Data collocation tiers

When a data collocation company talks about "tiers", they are referring to the different levels of reliability they can offer for your server maintenance and storage. This grading system ranges from Tier I to Tier IV, with IV being the topmost reliability in power, cooling and availability. Prices can rise significantly based on the tier level offered by a data center. A government's intelligence department would use Tier IV, however most companies can benefit fine from a Tier I or Tier II system and get the most for their buck. Choosing the right collocation center based on tier performance can differ according to the operational needs of a specific company. For VoIP telephone services, it would be more important to make sure servers aren't going down for a few hours at unexpected notice since customers are heavily involved. For others, a basic Tier I will meet business needs while maintaining an economical balance for return on investment.

Tier I

The Tier I system is the longest living data collocation design having been around since the 1960s. It offers one pathway with no redundancies, which are used in case the main power pathway fails. Floor height, which is important to prevent damage against floods and can determine the effectiveness of a cooling system, stands at about 12 inches. The weight capacity of the platform on which the server stands is about 85 pounds per square foot. Weight capacity is important when considering the chances of a collapse (if say, you live on the earthquake-prone West coast of North America). Yearly downtime is estimated to be about 29 hours due to site infrastructure deficiencies (which are inevitable). Costs can be about $450 per square foot a month.

Tier II

Tier II holds all the qualities of a Tier I system except that the main feature is its redundant component, providing an alternative power source in the event the main circuit supply fails. Floor height is at 18 inches instead of 12 and the weight capacity is at 100 pounds instead of 85. Downtime is calculated to be around 22 hours a year. A Tier II system can cost about $650 per square foot a month.

Tier III

Tier III is a level up from Tier II, only now you have multiple electrical delivery paths that act independently, with any given circuit providing power to the servers at a time. In other words, instead of having only one circuit delivering power to equipment, with a back-up plug in that 'sleeps' until needed, now you have separate circuits connecting to the multiple plug-ins located in the equipment for more reliability. Floor height jumps to anywhere between 30 to 36 inches and weight capacity increases to 150 pounds. Downtime dramatically decreases to just below 2 hours a year, but costs soar to $900 per square foot of construction. Major telecoms or non-vital government departments might usually opt for a Tier III system.

Tier IV

Finally, the ultimate in performance, the Tier IV system. This design has everything of the first three Tiers plus added layers of protection, using multiple redundancies for each piece of equipment. Basically, if one power hub goes out, let alone the circuits and plugs in involved at the lower electrical layers, another will take over. In extreme cases, there will be back-ups for back-ups. Floor height remains at 30 to 36 inches since anything higher will not affect security or cooling greatly and might, in fact, create dust-build up that can cause trouble for servers in the long run. The weight capacity can exceed 150 pounds, depending on the data center's specific infrastructure design. Downtime is at an all-time low of less than one hour per year, but costs are a hefty estimate of $1,100 per square foot a month or more.

As mentioned above, Tier I or, preferably Tier II systems will do fine for most business needs. It's only the big players that will need higher reliability and actually have the resources to finance investments in Tier III or Tier IV systems. Speaking with a data center's representatives about your server needs and their site infrastructure will help aid your decision greatly. Also keep in mind that the Tier system is only one of the many qualities to look for in selecting a data center to store your server. Other important factors not to be neglected are security, cooling, remote assistance and, of course, price.