

Demystifying Networking
Prof. Sridhar Iyer
Department of Computer Science and Engineering
Indian Institute of Technology, Bombay

Lecture - 66
Port number in Wireshark

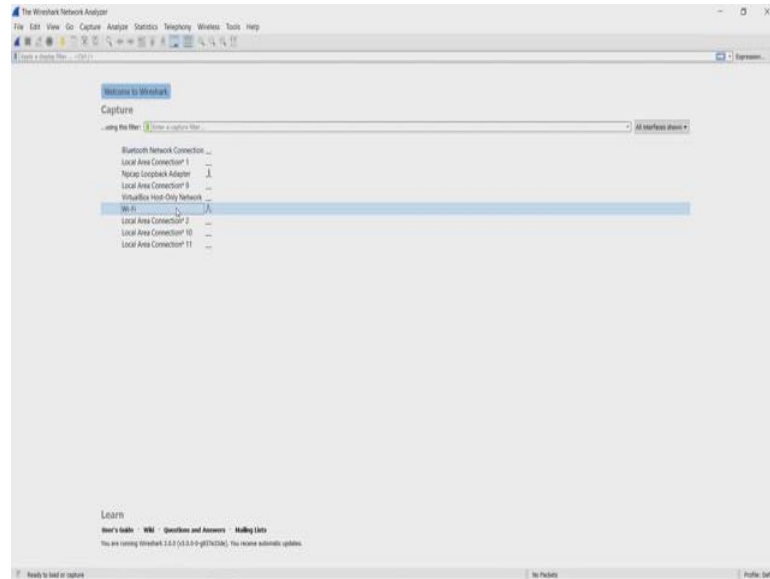
Now, that we have talked about concept of application layer, let us see how it actually works.

(Refer Slide Time: 00:07)



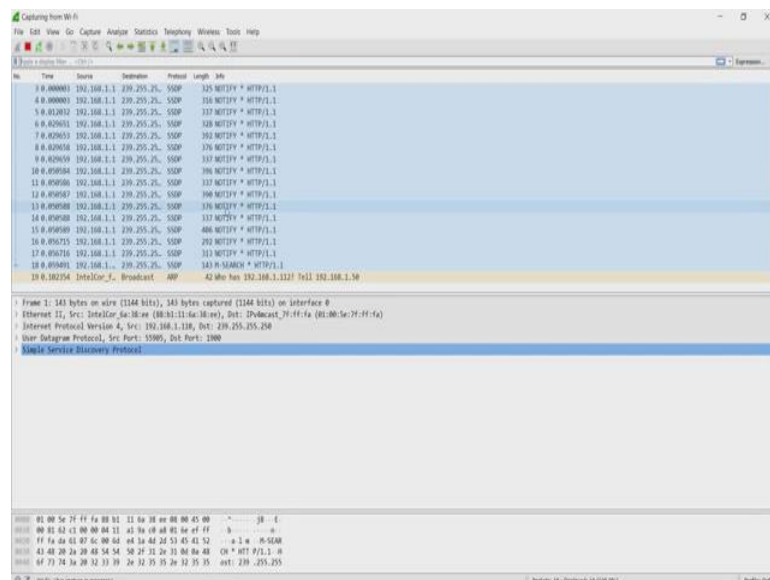
Hello and welcome to week 3's video on Port numbers. So, we know port numbers are used to distinguish communication for different applications, for example; the websites used port number 80, so, your browser knows that this packet is being sent to a server and it has come from a server and when your browser is sending out the request it attaches its own port number. So, now we have seen these things in packet tracer. So, what we thought it would be a good idea to actually see them on Wireshark.

