section one: ip assignment

type of addr assignment

manual -¿ static
dynamic -¿ DHCP server
ifconfig -a show you all interface
route -n show table of route
ip route show also show table
/etc/network/interfaces to see seting of interface in ubonto
/etc/syscongih/network-scripts/ for centos
systemctl restart networking
secure shell (ssh) =¿ remote managment tcp/22 encrypt
install openssh-server
apt-ger install openssh-server
netstat -ntulp
n -¿ numeric
t-¿ tcp
u -¿ udp
l -¿ listening
p -¿ PID
cat /etc/resolv.conf shot you dns server
uuidgen -¿ this command make a uuid to set it in to ifcfg-enp0s in centos

DHCP

vi /etc/default/isc-dhcp-server set name of interface for lissten to dhcp
INTERFACES="name of interface"
/etc/dhcp/dhcpd.conf you can set range for ip addressing or dns or set reservation an ip
systemctl restart isc-dhcp-server
systemctl status isc-dhcp-server
netstat -ntulp — grep :67
apt-get remove name apt-get purge name
cat /var/log/syslog — grep -i dhcpdiscover -offer- request - ach
cat /var/lib/dhcp/dhcpd.leases
systemctl restart sshd

Name resolution

Name ==¿ ip
www.google.com —¿ 82.153.6.8
Name sever:
1.DNS server (BIND) FQDN or DNS name — ¿ ip
2.WINS server NetBIOS —¿ ip

vi /etc/hosts add an ip and name infront of it to set name resolution
vi /etc/nsswitch change priority of dns server or hosts

Bind

www.min.ir.””
local DNS sever (forwarding DNS server) —¿ Other DNS server (Forwarder DNS server) this work named Recursion
DDNS
DNS master and slave with BIND
Master DNS server ==¿ Name Registration + Name resolution
Slave DNS server ==¿ Name resolution
www -¿ host name –¿ can be 63 char first 15 char for NetBIOS
.mi.ir -¿ DNS Suffix –¿ can be 255 char
nslookup sitename to get ip
host sitename to get ip
dig sitename to get ip
dig @ip to ask ip
Resource Record:
SOA (main): =====¿ Zone transfer Serial number: Refresh interval: 1200 s Retry interval: 300 s Expire: 1 Day to s Cache TTL: 3600 s
NS (main) ===¿ name server ====¿autoritative
A ====¿ FQDN —-¿IPv4
AAAA ====¿ FQDN —-¿IPv6
PTR ====¿ IP ===¿ FQDN
SRV
MX
CName(Alias)
TXT
SPF
dig @4.2.2.4 AAAA www.google.com
apt-get install bind9 bind9utils
rpm -qa — grep bind
vi /etc/bind/named.conf.options
add ”recursion yes ;” at ent of
rndc reload —¿ if succesful mean every config file ok
systemctl status bind9
systemctl restart bind9 or rndc reload

set server as master

vi /etc/bind/named.conf.local
to those file add 4 next lines
zone ”anisa.co.ir” type master; file ”/etc/bind/db.anisa.co.ir”;;
to crate a database for dns server

vi/etc/bind/db.anisa.co.ir
to those file add 11 next lines
$TTL 3600 @ IN SOA anisa.co.ir. root.anisa.co.ir. (10 ;serial1200 ;refresh 300 ;retry 86400 ;expire 3600) ;cash ttl @ IN NS ubuntu.anisa.co.ir. ubuntu.anisa.co.ir. IN A 192.168.56.10 www.anisa.co.it. IN A 192.168.56.60 ftp.anisa.co.it. IN A 192.168.56.70
systemctl restart bind9
rndc reload
if rndc is none succesful use systemctl status
or use journalctl -xe
dig @localhost www.anisa.co.ir
dig @localhost ftp.anisa.co.ir
dig @localhost pop3.anisa.co.ir
if wriht 192.168.56.10(dns server) in localhos place then ask dns server

set dns server by reverse ip addressing

192.168.56.0/24 ==¿ 56.168.192.in-addr.arpa
then set PTR to convert id to fqdn
vi /.. /named.conf.local
add
zone "56.168.192.in-addr.arpa" type master ; file "/etc/bind/db.56.168.192";
;
cp db.anisa.co.ir ./db.56.168.192
vi db.56.168.192
delete 4 last line (with that have ip)
them add
10 IN PTR ubuntu.anisa.co.ir. 60 IN PTR www.anisa.co.ir 70 IN PTR ftp.anisa.co.ir 80 IN PTR pop3.anisa.co.ir
systemctl restart bind9
rndc reload
dig @localhost -x 192.168.56.60
vi /etx/timezone ==¿ Asia/Tehran
cd /use/share/zoneinfo
cp ./Iran /etc/localtime
date
timedatectl list-timezones
timedatectl set-timezone Asia/Tokyo
timedatectl
to set master and slave dns server the both timezone mostbe same

make slave dns server (centos)

vi /etc/named.conf
add

in line 13 centos listen in 127.0.0.1:53 that mean centos listen to itself them delete 127.0.0.1 and write any to listen to another

