Scaling with Commodity off the Shelf Hardware

This lesson covers scaling with commodity off the shelf hardware and its benefits.

We'll cover the following

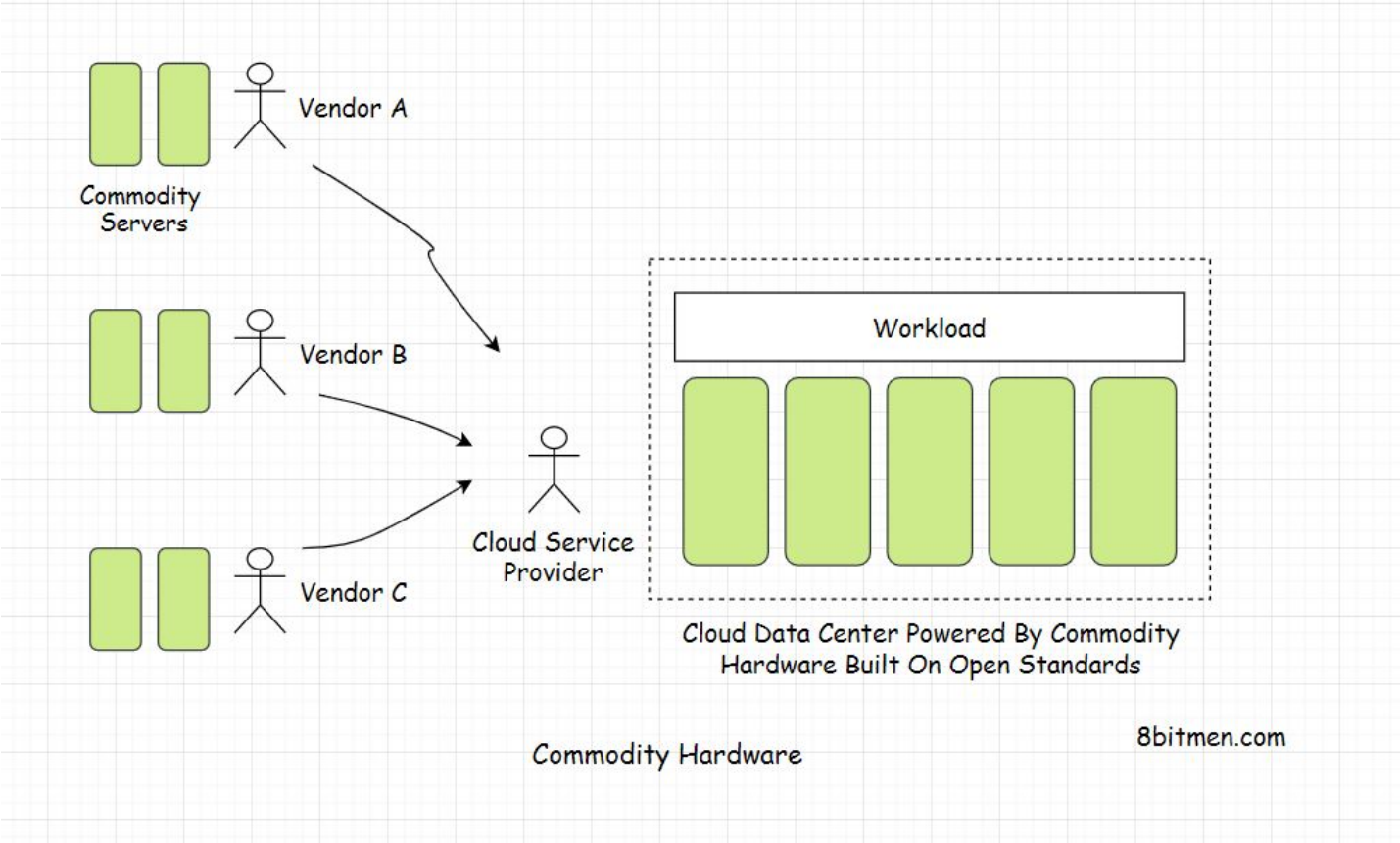
Scaling with commodity off the shelf hardware

Commodity hardware, also known as *commercially available off the shelf* hardware is a generic compute hardware that can be bought off the shelf of a computer hardware store and can be directly plugged into the infrastructure of a business to augment its computing power.

This type of hardware is not custom-made; it's generic in nature built on open standards. The upsides of building generic hardware on open compute standards are:

- To increase the availability of the hardware in the market
- To make it easily replaceable, facilitating its plug-and-play nature
- To have a hardware homogeneity in the infrastructure
- To keep the costs low
- To avoid any sort of hardware-specific vendor lock-in

Since the hardware is not custom-made, multiple vendors can manufacture the same product adhering to the open standards. This ensures the availability of the product in the market, and the business is not locked in with a vendor with regards to buying hardware for its data center from one particular vendor.



When using commodity hardware, if a business needs to augment its computing power it can just directly buy the hardware and plug it into its system without having to wait for any sort of manufacturing time of the hardware by the vendor. The use of commodity hardware enables businesses to augment their computing power in as little time as possible.

Also, commodity hardware is always cheaper to manufacture as opposed to manufacturing custom hardware. The sole aim of using this type of hardware is to save time and expenses involved in upgrading the infrastructure hosting our service.

Some companies may choose to build their commodity hardware in house while others may prefer to buy it from the third-party vendors. It's more of a business decision. Buying hardware from a third party may involve some security risks for businesses dealing with super-sensitive data; those businesses often choose to build the hardware in house.

This whole approach of augmenting the computational power using commodity hardware is known as *Commodity Computing*, sometimes also called *Commodity Cluster Computing*. Most of the internet giants like *Amazon, Baidu, Facebook, Google, and Yahoo* run their infrastructure using commodity hardware.

Speaking of the *Google* data centers, they have homogeneity in their hardware & the software is built in-house to manage the clusters of thousands of individual commodity servers.

These inexpensive, widely available servers are bought in large numbers and are either replaced or configured with the same hardware in the data centers, requiring minimal cost and effort.

As the demand for additional computers rises, new commodity servers are plugged into the system. Due to the low costs involved, commodity servers are typically replaced as opposed to being repaired.

Well, this is pretty much all there is about commodity computing. In the next lesson, you'll learn about *edge computing*.