Syrian Arab Republic

Ministry Of Education

National Center For Distinguished



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| android : just Customs | Prepared By : Mayad Farhod  Supervised By : E,Mais Darwish  2015 - 2016 |

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Introduction

To all people word custom means clothes, but for those who are Android developers the word custom means completely another different thing .

Are custom ROMs better than officials or not ?

What are custom Roms ?

What is special in Custom roms ?

Is it Difficult to install a custom ROM?

All the answers for these questions will be find in this research…….,

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Hope you enjoy reading it.

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Chapter one

Important expressions :

In order to talk about anything that is related to any topic , we must at first know the most important expressions and definitions related to it , according to Custom ROMS you must know as much as you can about Mods , Root , Kernel…….etc. So let’s try to define them and define the expression ROM at last…….

Recovery: this is a booting option for your phone , from where you can flash updates or custom firmware, as well as do full wipes and perform backups. You’ll likely be asked to run a patched Recovery image to make your life easier.

MOD: this is how we refer to any modified software that has been tampered with to do something that it was not meant to do in the first place, often with awesome results.

Root: the first level in your system folder.

Superuser/ SU: you might compare this to administrative privileges on a Windows computer, a Superuser account gives you full access to your device’s system, thereby allowing you to tap into it’s potential for either good, or evil ( no, really, you can cause some serious harm if you mess around blindly in there.)

Kernel: the Kernel allows the phone’s software to interface with its hardware and as such all custom ones are designed to improve the degree to which you can take advantage of the full capability of your components. ROMs often include their own Custom Kernels, although there’s also a wide variety of standalone ones.

ROM\FIRMWARE: the ROM is a modified OS for your phone, which you can flash once your mobile is rooted. They are usually jam packed with features that the official Android releases may not offer yet, or simply offer you the chance to update to a higher release than may be available for your device at the moment due to carrier limitations.

Custom ROMs: are ROMs that have been created by a developer or developer community to run on

Android devices. These ROMs are not officially sanctioned by the manufacturer and is never supported directly by the manufacturer. With Custom ROMs, your support comes from the developer and the community built around the ROM.

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Some famous custom ROMs:

As a first step to do the Rom installation operation you must ROOT your mobile at first.

Some Custom ROMs requires you to install specialized Kernels and Recoveries.

But Why would you install a custom ROM?

Custom ROMs have an advantage of giving some features to your mobile phone that it does not have before, one of the advantages is offering you a new release of Android OS that your device was not able to accept the official one, it’s like giving the key of a treasure box to a poor man.

Flashing custom ROMs is possibly the best reason to mess around with your fancy phone by rooting it. You might do this because your manufacturer stopped putting out OS updates, because those updates aren’t coming out fast enough or simply because you want a change of pace. Whatever your reason, here’s a list of most often recommended

ROMs for users of all walks of life:

Slim Bean : a sleek and lightweight option, yet hardly bereft of features. It boasts great performance on most devices (although it bears to mention that given the vast array of available

Android phones, it’s impossible to predict performance for each. You should always assume that

reviews are based on tests performed on current generation devices).

Battery life is also better than usual, since Slim Bean packs its own kernel; it also comes with an automatic-update feature, so you won’t have to keep manually downloading and flashing new updates.

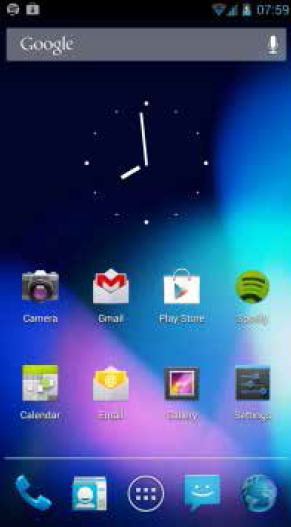
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Liquid smooth : this ROM lives up to its name, with a focus on pure performance across the

board. It makes messing around with your processor settings pretty easy in order for you to

tweak it to perfection with whichever device you’re carrying. There isn’t much of an improvement on battery life, but you have the option of undervolting your processor or changing its governor settings if you’re desperate to get more juice out of yours. Testing does show the ROM tends to crash often, but it’s nothing a reboot now and then won’t take care of. Remember, most of these projects are undertaken by small teams of developers without many resources and as such, so you won’t always get the most stable of products, but they have tremendous upsides.