in lin 21 allow-query most be to any instead of localhosr them whrit in "any;"

after default zoon than define at first add

zone "anisa.co.ir" type slave; masters 192.168.56.10; ; file "db.anisa.co.ir"; ;

in ubuntu

vi /etc/bind/db.anisa.co.ir

chande serial 2 unit

add a ns record after first ns record

@ IN NS centos.anisa.co.ir centos.anisa.co.ir. In A 192.168.56.20 systemctl restart bind9

systemctl restart named

netstat -ntulp — grep :53 — grep named

cat /var/log/messages — grep -i transfer

dig @localhost pop3.anisa.co.ir

dig @192.168.56.10 pop3.anisa.co.ir

dig @192.168.56.20 pop3.anisa.co.ir

systemctl enable named systemctl disable named

DNSsec

TSIG (Transfer SIGniture) = a secure chanel between master and slave

cd /etc/bind

dnssec-keygen -a HMAC-MD5 -b 128 -n HOST -r /dev/urandom transerkey

— — — —

cat Ktransferkey.+157+02007.private — grep Key ¿ ./named.conf.tsif

vi named.conf

add at end

include "/etc/bind/named.conf.tsig";

vi named.conf.local

in anisa zone

add afrer file""

allow-transfer key "transferkey";;

systemctl rstart bind9

rndc reload

we maby got an error from named.conf.tsig file

change Key: 231313131.. to

key "transferkey" algorithm HMAC-MD5; secret "231313131.."; ;

systemctl restart bind9

rndc reload

systemctl status sshd

ss -ntulp — grep :22

scp ./named.conf.tsig root@192.168.56.20:/root/

cat named.conf.tsig ¿¿ /etc/named.conf

vi /etc/named.conf

4dd move those line to above of options
and beetween options and key add
server 192.168.56.10 keys transferkey; ; ;
systemctl restart named
systemctl restart bind9
rndc reload
systemctl restart named

Apache

socket base application
Protocol:IP:Port
http://www.google.com:80
if we want to make two site
bui.com mai.ir
1) diffrent IP add ===¿ bui.com –¿ 192.168.56.10 , mai –¿ 192.168.56.20
2) same IP address and diffrent port ===¿ bui.com ¿¿ 192.168.56.10:8080 , mai ¿¿ 192.168.56.10:8090
3) same IP Prot ====¿ diffrent host name (header) ==¿ 192.168.56.10:8080 –¿ bui.com , mai.ir
package name in red hat = httpd and in debian = apache2
and config file with same name in the /etc
¡virtualHost 192.168.56.20:20¿ DocumentRoot /var/www/html ¡/virtualHost 192.168.56.20:20¿
in /etc/apache2/ports.cofn —¿ Listen to any thing
you can also see html file in /var/www
in www html folder is default and you can add another folder to more page
in /etc/apache2/site-avalible you can add config file
to show change in site you most linked mysite in site-enable to config file than in dite-avalible
you also can make link by this command "a2endite "name of config file""
systemctl reload apache2
systemctl restart apache2
to open site with name of sit (not ip)
first in /apache2/site-enabled/ change mysite file and add a line in every server
ServerName www.mai.ir
them go to /bind/maned.conf.local
add new one for bui and mui
so go to make db of these zone and change it
:
above line to change same work to new word in vi per each cope
systemctl restart bind9
rndc reload
systemctl restart apache2

them go to centos (client)
vi /etc/sysconfig/network-scripts/ifcfg-enp0s3
and add DNS
DNS1=192.168.56.10
systemctl restart network
authentication methods :
1)username password ===¿ /etc/passwd, ldap server, kerveros, NIS, Active Directory
2)smart card ===¿ EAP
3)Certificate ===¿ CA
AAA server : ====¿ RADIUS server
Authenticate Authorized Accounting
authenticate for apache2
make a (name)secret file in /var/www/mai/
echo "¡h1¿ welcome to secret page¡/h1¿" ¿ ./secret/index.html
htpasswd -c /etc/apache2/amirpass amir
vi /etc/apache2/site-enabled/mysite
in a virtualhost zone add these line
¡Directory "/var/www/maserati/secret" ¿ AuthType Basic AuthName "PLZ enter username and password" AuthUserFile /etc/apache2/amirpass Require valid-user ¡/Directory¿
systemctl restart apache2
make a (name)policy in /var/www/mai/
echo "¡h1¿welcom to policy page ¡/h1¿" ¿ ./policy/index.html
vi /etc/apache2/sites-enabled/mysite.conf
in a virtual host zone add
Redirect /secret /policy
systemctl restart apache2
ssl setup in centos
yum install httpd mod_ssl
cd /etc/httpd
cd conf
vi httpd.conf
line 42 listen in 80 port
line 119 Ducumentroot "/var/www/html"
cd /var/www/html
echo "¡h1¿welcom to centos web server ¡/h1¿" ¿ ./index.html
systemctl restart httpd
if error journalctl -xe
vi /etc/httpd/conf.d/ssl.conf
to set site in https
ca /etc/httpd
openssl req -x509 -nodes -days 365 -newkey rsa:2048 -keyout ./private.key -out ./public.crt
vi /etc/httpd/conf.d/ssl.conf
line 100 changto ==¿ SSLCertificateFile /etc/httpd/puvlic.crt

line 107 chang to ==¿ SSLCertificateKeyFile /etc/httpd/private.key
systemctl restart httpd
netstat -ntulp — grep :443

