

一、硬件要求

1、准备一台安装Ubuntu16.04/18.04/20.04的x86主机

运行内存建议12GB以上。

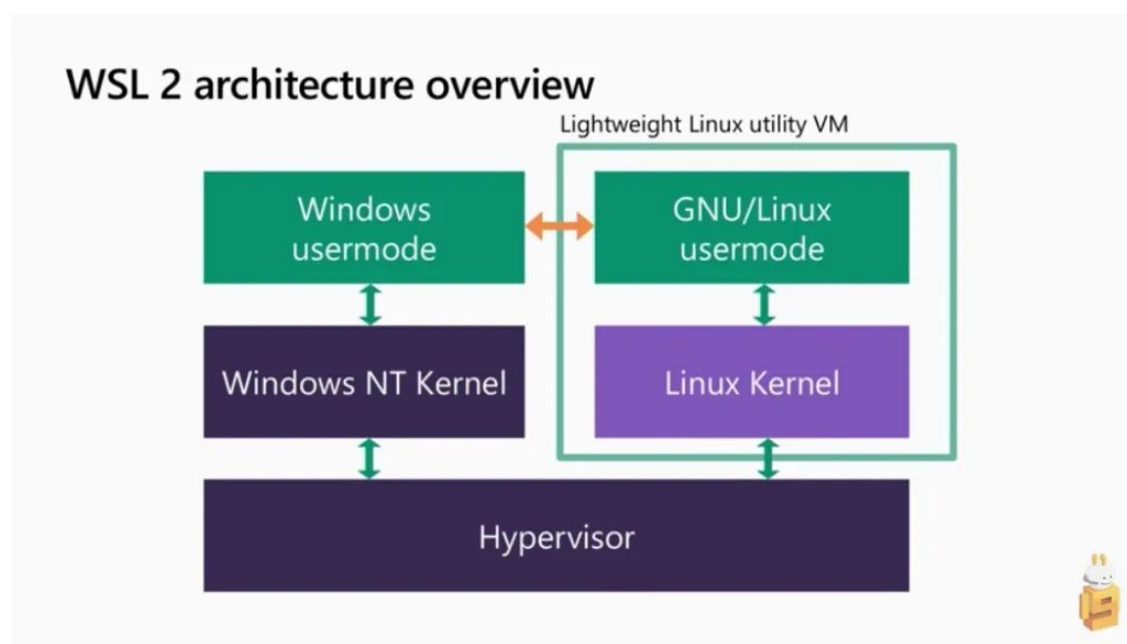
这里提供三种windows主机安装ubuntu系统的方法：

方法一：虚拟机VMware方式（磁盘空间要求大，入门友好）

安装方式可参考https://blog.csdn.net/weixin_43290551/article/details/125954709

https://blog.csdn.net/weixin_43928755/article/details/125780576

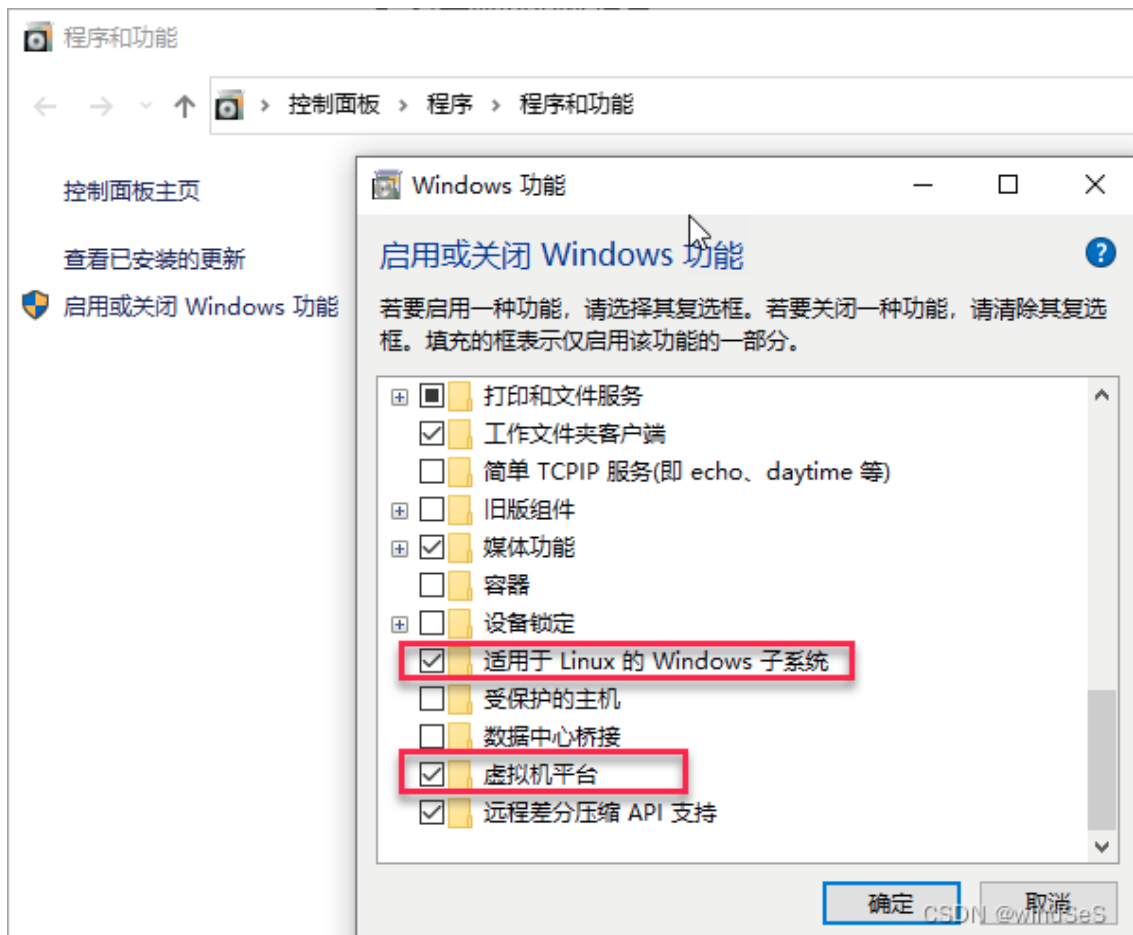
方法二：Windows系统WSL本地搭建Ubuntu



