

Trends towards consolidation and higher-density computing configurations make the problem of heat management one of the critical challenges in emerging data centers. Conventional approaches to addressing this problem have focused at the facilities level to develop new cooling technologies or optimize the delivery of cooling.

The last few years have seen a dramatic increase in the number, size, and uses of data centers. Large data centers contain up to tens of thousands of servers and support hundreds or thousands of users. For such data centers, in addition to traditional IT infrastructure issues, designers increasingly need to deal with issues of power consumption, heat dissipation, and cooling provisioning.

Challenges

Rack weight to static Load Capacity- Deploy more servers in Rack As datacenter floor has limiting factor weight per Square Meter

Enhancing the Cooling of mission critical equipment by honeycomb perforated doors and Thermal Sealing to minimize hot air cool air mixing.

Rack manufacture to work in tandem with PAC to decide the on Rack and corridor solution Power availability at Rack - To deploy more servers / Equipment in rack

Benefits

Decrease cooling cost. 20% - 40% Big savings in cooling costs.

Increase hardware reliability and Higher MTBF

Decrease response times to transients and emergencies.

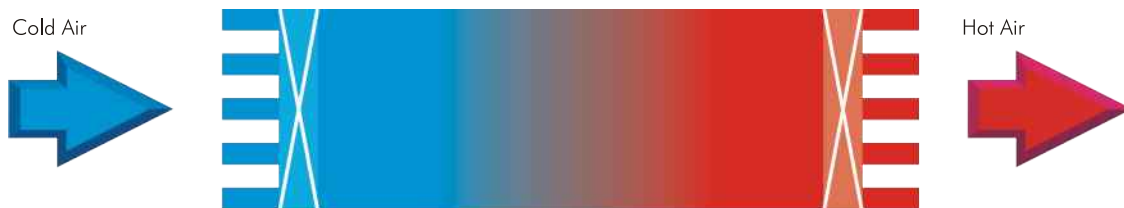
Increase compaction and improve operational efficiencies.

NetRack Products

- High Density Racks
- Thermal Management & Enhanced Cooling
- Rack Security & Remote Monitoring
- Climate Monitoring.
- Grounding & Bonding Solutions
- Rack Power Solutions.
- KVM & Console Solutions.

Introduction

The Servers and Equipments used in Data Centre and Server Rooms generates Lot of Heat and when these equipments are housed in the rack, manufacturer has to provide the system to take out the hot air and allow more cool air to enter front side of the Racks.



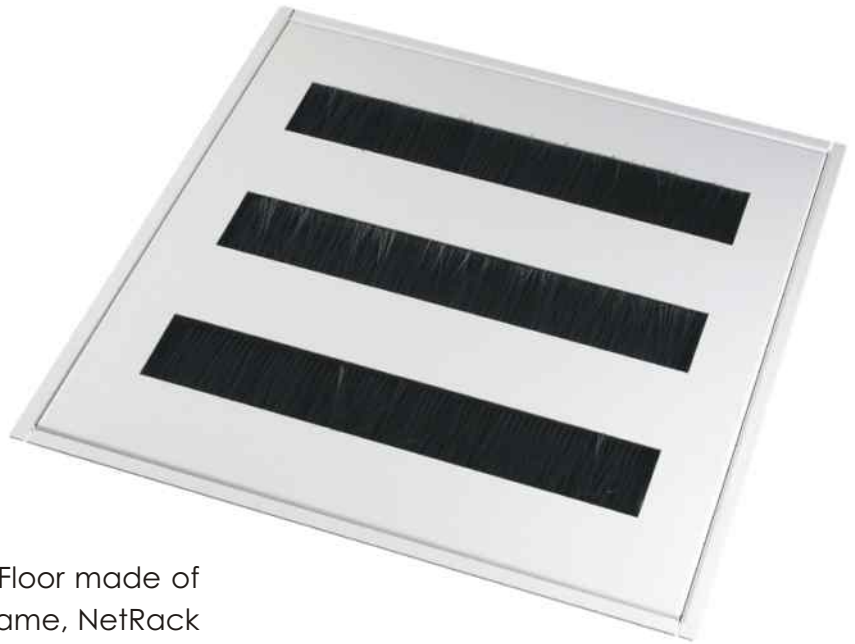
As explained in above drawing, The Servers and equipments will breathe Cool air from Front side and exhaust from the back side this forced cooling happens through suction (Front) and exhaust (Back) fans provided inside the Server / Equipments by OEM The air acts as a heat transfer media to take out the heat from the internal components to the outside of the equipment.

