

MIT WORLD PEACE UNIVERSITY

Wireless Devices and Mobile Security
Third Year B. Tech, Semester 5

CONFIGURATION OF APN OF A ROUTER, AND
MANAGE ITS ACCESS CONTROL FOR SECURITY.

LAB ASSIGNMENT 7

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1 Aim

To Learn about the Configuration of APN of a router, and manage its access control for Security.

2 Objectives

1. To learn how to configure APN of a router.
2. To learn how to manage access control of a router.
3. To learn how to secure a router.
4. To learn how to connect a device to a router.

3 Theory

3.1 Access Point Name (APN)

1. **Definition:** APN, or Access Point Name, is a gateway between a mobile network and another computer network. It is used to connect mobile devices to the internet and other resources.
2. **Configuration:** Users can configure APN settings on their devices, specifying the network to which they want to connect.
3. **Use in Mobile Networks:** APNs play a crucial role in enabling data communication for mobile devices, facilitating internet access and multimedia messaging.
4. **Security Considerations:** Configuring APN settings securely is important to prevent unauthorized access and potential security vulnerabilities.

3.2 Access Control

1. **Definition:** Access control refers to the practice of restricting access to a system or resource only to authorized entities and preventing unauthorized access.
2. **Key Components:** Access control systems typically include authentication, authorization, and auditing mechanisms.
3. **Implementation:** Access control can be implemented through methods like role-based access control (RBAC), mandatory access control (MAC), or discretionary access control (DAC).
4. **Importance in Security:** Proper access control is crucial for protecting sensitive information, ensuring privacy, and preventing unauthorized activities.

3.3 Router Security

1. **Router Configuration:** Securing a router involves configuring settings such as passwords, firewalls, and firmware updates.
2. **Firewall Settings:** Routers often include built-in firewalls that can be configured to filter incoming and outgoing traffic.

3. **Firmware Updates:** Regularly updating router firmware is essential to patch vulnerabilities and improve overall security.
4. **Guest Network Considerations:** Many routers offer guest network features, allowing users to separate guest and private networks for enhanced security.

