



CSQUARE

# Colocation 101

A PRACTICAL  
GUIDE

# Table of Contents

- Introduction ..... 1
- What is Colocation?.....2
- Why Colocation?.....3
- How Colocation Works for You ..... 4
- Infrastructure Modernization: Cloud Recalibration and Hybrid IT .....5
- Case Study: InfoSec Powerhouse Cuts Costs and Complexity ..... 6
- Colocation 101 FAQs .....7
- Colocation 101 Terms..... 8
- Colocation You Can Count On..... 9



# Introduction

Infrastructure teams are under constant pressure to deliver more performance, scale, predictability, and real-time services. At the same time, they are likely managing on-premises environments and cloud-first strategies that are showing limitations in cost control, latency, and operational complexity.

Colocation provides a practical foundation for modernization. By placing infrastructure in a professionally operated colocation data center, organizations gain enterprise-grade power, cooling, security, and connectivity while maintaining control over their hardware. Colocation also acts as a stabilizing anchor for hybrid IT, helping teams modernize at the right pace and build infrastructure that's ready for what comes next.

This short guide explains what colocation is, how data centers work, what's inside them, and how to decide if colocation fits your digital infrastructure strategy.

# What is Colocation?

Colocation works like renting a secure home for your servers: you move them in, lock the door, and turn on the utilities that power your equipment and connect your data. Flexible options span shared or private dedicated space, allowing customers to scale from secure cabinets and cages to private suites as their infrastructure requirements grow.

Advanced colocation data centers support a wide range of use cases by offering:

- Cabinets, cages, or private suites
- Shared or dedicated power and cooling infrastructure
- Scalable power densities for standard and high-performance workloads
- Flexible to longer-term contract structures
- Support for hybrid IT environments of all sizes
- Secure, enterprise-grade facilities with carrier-neutral connectivity

This approach enables organizations to start small, expand efficiently, and modernize infrastructure at their own pace without changing providers or redesigning their architecture.

At their core, colocation data centers provide customers a stable, scalable environment to run critical infrastructure without the burden of owning and operating informal data rooms, floors of server rooms, or their own stand-alone facility.



## KEY TAKEAWAY

### You Provide

- Servers and storage
- Network switches and routers
- Operating systems and applications

### The Colocation Provider Delivers

- Redundant power and cooling
- Physical security and monitoring
- Carrier-neutral connectivity

# Why Colocation?

Colocation has become a practical modernization path for organizations seeking balance for on-premises systems and cloud services.

**Reliable Performance**

Consistent power, cooling, and connectivity support everyday business applications as well as demanding workloads like AI and high-performance compute as needs evolve.

**Predictable Costs**

Clear, stable pricing without surprise cloud fees or the expense of maintaining in-house infrastructure.

**Improved Security**

Professionally monitored facilities with controlled access to help protect sensitive systems and data.

**Simplified Compliance**

Purpose-built environments to align with regulatory and audit requirements more easily.

**Less to Manage**

Eliminates the burden of running server rooms, utilities, and physical infrastructure with limited IT staff.

**Direct Cloud Access**

Private on-ramp connections to major cloud providers improve performance and simplify hybrid setups.

**Room to Grow**

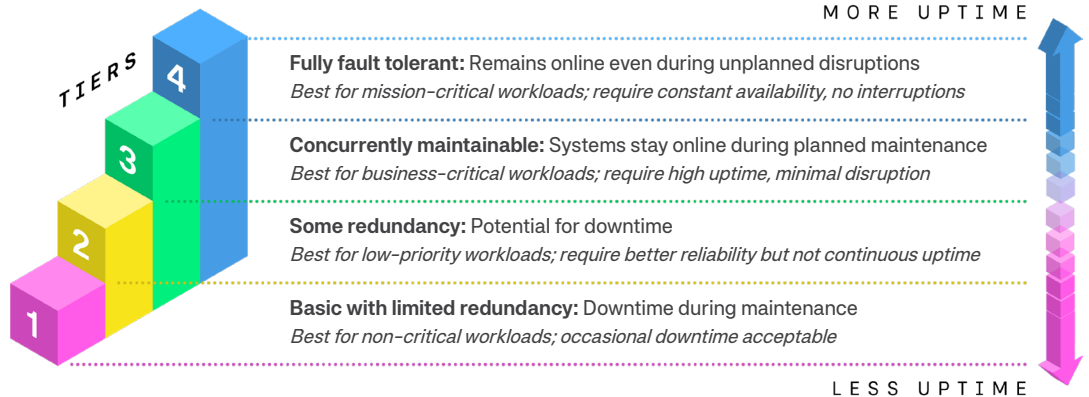
Capacity can scale over time without rebuilding environments or changing providers.

