Complete Step-by-Step Guide: Installing Ubuntu on VirtualBox for Beginners

This comprehensive guide will walk you through every step needed to install Ubuntu on VirtualBox, complete with detailed explanations and visual guidance for complete beginners.

Prerequisites and System Requirements

Before starting, ensure your computer meets these minimum requirements:

Host System Requirements:

- **Processor**: 2 GHz dual-core processor or better
- **RAM**: 8 GB system memory (minimum 6 GB)
- **Storage**: At least 50 GB of free hard drive space
- **Operating System**: Windows 10/11, macOS, or Linux
- **Internet Connection**: Required for downloads

Recommended Ubuntu VM Specifications:

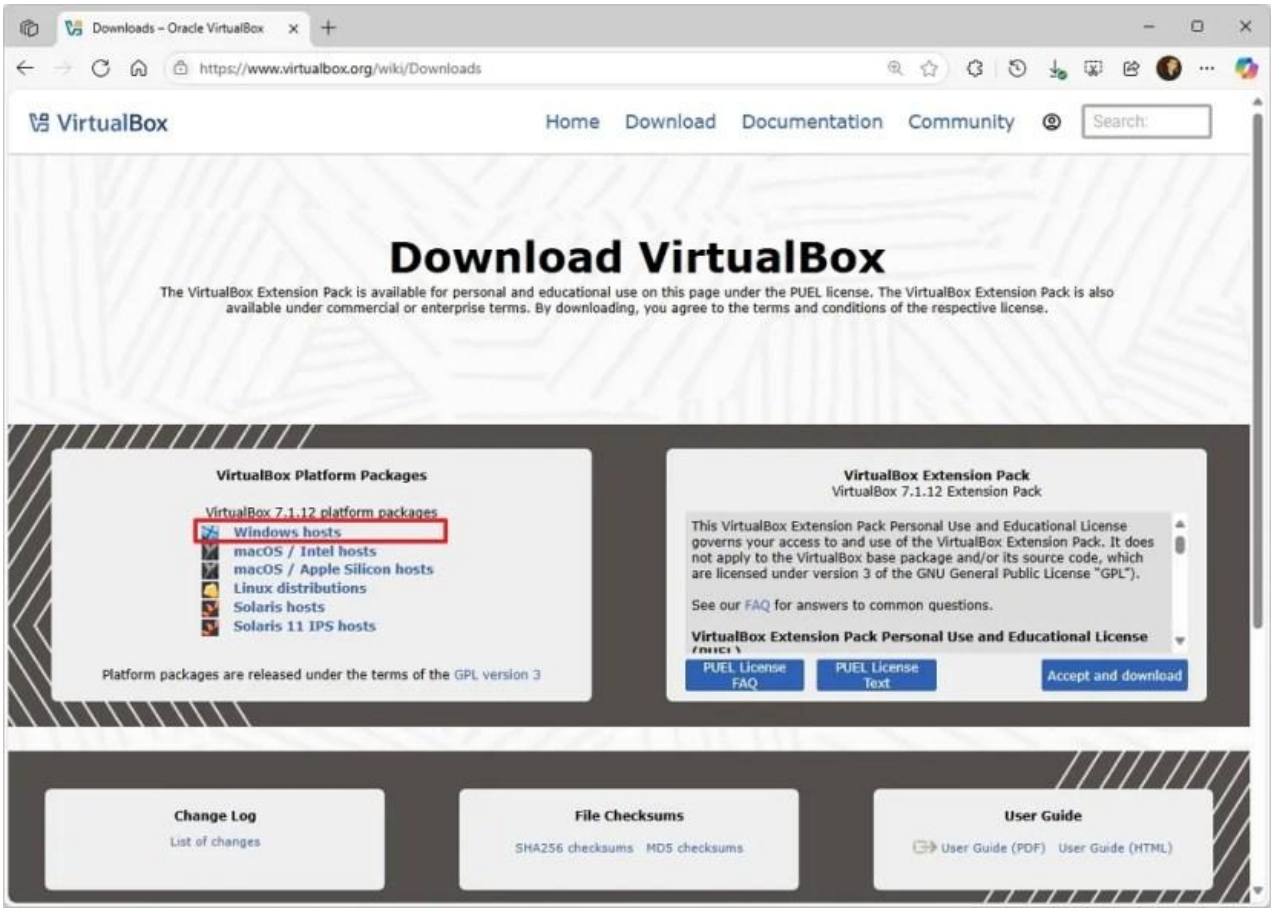
- **RAM Allocation**: 8 GB (for smooth performance)
- **Virtual Hard Disk**: 25-50 GB minimum
- **Processors**: 2-4 CPU cores

Screenshot of the official VirtualBox website showing the Downloads section highlighted, suitable for guiding users on where to begin downloading the software.

