

Video – Creating PDUs in Simulation Mode

Hello everyone. This is our Cisco Packet Tracer creating PDUs in simulation mode video. What does that mean? That means we're going to be creating messages that can move between devices in this network, and we're going to be able to open up those messages later on and view them.

A PDU is a protocol data unit. It's just a message type that's going to be transferring between network devices. In previous chapters, we've used Cisco Packet Tracer in realtime mode, as we see in the bottom right corner, with the clock. What we're going to be doing today is going into simulation mode. Here is the place where we can create these PDUs and view their content. So let's get started and get into simulation mode.

To go into simulation mode, in the bottom right corner, we're going to click on the gray stopwatch that's hiding in the back. When you click on the gray stopwatch, we see that we're now in simulation mode and the stopwatch has come to the front. In simulation mode, we have this simulation panel. We'll have an event list, we'll be able to reset our simulation at any time, have a constant delay or remove it as network traffic goes across the network. We'll also be able to control the simulation by using back and forward buttons, as well as an autocapture play button, which is like a hands-free mode to have it just play. Down below we can filter what type of messages we want to see with these PDUs we're going to create, and what type of messages we don't want to see. Even further below, there's this little left arrow, which we want to click on this because this is going to give us an actual event simulation pane where we can actually see multiple PDUs in one moment. It also gives us some control for getting rid and deleting our PDUs. Let's get started.

We have our network. We have the simulation mode on. Let's go ahead and take a look at our two envelopes. The first envelope is known as a simple PDU. This is a basic message, which is really a ping that we can create and target a destination. Let's go ahead and click on it. Add simple PDU. Our cursor's going to change to an envelope with a plus button. We'll click on the PC as the source, and then we'll click on the laptop as the destination, and now we'll see a message is waiting to be sent. It's wanting to move, and inside of our simulation panel, we'll see the message there as well. We actually get two messages from this. One is a ping, known as ICMP, and one is an ARP. Down below, what we want to do, though, is we're going to click the capture forward button, and we'll watch our traffic move each time we click this button. Click it once, we watch the traffic go to the wireless router. We can click it again, and click it one more time, and we watch the wireless router send it over to the laptop and the smartphone. From there, the laptop and the smartphone are going to choose to respond or not respond. The laptop was the target, and it's going to choose to respond backwards. Clicking on the capture forward button until eventually the message makes it all the way back to the PC with a green checkmark. And there we go. We'll get the green checkmark on the PC message.

The messaging will continue for a little bit longer. We can just continue by using capture forward, and again, until we get back to the laptop and the laptop responds backwards, and the PC again gets the checkmark for success of receiving a message. As easy and fun as that is, inside of the list here you can actually walk through and watch the traffic going from the current device to where: the wireless device, the wireless router to the smartphone, wireless router to the laptop. You can actually track the messages as they're going back and forth here.

There's another type of message that we can utilize as well, and that's going to be called the complex PDU. Let's go ahead to the bottom, and we want to delete the current event by using the delete button. And now we want to create a new PDU which is called the complex PDU. That's the envelope with the little message on it. So click add complex PDU, and now we can go from PC, and then, of course, target the destination laptop, PC by clicking on it, and this complex PDU screen autofills in the destination IP address. The source IP we don't need to fill in because it's coming from a PC already. The sequence number, we can create one that we want. How about two as the initial sequence number? We can set a periodic time interval for how often should this test go out, or just leave it as a one-shot time interval over a period of seconds. Let's try periodic. With periodic we can put in five seconds. We're just going to keep running through, and every five seconds, it'll do another test. The application type right now is ping by default. Look at all the different types of traffic we can choose to send with a complex PDU. We'll keep it as ping, though. Once we hit create, we see it's down below inside of our event list. Also we see it in the simulation panel. Again, we can use capture forward or we can do the autocapture play. Let's

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increase the speed a little bit by moving our slider forward, and then we're going to do the autocapture play button. And we'll watch the traffic move: PC to the wireless router, wireless router didn't know where to go with it at the moment, so it goes out to everybody. Wireless router figures out where the target's going to be, it goes to the laptop, laptop responds back to the wireless router, wireless router responds back to the PC, and we'll get a green checkmark. And that's awesome, but it doesn't stop because we have it as periodic over a period of five seconds. So that ping message is going to keep going out from that PC, hitting the laptop, and the laptop responding back on our set time interval.

With Cisco Packet Tracer, it doesn't end here. You can make this as complicated as you want or as easy as you want. With that being said, reset the simulation using the reset simulation button, and that starts us from the beginning again. And then I can delete that message down below. Please make sure you play with PDU creation and being able to test out connectivity because in the next video, we're going into viewing the contents of those PDU messages, and taking a closer look at the data that's actually inside of them.