1 Secur SHell (ssh)

remote managment:
1) Telnet ===¿ 23 —¿ Plaintext
2) SSH ===¿ 22 —¿ Encrypt ¿¿ user,pass password-less(ssh key)
3) RDP ===¿ 3389
4) SNMP ===¿
dpkg -l — grep openssh-server
apt-get install openssh-server
cd /etc/ssh
vi sshd$_{c}onfig - - > permitlogin >> yes$
systemctl restart sshd
netstat -ntulp — grep :22
ssh root@192.168.56.10
ssh root@192.168.56.10 -p 2254 (on port 2254)
exit
vi /etc/selinux/config
in line 7 =disabled

password less in ssh

in /.ssh
ssh-keygen
ssh-copy-id -i id$_{r}sa.pubroot$@192.168.56.10
ssh root@192.168.56.10

routing

type of route
1)network route 192.168.56.0/24
2)host route 192.168.56.20/32
3)default route 0.0.0.0/0.0.0.0
priority ==¿ H - N - D
priotity ==¿ static - dynamic
static router – dynamic routing protocol —-¿ dynamc router
adverisement RIP,EIGRP,OSPF,.. BGP,IS-IS
Announcement
to see os is router or not
cat /proc/sys/net/ipv4/ip$_{f}orwardif == 0 = disable$
echo 1 ¿ /proc/sys/net/ipv4/ip$_{f}orwardd$
to permanent routing

vi /etc/sysctl.conf
ling 28 del

IPTable , firewall

firewall

ufw status
ufw allow 22/tcp
to see rules ufw status
and ports in /etc/servises
ufw status numbered
ufw delete 4
ufw reset
but in centos
systemctl start firewalld
firewall-cmd –list-ports
firewall-cmd –services
firewall-cmd –remove-service=ssh
firewall-cmd –permanent –remove-service=ssh
firewall-cmd –reload
firewall-cmd –permanent –add-port=22/tcm
firewall-cmd –reload

IPTable

iptavles:(IPchanges) and we have priority
1)Filter===¿ Block, Accept Packet
2)NAT =====¿ Internet sharing , Port mapping (Forwarding) , Readirect
3)Mangle
4)Raw
5)Security
every table have some Chain
Chains: $_{1})INPUT|$
2)FORWARD —
3)OUTPUT —==¿ Built-in
4)PREROUTING —
5)POSTROUTINg —
man iptables
iptables -t filter -n -L
iptables -t filter -F
iptables -t filter -X
iptables -t filter -nL
inpables –table nat -nL
Define Rules :

-p protocol —¿ tcp, udp, icmp, all
-s source address
-d destination address
-i Inbound-Interface
-o Outbound-Interface
-j (jump)Target —¿ Accept, Reject(error message) , Drop (no error msg), Redirect, SNAT, DNAT, Masquerade
-A Append
-I Insert
-t choose table (default filter)
-D delete
apt-get install iptables-persistent for permanent in ruleing
rule writing :
iptables -t filter -A INPUT -p icmp -s 192.168.56.20 -j REJECT
iptables -t filter -nL
iptables -t filter -A INPUT -p tcp –destination-port 22 -j REJECT
iptables -t filter -F
iptables -t filter -A INPUT -p tcp –destination-port 22 -s 192.168.56.30 -j REJECT
iptables -t filter -I INPUT 5(default 1) -p icmp -s 192.168.56.20 -j DROP
iptables -t filter -nL –line-numbers
iptables -t filter -D INPUT 3
iptables -t filter -F
iptables -t filter -A OUTPUT -p icmp -d 192.168.56.30 -j DROP
ss -ntulp — grep :22
change port num in /etc/ssh/sshd$_{c}onfig$
systemctl restart sshd
iptables -t nat -A PREROUTING -i enp0s3 -p tcp –dport 22 -j REDIRECT –to-port 2370(or else)
iptables -t filter -P INPUT DROP
iptables -t filter -A INPUT -p tcp –destination-port 22 -s 192.168.56.1 -j ACCEPT
to save all of them
iptables-save
iptables-save ¿ /etc/iptables/rules.v4

NAT

int nat os we most write two rule one in nat table and on in filter tables
iptables –table nat –append POSTROUNTING –out-interface enp0s8 –jump MASQUERADE
iptables –table filter –append FORWARD –in-interface enp0s3 –jump ACCEPT
iptables -t nat -A POSTROUTING -o enp0s8 -j MASQUERADE
iptables -t filter -A FORWARD -i nep0s3 -j ACCEPT