Phase 1: Download Required Software

Step 1: Download VirtualBox

1. Open your web browser and navigate to the official VirtualBox website: https://www.virtualbox.org
2. Click on the **"Download VirtualBox"** button on the homepage
3. Select **"Windows hosts"** if you're using Windows (or choose your appropriate operating system)



VirtualBox official download page showing platform packages with Windows hosts option highlighted for downloading the installer.

4. The download will begin automatically - save the installer file to your Downloads folder
5. The file will be named something like `VirtualBox-7.x.x-Win.exe`

Step 2: Download Ubuntu ISO

1. Visit the official Ubuntu website: `https://ubuntu.com/download/desktop`
2. Choose **Ubuntu 24.04.3 LTS** (Long Term Support version recommended for beginners)
3. Click the **"Download"** button - this will download the Ubuntu ISO file (approximately 4.1-4.7 GB)
4. Save the ISO file to an easily accessible location like your Downloads folder
5. The file will be named `ubuntu-24.04.x-desktop-amd64.iso`

Phase 2: Install VirtualBox

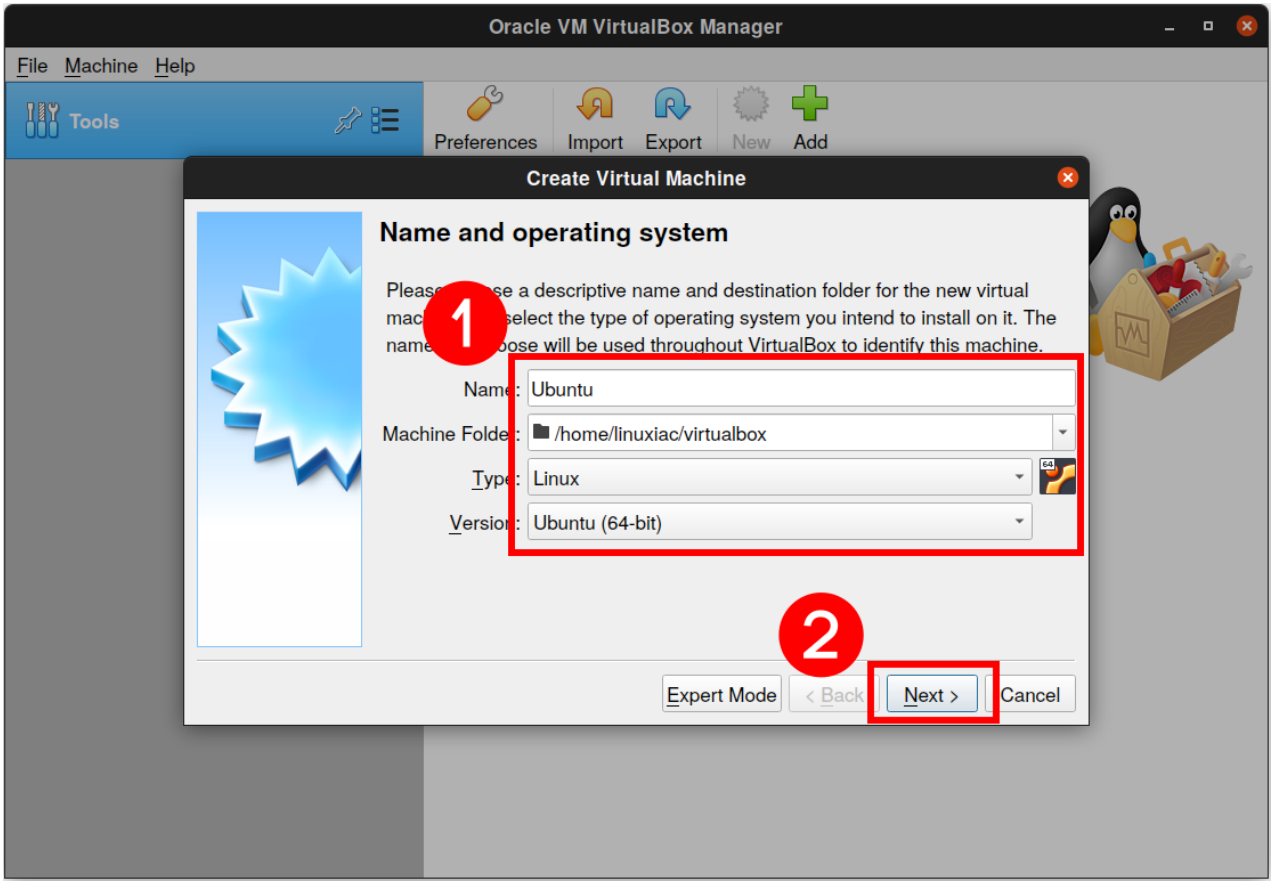
Step 3: Install VirtualBox on Your Computer

