CS 305 Lab Tutorial
Lab9 eNSP &
Simple network topology

Dept. Computer Science and Engineering
Southern University of Science and Technology

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of Science and Technology

Thanks to Wei WANG

Simulator: eNSP

eNSP Enterprise Network Simulation Platform (eNSP) is a free,extensible, and graphic network simulation platform developed by Huawei.

- By simulating Huawei enterprise routers and switches,it demonstrates device deployment scenarios.
- eNSP can simulate large-sized networks. Users can perform trial tests and learn network technologies without using real devices.

Installation package could be found on the following URL:
https://pan.baidu.com/s/1KGfkMHCabJ9Bwl78eHKSsw?pwd=1xi5

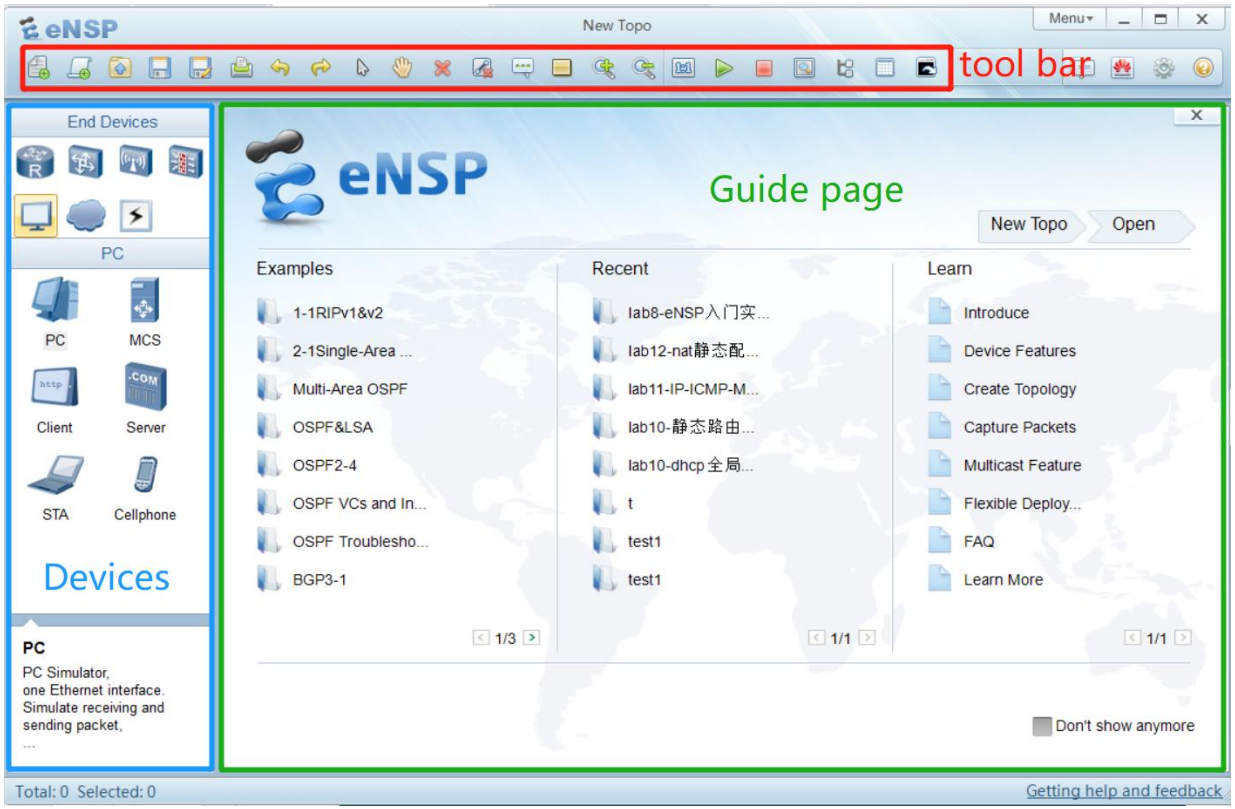
Dependence

The normal use of eNSP depends on WinPcap, Wireshark and VirtualBox. The supported versions are as follows:

Software category	Version
WinPcap	4.1.3
Wireshark	2.6.6
VirtualBox	4.2.X-5.2.X

Lecture hall #3 room# 504 is valid for the experiment on every Thursday afternoon.

First Page



1. "**tool bar**" (on the top) which lists almost all the tools in the eNSP.

2. "**Devices**"(on the left) which lists all the devices and connections that supported by eNSP

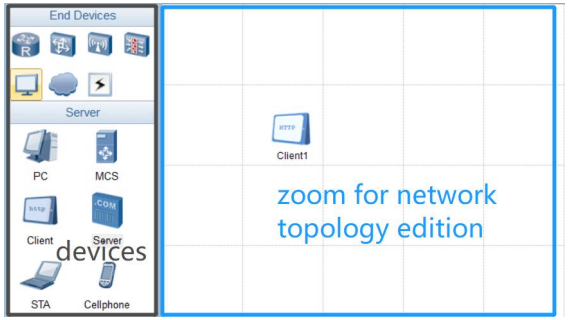
3. "**Guide page**" (on the right) includes:

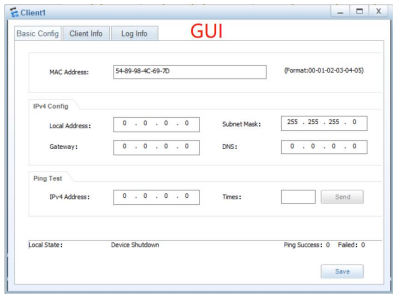
3-1. short cut of "New Topo" and "Open"

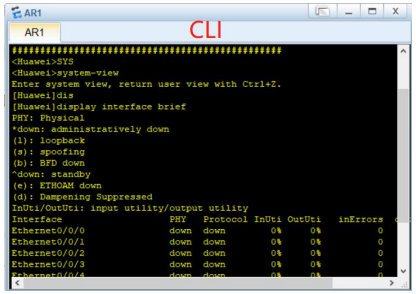
3-2. Learning guidance and Examples

Build a network and make it work

1. Build a network topology
   - 1-1) new a network topo
   - 1-2) add the device to the network topology
   - 1-3) connect the device
   - 1-4) add text for neccessary comments(optional)
2. Start the device
3. Configure the device(GUI, CLI)
4. Verify and analysis the network
5. Save the network topology

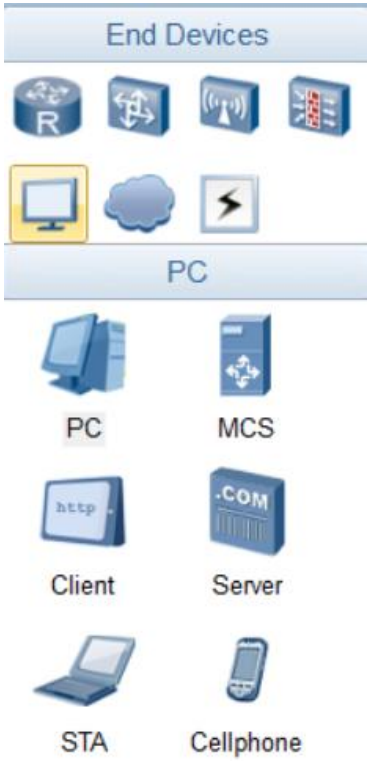






Device & Connection

- 1. network device
  - Router
  - Switch
  - Wireless device
  - Firewall
- 2. End device
  - PC
  - Client
  - Server
  - ...
- 3.Connections
  - Auto
  - CTL
  - ...



TIPS： The device is configurable only if it has been added to the network topology; The device works only if it has been started.

Network Device

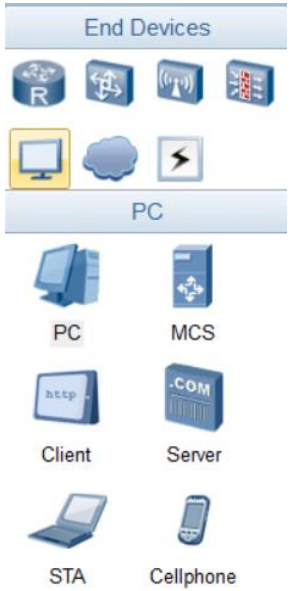
- 1. network device
  - Router, Switch, Wireless device, Firewall, ...

  - Two configuration ways:
    - GUI： used for adding modules to the device before the device started (supported by ONLY part types of the device)
    - CLI(Command Line Interface):
      - most common way for setting the network device
      - ONLY be used after the device is started.
      - 3 setting view in the CLI: user、 system、 function setting
      - common commands:
        - » system-view
        - » quit (back to previous view)
        - » display (to show some information)
        - » undo (used with other command, means to revoke the command)
        - » “tab” key (to complete the command)
        - » ？(to find the usage of the command)

```
<Huawei>system-view
Enter system view, return user view with Ctrl+Z.
[Huawei]interface ethernet 0/0/0
[Huawei-Ethernet0/0/0]
```

End Device

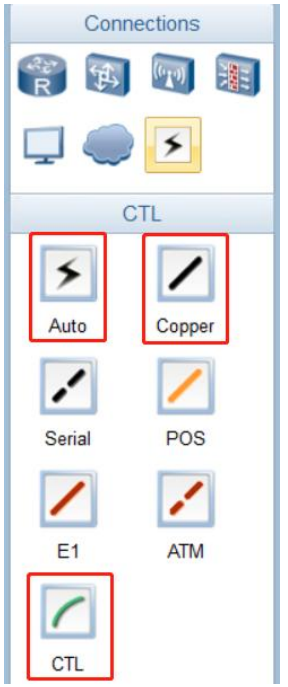
- **2. End device (set by GUI ONLY)**
  - **PC**
    - with ethernet interface, console interface
    - NO application which works on application Layer
    - support basic network command
  - **Client**
    - with ethernet interface
    - contains DNS, HTTP, FTP client
    - NO network command
  - **Server**
    - with ethernet interface
    - contains DNS, HTTP, FTP server, but no DHCP and EMAIL server
  - ...

