

Web Services

<code>systemctl start httpd</code>	Start the Apache web service
<code>vim /etc/httpd/conf/httpd.conf</code>	Main config file for Apache
<code>/etc/httpd/conf.d</code>	Additional config, drop any additional here
<code>/etc/httpd/conf.modules.d</code>	Additional config

Squid Proxy

```

yum install squid
vim /etc/squid/squid.conf
systemctl enable --now squid
#Configure browser
Preferences -> Advanced -> Network -> Settings ->
Manual: 192.16 8.4.240 port 3128

```

Virtual Hosts

```

- vim /etc/hosts; Create name resolution
- cd /etc/httpd/conf.d; vim account.example.com.conf : Create virtual
host w/ content
<VirtualHost *:80>
ServerAdmin webmaster@account.example.com
DocumentRoot /web/account
ServerName account.example.com
</VirtualHost>
- mkdir /web/account; cd /web/account; vim index.html : Create index
file

```

FTP Server

<code>yum install vsftpd</code>	Install Very Secure ftp
<code>/etc/vsftpd</code>	Main config file
<code>yum install lftp</code>	Install ftp client
<code>lftp localhost</code>	Connect to ftp

Configure Postfix

```

#Email delivery
vim /etc/postfix/main.cf
    relayhost = [192.168.4.200]
    relay_domains = $mydestination

#Email Receiving
vim /etc/postfix/main.cf
    myorigin = $myhostname
    mynetworks = 192.168.0.0/16
    inet_protocols = ipv4
    inet_interfaces = all
    mydestination = ..., hash:/etc/postfix/transport

#setting transport
vim /etc/postfix/transport
    example.com local:
    .example.com local:

#update transport table
postmap /etc/postfix/transport

```

Configure an IMAP service

```

yum install dovecot
vim /etc/dovecot.conf
    protocols = imap pop3
vim /etc/dovecot/conf.d/10-mail.conf
    mail_location = mbox:~/mail:INBOX=/var/mail/%u
    mail_privileged_group = mail
vim /etc/dovecot/conf.d/10-ssl.conf
    ssl_cert = </etc/pki/dovecot/certs/ -
dovecot.pem
    ssl_key = </etc/pki/dovecot/private/d -
ovecot.pem
dovecot -n

```

Message Transport Agent – MTA: mail relay, Postfix
 Mail User Agent – MUA: Gmail, Outlook, Thunderbird
 Mail Delivery Agent - MDA: Dovecot



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Setting Up Email Services

```
#Email aliases
vim /etc/postfix/main.cf
    user1: user1, user2

postalias /etc/postfix/main.cf reload configuration
#parameters
myorigin
inet_interfaces = yourIP, localhost
mydestination = $myhostname, localhost.$mydomain, localhost, $mydomain
#Send email to test
echo "This is a test" | mail -s "test" root@example.com
#Check
mail
```

Cache-only DNS Server

```
yum install unbound
systemctl enable --now unbound
iptables -A INPUT -p udp/tcp -dport 53 -j ACCEPT
vim /etc/unbound/unbound.conf
    # interface: 0.0.0.0
    # access-control: 192.168.0.0/16 allow
    # do-main-insecure: "example.com"
    # forward-zone:
                                name: "."
                                forward-addr:
8.8.8.8
systemctl restart unbound
netstat -tulpen (Show listening port)
```

Database

yum install mariadb	Install Mariadb
mysql_secure_installation	Interactive setup for Mysql
mysql -u root -p	Login mysql using root
create database <i>dbname</i>	Create database
use people; create table users(firstname varchar(20),...);	Create table
insert into user(...) values(...);	Insert values
select * from users	Show table

Configure NFS Server

```
mkdir /nfsshare (Create folder for NFS)
chown nfsnobody :nfsnobody /nfsshare (Change owner to special nfsnobody user)
chmod 755 /nfsshare
vim /etc/exports
    /share *(rw,nosuid,noexec,fsid=0)
systemctl enable --now nfs-server
systemctl enable --now rpcbind
systemctl enable --now nfs-idmap
#Mounting NFS Share persistently
ssh into remote client
yum install nfs-utils (install nfs utilities)
mkdir -p /mnt/remote (Create mount point)
mount -t nfs Server IP: /share /mnt/remote (Mount)
vim /etc/fstab
    #centos:/share /centos/nfs nfs _netdev 0 0
umount /centos/nfs
mount -a
```



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Configure Samba Server

```
yum install samba
mv /etc/smb.conf /etc/smb.conf.bak
mv /etc/smb.conf /etc/smb.conf.new
vim /etc/smb.conf (Create a samba share)
[share]
    comment = samba share
    path = /samba
    public = yes

mkdir /samba
semanage fcontext -a -t samba_share_t /samba
restorecon -Rv /samba
systemctl start smb
#Create samba user
smbpasswd -a anna
#smb client
yum install smbclient
smbclient -L localhost
#Mount smb persistently
mount -o username=anna //centos/share /mnt
yum install cifs-utils (Install additional utils)
mkdir /centos/samba
vim /etc/fstab
//centos/samba /centos/samba cifs
    username=anna,password=anna
    0 0
```

KVM

```
yum group install "Virtualization Host" or yum
install qemu-kvm libvirt libvirt-client virt-
install virt-viewer virt-manager
systemctl start libvirtd
virt (Start Virtual manager)
#
virsh list (Show available VMs)
```

KVM (cont)

```
> virsh list --all (Show all VMs)
virsh start VM name
virsh stop VM name
virsh autostart VM name (Autostart after the host reboot)
virsh autostart --disable VMname (Disable autostart)
virt-install --name=VM1 --vcpus=1 --memory=1024 --cdrom=i-
soimage
virsh edit VM1 (Edit VM1 virtual machine)
virt-clone --original=VM1 --name=VM2 --file=/var/lib/libvirt/images/VM1.q-
cow2
```

Managing Docker containers

```
# Install packages
yum install -y yum-utils device-mapper-persistent-data lvm2
#Setup stable Docker repo
yum-config-manager --add-repo https://download.docker.com/linux/centos/docker-ce.repo
#Install Docker CE
yum install docker-ce
#Start Docker service
systemctl start docker
docker search hello
docker pull hello-world
docker run hello-world
docker images (check available images)
docker ps -a (Check all containers)
docker start id (Start specific container)
docker run -it ubuntu bash (Run bash shell inside container)
docker run -dit --name latest-web -p 80:80 -v /home/long/web:/usr/local/apache2/htdocs httpd:2.4 (Create a container for running web server)
docker rm latest-web (Remove container latest-web)
```



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