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Networking Fundamentals

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**Network Hardware Components**

In order to build a network, we need to use hardware devices. What are Hardware Devices? Another word for hardware is “Physical”. Hardware is the physical part of the computer. It can be the case, monitor, mouse, or even the CPU. These are examples of simples parts of the computer, but other hardware components help us to connect with the world. These components are call Network Devices. Each of these devices has an especial function and purpose. All of them work together to compute a computer network. Six major hardware components stand out among many others. These are the Network Interface Card (NIC), Hub, Switch, Access Point, Router, and the Bridge as the last component. As I stayed before each of these components have their own task to complete but at the end, they all work together for connecting to the internet.

* **Network Interface Card**
* **Network Interface Card Example
  **Without the Network Interface Card our computer would not be able to connect to the internet. We would not be able to use any of the online futures. There are two types of Network Interface. One is called “Wired Network Interface Card” and the other one is called “Wireless Network Interface Card”. The main difference between these two is in the name. The word “Wired” means that it can be connected to the computer. It means that it needs cables to start working. On the other hand, the word “Wireless” means that it can work without the necessity of cables.
* A Network Interface Card looks like this:
* **Hub**
* **A picture containing electronics

  Description automatically generated**Unlike the Network Interface Card, Hub is a hardware network component that allows multiple devices to connect to the internet. One special characteristic of this artifact is that it has multiple ports that allow the other devices to connect with each other so they can share data and any other type of information. Is important to mention that Hubs are “old technology” and nowadays it had been replaced by Switches.
* A Hub look like this:

* **Switch**
* As is stayed in the Hub paragraph, Switches are a new version of them. They are similar to Hub by allowing many devices to connect to the internet. The difference and the reason why are a more advance device is for the reason of it transmit the data collected with more efficiency. One important advance that switches has is that it helps the network to work faster. A close-up of a computer

  Description automatically generated with low confidenceThis is because it sends the data directly to the correct device, helping the network traffic to reduce.
* A Switch looks like this:
* **Access Point**
* A picture containing text

  Description automatically generatedAn access point is a hardware device that creates a network. It could be a LAN or WLAN. This device is usually used on large buildings. How does it work? This device connects to a router or to a switch and produces Wi-Fi to the designated Area. This device helps you in terms of expanding the signal. If you want to have Wi-Fi in one specific area in your building but the router that you have is not that extended, then in this situation you need to connect to the access point to your router and locate it into the space you want to have WIFI signal.
* An Access Point looks like this:
* **Router**
* A close-up of a device

  Description automatically generated with low confidenceThe principal characteristic of a router is to connect computers and other devices to the internet. It can be wireless or through cables. Routers are designed to connect networks and exchange data between each other. They can do this because they are intelligent devices. The name “router” comes from their ability to direct data between networks by choosing the fastest route. How do they connect with other networks? Routers follow IP Addresses. These are special numbers that are assigned to your computer or network. Each device has its own number. This is how the router knows where to send the data. The same applies to networks. Each network has its own IP addresses. They can share the first numbers but what makes them unique are the last numbers.
* A router looks like this:
* **Bridge**
* **Chart, box and whisker chart

  Description automatically generated**A Bridge Network Device function is to connects two different LAN’s. It is called Bridge because of its function. As in real life is used to connect things. The process of connecting two different networks is called Networking Bridging.
* Here is a useful example of how it works.

Network Interface Card, Hub, Switch, Router, The Access Point and the Bridge are different Hardware Devices are used to build a Network and as is explained above each pf them has its own function but at the end they all work together to make Network better.

Sources

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