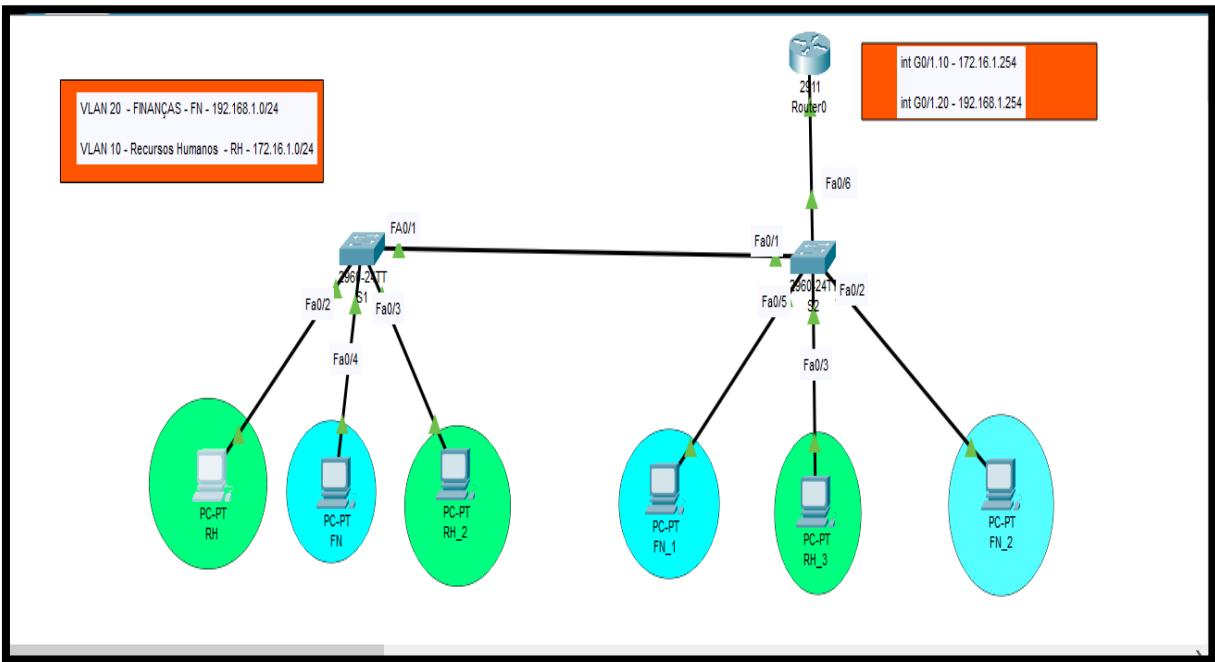


Roteamento inter-vlan nos dispositivos **cisco** e **Huawei**

CISCO



1.- Criar as vlans no primeiro switch

```
S1(config)#vlan 10
S1(config-vlan)#name RH
S1(config-vlan)#exit
S1(config)#vlan 20
S1(config-vlan)#name FN
```

1.1 – Visualizar as vlans

S1#show vlan

S1#show vlan			
VLAN	Name	Status	Ports
1	default	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4 Fa0/5, Fa0/6, Fa0/7, Fa0/8 Fa0/9, Fa0/10, Fa0/11, Fa0/12 Fa0/13, Fa0/14, Fa0/15, Fa0/16 Fa0/17, Fa0/18, Fa0/19, Fa0/20 Fa0/21, Fa0/22, Fa0/23, Fa0/24 Gig0/1, Gig0/2
10	RH	active	
20	FN	active	

2 – Associar as portas a vlan

S1(config)#int fa0/2

S1(config-if)#switchport mode access

S1(config-if)#switchport access vlan 10

S1(config-if)#exit

S1(config-if)#int fa0/3

S1(config-if)#switchport mode access

S1(config-if)#switchport access vlan 10

S1(config-if)#exit

S1(config)#int fa0/4

S1(config-if)#switchport mode access

S1(config-if)#switchport access vlan 20

2.1 – Visualizar as vlans

S1#show vlan

S1#show vlan			
VLAN	Name	Status	Ports
1	default	active	Fa0/1, Fa0/5, Fa0/6, Fa0/7 Fa0/8, Fa0/9, Fa0/10, Fa0/11 Fa0/12, Fa0/13, Fa0/14, Fa0/15 Fa0/16, Fa0/17, Fa0/18, Fa0/19 Fa0/20, Fa0/21, Fa0/22, Fa0/23 Fa0/24, Gig0/1, Gig0/2
10	RH	active	Fa0/2, Fa0/3
20	FN	active	Fa0/4

