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## ***PROJECT REPORT ON***

Under Supervision-

Santu Purkait

Director

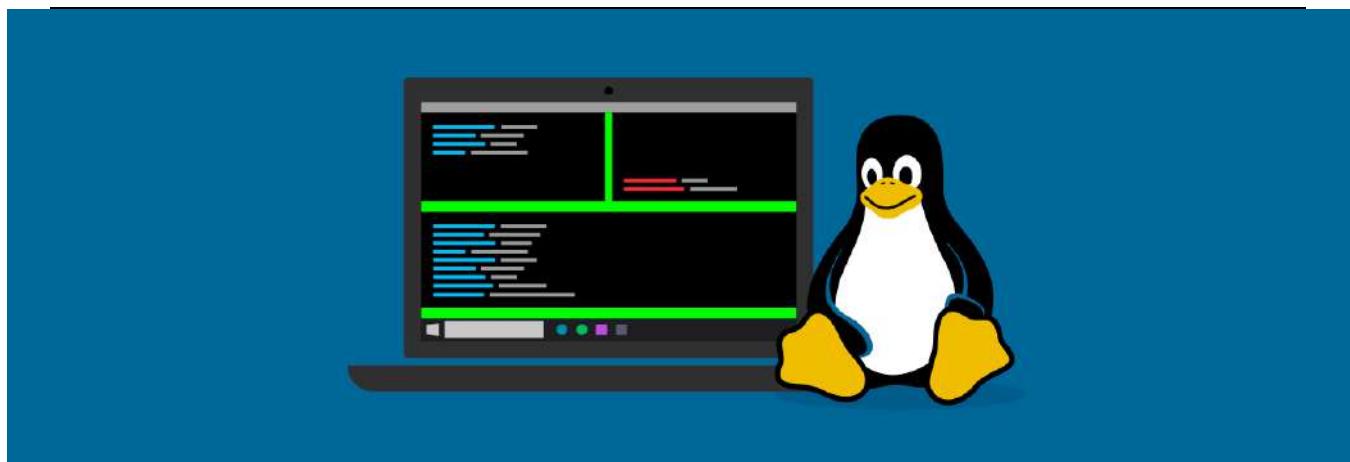
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## ***NETWORK MANAGEMENT***



***SUBMITTED BY***

NAINA SETHIA

Amity University Chhattisgarh, Raipur

# *Acknowledgement*

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*I have taken efforts in this project. However, it would not have been possible without the kind support and help of many individuals and organizations. I would like to extend my sincere thanks to all of them.*

*I am highly indebted to Netcamp Solutions Private Limited. For their guidance and constant supervision as well as for providing necessary information regarding the project and also for their support in completing the project.*

*I would like to express my gratitude towards Mr. Santu Purkait, Director: Netcamp Solutions Private Limited For their kind co-operation and encouragement which help me in completion of this project.*

*I would like to express my special gratitude and thanks to organization persons for giving me such attention and time.*

*My thanks and appreciations also go to my colleagues in developing the project and people who have willingly helped me out with their abilities.*

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Date: 04-10-2025

Signature:

# *Netcamp Solutions Private Limited*

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## *Certificate*

*This is to certify that, Naina Sethia, a student of program, Network Management on Linux has successfully completed a project on Networking under the guidance of Mr. Santu Purkait during the Dates: 4<sup>th</sup> August 2025 to 4<sup>th</sup> October 2025 by Netcamp Solutions Private Limited.*

# **INDEX**

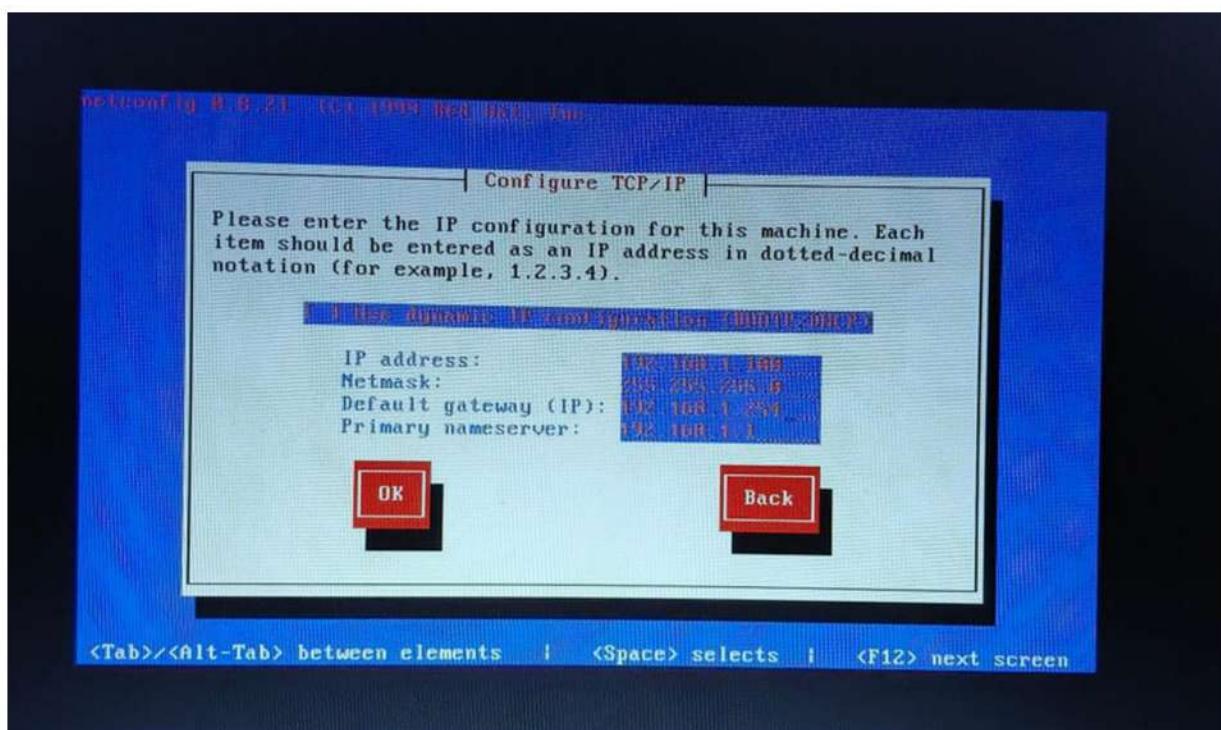
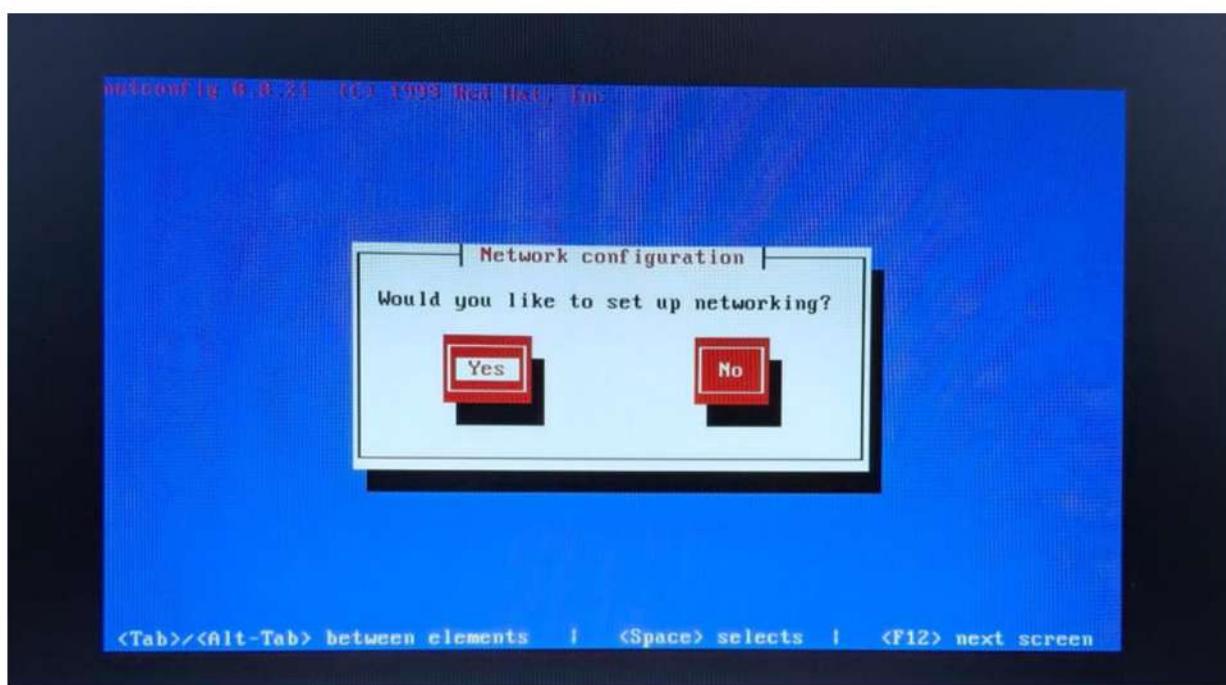
- Project - NETWOEKING
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- VMware codes
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- webserver
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- Web server configuration
- Mail server
- Network configuration
- Apache configuration
- SMTP configuration
- IMAP & POP3 configuration
- DHCP server
- User configuration
- File server
- Creating department

# 1.To change the mac address

(open VMware--->new file--->server1,server2--->open the server in VM)

## (server1)

```
Certificate in Network Management and Ethical Hacking with Web Development  
www.netcamp.in  
santu@netcamp.in  
helpdesk@netcamp.in  
093310 90003  
netcamp-server login: root  
Password:  
Last login: Sat Aug 16 13:43:33 on tty1  
Welcome to Netcamp Class  
[root@netcamp-server ~]# netconfig_
```



```
[root@netcamp-server ~]# service network restart
Shutting down loopback interface:                                [ OK ]
Setting network parameters:                                     [ OK ]
Bringing up loopback interface: ip_tables: (C) 2000-2002 Netfilter core team
Bringing up interface eth0: ip_tables: (C) 2000-2002 Netfilter core team
[root@netcamp-server ~]# _
```

