The header cabinet has several server racks

Overview

Data Center Power Infrastructure Guide: Distribution A column header cabinet (also known as a row distribution cabinet) is installed at the end of a server.

Key Takeaways

A header cabinet, or power distribution cabinet, manages and distributes power to several server racks while providing monitoring, fault isolation, and operational efficiency.

Function and Role

A header cabinet, also known as a column header or row distribution cabinet, is installed at the end of a row of server racks and serves as a centralized power distribution unit for all racks in that row. It receives power from upstream distribution systems and redistributes it to individual rack-level PDUs inside each server rack, ensuring that each rack receives reliable and controlled power.

Power Management and Monitoring

Each outgoing circuit from the header cabinet is protected by dedicated breakers, allowing faults to be isolated to a single rack or a small group without affecting adjacent equipment. Modern header cabinets include intelligent monitoring systems that track input and output electrical parameters such as voltage, current, power factor, load percentage, and energy usage. This data supports capacity planning, energy optimization, and operational transparency.

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Structure and Design

Header cabinets are fully enclosed, typically featuring side panels, top and bottom plates, and front and rear doors for safety and accessibility. They are designed to withstand heat, vibration, and electromagnetic interference, ensuring that the operation of one component does not affect others. Inside, the cabinet can accommodate multiple server racks, with organized cable pathways to prevent interference and maintain airflow.

Integration with Server RacksServer racks housed within or connected to a header cabinet are arranged in rows for space optimization and efficient management. The cabinet supports both open-frame and closed-frame racks, providing flexibility for cooling, security, and environmental protection. Redundant power feeds (A and B circuits) are often used to ensure continuous operation during maintenance or power failures.

Benefits

Operational Efficiency: Centralized switching and monitoring simplify maintenance and troubleshooting. Fault Isolation: Dedicated breakers prevent a single fault from affecting multiple racks. Energy Management: Real-time monitoring enables better energy usage tracking and optimization.

Scalability: Additional racks can be added without redesigning the entire power infrastructure. In summary, a header cabinet with several server racks acts as a critical hub for power distribution, monitoring, and operational management, ensuring that multiple racks operate safely, efficiently, and reliably within a data center environment.

Article Content

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A column header cabinet (also known as a row distribution cabinet) is installed at the end of a server rack row. It acts as a row-level electrical

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The busway is equipped with a feeder unit and several tap-off units, connected along the busway in alignment with the server cabinets. The tap-off units are fitted with protection devices to safely

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Racks and Cabinets in a data center

Cabinets are like racks in that they can hold multiple modules for electronic equipment. The main difference between a cabinet and a rack is that racks are open and have no sidewalls,

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