

Data Center Commissioning

Data center commissioning is a structured verification and documentation process for mission-critical electrical, mechanical, controls and life-safety systems. It checks that systems within the agreed scope are planned, installed, tested and capable of operating in accordance with the Owner's Project Requirements (OPR), Basis of Design (BOD), approved project documents and applicable standards.

The service can combine independent Commissioning Authority (CxA) oversight with Commissioning Management led by a Commissioning Manager (CxM). Activities may include design and readiness reviews, Factory and Site Acceptance Test witnessing, functional testing, Integrated Systems Testing (IST), deficiency tracking, retesting and handover support. It is intended for hyperscalers, colocation providers, data center developers, owners, operators and other organizations delivering critical infrastructure.

Early involvement is recommended for new facilities, phased deployments, expansions and modernization projects because commissioning requirements, responsibilities, test methods and acceptance criteria can then be built into the project plan. Data center commissioning is part of Applus+ [data center infrastructure services](#), delivered independently across the facility lifecycle.



THE Applus+ SOLUTION

Effective data center commissioning provides documented evidence that critical systems perform against defined requirements before they support live IT loads. Early reviews identify design, installation, interface and documentation issues while corrective action is less disruptive and costly.

Functional and Integrated Systems Testing (IST) show how power, cooling, controls and life-safety systems respond during normal operation, maintenance configurations and credible failure scenarios. Deficiencies are logged, corrected and retested before



handover. This reduces unresolved issues, rework, schedule disruption and unplanned downtime while improving reliability, operational resilience and readiness. Commissioning also establishes a performance baseline and provides structured records for training, procedures and future maintenance. Without a coordinated process, tests may be incomplete, responsibilities unclear and system interactions unverified. These gaps can remain hidden until maintenance or a component failure exposes them during live operation.

Commissioning starts by defining the scope, roles, Owner's Project Requirements (OPR), Basis of Design (BOD), acceptance criteria, schedule and test documentation. The Commissioning Manager (CxM) coordinates the program, interfaces and readiness gates; where both roles are appointed, the Commissioning Authority (CxA) performs the agreed independent verification and reporting. During construction, installation and documentation readiness are reviewed before equipment is energized.

The verification sequence may include Factory Acceptance Tests (FAT), Site Acceptance Tests (SAT), equipment start-up, functional performance tests and Integrated Systems Testing (IST). Approved scripts state each action, expected result, safety control and responsible party. Results and deficiencies are recorded, corrective work is completed and affected tests are repeated. Compared with contractor self-checking alone, independent oversight provides a separate evidence trail against project requirements. Good practice is to appoint commissioning leadership early, involve operations personnel, test credible normal, maintenance and failure scenarios, and close documentation before handover. These activities align with recognised frameworks such as ASHRAE Guideline 0, Uptime Institute Tier Certification and ANSI/TIA-942.

Applus+ delivers data center commissioning as an independent, third-party provider, acting as Commissioning Authority (CxA) and Commissioning Manager (CxM) for mission-critical facilities. Our teams support hyperscale, colocation, enterprise and edge data centers, combining accredited testing and inspection with commissioning management.