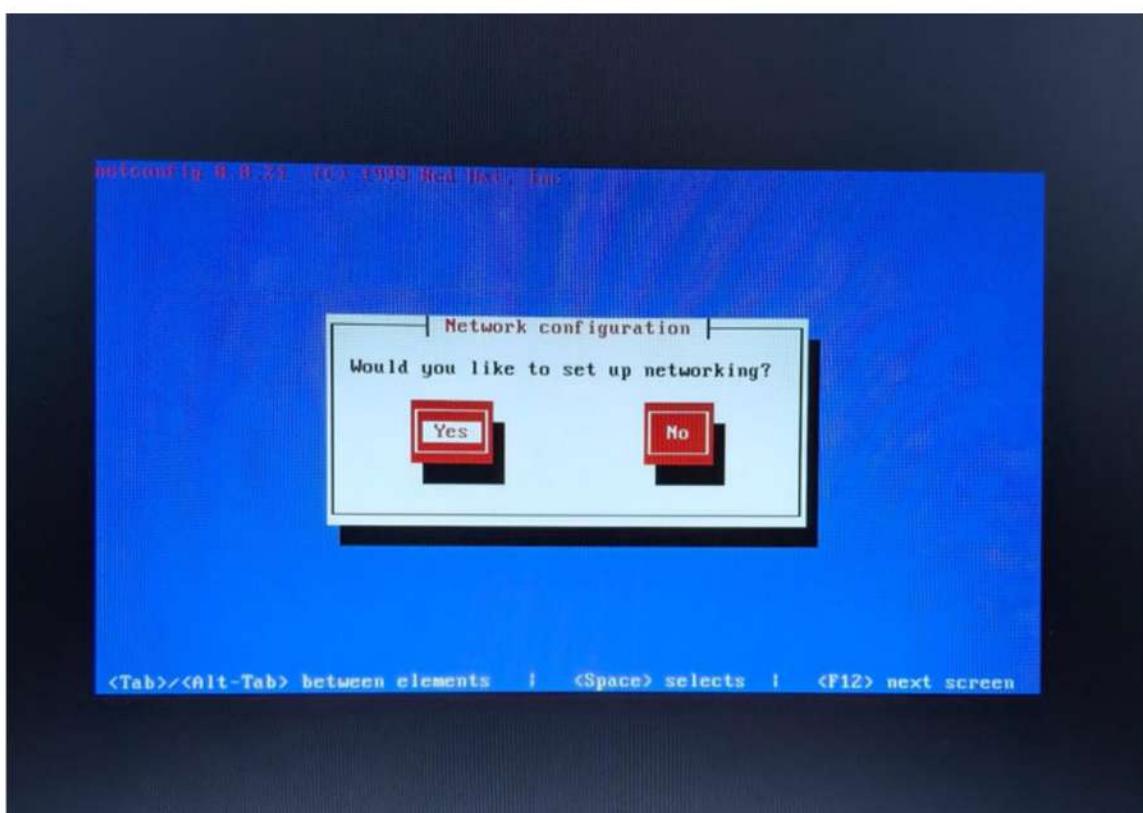
```
[root@netcamp-server ~]#
[root@netcamp-server ~]#
[root@netcamp-server ~]# ifconfig
eth0      Link encap:Ethernet HWaddr 00:0C:29:DA:6B:42
          inet addr:192.168.1.100 Bcast:192.168.1.255 Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
          RX packets:2953 errors:0 dropped:0 overruns:0 frame:0
          TX packets:8 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:250043 (244.9 Kib) TX bytes:336 (336.8 b)
          Interrupt:5 Base address:0x2000

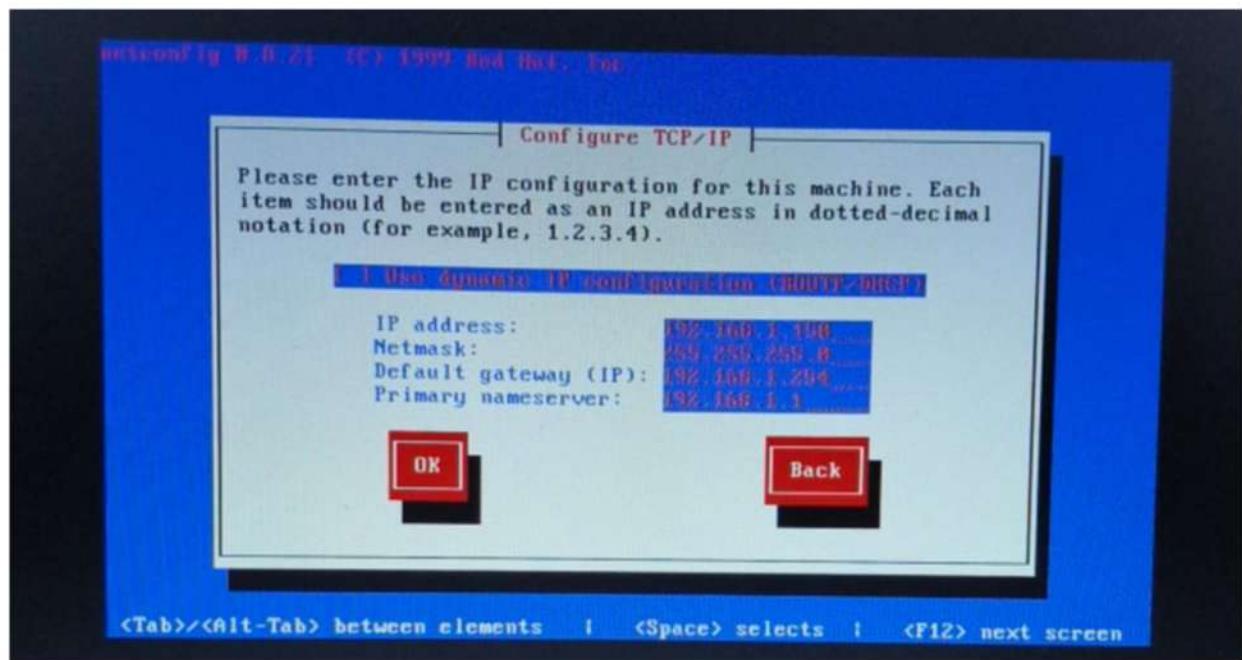
lo       Link encap:Local Loopback
          inet addr:127.0.0.1 Mask:255.0.0.0
          UP LOOPBACK RUNNING MTU:16436 Metric:1
          RX packets:6 errors:0 dropped:0 overruns:0 frame:0
          TX packets:6 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:588 (588.0 b) TX bytes:588 (588.0 b)

[root@netcamp-server ~]# ifconfig eth0 down
[root@netcamp-server ~]# ifconfig eth0 hw ether 1A:2B:3C:4D:5E:6F
[root@netcamp-server ~]# ifconfig eth0 up
[root@netcamp-server ~]#
```

## (server2)

```
Certificate in Network Management and Ethical Hacking with Web Development
www.netcamp.in
santu@netcamp.in
helpdesk@netcamp.in
093310 90003
netcamp-server login: root
Password:
Last login: Sat Aug 16 13:43:33 on ttys1
Welcome to Netcamp Class
[root@netcamp-server ~]# netconfig_
```





```
[root@netcamp-server ~]# service network restart
Shutting down loopback interface:                                [  OK  ]
Setting network parameters:                                     [  OK  ]
Bringing up loopback interface: ip_tables: (C) 2000-2002 Netfilter core team
Bringing up interface eth0: ip_tables: (C) 2000-2002 Netfilter core team
[root@netcamp-server ~]# _
```

```
[root@netcamp-server ~]# ifconfig
Bringing up interface eth0: ip_tables: (C) 2000-2002 Netfilter core team
[  OK  ]
[  OK  ]
[root@netcamp-server ~]# ifconfig
eth0      Link encap:Ethernet HWaddr 00:0C:29:C5:EF:EC
          inet addr:192.168.1.150  Bcast:192.168.1.255  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:4 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 b)  TX bytes:160 (160.0 b)
          Interrupt:5 Base address:0x2000

lo       Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          UP LOOPBACK RUNNING  MTU:16436  Metric:1
          RX packets:6 errors:0 dropped:0 overruns:0 frame:0
          TX packets:6 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:508 (508.0 b)  TX bytes:508 (508.0 b)

[root@netcamp-server ~]# ifconfig eth0 down
[root@netcamp-server ~]# ifconfig eth0 hw ether 1A:2B:3C:4D:5E:6F
[root@netcamp-server ~]# ifconfig eth0 up
[root@netcamp-server ~]# ifconfig
```

**Open the control panel ,click on view by category then click on network and sharing then click on change adapter setting (disable VMnet8 and set ip on VMnet1)-->properties-->internet protocols version4-->change ip address Then ping the device on command prompt:**

-ping 192.168.1.100  
-ping 192.168.1.150

# DNS Server

## WHAT IS DNS?

DNS(Domain Name System) is a hierarchical and distributed naming system that translate domain names into IP addresses . This makes it easy for people to use names instead of remembering long numbers when browsing the internet. It translate websites names into IP addresses and it make communication between computers easier and faster.

### 1.Click on server then open BIND DNS Server

The screenshot shows the Webmin interface version 1.330 on Redhat Enterprise Linux 4ES. The 'Servers' tab is selected. A red circle highlights the 'BIND DNS Server' icon, which is also circled by a red arrow originating from the 'Servers' tab. Other icons include Apache Webserver, Dovecot IMAP/POP3 Server, Majordomo List Manager, PostgreSQL Database Server, Fetchmail Mail Retrieval, MySQL Database Server, ProFTPD Server, CVS Server, Frox FTP Proxy, OpenSLP Server, Procmail Mail Filter, DHCP Server, Jabber IM Server, Postfix Configuration, and QMail Configuration.

### 2.Click on create master zone

The screenshot shows the BIND DNS Server configuration page. At the top, there are several links: Miscellaneous Options, Control Interface Options, DNS Keys, Zone Defaults, Cluster Slave Servers, and Setup RNDC. Below these are links for Edit Config File, Existing DNS Zones, Create master zone, Create slave zone, Create stub zone, Create forward zone, Create delegation zone, and Create zones from batch file. The 'Existing DNS Zones' section displays icons for Root zone, 0, 0000::0/124, 127.0.0, and 255. At the bottom, there are links for Existing Client Views, Create master zone, Create slave zone, Create stub zone, Create forward zone, Create delegation zone, and Create zones from batch file.

