Hosting

Web Development
Foundations

About Hosting

Domain names are great at pointing at devices and web servers, but for this to be useful there does need to be a computer with software capable of accepting requests and sending responses. We call such a configuration a “hosting” solution. These are typically rented from “hosting providers.” Note there is a lot of overlap between domain registrars and hosting providers. As an example, GoDaddy is a domain registrar (you can reserve a domain through them) and a hosting provider (you can rent a web server or server space from them as well.)

Some popular types of hosting to be aware of include:

- Shared Hosting
- Virtual Private Server (VPS)
- Dedicated Server
- Cloud Hosting

Traditional Web Hosting

Shared Hosting

A shared hosting solution often offers a “folder” to each user on the server computer. The server computer’s resources are spread (sometimes rather thinly) across all of the websites on each server. There are sometimes additional security risks involved with this approach if the hosting provider does not do their due diligence.

Virtual Private Server (VPS)

Virtual Private Servers (VPSs) generally run virtual machines with specified resources. This enhances security, as each virtual instance is essentially an emulated computer, providing more separation between user accounts. One of the greatest advantages of a VPS compared to shared hosting environments, is that your resources are not shared with the other virtual machines on the computer. The idea being, if the host is offering you 2GB of RAM, your website or application should always have that available (opposed to it fluctuating with the use of your neighbours.)

Dedicated Server

For further control and stability than a VPS can offer, some opt for a Dedicated Server. This typically supplies you with a set of physical hardware that is dedicated to your website or application. This means better performance, security, and consistency than either of the above options. Note that this usually quite noticeably more expensive than the other options.

Cloud Hosting

Cloud Hosting

Cloud hosting is a bit different than the others, and depending on the company you're working with it may be handled a bit differently. Typically the resources are seen as more "dynamic." As the usage of your website increases, the host will automatically spin up more virtual machines or containers to offer more resources. Because of this, it is by far the most scalable solution.

Some of the most well-known providers of cloud hosting include: Amazon Web Services, Google Cloud, and Microsoft Azure. Note Microsoft Azure offers the easiest and most automated launch of .NET CORE applications.

Cloud Hosting Example

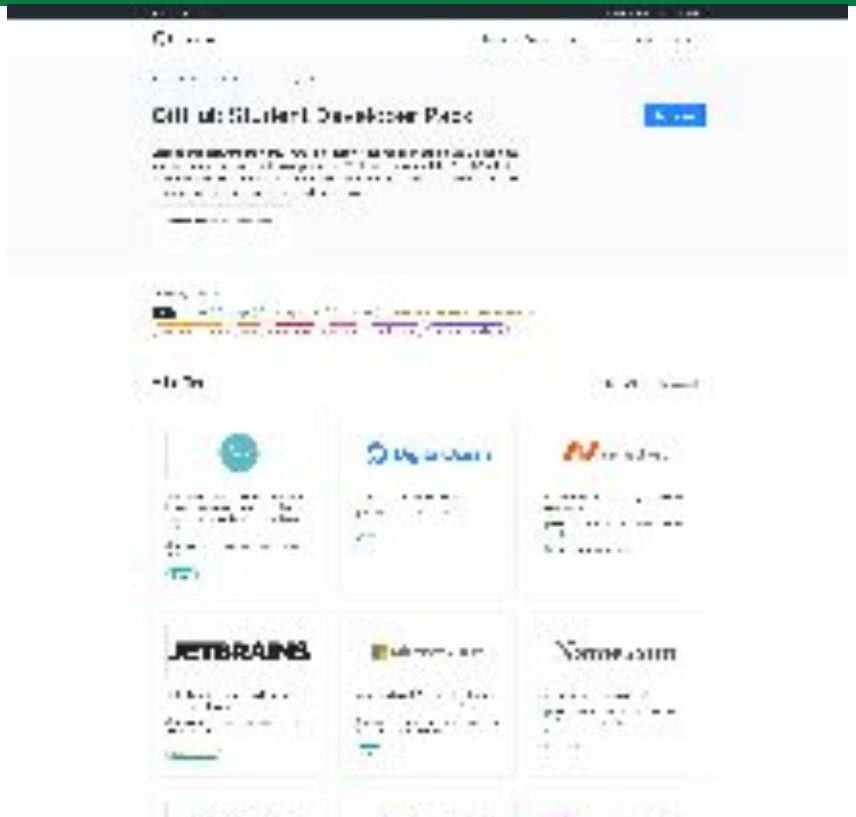
Let’s say you had a dedicated server that could support about fifty people using your website application at once. Much beyond that might result in users receiving a 500 server error, a timeout, or no response at all. In contrast, with cloud hosting, once you hit your limit additional machines and/or resources are afforded to your project. With increased resources, the additional users pose no problem and the end-users have a smooth experience.

With additional resources, however, comes an additional cost. Most companies will charge you an additional amount in accordance to your increased usage per payment period.

Resources

Hosting Resources

To find a number of amazing hosting discounts, trials, and resources it can be useful to check out the [GitHub Student Developer Pack](#)!



Recommended Readings

If you'd like a more in-depth look at hosting and configuration:

- Geewax, J. J. (September 2018). Google Cloud Platform in Action. Manning Publications.