Release Note of Ubuntu 16.04 LTS (v2.3)

Summary

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<tr>
<th>Release Date</th>
<th>2017-03-01</th>
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<tbody>
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<td>Release Type</td>
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File name: ubuntu64-16.04lts-mate-odroid-c2-20170301.img.xz

Note: OS will reboot on the first boot for automatic rootfs resize

New updates

- Official US West Coast: [http://odroid.in/ubuntu_16.04lts](http://odroid.in/ubuntu_16.04lts)
- Official US East Coast: [http://east.us.odroid.in/ubuntu_16.04lts](http://east.us.odroid.in/ubuntu_16.04lts) (Thanks to David Beauchamp @ ArchLinuxARM)
- Official EU Germany: [http://de.eu.odroid.in/ubuntu_16.04lts](http://de.eu.odroid.in/ubuntu_16.04lts)

Kernel Updates

- GPIO Wakeup Feature Power Off and Wake Up using GPIO Key Button
- GPIO Mem driver is implemented to support the Rootless GPIO access: /dev/gpiomem

U-Boot Updates

- Display Auto Detection Display Auto Detection using EDID
- GPIO Wakeup Feature Power Off and Wake Up using GPIO Key Button
- New dvfs table scheme to support Mainline Kernel development

Userspace Update

- Kodi to 17.0
- libcec to 4.0
- Ubuntu to 16.04.2

Tips and Known issues

- mySQL/KVM needs an editing of boot.ini file to change the system timer source to ARMv8 Architecture from the Meson. But the ARMv8 timer affects the VPU/GPU system accuracy.
- NTP time syncing takes long time (sometimes around 1~2 minutes)
- Check the CPU governor if you feel the system slowness.
If it is not “performance”, try

```
echo 'GOVERNOR="performance"' | sudo tee /etc/default/cpufrequtils
```

and reboot.

- GPU acceleration should be enabled manually. Add below line into /etc/chromium-browser/default file.

```
CHROMIUM_FLAGS=" --use-gl=egl --ignore-gpu-blacklist --disable-accelerated-2d-canvas --num-raster-threads=2"
```

- The root file system will be resized in the first booting process. OS will reboot automatically to complete the resizing process. **This process must not be interrupted.**
- To enable Auto-login, edit /usr/share/lightdm/lightdm.conf.d/60-lightdm-gtk-greeter.conf file like this.

```ini
[Seat:*

greeter-session=lightdm-gtk-greeter
autologin-user=odroid
```

## Reverting to Kodi 16.1

- If Kodi 17 isn't working fine for you, you can revert to 16.1 with the following steps.

```
wget deb.odroid.in/old_kodi_c2/old_kodi.tar

tar xf old_kodi.tar

sudo dpkg -i *.deb
```

## How to update the kernel and system

```
sudo apt update
sudo apt upgrade
sudo apt dist-upgrade
sudo apt install linux-image-c2
sudo reboot
```

## The default boot.ini in V2.3

How to checkout

The current version only provide Linux kernel and U-boot source code. Here are the instructions to checkout the source code and build. For more detail information, please visit U-boot and Kernel.

This guide is only for the NATIVE BUILD.

U-boot

$ git clone https://github.com/hardkernel/u-boot.git -b odroidc2-v2015.01
$ cd u-boot
$ make odroidc2_config
$ make

Linux Kernel

$ cd linux
$ make odroidc2_defconfig
$ make -j5
$ sudo make modules_install
$ sudo cp arch/arm64/boot/Image /media/boot
$ sudo cp arch/arm64/boot/dts/meson64_odroidc2.dtb /media/boot

Run “git checkout jenkins-deb_s905_kernel-102” command to use the same kernel tag before “make odroidc2_defconfig”.

Kodi Tips

- Enabling Adjust Display Refresh Rate
- Enabling HDMI passthrough