Windows 10+

- **Minimum Requirements**
  - Windows 10 version 2004 (Build 19041 and higher)
  - Quad-core CPU running at 2.0 GHz+
  - 8 GiB of RAM
- **Recommended**
  - Windows 11
  - 6th Gen Intel® Core CPU or later OR AMD Ryzen™ 1000-series or later
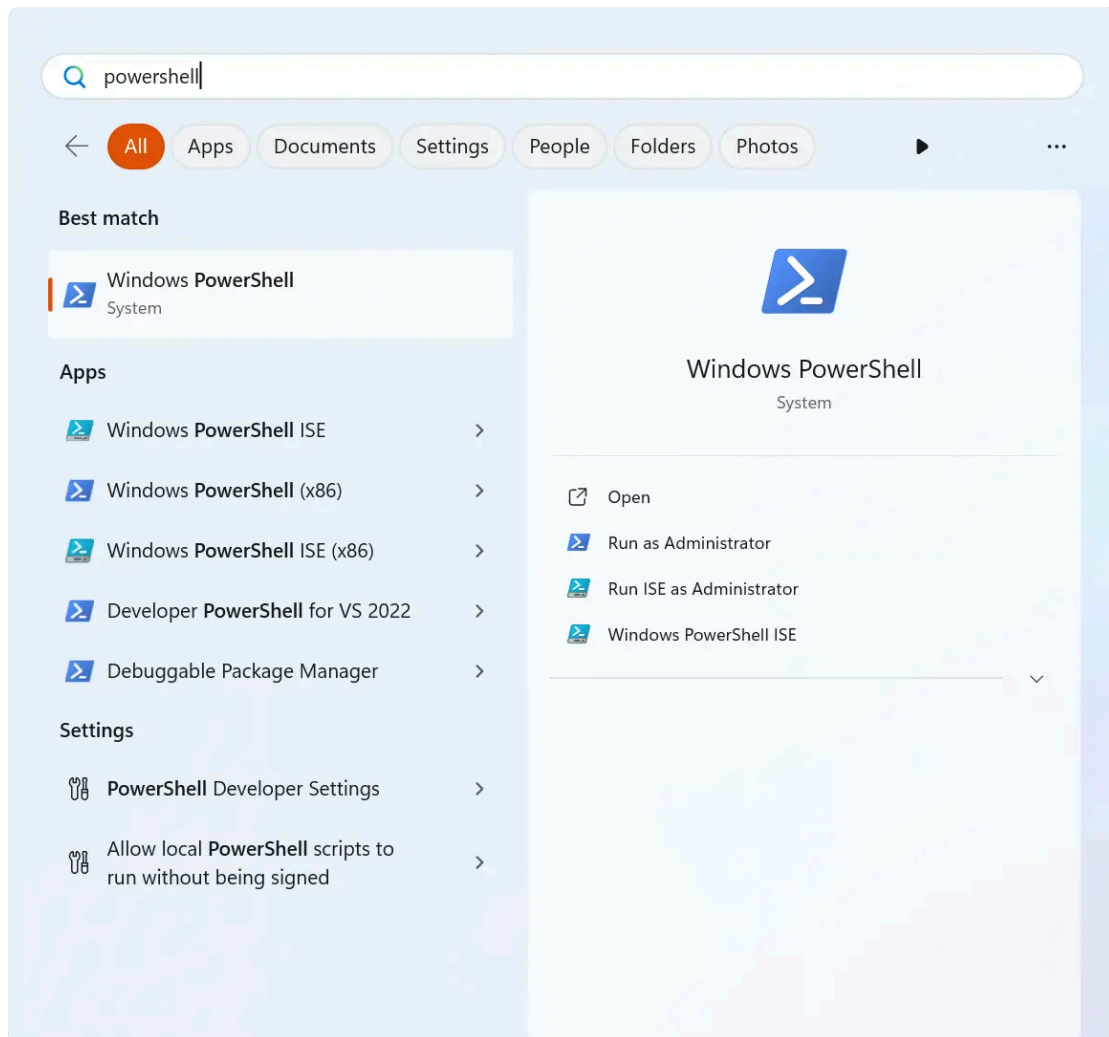 - 16 GiB of RAM

