**1.Cisco Packet Tracer**

**Cisco Packet Tracer** as the name suggests, is a tool built by Cisco. This tool provides a network simulation to practice simple and complex networks.

*T*he main purpose of Cisco Packet Tracer is to help students learn the principles of networking with hands-on experience as well as develop Cisco technology specific skills. Since the protocols are implemented in software only method, this tool cannot replace the hardware Routers or Switches. Interestingly, this tool does not only include Cisco products but also many more networking devices. Using this tool is widely encouraged as it is part of the curriculum like CCNA, CCENT where Faculties use Packet Trace to demonstrate technical concepts and networking systems. Students complete assignments using this tool, working on their own or in teams.

Workspace :

Logical –  
Logical workspace shows the logical network topology of the network the user has built. It represents the placing, connecting and clustering virtual network devices.

Physical –  
Physical workspace shows the graphical physical dimension of the logical network. It depicts the scale and placement in how network devices such as routers, switches and hosts would look in a real environment. It also provides geographical representation of networks, including multiple buildings, cities and wiring closets.

Key Features:

Unlimited devices

E-learning

Customize single/multi user activities

Interactive Environment

Visualizing Networks

Real-time mode and Simulation mode

Self-paced

Supports majority of networking protocols

International language support

Cross platform compatibility

**2.WireShark**

Wireshark is the world's leading network traffic analyzer, and an essential tool for any security professional or systems administrator. This free software lets you analyze network traffic in real time, and is often the best tool for troubleshooting issues on your network.

Common problems that Wireshark can help troubleshoot include dropped packets, latency issues, and malicious activity on your network. It lets you put your network traffic under a microscope, and provides tools to filter and drill down into that traffic, zooming in on the root cause of the problem. Administrators use it to identify faulty network appliances that are dropping packets, latency issues caused by machines routing traffic halfway around the world, and data exfiltration or even hacking attempts against your organization.

Wireshark intercepts traffic and converts that binary traffic into human-readable format. This makes it easy to identify what traffic is crossing your network, how much of it, how frequently, how much latency there is between certain hops, and so forth.

Given the large volume of traffic that crosses a typical business network, Wireshark's tools to help you filter that traffic are what make it especially useful. Capture filters will collect only the types of traffic you're interested in, and display filters will help you zoom in on the traffic you want to inspect. The network protocol analyzer provides search tools, including regular expressions and colored highlighting, to make it easy to find what you're looking for.

Similar products are glasswire.

**Trends in networking**

1. **5G and Wi-Fi 6**

Qualcomm Is the tech giant that makes networking hardware persisting to generations of communication, their next standard that Using or is in the process of releasing is called 5G and wifi 6

There will be a 5G versus Wi-Fi 6 battle for home and business use next year. Now, I know this isn’t exactly a trend per say, but it’s nevertheless an important thing to watch for in the coming year.

Cellular providers have an opportunity to make good on their promises to bring 5G right into our homes and offices with personal 5G cellular networks. I realize this was promised a long time ago, and it took years for ISPs to finally coalesce around a common 5G communications language. In 2020, we’ll see ISPs rally behind 5G NR and make a push to move from large-scale connectivity to small scale in our offices and homes.

This could help solve the challenge of having so many wireless devices connected at once—a problem IoT makes worse—by slowing wireless network performance even more. However, Wi-Fi 6 promises to solve the same problem as 5G and has much easier inroads into the market, which is why I’m not sure 5G from large ISPs will win out in the fight over small-scale wireless networking. Pay attention to how ISPs approach this new market niche in 2020.