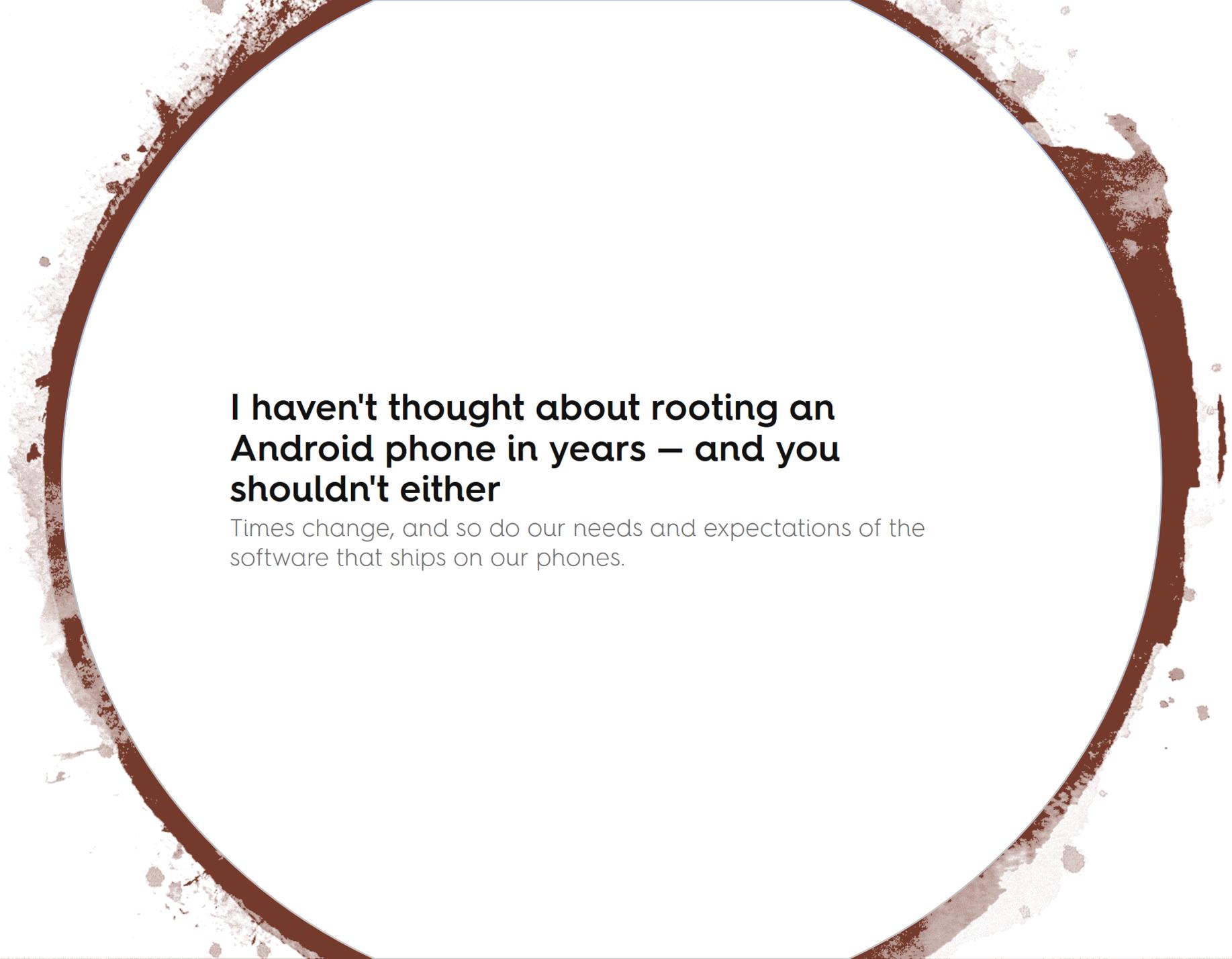


Backup, Booting and Rooting



Version 9 – Pie (Release 9th August 2018)



**I haven't thought about rooting an
Android phone in years – and you
shouldn't either**

Times change, and so do our needs and expectations of the software that ships on our phones.

The rapid improvement with each new release of the Android OS makes the case for rooting a phone less and less attractive.

Why root Android Phone?

