How data centers and web hosting providers are interconnected — What you need to know
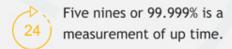
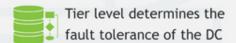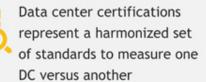# Why Data Center Infrastructure Is

Important

Whether a hosting provider is leasing space in a data center or owns their own data center, how that translates into their hosting packages and customer support are directly related as not all data centers are created equally.

Data Center

Five nines or 99.999% is a measurement of up time.

Tier level determines the fault tolerance of the DC

Data center certifications represent a harmonized set of standards to measure one DC versus another

Does your DC offer BGP routing, high speed Internet ports, A+B power or DDoS protection?

Hosting Provider

Does your provider offer a Service Level Agreement?

What are your hosting provider's upstream single points of failure?

Is your hosting provider able to offer packages based on standards like HIPPA

What are your website's download speeds and is your site safe from hacks and attacks?

ProlimeHost

Behind all successful hosting providers are top-of-the-line data centers

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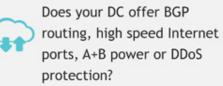
Data center variances

Of course, data centers come in a variety of dimensions. Some are built from the ground floor up and others are built out utilizing existing space, for example; 1st or 2nd floors, warehouses or such. Each implements their own security protocols, uses specific cooling schemes, and employs any number of monitoring alerts (fire, smoke and moisture).

What does five nines mean?

Five nines or 99.999% is a measurement of up time availability. Today's clients want their sites to always be online (no downtime), so this translates into a demand for reliability. Data centers infrastructures utilize very complex physical layers that have to cohesively integrate, for example: power and cooling. If a specific layer is deemed to be fault tolerant, this means that it could sustain a worst case, unplanned event – which doesn't affect the end user.

The different tier classifications of data centers

A tier rating is limited to the rating of the weakest subsystem that will impact their operations. Of the four tier classifications:

- Tier 1 lacks redundancy and has single distribution paths.
- Tier 2 is one step up, having redundant components, but still just a single distribution path.
- Tier 3 has both redundant components and more than one

distribution path, and

- Tier 4 is considered fault tolerant because it has uses redundant capacity systems and more than one distribution path simultaneously.

When you're considering which hosting provider to select, ask for their data center's tier classification or certifications.

Data center certifications

There exist a number of certifications that data centers can obtain, but here are but a few:

- Uptime Institute Tier Certifications – awards certifications in 65 countries around the world.
- [AICPA: SAS 70](#) – represents that a service organization has been through an in-depth examination of their control objectives and control activities, which often include controls over information technology and related processes.
- DCA Data Center Certification – is a harmonized set of standards that when applied to a data center identifies its energy efficiency strategy, resilience class, site physical security and operational professionalism.
- Telecommunications Industry Association: TIA 942 – represents the value chain of global communications networks through technology standards, policy advocacy, market intelligence, online media and networking events.

How to Choose a Hosting Provider Based on their Data Center Infrastructure

Some hosting providers will provide the names, addresses and specifications of the data centers they use or own while others do not. At minimum, all you need to do to become a hosting provider is purchase a shared hosting account and sell services on add on domains. Others start by leasing a VPS or dedicated server without ever knowing anything about their provider's infrastructure.

For informational sites where there's no real uptime demand, this does work, but there's no guarantee that host will be around next year or next week. What you need to do is balance the value of your business data against what your hosting provider offers, both in infrastructure, flexibility, reliability, professionalism, ethics and perception of value.

Determine which features are more beneficial to your business

Which attributes lead you to select one hosting provider over another? If it's strictly price, you may be disappointed down the line. Hosting providers need to turn a profit to be successful, to both maintain existing infrastructures and grow as their client base expands.

Not every feature that is advertised is relevant unless it solves a problem — providing a benefit of some sort or another. At the top of my list is professional, courteous customer support. As many hosting providers share a common thread of infrastructure and connectivity (to varying degrees), what differentiates one from the other?

If you need redundancy in distribution paths or if you need A/B power, ask before you buy. Make a list of what you absolutely must have versus what you'd like to have and filter out prospective hosting providers.

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