Port Mapping

iptables -t nat -A PREROUTING -i enp0s8 -p tcp –destination-port 2222 -j DNAT –to-destination 192.168.56.30:2370

iptables -t nat -A PREROUTING -i enp0s8 -p tcp –destination-port 3333 -j DNAT –to-destination 192.168.56.20:2480

iptables –t filter -A FORWARD -i enp0s8 -p tcp –destination-port 2370 -j ACCEPT

iptables –t filter -A FORWARD -i enp0s8 -p tcp –destination-port 2480 -j ACCEPT

DHCP relay ageng/host (router)

at first in dhcp sesrver os in /etc/dhcp/dhcpd.conf

add these line after subnet and host

subnet 172.20.1.0 netmask 255.255.255.0 range 172.20.1.111 172.20.1.120; option routers 172.20.1.2;

in router os

apt/yum install dhcp

route add -net 172.20.1.0/24 gw 192.168.56.20 dev enp0s3

enable routing in /proc/....

cp /lib/systemd/system/dhcrelay.service /etc/systemd/system/

vi /etc/systemd/system/dhcrelay.service

in line 9 add to end

192.168.56.10

systemctl –system daemon-reload

systemctl restart dhcrelay

cat /var/lib/dhcp/dhcpd.leases

LVM (logical volume manager)

ls /dev/sd*

lsblk

fdisk /dev/sdb % set the lvm tag - 8e

fdisk /dev/sdc

fdisk /dev/sdd

pvs % physical volum

vgs % volume group

lvs % logical volume

pvdisplay

vgdisplay

lvdisplay

pvcreate /dev/std1 /dev/sdc1 /dev/sdd1

vgcreate bigdatachunk /dev/sdb1 /dev/sdc1

pvs

vgs
lvcreate –name logical1 –size 6G bigdatachunk
lvs
mkfs.ext4 /dev/bigdatachunk/logical1
mkdir logical1
mount /dev/bigdatachunk/logical1 ./logical1
df -h
cd logical1
echo "LVM test" ¿ ./lvm.txt
vi /etc/fstab to permanent mounting
tune2fs -l /dev/bigdatachunk/logical1 to get some information like UUID
cd ..
lvextend -L +1G /dev/bigdatachunk/logical1
df -h
resize2fs /dev/bigdatachunk/lgical1
df -h
–¿ to decreas lv size without any problem at first you most unmount lv them check lv decrase stat with e2fsck if not give any error you can decreas size before unmount you most go out of derectory
umount /dev/bigdatachunk/logical1
e2fsck -ff /dev/bigdatachunk/logical1
fsck % to solve problem
echo $? to see status of last
resize2fs /dev/bigdatachunk/logical1 4G
lvreduce -L -3G /dev/bigdatachunk/logical1
lvs
df -h
mount /dev/bigdatachunk/logical1 ./logical1
df -h
vgextend bigdatachunk /dev/sdd1
pvs
vgs
df -h
lvremove /dev/bigdatachunk/logical1
umount /dev/bigdatachunk/logical1
lvremove /dev/bigdatachunk/logical1
lvs
vgs
vgreduce bigdatachunk /dev/sdd1
vgs
vgreduce bigdatachunk /sdc1
vgs
vgreduce bigdatachunk/sdb1
vgremove bigdatachunk
vgs
pvs

pvremove /dev/sdb1 /dev/sdc1 /dev/sdd1
ls /dev/sd*

RADE (Redundant Array of Independent Disks)

RADE0 (Srtiping)
RADE1 (Mirroring)
RADE-4: Dedicated Parity
RADE-5: Distributed Parity
RADE 10 - 1 , 0

RAID0 (2-32 disk)–¿ performance in read and write but no file tlorance (a data devide by 2 and half in disk 0 and half in disk 1)

RADE1 (2 disk)–¿ no performance in write but have performance in read but have backup (data in disk 1 same as in disk 0 (mirror)) in RADE1 have 50 percent over head –¿ 120 G –¿ 60G in RADE1

RADE 4 (3-32 disk)–¿ if we have n disk 1/n use for save parity and wehave 100/n percent overhead and a single data save distribut between another disk

RADE 5 like RADE 4 but in 4 a disk save all parity and in 5 each disk save a part of parity

in 4 , 5 if we lost two or more disk cant recaver it

RADE 10 –¿ RADE 1 + 0

in terminal

sha

fdisk /dev/sdb –¿ p –¿ t –¿ fd (RADE)–¿w
fdisk /dev/sdc –¿ p –¿ t –¿ fd (RADE)–¿w
fdisk /dev/sdd –¿ p –¿ t –¿ fd (RADE)–¿w
cat /proc/mdstat (file of RADE)
mdadm –create –verbose /dev/md0 –level=1 –rade-devices=2 /dev/sdb1 /dev/sdc1
fdisk /dev/md0
mkfs.ext4 /dev/md0
mkdir raid1
tune2fs -l /dev/md0 — grep UUID
tune2fs -l /dev/md0 — grep UUID ¿¿ /etc/fstab
vi /etc/fstab
change lastlin to UUID=gsgsdsfg. . . /root/raid1 ext defaults 0 0
mdadm –detail –scan
mdadm –detail –scan ¿ /etc/mdadm.conf
init 6
cat /proc/mdstat
df -h
cd raid1
echo ”raid 1 sample test ” ¿ ./raid1.txt
mdadm –detail /dev/md0
if a disk knocked out in RADE 1

