

System: Coral Google

Get started with the Dev Board

1. SD.

Insert the SD card into the computer

2. Download and unzip.

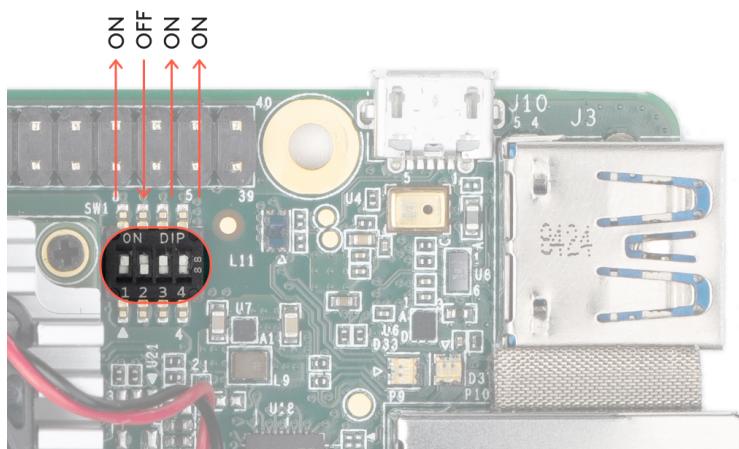
Download and unzip the SD card :[enterprise-eagle-flashcard-20211117215217.zip](https://drive.google.com/file/d/10yhJS6k-5KOwAkVIhsZ5ce48qhc2FzBv/view?usp=sharing) or <https://drive.google.com/file/d/10yhJS6k-5KOwAkVIhsZ5ce48qhc2FzBv/view?usp=sharing>

3. BalenaEtcher.

Use a program such as balenaEtcher to flash the `flashcard_arm64.img` file to your microSD card. 5-10 min.

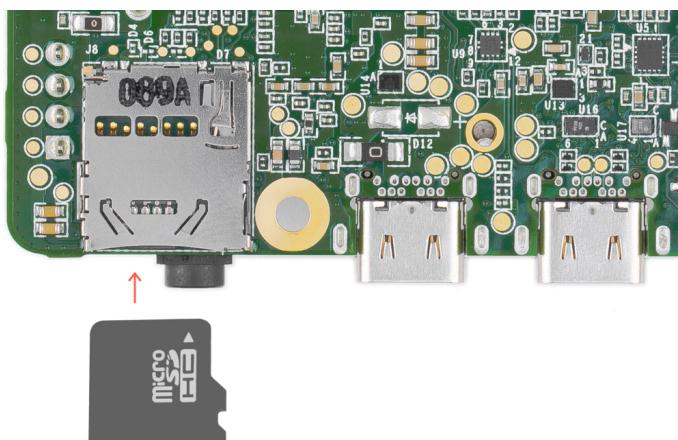
4. Turn off the board.

The board must be turned off. The switches are placed as shown in the picture:



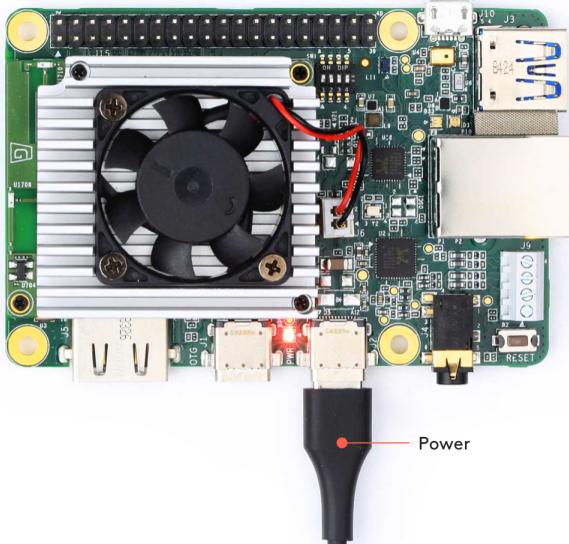
5. Loading the system.

Once the card is flashed, safely remove it from your computer and insert it into the Dev Board (the card's pins face toward the board). The board should not be powered on yet.



6. Power

Power up the board by connecting your 2-3 A power cable to the USB-C port labeled "PWR" (see figure 3). The board's red LED should turn on.



