

Lab7 - Guideline

DNS role; C/S architecture, UDP port 53

DNS Namespace

DNS Components

forward query

reverse queries

caching

DNS records:

- Start of Authority (SOA)
- Name Servers
- Host (A), Host (AAAA)
- Pointer (PTR)
- Canonical Name (CNAME) or Alias
- Mail Exchange (MX)

>nslookup

> server <IP>

> set type=A

> set type=AAAA

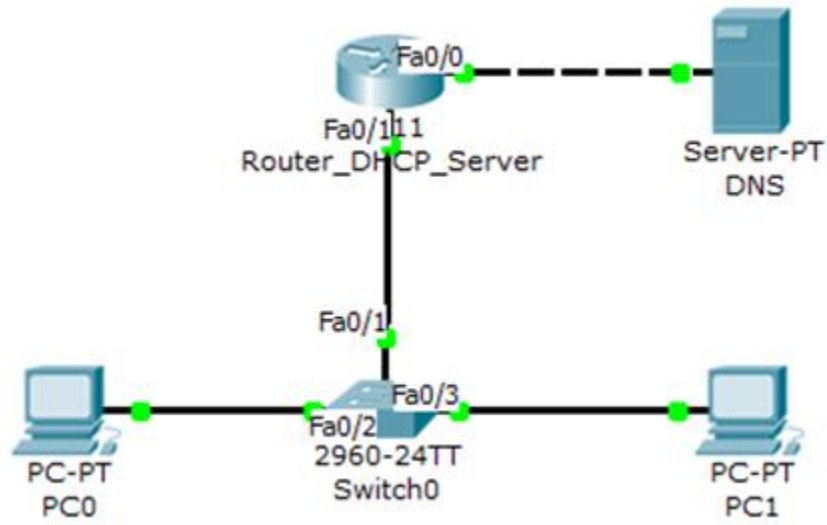
...

View Wireshark DNS query and reply
(on UDP, port 53)

Usefull tutorial for DNS on Windows Server 2008:

<http://www.techrepublic.com/blog/datacenter/how-do-i-install-and-configure-a-dns-server-in-windows-server-2008/327>

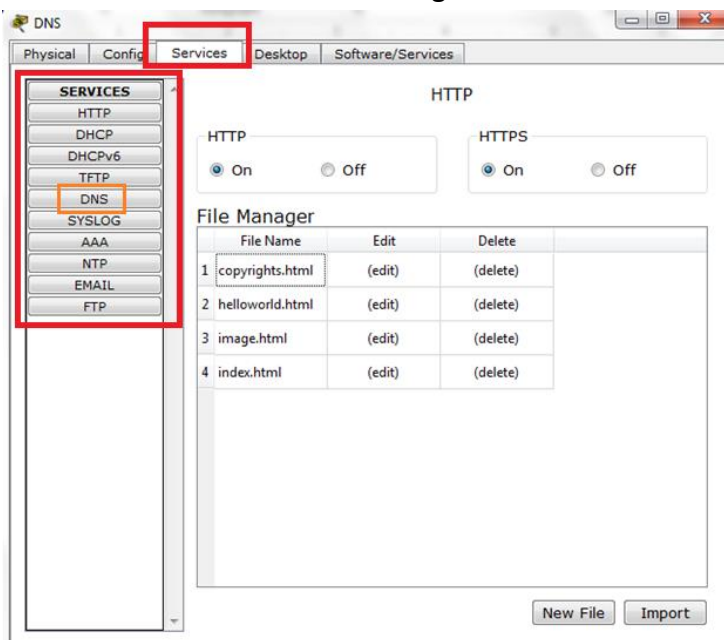
Laboratory test configuration (same as EasyIP lab):



Device		IP address	Subnet mask	Default Gateway	DNS address
Router	Fa0/0	193.1.1.1	255.255.255.0	-	-
	Fa0/1	172.16.2.1	255.255.255.0	-	-
PCs		Dynamic (DHCP)	Dynamic (DHCP)	Dynamic (DHCP)	Dynamic (DHCP)
DNS Server		193.1.1.2	255.255.255.0	193.1.1.1	-

Configuring a DNS server in Packet Tracer

a. Select the service to configure



- b. All the devices should have a DNS server address (verify you have assigned an DNS address using either DHCP service or statically assign the address)

The screenshot shows the 'IP Configuration' window. It has tabs for 'Physical', 'Config', 'Desktop', and 'Software/Services'. The 'Config' tab is active. Under 'IP Configuration', the 'DHCP' radio button is selected. The fields are filled with: IP Address: 10.1.1.6, Subnet Mask: 255.255.255.0, Default Gateway: 10.1.1.2, and DNS Server: 193.15.1.18. Below this, the 'IPv6 Configuration' section has 'Static' selected, with empty fields for IPv6 Address, Link Local Address, IPv6 Gateway, and IPv6 DNS Server.