mdadm –detail /dev/md0
cat /proc/mdstat
mdadm –manage /dev/md0 –add /dev/sdd1
if a disk born in RADE 5 first creat raid 5
mdadm –creat –verbose /dev/md –leve=5 –raid-devices=3 /dev/sdb2 /dev/sdc2 /dev/sdd2
fdisk /de/md1
mkfd.ext4 /dev/md1
mkdir raid5
tune2fs -l /dev/md1 — grep UUID ¿¿ /etc/fstab
in /etc/fstab change last line to UUID=hffhs... /root/raid5/ ext4 defaults 0 0
mdadm –detail –scan ¿ /etc/mdadm.conf
init 6
cat /proc/mdstat
df -h
mdadm –detail /dev/md1
cd raid 5
echo "raid 5 sample text" ¿ ./raid5.tex
now time to lose disk
mdadm –detail /dev/md1 lsblk
fdisk /dev/sdb
mdadm –manage /dev/md1 –add /dev/sdb2
mdadm –detail /dev/md1

Samba

file server –¿ a os that share file common internet file system (CIFS) = samba
two daemon = nmbd udp 137/138, smbd=tcp/139 or tcp/445
nmblookup
samba package for server
smbclient package,samba-client for client first for ubuntu and secont for centos
apt-get install samba smbclient
make a folder in windos in c drive with name (winfileserver)
then share folder with properties in share tab
and set permision is security tab
if we use $ at the end of name to share thats hiden share
we can see all share with
localhost command in run
also can see hiden share with
localhost name of share compmgmt.msc see all share
in compmgmt.msc in tab local user and group
in user folder add new user and give adminstraitor permissing
in linux

smbclient -L 192.168.56.20 -U richard(name of user that add)
smbclient //192.168.56.20/winfileserver -U richard
if you get some error like (nt status login failed)
vi /etc/samba/smb.conf
in line 30 add
client min protocol = SMB2 client max protocol = SMB3 (if no error not write these line)
systemctl restart smbd (debian)
smbclient //192.168.56.20/winfileserver -U richard
smb: ¿ help
smb: ¿ dir
smb: ¿ get winserver.txt
smb: ¿ exit
ls
echo "sample teslfsjfj l" ¿ ./linuxfile.txt
smbclient //192.168.56.20/winfileserver -U richard
smb: ¿ put linuxfile.txt
smb: ¿ dir
this part is finishet lets change role of linux and windoes
mkdir /linuxfileserver
chmod 777 /linuxfileserver
echo "slshflflsl" ¿ ./linuxfileserver/linuxsercer.txt
useradd -d /home/maziyar -m -s /bin/bash maziyar
passwd maziyar
vi /etx/samba/smb.conf
at end of file add
[linuxfileserver] path = /linuxfileserver valid users = maziyar read only = no create mask = 0777 directory madk = 0777
smbpasswd -a maziyar
systemctl restart smbd
in windows
in run

192.168.56.10
testparm to see status of samba

Manipulating modules(in centos)

Driver = Module ¿ .ko
lsmod (list of modules)
cdrom 42556 1 sr_mod
mean $sr_moddependedtocdrom$
cd /lib/modules
uname -r
cd /s10.0fs (answer of uname command)

cd net
cd ipv4
lsmod — grep cdrom
modinfo sr$_m od$
modinfo cdrom
remove module == rmmod or modprobe -r
inser module ==
insmod ==¿ 1-full path
or
modprob ==¿ 1-module name, 2-Dependency
/lib/modules/kernel-version/modules.dep =¿1) ko path, 2)Dependency
rmmod cdrom
modprob -r cdrom
rmmod sr-mod
modprobe -r cdrom
lsmod
/lib/modules/3.10.0-353...../modules.dep
modinfo sr$_m od(takeaddress)$
insmod (write address)
modinfo cdrom (take address)
insmod (addr)
insmod (addr sr-mod)
rmmod sr-mod
rmmod cdrom
modprobe sr-mod
lsmod — grep sr-mod
depmod -a (update db of mdules)

kernel compilation (in centos)

linux-A.B.C.tar.xz
A major release
B minor release
C patch level
in centos to install kernel
yum groupinstall "Develpment Tools" yum install ncurses-devel qt-devel
in ubuntu
apt-get install build-essential
cd /usr/src
tar -xvjf linux-3.6.4.tar.bz2 (gzip .gz -z, bzip2 .bz2 -j, xz .xz -J)
creating a .config file
make config (not recommended)
make menuconfig
make xconfig and gconfig
make oldconfig (not recommended)

cd linux-3.6.4 (extracted file)
use one of make config at up
old config make backup and them make new config
make mrproper (delete all config file)
after make config file enter
make zImage/bzImage (b = big for new kernel)
make modules
make modules$_install$
make install

