



- Product Solutions White Paper Series –

IDB DATA FORTRESS SOLUTION

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IDB DATA FORTRESS SOLUTION

◎ Introduction

DATA FORTRESS is a container data center infrastructure solution that responds to high computing power and low PUE requirements. It has unique advantages for high computing performance cluster equipment with strong environmental tolerance. The box integrates power distribution, cooling, rack, monitoring, and fire protection systems, and is prefabricated in the factory to achieve rapid deployment and complete new data center construction or capacity expansion in a short time.



◎ Application scenarios



HPC
(high performance computing)



Block-chain computing

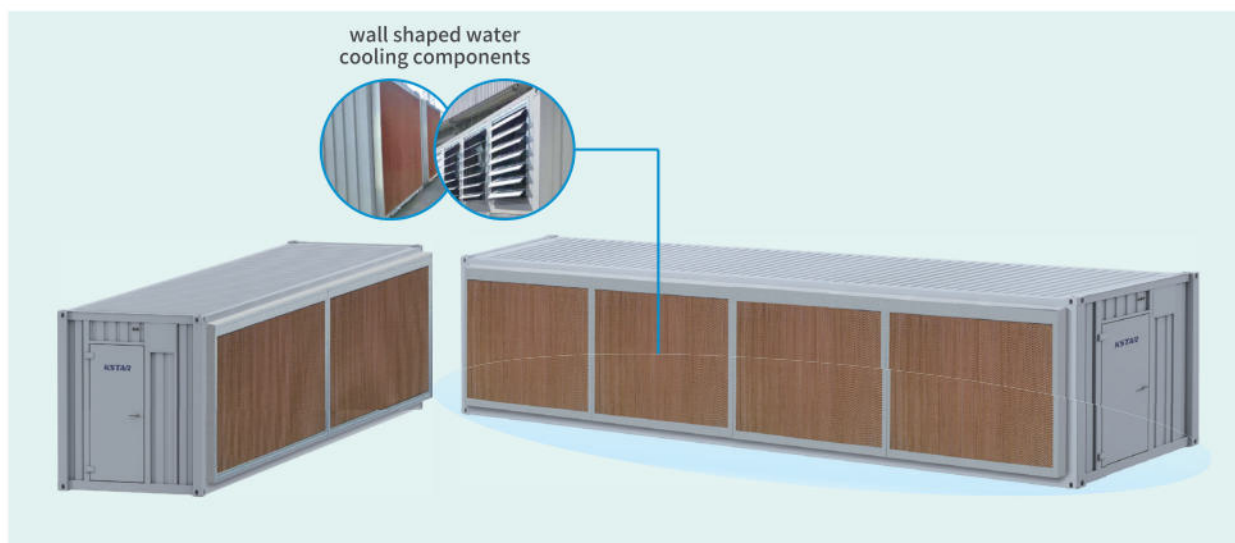


Edge computing

◎ Product Specifications

▼ Container structure

- The blinds on both sides are designed to be automatically controlled according to the inside/outside environment (temperature and humidity), and the cabinet has an outdoor protection level of IPX4.
- The cabinet has a reserved wire-feeding window, independent optical fiber inlet holes, pre-assembled circuit routing inside the cabinet, and strong and weak current separation.
- Mesh panels and rain shields are distributed on the hot air outlet side to prevent rodents, insects, and rain.



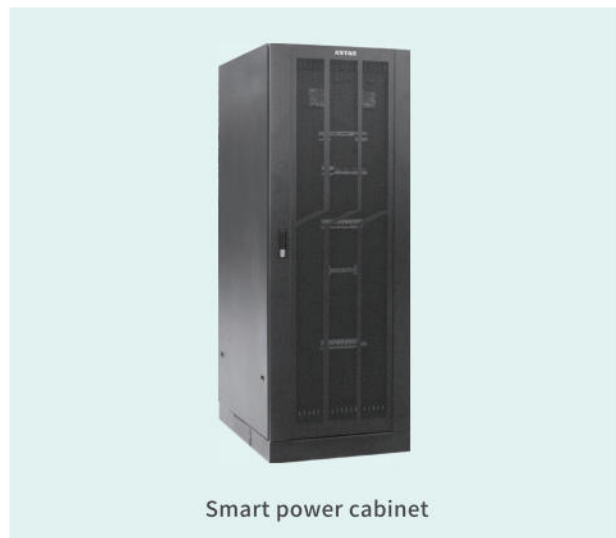
▼ Natural air cooling, high efficiency and energy saving.

