# 6 Service Management

==========
# Linux service Mangement
**********

**Introduction**
==========

No of machines needed
``````````````````````

Make a new clean machines

Server 1 - Centos cli

Server 2 - Centos cli

Blank Machine - Clean Install

Objectives
``````````

Study for

DNS DHCP PXE FTP
HTTP PHP MariaDB
Email
Printing
Selinux services

LAB

````
Using system and systemctl to manage services

**Using system to manage services**
==========

[root@server1 ~]# yum install net-tools bash-completion vim-enhanced

[root@server1 ~]# ps -f 1                                                    //
checking full process of system, no initd
UID        PID  PPID  C STIME TTY      STAT    TIME CMD
root         1     0  0 12:40 ?        Ss     0:02 /usr/lib/systemd/systemd

[root@server1 ~]# systemctl status sshd                                      // process
initiated by systemd

[root@server1 ~]# systemctl status sshd

[root@server1 ~]# systemctl  stop sshd

[root@server1 ~]# systemctl disable shd

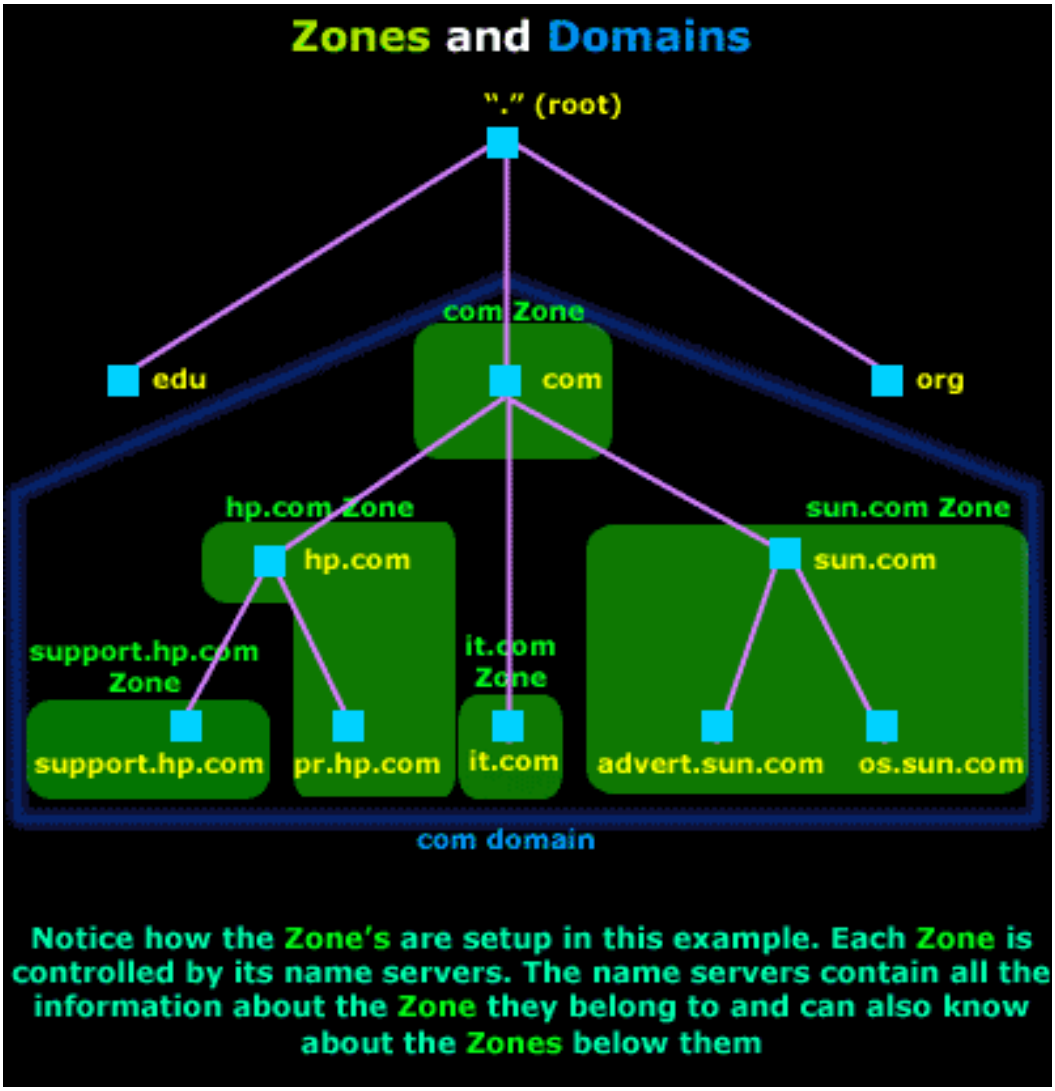
[root@server1 ~]# systemctl mask sshd

[root@server1 ~]# systemctl unmask sshd
````

