



an ISO 9001:2015 Company

PROJECT REPORT ON

Under Supervision-

Santu Purkait

Director

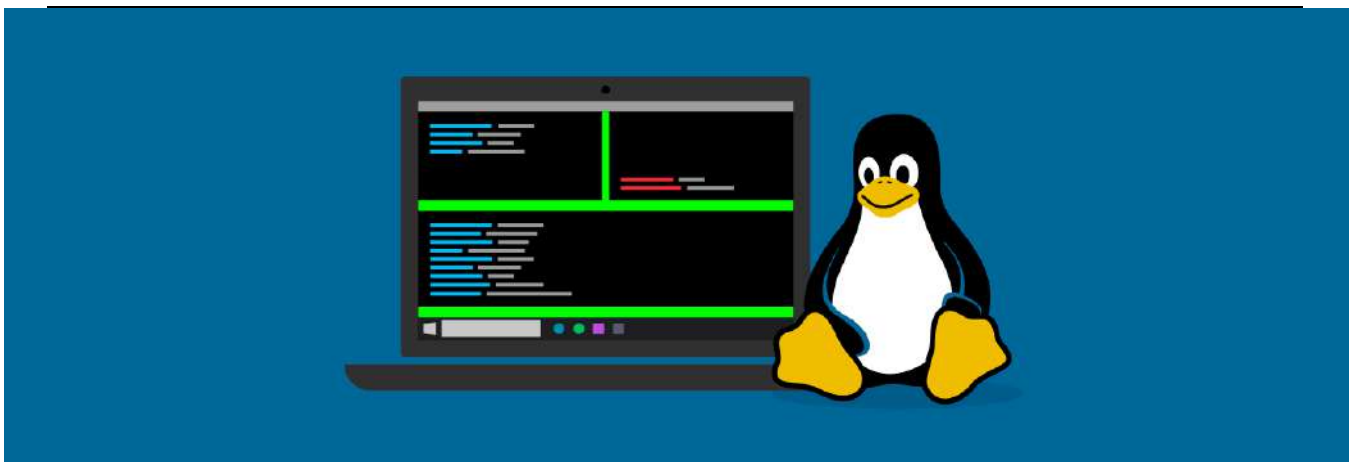
Netcamp Solutions Private Limited

+91 9331090003

santu@netcamp.in

www.netcamp.in

NETWORK MANAGEMENT



SUBMITTED BY

NAINA SETHIA

Amity University Chhattisgarh, Raipur

Acknowledgement

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.

Name: Naina Sethia

College ID: A809150824045

Netcamp ID: 4250094

College: Amity University Chhattisgarh, Raipur

Date: 04-10-2025

Signature:

Netcamp Solutions Private Limited



an ISO 9001:2015 Company

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: 4th August 2025 to 4th October 2025 by **Netcamp Solutions Private Limited**.*

INDEX

- Project - NETWORKING
- Acknowledgement
- Certificate
- VMware codes
- DNS server
- webserver
- DNS server configuration
- 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
093318 98003
netcamp-server login: root
Password:
Last login: Sat Aug 16 13:43:33 on tty1
Welcome to Netcamp Class
[root@netcamp-server ~]# netconfig_
```

netconfig 0.8.21 (C) 1999 Red Hat, Inc.

Network configuration

Would you like to set up networking?

<Tab>/<Alt-Tab> between elements | <Space> selects | <F12> next screen

netconfig 0.8.21 (C) 1999 Red Hat, Inc.

Configure TCP/IP

Please enter the IP configuration for this machine. Each item should be entered as an IP address in dotted-decimal notation (for example, 1.2.3.4).

☒ I use dynamic IP configuration (DHCP/DHCP)

IP address: 192.168.1.100
Netmask: 255.255.255.0
Default gateway (IP): 192.168.1.254
Primary nameserver: 192.168.1.1

<Tab>/<Alt-Tab> between elements | <Space> selects | <F12> next screen


```

[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 [ OK ]
Bringing up interface eth0: ip_tables: (C) 2000-2002 Netfilter core team [ OK ]
[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:250843 (244.9 KiB)  TX bytes:336 (336.0 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: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:50:00
[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
0933310 90003
netcamp-server login: root
Password:
Last login: Sat Aug 16 13:43:33 on tty1
Welcome to Netcamp Class
[root@netcamp-server ~]# netconfig_

```

netconfig 0.0.23 - (C) 1999 Red Hat, Inc.

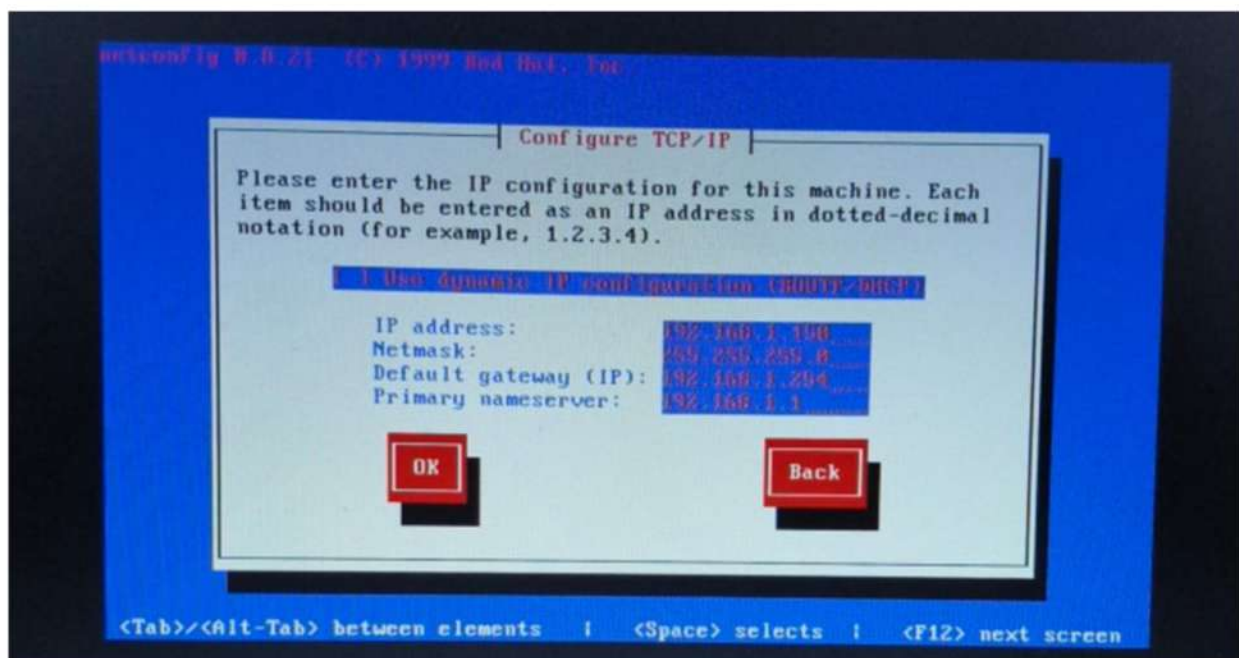
Network configuration

Would you like to set up networking?

Yes

No

<Tab>/<Alt-Tab> between elements | <Space> selects | <F12> next screen



```
[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 [ OK ]
Bringing up interface eth0: ip_tables: (C) 2000-2002 Netfilter core team [ OK ]
[root@netcamp-server ~]# _
```

```
Bringing up interface eth0: ip_tables: (C) 2000-2002 Netfilter core team [ 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:500 (500.0 b)  TX bytes:500 (500.0 b)