- The natural cold air enters the sealed cold aisle through the wall shaped air filter, and after heat exchange with the equipment, the hot air flows out of the cabinet through the back plate mesh to achieve cold and heat exchange, and the system PUE value can be reduced to less than 1.05.
- Removable wall shaped air filter, which can be reused after cleaning, saving cost and convenient maintenance.
- Support installation of wall shaped water cooling as optional kit.
- Support installation of submerged liquid-cooling system as optional kit.



▼ Large loading capacity, precision power distribution

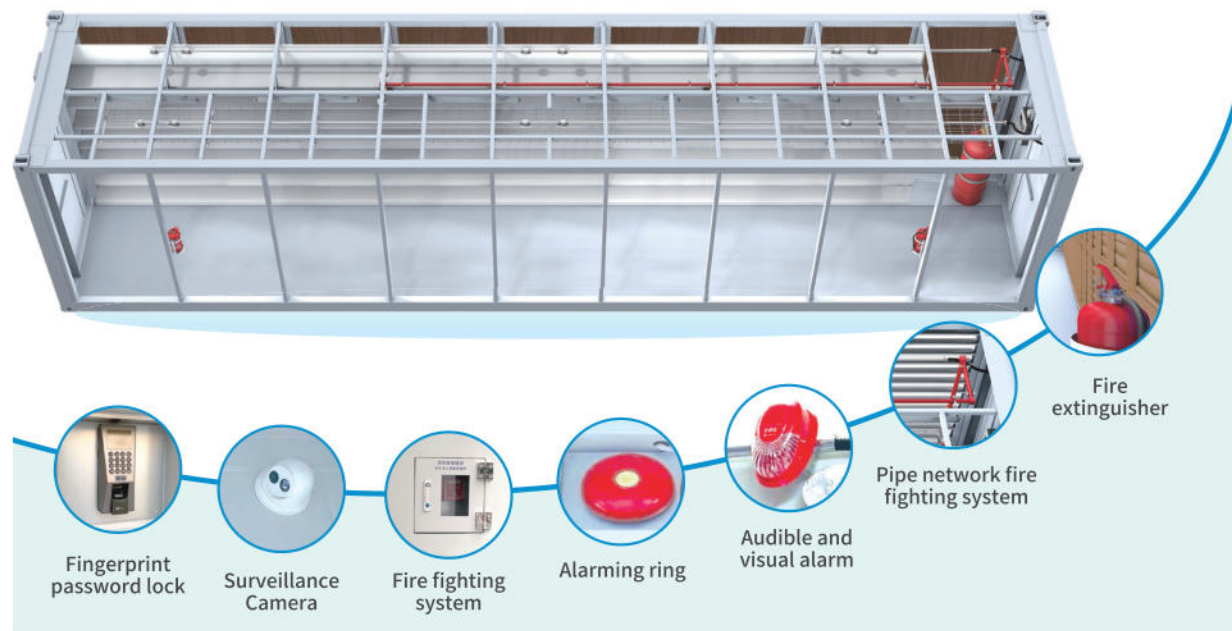
- The power distribution capacity of a single cabinet can be up to 1.5MW. The power distribution unit is assembled as a modular, which is convenient to apply and flexible when expansion needed.
- Employed with smart power distribution boxes and smart PDUs, it can detect the operating parameters of the power distribution system such as voltage and current in real time.



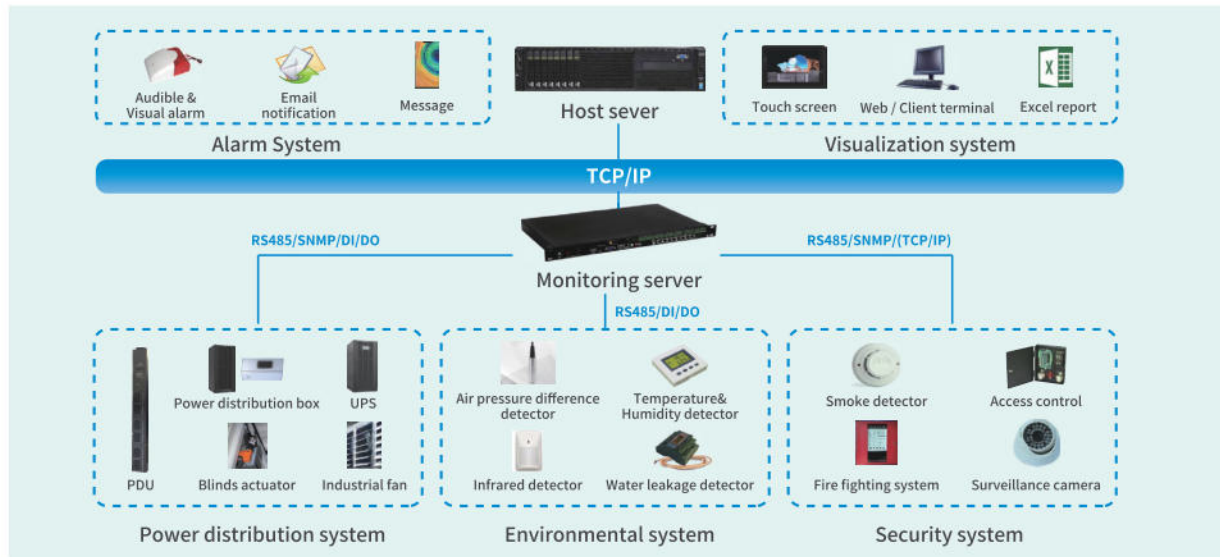
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▼ Intelligent monitoring system

