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Easy and Safe Way to Try Linux on Popular Rockchip RK3188 mini PCs

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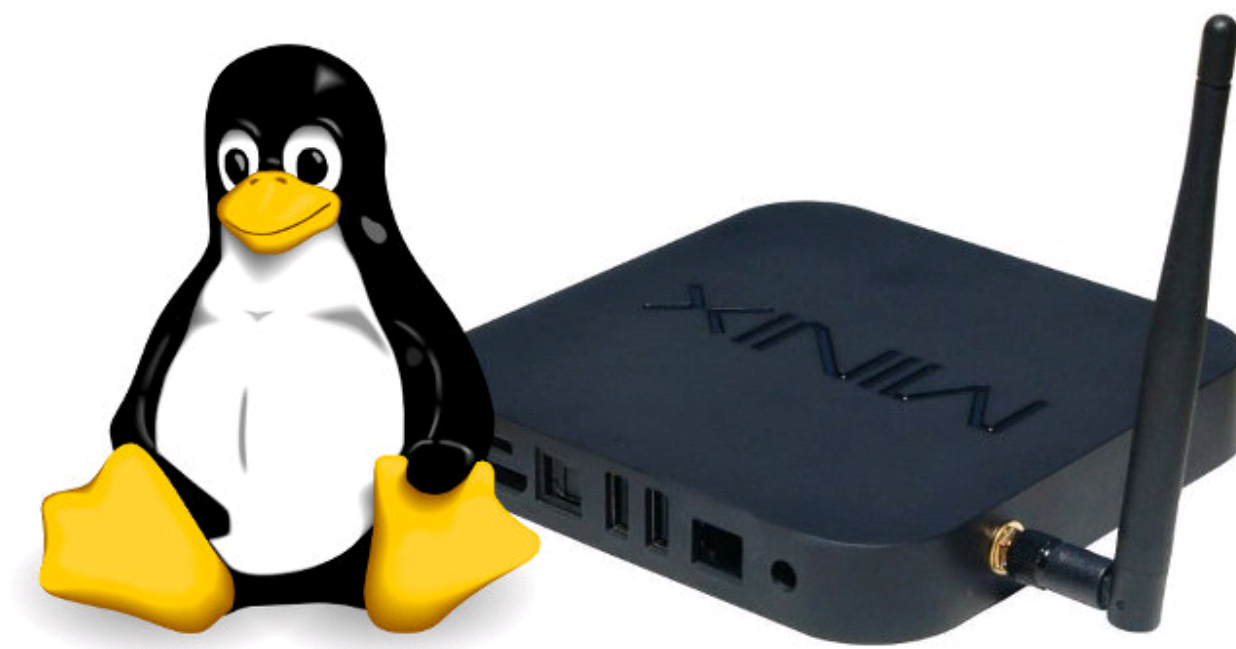


Until recently, [installing Linux on Rockchip R3188](#) based TV boxes or HDMI TV dongles meant you had to flash one or more binaries to your device using various type of tools for Linux or Windows. But thanks to various members of the community, it's now as easy as flashing an image for the Raspberry Pi, as long as you own [Minix Neo X7](#), [PQ Labs iStick A350-SSD](#), [Radxa Rock development board](#), or [Rikomagic MK802IV](#) (AP6210 or 8188EU Wi-Fi module versions) thanks to

4

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[images provided by Ian Morrison on G+ mini PC community](#) that can be booted from a (micro) SD card, which the added advantage that it won't mess with your Android installation.



You can do it whether you use a Windows or Linux PC, and it should also be possible on Mac OS X, but I don't know the commands. Here are the steps to follow for MINIX NEO X7, other products will have the same procedure, only the filename will change:

1. Download the image ([linux-sdcard-minix-neo-x7.img.7z](#))
2. Extract linux-sdcard-minix-neo-x7.img.7z using a utility that can handle this type of file, for example [7-Zip](#) for Windows, or p7zip in Linux.
3. Insert a (micro) SD card into your computer, and flash the extracted image:
 - Windows - Using [Win32DiskImager](#) GUI tool
 - Linux - with dd:

```
sudo dd if=linux-sdcard-minix-neo-x7.im of=/dev/sdX bs=4M
```

where 'X' is the disk name, and varies from system to system. It may also be like /dev/mmcblkX. Use 'lsusb' to find out. If you use a USB hard drive, be very careful, as you may wipe out your data if you use the wrong X.