We at NetRack constantly working on increasing the cool air flow inside the rack and exhaust the hot air and we have come out with below solutions to meet various site conditions and requirements.

NetRack Understands challenges in high-density computing as this increase heat in the rack and Data Centre NetRack Thermal management Solutions are designed to handle large heat generated by IT equipments and Servers, by improving airflow in the racks and also prevent mixing of Cool and Hot air and ensures that your mission critical equipment runs cool with more reliability with an increased MTBF, saving energy costs and capital cost on the AC plant.

The Ready Accessories and Solutions are,

- a. Brush Tie,
- b. Brush window Module for Side Panels
- c. Air seal Kit
- d. Front Filler Panels
- e. Enhanced Rack Cooling
- f. Hot & Cold Corridors.



Brush Tile

Today as a Standard all Raised Floor made of 2x2 Feet Tiles installed on Grid Frame, NetRack offer Ready to use Brush Tile 2x2 feet has 75x450-3 No cutout with High quality Nylon high density Brush to reduce cold air leakage. Tile can be swapped with existing conventional tile at required area to get below advantages -

- Reduces Cold air leakages.
- Eliminates Pollution during tile cutting.
- Eliminate Cable damages due to bad Tile cutting.
- Easiness of relocation the tile.

Air-seal Kit & Filler Panel

This will minimize hot & cold air Mixing / short circuit and divert the air to enter mission critical equipments. This will be critical accessory for datacenter Racks to increase the efficiency of Thermal management.

Air-seal Kit will cover front sides and Top. The filler panels will cover the front side unused equipment mounting area.

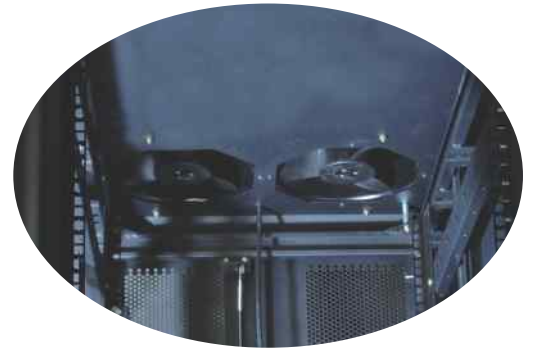
OVERVIEW

To increase cold air entry from front side and exhaust Hot air in back side rack NetRack Offers, Inlet Blower Module, Roof Blower Module and Back Door Blower Modules

Inlet Blower module will be installed in front Bottom side of Rack available up to 600 CFM This will push Cold air in to the rack and will be associated with Front Glass Door, Air seal kit, Front filler Panels, with back Door and roof enhanced cooling based on Heat Load on The Rack.



Roof Blower module will be installed in Top back side of racks available 400 to 1300 CFM with optional Duct, This will exhaust hot air from rack and will be associated with Front perforated Door, Air seal kit, Front Filler Panels, with back door enhanced cooling, based on Heat Load on The Rack



Divertor.



Back Door Blower module will be installed Back Door with Divertor. Available 720 to 1950 CFM. this will exhaust hot air from Backside of rack and will be associated with front perforated Door, Air seal kit, Front Filler panels, with Roof Blower Module, based on Heat Load on the Rack.

