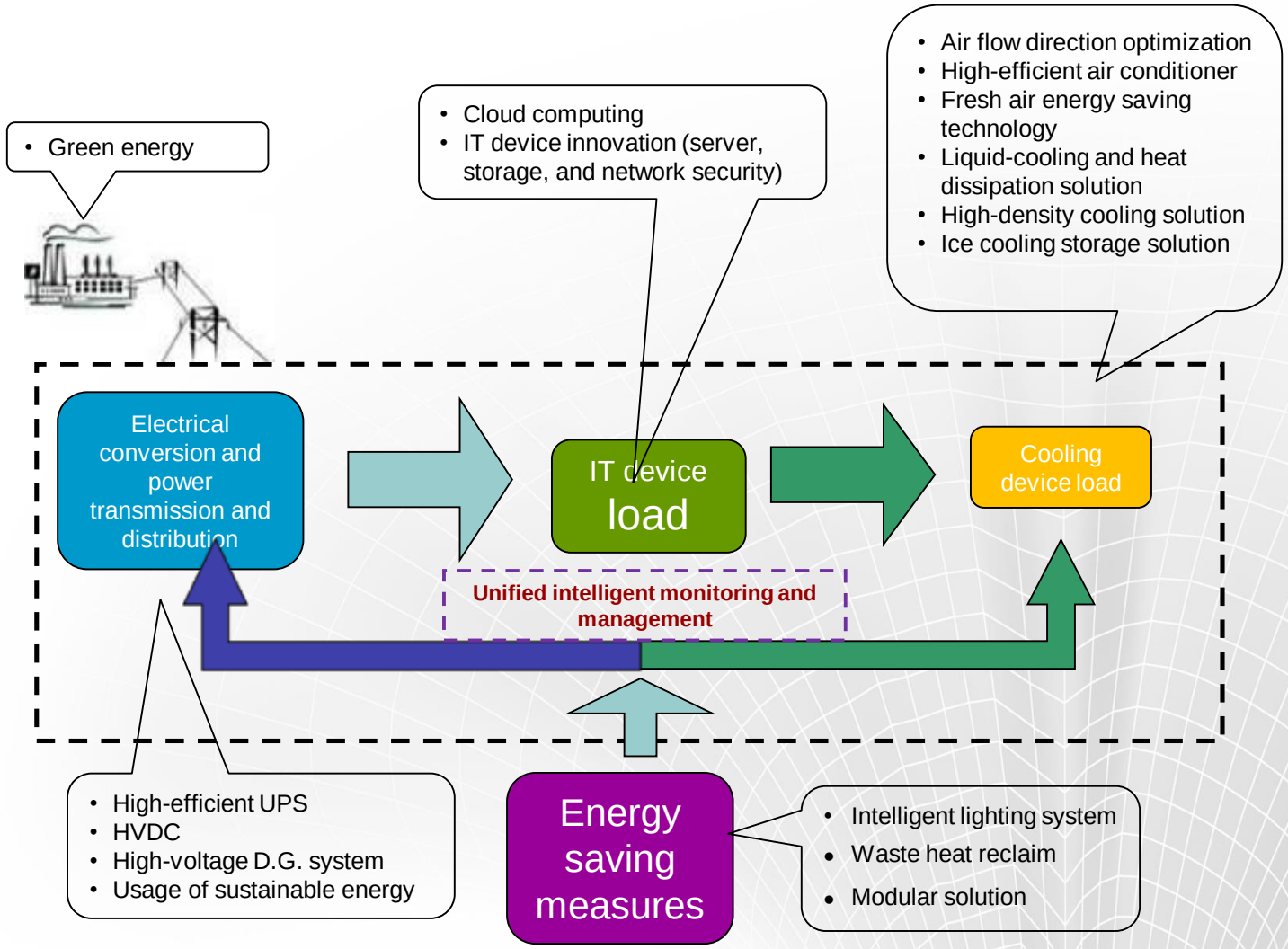




According to the Independent, the amount of energy consumed by the world's data centre amounts to 3 per cent of the global electricity supply and accounts for about 2 per cent of total greenhouse gas emissions. That gives it the same carbon footprint as the airline industry.