==========
=====
# Configure BIND DNS Service
**********
********

The Domain Name System (DNS) is the phonebook of the Internet.
Humans access information online through domain names, like nytimes.com or espn.com.
Web browsers interact through Internet Protocol (IP) addresses.
DNS translates domain names to IP addresses so browsers can load Internet resources.

https://www.cloudflare.com/learning/dns/what-is-dns/




**DNS Intoroduction**
==========

BIND
``````

Berkely Internet Domain .
The mostly widely implementedd Domain Name System (DNS) service.

Objectives
``````````

Configure a basic DNS server
Maintain a dns zone

Configure a caching-only name server
Configure a caching-only name server to forward DNS queries.

LAB
````
Install and test BIND
DNS Forwarding
Identify DNS files and locations
Configure forward lookup zones
Using DNS API’s

**Configure a caching only server**
==========

Installing the bind packages
````````````````
[root@server1 ~]# yum install bind bind-utils

Services
````````
[root@server1 ~]# systemctl enable named
Created symlink from /etc/systemd/system/multi-user.target.wants/
named.service to /usr/lib/systemd/system/named.service.

[root@server1 ~]# systemctl start named

[root@server1 ~]# systemctl status named
● named.service - Berkeley Internet Name Domain (DNS)
   Loaded: loaded (/usr/lib/systemd/system/named.service; enabled; vendor
preset: disabled)
   Active: **active (running)**
````````

Firewall design . Port 53
``````````````````

```
[root@server1 ~]# netstat  -ltn
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp        0      0 0.0.0.0:111             0.0.0.0:*               LISTEN
tcp        0      0 127.0.0.1:53            0.0.0.0:*               LISTEN
                          // Listening DNS request , lookup
tcp        0      0 0.0.0.0:22              0.0.0.0:*               LISTEN
tcp        0      0 127.0.0.1:953           0.0.0.0:*               LISTEN
                          // 953 is for controlling DNS


[root@server1 ~]# firewall-cmd --permanent --add-service=dns
success
[root@server1 ~]# firewall-cmd --reload
success
[root@server1 ~]# firewall-cmd --list-services
dhcpv6-client dns ssh
```

Controll dns lookup. From local machine 127.0.0.1
``````````````````````````````````````````````````

Held on cache mode , can be fushed
``````````````````````````````

```
[root@server1 ~]# dig www.pluralsight.com @127.0.0.1

; <<>> DiG 9.11.4-P2-RedHat-9.11.4-16.P2.el7_8.6 <<>> www.pluralsight.com
@127.0.0.1
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 14303
;; flags: qr rd ra; QUERY: 1, ANSWER: 3, AUTHORITY: 5, ADDITIONAL: 7

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 4096
;; QUESTION SECTION:
;www.pluralsight.com.           IN     A

;; ANSWER SECTION:
www.pluralsight.com.  60   IN    CNAME
www.pluralsight.com.cdn.cloudflare.net.
```
```

**www.pluralsight.com.cdn.cloudflare.net. 300 IN A 104.19.161.127**
**www.pluralsight.com.cdn.cloudflare.net. 300 IN A 104.19.162.127**

;; AUTHORITY SECTION:
cloudflare.net. 172798 IN NS ns4.cloudflare.net.
cloudflare.net. 172798 IN NS ns5.cloudflare.net.
cloudflare.net. 172798 IN NS ns3.cloudflare.net.
cloudflare.net. 172798 IN NS ns2.cloudflare.net.
cloudflare.net. 172798 IN NS ns1.cloudflare.net.

;; ADDITIONAL SECTION:
ns1.cloudflare.net. 172798 IN A 173.245.59.31
ns2.cloudflare.net. 172798 IN A 198.41.222.131
ns3.cloudflare.net. 172798 IN A 198.41.222.31
ns1.cloudflare.net. 172798 IN AAAA 2400:cb00:2049:1::adf5:3b1f
ns2.cloudflare.net. 172798 IN AAAA 2400:cb00:2049:1::c629:de83
ns3.cloudflare.net. 172799 IN AAAA 2400:cb00:2049:1::c629:de1f

;; Query time: 60 msec
;; SERVER: 127.0.0.1#53(127.0.0.1)
;; WHEN: Fri Aug 14 13:36:13 +0545 2020
;; MSG SIZE rcvd: 354