A colocation data center is built to keep IT systems running 24/7 and offers far greater consistency than an on-site server closet or data room. Colocation creates stability where it matters most, freeing IT teams from day-to-day infrastructure upkeep so they can focus on supporting the business.

## Colocation Data Center Tiers\*

*\*Based on the Uptime Institute Tier Classification System*

Data center tiers classify a facility's resilience during planned maintenance or unplanned service disruptions. Higher classification tiers mean less downtime and more consistent performance.



# How Colocation Works for You

1

## Physical Foundation: Dedicated Space

*Where your infrastructure lives and connects to the outside world*

- Secure cabinets, cages, or private suites
- Structured cabling for organized, scalable connections

2

## Resilient Power Systems

*How power is delivered and protected*

- Utility power feeds into facility
- UPS provides instant backup power
- Generators sustain longer outages
- PDUs distribute power to equipment

3

## Advanced Cooling Systems

*How heat is managed to maintain performance*

- Air handlers and chillers regulate temperature
- Hot aisle/cold aisle containment improves airflow efficiency
- Advanced liquid cooling supports high-density environments

4

## Network and Connectivity

*How data moves in and out of your environment*

- Multiple carrier options
- Direct cloud connections
- Redundant network paths

5

## Security Built into the Facility

*How your infrastructure is physically protected*

- Controlled access and surveillance
- Authentication systems (badge, biometric)
- Fire suppression and environmental controls

6

## On-site Operations and Support

*How the facility is managed day to day*

- 24/7 monitoring teams
- Remote hands support
- Installation and troubleshooting
- Secure shipping and receiving

7

## Monitoring and Visibility

*How systems and infrastructure are tracked in real time*

- Continuous system monitoring
- Alerts for anomalies
- Reporting for planning and audits

8

## Compliance and Audit Readiness

*How the facility meets regulatory and audit requirements*

- Industry certifications (SOC, ISO, PCI)
- Documented processes
- Controls supporting regulatory requirements

9

## Customer Management and Support

*How customers interact with and manage their environment*

- Customer portal for visibility and control
- 24/7 support teams
- Centralized request management

# Infrastructure Modernization: A Moving Target

Infrastructure modernization isn't a one-time project. It is an ongoing reality for most IT teams. Hardware ages, power and cooling limits emerge, data volumes grow, and performance expectations rise. At the same time, cloud costs become less predictable, security requirements evolve, and newer AI and inference workloads demand faster response times and more localized data paths.

For many organizations, keeping up with change in aging on-premises environments is challenging and resource intensive. Colocation brings stability by providing purpose-built data centers with consistent power, cooling, physical security, and operational controls that traditional server rooms struggle to support.

Most importantly, colocation enables modernization at a manageable pace. It supports upgrades and adaptation without rushed migrations, forced cloud moves, or added strain on already lean IT teams.

## Cloud Recalibration

### Finding the Right Balance

Infrastructure modernization often leads to a broader conversation about the role of cloud and where it delivers the most value. This has prompted many organizations to take a closer look at cloud-first approaches, especially as rising operational costs, latency challenges, and vendor lock-in prove that not every workload is a fit for public cloud.

Cloud recalibration reflects a shift to a cloud-right strategy that places each workload where it performs best and makes the most financial sense. In this approach:

- Colocation supports predictable, regulated, and performance-sensitive workloads that benefit from stable costs and consistent performance
- Cloud supports dynamic, elastic, or short-term workloads that require rapid scaling or flexibility

Used together, colocation and cloud create a more balanced and sustainable infrastructure model. This fusion improves cost control, performance consistency, and overall resilience, while giving IT teams greater flexibility to adapt as business needs change.

## Hybrid IT and Colocation

### Built for Real-World Operations

Hybrid IT has become the standard operating model because it reflects how most organizations actually run their environments. Workloads differ in performance needs, data locations vary, compliance requirements are inconsistent, and not every system changes at the same pace.