4. Once this is complete, simply insert the SD card into your device, and powered it up and it should start Linux (Ubuntu 12.04)

The login credentials are Linuxium / p. Now you'll get a fully working system, and if you want to return back to Android simply remove the SD card.

However, you may want to complete a few more steps to take advantage of the full SD card capacity.

1. Type the following in a terminal window in your mini PC:

```
echo -e "d\n\n\np\n\n\n81921\n\n\nnw" | sudo fdisk /dev/mmcblk0'
```

2. Reboot, and type the command below to complete the partition resize:

```
sudo reseize2fs /dev/mmcblk0p1
```

Mali GPU hardware acceleration can be enabled as follows:

```
sudo mv /usr/lib/arm-linux-gnueabi/mesa-egl /usr/lib/arm-linux-gnueabi/xmesa-egl
```

Finally, if for some reasons, you want to create a root password, you can do by typing:

```
sudo su -
passwd root
```

Now what if you don't own any of the devices with pre-built SD card images? You can checkout Androtab.info instructions for Radxa Rock, which will give you ideas of what you need to do to boot from SD card on your own system. This does not require internal flash at all, you could unsolder the flash, and it would still work. Have fun!



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1.

Onanii

July 2nd, 2014 at 19:44 | [#1](#)[Reply](#) | [Quote](#)

hi does it work for RK3066 devices?



2.

guest

July 2nd, 2014 at 21:14 | [#2](#)[Reply](#) | [Quote](#)

can i try it on mk908 ? mk908 and mk802iv has similiar hardware.



3.

[cnxsoft](#)July 2nd, 2014 at 21:20 | [#3](#)[Reply](#) | [Quote](#)[@Onanii](#)

I think it only works for RK3188 devices (TBC).

[@guest](#)

Yes, you can try, there is no risk, since it won't modify your internal flash. But once I tried MK802 IV on MK908 and it did not work (NAND flash version), so there must be some kernel differences.



4.

Gabe

July 2nd, 2014 at 23:05 | [#4](#)[Reply](#) | [Quote](#)

I've tried it on an OS-TRK802Q stick(which I think has the insides of a J22), only wifi is not working. Glmark2 score is:52, glxgears fps around 62-79 FPS



5.

Gabe

July 2nd, 2014 at 23:11 | [#5](#)[Reply](#) | [Quote](#)

The first command works for 8GB microSD card only?



6.

Gabe

July 3rd, 2014 at 00:45 | [#6](#)[Reply](#) | [Quote](#)

I've tried then Minix Neo X7 version, should have tried the Mk902 IV version.



7.

riklaunim

July 3rd, 2014 at 02:29 | [#7](#)

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I have a tutorial and a set of benchmarks for Measy U4A dongle (RK3188)
<http://www.rkblog.rk.edu.pl/w/p/picuntu-and-linuxium-linux-measy-u4a-android-dongle/> and some Radxa articles are coming too.



8.

hamadi

July 3rd, 2014 at 08:48 | [#8](#)

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there's a way for dummy using chroot



9.

[cnxsoft](#)

July 3rd, 2014 at 13:24 | [#9](#)

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The Radxa guys have uploaded both Android 4.4 and Lubuntu SD card images-
http://wiki.radxa.com/Rock/SD_images



10.

fathony

July 3rd, 2014 at 15:20 | [#10](#)

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can this method applied on "MINIX NEO X7 mini" ?



