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## **ASSIGNMENT-2**

Assignment: Set up a domain, setup a server on a VM and use the DNS server for traffic

Part 1: Configure DNS Server on VM1

**Step-1**: install the bind package. The BIND (Berkeley Internet Name Domain) package is used in Linux to translate domain names into IP addresses

```
root@localhost:~

[root@localhost ~]# yum install -y bind* --skip-broken Updating Subscription Management repositories.
Unable to read consumer identity

This system is not registered with an entitlement server. You can use subscription-manager to register.

Last metadata expiration check: 1 day, 0:08:42 ago on Tue 22 Oct 2024 06:08:27 PM IST. Package bind-32:9.16.23-1.el9.x86_64 is already installed.

Package bind-chroot-32:9.16.23-1.el9.x86_64 is already installed.

Package bind-dnssec-doc-32:9.16.23-1.el9.x86_64 is already installed.

Package bind-libensec-21:9.16.23-1.el9.x86_64 is already installed.

Package bind-libense-32:9.16.23-1.el9.x86_64 is already installed.

Package bind-license-32:9.16.23-1.el9.x86_64 is already installed.

Package bind-license-32:9.16.23-1.el9.x86_64 is already installed.

Package bind-utils-32:9.16.23-1.el9.x86_64 is already installed.

Package bind-utils-32:9.16.23-1.el9.x86_64 is already installed.

Nothing to do.

Complete!
```

**Step-2:** configure the Configuration file. A zone file is a plain text file stored in a DNS server that contains an actual representation of the zone and contains all the records for every domain within the zone.

Vim /etc/named.conf

Step-3: Create a Zone File.

@ represents domain.

www.engineering.tech is the canonical/alias of engineering.tech.

-> vim /var/named/engineering.tech

```
root@localhost:~ — vim /var/named/engineering
$TTL 86400
                     S0A
           IN
                              @ root.engineering.tech. (
                                                                        ; Serial
                                                                        ; Retry
                                                             604800
                                                             86400 )
                    NS
                               nsl.engineering.tech.
                               192.168.136.128
192.168.136.12
          IN
                    A
          IN
                    CNAME
                               engineering.tech
```

Step-4: Set ownership and permissions for the zone file:

```
[root@localhost ~]# chown root:named /var/named/engineering
[root@localhost ~]# chmod 640 /var/named/engineering
[root@localhost ~]# cd /var/named/
[root@localhost named]# ll
total 32
-rw-r----. 1 root
                                      268 Oct 1 10:48 abc
                           named
drwxr-x---. 8 root
                                       73 Oct 23 18:09
                           named
                                      101 Oct 20
60 Oct 17
                                                    11:44
21:27
drwxrwx---. 2 named named
drwxrwx---. 2 named named
                                    400 Oct 21 19:39 engineering
821 Oct 23 18:16 managed-keys.bind
3872 Oct 23 18:16 managed-keys.bind.jnl
2253 Nov 26 2021 named.ca
-rw-r----. 1 root named
-rw-r--r--. 1 named named
                 1 named named
                   root
                            named
                            named
                                           Nov
                                                      2021 named.empty
                   root
                                                      2021 named.localhost
                            named
                                      152 Nov 26
                   root
                                                      2021 named.loopback
                           named
                                      168 Nov
                   root
                                           Nov 26
                                                      2021
                   named named
drwxrwx---. 2
```

Step-5: After making changes in configuration file always start and enable the service.

Step-6: Configure the firewall to allow DNS traffic.

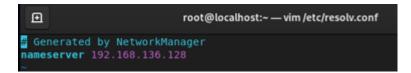
Firewall is used for **Traffic Filtering**: control and filter DNS traffic (usually on port 53) based on predefined rules. This helps prevent unauthorized access and malicious DNS queries.

Step-7: Verify the dns using nslookup.

```
[root@localhost ~]# systemctl enable --now named
[root@localhost ~]# firewall-cmd --permanent --add-service=dns
Warning: ALREADY ENABLED: dns
success
[root@localhost ~]# firewall-cmd --reload
success
[root@localhost ~]# nslookup www.engineering.tech @localhost
nslookup: couldn't get address for '@localhost': not found
[root@localhost ~]# nslookup www.engineering @localhost
nslookup: couldn't get address for '@localhost': not found
[root@localhost ~]# nslookup www.engineering.tech
                192.168.136.128
Server:
Address:
                192.168.136.128#53
www.engineering.tech
                          canonical name = engineering.tech.
Name: engineering.tech
Address: 192.168.136.128
```

## Part 2: Test DNS from Another VM (VM2)

Step-1: The resolv.conf file is a configuration file used to specify the DNS (Domain Name System) resolver settings for the system. It tells the system how to resolvedomain names into IP addresses.



In the nameserver add the IP of VM1.

Step-2: Now check the connectivity with the Server using ping command.

```
riod@localhost ~]# ping 192.168.136.128
riod 192.168.136.128 (192.168.136.128) 56(84) bytes of data.
riod 192.168.136.128 (192.168.136.128) 56(84) bytes of data.
riod 192.168.136.128: icmp_seq=1 ttl=64 time=0.087 ms
riod bytes from 192.168.136.128: icmp_seq=2 ttl=64 time=0.093 ms
riod bytes from 192.168.136.128: icmp_seq=3 ttl=64 time=0.095 ms
riod color by the color
```