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**Subject :- Linux Server Administration
(USCSP502)**

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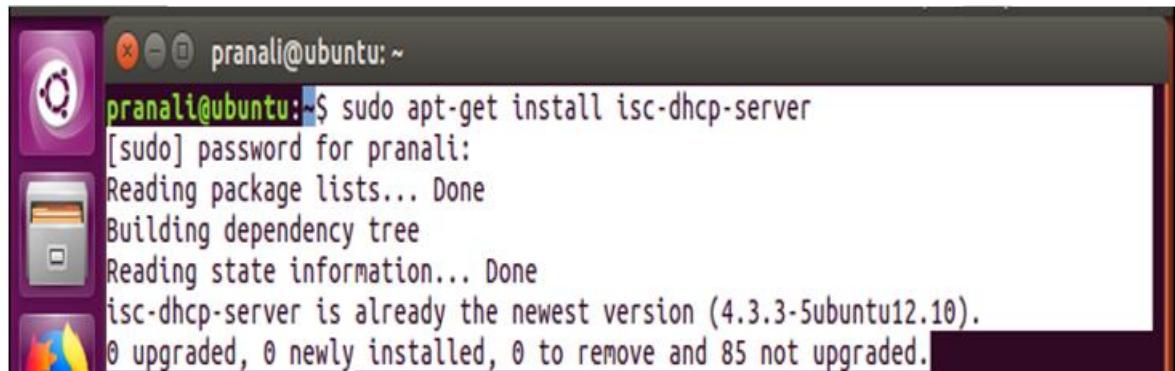
Practical No.: - 1

Aim: - Install DHCP Server in Ubuntu 16.04. Configure DHCP Server, Configure DHCP

(Dynamic Host Configuration Protocol) Server.

Command:- Sudo apt-get install isc-dhcp-server

Output: -



The image shows a terminal window from an Ubuntu desktop environment. The window title bar says "pranali@ubuntu: ~". The terminal content shows the following command and its execution:

```
pranali@ubuntu:~$ sudo apt-get install isc-dhcp-server
[sudo] password for pranali:
Reading package lists... Done
Building dependency tree
Reading state information... Done
isc-dhcp-server is already the newest version (4.3.3-5ubuntu12.10).
0 upgraded, 0 newly installed, 0 to remove and 85 not upgraded.
```

Practical No.:2

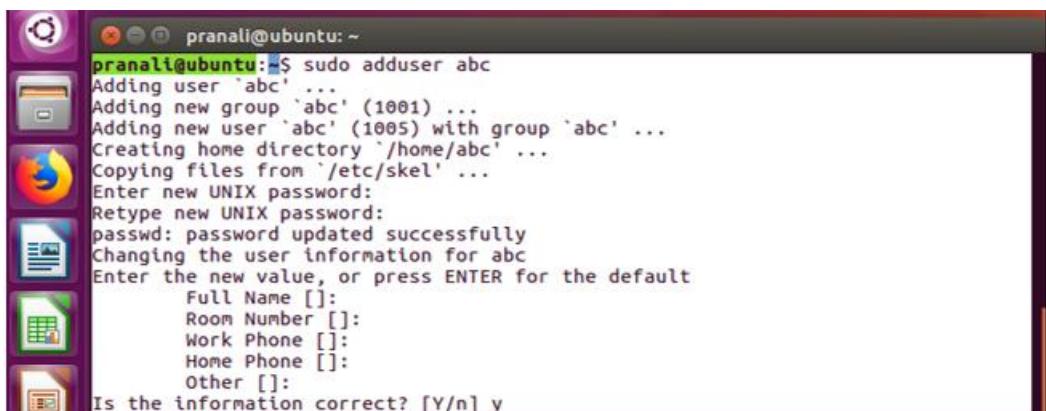
Aim: - Initial settings: Add a User, Network Settings, Change to static IP address, Disable IPv6 if not needed , Configure Services, display the list of services which are running

Disable IPv6 if not needed , Configure Services, display the list of services which are running

Sudo Settings

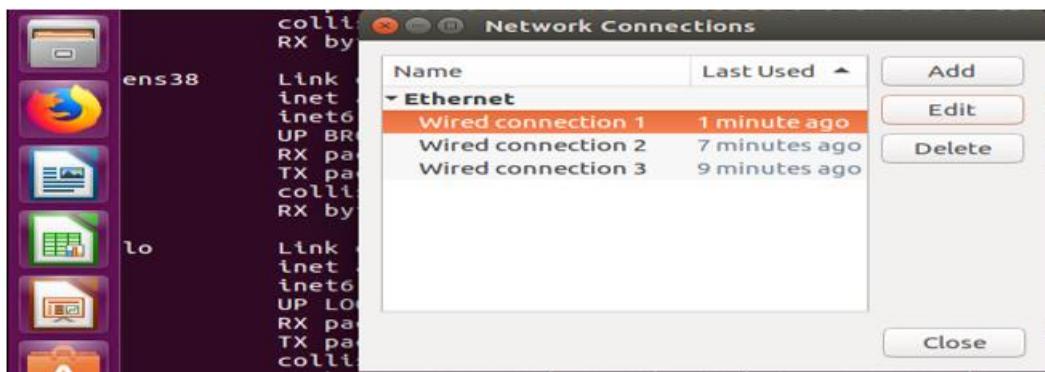
1) Add user:-

COMMAND: - sudo adduser abc

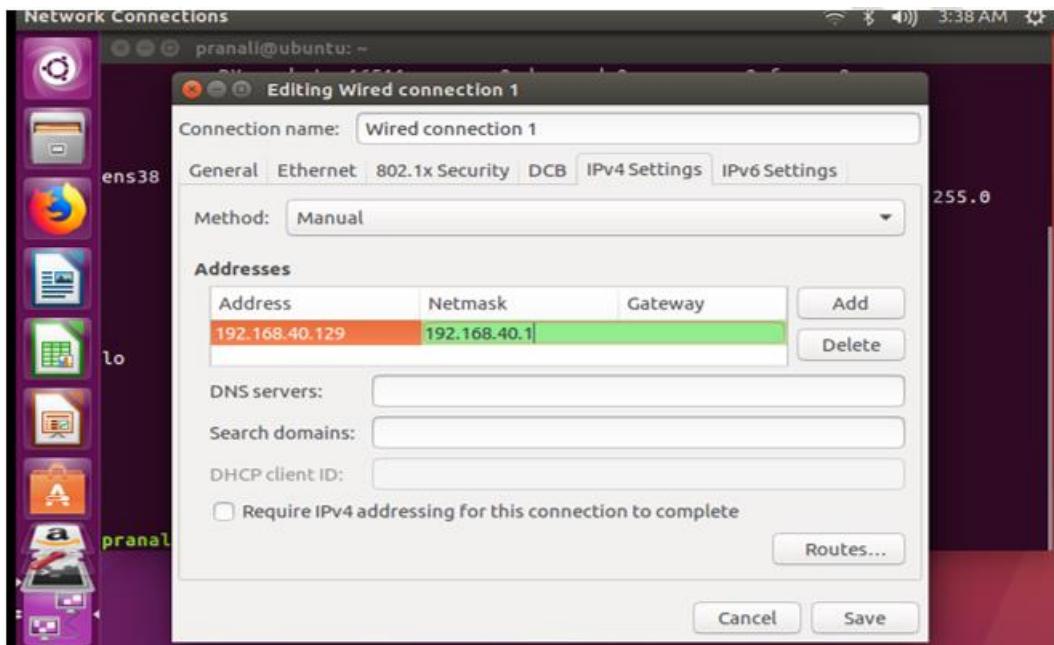


```
pranali@ubuntu:~$ sudo adduser abc
Adding user `abc' ...
Adding new group `abc' (1001) ...
Adding new user `abc' (1005) with group `abc' ...
Creating home directory `/home/abc' ...
Copying files from `/etc/skel' ...
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
Changing the user information for abc
Enter the new value, or press ENTER for the default
    Full Name []:
    Room Number []:
    Work Phone []:
    Home Phone []:
    Other []:
Is the information correct? [Y/n] y
```

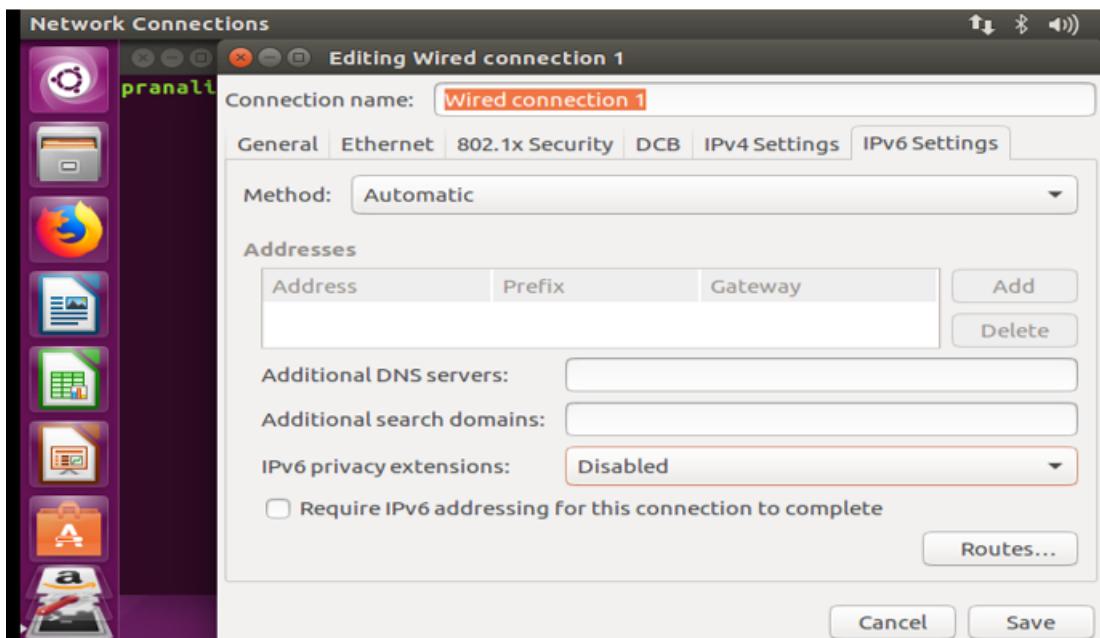
2) Network setting:-



Gives the ip address default gateway

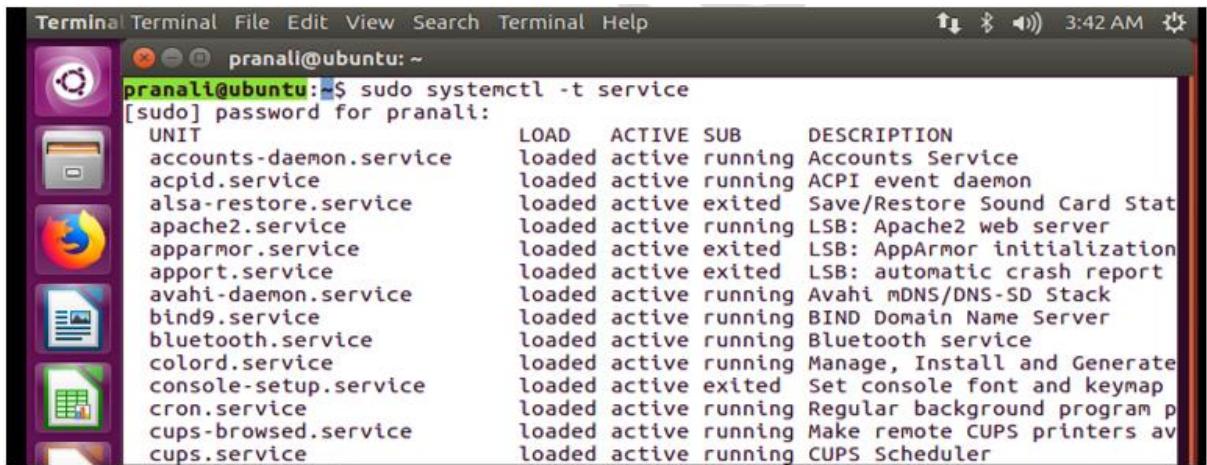


Disable ipv6



list out the all service and configuration service

Command:- sudo systemctl -t service

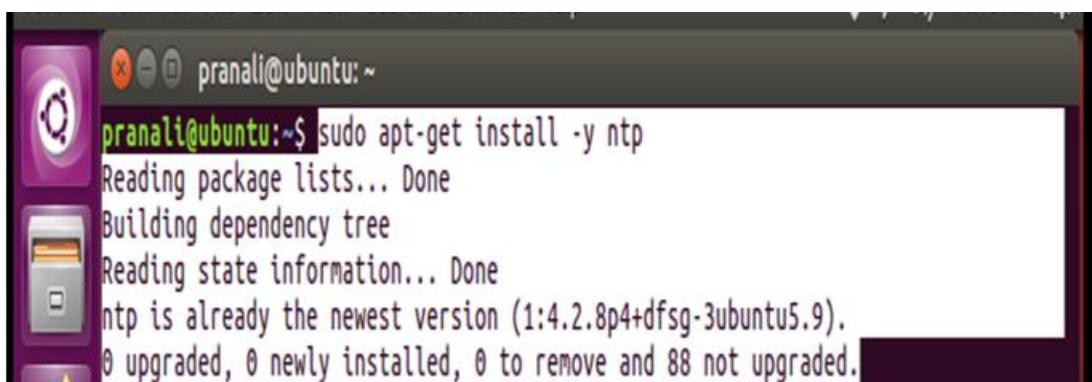
A screenshot of a Linux desktop environment, specifically Ubuntu, showing a terminal window. The terminal window has a title bar "Terminal" and a menu bar "File Edit View Search Terminal Help". The status bar at the bottom right shows "3:42 AM". The terminal content is as follows:

```
pranali@ubuntu:~$ sudo systemctl -t service
[sudo] password for pranali:
UNIT           LOAD  ACTIVE SUB    DESCRIPTION
accounts-daemon.service   loaded active running Accounts Service
acpid.service        loaded active running ACPI event daemon
alsa-restore.service   loaded active exited  Save/Restore Sound Card State
apache2.service       loaded active running LSB: Apache2 web server
apparmor.service      loaded active exited  LSB: AppArmor initialization
apport.service        loaded active exited  LSB: automatic crash report
avahi-daemon.service   loaded active running Avahi mDNS/DNS-SD Stack
bind9.service         loaded active running BIND Domain Name Server
bluetooth.service     loaded active running Bluetooth service
colord.service        loaded active running Manage, Install and Generate
console-setup.service  loaded active exited  Set console font and keymap
cron.service          loaded active running Regular background program p
cups-browsed.service   loaded active running Make remote CUPS printers av
cups.service          loaded active running CUPS Scheduler
```

Practical No:- 3

Aim:- Configure NTP Server (NTPd), Install and Configure NTPd, Configure NTP Client
(Ubuntu and Windows)

1) Command:- sudo apt-get install -y ntp



```
pranali@ubuntu:~$ sudo apt-get install -y ntp
Reading package lists... Done
Building dependency tree
Reading state information... Done
ntp is already the newest version (1:4.2.8p4+dfsg-3ubuntu5.9).
0 upgraded, 0 newly installed, 0 to remove and 88 not upgraded.
```

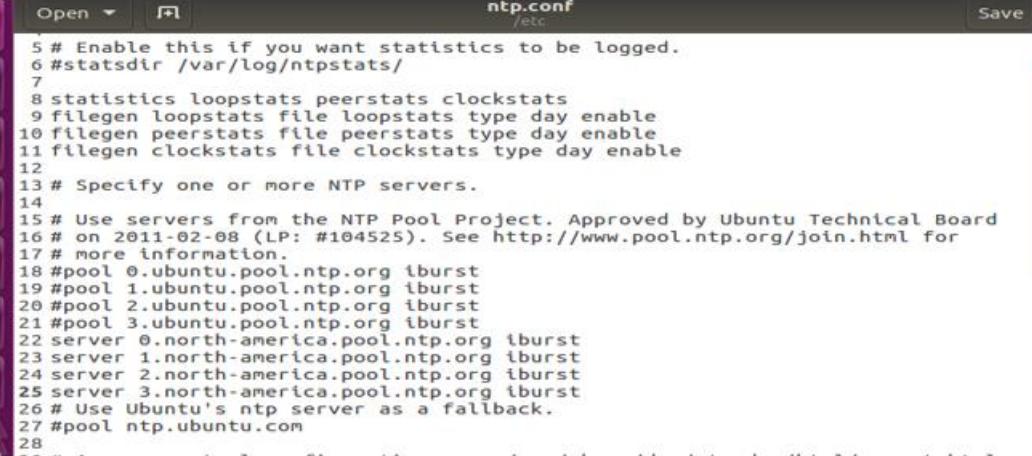
2) Command:- sudo gedit /etc/ntp.conf



```
ntp.conf
/etc
Save
12
13 # Specify one or more NTP servers.
14
15 # Use servers from the NTP Pool Project. Approved by Ubuntu Technical Board
16 # on 2011-02-08 (LP: #104525). See http://www.pool.ntp.org/join.html for
17 # more information.
18 #pool 0.ubuntu.pool.ntp.org iburst
19 #pool 1.ubuntu.pool.ntp.org iburst
20 #pool 2.ubuntu.pool.ntp.org iburst
21 #pool 3.ubuntu.pool.ntp.org iburst
22
23 # Use Ubuntu's ntp server as a fallback.
24 pool ntp.ubuntu.com
25
26 # Access control configuration; see /usr/share/doc/ntp-doc/html/accept.html
# for
27 # details. The web page <http://support.ntp.org/bin/view/Support/
```

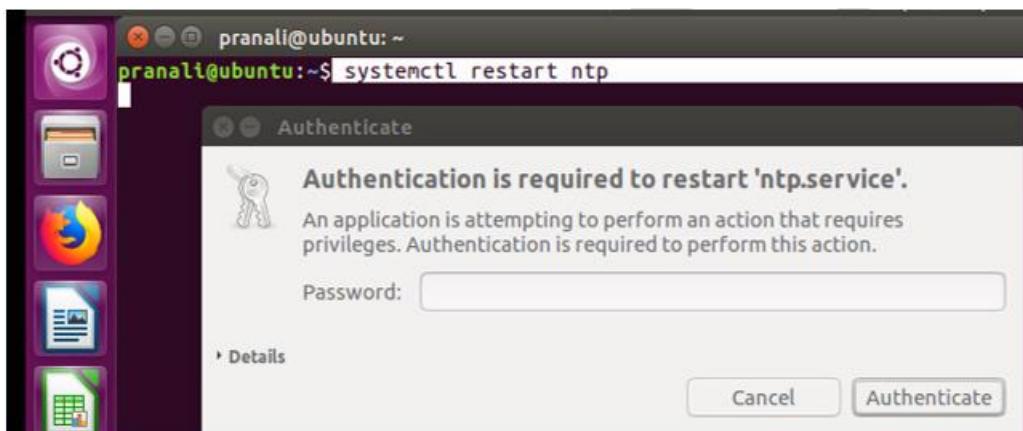
comment the line number 18 to 21.
And write the following lines: -
server 0.north-america.pool.ntp.org iburst

```
server 1.north-america.pool.ntp.org iburst
server 2.north-america.pool.ntp.org iburst
server 3.north-america.pool.ntp.org iburst
```

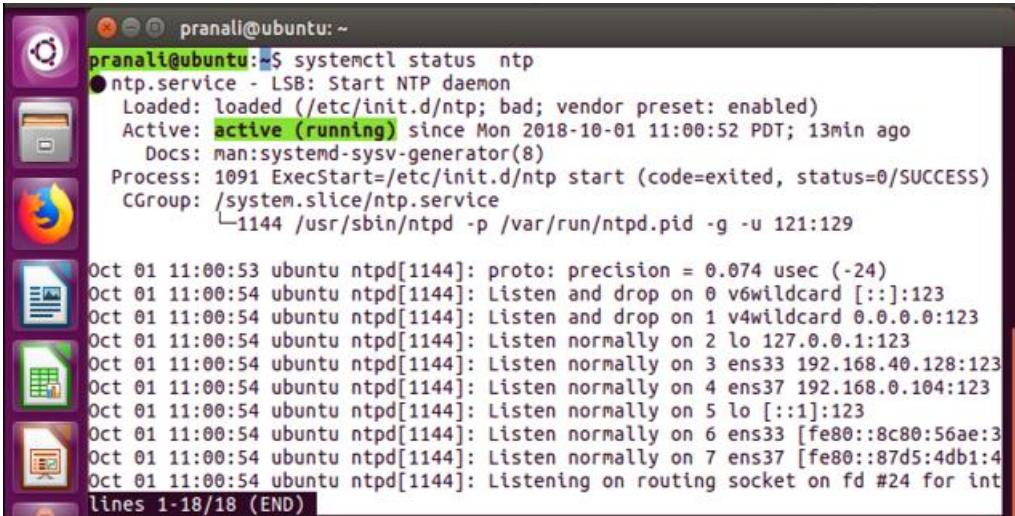


```
ntp.conf /etc
5 # Enable this if you want statistics to be logged.
6 #statsdir /var/log/ntpstats/
7
8 statistics loopstats peerstats clockstats
9 filegen loopstats file loopstats type day enable
10 filegen peerstats file peerstats type day enable
11 filegen clockstats file clockstats type day enable
12
13 # Specify one or more NTP servers.
14
15 # Use servers from the NTP Pool Project. Approved by Ubuntu Technical Board
16 # on 2011-02-08 (LP: #104525). See http://www.pool.ntp.org/join.html for
17 # more information.
18 #pool 0.ubuntu.pool.ntp.org iburst
19 #pool 1.ubuntu.pool.ntp.org iburst
20 #pool 2.ubuntu.pool.ntp.org iburst
21 #pool 3.ubuntu.pool.ntp.org iburst
22 server 0.north-america.pool.ntp.org iburst
23 server 1.north-america.pool.ntp.org iburst
24 server 2.north-america.pool.ntp.org iburst
25 server 3.north-america.pool.ntp.org iburst
26 # Use Ubuntu's ntp server as a fallback.
27 #pool ntp.ubuntu.com
28
```

3) Command:- systemctl restart ntp



4) Command:- systemctl status ntp



```
pranali@ubuntu:~$ systemctl status ntp
● ntp.service - LSB: Start NTP daemon
  Loaded: loaded (/etc/init.d/ntp; bad; vendor preset: enabled)
  Active: active (running) since Mon 2018-10-01 11:00:52 PDT; 13min ago
    Docs: man:systemd-sysv-generator(8)
   Process: 1091 ExecStart=/etc/init.d/ntp start (code=exited, status=0/SUCCESS)
   CGroup: /system.slice/ntp.service
           └─1144 /usr/sbin/ntpd -p /var/run/ntpd.pid -g -u 121:129

Oct 01 11:00:53 ubuntu ntpd[1144]: proto: precision = 0.074 usec (-24)
Oct 01 11:00:54 ubuntu ntpd[1144]: Listen and drop on 0 v6wildcard [::]:123
Oct 01 11:00:54 ubuntu ntpd[1144]: Listen and drop on 1 v4wildcard 0.0.0.0:123
Oct 01 11:00:54 ubuntu ntpd[1144]: Listen normally on 2 lo 127.0.0.1:123
Oct 01 11:00:54 ubuntu ntpd[1144]: Listen normally on 3 ens33 192.168.40.128:123
Oct 01 11:00:54 ubuntu ntpd[1144]: Listen normally on 4 ens37 192.168.0.104:123
Oct 01 11:00:54 ubuntu ntpd[1144]: Listen normally on 5 lo [::1]:123
Oct 01 11:00:54 ubuntu ntpd[1144]: Listen normally on 6 ens33 [fe80::8c80:56ae:3]
Oct 01 11:00:54 ubuntu ntpd[1144]: Listen normally on 7 ens37 [fe80::87d5:4db1:4]
Oct 01 11:00:54 ubuntu ntpd[1144]: Listening on routing socket on fd #24 for int
lines 1-18/18 (END)
```

Practical No:- 4

SSH Server: Password Authentication

Aim:- Configure SSH Server to manage a server from the remote computer, SSH Client:

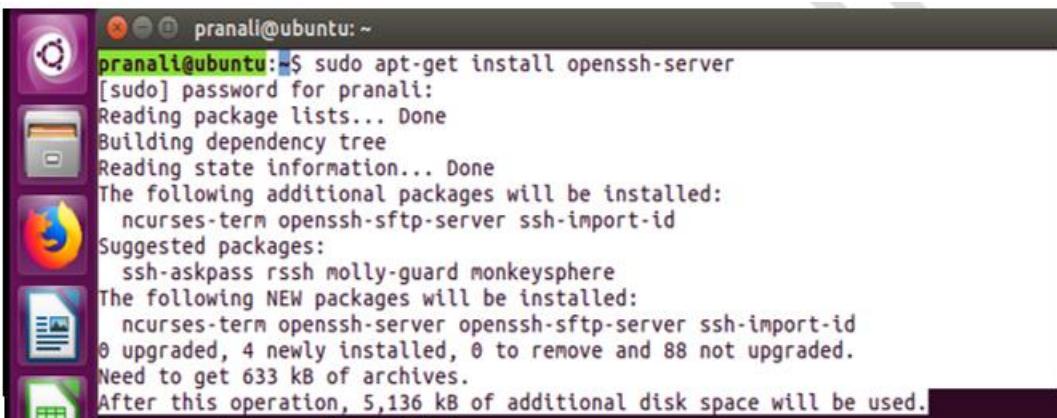
(Ubuntu and Windows)

Open the two ubuntu system one is client and other is server.

