

How to set max cpu frequency and cores

- Ubuntu : Available with 3.14.77-80 (Sep 8, 2016) or higher version
- Android : Available with Android v2.2 or higher version

For further information, you can refer to the following forum thread.

<http://forum.odroid.com/viewtopic.php?f=141&t=23044>

How to set max cpu frequency

Here are the available cpu frequency sets and you can set one of them as max. cpu frequency using boot.ini

The available list of cpu frequency set

Here are the common sets we recommend under normal conditions.

frequency	notation on boot.ini
1.656 GHz	"1656"
1.536 GHz	"1536"
1.296 GHz	"1296"
1 GHz	"1000"
500 MHz	"500"
250 MHz	"250"
100 MHz	"100"

There are some advanced frequency sets you can try below.

The following sets are unstable with 2 or more cpu-cores so, you should adjust cpu cores as described the next section.

frequency	notation on boot.ini	note
1.680 GHz	"1680"	booting OK with 4 cores / recommend 3 cores for heavy load test
1.752 GHz	"1752"	booting OK with 4 cores / recommend 2 cores for heavy load test
1.896 GHz	"1896"	booting OK with 1~3 cores / recommend running with a single core
1.920 GHz	"1920"	booting OK with 1 or 2 cores / recommend running with a single core
1.944 GHz	"1944"	booting OK with a single core but unstable
2.016 GHz	"2016"	extremely unstable

setting boot.ini

Please modify **max_freq** based on the aforementioned frequency table. The unit of max_freq in boot.ini is MHz.

If you don't set max_freq in bootargs or the setting value is wrong one which doesn't exist in frequency table, max_freq will be set as "1.536GHz" by default.

```
### boot.ini

# max cpu frequency in dvfs table / in MHz unit
# setenv max_freq "2016" # 2.016GHz
# setenv max_freq "1944" # 1.944GHz
# setenv max_freq "1920" # 1.920GHz
# setenv max_freq "1896" # 1.896GHz
# setenv max_freq "1752" # 1.752GHz
# setenv max_freq "1680" # 1.680GHz
# setenv max_freq "1656" # 1.656GHz
setenv max_freq "1536" # 1.536GHz

# Boot Arguments
# add max_freq in bootargs
setenv bootargs "root=UUID=e139ce78-9841-40fe-8823-96a304a09859 rootwait ro
${condev} no_console_suspend max_freq=${max_freq} hdmimode=${m} ${comde}
m_bpp=${m_bpp} vout=${vout} fsck.repair=yes net.ifnames=0 elevator=noop
disablehpd=${hpd}"
```

After setting it, then be sure you do reboot.

You can check the frequency list as following.

ex) setenv max_freq "1656"

```
root@odroid64:~# cat
/sys/devices/system/cpu/cpu0/cpufreq/scaling_available_frequencies
100000 250000 500000 1000000 1296000 1536000 1656000
```

How to set the number of cpu cores

Also, you can set cpu-cores you want to activate using boot.ini

The available range is "1" to "4"

setting boot.ini

```
### boot.ini

# max cpu-cores
```

```
# setenv maxcpus "1"
# setenv maxcpus "2"
# setenv maxcpus "3"
setenv maxcpus "4"

# Boot Arguments
# add max_freq in bootargs
setenv bootargs "root=UUID=e139ce78-9841-40fe-8823-96a304a09859 rootwait ro
${condev} no_console_suspend max_freq=${max_freq} maxcpus=${maxcpus}
hdmimode=${m} ${comde} m_bpp=${m_bpp} vout=${vout} fsck.repair=yes
net.ifnames=0 elevator=noop disablehpd=${hpd}"
```

After setting it, then please be sure you do reboot.

You can check the activated cpu cores as following.

ex) setenv maxcpus "2"

```
root@odroid64:~# cat /sys/devices/system/cpu/online
-1
root@odroid64:~# cat /sys/devices/system/cpu/offline
2-3
```

```
root@odroid64:~# cat /proc/cpuinfo
processor       : 
BogoMIPS      : 2.00
Features       : fp asimd crc32
CPU implementer : 0x41
CPU architecture: 8
CPU variant    : 0x0
CPU part      : 0xd03
CPU revision   : 4

processor       : 1
BogoMIPS      : 2.00
Features       : fp asimd crc32
CPU implementer : 0x41
CPU architecture: 8
CPU variant    : 0x0
CPU part      : 0xd03
CPU revision   : 4

Hardware       : ODROID-C2
```

From:
<http://wiki.odroid.com/> - **ODROID Wiki**

Permanent link:
http://wiki.odroid.com/odroid-c2/application_note/software/set_cpu_freq?rev=1501574449

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