01-03 Generalities Classes

(0:01) We will continue looking at generalities; in this case, we will see classes. (0:07) So, one can talk about many types of networks, they talk about HAN, WAN, MAN, LAN, (0:14) FAN, and you find other types of names, let's say, that appear around these classes. (0:24) Maybe the most recognized ones are LAN and WAN, which you might hear about more frequently. (0:29) When talking about these types of networks, it is related to two aspects: (0:38) one has to do with distance and the other, and also very importantly, with management.

(0:52) Perhaps the latter becomes more important than the first. So, when (1:00) we are inside the computer, one talks a little about these here, but we will focus on those that are here. (1:05) So, when we talk about a Local Area Network or what is known as LAN, (1:11) these are networks that cover approximately a room or a building, or for example, a campus, (1:18) like the campus of a university.

Here, distances are more or less related to this type of network, (1:27) but these distances can vary a bit. You could have a campus of more than a kilometer (1:34) or a building of less than 100 meters. So, in reality, the distance is somewhat related, (1:40) but it's not as precise as presented here, but what truly makes it interesting or different (1:48) at a given moment from other types of networks is management.

What does management mean? (1:55) Who is in charge of purchasing the equipment, deciding what will be done with them, configuring them, designing them? (2:06) Well, all those things are related to management, and that's where there is a big difference. (2:11) So, in a LAN, the management is done directly by the owner, let's say, the owner of the company, in a way. (2:22) When one thinks of a LAN, like the school's LAN, the school's LAN belongs to the school because the school decides (2:29) how it is designed, how it is configured, what equipment to purchase, (2:36) and hires personnel to manage it.

All of this is done directly by the university. (2:43) It doesn't mean that you have to hire staff as part of the university's payroll. (2:48) One could outsource this to a company and assign the company the responsibility of managing the organization's LAN.

(2:56) But all the decisions are made by the company. Alright? (3:02) At home, one has a LAN. You decide, in a way, which equipment to have and are concerned about what happens inside the home.

(3:13) Often, you end up asking the service provider, the ISP, to give you (3:20) the infrastructure needed to connect the equipment. (3:25) Because for many people, it's easier that way, but not because the management is not their own. (3:30) That is a LAN, and there are technologies specifically designed for this type of network.

(3:36) The next size of network is the Metropolitan Area Network, or MAN. (3:44) So, in a MAN, we are talking about a network that covers approximately a city, covering around 10 kilometers. (3:51) So, there are smaller cities, larger cities; well, it's a city.

(3:55) These networks are more related to companies that, for example, have several branches. (4:02) So, if I have a company with branches in Bogotá, for instance, (4:07) then I somehow have to connect them. (4:09) Inside each branch, I probably have a LAN.

(4:16) Inside here, there is a LAN. (4:18) But the way I connect all the branches, I can no longer do directly with my infrastructure. (4:26) It would be very costly.

(4:27) So, I pay a third party to connect branch 1 with branch 2 or branch 1 with branch 3, and so on. (4:36) I am paying a third party. (4:37) So, the owner is not the owner of all the infrastructure.

(4:43) From a MAN downwards, the owner of the infrastructure is no longer only the company owner but hires third parties (4:52) to provide part of the interconnection between branches. (4:56) If we are talking about a city, more or less, we are talking about a MAN. (5:02) If I want to do it on a larger network, for example, a country or a continent, then we talk about a WAN. (5:14) So, if I have branches in various cities across the country, for example, Bogotá, Cartagena, Barranquilla, Manizales, (5:21) then I have a WAN. (5:24) Or if I connect the branches in Colombia with branches in Mexico, with branches in Peru, there I have a WAN. (5:31) And the next level is the Internet, which is the entire planet.

(5:37) Now, when we talk about WAN, the boundary between a country, a continent, and really the planet has blurred. (5:45) And so, one almost talks about WAN when referring to a large-scale scheme. (5:51) Even MAN sometimes gets blurred, and one can almost talk about any scheme that includes (6:03) a third party to connect one's infrastructure as a WAN.

(6:08) Even though there are these size details that I mention, one often talks about LAN and WAN. (6:14) And these become the important ones, LAN and WAN, and they are the ones you hear about most often. (6:21) Now, recently, a number of new terms have emerged regarding networks, (6:27) and networks like HAN or PAN have been invented.

(6:31) So, they say that HAN networks are Home Area Networks, the ones you have at home, (6:37) and they mostly refer to networks that include not only computers but also other types of equipment we've already discussed. (6:48) TVs, game consoles, video cameras, recording devices—anything like that becomes the HAN. (7:00) And then there is PAN, in some cases. (7:04) And PAN is a Personal Area Network, which includes all devices related to the person. (7:11) So, it's my cell phone, my tablet, my computer, maybe my wearables, (7:21) like clothing with sensors that measure heart rate, etc., etc., etc. (7:29) There are other options too, so I want to explore what other options you might find around these classes of networks or computers that have become popular.

(7:41) Here are some characteristics of the most representative ones, which are HAN and PAN. (7:51) Alright, so we continue talking.