

Configure DHCP server and client

DHCP, or Dynamic Host Configuration Protocol, allows an administrator to configure network settings for all clients on a central server. The DHCP clients request an IP address and other network settings from the DHCP server on the network. The DHCP server in turn leases the client an IP address within a given range or leases the client an IP address based on the MAC address of the client's network interface card (NIC). The information includes its IP address, along with the network's name server, gateway, and proxy addresses including the netmask. Nothing has to be configured manually on the local system, except to specify the DHCP server it should get its network configuration from. If an IP address is assigned according to the MAC address of the client's NIC, the same IP address can be leased to the client every time the client requests one. DHCP makes network administration easier and less prone to error.

Configure DHCP server

We will configure a dhcp server and will lease ip address to clients. we are using two systems one linux server one linux clients. dhcp rpm is required to configure dhcp server.

Step 1: First, we have to check whether DHCP is available on our machine or not that we can check with rpm command. **#rpm -qa dhcp**

Step 2: If DHCP package is not installed. Use the following command to install DHCP Package. First move to Package Folder. **#cd /media/RHEL/Package**

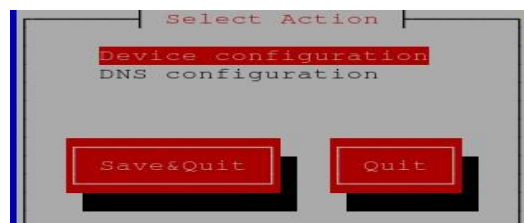
#pwd Output : **-/media/RHEL/Package** Now install DHCP Package **#rpm -ivh DHCP***

Step 3: Check the hostname of your linux system. **#hostname**

Step 4: Now check dhcpd service in system service it should be on **#setup**

To assign IP to dhcp server

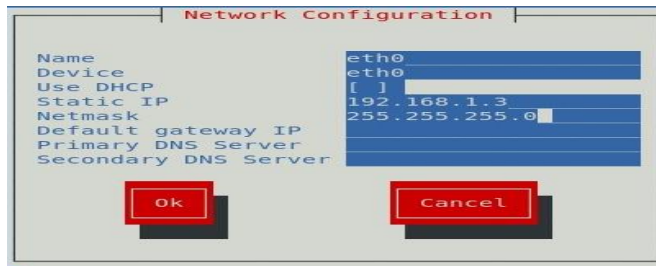
DHCP server have a static a IP address. First configure the IP address 192.168.1.3 with netmask of 255.255.255.0 on server. Run setup command form root user This will launch a new window select network configuration.



Now a new window will show you all available LAN card select your LAN card (if you don't see any LAN card here mean you don't have install driver)



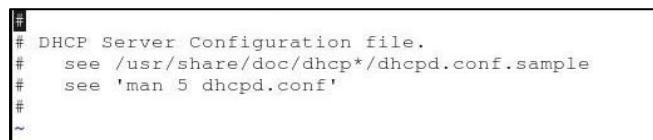
Select Use DHCP Option and remove the [*] dhcpd option. now enter static IP Address.



Click on OK, quit and again quit to come back on root prompt.

Step 5: Restart the network service so new ip address can take place on LAN card To disable network we use following command **#ifdown eth0** To disable network we use following command **#ifup eth0**

Step 6: Main configuration file of dhcp server is dhcpd.conf. This file located on /etc directory. If this file is not present there or you have corrupted this file, then copy new file first, if ask for overwrite press "y".



By default when you install DHCP Package it will create dhcpd.conf.sample file in /usr directory (/usr/sample/doc/dhcp-4.1.2/dhcpd.conf.sample) now copy the file to /etc directory and replace with the old file.