### 3. Set domain name and email address then click on create

Not secure 192.168.1.100:10000/bind8/master\_form.cgi

## Create Master Zone

New master zone options

|                                      |  |
|--------------------------------------|--|
| Zone type                            | <input checked="" type="radio"/> Forward (Names to Addresses) <input type="radio"/> Reverse (Addresses to Names) |
| Domain name / Network                | netcamp.in   |
| Records file                         | Automatic  |
| Master server                        | netcamp-server   |
| Email address                        | <input checked="" type="checkbox"/> Add NS record for master server?<br>netcamp@gmail.com                        |
| Use zone template?                   | <input type="radio"/> Yes <input checked="" type="radio"/> No  |
| Add reverses for template addresses? | <input type="radio"/> Yes <input checked="" type="radio"/> No  |
| Refresh time                         | 10800 seconds  |
| Expiry time                          | 604800 seconds   |
| IP address for template records      |  |
| Transfer retry time                  | 3600 seconds   |
| Default time-to-live                 | 38400 seconds  |

[Create](#) [Return to zone list](#)

### 4. click on Address

Not secure 192.168.1.100:10000/bind8/edit\_master.cgi?index=108&view=

## Edit Master Zone

netcamp.in

|   |  |  |  |
|---|--|--|--|
| <b>A</b><br><a href="#">Address (0)</a>             | <b>NS</b><br><a href="#">Name Server (1)</a>     | <b>CI</b><br><a href="#">Name Alias (0)</a>            | <b>MX</b><br><a href="#">Mail Server (0)</a>       |
| <b>HI</b><br><a href="#">Host Information (0)</a>   | <b>TX</b><br><a href="#">Text (0)</a>            | <b>SF</b><br><a href="#">Sender Permitted From (0)</a> | <b>W</b><br><a href="#">Well Known Service (0)</a> |
| <b>RF</b><br><a href="#">Responsible Person (0)</a> | <b>PT</b><br><a href="#">Reverse Address (0)</a> | <b>LC</b><br><a href="#">Location (0)</a>              | <b>SF</b><br><a href="#">Service Address (0)</a>   |
| <b>KE</b><br><a href="#">Public Key (0)</a>         | <b>All Record Types (1)</b>                      |  |  |

### 5. Provide name and IP address then create, Click on return to zone list

Not secure 192.168.1.100:10000/bind8/edit\_recs.cgi?index=108&view=&type=A&sort=

## Address Records

In netcamp.in

Add Address Record

|                 |  |   |
|-----------------|--|---|
| Name            | Time-To-Live   | <input checked="" type="radio"/> Default <input type="radio"/> <input type="text"/> |
| Address         | <input type="button" value="Create"/>  |   |
| Update reverse? | <input checked="" type="radio"/> Yes <input type="radio"/> Yes (and replace existing) <input type="radio"/> No |   |

Select all, Invert selection.

| Name             | TTL     | Address       |
|------------------|---------|---------------|
| netcamp.in       | Default | 192.168.1.150 |
| www.netcamp.in   | Default | 92.168.1.150  |
| sales.netcamp.in | Default | 192.168.1.150 |

Select all, Invert selection.  
 Delete Selected  Delete reverses too?

[Return to zone list](#) [Return to record types](#)

## 6.Then click on mail server records

The screenshot shows the 'Edit Master Zone' interface for a zone named 'netcamp.in'. It lists several record types: Address (A), Name Server (NS), Name Alias (C), Mail Server (M), Host Information (HI), Text (T), Sender Permitted From (SF), Responsible Person (RF), Reverse Address (P), Location (LC), Public Key (KE), Well Known Service (W), and Service Address (SF). The 'Mail Server (0)' icon is highlighted with a red circle.

## 7.Provide the details then click on create

The screenshot shows the 'Mail Server Records' creation page. It has fields for 'Name' (containing 'mail netcamp.in') and 'Priority' (set to 1). A 'Create' button is highlighted with a red circle. Below the form are links to 'Return to zone list' and 'Return to record types'.

## 8.Then click on return to zone list

The screenshot shows the 'Mail Server Records' list page. It displays a table with one row:

| Name       | TTL     | Priority | Mail Server     |
|------------|---------|----------|-----------------|
| netcamp.in | Default | 1        | mail.netcamp.in |

Below the table are links for 'Select all' and 'Delete Selected'. The 'Return to zone list' link is highlighted with a red circle.

## 9.Start name server

The screenshot shows the BIND DNS Server configuration interface. At the top, there are several tabs: Other DNS Servers, Logging and Errors, Access Control Lists, Files and Directories, Forwarding and Transfers, Addresses and Topology, Miscellaneous Options, Control Interface Options, DNS Keys, Zone Defaults, Cluster Slave Servers, and Setup RNDC. Below these tabs, there is a section titled "Existing DNS Zones" which lists various zones: Root zone, 0, 0000-0/124, 127.0.0, 255, localdomain, localhost, and netcamp.in. Below this, there is a section titled "Existing Client Views" with a message stating "There are no client views defined on this server." A red arrow points to the "Start Name Server" button, which is highlighted with a red circle. To the right of the button, there is a note: "Click this button to start the BIND server, and load the current configuration." At the bottom left, there is a "Return to index" link.

## 10.Click on apply changes

This screenshot is identical to the previous one, showing the BIND DNS Server configuration interface. It displays the same tabs, DNS zones, and client view information. However, the "Apply Changes" button at the bottom left is now highlighted with a red circle and a red arrow points to it. To the right of the button, there is a note: "Click this button to restart the running BIND server. This will cause the current configuration to become active." Below this note, there is another button labeled "Stop Name Server". At the bottom left, there is a "Return to index" link.

# Web Server

(IP 192.168.1.150)

Q Create 4 folders :- /webnetcamp - index.html  
/websales - index.html  
/webresearch - index.html  
/webaccounts - index.html

-->First we will create the folder-->file will create-->name-->index.html  
in command prompt ->ping 192.168.1.150->telnet 192.168.1.150(login-netcamp-->(su -)  
-->netcamp-->cd / -->mkdir webnetcamp-->mkdir websales-->mkdir research--> mkdir webaccounts  
-->cd webnetcamp-->webnetcamp index.html-->vi index.html-->press i-->:wq-->pwd  
(same process for websales, webresearch and webaccounts))

1. First click on server and click on Apache webserver



2. Fill all the details and click on create

The screenshot shows the 'Create a New Virtual Server' dialog box. The 'Handle connections to address' section has 'Any address' selected and '192.168.1.150' entered. The 'Port' section has 'Default' selected. The 'Document Root' field contains '/webnetcamp'. The 'Server Name' field has 'netcamp.in' entered. The 'Copy directives from' field is set to 'Nowhere'. The 'Create Now' button is highlighted with a red oval.

### 3.click on start Apache

The screenshot shows the Apache Webserver configuration interface. At the top right, there is a red circle around the 'Start Apache' button. Below it, the interface includes sections for Global Configuration (Processes and Limits, Networking and Addresses, MIME Types, User and Group, CGI Programs, Per-Directory Options Files, Re-Configure Known Modules, -DSSI, -Dphs, Edit Defined Parameters, Miscellaneous, and Edit Config Files) and Virtual Servers (Default Server). A 'Virtual Servers' section is also present.

### 4.click on apply

The screenshot shows the Apache Webserver configuration interface after changes have been applied. A red circle highlights the 'Apply Changes' button at the top right. The interface remains largely the same, with sections for Global Configuration and Virtual Servers. In the Virtual Servers section, there are two entries: 'Default Server' and 'Virtual Server'. The 'Virtual Server' entry is expanded, showing its configuration details.

### 5.To check the message of webnetcamp in netcampXP

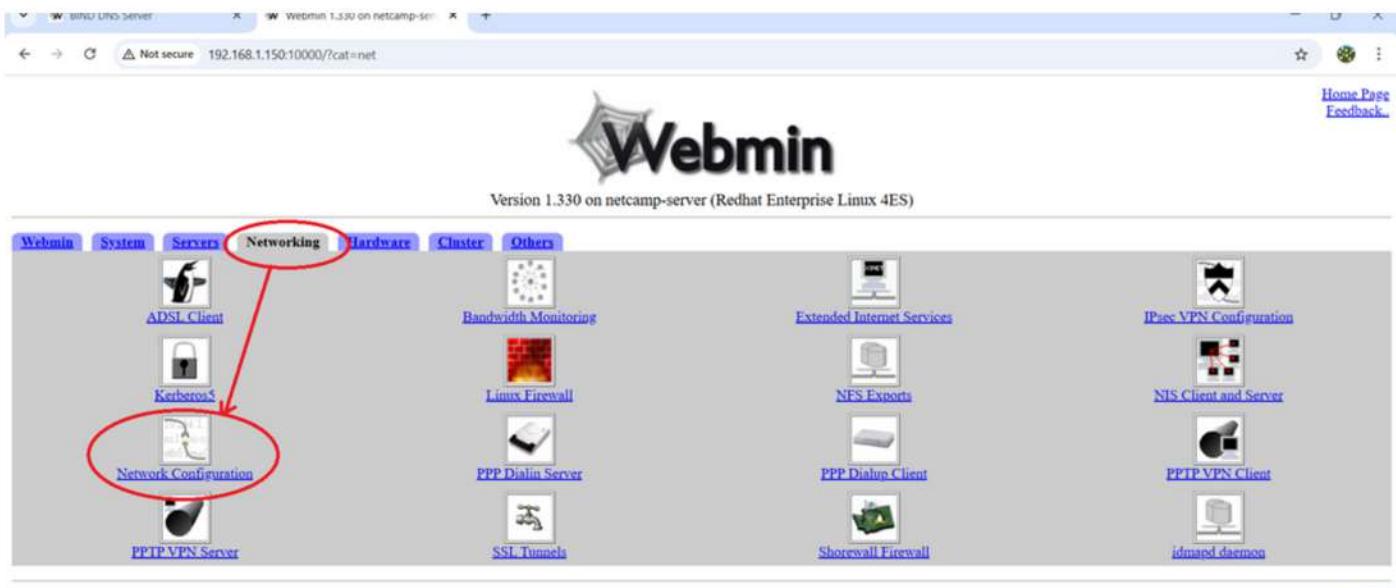


For /websales, /webresearch and /webaccounts we follow the same steps for respective folders and we get the outputs.

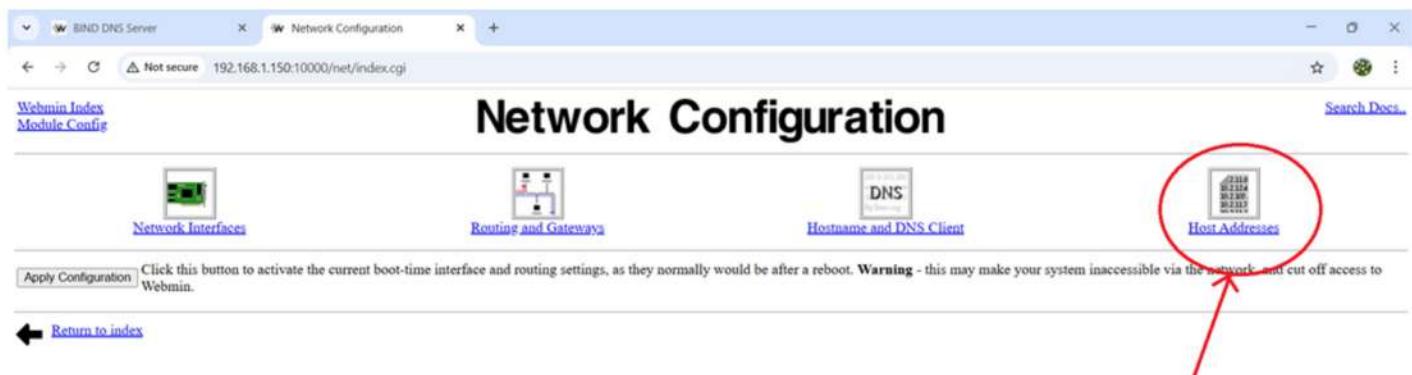
# Mail Server

**Q2. For username of chairman, sales 1, sales 2, research 1, research 2, accounts 1, accounts 2**

1. Click on networking then go to network configuration



2. Click on host address



3. Provide IP address and host name, save then return to host address list



## 4.Click on return to network configuration

The screenshot shows the 'Host Addresses' page in Webmin. At the bottom left, there is a link labeled 'Return to network configuration' which is circled in red.