Command:-

Run in server:-

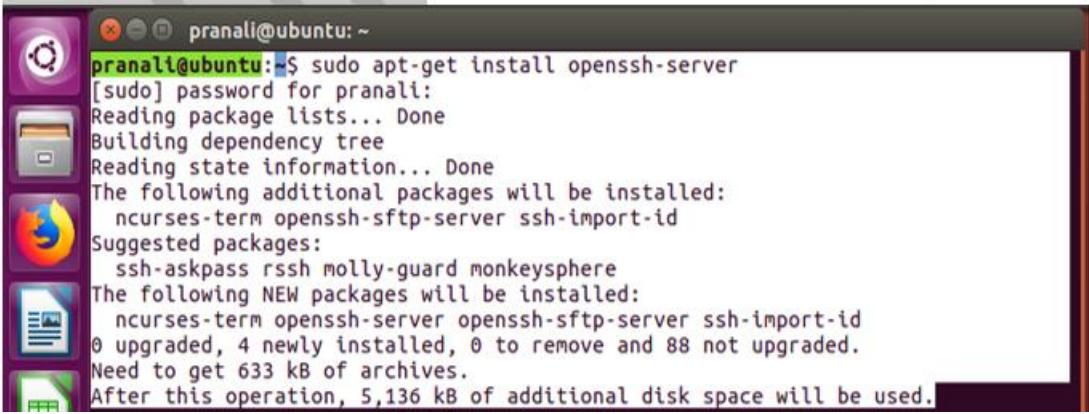
- 1) Sudo apt-get install openssh-server



```
pranali@ubuntu:~$ sudo apt-get install openssh-server
[sudo] password for pranali:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  ncurses-term openssh-sftp-server ssh-import-id
Suggested packages:
  ssh-askpass rssh molly-guard monkeysphere
The following NEW packages will be installed:
  ncurses-term openssh-server openssh-sftp-server ssh-import-id
0 upgraded, 4 newly installed, 0 to remove and 88 not upgraded.
Need to get 633 kB of additional disk space.
After this operation, 5,136 kB of additional disk space will be used.
```

Run as client:-

2) Sudo apt-get install openssh-server



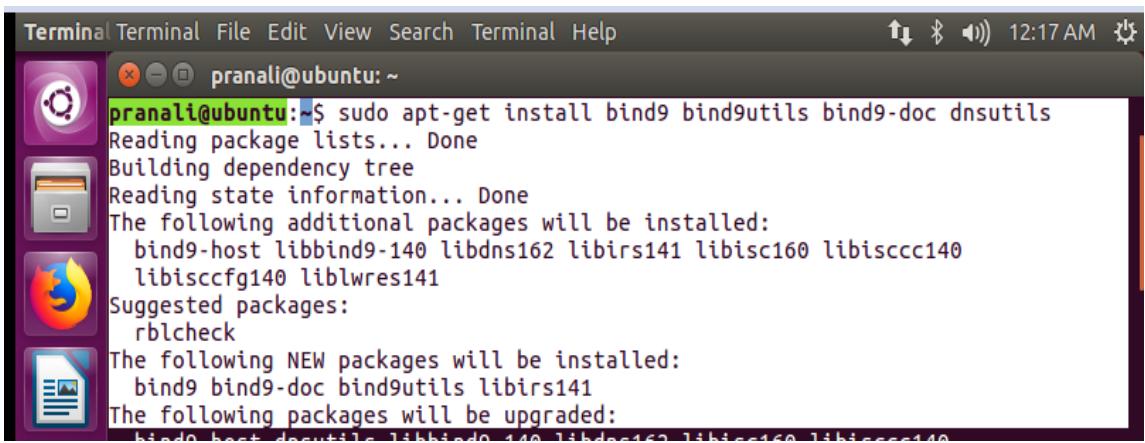
```
pranali@ubuntu:~$ sudo apt-get install openssh-server
[sudo] password for pranali:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  ncurses-term openssh-sftp-server ssh-import-id
Suggested packages:
  ssh-askpass rsync molly-guard monkeysphere
The following NEW packages will be installed:
  ncurses-term openssh-server openssh-sftp-server ssh-import-id
0 upgraded, 4 newly installed, 0 to remove and 88 not upgraded.
Need to get 633 kB of additional disk space.
After this operation, 5,136 kB of additional disk space will be used.
```

Practical No:- 5

Aim:- Install DNS Server BIND, Configure DNS server which resolves domain name or IP

address, Install BIND 9, Configure BIND.

1) Command:- sudo apt-get install bind9 bind9utils bind9-doc dnsutils



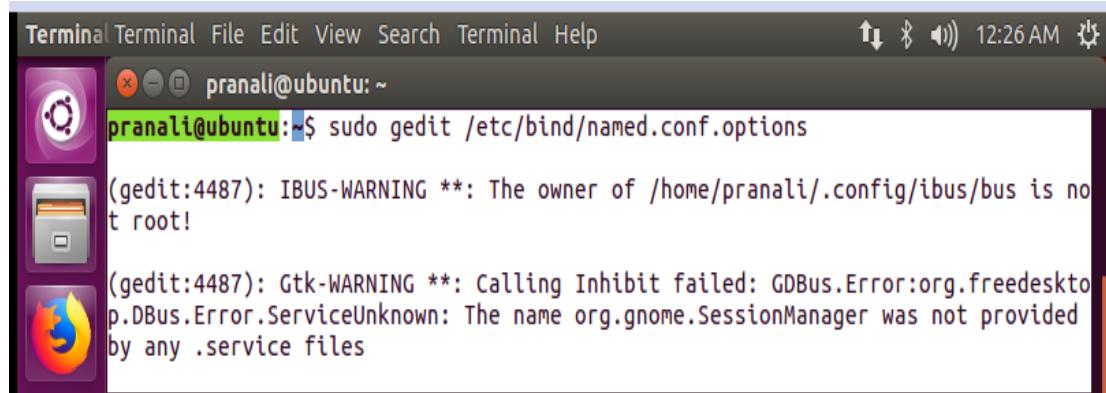
```
Terminal Terminal File Edit View Search Terminal Help
pranali@ubuntu:~$ sudo apt-get install bind9 bind9utils bind9-doc dnsutils
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  bind9-host libbind9-140 libdns162 libirs141 libisc160 libisccc140
  libisccfg140 liblwres141
Suggested packages:
  rblcheck
The following NEW packages will be installed:
  bind9 bind9-doc bind9utils libirs141
The following packages will be upgraded:
  bind9-host dnsutils libbind9-140 libdns162 libisc160 libisccc140
```

2) Command:- sudo cp /etc/bind/named.conf.options /etc/bind/named.conf.options.bak



```
pranali@ubuntu:~$ sudo cp /etc/bind/named.conf.options /etc/bind/named.conf.options.bak
pranali@ubuntu:~$
```

3) Command:- sudo gedit /etc/bind/named.conf.options

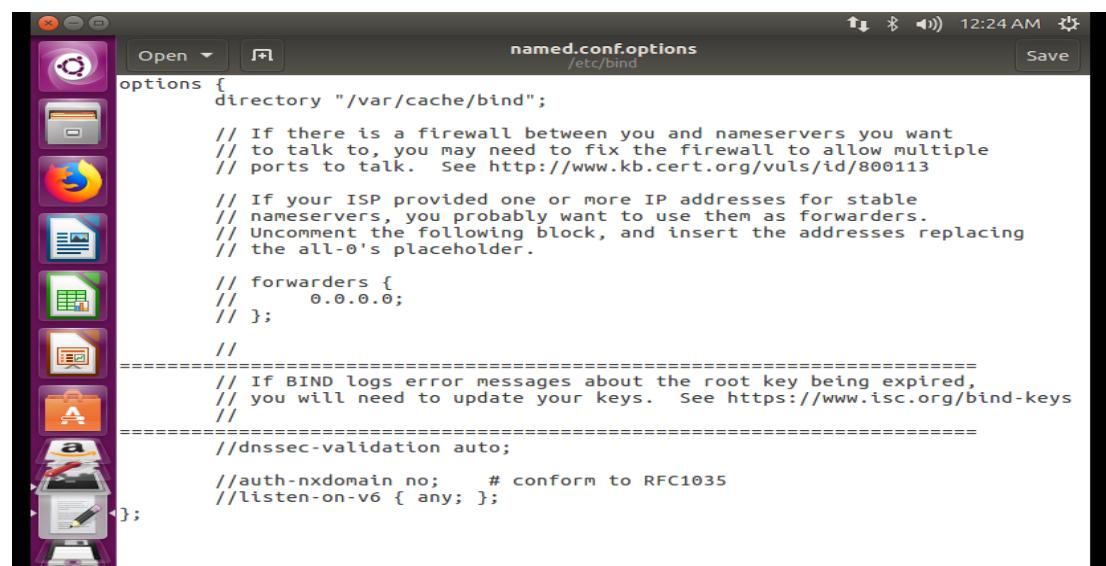


```
Terminal Terminal File Edit View Search Terminal Help
pranali@ubuntu:~$ sudo gedit /etc/bind/named.conf.options

(gedit:4487): IBUS-WARNING **: The owner of /home/pranali/.config/ibus/bus is not root!

(gedit:4487): Gtk-WARNING **: Calling Inhibit failed: GDBus.Error:org.freedesktop.DBus.Error.ServiceUnknown: The name org.gnome.SessionManager was not provided by any .service files
```

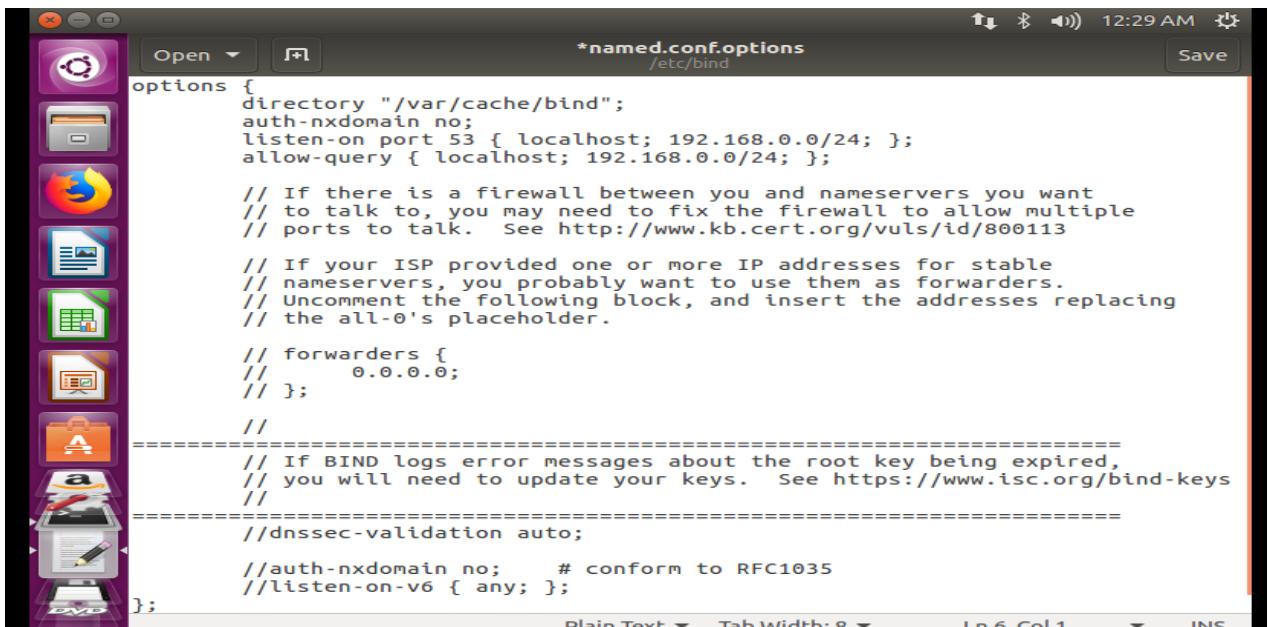
Comment the line number 25 to 28



```
named.conf.options
/etc/bind
options {
    directory "/var/cache/bind";
    // If there is a firewall between you and nameservers you want
    // to talk to, you may need to fix the firewall to allow multiple
    // ports to talk. See http://www.kb.cert.org/vuls/id/800113
    // If your ISP provided one or more IP addresses for stable
    // nameservers, you probably want to use them as forwarders.
    // Uncomment the following block, and insert the addresses replacing
    // the all-0's placeholder.
    // forwarders {
    //     0.0.0.0;
    // };
    //
===== // If BIND logs error messages about the root key being expired,
===== // you will need to update your keys. See https://www.isc.org/bind-keys
===== //dnssec-validation auto;
    //auth-nxdomain no;      # conform to RFC1035
    //listen-on-v6 { any; };
};
```

Write the text in line number 3

```
auth-nxdomain no;
listen-on port 53 { localhost; 192.168.0.0/24; };
allow-query { localhost; 192.168.0.0/24; };
```



```
*named.conf.options
/etc/bind

options {
    directory "/var/cache/bind";
    auth-nxdomain no;
    listen-on port 53 { localhost; 192.168.0.0/24; };
    allow-query { localhost; 192.168.0.0/24; };

    // If there is a firewall between you and nameservers you want
    // to talk to, you may need to fix the firewall to allow multiple
    // ports to talk. See http://www.kb.cert.org/vuls/id/800113

    // If your ISP provided one or more IP addresses for stable
    // nameservers, you probably want to use them as forwarders.
    // Uncomment the following block, and insert the addresses replacing
    // the all-0's placeholder.

    // forwarders {
    //     0.0.0.0;
    // };

    //
    =====
    // If BIND logs error messages about the root key being expired,
    // you will need to update your keys. See https://www.isc.org/bind-keys
    //
    =====
    //dnssec-validation auto;

    //auth-nxdomain no;    # conform to RFC1035
    //listen-on-v6 { any; };

};
```

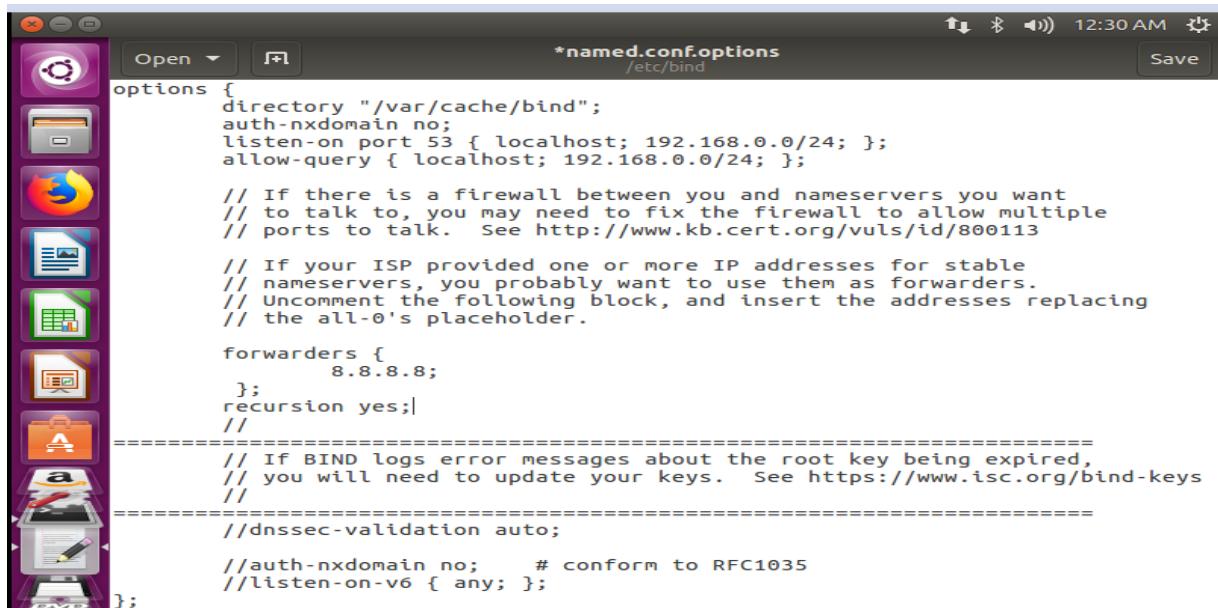
Change

forwarders {

 8.8.8.8;

};

recursion yes;



```
*named.conf.options
/etc/bind

options {
    directory "/var/cache/bind";
    auth-nxdomain no;
    listen-on port 53 { localhost; 192.168.0.0/24; };
    allow-query { localhost; 192.168.0.0/24; };

    // If there is a firewall between you and nameservers you want
    // to talk to, you may need to fix the firewall to allow multiple
    // ports to talk. See http://www.kb.cert.org/vuls/id/800113

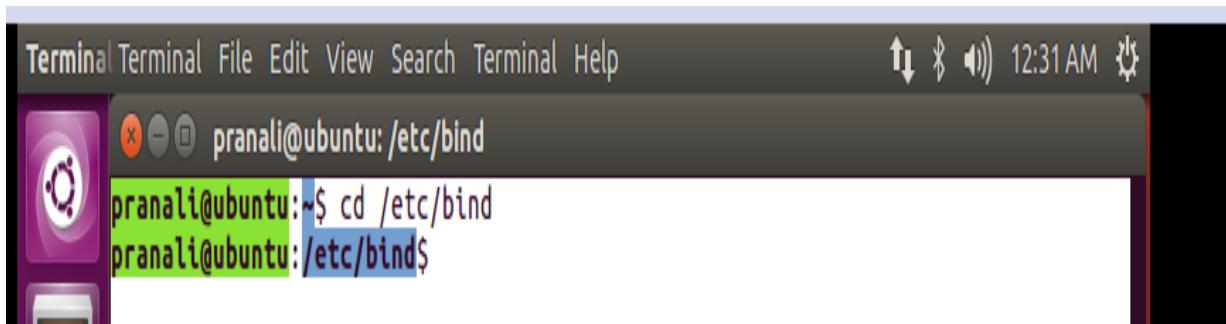
    // If your ISP provided one or more IP addresses for stable
    // nameservers, you probably want to use them as forwarders.
    // Uncomment the following block, and insert the addresses replacing
    // the all-0's placeholder.

    forwarders {
        8.8.8.8;
    };
    recursion yes;
    //
    =====
    // If BIND logs error messages about the root key being expired,
    // you will need to update your keys. See https://www.isc.org/bind-keys
    //
    =====
    //dnssec-validation auto;

    //auth-nxdomain no;    # conform to RFC1035
    //listen-on-v6 { any; };

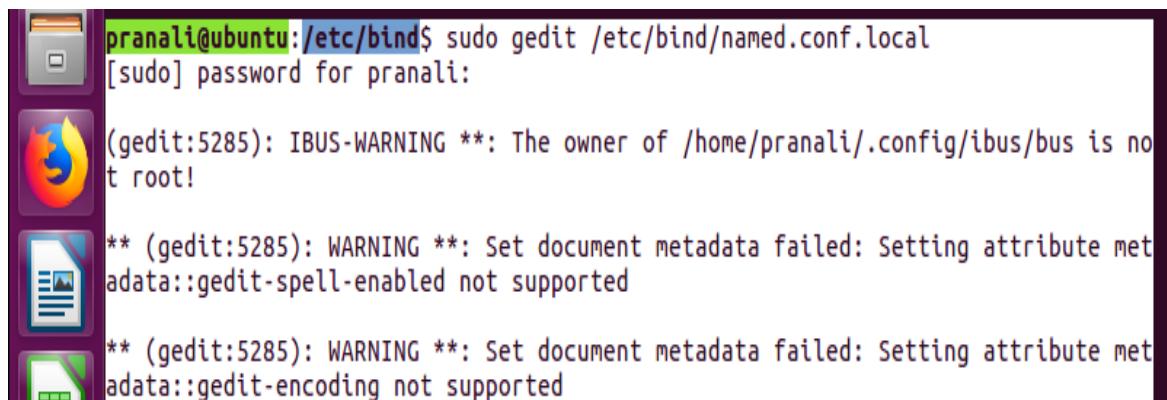
};
```

4) Command:- cd /etc/bind



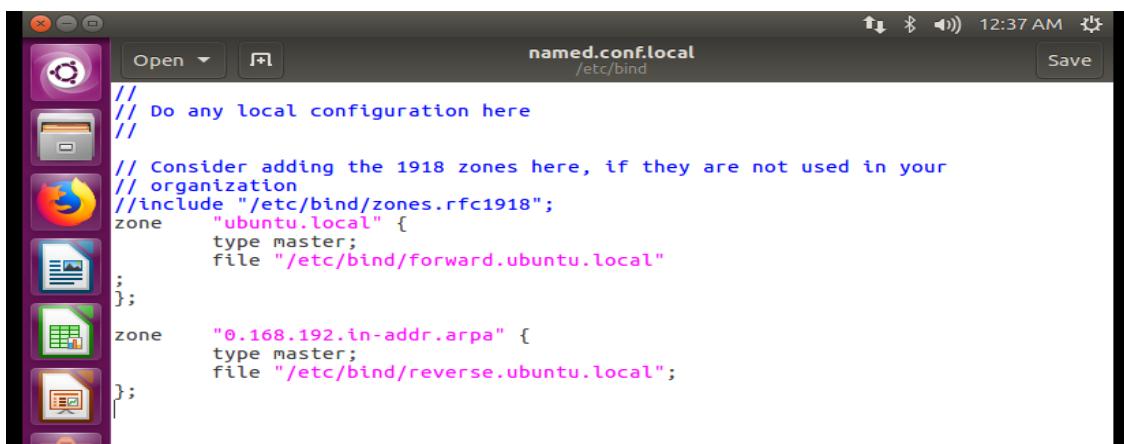
A screenshot of a Linux desktop environment, specifically Ubuntu. A terminal window is open in the top panel. The title bar says "Terminal". The command "pranali@ubuntu:~\$ cd /etc/bind" is typed into the terminal, and the output "pranali@ubuntu:/etc/bind\$" is shown below it. The desktop background shows the standard Ubuntu wallpaper.

5) Command:- sudo gedit /etc/bind/named.conf.local



A screenshot of a Linux desktop environment. A terminal window is open in the top panel with the command "sudo gedit /etc/bind/named.conf.local" and its password prompt. Below the terminal, a Gedit window is open, displaying the contents of the named.conf.local file. The file contains configuration for DNS zones, including "ubuntu.local" and "0.168.192.in-addr.arpa". The desktop background shows the standard Ubuntu wallpaper.

