

# Bare Metal: Install Ubuntu 24.04

Below is a comprehensive, step-by-step guide for performing a clean installation of Ubuntu 24.04 as a headless server. This guide covers everything from preparation to post-installation configuration without a desktop environment. **Note:** A clean installation will erase existing data on the target drive. Be sure to back up any important data before proceeding.

---

## 1. Pre-Installation Preparations

### a. Verify System Requirements

- **Processor:** 2 GHz dual-core or better
- **Memory (RAM):** Minimum 4 GB (more recommended for server workloads)
- **Disk Space:** Minimum 20 GB (adjust based on your intended server usage)
- **Network:** Ethernet or Wi-Fi adapter (wired is preferred for servers)
- **Console Access:** Either direct physical access or remote (via IPMI/KVM) since no GUI will be available

### b. Backup Your Data

- **Warning:** A clean installation will **erase all data** on the chosen drive. Back up important files and configurations.
- 

## 2. Download the Ubuntu 24.04 Server ISO

1. **Visit the Official Ubuntu Website:**

Navigate to [Ubuntu Server Downloads](#).

2. **Select Ubuntu 24.04 LTS:**

Click on the Ubuntu 24.04 LTS Server download button.

3. **Download the ISO:**

Save the ISO file to your computer.

4. **Verify the Download (Optional but Recommended):**

- **On Linux/macOS:**

```
sha256sum path/to/ubuntu-24.04-live-server-amd64.iso
```

- **On Windows:**

Use a tool such as [QuickHash](#) to verify the checksum provided on the Ubuntu website.

---

## 3. Create a Bootable USB Drive

### a. Using Rufus (Windows)

1. **Download and Install Rufus:**

Visit [rufus.ie](https://rufus.ie) and download the latest version.

2. **Insert a USB Drive:**

Ensure it's at least 2 GB (all data on the USB will be erased).

3. **Open Rufus and Configure:**

- **Device:** Select your USB drive.
- **Boot selection:** Click "SELECT" and choose the Ubuntu 24.04 Server ISO.
- **Partition scheme:**
  - Choose **GPT** for UEFI systems (most modern PCs).
  - Choose **MBR** if you need BIOS/Legacy support.
- **File System:** Typically "FAT32" (default).

4. **Start the Process:**

Click "START" and confirm any warnings. Rufus will now create your bootable USB drive.

### b. Using balenaEtcher (macOS/Linux/Windows)

### 1. Download Etcher:

Go to [balenaEtcher](#) and download the version for your OS.

### 2. Install and Run Etcher:

- Select the Ubuntu 24.04 Server ISO.
- Choose your USB drive.
- Click “Flash!” and wait for the process to finish.

## c. Using the `dd` Command (Linux/macOS)

⚠ **Warning:** The `dd` command is powerful. Ensure you’ve selected the correct drive to avoid data loss.

### 1. Identify the USB Drive:

```
lsblk
```

### 2. Write the ISO to the USB:

Replace `/dev/sdX` with your USB device (do not include a partition number, e.g., use `/dev/sdb` instead of `/dev/sdb1`):

```
sudo dd if=/path/to/ubuntu-24.04-live-server-amd64.iso of=/dev/sdX bs=4M status=progress  
conv=fdatasync
```

## 4. Booting from the USB Drive

1. **Insert the Bootable USB Drive** into the server hardware.

2. **Restart Your Server.**

3. **Enter BIOS/UEFI Settings:**

- Common keys: `F2`, `F12`, `DEL`, or `ESC` (refer to your hardware’s documentation).
- Set the boot order to prioritize booting from the USB drive.

4. **Save and Exit:**

Your server should now boot from the USB drive.

# 5. Starting the Ubuntu Server Installation

## 1. Boot Menu:

After booting from the USB, you'll see a text-based installer menu. Since this is a server installation, there is no graphical "Try" mode.

- **Action:** Select "Install Ubuntu Server" (or similar option) using your keyboard's arrow keys and press **Enter**.
- 

# 6. Follow the Server Installation Wizard

The installation wizard is text-based and will guide you through the setup. Use the keyboard (arrow keys, Tab, and Enter) to navigate the menus.

## a. Select Your Language

- **Screen:** "Welcome to Ubuntu Server Installer"
- **Action:** Choose your preferred language and press **Enter**.

## b. Select Your Keyboard Layout

- **Screen:** "Keyboard Configuration"
- **Action:** Choose your layout (often "English (US)" or your regional setting) and press **Enter**.