**Configuring Forward and security**
==========

[root@server1 ~]# netstat -ltn
tcp 0 0 127.0.0.1:53 0.0.0.0:* LISTEN //
listen on ipv4 and ipv6
tcp6 0 0 ::1:53 :::* LISTEN //
from local host

Change conf file
```
[root@server1 ~]# vim /etc/named.conf
        listen-on port 53 { 127.0.0.1; };               to                      listen-on port
53 { any; };
        listen-on-v6 port 53 { ::1; };                  to                      listen-on-v6
port 53 { none; };

        :wq
```

Check conf file ok or not
```
[root@server1 ~]# named-checkconf -v                                            // looks good
9.11.4-P2-RedHat-9.11.4-16.P2.el7_8.6
```

```
[root@server1 ~]# systemctl restart named
```

```
[root@server1 ~]# netstat -ltn                                                          //
now looking only in ipv4
Active Internet connections (only servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp        0      0 0.0.0.0:111             0.0.0.0:*               LISTEN
tcp        0      0 192.168.1.121:53        0.0.0.0:*               LISTEN
tcp        0      0 127.0.0.1:53            0.0.0.0:*               LISTEN
tcp        0      0 0.0.0.0:22              0.0.0.0:*               LISTEN
tcp        0      0 127.0.0.1:953           0.0.0.0:*               LISTEN
```

Allowing query to specified hosts of 192.168.1.0/24 and localhost
```
[root@server1 ~]# vim /etc/named.conf
            allow-query     { localhost; };         to              allow-query
{ localhost; 192.168.1.0/24; localnets; };
```

```
[root@server1 ~]# systemctl restart named
```

```
[root@server1 ~]# named-checkconf -v
9.11.4-P2-RedHat-9.11.4-16.P2.el7_8.6



[root@server1 ~]# dig www.onlinekhabar.com @127.0.0.1                    // caching
only


For forwarding ,mode
``````````````````
[root@server1 ~]# vim /etc/named.conf
        forwarders { 8.8.8.8; 8.8.4.4; };
        forward only;


[root@server1 ~]# systemctl restart named
[root@server1 ~]# named-checkconf -v



[root@server1 ~]# dig www.pluralsight.com @127.0.0.1                     // fast
response

; <<>> DiG 9.11.4-P2-RedHat-9.11.4-16.P2.el7_8.6 <<>> www.pluralsight.com
@127.0.0.1
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 19367
;; flags: qr rd ra; QUERY: 1, ANSWER: 3, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 4096
;; QUESTION SECTION:
;www.pluralsight.com.           IN     A

;; ANSWER SECTION:
www.pluralsight.com.     15    IN     CNAME
www.pluralsight.com.cdn.cloudflare.net.
www.pluralsight.com.cdn.cloudflare.net.       156 IN A 104.19.162.127
www.pluralsight.com.cdn.cloudflare.net.       156 IN A 104.19.161.127

;; Query time: 850 msec
;; SERVER: 127.0.0.1#53(127.0.0.1)
```
```

```
;; WHEN: Fri Aug 14 13:55:19 +0545 2020
;; MSG SIZE  rcvd: 132
```

```
[root@server1 ~]# dig www.ford.com @127.0.0.1                    // fast
response

; <<>> DiG 9.11.4-P2-RedHat-9.11.4-16.P2.el7_8.6 <<>> www.ford.com
@127.0.0.1
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 5513
;; flags: qr rd ra; QUERY: 1, ANSWER: 3, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 4096
;; QUESTION SECTION:
;www.ford.com.                  IN     A

;; ANSWER SECTION:
www.ford.com.           21415     IN     CNAME    www.ford.com.edgekey.net.
www.ford.com.edgekey.net. 193     IN     CNAME    e4213.dscx.akamaiedge.net.
e4213.dscx.akamaiedge.net. 19     IN     A      23.10.238.20

;; Query time: 728 msec
;; SERVER: 127.0.0.1#53(127.0.0.1)
;; WHEN: Fri Aug 14 13:56:05 +0545 2020
;; MSG SIZE  rcvd: 131
```