Write the following code



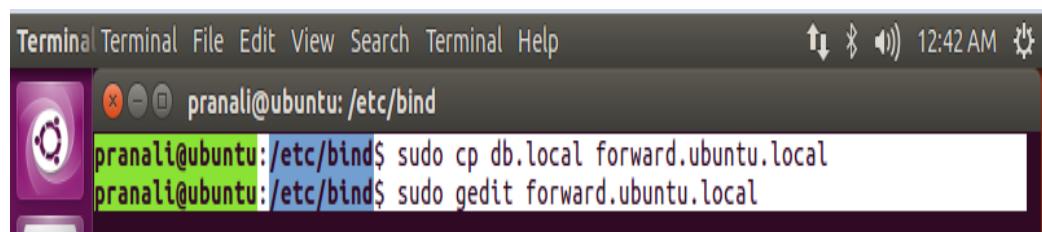
A screenshot of a Gedit window showing the contents of the "/etc/bind/named.conf.local" file. The file contains the following configuration:

```
// Do any local configuration here
//
// Consider adding the 1918 zones here, if they are not used in your
// organization
//include "/etc/bind/zones.rfc1918";
zone "ubuntu.local" {
    type master;
    file "/etc/bind/forward/ubuntu.local";
};

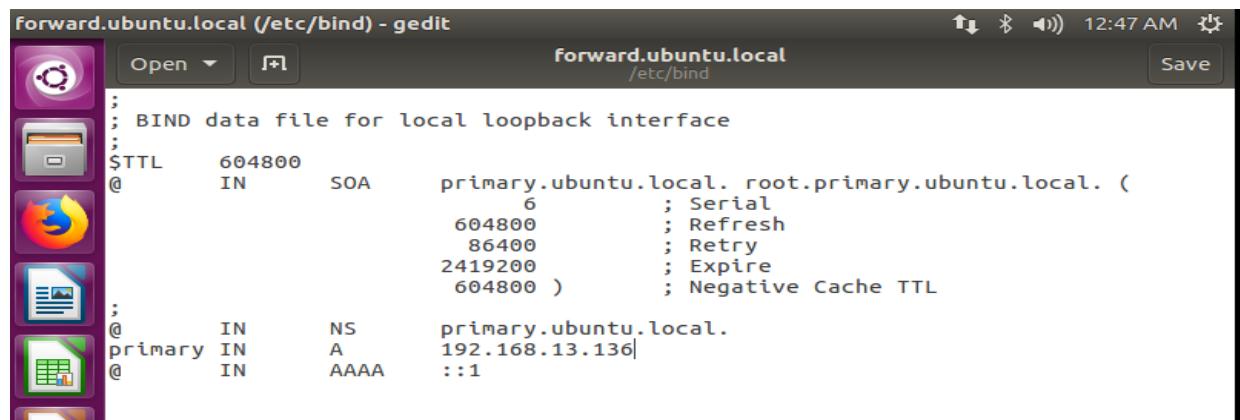
zone "0.168.192.in-addr.arpa" {
    type master;
    file "/etc/bind/reverse/ubuntu.local";
};
```

6) Command:- sudo cp db.local forward.ubuntu.local

7) Command:- sudo gedit forward.ubuntu.local



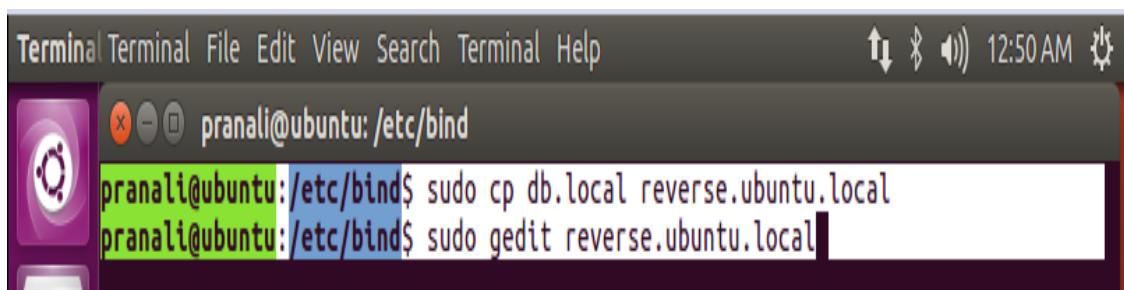
```
Terminal Terminal File Edit View Search Terminal Help
pranali@ubuntu:/etc/bind$ sudo cp db.local forward.ubuntu.local
pranali@ubuntu:/etc/bind$ sudo gedit forward.ubuntu.local
```



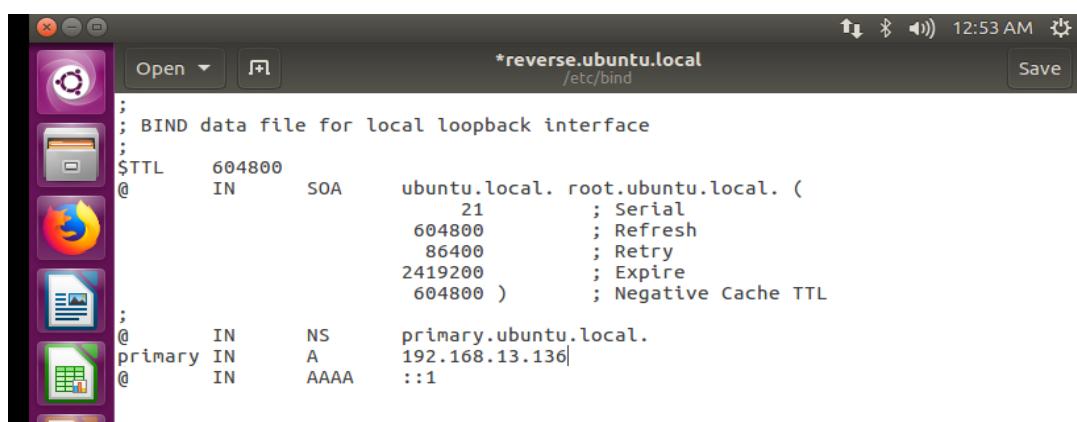
```
; BIND data file for local loopback interface
;
$TTL    604800
@       IN      SOA    primary.ubuntu.local. root.primary.ubuntu.local. (
                      6           ; Serial
                      604800        ; Refresh
                      86400         ; Retry
                     2419200        ; Expire
                     604800 )       ; Negative Cache TTL
;
@       IN      NS     primary.ubuntu.local.
primary IN      A      192.168.13.136
@       IN      AAAA   ::1
```

8) Command:- sudo cp db.local reverse.ubuntu.local

9) Command:- sudo gedit reverse.ubuntu.local



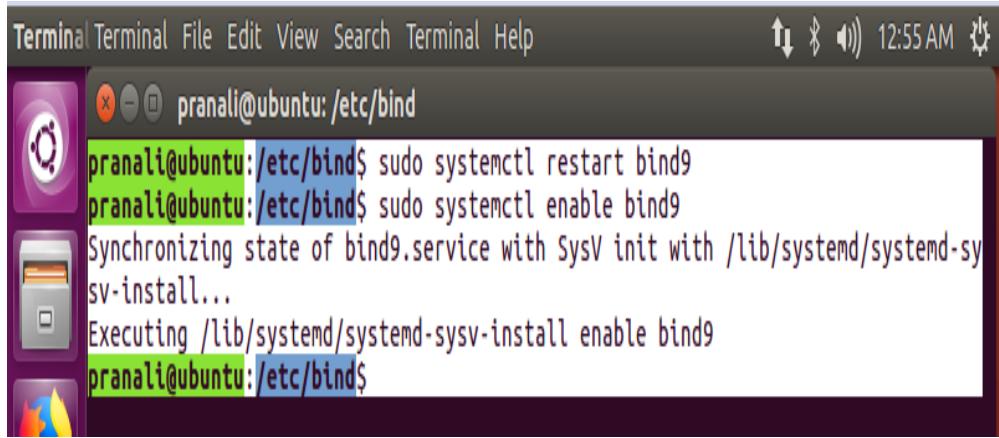
```
Terminal Terminal File Edit View Search Terminal Help
pranali@ubuntu:/etc/bind$ sudo cp db.local reverse.ubuntu.local
pranali@ubuntu:/etc/bind$ sudo gedit reverse.ubuntu.local
```



```
; BIND data file for local loopback interface
;
$TTL    604800
@       IN      SOA    ubuntu.local. root.ubuntu.local. (
                      21          ; Serial
                      604800        ; Refresh
                      86400         ; Retry
                     2419200        ; Expire
                     604800 )       ; Negative Cache TTL
;
@       IN      NS     primary.ubuntu.local.
primary IN      A      192.168.13.136
@       IN      AAAA   ::1
```

10) Command:- sudo systemctl restart bind9

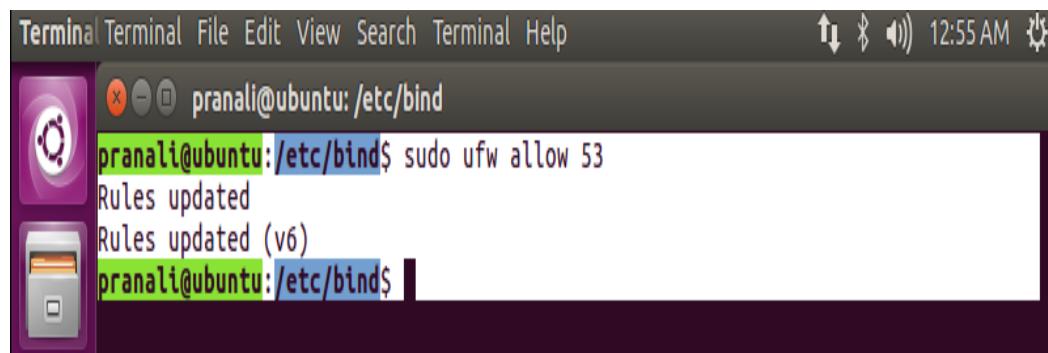
11) Command:- sudo systemctl enable bind9



A screenshot of a Linux desktop environment, likely Ubuntu, showing a terminal window. The terminal window title bar says "Terminal" and the user is at the prompt "pranali@ubuntu:/etc/bind". The terminal shows the following command execution:

```
pranali@ubuntu:/etc/bind$ sudo systemctl restart bind9
pranali@ubuntu:/etc/bind$ sudo systemctl enable bind9
Synchronizing state of bind9.service with SysV init with /lib/systemd/systemd-sy
sv-install...
Executing /lib/systemd/systemd-sysv-install enable bind9
pranali@ubuntu:/etc/bind$
```

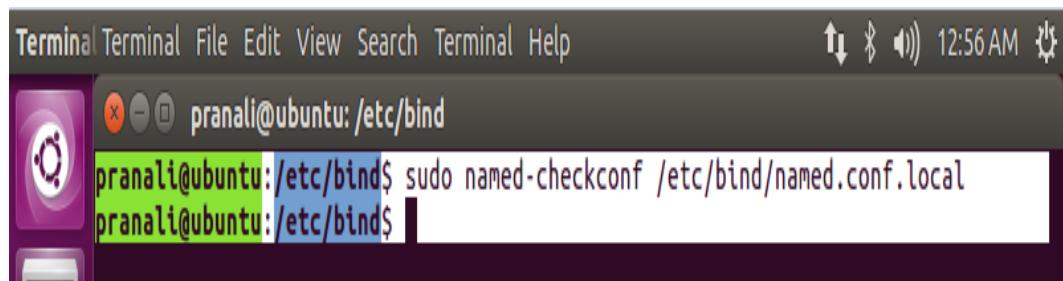
12) Command:- sudo ufw allow 53



A screenshot of a Linux desktop environment, likely Ubuntu, showing a terminal window. The terminal window title bar says "Terminal" and the user is at the prompt "pranali@ubuntu:/etc/bind". The terminal shows the following command execution:

```
pranali@ubuntu:/etc/bind$ sudo ufw allow 53
Rules updated
Rules updated (v6)
pranali@ubuntu:/etc/bind$
```

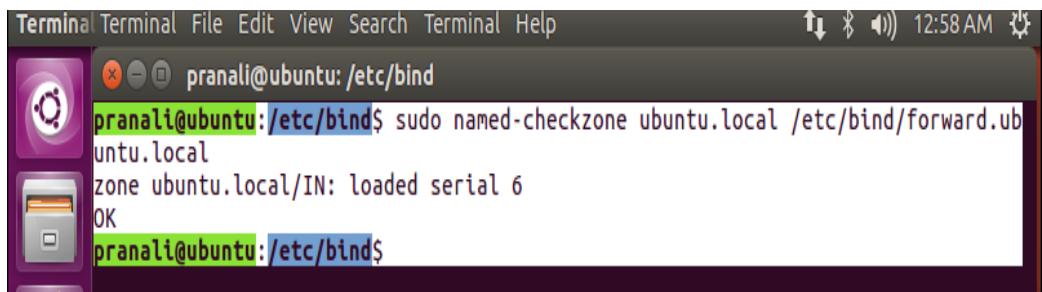
13) Command:- sudo named-checkconf etc/bind/named.conf.local



A screenshot of a Linux desktop environment, likely Ubuntu, showing a terminal window. The terminal window title bar says "Terminal" and the user is at the prompt "pranali@ubuntu:/etc/bind". The terminal shows the following command execution:

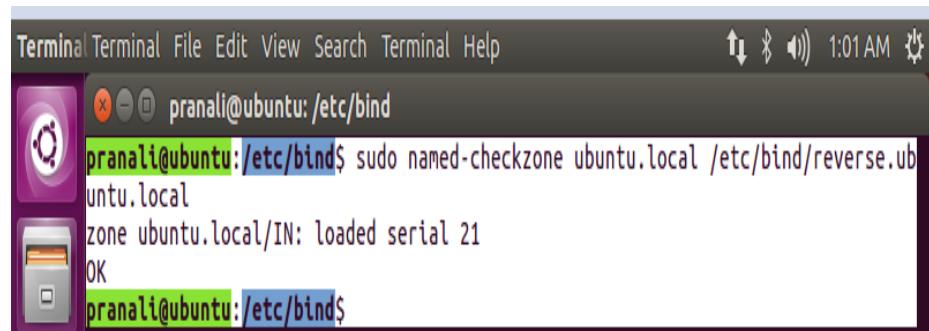
```
pranali@ubuntu:/etc/bind$ sudo named-checkconf /etc/bind/named.conf.local
pranali@ubuntu:/etc/bind$
```

14) Command:- sudo named –checkzone ubuntu.local /etc/bind/forward/ubuntu.local



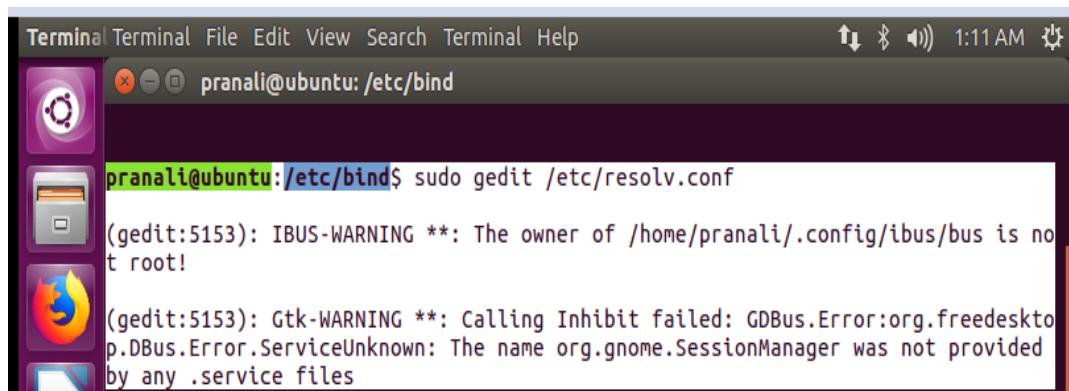
Terminal Terminal File Edit View Search Terminal Help
pranali@ubuntu:/etc/bind\$ sudo named-checkzone ubuntu.local /etc/bind/forward.ub
untu.local
zone ubuntu.local/IN: loaded serial 6
OK
pranali@ubuntu:/etc/bind\$

15) Command:-sudo named –checkzone ubuntu.local
/etc/bind/reverse.ubuntu.local



Terminal Terminal File Edit View Search Terminal Help
pranali@ubuntu:/etc/bind\$ sudo named-checkzone ubuntu.local /etc/bind/reverse.ub
untu.local
zone ubuntu.local/IN: loaded serial 21
OK
pranali@ubuntu:/etc/bind\$

16) Command:- sudo gedit /etc/resolv.conf

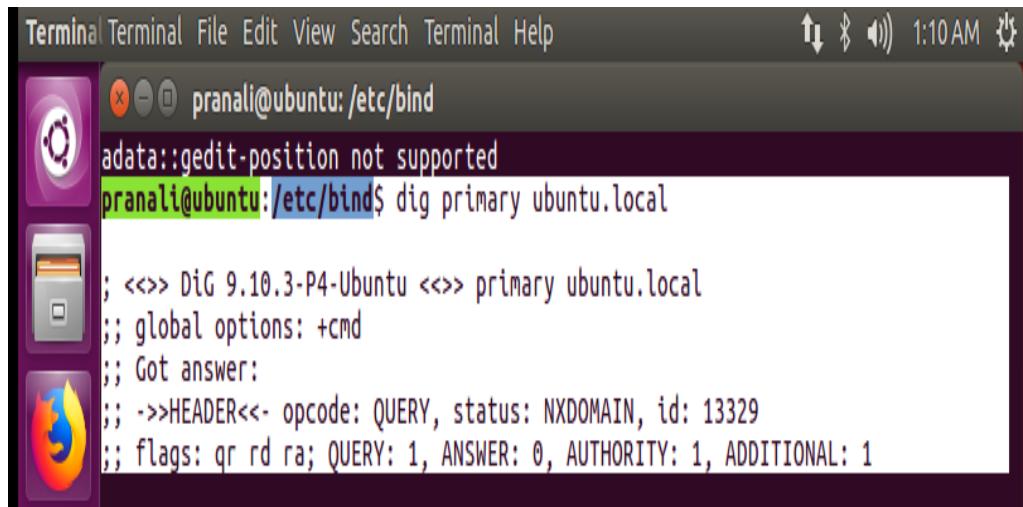


Terminal Terminal File Edit View Search Terminal Help
pranali@ubuntu:/etc/bind\$ sudo gedit /etc/resolv.conf
(gedit:5153): IBUS-WARNING **: The owner of /home/pranali/.config/ibus/bus is no
t root!
(gedit:5153): Gtk-WARNING **: Calling Inhibit failed: GDBus.Error:org.freedeskto
p.DBus.Error.ServiceUnknown: The name org.gnome.SessionManager was not provided
by any .service files



resolv.conf
/etc
Open ▾ Save
Dynamic resolv.conf(5) file for glibc resolver(3) generated by resolvconf(8)
DO NOT EDIT THIS FILE BY HAND -- YOUR CHANGES WILL BE OVERWRITTEN
search ubuntu.local
nameserver 192.168.13.136
search localdomain

17) Command:-dig primary ubuntu.local



```
Terminal Terminal File Edit View Search Terminal Help
pranali@ubuntu:/etc/bind
adata::gedit-position not supported
pranali@ubuntu:/etc/bind$ dig primary ubuntu.local

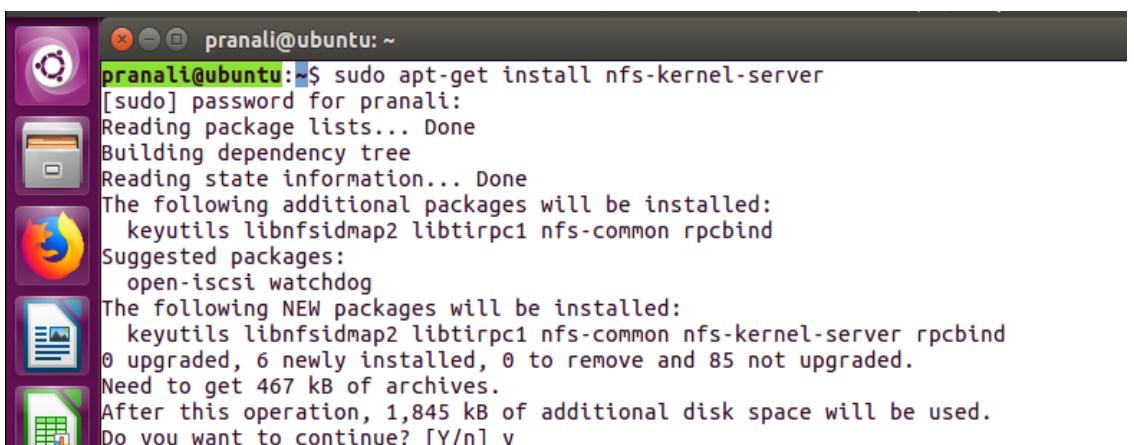
; <>> DiG 9.10.3-P4-Ubuntu <><> primary ubuntu.local
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NXDOMAIN, id: 13329
;; flags: qr rd ra; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1
```

Practical No:- 6

Aim:- Configure NFS Server to share directories on your Network, Configure NFS Client.

