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# TOPST Development Environment Setting

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# 1 INTRODUCTION

This document provides guidelines for setting up the development environment on the Host PC.

# 1 SETTING HOST ENVIRONMENT

This chapter describes how to set the environment on the Host PC.

## 1.1 Ubuntu Installation

You can install another version of Linux, but in this document, TOPST development environment is described based on Ubuntu 22.04.

Linux distribution version:

- Ubuntu 22.04 (LTS)

## 1.2 Install WSL2 Ubuntu (Windows Environment Only)

1. Set Windows Features by clicking **Control Panel > Programs > Windows Features On/Off > Enable Virtual Machine Platform & Hyper-V**.
2. Execute Windows PowerShell with "**Run with administrator privileges**".
3. Enable WSL.

```
dism.exe /online /enable-feature /featurename:Microsoft-Windows-Subsystem-Linux /all /norestart
```

4. Enable the Virtual Machine feature.

```
dism.exe /online /enable-feature /featurename:VirtualMachinePlatform /all /norestart
```

5. Set WSL to the default version of 2 (WSL2).

```
wsl --set-default-version 2
```

6. Search for Ubuntu 22.04 LTS in Microsoft Store and download it.
7. Check Ubuntu 22.04 in the WSL list.

```
wsl --list --online
```

8. Install Ubuntu 22.04.

```
wsl --install Ubuntu-22.04
```

9. Search for WSL2 in the Windows search box and execute it.

## 1.3 Ubuntu Environment

If you are using Ubuntu host, you can skip installing WSL2.

## 1.4 Setting Linux Environment

To set up a Linux environment on your host PC, follow these steps:

1. Execute WSL2 (Windows Environment Only)  
If you are using Windows, start WSL2 by executing one of the following commands in Windows PowerShell.

```
wsl
```

```
ubuntu
```

2. Update Package List  
Before installing any new software, update the list of available packages. This ensures you get the latest versions and dependencies. The following command fetches the latest list of available packages from the repositories.

```
sudo apt update && /  
sudo apt upgrade
```

### 1.4.1 Set Locale

After executing Ubuntu on WSL, you should set the locale to ensure proper language and regional settings. It is recommended to use `en_US.UTF-8`. Execute the following commands to use `en_US.UTF-8`.

```
sudo locale-gen en_US.UTF-8 && sudo update-locale LANG=en_US.UTF-8
```

After setting locale, you can check the locale type by using the following commands.

```
echo 'LANG=en_US.UTF-8' | sudo tee -a /etc/default/locale && \  
echo 'LC_ALL=en_US.UTF-8' | sudo tee -a /etc/default/locale
```

### 1.4.2 Install SSH

After you install a virtual machine, you can use additional utilities such as SSH for a more convenient development environment. You can execute commands on remote computers and copy files to other computers by using SSH. If SSH is already installed or you are not going to use it, you can skip this chapter.

In Ubuntu, use the following command to install net-tools and SSH.

```
sudo apt install -y net-tools openssh-server
```

After downloading SSH, set each program to your environment.

### 1.4.3 Install Utilities for Yocto Project

Simultaneously install all the utilities. To use Yocto Project, the following utilities must be installed on the Host PC (personal computer or development server).

Execute the following command to install utilities.

```
sudo apt-get install -y gawk wget git diffstat unzip texinfo gcc-multilib build-essential chrpath socat  
cpio python3 git-core python3-pip python3-pexpect xz-utils debianutils iputils-ping python3-git python3-  
jinja2 liblz4-tool libsdl1.2-dev pylint xterm zstd ncftp curl git-lfs vim zip
```

You can find these packages to install for Yocto Project as follows:

- <https://docs.yoctoproject.org/dev/migration-guides/migration-4.0.html>

### 1.4.4 Install Repo

You can download TOPST development environment by using **Repo**.

If **Repo** is already installed, you do not need to reinstall it.

Before installing **Repo**, make sure Python version 3.6 or higher is properly set.

Execute the following command to install **Repo**.

```
sudo apt-get install repo
```

If you see the error message `/usr/bin/env 'python' no such file or directory`, execute the following command that allows the file "python" to point to `python3`.

```
sudo ln -sf /usr/bin/python3 /usr/bin/python
```

If you see the error message `repo: no such file or directory`, execute the following command to download the latest version of **Repo** and put it directly into the `/usr/bin/` folder.

```
mkdir -p ~/bin && \  
curl http://commondatastorage.googleapis.com/git-repo-downloads/repo > ~/bin/repo && \  
chmod a+x ~/bin/repo && \  
sudo mv ~/bin/repo /usr/bin/repo
```

### 1.4.5 Udev Rules for Telechips USB Device

After executing the following command, you no longer need to use `sudo` command to download **FWDN** in Linux (Host PC).

```
echo "SUBSYSTEM==\"usb\", ATTR{idVendor}==\"140e\", MODE=\"0666\", OWNER=\"${USER}\"" | sudo tee \  
/etc/udev/rules.d/99-topst.rules && \  
sudo udevadm control --reload-rules && sudo udevadm trigger
```

You can confirm whether the udev rule is successfully applied by using the following command.

```
cat /etc/udev/rules.d/99-topst.rules
```

The following code is displayed if the rule is correctly added.

```
SUBSYSTEM=="usb", ATTR{idVendor}=="140e", MODE="0666", OWNER="TOPST"
```

## 2 REFERENCES

[1] Contact TOPST for more details: [topst@topst.ai](mailto:topst@topst.ai)

**Note:** Reference documents can be provided whenever available, depending on the terms of a contract. If the reference documents are unavailable, the contents directly related to your development can be guided.

## 3 REVISION HISTORY

### Rev. 1.00: 2025-03-xx

- Official version release



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