**Locating files and DNS Locations**

==========

```
[root@server1 ~]# vim /etc/named.conf
options {
        listen-on port 53 { any; };
        listen-on-v6 port 53 { none; };
       directory       "/var/named";
        dump-file       "/var/named/data/cache_dump.db";
        statistics-file "/var/named/data/named_stats.txt";
        memstatistics-file "/var/named/data/named_mem_stats.txt";
        recursing-file  "/var/named/data/named.recursing";
        secroots-file   "/var/named/data/named.secroots";
        allow-query     { localhost; 192.168.1.0/24; localnets; };

        forwarders { 8.8.8.8; 8.8.4.4; };
        forward only;


logging {
        channel default_debug {
             file "data/named.run";
              severity dynamic;

                print-severity yes;                                     // add more
lines


        :wq




[root@server1 ~]# named-checkconf -v

[root@server1 ~]# systemctl stop named



Clearing all logs
```````````````
[root@server1 ~]# ls -lh /var/named/data/named.run
-rw-r--r--. 1 named named 17K Aug 14 14:01 /var/named/data/named.run



[root@server1 ~]# >/var/named/data/named.run                            // clearing
file
```
```

[root@server1 ~]# ls -lh /var/named/data/named.run
-rw-r--r--. 1 named named 0 Aug 14 14:03 /var/named/data/named.run

[root@server1 ~]# cat !$ // read , its empty
cat /var/named/data/named.run

[root@server1 ~]# systemctl start named

Now log logs like and severity notice
```

[root@server1 ~]# cat /var/named/data/named.run
info: managed-keys-zone: journal file is out of date: removing journal file
info: managed-keys-zone: loaded serial 6
info: zone 0.in-addr.arpa/IN: loaded serial 0
info: zone 1.0.0.127.in-addr.arpa/IN: loaded serial 0
info: zone 1.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.ip6.arpa/IN: loaded serial 0
info: zone localhost.localdomain/IN: loaded serial 0
info: zone localhost/IN: loaded serial 0
**notice: all zones loaded**
notice: running
info: managed-keys-zone: Key 20326 for zone . acceptance timer complete: **key now trusted**

Look zones
```

[root@server1 ~]# vim /etc/named.conf

```
**zone "." IN {**
**type hint;**
**file "named.ca";**
```

:q

Zone file
```
[root@server1 ~]# vim /etc/named.rfc1912.zones

zone "localhost.localdomain" IN {
        type master;
        file "named.localhost";                                         // local
zone
        allow-update { none; };



zone "1.0.0.127.in-addr.arpa" IN {
        type master;
        file "named.loopback";                                          //
reverse. Lookup zone
        allow-update { none; };

        :q


[root@server1 ~]# ls /var/named/
data  dynamic  named.ca  named.empty  named.localhost  named.loopback
slaves

[root@server1 ~]# ll /var/named/
total 16
drwxrwx---. 2 named named   23 Aug 14 13:21 data
drwxrwx---. 2 named named   60 Aug 14 14:09 dynamic
-rw-r-----. 1 root  named 2253 Apr  5  2018 named.ca            // root zone
server
-rw-r-----. 1 root  named  152 Dec 15  2009 named.empty          // templets file
-rw-r-----. 1 root  named  152 Jun 21  2007 named.localhost        //
localhost name
-rw-r-----. 1 root  named  168 Dec 15  2009 named.loopback// reverse
lookup
drwxrwx---. 2 named named    6 Jun  1 21:11 slaves
```

**Entering a Zone in the Named.conf**
==========

Create DNS forward lookup zone
``````````

[root@server1 ~]# vim /etc/named.conf

Add before zone

```
zone "example.vm." {
type master;
file    "db.example";
 allow-update {  none;};
};
```

[root@server1 ~]# named-checkconf -v

Now need to create zones for domain of example.vm

**Creating a DNS Zone**
==========

[root@server1 ~]# cd /var/named/
```

[root@server1 named]# cp named.empty db.example  //template copy

[root@server1 named]# ls -lh db.example
-rw-r-----. 1 root root 152 Aug 14 14:30 db.example

[root@server1 named]# chgrp named db.example

[root@server1 named]# ls -lh db.example
-rw-r-----. 1 root **named** 152 Aug 14 14:30 db.example

[root@server1 named]# vim db.example

```
$TTL 3H
@       IN SOA  @ rname.invalid. (
                                        0       ; serial
                                        1D      ; refresh
                                        1H      ; retry
                                        1W      ; expire
                                        3H )    ; minimum
        NS      @
        A       127.0.0.1
        AAAA    ::1
```

//Change to

```
$TTL 3H
$ORIGIN example.vm.
example.vm.     IN SOA  server1.example.vm.     root.example.vm. (
                                        1       ; serial
                                        1D      ; refresh
                                        1H      ; retry
                                        1W      ; expire
```