[root@netcamp-server ~]# ifconfig eth0 down
[root@netcamp-server ~]# ifconfig eth0 hw ether 1A:2B:3C:4D:5E:9B
[root@netcamp-server ~]# ifconfig eth0 up
[root@netcamp-server ~]# ifconfig _
```

Open the control pannel ,click on view by category then click on network and sharing then click on change adapter setting (disable VMnet8 and set ip on VMnet1)-->proporties-->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

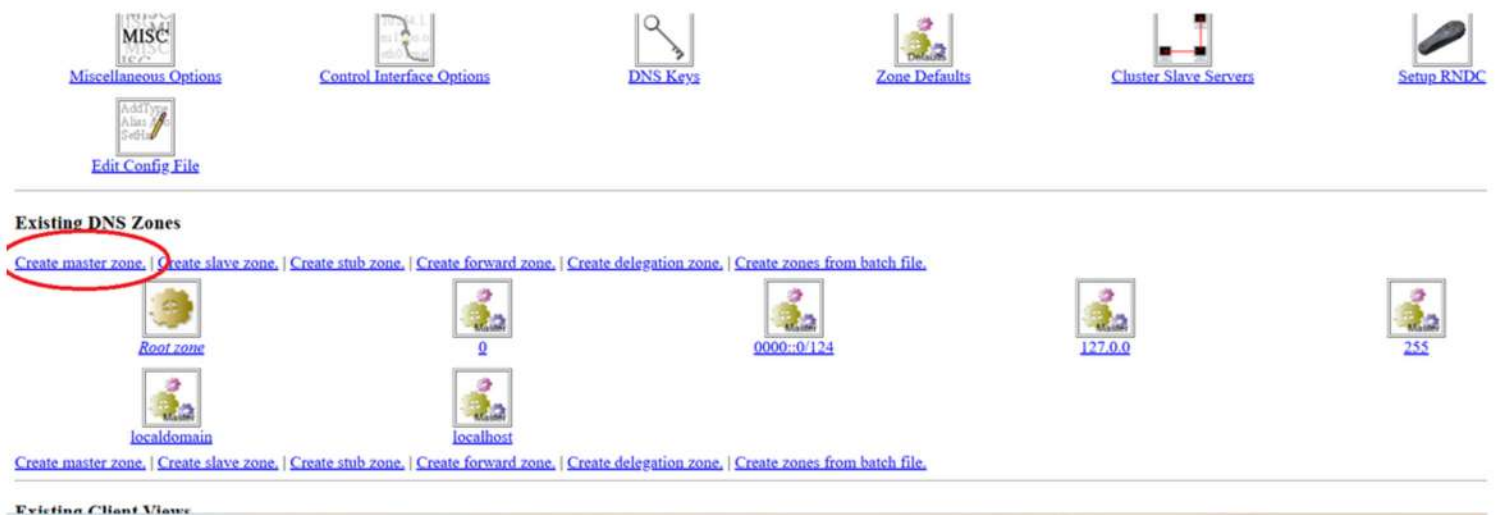
WHAT IS DNS?

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



2.Click on create master zone



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

Webmin Index
Module Index

Create Master Zone

New master zone options

Zone type: ☒ Forward (Names to Addresses) ☐ Reverse (Addresses to Names)

Domain name / Network:

Records file:

Master server: ☒ Add NS record for master server?

Email address:

Use zone template? ☐ Yes ☒ No

Add reverses for template addresses? ☐ Yes ☒ No

Refresh time: seconds

Expiry time: seconds

IP address for template records:

Transfer retry time: seconds

Default time-to-live: seconds

[Create](#)

[Return to zone list](#)

4. click on Address

Webmin Index
Module Index

Edit Master Zone

netcamp.in

[A](#) Address (0)

[HI](#) Host Information (0)

[RF](#) Responsible Person (0)

[KE](#) Public Key (0)

[NS](#) Name Server (1)

[TX](#) Text (0)

[PT](#) Reverse Address (0)

[A MX NS PTR RR CNAME](#) All Record Types (1)

[CI](#) Name Alias (0)

[SF](#) Sender Permitted From (0)

[LC](#) Location (0)

[M](#) Mail Server (0)

[W](#) Well Known Service (0)

[SF](#) Service Address (0)

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

Webmin Index
Module Index

Address Records

In netcamp.in

Add Address Record

Name:

Address:

Time-To-Live: ☒ Default ☐

