NETWORK CABINET: COMPLETE GUIDE FOR THE BEST CHOICE

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Categories: General, Racks and Cabinets

Choosing the Network Cabinet is crucial to ensure the organization, safety, and efficiency of IT equipment. A well-selected cabinet not only optimizes space and facilitates cable management but also ensures operational continuity and the integrity of the equipment.

In this guide, we will cover essential aspects such as security and durability, the surrounding area, and the airflow of the equipment. We will also discuss the importance of the cabinet's path, the height of the technical room, and best practices for panel assembly and distribution. Additionally, we will provide guidelines on the appropriate choice of shelves and organizers, and how to ensure efficient cable fastening.

With these recommendations, you will be prepared to choose a network cabinet that meets your needs and ensures an efficient and safe installation.

Security and Durability: When choosing a network cabinet, it is essential to ensure that it provides durability, security, efficiency, and scalability. The cabinet should be well-constructed and certified by independent laboratories. To ensure the secure housing of critical equipment, the cabinet should have key locks for doors and side panels.

Alarm System: The cabinet should be equipped with an alarm system that sends notifications about intrusions, temperature variations, smoke presence, humidity levels, and flooding.

Surrounding Area: To ensure proper ventilation and facilitate maintenance, the area around the cabinet, both at the front and the back, should have at least one meter of clearance.

Equipment Airflow: Active equipment receives air from the front and expels it from the back. Therefore, the air conditioning should be installed at the front of the cabinet to optimize cooling.

Cabinet Path: Know the route to the destination site, considering the dimensions of doors, hallways, staircases, etc.

Technical Room Height: The cabinet should have at least a 30cm clearance from the ceiling of the room.

Cabinet Assembly: If your cabinet is in a "flat pack," assembling it vertically directly on the floor may result

in misalignment due to small irregularities that may exist in the flooring. It is recommended to assemble it in a horizontal position, preferably on a structure that functions as a workbench, to ensure a more level, precise, and comfortable assembly.

Door Opening: Check the door opening side; some doors may need a new set of hinges to change the opening direction.

Removability: To simplify maintenance, grounding terminals should have quick-connect fastenings to facilitate the removal of doors and side panels.

Identification: Cabinets should be identified in a clearly legible and visible manner from the outside.

Equipment Layout: Create a layout with all the equipment to be mounted in the cabinet, including dimensions (height, depth, width, and weight).

Stability: Heavier equipment should be housed at the bottom of the cabinet (UPS and servers) for greater stability.

Cable Entry: When the distribution cable entry is at the bottom of the cabinet, leave at least the last 4U free for ventilation, cleaning, and structured network expansions.

Vertical Space: Consider the height of the cabinet measured in "U" (1U equals 44.45mm). Reserve 30% of the vertical space for future expansions.

Cabinet Height: A standard height of 42U is recommended for cabinets. Higher heights may make it difficult to access equipment located at the top of the cabinet. On the other hand, cabinets with a height of less than 42U may limit future expansions and increase the risk of improper use, such as placing folders and tools on top of the cabinet.

Cabinet Width: With a width of 800mm, barpa cabinets are equipped with two vertical organizers with hinged covers, positioned at the front side. This configuration is ideal for cabling solutions, ensuring efficient organization of patch cords.

Front-Mounting Shelves: Ideal for equipment with a depth of up to 400mm and a static load of less than 20kg. These shelves help avoid occupying the rear space of the cabinet and should preferably be chosen with slots to provide better ventilation.

Four-Point Mounting Shelves: Designed to support static loads of up to 90kg. It is important to note that these shelves are not compatible with all cabinet models and brands, as they are fixed to the vertical profiles on the sides, depending on the dimensions and design of the profiles. It is essential to limit the use of these shelves to improve the ventilation system and optimize space. They should also have slots to provide better ventilation.

Telescopic Shelves: Care must be taken when using telescopic shelves to avoid the risk of the cabinet tipping forward due to a lack of front support.

Vertical Channels: Install lateral vertical channels inside the cabinet to organize and secure cables, as well as to allow the vertical mounting of power strips. By installing a channel on each side, you can dedicate one channel for the power network and the other for structured cabling, facilitating the management and separation of different types of cables.

Power Strips: Preferably use vertically mounted power strips to optimize space management, always powered by stabilized current.

Cable Fixing: Use Velcro tape instead of serrated cable ties to avoid cable deformation and ensure a softer, adjustable fixation.

Fiber Optic Panels: Install fiber optic panels out of visual range, preferably at the top of the cabinet, to avoid eye accidents.

Panel Distribution: Place static panels (operators and vertical backbone distribution) at the top of the cabinet, followed by horizontal distribution panels.

Horizontal Organizers Application: Provide a cable guide for each connection panel. In the case of a 19” 48-port switch, apply a cable guide for every 24 ports, one at the top of the switch and another at the bottom.

Types of Horizontal Organizers: There are several solutions for horizontal organizers, including models with brushes, rings, covers, and in 1U or 2U formats.

Ring Cable Guides: These are the most common and are designed to guide patch cords from the side of the cabinet to the connection point on the equipment or panel. They should have flexible rings to adapt to the density of the patch cords, avoiding tightness and deformation.

Brush Cable Guides: These are more suitable for routing patch cords to internal connections in the cabinet, such as connections to servers.

Cable Guides with Covers: These are usually used for aesthetic purposes. They offer additional coverage that can hide disorganization but may be less practical for frequent maintenance.

In conclusion, replacing a rack can be highly challenging and may lead to temporary network downtime. Therefore, selecting the right rack is crucial to minimize the need for replacements and ensure continuous operational efficiency.