Rooting your phone can unlock the device's full potential and power, which may enhance your user experience and following benefits:

- Remove unwanted apps.
- Disable System apps to speed up the Phone.
- Helps to do full root level backup.
- Install custom Roms.
- Move all apps to SD Card.
- Helps to Remove ads from apps.

Some Terms

Root:

Process of unlocking access to the root of the android OS.
It enables you to edit and change any or all system files

Recovery:

A small software partition that boots separately to the OS.
A customer recovery partition is essential if you want to flash custom ROM's

ROM:

Firmware that contains the version of the OS that can be installed to replace the version already installed.

Flash:

Process of installing a new custom ROM eg *Cyanogenmod* (see following slides)

Bootloader:

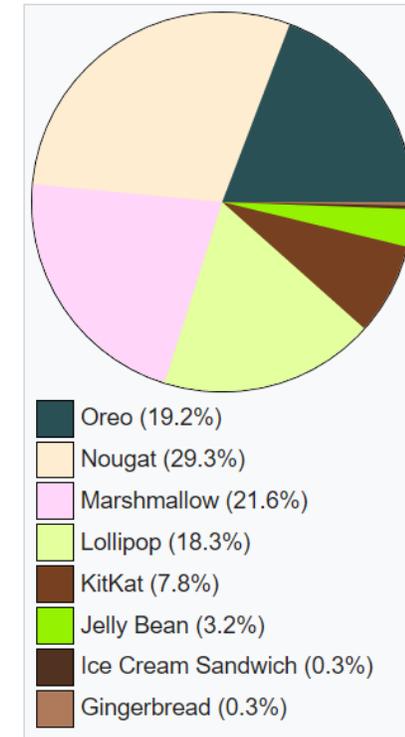
Software that runs when you turn your device on and causes the OS to boot.
It must be unlocked to install a custom ROM

Platform usage

Charts in this section provide breakdowns of Android versions, based on devices accessing the [Google Play Store](#) in a seven-day period ending on September 28, 2018.^{[359][b]} Therefore, these statistics exclude devices running various Android forks that do not access the Google Play Store, such as Amazon's [Fire tablets](#).

Version ↕	Code name ↕	Release date ↕	API level ↕	Runtime ↕	Distribution ↕	First devices to run version ↕
9.0	Pie	August 6, 2018	28	ART	N/A	Essential Phone, Pixel, Pixel XL, Pixel 2, Pixel 2 XL, Nokia 7 Plus, OnePlus 6, Oppo R15 Pro, Sony Xperia XZ2, Vivo X21UD, Vivo X21, Xiaomi Mi Mix 2S ^[360]
8.1	Oreo	December 5, 2017	27	ART	5.8%	Pixel, Pixel XL, Nexus 6P, Nexus 5X
8.0		August 21, 2017	26	ART	13.4%	N/A
7.1	Nougat	October 4, 2016	25	ART	10.3%	Pixel, Pixel XL
7.0		August 22, 2016	24	ART	19.0%	Nexus 5X, Nexus 6P
6.0	Marshmallow	October 5, 2015	23	ART	21.6%	
5.1	Lollipop	March 9, 2015	22	ART	14.7%	Android One
5.0		November 3, 2014	21	ART 2.1.0	3.6%	Nexus 6, Nexus 9
4.4	KitKat	October 31, 2013	19	Dalvik (and ART 1.6.0)	7.8%	Nexus 5
4.3	Jelly Bean	July 24, 2013	18	Dalvik	0.5%	Nexus 7 2013
4.2		November 13, 2012	17	Dalvik	1.6%	Nexus 4, Nexus 10
4.1		July 9, 2012	16	Dalvik	1.1%	Nexus 7
4.0	Ice Cream Sandwich	October 19, 2011	15	Dalvik	0.3%	Galaxy Nexus
2.3	Gingerbread	February 9, 2011	10	Dalvik 1.4.0	0.3%	Nexus S

Legend: ■ Old version ■ Older version, still supported ■ Latest version ■ Latest preview version ■ Future release



CyanogenMod is a discontinued open-source operating system for mobile devices, based on the Android mobile platform. It was developed as free and open-source software based on the official releases of Android by Google, with added original and third-party code, and based on a rolling release development model.

