

COMP 012 - Network Administration

Windows + Linux + Packet Tracer + Python Automation

SESSION 6: LINUX SERVER FUNDAMENTALS

ACTIVITY 6.1: UBUNTU SERVER INSTALLATION

Topic: Installing and configuring Ubuntu Server

Description: Deploy Ubuntu Server in your virtual lab environment

INSTRUCTIONS:

Create VM in VirtualBox:

- Name: UbuntuServer
- Type: Linux, Ubuntu (64-bit)
- RAM: 2048 MB
- Disk: 25 GB
- Network: Host-Only + NAT

Install Ubuntu Server 22.04 LTS:

- Minimal installation
- Configure network during install
- Create admin user (not root)
- Enable OpenSSH server
- No additional snaps needed

Post-installation:

- Login with your user
- sudo apt update && sudo apt upgrade
- Set static IP via netplan:
Edit /etc/netplan/00-installer-config.yaml
- Set hostname: sudo hostnamectl set-hostname linuxsrv
- Configure timezone: sudo timedatectl set-timezone Asia/Manila

Verify SSH access from your host machine

Deliverables: Submit installation screenshots and SSH connection proof

25 Points

ACTIVITY 6.2: LINUX COMMAND LINE MASTERY

Topic: Essential Linux commands for administration

Description: Master command-line skills for Linux server management

INSTRUCTIONS:

File and directory commands:

- pwd, ls, ls -la, cd, mkdir, rmdir
- touch, cp, mv, rm, cat, less, head, tail

- find /path -name 'filename'

- grep 'pattern' filename

File permissions:

- chmod 755 filename (rwxr-xr-x)

- chmod u+x script.sh (add execute for user)

- chown user:group filename

System information:

- uname -a, hostname, uptime

- df -h (disk space)

- free -m (memory)

- top, htop (processes)

Package management:

- apt update, apt upgrade

- apt install [package]

- apt remove [package]

- apt search [keyword]

Network commands:

- ip addr, ip route

- ping, traceroute, netstat, ss

- curl, wget

Deliverables: Submit terminal screenshots showing all command exercises

30 Points

ACTIVITY 6.3: USER AND PERMISSION MANAGEMENT

Topic: Managing users, groups, and file permissions

Description: Configure Linux users, groups, and access controls

INSTRUCTIONS:

User management commands:

- sudo adduser username

- sudo deluser username

- sudo passwd username

- sudo usermod -aG groupname username

Create users:

- webadmin, dbadmin, developer

Group management:

- sudo groupadd webteam

- sudo groupadd dbteam

- Add users to groups

Configure sudo access:

- sudo visudo

- Add: webadmin ALL=(ALL) NOPASSWD: /usr/sbin/service apache2 *

Create shared directories:

- /shared/web - webteam full access
- /shared/db - dbteam full access
- /shared/public - everyone read, owners write

Set permissions:

- sudo chown :webteam /shared/web
- sudo chmod 770 /shared/web
- sudo chmod g+s /shared/web (setgid)

Test access with different users

Deliverables: Submit user setup commands and permission verification

35 Points

TOTAL POINTS: 90