Nginx

in ubuntu
apt-get remove apache2
apt-get purge apache 2
maby ger some warning we most del these warning
cd /etc rm -rf apache2
apt-get install nginx
cd /etc/nginx/sites-available
rm -f default
cd /var/www
rm -rf html/
mkdir anisa
cd anisa
mkdir site1 site2
echo "¡h1¿welcomgljlsg¡/h1¿" ¿ ./site1/index.html
echo "¡h1¿welcomgljlsg¡/h1¿" ¿ ./site2/index.html
cd /etc/nginx/sites-available
vi mysites.conf
add lines
server listen 192.168.56.10:80; location / root /var/www/anisa/site1; server listen 192.168.56.100; locarion / root /var/www/anisa/site2;
get out
cd ../sites-enabled
ln -s ../sites-available/mysites.conf .
nginx -t (show your mistak)
systemctl restart nginx
vi mysites.conf
set both locatino as 192.168.56.10:80
and theses line for both after listen line
server$_name$*amewww.site*1.*com*;
server$_name$*amewww.site*2.*com*;
nginx -t
cd /etc/bind
vi name.cconf.local

add new zone
zone "site1.com" type master; file "/etc/bind/db.site1.com"; ;
zone "site1.com" type master; file "/etc/bind/db/sites2.com"; ;
get out
cp db.mai.ir db.site1.com
cp db.mai.ir db.site2.com
vi db.site1.com
%s/mai.ir/site1.com/g
vi db.site2.com
%s/mai.ir/site2.com/g
systemctl restart bind9
rndc reload
systemctl restart nginx
vi mysites.conf
add after locatino for on server
location /image root /var/www/anisa;
mkdir /var/www/anisa/image
echo "¡h1¿any¡/h1¿" ¿ /var/www/anisa/image/index.html
nginx -t
systemctl restart nginx
cd /var/log/nginx
ls
tailf error.log
tailf access.log
vi /etc/nginx/site-enable/mysite.conf
add after address
$access_log/vae/log/nginx/access_image.log; error_log/var/log/nginx/error_image.log;$
nginx -t
slstemctl restart nginx
tailf $access_image.log$
vi /etc/nginx/site-enable/mysite.conf
add
server listen 192.168.10:80: $server_name www.site1.ir; location/return http://site1.com;;$
nginx -t
systemctl restart nginx
in centos
vi /etc/hosts
add after 127.0.0.1
192.168.56.10 www.site1.ir

Nginx Revese Proxy

balance request to web-server by protocol , web acceleration , security

1)Round Robin (cycle)
2)Least Connection (web server with less req choose)
3)IP Hash (same ip same web server)

vi /nginx/site-enable/mysites.conf
delete all line then add
upstream loadbalancer(any name) server 127.0.0.1:8080 weight=1; server 127.0.0.1:8090 weight=1;
server listen 80; location / proxy$_{p}asshttp://loadbalancer$;
server listen 8080; location / root /var/www/anisa/site1;
server listen 8090; location / root /var/www/anisa/site2;
nginx -t
systemctl restart nginx
ss -ntulp — grep :80
culr http://192.168.56.10
in file mysites.conf in upstream before server 127 add
ip$_{h}ash$;
nginx -t
systemctl restart nginx
curl

Nginx atuntication

in /var/www/anisa
mkdir secret
echo "¡h1¿¡/h1¿" ¿ ./secret/index.html
vi /etc/nginx/sites-enable/mysites.conf
delete all line add
server listen 80; location / root /var/www/anisa/site1; location /secret root /var/www/anisa; allow 192.168.56.20; deny all; auth$_{b}asic$"$PLZENTERusernamepas$"; $auth$_{b}asic_{u}se$
nginx -t
htpasswd -c /etc/nginx/farhadpass farhad(username)
cat /etc/nginx/fargadpass
systemctl restart nginx
cd /var/www/anisa/secret
dd if=/dev/zero of=./test.txt bs=500M count=1
in browser http://192.168.56.10/secret/test.txt
in mysites.conf
after auth$_{b}asic_{u}ser_{f}ileadd$
limit$_{r}ate1m$;
nginx -t
systemctl restart nginx

webmin

cd /etc/apt
vi sources.list
cd sources.list.d
vi webmin.list
deb http://download.webmin.com/download/repasitory sarge contrib

wgen http://www.webmin.com/jcameron.asc
apt-key add jcameron-key.asc
apt-get install webmin
apt-get update
apt-get install webmin
dpkg -l — grep webmin
in sources.list.d
rm -f jcameron-key.asc
in browser https://192.168.56.10:10000
see and manage them

IPV6

IPv6 Prefix (subnet mask ipv4)
2001:DB8:3F::/48 –¿ Network Number (NN) 2 $^{8}0IP$
2001:DB8:3F01::/47 –¿ Single IP becaus in 81 bit at end of ip (Net id) exist 1 number is all been zero mean is NN
1)-Unicast
2)-Multicast
3)-Anycast
Unicast
Global unicast address –¿ if first digit of first block == 3 or 2 is Global
Link-local address –¿ FE80::/64
Unique local address –¿ if FC or FD in first
Speecail address –¿ loopback ::1 (127.0.0.1 in ipv4) or unspecified addr :: (0.0.0.0 in ipv4)
Multicast IPv4 address –¿ FF at first
transation address