Current CyanogenMod version list:

- CyanogenMod 3 (based on [Android Cupcake](#) 1.5.x, initial release)
- CyanogenMod 4 (based on [Android Cupcake](#) 1.5.x and [Android Donut](#) 1.6.x)
- CyanogenMod 5 (based on [Android Eclair](#) 2.0/2.1)
- CyanogenMod 6 (based on [Android Froyo](#) 2.2.x)
- CyanogenMod 7 (based on [Android Gingerbread](#) 2.3.x)
- CyanogenMod 9 (based on [Android Ice Cream Sandwich](#) 4.0.x, major UI revamp)
- CyanogenMod 10 (based on [Android Jelly Bean](#) 4.1.x – 4.3.x)
- CyanogenMod 11 (based on [Android KitKat](#) 4.4.x)
- CyanogenMod 12 (based on [Android Lollipop](#) 5.0.x – 5.1.x, major UI revamp)
- CyanogenMod 13 (based on [Android Marshmallow](#) 6.0.x)
- CyanogenMod 14.1 (based on [Android Nougat](#) 7.1.x)

LineageOS is a free and open-source operating system for set-top boxes, smartphones and tablet computers, based on the Android mobile platform. It is the successor to the custom ROM CyanogenMod, from which it was forked in December 2016 when Cyanogen Inc. announced it was discontinuing development and shut down.

Preinstalled apps [\[edit\]](#)

LineageOS includes many essential and useful apps, but, like its predecessor CyanogenMod, is free from the bloatware often pre-installed by a phone's manufacturer or carrier.^{[30][17]}

- AudioFX – Audio optimizer with presets to alter the listening experience.
- Browser – A lightweight browser that relies on the System WebView, for low-end devices, also known as Jelly.
- Calculator – which resembles a four-function calculator and offers some more advanced functions.
- Calendar – Calendar functionality with Day, Week, Month, Year or Agenda views.
- Camera – Dependent on device specification will take video or photos, including panoramic. It can also be used to read QR codes. This app is formerly known as Snap.
- Clock – World clock, countdown timer, stopwatch and alarms.
- Contacts – Phonebook for numbers and email addresses.
- Email – Email client that handles POP3, IMAP and Exchange.
- Files – Simple file manager to move, copy and rename files on internal storage or SD card.
- FlipFlap – An app for smart flip covers, only included on select devices.
- FM Radio - An app for listening to FM broadcasts, included on devices with an FM tuner.
- Gallery – Organize photos and videos into a timeline or albums for easy viewing.
- Messaging – SMS messaging.
- Music – A music player, formerly known as Eleven.
- Phone – for making calls: includes speed dial, phone number lookups and call blocking.
- Recorder – A screen and/or sound recorder.
- Trebuchet – A customizable launcher that supports protected apps.

Although they are not included by default due to legal issues,^[31] users can flash the normal Google apps, including the Google Play Store and Play Apps with a gapps zip package.

Unique features [edit]

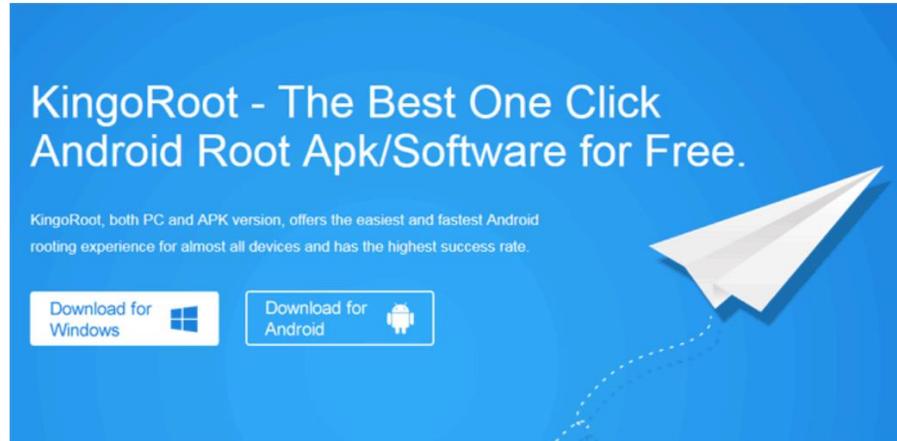
LineageOS offers several unique features that [AOSP](#) doesn't include. Some of these features are:

- Custom button placement – Set custom location for buttons on the navigation bar, or enable on-screen buttons for devices with hardware buttons.
- System Profiles – Enable or disable common settings based on the selected profile (For example, a "Home" profile and a "Work" profile). The profile can be selected either manually or through the use of a "trigger", such as upon connecting to a specific WiFi access point, connecting to a bluetooth device or tapping an NFC tag.
- Custom Quick-Setting tiles – Quick Setting Tiles such as "Caffeine" preventing the device from sleeping, enabling/disabling Heads Up notifications, "Ambient Display" and "ADB over network" are present to easily toggle frequently accessed settings.
- Expanded Desktop – Force "immersive mode" in apps that don't enable it initially.
- LiveDisplay – Adjust color temperature for the time of day.
- Trust - helps you keep your device secure and protects your privacy.
- Protected Apps – Hide specific apps behind a secure lock. This works hand-in-hand with Trebuchet; the respective app's icon is removed from the launcher, and "secure folders" can be created to easily access these applications. A pattern is used to lock these apps.
- PIN scramble – For users securing their device with a pin, the layout can be scrambled each time the device locks to make it difficult for people to figure out your lock by looking over your shoulder.
- Custom pattern sizes – In addition to Android's 3x3 pattern size, a 4x4, 5x5 or 6x6 size can be used.
- Lock screen customization – The lock screen allows all sorts of customizations, including media cover art, a music visualizer, displaying the weather (if a weather provider is installed), and double-tap to sleep.
- Weather providers – Display the weather in widgets or on the lock screen with a weather provider. This functionality is not included by default; a weather provider must be downloaded from the LineageOS Downloads website.
- Styles – Set a global dark or light theme mode and customize accent colors. This functionality can also be managed automatically by the system based on wallpaper or time of day (in line with LiveDisplay).
- Root Access -- Allows you to have SuperUser right. But you need to flash the su add-on pack.

