

How to configure the ISC DHCP server to lease IP address to SkyPilot devices

Step 1: Editing dhcpd.conf using vi editor.

- a) type "vi /etc/dhcpd.conf" to edit the dhcpd.conf
- b) If you are not familiar VI, please look below for reference to VI basic commands:

For Step 2 – 6 look at example DHCP config

Step 2: change server-name "192.168.5.4" to reflect the server IP address.

```
ddns-update-style ad-hoc;
default-lease-time 172800;
max-lease-time 345600;
server-name "192.168.5.4"; ← IP address of the EMS and DHCP server
omapi-port 7911;
authoritative;
```

Step 3: add your own network IP address, subnet mask, broadcast-address, router, ftp, and skypilot EMS server IP address.

```
shared-network SkyPilot {
subnet 192.168.5.0 netmask 255.255.255.0 { ← Subnet for the SkyPilot devices
option subnet-mask 255.255.255.0; ← subnet mask
option broadcast-address 192.168.5.255; ← broadcast address for the subnet
option routers 192.168.5.1; ← the router IP address
option tftp-server-name "192.168.5.4"; ← FTP server that SkyPilot nodes will
download images from
option www-server 192.168.5.4; ← IP address of server that SkyPilot nodes
download configuration file from
}
```

Step 4: Add specific node (SkyGateway, SkyExtender, and SkyConnector) information.

- a) add host, hardware Ethernet, fixed-address, and option host-name for each entry

```
host Gateway {
hardware ethernet 00:0a:db:01:08:a0; ← Mac address of unit
fixed-address 192.168.5.20; ← Fix IP address that will be assigned
option host-name "Gateway"; ← Option host name that you want to give it.
}

host Ext01 {
hardware ethernet 00:0a:db:00:01:09;
fixed-address 192.168.5.21;
option host-name "Ext01";
}

host CPE1 {
hardware ethernet 00:0A:DB:09:52:6C;
fixed-address 192.168.5.51;
option host-name "CPE1";
}
```

Step 5: Add a new subnet with public IP address for the PCs

```
subnet 216.15.3.0 netmask 255.255.255.0 { ← Subnet for the PC behind the
SkyPilot Devices
range 216.15.3.3 216.15.3.254; ← DHCP IP range that will be dynamically lease
to the PC
option subnet-mask 255.255.255.0; ← Subnet mask
option broadcast-address 216.15.3.255; ← broadcast address
option routers 216.15.3.1; ← router on which the PC will get to the internet
option domain-name-servers 66.81.32.11, 66.81.32.12; ← DNS server
}
```

```
}
```

Step 6: Make sure that you restart the dhcp server every time you add entries by editing the dhcpd.conf file. If you get any errors, look at what line you are failing at and you can look over it to see if there is any typos.

```
[root@budget root]# skypilot_stop dhcpd
Shutting down dhcpd: [OK]
[root@budget root]# skypilot_start dhcpd
Shutting down dhcpd: [OK]
```

Sample dhcpd.conf

```
ddns-update-style ad-hoc;
default-lease-time 172800;
max-lease-time 345600;
server-name "192.168.5.4";
omapi-port 7911;
authoritative;

shared-network SkyPilot {

    subnet 192.168.5.0 netmask 255.255.255.0 {
    option subnet-mask 255.255.255.0;
    option broadcast-address 192.168.5.255;
    option routers 192.168.5.1;
    option tftp-server-name "192.168.5.4";
    option www-server 192.168.5.4;

    host Gateway {
    hardware ethernet 00:0a:db:01:08:a0;
    fixed-address 192.168.5.20;
    option host-name "Gateway";

    }

    host Ext01 {
    hardware ethernet 00:0a:db:00:01:09;
    fixed-address 192.168.5.21;
    option host-name "Ext01";
    }
    host CPE1 {
    hardware ethernet 00:0A:DB:09:52:6C;
    fixed-address 192.168.5.51;
    option host-name "CPE1";
    }

    }

    Subnet 216.15.3.0 netmask 255.255.255.0 {
    range 216.15.3.3 216.15.3.254;
    option subnet-mask 255.255.255.0;
    option broadcast-address 216.15.3.255;
    option routers 216.15.3.1;
    option domain-name-servers 66.81.32.11, 66.81.32.12;
    }
}
```

}

Vi Basic - To Get Into and Out Of vi

To Start vi

To use vi on a file, type in `vi filename`. If the file named `filename` exists, then the first page (or screen) of the file will be displayed; if the file does not exist, then an empty file and screen are created into which you may enter text.