7. Download process.

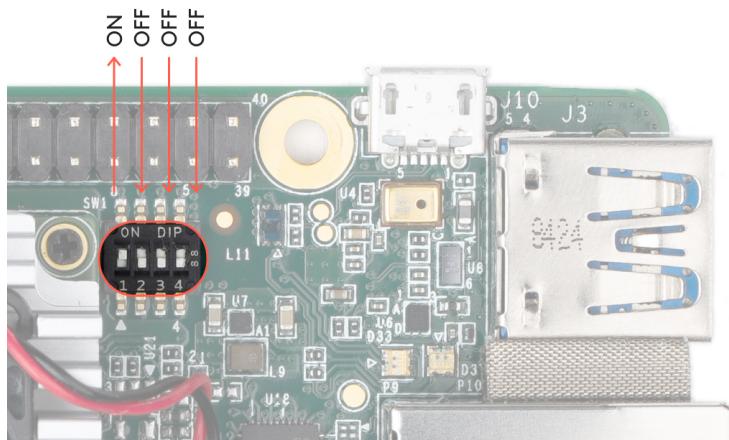
When the red LED turns off, unplug the power and remove the microSD card.

start here for

[enterprise-eagle-flashcard-20211117215217.zip](#)

8. Mode switches.

Change the boot mode switches to eMMC mode:



9. Connect the board

Connect the board to power and it should now boot up Mendel Linux. Booting up for the first time after flashing takes about 3 minutes (subsequent boot times are much faster).

10. Install MDT

You can install MDT on your host computer follows:

```
python3 -m pip install --user mendel-development-tool
```

You might see a warning that mdt was installed somewhere that's not in your PATH environment variable. If so, be sure you add the given location to your PATH, as appropriate for your operating system. If you're on Linux, you can add it like this:

```
echo 'export PATH="$PATH:$HOME/.local/bin"' >> ~/.bash_profile
```

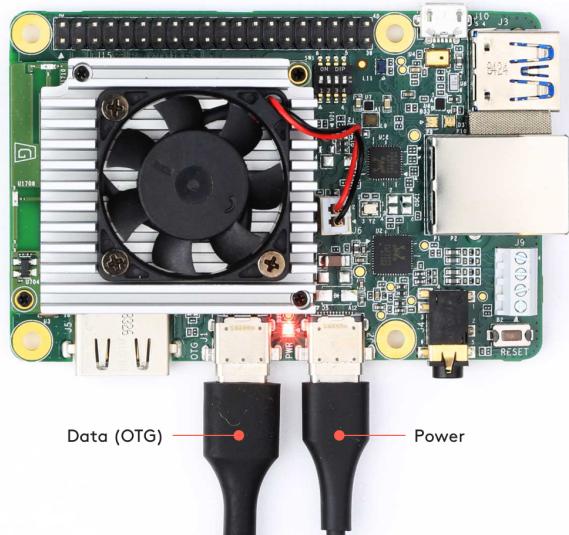
```
source ~/.bash_profile
```

start here for

<https://drive.google.com/file/d/10yhJS6k-5KOwAkVIhsZ5ce48qhc2FzBv/view?usp=sharing>

11. Connect to the board's shell via MDT

Connect a USB-C cable from your computer to the board's other USB port (labeled "OTG"):



Now make sure MDT can see your device by running this command from your host computer:

```
mdt devices
```

You should see output showing your board hostname and IP address:

```
orange-horse      (192.168.100.2)
```

Now to open the device shell, run this command:

```
mdt shell
```

12. Connect to the internet

13. Update the Mendel software

```
sudo apt-get update
```

```
sudo apt-get dist-upgrade
```

14. Connect using other SSH tools.

```
ssh-keygen
```

Follow steps to create key

Enter these commands already on the main computer:

```
mdt pushkey ~/.ssh/id_rsa.pub
```

ssh mendel@192.168.100.2

yes

in more detail:

<https://coral.ai/docs/dev-board/mdt/#connect-using-other-ssh-tools>

15.Libraries

Here are the libraries to make your life better:

certifi==2018.8.24

cffi==1.15.1

chardet==3.0.4

distro-info==0.21

edgetpuvision==7.0

httplib2==0.11.3

idna==2.6

netifaces==0.10.4

numpy==1.16.2

Pillow==5.4.1

protobuf==3.6.1

PyAudio==0.2.11

pycairo==1.16.2

pycoral==2.0.0

pyparser==2.21

pycurl==7.43.0.2

PyGObject==3.30.4

PyJWT==1.7.0

PyOpenGL==3.1.0

pyserial==3.4

PySimpleSOAP==1.16.2

python-apt==1.8.4.3

python-debian==0.1.35

python-debianbts==2.8.2

python-periphery==2.4.1

pyzmq==25.1.1

reportbug==7.5.3-deb10u1

requests==2.21.0

six==1.12.0

sounddevice==0.4.6

srt==3.5.3

tflite-runtime==2.5.0.post1

thread6==0.2.0

tqdm==4.66.1

unattended-upgrades==0.1

urllib3==1.24.1

vitalsd==1.0

vosk @

https://github.com/alphacep/vosk-api/releases/download/v0.3.32/vosk-0.3.32-py3-none-linux_aarch64.whl#sha256=4d7439c59848ebaaa0fef0a6ca5c60493db68ac00c79284eb9bc436e71e82c58

websockets==11.0.3

zmq==0.0.0

To see which libraries used, enter in the terminal:

pip3 freeze

16. Install Libraries

Next will be the codes for the Linux terminal to download the previously mentioned libraries:

1. cffi==1.15.1

pip3 install cffi

an error may occur: WARNING: You are using pip version 21.1.1; however, version 23.2.1 is available. You should consider upgrading via the '/usr/bin/python3 -m pip install --upgrade pip' command.

then:

sudo python3 -m pip install --upgrade pip==23.2.1

pip3 install cffi

or

an error may occur: error: command 'aarch64-linux-gnu-gcc' failed with exit status 1

then:

sudo apt-get install python3.7-dev

y

an error may occur: E: Unable to fetch some archives, maybe run apt-get update or try with --fix-missing?

then:

```
sudo apt-get update --fix-missing
```

an error may occur: The following signatures couldn't be verified because the public key is not available: NO_PUBKEY B53DC80D13EDEF05

(there may be other numbers)

then:

```
sudo apt-key adv --keyserver keyserver.ubuntu.com --recv-keys  
B53DC80D13EDEF05
```

(the same numbers that were in the error)

```
sudo apt-get update --fix-missing
```

an error may occur: E: Repository 'https://deb.debian.org/debian-security buster/updates InRelease' changed its 'Suite' value from 'oldstable' to 'oldoldstable'

then:

```
sudo apt-get --allow-releaseinfo-change update
```

an error may occur: N: Repository 'https://deb.debian.org/debian-security buster/updates InRelease' changed its 'Suite' value from 'oldstable' to 'oldoldstable'

then:

```
sudo apt-get dist-upgrade
```

y

q

```
sudo apt-get install python3.7-dev
```

y

```
pip3 install cffi
```

an error may occur: fatal error: ffi.h: No such file or directory

then:

```
sudo apt install libffi-dev
```

```
pip3 install cffi
```

in more detail:<https://blog.finxter.com/how-to-install-cffi-in-python/>

<https://stackoverflow.com/questions/68802802/repository-http-security-debian-org-debian-security-buster-updates-inrelease>

<https://stackoverflow.com/questions/58393840/fatal-error-ffi-h-no-such-file-or-directory-on-pip2-install-pyopenssl>

<https://medium.com/geekculture/error-command/usr-bin-aarch64-linux-gnu-gcc-failed-with-exit-code-1-36dfac6c72d6>

2. PyAudio==0.2.11

```
sudo apt install python3-pyaudio
```

```
y
```

in more detail: <https://pypi.org/project/PyAudio/>

3. pyzmq==25.1.1

```
pip3 install pyzmq
```

in more detail: <https://pypi.org/project/pyzmq/>

4. sounddevice==0.4.6

```
pip3 install sounddevice
```

in more detail:

<https://python-sounddevice.readthedocs.io/en/0.4.1/installation.html>

5. srt==3.5.3

pip3 install srt

in more detail: <https://pypi.org/project/srt/>

6. thread6==0.2.0

pip3 install thread6

in more detail:

<https://stackoverflow.com/questions/50918432/how-do-i-install-python3-threading-module-in-linux-ubuntu>

7. tqdm==4.66.1

pip3 install tqdm

in more detail: <https://blog.finxter.com/how-to-install-tqdm-in-python/>

8. Download PyCoral API

git clone --recurse-submodules <https://github.com/google-coral/pycoral>

cd pycoral

git submodule init && git submodule update

in more detail: <https://github.com/google-coral/pycoral/tree/master>

or

```
sudo apt-get install python3-pycoral
```

```
python3 -m pip install --extra-index-url  
https://google-coral.github.io/py-repo/ pycoral~=2.0  
in more detail: https://coral.ai/software/#pycoral-api
```

9. vosk @

```
https://github.com/alphacep/vosk-api/releases/download/v0.3.32/vosk-0.3.32-py3-none-linux\_aarch64.whl#sha256=4d7439c59848eba0fef0a6ca5c60493db68ac00c79284eb9bc436e71e82c58
```

```
pip3 install
```

```
https://github.com/alphacep/vosk-api/releases/download/v0.3.32/vosk-0.3.32-py3-none-linux\_aarch64.whl
```

```
pip3 install vosk
```

models:<https://alphacepheli.com/vosk/models>

10. websockets==11.0.3

```
pip3 install websockets==11.0.3
```

in more detail: <https://libraries.io/pypi/websockets>

11. zmq==0.0.0

```
pip3 install zmq==0.0.0
```

in more detail: <https://libraries.io/pypi/zmq>

12. PortAudio==

```
sudo apt-get install portaudio19-dev python-all-dev
```

y

in more detail:

https://github.com/GoogleCloudPlatform/python-docs-samples/blob/main/scripts/readme-gen/templates/install_portaudio.tmpl.rst

13. python-periphery 2.4.1

pip install python-periphery

in more detail: <https://pypi.org/project/python-periphery/>

17. The End

Congratulations on successfully downloading Google Coral Dev Board.

Good luck!!!