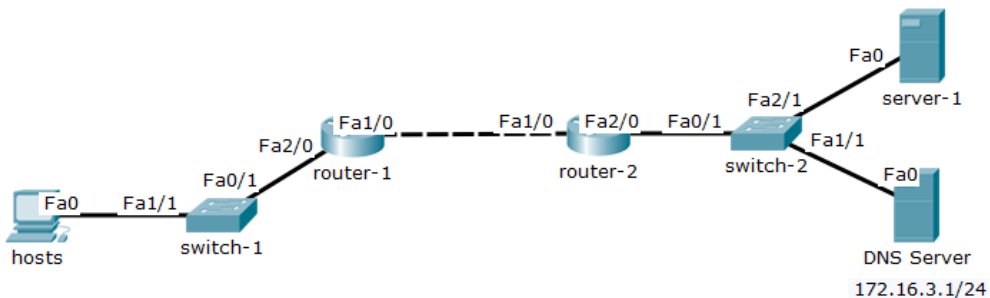


# Domain Name Services (DNS)

## Lab Summary

Enable DNS services on router-1 to forward DNS requests originating from that device.

**Figure 1** Lab Topology



## Lab Configuration

Start Packet Tracer File: **DNS**

Click on the *router-1* icon and select the *CLI* folder. Hit the <enter> key for user mode prompt (>).

Step 1: Enter global configuration mode

```
router-1> enable
Password: cisco
router-1# configure terminal
```

Step 2: Enable DNS services on router-1.

```
router-1(config)# ip domain-lookup
```

Step 3: Configure an IP name server (DNS server) to forward DNS requests.

```
router-1(config)# ip name-server 172.16.3.1
```

Step 4: Configure a domain name to generate Fully Qualified Domain Names (FQDN) for DNS requests.

```
router-1(config)# ip domain-name ccna.cisconetsolutions.com
router-1(config)# end
router-1# copy running-config startup-config
```

### Verify Lab:

Ping server-1 using the hostname instead of IP address and verify DNS server can resolve the IP address.

```
router-1# ping server-1
```

```
Translating "server-1"...domain server (172.16.3.1)
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 172.16.3.2, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 11/17/27 ms
```

Ping router-2 using the hostname instead of IP address and verify DNS server can resolve the IP address.

```
router-1# ping router-2
```

```
Translating "router-2"...domain server (172.16.3.1)
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 172.16.2.2, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/7/16 ms
```

Disable DNS services on router-1 (**no ip domain-lookup**) and Ping switch-2 using the hostname instead of IP address.

```
router-1# ping switch-2
```

```
Translating "switch-2"
```

```
% Unrecognized host or address or protocol not running.
```

Ping router-2 again and note that with DNS services disabled the hostname to IP address resolution still occurs.

```
router-1# ping router-2
```

```
Translating "router-2"...domain server (172.16.3.1)
```

```
Type escape sequence to abort.
```

```
Sending 5, 100-byte ICMP Echos to 172.16.2.2, timeout is 2 seconds:
```

```
!!!!
```

```
Success rate is 100 percent (5/5), round-trip min/avg/max = 0/7/16 ms
```

The following IOS command lists the DNS cache on router-1. There is a local entry for router-2 and explains how the DNS request was resolved for router-2.

router-1# **show hosts**

Default Domain is ccna.cisconetsolutions.com

Name/address lookup uses domain service

Name servers are 172.16.3.1

Codes: UN - unknown, EX - expired, OK - OK, ?? - revalidate

temp - temporary, perm - permanent

NA - Not Applicable None - Not defined

Host	Port	Flags	Age	Type	Address(es)
router-2	None	(temp, OK)	0	IP	172.16.2.2
server-1	None	(temp, OK)	0	IP	172.16.3.2