Microsoft Build 2019 | The new Windows subsystem for Linux architecture: a deep dive

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- (1) 打开【控制面板->程序->程序和功能->启用或关闭Windows功能】，出现如下界面，启用“适用于Linux的Windows子系统”与“虚拟机平台”两个功能。注意，千万不要漏掉“虚拟机平台”。

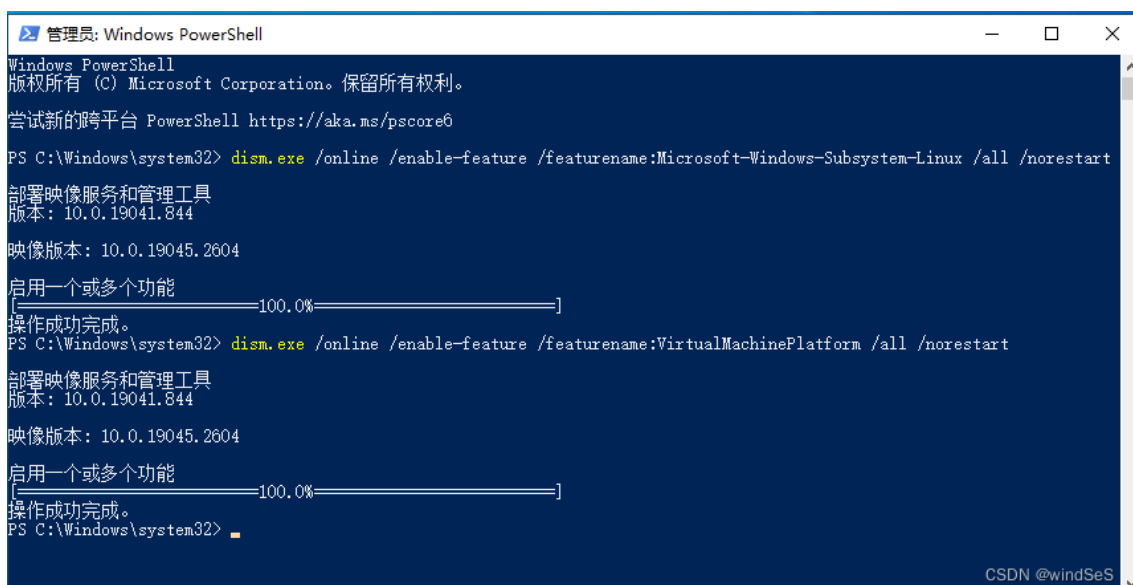


- (2) 下载并安装wsl_update_x64.msi

将地址“https://wslstorestorage.blob.core.windows.net/wslblob/wsl_update_x64.msi”复制到浏览器，下载并安装wsl_update_x64.msi。

