

CYBERSECURITY TRAINING

(WEEK 1- Day4)

1.Linux System Administration

1.1. User and Group Management

- **Creating and Managing Users:**
 - **useradd:** Adds a new user.
 - **Example:** useradd student creates a new user named student.
 - **passwd:** Sets or changes user passwords.
 - **Example:** passwd student prompts for a new password for the student user.
- **Creating and Managing Groups:**
 - **groupadd:** Adds a new group.

- **Example:** groupadd students creates a new group named students.
- **usermod:** Modifies user account properties.
 - **Example:** usermod -aG students student adds the student user to the students group.
- **Listing Users and Groups:**
 - **cat /etc/passwd:** Lists user accounts.
 - **Example:** Shows user details such as username, UID, GID, home directory, and shell.
 - **cat /etc/group:** Lists groups.
 - **Example:** Shows group names, GIDs, and member usernames.

1.2. Process Management

- **Viewing Processes:**

- **ps** (Process Status): Displays information about running processes.
 - **Example:** `ps aux` shows all processes with detailed information including user, PID, CPU and memory usage.
- **top:** Provides a real-time view of system processes and resource usage.
 - **Example:** `top` displays CPU, memory usage, and running processes.

- **Managing Processes:**

- **kill:** Terminates processes.
 - **Example:** `kill 1234` sends the SIGTERM signal to process ID 1234. Use `kill -9 1234` to forcefully terminate the process.

- **pkill**: Sends signals to processes based on their name.
 - **Example:** pkill firefox terminates all processes named firefox.

2. Linux Networking Basics

2.1. Network Configuration and Tools

- **ifconfig**: Configures and displays network interfaces (deprecated in favor of ip).
 - **Example:** ifconfig -a shows all network interfaces, including those that are inactive.
- **ip**: A more modern tool for managing network interfaces.
 - **Example:** ip addr show displays IP addresses and other details for network interfaces.
- **ping**: Tests network connectivity.

- **Example:** ping google.com sends ICMP echo requests to google.com and displays responses, indicating whether the host is reachable.
- **netstat:** Displays network connections, routing tables, and interface statistics.
 - **Example:** netstat -tuln shows active TCP and UDP connections with their listening ports.