Colocation plays a central role in supporting this reality. It provides a neutral, stable environment that connects on-premises systems, cloud platforms, network providers, and edge locations. This shared foundation allows organizations to place workloads where they make the most sense now and adjust over time as needs change.

With colocation at the core of a hybrid IT environment, organizations benefit from controlled deployment, more predictable performance, and reduced operational risk. As importantly, it offers clearer visibility and control without forcing a one-size-fits-all approach to infrastructure or locking teams into a single platform.

# InfoSec Powerhouse Cuts Costs and Complexity

As this cloud-based security and IT solutions provider grew, so did the complexity of its infrastructure. The global company had expanded to 50+ data centers across regions and providers, each addressing short-term needs but resulting in a fragmented environment.

## Challenges

- Rising operational and management costs
- Inconsistent performance across environments
- Fragmented operations and vendor sprawl
- Limited support for high-performance workloads
- Aging, low-density infrastructure that made it harder to meet security, compliance, and performance demands

## Solution

What began as flexibility became difficult to manage at scale. Power, cooling, vendors, and deployments spread across dozens of sites and regions reduced visibility, control, and the ability to scale efficiently. To reset, the company partnered with Csquare to:

- Consolidate to 20 strategically located colocation data centers built to Tier III standards
- Standardize architecture across regions
- Modernize power and cooling for high-density workloads
- Strengthen physical security and operational controls
- Establish consistent global deployment practices
- Connect sites with diverse carriers, dark fiber, and cloud on-ramps

## Results

- 56% reduction in data center footprint
- Lower costs through standardization and optimized contracts
- Faster, more consistent deployments
- Reduced vendor risk and improved operational consistency
- Scalable foundation for next-generation workloads

## KEY TAKEAWAY

Infrastructure sprawl rarely happens all at once. It builds over time if there is not an overall strategy for scale and consistency. Planning early helps avoid unnecessary complexity, maintain visibility, and enable more controlled, efficient growth.



# Colocation 101 FAQs

## Who manages the equipment?

Customers own and manage their hardware, including operating systems and applications. The colocation provider manages the facility itself, including power, cooling, physical security, and day-to-day operations.

*Why this matters: You keep control over your infrastructure without carrying the burden of running the building.*

## Is colocation the same as cloud?

No. Colocation supports customer-owned infrastructure, while cloud provides shared, provider-managed resources. Colocation is often used alongside cloud as part of a hybrid or cloud-right strategy.

*Why this matters: Colocation gives predictable performance and cost for steady workloads, while cloud supports flexibility and scaling when needed.*

## Is colocation secure?

Yes. Colocation data centers are designed with multiple layers of physical security, including controlled access, monitoring, and audited operational processes.

*Why this matters: Many organizations gain stronger physical security and compliance support than they can achieve in office server rooms or private facilities.*

## Will this add operational complexity for my team?

No. While customers retain control of their systems, on-site staff, remote hands services, and customer support teams help reduce day-to-day operational burden.

*Why this matters: Colocation is designed to support lean IT teams, not create more work.*

## Can colocation support modernization?

Yes. Colocation enables incremental modernization by providing a stable environment for upgrades, migrations, and new workloads without forcing full re-platforming or downtime.

*Why this matters: Teams can modernize at their own pace instead of reacting to failing infrastructure or urgent cloud migrations.*

## How does colocation fit into a hybrid IT strategy?

Colocation acts as a stable foundation that connects on-premises systems, cloud platforms, and network providers, making it easier to place workloads where they perform best.

*Why this matters: It supports flexibility without forcing a one-size-fits-all infrastructure model.*

## Can colocation support edge computing and AI inference workloads?

Yes. Many colocation data centers are in central business districts and secondary markets, placing infrastructure closer to users and data sources. This proximity supports faster response times and predictable performance for edge computing and inference workloads without relying solely on distant cloud regions.

*Why this matters: Colocation operators with large footprints makes it easier to run real-time inference workloads closer to the users while maintaining control, security, and scalability.*

# Colocation 101 Terms

**Cabinet (Rack)**

Secured enclosure that holds servers, storage, and networking equipment. Cabinets are the primary unit of space in retail colocation environments.

**Cage**

Physically enclosed, secured area in a data center that houses multiple cabinets for a single customer.

**Carrier Neutral**

Allows customers to choose from multiple network service providers for flexibility, redundancy, and competitive pricing.