1- Criar as vlans no segundo switch

```
S2(config-vlan)#vlan 10
S2(config-vlan)#name RH
S2(config-vlan)#exit
S2(config)#vlan 20
S2(config-vlan)#name FN
```

1.1 – Visualizar as vlans

```
S2#show vlan
```

S2#show vlan			
VLAN Name	Status	Ports	
1 default	active	Fa0/1, Fa0/2, Fa0/3, Fa0/4 Fa0/5, Fa0/6, Fa0/7, Fa0/8 Fa0/9, Fa0/10, Fa0/11, Fa0/12 Fa0/13, Fa0/14, Fa0/15, Fa0/16 Fa0/17, Fa0/18, Fa0/19, Fa0/20 Fa0/21, Fa0/22, Fa0/23, Fa0/24 Gig0/1, Gig0/2	
10 RH	active		
20 FN	active		

2 – Associar as portas a vlan

```
S2(config)#int fa0/5
S2(config-if)#switchport mode access
S2(config-if)#switchport access vlan 20
S2(config-if)#exit
```

```
S2(config)#int fa0/3
S2(config-if)#switchport mode access
S2(config-if)#switchport access vlan 10
S2(config-if)#exit
```

```
S2(config)#int fa0/2
S2(config-if)#switchport mode access
S2(config-if)#switchport access vlan 20
S2(config-if)#exit
```

2.1 – Visualizar se as portas foram associadas as vlans

S1#show vlan

VLAN Name	Status	Ports
1 default	active	Fa0/1, Fa0/4, Fa0/6, Fa0/7 Fa0/8, Fa0/9, Fa0/10, Fa0/11 Fa0/12, Fa0/13, Fa0/14, Fa0/15 Fa0/16, Fa0/17, Fa0/18, Fa0/19 Fa0/20, Fa0/21, Fa0/22, Fa0/23 Fa0/24, Gig0/1, Gig0/2
10 RH	active	Fa0/3
20 FN	active	Fa0/2, Fa0/5

3– Habilitar a porta trunk nos switchs

S1(config)#int fa0/1

S1(config-if)#switchport mode trunk

S1(config-if)#switchport trunk allowed vlan 10,20

S2(config)#int fa0/1

S2(config-if)#switchport mode trunk

S2(config-if)#switchport trunk allowed vlan 10,20

Obs ; a porta do switch 2 ligado ao roteador também deve estar no modo trunk

S2(config-if)#int fa0/6

S2(config-if)#switchport mode trunk

S2(config-if)#switchport trunk allowed vlan 10,20

3.1 – Visualizar as portas trunk

S2#show interfaces trunk

```
S2#show interfaces trunk
Port      Mode       Encapsulation  Status      Native vlan
Fa0/1    on        802.1q         trunking   1
Fa0/6    on        802.1q         trunking   1

Port      Vlans allowed on trunk
Fa0/1    10,20
Fa0/6    10,20

Port      Vlans allowed and active in management domain
Fa0/1    10,20
Fa0/6    10,20

Port      Vlans in spanning tree forwarding state and not pruned
Fa0/1    10,20
Fa0/6    10,20
```

