SUSE Network Settings

Ethernet - Access Point - SSH Settings

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Contents

Abstract

SUSE as a linux distribution is commonly used as an open source linux for Enterprises Servers, Cloud and Storage applications. In this document we will see important network settings in SUSE

1 Ethernet Interfaces Configuration

First we need to make sure that the Ethernet card is detected. To know that we can use this command

```
$/sbin/lspci
```

you will have output like the following shot, in which we can find and Ethernet controller is detected on bus number 00:19.0

```
00:02.0 VGA compatible controller: Intel Corporation 2nd Generation Core Processor Family Integrated Graphics Controlle
00:16.0 Communication controller: Intel Corporation 6 Series/C200 Series Chipset Family MEI Controller #1 (rev 04)
00:19.0 Ethernet controller: Intel Corporation 82579LM Gigabit Network Connection (rev 04)
00:1a.0 USB controller: Intel Corporation 6 Series/C200 Series Chipset Family USB Enhanced Host Controller #2 (rev 04)
00:1b.0 Audio device: Intel Corporation 6 Series/C200 Series Chipset Family High Definition Audio Controller (rev 04)
00:1c.0 PCI bridge: Intel Corporation 6 Series/C200 Series Chipset Family PCI Express Root Port 1 (rev b4)
```

Figure 1: lspci output

then open Yast to start configuration for the Ethernet interfaces

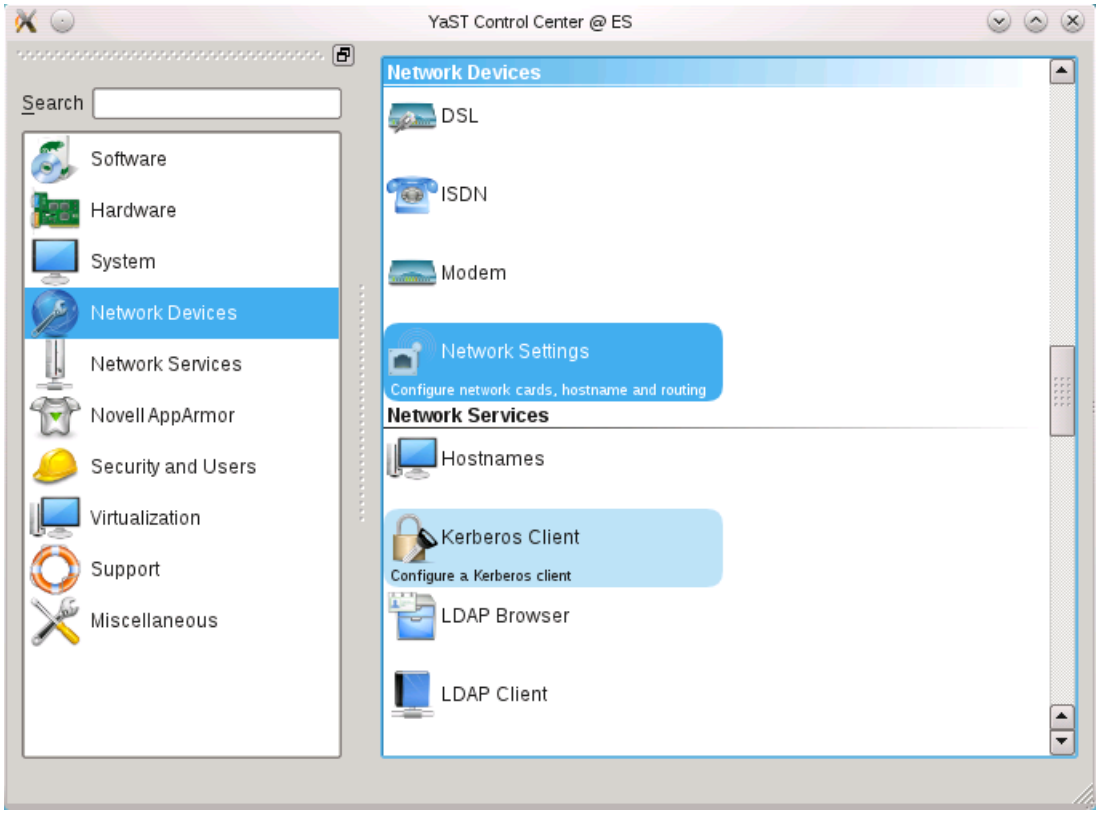

Figure 2: Yast Front Panel

Choose to open Network Settings

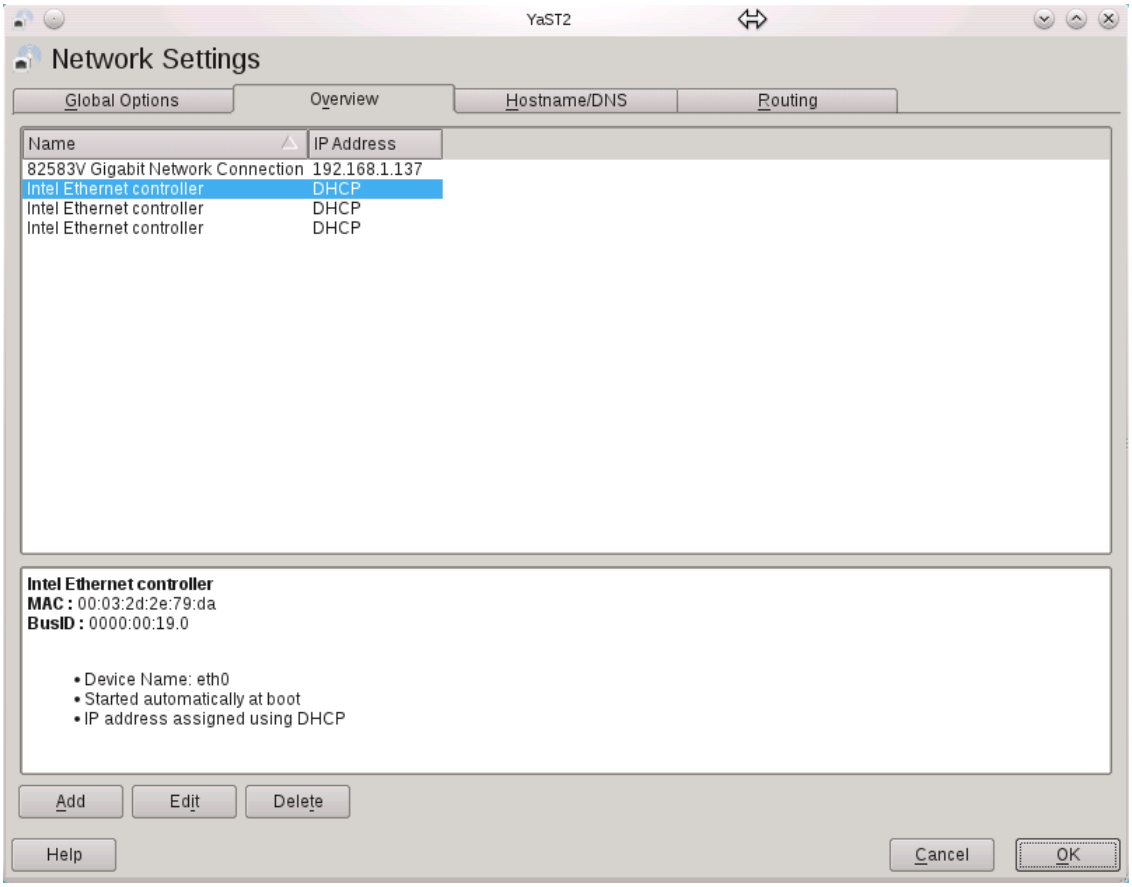

Figure 3: Yast Network Settings

In previous shot we can see that we have four interfaces are detected. For each interface the right Ethernet driver should be installed in SUSE in order to configure these interfaces. In this example, two of the interfaces were not possible to be configured because the driver of its hardware wasn't installed. The working interfaces were working because its driver was installed (e1000e). The other two needed another driver (igb). So make sure that the the right drivers are installed, then start configuration of these interfaces by click 'Edit' button in the down side of the wizard.