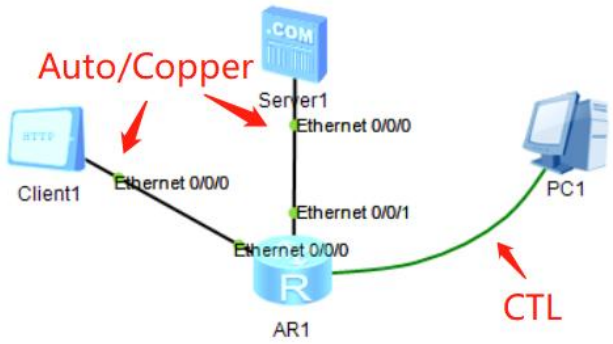


TIPS：The device is configurable only if it has been added to the network topology; The device work only if it has been started.

Connections

- 3. Connections
  - Auto (most commonly used)
    - Automatically choose the appropriate interfaces of the device
  - Copper
    - Connect GE and Ethernet interfaces of the device
  - CTL
    - Console line between PC and device
      - In real scenarios, the computer used for configuration is connected to the network device by CTL, and the network device is configured through command line tools which works on the computer…





Demo1: a simple network(design)

Task： Build the network with two computers(PC1 and PC2) in it, PC1 connects with PC2 by the ethernet interface. Both PC1 and PC2 could send/receive packets to/from eachother.

Task analysis：

1. Device：

- ✓ PC is a better choice than Client and Server

2. Connections：

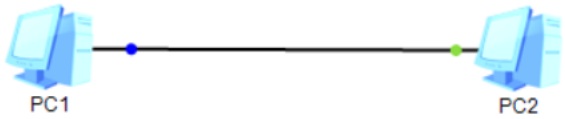
- ✓ use auto connection or copper connection

3. Settings:

- ✓ Both PC1 and PC2 are in the same network which means PC1 and PC2 share the same network ID while keep the host ID different.
  - ✓ 192.168.1.100 255.255.255.0
  - ✓ 192.168.1.200 255.255.255.0

4. Tests:

- ✓ Using “ping” to test the connect between PC1 and PC2



PC1

基础配置 | 命令行 | 组播 | UDP发包工具 | 串口

```
Welcome to use PC Simulator!

PC>

PC Simulator has not been started!

Welcome to use PC Simulator!

PC>ping 192.168.1.200

Ping 192.168.1.200: 32 data bytes, Press Ctrl_C to break
From 192.168.1.200: bytes=32 seq=1 ttl=128 time=31 ms
From 192.168.1.200: bytes=32 seq=2 ttl=128 time=32 ms
From 192.168.1.200: bytes=32 seq=3 ttl=128 time=31 ms
From 192.168.1.200: bytes=32 seq=4 ttl=128 time=31 ms
From 192.168.1.200: bytes=32 seq=5 ttl=128 time=32 ms

--- 192.168.1.200 ping statistics ---
  5 packet(s) transmitted
  5 packet(s) received
  0.00% packet loss
  round-trip min/avg/max = 31/31/32 ms

PC>
```

正在捕获 -

文件(F) 编辑(E) 视图(V) 跳转(G) 捕获(C) 分析(A) 统计(S) 电话(Y) 无线(W) 工具(T) 帮助(H)

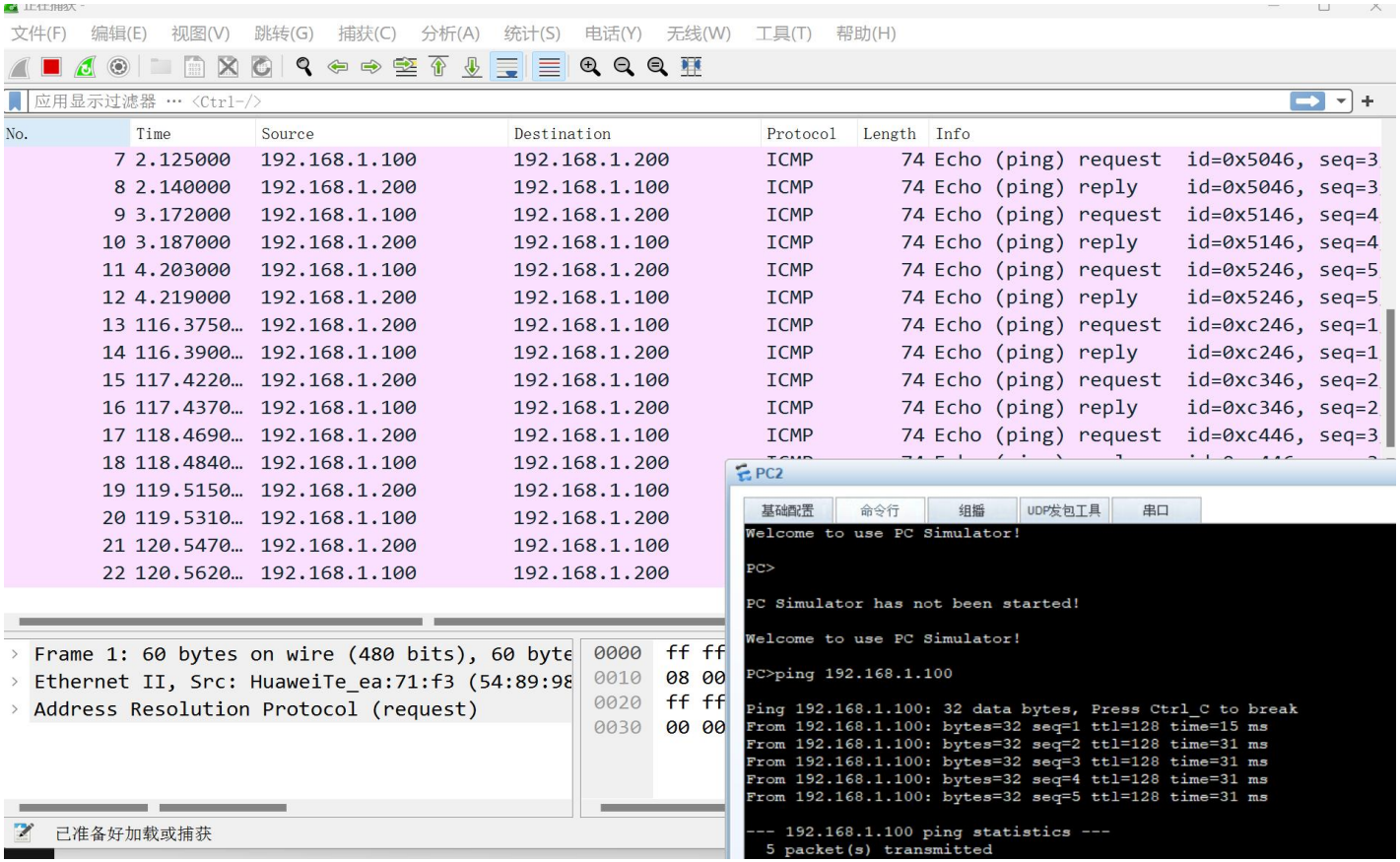
应用显示过滤器 … <Ctrl-/>

No.	Time	Source	Destination	Protocol	Length	Info
1	0.000000	HuaweiTe_ea:71:f3	Broadcast	ARP	60	Who has 192.168.1.200? Tell 192.168.1.1
2	0.015000	HuaweiTe_11:09:1b	HuaweiTe_ea:71:f3	ARP	60	192.168.1.200 is at 54:89:98:11:09:1b
3	0.047000	192.168.1.100	192.168.1.200	ICMP	74	Echo (ping) request id=0x4e46, seq=1/2
4	0.062000	192.168.1.200	192.168.1.100	ICMP	74	Echo (ping) reply id=0x4e46, seq=1/2
5	1.078000	192.168.1.100	192.168.1.200	ICMP	74	Echo (ping) request id=0x4f46, seq=2/5
6	1.094000	192.168.1.200	192.168.1.100	ICMP	74	Echo (ping) reply id=0x4f46, seq=2/5
7	2.125000	192.168.1.100	192.168.1.200	ICMP	74	Echo (ping) request id=0x5046, seq=3/7
8	2.140000	192.168.1.200	192.168.1.100	ICMP	74	Echo (ping) reply id=0x5046, seq=3/7
9	3.172000	192.168.1.100	192.168.1.200	ICMP	74	Echo (ping) request id=0x5146, seq=4/1
10	3.187000	192.168.1.200	192.168.1.100	ICMP	74	Echo (ping) reply id=0x5146, seq=4/1
11	4.203000	192.168.1.100	192.168.1.200	ICMP	74	Echo (ping) request id=0x5246, seq=5/1
12	4.219000	192.168.1.200	192.168.1.100	ICMP	74	Echo (ping) reply id=0x5246, seq=5/1

```
> Frame 1: 60 bytes on wire (480 bits), 60 byte
> Ethernet II, Src: HuaweiTe_ea:71:f3 (54:89:98
> Address Resolution Protocol (request)
```

```
0000  ff ff ff ff ff ff 54 89  98 ea 71 f3 08 06 00 01   ......T· ..q·....
0010  08 00 06 04 00 01 54 89  98 ea 71 f3 c0 a8 01 64   ......T· ..q....d
0020  ff ff ff ff ff ff c0 a8  01 c8 00 00 00 00 00 00   ........ ........
0030  00 00 00 00 00 00 00 00  00 00 00 00               ........ ....
```

