

# Compile and flash AOSP image

## 1. Download AOSP source code

Sync the source code from repository (e.g., [Tsinghua mirror](#)).

```
1 | repo init -u https://mirrors.tuna.tsinghua.edu.cn/git/AOSP/platform/manifest -b android-11.0.0_r25 # The version name is after "-b"
2 |
3 | repo sync # Or use "repo sync -j8" where j8 represents using 8 threads.
```

## 2. Download and install device drivers

- You can find drivers for Nexus and Pixel series on the [website](#). It is important to note that each driver has a specific code that needs to correspond with the build number of the AOSP source code you have downloaded.

□  
*image*

- After decompression, you will get two shell files. Copy them to the root directory of the downloaded AOSP source code.

□  
*image*

- Execute the two extracted shell files. When prompted for a license, press enter to agree. Use the spacebar to scroll to the end and enter "I ACCEPT".

## 3. Prepare environment for compiling

- Execute `source build/envsetup.sh` to set up the necessary environment variables in the shell.
- Execute `make clean` to clear previous compilation results.
- To select a build target, use the `lunch` command. The syntax is as follows:

```
1 | lunch product_name-build_variant
2 | # the "product_name" part is the device alias, while "build_variant" part refers to the specific variant.
3 | # For example: lunch aosp_coral-userdebug
```

You can find a list of product builds [here](#), while the variants include: *user*, *userdebug*, and *eng*.

## 4. Compile source code

```
1 | m -j32 # Enable 32-thread compilation
```

Compiling AOSP source code is a memory and time-intensive task. It is recommended to use a high-configured server and a separate thread window for the process.

## 5. Flash the image into a Android device

- Find an unused Android smartphone with an unlocked Bootloader (each model has its own method, tutorials can be found easily online).
- Configure the fastboot tool in the computer system, you can either compile it using the `make fastboot` command in the aosp directory or download it directly from the [website](#).
- Enter fastboot mode on your phone, you can either press the corresponding [key combination](#) during startup or use the following command:

```
1 | adb reboot bootloader
```

- Make sure to install [Android USB driver](#) on your computer to avoid the situation where the device cannot be found after the phone restarts.
- Set the environment variable `ANDROID_PRODUCT_OUT` on your computer to the directory of the compiled image, such as `"...../aosp/out/target/product/coral"`.
- Navigate to the image directory on your computer and proceed with the flashing process:

```
1 | cd ...../aosp/out/target/product/coral
2 |
3 | fastboot flashall -w
```

- After the flashing process is complete, the phone will automatically power on and enter the new system.