

Demystifying networking
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Lecture – 88
The troubleshooting approach

So, the idea conveyed by our story was, while troubleshooting be it a car, a washing machine, a computer network or an app, it is made up of different sub systems. And while troubleshooting you have to try to narrow it down narrow down the problem to on particular sub system and troubleshoot.

So, in case of computer networks. So, what we can do is, we can divide the computer network into sub networks or say sub systems or the other approach that you can take is, you can go at the layer by layer approach. So, when we look at the layer by layer approach what we can do is, may be look at the functions of what each layer is or say in the system approach, try to look at what is the function of each system and then try to troubleshoot it.

Right. At this point we have a reflection question for you please pause, read the question, take your time to answer and then proceed.

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Reflection Spot  

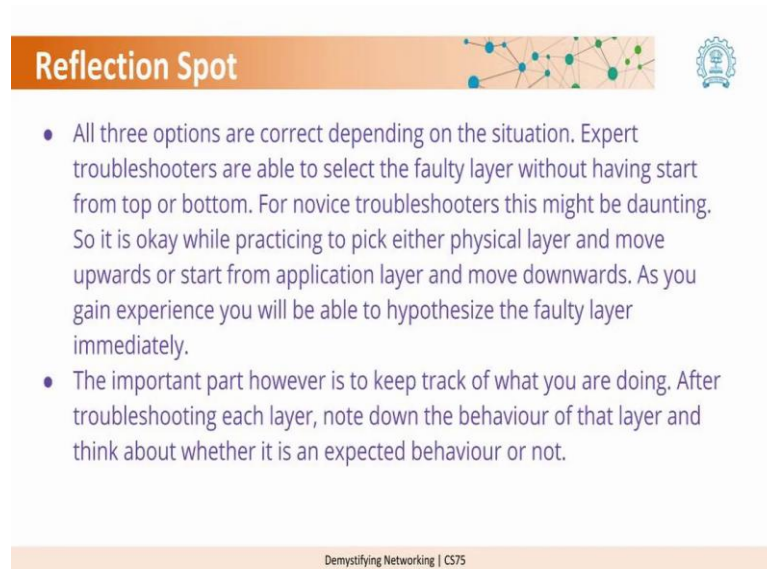
1. Which among the following is the preferred way of troubleshooting networks?

- a. Start from physical layer and go up
- b. Start from application layer and go down
- c. Start from the layer which you think is faulty

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Which among the following is the preferred way of troubleshooting networks? Option A: start from physical layer and go up; option B: start from application layer and go down; option C: start from the layer which you think is faulty.

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Reflection Spot

- All three options are correct depending on the situation. Expert troubleshooters are able to select the faulty layer without having start from top or bottom. For novice troubleshooters this might be daunting. So it is okay while practicing to pick either physical layer and move upwards or start from application layer and move downwards. As you gain experience you will be able to hypothesize the faulty layer immediately.
- The important part however is to keep track of what you are doing. After troubleshooting each layer, note down the behaviour of that layer and think about whether it is an expected behaviour or not.

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As some of you might have guessed all three are correct depending on the situation; usually expert troubleshooters can guess the layer where the problem is and then directly start troubleshooting at that layer, but for beginners this might be a little daunting as to which layer to start with. So, they can either start from the physical layer and go up or application layer and go down as it seems easier for them and then by practice when they troubleshoot more and more network problems, they will be able to guess the layer where the problem resides and start directly troubleshooting at that layer.

The important part however, is it is important to keep track of what are the observations that you have at different systems or different layers.

Right.

Because that information will help you in determining the behavior and try to see which behavior is anomalous and using that we will be able to troubleshoot the system.

Now, we know that layer by layer troubleshooting is preferred way of troubleshooting computer networks, we will now look in detail how to troubleshoot each layers using different tools and commands.