Aisle Containment Solutions

Effective Cooling For High Density Server Installations

Aisle Containment is a popular way of cooling high density server installations.

Aisle containment can work in two ways: Cold Aisle Containment where the cold aisle of a data centre is enclosed, so containing the cold air and preventing it from mixing or, Hot Aisle Containment where the hot aisle is enclosed and the hot exhaust air is directed back to the CRAC units.

Our aisle containment solution is flexible enough to accommodate both methods. This is because, unlike many other systems, our aisle containment is retrofittable and can be fitted to existing rows of cabinets.

Features & Benefits of Aisle Containment

- An aisle containment system that is non-intrusive, bespoke, and retrofitting.
- Retrofits to existing cabinets no matter what their height, width or manufacturer.
- Aisle containment prevents mixing of cold air and hot exhaust air.
- Increasing the temperature of CRAC units by 1°C, provides a typical saving in the region of 8% of cooling power bills.
- Power savings on room hardware (servers, switches, routers, etc.).
- Better control of room temperatures, humidity, airflow and balancing.
- Improved U space utilisation.
- Reduces the building's carbon emissions, improving eco-friendly status.
- Self closing doors with the option to keep aisle entry at floor level clear of obstruction.
- Top and bottom door guide system ensures smooth running while maintaining door rigidity when closed.
- Provides a cost effective solution without reduction in quality.
- Custom built solution with infill panels for future rack expansion, roof panel options for various types of fire suppression and automated doors for greater security and aisle management.

Cold Aisle Containment (CAC)

Our Cold Aisle Containment retrofits to existing cabinets, with infill panels custom made to enclose any differences in rack heights or to surround obstacles such as pipe work or pillars.

CAC Features & Benefits

- With cold aisle containment cost savings of up to 30% can be made on the current operational cost of building cooling systems supporting data centres.
- Lightweight roof panels are easily demounted for maintenance access to the top of a cabinet.
- Roof panels also have a high light transmission.
- Tailor-made centre roof support bracket with a choice of fire protection options:
  - Fusible link mechanism allows the release of the roof panels at 58°C allowing fire suppression access to the source of the combustion.
  - Gas fire protection system where roof panels feature a rubber seal to prevent gas leakage.
  - Electronic release system that can be integrated into the existing fire suppression control system.

Infill Panels

Infill panels provide extra flexibility and can be used to fill gaps caused by different height racks, provide space for future rack expansion, surround obstacles such as pipe work or pillars, or use perspex infills to create supporting walls.
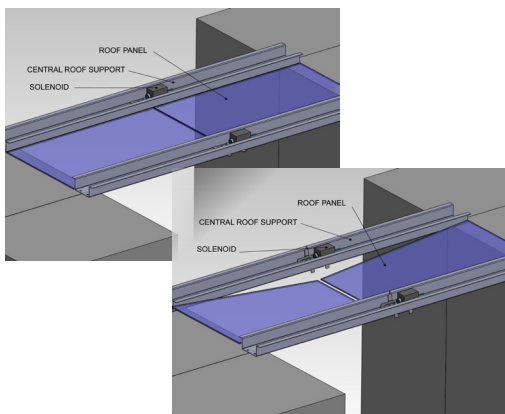

Blanking space from different height racks.

Removable panels for future rack expansion.

Create an aisle with Perspex infill panels

Electronic Roof Release System

The option of an electronic roof release offers the following features & benefits:

- It can be used with both gas and water based fire suppression systems.
- The system can be integrated into the existing fire suppression control system or operated in a stand-alone mode, for ease of integration.
- The roof release is controlled by a solenoid mechanism and comes complete with a power supply.
- Zero power consumption under normal operating conditions, and just 18 watts of power required to release panels.
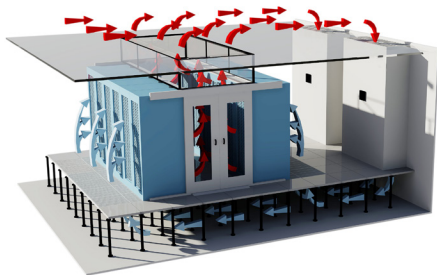
Hot Aisle Containment (HAC)

Hot Aisle Containment encloses the hot aisle and directs the hot exhaust air back to the intakes of the cooling system. HAC has several benefits:

HAC Features & Benefits

- HAC systems are not dependant on the data centre having a raised floor.
- They provide a higher thermal mass which is returned to the cooling system making it operate more efficiently.
- As the hot aisle is contained the operating room temperature is more comfortable.
- As the entire room is filled with cold air there is more volume of air available for cooling equipment.

Hot Aisle Containment with Return Plenum

Hot Aisle Containment with a return plenum utilises a ceiling plenum as a return air path back to the room's CRAC units.

- The hot aisle is enclosed with doors at each end.
- A 'chimney' system extends from the hot aisle up to the ceiling plenum.
- Drop boxes are placed on top of the air handler units up to the ceiling allowing the hot air to be sucked back to the unit for processing.
- Cold air is re-circulated under the floor back to the cold aisles.
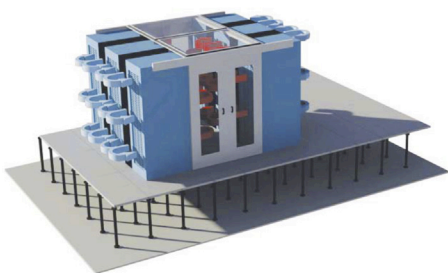
Hot Aisle Containment with In-Row Cooling

Hot Aisle Containment is deployed with in-row cooling system within the aisle.

- The hot aisle is enclosed with doors at each end and with roof panels.
- The hot air is cooled through the in-row coolers and re-circulated back into the general data centre environment.

End of Aisle Doors

One of the core features of our aisle containment solution is the quality and flexibility of the end of aisle doors, which are designed to offer an enhanced user experience and low maintenance.

Sliding or Swing End of Aisle Doors

As a retro-fitting aisle containment solution we are able to offer different end of aisle door styles for maximum solution flexibility. Sliding aisle doors use a high quality damper mechanism that allows the doors to operate smoothly and glide gently to a close. This means that the sliding aisle doors are far less likely to be wedged open and thus allow the cold and hot air to mix. Both types of doors are self-closing and helps ensure that the doors are not left open; this increases the effectiveness of the properties of the contained aisle.

Clear Pathway

By using a superior door running mechanism, it means there are no floor obstructions to the entrance of the aisle containment. This allows easy access for server lifts and reduces trip hazards.

Clear Polycarbonate Door Panel

Using a good sized window in the door allows maximum light into the cold aisle and helps create a light airy environment in which to work.

Door Security Options

There are a variety of choices available for securing the aisle and controlling access to it. This can be via keypad, swipe card, or simple lock and key. Keypad security provides a neat security solution offering a variety of benefits including: helping to protect the servers from unauthorised access, enables access to be monitored and gives an additional level of central control.

Bespoke Door Sizing

Allows the space available for entering and exiting the aisle to be maximised, even utilising the whole space.

Manual or Motorised Door Operation

For ease of access to the aisle containment a choice of manual or motorised door operation methods is available to suit traffic levels and personal preference.

Door Rigidity

Our aisle containment doors are built on quality and usability. We believe that aisle containment doors should not be 'flimsy', so where necessary we use strengthened metal to ensure rigid doors.

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