- (3) PowerShell安装组件（管理员身份运行PowerShell）

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



- (4) PowerShell安装Ubuntu

PowerShell运行 `wsl --set-default-version 2`，设置默认安装WSL2版本

```
PS C:\Windows\system32> wsl --set-default-version 2
有关与 WSL 2 的主要区别的信息, 请访问 https://aka.ms/wsl2
操作成功完成。
```

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PowerShell运行 `wsl --list --online` 查看可用的Linux系统版本

```
PS C:\Windows\system32> wsl --list --online
以下是可安装的有效分发的列表。
请使用“wsl --install -d <分发>”安装。

NAME                                FRIENDLY NAME
Ubuntu                             Ubuntu
Debian                             Debian GNU/Linux
kali-linux                         Kali Linux Rolling
Ubuntu-18.04                       Ubuntu 18.04 LTS
Ubuntu-20.04                       Ubuntu 20.04 LTS
Ubuntu-22.04                       Ubuntu 22.04 LTS
OracleLinux_8_5                   Oracle Linux 8.5
OracleLinux_7_9                   Oracle Linux 7.9
SUSE-Linux-Enterprise-Server-15-SP4 SUSE Linux Enterprise Server 15 SP4
openSUSE-Leap-15.4                 openSUSE Leap 15.4
openSUSE-Tumbleweed                openSUSE Tumbleweed
```

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- PowerShell运行 `wsl --install -d <distro name>` 安装指定版本的Linux系统
将替换为**Ubuntu-18.04**或你对应的Ubuntu系统版本
- 安装完会弹出一个框, 设置好**用户名和密码**, 一个专属于你的Linux系统就成了。

```
xiaohai@SZ2303316389: ~/sophgo
```

```
xiaohai@SZ2303316389: ~/sophgo$
```

- PowerShell运行 `wsl -l -v` 查看安装的Linux版本与WSL版本
如下图所示, 我们安装的是Ubuntu-18.04版本的Linux系统, Version为2表示WSL2, 若为1则为WSL。

至此, 我们成功在Win10中安装了WSL2版本的Ubuntu 18.04系统。

```
Windows 版本: 10.0.19045.3208
PS C:\windows\system32> wsl -l -v
  NAME      STATE      VERSION
* Ubuntu-18.04 Running      2
PS C:\windows\system32>
```

- PowerShell运行 `wsl --version` 查看安装的WSL是否为最新版本
若输出的信息类似下面这种, 说明安装的WSL2为最新的版本。**版本的不同决定了后面systemd配置是否能成功。**

```
PS C:\windows\system32> wsl --version
WSL 版本: 1.2.5.0
内核版本: 5.15.90.1
WSLg 版本: 1.0.51
MSRDC 版本: 1.2.3770
Direct3D 版本: 1.608.2-61064218
DXCore 版本: 10.0.25131.1002-220531-1700.rs-onecore-base2-hyp
Windows 版本: 10.0.19045.3208
PS C:\windows\system32>
```

若输出为一大堆其它的信息，则需要想办法将wsl版本升级到最新。可以尝试 `wsl --update --web-download` 或 `wsl --update`，甚至是卸载WSL重装。一定要看到上面的图片输出信息，否则可能导致后续拉取Docker出错。

方法三：安装双系统（需要设置好本地引导区）

安装方式可参考<https://www.cnblogs.com/masbay/p/10745170.html>

二、软件要求

1、Docker (*sophgo/tpuc_dev:latest)

