

Construction period of a 500-square-meter IDC data center



AI Overview

A 500-square-meter IDC data center typically takes 12 to 18 months from planning to commissioning, depending on complexity, permitting, and infrastructure requirements.

Typical Timeline

For a medium-sized enterprise data center (1-5 MW capacity), the full construction process generally spans 12-18 months, including planning, design, permitting, construction, and commissioning. This timeline can vary based on factors such as local regulatory approvals, availability of power and fiber connectivity, and the complexity of cooling and backup systems.

Key Phases

- Planning and Feasibility (2-6 months)** Define capacity, purpose, and budget. Conduct site selection considering power, connectivity, and environmental risks. Perform feasibility studies for zoning, environmental impact, and cooling requirements.
- Design and Engineering (3-5 months)** Architectural and structural design of the building shell. Mechanical, electrical, and plumbing (MEP) systems planning, including UPS, generators, and precision cooling. Security and network infrastructure design.
- Permitting and Approvals (1-3 months)** Obtain local construction permits and environmental approvals. Delays in this phase can extend the overall timeline.
- Construction (6-9 months)** Site preparation, foundation, and building shell construction. Installation of electrical grounding, cabling, cooling systems, and security infrastructure. Interior fit-out for server racks, storage, and networking equipment.
- Commissioning and Testing (1-2 months)** Rigorous testing of power, cooling, and network systems. Quality control inspections to ensure reliability and uptime standards.

Factors Affecting Duration

Permitting delays or regulatory hurdles can add 3-6 months. Long-lead equipment such as UPS units, generators, and cooling systems may extend timelines. Modular or prefabricated designs can reduce construction time.

Article Content

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