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## Explain: Tier 1 / Tier 2 / Tier 3 / Tier 4 Data Center

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**Q.** What is data center tiers? What is tier 1 data center? Which tier / level is the best for maximum uptime?

**A.** Tier 1 to 4 data center is nothing but a standardized methodology used to define uptime of data center. This is useful for measuring:

- a) Data center performance
- b) Investment
- c) ROI (return on investment)



Tier 4 data center considered as **most robust and less prone** to failures. Tier 4 is designed to host mission critical servers and computer systems, with fully redundant subsystems (cooling, power, network links, storage etc) and compartmentalized security zones controlled by biometric access controls methods. Naturally, the simplest is a Tier 1 data center used by small business or shops.

- **Tier 1** = Non-redundant capacity components (single uplink and servers).
- **Tier 2** = Tier 1 + Redundant capacity components.
- **Tier 3** = Tier 1 + Tier 2 + Dual-powered equipments and multiple uplinks.
- **Tier 4** = Tier 1 + Tier 2 + Tier 3 + all components are fully fault-tolerant including uplinks, storage, chillers, HVAC systems, servers etc. Everything is dual-powered.

## Further recommended readings:

- [Uptime Institute](#) <sup>[2]</sup>
- [TIA-942 Data Center Standards Overview - 102264AE](#) <sup>[3]</sup>
- [Telecommunications Infrastructure Standard for Data Centers](#) <sup>[4]</sup>

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[1] Image: <http://www.cyberciti.biz/faq/faq/category/troubleshooting/>

[2] Uptime Institute: <http://uptimeinstitute.org/>

[3] TIA-942 Data Center Standards Overview - 102264AE: <http://www.adc.com/Library/Literature/102264AE.pdf>

[4] Telecommunications Infrastructure Standard for Data Centers:

[http://www.ieee802.org/802\\_tutorials/july03/tutorial\\_1\\_0703.pdf](http://www.ieee802.org/802_tutorials/july03/tutorial_1_0703.pdf)