IPv6 IP assignment

NN = fd00::/64
in ubuntu
vi /etc/network/interfaces
add
iface enp0s3 inet6 static address fd00::10 netmask 64
systemctl restart networking
in centos
vi /etc/sysconfig/network-scripts/ifcfg-enp0s3
add
IPV6ADDR=fd00::20/64
ping6
rpm -qa — grep bind
yum install -y bind bind-utils
vi /etc/named.conf

in line 13 in oprino
listen-on-v6 —¿ any;
allow-query —¿ any;
then add new zone
zone "anisa.co.local" type master; file "/etc/named/db.anisa.co.local"; ;
vi /etc/named/db.anisa.co.local
add
$TTl 1200
anisa.co.local IN SOA ns.anisa.co.local root@anisa.co.local (10 1200 300 86400 3600) @ IN NS ns.anisa.co.local. ns IN AAAA fd00::20 www IN AAAA fd00::60 ftp IN AAAA fd00::70
systemctl restart named
rndc reload
netstat -ntulp — grep :53
dig @localhost AAAA www.anisa.co.local
dig @localhost AAAA ftp.anisa.co.local
NN=fd00::/64
Net ID = fd00:0000:0000:0000 Host Id =0000:0000:0000:0000
define reverse zone:(wiht net id)
vi /etc/named.conf
zone "0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.d.f.ip6.arpa" type master; file "/etc/named/db.reversev6"; ;
vi /etc/named/db.reversev6
$TTL 1200 $ORIGIN 0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.d.f.ip6.arpa. @ IN SOA ns.anisa.co.local. root@anisa.co.local. (10 1200 300 86400 3600) @ IN NS ns.anisa.co.local. 0.2.0.0.0.0.0.0.0.0.0.0.0.0.0.0 IN PTR ns.anisa.co.local. 0.6.0.0.0.0.0.0.0.0.0.0.0.0.0.0 IN PTR www.anisa.co.local. 0.7.0.0.0.0.0.0.0.0.0.0.0.0.0.0 IN PTR ftp.anisa.co.local.
systemctl restart named
rndc reload
dig @loclahost -x fd::60
start apache2 (httpd in centos)
set listen to fd::20:80
search [fd::20]

FTP

Filte sharing :
samba
ftp –¿ FTP server :
vsftpd, Pure-FTPd, ProFTPd,other (server side package)
filezilla (client side package)
in ubuntu server
apt-get install vsftpd
in desktop
apt-get install filezilla

yum instal -y epel-release (add epel to package for download)
diffrent between ftp and tftp:
ftp
authentication 21 TCP ==¿ Reliable, low speed
tfpt
NO - authentication 69 UDP ==¿NO - reliable, High speed
diffrent bet ftps and sftp
ftps
work with key and tunel
sftp
encrypt send decrypt
vi /etc/vsftpd.conf
in line 146
userlist$_{e}nable = YESuserlist_{f}ile = /etc/ftpusers.userlistuserlist_{d}eny = NO$
echo maziyar ¿ /etc.ftpusers.userlist (maziyar name of a user)
systemctl restart vsftpd
systemctl status vsftpd
netstat -ntulp — grep :21
to upload file in server you most uncomment permition part
vi /etc/vsftpd.conf
in line 31 write$_{e}nable = YES$
systemctl restart vsftpd

fail2ban

eg. 3 invalid login in 90s ==¿ 1200s ban
apt-get install fail2ban
cd /etc/fail2ban
vi jail.conf
in line 66 maxretry
systemctl restart fail2ban

OpenVPN

yum install epel-release -y
yum install openvpn
apt-get install openvpn
in server(centos)
cd
openvpn –genkey –secret tunnel.key
scp tunnel.key root@192.168.56.10:/root/
vi vpnserver.conf
dev tun ifconfig 10.10.10.20 10.10.10.30 sectet tunnel.key

in ubuntu
cd
vi vpnclient.conf
remote 192.168.56.20 dev tun ifconfig 10.10.10.30 10.10.10.20 sectey tunnel.key
in centos
cd
openvpn –config vpnserver.conf
in ubuntu
cd
openvpn –config vpnclient.conf
in centos
ping 10.10.10.30
ssh root@10.10.10.30
you can also see wireguard (say it better)

NFS(Network File System)

in ubuntu server
apt-get install nfs-kernel-server
mkdir /nfsserver
chmod 777 /nfsserver/
vi /etc/exports
/nfsserver *(rw)
exportfs -r
systemctl restart nfs-kernel-server
systemctl status nfs-kernel-server
showmount -e localhost
in centos(client)
mkdir /nfsclient
chmod 777 /nfsclient/
showmount -e 192.168.56.10
vi /etc/fstab
192.168.56.10:/nfdserver /nfsclient nfs default 0 0
in ubuntu
cd /nfsserver
echo "nfs server side" ¿ ./nfsserver.txt
in centos
mount /nfsclient
mount
df
cd /nfsclient
ls
echo "nfs clinet side" ¿ ./nfsclient.txt
in ubuntu

cd /nfsserver
ls
sysstemctl enable nfs-kernel-server

Squid(caching proxy)

