

what are the basic functionalities of Wi-Fi Accesspoint

1. **Wireless Connectivity**

- Provides **Wi-Fi access** to connected devices (laptops, smartphones, etc.).
- Acts as a **bridge** between wired and wireless networks.

2. **Signal Transmission & Reception**

- Transmits **radio signals** (2.4 GHz, 5 GHz, or 6 GHz).
- Uses antennas to send and receive data packets.

3. **SSID Broadcasting**

- Advertises the **Wi-Fi network name (SSID)** so devices can detect and connect.

4. **Authentication & Security**

- Supports **encryption protocols** (WPA2, WPA3) for secure communication.
- Uses MAC filtering and firewall rules for **access control**.

5. **Network Traffic Management**

- Distributes bandwidth among connected devices.
- Uses **QoS (Quality of Service)** to prioritize critical applications (VoIP, video streaming).

6. **Roaming Support (ESS Mode)**

- Allows seamless handoff between multiple APs within an **Extended Service Set (ESS)**.

7. **DHCP Relay & IP Management**

- Can relay DHCP requests to a central server or assign **IP addresses** (if enabled).

8. **Multiple SSID Support**

- Can create **guest networks** or separate SSIDs for different departments.

9. **Power Management (PoE Support)**

- Some APs support **Power over Ethernet (PoE)** for power and data transmission over a single cable.

10. **Monitoring & Logging**

- Tracks connected devices, bandwidth usage, and security logs.
- Provides **remote management** via web interfaces or cloud controllers.