

# FileWave Debian Appliances and Networking

## What

FileWave provides pre-built Appliances, quick to setup and peace of mind all should be well. These currently include:

- FileWave Server
- Booster
- IVS

Out of the box, FileWave Appliances are configured to use DHCP. You should note that these concepts in this article apply in general to any Debian installation, but the Appliances come in a specific state so this article is focused more directly on them.

✔ It is recommended that these are set to use static IPs, either from reconfiguring the Appliance or by way of DHCP reservations.

## Why

FileWave cannot know in advance any network configuration, since each network will have its own unique setup. However, static IP addresses provide greater reliability of service and faster data exchange with the aim to guarantee uptime. As such, although the Appliances are built with DHCP configured, this should be addressed on initial configuration of the Appliance.

## Information

The following articles offer details for configuring static addresses on FileWave Appliances:

- [FileWave Server Setup](#)
- [Networking - Assign static IP Address for a FileWave Booster Appliance](#)
- [IVS Control Commands](#)

However, it is also possible to use DHCP IP reservations, forcing an IP address per MAC address; configured on the DHCP server instead.

## Troubleshooting

Example customer report to the FileWave Support Team:

### Report

“Despite having a DHCP IP reservation the Booster was not being assigned the defined IP.”

### Resolution

In this instance, working with the customer, the FileWave Support team helped identify 2 DHCP servers offering addresses for this same subnet and only one was configured to assign the correct static IP.

## Recommendation

The following considerations should be noted:

- Where multiple DHCP servers are considered necessary to server a subnet, ensure each DHCP server is configured for a unique addresses pool; multiple DHCP servers should not be configured to provide the same addresses in a given subnet.
- Since only one DHCP server should provide any one single IP for a subnet, when mixing DHCP with static reservations, only one server can be configured to offer an IP for any one MAC address in a given subnet.
- The consequence of the above: for static reservations, only add the MAC address for a device on one DHCP server for that subnet, which is handling the range of the desired IP.

⚠ Overlapping address pools and relying on DHCP synchronisation is not recommended.

The below table shows some commands that were useful during the troubleshooting of the described example issue:

Command	Description
<pre>ip a</pre>	Show network interfaces, including IP, MAC addresses, etc.


<code>ls /sys/class/net</code>	List just the names of the network interfaces
<code>dhclient &lt;name of network interface&gt;</code>	Refresh the client lease of the provided network interface
<code>arp -a</code>	Display the network neighbour cache

## Examples:

'ip' command listing two defined interfaces. In the example, 'ens192' is the active network interface for all external traffic.

```
# ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
        valid_lft forever preferred_lft forever
2: ens192: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 1000
    link/ether 00:0c:29:1d:1c:75 brd ff:ff:ff:ff:ff:ff
    altname enp11s0
    inet 10.85.1.9/24 brd 10.85.1.255 scope global ens192
        valid_lft forever preferred_lft forever
```

 'lo' is the [local loopback address](#)

 Assists in displaying the MAC address if required for DHCP static IP reservation

The below command more simplistically displays the names of the interfaces alone:

```
# ls /sys/class/net
ens192  lo
```

Were an appliance to pick up an 'incorrect' IP, it may be necessary to force the device to establish a new IP from the DHCP server. Using the above example, the network interface name is 'ens192'. Therefore the command would appear as:

```
# dhclient ens192
```

 The dhclient command should be ran as root

The 'arp' command can be useful in identifying network conflicts. The below example shows the DHCP/DNS server, along with two devices that the FileWave Appliance is now aware.

```
# arp -a
Linksys38496.home (10.85.1.1) at d8:9f:80:4c:24:67 [ether] on ens192
FW1063.home (10.85.1.230) at 5c:96:cf:db:62:3b [ether] on ens192
ml1063.home (10.85.1.136) at ac:d0:74:68:23:6d [ether] on ens192
```