Retele laboratorul 3

1. **End Devices -> PC**, il punem pe ecran, ii dam numele **ARAD** si intram in el.

2. Inchidem PC-ul (turn off), **scoatem** placa de retea actuala si punem o placa de tipul "PT-HOST-NM-**1CGE**", care este gigabit ethernet si **pornim** PC-ul.

3. Intram in tabul "**Desktop**". Intram pe "**IP Configuration"** si setam:
   - **IP Address: 173.228.32.140**
   - **Subnet Mask: 255.255.255.192**
   - **Default Gateway: 173.228.32.129**
   - **DNS Server: 192.168.200.254**

4. Iesim din "**IP Configuration**" si intram in "**Email**" (tot din tabul "**Desktop**"), unde setam:
   - **Your name: Arad**
   - **Email Address: Arad@info.ro**
   - **Incoming Mail Server: 192.168.200.254**
   - **Outgoing Mail Server: 192.168.200.254**
   - **User Name: Arad**
   - **Password: 123456**

5. Iesim de aici si punem un **Switch** de tipul **2960**, pe care il numim **SWARAD** (**Network Devices -> Switches -> 2960**).

6. Punem si un **Laptop,** pe care il numim "**SERVICE" (End Devices -> Laptop)**.

7. Cablam **SERVICE** cu **SWARAD** cu un cablu de tip **Console** (**Connections -> Console //** ala albastru deschis). In **SERVICE**, selectam intrarea **RS 232,** iar in **SWARAD** selectam intrarea **Console**.

8. Intram in **SERVICE**, in tabul **"Desktop"**, in **"Terminal"** (apesi OK daca iti apare Terminal Configuration).

9. ***In cazul in care*** apare o interogare unde trebuie sa raspunzi cu **YES** sau **NO**, scrii **NO**. Dupa (ce ati selectat NO), apasati ENTER si o sa fiti in user-ul **Switch.** (O sa apara in terminal **"Switch>"**). Aici scriem urmatoarele:

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#no ip domain-lookup
Switch(config)#hostname SWARAD
SWARAD(config)#enable secret cisco12345
SWARAD(config)#enable password cisco54321
SWARAD(config)#banner motd "Bine ati venit in SWARAD"
SWARAD(config)#line console 0
SWARAD(config-line)#password ciscoconpass
SWARAD(config-line)#login
SWARAD(config-line)#logging synchronous
SWARAD(config-line)#exec-timeout 15 10
SWARAD(config-line)#exit
SWARAD(config)#line vty 0 15
SWARAD(config-line)#password ciscovtypass
SWARAD(config-line)#login
SWARAD(config-line)#logging synchronous
SWARAD(config-line)#exec-timeout 15 10
SWARAD(config-line)#exit
SWARAD(config)#exit
SWARAD#
%SYS-5-CONFIG_I: Configured from console by console

SWARAD#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
SWARAD#clock set 14:04:00 04 MAR 2020
SWARAD#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
SWARAD(config)#ip domain-name info.ro
SWARAD(config)#username admin privilege 15 secret adminpass1
SWARAD(config)#line vty 0 15
SWARAD(config-line)#transport input ssh
SWARAD(config-line)#login local
SWARAD(config-line)#exit
SWARAD(config)#crypto key generate rsa
The name for the keys will be: SWARAD.info.ro
Choose the size of the key modulus in the range of 360 to 2048 for your
  General Purpose Keys. Choosing a key modulus greater than 512 may take
  a few minutes.

How many bits in the modulus [512]: 2048
% Generating 2048 bit RSA keys, keys will be non-exportable...[OK]

SWARAD(config)#interface vlan 1
*Mar 4 14:4:54.884: %SSH-5-ENABLED: SSH 1.99 has been enabled
SWARAD(config-if)#description Conexiune cu SWARAD
SWARAD(config-if)#ip address 173.228.32.130 255.255.255.192
SWARAD(config-if)#no shutdown
```

10. Conectam cu un cablu de tip **“Straight-Through”** (**Connections -> Straight-Through** // linia dreapta neagra**) ARAD** (capatul **Gigabitethernet 0**) cu **SWARAD (**capatul **Gigabitethernet 0/1**).

11. Facem verificarea. Intram in **ARAD**, in tabul **“Desktop”**, in **“Command prompt”** si folosim comenzile **“ping”** si **“ssh -l admin 173.228.32.130”,** unde folosim parola **“adminpass1”,** iar la final dam **exit**, ca sa nu ramanem conectati pe **SWARAD**:

```
Packet Tracer PC Command Line 1.0
C:\>
ping 173.228.32.130

Pinging 173.228.32.130 with 32 bytes of data:

