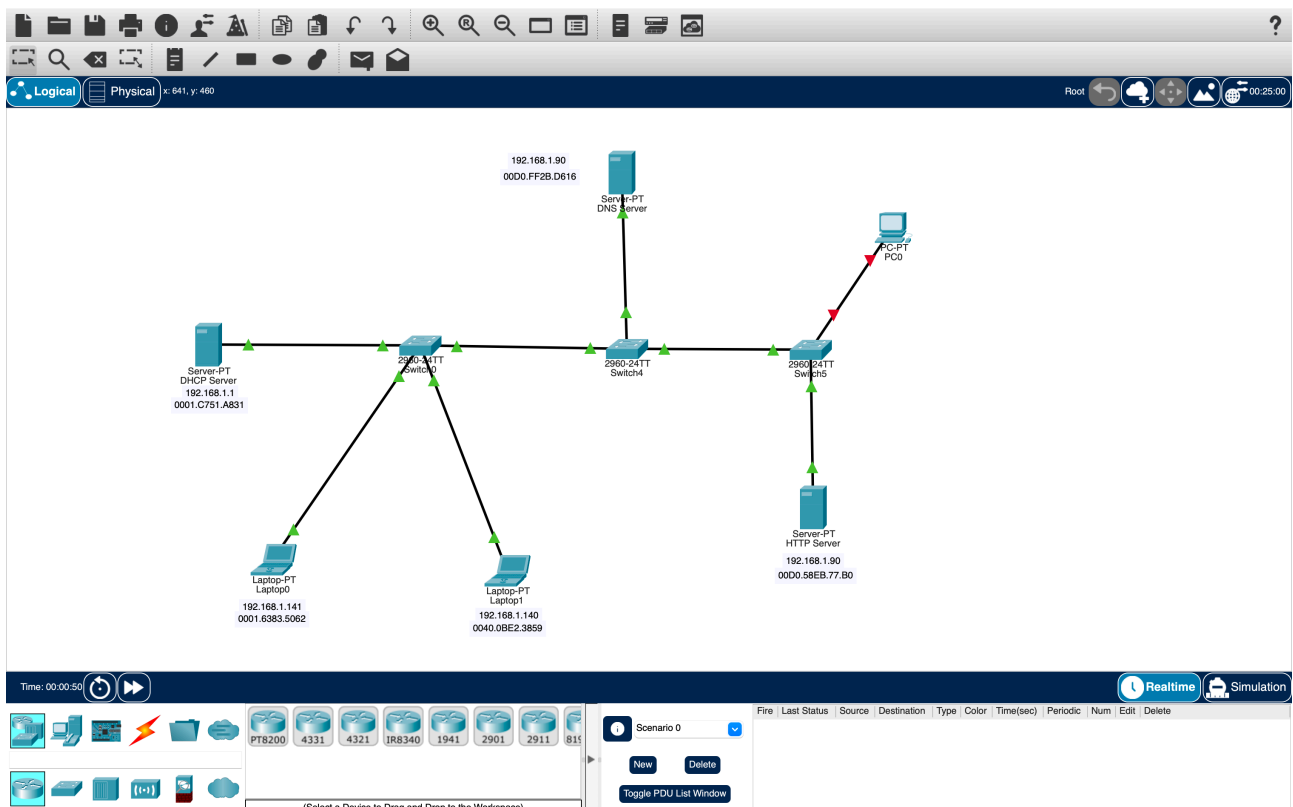


## Simulazione dei servizi applicativi simulando i seguenti protocolli HTTP, DHCP, DNS.

Riportato sottostante, una architettura tipo con le apposite configurazioni che verranno riportate dopo di essa. Configurati nella stessa rete e con l'indirizzo Gateway di default: 192.168.1.1 , DNS: 192.168.1.100



## Configurazione del server DHCP:

**DHCP Server**

**SERVICES**

- HTTP
- DHCP**
- DHCPv6
- TFTP
- DNS
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP
- IoT
- VM Management
- Radius EAP
- PRP

**DHCP**

Interface: FastEthernet0 Service: ☐ On ☒ Off

Pool Name: serverPool

Default Gateway: 192.168.1.1

DNS Server: 192.168.1.100

Start IP Address: 192 168 1 140

Subnet Mask: 255 255 255 0

Maximum Number of Users: 116

TFTP Server: 0.0.0.0

WLC Address: 0.0.0.0

Pool Name	Default Gateway	DNS Server	Start IP Address	Subnet Mask	Max User	TFTP Server	WLC Address
serverPool	192.168...	192.168...	192.168...	255.255...	116	0.0.0.0	0.0.0.0

Configurazione del server DNS con l'aggiunta della risorsa epicode.internal con il seguente indirizzo 192.168.1.90:

**DNS Server**

Physical Config **Services** Desktop Programming Attributes

**SERVICES**

- HTTP
- DHCP
- DHCPv6
- TFTP
- DNS**
- SYSLOG
- AAA
- NTP
- EMAIL
- FTP
- IoT
- VM Management
- Radius EAP
- PRP

**DNS**

DNS Service ☒ On ☐ Off

Resource Records

Name  Type **A Record**

Address

No.	Name	Type	Detail
0	epicode.internal	A Record	192.168.1.90

Configurazione del server HTTP:

**HTTP Server**

Physical Config Services **Desktop** Programming Attributes

**IP Configuration**

IP Configuration

☐ DHCP ☒ Static

IPv4 Address

Subnet Mask

Default Gateway

DNS Server

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address  /

Link Local Address

Default Gateway

A seguire in uscita dal laptop0 la richiesta HTTP al server HTTP con le relative informazioni del pacchetto.

