

Linux and Shell Scripting

Chapter 2: Installation of Linux (Ubuntu and CentOS)

Introduction

This chapter will guide you through the installation process of two popular Linux distributions: Ubuntu and CentOS. By the end of this chapter, you will have a fully operational Linux system ready for further exploration and use.

2.1 Installing Ubuntu

2.1.1 System Requirements

Before installing Ubuntu, ensure your system meets the following minimum requirements:

- Processor: 2 GHz dual-core processor
- Memory: 4 GB RAM
- Storage: 25 GB of free disk space
- Graphics: VGA capable of 1024x768 screen resolution
- Bootable USB drive or DVD

2.1.2 Downloading Ubuntu

1. Visit the [official Ubuntu website](https://ubuntu.com).
2. Choose the version you want to download. For most users, the Long Term Support (LTS) version is recommended.
3. Click on the "Download" button and save the ISO file to your computer.

2.1.3 Creating a Bootable USB Drive

To create a bootable USB drive, you will need a tool like Rufus (for Windows) or Etcher (cross-platform).

Using Rufus (Windows):

1. Download and install Rufus from the [official website](https://rufus.ie).
2. Insert your USB drive and open Rufus.
3. Select your USB drive under "Device".
4. Click "Select" and choose the Ubuntu ISO file you downloaded.
5. Click "Start" and wait for the process to complete.

Using Etcher (Windows, macOS, Linux):

1. Download and install Etcher from the [official website](https://etcher.io).
2. Open Etcher, select the Ubuntu ISO file, select your USB drive, and click "Flash!".

3. Wait for the process to complete.

2.1.4 Installing Ubuntu

1. Insert the bootable USB drive into your computer and restart it.
2. Access the boot menu by pressing the appropriate key (usually F2, F12, Esc, or Del) during startup.
3. Select the USB drive from the boot menu.
4. Once the Ubuntu installer loads, select "Install Ubuntu".
5. Choose your language and keyboard layout.
6. Select "Normal installation" and ensure "Download updates while installing Ubuntu" and "Install third-party software" are checked.
7. Choose the installation type. If you want to erase the entire disk, select "Erase disk and install Ubuntu". For dual-boot, select "Install Ubuntu alongside [your current OS]".
8. Follow the prompts to set your time zone, create a user account, and set a password.
9. Click "Install Now" and wait for the installation to complete.
10. Once done, restart your computer and remove the USB drive when prompted.

2.2 Installing CentOS

2.2.1 System Requirements

Ensure your system meets the following minimum requirements for CentOS:

- Processor: 2 GHz dual-core processor
- Memory: 2 GB RAM (4 GB recommended)
- Storage: 20 GB of free disk space
- Graphics: VGA capable of 1024x768 screen resolution
- Bootable USB drive or DVD

2.2.2 Downloading CentOS

1. Visit the official CentOS website.
2. Choose the version you want to download. The minimal ISO is a lightweight option, while the DVD ISO includes a full set of software.
3. Click on the desired version and download the ISO file.

2.2.3 Creating a Bootable USB Drive

You can use Rufus or Etcher to create a bootable USB drive, following the same steps outlined for Ubuntu.

2.2.4 Installing CentOS

1. Insert the bootable USB drive into your computer and restart it.

2. Access the boot menu by pressing the appropriate key during startup.
3. Select the USB drive from the boot menu.
4. Once the CentOS installer loads, select "Install CentOS".
5. Choose your language and click "Continue".
6. On the "Installation Summary" screen, configure the following:
 - Date & Time: Set your time zone.
 - Keyboard: Choose your keyboard layout.
 - Installation Destination: Select the disk where you want to install CentOS.
 - Network & Hostname: Configure your network settings and set a hostname.
7. Click "Begin Installation".
8. During installation, set the root password and create a user account.
9. Once the installation is complete, click "Reboot" and remove the USB drive.

2.3 Post-Installation Steps

2.3.1 Updating the System

After installing Ubuntu or CentOS, it is important to update the system to ensure you have the latest software and security patches.

Updating Ubuntu:

1. Open a terminal.
2. Run the following commands:

```
bash
```

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

Updating CentOS:

1. Open a terminal.
2. Run the following command:

```
bash
```

```
sudo yum update -y
```

2.3.2 Installing Additional Software

Depending on your needs, you may want to install additional software such as web browsers, development tools, and media players.

Installing Software on Ubuntu:

Use the apt command to install software. For example, to install the GIMP image editor, run:

```
bash
```

```
sudo apt install gimp
```

Installing Software on CentOS:

Use the yum command to install software. For example, to install the GIMP image editor, run:

```
bash
```

```
sudo yum install gimp
```

2.4 Summary

In this chapter, we covered the installation process for Ubuntu and CentOS, including system requirements, downloading ISO files, creating bootable USB drives, and post-installation steps. With your new Linux system installed, you're now ready to dive deeper into the world of Linux.