(Ubuntu and Windows Client OS)

1) Command:- Sudo apt-get install nfs-kernel-server



```
pranali@ubuntu:~$ sudo apt-get install nfs-kernel-server
[sudo] password for pranali:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  keyutils libnfsidmap2 libtirpc1 nfs-common rpcbind
Suggested packages:
  open-iscsi watchdog
The following NEW packages will be installed:
  keyutils libnfsidmap2 libtirpc1 nfs-common nfs-kernel-server rpcbind
0 upgraded, 6 newly installed, 0 to remove and 85 not upgraded.
Need to get 467 kB of archives.
After this operation, 1,845 kB of additional disk space will be used.
Do you want to continue? [Y/n] v
```

2) Command:- Mkdir A

3) Command:- Ls

```
Terminal | Terminal File Edit View Search Terminal Help 1:19 PM
pranali@ubuntu: ~
pranali@ubuntu:~$ mkdir A
pranali@ubuntu:~$ ls
A      Documents examples.desktop Pictures share user
Desktop Downloads Music       Public Templates Videos
pranali@ubuntu:~$
```

4) Command:- Cd A

5) Command:- Touch demo.txt

6) Command:- Pwd

```
pranali@ubuntu: ~
pranali@ubuntu:~$ cd A
pranali@ubuntu:~/A$ touch demo.txt
pranali@ubuntu:~/A$ pwd
/home/pranali/A
pranali@ubuntu:~/A$
```

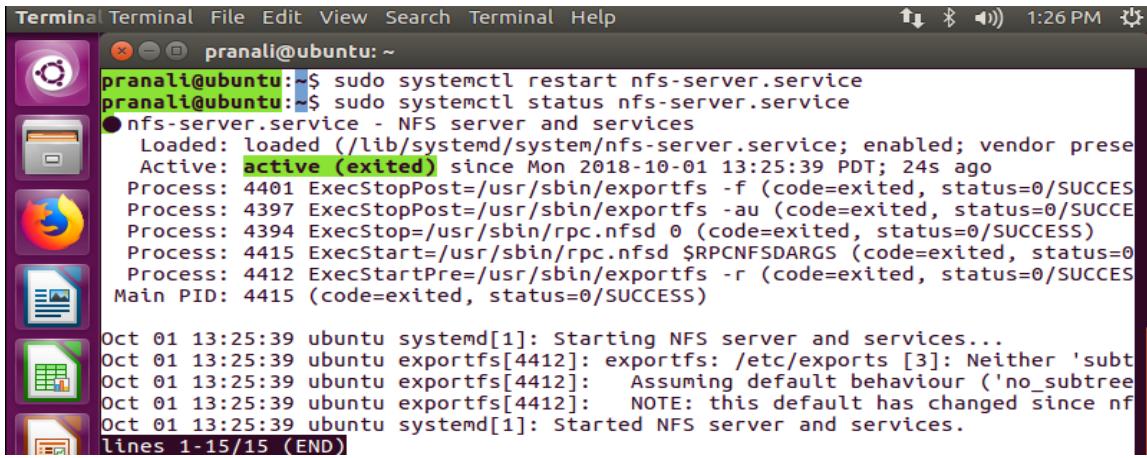
7) Command:- Sudo gedit /etc/exports

/home/Pranali/ ip address(rw,no_root_squash)

```
Open Save
exports
/etc
# /etc/exports: the access control list for filesystems which may be exported
#           to NFS clients.  See exports(5).
#
# Example for NFSv2 and NFSv3:
# /srv/homes          hostname1(rw,sync,no_subtree_check) hostname2
# (ro,sync,no_subtree_check)
#
# Example for NFSv4:
# /srv/nfs4          gss/krb5i(rw,sync,fsid=0,crossmnt,no_subtree_check)
# /srv/nfs4/homes    gss/krb5i(rw,sync,no_subtree_check)
#
/home/pranali/ 192.168.153.1(rw,no_root_squash)
```

8) Command:- Sudo systemctl restart nfs-server.service

9) Command:- Sudo systemctl status nfs-server.service



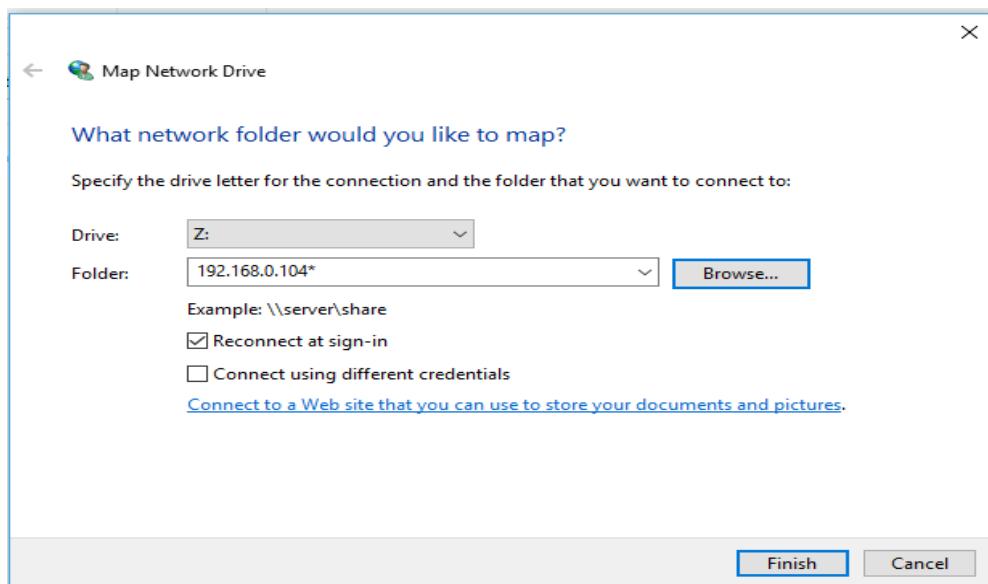
A screenshot of a Ubuntu desktop environment. On the left is a dock with icons for Dash, Home, File Explorer, Terminal, and others. A terminal window titled 'Terminal' is open, showing command-line output. The terminal window title bar says 'Terminal Terminal File Edit View Search Terminal Help'. The status bar at the top right shows '1:26 PM'. The terminal content is as follows:

```
pranali@ubuntu:~$ sudo systemctl restart nfs-server.service
pranali@ubuntu:~$ sudo systemctl status nfs-server.service
● nfs-server.service - NFS server and services
   Loaded: loaded (/lib/systemd/system/nfs-server.service; enabled; vendor prese
   Active: active (exited) since Mon 2018-10-01 13:25:39 PDT; 24s ago
     Process: 4401 ExecStopPost=/usr/sbin/exportfs -f (code=exited, status=0/SUCCE
    Process: 4397 ExecStopPost=/usr/sbin/exportfs -au (code=exited, status=0/SUCCE
    Process: 4394 ExecStop=/usr/sbin/rpc.nfsd 0 (code=exited, status=0/SUCCESS)
    Process: 4415 ExecStart=/usr/sbin/rpc.nfsd $RPCNFSDARGS (code=exited, status=0
    Process: 4412 ExecStartPre=/usr/sbin/exportfs -r (code=exited, status=0/SUCCE
  Main PID: 4415 (code=exited, status=0/SUCCESS)

Oct 01 13:25:39 ubuntu systemd[1]: Starting NFS server and services...
Oct 01 13:25:39 ubuntu exportfs[4412]: exportfs: /etc/exports [3]: Neither 'subt
Oct 01 13:25:39 ubuntu exportfs[4412]: Assuming default behaviour ('no_subtree
Oct 01 13:25:39 ubuntu exportfs[4412]: NOTE: this default has changed since nf
Oct 01 13:25:39 ubuntu systemd[1]: Started NFS server and services.

Lines 1-15/15 (END)
```

10) My computer > network>map network drive> ip address



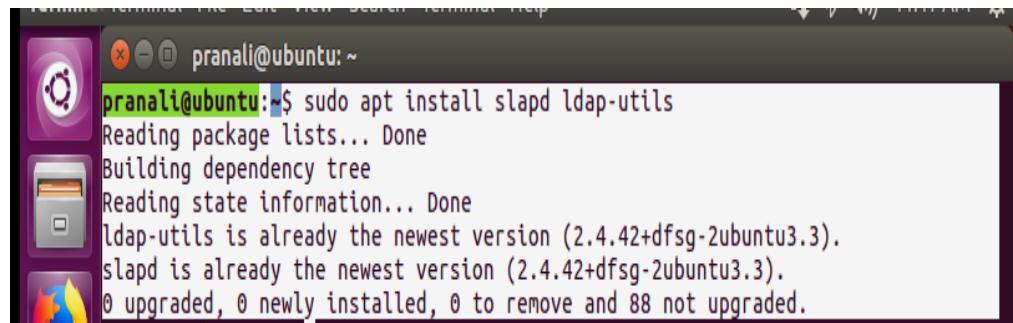
Practical No:- 7

Aim:- Configure LDAP Server, Configure LDAP Server in order to share users' accounts in

your local networks, Add LDAP User Accounts in the OpenLDAP Server, Configure

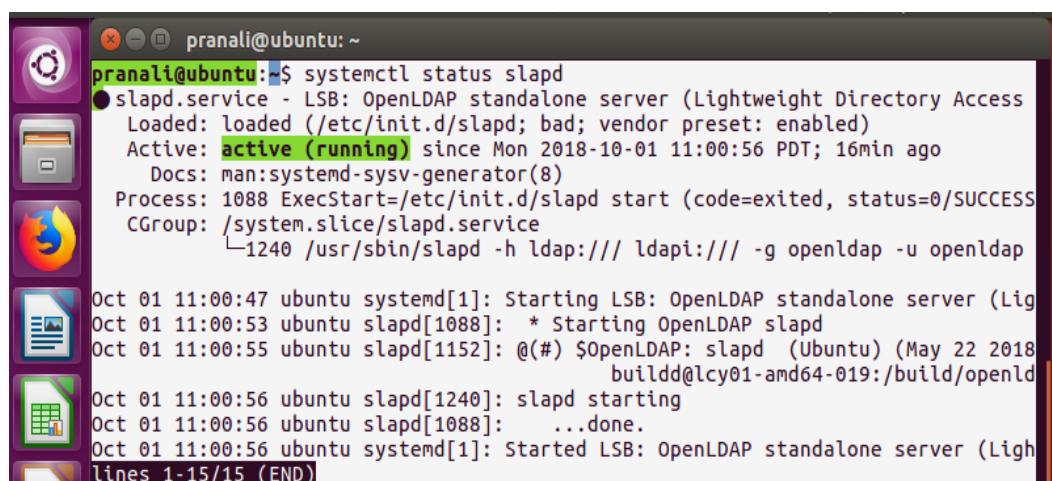
LDAP Client in order to share users' accounts in your local networks. Install phpLDAPadmin to operate LDAP server via Web browser.

1) Command:- Sudo apt install slapd ldap-utils



```
pranali@ubuntu:~$ sudo apt install slapd ldap-utils
Reading package lists... Done
Building dependency tree
Reading state information... Done
ldap-utils is already the newest version (2.4.42+dfsg-2ubuntu3.3).
slapd is already the newest version (2.4.42+dfsg-2ubuntu3.3).
0 upgraded, 0 newly installed, 0 to remove and 88 not upgraded.
```

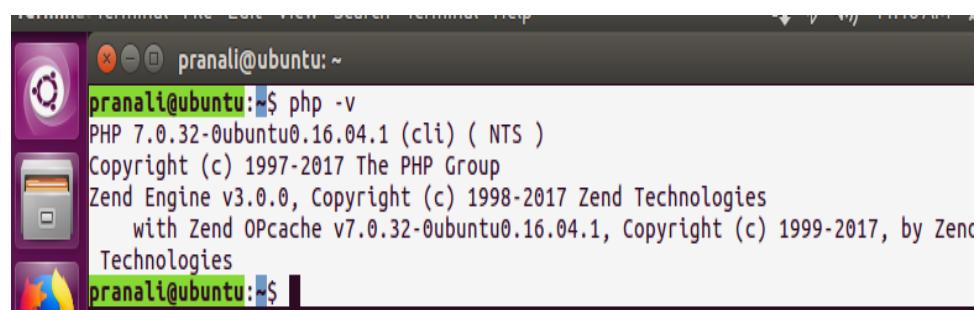
2) Command:- Systemctl status slapd



```
pranali@ubuntu:~$ systemctl status slapd
● slapd.service - LSB: OpenLDAP standalone server (Lightweight Directory Access
   Loaded: loaded (/etc/init.d/slapd; bad; vendor preset: enabled)
   Active: active (running) since Mon 2018-10-01 11:00:56 PDT; 16min ago
     Docs: man:systemd-sysv-generator(8)
 Process: 1088 ExecStart=/etc/init.d/slapd start (code=exited, status=0/SUCCESS)
   CGroup: /system.slice/slapd.service
           └─1240 /usr/sbin/slapd -h ldap:/// ldapi:/// -g openldap -u openldap

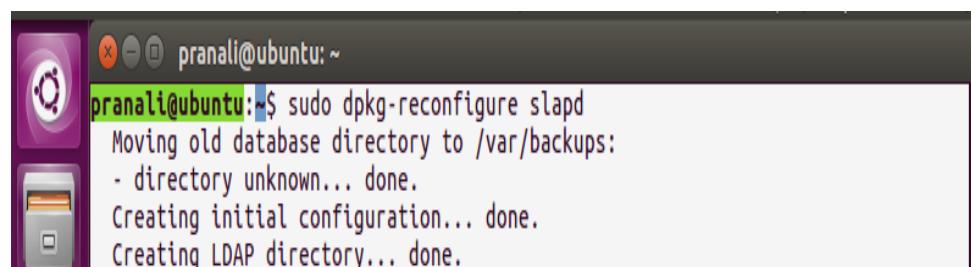
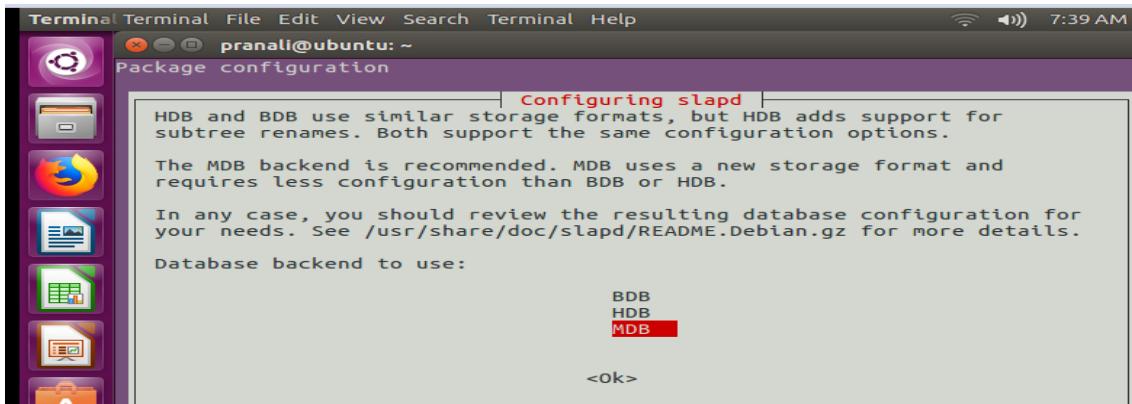
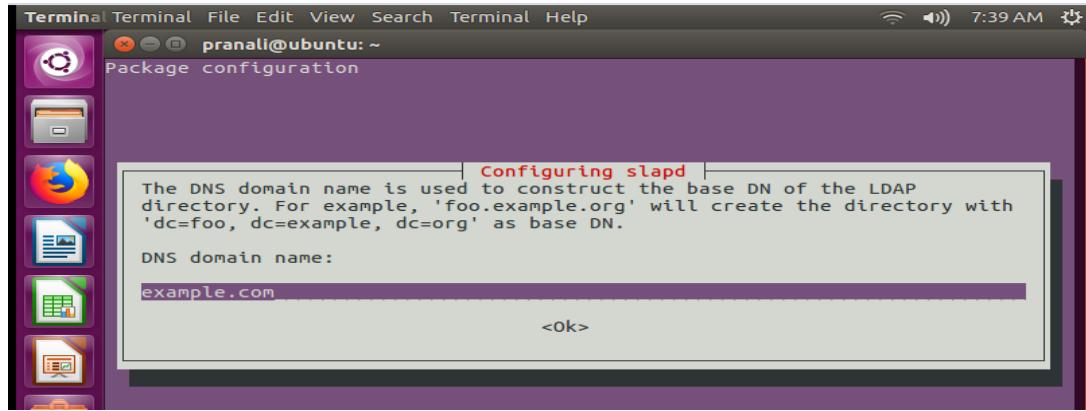
Oct 01 11:00:47 ubuntu systemd[1]: Starting LSB: OpenLDAP standalone server (Lig
Oct 01 11:00:53 ubuntu slapd[1088]: * Starting OpenLDAP slapd
Oct 01 11:00:55 ubuntu slapd[1152]: @(#) $OpenLDAP: slapd (Ubuntu) (May 22 2018
                                         build@lcy01-amd64-019:/build/openld
Oct 01 11:00:56 ubuntu slapd[1240]: slapd starting
Oct 01 11:00:56 ubuntu slapd[1088]: ...done.
Oct 01 11:00:56 ubuntu systemd[1]: Started LSB: OpenLDAP standalone server (Ligh
lines 1-15/15 (END)
```

3) Command:- Php -v



```
pranali@ubuntu:~$ php -v
PHP 7.0.32-0ubuntu0.16.04.1 (cli) ( NTS )
Copyright (c) 1997-2017 The PHP Group
Zend Engine v3.0.0, Copyright (c) 1998-2017 Zend Technologies
    with Zend OPcache v7.0.32-0ubuntu0.16.04.1, Copyright (c) 1999-2017, by Zend
Technologies
pranali@ubuntu:~$
```

4) Command:- Sudo dpkg–reconfigure slapd

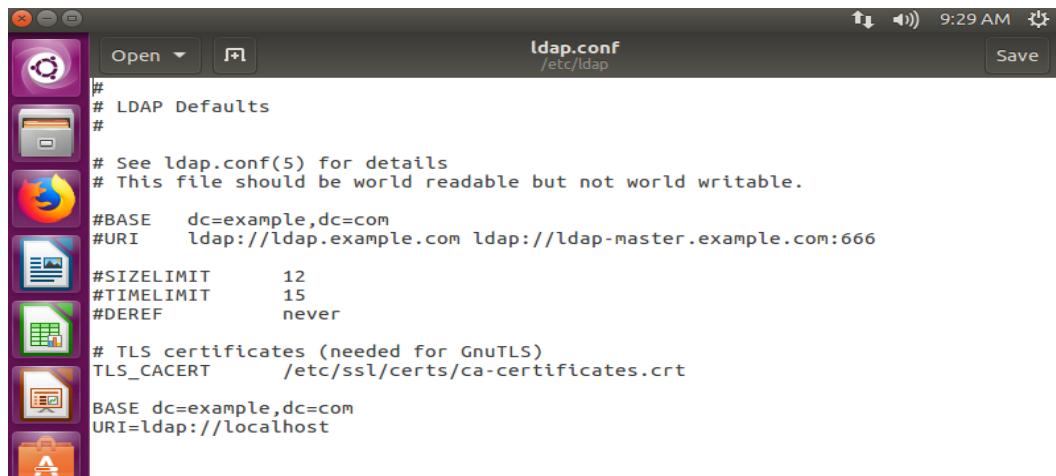


5) Command:- Sudo gedit /etc/ldap/ldap.conf

Write the following in idap.conf file:-

BASE dc=example,dc=com

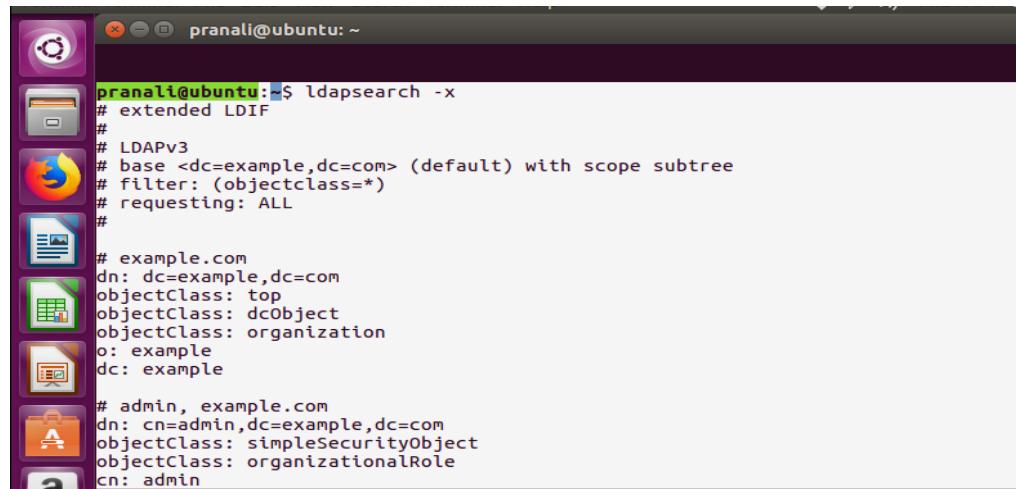
URI=ldap://localhost



```
ldap.conf
/etc/ldap

# LDAP Defaults
#
# See ldap.conf(5) for details
# This file should be world readable but not world writable.
#BASE    dc=example,dc=com
#URI     ldap://ldap.example.com ldap://ldap-master.example.com:666
#SIZELIMIT      12
#TIMELIMIT      15
#DEREF            never
# TLS certificates (needed for GnuTLS)
TLS_CACERT      /etc/ssl/certs/ca-certificates.crt
BASE  dc=example,dc=com
URI=ldap://localhost
```

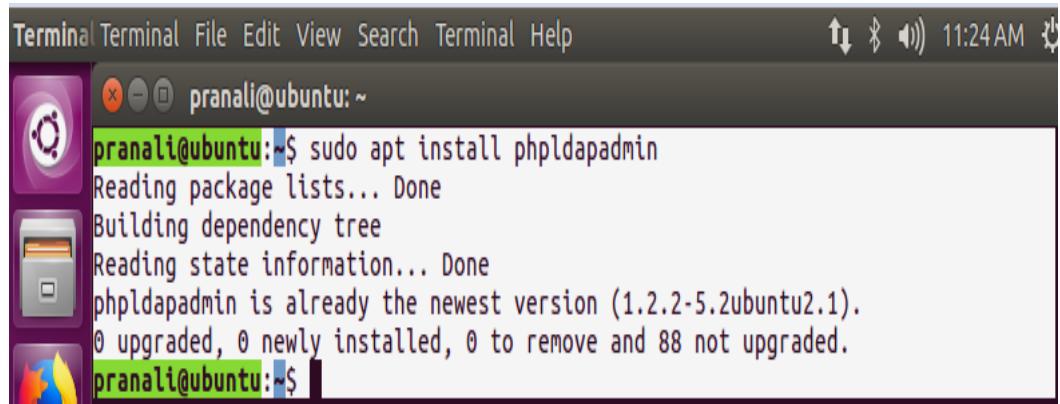
6) Command:- ldapsearch -x



```
pranali@ubuntu:~$ ldapsearch -x
# extended LDIF
#
# LDAPv3
# base <dc=example,dc=com> (default) with scope subtree
# filter: (objectclass=*)
# requesting: ALL
#
# example.com
dn: dc=example,dc=com
objectClass: top
objectClass: dcoObject
objectClass: organization
o: example
dc: example

# admin, example.com
dn: cn=admin,dc=example,dc=com
objectClass: simpleSecurityObject
objectClass: organizationalRole
cn: admin
```

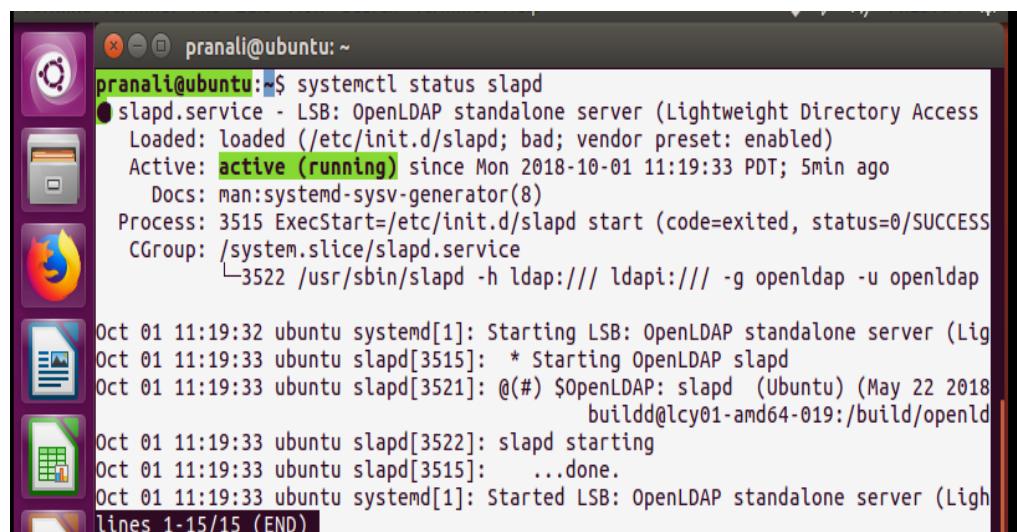
7) Command:- sudo apt install phpldapadmin



A screenshot of a Linux desktop environment, likely Ubuntu, showing a terminal window. The terminal window title is "Terminal" and the prompt is "pranali@ubuntu:~". The user has run the command "sudo apt install phpldapadmin" and the output shows that the package is already at the newest version (1.2.2-5.2ubuntu2.1) and no upgrades are needed.

```
pranali@ubuntu:~$ sudo apt install phpldapadmin
Reading package lists... Done
Building dependency tree
Reading state information... Done
phpldapadmin is already the newest version (1.2.2-5.2ubuntu2.1).
0 upgraded, 0 newly installed, 0 to remove and 88 not upgraded.
pranali@ubuntu:~$
```