(Refer Slide Time: 00:43)

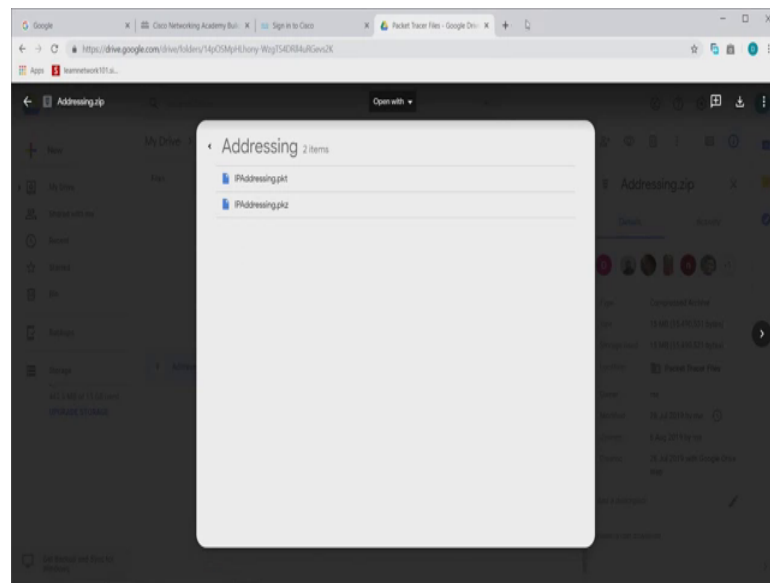


And what we will do is, let us open Wireshark and let us see how on real time traffic we can distinguish traffic for different applications. Now, we will use the Wi-Fi adapter that is used in this card.

(Refer Slide Time: 00:55)

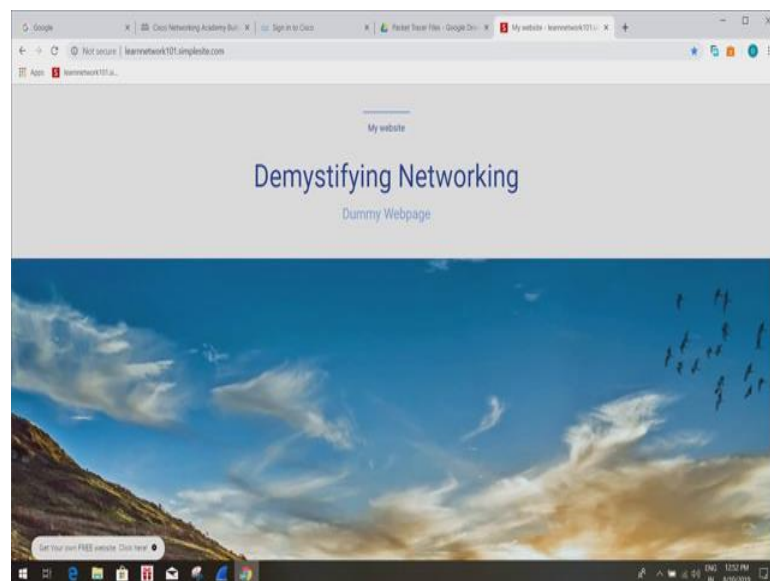


(Refer Slide Time: 01:06)



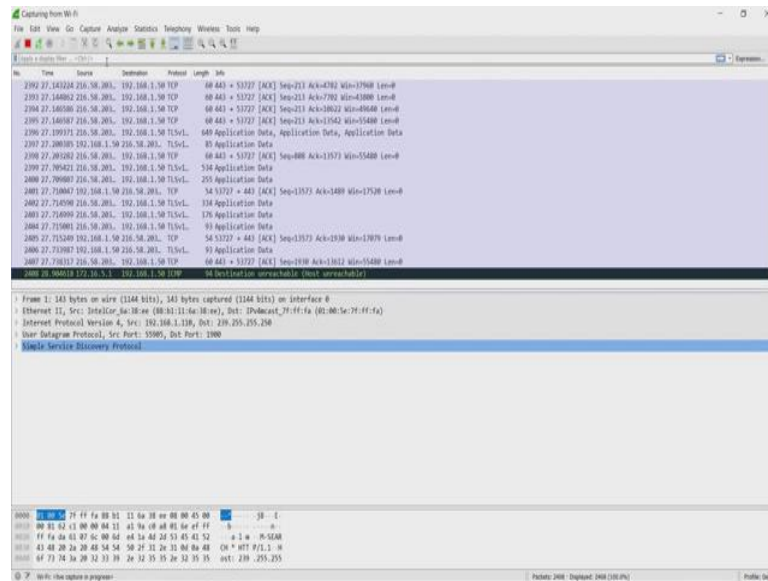
So, in the mean while what we can try is try opening say some website.

