Rooting & Flashing Android Phones

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What does rooting mean?

- Android is a version of Linux

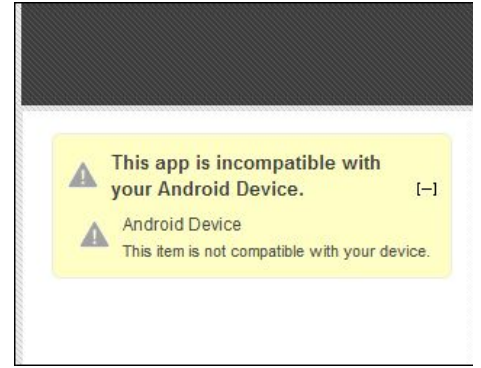- Makes you superuser of phone

What does flashing mean?

- Installing a ROM onto phone

- ROM: file with executable of an Android OS and related apps

Cons of Rooting

- Voids phone manufacturer's warranty

- Possibility of "bricking" phone

- Makes phone more vulnerable to viruses

- Can be illegal depending on where in the US you live according to the Digital Millennium Copyright Act (DMCA)

Pros of Rooting

- Remove bloatware

- Flash custom ROMs

- Apps

- Overclocking/saving battery

- Custom Kernels

- Mobile tethering for free

This app is incompatible with your Android Device.   [–]

Android Device
This item is not compatible with your device.

Steps for Rooting

1) Unlocking bootloader - Opens the door to the internal memory of the device to be written on to.

   a) This allows you to flash images onto the main partitions of the phone.

2) Installing custom recovery - overwrite stock Android recovery

   a) Allows for creating/restoring backups

   b) Flash ROMs

3) Gaining Root Access

Prerequisite Part

- Download:
    - ADB (Android Debug Bridge): lets you communicate with android device
    - Fastboot - tool/protocol used to modify file system images
- Make sure phone is charged and PC is plugged in
- Backup!
- USB Debugging - establishes connection between Android phone and Android SDK
- OEM (Original Equipment Manufacturer) Unlocking - gives option to unlock bootloader
- Download TWRP (Team Win Recovery Project) and Magisk

Fastboot Part

Advanced reboot
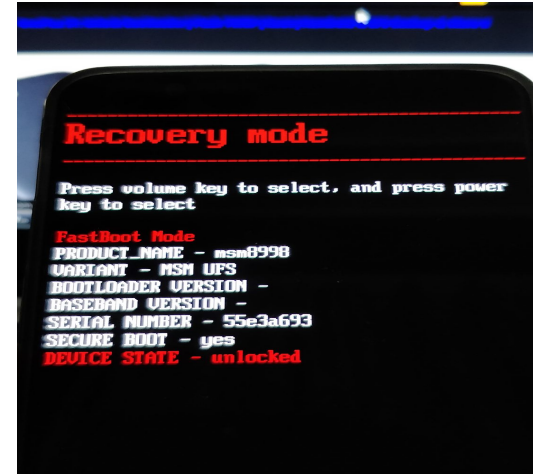When unlocked, reboot will offer the options to reboot normally, into recovery, or fast-boot

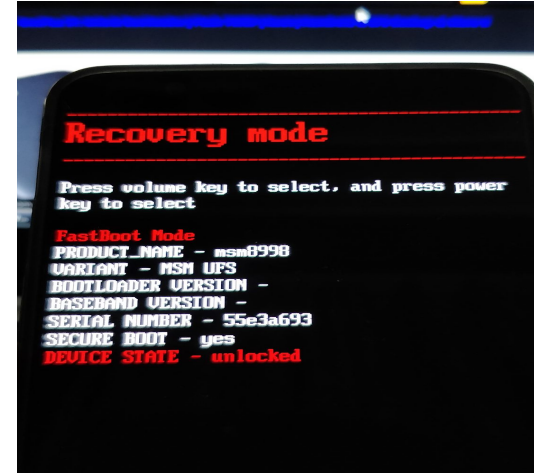I. Reboot phone into fastboot mode (2 methods)

II. "fastboot devices"

III. "fastboot oem unlock"

IV. Place Magisk on Device Internal memory

V. "fastboot flash recovery (file name).img"

VI. Reboot phone in recovery mode (2 methods)

    A.   "fastboot boot recovery.img"

TWRP Part

I.   Install Magisk to root phone

II. Reboot (but wait!)

Flashing Custom ROM

1. Wipe -> Format Data

2. Advance Wipe -> Cache, System

3. "adb push filename.zip /sdcard/"

4. Install .zip package

5. Reboot -> System

- Guide I used: https://forums.oneplus.com/threads/oneplus-5t-unlock-bootloader-flash-twrp-root-nandroid-efs.685403/
- Custom ROM I installed: https://lineageos.org/