8) Command:- systemctl status slapd



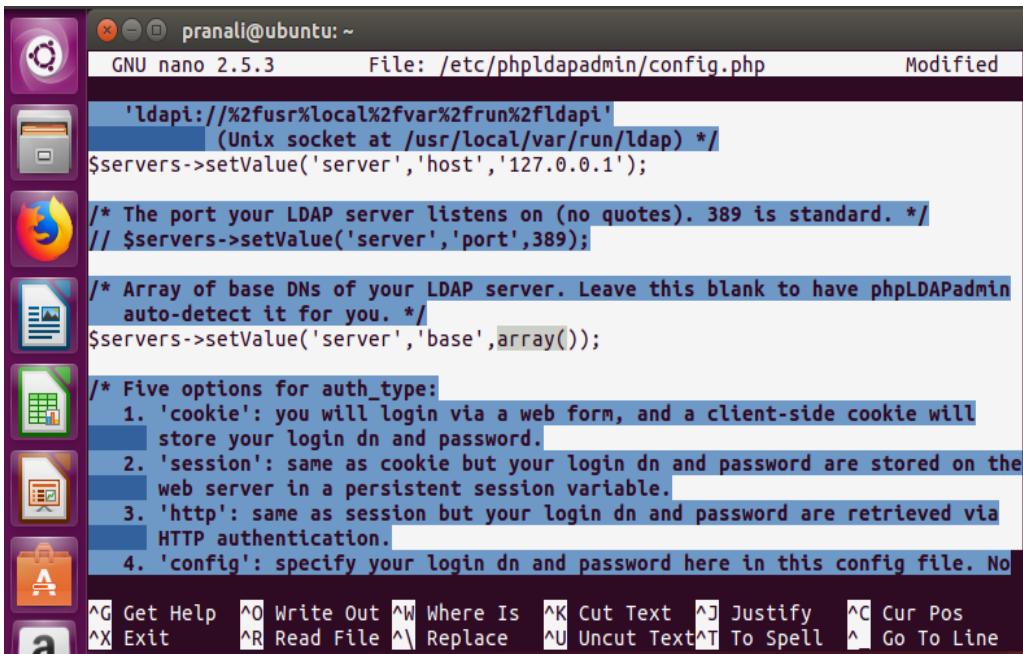
A screenshot of a Linux desktop environment, likely Ubuntu, showing a terminal window. The terminal window title is "Terminal" and the prompt is "pranali@ubuntu:~". The user has run the command "systemctl status slapd" and the output shows the status of the OpenLDAP standalone server service.

```
pranali@ubuntu:~$ systemctl status slapd
● slapd.service - LSB: OpenLDAP standalone server (Lightweight Directory Access
   Loaded: loaded (/etc/init.d/slapd; bad; vendor preset: enabled)
   Active: active (running) since Mon 2018-10-01 11:19:33 PDT; 5min ago
     Docs: man:systemd-sysv-generator(8)
   Process: 3515 ExecStart=/etc/init.d/slapd start (code=exited, status=0/SUCCESS)
   CGroup: /system.slice/slapd.service
           └─3522 /usr/sbin/slapd -h ldap:/// ldapi:/// -g openldap -u openldap

Oct 01 11:19:32 ubuntu systemd[1]: Starting LSB: OpenLDAP standalone server (Lig
Oct 01 11:19:33 ubuntu slapd[3515]: * Starting OpenLDAP slapd
Oct 01 11:19:33 ubuntu slapd[3521]: @(#) $OpenLDAP: slapd (Ubuntu) (May 22 2018
                                         builddd@lcy01-amd64-019:/build/openldap
Oct 01 11:19:33 ubuntu slapd[3522]: slapd starting
Oct 01 11:19:33 ubuntu slapd[3515]: ...done.
Oct 01 11:19:33 ubuntu systemd[1]: Started LSB: OpenLDAP standalone server (Light
lines 1-15/15 (END)
```

9) Command:- sudo nano /etc/phpldapadmin/config.php

delete the array value in line number 300 using(shift+ctrl+-)key



```
pranali@ubuntu:~$ nano 2.5.3      File: /etc/phpldapadmin/config.php      Modified

'ldapi://%2fusr%local%2fvar%2frun%2fldapi'
        (Unix socket at /usr/local/var/run/ldap) */
$servers->setValue('server','host','127.0.0.1');

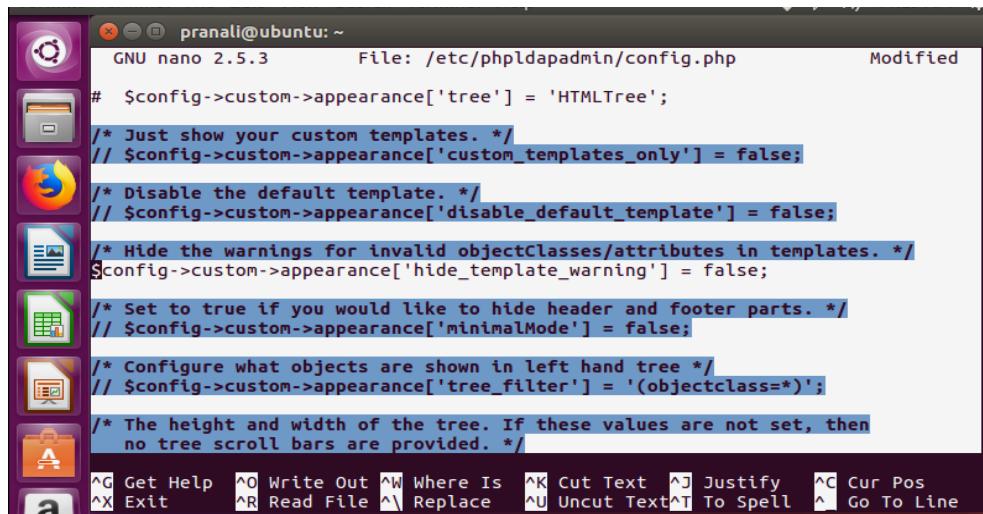
/* The port your LDAP server listens on (no quotes). 389 is standard. */
// $servers->setValue('server','port',389);

/* Array of base DNs of your LDAP server. Leave this blank to have phpLDAPAdmin
auto-detect it for you. */
$servers->setValue('server','base',array());

/* Five options for auth_type:
1. 'cookie': you will login via a web form, and a client-side cookie will
store your login dn and password.
2. 'session': same as cookie but your login dn and password are stored on the
web server in a persistent session variable.
3. 'http': same as session but your login dn and password are retrieved via
HTTP authentication.
4. 'config': specify your login dn and password here in this config file. No

^G Get Help  ^O Write Out  ^W Where Is  ^K Cut Text  ^J Justify  ^C Cur Pos
^X Exit      ^R Read File  ^\ Replace   ^U Uncut Text^T To Spell  ^L Go To Line
```

Remove the comment in line number 161



```
pranali@ubuntu:~$ nano 2.5.3      File: /etc/phpldapadmin/config.php      Modified

# $config->custom->appearance['tree'] = 'HTMLTree';

/* Just show your custom templates. */
// $config->custom->appearance['custom_templates_only'] = false;

/* Disable the default template. */
// $config->custom->appearance['disable_default_template'] = false;

/* Hide the warnings for invalid objectClasses/attributes in templates. */
$config->custom->appearance['hide_template_warning'] = false;

/* Set to true if you would like to hide header and footer parts. */
// $config->custom->appearance['minimalMode'] = false;

/* Configure what objects are shown in left hand tree */
// $config->custom->appearance['tree_filter'] = '(objectclass=*)';

/* The height and width of the tree. If these values are not set, then
no tree scroll bars are provided. */

^G Get Help  ^O Write Out  ^W Where Is  ^K Cut Text  ^J Justify  ^C Cur Pos
^X Exit      ^R Read File  ^\ Replace   ^U Uncut Text^T To Spell  ^L Go To Line
```

Open the browser and refresh it.

10) Command:- Localhost/phpldapadmin/

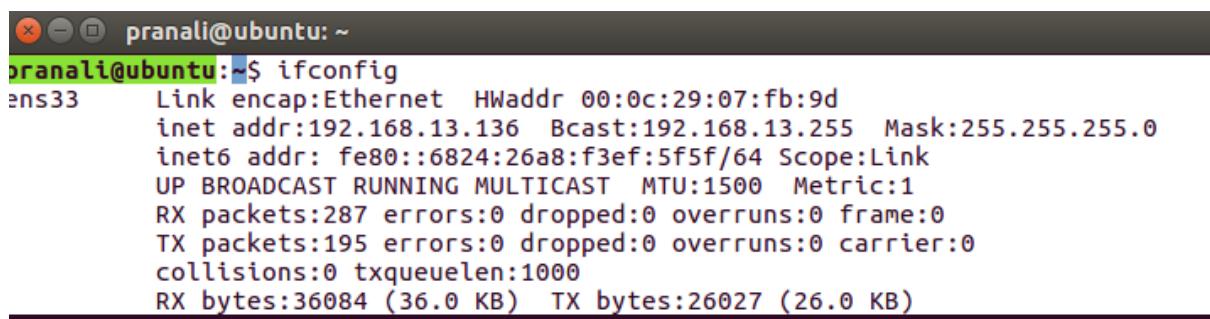
Practical No: - 8

Aim:- Configure NIS Server in order to share users' accounts in your local networks,

Configure NIS Client to bind NIS Server.

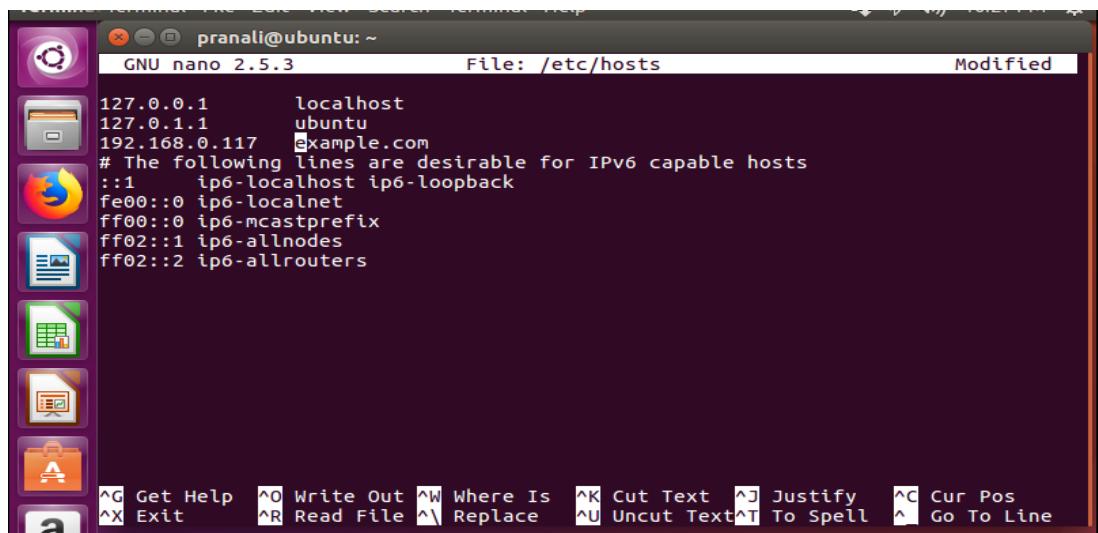
Command:-

- 1) Change network adapter setting into Bridged.
- 2) Check the ip address of system



```
pranali@ubuntu:~$ ifconfig
ens33      Link encap:Ethernet HWaddr 00:0c:29:07:fb:9d
            inet addr:192.168.13.136 Bcast:192.168.13.255 Mask:255.255.255.0
            inet6 addr: fe80::6824:26a8:f3ef:5f5f/64 Scope:Link
              UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
              RX packets:287 errors:0 dropped:0 overruns:0 frame:0
              TX packets:195 errors:0 dropped:0 overruns:0 carrier:0
              collisions:0 txqueuelen:1000
              RX bytes:36084 (36.0 KB) TX bytes:26027 (26.0 KB)
```

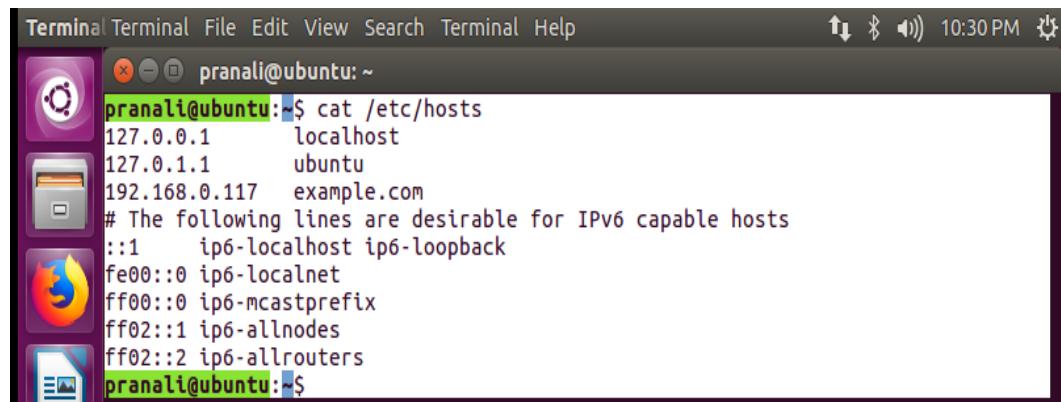
- 3) sudo nano /etc/hosts



```
pranali@ubuntu:~$ nano /etc/hosts
GNU nano 2.5.3          File: /etc/hosts          Modified
127.0.0.1      localhost
127.0.1.1      ubuntu
192.168.0.117  example.com
# The following lines are desirable for IPv6 capable hosts
::1      ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters

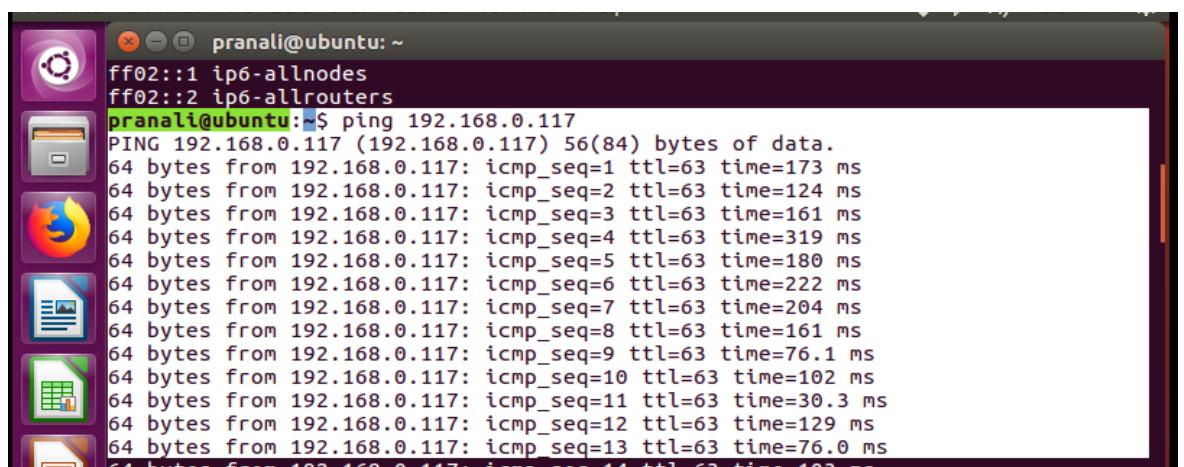
^G Get Help  ^O Write Out  ^W Where Is  ^K Cut Text  ^J Justify  ^C Cur Pos
^X Exit     ^R Read File  ^\ Replace   ^U Uncut Text ^T To Spell  ^_ Go To Line
```

4) cat /etc/hosts



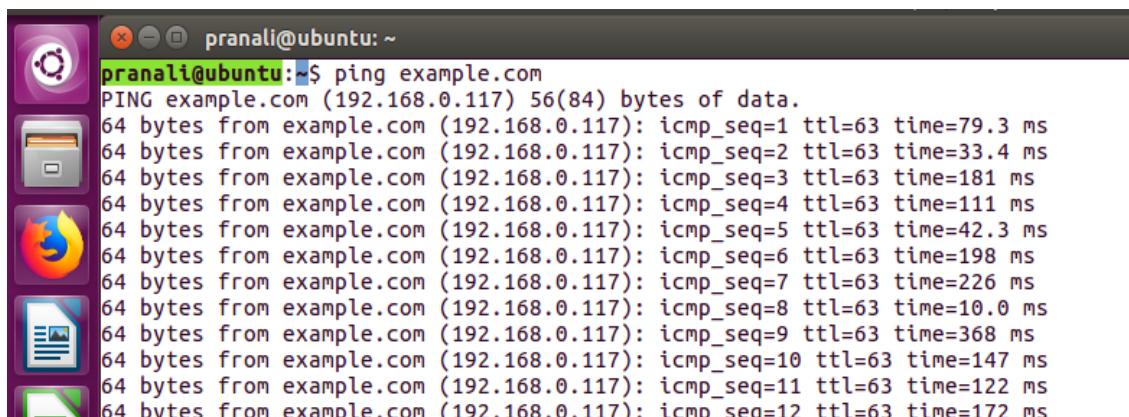
```
Terminal Terminal File Edit View Search Terminal Help
pranali@ubuntu:~$ cat /etc/hosts
127.0.0.1      localhost
127.0.1.1      ubuntu
192.168.0.117  example.com
# The following lines are desirable for IPv6 capable hosts
::1      ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
pranali@ubuntu:~$
```

5) ping 192.168.0.117



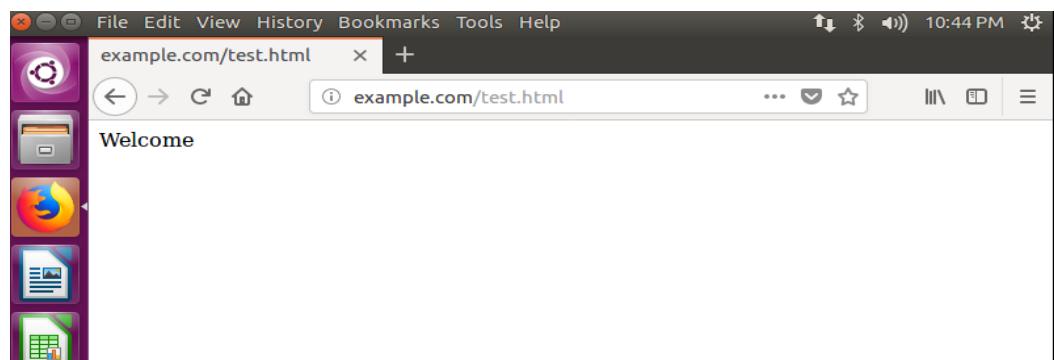
```
pranali@ubuntu:~$ ping 192.168.0.117
PING 192.168.0.117 (192.168.0.117) 56(84) bytes of data.
64 bytes from 192.168.0.117: icmp_seq=1 ttl=63 time=173 ms
64 bytes from 192.168.0.117: icmp_seq=2 ttl=63 time=124 ms
64 bytes from 192.168.0.117: icmp_seq=3 ttl=63 time=161 ms
64 bytes from 192.168.0.117: icmp_seq=4 ttl=63 time=319 ms
64 bytes from 192.168.0.117: icmp_seq=5 ttl=63 time=180 ms
64 bytes from 192.168.0.117: icmp_seq=6 ttl=63 time=222 ms
64 bytes from 192.168.0.117: icmp_seq=7 ttl=63 time=204 ms
64 bytes from 192.168.0.117: icmp_seq=8 ttl=63 time=161 ms
64 bytes from 192.168.0.117: icmp_seq=9 ttl=63 time=76.1 ms
64 bytes from 192.168.0.117: icmp_seq=10 ttl=63 time=102 ms
64 bytes from 192.168.0.117: icmp_seq=11 ttl=63 time=30.3 ms
64 bytes from 192.168.0.117: icmp_seq=12 ttl=63 time=129 ms
64 bytes from 192.168.0.117: icmp_seq=13 ttl=63 time=76.0 ms
64 bytes from 192.168.0.117: icmp_seq=14 ttl=63 time=102 ms
```

6) ping example.com



```
pranali@ubuntu:~$ ping example.com
PING example.com (192.168.0.117) 56(84) bytes of data.
64 bytes from example.com (192.168.0.117): icmp_seq=1 ttl=63 time=79.3 ms
64 bytes from example.com (192.168.0.117): icmp_seq=2 ttl=63 time=33.4 ms
64 bytes from example.com (192.168.0.117): icmp_seq=3 ttl=63 time=181 ms
64 bytes from example.com (192.168.0.117): icmp_seq=4 ttl=63 time=111 ms
64 bytes from example.com (192.168.0.117): icmp_seq=5 ttl=63 time=42.3 ms
64 bytes from example.com (192.168.0.117): icmp_seq=6 ttl=63 time=198 ms
64 bytes from example.com (192.168.0.117): icmp_seq=7 ttl=63 time=226 ms
64 bytes from example.com (192.168.0.117): icmp_seq=8 ttl=63 time=10.0 ms
64 bytes from example.com (192.168.0.117): icmp_seq=9 ttl=63 time=368 ms
64 bytes from example.com (192.168.0.117): icmp_seq=10 ttl=63 time=147 ms
64 bytes from example.com (192.168.0.117): icmp_seq=11 ttl=63 time=122 ms
64 bytes from example.com (192.168.0.117): icmp_seq=12 ttl=63 time=172 ms
```

7) open brower and then search the file example.com/test.html



8) sudo apt-get install portmap

```
cs@ubuntu:~$ sudo apt-get install portmap
[sudo] password for cs:
Reading package lists... Done
Building dependency tree
Reading state information... Done
Note, selecting 'rpcbind' instead of 'portmap'
rpcbind is already the newest version (0.2.3-0.2).
rpcbind set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 646 not upgraded.
cs@ubuntu:~$ sudo systemctl start rpcbind
```

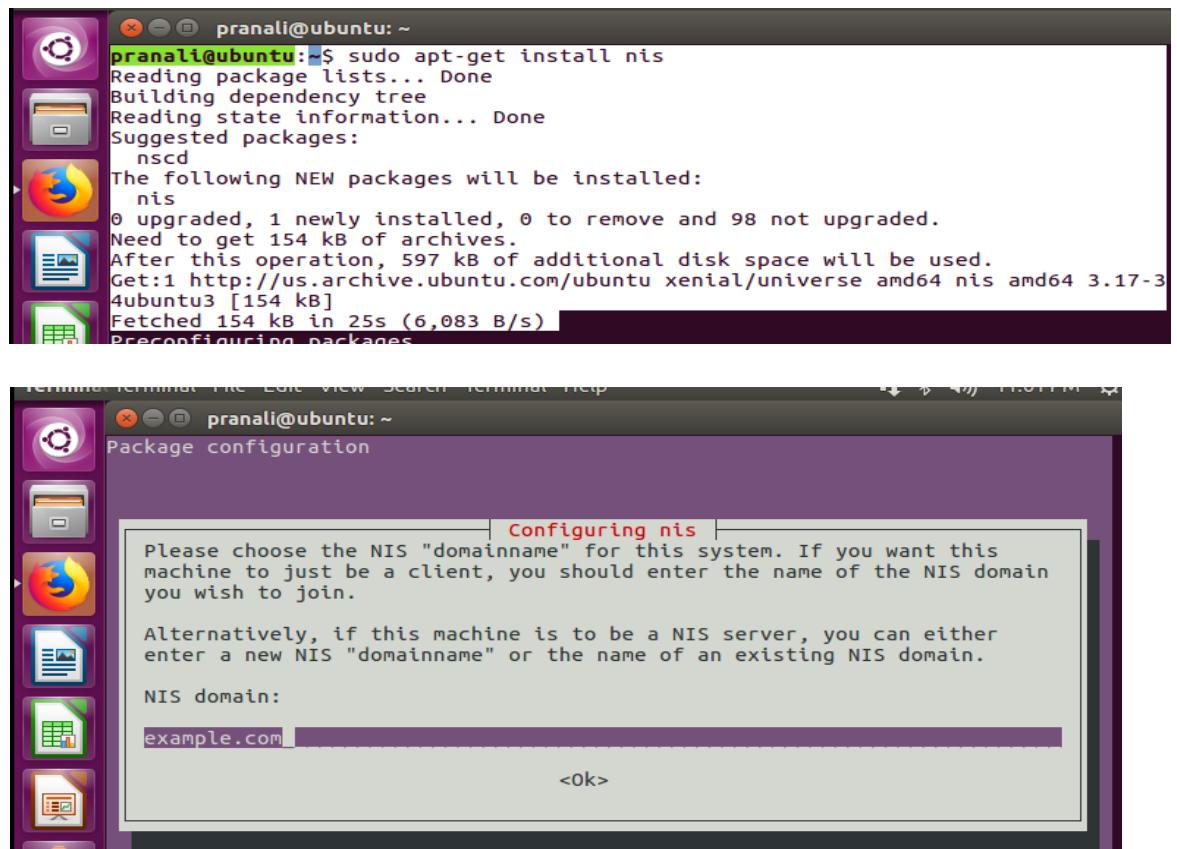
9) sudo systemctl start rpcbind

10) sudo systemctl status rpcbind

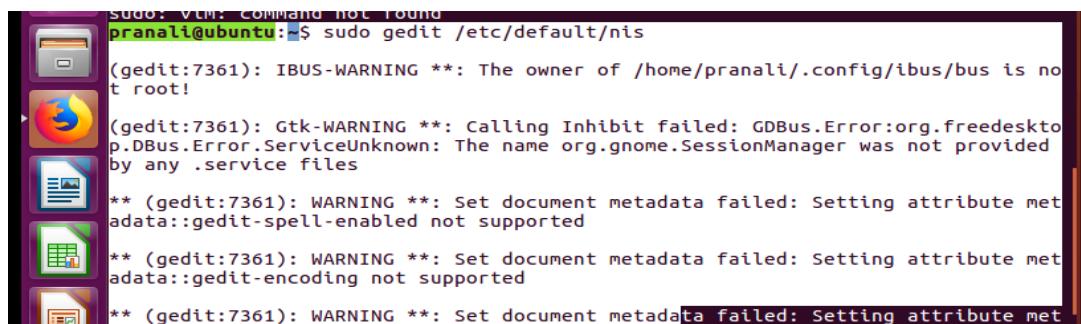
```
pranali@ubuntu:~$ sudo systemctl start rpcbind
pranali@ubuntu:~$ sudo systemctl status rpcbind
● rpcbind.service - RPC bind portmap service
  Loaded: loaded (/lib/systemd/system/rpcbind.service; indirect; vendor preset:
  Drop-In: /run/systemd/generator/rpcbind.service.d
    └─50-rpcbind-$portmap.conf
    Active: active (running) since Fri 2018-10-05 22:06:07 PDT; 51min ago
      Main PID: 885 (rpcbind)
        CGroup: /system.slice/rpcbind.service
                └─885 /sbin/rpcbind -f -w

Oct 05 22:06:07 ubuntu systemd[1]: Starting RPC bind portmap service...
Oct 05 22:06:07 ubuntu rpcbind[885]: rpcbind: xdr_/run/rpcbind/rpcbind.xdr: fail
Oct 05 22:06:07 ubuntu rpcbind[885]: rpcbind: xdr_/run/rpcbind/portmap.xdr: fail
Oct 05 22:06:07 ubuntu systemd[1]: Started RPC bind portmap service.
Oct 05 22:57:44 ubuntu systemd[1]: Started RPC bind portmap service.
lines 1-14/14 (END)
```