## 5.Click on hostname and DNS client

The screenshot shows the 'Network Configuration' page in Webmin. In the top right, there is an icon for 'Hostname and DNS Client' which is circled in red. A red arrow points from the 'Return to index' link at the bottom left towards this icon.

## 6.Provide the hostname and DNS servers, save and then return to network configuration

The screenshot shows the 'Hostname and DNS Client' page in Webmin. The 'Hostname' field contains 'netcamp-server' and the 'DNS servers' field contains '192.168.1.100'. A red circle highlights the 'Save' button. Another red circle highlights the 'Return to network configuration' link at the bottom left.

## 7.Again open webmin, click on server then open Apache webserver

The screenshot shows the main Webmin interface. The 'Servers' tab is selected, and the 'Apache Webserver' icon is highlighted with a red circle. Other icons visible include BIND DNS Server, CVS Server, DHCP Server, Dovecot IMAP/POP3 Server, Fetchmail Mail Retrieval, Prox FTP Proxy, Open SLP, and Jabber IM Server.

## 8. Provide all necessary details then click on create now

Select all | Invert selection  
Delete Selected Servers

Create a New Virtual Server

Handle connections to address  Any address  Specific address: 192.168.1.150  
 Add name virtual server address (if needed)  
 Listen address (if needed)

Port  Default  Any  Other: \_\_\_\_\_

Document Root: /usr/share/squirrelmail

Server Name: mail.netcamp.in  Automatic  mail.netcamp.in  
 Standard httpd.conf file  Selected file: \_\_\_\_\_

Copy directives from: Nowhere

[Return to index](#)

## 9. Click on start apache

Bind DNS Server   Apache Webserver

Not secure 192.168.1.150:10000/apache/

Webmin Index Module Config

### Apache Webserver

Apache version 2.0.52

[Start Apache](#) [Search Docs.](#)

#### Global Configuration

[Processes and Limits](#) [Networking and Addresses](#) [MIME Types](#) [User and Group](#) [Miscellaneous](#)

[CGI Programs](#) [Per-Directory Options Files](#) [Re-Configure Known Modules](#) [Edit Defined Parameters](#) [Edit Config Files](#)

#### Virtual Servers

Select all | Invert selection

[Default Server](#) [Virtual Server](#) [Virtual Server](#)

Defines the default settings for all other virtual servers, and processes any unhandled requests.  
Address Any  Port Any   
Server Name Automatic  Document Root /var/www/html

Handles the name-based server mail.netcamp.in on all addresses  
Address Any  Port Any   
Server Name mail.netcamp.in  Document Root /usr/share/squirrelmail

Processes all requests on port 443 not handled by other virtual servers.  
Address Any  Port 443   
Server Name Automatic  Document Root /var/www/html

## 10. Click on apply changes

Bind DNS Server   Apache Webserver

Not secure 192.168.1.150:10000/apache/

Webmin Index Module Config

### Apache Webserver

Apache version 2.0.52

[Apply Changes](#) [Stop Apache](#) [Search Docs.](#)

#### Global Configuration

[Processes and Limits](#) [Networking and Addresses](#) [MIME Types](#) [User and Group](#) [Miscellaneous](#)

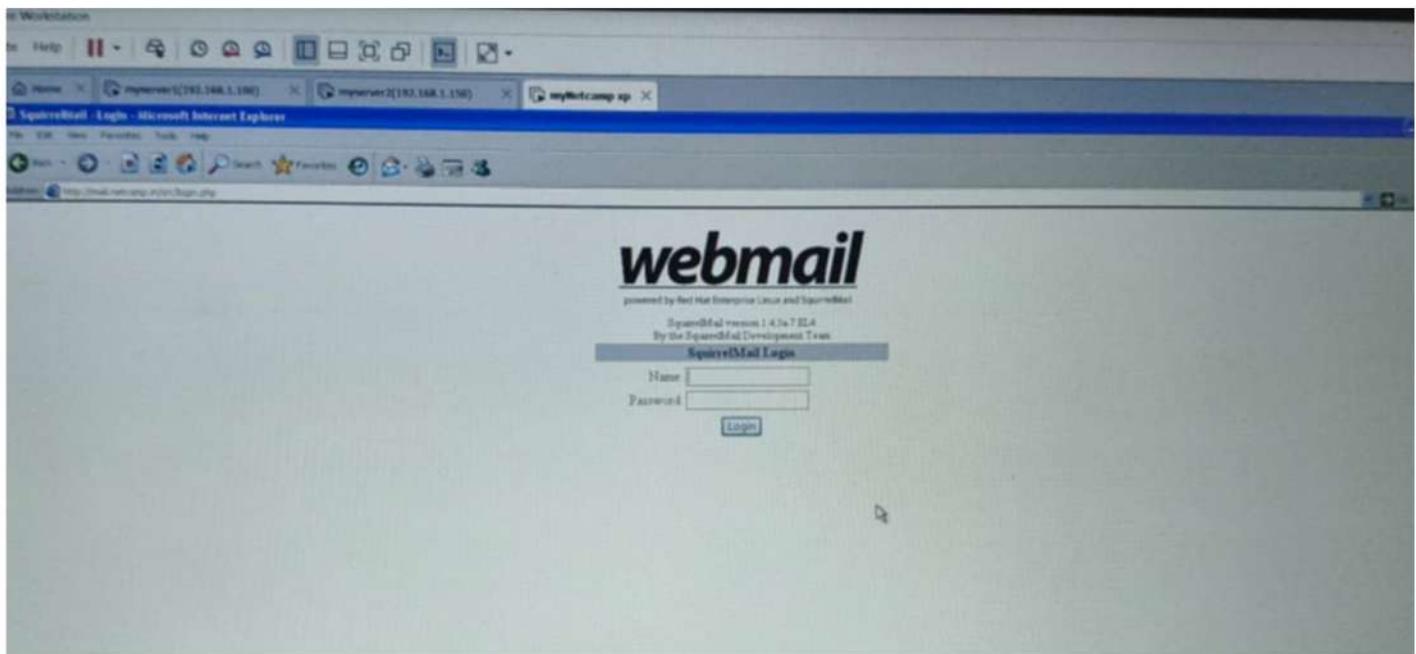
[CGI Programs](#) [Per-Directory Options Files](#) [Re-Configure Known Modules](#) [Edit Defined Parameters](#) [Edit Config Files](#)

#### Virtual Servers

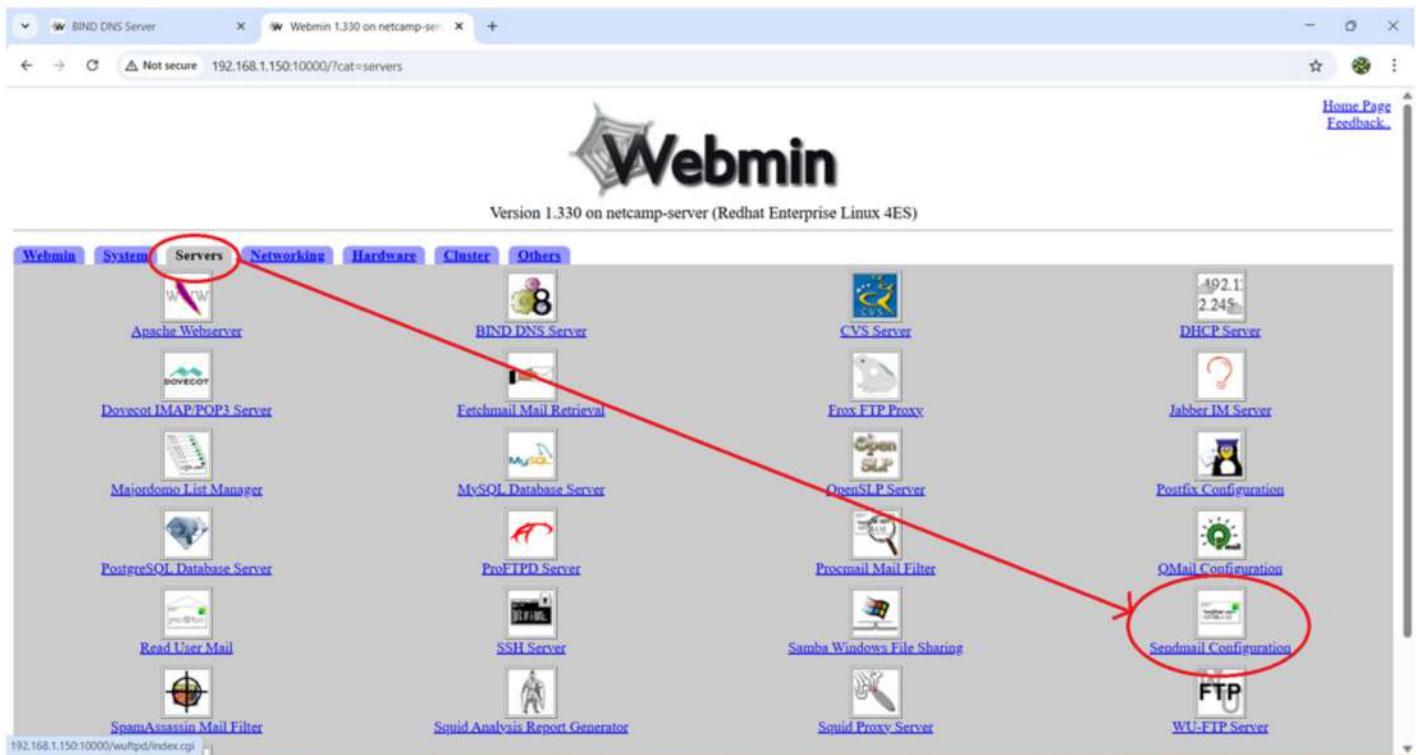
Select all | Invert selection

(Then open server.xp)

open (double computer symbol) -->properties-->change ip-->DNA=192.168.1.100-->start-->run-->cmd-->ping 1.100 and 1.150-->start-->internet explore-->search mail.netcamp.in



11. Again open the webmin, click on server and then click on sendmail configuration



## 12. For mail send faster click on sendmail options

The screenshot shows the 'Sendmail Configuration' page with a red circle highlighting the 'Sendmail Options (Q)' icon under the 'MISC' section. Other icons include 'Mail Aliases (alias)', 'Local Domains (Cw)', 'Domain Masquerading (CM)', 'Trusted Users (T)', 'Address Mappings (virtuser)', 'Domain Routing (mailertable)', 'Outgoing Addresses (generics)', 'Outgoing Domains (CG)', 'Domain Mapping (domainable)', 'Spam Control (access)', 'Relay Domains (CR)', and 'User Mailboxes'. A 'Start Sendmail' button is at the bottom left, and a note says 'Click this button to start sendmail with the command /etc/rc.d/init.d/sendmail start. Until this is done mail will not be delivered to local users from other systems, and clients will not be able to use this system as a mail server.'