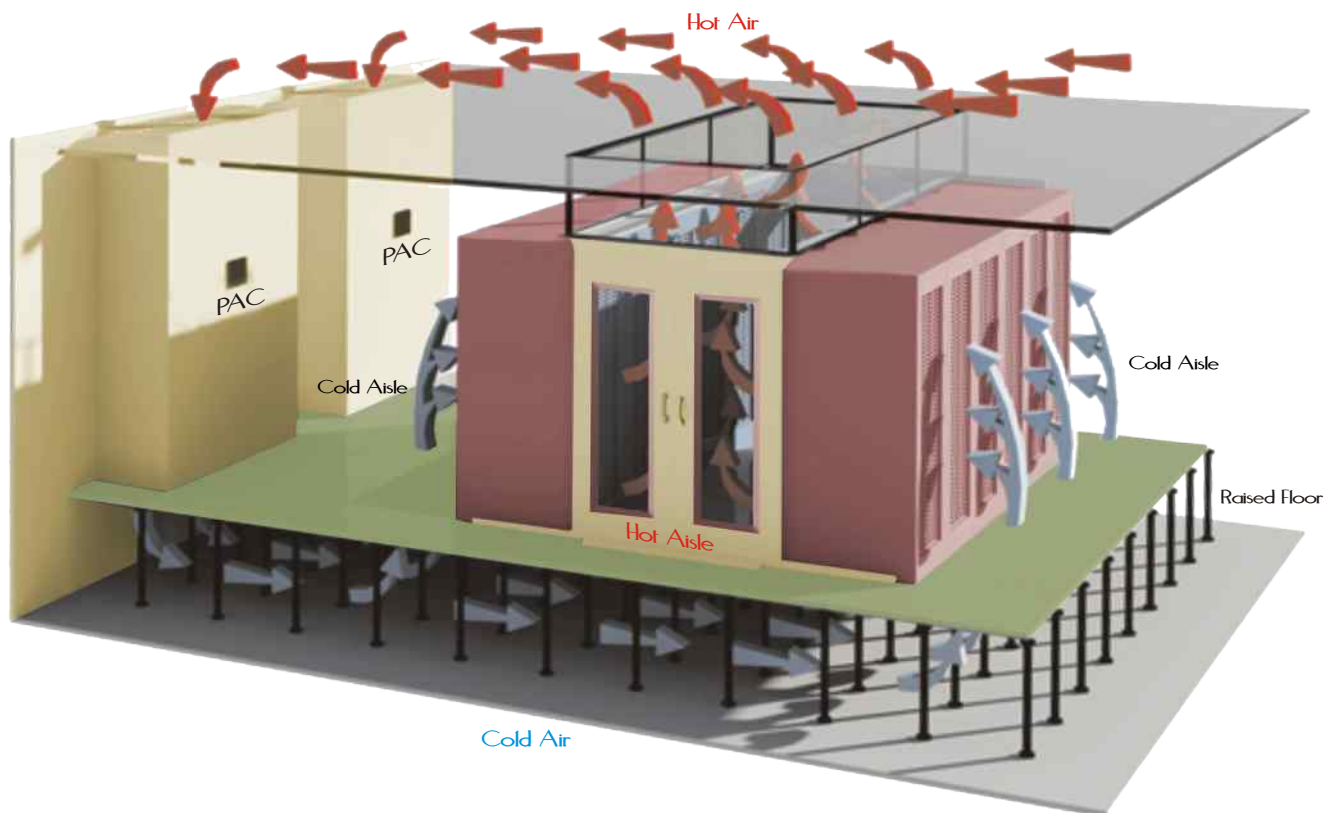
Back Door with Blower Module/1440 CFM/Divertor

OVERVIEW

The Corridor concept is based on the principle of separation of hot and cold airflows thus preventing any 'short-circuiting' between hot and cold air. Which leads to significant efficiency improvements. This is achieved by enclosing the Both ends of the Cold aisle are closed using doors for cold air Contentment. In addition all cabinets are fitted with plinth, Rack Side Thermal Sealing and blanking panels between the equipment, in this way the only route for the Cold air is through the equipment.

The advantages are quite clear - the temperature between the bottom and top of the rack is now more constant. Reduction in Hot & Cold air Mixing

Concept of Hot Air Corridor



NETRACK™