已准备好加载或捕获 | 分组: 12 · 已显示: 12 (100.0%) | 配置: Default


文件(F) 编辑(E) 视图(V) 跳转(G) 捕获(C) 分析(A) 统计(S) 电话(Y) 无线(W) 工具(T) 帮助(H)
应用显示过滤器 … <Ctrl-/>
No. Time Source Destination Protocol Length Info
7 2.125000 192.168.1.100 192.168.1.200 ICMP 74 Echo (ping) request id=0x5046, seq=3
8 2.140000 192.168.1.200 192.168.1.100 ICMP 74 Echo (ping) reply id=0x5046, seq=3
9 3.172000 192.168.1.100 192.168.1.200 ICMP 74 Echo (ping) request id=0x5146, seq=4
10 3.187000 192.168.1.200 192.168.1.100 ICMP 74 Echo (ping) reply id=0x5146, seq=4
11 4.203000 192.168.1.100 192.168.1.200 ICMP 74 Echo (ping) request id=0x5246, seq=5
12 4.219000 192.168.1.200 192.168.1.100 ICMP 74 Echo (ping) reply id=0x5246, seq=5
13 116.3750… 192.168.1.200 192.168.1.100 ICMP 74 Echo (ping) request id=0xc246, seq=1
14 116.3900… 192.168.1.100 192.168.1.200 ICMP 74 Echo (ping) reply id=0xc246, seq=1
15 117.4220… 192.168.1.200 192.168.1.100 ICMP 74 Echo (ping) request id=0xc346, seq=2
16 117.4370… 192.168.1.100 192.168.1.200 ICMP 74 Echo (ping) reply id=0xc346, seq=2
17 118.4690… 192.168.1.200 192.168.1.100 ICMP 74 Echo (ping) request id=0xc446, seq=3
18 118.4840… 192.168.1.100 192.168.1.200
19 119.5150… 192.168.1.200 192.168.1.100
20 119.5310… 192.168.1.100 192.168.1.200
21 120.5470… 192.168.1.200 192.168.1.100
22 120.5620… 192.168.1.100 192.168.1.200
Frame 1: 60 bytes on wire (480 bits), 60 byte
Ethernet II, Src: HuaweiTe_ea:71:f3 (54:89:98
Address Resolution Protocol (request)
0000 ff ff
0010 08 00
0020 ff ff
0030 00 00
已准备好加载或捕获
PC2
基础配置 命令行 组播 UDP发包工具 串口
Welcome to use PC Simulator!
PC>
PC Simulator has not been started!
Welcome to use PC Simulator!
PC>ping 192.168.1.100
Ping 192.168.1.100: 32 data bytes, Press Ctrl_C to break
From 192.168.1.100: bytes=32 seq=1 ttl=128 time=15 ms
From 192.168.1.100: bytes=32 seq=2 ttl=128 time=31 ms
From 192.168.1.100: bytes=32 seq=3 ttl=128 time=31 ms
From 192.168.1.100: bytes=32 seq=4 ttl=128 time=31 ms
From 192.168.1.100: bytes=32 seq=5 ttl=128 time=31 ms
--- 192.168.1.100 ping statistics ---
5 packet(s) transmitted

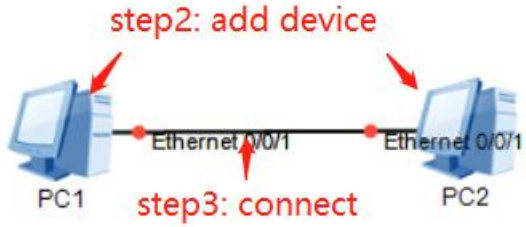
Demo1: a simple network(step1-4/6)

Task： Build the network with two computers(PC1 and PC2) in it, PC1 connects with PC2 by the ethernet interface. Both PC1 and PC2 could send/receive packets to/from eachother.

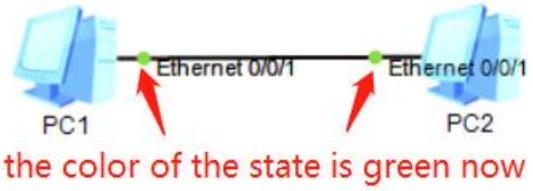
Task steps(1-4/6)：

1. **New a network topology**
   - Click on the tool “new topo”

2. **Add device to the network topology edit page**:
   - Drag and drop devices to the network topology edit page
3. **Make the connection in the network topology edit page**:
   - Click on the “auto connection”, then click on PC1, finally click on PC2.
4. Start the device
   - Click the device fist, then click on the tool “Start Device”



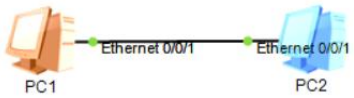
After the connecting and starting, the color of the conncetion state would switch from red to green.



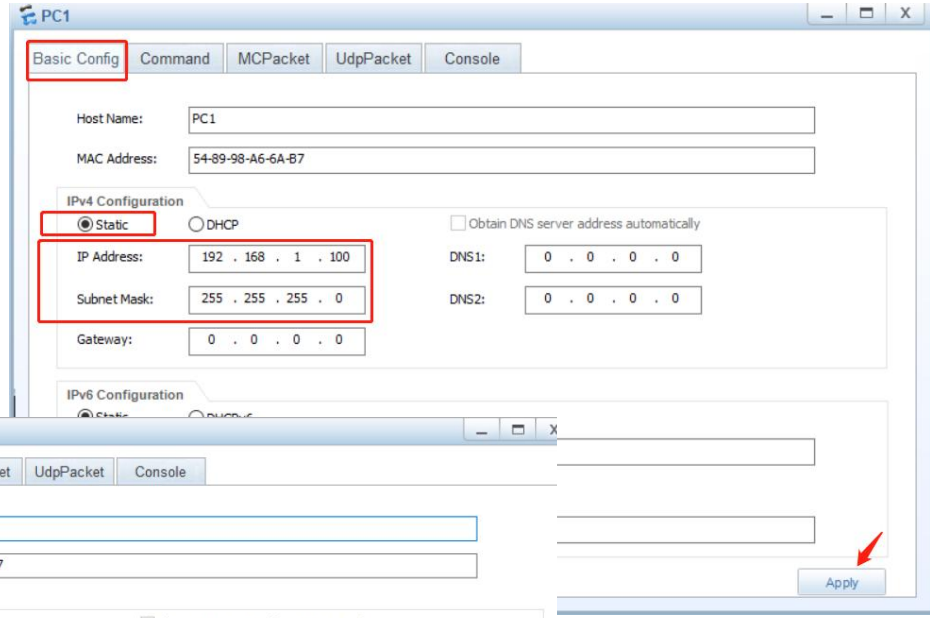
Demo1: a simple network(step5/6)

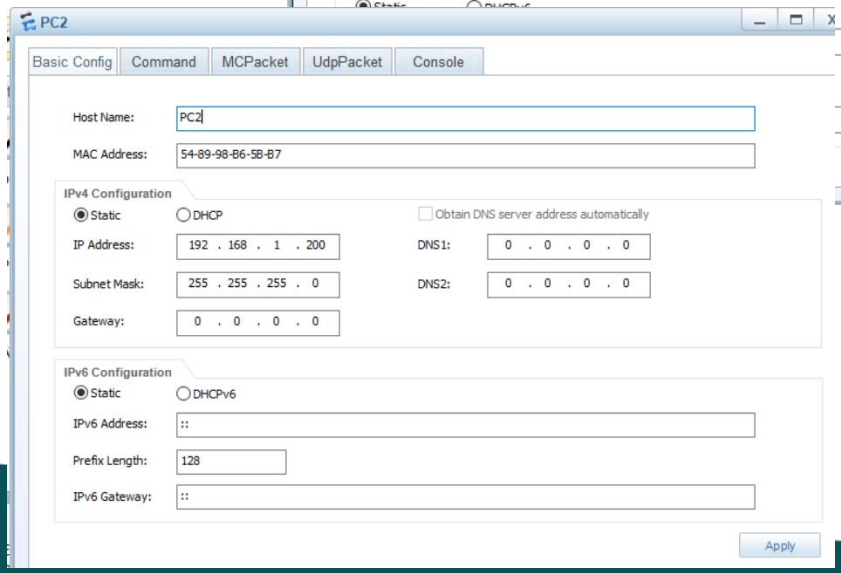
Task： Build the network with two computers(PC1 and PC2) in it, PC1 connects with PC2 by the ethernet interface. Both PC1 and PC2 could send/receive packets to/from eachother.

Task steps(5/6)：



5. **Set the devices(PC1, PC2)**
   - **Double click** on the device
   - Click “**Basic Config**”,
   - On the Basic config page, click “**Static**” on IPv4 Configuration, set its **IP address** and **subnet Mask**
   - After setting, click on “**Apply**”





NOTES:

1) If the device use DNS service, the DNS MUST be set;

2) If the devices are in different subnet, the Gateway MUST be set.