3.4 Connecting a Device to a Router

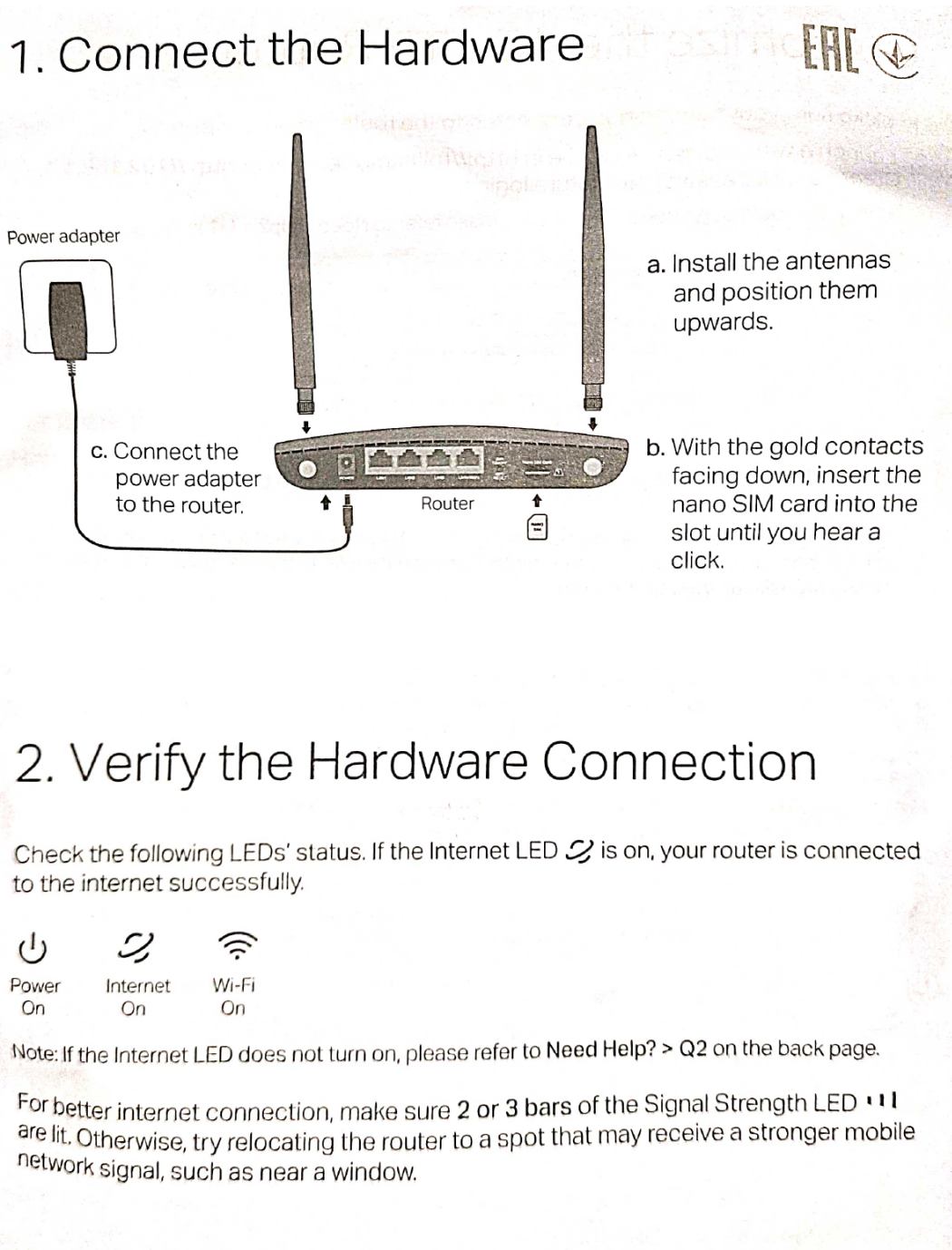
1. **SSID and Password:** To connect a device to a router, users typically need to enter the router's SSID (Service Set Identifier) and the associated password.
2. **Wi-Fi Protected Setup (WPS):** Some routers support WPS, a simplified method for connecting devices without entering a password.
3. **Security Considerations:** Using strong passwords and avoiding public Wi-Fi networks are important for securing device connections.
4. **Troubleshooting:** In case of connection issues, troubleshooting steps may involve checking router settings, restarting devices, or updating network drivers.

3.5 Different Wi-Fi Security Protocols

1. **WEP (Wired Equivalent Privacy):** An older and less secure protocol, susceptible to various attacks.
2. **WPA (Wi-Fi Protected Access):** Introduced as a more secure replacement for WEP, with variations like WPA2 and WPA3.
3. **WPA3:** The latest Wi-Fi security protocol, providing stronger encryption and improved security features.
4. **Choosing Security Protocols:** Users should select the most secure protocol supported by their devices and routers.

4 Implementation

4.1 Configuration Instructions



3. Enjoy the Internet

- **Wired**

Connect your computer to the router's LAN port via an Ethernet cable.

- **Wireless**

- a. Find the SSID (network name) and wireless password printed on the label at the bottom of the router.

Note: For a dual-band router, you can find two default SSIDs. Choose one to join the Wi-Fi.



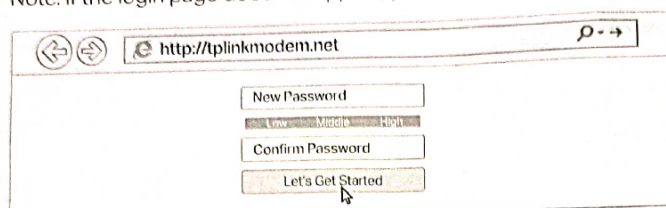
- b. Click the network icon of your computer or go to Wi-Fi settings of your smart device, and then select the SSID to join the network.