Tools

Rooting

1) KingoRoot

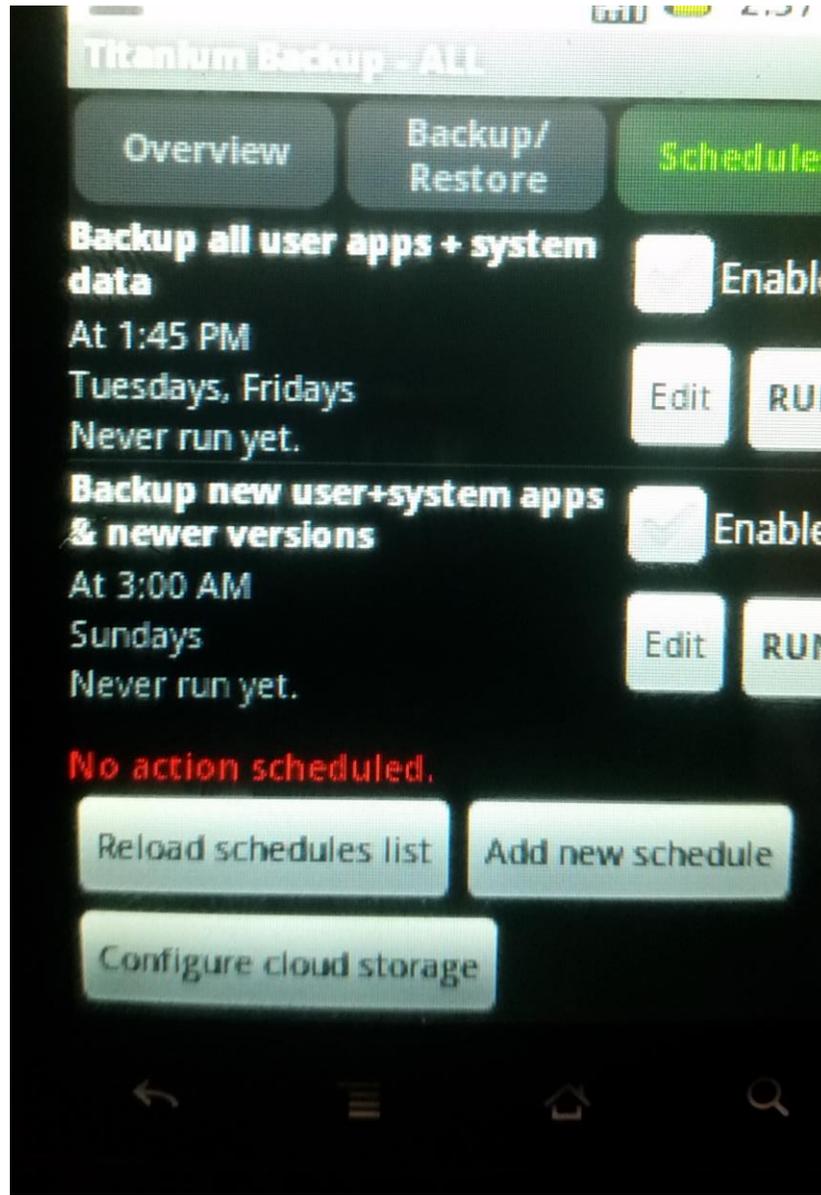
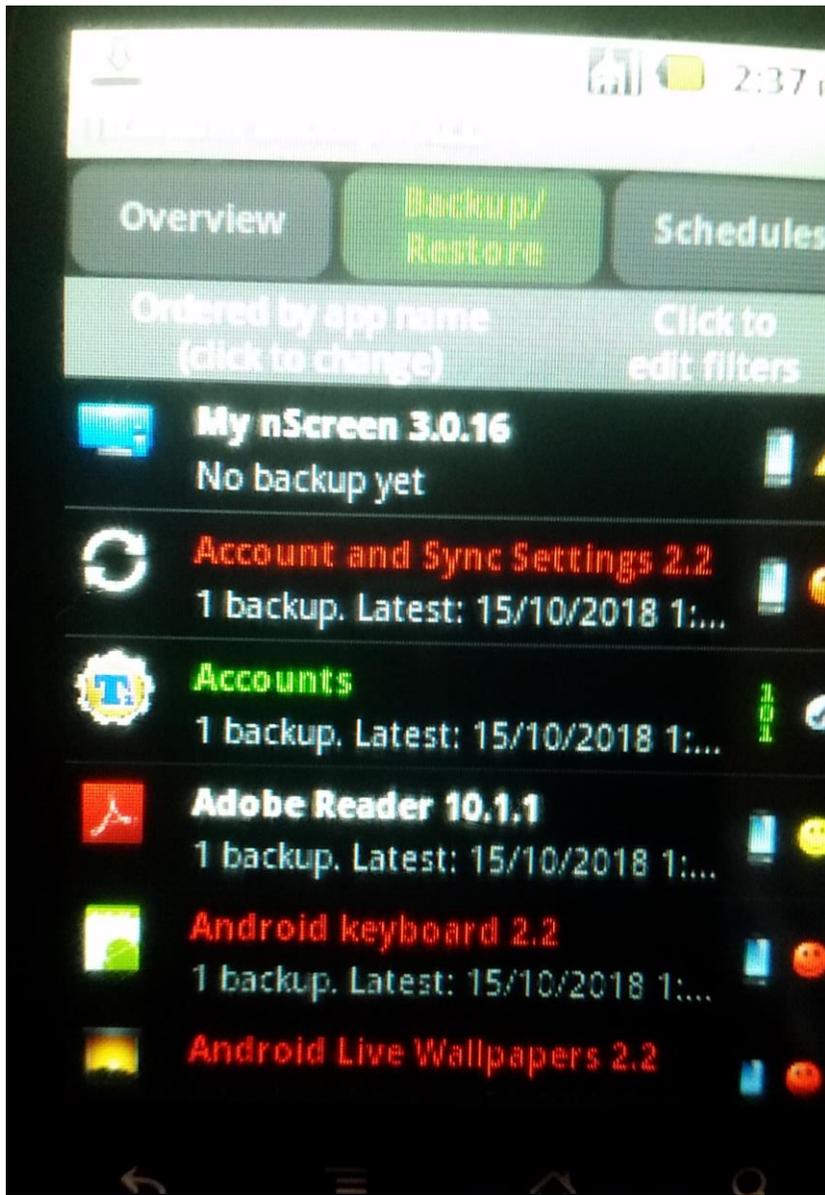
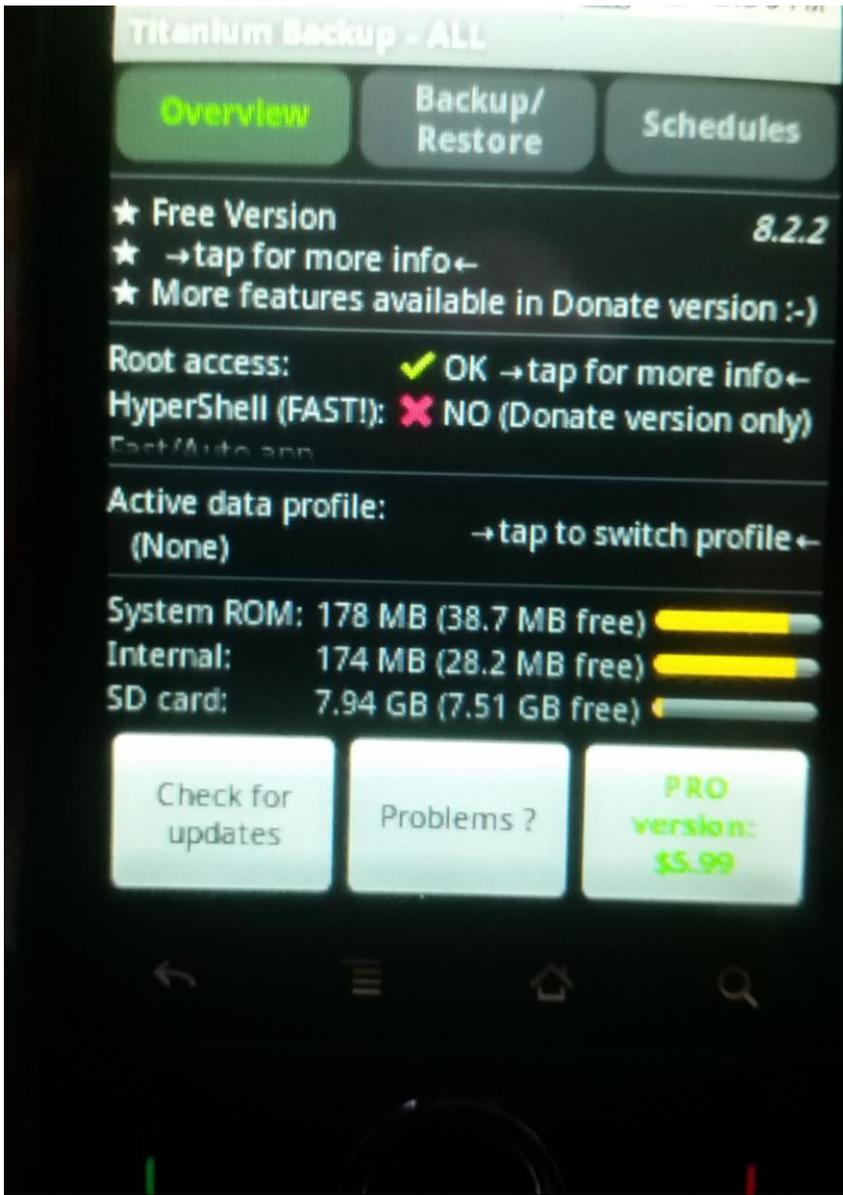


This is a most popular software for rooting any Android smartphone. It can root almost all Android devices that are running on 2.2-Froyo, 2.3-Gingerbread, 4.0-Ice Cream Sandwich, 4.2-Jelly Bean, 4.4-KitKat, 5.0-Lollipop, 6.0-Marshmallow, 7.0-Nougat and also it will support all newer Android Operating Systems (OS) that will launch in the future. You can check the full supported Smartphone list [here](#). It has a lightweight APK file, which doesn't consume much space on your Phone.

KingoRoot app is available for Windows and Android Phone but both do the same kind of **one click rooting** work. I have already described the full process how to root or unroot an Android phone

[ROM Managers](#)

[Backup Software](#)



Titanium Backup running on Huawei u8150 IDEOS with Android 2.2

Questions ?