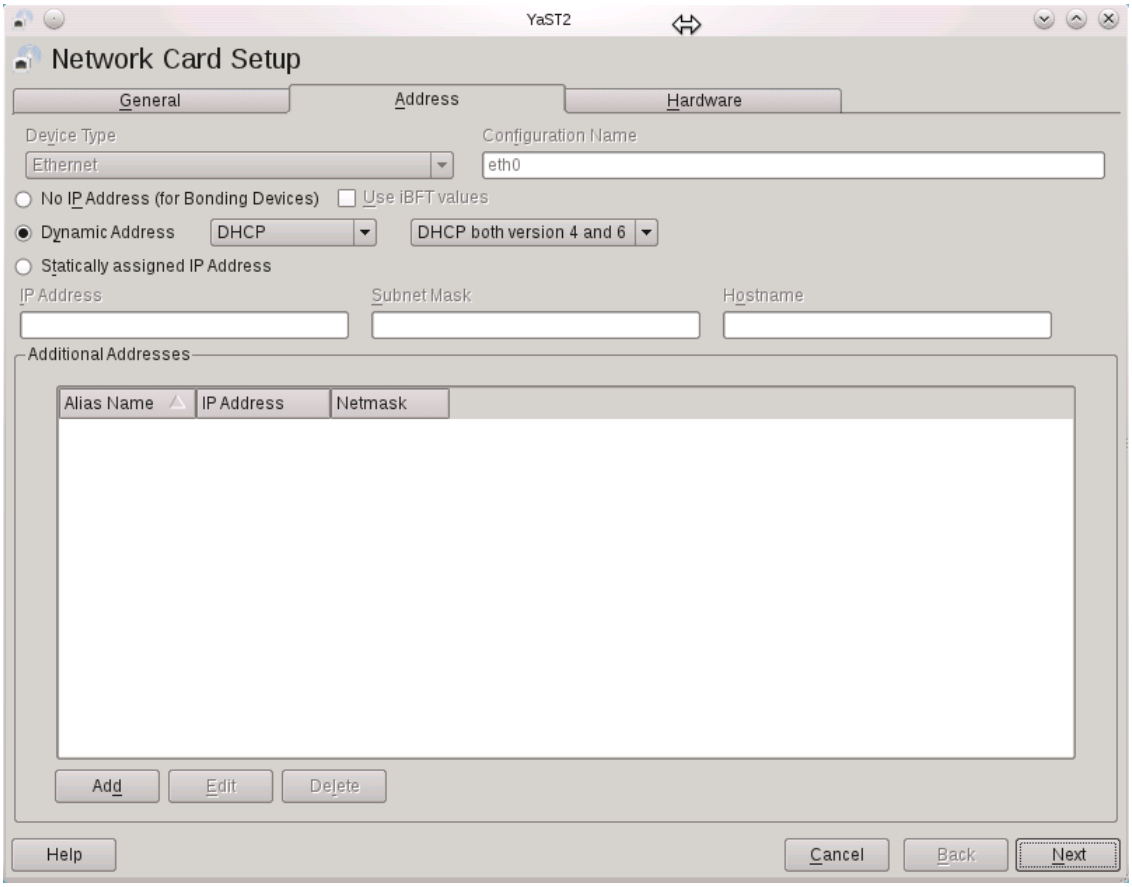

Figure 4: Network Card Setup

Here you can assign Static IP to this interface. In this example we have chosen this interface to have dynamic IP. You have the option to change to interface name by opening 'Hardware' tab.

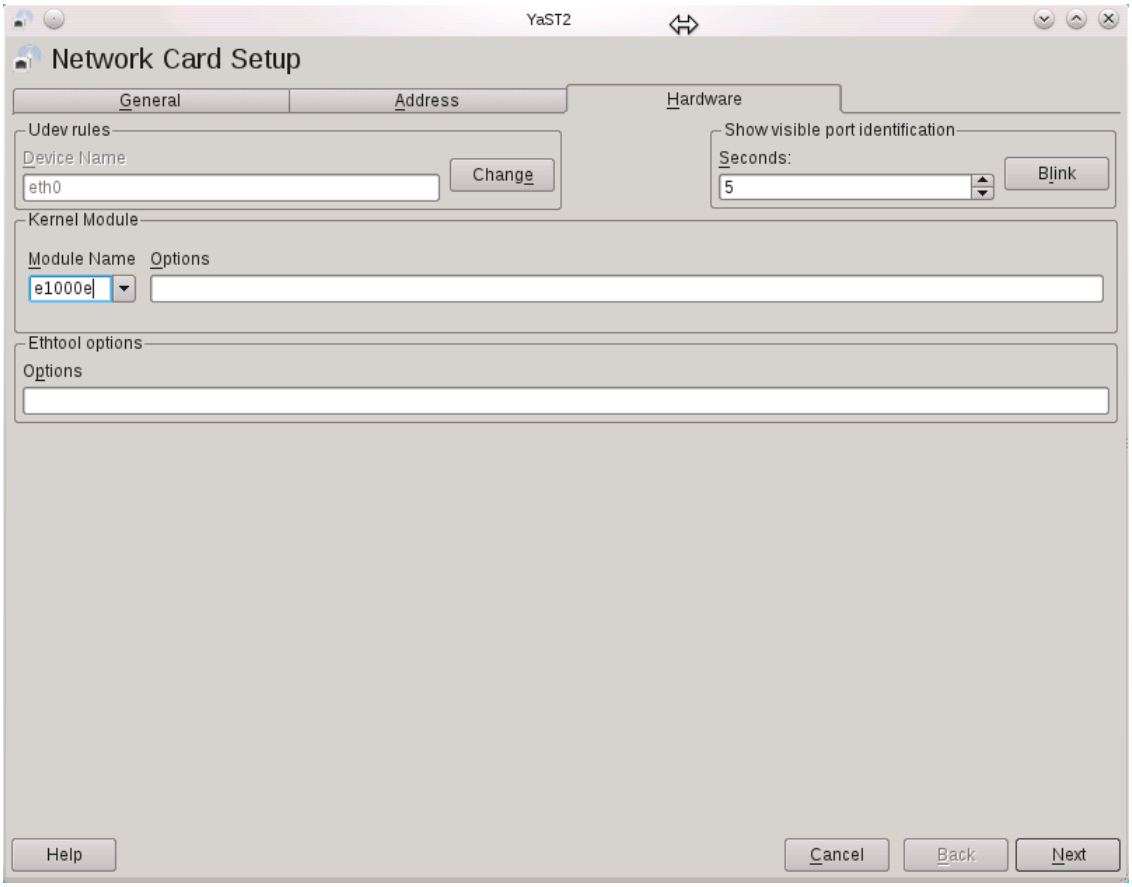

Figure 5: Interface Hardware Options

Click on 'Change' button if you want to change the interface name. To make sure that all interface are up, you can run the following command

```
$ifplugstatus
```

which should display the status of all configured interfaces

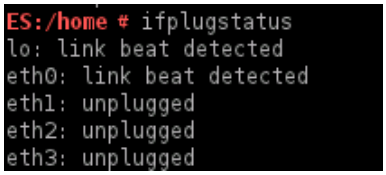

Figure 6: Plugged Interfaces

Sometimes it is useful to know the version of the installed driver. You can use this command to get information about the driver

```
$modinfo <driver_name>
```

2 SUSE As Access Point

In case that you have SUSE is running on central machine with several devices are connected to it. Each of these connected devices needs to connect to external networks (internet for instance) through SUSE central machine. Achieving that can be explained as follows

2.1 Install DHCP server

You can install DHCP server package using command line or using Yast, in both cases there are many packages with the name DHCP as shown in the following figure.