(Refer Slide Time: 01:09)



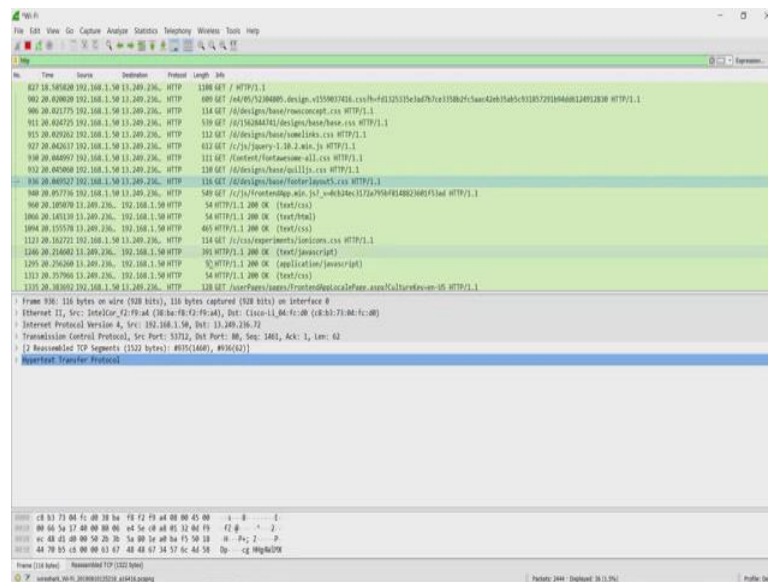
Let us for example, just open our old dummy website which is this. Now, since we are generated some traffic we can go back and see what is there on Wireshark.

(Refer Slide Time: 01:21)



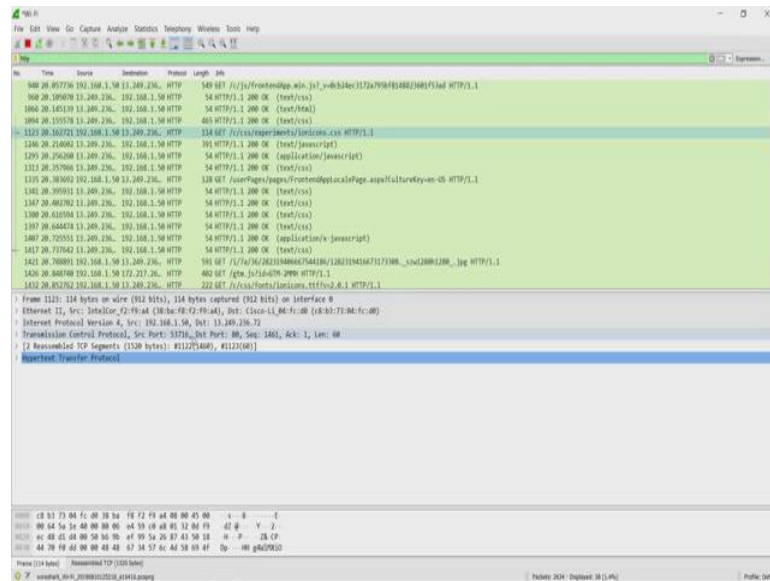
So, what we will try to do is we will try to filter out traffic. Now, we know the protocol that the website is using is HTTP.

(Refer Slide Time: 01:31)