3H )  ; minimum

example.vm.  NS  **server1.example.vm.**
server1  A  192.168.1.121

:wq

[root@server1 named]# named-checkconf -v

[root@server1 named]# named-checkzone example.vm
db.example  // check file
zone example.vm/IN: loaded serial 1
OK

[root@server1 ~]# systemctl restart named

[root@server1 ~]# cat /var/named/data/named.run  //looks good

info: zone example.vm/IN: loaded serial 1

Or

[root@server1 ~]# cat /var/named/data/named.run | grep example.vm
info: zone **example.vm**/IN: loaded serial 1
info: zone **example.vm**/IN: loaded serial 1

**Using a DNS tool and API**
==========

DNS Query using Python API
``````````````````````
``````````````````````

```
[root@server1 ~]# dig server1.example.vm @127.0.0.1

        ;; QUESTION SECTION:
;server1.example.vm.            IN     A

;; ANSWER SECTION:
server1.example.vm.    10800    IN    A     192.168.1.121

;; AUTHORITY SECTION:
example.vm.            10800    IN    NS    server1.example.vm.
```

```
[root@server1 ~]# dig -t NS example.vm @127.0.0.1
;; ANSWER SECTION:
example.vm.            10800    IN    NS    server1.example.vm.
```

```
[root@server1 ~]# which python
/usr/bin/python

[root@server1 ~]# python --version
Python 2.7.5
```

```
[root@server1 ~]# cp /usr/share/doc/python-dns ...../ examples/mx.py .
```

```
[root@server1 ~]# vim mx.py

#!/usr/bin/env python

import dns.resolver


answers = dns.resolver.query('nominum.com', 'MX')
for rdata in answers:
        print 'Host', rdata.exchange, 'has preference', rdata.preference
```

```
[root@server1 ~]# cat our.py
#!/usr/bin/env python

import dns.resolver

r=dns.resolver.Resolver()
r.nameservers = ['127.0.0.1']

answers = r.query('example.vm', 'NS')
for rdata in answers:
        print rdata




[root@server1 ~]# python our.py
```

==========
=====
# Configuring FTP Service
**********
********

**Welcome to the world of FTP**
==========

Objectives
```````
Configure FTP server
Configure anonymous-only download on FTP server

LAB
`````
Configure DNS client on server2
Install vsftpd on server1
Configure vsftpd on server1
Create FTP YUM  repo on Server1
Use FTP repo on server2

Configure DNS client on server2
```````````````````````````````

[root@server1 ~]# cat /etc/hosts
192.168.1.135  server1.example.com  server1  s1
192.168.1.65  server2.example.com  server2  s2
```````````````````````````````

[root@server2 ~]# cat /etc/hosts
192.168.1.65 server2.example.com server2 s2
192.168.1.135 server1.example.com server1 s1

[root@server2 ~]# cat /etc/resolv.conf
# Generated by NetworkManager
search example.com
nameserver 192.168.1.254