dpkg -l — grep squid
apt-get install squid3
systemctl restart squid3
systemctl status squid3
netstat -ntulp — grep 3128
(check nat setting)
cat /proc/sys/net/ipv4/ip$_{f}orwarding$
iptables -t nat -nL
iptables -nL
route -n
cat /etc/resov.conf
ping 8.8.8.8
set http proxy on client with ip 192.168.56.10 with port 3128
vi /etc/squid/squid.conf
in line 1188 (http$_{a}ccessdenall$)
http$_{a}ccessallowall$
systemctl reload squid
vi /etc/squid/squid.conf
in line 3408
cache$_{d}ir/usfvar/spool/squid10016255uncommentthidline$
cd /var/spool/squid
vi /etc/squid/squid.conf
in line 988 some acl definded
add
acl GOOGLE dstdomain .google.com
thengo to line 1188
before http$_{a}ccessallowlocalhost$
http$_{a}ccessdenyGOOGLE$
systemctl reload squid3
vi /etc/squid/squid.conf
inlin 988
acl TUESDAY time T
in line 1186
http$_{a}ccessdenyTUESDAY$
systemctl reload squid3
vi /etc/squid/squid.conf
in line 988
acl Nerwork1 src 192.168.56.0/24
in line 1168

http$_{a}ccessdenyNetwork$1
systemctl reload squid3

squid athenticaiton

htpasswd -c /etc/squid/minapass mina
cd /usr/lib/squid
vi /etc/squid/squid.conf
in line 448 before athenticatin tag add
auth$_{p}atambasicprogram/usr/lib/squid/basic_{n}csa_{a}uth/etc/squid/minapass$
in line 988
acl authenticate proxy$_{a}uthREQUIRED$
in line 1186
http$_{a}ccessallowauthenticate$
systemctl reload squid3

monitoring

man nc (nc=net cat)
nc -vz localhost 20-30
nc -vz localhost 80-85
nmap localhost
nmap -p 25 localhost
iftop
nload (switch with up and dowa arrow)
iperf (client server tool)
in server
iperf -s
in client
iperf -c 192.168.56.30

Postfix, Procmail, Dovecot

in ubuntu desktop
apt-get install postfix mailutils
useradd -d /home/mina -m -s /bin/bash mina
useradd -d /home/sina -m -s /bin/bash sina
passwd mina
passwd sina
systemctl status postfix
su - sina
mail
su - mina
mail
mail sina@ubuntu Cc: Subject: test hi sina ^{d}

su - sina
mail ?1 ?d ?q
mail root@ubuntu
su - root
mail
vi /etc/aliases
sina: root
newaliases
su - mina
mail sina@ubuntu
su - sina
mail
su - root
mail
cat /var/log/mail.log
vi /etc/aliases
del line sina: root
mail sina@ubuntu
su - sina
mail
vi .forward
mina@ubuntu
su - root
mail sina@ubuntu
su - sina
mail
su - mina
mail
su - sina
clear .forward

Procmail

(manage mail of user in user home)
in root
apt-get install procmail
two type (mbox=all mail in one file, maildir=all mail in uniq file in one dir)
cd /etc/postfix
vi main.cf
:q
postconf -e "mailbox$_{c}ommand = procmail$"
vi main.cf
su - sina
mkdir mail
su - mina
mkdir mail

su - root
mkdir mail
vi /etc/procmailrc
MAILDIR=$HOME/mail DEFAULT=/mail/inbox
mail sina@ubuntu
su - mina
mail sina@ubuntu
su - sina
mail
cd mail
cat inbox
su - root
vi /etc/procmailrc
add / at end of path line line 2
mail mina@ubuntu
su - sina
rm -f mail/inbox
mail mina@ubuntu
su - mina
mail
cd mail
cd inbox
cd new
cat 1551116516.ubuntu
cd ../..
mail -f inbox
?1 ?2 ?d ?d ?q

Dovecot

dpkg -l — grep dovecot
apt-get install dovecot-imapd dovecot-pop3d
cd /etc/ssl
we most put 2 file in this path (dovecot-openssl.cnf, mkcert.sh) but we dont have these
su - root
cd /etc/dovecot
cd conf.d
vi 10-mail.conf
in line 30 mail$_{l}ocation$
mail$_{l}ocation = maildir :$ $/mail/inbox$
cd /etc/ssl
vi mkcert.sh
vi dovecot-openssl.cnf
ls certs/ — grep dovecot
ls private/ — grep dovecot

./mkcert.sh
vi /etc/dovecot/conf.d/10-ssl.conf
in line 6
ssl = required
in line 12,13
ssl$_cert$ =< /etc/ssl/certs/dovecot.pemssl$_key$ =< /etc/ssl/private/dovecot.pem
systemctl restart dovecot
systemctl status dovecot
netstat -ntulp — grep :100
netstat -ntulp — grep :143
su - mina
in Thunderbird (graphical ubuntu desktop)
in account setting
in account action
add mail account
mina mina@ubuntu password
su - root
mail mina@ubuntu
su - root
mail mina@ubuntu
graphicaly send a mail to sina
su - sina
mail -f inbox/
?1 ?d ?q