11) sudo apt-get install nis

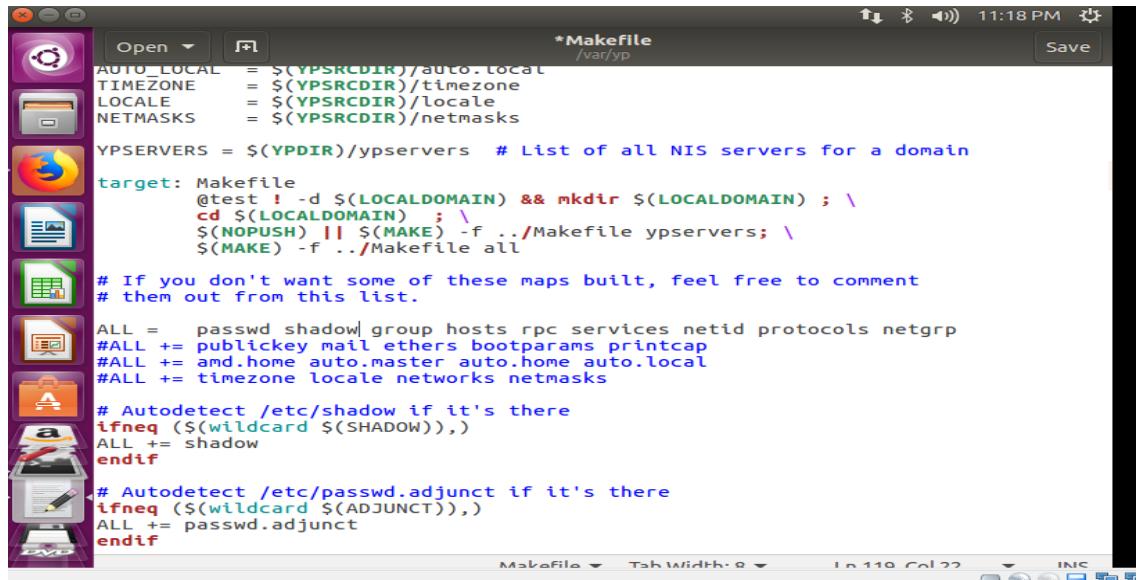


12) sudo gedit /etc/default/nis



13) sudo gedit /var/yp/Makefile

line number 119 add shadow text



```

*Makefile
/var/yp

AUTO_LOCAL      = $(YPSRCDIR)/auto.local
TIMEZONE        = $(YPSRCDIR)/timezone
LOCALE          = $(YPSRCDIR)/locale
NETMASKS         = $(YPSRCDIR)/netmasks

YPSERVERS = $(YPDIR)/ypservers # List of all NIS servers for a domain

target: Makefile
    @test ! -d $(LOCALDOMAIN) && mkdir $(LOCALDOMAIN) ; \
    cd $(LOCALDOMAIN) ; \  

    $(NOPUSH) || $(MAKE) -f ../Makefile ypservers; \  

    $(MAKE) -f ../Makefile all

# If you don't want some of these maps built, feel free to comment
# them out from this list.

ALL = passwd shadow group hosts rpc services netid protocols netgrp
#ALL += publickey mail ethers bootparams printcap
#ALL += amd.home auto.master auto.home auto.local
#ALL += timezone locale networks netmasks

# Autodetect /etc/shadow if it's there
ifeq ($(wildcard $(SHADOW)),)
ALL += shadow
endif

# Autodetect /etc/passwd.adjunct if it's there
ifeq ($(wildcard $(ADJUNCT)),)
ALL += passwd.adjunct
endif

```

14) sudo gedit /var/yp/Makefile



```

pranali@ubuntu:~$ sudo gedit /var/yp/Makefile

(gedit:7390): IBUS-WARNING **: The owner of /home/pranali/.config/ibus/bus is no
t root!

(gedit:7390): Gtk-WARNING **: Calling Inhibit failed: GDBus.Error:org.freedeskt
o.p.DBus.Error.ServiceUnknown: The name org.gnome.SessionManager was not provided
by any .service files

** (gedit:7390): WARNING **: Set document metadata failed: setting attribute met

```

15) sudo systemctl restart rpcbind

16) sudo systemctl restart nis

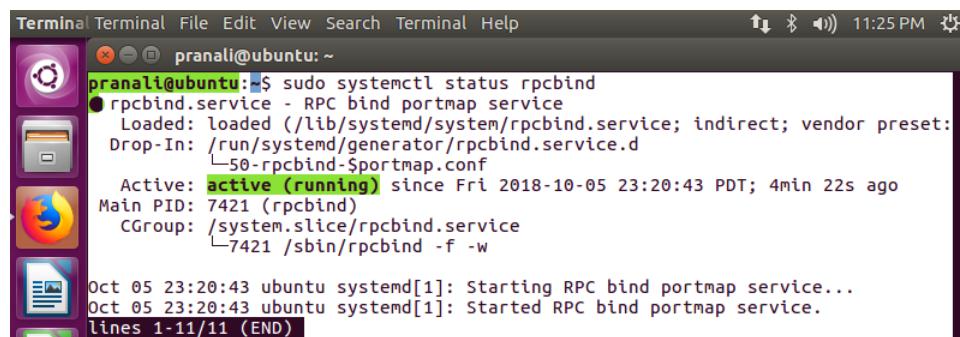


```

pranali@ubuntu:~$ sudo systemctl restart rpcbind
pranali@ubuntu:~$ sudo systemctl restart nis

```

17) sudo systemctl status rpcbind



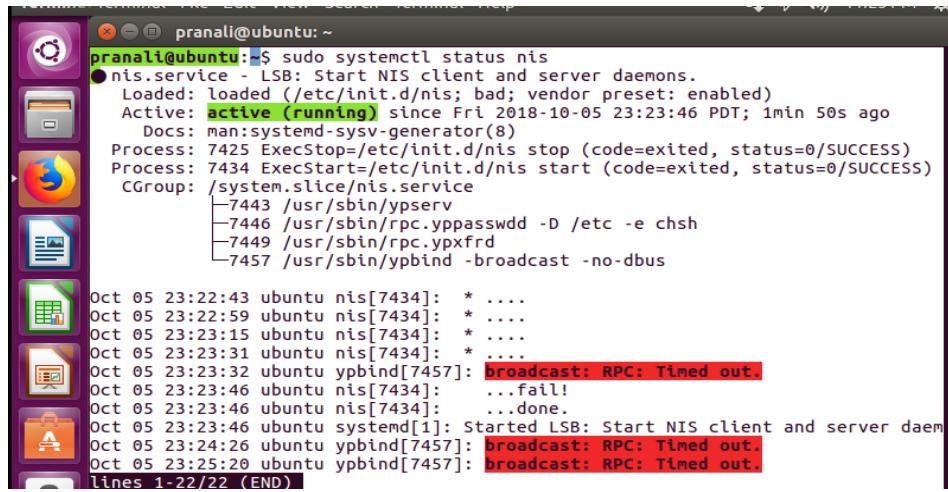
```

Terminal Terminal File Edit View Search Terminal Help
pranali@ubuntu:~$ sudo systemctl status rpcbind
● rpcbind.service - RPC bind portmap service
   Loaded: loaded (/lib/systemd/system/rpcbind.service; indirect; vendor preset:
   Drop-In: /run/systemd/generator/rpcbind.service.d
             └─50-rpcbind-$portmap.conf
   Active: active (running) since Fri 2018-10-05 23:20:43 PDT; 4min 22s ago
     Main PID: 7421 (rpcbind)
       CGroup: /system.slice/rpcbind.service
                 └─7421 /sbin/rpcbind -f -w

Oct 05 23:20:43 ubuntu systemd[1]: Starting RPC bind portmap service...
Oct 05 23:20:43 ubuntu systemd[1]: Started RPC bind portmap service.
lines 1-11/11 (END)

```

18) sudo systemctl status nis

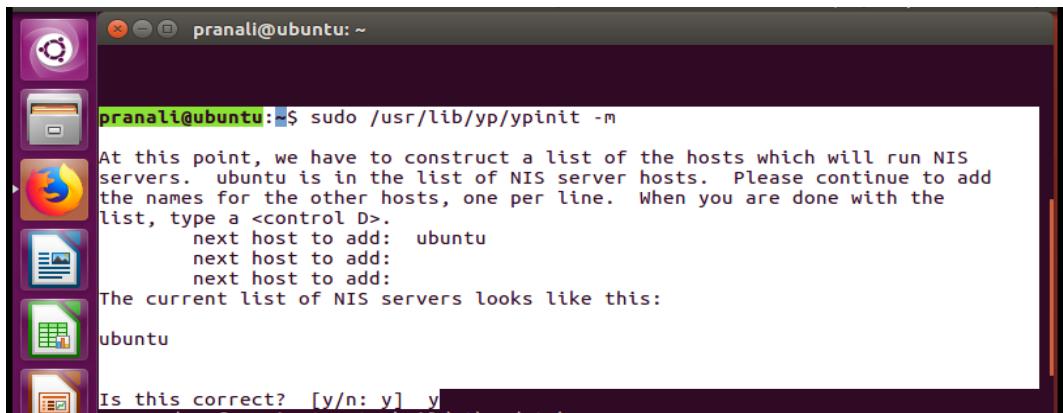


```
pranali@ubuntu:~$ sudo systemctl status nis
● nis.service - LSB: Start NIS client and server daemons.
  Loaded: loaded (/etc/init.d/nis; bad; vendor preset: enabled)
  Active: active (running) since Fri 2018-10-05 23:23:46 PDT; 1min 50s ago
    Docs: man:systemd-sysv-generator(8)
 Process: 7425 ExecStop=/etc/init.d/nis stop (code=exited, status=0/SUCCESS)
 Process: 7434 ExecStart=/etc/init.d/nis start (code=exited, status=0/SUCCESS)
   CGroup: /system.slice/nis.service
           └─7443 /usr/sbin/ypserv
               ├─7446 /usr/sbin/rpc.yppasswdd -D /etc -e chsh
               ├─7449 /usr/sbin/rpc.ypxfrd
               └─7457 /usr/sbin/ypbind -broadcast -no-dbus

Oct 05 23:22:43 ubuntu nis[7434]: * ....
Oct 05 23:22:59 ubuntu nis[7434]: * ....
Oct 05 23:23:15 ubuntu nis[7434]: * ....
Oct 05 23:23:31 ubuntu nis[7434]: * ....
Oct 05 23:23:32 ubuntu ypbind[7457]: broadcast: RPC: Timed out.
Oct 05 23:23:46 ubuntu nis[7434]: ...fail!
Oct 05 23:23:46 ubuntu nis[7434]: ...done.
Oct 05 23:23:46 ubuntu systemd[1]: Started LSB: Start NIS client and server daem
Oct 05 23:24:26 ubuntu ypbind[7457]: broadcast: RPC: Timed out.
Oct 05 23:25:20 ubuntu ypbind[7457]: broadcast: RPC: Timed out.

lines 1-22/22 (END)
```

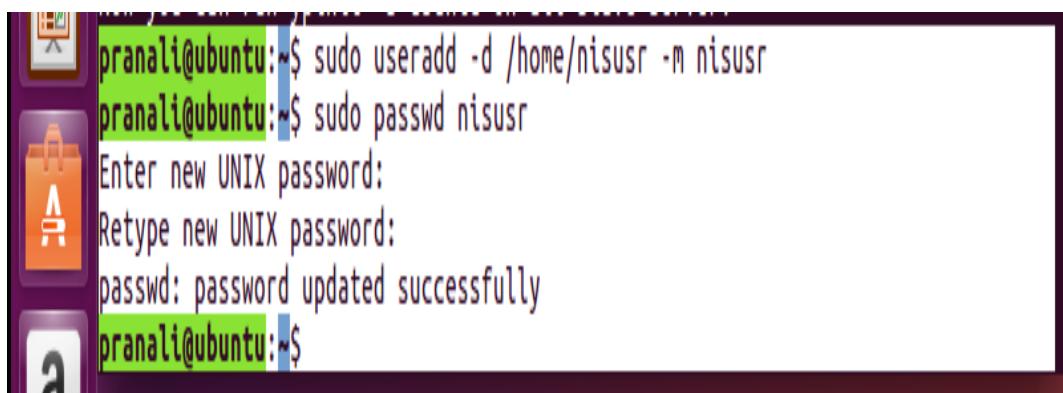
19) sudo /usr/lib/yp/ypinit -m



```
pranali@ubuntu:~$ sudo /usr/lib/yp/ypinit -m
At this point, we have to construct a list of the hosts which will run NIS
servers. ubuntu is in the list of NIS server hosts. Please continue to add
the names for the other hosts, one per line. When you are done with the
list, type a <control D>.
      next host to add: ubuntu
      next host to add:
      next host to add:
The current list of NIS servers looks like this:
ubuntu
Is this correct? [y/n: y] y
```

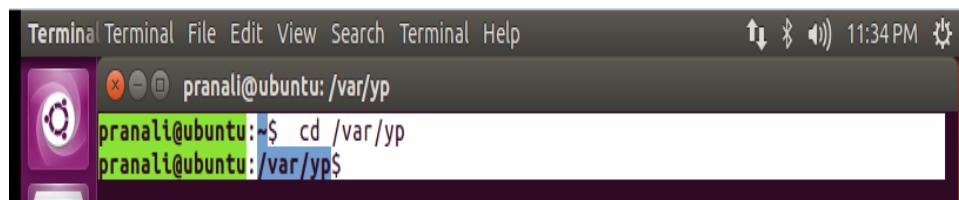
20) sudo useradd -d /home/nisusr

21) sudo passwd nisusr



```
pranali@ubuntu:~$ sudo useradd -d /home/nisusr -m nisusr
pranali@ubuntu:~$ sudo passwd nisusr
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
pranali@ubuntu:~$
```

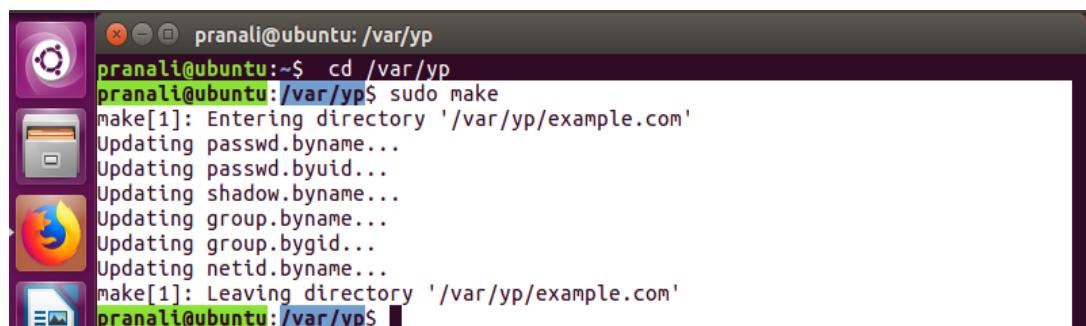
22) cd /var/yp



A screenshot of a Linux desktop environment, likely Ubuntu. A terminal window is open in the foreground, showing the command 'cd /var/yp' being entered. The terminal title bar says 'Terminal'. The desktop background shows icons for the Dash, Home, and other applications.

```
Terminal Terminal File Edit View Search Terminal Help
pranali@ubuntu:~$ cd /var/yp
pranali@ubuntu:/var/yp$
```

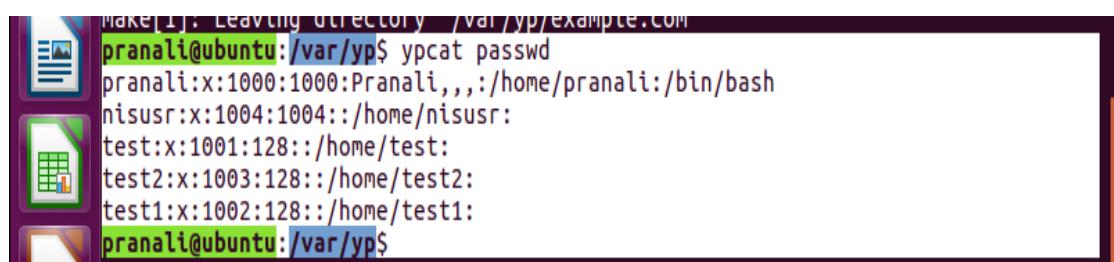
23) sudo make



A screenshot of a Linux desktop environment, likely Ubuntu. A terminal window is open in the foreground, showing the command 'sudo make' being entered. The terminal title bar says 'Terminal'. The desktop background shows icons for the Dash, Home, and other applications.

```
Terminal Terminal File Edit View Search Terminal Help
pranali@ubuntu:~$ cd /var/yp
pranali@ubuntu:/var/yp$ sudo make
make[1]: Entering directory '/var/yp/example.com'
Updating passwd.byname...
Updating passwd.byuid...
Updating shadow/byname...
Updating group/byname...
Updating group/bygid...
Updating netid/byname...
make[1]: Leaving directory '/var/yp/example.com'
pranali@ubuntu:/var/yp$
```

24) ypcat passwd



A screenshot of a Linux desktop environment, likely Ubuntu. A terminal window is open in the foreground, showing the command 'ycat passwd' being entered. The terminal title bar says 'Terminal'. The desktop background shows icons for the Dash, Home, and other applications.

```
Terminal Terminal File Edit View Search Terminal Help
pranali@ubuntu:~$ ypcat passwd
pranali:x:1000:1000:Pranali,,,:/home/pranali:/bin/bash
nisusr:x:1004:1004::/home/nisusr:
test:x:1001:128::/home/test:
test2:x:1003:128::/home/test2:
test1:x:1002:128::/home/test1:
pranali@ubuntu:/var/yp$
```

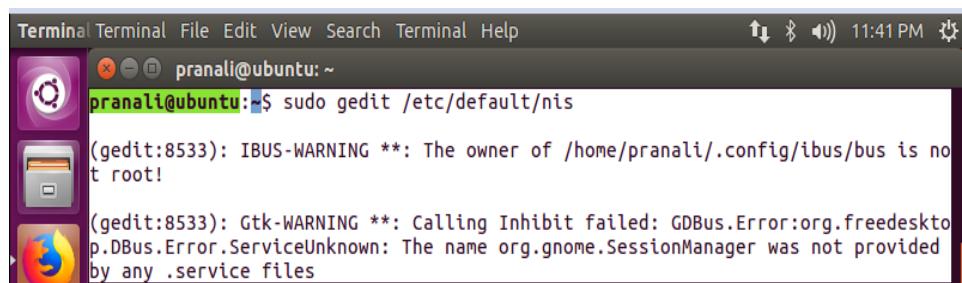
25) cd ~



A screenshot of a Linux desktop environment, likely Ubuntu. A terminal window is open in the foreground, showing the command 'cd ~' being entered. The terminal title bar says 'Terminal'. The desktop background shows icons for the Dash, Home, and other applications.

```
Terminal Terminal File Edit View Search Terminal Help
pranali@ubuntu:~$ cd ~
```

26) sudo gedit /etc/default/nis



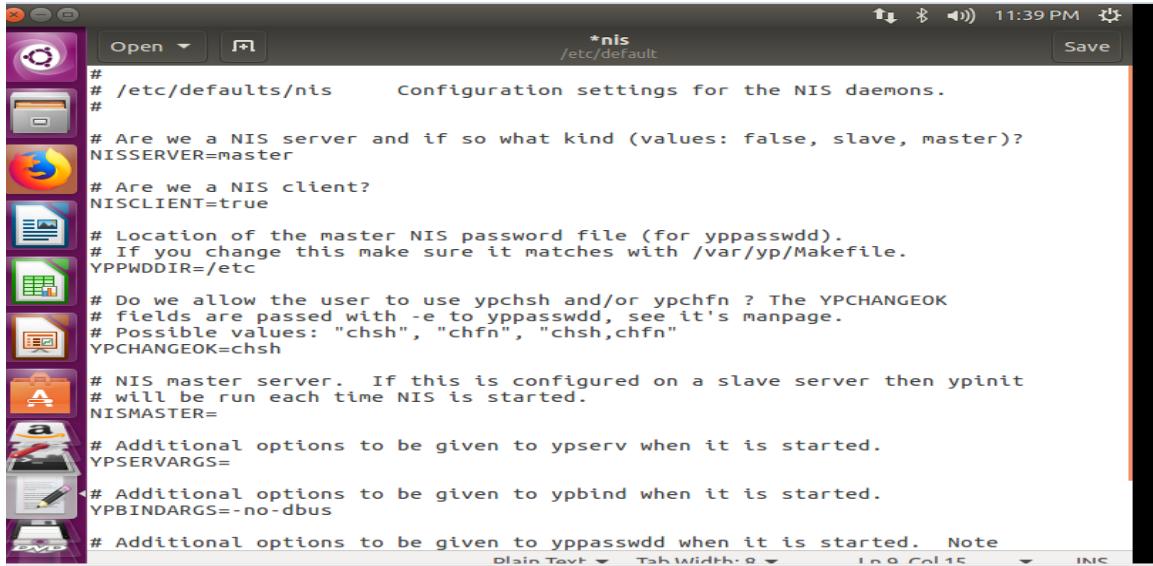
A screenshot of a Linux desktop environment, likely Ubuntu. A terminal window is open in the foreground, showing the command 'sudo gedit /etc/default/nis' being entered. The terminal title bar says 'Terminal'. The desktop background shows icons for the Dash, Home, and other applications.

```
Terminal Terminal File Edit View Search Terminal Help
pranali@ubuntu:~$ sudo gedit /etc/default/nis
(gedit:8533): IBUS-WARNING **: The owner of /home/pranali/.config/ibus/bus is not root!
(gedit:8533): Gtk-WARNING **: Calling Inhibit failed: GDBus.Error:org.freedesktop.DBus.Error.ServiceUnknown: The name org.gnome.SessionManager was not provided by any .service files
```

