

Cold Aisle Layout Diagram of Computer Room



Article Overview

Cold aisle design involves arranging server racks so that their fronts face each other, creating a corridor of cool air that is efficiently drawn into servers, improving cooling efficiency and reducing energy costs.

Overview of Cold Aisle Layout

In a cold aisle configuration, the fronts of server racks face each other, forming a corridor known as the cold aisle. Conditioned air is delivered into this aisle, typically through perforated floor tiles in raised floor systems or via overhead ducting, depending on the facility design. Servers draw in this cold air through their front intakes, absorb heat, and expel warm air from the back into the adjacent hot aisle. This separation of hot and cold air prevents mixing, which is critical for maintaining consistent server inlet temperatures and avoiding hotspots.

Cold Aisle Containment

Cold aisle containment (CAC) enhances the basic cold aisle layout by enclosing the cold aisle with physical barriers, such as doors, panels, or overhead covers, to prevent cold air from escaping and hot air from entering. This approach allows the room temperature to be slightly higher while still maintaining adequate cooling at the server intakes, improving overall energy efficiency. CAC can be implemented with or without raised floors and is suitable for retrofitting existing data centers. Studies have shown that cold aisle containment can reduce cooling-related energy costs by...

Article Content

Aug 30, 2025

How to Make the Right Choice? Comparison between the Enclosed Cold ...

Air Distribution Diagram of the Isolated Cold Aisle Air Distribution Diagram of the Isolated Hot Aisle 01 Prerequisites for

May 06, 2026

Hot aisle/cold aisle configuration. | Download Scientific Diagram

Download scientific diagram | Hot aisle/cold aisle configuration. from publication: Effect of under-floor blockages and perforated tile

Jun 28, 2026

Hot vs. Cold H

Hot aisle or cold aisle containment is a layout design for server racks and other computing data center. The aisle/cold aisle

Jul 10, 2026

Typical data center hot/cold aisles layout.

Download scientific diagram | Typical data center hot/cold aisles layout. from publication: A Novel Cloud-Based Service Robotics

May 08, 2026

What are hot and cold aisles in the data center?

In its simplest form, hot/cold aisle data center design involves lining up server racks in alternating rows, with cold air

Mar 06, 2026

Data Center Design: Hot Aisle & Cold Aisle – Length and Width ...

Efficient airflow management in data centers relies heavily on proper Hot Aisle and Cold Aisle configurations. To maintain thermal

Aug 23, 2025

Data Center Aisle Containment Systems | Profile IT Solutions

Explore 30 hot aisle, cold aisle, structural, door, roof, flexible containment and airflow-control products for data centers. Engineering

Dec 10, 2025

Diagram of cold aisle containment in the computer room.

Download scientific diagram | Diagram of cold aisle containment in the computer room. from publication: Cooling Technologies for

Feb 21, 2026

Hot and Cold Aisle | Effective Aisle Containment

The cold aisle containment data center embraces routes, via which cold air is supplied into server rooms. These are

Oct 01, 2025

Hot Aisle / Cold Aisle Cooling Explained

The hot aisle / cold aisle configuration conserves energy and lowers cooling costs by managing air flow. This is

Jan 11, 2026

Data Center Design: Hot Aisle & Cold Aisle – Length and Width ...

Proper aisle planning isn't just about airflow—it's about optimizing safety, serviceability, and system efficiency. By adhering to these

Feb 24, 2026

Utilize Containment/Enclosures

Containment refers to physical barriers used in a hot aisle/cold aisle layout that further eliminate the mixing of cold ("supply") air and

Oct 27, 2025

Hot aisle/Cold Aisle Layout | Download Scientific

Download scientific diagram | Hot aisle/Cold Aisle Layout from publication: Temperature Monitoring and

Oct 05, 2025

Cold and hot aisle construction in computer room

Cabinet layout in the computer room. (1) The cabinets are arranged face to face to form a cold aisle, and the air outlet is on the floor

Sep 07, 2025

Hot Aisle vs Cold Aisle in Data Centers: Technical Impact, ROI, and ...

What Are Hot Aisle / Cold Aisle Configurations? Data centers are ovens if left unmanaged. Hundreds, sometimes

Mar 17, 2026

Common Server Rack Configurations Explained | AMCO

This setup achieves optimal airflow, which prevents hot and cold air from mixing. Most enterprise data centers adopt this standard

Jul 23, 2026

Hot aisle/cold aisle configuration. | Download Scientific Diagram

The region where perforated tiles are placed is called cold aisle. On each side of cold aisle, computer racks are placed with their

May 26, 2026

Explore hot and cold aisle containment for your data center

However, this particular layout degraded a data center's cooling as warm exhaust air from one row blew into the

Dec 25, 2025

Hot aisle/cold aisle layout for data center racks

hot aisle separating the rear sides of the racks. As a result, the cold air flows from the outlets in the raised floor via the cold aisle

Nov 21, 2025

Server Room Layout for Optimal Airflow | Step-by-Step Guide

Follow Camali Corp's 6-step guide to design a server room layout that cuts cooling costs, boosts uptime, and

Oct 06, 2025

Hot and Cold Aisle Containment: What You Need to Know

Hot aisle containment systems isolate the hot aisle using a similar enclosure system to that of a cold aisle with a sealed

May 06, 2026

Cold Aisle Containment & Hot Aisle Containment

Executive Summary of Aisle Containment This article examines cold aisle containment and hot aisle containment (also known as

Jul 09, 2026

Maximizing Data Center Efficiency: Key Rack Alignments & Layouts

In this layout, server racks are arranged in alternating rows, with the fronts of servers facing each other (Cold Aisles)

Sep 04, 2025

Hot aisle/cold aisle layout for data center racks

In contrast, for hot aisle separation the CRAC units and the cold air outlets are separated from the data room via contain-ment.

Aug 20, 2025

Hot-aisle/cold-aisle configuration. | Download Scientific Diagram

In the current data centre layout, CRAC 6 is close to the cold-aisle causing the airflow to bypass the perforated tiles in aisle C, as

Jul 29, 2025

Typical Data Center HVAC Hot Aisle / Cold Aisle Layout

Download scientific diagram | Typical Data Center HVAC Hot Aisle / Cold Aisle Layout from publication: Report to Congress on

Sep 14, 2025

Aisle Containment Systems for Hot & Cold Aisle Solutions

Cool Shield Aisle containment solutions reduces server row temperatures in active data centers. Learn

May 31, 2026

Move to a Hot Aisle/Cold Aisle Layout

Hot aisle/cold aisle layout makes sense for the vast majority of new data centers or data center expansions. However, retrofitting an

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://khanimamboguesthouse.co.za>

Email: sales@khanimamboguesthouse.co.za

Phone: +27 64 852 1973

Address: Unit 7, Greenway Business Park, 8 Innovation Drive, Centurion, 0157, South Africa

This document is for informational purposes only. Specifications subject to change without notice.