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AOKP : (Android Open Kang Project): think of AOKP like Android’s mature cousin. It’s a perfect

choice for your first ROM if you’re rooting for the first time, since thematically it’s very similar to

the stock Android, simply packing far more under the hood. It’s compatible with most devices

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Cyanogen Mod : our last pick is another aged heavyweight. Cyanogen is the ROM of choice

for most Android enthusiasts, since it’s jam packed with every feature you can imagine and it’s

stable – which you’d expect from a project this mature. If that weren’t enough, it even gets good

battery life.

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Chapter Two

Cyanogen Mod :

You noticed that we didn’t talk about cyanogen mod details in the previous clause because now it’s the right time to talk about them .

Cyanogen mod :

Cyanogen Mod has grown to become an all-out mega ROM with close to 90 officially supported

devices. The ROM itself offers dozens of useful features including lockscreen gestures, a

powerful built-in theme engine, audio equalization, VPN support, and much more.

Some Researchers say that Cyanogen Mod is built from source code made available as part of the Android Open Source Project (AOSP), so extensive modifications can be made to it.

And others say that it is part of the AOKP ( Android Open Kang Project ).

In addition to the official ports, there are hundreds (if not thousands) of unofficial ports and

modifications (also known as "kangs"). These unofficial versions typically add anything from

support for additional devices to experimental features not yet merged into the official

Cyanogen Mod tree.

The latest version of the cyanogen mod ROM is CM13 it’s built upon the Marshmallow official ROM unfortunately it’s not released yet so you could say that the latest release is CM12.1

You can get more information from: [www.cyanogenmod.org](http://www.cyanogenmod.org) .

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Differences between customs and officials:

Officials:

First from its name, official ROMs are those ROMs that were released by the manufacturer

And the home screen or the home launcher is completely different, considering that every company has its own home launcher so it’s very natural to be different, beside this official ROMs

Are usually closed source except for Google mobile phones that developers take stock ROMs from them and build their custom ROMs on them, Latest release of officials ROMs aren’t available for old devices.

Beside all of these negatives there is some positive sides of it some of them are : it’s impossible to find an official ROM that has malwares inside, also it’s almost impossible to find an official ROM with Bugs inside, you don’t need to install an official ROM on your device because its installed already on it except for updates.

Customs:

Custom ROMs are ROMs that are developed by individual developers or developers community like the XDA’s Developers.

Like officials customs have different home launchers , here it to returns to the developer , according to the custom ROMs you can develop and improve on them anytime you want,

Some are based on stock ROMs , some are a part of the AOSP , and others are part of the AOKP , supported for almost all devices, and you can find the latest releases for old devices .

Beside these positives there is a lot of negatives the most important one of them is that custom ROMs are filled with bugs and causes many problems like no imei code which means no connections, or the device may not work while the Sim card is inside it and other problems that make many users avoid installing a Custom ROM.

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Chapter Three

Types of custom ROMs:

Custom ROMs have different types. The type of ROM will often determine the compatibility,

stability and features. Custom ROM types are separated into the following:

Stock Based ROMs:

Stock based ROMs are custom ROMs developed by making tweaks and edits to the stock

ROMs that came with the device. It may or may not have a theme, but it will perform

differently from the original ROM, usually running faster and smoother thanks to the many

tweaks and optimizations applied to the ROM. These ROMs are often the most stable ones,

especially if it was based on an already stable stock ROM.

Stock based ROMs often retain special features of the ROM it was based on, such as in the

case of the Galaxy S3 stock based ROMs that still have the “Direct Call” and “Smart Stay”

device specific features. These proprietary features are often left out of other types of ROMs

unless they are somehow ported from the original ROM.