方法一和方法三安装Ubuntu系统的参考以下方式加载docker

Docker 安装

```
1 # 安装docker
2 sudo apt-get install docker.io
3 # docker命令免root权限执行
4 # 创建docker用户组，若已有docker组会报错，没关系可忽略
5 sudo groupadd docker
6 # 将当前用户加入docker组
7 sudo gpasswd -a ${USER} docker
8 # 重启docker服务
9 sudo service docker restart
10 # 切换当前会话到新group或重新登录重启X会话
11 newgrp docker
```

1 | 提示：需要logout系统然后重新登录，再使用docker就不需要sudo了。

创建docker容器并进入Docker

```
1 | docker run -v $PWD:/workspace -p 8001:8001 -it sophgo/tpuc_dev:latest
```

方法二按照以下方式加载Docker

- 更新 apt 包索引

```
1 | $ sudo apt-get update
```

- 安装 apt 依赖包，用于通过HTTPS来获取仓库

```
1 $ sudo apt-get install \
2     apt-transport-https \
3     ca-certificates \
4     curl \
5     gnupg-agent \
6     software-properties-common
```

- 添加 Docker 的官方 GPG 密钥

```
1 $ curl -fsSL https://mirrors.ustc.edu.cn/docker-ce/linux/ubuntu/gpg | sudo
    apt-key add -
```

- 使用以下指令设置稳定版仓库

```
1 $ sudo add-apt-repository \
2     "deb [arch=amd64] https://mirrors.ustc.edu.cn/docker-ce/linux/ubuntu/ \
3     $(lsb_release -cs) \
4     stable"
```

安装后，输出如图：

```
x bluebonnet27@R9000X-bluebonnet27 ~ % sudo add-apt-repository \
    "deb [arch=amd64] https://mirrors.ustc.edu.cn/docker-ce/linux/ubuntu/ \
    $(lsb_release -cs) \
    stable"

Get:1 https://mirrors.ustc.edu.cn/docker-ce/linux/ubuntu focal InRelease [57.7 kB]
Hit:2 https://mirrors.tuna.tsinghua.edu.cn/ubuntu focal InRelease
Get:3 https://mirrors.ustc.edu.cn/docker-ce/linux/ubuntu focal/stable amd64 Packages [24.5 kB]
Get:4 https://mirrors.tuna.tsinghua.edu.cn/ubuntu focal-updates InRelease [114 kB]
Get:5 https://mirrors.tuna.tsinghua.edu.cn/ubuntu focal-backports InRelease [108 kB]
Get:6 https://mirrors.tuna.tsinghua.edu.cn/ubuntu focal-security InRelease [114 kB]
Get:7 https://mirrors.tuna.tsinghua.edu.cn/ubuntu focal-updates/main amd64 Packages [2370 kB]
Get:8 https://download.docker.com/linux/ubuntu focal InRelease [57.7 kB]
Get:9 https://download.docker.com/linux/ubuntu focal/stable amd64 Packages [24.5 kB]
Get:10 https://mirrors.tuna.tsinghua.edu.cn/ubuntu focal-updates/universe amd64 Packages [1024 kB]
Fetched 3894 kB in 7s (542 kB/s)
Reading package lists... Done
W: Target Packages (stable/binary-amd64/Packages) is configured multiple times in /etc/apt/sources.list:10 and /etc/apt/sources.list.d/docker.li
st:1
W: Target Packages (stable/binary-all/Packages) is configured multiple times in /etc/apt/sources.list:10 and /etc/apt/sources.list.d/docker.list
:1
W: Target Translations (stable/i18n/Translation-en) is configured multiple times in /etc/apt/sources.list:10 and /etc/apt/sources.list.d/docker.
list:1
W: Target CNF (stable/cnf/Commands-amd64) is configured multiple times in /etc/apt/sources.list:10 and /etc/apt/sources.list.d/docker.list:1
W: Target CNF (stable/cnf/Commands-all) is configured multiple times in /etc/apt/sources.list:10 and /etc/apt/sources.list.d/docker.list:1
W: Target Packages (stable/binary-amd64/Packages) is configured multiple times in /etc/apt/sources.list:10 and /etc/apt/sources.list.d/docker.li
st:1
W: Target Packages (stable/binary-all/Packages) is configured multiple times in /etc/apt/sources.list:10 and /etc/apt/sources.list.d/docker.list
:1
W: Target Translations (stable/i18n/Translation-en) is configured multiple times in /etc/apt/sources.list:10 and /etc/apt/sources.list.d/docker.
list:1
W: Target CNF (stable/cnf/Commands-amd64) is configured multiple times in /etc/apt/sources.list:10 and /etc/apt/sources.list.d/docker.list:1
```

