**Assignment : 2**

*Question 1* : **Draw your Home Network Topology and explain how you are accessing the RPS Lab environment**

Example of a home network topology and explain how a user might access a remote lab environment like the RPS Lab.

**Example Home Network Topology :**

ISP

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Modem

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Wi-Fi Router

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PC1 (Ethernet) Laptop (Wi-Fi) Smartphone (Wi-Fi)

**Accessing the RPS Lab Environment**

Let's break down the steps a user might take to access the RPS Lab environment from their home network.

1. **User Devices:**

PC1: A desktop computer connected via Ethernet to the router.

Laptop: A wireless laptop connected to the router via Wi-Fi.

Smartphone: A mobile device connected to the router via Wi-Fi.

2. **Connecting to the RPS Lab**:

VPN Client: Installed on PC1 or Laptop to securely connect to the RPS Lab's VPN server.

Remote Desktop (RDP)/SSH Client: Used to access and control the remote lab machines.

**Detailed Access Flow Example**

1. **Connect to VPN:**

->The user opens the VPN client on their device (e.g., PC1).

-> They enter the VPN server address provided by the RPS Lab and their credentials.

-> The VPN client establishes a secure connection to the RPS Lab's network.

2. **Access the RPS Lab Machines:**

->Once connected to the VPN, the user opens the RDP client to connect to a specific remote desktop within the RPS Lab.

->They enter the IP address of the remote machine and their login credentials.

-> Alternatively, they use an SSH client to access a server within the lab by entering the server's IP address and SSH credentials.

**Example Topology and Access Flow Diagram :**

plaintext

Home Network | RPS Lab Network

----------------------------------------|---------------------------

ISP | VPN Server

| | |

Modem | |

| | |

Wi-Fi Router | RDP/SSH Server

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PC1 (Ethernet) Laptop (Wi-Fi) Smartphone (Wi-Fi) |

| | |

VPN Connection (Encrypted) | |

| | |

RDP/SSH Session (Secure) | |

| | |

Remote Desktop/Server within RPS Lab | |

**Steps :**

1. **Setting Up VPN:**

->On PC1, the user opens their VPN client.

-> They input the VPN server details provided by RPS Lab and authenticate.

-> The VPN client creates a secure tunnel to the RPS Lab network.

2. **Accessing Remote Desktop or Server :**

-> With the VPN active, the user launches their RDP client.

-> They enter the IP address of a specific machine in the RPS Lab.

->After providing the necessary credentials, they gain access to the remote desktop.

->Alternatively, they can use an SSH client to access a server, entering the server’s IP address and SSH login details.

This setup allows the user to securely access and work within the RPS Lab environment from their home network.