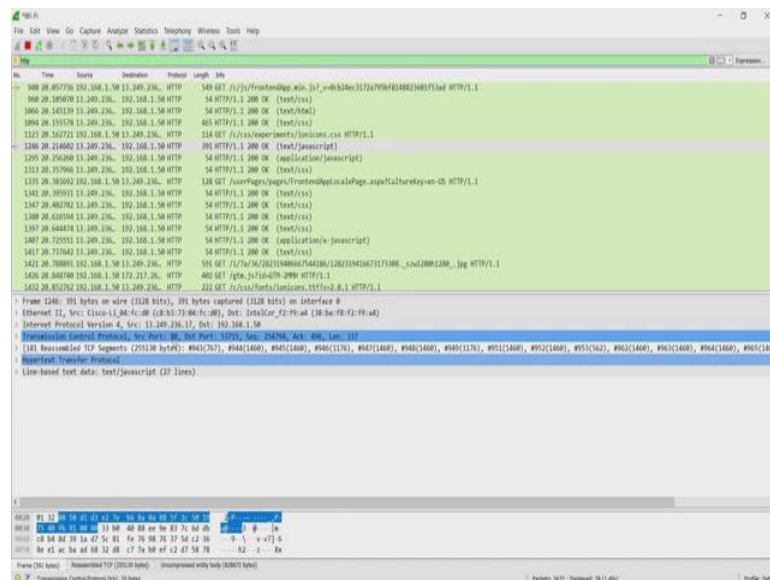
So, let us filter out this and let us try to see what is the port number here. So, what we see here is the destination port number is 80 and source port number is 53712. So, what it means here is that this packet is intended to go to a webserver via the protocol HTTP. So, when this packet comes back, then the source the destination port would be this and the source port will be this, that is when it comes back from the server.

(Refer Slide Time: 02:04)



So, let us try to see some other HTTP request packets and see if we can see. So, see these are all request that are going to the web server.

(Refer Slide Time: 02:13)

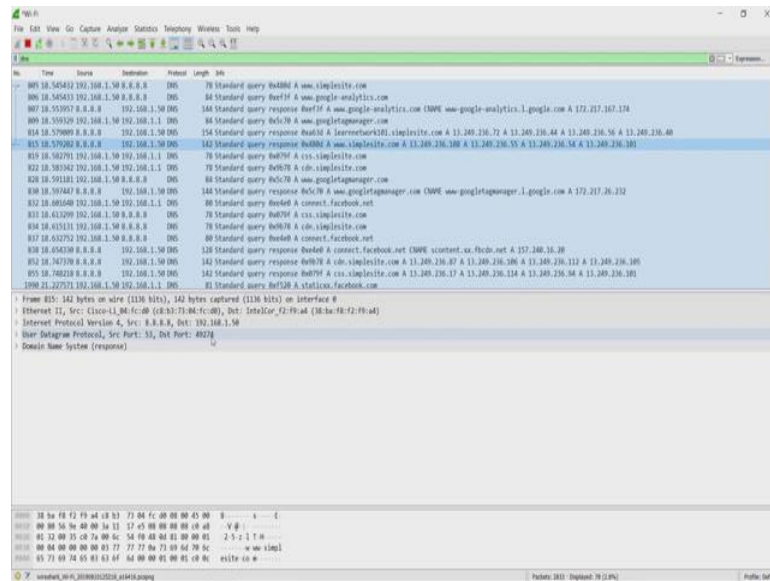


Now, you see this one here the source port is 80 and the destination port is 53715. So, this means this packet has come from a web server and it has come to the application which was using the port number 53715. So, this way port numbers are used to distinguish different communications that belong to different applications and even if it

is a same web browser and it has multiple tabs here, so, all the tabs would use different port numbers.

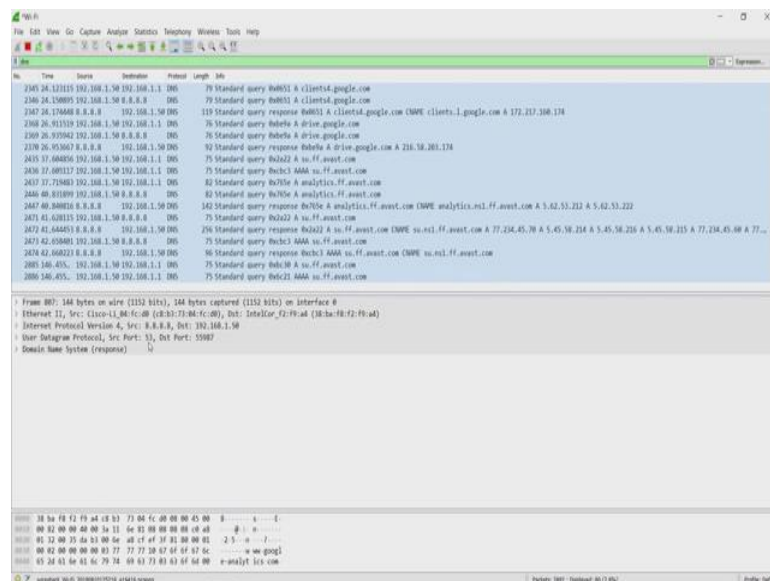
So, let us try and see if we can find any other protocol that the laptop is communicating through. So, let us try DNS which is Domain Name Service.