- 安装 Docker Engine-Community

我这里直接安装最新版本的 Docker Engine-Community 和 containerd，

```
1 $ sudo apt-get install docker-ce docker-ce-cli containerd.io
```

输出如图：

```

bluebonnet27@R9000X-bluebonnet27 ~$ sudo apt-get install docker-ce docker-ce-cli containerd.io
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  docker-buildx-plugin docker-ce-rootless-extras docker-compose-plugin docker-scan-plugin pigz slirp4netns
Suggested packages:
  aufs-tools cgroups-mount | cgroup-lite
The following NEW packages will be installed:
  containerd.io docker-buildx-plugin docker-ce docker-ce-cli docker-ce-rootless-extras docker-compose-plugin docker-scan-plugin pigz
  slirp4netns
0 upgraded, 9 newly installed, 0 to remove and 165 not upgraded.
Need to get 111 MB of archives.
After this operation, 399 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 https://mirrors.tuna.tsinghua.edu.cn/ubuntu focal/universe amd64 pigz amd64 2.4-1 [57.4 kB]
Get:2 https://mirrors.tuna.tsinghua.edu.cn/ubuntu focal/universe amd64 slirp4netns amd64 0.4.3-1 [74.3 kB]
Get:3 https://download.docker.com/linux/ubuntu focal/stable amd64 containerd.io amd64 1.6.16-1 [27.7 MB]
Get:4 https://download.docker.com/linux/ubuntu focal/stable amd64 docker-buildx-plugin amd64 0.10.2-1~ubuntu.20.04~focal [25.9 MB]
Get:5 https://download.docker.com/linux/ubuntu focal/stable amd64 docker-ce-cli amd64 5:23.0.1-1~ubuntu.20.04~focal [13.2 MB]
Get:6 https://download.docker.com/linux/ubuntu focal/stable amd64 docker-ce amd64 5:23.0.1-1~ubuntu.20.04~focal [22.0 MB]
Get:7 https://download.docker.com/linux/ubuntu focal/stable amd64 docker-ce-rootless-extras amd64 5:23.0.1-1~ubuntu.20.04~focal [8765 kB]
Get:8 https://download.docker.com/linux/ubuntu focal/stable amd64 docker-compose-plugin amd64 2.16.0-1~ubuntu.20.04~focal [10.2 MB]
Get:9 https://download.docker.com/linux/ubuntu focal/stable amd64 docker-scan-plugin amd64 0.23.0~ubuntu-focal [3622 kB]
Fetched 111 MB in 3min 9s (590 kB/s)
Selecting previously unselected package pigz.
(Reading database ... 66310 files and directories currently installed.)
Preparing to unpack .../0-pigz_2.4-1_amd64.deb ...
Unpacking pigz (2.4-1) ...

```

为了避免每次都加sudo，需要给现在的账户添加docker权限

- 创建docker用户组

```
1 | $ sudo groupadd docker
```

- 添加当前用户到docker用户组

```
1 | $ sudo usermod -aG docker $USER
```

- 退出当前shell，重新登录
- 创建docker容器并进入Docker

```
1 | docker run -v $PWD:/workspace -p 8001:8001 -it sophgo/tpuc_dev:latest
```

2、SophonSDK开发包 (V23.03.01/23.05.01**)

[算能官网](#)下载SDK包

The screenshot shows the Sophon website's navigation and content structure. The top navigation bar includes links for '服务与支持' (Service & Support), '技术资料' (Technical Resources), and '客户支持' (Customer Support). The '技术资料' dropdown menu is open, showing '产品文档' (Product Documents), '开发资料' (Development Resources), and '课程中心' (Course Center). The '开发资料' section is selected, displaying a list of SDK versions. The 'V23.05.01' version is highlighted, and the '下载' (Download) button is visible.

3、moberXterm (或者Xshell) 、XFtp

- MobaXterm下载: <https://mobaxterm.mobatek.net/download-home-edition.html>
- Xshell下载: <https://cdn.netsarang.net/v7/Xshell-latest-p>
- Xftp下载: <https://cdn.netsarang.net/v7/Xftp-latest-p>