Modular Data Center Form

Overview

Modular data centers typically come in two types of form factors. The more common type, referred to as containerized data centers or portable modular data centers, fits data center equipment (servers, storage and networking equipment) into a, which is then transported to a desired location. Containerized data centers typically come outfitted with their own cooling systems. Cisco makes an example of this type of data center, called the Cisco Containerized Data Center.

Key Takeaways

Modular data centers come in several forms, including containerized units, prefabricated rooms, IT pods, and dedicated power and cooling modules.Containerized Modular Data Centers

These are self-contained units built within standard shipping containers or similar enclosures, designed for easy transport and rapid deployment. They typically include IT racks, cooling systems, power distribution units, UPS, and security features integrated into a single enclosure, making them ideal for edge computing or locations with limited space . Examples include Cisco Containerized Data Centers and Eaton's xModular systems .

Prefabricated Modular Rooms

These modular data centers are constructed from prefabricated components on-site, forming complete data halls or rooms. They allow for scalable expansion by adding additional modules as needed. Prefabricated rooms are often used in larger facilities or campuses where a more permanent structure is required, such as HP's modular data center halls .

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IT Pods

IT pods are smaller, pre-engineered units that house compute, storage, and networking equipment along with integrated power and cooling. They are designed for rapid deployment and scalability, often used in hyperscale or AI-ready environments. These pods can be combined to form larger modular systems .

Dedicated Power and Cooling Modules

Some modular data centers include standalone power and cooling blocks, which can be integrated with IT modules or existing infrastructure. These modules provide flexible capacity growth and allow for incremental expansion without disrupting ongoing operations .

Hybrid Modular Campuses

In large-scale deployments, modular components such as IT pods, prefabricated rooms, and power/cooling blocks can be combined within a conventionally built civil shell, creating a hybrid campus. This approach leverages factory-built quality and on-site integration for predictable performance and faster deployment .

Summary

Modular data centers are defined by pre-engineered, factory-tested construction rather than a single physical form. The main forms include containerized units, prefabricated rooms, IT pods, dedicated power/cooling modules, and hybrid campuses, each offering scalability, rapid deployment, and flexibility to meet diverse operational and environmental requirements .

Article Content

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The Complete Guide to Modular Data Centers

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Myth 1: Modular Data Centers Come in ISO Shipping Containers.Myth 2: Modular Data Centers Are only Used For Temporary Installations.Myth 3: Modular Data Centers Tend to Be More expensive.Myth 4: Modular Data Centers Are Less Secure fact, modular data centers have a prefabricated design that should last for years. They are designed for permanent installation, either inside an existing data center or adjacent to another building.See more on info.pcxcorp Mobile Modular

Modular Solutions for Data Center Campuses

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