**Cloud On-Ramp**

A direct, private network connection to a public cloud provider for lower latency than internet-based connections.

**Cloud Recalibration**

Rethinking cloud usage and redistributing workloads across different environments to optimize cost, performance, and risk.

**Colocation (Colo)**

Renting space to place servers and equipment in a third-party data center.

**Cross Connect**

Physical or virtual connection that links customer equipment to a carrier, cloud provider, or service partner inside the data center.

**Edge Computing**

The practice of placing compute and storage resources closer to users or data sources to reduce latency and improve performance for real-time applications.

**Environmental Monitoring**

Systems that track temperature, humidity, airflow, and other conditions to protect IT equipment and maintain reliable operation.

**Hybrid Cloud**

Model that integrates private infrastructure (on-premises or private cloud) with public cloud, allowing workloads and data to move between environments.

**Hybrid IT**

Architecture that combines on-premises, colocation, cloud services, and edge environments to align workloads with performance, cost, and compliance needs.

**kW (Kilowatt)**

A unit measuring power use with colo pricing/capacity typically based on committed kW per cabinet.

**Meet Me Room (MMR)**

A secure area within a data center where networks, cloud providers, and customers interconnect through cross connects.

**MW (Megawatt)**

A unit equal to 1M watts, used to measure large-scale data center power capacity.

**On-Premises (On-Prem)**

IT systems hosted and managed in your own physical location.

**Physical Security**

Measures that protect facilities and equipment, including controlled access, surveillance, biometric authentication, and security personnel.

**Power Density**

Power delivered to IT equipment in a cabinet, measured in kW. Higher density supports demanding workloads like AI and analytics.

**Redundancy**

The use of backup components such as power feeds, cooling systems, or network paths for continued operation if a primary system fails.

**Remote Hands**

Onsite tech services by data center staff for customer tasks like installation, troubleshooting, and cable management.

**Uninterruptible****Power Supply (UPS)**

Battery backup system that provides instant power during outages, keeping IT running until generators or utility power resume.

**Uptime**

Percentage of time a data center or system is operational, often guaranteed by SLAs.

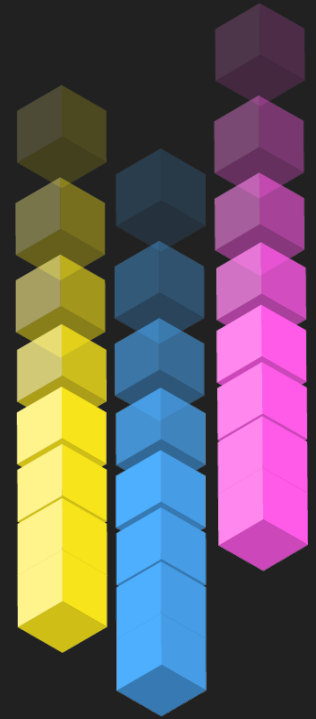
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# Colocation You Can Count On

Modern infrastructure strategies are no longer cloud or on-premises only. Hybrid IT is the operating model built for reality, and colocation provides the stable, high-performance foundation that makes it work.

Csquare helps organizations modernize infrastructure, rebalance cloud strategies, and build resilient hybrid environments without disruption.

Infrastructure decisions directly impact resilience, performance, and business outcomes. Csquare's advanced colocation data centers are built to support modernization and hybrid IT strategies over the long term.



## Hybrid IT-Ready

Supports mixed architectures, multi-cloud strategies, and workload mobility.

## Modernization Without Disruption

Stable, reliable environments that allow incremental change without forced migrations.

## High-Density and AI Capable

Facilities engineered for GPU-rich, high-performance workloads.

## Operational Excellence

Uptime, compliance, and performance stability are non-negotiable.

## High-Value Connectivity

Direct access to carriers, clouds, and partners.

## Partnership Approach

A collaborative model focused on long-term success, not one-time transactions.

Csquare operates 80 colocation data centers across 30 markets in North America and the UK. This footprint enables regional deployments, efficient interconnection, and capacity growth over time. Customers modernize with confidence knowing their infrastructure can scale alongside the business, backed by a 100% uptime guarantee. In September 2025, Csquare was named #11 on Data Centre Magazine's "Top 100 Data Centre Companies."

Learn more at [csquare.com](https://csquare.com).

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