[root@server2 ~]# ping server1
ping: server1: Name or service not known

[root@server2 ~]# vim /etc/sysconfig/network-scripts/ifcfg-enp0s17
PEERDNS=no

[root@server2 ~]# systemctl restart NewtwworkManager

[root@server2 ~]# cat /etc/resolv.conf

**Installing the vsftpd service**
==========

[root@server1 ~]# yum install vsftpd -y

[root@server1 ~]# systemctl enable vsftpd

[root@server1 ~]# systemctl start vsftpd

[root@server1 ~]# netstat -ltn
tcp6 0 0 :::**21** :::* LISTEN //later on ipv4

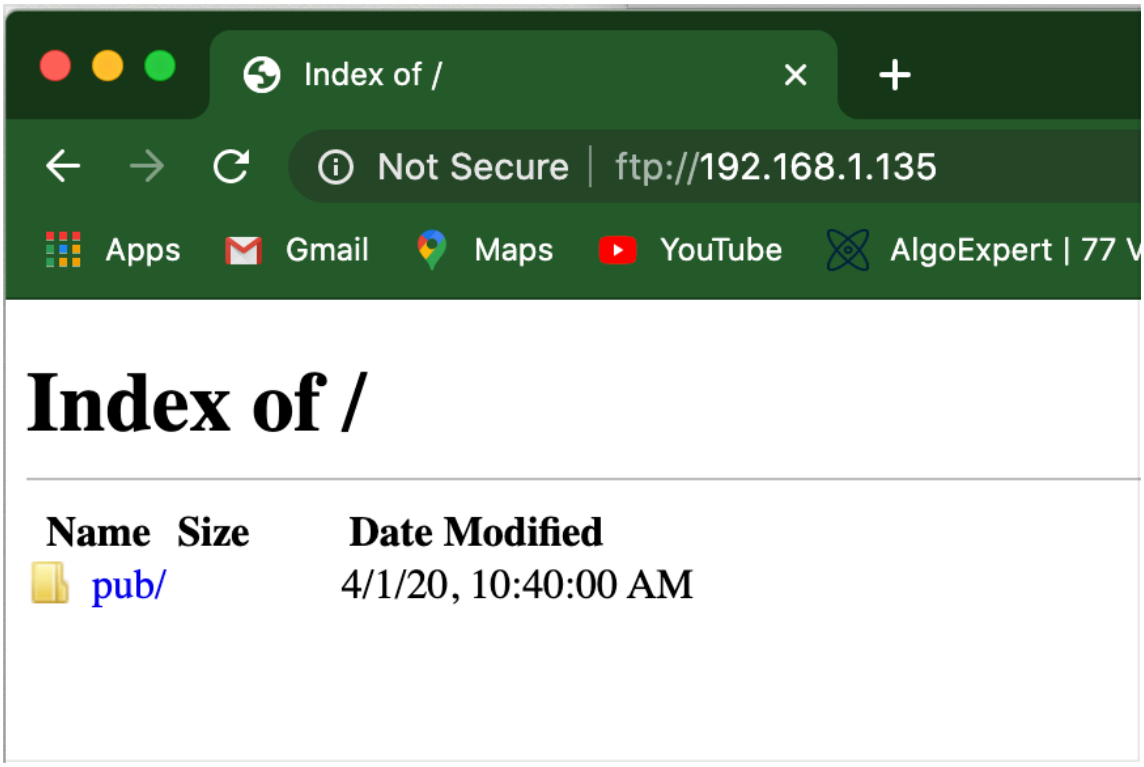
```
[root@server1 ~]# firewall-cmd --permanent --add-service=ftp
success
[root@server1 ~]# firewall-cmd --reload
success
[root@server1 ~]#
```

Go o browser and hit

ftp:// IP

Or

ftp://server1



**Configuring FTP to Allow only Anonymous Connections**
==========

[root@server1 ~]# cd /etc/vsftpd/

[root@server1 vsftpd]# ls
ftpusers  user_list  vsftpd.conf  vsftpd_conf_migrate.sh

[root@server1 ~]# vim vsftpd.conf

anonymous_enable=YES

**local_enable=NO**

**write_enable=NO**

local_umask=022

dirmessage_enable=YES

xferlog_enable=YES

connect_from_port_20=YES

xferlog_std_format=YES

**listen=YES**

**listen=NO**

pam_service_name=vsftpd
userlist_enable=YES
tcp_wrappers=YES

**anon_world_readable_only=YES //manual line added**

:wq

[root@server1 ~]# systemctl restart vsftpd

[root@server1 ~]# netstat -ltn
tcp 0 0 0.0.0.0:21 0.0.0.0:* LISTEN
//only v4

**Creating an FTP YUM repository**
==========

Creating a FTP repo
``````````````````

ATTACH DVD , to MACHINE of SERVER1 as .ISO

[root@server1 ~]# mount /dev/sr0 /mnt/
mount: /dev/sr0 is write-protected, mounting read-only

[root@server1 ~]# lsblk

sr0 11:0 1 4.2G 0 rom /mnt

[root@server1 ~]# df -h
``````````````````

```
Filesystem                Size  Used Avail Use% Mounted on
/dev/mapper/centos-root   17G  1.7G   16G  10% /
```

```
[root@server1 ~]# mkdir  /var/ftp/pub/centos72

[root@server1 ~]# cd /mnt/

[root@server1 mnt]# ls
CentOS_BuildTag  EULA  LiveOS    RPM-GPG-KEY-CentOS-7         TRANS.TBL
isolinux
EFI              GPL   Packages  RPM-GPG-KEY-CentOS-Testing-7  images
repodata
```

```
[root@server1 mnt]# find . | cpio -pmd /var/ftp/pub/centos72/
```