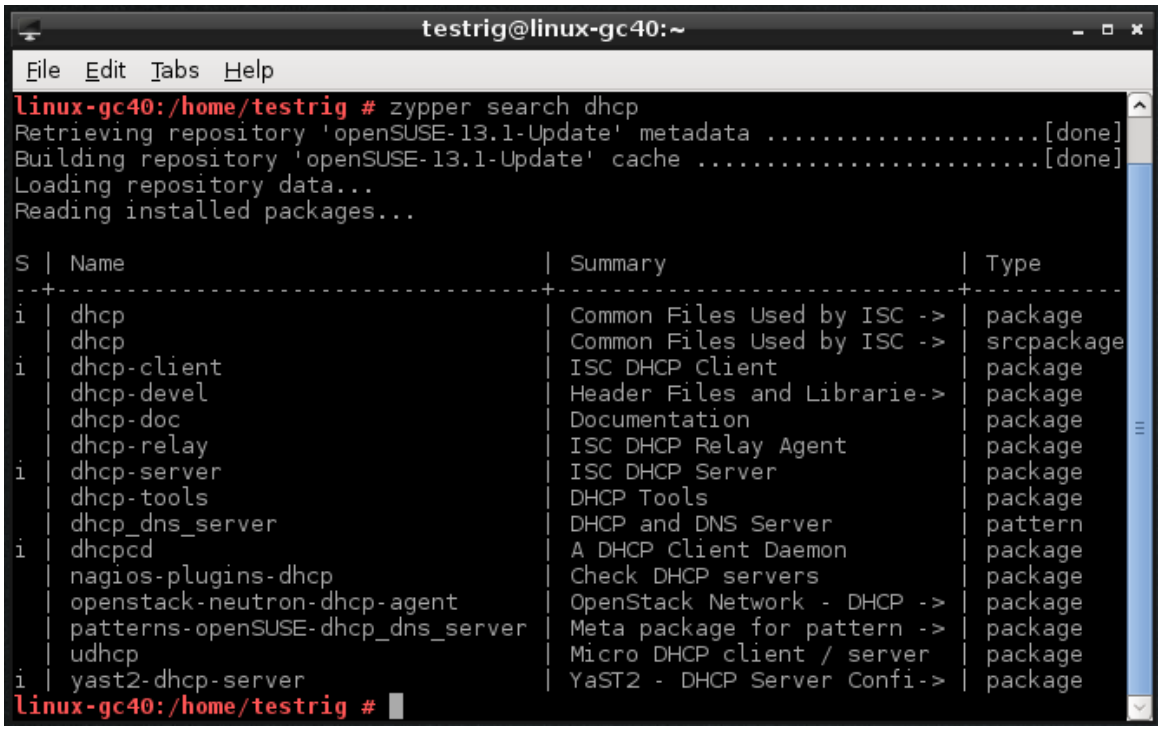

Figure 7: Available DHCP Packages

For suse we can work with package called dhcp-server or another version called yast2-dhcp-server. I prefer to work with the second one is it will be easier for settings and configuration. Installing yast2-dhcp-server can be done using Yast gui.

- Open Yast>Software Manager
- Search for yast2-dhcp package, install it.

Figure 8: Yast-dhcp-server Package

- After successful installation, it should be found in 'Network Services' section

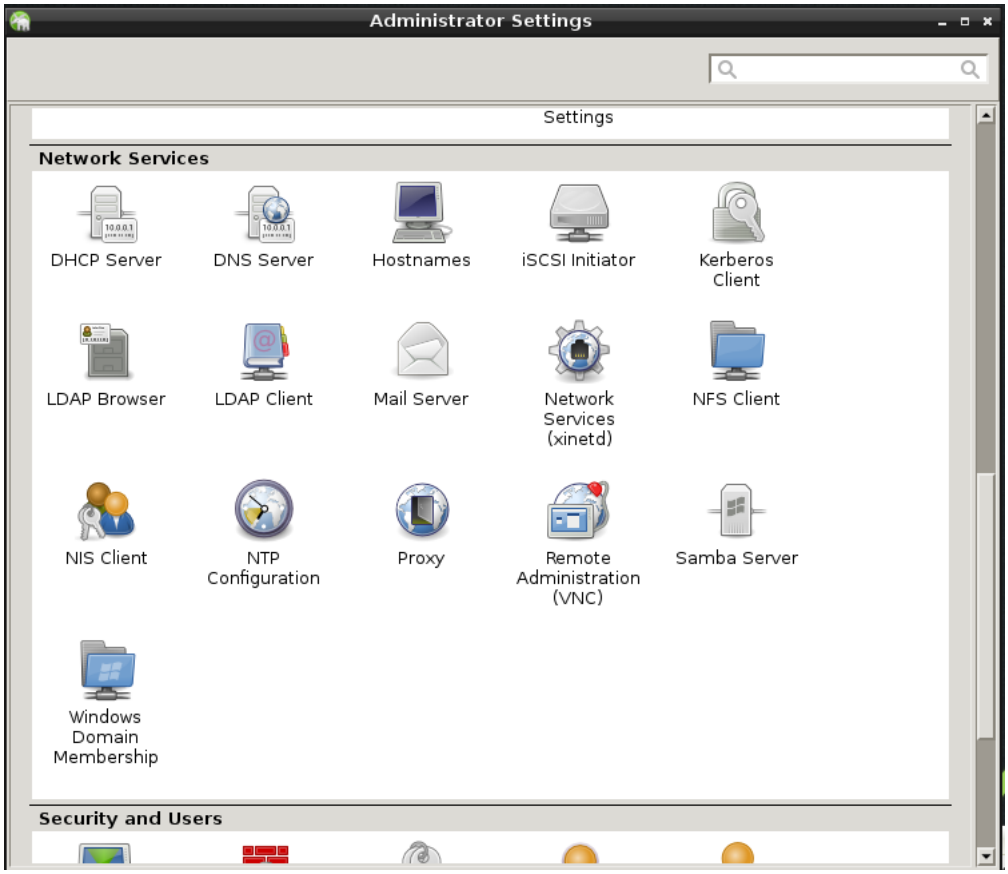

Figure 9: Network Services

- Click on DHCP Server, an error message may appear regarding LDAP server, just click OK.