## 13. Add netcamp.in and mail.netcamp.in, save and then click on return to sendmail configuration

The screenshot shows the 'Local Domains' configuration page. A red box highlights the text input field containing 'netcamp.in', 'mail.netcamp.in', 'localhost', and 'localhost.localdomain'. Below the input field is a note: 'Apart from mail to netcamp-server, sendmail will only accept for local delivery mail for domains and hostnames listed in the text box to the left. If you want your mail server to handle multiple email domains, they must all be listed on this form.' Another note below says: 'Note that merely including a domain in the list is not usually enough. You must also make sure that a DNS record for the domain exists, and points to your system.' At the bottom left is a 'Save' button, which is highlighted with a red circle. A red arrow points from the 'Return to sendmail configuration' link at the bottom left to the 'Save' button.

## 14. Cut (addr=127.0.0.1) then click on save and apply

The screenshot shows the 'Sendmail M4 Configuration' page. A red box highlights the 'Port=smtp,Name=MTA' input field. A red arrow points from the 'Save and Apply' button at the bottom left to this input field. The page contains many configuration options like 'Delivery mode', 'Max load average for sending', 'Max child processes', etc., each with its own set of radio buttons and input fields. The 'Save and Apply' button is highlighted with a red circle at the bottom left.

## 15. Again open webmin, click on server then click on dovecot imap/POP3 server

The screenshot shows the Webmin interface version 1.330 on a Redhat Enterprise Linux 4ES system. The 'Servers' tab is active, highlighted with a red circle. The 'Dovecot IMAP/POP3 Server' icon is also circled in red. Other servers listed include Apache Webserver, BIND DNS Server, Fetchmail Mail Retrieval, MySQL Database Server, ProFTPD Server, CVS Server, Frox FTP Proxy, OpenSLP Server, Procmail Mail Filter, DHCP Server, Majordomo List Manager, and QMail Configuration.

## 16. Click on networking and protocols

The screenshot shows the Dovecot IMAP/POP3 Server configuration page. The 'Networking and Protocols' link in the left sidebar is circled in red. The main page displays settings for starting the Dovecot server at boot time, with the 'Yes' radio button selected. Navigation links include 'Webmin Index', 'Module Config', 'Search Docs', 'User and Login Options', 'Mail Files', 'SSL Configuration', and 'Edit Config File'. A 'Return to index' link is also present.

## 17. Select all 4 protocols, click on save

The screenshot shows the 'Networking and Protocols' configuration page. Under 'Dovecot networking and mail protocol options', the 'Serve mail protocols' section has checkboxes for 'IMAP', 'POP3', 'IMAP (SSL)', and 'POP3 (SSL)'. The 'IMAP' checkbox is highlighted with a red box. The 'Accept SSL connections?' section has a 'Default (Yes)' radio button selected. Below, there are sections for 'Interfaces for IMAP connections', 'Interfaces for POP3 connections', 'Interfaces for IMAP SSL connections', and 'Interfaces for POP3 SSL connections'. A 'Save' button at the bottom left is circled in red. Navigation links include 'Webmin Index' and 'Return to module index'.

## 18.Click on start dovecot server

The screenshot shows the Dovecot IMAP/POP3 Server configuration interface. At the top, there are five main menu items: Networking and Protocols, User and Login Options, Mail Files, SSL Configuration, and Edit Config File. Below these, there is a section titled "Start Dovecot Server". It contains a checkbox labeled "Start at boot?" with two options: "Yes" (radio button selected) and "No". A red arrow points from the bottom left towards this checkbox. To the right of the checkbox, there is descriptive text: "Start the Dovecot IMAP/POP3 server process, so that users can download their email." and "Change this setting to enable or disable starting the Dovecot server at system boot time." At the very bottom left, there is a "Return to index" link.

## 19.Click on apply configuration

The screenshot shows the Dovecot IMAP/POP3 Server configuration interface. The layout is identical to the previous screenshot, with the same five menu items at the top. Below the menu, there is a section titled "Apply Configuration". It contains a button labeled "Apply Configuration" with a red circle around it, and below it are two smaller buttons: "Stop Dovecot Server" and "Start at boot?". The "Start at boot?" button has two radio button options: "Yes" (radio button selected) and "No". To the right of these buttons, there is descriptive text: "Activate the current Dovecot configuration by stopping and re-starting the server process.", "Shut down the running Dovecot IMAP/POP3 server process. This will prevent users from downloading their email.", and "Change this setting to enable or disable starting the Dovecot server at system boot time.". At the bottom left, there is a "Return to index" link.

# DHCP Server

## DHCP connection:-

A DHCP server (Dynamic Host Configuration Protocol server) is a network service that automatically assigns IP addresses and other network configuration parameters (like subnet mask, default gateway, and DNS servers) to devices (clients) on a network. This helps devices communicate with each other on IP networks without requiring manual setup.

Why it's important:

Without DHCP , every device on a network would need to be manually configured with:

- A unique IP address
- Subnet mask
- Default gateway
- DNS servers

This is impractical for large or dynamic networks (like in offices, homes, or schools)

## 1.Click on server

## 2.Then click on DHCP server

## 3.Click on add a new subnet

## 4. Provide all necessary details, create, and then return to subnet list

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### Create Subnet

**Subnet Details**

|   |  |                                |                                      |
|---|--|--------------------------------|--------------------------------------|
| Subnet description                                    | netcamp  | Netmask                        | 255.255.255.0                        |
| Network address                                       | 192.168.1.0  | Dynamic BOOTP ?                | <input type="checkbox"/>             |
| Address ranges  | 192.168.1.160 - 192.168.1.160  | Default lease time             | Default <input type="radio"/> [secs] |
| Shared network  | <input type="radio"/> None   | Maximum lease time             | Default <input type="radio"/> [secs] |
| Boot filename   | <input type="radio"/> This server  | Server name                    | Default <input type="radio"/>        |
| Boot file server                                      | <input type="radio"/> Forever  | Lease end for BOOTP clients    | Default <input type="radio"/>        |
| Lease length for BOOTP clients                        | <input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Default                                  | Dynamic DNS domain name        | Default <input type="radio"/>        |
| Dynamic DNS enabled?                                  | <input type="radio"/> Allow <input type="radio"/> Deny <input type="radio"/> Ignore <input checked="" type="radio"/> Default | Dynamic DNS hostname           | Default <input type="radio"/>        |
| Dynamic DNS reverse domain                            | <input type="radio"/> Allow <input type="radio"/> Deny <input type="radio"/> Ignore <input checked="" type="radio"/> Default |                                | Never <input type="radio"/>          |
| Allow unknown clients?                                | <input type="radio"/> Allow <input type="radio"/> Deny <input type="radio"/> Ignore <input checked="" type="radio"/> Default |                                | Default <input type="radio"/>        |
| client-updates: Can clients update their own records? | <input type="radio"/> Yes <input checked="" type="radio"/> Default (No)  |                                | From client <input type="radio"/>    |
| Server is authoritative for this subnet?              |  | Groups directly in this subnet |                                      |
| Hosts directly in this subnet                         |  |                                |                                      |

**Create** [Return to subnet list](#)

## 5. Click on edit client options

192.168.1.0  
[Select all](#) | [Invert selection](#) | [Add a new subnet](#) | [Add a new shared network](#)  
[Delete Selected](#)

### Hosts and Host Groups

No hosts or groups have been defined.

[Add a new host](#) | [Add a new host group](#).

### DNS-zones

No DNS zones have been defined yet.

[Add a new DNS zone](#).

- [Edit Client Options](#) Edit DHCP client options that apply to all subnets, shared networks, hosts and groups  
[Edit TSIG-keys](#) Edit TSIG-keys (used for authenticating updates to DNS servers)  
[Configfile](#) Edit configfile in texteditor (caution!)  
[Edit Network Interface](#) Set the network interfaces that the DHCP server listens on when started.  
[List Active Leases](#) List leases currently issued by this DHCP server for dynamically assigned IP addresses.  
[Start Server](#) Click this button to start the DHCP server on your system, using the current configuration.

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## 6. Provide all necessary details, save

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### Client Options

For all networks, hosts and groups

**Client Options**

|                                |   |                             |  |
|--------------------------------|---|-----------------------------|--|
| Client hostname                | <input type="radio"/> Default <input type="radio"/> [Value]   | Default routers             | <input type="radio"/> Default <input checked="" type="radio"/> 192.168.1.1   |
| Subnet mask                    | <input type="radio"/> Default <input type="radio"/> [Value]   | Broadcast address           | <input type="radio"/> Default <input checked="" type="radio"/> 192.168.1.100 |
| Domain name                    | <input type="radio"/> Default <input type="radio"/> [Value]   | DNS servers                 | <input type="radio"/> Default <input checked="" type="radio"/> 192.168.1.100 |
| Time servers                   | <input type="radio"/> Default <input type="radio"/> [Value]   | Log servers                 | <input type="radio"/> Default <input checked="" type="radio"/> 192.168.1.100 |
| Swap server                    | <input type="radio"/> Default <input type="radio"/> [Value]   | Root disk path              | <input type="radio"/> Default <input checked="" type="radio"/> 192.168.1.100 |
| NIS domain                     | <input type="radio"/> Default <input type="radio"/> [Value]   | NIS servers                 | <input type="radio"/> Default <input checked="" type="radio"/> 192.168.1.100 |
| Font servers                   | <input type="radio"/> Default <input type="radio"/> [Value]   | XDM servers                 | <input type="radio"/> Default <input checked="" type="radio"/> 192.168.1.100 |
| Static routes                  | <input type="radio"/> Default <input type="radio"/> [Value]   | NetBIOS name servers        | <input type="radio"/> Default <input checked="" type="radio"/> 192.168.1.100 |
| NTP servers                    | <input type="radio"/> Default <input type="radio"/> [Value]   | NetBIOS node type           | <input type="radio"/> Default <input checked="" type="radio"/> 192.168.1.100 |
| NetBIOS scope                  | <input type="radio"/> Default <input type="radio"/> [Value]   |                             |  |
| Time offset                    | <input type="radio"/> Default <input type="radio"/> [Value]   |                             |  |
| SLP directory agent IPs        | <input type="radio"/> Default <input type="radio"/> [Value] <input type="checkbox"/> These IPs only?  |                             |  |
| SLP service scope              | <input type="radio"/> Default <input type="radio"/> [Value] <input type="checkbox"/> This scope only? |                             |  |
| Custom option                  | Number <input type="text"/> Value <input type="text"/>  | Custom option               | Number <input type="text"/> Value <input type="text"/>                       |
| Option definition              | Option name <input type="text"/> Number <input type="text"/> Type <input type="text"/>                |                             |  |
| Use name as client hostname?   | <input type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Default           | Default lease time          | <input type="radio"/> Default <input checked="" type="radio"/> [secs]        |
| Boot filename                  | <input type="radio"/> None <input type="radio"/> [Value]  | Maximum lease time          | <input type="radio"/> Default <input checked="" type="radio"/> [secs]        |
| Boot file server               | <input type="radio"/> This server <input type="radio"/> [Value]                                       | Server name                 | <input type="radio"/> Default <input checked="" type="radio"/> [Value]       |
| Lease length for BOOTP clients | <input type="radio"/> Forever <input type="radio"/> [Value] secs                                      | Lease end for BOOTP clients | <input type="radio"/> Never <input checked="" type="radio"/> [Value]         |

Failed to start dhcpcd :

```
Starting dhcpcd: Internet Systems Consortium DHCP Server V3.0.1
Copyright 2004 Internet Systems Consortium.
All rights reserved.
For info, please visit http://www.isc.org/sw/dhcp/
```

```
** You must add a ddns-update-style statement to /etc/dhcpcd.conf.
To get the same behaviour as in < 4.9.1.11 and previous
versions, add a line that says "ddns-update-style ad-hoc;".
Please read the dhcpcd.conf manual page for more information. **
```

If you did not get this software from ftp.isc.org, please  
get the latest from ftp.isc.org and install that before  
requesting help.