4. Configurando o roteador

Router(config)#int g0/1
Router(config-if)#no shutdown

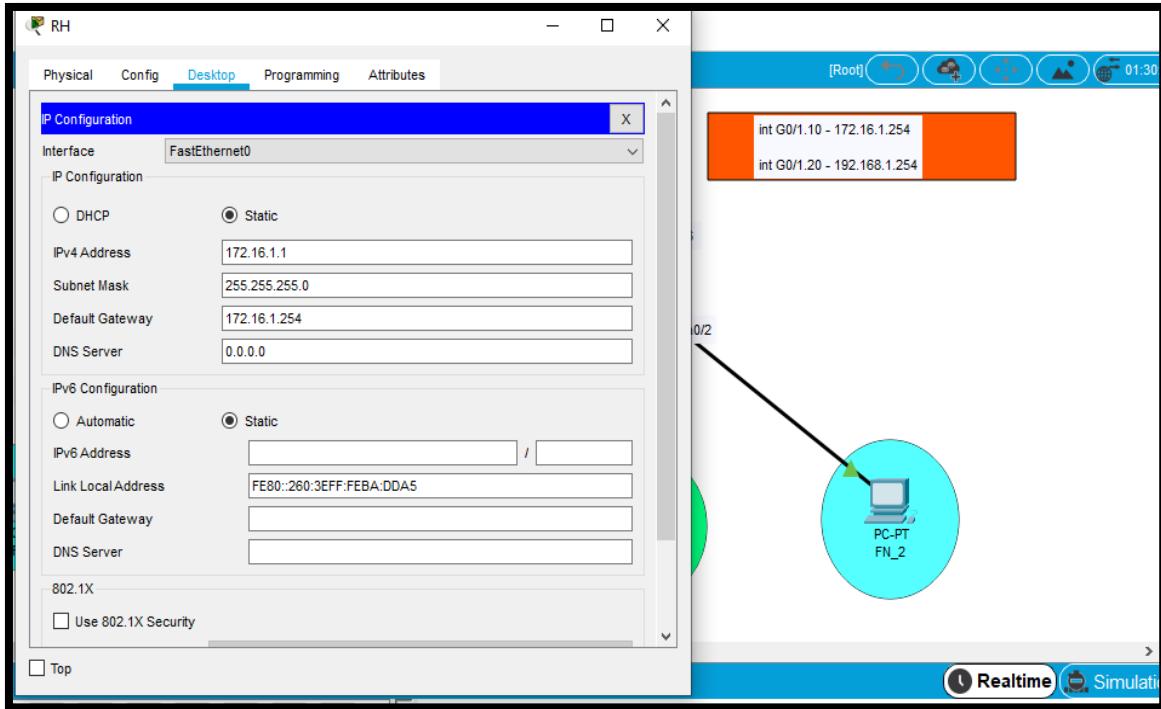
4. 1 – Configurando as sub-interfaces no roteador

Router(config)#int g0/1.20
Router(config-subif)#encapsulation dot1Q 20
Router(config-subif)#ip add 192.168.1.254 255.255.255.0

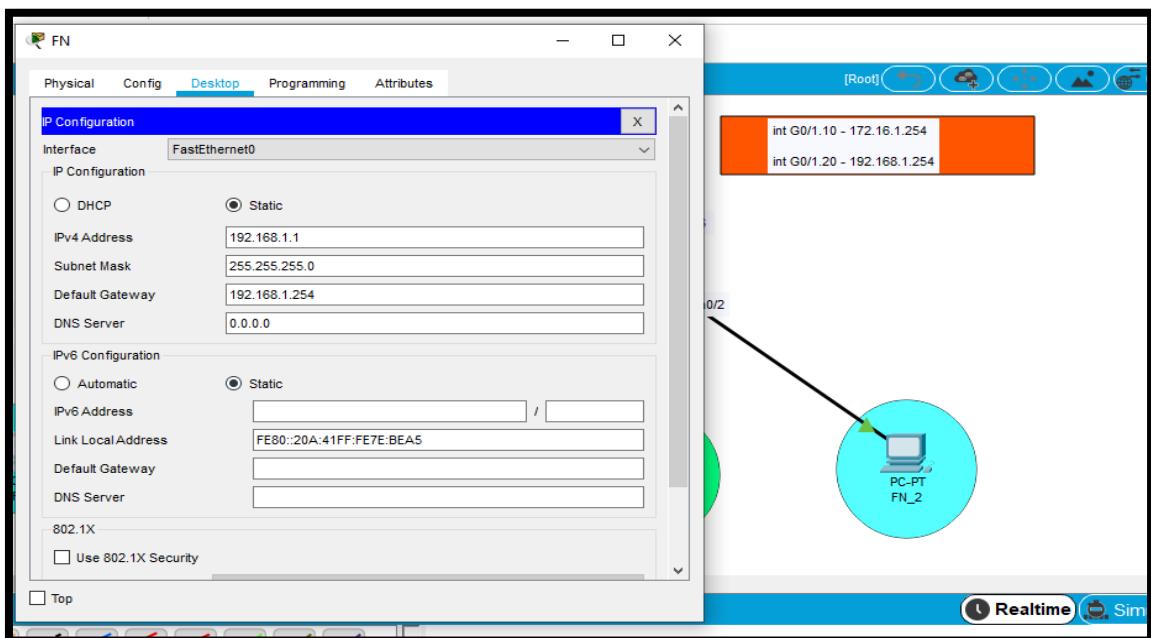
Router(config)#int g0/1.10
Router(config-subif)#encapsulation dot1Q 10
Router(config-subif)#ip add 172.16.1.254 255.255.255.0