Change the NIS server and NIS client as follow:-

NISERVER=master

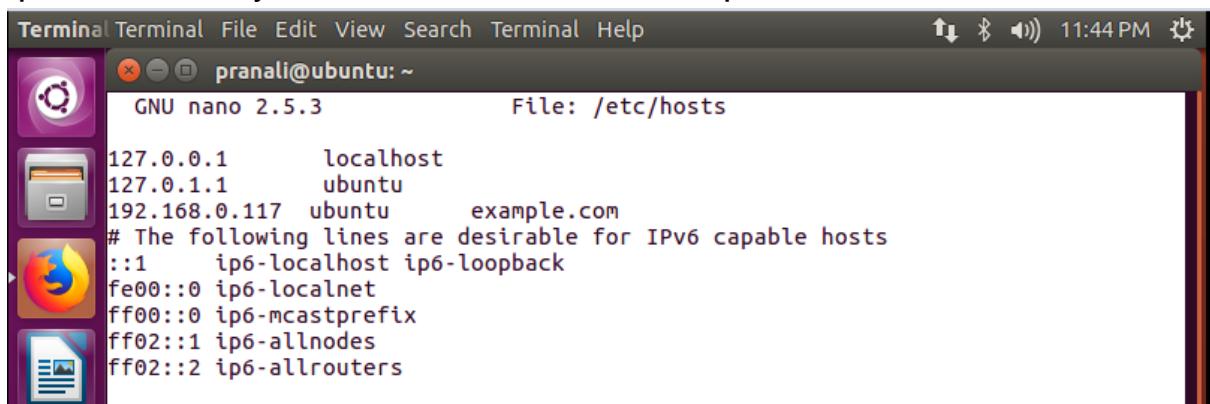
NISCLIENT=true



```
# /etc/default/nis      Configuration settings for the NIS daemons.
#
# Are we a NIS server and if so what kind (values: false, slave, master)?
NISERVER=master
#
# Are we a NIS client?
NISCLIENT=true
#
# Location of the master NIS password file (for yppasswdd).
# If you change this make sure it matches with /var/yp/Makefile.
YPPWDDIR=/etc
#
# Do we allow the user to use ypchsh and/or ypchnfn ? The YPCANGEOK
# fields are passed with -e to yppasswdd, see it's manpage.
# Possible values: "chsh", "chfn", "chsh,chfn"
YPCHANGEOK=chsh
#
# NIS master server. If this is configured on a slave server then ypinit
# will be run each time NIS is started.
NISMASTER=
#
# Additional options to be given to ypserv when it is started.
YPSERVARGS=
#
# Additional options to be given to ypbind when it is started.
YPBINDARGS=-no-dbus
#
# Additional options to be given to yppasswdd when it is started. Note
# that the options are passed with -e to yppasswdd.
```

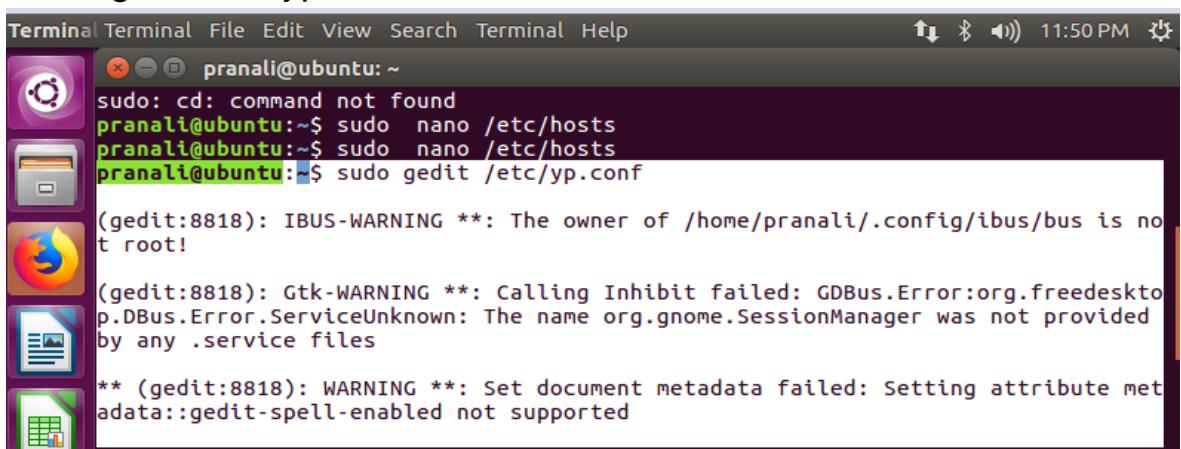
Add following line in line number 5

Ip address of system ubuntu example.com



```
127.0.0.1      localhost
127.0.1.1      ubuntu
192.168.0.117  ubuntu      example.com
# The following lines are desirable for IPv6 capable hosts
::1      ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
```

27) sudo gedit /etc/yp.conf

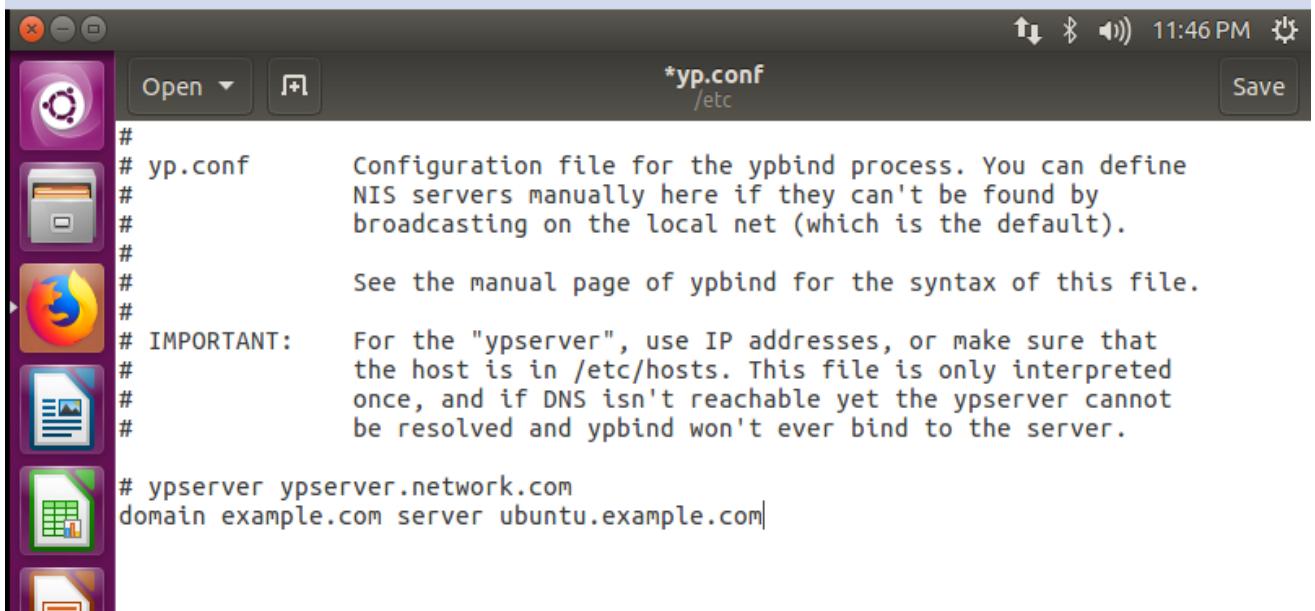


```
sudo: cd: command not found
pranali@ubuntu:~$ sudo nano /etc/hosts
pranali@ubuntu:~$ sudo nano /etc/hosts
pranali@ubuntu:~$ sudo gedit /etc/yp.conf

(gedit:8818): IBUS-WARNING **: The owner of /home/pranali/.config/ibus/bus is not root!
(gedit:8818): Gtk-WARNING **: Calling Inhibit failed: GDBus.Error:org.freedesktop.DBus.Error.ServiceUnknown: The name org.gnome.SessionManager was not provided by any .service files
** (gedit:8818): WARNING **: Set document metadata failed: Setting attribute metadata::gedit-spell-enabled not supported
```

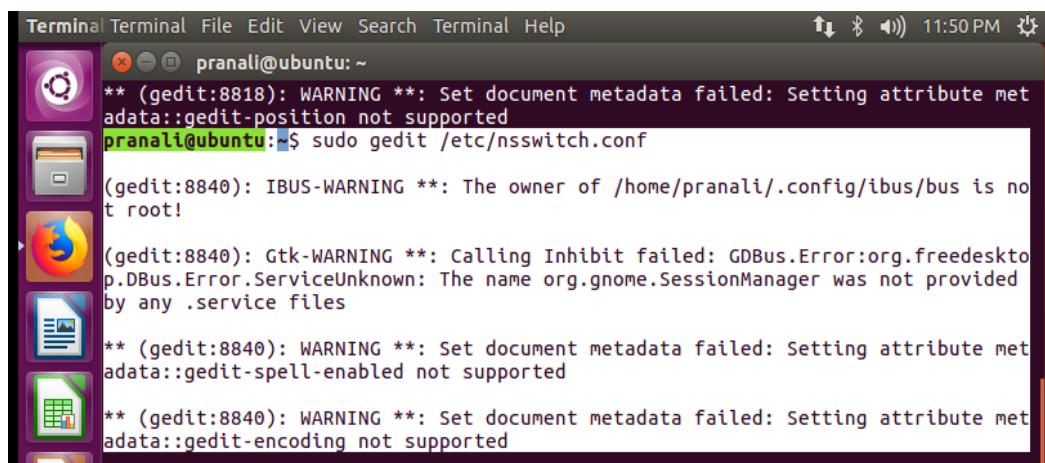
Add following lines

domain example.com server ubuntu.example.com



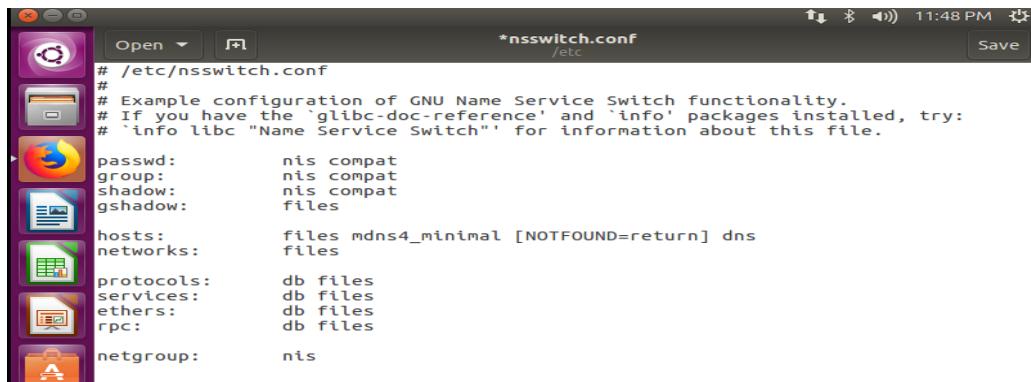
```
#  
# yp.conf      Configuration file for the ypbind process. You can define  
# NIS servers manually here if they can't be found by  
# broadcasting on the local net (which is the default).  
#  
# See the manual page of ypbind for the syntax of this file.  
#  
# IMPORTANT: For the "ypserver", use IP addresses, or make sure that  
# the host is in /etc/hosts. This file is only interpreted  
# once, and if DNS isn't reachable yet the ypserver cannot  
# be resolved and ypbind won't ever bind to the server.  
  
# ypserver ypserver.network.com  
domain example.com server ubuntu.example.com
```

28) sudo gedit /etc/nsswitch.conf



```
Terminal Terminal File Edit View Search Terminal Help  
pranali@ubuntu: ~  
** (gedit:8818): WARNING **: Set document metadata failed: Setting attribute met  
adata::gedit-position not supported  
pranali@ubuntu:~$ sudo gedit /etc/nsswitch.conf  
  
(gedit:8840): IBUS-WARNING **: The owner of /home/pranali/.config/ibus/bus is no  
t root!  
  
(gedit:8840): Gtk-WARNING **: Calling Inhibit failed: GDBus.Error:org.freedeske  
p.DBus.Error.ServiceUnknown: The name org.gnome.SessionManager was not provided  
by any .service files  
  
** (gedit:8840): WARNING **: Set document metadata failed: Setting attribute met  
adata::gedit-spell-enabled not supported  
  
** (gedit:8840): WARNING **: Set document metadata failed: Setting attribute met  
adata::gedit-encoding not supported
```

Add nis in every compat word



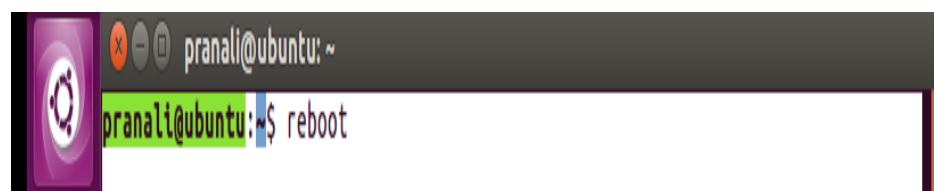
```
# /etc/nsswitch.conf  
#  
# Example configuration of GNU Name Service Switch functionality.  
# If you have the 'glibc-doc-reference' and 'info' packages installed, try:  
# `info libc "Name Service Switch"' for information about this file.  
  
passwd:      nis compat  
group:       nis compat  
shadow:      nis compat  
gshadow:     files  
  
hosts:       files mdns4_minimal [NOTFOUND=return] dns  
networks:    files  
  
protocols:   db files  
services:    db files  
ethers:      db files  
rpc:         db files  
  
netgroup:    nis
```

29) sudo chmod 777 /home



```
try chmod --help for more information.
pranali@ubuntu:~$ sudo chmod 777 /home
pranali@ubuntu:~$ ypcat passwd
pranali:x:1000:1000:Pranali,,,:/home/pranali:/bin/bash
nisusr:x:1004:1004::/home/nisusr:
test:x:1001:128::/home/test:
test2:x:1003:128::/home/test2:
test1:x:1002:128::/home/test1:
pranali@ubuntu:~$
```

30) reboot



```
pranali@ubuntu:~$ reboot
```

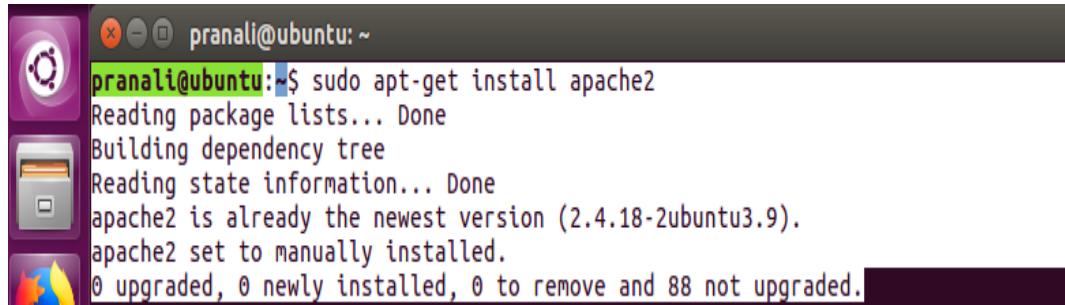
Practical No:- 9

Aim: - Install MySQL to configure database server, Install phpMyAdmin to operate MySQL

on web browser from Clients.

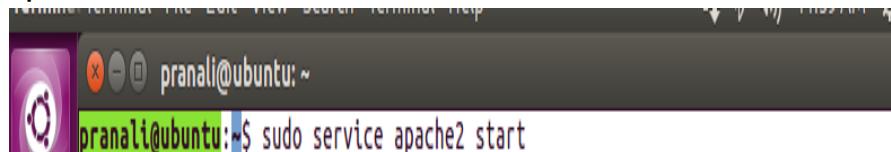
Command:-

1) sudo apt-get insatall apache2



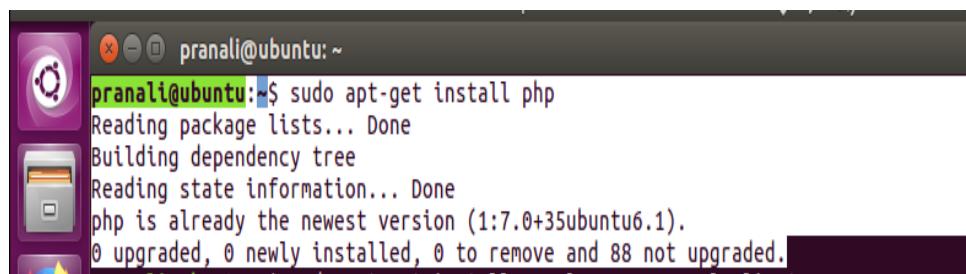
```
pranali@ubuntu:~$ sudo apt-get install apache2
Reading package lists... Done
Building dependency tree
Reading state information... Done
apache2 is already the newest version (2.4.18-2ubuntu3.9).
apache2 set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 88 not upgraded.
```

2) sudo service apache2 start



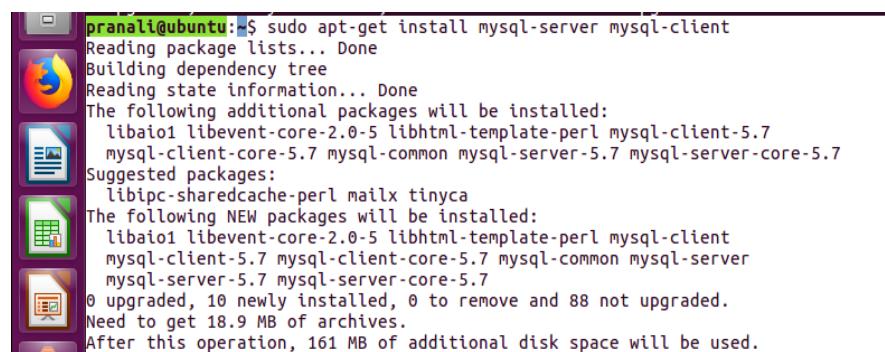
```
pranali@ubuntu:~$ sudo service apache2 start
```

3) sudo apt-get install php



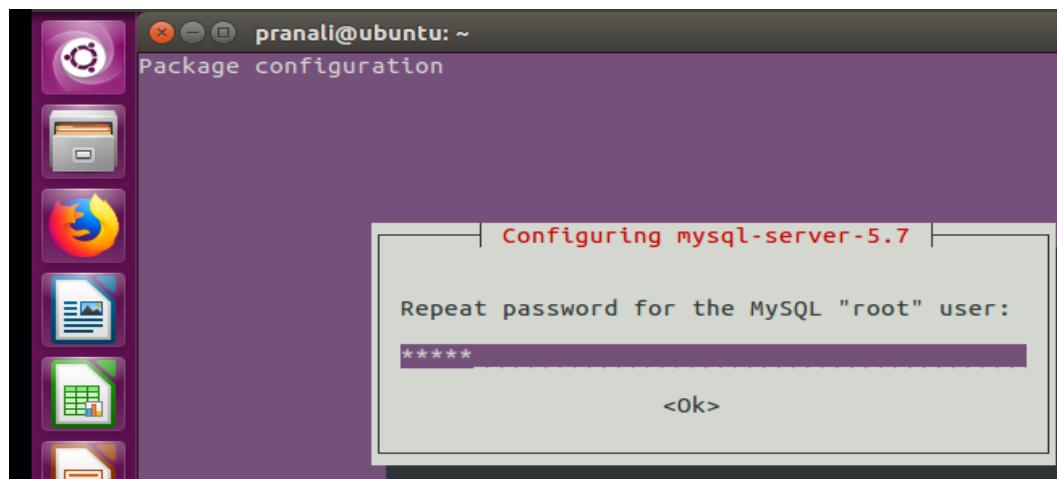
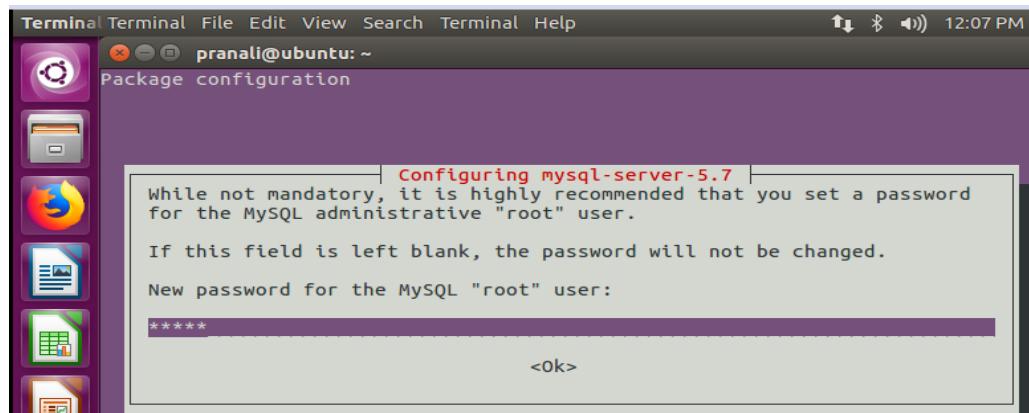
```
pranali@ubuntu:~$ sudo apt-get install php
Reading package lists... Done
Building dependency tree
Reading state information... Done
php is already the newest version (1:7.0+35ubuntu6.1).
0 upgraded, 0 newly installed, 0 to remove and 88 not upgraded.
```

4) sudo apt-get install mysql-server mysql-client

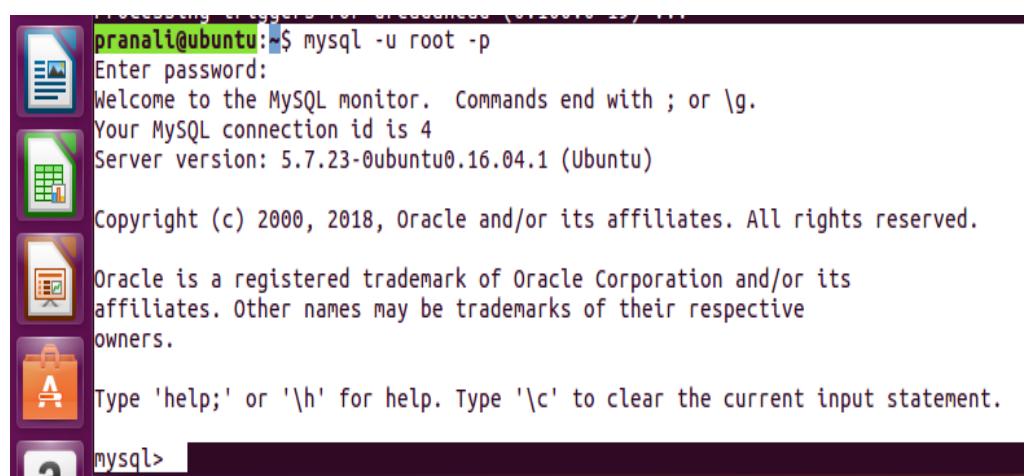


```
pranali@ubuntu:~$ sudo apt-get install mysql-server mysql-client
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libaio1 libevent-core-2.0-5 libhtml-template-perl mysql-client-5.7
  mysql-client-core-5.7 mysql-common mysql-server-5.7 mysql-server-core-5.7
Suggested packages:
  libipc-sharedcache-perl mailx tinyca
The following NEW packages will be installed:
  libaio1 libevent-core-2.0-5 libhtml-template-perl mysql-client
  mysql-client-5.7 mysql-client-core-5.7 mysql-common mysql-server
  mysql-server-5.7 mysql-server-core-5.7
0 upgraded, 10 newly installed, 0 to remove and 88 not upgraded.
Need to get 18.9 MB of additional disk space.
After this operation, 161 MB of additional disk space will be used.
```

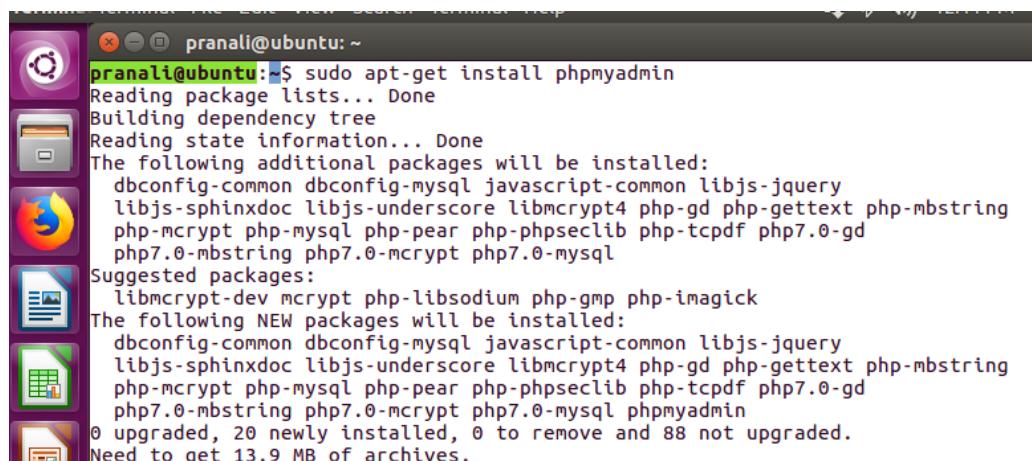
5) Default user is root then set the password 12345.



