

# TFTP Netbooting

## Setting up a TFTP server(Host PC)

Install the following packages on your host PC

```
$ sudo apt install xinetd tftpd tftp
```

Create file “/etc/xinetd.d/tftp” with the following contents

```
service tftp
{
    protocol = udp
    port = 69
    socket_type = dgram
    wait = yes
    user = nobody
    server = /usr/sbin/in.tftpd
    server_args = /tftpboot
    disable = no
}
```

Create directory `/tftpboot/` (this matches the `server-args` above) and set its permissions:

```
$ sudo mkdir /tftpboot/
$ sudo chmod -R 777 /tftpboot/
$ sudo chown -R nobody /tftpboot/
```

Restart the `xinetd` service:

```
$ sudo service xinetd restart
```

Test the server by creating a simple `test` file in `/tftpboot/`: `<coe host> $ cd /tftpboot/ $ echo “this is a test” > test </code>`

Get the IP address of your host PC via “ip addr”, then from another system:

```
$ tftp <host_pc_ip_address>
$ tftp> get test
$ Sent 159 bytes in 0.0 seconds
$ tftp> quit
$ $ cat test
$ this is a test
```

Copy your kernel and dtb binary into the “/tftpboot” folder.

## ODROID-N2

```
$ cp Image /tftpboot  
$ cp meson64_odroidn2.dtb /tftpboot  
$ cp uInitrd /tftpboot
```

## ODROID-C4

```
$ cp Image /tftpboot  
$ cp meson64_odroidc4.dtb /tftpboot  
$ cp uInitrd /tftpboot
```

## ODROID-C2

```
$ cp uInitrd /tftpboot  
$ cp Image /tftpboot  
$ cp meson64_odroidc2.dtb /tftpboot
```

## ODROID GO Advance

```
$ cp Image /tftpboot  
$ cp rk3326-odroidgo2-linux.dtb /tftpboot
```

### U-Boot

#### Assumptions:

- TFTP server IP address: *192.168.0.2*
- ODROID Board IP address: *192.168.0.3*

#### Download image and Booting

## ODROID-N2

Set the tftp server & board ip address:

[target](#)

```
odroidn2# setenv serverip 192.168.0.2
```

```
odroidn2# setenv ipaddr 192.168.0.3
```

Download images using tftp:

target

```
odroidn2# tftp 0x1000000 meson64_odroidn2.dtb
odroidn2# tftp 0x11000000 Image
odroidn2# tftp 0x13000000 uInitrd
```

Booting:

target

```
odroidn2# setenv condev "console=ttyS0,115200n8 console=tty0"
odroidn2# setenv m "1080p60hz"
odroidn2# setenv m_bpp "32"
odroidn2# setenv bootargs
"root=UUID=e139ce78-9841-40fe-8823-96a304a09859 rootwait rw ${condev}
no_console_suspend hdmimode=${m} m_bpp=${m_bpp} fsck.fix=yes"
odroidn2# booti 0x11000000 0x13000000 0x1000000
```

## ODROID-C4

Set the tftp server & board ip address:

target

```
odroidc4# setenv serverip 192.168.0.2
odroidc4# setenv ipaddr 192.168.0.3
```

Download images using tftp:

target

```
odroidc4# tftp 0x1000000 meson64_odroidc4.dtb
odroidc4# tftp 0x11000000 Image
odroidc4# tftp 0x13000000 uInitrd
```

Booting:

target

```
odroidc4# setenv condev "console=ttyS0,115200n8 console=tty0"  
odroidc4# setenv m "1080p60hz"  
odroidc4# setenv m_bpp "32"  
odroidc4# setenv bootargs  
"root=UUID=e139ce78-9841-40fe-8823-96a304a09859 rootwait rw ${condev}  
no_console_suspend hdmimode=${m} m_bpp=${m_bpp} fsck.fix=yes"  
odroidn2# booti 0x11000000 0x13000000 0x1000000
```

## ODROID-C2

Configure boot.ini file.

Comment out the changes to boot from primary partition /media/boot/boot.ini file.

```
# fatload mmc 0:1 ${initrd_loadaddr} uInitrd  
# fatload mmc 0:1 ${loadaddr} Image  
# fatload mmc 0:1 ${dtb_loadaddr} meson64_odroidc2.dtb
```

And Replace these with following

```
# Booting via tftp server configuration  
# setting up the tftp parameters  
setenv tftpImage Image  
setenv tftpFdtfile meson64_odroidc2.dtb  
setenv tftpuInit uInitrd  
setenv ipaddr 192.168.0.3 # client ip address  
setenv serverip 192.168.0.2 # server ip address  
setenv gatewayip 192.168.0.1 # gateway ip address  
# Download firmware image via tftp  
setenv net_tftp 'tftp ${loadaddr} ${tftpImage};tftp ${dtb_loadaddr}  
${tftpFdtfile};tftp ${initrd_loadaddr} ${tftpuInit};'  
run net_tftp
```

## ODROID-C1

Configure boot.ini file.

Comment out the changes to boot from primary partition /media/boot/boot.ini file.

```
# Booting  
# fatload mmc 0:1 0x21000000 uImage  
# fatload mmc 0:1 0x22000000 uInitrd  
# fatload mmc 0:1 0x21800000 meson8b_odroidc.dtb
```

And Replace these with following

```
# Booting via tftp server configuration
# setting up the tftp parameters

setenv kernel_addr 0x21000000
setenv fdt_addr 0x21800000
setenv uinit_addr 0x22000000
setenv tftpbootfile uImage
setenv tftpfdtfile meson8b_odroidc.dtb
setenv tftpuInit uInitrd
setenv ipaddr 192.168.0.3      # Client ipaddress
setenv serverip 192.168.0.2  # Server ipaddress
setenv gatewayip 192.168.0.1 # Gateway ipaddress

setenv net_tftp 'tftp ${kernel_addr} ${tftpbootfile};tftp ${fdt_addr}
${tftpfdtfile};tftp ${uinit_addr} ${tftpuInit};'
run net_tftp
```

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