If you did get this software from ftp.isc.org and have not  
yet read the README, please read it before requesting help.  
If you intend to request help from the dhcp-server@isc.org  
mailing list, please read the section on the README about  
submitting bug reports and requests for help.

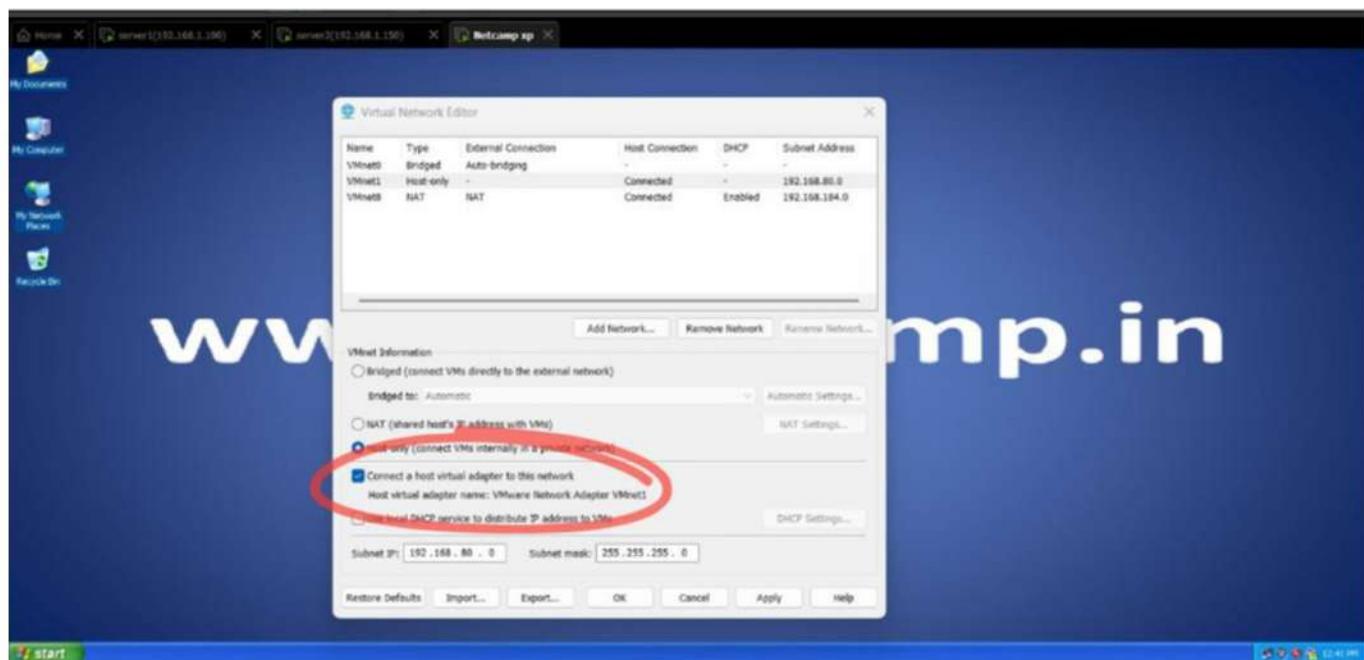
Please do not under any circumstances send requests for  
help directly to the authors of this software - please  
send them to the appropriate mailing list as described in  
the README file.

exiting.  
[FAILED]

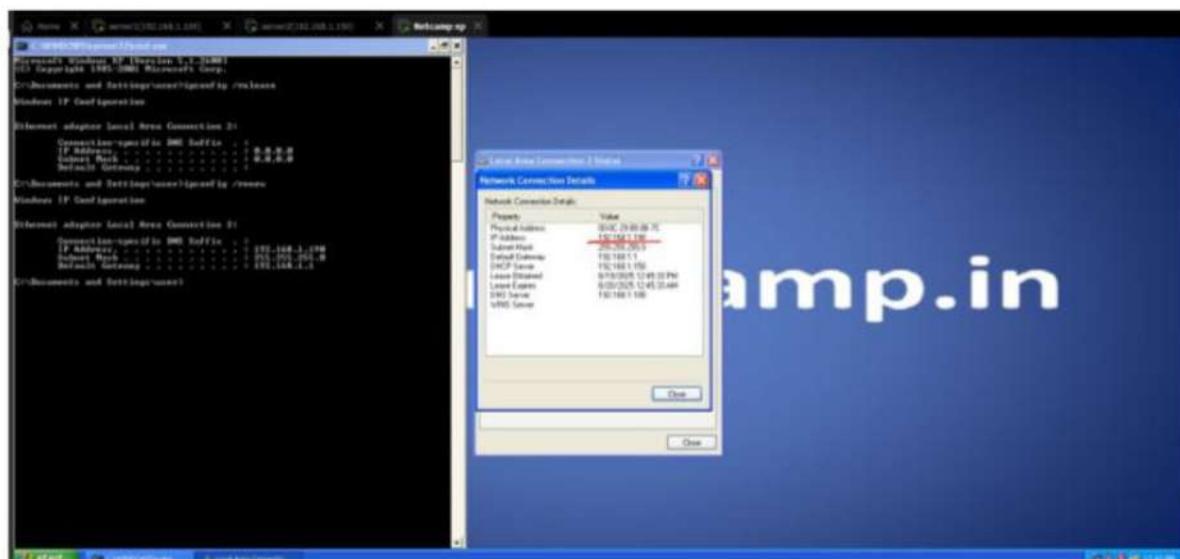
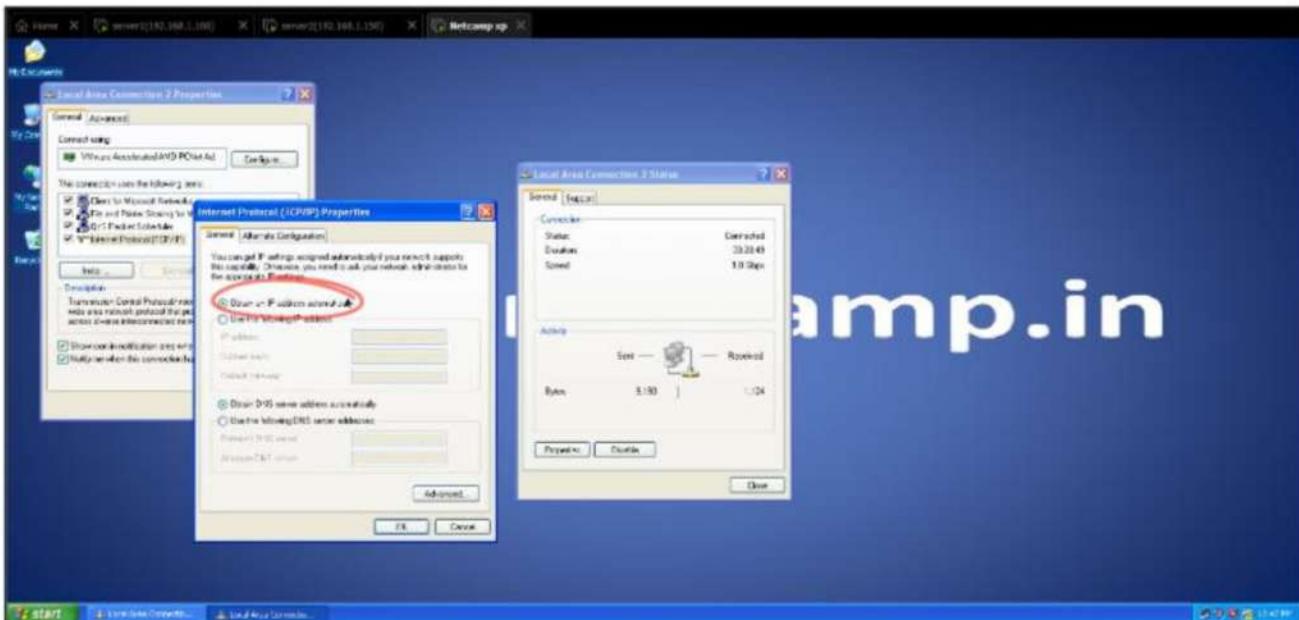
[Return to previous page](#)

To debug error>connect telnet with ip 192.168.1.100>then add  
command ipconfig/release,ipconfig /renew>check on list>local area>

using command-dhcpcd.conf(configuration file for DNCP server)and vi  
dhcpcd.conf(command to open and edit that file using the vi text  
editor).>start server.



after connecting to host ,we have to obtain an IP address automatically



Not secure 192.168.1.150:10000/dhcpd/list\_leases.cgi?

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31 IP addresses available, 1 allocated (3 %)

| IP Address    | Ethernet          | Hostname | Start Date          | End Date            |
|---------------|-------------------|----------|---------------------|---------------------|
| 192.168.1.150 | 00:0c:29:80:9b:7c | ws1      | 2025/08/15 07:02:59 | 2025/08/15 19:02:59 |

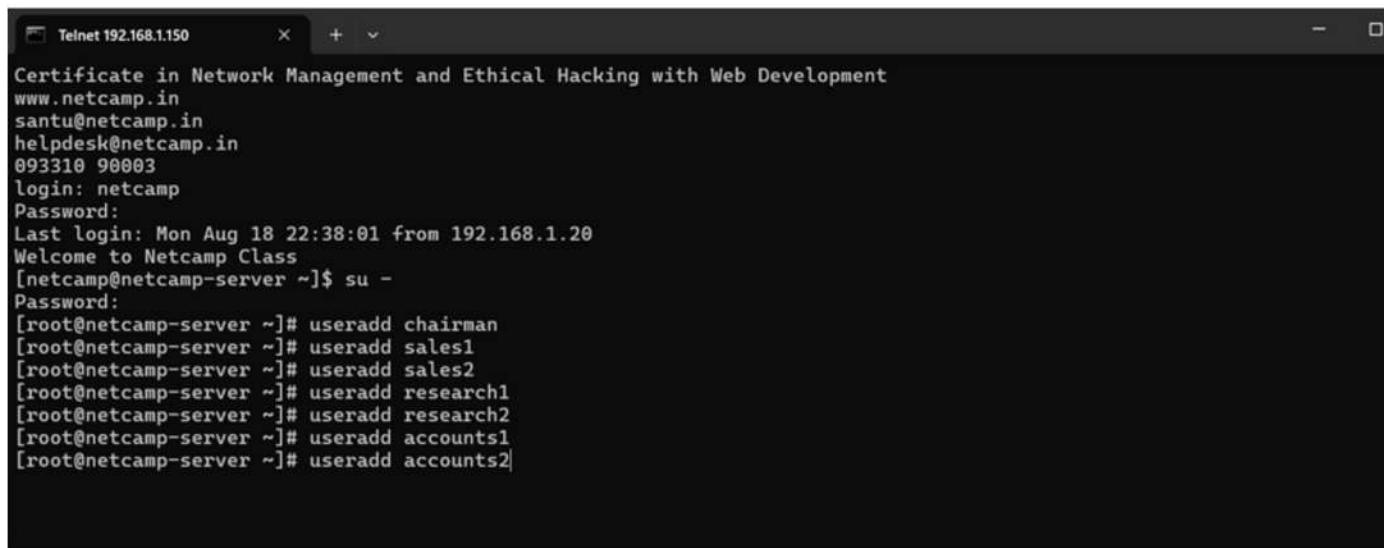
Click on a lease IP address from the list above to delete it.