- Integrated intelligent access control system, video system, infrared detection, temperature and humidity detection, water leakage detection, internal and external air pressure difference detection (used for filter clogging monitoring) , smoke detection and fire alarm, sound and light alarm and other monitoring equipment, which can monitor the internal environment in real time.
- Able to remotely control the blinds (on/off, opening & closing angle) either manually or automatically based on the data(temperature, humidity, water leakage, fire alarm, etc...) obtained in the monitoring system.
- The power supply link is monitored throughout the whole process, and the power status and energy consumption output of each device can be directly obtained, so that power supply demand can be adjusted in time.
- Accurate energy consumption calculation, real-time display of PUE value.
- Able to achieve multi-site unified monitoring and management, remote access to the management platform enables 7×24 hours unattended operation, in order to minimize operation and maintenance costs.



▼ Monitor system topology

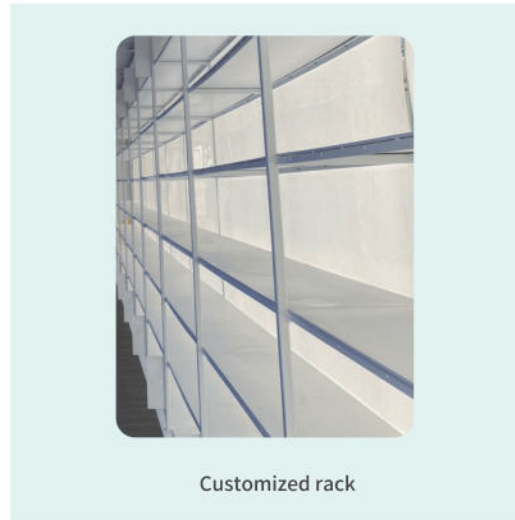


▼ Customized rack system

- For various types of HPC cluster equipment, customized processing can be performed according to its power density and occupied space.

▼ Modular design, flexible expansion

- The cabinet integrates power distribution system, heat dissipation system, monitoring system, and fire fighting system, which simplifies on-site engineering installation and shortens delivery time.
- Multi-site modular deployment enables rapid expansion.



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◎ Technical parameters

Model	IDB-DF	
Container structure		
Container size	40FT	20FT
(L×W×H)mm	12192×2438(3000)×2896(3500)	6096×2438(3000)×2896(3500)
Rack system	Customized rack(Liquid cooling pool)	
Power distribution system		
Total power distribution capacity (kW)	Up to 1500	
Power distribution architecture	Single/Dual mains power supply, integrated power cabinet/PDU	
Uninterruptible power	UPS/HVDC+ battery	
Cooling System		
Cooling method	Naturally cooled by air(Submerged liquid cooling)	
Hot and cold aisle	Cold aisle/hot aisle isolation(Liquid cooling pool)	
Surveillance system		
Monitoring and management	The monitoring host can realize the monitoring of internal power distribution, environment, access control, video, blinds, fire protection, etc., support sound and light, email alarm methods, and support remote monitoring	
Environmental monitoring	Integrate intelligent access control system, video system, infrared detection, temperature and humidity detection, water leakage detection, internal and external air pressure difference detection (used for filter blockage alarm), smoke detection and fire alarm, sound and light alarm and other monitoring equipment to monitor the internal environment in real time	
Access control system	Support IC card + password + fingerprint three-in-one access control system, facial recognition optional	
Fire Fighting System		
Fire extinguishing system	The automatic fire fighting system automatically controls the release of fire-extinguishing gas through the fire-fighting linkage, supports sound and light alarm, gas release alarm, and able to turn on manually when emergency occurs	
Fire extinguishing gas	FM200/NOVEC1230 optional	
Weight of the Container (kg)	5000 Max. (20FT)	
	11000 Max. (40FT)	
Compliance		
Container Transportation Compliance	CCS	
Core components in the container	UL, CE	



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Version number: KSD/IDB 2022-01

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