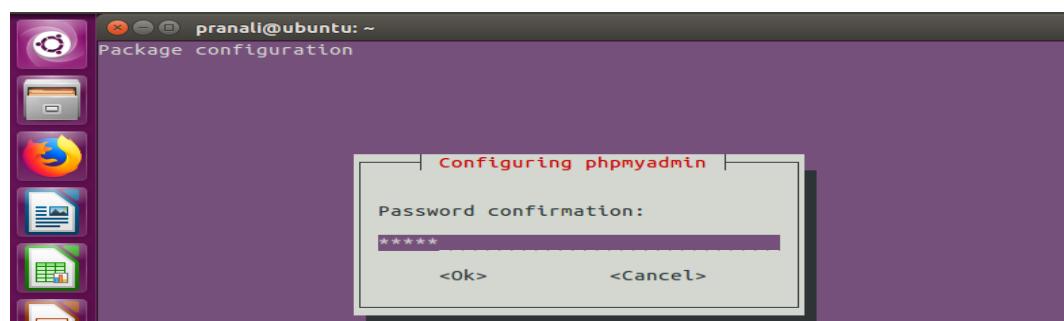
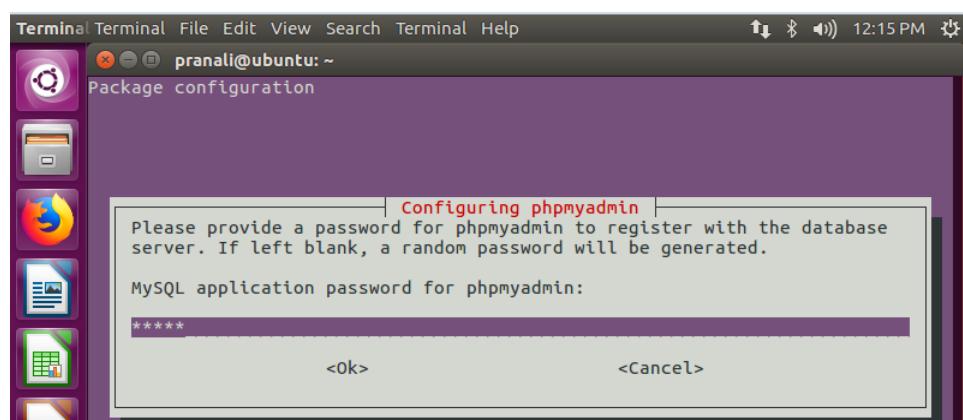
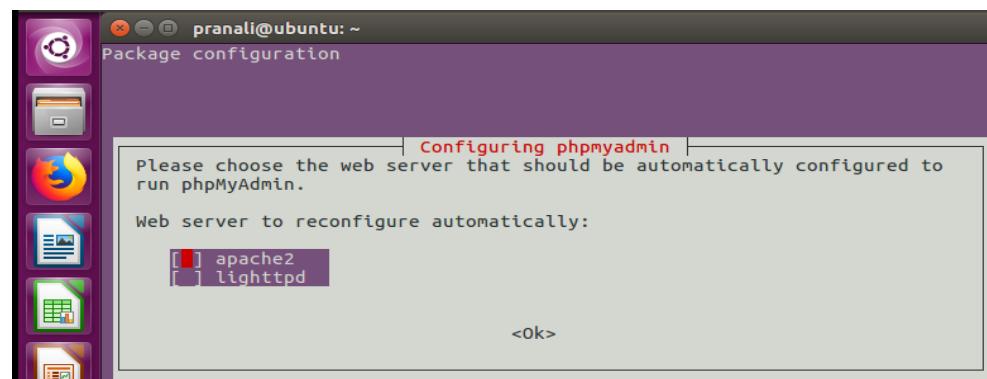
6) Mysql -u root -p



7) Sudo apt-get install phpmyadmin



```
pranali@ubuntu:~$ sudo apt-get install phpmyadmin
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  dbconfig-common dbconfig-mysql javascript-common libjs-jquery
  libjs-sphinxdoc libjs-underscore libmcrypt4 php-gd php-gettext php-mbstring
  php-mcrypt php-mysql php-pear php-phpseclib php-tcpdf php7.0-gd
  php7.0-mbstring php7.0-mcrypt php7.0-mysql
Suggested packages:
  libmcrypt-dev mcrypt php-libsodium php-gmp php-imagick
The following NEW packages will be installed:
  dbconfig-common dbconfig-mysql javascript-common libjs-jquery
  libjs-sphinxdoc libjs-underscore libmcrypt4 php-gd php-gettext php-mbstring
  php-mcrypt php-mysql php-pear php-phpseclib php-tcpdf php7.0-gd
  php7.0-mbstring php7.0-mcrypt php7.0-mysql phpmyadmin
0 upgraded, 20 newly installed, 0 to remove and 88 not upgraded.
Need to get 13.9 MB of archives.
```



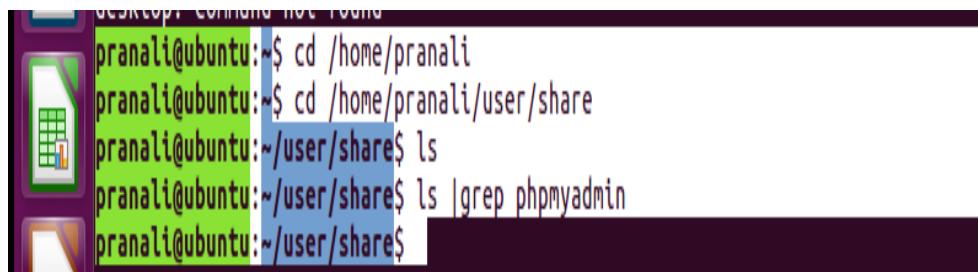
- 8) ls
- 9) cd /var/www/html



A screenshot of an Ubuntu desktop environment. A terminal window is open at the bottom of the screen. The command history shows:

```
pranali@ubuntu:~$ ls
Desktop Downloads Music Public Videos
Documents examples.desktop Pictures Templates
pranali@ubuntu:~$ locate phpmyadmin
pranali@ubuntu:~$ cd /var/www/html
pranali@ubuntu:/var/www/html$ ls
index.html
```

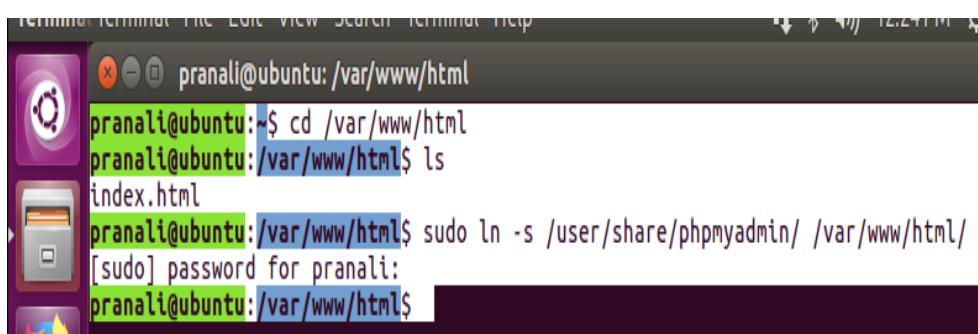
- 10) /user/share \$ls
- 11) /user/share \$ls | grep phpmyadmin



A screenshot of an Ubuntu desktop environment. A terminal window is open at the bottom of the screen. The command history shows:

```
pranali@ubuntu:~$ cd /home/pranali
pranali@ubuntu:~$ cd /home/pranali/user/share
pranali@ubuntu:~/user/share$ ls
pranali@ubuntu:~/user/share$ ls |grep phpmyadmin
pranali@ubuntu:~/user/share$
```

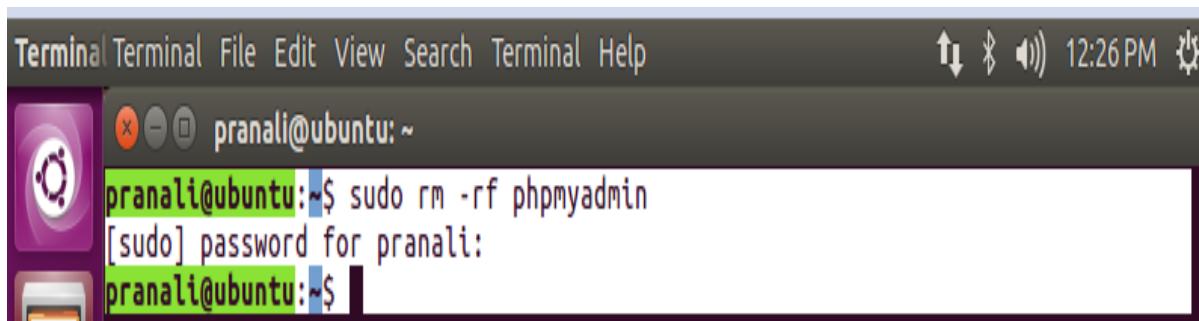
- 12) Cd /var/www/html
- 13) Cd /var/www/html \$ sudo ln -s /user/share/phpmyadmin/ /var/www/html/



A screenshot of an Ubuntu desktop environment. A terminal window is open at the bottom of the screen. The command history shows:

```
pranali@ubuntu:/var/www/html$ cd /var/www/html
pranali@ubuntu:/var/www/html$ ls
index.html
pranali@ubuntu:/var/www/html$ sudo ln -s /user/share/phpmyadmin/ /var/www/html/
[sudo] password for pranali:
pranali@ubuntu:/var/www/html$
```

- 14) Refresh the browser localhost/phpmyadmin
- 15) If forbidden error is occur then
Sudo rm -rf phpmyadmin



A screenshot of an Ubuntu desktop environment. A terminal window is open at the bottom of the screen. The command history shows:

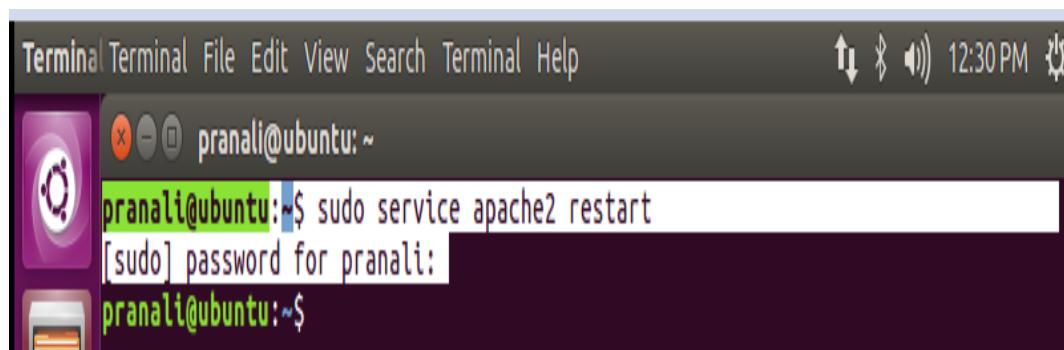
```
pranali@ubuntu:~$ sudo rm -rf phpmyadmin
[sudo] password for pranali:
pranali@ubuntu:~$
```

- 16) Cd /var/www/html
- 17) Cd /var/www/html \$ ls



```
ln: failed to create symbolic link '/var/www/html/phpmyadmin': File exists
pranali@ubuntu:~$ cd /var/www/html
pranali@ubuntu:/var/www/html$ ls
index.html phpmyadmin
pranali@ubuntu:/var/www/html$
```

- 18) Sudo service apache2 restart



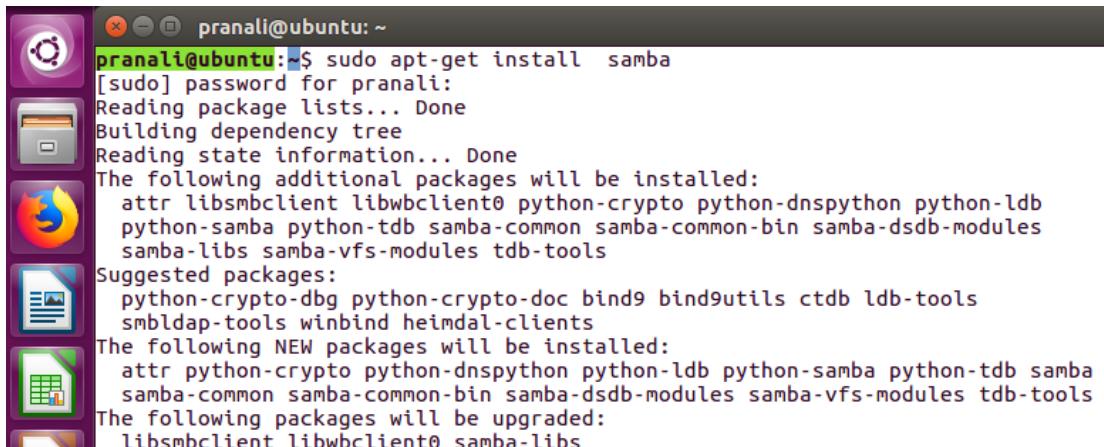
```
Terminal Terminal File Edit View Search Terminal Help
pranali@ubuntu:~$ sudo service apache2 restart
[sudo] password for pranali:
pranali@ubuntu:~$
```

Practical No:-10

Aim:- Install Samba to share folders or files between Windows and Linux

Command:-

- 1) Sudo apt-get install samba



```
pranali@ubuntu:~$ sudo apt-get install samba
[sudo] password for pranali:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  attr lib smbclient libwbclient0 python-crypto python-dnspython python-ldb
  python-samba python-tdb samba-common samba-common-bin samba-dsdb-modules
  samba-libs samba-vfs-modules tdb-tools
Suggested packages:
  python-crypto-dbg python-crypto-doc bind9 bind9utils ctdb ldb-tools
  smbldap-tools winbind heimdal-clients
The following NEW packages will be installed:
  attr python-crypto python-dnspython python-ldb python-samba python-tdb samba
  samba-common samba-common-bin samba-dsdb-modules samba-vfs-modules tdb-tools
The following packages will be upgraded:
  lib smbclient libwbclient0 samba-libs
```

- 2) Create folder in home directory
- 3) Sudo gedit /etc/samba/smb.conf



```
pranali@ubuntu:~$ sudo gedit /etc/samba/smb.conf
[sudo] password for pranali:
```

```
[folder_name]
Comment=my folder
Read only=no
Browsable=yes
Path=/home/Pranali/share
```

```

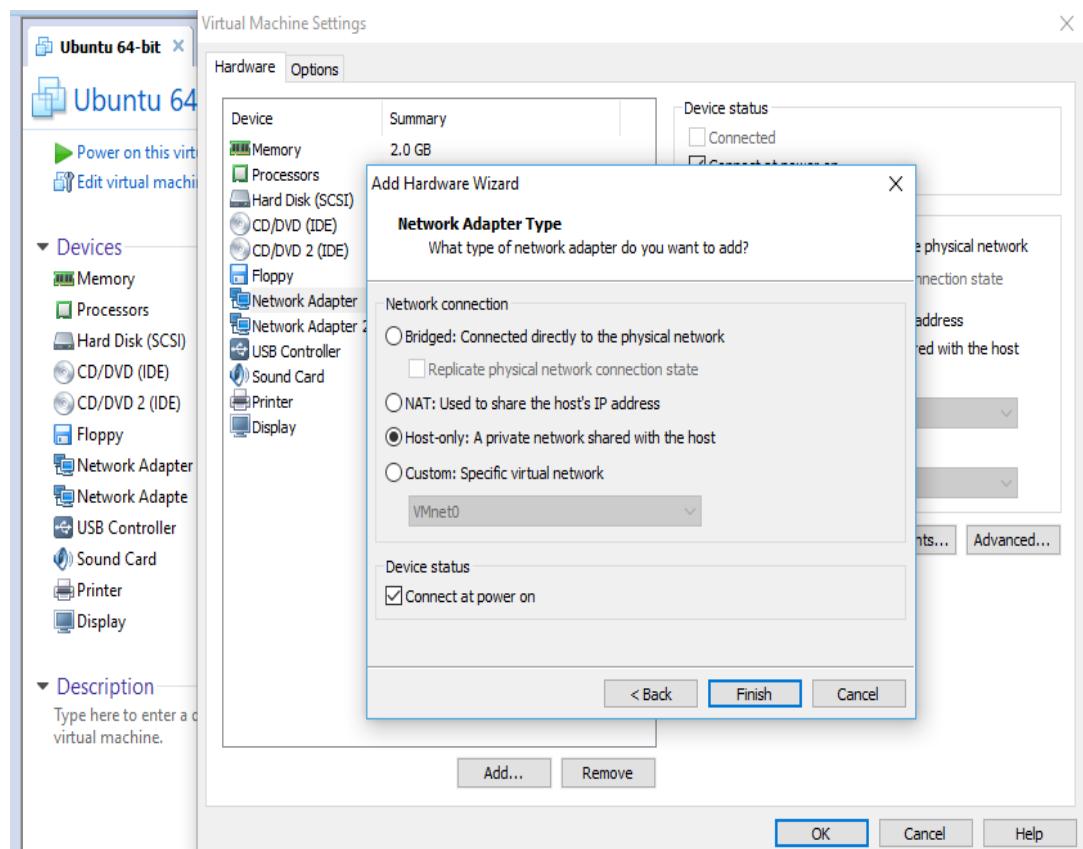
[printers]
comment = All Printers
browseable = no
path = /var/spool/samba
printable = yes
guest ok = no
read only = yes
create mask = 0700

# Windows clients look for this share name as a source of downloadable
# printer drivers
[print$]
comment = Printer Drivers
path = /var/lib/samba/printers
browseable = yes
read only = yes
guest ok = no
# Uncomment to allow remote administration of Windows print drivers.
# You may need to replace 'lpadmin' with the name of the group your
# admin users are members of.
# Please note that you also need to set appropriate Unix permissions
# to the drivers directory for these users to have write rights in it
; write list = root, @lpadmin

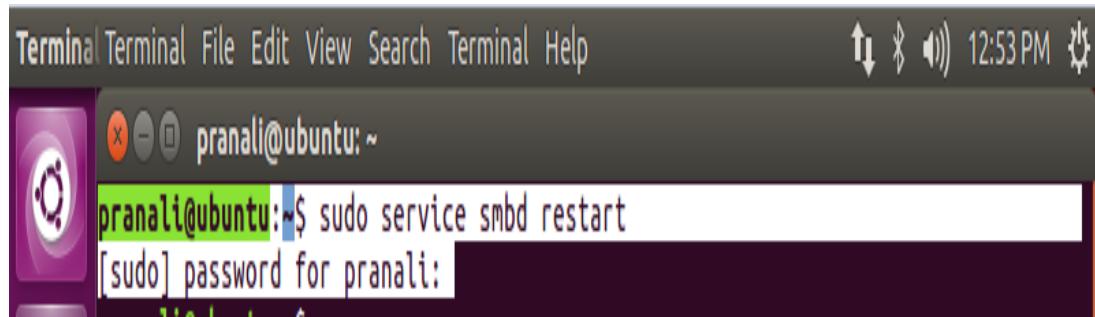
[share]
comment=my folder
path=/home/pranali/share
read only=no
browsable=yes

```

- 4) Then shut down the system and change the network adapter setting NAT into HOST only.

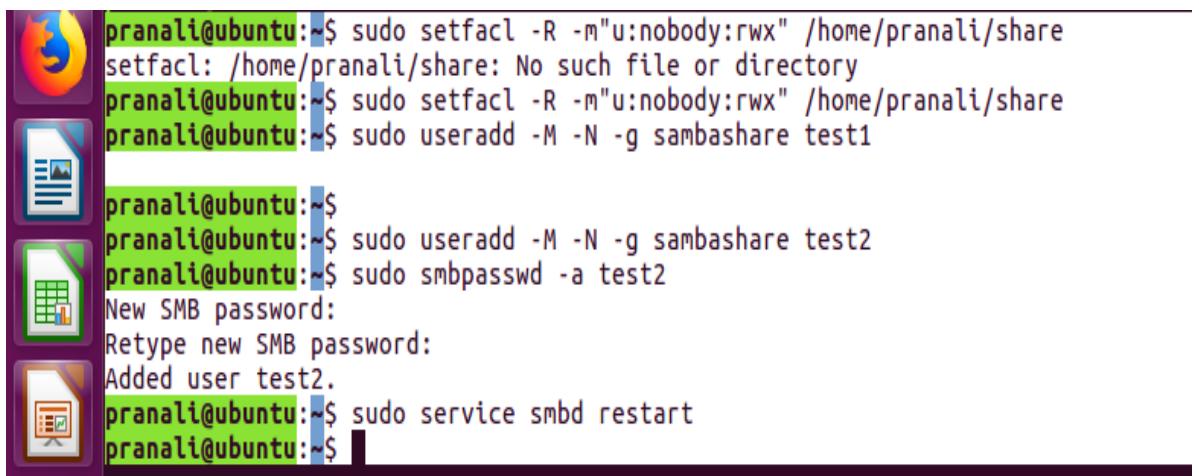


5) Sudo service smbd restart



```
Terminal Terminal File Edit View Search Terminal Help
pranali@ubuntu:~$ sudo service smbd restart
[sudo] password for pranali:
```

- 6) Then check the folder is in windows system
- 7) Window+R :- ip address of ubuntu system.
- 8) If the foler is lock then
- 9) Sudo setfacl -R -m "u:nobody:rwx"/home/Pranali/user
- 10) And the user :- sudo useradd -M -N -g sambashare test
- 11) Set the password of user:- sudo smbpasswd -a test
- 12) Sudo service smbd restart



```
pranali@ubuntu:~$ sudo setfacl -R -m "u:nobody:rwx" /home/pranali/share
setfacl: /home/pranali/share: No such file or directory
pranali@ubuntu:~$ sudo setfacl -R -m "u:nobody:rwx" /home/pranali/share
pranali@ubuntu:~$ sudo useradd -M -N -g sambashare test1

pranali@ubuntu:~$ 
pranali@ubuntu:~$ sudo useradd -M -N -g sambashare test2
pranali@ubuntu:~$ sudo smbpasswd -a test2
New SMB password:
Retype new SMB password:
Added user test2.
pranali@ubuntu:~$ sudo service smbd restart
pranali@ubuntu:~$ 
```

13) Check the folder