Principle: E2E Energy Saving Design for DC

- **E2E energy saving design for DC:**
  - **IT system energy saving design: reducing energy consumption of a DC from the source**
  - **Power distribution energy saving design: ensuring reliability, improving power distribution system efficiency, and reducing energy consumption**
  - **Cooling system energy saving design: high-efficient cooling systems, and free cooling application**



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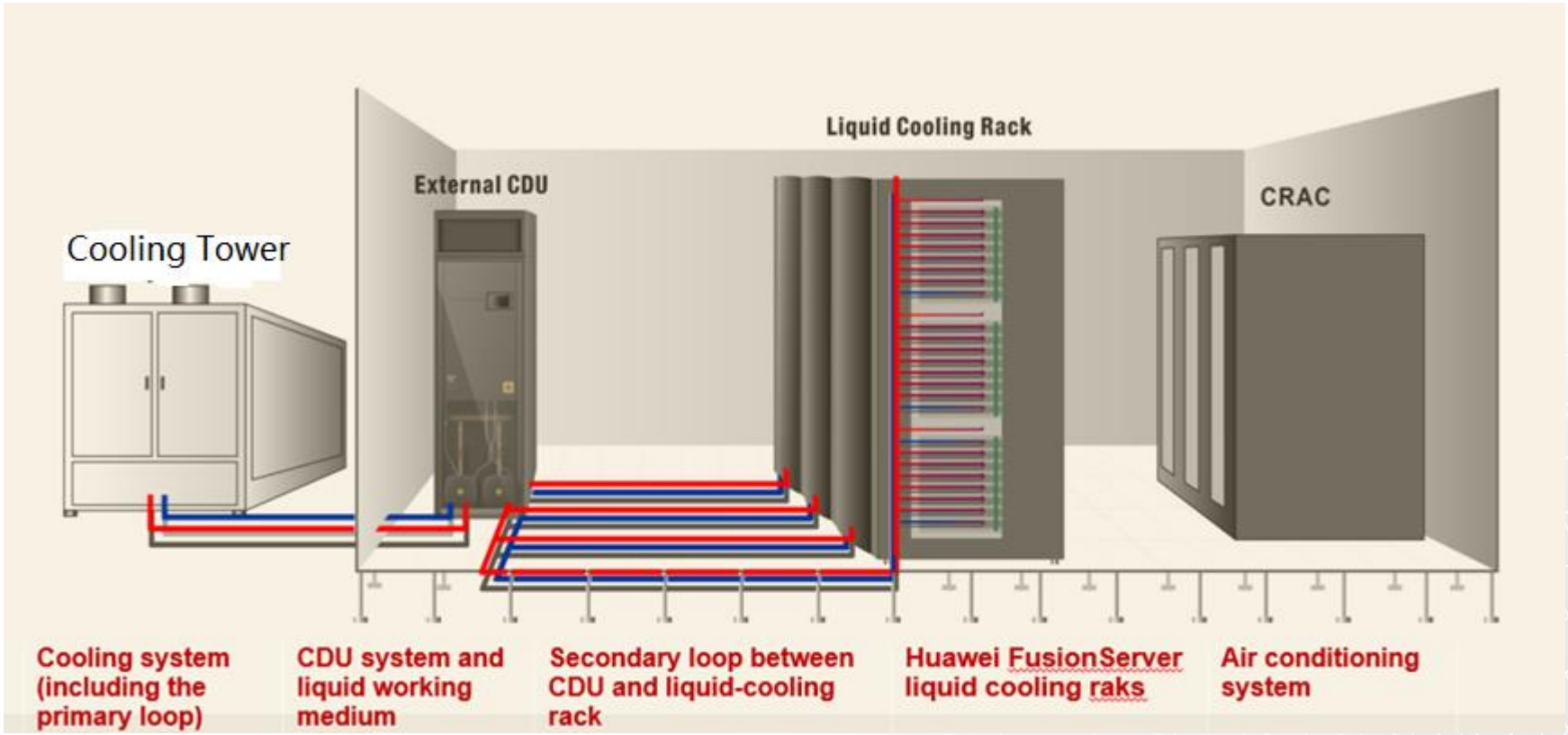
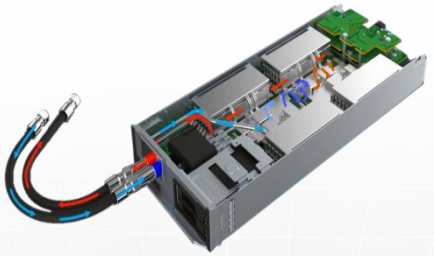
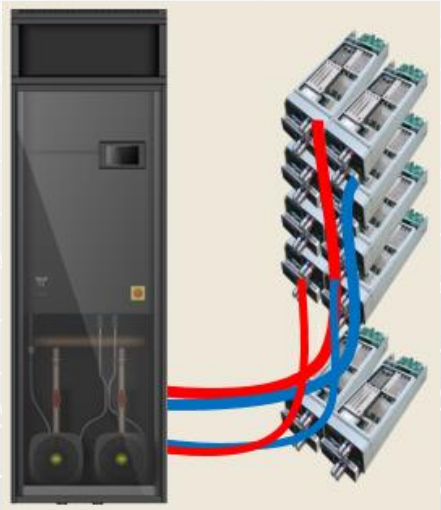
Liquid Cooling Solution For Server