(Refer Slide Time: 02:56)

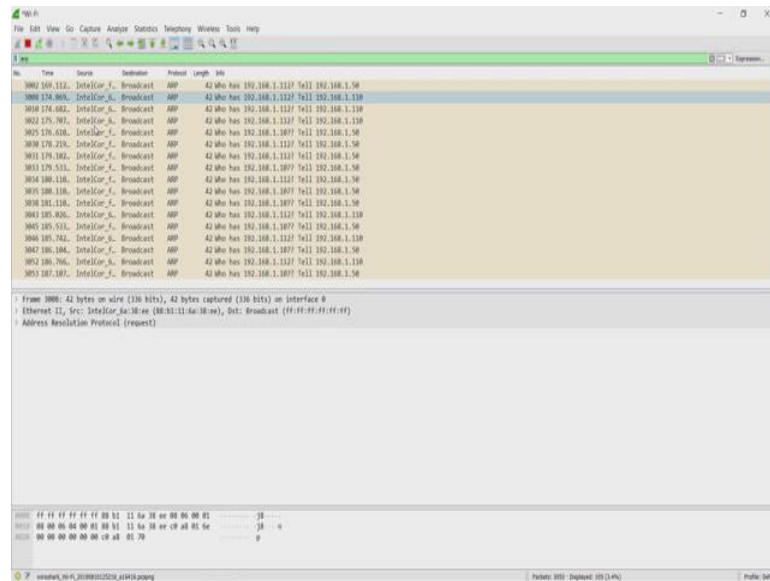


And yes we have some packets from DNS. So, again we see here the source port number is 53 and the destination port number is something, this is the response packet.

(Refer Slide Time: 03:06)

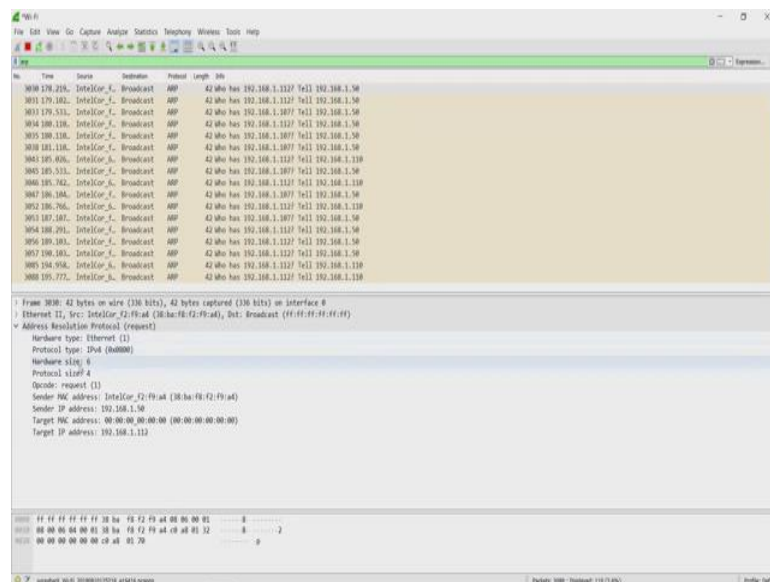


(Refer Slide Time: 03:59)



Now, the interesting thing here is ARP is a protocol which actually does not work on the application and higher layers; it basically just works still the internet layer. So, all you see here is the IP addresses and the MAC address.

(Refer Slide Time: 04:10)



Basically what ARP does is it gets the corresponding MAC address for IP address or vice versa. So, we call one as ARP, the other as reverse ARP or reverse Address Resolution Protocol.

So, all the protocols that work on the application layer have these port numbers. So, this is a brief demonstration of port numbers. There is one more crucial concept with port numbers called port address translation, for port address translation what we would want you to do is go through the article on port address translation and try to see what it mean. Once you have read the article, go to the next video and we will talk more about port address translation.

Thank you.