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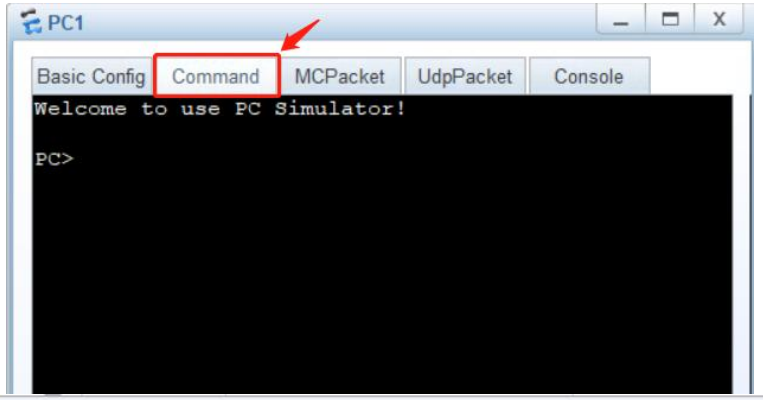
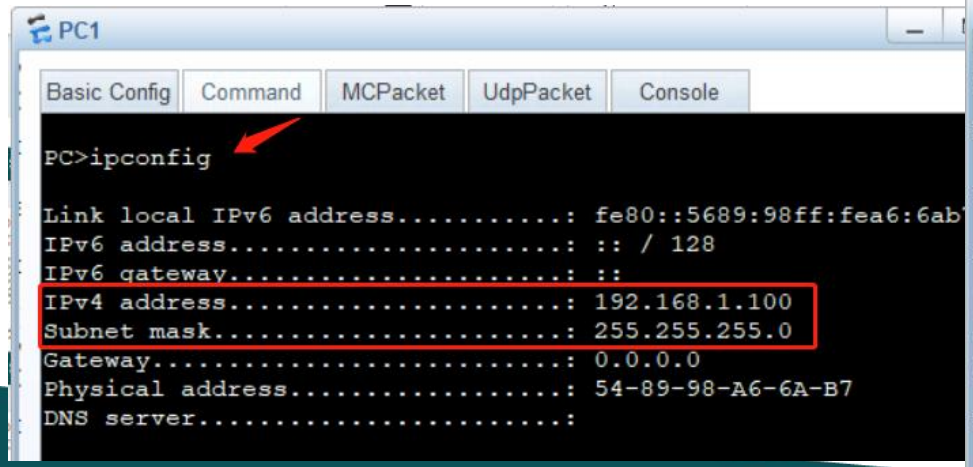
Demo1: a simple network(step6/6)

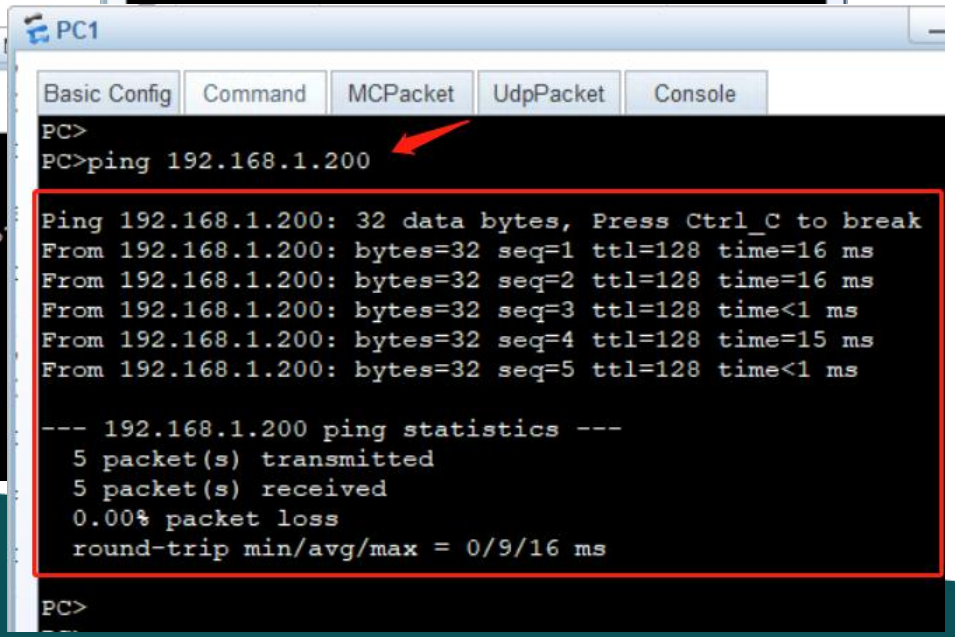
Task： Build the network with two computers(PC1 and PC2) in it, PC1 connects with PC2 by the ethernet interface. Both PC1 and PC2 could send/receive packets to/from eachother.

Task steps(6/6)：

6. **Test the conncetion between PC1 and PC2**
   - **Double click** on the PC, click "**Command**" page
   - Check the network configuration
     - using command "**ipconfig**"
   - Check if PC1 and PC2 could send/receive the packets to/from eachother.
     - using command "**ping**" to send the testing package to the destination PC.







Demo2: a simple C/S network(design)

Task： Build the network with a Client and a Web Server in it, the Client connects with the Server by the ethernet interface. Client sends a http request to Web Server, Wed Server receives the request and sends the response to the Client.

Task analysis：

1. Device：

✓ choose **Client** and **Server**

2. Connections：

✓ use **auto connection** or **copper connection**

3. Settings:

✓ Both Client and Server are in the same network which means Client and Server share the same network ID while keep the host ID different.

- ✓ 192.168.100.1 255.255.255.0
- ✓ 192.168.100.2 255.255.255.0

4. Tests:

✓ Using "**ping**" to test the **connecttion** between the Client and Server

✓ **Using http client to communicate the http server**

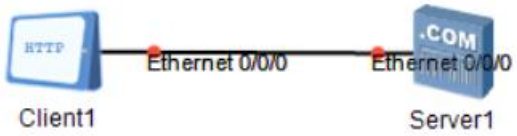
Demo2: a simple C/S network(step1-4/6)

Task： Build the network with a Client and a Web Server in it, the Client connects with the Server by the ethernet interface. Client sends a http request to Web Server, Wed Server receives the request and sends the response to the Client.

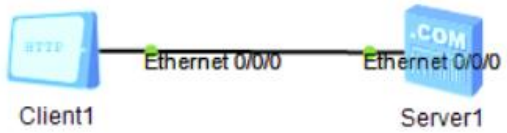
Task steps(1-4/6)：

1. **New a network topology**
   - Click on the tool “new topo”

2. **Add device to the network topology edit page**:
   - Drag and drop devices to the network topology edit page
3. **Make the connection in the network topology edit page**:
   - Click on the “auto connection”, then click on Client1, finally click on Server1.
4. Start the device
   - Click the device fist, then click on the tool “Start Device”



After the connecting and starting, the color of the conncetion state would switch from red to green.



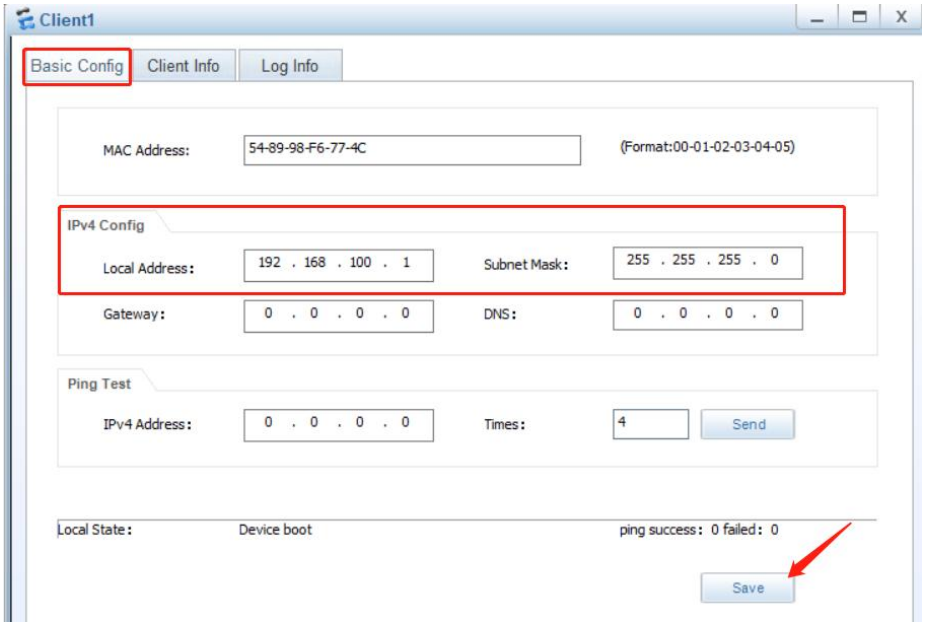
Demo2: a simple C/S network(step5.1/6)

Task： Build the network with a Client and a Web Server in it, the Client connects with the Server by the ethernet interface. Client sends a http request to Web Server, Wed Server receives the request and sends the response to the Client.

Task steps(5.1/6)：

5.1. **Set the devices(Client)**

- **Double click** on the device
- Click "**Basic Config**",
- On the Basic config page, set its **IP address** and **subnet Mask**
- After setting, click on "**Save**"



NOTES:
1) If the device use DNS service, the DNS MUST be set;
2) If the devices are in different subnet, the Gateway MUST be set.