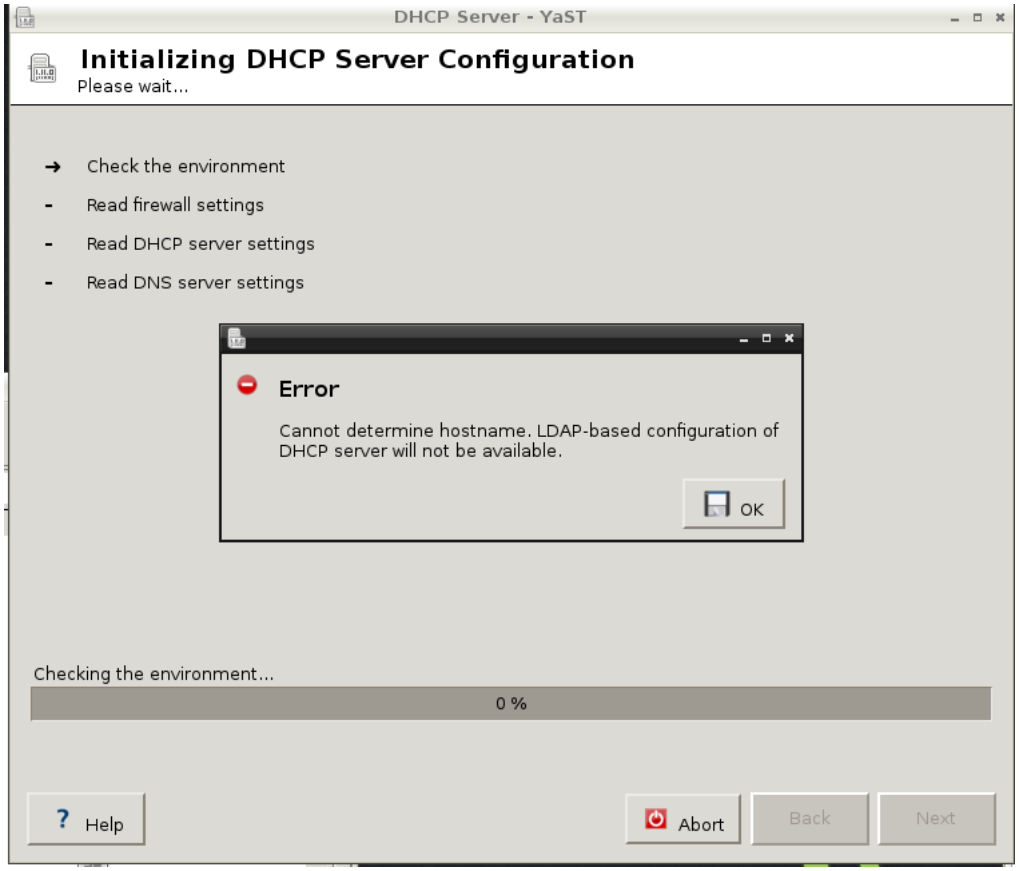

Figure 10: First DHCP Setting

- For first time setting you have to choose which interface this DHCP will listen to, choose your interface (in my demo here, I had chosen wireless interface).