45kW/cabinet Heat dissipation capability

80% liquid cooling

3D high density tube embedded cold plate, inlet water temperature up to 45 ℃

40% energy saving

PUE≈1.1

Management of existing ICT equipment and services with cloud computing technology

- Audit existing physical equipment and services:

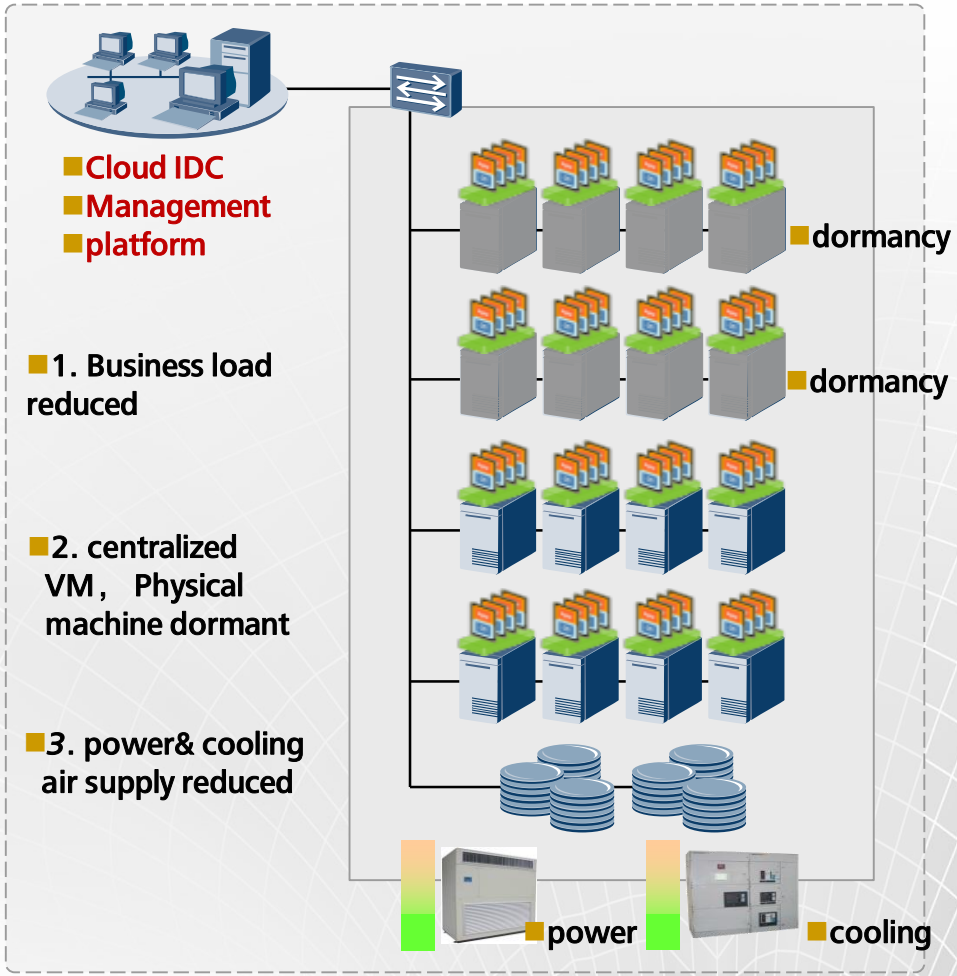
  Consolidation of existing services

  Decommission unused ICT equipment/services

  Decommission low business value services

  Shut down idle equipment

- **Design data centre with cloud computing technology**
- **Virtualise and archive legacy services**
- **Dynamic control cooling and power supply with IT demand in cloud computing data centre**

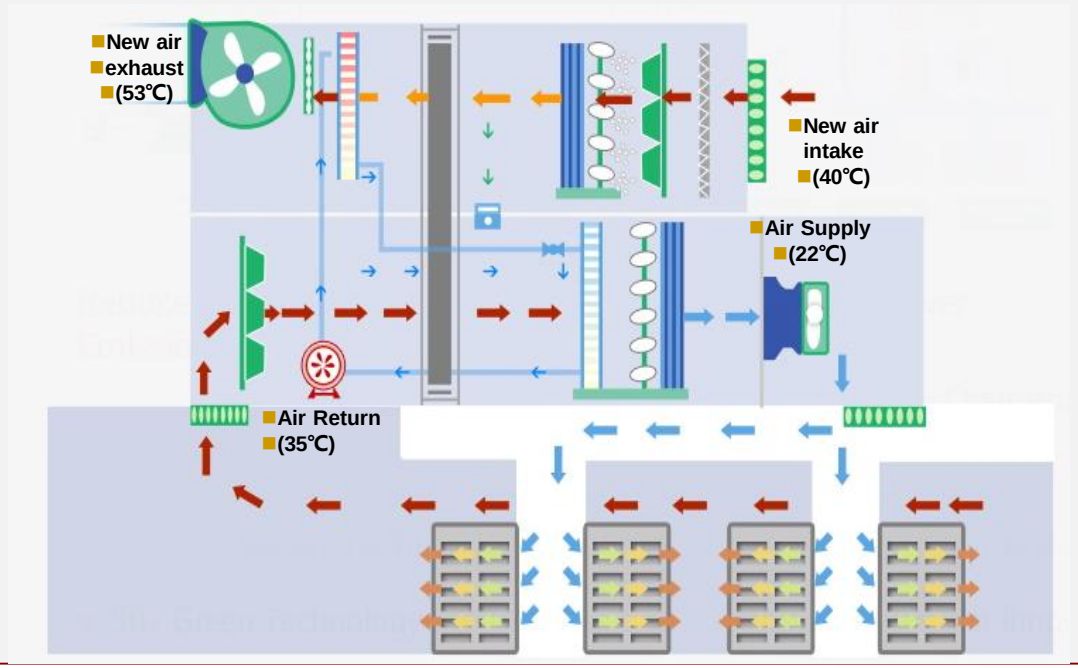


Indirect Air Side Free Cooling Technology Solution

Indirect Evaporator Cooling Solution Principle

Design Criteria

- Temperature, humidity, water resource analysis
- Air supply and return working condition design
- Building structure considering



Benefit

- High Efficiency, Save 20%(PUE 1.2 VS 1.5)
- Occupy less space
- Stronger environmental adaptability

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Case 1: Huawei Help xx To Build TOP80 Supercomputing Center with Huawei Liquid Cooling Server

TOP 80 Supercomputing Center, Cooling PUE（CLF）=1.05

Case 2: Huawei indirect air side free cooling solution

Green cooling

- Take full advantage of free cooling
- Indirect air side free cooling free cooling

Cold Aisle Containment

- Divide hot and cold air stream
- Improve supply air temperature
- Reduce hot air stream reflux and optimize air distribution

High efficiency power

- Distributed DC power，improve efficiency
- Direct Current model，efficiency more than 97%

PUE ≤ 1.215

Thank you

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