Step 7: Now open /etc/dhcp/dhcpd.conf **#vi /etc/dhcp/dhcpd.conf**

```
# dhcpd.conf
#
# Sample configuration file for ISC dhcpd
#
# option definitions common to all supported networks...
option domain-name "example.org";
option domain-name-servers ns1.example.org, ns2.example.org;

default-lease-time 600;
max-lease-time 7200;

# Use this to enable / disable dynamic dns updates globally.
#ddns-update-style none;

# If this DHCP server is the official DHCP server for the local
# network, the authoritative directive should be uncommented.
#authoritative;

# Use this to send dhcp log messages to a different log file (you also
# have to hack syslog.conf to complete the redirection).
log-facility local7;

# No service will be given on this subnet, but declaring it helps the
# DHCP server to understand the network topology.
:se nu
```

Change option domain-name “example.org” to option domain-name “Your Machine Domain-name for e.g tyit.com”. Change option domain-name-servers ns1.example.org, ns2.example.org; to option fully qualify domain-name-server “Your Machine Domain-name for e.g server.tyit.com”;

Step 8: Uncomment line no. 18 # authoritative (Remove # mark)

```
16 # If this DHCP server is the official DHCP server for the local
17 # network, the authoritative directive should be uncommented.
18 authoritative;
```

Authoritative says that the DHCP server is authenticated server and DHCP client can connect to DHCP server, if the option is not uncommented the DHCP client not able to connect to DHCP Server.

Step 9: Comment Line No 27 and 28 Change these lines no 32

```
Subnet 10.254.239.0 netmask 255.255.255.224 {
Range 10.254.239.10 10.254.239.20;
Option routers rtr-239-0-1.example.org,rtr-239-0-2.example.org
}
```

Following lines after changes

```
Subnet 198.168.1.0 netmask 255.255.255.0 (subnet ip is the first IP of your network.) {
Range 192.168.1.10 192.168.1.20; (Range means the range of IP Address server want to
assign to DHCP Client) #Option routers rtr-239-0-1.example.org,rtr-239-0-2.example.org }
```

Save the file.

```
27 #subnet 10.152.187.0 netmask 255.255.255.0 {
28 #}
29
30 # This is a very basic subnet declaration.
31
32 subnet 192.168.1.0 netmask 255.255.255.0 {
33     range 192.168.1.10 192.168.1.20;
34     # option routers rtr-239-0-1.example.org, rtr-239-0-2.example.org;
35 }
36
37 # This declaration allows BOOTP clients to get dynamic addresses,
38 # which we don't really recommend.
39
40 subnet 10.254.239.32 netmask 255.255.255.224 {
41     range dynamic-bootp 10.254.239.40 10.254.239.60;
42     option broadcast-address 10.254.239.31;
-- INSERT --                                     34,2      26%
```

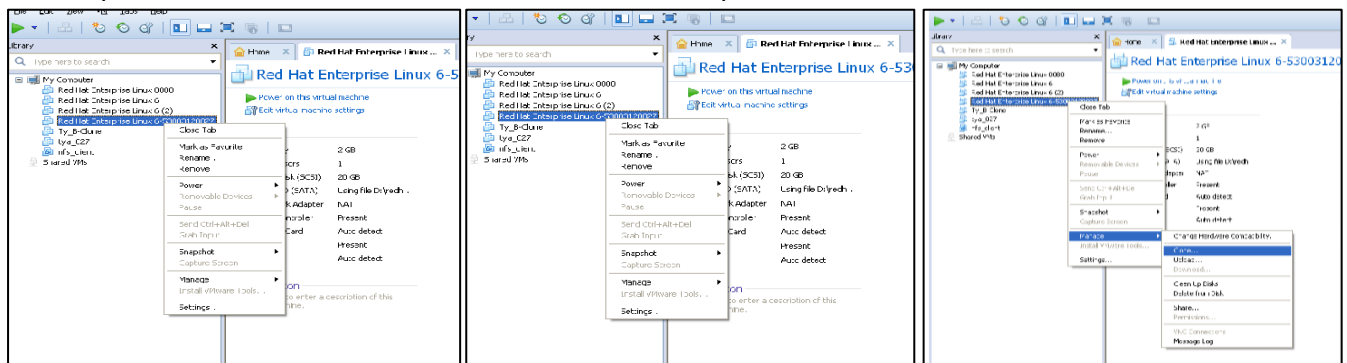
```
#service dhcpd start #service dhcpd restart #chkconfig dhcp on #chkconfig --list dhcpd
#service iptables stop #setenforce 0
```

```
[root@localhost Packages]# service dhcpd status
dhcpd is stopped
[root@localhost Packages]# service dhcpd start
Starting dhcpd: [ OK ]
[root@localhost Packages]# service dhcpd restart
Shutting down dhcpd: [ OK ]
Starting dhcpd: [ OK ]
[root@localhost Packages]# chkconfig --list dhcpd
dhcpd
0:off 1:off 2:off 3:off 4:off 5:off 6:off
[root@localhost Packages]# chkconfig dhcpd on
[root@localhost Packages]# chkconfig --list dhcpd
dhcpd
0:off 1:off 2:on 3:on 4:on 5:on 6:off
[root@localhost Packages]#
```