4.2 Set up Instructions

Customize the 4G LTE Router

1. Make sure your computer is connected to the router (wired or wireless).
2. Launch a web browser and type in <http://tplinkmodem.net> or <http://192.168.1.1>. Create a new password for future logins.

Note: If the login page does not appear, please refer to **Need Help? > Q1** in this guide.



3. Follow the step-by-step instructions of the **Quick Setup** to complete the initial configuration.

Note: The router can also be used (or configured) in Wireless Router Mode for DSL/Cable connections. For more advanced configurations, please refer to the user guide on TP-Link official website at www.tp-link.com.

4.3 The Router



Figure 1: Ports of the router



Figure 2: The Router

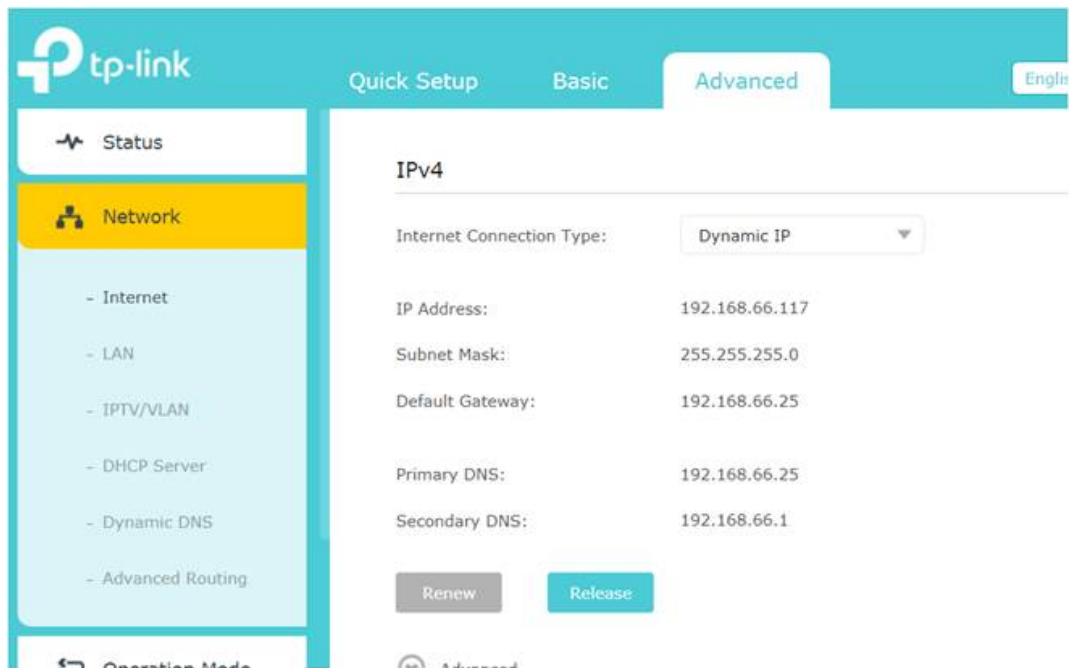


Figure 3: The Admin page of the TP Link Router

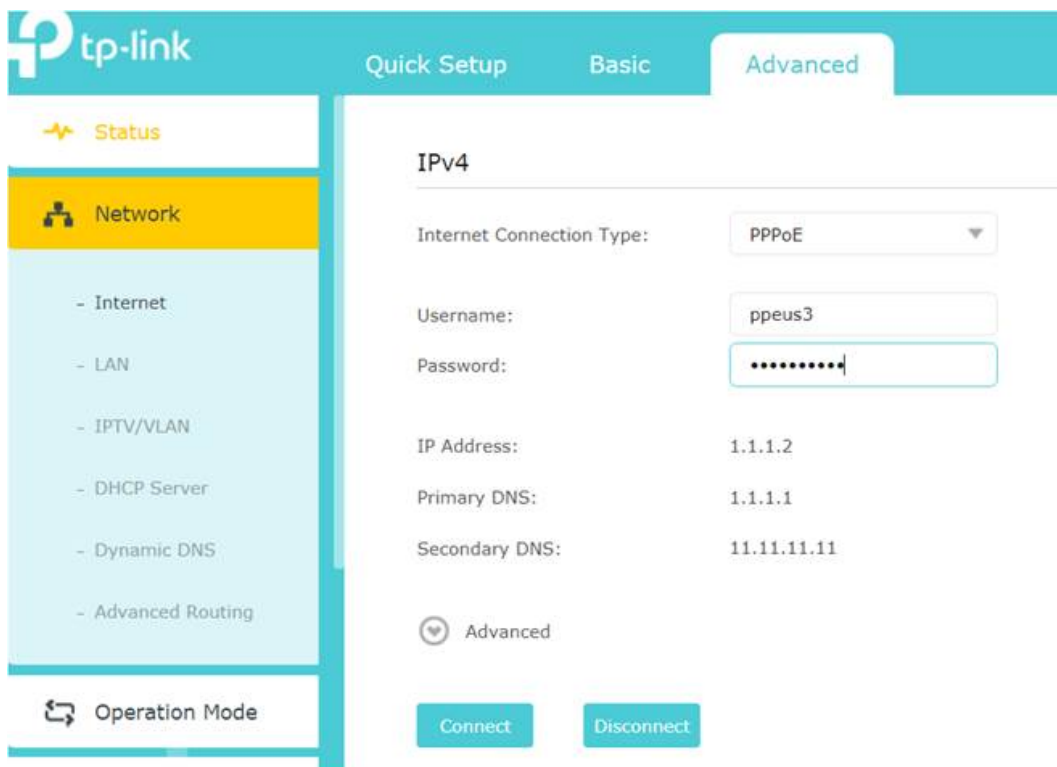


Figure 4: The Admin page of the TP Link Router

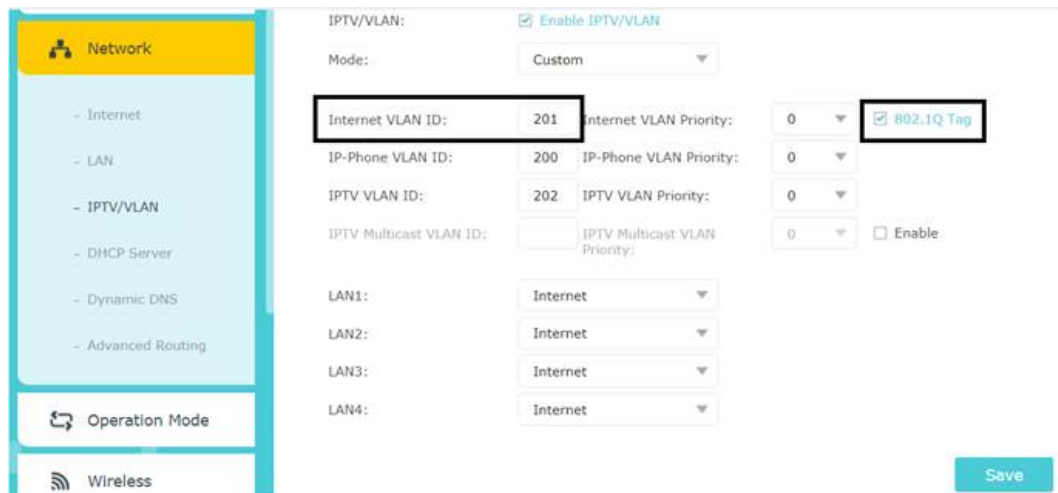


Figure 5: The Admin page of the TP Link Router

5 Platform

Operating System: Arch Linux x86-64

IDEs or Text Editors Used: Visual Studio Code

Compilers or Interpreters: Python 3.10.1

6 Conclusion

Thus, we have learnt about the Configuration of APN of a router, and manage its access control for Security.

References

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