Update reverse? ☒ Yes ☐ Yes (and replace existing) ☐ No

[Create](#)

Select all | Invert selection

Name	TTL	Address
<input type="checkbox"/> netcamp.in	Default	192.168.1.150
<input type="checkbox"/> www.netcamp.in	Default	192.168.1.150
<input type="checkbox"/> 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



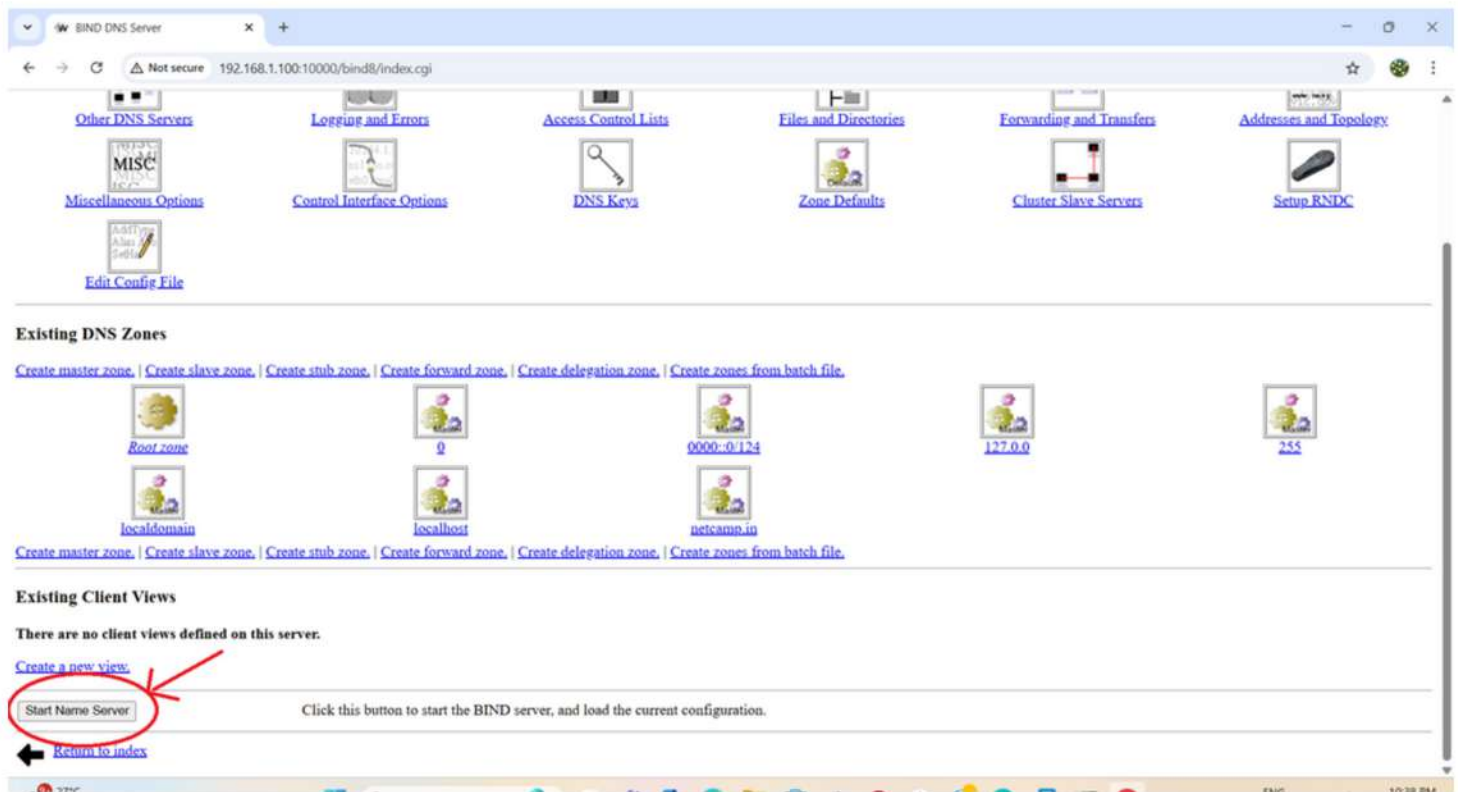
7. Provide the details then click on create



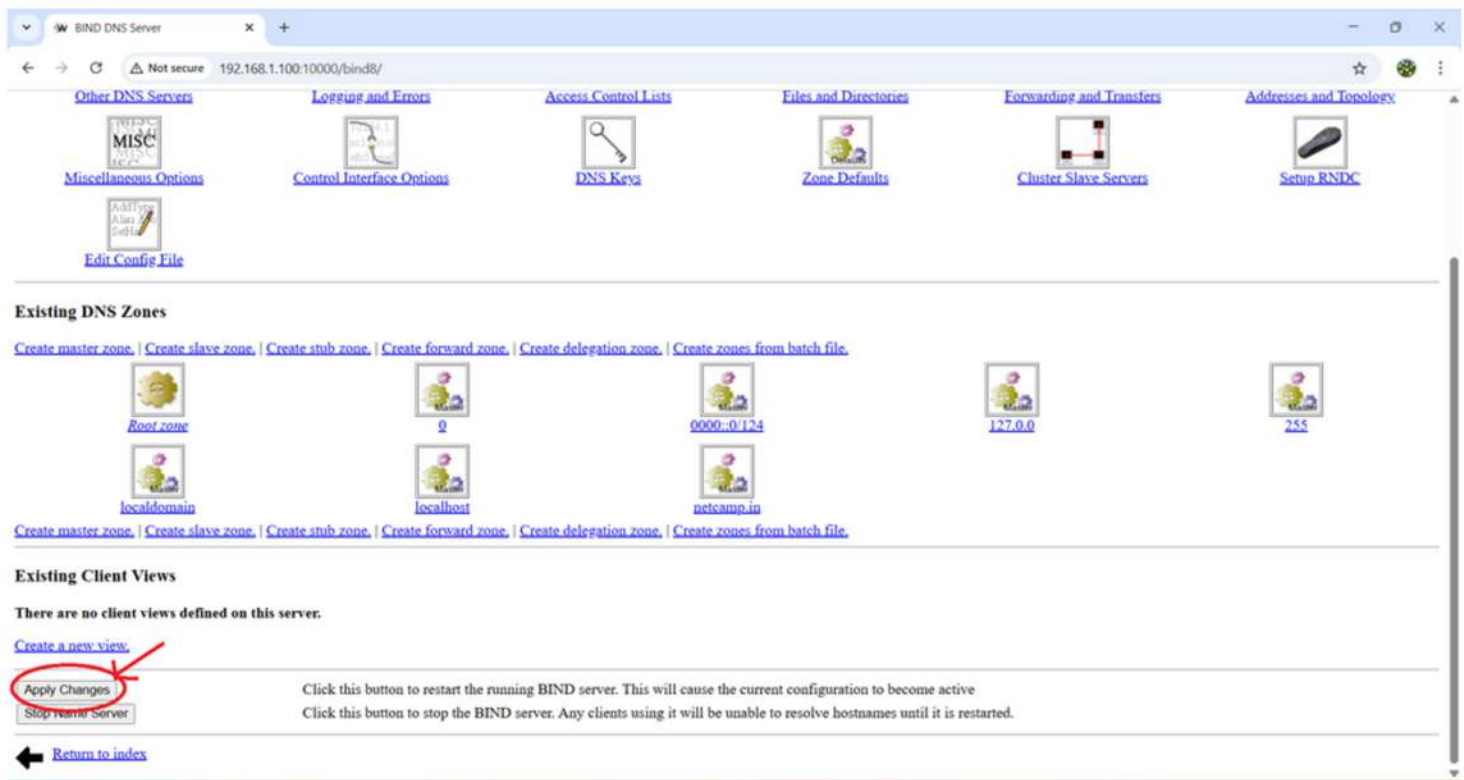
8. Then click on return to zone list



9. Start name server



10. Click on apply changes



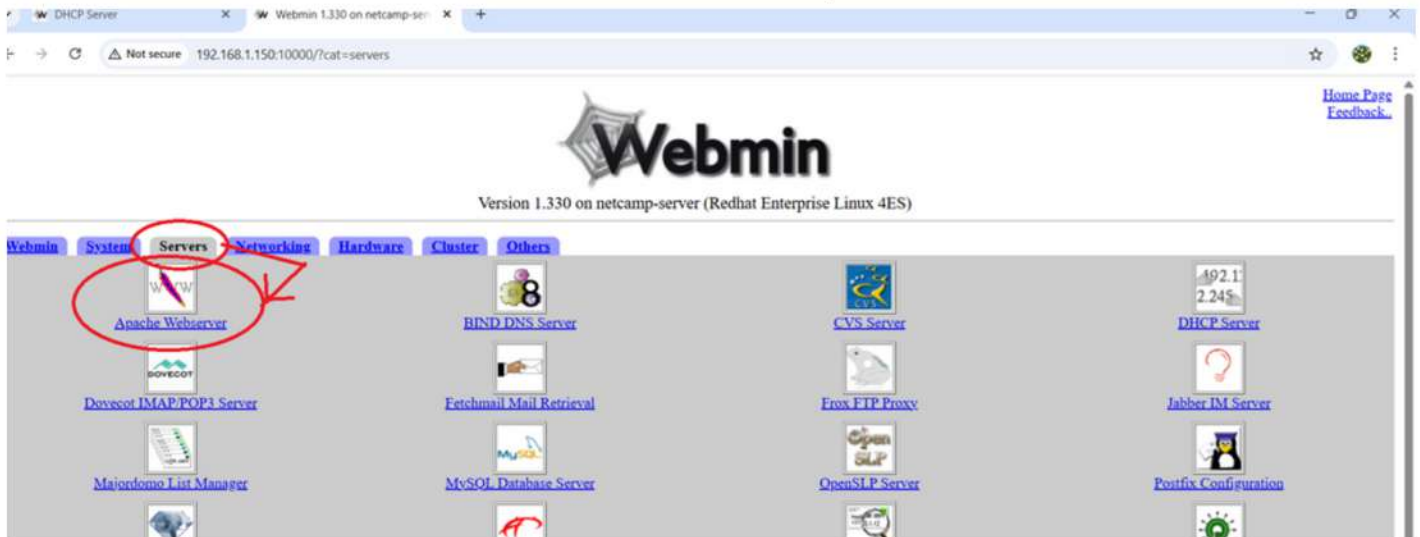
Web Server

(IP 192.168.1.150)

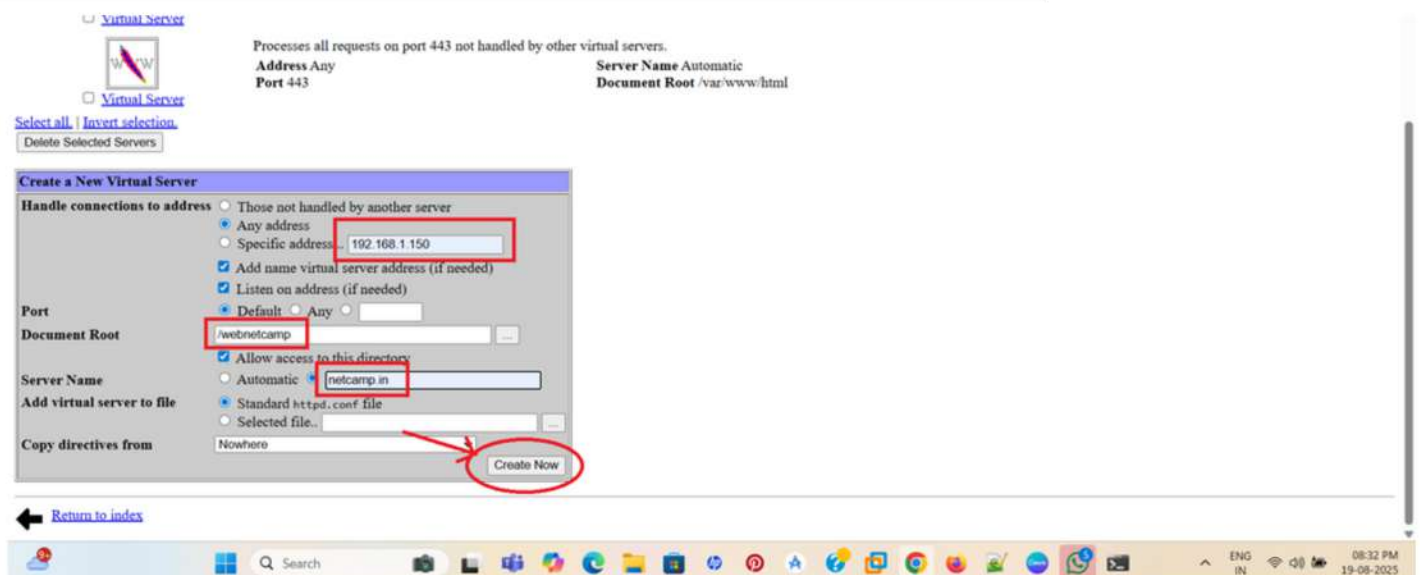
Q Create 4 folders :- /webnetcamp - index.html
/websales - index.html
/webresearch - index.html
/webaccounts - index.html

-->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



3.click on start Apache



4.click on apply



5.To check the message of webnetcamp in netcampXP

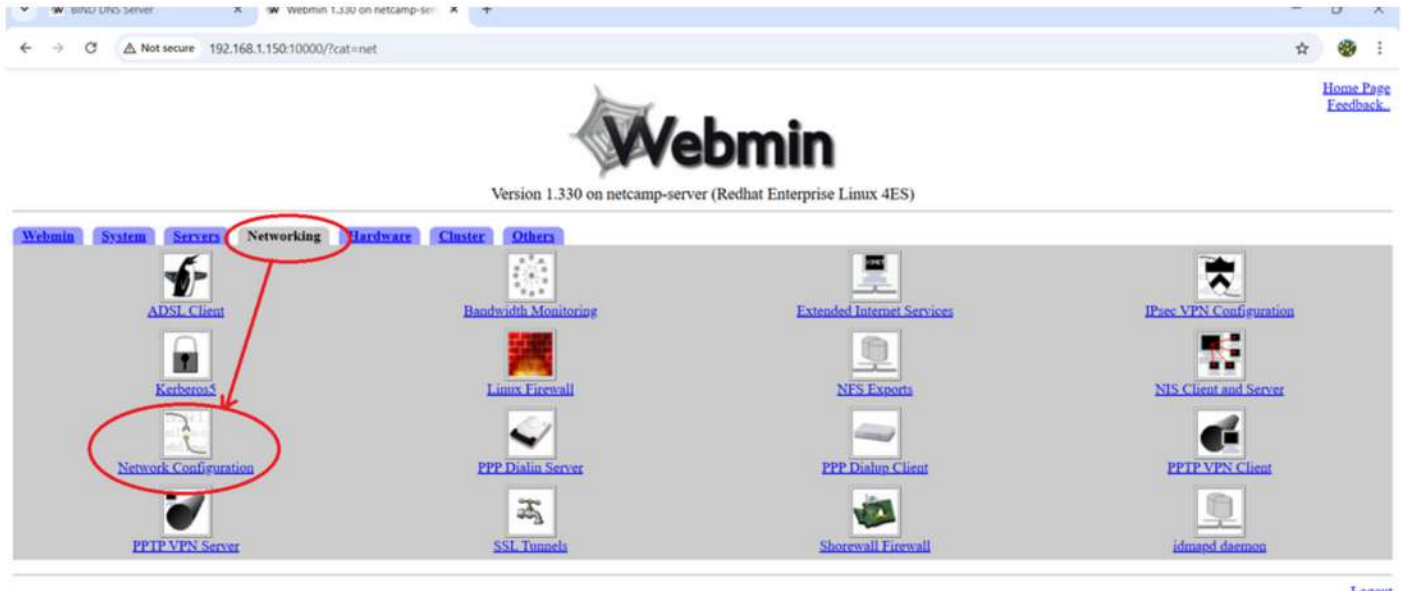


For /websales, /webresearch and /webaccounts we follow the same steps for respective folders and we get the outputs.

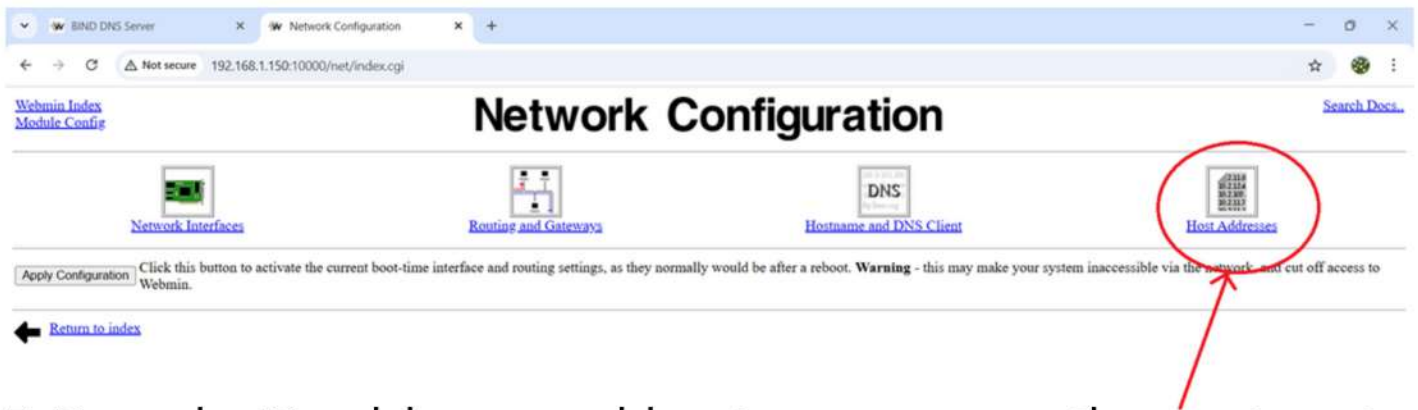
Mail Server

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



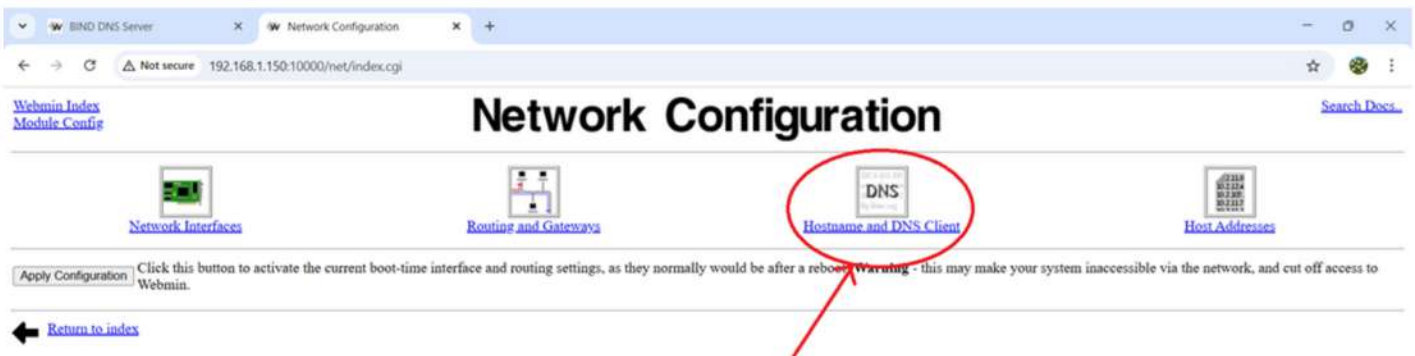
3. Provide IP address and host name, save then return to host address list



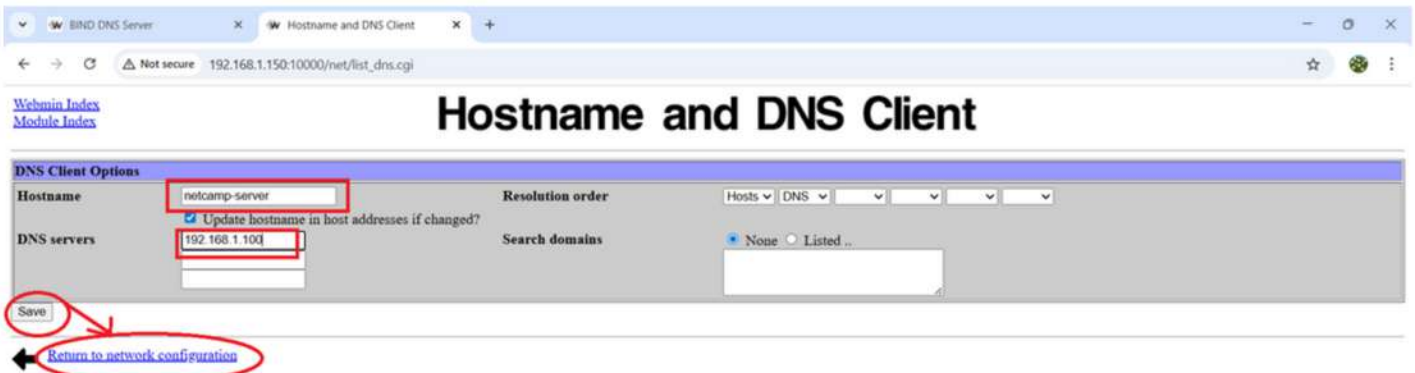
4. Click on return to network configuration



5. Click on hostname and DNS client



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



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



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

- ☐ Those not handled by another server
- ☒ Any address
- ☐ Specific address

☒ Add name virtual server address (if needed)
☒ Listen on address (if needed)

Port

Document Root

☒ Allow access to this directory