DHCP Client How to create Clone Machine:

First stop DHCP server. Right click on DHCP server virtual machine. Go to manage and select clone option

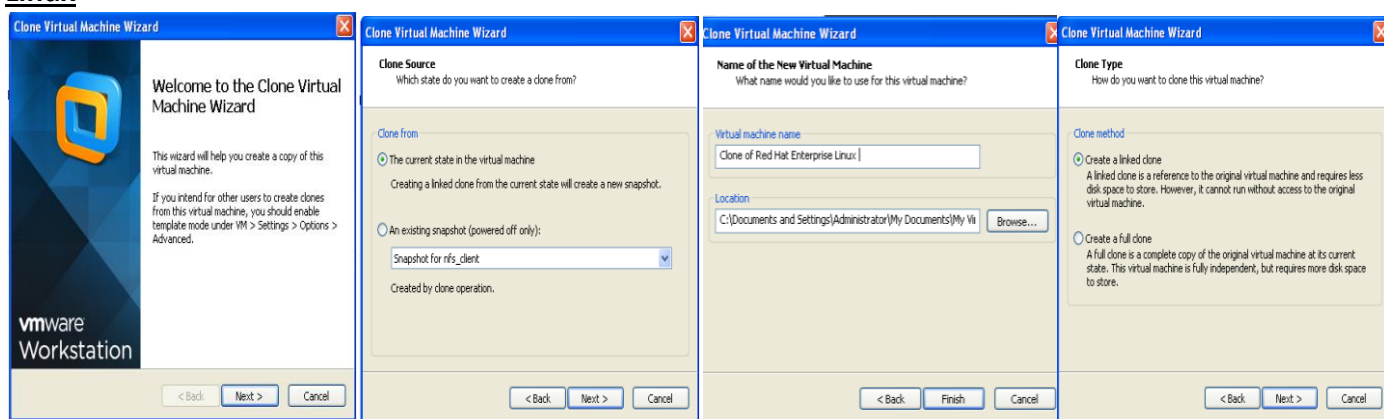
It will open Clone Virtual Machine Wizard Click Next to proceed.



Here select the first option **The Current State in the virtual machine** and click **Next** to Proceed.

Now select **Create a Full Clone** Option and click **Next**.

Now Provide name to your Virtual Machine or set it **default Clone of Red Hat Enterprise Linux**



Once the clone is created click on **close**

Now our clone machine is ready to use. First start DHCP Server and then start Clone/client virtual machine.

Now we are on client machine and we will check whether through dhcp, ip address can be given to our client machine or not before that we have to check currently our machine is configured manual or dhcp.

Through wizard we will check on network

Right click on Network icon at right top corner on desktop → Edit Connection → Select system eth0 → Click on Edit button → select IPv4 setting option → see the method manual Change it to DHCP (Automatically)



ifconfig OR This command is use to check network configuration and IP address.

#vi /etc/sysconfig/network-scripts/ifcfg-eth0

Change BOOTPROTO = dhcp Save the file.

#service network restart

Now use ifconfig command to check whether dhcp client get the ip address and all network information from dhcp client or not.