PDU Information at Device: Laptop0

OSI Model

Outbound PDU Details

At Device: Laptop0

Source: Laptop0

Destination: HTTP CLIENT

In Layers

Layer7

Layer6

Layer5

Layer4

Layer3

Layer2

Layer1

Out Layers

Layer 7: HTTP

Layer6

Layer5

Layer 4: TCP Src Port: 1030, Dst Port: 80

Layer 3: IP Header Src. IP: 192.168.1.141, Dest. IP: 192.168.1.90

Layer 2: Ethernet II Header 0001.6383.5062 >> 00D0.58EB.77B0

Layer 1: Port(s):

1. The HTTP client sends a HTTP request to the server.

Challenge Me

<< Previous Layer

Next Layer >>

PDU Information at Device: Laptop0

OSI Model

Outbound PDU Details

PDU Formats

EthernetII

0

4

8

Bytes

PREAMBLE: 101010..10

SFD

DEST ADDR:00D0.58EB.77B0

SRC ADDR:0001.6383.5062

TYPE:0x0800

DATA (VARIABLE LENGTH)

FCS:0x00000000

IP

0

4

8

16

20

24

Bits

VER:4

IHL:5

DSCP:0x00

TL:125

ID:0x0036

FLAGS:0x2

FRAG OFFSET:0x000

TTL:128

PRO:0x06

CHKSUM

SRC IP:192.168.1.141

DST IP:192.168.1.90

DATA (VARIABLE LENGTH)

TCP

0

4

8

16

24

Bits

SOURCE PORT:1030

DESTINATION PORT:80

SEQUENCE NUMBER:1

ACKNOWLEDGEMENT NUMBER:1

OFFSET:0x0

RESERVED: 0

FLAGS:0b00011000

WINDOW:65535

CHECKSUM:0x0000

URGENT POINTER:0x0000

OPTION

DATA (VARIABLE LENGTH)

PADDING: 0

HTTP REQUEST

0

4

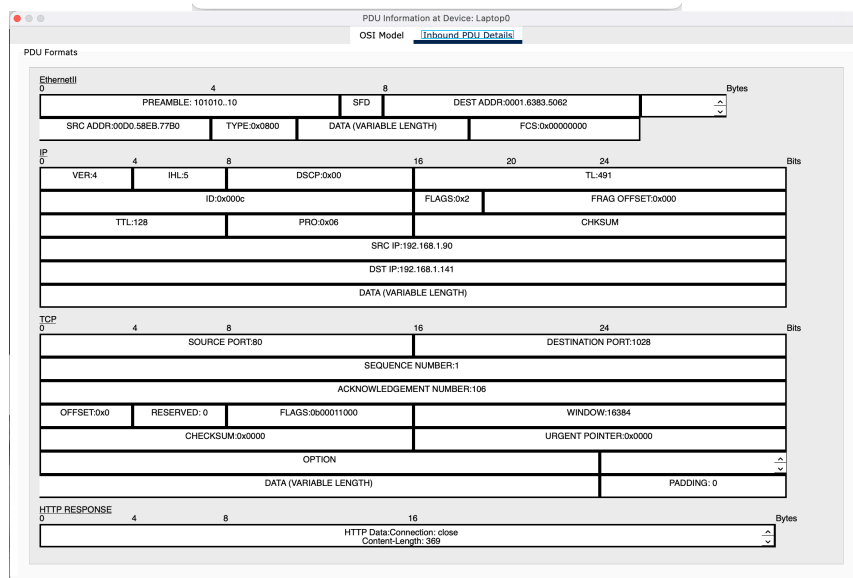
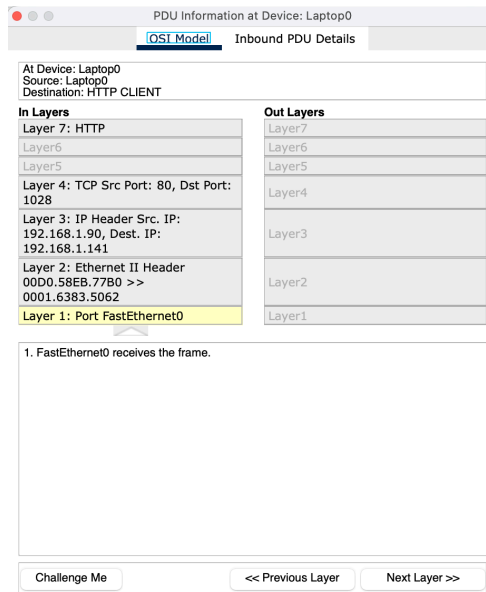
8

16

Bytes

HTTP Data:Accept-Language: en-us Accept: \*/\*

Per finire la risposta del server HTTP al laptop0:



## Conclusion:

Tramite il server DHCP configuriamo in automatico il Gateway predefinito e l'indirizzo del server DNS ai clienti.

Uno dei client fa una richiesta web cercando l'indirizzo epicode.learn contattando il server DNS per ottenere l'indirizzo ip del nome del server, infine il client invia una richiesta HTTP al server web utilizzando la porta 80 ed ottenendo la schermata della pagina web di epicode.learn.