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>
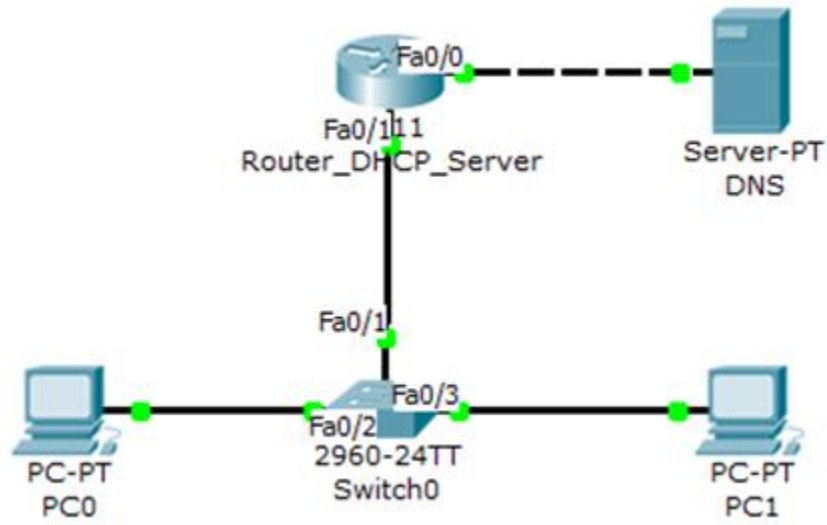   > set type=A
     > set type=AAAA
     …
View Wireshark DNS query and reply
(on UDP, port 53)

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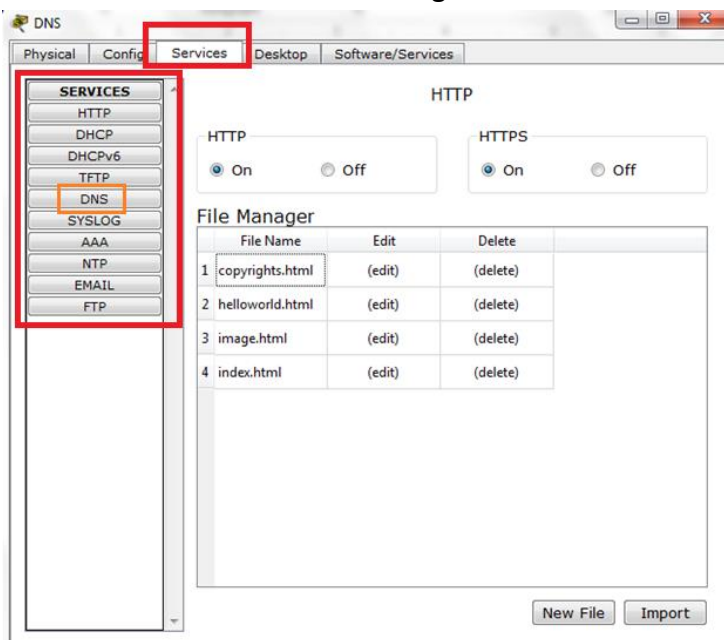
b. All the devices should have a DNS server address (verify you have assigned an DNS address using either DHCP service or statically assign the address)

Laptop1

Physical | Config | Desktop | Software/Services

IP Configuration X

IP Configuration
- ⦿ DHCP   ○ Static

IP Address: 10.1.1.6
Subnet Mask: 255.255.255.0
Default Gateway: 10.1.1.2
DNS Server: 193.15.1.18

IPv6 Configuration
- ○ DHCP ○ Auto Config ⦿ Static

IPv6 Address: _____ /
Link Local Address: _____
IPv6 Gateway: _____
IPv6 DNS Server: _____

c. Add entries (Name and address)
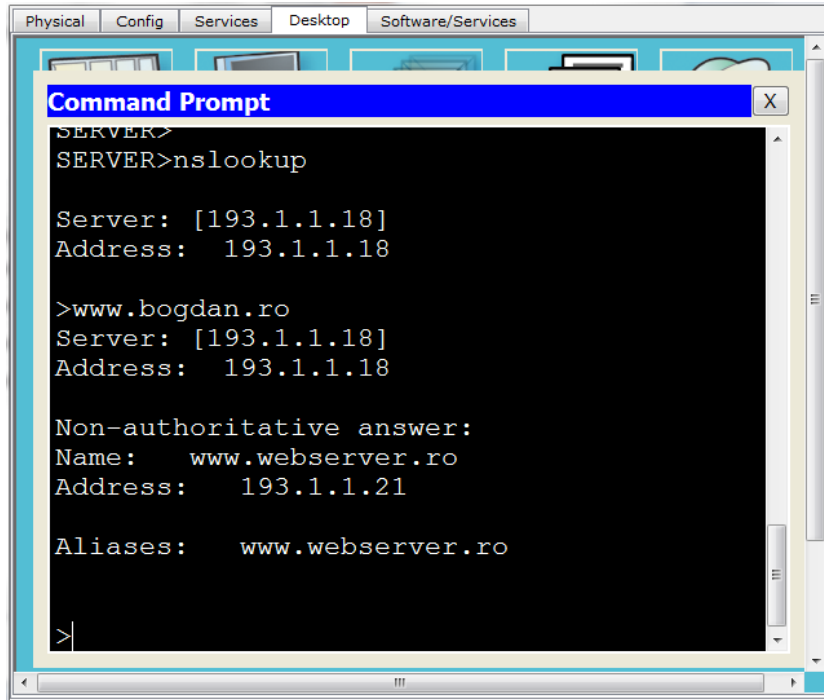
DNS

Physical | Config | Services | Desktop | Software/Services

| SERVICES |
| HTTP |
| DHCP |
| DHCPv6 |
| TFTP |
| DNS |
| SYSLOG |
| AAA |
| NTP |
| EMAIL |
| FTP |

DNS

DNS Service   ⦿ On   ○ Off

Resource Records
Name www.webserver.ro   Type A Record ▾

Address 193.1.1.21

[Add] [Save] [Remove]

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

[DNS Cache]

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

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Physical   Config   Services   Desktop   Software/Services

┌──────────────────────────────────────────────────────┐
│ Command Prompt                                     X   │
│ 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                           │
│                                                        │
│                                                        │
│ >                                                      │
└──────────────────────────────────────────────────────┘
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    IV.   Ping/tracert the Name or the IP address