Setting up WSL

1. Follow official Microsoft documentation for WSL located here to install the WSL 2.

> **Note**
>
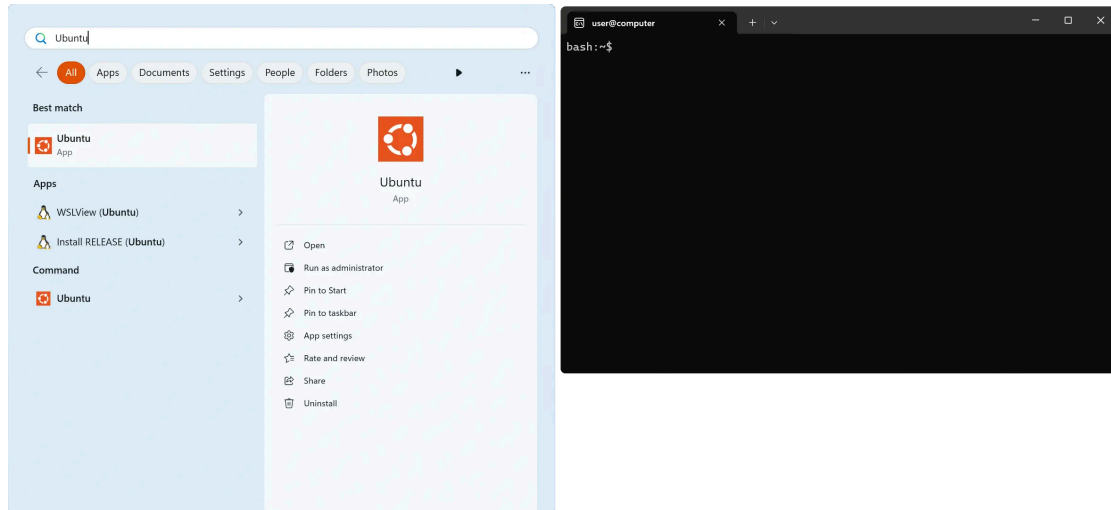> OpenLane 2 *requires* WSL2. Make sure that you're using Windows 11, or Windows 10 is up-to-date.

1. If you have an installation of WSL2 from 2023 or earlier, follow Microsoft's official documention to enable `systemd`

   o `systemd` is enabled by default for installations of WSL2 from mid-2023 or later.

2. Click the Windows icon, type in "Windows PowerShell" and open it.

3. Install Ubuntu using the following command: `wsl --install -d Ubuntu`

4. Check the version of WSL using following command: `wsl --list --verbose`

   It should produce the following output:

```
PS C:\Users\user> wsl --list --verbose
NAME                    STATE           VERSION
* Ubuntu                Running         2
```

5. Launch "Ubuntu" from your Start Menu.

Installing Nix

> **Warning**
>
> Do **not** install Nix using `apt`. The version of Nix offered by `apt` is more often than not severely out-of-date and may cause issues.

To install Nix, you first need to install `curl`:

```
$ sudo apt-get install -y curl
```

Then install Nix by running the following command:

```
$ curl --proto '=https' --tlsv1.2 -sSf -L https://install.determinate.systems/
    extra-substituters = https://openlane.cachix.org
    extra-trusted-public-keys = openlane.cachix.org-1:qqdwh+QMNGmZAuyeQJTH9ErW
"
```

Enter your password if prompted. This should take around 5 minutes.

Make sure to close the Ubuntu terminal after you're done with this step and start it again.

If you already have Nix set up...

You will need to enable OpenLane's Binary Cache manually.

If you don't know what that means:

We use a service called Cachix, which allows the reproducible Nix builds to be stored on a cloud server so you do not have to build OpenLane's dependencies from scratch on every computer, which will take a long time.

First, you want to install Cachix by running the following in your terminal:

```
$ nix-env -f "<nixpkgs>" -iA cachix
```

Then set up the OpenLane binary cache as follows:

```
$ sudo env PATH="$PATH" cachix use openlane
```

...and restart the Nix daemon.

```
$ sudo pkill nix-daemon
```

If you *do* know what this means, the values are as follows:

```
extra-substituters = https://openlane.cachix.org
extra-trusted-public-keys = openlane.cachix.org-1:qqdwh+QMNGmZAuyeQJTH9ErW57OWSvdtuwfBKdS254E
```

Make sure to restart `nix-daemon` after updating `/etc/nix/nix.conf`.

```
$ sudo pkill nix-daemon
```

Cloning OpenLane

With git installed, just run the following:

```
$ git clone https://github.com/efabless/openlane2
```

That's it. Whenever you want to use OpenLane, `nix-shell` in the repository root directory and you'll have a full OpenLane environment. The first time might take around 10 minutes while binaries are pulled from the cache.

To quickly test your installation, simply run `openlane --smoke-test` in the nix shell.