Request timed out.
Reply from 173.228.32.130: bytes=32 time<1ms TTL=255
Reply from 173.228.32.130: bytes=32 time<1ms TTL=255
Reply from 173.228.32.130: bytes=32 time<1ms TTL=255

Ping statistics for 173.228.32.130:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ssh -l admin 173.228.32.130

Password:

Bine ati venit in SWARAD

SWARAD#exit

[Connection to 173.228.32.130 closed by foreign host]
C:\>
```

12. Punem pe ecran si un **Router** de tipul **2911** (**Network Devices -> Routers -> 2911)**. Ii punem numele **RARAD** si ne conectam cu tipul de cablu **“Console”** din **SERVICE** (capatul **RS 232**) in **RARAD** (capatul **Console)**. Nu trebuie sa stergeti cablul. Pur si simplu apasati pe cercul negru din **SWARAD** si dupa il introduceti in **RARAD**.

13. Intram in **SERVICE,** in tabul **“Desktop”**, in **“Terminal”,** unde scriem:

```
         --- System Configuration Dialog ---

Would you like to enter the initial configuration dialog? [yes/no]: no


Press RETURN to get started!



Router>enable
Router#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#no ip domain-lookup
Router(config)#hostname RARAD
RARAD(config)#security passwords min-length 10
RARAD(config)#login block-for 30 attempts 3 within 20
RARAD(config)#enable secret cisco12345
RARAD(config)#enable password cisco54321
RARAD(config)#banner login "Accesul persoanelor neautorizate strict interzis."
RARAD(config)#banner motd "Bine ati venit in RARAD."
RARAD(config)#line console 0
RARAD(config-line)#password ciscoconpass
RARAD(config-line)#login
RARAD(config-line)#logging synchronous
RARAD(config-line)#exec-timeout 15 10
RARAD(config-line)#exit
RARAD(config)#line vty 0 15
RARAD(config-line)#password ciscovtypass
RARAD(config-line)#login
RARAD(config-line)#logging synchronous
RARAD(config-line)#exec-timeout 15 10
RARAD(config-line)#exit
RARAD(config)#exit
RARAD#
%SYS-5-CONFIG_I: Configured from console by console

RARAD#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
RARAD#clock set 14:43:00 04 MAR 2020
RARAD#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
RARAD(config)#ip domain-name info.ro
RARAD(config)#username admin privilege 15 secret adminpass1
RARAD(config)#line vty 0 15
RARAD(config-line)#transport input ssh
RARAD(config-line)#login local
RARAD(config-line)#exit
RARAD(config)#crypto key generate rsa
The name for the keys will be: RARAD.info.ro
Choose the size of the key modulus in the range of 360 to 2048 for your
  General Purpose Keys. Choosing a key modulus greater than 512 may take
  a few minutes.

How many bits in the modulus [512]: 2048
% Generating 2048 bit RSA keys, keys will be non-exportable...[OK]

RARAD(config)#interface gigabitethernet 0/0
*Mar 4 14:43:47.924: %SSH-5-ENABLED: SSH 1.99 has been enabled
RARAD(config-if)#ip address 173.228.32.129 255.255.255.192
RARAD(config-if)#no shutdown
```

14. Conectam **SWARAD** (capatul **Gigabitethernet 0/2)** cu **RARAD** (capatul **Gigabitethernet 0/0**) cu un cablu de tip **Straight-Through.**

15. Facem verificarea. Intram in **ARAD**, in tabul **“Desktop”**, in **“Command prompt”** si folosim comenzile **“ping”** si **“ssh -l admin 173.228.32.129”** si parola **adminpass1**, iar la final dam **“exit”**, ca sa nu ramanem conectati pe **RARAD**.

```
C:\>ping 173.228.32.129

Pinging 173.228.32.129 with 32 bytes of data:

Reply from 173.228.32.129: bytes=32 time=1ms TTL=255
Reply from 173.228.32.129: bytes=32 time<1ms TTL=255
Reply from 173.228.32.129: bytes=32 time<1ms TTL=255
Reply from 173.228.32.129: bytes=32 time<1ms TTL=255

Ping statistics for 173.228.32.129:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 1ms, Average = 0ms

C:\>ssh -l admin 173.228.32.129

Password:

Bine ati venit in RARAD.