Server Name

- ☐ Automatic
- ☒

Add virtual server to file

- ☒ Standard httpd.conf file
- ☐ Selected file..

Copy directives from

[Return to index](#)

[Create Now](#)

9. Click on start apache

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

Apache Webserver
Apache version 2.0.52

[Apply Changes](#)
[Search Docs](#)

Global Configuration

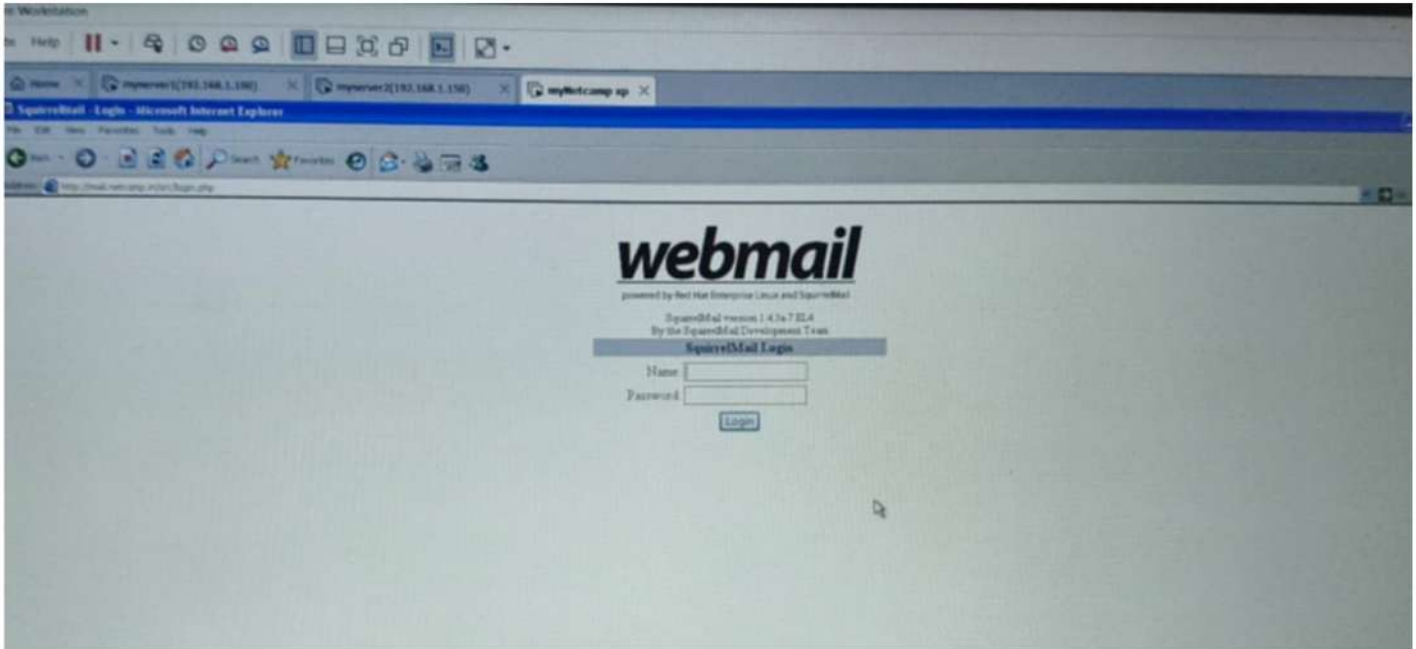
- [Processes and Limits](#)
- [Networking and Addresses](#)
- [MIME Types](#)
- [User and Group](#)
- [Miscellaneous](#)
- [CGI Programs](#)
- [Per-Directory Options Files](#)
- [Re-Configure Known Modules](#)
- [Edit Defined Parameters](#)
- [Edit Config Files](#)

Virtual Servers

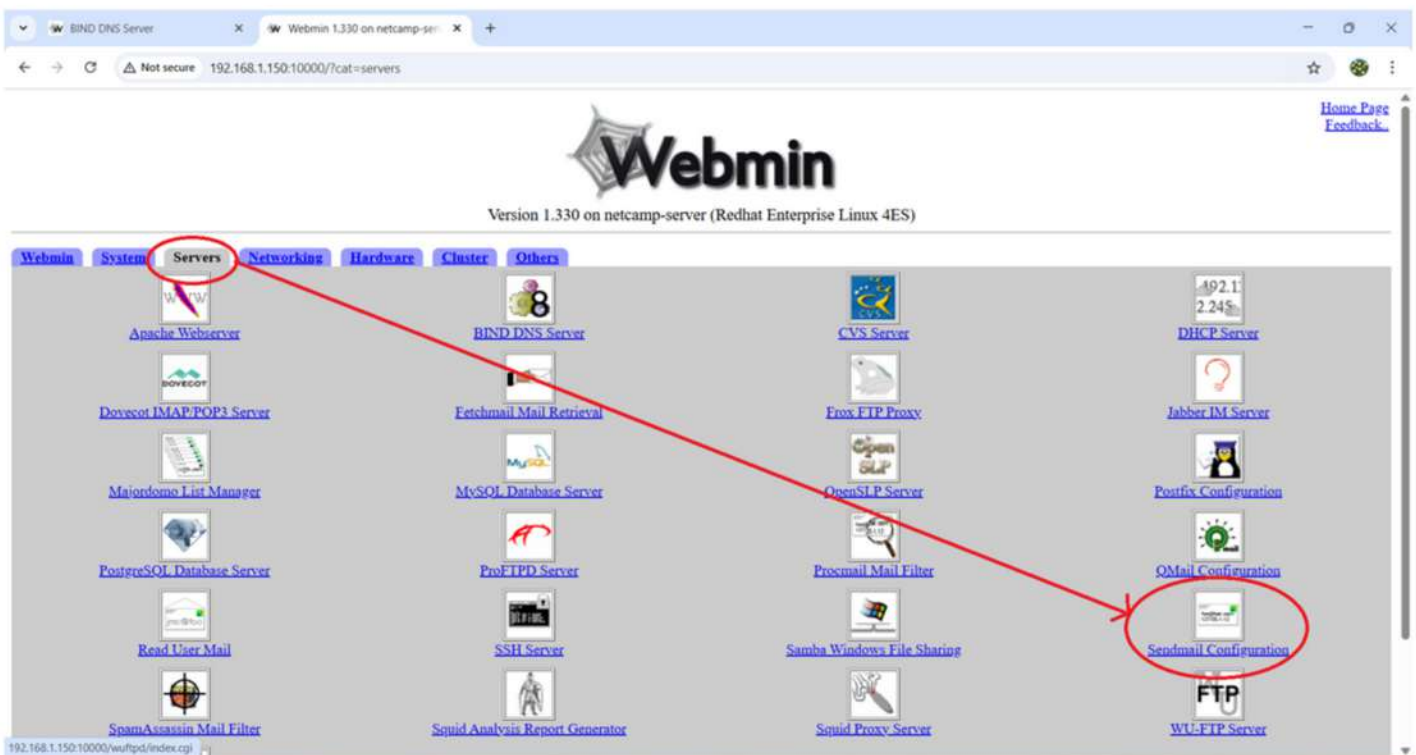
[Select all](#) | [Invert selection](#)

(Then open server.xp)

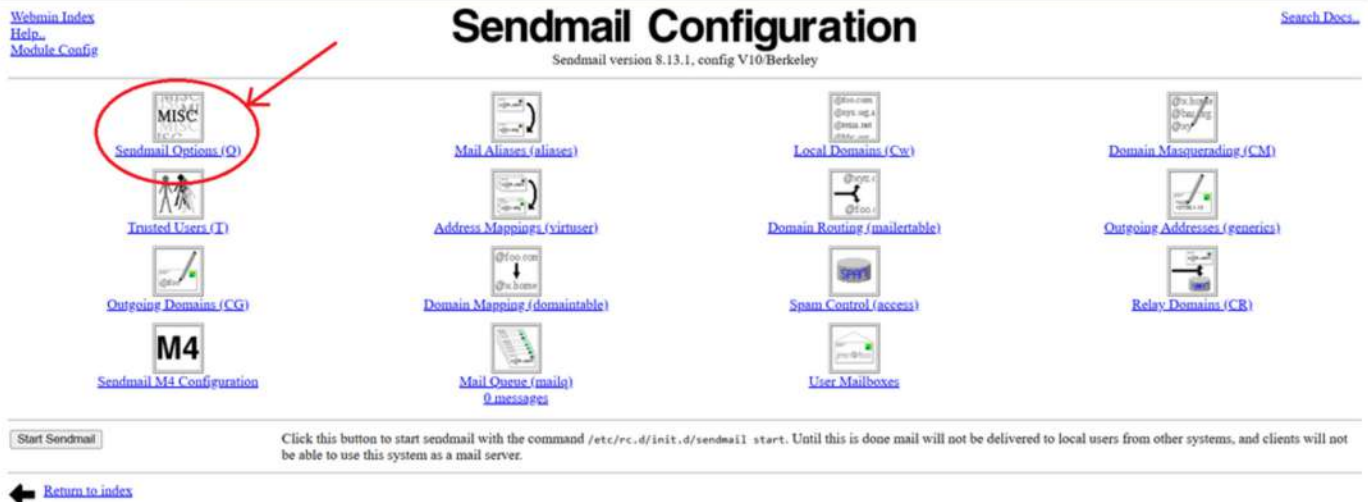
open (double computer symbol) --> properties --> change ip --> DNA=192.168.1.100 --> start --> run --> cmd --> ping 1.100 and 1.150 --> start --> internet explore --> search mail.netcamp.in



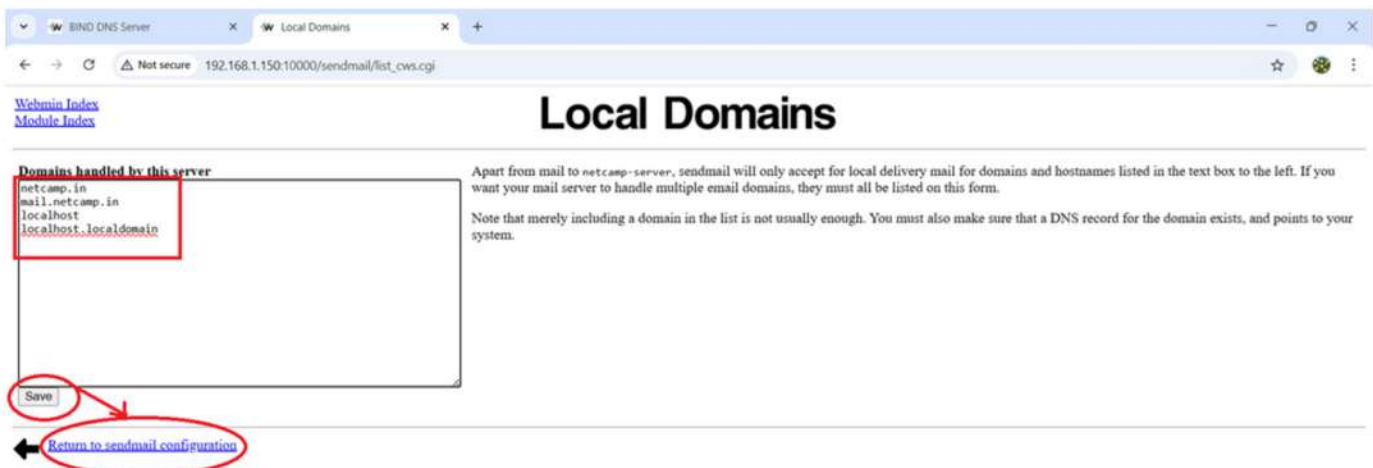
11. Again open the webmin, click on server and then click on sendmail configuration



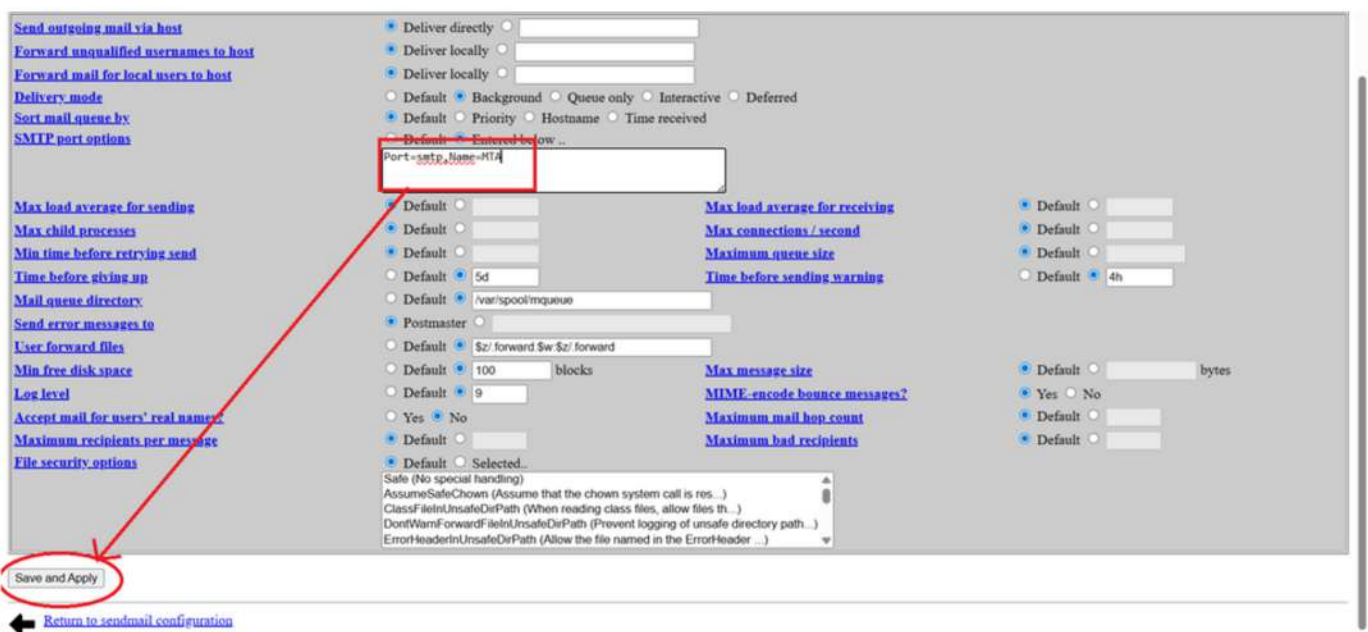
12. For mail send faster click on sendmail options



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



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



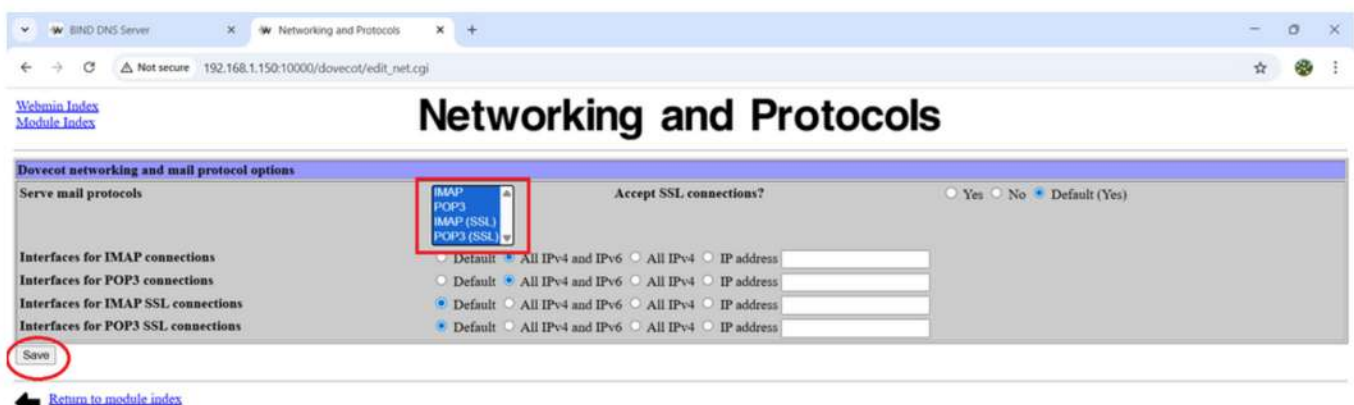
15. Again open webmin, click on server then click on dovecot imap/POP3 server



16. Click on networking and protocols



17. Select all 4 protocols, click on save



18. Click on start dovecot server