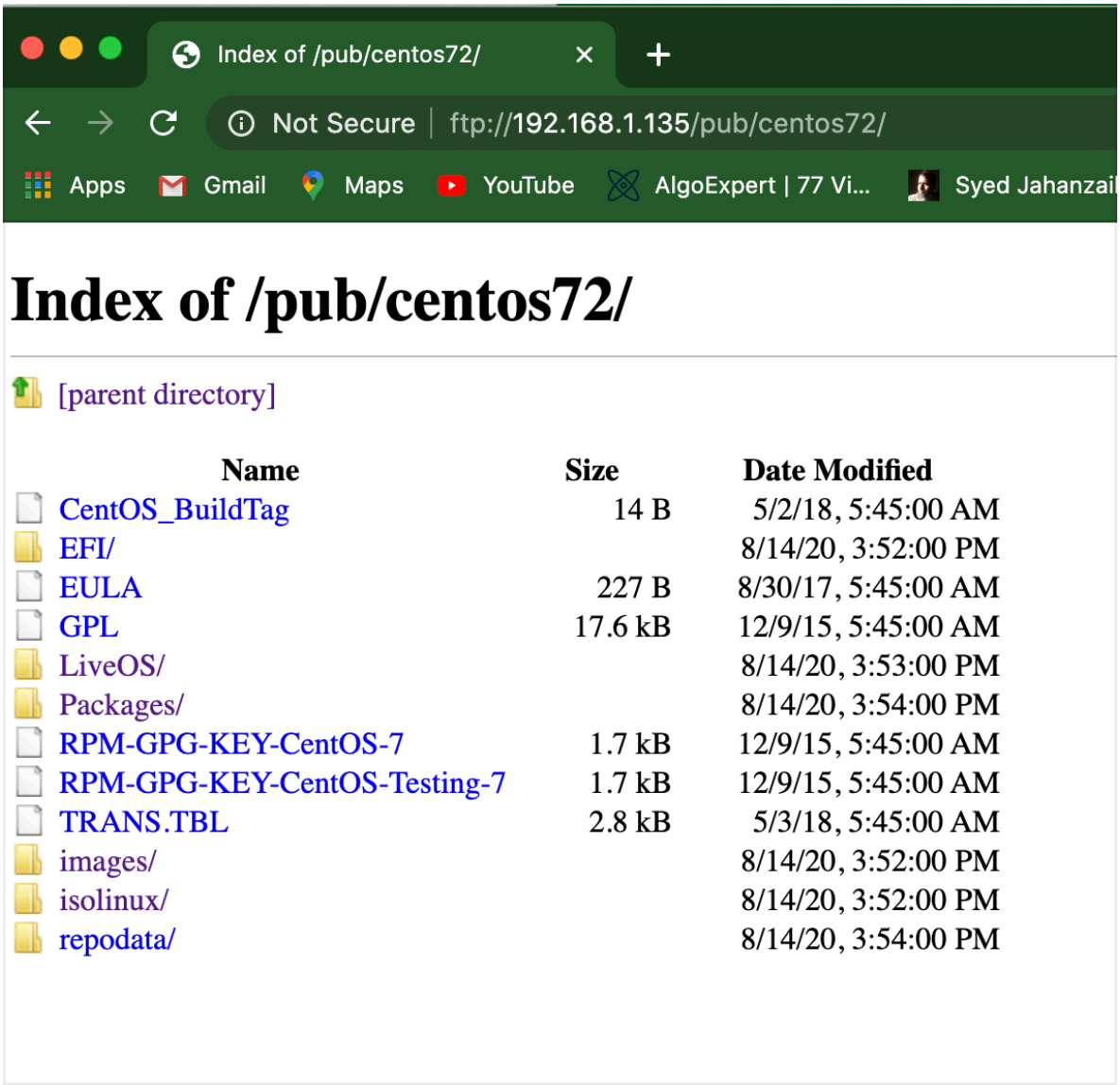
**//Use sync, cpio or cp to copy commands**

```
[root@server1 ~]# df -h /mnt/
Filesystem      Size  Used Avail Use% Mounted on
/dev/sr0        4.2G  4.2G     0 100% /mnt

[root@server1 ~]# eject /mnt
Or
[root@server1 ~]# umount /mnt

[root@server1 ~]# df -h /dev/mapper/centos-root
Filesystem              Size  Used Avail Use% Mounted on
/dev/mapper/centos-root   17G  5.8G   12G  35% /

[root@server1 ~]# ls /var/ftp/pub/centos72/
CentOS_BuildTag  EULA  LiveOS    RPM-GPG-KEY-CentOS-7         TRANS.TBL
isolinux
EFI              GPL   Packages  RPM-GPG-KEY-CentOS-Testing-7  images
repodata
```


