Indonesia commissioning of a 19-inch cold aisle

Overview

PT Grahasumber Prima Elektronik (GSPE) presents a row-based containment solution designed with modularity to physically separate cold and hot airflow.

Key Takeaways

A 19-inch cold aisle containment system in Indonesia isolates cold supply air from hot server exhaust, improving cooling efficiency, reducing energy costs, and ensuring stable server operation.

Overview of Cold Aisle Containment

Cold aisle containment (CAC) is a data center cooling strategy where cold air is delivered directly to the front of server racks while preventing it from mixing with hot exhaust air. This approach is particularly important in Indonesia due to tropical temperatures and high humidity, which increase cooling demands and operational costs. By isolating cold and hot airflows, CAC can reduce energy consumption by 20–50% and extend the lifespan of IT equipment.

Technical Features

A typical 19-inch cold aisle system includes: Modular roof panels: Enclose the cold aisle, often with integrated fire safety mechanisms that release panels automatically in case of fire. Automatic sliding doors: Provide secure access with fingerprint or RFID authentication, preventing hot air from entering the cold aisle. Height and depth specifications: Designed to accommodate standard 19-inch server racks, with net heights over 2 meters to allow maintenance without disruption.

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Monitoring options: Optional touchscreen monitors for real-time temperature tracking at the rack level. Modular and scalable design: Allows pay-as-you-grow deployment, enabling future expansion as data center capacity increases.

Benefits in Indonesian Data Centers

Energy efficiency: Reduces cooling energy consumption, which can account for 30–50% of total data center electricity use. Operational reliability: Maintains stable temperatures for critical servers, minimizing downtime and supporting high-density workloads. Cost savings: Lower operational expenditure (OPEX) due to optimized airflow and reduced overcooling.

Compliance and local content: Some systems, like GSPE's solution, meet 55% TKDN certification, ensuring adherence to Indonesian local content regulations.

Implementation Considerations

Rack density: Higher density racks may require careful airflow planning to avoid inefficiencies. Integration with existing cooling: CAC can be combined with CRAC units, in-row cooling, or liquid cooling for optimal performance. Maintenance and safety: Systems are designed for easy access and include fire safety and lighting features to support daily operations.

Scalability: Modular design allows incremental deployment, which is cost-effective for growing enterprise or colocation data centers.

Case Example

The Direktorat Jenderal Pajak (DJP) data center in Indonesia implemented cold aisle containment to support its Coretax system, ensuring uninterrupted operation for over 40,000 employees across 500 offices. The system addressed challenges of high computational load, energy efficiency, and operational reliability.

Conclusion

Commissioning a 19-inch cold aisle containment system in Indonesia provides enhanced cooling efficiency, energy savings, and operational reliability, making it a practical solution for enterprise and colocation data centers. Its modular, scalable, and safety-oriented design ensures adaptability to local climate conditions and future growth. Proper planning of rack layout, airflow, and monitoring is essential to maximize the benefits of the system.

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Article Content

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The number one cost of data warehouses is the physical cooling of the building, so the hot aisle/cold aisle idea was proposed to decrease the energy and cost involved in management of servers''

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Enables the isolation of hot and cold aisles, thereby maximizing cooling system efficiency and minimizing cooling energy requirements. Highly modular, scalable, expandable, and retrofitable,

DCCS – Data Center Containment System

We are a local manufacturer that focuses on aisle containment and data center cage products. We are experienced and have installed our products in several Tier III and Tier IV data centers in Indonesia.

Cold & Hot Aisle Containment For Data Center Efficiency

Learn how cold and hot aisle containment improves airflow, reduces energy use, and boosts reliability in data centers. Backed by CFD insights from EXPERIQS.

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Cold Aisle Containment ISC Tower: Instalasi di Data Center Tier IV

Haganerack Indonesia menyediakan layanan pengadaan, fabrikasi custom, instalasi, dan commissioning untuk sistem rack server dan data center containment di seluruh Indonesia, dengan

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Indonesia Cold Chain Market Overview The Indonesia cold chain market is experiencing significant growth driven by the increasing demand for perishable goods such as fruits, vegetables, and

Chapter 4

This chapter should be cited as PT Capricorn Indonesia Consult (2019), ''A Cold Chain Study of Indonesia'', in Kusano, E. (ed.), The Cold Chain for Agri-food Products in ASEAN. ERIA Research

Customized 19 Inch Hot/Cold Aisle Modular Data Center Server Room

19 inch size 3600*2600*2350mm (W*D*H) place of origin Jiangsu, China material SPCC Cold Rolled Steel brand name DTVS Material SPCC Cold Rolled Steel Product Name Cold Aisle Containment

Optimizing Data Center Cooling: The Power Of Hot And

Discover how to optimize your data center cooling system with hot and cold aisle containment. Learn about the assessment, design, installation, and

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Hot Aisle vs Cold Aisle Containment in Indonesia Data Centers

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Hot Aisle vs Cold Aisle. As Indonesia''s digital economy continues to grow rapidly, data centers are becoming the backbone of cloud services, AI workloads, fintech, and telecommunications. One ...

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Therefore, as demand on your system increases, and your data center expands, our Cold & Hot Aisle Containment solution can grow proportionally. Enables the

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