[List all active and expired leases](#)

[Return to network and host list](#)

## DHCP Leases

## Open command prompt



The screenshot shows a Telnet session titled "Telnet 192.168.1.150". The session displays a certificate for "Certificate in Network Management and Ethical Hacking with Web Development" from "www.netcamp.in". It shows the root user logging in from IP 192.168.1.20. The user then runs the command "su -" to become root. Root then creates six new users: "chairman", "sales1", "sales2", "research1", "research2", and "accounts1", "accounts2" using the "useradd" command.

```
Certificate in Network Management and Ethical Hacking with Web Development
www.netcamp.in
santu@netcamp.in
helpdesk@netcamp.in
093310 90003
login: netcamp
Password:
Last login: Mon Aug 18 22:38:01 from 192.168.1.20
Welcome to Netcamp Class
[netcamp@netcamp-server ~]$ su -
Password:
[root@netcamp-server ~]# useradd chairman
[root@netcamp-server ~]# useradd sales1
[root@netcamp-server ~]# useradd sales2
[root@netcamp-server ~]# useradd research1
[root@netcamp-server ~]# useradd research2
[root@netcamp-server ~]# useradd accounts1
[root@netcamp-server ~]# useradd accounts2
```

**Set the password for all the users(password chairman, sales 1, sales 2, research 1, research 2, accounts 1, accounts 2)**

Common data folder for user (only departmental access – only the department people can read and write on the same)

/departmentname/data

Common driver folder for the user (only departmental access – only access (r-x) but they can't write on the same)

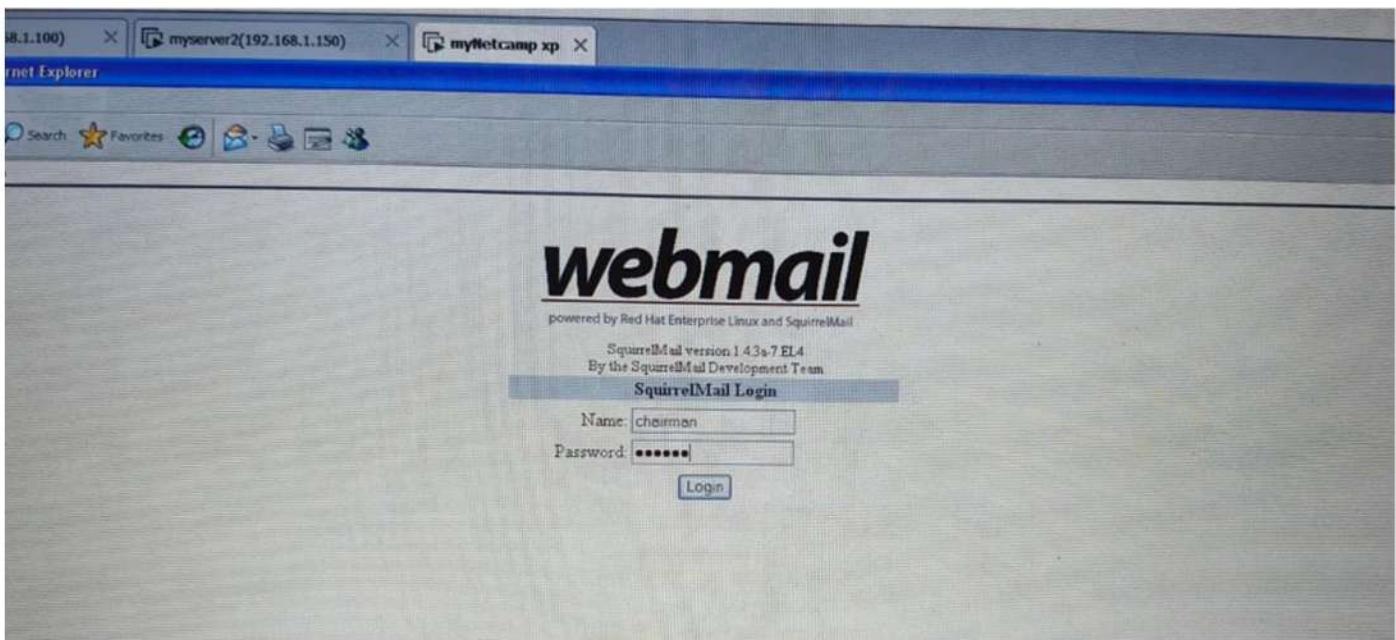
/departmentname/driver

chairman will have full access on these folder called data and driver.

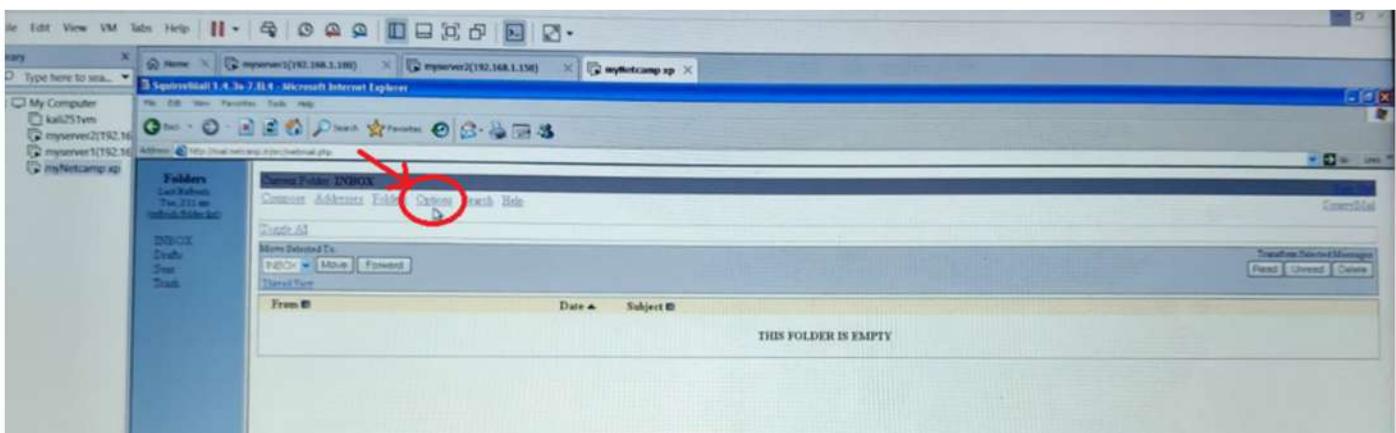
Please design and implement the same.

# USER LOGIN IN WEBMIN

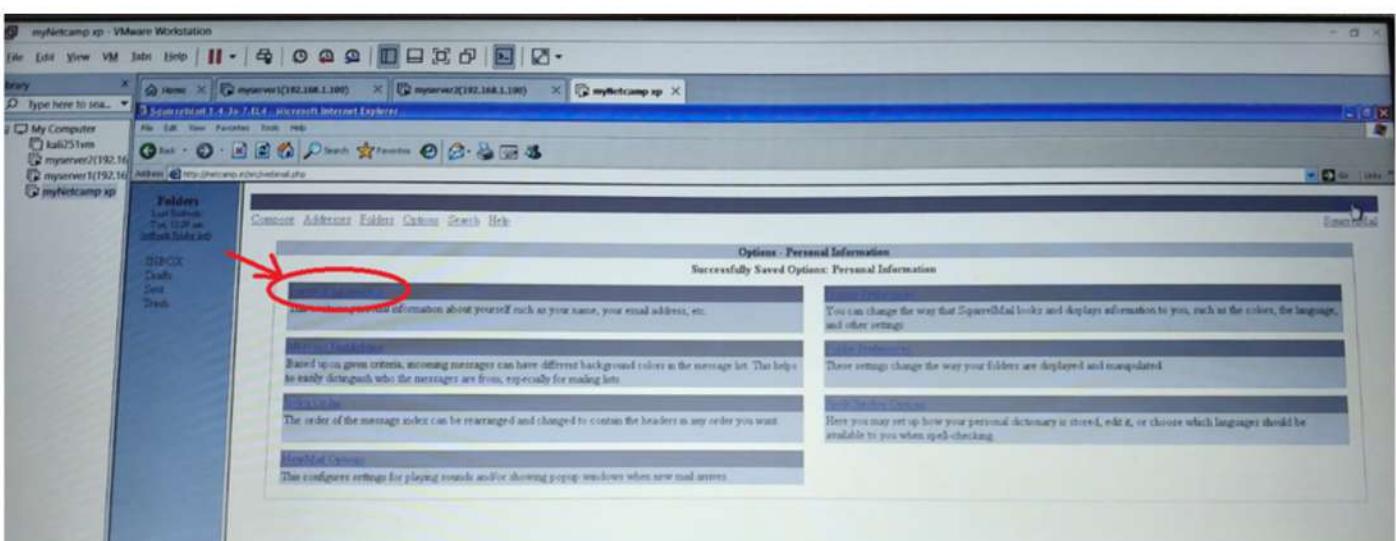
## 1.Login as user and enter the password



