



CLIMAVENETA AISLE CONTAINMENT

Aisle Containment solutions for high density applications

SYSTEM

In modern high density data centers, an advanced containment system is essential in order to provide physical separation of hot and cold air streams and keep the highest energy efficiency inside the environment.

This undesired mix of two airflows with different air temperatures leads to a great loss of efficiency inside the data center, resulting in a strong decrease in the PUE values. It is therefore necessary to avoid such a dangerous situation.

This is achieved by using the 'Climaveneta Aisle Containment System', a structure made of modular and scalable panels that physically contain the airflows, thus preventing hot and cold air mixing. It is a simple and effective solution that guarantees the servers will only be fed with the cold air required by the server, eliminating energy waste and making the cooling system more efficient.

Configurations

The CLIMAVENETA AISLE CONTAINMENT SYSTEM is available in two different configurations aimed at containing both the hot and cold aisles:

- ✓ **Climaveneta Cold Aisle Containment system** provides strict control over the cold air feeding the servers.
- ✓ **Climaveneta Hot Aisle Containment system** confines and isolates the server's hot air discharge from the rest of the environment.

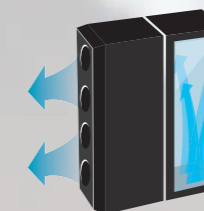
The choice of one solution over another greatly depends on several factors:
Environment dimensions, layout, loads trend, kind of air cooling system, redundancy.

Advantages



Enhanced efficiency

of the cooling system thanks to the complete separation of hot and cold air streams.



Flexible and easy installation

in high density data centers



Modular structure

for perfect integration in in-row racks (FLEX)

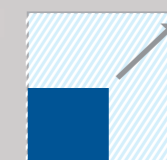


Perfect containment of hot and cold aisles



Reduced initial investment

(<CAPEX)



Easy expansion

in fast-changing data center environments



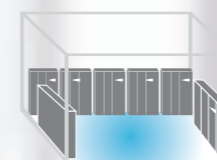
Easy and fast installation



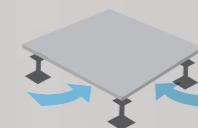
Perfect integration

with the most advanced cooling technologies:

- Inverter
- In row/Enclosure rack cooling
- Cooling door air conditioners

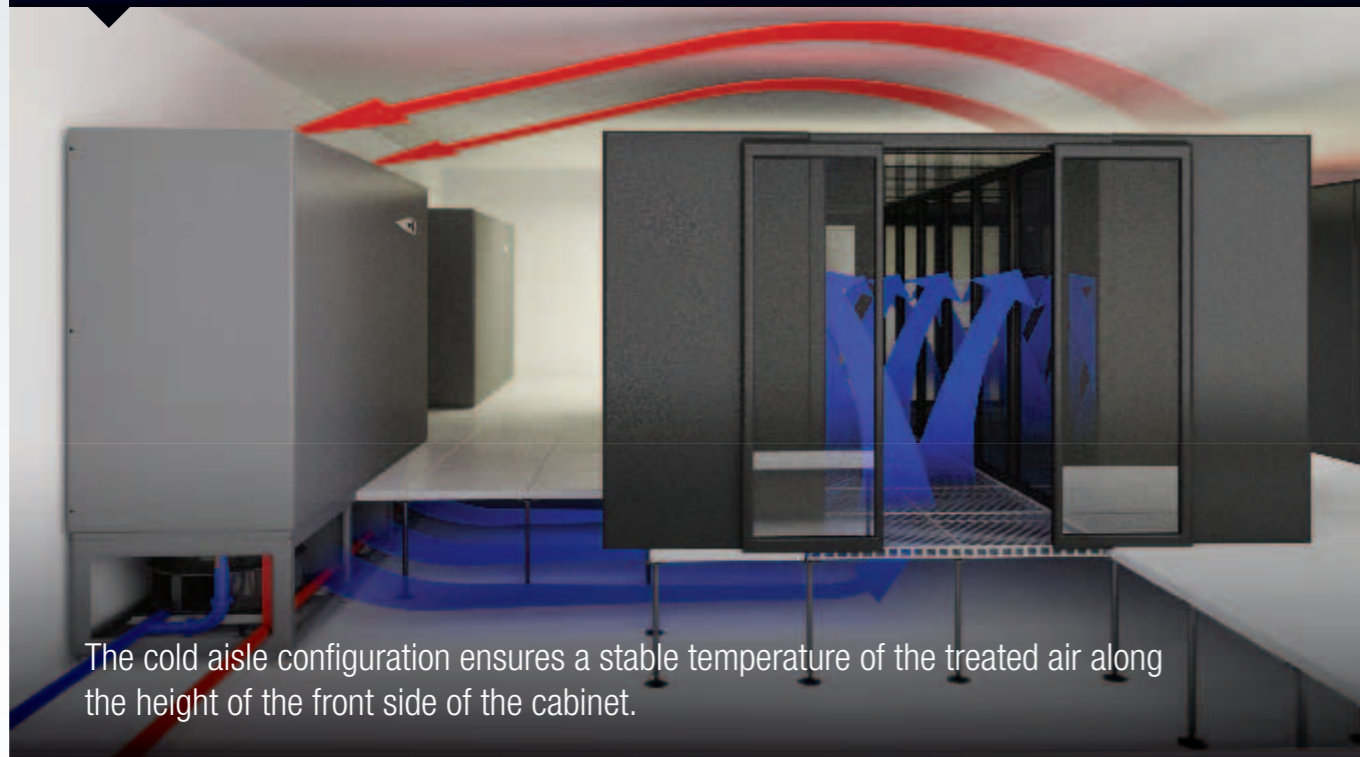


Space optimisation



Applications with or without raised floor

Cold Aisle Containment system



The cold aisle configuration ensures a stable temperature of the treated air along the height of the front side of the cabinet.

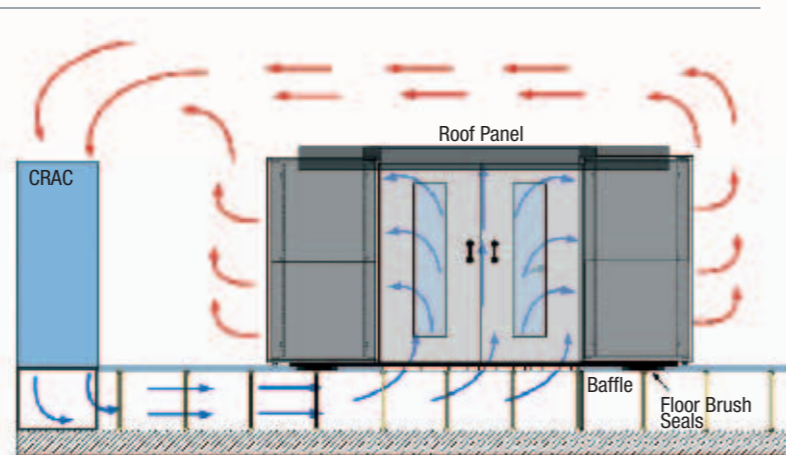
The cold air coming from the perimeter air conditioners is directed to the front of the rack through the raised floor. Thanks to the Climaveneta Containment System, the cold air is then contained into the cold aisle, avoiding any mixing between cold air and hot air. After that, the air that passes through the rack absorbs the servers' heat and is then released from the back of the rack and conducted to the perimeter air conditioners.

Well managed airflow and the control over the air temperature provide several advantages to the air conditioning system:

- Greater control over the airflows temperatures

Key features

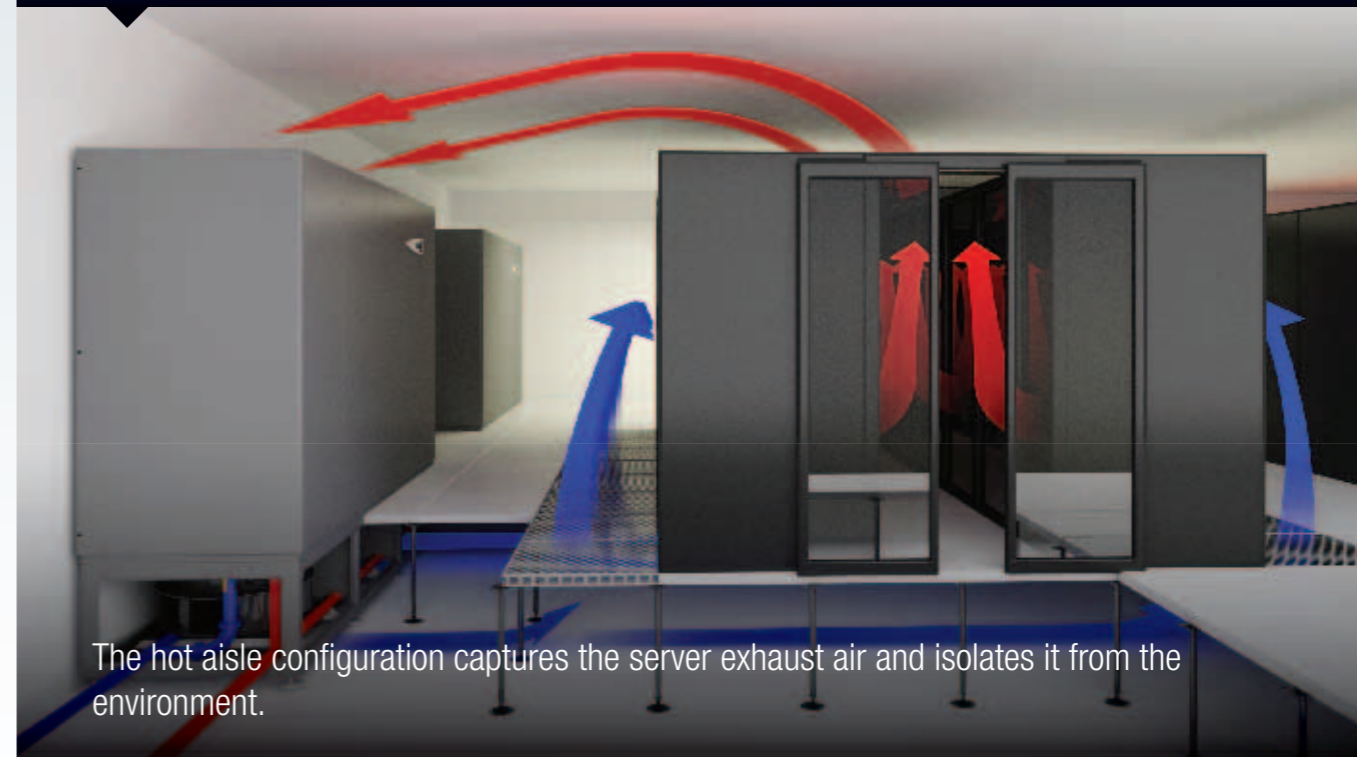
- Reduced load leakages
- Stable and uniform temperature levels at any height of the rack
- Higher thermal efficiency and reduced energy consumption
- Reduced space occupancy



