

You are welcome! Here is the complete report in text format, ready for you to copy, paste, and add your required screenshots and specific IP addresses.

DNS Configuration Assignment Report

Objective

The goal of this assignment is to successfully configure a **Domain Name System (DNS) server** and an **HTTP web host** on separate Ubuntu virtual machines, and verify that a client machine can resolve the domain name and access the web host.

Configuration Summary

Component	OS/Service	Domain Name	IP Address
DNS Server	Ubuntu Server/BIND9	Resolves yourdomain.com	192.168.X.10 (Example)
HTTP Host	Ubuntu Server/Apache2	Hosts www.yourdomain.com	192.168.X.20 (Example)
Client	Ubuntu Desktop/Any OS	Accesses www.yourdomain.com	192.168.X.30 (Example)

(Note: Replace 192.168.X.X with the actual IP scheme used in your lab.)

1. DNS Server Configuration (Ubuntu Server)

Service: BIND9 (installed via sudo apt install bind9)

IP Address: 192.168.X.10

1.1 Configuration Files Snapshots

A. /etc/bind/named.conf.local

This file declares the forward and reverse lookup zones.

Bash

```
// The zone for your custom domain
```

```
zone "yourdomain.com" {  
    type master;  
    file "/etc/bind/db.yourdomain.com";  
};
```

```
// The reverse lookup zone (replace X with the relevant octet of your network)
zone "X.168.192.in-addr.arpa" {
    type master;
    file "/etc/bind/db.192";
};
```

B. /etc/bind/db.yourdomain.com (Forward Lookup Zone)

This file maps domain names to IP addresses.

Bash

```
;
; BIND data file for yourdomain.com
;

$TTL 604800

@ IN SOA ns.yourdomain.com. admin.yourdomain.com. (
    2025112001 ; Serial
    604800      ; Refresh
    86400       ; Retry
    2419200     ; Expire
    604800 )    ; Negative Cache TTL
;

@ IN NS ns.yourdomain.com.
ns IN A 192.168.X.10 ; DNS Server IP
@ IN A 192.168.X.10 ; Root domain IP
www IN A 192.168.X.20 ; HTTP Host IP
```

C. /etc/bind/db.192 (Reverse Lookup Zone)

This file maps IP addresses to domain names (PTR records).

Bash

```
;
; BIND reverse data file for 192.168.X network
```

```
;  
$TTL 604800  
@ IN SOA ns.yourdomain.com. admin.yourdomain.com. (  
    2025112001 ; Serial  
    604800      ; Refresh  
    86400       ; Retry  
    2419200     ; Expire  
    604800 )    ; Negative Cache TTL  
;  
@ IN NS ns.yourdomain.com.  
10 IN PTR ns.yourdomain.com. ; DNS Server IP (192.168.X.10)  
20 IN PTR www.yourdomain.com. ; HTTP Host IP (192.168.X.20)
```

1.2 Terminal Output: BIND9 Service Status

This command confirms the BIND9 service is running without errors.

Bash

```
sudo systemctl status bind9
```

Expected Output Snippet: Active: active (running)

2. HTTP Host Configuration (Ubuntu Server)

Service: Apache2 (installed via sudo apt install apache2)

IP Address: 192.168.X.20

2.1 Configuration File Snapshot: Custom Website

The default web page is modified to confirm successful access.

A. /var/www/html/index.html

HTML

```
<!DOCTYPE html>  
<html>  
<head>  
<title>DNS Assignment Success</title>
```

```
</head>

<body>

<h1>Success! www.yourdomain.com is working.</h1>
<p>This page is hosted on the server with IP: 192.168.X.20.</p>

</body>
</html>
```

2.2 Terminal Output: Apache2 Service Status

This command confirms the Apache2 service is running.

Bash

```
sudo systemctl status apache2
```

Expected Output Snippet: Active: active (running)

3. Client Verification (Client Machine)

IP Address: 192.168.X.30

3.1 DNS Resolver Configuration

The client must be configured to use the newly set up DNS server (192.168.X.10).

A. /etc/resolv.conf Snapshot

Bash

```
nameserver 192.168.X.10
```

3.2 Terminal Output: Domain Name Resolution

Using the nslookup command to verify that the client can correctly resolve the domain name using the configured DNS server.

Bash

```
nslookup www.yourdomain.com 192.168.X.10
```

Expected Output Snippet:

Server: 192.168.X.10

Address: 192.168.X.10#53

Name: www.yourdomain.com

Address: 192.168.X.20

3.3 Browser Window Confirmation

Accessing the web host via its domain name confirms the entire configuration (DNS resolution and HTTP access) is successful.

Browser URL: <http://www.yourdomain.com>

([suspicious link removed]) is working." page]

Conclusion

The successful execution of the configuration steps and the verification using nslookup and a web browser confirm that:

1. The **DNS server** is correctly resolving the FQDN www.yourdomain.com to the IP address 192.168.X.20.
2. The **HTTP host** is correctly serving the web page.
3. The **client** can successfully access the web service using the configured domain name.

The assignment requirements for a functional DNS server, HTTP host, and client access have been met.

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