Demo2: a simple C/S network(step5.2/6)

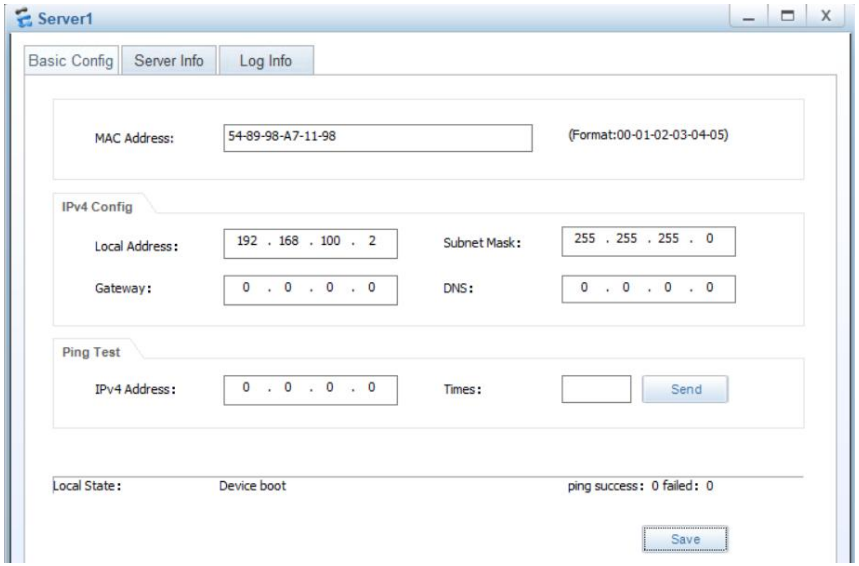
Task： Build the network with a Client and a Web Server in it, the Client connects with the Server by the ethernet interface. Client sends a http request to Web Server, Wed Server receives the request and sends the response to the Client.

Task steps(5.2/6):

5.2. **Set the devices(Server)**

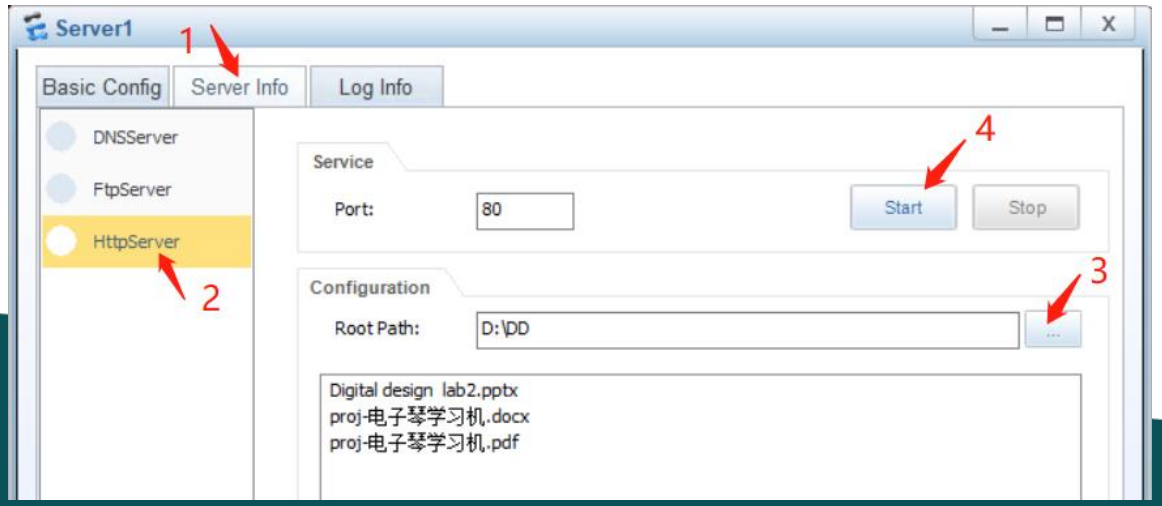
5.2-1) Basic Config

- **Double click** on the device
- Click "**Basic Config**"
- On the Basic config page, set its **IP address**, **subnet Mask ...**
- After setting, click on "**Save**"



5.2-1) Server Info

- click "**Server Info**"
- On the Server Info page, click "**HttpServer**"
- Choose a directory as **Root Path**
- click **"Start"** to start the http server



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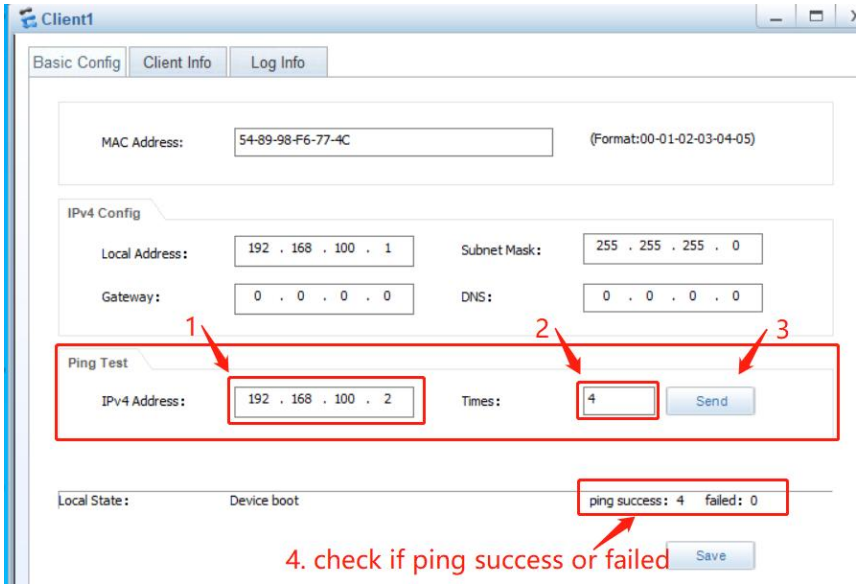
Demo2: a simple C/S network(step6/6)

Task： Build the network with a Client and a Web Server in it, the Client connects with the Server by the ethernet interface. Client sends a http request to Web Server, Wed Server receives the request and sends the response to the Client.

Task steps(6/6)：

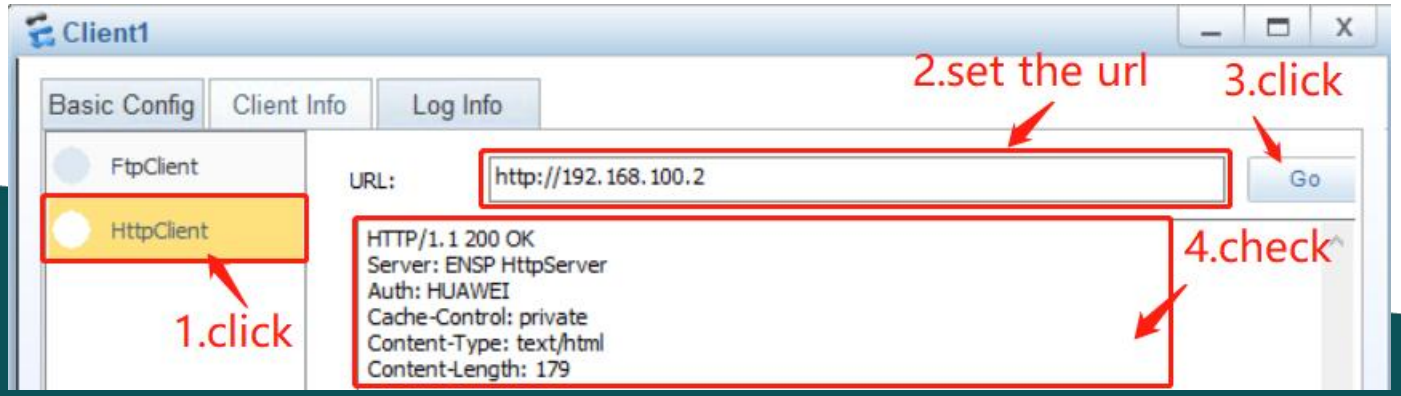
6.1. **Test connection between Client and Server**

- **Double click** on the **Client**, click "**Basic Config**" page
  - in "**Ping Test**", **set** the destination and the number of packets for testing, then click "**Send**", check the number of "**ping success**" and "**failed**"



6.2. **Test HTTP service**

- **Double click** on the **Client**, click "**Client Info**" page
  - Click "**HttpClient**", **set** the **URL of the Http Server**, then click "**GO**", **check** the response info received from the Http Server.



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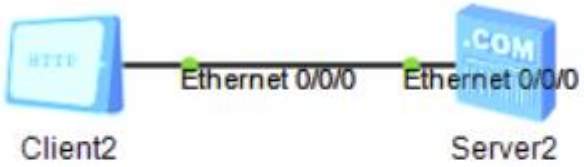
Practise 9.1: Practice on eNSP

9.1 DNS and HTTP service configuration and test

- Create a network with a Client and a Server
  - Both the client and server are in the same subnet.
  - Do the basic configuration, add relevant configurations description in “text”
- Connect the two network nodes.
- Configure the Client as HTTP client.
- Configure the Server as HTTP server and DNS server.
- Test if DNS server and HTTP server work.




```
DNS and HTTP Client
IP address: ?
subnet mask: 255.0.0.0
net id: 10.0.0.0
```

```
DNS and HTTP Server
IP address: ?
subnet mask: 255.0.0.0
net id: 10.0.0.0
```

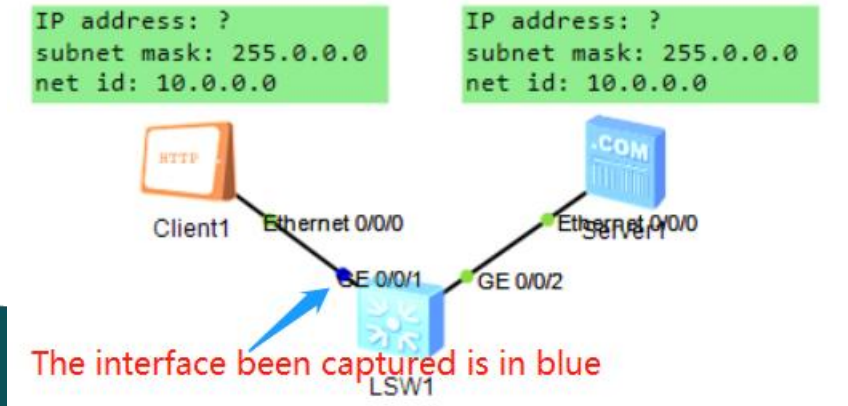
Practise 9.2: Practice on eNSP

9.2 You are encouraged to practice more on the eNSP

- Capture packets of the DNS session and HTTP session by wireshark and analysis.
  - What's the port number of DNS server?
  - Is there any TCP session? such as TCP handshake, TCP wave farewell?
  - In DNS session and HTTP session, are the ports of client same or not?