## c. Configure the Network

- **Screen:** "Network Connections"
- **Action:**
  - The installer will attempt to configure networking via DHCP.
  - If using a static IP or additional network interfaces, follow the prompts to set up manually.

- **Tip:** Ensure your network connection is active so that installation can download updates and packages if needed.

## d. Configure the Proxy (If Applicable)

- **Screen:** “HTTP Proxy”
- **Action:** Enter your proxy settings if required, or leave blank if not using one.

## e. Choose a Mirror for Package Updates

- **Screen:** “Ubuntu Archive Mirror”
- **Action:** Select the appropriate mirror (usually detected automatically) and press **Enter**.

## f. Storage Configuration

- **Screen:** “Partition Disks”
- **Options:**
  - **Guided - use entire disk:** For a fully automatic partitioning scheme (this will erase all data).
  - **Manual:** For custom partitioning (for example, creating separate partitions for `/`, `/var`, or swap).
- **Action:** Choose your preferred option, confirm any warnings, and proceed.
  - For UEFI systems, ensure an EFI System Partition (≈300–500 MB, FAT32) is created if not already present.
  - Set up the root partition (`/`) (at least 10–20 GB recommended).
  - Optionally configure a swap area (or use a swap file post-installation).

## g. Profile Setup

- **Screen:** “Who Are You?”
- **Action:**
  - Enter your full name, a username, and a secure password.
  - Configure whether to enable SSH access during installation (highly recommended for headless servers).
  - **Tip:** Many server installers offer to install and enable the OpenSSH server automatically—confirm this to allow remote management.

## h. Feature Selection (Optional)

- **Screen:** “Featured Server Snaps” or “Additional Software”
- **Action:**
  - You might have options to install services like LXD, Docker, or other server applications.
  - Select the ones you need, or skip if you plan to install them later.

## i. Finalize the Installation

- **Screen:** “Summary”
  - **Action:** Review your configuration and confirm to begin installation.
  - The installer will now copy files and configure your system. This process may take several minutes.
- 

# 7. Finishing Up

1. **Installation Complete:**

Once the process is finished, you’ll be prompted to remove the installation media.
  2. **Restart Your Server:**
    - Remove the USB drive.
    - Press **Enter** to reboot.
  3. **First Boot:**
    - Your server will boot into a command-line login prompt.
    - Log in using the username and password you created during installation.
- 

# 8. Post-Installation Configuration

## a. Update the System

1. **Log In via Console or SSH:**

If you enabled the SSH server, you can now connect remotely.
2. **Update Package Lists and Upgrade Packages:**

```
sudo apt update  
sudo apt upgrade -y
```

3. **Clean Up Unused Packages:**

```
sudo apt autoremove -y
```

## b. Secure Remote Access

- **SSH Configuration:**

The server installer should have set up SSH, but you can further harden it:

- Edit `/etc/ssh/sshd_config` to disable root login and consider changing the default SSH port.
- Restart SSH:

```
sudo systemctl restart ssh
```

- **Firewall Setup with UFW:**

1. **Enable UFW:**

```
sudo ufw allow ssh
sudo ufw enable
```

2. **Check Firewall Status:**

```
sudo ufw status verbose
```

## c. Install Essential Server Packages

- Install utilities and tools that are commonly used:

```
sudo apt install build-essential curl git vim htop -y
```

- **Note:** Since this is a headless server, you won't install any desktop environments.

## d. Configure Networking (If Needed)

- Use commands like `ip a` or `ifconfig` to check your network settings.
- For advanced networking, edit configuration files in `/etc/netplan/` (Ubuntu's default on recent releases) and apply changes using:

```
sudo netplan apply
```

## e. Set Up Automated Backups

- Consider installing and configuring backup tools (e.g., `rsnapshot` or `borgbackup`) to safeguard your server data.
  - Configure a regular backup schedule via cron jobs.
- 

## 9. Final Thoughts

- **Documentation:** Familiarize yourself with [Ubuntu Server documentation](#) for advanced configuration and troubleshooting.
- **Community:** Ubuntu Forums and Ask Ubuntu are excellent resources for support and tips.
- **Monitoring:** Set up system monitoring tools (e.g., `netdata`, `nagios`, or `prometheus`) to keep an eye on server health.

Congratulations! Your Ubuntu 24.04 headless server is now installed, updated, and configured for remote management and further customization. Enjoy your new server environment!

---

Revision #2

Created 18 February 2025 18:56:10 by Jamie W

Updated 18 February 2025 19:09:07 by Jamie W