1. Navigate to your Downloads folder and double-click the VirtualBox installer file
2. When the installation wizard appears, click **"Next"** to begin
3. **Choose Installation Location**: Accept the default location or choose a custom path, then click **"Next"**
4. **Select Components**: Keep all default selections checked and click **"Next"**
5. **Create Shortcuts**: You can uncheck "Quick Launch Bar" if desired, then click **"Next"**
6. **Network Warning**: Click **"Yes"** when prompted about network interfaces (this is normal)
7. **Ready to Install**: Click **"Install"** to begin the installation process
8. **Device Software Installation**: Click **"Install"** when Windows asks about device software
9. **Complete Installation**: Click **"Finish"** to complete the setup
10. VirtualBox will automatically open after installation

Phase 3: Create Ubuntu Virtual Machine

Step 4: Create New Virtual Machine

1. **Launch VirtualBox**: Open VirtualBox from your desktop or Start menu
2. **Start Creation**: Click the **"New"** button (blue icon) in the VirtualBox Manager
3. **Name Your VM**:
    - **Name**: Type "Ubuntu" or "Ubuntu 24.04"
    - **Machine Folder**: Leave as default or choose custom location
    - **Type**: Select **"Linux"**
    - **Version**: Choose **"Ubuntu (64-bit)"**