Index of /pub/centos72/
Not Secure | ftp://192.168.1.135/pub/centos72/
Apps
Gmail
Maps
YouTube
AlgoExpert | 77 Vi...
Syed Jahanzai
Index of /pub/centos72/
[parent directory]
Name
Size
Date Modified
CentOS_BuildTag 14 B 5/2/18, 5:45:00 AM
EFI/ 8/14/20, 3:52:00 PM
EULA 227 B 8/30/17, 5:45:00 AM
GPL 17.6 kB 12/9/15, 5:45:00 AM
LiveOS/ 8/14/20, 3:53:00 PM
Packages/ 8/14/20, 3:54:00 PM
RPM-GPG-KEY-CentOS-7 1.7 kB 12/9/15, 5:45:00 AM
RPM-GPG-KEY-CentOS-Testing-7 1.7 kB 12/9/15, 5:45:00 AM
TRANS.TBL 2.8 kB 5/3/18, 5:45:00 AM
images/ 8/14/20, 3:52:00 PM
isolinux/ 8/14/20, 3:52:00 PM
repodata/ 8/14/20, 3:54:00 PM

Use FTP repo

```
```

[root@server2 ~]# cd /etc/yum.repos.d/

[root@server2 yum.repos.d]# ls
CentOS-Base.repo       CentOS-Media.repo    CentOS-fasttrack.repo
epel.repo
CentOS-CR.repo         CentOS-Sources.repo  CentOS-x86_64-kernel.repo
CentOS-Debuginfo.repo  CentOS-Vault.repo    epel-testing.repo

[root@server2 yum.repos.d]# mkdir backup

[root@server2 yum.repos.d]# mv * backup/                    //old backup
file placing

[root@server2 yum.repos.d]# ls
        backup

[root@server2 yum.repos.d]# yum repolist

[root@server2 yum.repos.d]# vim ftp.repo                    // repo file
[ftp_c7]
name=FTP_centos_7.2
baseurl=ftp://server1.example.com/pub/centos72/        or  baseurl=ftp://
192.168.1.135/pub/centos72/
enabled=1
gpgcheck=

[root@server2 yum.repos.d]# yum clean all
Failed to set locale, defaulting to C
Loaded plugins: fastestmirror, langpacks
Cleaning repos: ftp_c7
Cleaning up list of fastest mirrors
Other repos take up 98 M of disk space (use --verbose for details)
```
```

```
[root@server2 ~]# yum repolist
Failed to set locale, defaulting to C
Loaded plugins: fastestmirror, langpacks
Loading mirror speeds from cached hostfile
repo id                         repo name                         status
ftp_c7                          FTP_centos_7.2                     3971
repolist: 3971
```

Now check

```
[root@server2 ~]# yum install bash-completion
```

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=====
# Configure DHCP
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********

**The ISC DHCP Server**
==========

Objectives
``````````

Configure a DHCP Server

LABS
`````

Configure Static IP on server1
Disable DHCP in Virtual BOX
Install DHCP on Server1
Configure DHCP
Test DHCP Service

DHCP
``````

Dynamic  Host Configuration Protocol
Enables a server to automatically assign an IP address and other network configuration to client device.

Used for TFTP server for PXE BOOT.
``````

**Configure a static IP address**
==========

**Disable Virtualbox DHCP and Install DHCP Server**
==========

```
[root@server1 ~]# ip a
        lo: <LOOPBACK,UP,LOWER_UP>
                inet 127.0.0.1/8
        enp0s8:                                                 // internal network

        enp0s17                                                 // bridge adapter
                192.168.1.135
```

```
[root@server1 ~]# yum install dhcp -y
```

**Configure an ISC DHCP Server**
==========

```
[root@server1 ~]# vim /etc/dhcp/dhcpd.conf

# DHCP Server Configuration file.
#   see /usr/share/doc/dhcp*/dhcpd.conf.example
#   see dhcpd.conf(5) man page
```

```
option domain-name-servers 8.8.4.4;
```

```
option domain-search "example.com";

default-lease-time 86400;
max-lease-time 86400;
ddns-update-style none;
authoritative;
log-facility local4;


subnet 172.17.50.0 netmask 255.255.255.0 {
        range                   172.17.50.100 172.17.50.190;

}
```

```
                :wq
```

```
[root@server1 ~]# dhcpd -t -cf /etc/dhcp/
dhcpd.conf                                      // test conf file
Internet Systems Consortium DHCP Server 4.2.5
Copyright 2004-2013 Internet Systems Consortium.
All rights reserved.
For info, please visit https://www.isc.org/software/dhcp/
Not searching LDAP since ldap-server, ldap-port and ldap-base-dn were not
specified in the config file
```

**Testing DHCP and Dhclient**

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# Installing PXE

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# Configuring Email

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# Configuring Printing

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## Configuring Apache web server

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# Installing and Testing PHP

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# Installing MariaDB

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# Configure SE Linux for Services

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