

## Network Device Assignments

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### 1. The Role of Network Devices in Cybersecurity

**Objective:** Understand how network devices contribute to securing digital infrastructure.

**Assignment:**

- Choose three network devices (router, firewall, Access Point).
- Explain:
  - How each device contributes to network security
  - What misconfigurations can lead to vulnerabilities
  - Real-world examples of breaches caused by device misuse

*Reflection:* Discuss how the proliferation of these devices in homes (IoT) complicates cybersecurity.

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### 2. Home Network Audit

**Objective:** Connect theory to practice by analyzing real environments. **Assignment:**

- Survey your home network:
    - List all connected devices
    - Identify the roles of any routers, modems, or access points
    - Map out the network topology
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### 3. Case Study Analysis: Network Device Exploits

**Objective:** Investigate real-world incidents. **Assignment:**

- Select a known cyberattack involving a network device (e.g., Mirai botnet exploiting IoT routers).
- Analyze:
  - What device(s) were compromised
  - How the attackers gained access



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- What could have prevented it

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#### **4. Design a Secure Small Business Network**

**Objective:** Apply technical and design skills. **Assignment:**

- Assume you're setting up a secure network for a small business.
- Draw a topology including:
  - At least 1 router, 1 switch, 1 firewall, and multiple endpoints
- Provide a written justification for:
  - Device selection
  - Placement