Chapter 3: Installing Docker

-Although Docker client can run on Windows and macOS to control Docker server, Linux containers can only be built and launched on Linux system. So that **non-Linux system** will **require** a **VM** or **remote server** to **host** Linux-based **Docker server**. Docker Community Edition, Docker Desktop, Vagrant provide some approaches to address this issue.

# 1. Docker Client

-The majority of **Linux distributions** can trace their origins to **Debian** or **Red Hat**.

+Debian: utilize deb package format and Advanced Package Tool (apt) to install most prepackaged software: <https://wiki.debian.org/AptCLI>

+Red Hat: rely on RPM Package Manager (rpm) files and Yellowdog Updater, Modified (yum)

https://en.wikipedia.org/wiki/Yum\_(software), Dandified yum (dnf) (https://goo.gl/TdkGRS)

-macOS and MS: native GUI installers provide easiest method to install and maintain prepackaged software:

+macOS: Homebrew (https://brew.sh/)

**+MS: (**[**https://chocolatey.org/**](https://chocolatey.org/)**)**

-Find the most recent installation documentation on Docker web: https://docs.docker.com/get-docker

## 1.1 Linux

-Ubuntu Linux 22.04 (64-bit)

-Fedora Linux 36 (64-bit)

## 1.2 macOs, Mac OS X

-GUI installer

-Homebrew installation

## 1.3 Microsoft Windows 11

-It’s highly recommended that you set up Window Subsystem for Linux (WSL2) before installing Docker Desktop, then select any available options in Docker Desktop installer to enable and default to WSL2: <https://docs.microsoft.com/en-us/windows/wsl/install>

-Chocolatey installation

+You can install Docker CLI tools using Chocolatey package management system

(<https://docs.chocolatey.org/en-us/choco/setup>). If you take this approach, consider installing Vagrant for creating and managing your Linux VM.

# 2. Docker Server

-Docker server is separate binary from client and used to manage most of work for which Docker is typically used. We will see most common ways to manage Docker server.

-Docker Desktop, Docker Community Edition already set up server for you, don’t need to do anything besides ensuring that server (dockerd)

## 2.1 systemd-based Linux

## 2.2 Non-Linux VM-Based Server

-If you running an older version of Windows or can’t use Docker Desktop, investigate Vagrant to create and manage your Docker server Linux VM (https://www.vagrantup.com/)

-Vagrant

+Vagrant provides support for multiple hypervisors and can often be leveraged to mimic even the most complex environments.

# 3. Testing the Setup

-We can run containers based on any Linux distribution we like. We’ll run Linux containers based on Ubuntu, Fedora, Alpine Linux.

## 3.1 Ubuntu

-Launching a container using latest Ubuntu Linux base image: 

+docker container run = docker run

+Then enter exit to close container.

## 3.2 Fedora

-Test launching a container using latest Alpine Linux base image: 

## 3.3 Alpine Linux



# 4. Exploring the Docker Server