

DATA CENTERS: TYPES AND TIERS:

According to the varied computing needs of the businesses they serve, data centers fall into two main categories: private (also called enterprise data centers) and public (also called Internet data centers). A private data center is one that is managed by the organization's own IT department, and provides the applications, storage, web-hosting, and e-business functions needed to maintain full operations. If an organization prefers to outsource these IT functions, then it turns to a public data center. Public data centers provide services ranging from equipment colocation to managed web-hosting. Clients typically access their data and applications via the Internet.

The more "mission critical" the application is, the more redundancy, robustness, and security required. Data centers can be classified by Tiers, with Tier 1 being the most basic and inexpensive, and Tier 4 being the most robust and costly. According to definitions from the Uptime Institute and TIA-942 (Telecommunications Infrastructure Standard for Data Centers), a Tier 1 data center is not required to have redundant power and cooling infrastructures. It needs only a lock for security and can tolerate up to 28.8 hours of downtime per year. In contrast, a Tier 4 data center must have redundant systems for power and cooling, with multiple distribution paths that are active and fault tolerant. Furthermore, access should be controlled with biometric readers and single-person entryways, gaseous fire suppression is required, the cabling infrastructure should have a redundant backbone, and the facility can permit no more than 0.4 hours of downtime per year.

Tier 1 or 2 is usually sufficient for enterprise data centers that primarily serve users within a corporation. Financial data centers are typically Tier 3 or 4 because they are critical to economic stability and, therefore, must meet higher standards set by federal regulatory bodies. Public data centers that provide disaster recovery / backup services are also built to higher standards.

References

1. Marlin, Steven. "Who Needs Cash?" *Information Week*. December 22, 2003.
2. Kolbasuk McGee, Marianne. "Collaborate and Conquer." *Healthcare Enterprise*. November 3, 2003.