- Up to 30% increased efficiency thanks to a larger temperature gap between inlet and outlet air
- Constant temperature on the front of the rack at any height, as the containment eliminates the normally existing thermal gradient.

Thanks to the Cold Air Containment System there is no chance for the hot exhaust air to mix with the cold inlet air. Therefore, the air needed to cool the servers is just inside the aisle, considerably increasing the system's efficiency.

Hot Aisle Containment system



The hot aisle configuration captures the server exhaust air and isolates it from the environment.

In the Hot Aisle Containment System, the hot airflow generated by IT devices is contained in a hot aisle.

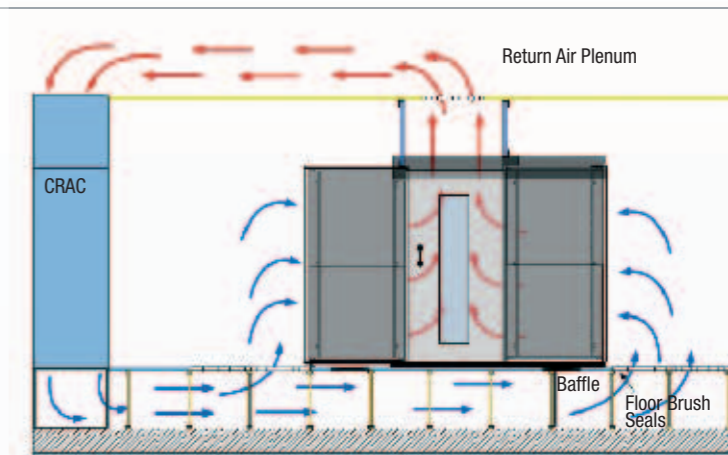
Cold air inside the rack becomes hot as it absorbs the heat from the server and is then ejected from the back of the rack. The Climaveneta Containment System encloses this hot exhaust air in the corridor, keeping it separate from airflows with different temperatures.

As a consequence, the difference between the air temperature in the corridor and the cooled air is high enough (>15 C) to ensure the greatest efficiency of the system.

The Climaveneta Hot Aisle Containment System is therefore the best solution to isolate hot air without compromising the environment's temperature, while maintaining high efficiency of the cooling system.

Key features

- Higher efficiency compared to traditional cooling systems
- Improved flexibility
- Zero contamination between airflows with different temperatures
- Perfect separation of the hot air stream from the rest of the room



Technical features



Polycarbonate transparent coverage

Special coverage made of polycarbonate transparent material that ensures perfect thermal insulation and conducts the light into the aisle.



Fairlead

- Maximum cable protection
- Easy inlet and organization of large quantities of cables
- Corner protection to provide optical cables with the correct angle
- Easy access and maintenance



Thermal insulation on the base

Applying plinths at the base of the cabinets makes it possible to isolate the aisle air from the environment air.



Safe and easy access

- Sliding doors with swing handle
- Door opening from the inside

Perfect integration with Climaveneta indoor air conditioners

A complete modular structure designed for the installation of high density racks and cooling door units.



CCD
Climaveneta
Cooling door
Chilled water air
conditioner, from
26 to 40 kW

CRC
Climaveneta
Rack cooler
Rack cooler air
conditioner
from 10 to 75 kW
CRCX: direct expansion version
CRCC: chilled water version
CRCD: dual fluid version
CRCF: free cooling version



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