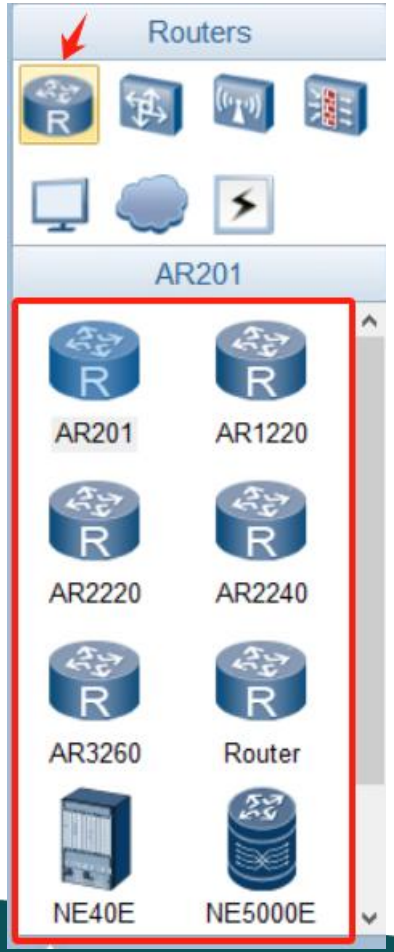
  NOTES: In eNSP, the interface of network device and PC excepts Client and Server could be captured.

- While the Client and Server are in different subnet, which device need to be added to the network topology? Does the Client and the Server need to set the gateway? try to build the network and make it work.



Network device(1)

- Router, Switch, Wireless device, Firewall, ...
- Router vs Switch
  - Router
    - Connect different networks
    - Route table
    - Gateway
    - DHCP server
    - ....
  - Switch
    - used in a local area network
    - plug and play
    - Layer 2 switch vs Layer 3 switch
    - VLAN
    - ...



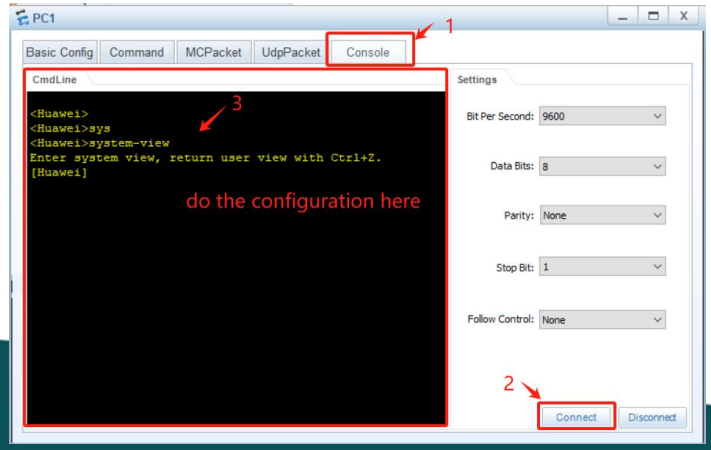
Network device(2)

How to do the configuration on the network device:

- In real work scenarios
  - Using PC to connect with the network device, the do the configure by the PC (telnet, web, console)
- On the simulator eNSP
  - configure the network device directly
    - » add the network device to network topology, start it, then double click on the device, do the configuration by CLI (Command Line Interface)

```
<Huawei>system-view
Enter system view, return user view with Ctrl+Z.
[Huawei]interface ethernet 0/0/0
[Huawei-Ethernet0/0/0]
```

  - using PC to do the configuration
    - » connect the PC with the network device by CTL connection
    - » start both the PC and the network device
    - » open the “console” window on the PC
    - » click on the “connect”
    - » do the configuration in the “Cmd Line”



Demo3. two subnets(design)

Task：Build the network with two computers(PC1 and PC2) in it, PC1 and PC2 are in different network, add a network device to connect with PC1 and Pc2, Configure the network to make both PC1 and PC2 could send/receive packets to/from eachother.

Task analysis：

1. Device： Router is used to connect with two different network

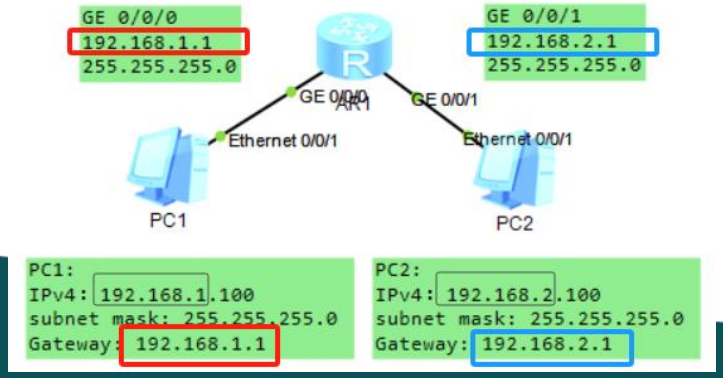
2. Connections： use auto connection or copper connection

3. Settings:

- ✓ PC1 and PC2 are in the different network which means the netwok ID of PC1 and PC2 are different.
  - ✓ PC1: IPv4: 192.168.1.100 subnet mask:255.255.255.0 Gateway: 192.168.1.x
  - ✓ PC2: IPv4: 192.168.2.100 subnet mask:255.255.255.0 Gateway: 192.168.2.y
- ✓ Router
  - ✓ interface A connect with PC1, its IPv4 address: 192.168.1.x
  - ✓ interface B connect with PC2, its IPv4 address: 192.168.2.y

4. Tests:

- ✓ Using “ping” to test the connect between PC1 and PC2



Demo3. two subnets (setting on network device)-1

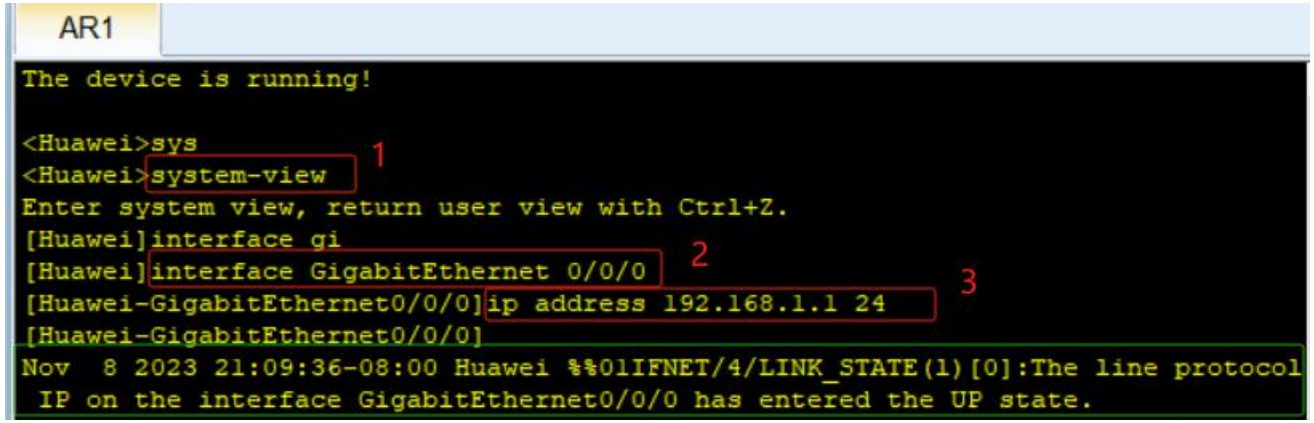
Step： The configuration on PC are same as demo1 (here Gateway MUST be set)

While configure the router A1, start it first, then double clieck on it, do the following configuration by CLI

Configure the route

1. using cmd "**system-view**" to switch the "user view" to "system view"

2. using cmd "**interface GigabitEthernet 0/0/0**" to switch to the "function configuration view" of interface GE0/0/0



3. using cmd "**ip address 192.168.1.1 24**" to set the IPv4 address of the interface GigabitEthernet 0/0/0 as 192.168.1.1, its subnet mask is 255.255.255.0 (there are 24 1-bit1s in the subnet mask)

Demo3. two subnets (setting on network device -2)

Step： in the CLI, continue to set the interface GE 0/0/1

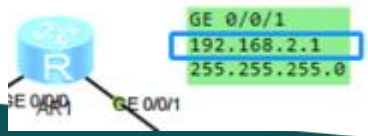
Configure the router

1. using cmd “**quit**” to switch from “function configuration view” to “system view”

2. using cmd “**interface GigabitEthernet 0/0/1**” to switch to the function configuration view of interface GE0/0/1

```
[Huawei-GigabitEthernet0/0/0]dis this
[V200R003C00]
#
interface GigabitEthernet0/0/0
 ip address 192.168.1.1 255.255.255.0
#
return
[Huawei-GigabitEthernet0/0/0]quit 1
[Huawei]int g 0/0/1 2
[Huawei-GigabitEthernet0/0/1]ip address 192.168.2.1 24 3
Nov  8 2023 21:10:32-08:00 Huawei %%01IFNET/4/LINK_STATE(l)[1]:The line protocol
 IP on the interface GigabitEthernet0/0/1 has entered the UP state.
[Huawei-GigabitEthernet0/0/1]dis this
[V200R003C00]
#
interface GigabitEthernet0/0/1
 ip address 192.168.2.1 255.255.255.0
#
return
```

