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Quick Reference Guide

Ubuntu Server 24.04 LTS

Complete installation for beginners

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1. Why Ubuntu Server

Ubuntu Server 24.04 LTS is the recommended Linux distribution for any self-hosted server. Key advantages:

+ No graphical interface: lower RAM usage, smaller attack surface

+ LTS: 5 years of security updates (until 2029)

+ Massive ecosystem: Docker, Kubernetes, cloud-init — all documented for Ubuntu

+ Built-in cloud-init: ideal for Proxmox VMs and cloud instances

+ APT + Snap: access to thousands of packages

i My entire BOTUM infrastructure runs on Ubuntu Server 22.04/24.04.

2. Download Ubuntu Server 24.04 LTS ISO

Always download from the official source:

```
https://ubuntu.com/download/server

# Verify integrity (SHA256)
sha256sum ubuntu-24.04.2-live-server-amd64.iso
# Compare with: https://releases.ubuntu.com/24.04/SHA256SUMS
```

i File ~2.7 GB. Select Ubuntu Server 24.04.2 LTS (Noble Numbat).

3. Create a Bootable USB Drive

With Rufus (Windows)

1. Download Rufus from https://rufus.ie

2. Plug in your USB drive (4 GB minimum)

3. Select the USB drive under "Device"

4. Click SELECT -> choose the Ubuntu Server ISO

5. Partition scheme: GPT (UEFI) or MBR (BIOS Legacy)

6. Click START -> "Write in ISO Image mode" -> OK

With Balena Etcher (Windows / Mac / Linux)

Download from https://etcher.balena.io -> Flash from file -> Select target -> Flash!

i WARNING: The USB drive will be completely wiped. Back up your data first.

4. Step-by-Step Installation

Boot from the USB drive (F2/F12/DEL at startup depending on your BIOS).

Language and Keyboard

Language -> English (recommended). Keyboard layout -> your preference. Type of install -> Ubuntu Server.

Network Configuration

DHCP if router assigns IPs automatically. For static IP: Edit IPv4 -> Manual -> fill in Subnet / Address / Gateway / Name servers.

Disk Partitioning with LVM

```
Select the target disk
-> "Use an entire disk"
-> Check "Set up this disk as an LVM group"

Automatically created structure:
  +-- /boot/efi    512 MB   (EFI)
  +-- /boot        1 GB     (Kernel)
  +-- ubuntu-vg    remaining (LVM)
       +-- ubuntu-lv  100 GB  (mount /)
```

User Account

Choose a hostname (e.g., ubuntu-srv-01). Lowercase username. Strong password (16+ characters). NEVER use "root" as the username.

Enable OpenSSH Server

MANDATORY step: check "Install OpenSSH server" to enable remote access. You can import SSH keys from GitHub.

i Additional packages (snaps): leave everything unchecked, install manually later.

5. Post-Installation Configuration

System Updates

```
sudo apt update && sudo apt upgrade -y
sudo apt install -y curl wget git htop net-tools unzip
sudo reboot
```

Configure UFW Firewall

```
# MANDATORY: allow SSH before enabling ufw!
sudo ufw allow ssh
sudo ufw allow 80/tcp
sudo ufw allow 443/tcp
sudo ufw enable
sudo ufw status verbose
```

i Absolute rule: always allow SSH BEFORE ufw enable to avoid locking yourself out.

Install fail2ban (Brute Force Protection)

```
sudo apt install -y fail2ban
sudo cp /etc/fail2ban/jail.conf /etc/fail2ban/jail.local
```

Settings in jail.local:

```
[DEFAULT]
bantime  = 3600    # 1-hour ban
findtime = 600     # 10-minute window
maxretry = 5       # 5 attempts before ban

[sshd]
enabled = true
port    = ssh

sudo systemctl enable fail2ban
sudo systemctl start fail2ban
sudo fail2ban-client status sshd
```

6. Create a Sudo User

```
# Create a user
sudo adduser newuser
sudo usermod -aG sudo newuser
groups newuser

# Disable root SSH login
sudo nano /etc/ssh/sshd_config
# Change: PermitRootLogin no
sudo systemctl restart ssh
```

i Principle of least privilege: always use sudo, never root directly.

7. Secure SSH Connection

Generate an SSH Key Pair (on your local machine)

```
# Generate an ED25519 key (recommended)
ssh-keygen -t ed25519 -C "user@botum-infra" -f ~/.ssh/botum_key

# ~/.ssh/botum_key     <- PRIVATE key (never share)
# ~/.ssh/botum_key.pub <- PUBLIC key (copy to server)
```

Copy Key and Secure SSH

```
# Copy public key to server
ssh-copy-id -i ~/.ssh/botum_key.pub user@192.168.1.100

# Test key-based connection
ssh -i ~/.ssh/botum_key user@192.168.1.100

# Disable password auth (on server)
sudo nano /etc/ssh/sshd_config
# PasswordAuthentication no
# PubkeyAuthentication yes
sudo systemctl restart ssh
```

Local SSH Alias (~/.ssh/config)

```
Host botum-srv
    HostName 192.168.1.100
    User yourname
    IdentityFile ~/.ssh/botum_key
    Port 22

# Connect with: ssh botum-srv
```

8. Essential Commands — Quick Reference

```
# System info
uname -a && lsb_release -a
hostname -I
df -h && free -h
htop

# systemd services
sudo systemctl status|start|stop|restart|enable <service>

# APT packages
sudo apt update && sudo apt upgrade -y
sudo apt install|remove <package>
sudo apt autoremove

# Networking
ip addr show
ss -tlnp

# Logs
journalctl -f
journalctl -u ssh
sudo fail2ban-client status
```

Full article: www.botum.ca/install-ubuntu-server

Website: www.botum.ca • contact@botum.ca •

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