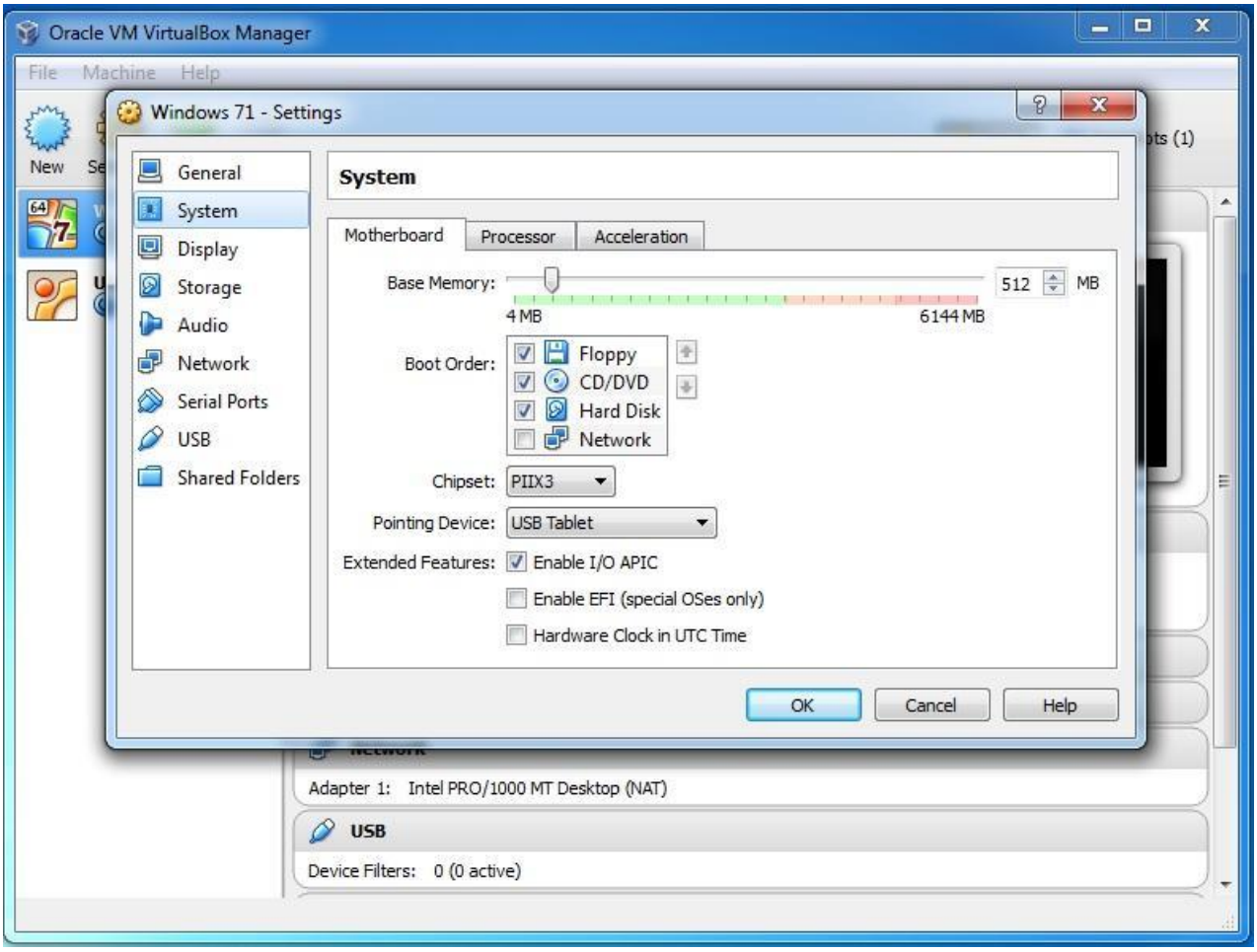


Setting up a new Ubuntu virtual machine in VirtualBox by entering the machine name, type, and version, then clicking Next to proceed.

4. Click **"Next"** to proceed

Step 5: Allocate Memory (RAM)

1. **Memory Size Configuration**:
    - **Minimum**: 2048 MB (2 GB) for basic operation
    - **Recommended**: 8192 MB (8 GB) for smooth performance
    - **Optimal**: 8192 MB (8 GB) if you have sufficient RAM
2. **Important**: Never allocate more than half of your total system RAM
3. Use the slider or type the value directly



VirtualBox system settings showing virtual machine memory allocation and boot order configuration.

4. Click **"Next"** to continue

Step 6: Create Virtual Hard Disk

1. **Hard Disk Options**: Select **"Create a virtual hard disk now"**
2. Click **"Create"** to proceed
3. **Hard Disk File Type**: Choose **"VDI (VirtualBox Disk Image)"**
4. Click **"Next"**
5. **Storage Type**:
    - Select **"Dynamically allocated"** (recommended for beginners)
    - This allows the disk to grow as needed, saving space initially
6. Click **"Next"**

7. **Disk Size**:
    - **Minimum**: 25 GB for Ubuntu installation
    - **Recommended**: 50 GB for comfortable usage with additional software
8. Click **"Create"** to finish creating the virtual machine

The 'Create New Virtual Machine' dialog in VirtualBox showing options to create or use a virtual hard disk for the new machine.