The screenshot shows the Dovecot IMAP/POP3 Server Webmin interface. The browser tabs include 'BIND DNS Server' and 'Dovecot IMAP/POP3 Server'. The address bar shows '192.168.1.150:10000/dovecot/index.cgi'. The page title is 'Dovecot IMAP/POP3 Server' with 'Version 0.99.11' below it. The navigation bar includes links for 'Networking and Protocols', 'User and Login Options', 'Mail Files', 'SSL Configuration', and 'Edit Config File'. The main content area has a section titled 'Start Dovecot Server' with a description: 'Start the Dovecot IMAP/POP3 server process, so that users can download their email. Change this setting to enable or disable starting the Dovecot server at system boot time.' Below this, there is a 'Start at boot?' section with radio buttons for 'Yes' and 'No', where 'No' is selected. A red circle highlights the 'Start Dovecot Server' link, and a red arrow points to it from the left. A 'Return to index' link is at the bottom left.

19. Click on apply configuration

The screenshot shows the Dovecot IMAP/POP3 Server Webmin interface. The browser tabs include 'BIND DNS Server' and 'Dovecot IMAP/POP3 Server'. The address bar shows '192.168.1.150:10000/dovecot/'. The page title is 'Dovecot IMAP/POP3 Server' with 'Version 0.99.11' below it. The navigation bar includes links for 'Networking and Protocols', 'User and Login Options', 'Mail Files', 'SSL Configuration', and 'Edit Config File'. The main content area has a section titled 'Apply Configuration' with a description: '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. Change this setting to enable or disable starting the Dovecot server at system boot time.' Below this, there is a 'Start at boot?' section with radio buttons for 'Yes' and 'No', where 'No' is selected. A red circle highlights the 'Apply Configuration' link, and a red arrow points to it from the left. A 'Return to index' link is at the bottom left. The Windows taskbar at the bottom shows the date as 18-08-2025 and the time as 11:22 PM.

