Week 2: Operating Systems & Command Line Fundamentals

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📘 **Summary of Learning Content:**

- This week focused on understanding **Linux and Windows operating systems**, their file structures, and basic to intermediate **command-line usage**.

- A key part of cybersecurity is mastering how systems work under the hood—especially through CLI (Command-Line Interface) interaction.

- Linux is the dominant OS in server environments and CTFs, while Windows is prevalent in enterprise and real-world attacks.

📘 **Key Topics Covered:**

🔧 **Linux Fundamentals (via TryHackMe & Bandit Wargames)**

- Linux file system hierarchy (/, /home, /etc, /var, /bin)

- Navigating files & directories: cd, ls, pwd, cat, more, less

- File operations: cp, mv, rm, touch, mkdir, rmdir

- Permissions & ownership: chmod, chown, ls -l, numeric permissions (e.g., 755)

- Text processing: grep, head, tail, cut, sort, wc, nano, vi

- Process management: ps, top, kill, nice

- Networking basics: ping, netstat, ifconfig, ssh, scp

- Package management: apt, yum, dpkg

📏 **Hands-On Practice (Rooms & Wargames):**

- **TryHackMe Rooms Completed:**

    o [Linux Fundamentals Part 1](#)
    o [Linux Modules](#)

- **Bandit Wargames (OverTheWire):**

    o Levels 0 – 5 completed (Basic file reading, navigation, hidden files, SSH login)

🪟 **Windows Fundamentals (via TryHackMe):**

- Windows OS structure: C:\Windows\, Registry basics

- File extensions and system files

- User accounts, roles, and privileges

- Common tools: Task Manager, Command Prompt, PowerShell

- Network settings and configurations

- Event Viewer, services, and scheduled tasks

- TryHackMe Rooms:

  - [Windows Fundamentals 1](#)

  - [Windows Fundamentals 2](#)

🟦 **Realizations & Takeaways:**

- CLI is a powerful tool for both administrators and hackers.

- Knowing how to navigate Linux and Windows is foundational for cybersecurity roles.

- Bandit wargames improved confidence with real-time command-line challenges.

- Understanding permissions and processes is key for system security and forensics.

🟦 **Common Myths Busted:**

- "Linux is only for experts" – False. With practice, it's user-friendly and essential.

- "You can't learn Windows security without admin access" – False. TryHackMe simulates realistic environments.

🟦 **Platforms and Resources Used:**

- **Learning Platforms:** TryHackMe, OverTheWire (Bandit)

- **Helpful Tools:** PowerShell, Windows CMD, Linux Terminal

- **Communities:** TryHackMe Discord, GitHub, LinkedIn CyberSec groups