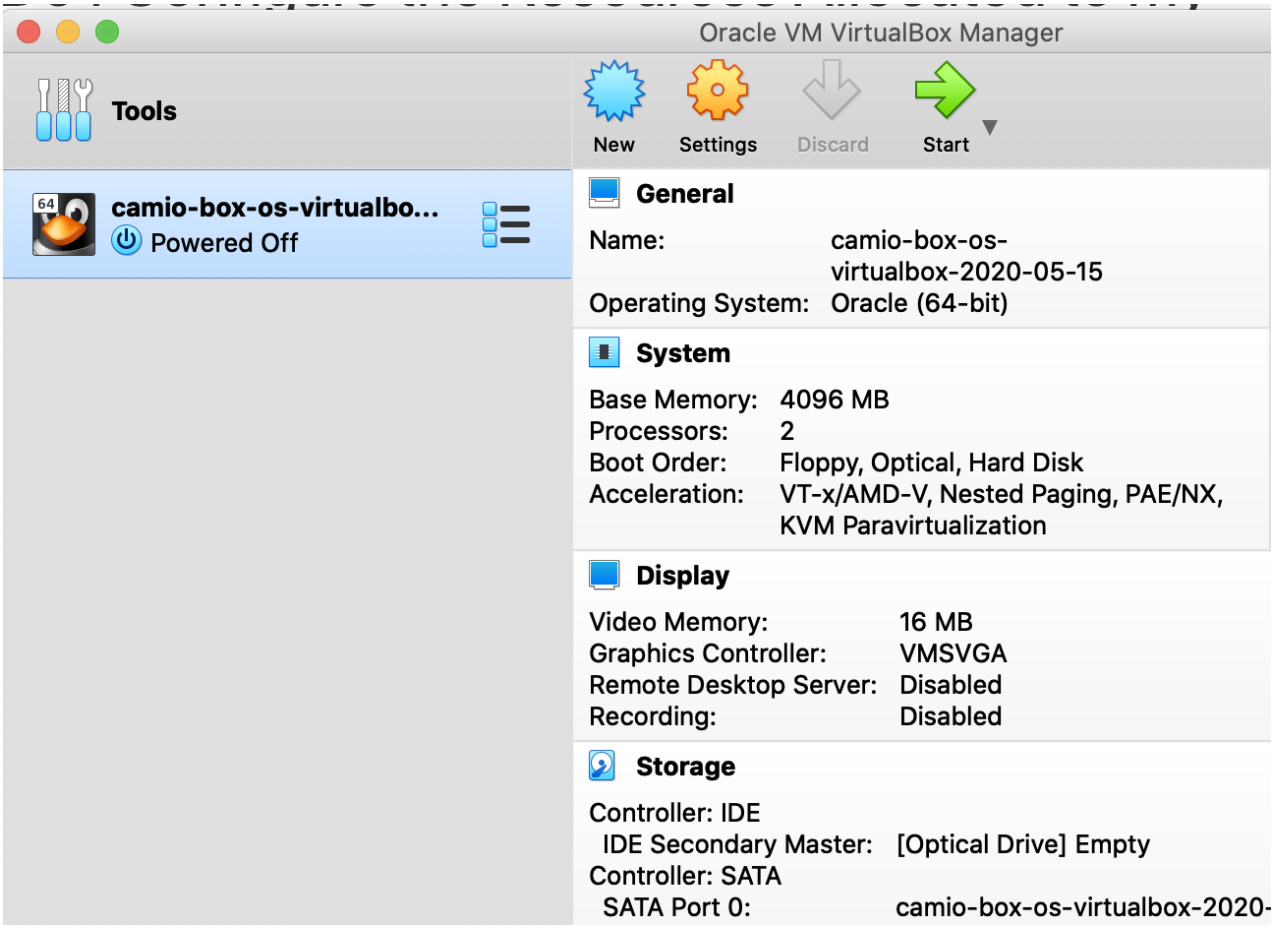
Phase 4: Configure Virtual Machine Settings

Step 7: Adjust VM Settings

1. **Access Settings**: Select your Ubuntu VM and click **"Settings"**
2. **System Settings**:
    - Go to **"System"** → **"Processor"** tab

- **Processor(s)**: Set to 2-4 processors if available
- **Enable VT-x/AMD-V**: Ensure hardware virtualization is enabled

3. **Display Settings**:
   - Go to **"Display"** → **"Screen"** tab
   - **Video Memory**: Set to 128 MB or maximum available
   - **Graphics Controller**: Select **"VBoxSVGA"**
4. **Storage Configuration**:
   - Go to **"Storage"** tab
   - Click on **"Empty"** under **"Controller: IDE"**
   - Click the disk icon next to **"Optical Drive"**
   - Select **"Choose a disk file"** and browse to your Ubuntu ISO file
   - Select the Ubuntu ISO file and click **"Open"**
5. Click **"OK"** to save all settings



VirtualBox Manager showing detailed settings for a virtual machine, including memory (RAM) allocation, processors, display, and storage configurations.