- c. Add entries (Name and address)

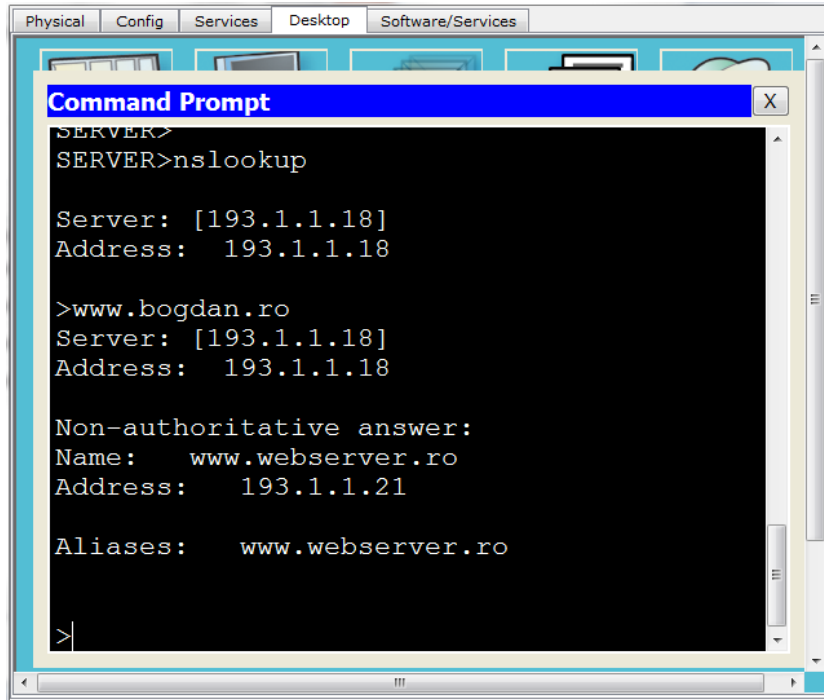
The screenshot shows the 'DNS' configuration window. It has tabs for 'Physical', 'Config', 'Services', 'Desktop', and 'Software/Services'. The 'Services' tab is active. On the left, a 'SERVICES' list includes HTTP, DHCP, DHCPv6, TFTP, DNS (selected), SYSLOG, AAA, NTP, EMAIL, and FTP. The main area is titled 'DNS' and shows 'DNS Service' as 'On'. Under 'Resource Records', the 'Name' is 'www.webserver.ro' and 'Type' is 'A Record'. The 'Address' field contains '193.1.1.21'. Below these are 'Add', 'Save', and 'Remove' buttons. A table lists the resource records:

No.	Name	Type	Detail
0	bogdan	A Record	10.1.1.6
1	www.bodan.ro	CNAME	www.webserver.ro
2	www.webserver.ro	A Record	193.1.1.21

At the bottom, there is a 'DNS Cache' button.

d. Test the DNS service:

- I. Open command prompt on a network host
- II. Enter the **nslookup** command
- III. Test with a define Name or IP address

A screenshot of a network management application window with tabs for Physical, Config, Services, Desktop, and Software/Services. The 'Services' tab is active, showing a 'Command Prompt' window. The command prompt has a blue title bar and a black background. It shows the following text:

```
SERVER>  
SERVER>nslookup  
  
Server: [193.1.1.18]  
Address: 193.1.1.18  
  
>www.bogdan.ro  
Server: [193.1.1.18]  
Address: 193.1.1.18  
  
Non-authoritative answer:  
Name: www.webserver.ro  
Address: 193.1.1.21  
  
Aliases: www.webserver.ro  
  
>
```

IV. Ping/tracert the Name or the IP address