

Tips for boot logo on ODROID-N2

Using the display auto detection option, the broken logo display can be shown with the latest version.

Please use manual display mode by setting **setenv display_autodetect "false"** of boot.ini.

Boot Logo Image Format

The basic image format for the ODROID-N2 boot logo file is as following.

Format

```
Image Format : 24-bit Windows BMP image or 24-bit Windows Gzipped BMP image
              (without meta-data)
Image Size  : 1280 by 720
Color Depth : 24bpp Color
The file name should be 'boot-logo.bmp' or 'boot-logo.bmp.gz'
```

Here is the sample bmp file. [boot-logo.bmp.gz](#)

We recommend using GIMP or KolourPaint for boot logo creation.
Here are the advanced options for each of the recommended programs.

[GIMP]

```
- Export as Windows BMP
- Compatibility Options : Do not write Color Space Information
- Advanced Options : 24 bits Color
- Name : "boot-logo.bmp"
```

[KolourPaint]

```
- Save Image as
- Filter : Windows BMP image
- Convert to : 24-bit Color
```

Size Limitation

It is important to note that, **the size of your logo file must be under 2MB** because the logo partition of Android is limited to 2MB. Gzip BMP format is supported, so if the size is over 2MB, you can use bmp.gz file.

```
$ gzip boot-logo.bmp
$ ls
boot-logo.bmp.gz
```

Auto scaling option

On ODROID-N2 uboot, **image scaling for boot logo** is supported, so displayed boot logo will be fixed automatically for output mode as described in boot.ini.

For example, in case of using the mode "1024x600p60hz", the boot logo will be displayed as 1024x600 even though the actual size of the bmp file is 1280x720.

How to replace boot logo with your custom image

ODROID-N2 scans the existence of the following three parts in numerical order.

1. boot-logo.bmp in VFAT partition
2. boot-logo.bmp.gz in VFAT partition
3. logo data in Android LOGO partition

Android

In Android, you can replace boot logo with your custom image.

There are two ways to change the boot logo image.

1. Add a image into VFAT partition.
2. Rewrite image data into Android LOGO partition using fastboot.

1. VFAT

Copy the new boot-logo.bmp (or boot-logo.bmp.gz) to **VFAT** partition.

2. Android Logo Partition

If you want to replace the logo data in logo partition, please follow this guide.

First, you must get into your U-Boot command line while pressing the **ENTER** key when your ODROID-N2 is powered up.

And execute **fastboot** command from U-Boot and connect it with your desktop using a USB cable.

[ODROID-N2 Target]

```
odroidn2# fastboot
```

Next, run **fastboot** command from your desktop.

[HOST PC]

```
$ fastboot flash logo boot-logo.bmp.gz
or
$ fastboot flash logo boot-logo.bmp
```

If you will use bmp data on logo partition, make sure there is **NO boot-logo.bmp.gz file on your VFAT area**, because U-Boot first checks if there is a boot-logo.bmp/boot-logo.bmp.gz file in the VFAT area and then checks the logo partition.

Ubuntu

With Ubuntu, LOGO option is NOT included by default. So, you need to add a boot logo image into **VFAT** partition. The way using LOGO partition is not available on Ubuntu.

How to add showlogo command in boot.ini

1080p60hz case

On U-Boot, default logo display logic works with 1080p60hz display resolution. So you don't need to add/modify related commands, but make sure boot logo file exists in the aforementioned locations.

Another resolution other than 1080p60hz

You should add the commands to your **boot.ini** before **bootcmd** is executed.

Please check if there is 'showlogo' command in your boot.ini first. If not so, refer to the following.

```
### Boot Arguments
if test "${display_autodetect}" = "true"; then hdmitx edid; fi
if test "${hdmimode}" = "custombuilt"; then setenv cmode
"modeline=${modeline}"; fi

### Add showlogo with ${hdmimode} size
hdmitx mode ${voutmode}
showlogo ${hdmimode}
```

How to use the custom image with Native resolution

If you want to use a native resolution of bmp image like 1920×1080, 1024×600 (for VU7+) or 800×480 (for VU7), please set the arg[2]/arg[3] of **showlogo** command as following.

```
odroidn2 # help showlogo
showlogo - Displaying BMP logo file to HDMI screen with the specified
resolution

Usage:
showlogo <resolution> [<bmp_width> <bmp_height>]
    resolution - screen resolutuion on HDMI screen
                 '1080p60hz' will be used by default if missing
    bmp_width (optional) - width of logo bmp file
                 '1280' will be used by default if missing
    bmp_height (optional) - height of logo bmp file
                 '720' will be used by default if missing
```

Replace boot logo image with yours as described in previous sections and then modify 'showlogo' command in boot.ini.

Here are examples.

1. Logo image size of width 1920 and height 1080

If your monitor's resolution is 1920×1080 and you want to set a bmp file in 1920×1080, set command in boot.ini as following.

```
setenv hdmimode "1080p60hz"
showlogo ${hdmimode} 1920 1080
```

2. Logo image size of width 1024 and height 600

```
setenv hdmimode "1024x600p60hz"
showlogo ${hdmimode} 1024 600
```

3. Logo image size of width 800 and height 480

```
setenv hdmimode "800x480p60hz"
showlogo ${hdmimode} 800 480
```

Android Boot Animation

In case of Android, you can use **bootanimation.zip** method to show your custom logo using animation.

Please refer to this reference site.

<https://android.googlesource.com/platform/frameworks/base/+master/cmds/bootanimation/FORMAT.md>

The system selects a boot animation zip file from the following locations.

```
/system/media/bootanimation.zip  
/oem/media/bootanimation.zip
```

Before copy process, you need to change root filesystem permission as r/w.
And copy your bootanimation.zip into /system/media/ folder.

```
console:/ $ su  
console:/ # mount -o rw,remount /system  
[ 173.674067@2] EXT4-fs (mmcblk0p11): re-mounted. Opts:  
block_validity,delalloc,barrier,user_xattr,acl,inode_readahead_blks=8
```

Please make sure file permission of bootanimation.zip.

```
console:/ # chmod 755 /system/media/bootanimation.zip  
console:/ # ls -al /system/media/bootanimation.zip  
-rwxr-xr-x 1 root root 5030729 2019-03-27 00:41  
/system/media/bootanimation.zip
```

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