

# Device As Webcam CTSVerifier Test

## Setup

### Device Setup

Connect the device over USB to a host machine, and grant permissions for the host to access the device over adb.

Update the config.yml file in *packages/services/DeviceAsWebcam/tests* with the device ID of the device under test. Ex:

```
TestBeds:  
# A test bed where adb will find Android devices.  
- Name: WebcamTestBed  
  Controllers:  
    AndroidDevice:  
      - serial: 15081FDEE00053 # Update to match ID of device  
        label: dut
```

### Host Machine Setup

The testing script itself should also be compatible with all three operating systems, but there may be certain issues that arise on Windows due to potential reliability issues. It is highly recommended to run the script on Linux to minimize any potential compatibility issues.

Ensure Python version 3.10.9, adb and Mobly are installed.

- Python 3.10.9: <https://www.python.org/downloads/>
- adb: <https://developer.android.com/studio/releases/platform-tools>
- Mobly:  
> pip install mobly

### Linux Setup

```
> pip3 install git+https://github.com/aspotton/python3-v4l2.git
```

## Mac Setup

No Mac specific setup required.

## Windows Setup

```
> pip install opencv-python
> pip install windows-capture-device-list
```

## Scene Setup

Point the device at a well lit scene to ensure stable FPS for testing. Low-light conditions may result in variable FPS rates and cause the test to fail.

## Run Test

The test script can be found at *packages/services/DeviceAsWebcam/tests* and ran as follows:

```
> python run_webcam_test.py -c config.yml
```

During the test run, the webcam service activity will open to preview the webcam stream. Upon completion of the test script, the CTSVerifier test will prompt for confirmation regarding the quality of the frames that were previewed. Confirm either "Yes" or "No". The script's results will be automatically sent to the CTSVerifier test. To pass the test, both the automated test results and the manual frame check must pass.