

Setting up Linux on Windows

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NOTE: Using Linux has a learning curve. Don't be afraid! Call your mom; she'll tell you everything's all right!

Windows Subsystem for Linux (wsl):

Pros:

- It provides a Linux terminal in Windows

Cons:

- Can be buggy

Docker/Podman

Pros:

- You can run any container you want or create your own
- Many CTF's have Dockerfiles and docker-compose files to create a local environment to work on

Cons:

- WSL installation is required, and if WSL is buggy by itself, podman is already starting off with a strike
- You can't use Docker on your work computer without a license

VirtualBox

Pros:

- You can run a wide range of pre-made OSs, including Kali
- WSL not required

Cons:

- There is a learning curve
- Debugging issues can be a PITA

Also Rans:

Cloud offerings: Linode, AWS, Azure, or GC

WSL Setup:

I used these as a guide.

<https://learn.microsoft.com/en-us/windows/wsl/install>

<https://learn.microsoft.com/en-us/windows/wsl/setup/environment#set-up-your-linux-username-and-password>

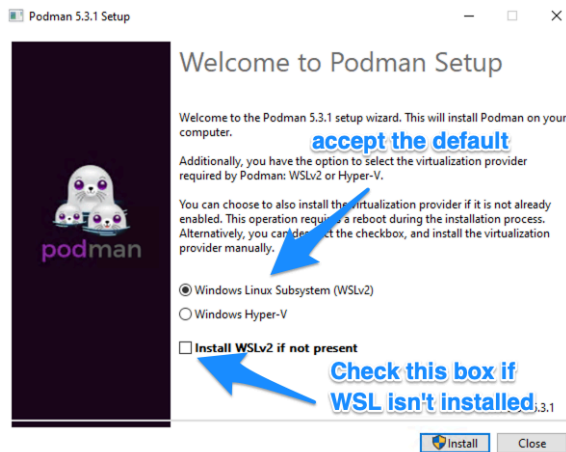
1. Open Powershell or Command Prompt as Administrator
 2. Run `wsl --install`
 3. Create a username and password for the Linux instance
-

Podman Setup:

I used the following link as an installation reference.

<https://github.com/containers/podman/blob/main/docs/tutorials/podman-for-windows.md>

1. Open the command line (cmd)
2. Install Windows Terminal: `winget install Microsoft.WindowsTerminal`
3. Download most recent podman setup.exe file from <https://github.com/containers/podman/releases>.
 1. E.g., `podman-5.3.1-setup.exe`
4. Run the .exe file you downloaded in the previous step. NOTE: I had WSL installed before installing podman. YMMV having podman install it.



5. Open the Windows Terminal that was installed in step 2.

6. Enter `podman machine init` on the command line. It should resemble the following:

```
Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\kenny> podman machine init
Looking up Podman Machine image at quay.io/podman/machine-os-wsl:5.3 to create VM
Getting image source signatures
Copying blob b91111a57876 done |
Copying config 44136fa355 done |
Writing manifest to image destination
b91111a57876f7891d144d97aae170247b7df7bd242500fb2f18d6ef2f86837f
Extracting compressed file: podman-machine-default-amd64: done
Importing operating system into WSL (this may take a few minutes on a new WSL install)...
Import in progress, this may take a few minutes.
The operation completed successfully.
Configuring system...
Machine init complete
To start your machine run:

    podman machine start

PS C:\Users\kenny> |
```

7. Next, enter `podman machine start` on the command line. You should get a successful start message.

```
PS C:\Users\kenny> podman machine start
Starting machine "podman-machine-default"

This machine is currently configured in rootless mode. If your containers
require root permissions (e.g. ports < 1024), or if you run into compatibility
issues with non-podman clients, you can switch using the following command:

    podman machine set --rootful

API forwarding listening on: npipe:////./pipe/docker_engine

Docker API clients default to this address. You do not need to set DOCKER_HOST.
Machine "podman-machine-default" started successfully
PS C:\Users\kenny>
```

8. Now, test it! Enter the following on the command line: `podman run ubi8-micro date`

```
PS C:\Users\kenny> podman run ubi8-micro date
Resolved "ubi8-micro" as an alias (/etc/containers/registries.conf.d/000-shortnames.conf)
Trying to pull registry.access.redhat.com/ubi8-micro:latest...
Getting image source signatures
Checking if image destination supports signatures
Copying blob sha256:0cdc646404194f6ede416263e7299a39254dd6005bef2f7f90d7d2e0e3baeef9
Copying config sha256:056466af3595658b35c0fd1dc8b4af6429718c2cfd77072e7135954557a7d37d
Writing manifest to image destination
Storing signatures
Tue Jan 7 14:20:41 UTC 2025
PS C:\Users\kenny>
```

If you get the current date and time, podman works!

9. Profit!

VirtualBox Setup:

https://www.youtube.com/watch?v=wX75Z-4MEoM&ab_channel=NetworkChuck

<https://www.geeksforgeeks.org/how-to-install-virtualbox-on-windows/>

The guides above are good for installing Virtualbox. I would just be recreating their work.