

VPN Configuration

Computer Network Technologies and Services (CNTS)
Tecnologie e Servizi di Rete (TSR)

Warning

The lab experience requires:

- Microsoft Windows 10 (you can also use a different OS, but you have to find out by yourself how to setup a VPN connection in your OS)
- a network analyzer installed on your PC
- a network allowing PPTP traffic

1 VPN connection configuration

You have to setup a VPN connection with the parameters provided in the course website.

In Microsoft Windows 10, a VPN adapter is configured by opening the *Control Panel*, and then:

Network and Internet -> Network and Sharing Center -> Set up a new connection or network -> Connect to a workplace -> Use my Internet connection (VPN)

Here you can give a name to your VPN connection and set the address of the access server. At this point press the *Create* button.

Once the VPN connection is created, there is still some information to be set before starting using it. To this purpose, click on the network icon on right-hand-side of your taskbar, then select

Network & Internet settings -> VPN

Select the VPN just created and then

Advanced options -> Edit

Here change the *VPN type* to *Point to Point Tunneling Protocol (PPTP)* and set the username and password. Again, click on the network icon on the right-hand-side of your taskbar, then

Network and Internet -> Network and Sharing Center -> Change Adapter Settings

Select your VPN and then

Properties -> Security

At this point, select *Allow these protocols* and set *Data encryption* to *No encryption allowed*.

Once you created and configured the VPN connection, you have to run the network analyzer and connect the VPN (click again on the network icon in the bottom right of your monitor, select you VPN and click on the *Connect* button). Then, open the browser and connect to any website (e.g., www.google.com).

ATTENTION! In order to capture the encapsulating headers you need to select the physical interface. Do not capture on the `dialup`/VPN interface: it would not enable you to see the VPN encapsulation.

Answer the following questions

1. Show a schematic representation of a generic data packet (not a connection setup packet), highlighting the various headers.

[illegible]

2. Is the traffic encrypted or not?

3. Is the connection setup phase encrypted or not?

4. Briefly describe the authentication procedure. Base your description on your capture file.

5. On MS Windows 10, click on the network icon on the right-hand-side of your taskbar, then

Network and Internet -> Network and Sharing Center -> Change Adapter Settings

Select your VPN and then

Properties -> Networking -> Internet Protocol Version 4 -> Properties -> Advanced

At this point, uncheck the box *Used default gateway on remote network*.

Open again any website on your browser and describe the differences you observe with these new VPN settings.

[illegible]