11.

linuxium

July 3rd, 2014 at 20:28 | [#11](#)

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If anyone is interested some additional devices include:

Tronsmart T428 -

<https://drive.google.com/file/d/0B99O3A0dDe67bFJBSTFqSzlxMG8>

J22/CX919II -

<https://drive.google.com/file/d/0B99O3A0dDe67eTBRd3RXY0FpcWc>

MK809III -

<https://drive.google.com/file/d/0B99O3A0dDe67NmIyLTl4Z3ZFRmc>

Booting will give you a full Ubuntu 12.04 LTS desktop with Unity. It will not affect your installed software and there is no pre-requisite for a specific stock or custom ROM to be pre-installed. No 'flashing' is required as everything needed to boot is taken from the SD card so it will work even if the NAND is empty or the device is 'bricked'.



[cnxsoft](#)

July 3rd, 2014 at 20:38 | [#12](#)

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[@fathony](#)

Based on the difference with NEO X7 (<http://www.cnx-software.com/2013/08/05/minix-neo-x7mini-vs-neo-x7-android-media-players-comparison/>), I'd say it should work, possibly excluding Wi-Fi (different module)



onebir

July 3rd, 2014 at 21:59 | [#13](#)

[Reply](#) | [Quote](#)

[@linuxium](#)

Presumably you can only create these images for devices you have; if people donate & send RK3188 devices, would you have time (etc) to create images for those?



linuxium

July 4th, 2014 at 18:32 | [#14](#)

[Reply](#) | [Quote](#)

[@onebir](#)

If a manufacturer donates and sends me a RK3188 or even a RK3288 device together with the Android kernel source I'll certainly try and create an image for it.



onebir

July 5th, 2014 at 01:11 | [#15](#)

[Reply](#) | [Quote](#)

[@linuxium](#)

I hope some will see that this offers a unique added value for their devices & send some your way (maybe throwing in a bit of cash with them 😊)

1. July 4th, 2014 at 01:47 | [#1](#)

[Now it's easier to boot Linux on an RK3188 Mini PC \(with a microSD card\) - Liliputing](#)

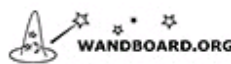

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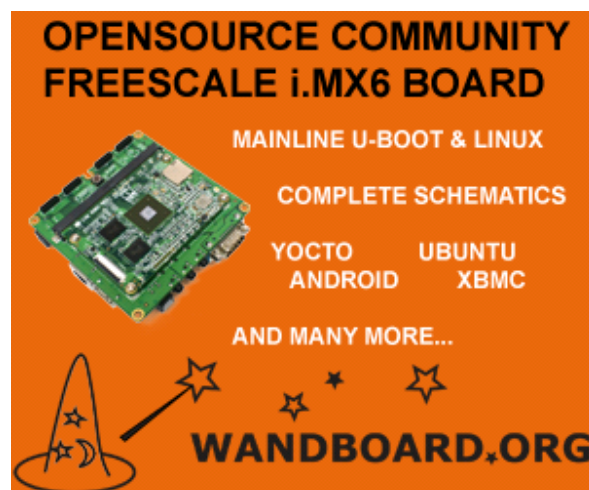
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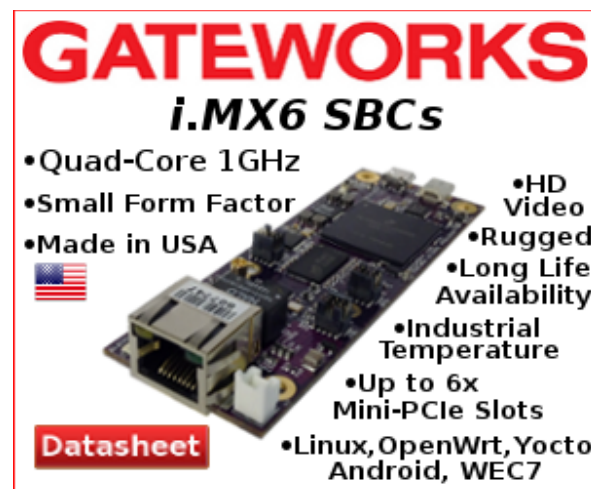
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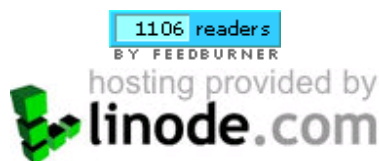
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