AOSP ( Android Open Source Project ):

These types of ROMs are based on the Android Open source Alliance codes. They are based on the normal way Android is supposed to look and function, which is normally only seen on Nexus devices such as the Nexus 7 and Galaxy Nexus.

7These ROMs do not have any manufacturer specific features, and only retain features available on the base version of Android it is compiled in. These ROMs aim to provide the pure android experience even to non-Nexus devices.

AOKP ( Android Open Kang Project ):

These ROMs are based on the code developed by the AOSP. They steal the code and modify it so that it runs differently from the Pure Android experience while being based on it at its core.

It seeks to improve the basic code used on the AOSP ROMs and make it run better than the pure experience while still looking like the stock Android.

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It Has over 180,000 users !!!!

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Examples about every type:

Cyanogen Mod is essentially a type of AOKP. It is also based on AOSP code, but is heavily

modified to look completely different from AOKP. In effect, this AOKP has developed its own

identity and is considered its own type of ROM.

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MIUI is read as “Me, You, I”. It is actually a derivative of pure Android that has become closed source. An independent company named Xiaomi Tech. develops these ROMs. They are the company that made the Mi-One and Mi- Two smartphones. MIUI is the official custom Android operating system these devices run.

The MIUI ROM is like a mixture of iOS and Touch wiz, making a unique Android experience. Its code is actually based on a mix of AOSP and Cyanogen Mod as well as several tweaks and apps found from open sources or developed exclusively by the MIUI team. Despite that fact, MIUI uses a lot of their own unique system apps for services like calendar, contacts, dialer and messenger.

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Installing Method :

First, you must download the ROM file and put it in the SD card, after being sure that its suitable with your device, if the ROM requires a custom recovery or custom kernel you must download them also. ( this way is for Samsung devices )

Now, in case the ROM doesn’t require a custom kernel or recovery

After copying the ROM file to your SD card switch off the device, open the recovery mode by pressing the power button + home button + volume up button, when the recovery mode opens you can move by the volume buttons, choose by the power button ,

Now choose “ Install Zip from SD card “, go to the ROM file chose it, then choose yes , and wait for the operation to finish, when the operation finishes choose reboot system now

And wait for your device to reboot, it might take a long time to reboot so don’t worry.

Congrats, you installed a custom ROM.

Otherwise, if the ROM requires a custom recovery or kernel, you must install the custom recovery and kernel before installing the Rom, so in this case, after the recovery mode opens you do the same steps but instead of choosing, the Rom File you choose the custom recovery file and it will immediately run after that choose reboot recovery

When the recovery mode opens again go to install zip from SD card now choose the kernel file install it after that install the Rom.

And that’s all.

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Conclusion

At Last, as we read in the research: we get the result:

Custom ROMs have many advantages, more than officials but in addition to this, disadvantages of Customs are more dangerous than the disadvantages of officials, So, what’s the problem if your mobile phone doesn’t support a game or has an ugly home launcher, but it’s a horrible problem if your mobile phone don’t accept the SIM card, or if your device has a hard break or even if the device is stuck in the booting.

Installing a Custom ROM is easy if you’re a Samsung user somehow difficult if you use other devices like Sony, HTC, Motorola, LG……..etc.

But problems that will may face you after installing it isn’t so easy to solve if you are an ordinary user.

Although Custom ROMs gives you the opportunity to modify your device as you want and lets you make your mobile a super mobile, Custom ROMs aren’t better than officials even the official ROMs are somehow limiting the user but it stills safer than Custom.

If you’re a Superuser and you deserve the name may be you could built or customize your own Custom ROM the thing that is not available in officials except if you’re a manufacturer.

So In case you are an ordinary user it’s better for you to stay Classic, or just ask for help from a Superuser, but if you are really a Superuser wear the custom and don’t be afraid, you’ll absolutely find the solution for every Bug and problem will face you.

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