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

[Webmin Index](#)
[Module Index](#)

Create Subnet

Subnet Details

Subnet description: netcamp

Network address: 192.168.1.0

Address ranges: 192.168.1.160 - 192.168.1.160

Shared network: <None>

Boot filename: *

Boot file server: *

Lease length for BOOTP clients: *

Dynamic DNS enabled?: *

Dynamic DNS reverse domain: *

Allow unknown clients?: *

client-updates: Can clients update their own records?: *

Server is authoritative for this subnet?: *

Hosts directly in this subnet: *

Netmask

Dynamic BOOTP?: *

Default lease time: *

Maximum lease time: *

Server name: *

Lease end for BOOTP clients: *

Dynamic DNS domain name: *

Dynamic DNS hostname: *

Groups directly in this subnet: *

[Create](#)

[Return to subnet list](#)

5. Click on edit client options

[Webmin Index](#)
[Module Index](#)

[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.

[Return to index](#)

6. Provide all necessary details, save

[Webmin Index](#)
[Module Index](#)

Client Options

For all networks, hosts and groups

Client Options

Client hostname: *

Subnet mask: *

Domain name: *

Time servers: *

Swap server: *

NIS domain: *

Font servers: *

Static routes: *

NTP servers: *

NetBIOS scope: *

Time offset: *

SLP directory agent IPs: *

SLP service scope: *

Custom option: Number Value

Option definition: Option name Number Type

Use name as client hostname?: *

Boot filename: *

Boot file server: *

Lease length for BOOTP clients: *

Default routers: *

Broadcast address: *

DNS servers: *

Log servers: *

Root disk path: *

NIS servers: *

XDM servers: *

NetBIOS name servers: *

NetBIOS node type: *

Default lease time: *

Maximum lease time: *

Server name: *

Lease end for BOOTP clients: *

Failed to start dhcpd :