3. using cmd “**ip address 192.168.2.1 24**” to set the IPv4 address of the interface GigabitEthernet 0/0/1 as 192.168.2.1, its subnet mask is 255.255.255.0 (there are 24 1-bit1s in the subnet mask)



Demo3. two subnets (test)

PC1

Basic Config | Command | MCPacket | UdpPacket | Console

```
PC>ipconfig

Link local IPv6 address...........: fe80::5689:98ff:fe09:63b2
IPv6 address......................: :: / 128
IPv6 gateway......................: ::
IPv4 address......................: 192.168.1.100
Subnet mask.......................: 255.255.255.0
Gateway...........................: 192.168.1.1
Physical address..................: 54-89-98-09-63-B2
DNS server........................:

PC>ping 192.168.2.100

Ping 192.168.2.100: 32 data bytes, Press Ctrl_C to break
Request timeout!
From 192.168.2.100: bytes=32 seq=2 ttl=127 time=15 ms
From 192.168.2.100: bytes=32 seq=3 ttl=127 time=16 ms
From 192.168.2.100: bytes=32 seq=4 ttl=127 time=15 ms
From 192.168.2.100: bytes=32 seq=5 ttl=127 time=16 ms

--- 192.168.2.100 ping statistics ---
  5 packet(s) transmitted
  4 packet(s) received
  20.00% packet loss
  round-trip min/avg/max = 0/15/16 ms
```

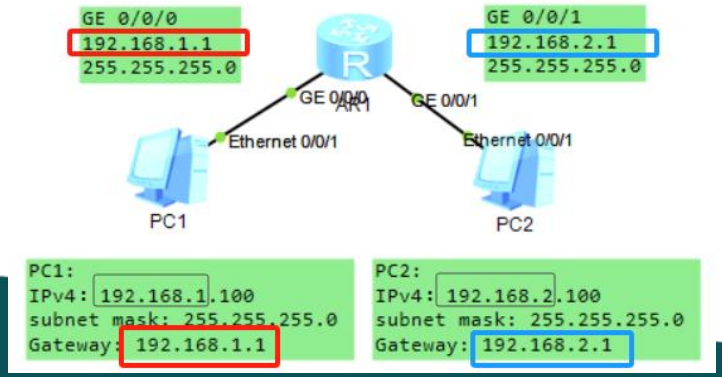
PC2

Basic Config | Command | MCPacket | UdpPacket | Console

```
PC>ipconfig

Link local IPv6 address...........: fe80::5689:98ff:fe28:1c4b
IPv6 address......................: :: / 128
IPv6 gateway......................: ::
IPv4 address......................: 192.168.2.100
Subnet mask.......................: 255.255.255.0
Gateway...........................: 192.168.2.1
Physical address..................: 54-89-98-28-1C-4B
DNS server........................:

PC>ping 192.168.1.100

Ping 192.168.1.100: 32 data bytes, Press Ctrl_C to break
From 192.168.1.100: bytes=32 seq=1 ttl=127 time=16 ms
From 192.168.1.100: bytes=32 seq=2 ttl=127 time=16 ms
From 192.168.1.100: bytes=32 seq=3 ttl=127 time=31 ms
From 192.168.1.100: bytes=32 seq=4 ttl=127 time=15 ms
From 192.168.1.100: bytes=32 seq=5 ttl=127 time=16 ms

--- 192.168.1.100 ping statistics ---
  5 packet(s) transmitted
  5 packet(s) received
  0.00% packet loss
  round-trip min/avg/max = 15/18/31 ms
```

Test the conncetion between PC1 and PC2

- **Double click** on the PC, click "**Command**" page
- Check the network configuration: "**ipconfig**"
- Check if PC1 and PC2 could send/receive the packets to/from eachother. "**ping**"



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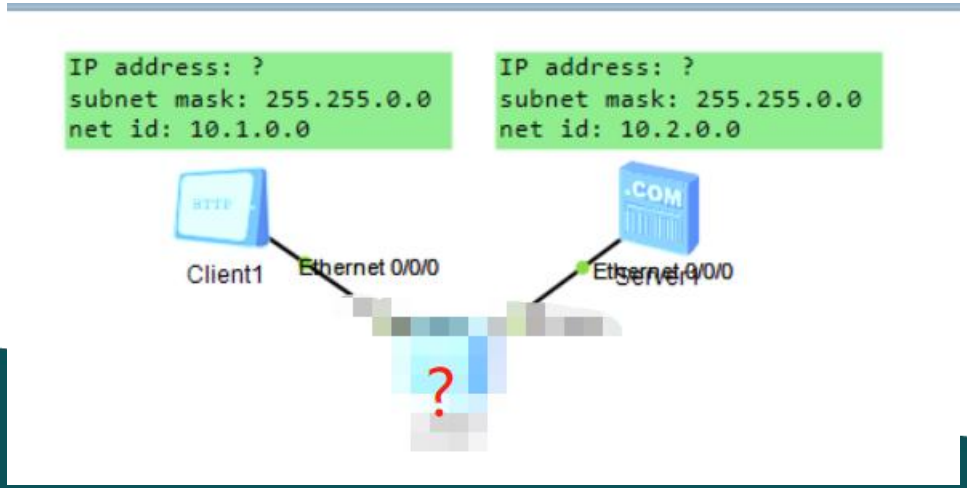
Practise 9.3: Practice on eNSP

9.3 DNS and HTTP service configuration and test

- Create a network with a Client and a Server,
  - The client and server are in the different subnet.
  - Do the basic configuration, add relevant configurations description in “text”
- Configure C/S
  - configure the Client as HTTP client.Configure the Server as HTTP server and DNS server.
- Test if DNS server and HTTP server work.
- Capture packets of the DNS session and HTTP session by wireshark and analysis.
  - What’s the port number of DNS server?
  - Is there any TCP session? such as TCP handshake, TCP wave farewell?
  - In DNS session and HTTP session, are the ports of client same or not?

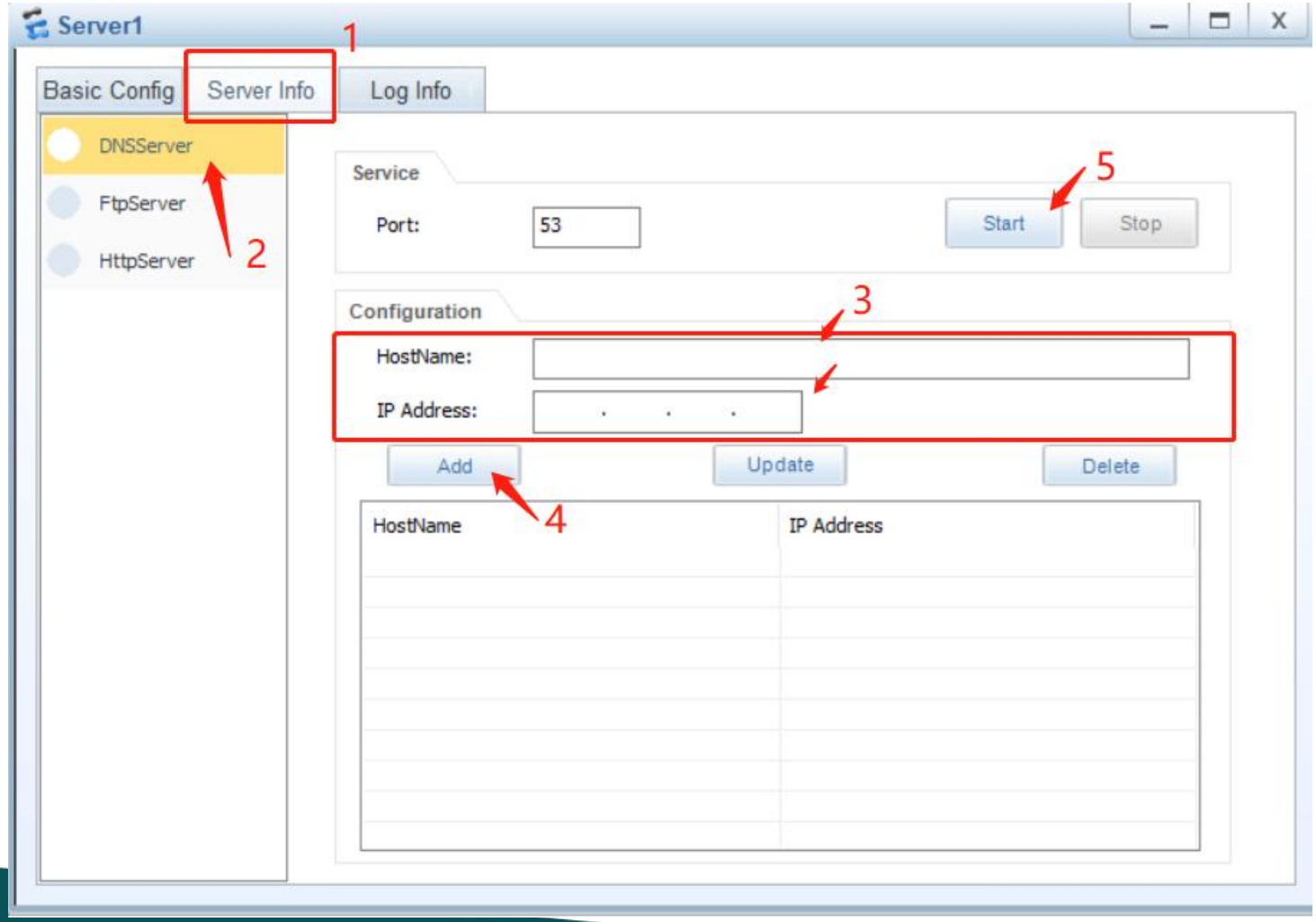


Tips summary on eNSP

- 1. All devices need to be started before they can be configured
- 2. Cannot directly capture packets on clients and servers
- 3. If the computer on which eNSP is installed is set to hibernate, please turn off hibernation, otherwise it will affect the use of eNSP.
- 4. It is recommended to add necessary comments to the network topology to view the basic configuration of related devices.
- 5.Save in a timely manner, especially the configuration on network devices.

```
<Huawei>
<Huawei>save
  The current configuration will be written to the device.
  Are you sure to continue? (y/n)[n]:y
  It will take several minutes to save configuration file, please wait.......
  Configuration file had been saved successfully
  Note: The configuration file will take effect after being activated
<Huawei>
```