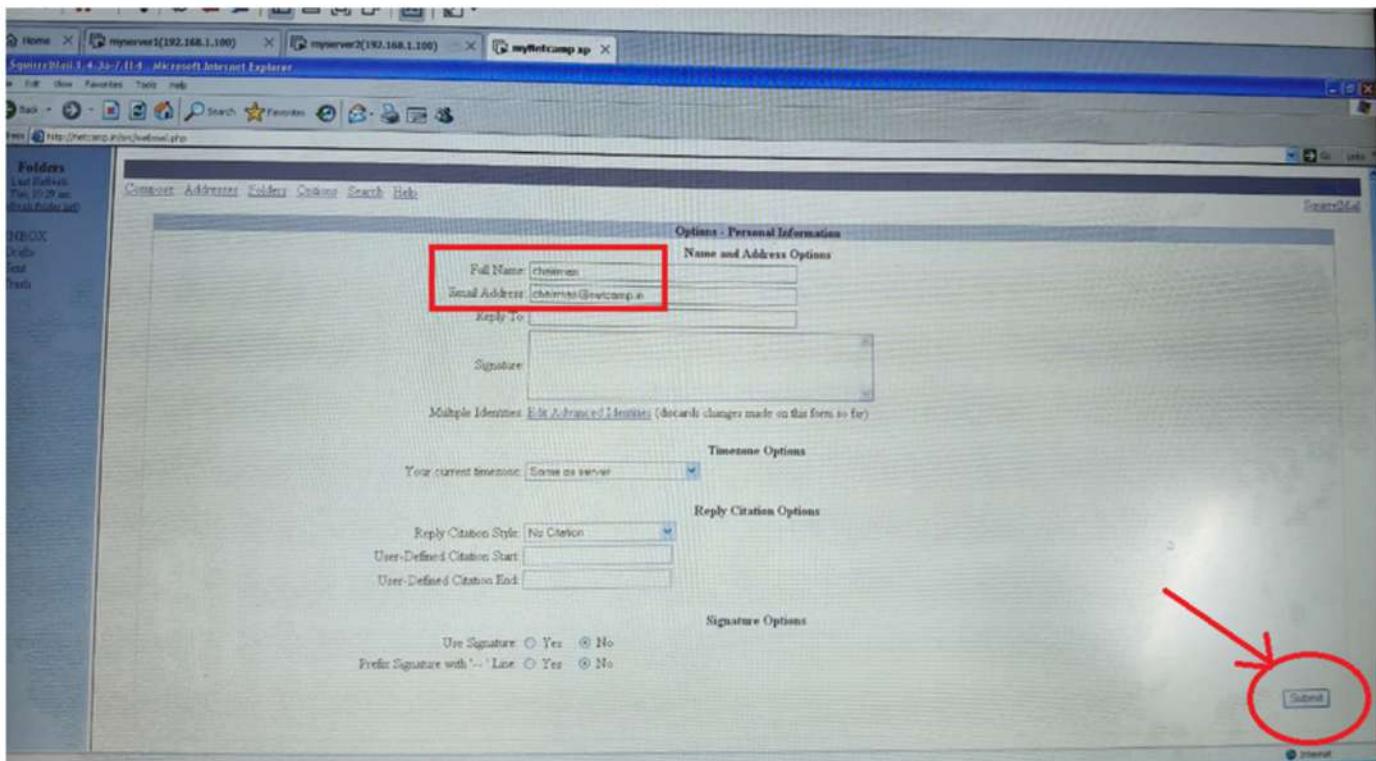
## 2.After login click on options



## 3.Click on personal details



4. Provide the name and email address and then click on submit

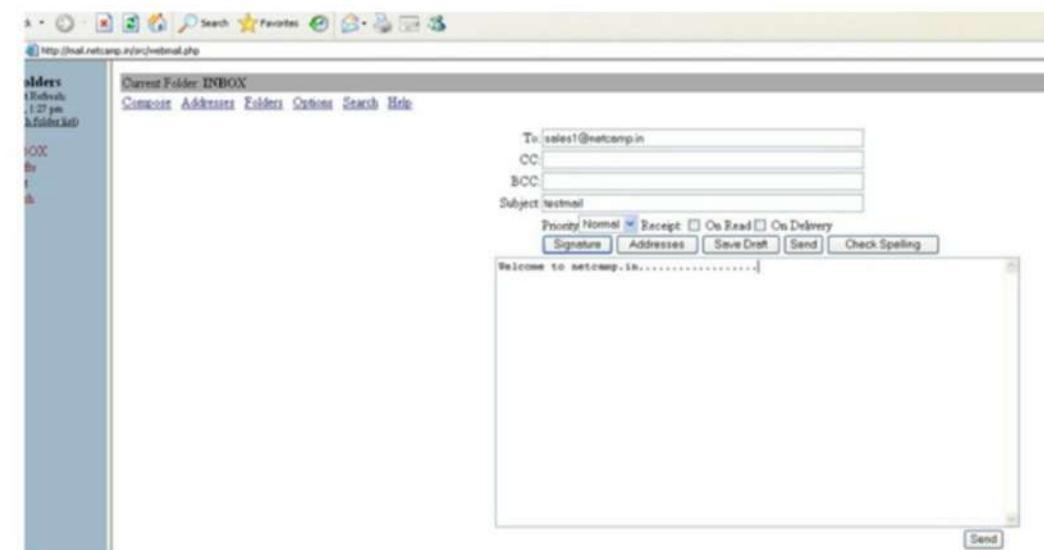


**Then follow the same steps for respective users and set name and email address for each.**

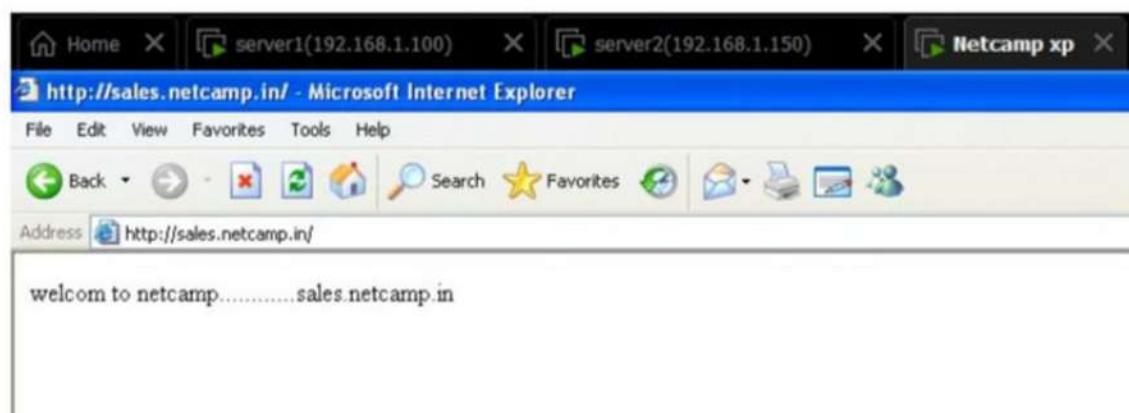
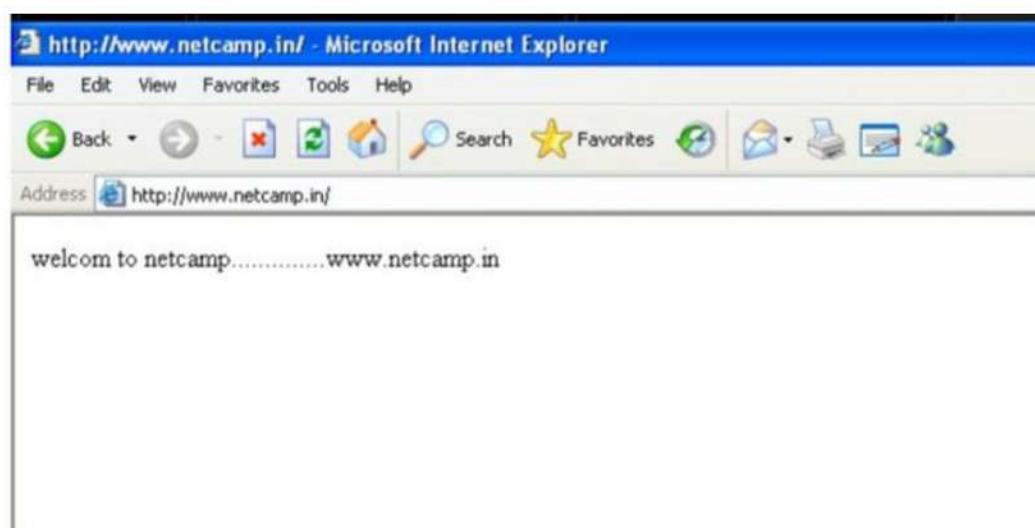
- **sales1 :- sales1@netcamp.in**
- **sales2 :- sales2@netcamp.in**
- **research1 :- research1@netcamp.in**
- **research2 :- research2@netcamp.in**
- **accounts1 :- accounts1@netcamp.in**
- **accounts2 :- accounts2@netcamp.in**

# Result and output observation

## chairman sends a mail to sales 1(client server)



>>subdomain web server inside client server



# File Server

```
[root@netcamp-server ~]# cd /
[root@netcamp-server /]# mkdir sales
[root@netcamp-server /]# ls -ld sales
drwxr-xr-x 2 root root 4096 Aug 18 20:50 sales
[root@netcamp-server /]# cd sales
[root@netcamp-server sales]# mkdir data driver
[root@netcamp-server sales]# ls -l
total 8
drwxr-xr-x 2 root root 4096 Aug 18 20:50 data
drwxr-xr-x 2 root root 4096 Aug 18 20:50 driver
```

- Make a sales folder and under that make data driver files and check the permission.

```
[root@netcamp-server sales]# chmod 757 data
[root@netcamp-server sales]# chmod 755 driver
[root@netcamp-server sales]# ls -l
total 8
drwxr-xrwx 2 root root 4096 Aug 18 20:50 data
drwxr-xr-x 2 root root 4096 Aug 18 20:50 driver
```

- change the permission of data drive files

Date-(full access \_757)

Driver-> department-read access only \_757

(Similarly for research and accounts)

Now we will add grp1 in which we will add chairman,sales1 and sales2

```
[root@netcamp-server sales]# cd /
[root@netcamp-server /]# groupadd grp1
[root@netcamp-server /]# usermod -G grp1 chairman
[root@netcamp-server /]# usermod -G grp1 sales1
[root@netcamp-server /]# usermod -G grp1 sales2
```

```
[root@netcamp-server /]# chgrp grp1 sales
[root@netcamp-server /]# ls -ld sales
drwxr-xr-x 4 root grp1 4096 Aug 18 20:53 sales
```

Now we will add grp2 in which we will add chairman, research1 and research2

```
[root@netcamp-server /]# groupadd grp2
[root@netcamp-server /]# usermod -G grp2 chairman
[root@netcamp-server /]# usermod -G grp2 research1
[root@netcamp-server /]# usermod -G grp2 research2
```

```
[root@netcamp-server /]# chgrp grp2 sales
[root@netcamp-server /]# ls -ld sales
drwxr-xr-x 4 root grp2 4096 Aug 18 20:53 sales
```

Now we will add grp3 in which we will add chairman, accounts1 and accounts2

```
[root@netcamp-server /]# groupadd grp3
[root@netcamp-server /]# usermod -G grp2 chairman
[root@netcamp-server /]# usermod -G grp2 accounts1
[root@netcamp-server /]# usermod -G grp2 accounts2
[root@netcamp-server /]# chgrp grp3 sales
[root@netcamp-server /]# ls -ld sales
drwxr-xr-x 4 root grp3 4096 Aug 18 20:53 sales
```

-----THANK YOU-----