RARAD#exit

[Connection to 173.228.32.129 closed by foreign host]
C:\>
```

16. Mai punem un **Switch** de tipul **2960**, pe care il numim **SWANCONA** si il conectam (capatul **Console**) la **SERVICE (**capatul **RS 232**) cu un cablu de tip **“Console”**. La fel, puteti sa scoateti capatul din **RARAD** si sa-l introduceti in **SWANCONA**, in loc sa-l stergeti si sa puneti altul, desi merge si asa.

17. Intram in **SERVICE,** in tabul **“Desktop”**, in **“Terminal”,** unde scriem:

```
Switch>enable
Switch#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Switch(config)#no ip domain-lookup
Switch(config)#hostname SWANCONA
SWANCONA(config)#enable secret cisco12345
SWANCONA(config)#enable password cisco54321
SWANCONA(config)#banner motd "Bine ati venit in SWANCONA."
SWANCONA(config)#line console 0
SWANCONA(config-line)#password ciscoconpass
SWANCONA(config-line)#login
SWANCONA(config-line)#logging synchronous
SWANCONA(config-line)#exec-timeout 15 10
SWANCONA(config-line)#exit
SWANCONA(config)#line vty 0 15
SWANCONA(config-line)#password ciscovtypass
SWANCONA(config-line)#login
SWANCONA(config-line)#logging synchronous
SWANCONA(config-line)#exec-timeout 15 10
SWANCONA(config-line)#exit
SWANCONA(config)#exit
SWANCONA#
%SYS-5-CONFIG_I: Configured from console by console

SWANCONA#clock set 15:00:00 04 MAR 2020
SWANCONA#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
SWANCONA(config)#ip domain-name info.ro
SWANCONA(config)#username admin privilege 15 secret adminpass1
SWANCONA(config)#line vty 0 15
SWANCONA(config-line)#transport input ssh
SWANCONA(config-line)#login local
SWANCONA(config-line)#exit
SWANCONA(config)#crypto key generate rsa
The name for the keys will be: SWANCONA.info.ro
Choose the size of the key modulus in the range of 360 to 2048 for your
  General Purpose Keys. Choosing a key modulus greater than 512 may take
  a few minutes.

How many bits in the modulus [512]: 2048
% Generating 2048 bit RSA keys, keys will be non-exportable...[OK]

SWANCONA(config)#interface vlan 1
*Mar 4 15:0:42.418: %SSH-5-ENABLED: SSH 1.99 has been enabled
SWANCONA(config-if)#description "Conexiune cu SWANCONA"
SWANCONA(config-if)#ip address 192.168.200.226 255.255.255.224
SWANCONA(config-if)#no shutdown
```

18. Conectam **SERVICE** (capatul **RS 232**) cu **RARAD** (capatul **Console**) cu cablul de tipul **“Console”**.

19. Intram in **SERVICE,** in tabul **“Desktop”**, in **“Terminal”**, unde va trebui sa ne logam. Prima oara trebuie sa ne logam in user-ul “**RARAD”** si vom folosi parola **ciscoconpass**, iar dupa ce ii dam **RARAD>enable,** introducem parola **cisco12345**, pentru a putea face modificari in Router, iar dupa introducem urmatoarele comenzi: (description-urile sunt optionale, dar profesorul le vrea)

```
Bine ati venit in RARAD.
Accesul persoanelor neautorizate strict interzis.

User Access Verification

Password:

RARAD>enable
Password:
RARAD#configure terminal
Enter configuration commands, one per line.  End with CNTL/Z.
RARAD(config)#interface gigabitethernet 0/1
RARAD(config-if)#description "Conexiune RARAD pe 0/1"
RARAD(config-if)#ip address 192.168.200.225 255.255.255.224
RARAD(config-if)#no shutdown
```

20. Dupa putem conecta cu un cablu de tip **“Straight Through”** router-ul **RARAD (**capatul **GigabitEthernet0/1)** cu **SWANCONA** (capatul **GigabitEthernet0/1)**. In momentul asta vom avea conexiunile verzi (una va fi portocalie, dar se va face in curand verde). Daca aveti vreuna rosie, inseamna ca ati gresit undeva.

21. O sa adaugam un **Server** pe ecran (**End Devices -> Server)** si il numim **SERVER**.

22. Ca la **ARAD,** il inchidem, ii schimbam placa de retea cu **1CGE** si il pornim la loc.

23. Intram in tabul **“Desktop”**, in **“IP Configuration”** si setam:
    - **IP Address: 192.168.200.254**
    - **Subnet Mask: 255.255.255.224**
    - **Default Gateway: 192.168.200.225**
    - **DNS Server: 192.168.200.254**

24. Intram in tabul **“Services”**, iar in meniul din stanga, apasam pe **“DNS”**, unde vom pune **“DNS Service”** pe **ON.** Mai jos, la **“Name”**, scriem **“inforo” (sau ce nume doriti voi)**, iar la **“Address”** scriem **“192.168.200.254”** si apasam pe **“Add”**.

25. Conectam **SERVER** (capatul **GigabitEthernet0)** cu **SWANCONA** (capatul **GigabitEthernet0/2).**

26. Intram in **ARAD**, in tabul **“Desktop”**, in **“Web browser”**, iar acolo putem scrie fie **“inforo” (sau ce nume ati pus la punctul 24)**, fie **DNS**-ul **“192.168.200.254”**.