Tips1: set and start DNSServer in eNSP

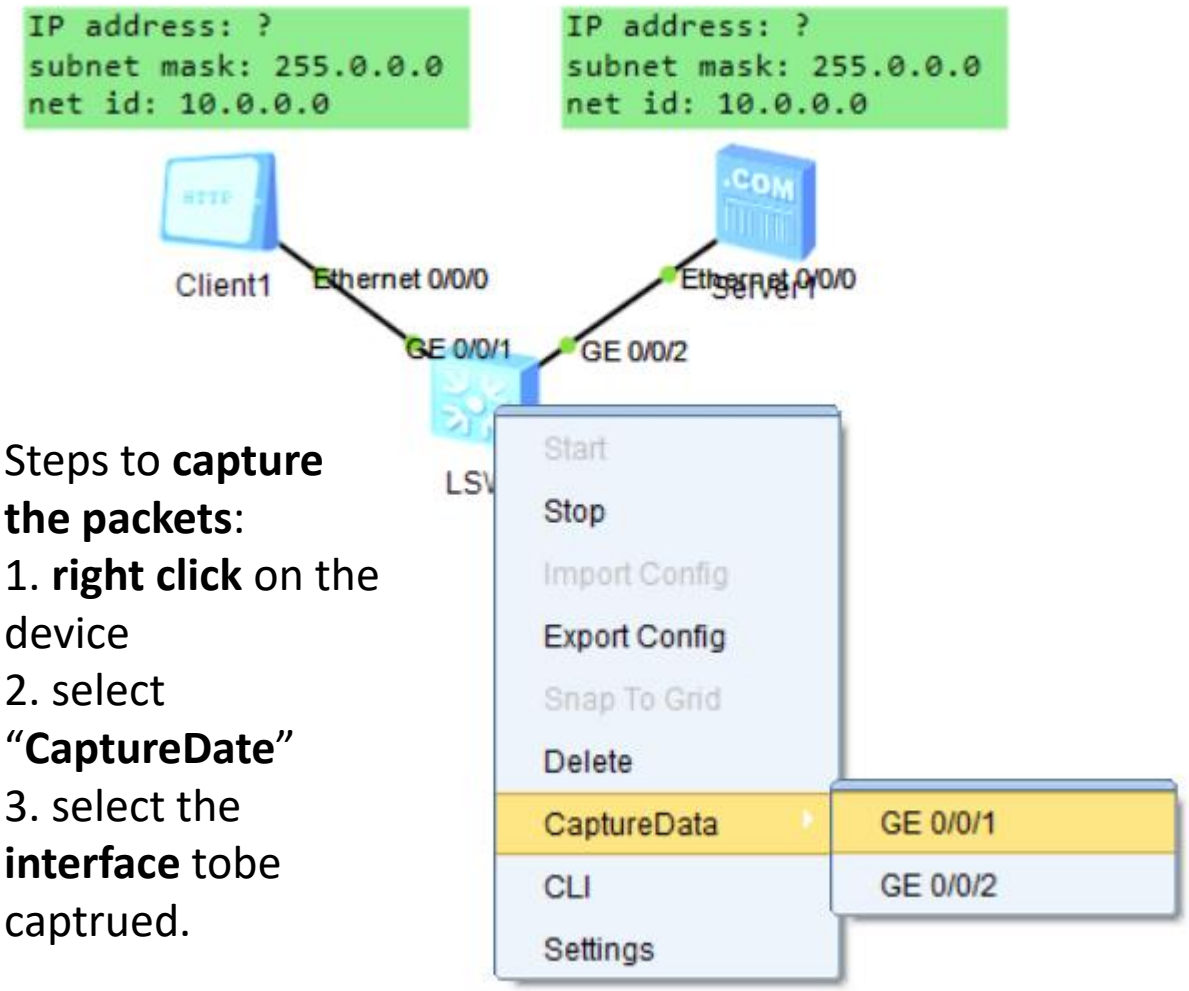


Tips2: capture packets in eNSP(1)

NOTES:

1. In eNSP, the interface of network **device** and **PC excepts Client and Server** could be captured.

2. For common usage, **switch is plug and play**, which means while it is added to the topology and started, it could work without setting.



Steps to **capture the packets**:

1. **right click** on the device
2. select "**CaptureDate**"
3. select the **interface** tobe captrued.

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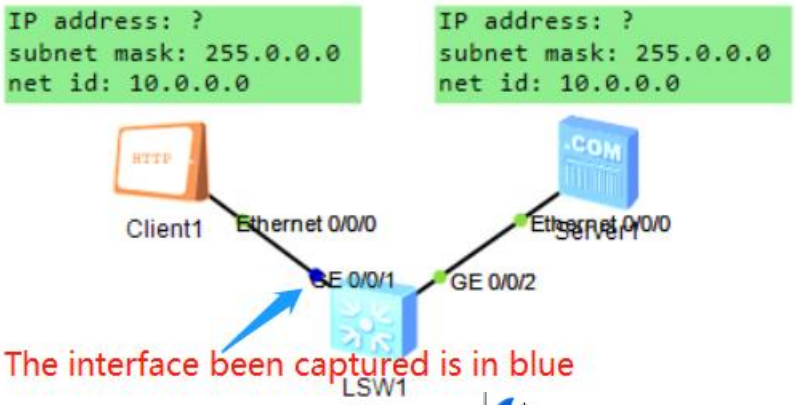
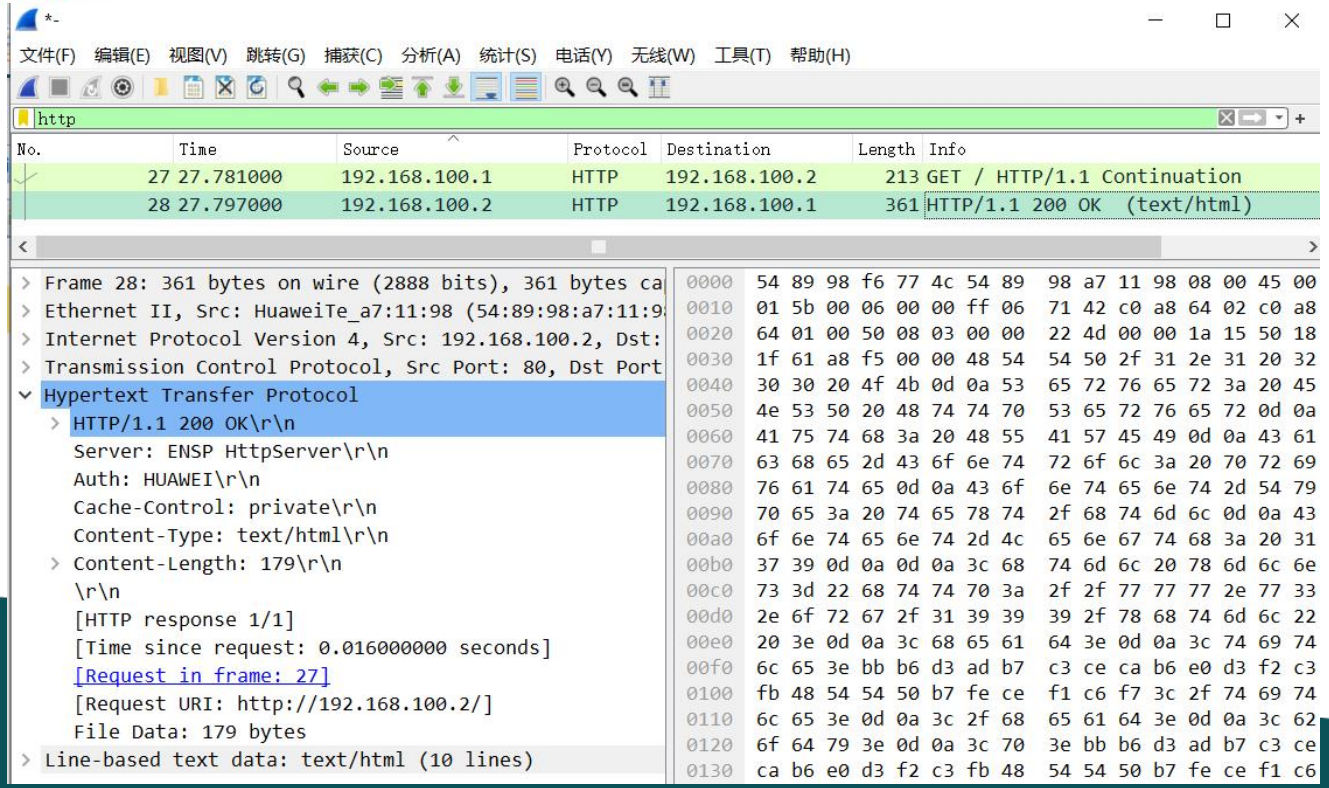
Tips2: capture packets in eNSP(2)





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