Starting dhcpd: 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/dhcpd.conf`.
To get the same behaviour as in ~~current and previous~~ versions, add a line that says `"ddns-update-style ad-hoc;"`
Please read the dhcpd.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.

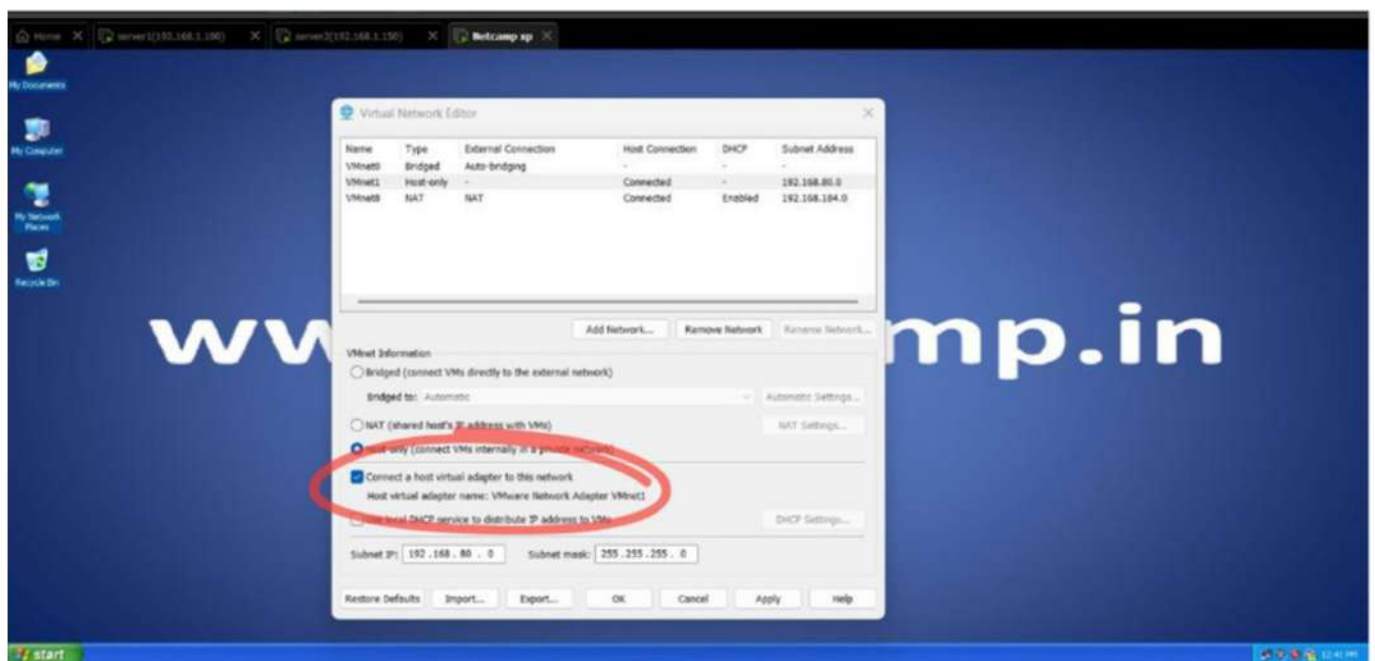
If you did get this software from <ftp.isc.org> and have not
yet read the README, please read it before requesting help.
If you intend to request help from the dhcp-server@isc.org
mailing list, please read the section on the README about
submitting bug reports and requests for help.

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.

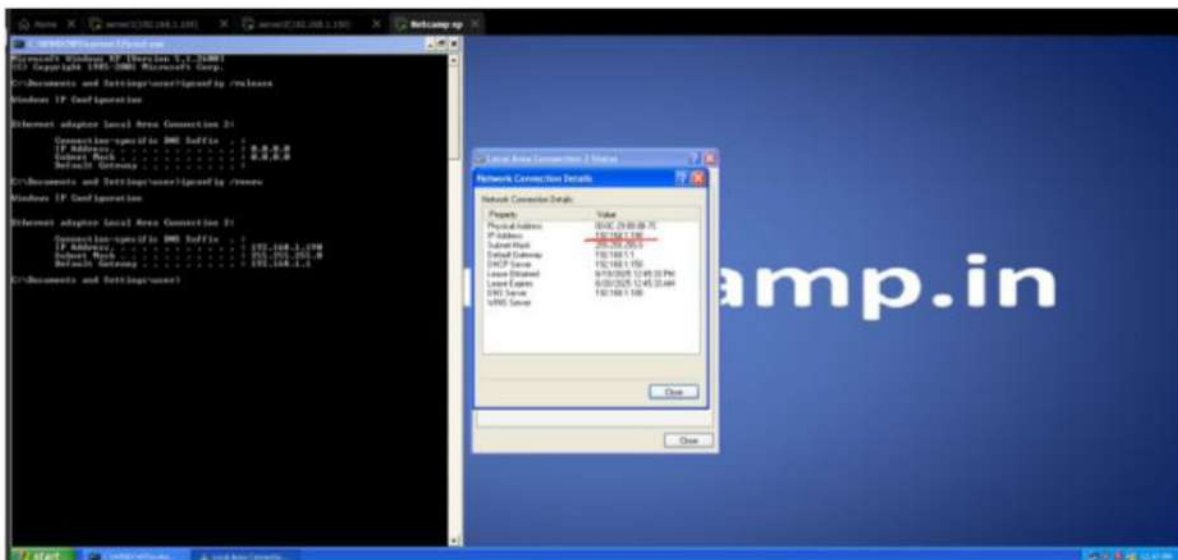
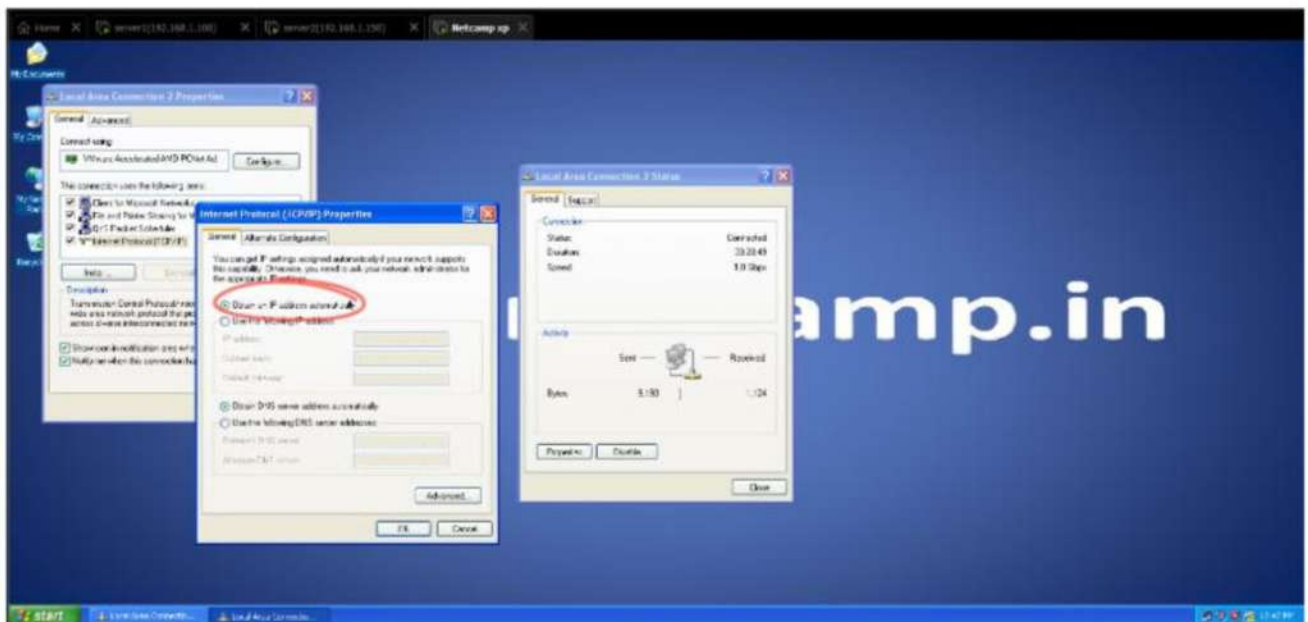
exiting.
[FAILED]

[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 `-dhcpd.conf`(configuration file for DNCP server)and `vi`
`dhcpd.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/leases.cgi?

[Webmin Index](#)
[Module Index](#)

DHCP Leases

31 IP addresses available, 1 allocated (3 %)

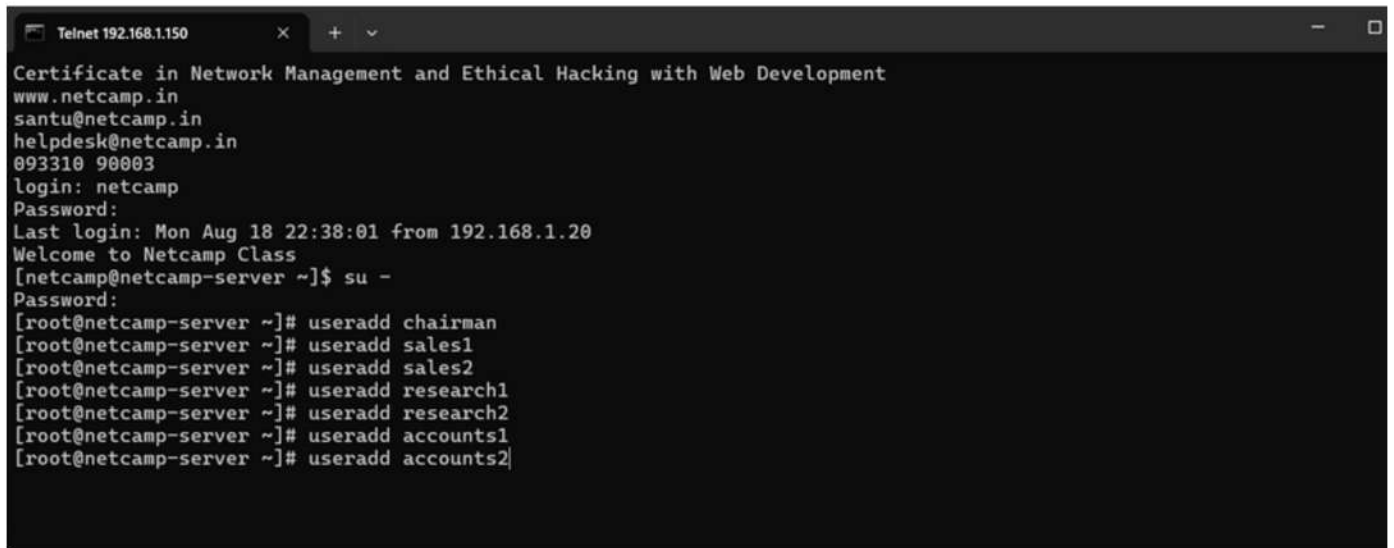
IP Address	Ethernet	Hostname	Start Date	End Date
192.168.1.150	00:0c:29:80:06:7c	lvs1	2025/08/15 07:02:59	2025/08/15 19:02:59

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](#)

Open command prompt

A screenshot of a Telnet window titled 'Telnet 192.168.1.150'. The window shows a command-line interface for a Netcamp server. The user 'santu@netcamp.in' logs in with the password 'helpdesk@netcamp.in' and IP '093310 90003'. The system shows the last login time as 'Mon Aug 18 22:38:01 from 192.168.1.20' and a welcome message 'Welcome to Netcamp Class'. The user then switches to root using 'su -' and provides a password. The root user then adds several users: 'chairman', 'sales1', 'sales2', 'research1', 'research2', 'accounts1', and 'accounts2'.

