RACK MUSTHAVES

CONSIDERATIONS WHEN
CHOOSING A RACK

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Rack musthaves

1. RACK APPLICATION

What is the intention for the use of the rack? Small footprint & high rack for colocation, 800mm wide rack for cable & power management convenience. Pay extra attention to rack and floor loading specifications. High racks on small footprints are efficient for m^2 usage but can be a challenge for floor loading and equipment access. Wider racks provide much better options for cable management and Power Distribution Units (PDU) installation. Generally spoken, data centres use (high density) server racks, (high density) network racks and colocation racks. Having the ability to seamlessly use them together by means of have having the same basic platform has value when it comes to standardisation, aesthetics and integration with other systems.

POWER DISTRIBUTION UNITS (PDU)
Power is an operationally critical component of any server room and any data centre. Even the slightest interruption to the power supply can have a huge impact. Power & Connectivity solutions make it possible to manage the risks of power outages.

2. EASY TRANSPORT AND INSTALLATION

Use reusable/ temporary transport casters to move your rack from the data centres loading dock onto the data floor. Doors should be able to be opened 180 degrees or more to provide proper access during the installation of IT equipment. It is also quite convenient if it is possible to temporarily take off the doors without the use of tools.

THE CORRECT AIRFLOW OPTIMISATION ACCESSORIES WILL CREATE AN ENERGY-EFFICIENT SOLUTION

Studies by Minkels have shown that using the right airflow optimisation accessories can result in massive reductions in energy consumption. Based on this research, Minkels has developed accessories that provide the concrete answers t specific airflow optimisation requirements. More information on this subject can be found in Minkels' white paper 04,'Rack Airflow Optimisation', which is available through the Minkels website:

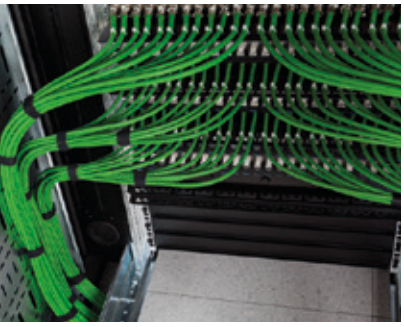
www.minkels.com/whitepapers

3. AIRFLOW MANAGEMENT STRATEGY

Cable entry foam for airtight cable entry. Airtight accessories create energy savings because they prevent air leaks.

Rack airflow management is a substantial contributor to data centre energy efficiency and the ability for proper cooling control (especially in case of low airspeed systems like most new data centres use). This includes the prevention of air losses in the 19"-racks as well as aligning the room/row/rack cooling principles to the rack specifications (open, closed & hybrid loop, VED, etc).
Use appropriate accessories to manage this topic efficiently.

4. CABLE MANAGEMENT



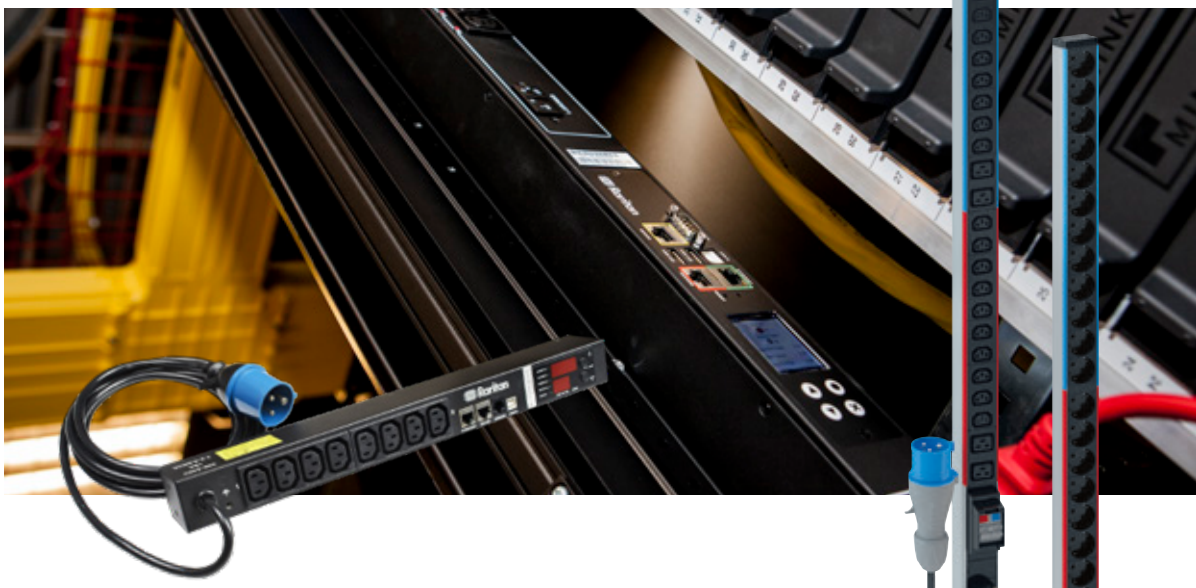
The network is the heart of the IT-infrastructure. Proper cable management provides better performance, serviceability, reliability and airflow management. Using the right accessories for copper and fibre cabling is essential. Especially >CAT 6 copper & fibre is sensitive for sharp bends and minimum bend radius shouldn't be violated. Use modular cable ducts with dividers on top of the rack to manage top of rack cabling smartly.

5. RACK ENVIRONMENTAL MONITORING

A very high uptime is one of the main features demanded of an IT-infrastructure. The ideal would be a computer system which has an availability of a hundred percent, and thus is up 24 hours a day. However, experience shows that this is not a realistic availability, with ninety-nine percent availability a more achievable result. Failures in computer systems and networks can cripple your organization. For this reason, understanding what happens inside your rack by adding temperature, humidity and airflow sensors enlarges the ability to manage your data centres properly and provide optimal conditions for your precious IT-equipment. Link this information to your DCIM tool will further enhance data centres management capabilities.

6. SECURITY

It is essential to provide proper access management to your valuable servers and IT-equipment as well as access to data (eg protection of USB ports to prevent unwanted interaction with your equipment) by adding the right level of security to the racks. This includes front and rear door access as well as cross cabinet access (use of divider panels between racks) and the side of the cabinet (side panel locking). Choose electronic access control systems for managed security, optimal results? (highest level of security) and compliancy?



7. POWER DISTRIBUTION

Choose proper position in the rack to install PDU's in relation to PDU power lead cable management, angle and position of the outlets, potential obstructions of airflow, server power lead cable management and access to components in case of servicing, reading display, etc. Use the PDU must have tool to better understand how to select PDU's properly (link)

"Where IT meets Facility"

8. INTEGRATION AND CUSTOMISATION

Inside the equipment racks all facilities come together in a very small volume: hot & cold air flows, power, network, fire suppression & detection, security, monitoring, etc. For an optimal result, it is critical that all these elements are properly integrated in the rack by using the right products and accessories. Since all situations are different, is has great value to have the ability to combine standard components and accessories into a customer specific specification and single SKU. Mass Customization is an excellent way to achieve this.

INTEGRATION OF AISLE CONTAINMENT WITH FIRE SUPPRESSION SYSTEMS

The Minkels White paper 05, Integration of aisle containment with Fire Suppression Systems, is one in a series of White papers sharing valuable data centre knowledge on managerial and technical levels. The White paper is available through the Minkels website:

www.minkels.com/whitepapers

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