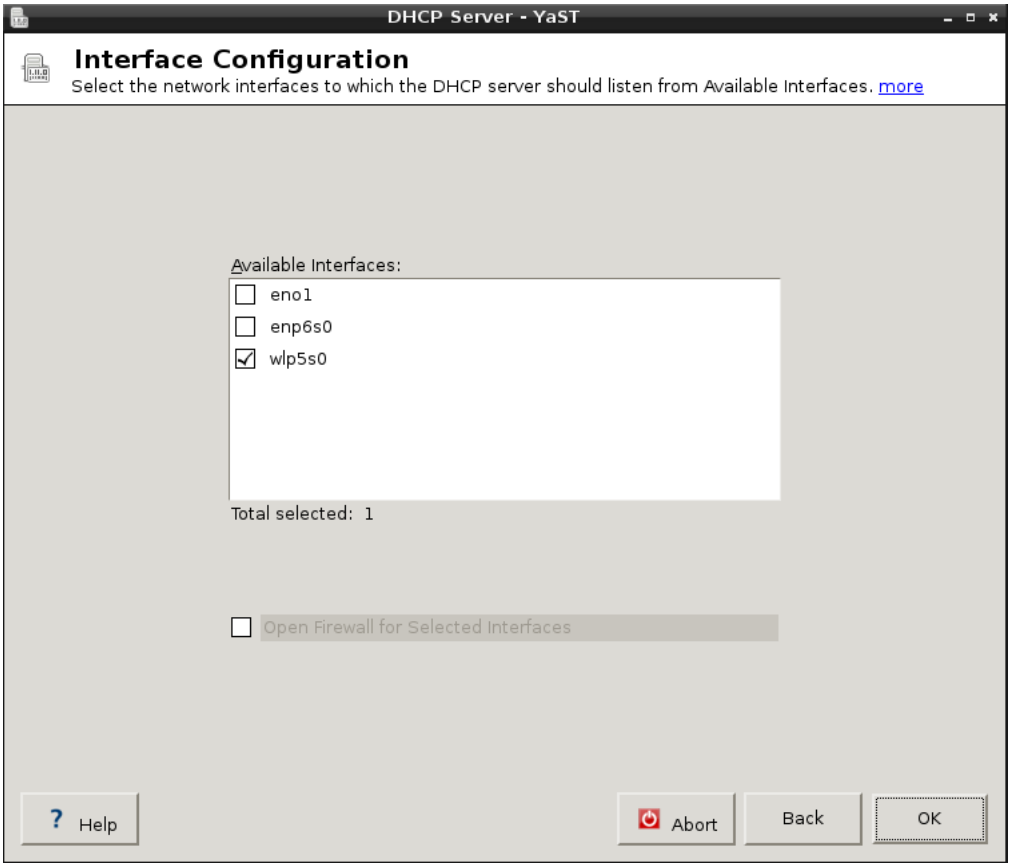

Figure 11: Choose Interface

- Then start declaration for the subnet. if it hasn't opened automatically, you can open it by clicking 'Add' button. Then choose 'Subnet'.

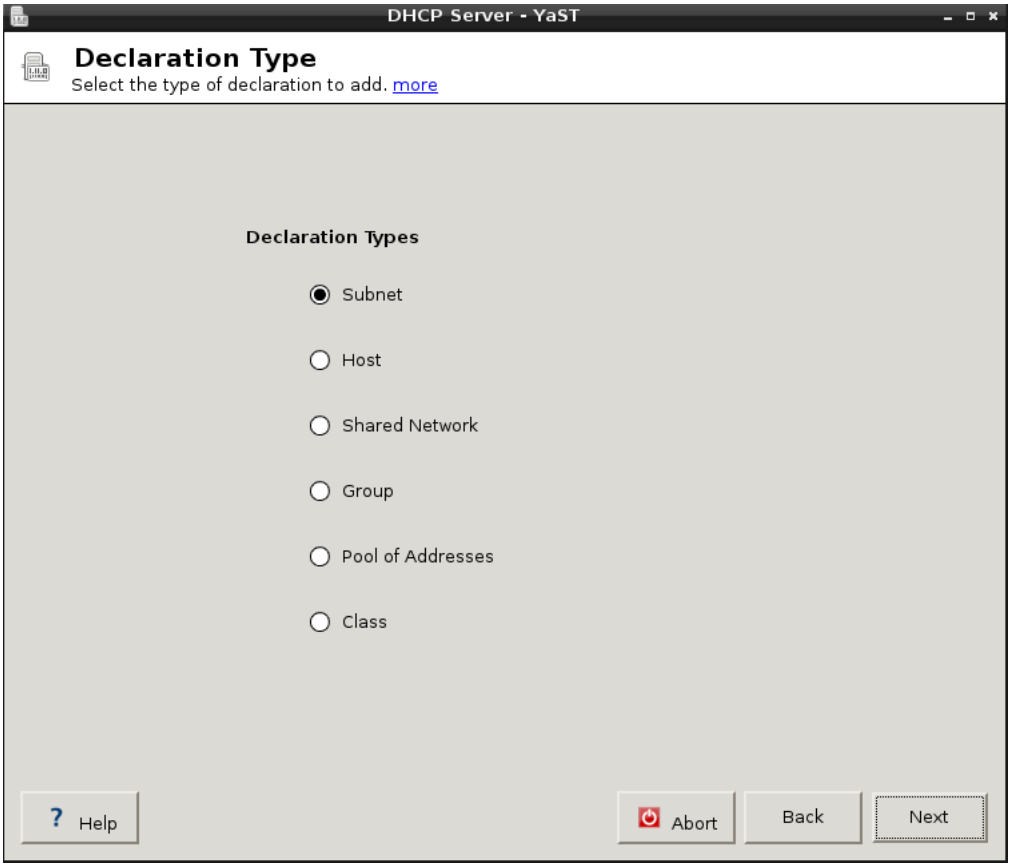

Figure 12: Adding Subnet

- Add the Subnet configuration as shown in the following shot.

