

Installing the PXE Server

This tutorial was done with a Debian 8. And it will only be possible to automatically boot an OS according to the modules MAC adress. In this configuration there is no GUI to select a boot image.

All operation where donw with root permissions.

First the fowlling services have to be installed:

```
apt-get install dnsmasq, nfs-kernel-server
```

dnsmasq serves as DHCP Server to tell teh clients what IP adress to use and which kernel they have to load. Also it runs the TFTP Server that provides the kernel images.

nfs-kernel-server provides the nfs network share for the rootfs and a persistent storage.

Setting up dnsmasq

the config file can be opende with

```
nano /etc/dnsmasq.conf
```

All DHCP Options used in the following config can be found here [Link](#) The following shows an example configuration for 3 drifferent mdoules and 4 different kernel.

```
#Binds the DHCP server to eth0
interface=eth0
#Sets the IP range with a lease time of 8 hours
dhcp-range=192.168.13.201,192.168.13.249,255.255.255.0,8h

#Enables the TFTP service of dnsmasq
enable-tftp
#Bind the TFTP root folder to the set folder
tftp-root=/srv/tftpboot/
#DHCP Option 66 sets which TFTP Server will be used by the client
dhcp-option=66,192.168.13.80
#DHCP Option 42 sets a NTP time server
dhcp-option=42,130.133.1.10

#The following sets a flag for all MAC addresses starting with the given
number,
#so it is possible to set different setups for different modules
dhcp-host=00:14:2d:*:*:*,set:toradexApalis
dhcp-host=00:0e:c6:*:*:*,set:toradexColibriAndroid
#"set:christmannExynosLinux" has to be changed to
"set:christmannExynosAndroid" in order to load
```

```
#the Android kernel
dhcp-host=70:b3:d5:56:*:* ,set:christmannExynosLinux

#These different tags can be used with "tag:"tagname", "option""
#"dhcp-boot" defines which kernel will be loaded from the TFTP root path
#"dhcp-option" gives an option to the set MAC adress group

#Kernel filename for Toradex Apalis T30 provided by the TFTP Server
dhcp-boot=tag:toradexApalis,toradexApalis_uImage
#Root path that is shared by the nfs-kernel-server
dhcp-option=tag:toradexApalis,17,/srv/nfs/apalisT30/rootfs/

#Kernel filename for Toradex Colibri T20
dhcp-boot=tag:toradexColibri,toradexColibri_uImage
#Root path
dhcp-option=tag:toradexColibri,17,/srv/nfs/colibriT20/linux/rootfs/

#Kernel filename for Christmann Apalis Exynos Linux
dhcp-boot=tag:christmannExynosLinux,uImage-ExynosLinux
#Root path
dhcp-option=tag:christmannExynosLinux,17,/srv/nfs/apalisExynos/linux/rootfs/

#Kernel filename for Christmann Apalis Exynos Android
dhcp-boot=tag:christmannExynosAndroid,uImage-ExynosAndroid
#Root path
dhcp-
option=tag:christmannExynosAndroid,17,/srv/nfs/apalisExynos/android/rootfs
```

After the dnsmasq.conf has been changed the dnsmasq service has to be restarted in order to apply the changes using:

```
/etc/init.d/dnsmasq restart
```

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