Phase 5: Install Ubuntu

Step 8: Start Virtual Machine

1. **Boot the VM**: Select your Ubuntu VM and click **"Start"**
2. **First Boot**: The VM will boot from the Ubuntu ISO automatically
3. **Ubuntu Boot Screen**: You'll see the Ubuntu logo and loading screen

Step 9: Begin Ubuntu Installation

1. **Language Selection**: Choose your preferred language from the list
2. **Try or Install**: Select **"Install Ubuntu"** to begin the installation process
3. **Keyboard Layout**:
    - Select your keyboard layout (usually detected automatically)
    - Click **"Continue"**

Step 10: Installation Options

1. **Updates and Software**:
    - Select **"Normal installation"** (recommended for beginners)
    - Check **"Download updates while installing Ubuntu"**
    - Check **"Install third-party software"** for better hardware support
    - Click **"Continue"**
2. **Installation Type**:
    - Select **"Erase disk and install Ubuntu"**
    - **Don't worry**: This only affects the virtual disk, not your real computer
    - Click **"Install Now"**
    - Click **"Continue"** to confirm

Step 11: Configure User Settings

1. **Location**: Select your time zone on the world map, then click **"Continue"**
2. **User Information**:
    - **Your name**: Enter your full name
    - **Computer name**: Choose a name for your Ubuntu system
    - **Username**: Create a username (lowercase, no spaces)
    - **Password**: Create a strong password
    - **Confirm password**: Re-enter your password
    - Choose **"Log in automatically"** or **"Require password"**
3. Click **"Continue"** to start the installation

Step 12: Complete Installation

1. **Installation Progress**: Wait for Ubuntu to install (typically 15-30 minutes)
2. **Installation Complete**: When finished, click **"Restart Now"**
3. **Remove Installation Media**: Press **Enter** when prompted to remove the installation media
4. **First Boot**: Your Ubuntu VM will restart and boot into the new system

Phase 6: Post-Installation Setup

Step 13: Initial Ubuntu Setup

1. **Welcome Screen**: Complete the initial Ubuntu setup wizard
2. **Online Accounts**: You can skip this step or configure accounts as desired
3. **Livepatch**: Choose whether to enable Ubuntu Livepatch (optional)
4. **Help Improve Ubuntu**: Choose whether to send system information (optional)
5. **Privacy Settings**: Configure location services as desired
6. **Ready to Go**: Click **"Done"** to complete the setup

Step 14: Install VirtualBox Guest Additions (Optional but Recommended)

1. **From VM Menu**: In the VirtualBox window, go to **"Devices"** → **"Insert Guest Additions CD image"**
2. **Ubuntu Prompt**: When Ubuntu asks what to do with the CD, select **"Run"**

3. **Installation**: Enter your password when prompted and wait for installation to complete
4. **Restart**: Restart your Ubuntu VM for changes to take effect
5. **Benefits**: This enables better screen resolution, mouse integration, and shared folders

Step 15: Final Configuration

1. **Screen Resolution**: The display should now automatically adjust to your window size
2. **Updates**: Open **"Software Updater"** to install any available updates
3. **Install Software**: Use **"Ubuntu Software"** to install additional applications as needed

Troubleshooting Common Issues

Performance Issues

- **Slow Performance**: Increase allocated RAM to 8 GB if available
- **Graphics Issues**: Install Guest Additions and increase video memory to 128 MB
- **CPU Usage**: Reduce allocated processors if host system becomes sluggish

Boot Issues

- **VM Won't Start**: Ensure Ubuntu ISO is properly attached in Storage settings
- **Black Screen**: Enable VT-x/AMD-V in BIOS/UEFI if available
- **Installation Hangs**: Try increasing allocated RAM or processors

Storage Issues

- **Running Out of Space**: Power off VM, go to Settings → Storage, and increase disk size
- **Slow Disk Performance**: Consider using Fixed Size instead of Dynamically Allocated storage

Memory and Performance Recommendations

Based on extensive testing and user feedback:

For Basic Usage (Web browsing, office work):

- RAM: 4 GB
- Processors: 2 CPUs

- Storage: 25-30 GB

For Development/Programming:

- RAM: 6-8 GB
- Processors: 3-4 CPUs
- Storage: 40-50 GB

For Resource-Intensive Tasks:

- RAM: 8+ GB
- Processors: 4+ CPUs
- Storage: 60+ GB

Next Steps

After successfully installing Ubuntu on VirtualBox:

1. **Explore Ubuntu**: Familiarize yourself with the Ubuntu desktop environment
2. **Install Software**: Use the Ubuntu Software Center to install applications
3. **Configure Shared Folders**: Set up shared folders between host and guest OS for file transfer
4. **Create Snapshots**: Take VirtualBox snapshots before making major changes
5. **Enable Bidirectional Clipboard**: Configure clipboard sharing in VM settings

Congratulations! You now have a fully functional Ubuntu system running on VirtualBox. This virtual environment is perfect for learning Linux, testing software, or development work without affecting your main operating system.