* <code>vi filename</code>	<i>edit filename starting at line 1</i>
<code>vi -r filename</code>	<i>recover filename that was being edited when system crashed</i>

*** hit <ESC> whenever you aren't sure which mode you are in**

To Exit vi

Usually the new or modified file is saved when you leave vi. However, it is also possible to quit vi without saving the file.

Note: The cursor moves to bottom of screen whenever a colon (:) is typed. This type of command is completed by hitting the <Return> (or <Enter>) key.

* <code>:x<Return></code>	<i>quit vi, writing out modified file to file named in original invocation</i>
<code>:wq<Return></code>	<i>quit vi, writing out modified file to file named in original invocation</i>
<code>:q<Return></code>	<i>quit (or exit) vi</i>
* <code>:q!<Return></code>	<i>quit vi even though latest changes have not been saved for this vi call</i>

Moving the Cursor

Unlike many of the PC and MacIntosh editors, **the mouse does not move the cursor** within the vi editor screen (or window). You must use the the key commands listed below. On some UNIX platforms, the arrow keys may be used as well; however, since vi was designed with the Qwerty keyboard (containing no arrow keys) in mind, the arrow keys sometimes produce strange effects in vi and should be avoided.

If you go back and forth between a PC environment and a UNIX environment, you may find that this dissimilarity in methods for cursor movement is the most frustrating difference between the two.

In the table below, the symbol ^ before a letter means that the <Ctrl> key should be held down while the letter key is pressed.

* <code>j or <Return></code> <code>[or down-arrow]</code>	<i>move cursor down one line</i>
* <code>k [or up-arrow]</code>	<i>move cursor up one line</i>
* <code>h or <Backspace></code> <code>[or left-arrow]</code>	<i>move cursor left one character</i>
* <code>l or <Space></code> <code>[or right-arrow]</code>	<i>move cursor right one character</i>
* <code>0 (zero)</code>	<i>move cursor to start of current line (the one with the cursor)</i>
* <code>\$</code>	<i>move cursor to end of current line</i>
<code>w</code>	<i>move cursor to beginning of next word</i>

b	<i>move cursor back to beginning of preceding word</i>
:0<Return> or 1G	<i>move cursor to first line in file</i>
:n<Return> or nG	<i>move cursor to line n</i>
:\$<Return> or G	<i>move cursor to last line in file</i>

Screen Manipulation

The following commands allow the `vi` editor screen (or window) to move up or down several lines and to be refreshed.

^f	<i>move forward one screen</i>
^b	<i>move backward one screen</i>
^d	<i>move down (forward) one half screen</i>
^u	<i>move up (back) one half screen</i>
^l	<i>redraws the screen</i>
^r	<i>redraws the screen, removing deleted lines</i>

Adding, Changing, and Deleting Text

Unlike PC editors, you cannot replace or delete text by highlighting it with the mouse. Instead use the commands in the following tables.

Perhaps the most important command is the one that allows you to back up and *undo* your last action.

Unfortunately, this command acts like a toggle, undoing and redoing your most recent action. You cannot go back more than one step.

*u	<i>UNDO WHATEVER YOU JUST DID; a simple toggle</i>

The main purpose of an editor is to create, add, or modify text for a file.

Inserting or Adding Text

The following commands allow you to insert and add text. Each of these commands puts the `vi` editor into insert mode; thus, the `<Esc>` key must be pressed to terminate the entry of text and to put the `vi` editor back into command mode.

*i	<i>insert text before cursor, until <Esc> hit</i>
I	<i>insert text at beginning of current line, until <Esc> hit</i>
*a	<i>append text after cursor, until <Esc> hit</i>
A	<i>append text to end of current line, until <Esc> hit</i>
*o	<i>open and put text in a new line below current line, until <Esc> hit</i>
*O	<i>open and put text in a new line above current line, until <Esc> hit</i>