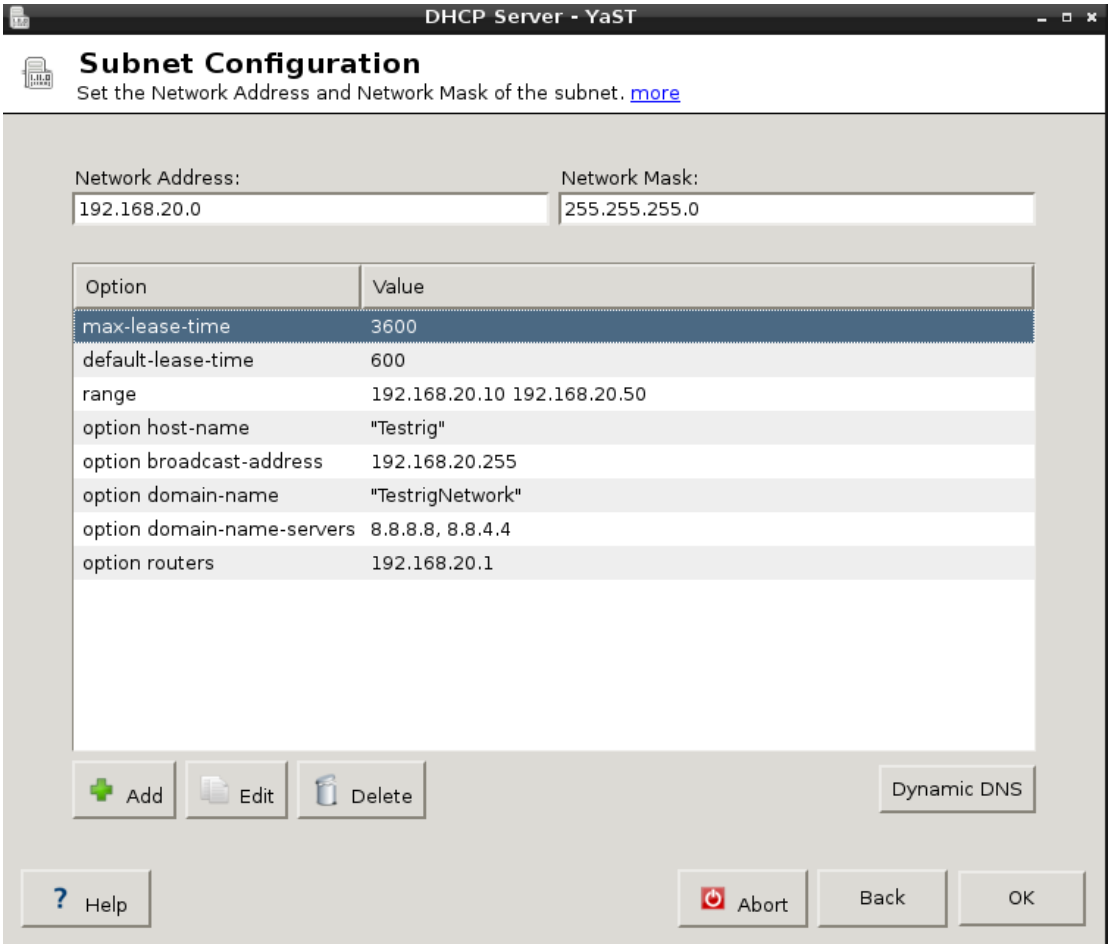

Figure 13: Subnet Configuration

- Click OK, this should set up DHCP service in your SUSE.

If you are command line fan, you can use the following steps to install a DHCP server in SUSE.

- Install the package using the following command

```
$zypper install yast2-dhcp-server
```

- Open dhcp.conf file to start adding dhcp configuration

```
$nano /etc/dhcp.conf
```

- Add subnet configuration as shown in the following shot

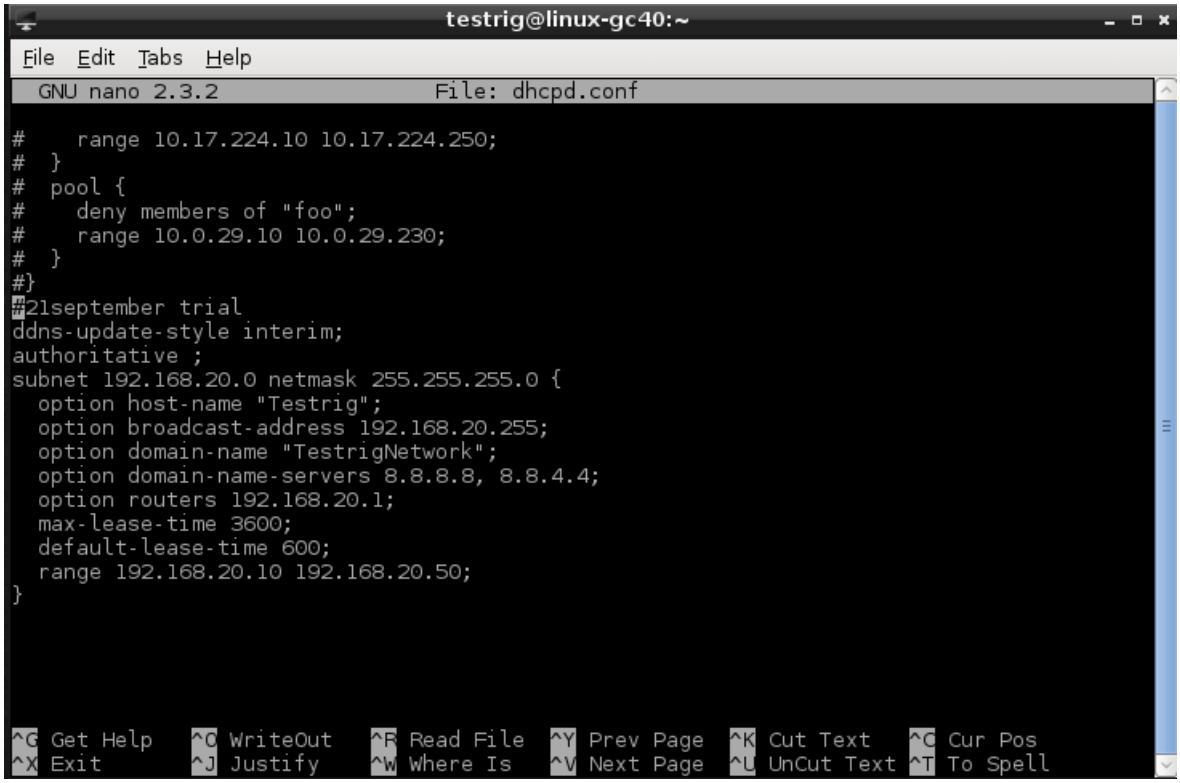

Figure 14: Adding Subnet Configuration

- Save the file and exit.
- Open the following file to define dhcp interface.

```
$nano /etc/sysconfig/dhcp
```

define interface name as shown in the following shot.