Set the password for all the users(passwd 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)

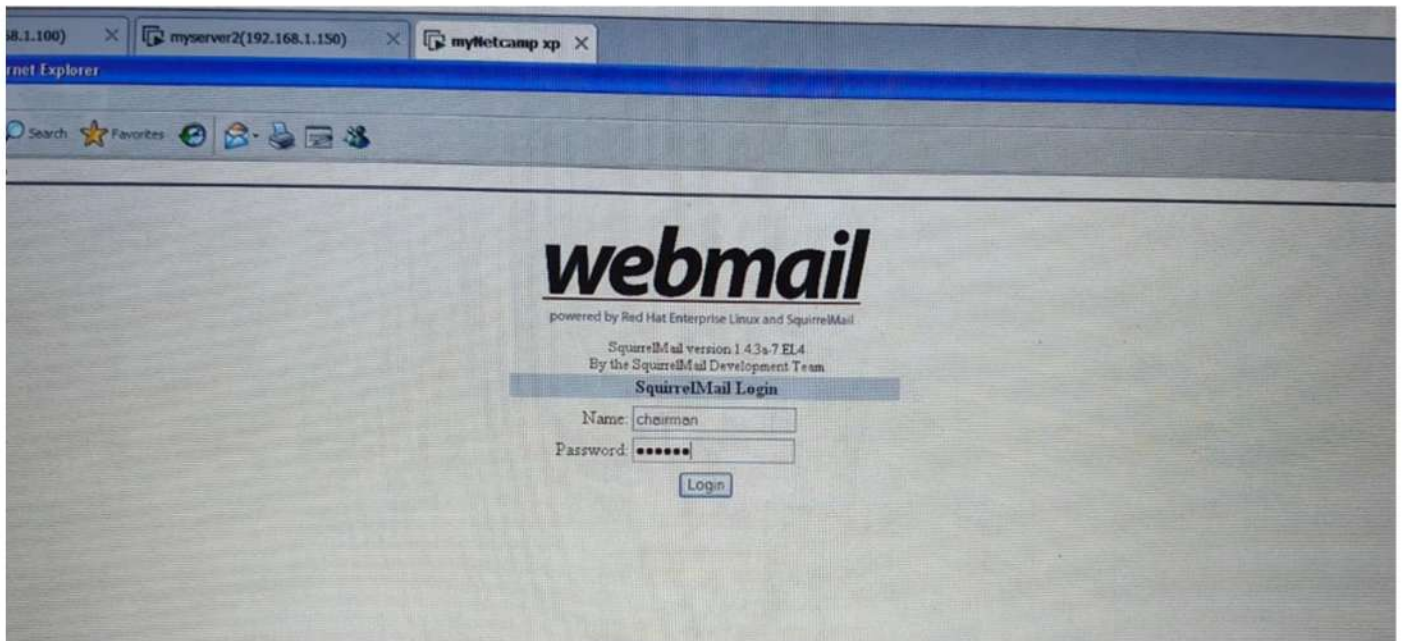
/departmentname/driver

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

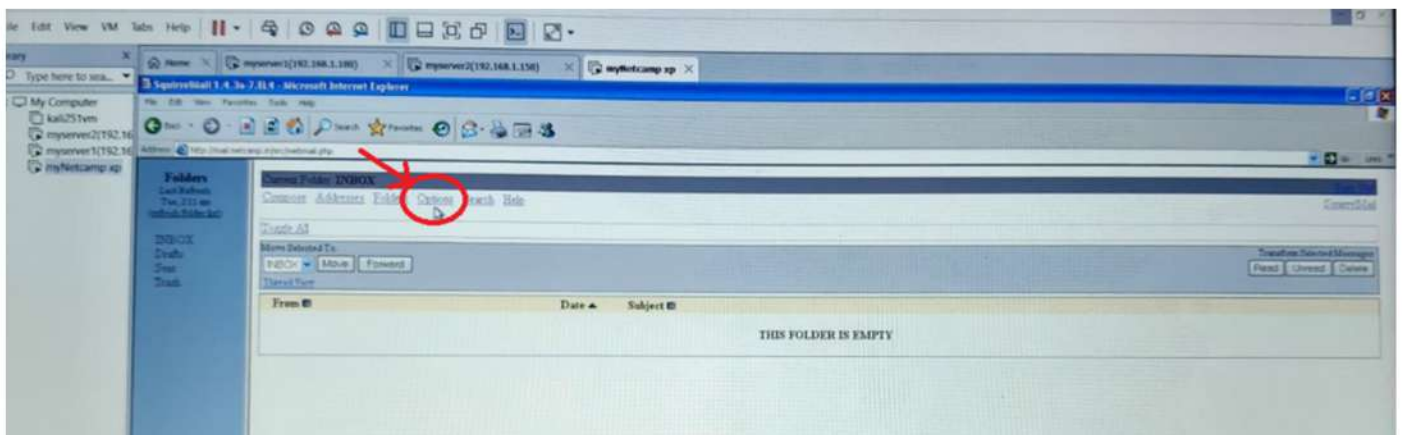
Please design and implement the same.

USER LOGIN IN WEBMIN

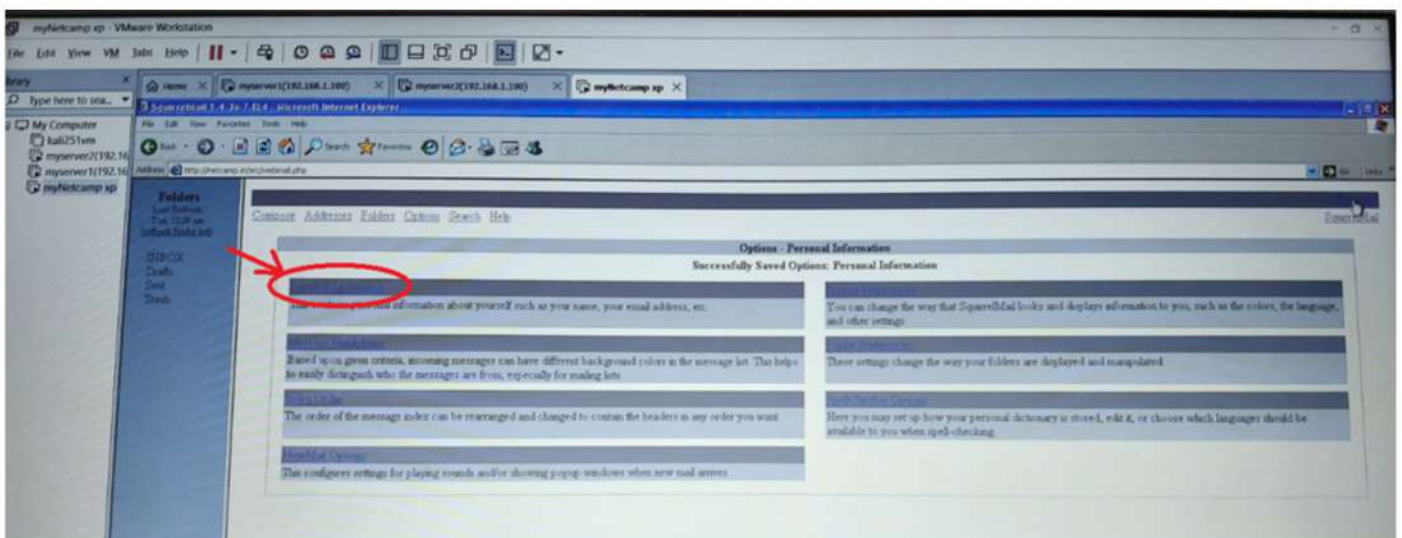
1.Login as user and enter the password



2.After login click on options



3.Click on personal details



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

The screenshot shows a web browser window with the address bar displaying 'http://netcamp.in/submit.php'. The page title is 'Options - Personal Information'. The form contains the following fields and options:

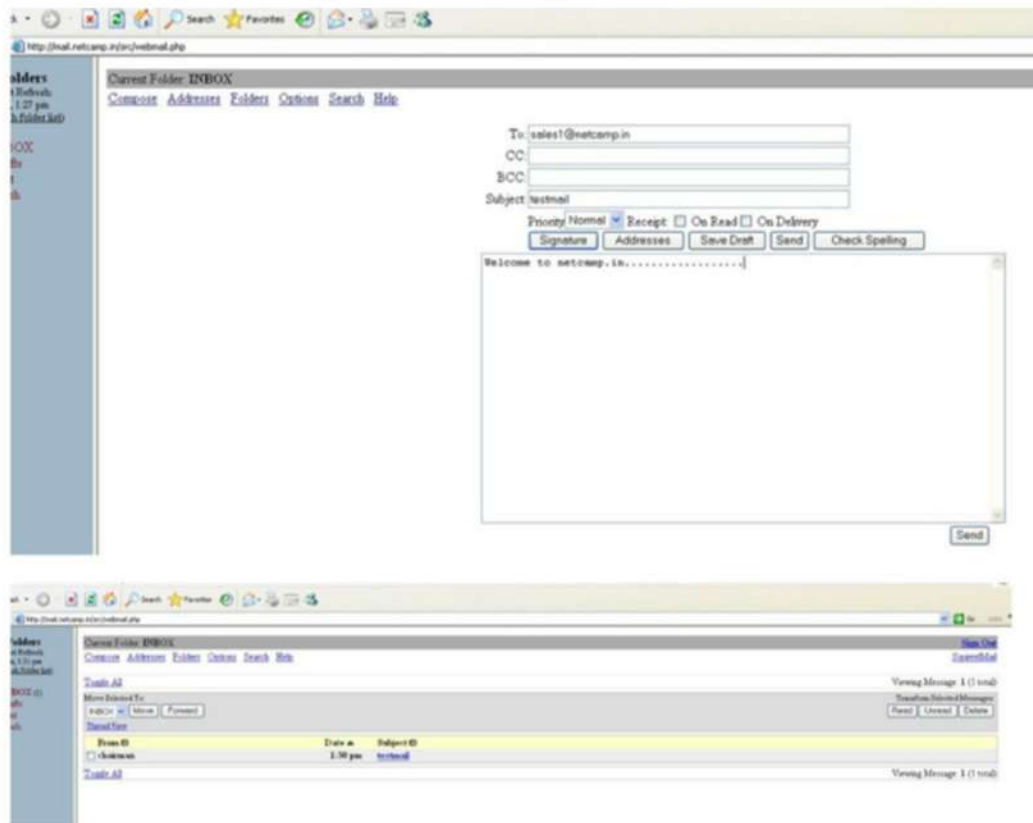
- Full Name:** chrisman
- Email Address:** chrisman@netcamp.in
- Reply To:** (empty)
- Signature:** (empty)
- Multiple Identities:** [Edit Advanced Identities](#) (discards changes made on this form so far)
- Your current timezone:** Same as server
- Reply Citation Style:** No Citation
- User-Defined Citation Start:** (empty)
- User-Defined Citation End:** (empty)
- Use Signature:** ☐ Yes ☒ No
- Prefix Signature with '---':** ☐ Yes ☒ No
- Submit:** (button, highlighted with a red circle and a red arrow)

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

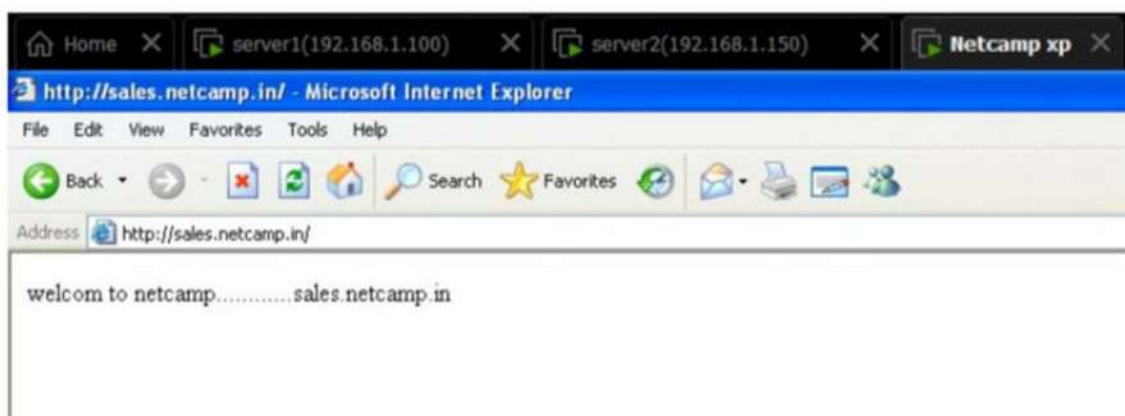
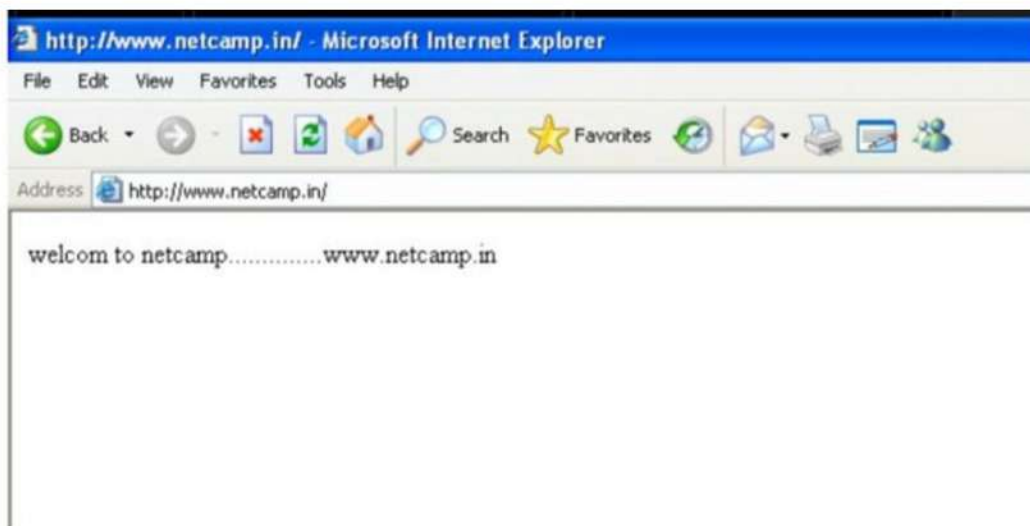
- sales1 : -sales1@netcamp.in
- sales2 : -sales2@netcamp.in
- research1 : -research1@netcamp.in
- research2 : -research2@netcamp.in
- accounts1 : -accounts1@netcamp.in
- accounts2 : -accounts2@netcamp.in

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

 Data-(full access 757)

 Driver-> department-read access only 755

(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-----