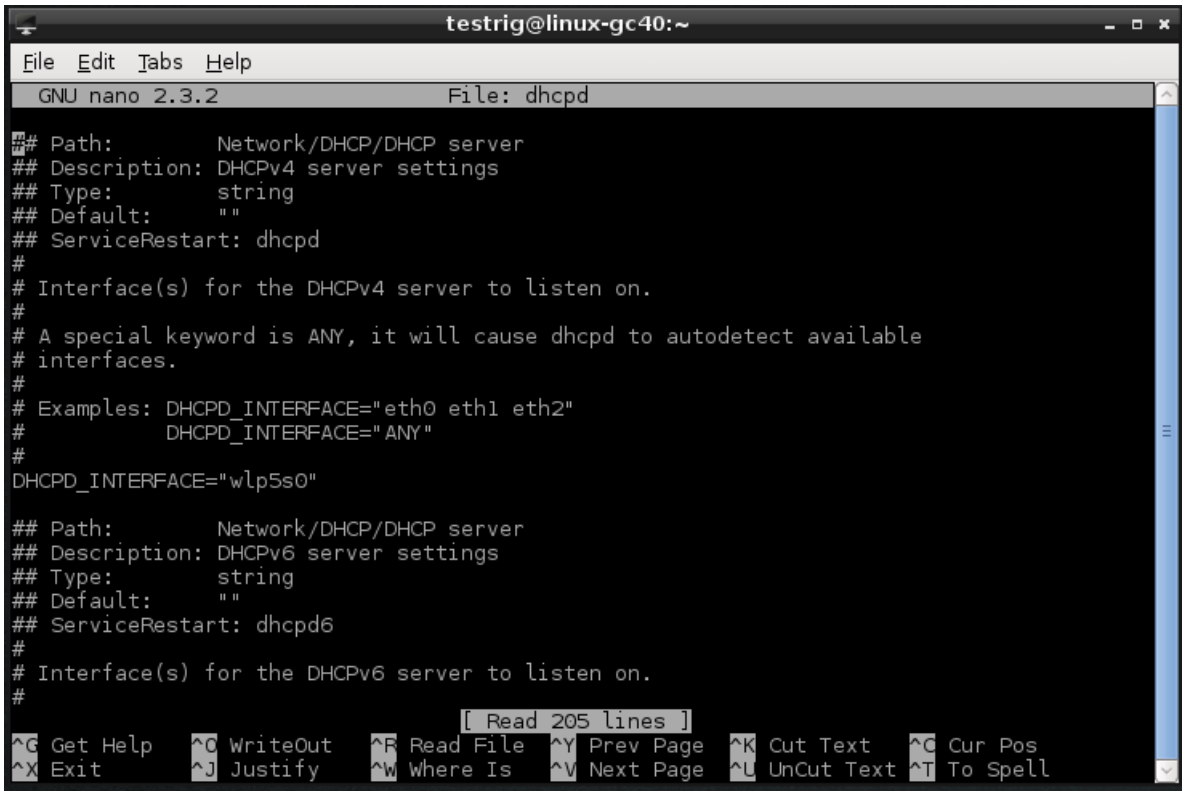

Figure 15: Define Interface Name

- Save and exit.

Remaining now the following steps in order to complete the setup.

2.2 Install hostapd

Using the same way you can install hostapd

```
$sudo zypper install hostapd
```

The following configuration is needed to be defined in hostapd.conf file

```
interface=wlp5s0
driver=nl80211
channel=1
hw_mode=g
ssid=NETWORK_NAME
auth_algs=2
wep_default_key=0
wep_key0”=”password_for_network
```

Note that password should be 5 or 13 or 16 characters.

Now to run dhcp and hostapd we need to enable them as services

```
$systemctl enable dhcpd.service
$systemctl enable hostapd.service
```

Upon success, SUSE machine should be now ready to function as an Access Point.

3 Enabling SSH for SUSE

To see if the SSH Daemon is listening on port 22:

```
$netstat -an | grep :22
```

If the daemon is running, you will get something like:

```
tcp        0      0 0.0.0.0:22              0.0.0.0:*               LISTEN
tcp        0      0 :::22                   :::*                    LISTEN
```

If the daemon is not running, you will get nothing. Then you can enbale it using:

```
$systemctl enable sshd.service
```

And to start this SSH service:

```
$systemctl start sshd.service
```

Bibliography

[1] http://www.tldp.org/LDP/tlk/dd/pci.html

[2] http://www.linuxintro.org/wiki/Set_up_a_hotspot_with_Linux

[3] https://wiki.gentoo.org/wiki/Hostapd