Verificar a conexão entre os dispositivos

PC RH

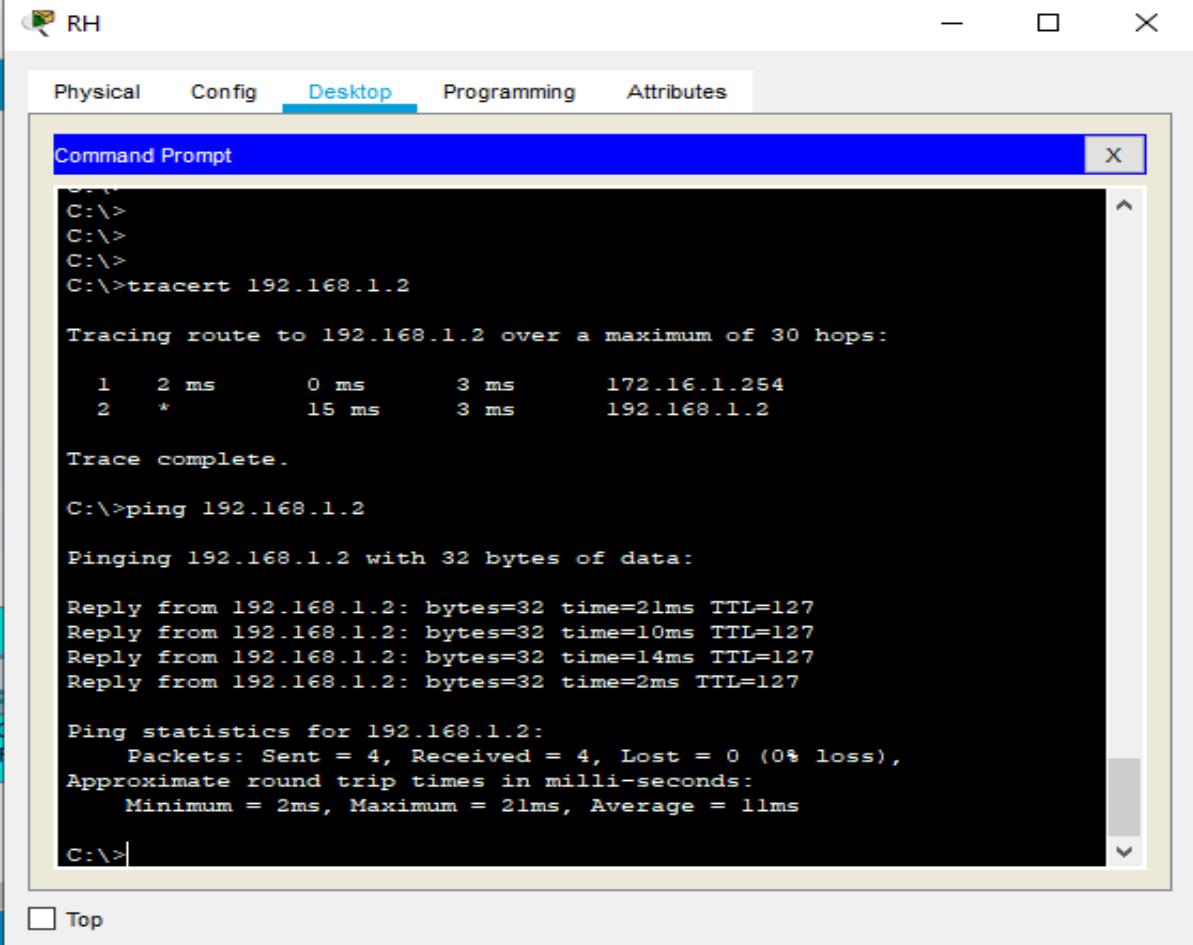


PC FN



Tracert de 172.16.1.1 para 192.168.1.2

Ping de 172.16.1.1 para 192.168.1.2



The screenshot shows a software window titled "RH" with a toolbar at the top featuring icons for Physical, Config, Desktop (which is selected), Programming, and Attributes. Below the toolbar is a "Command Prompt" window containing the following command-line session:

```
C:\>
C:\>
C:\>
C:\>
C:\>tracert 192.168.1.2

Tracing route to 192.168.1.2 over a maximum of 30 hops:
  1    2 ms      0 ms      3 ms      172.16.1.254
  2    *         15 ms      3 ms      192.168.1.2

Trace complete.

C:\>ping 192.168.1.2

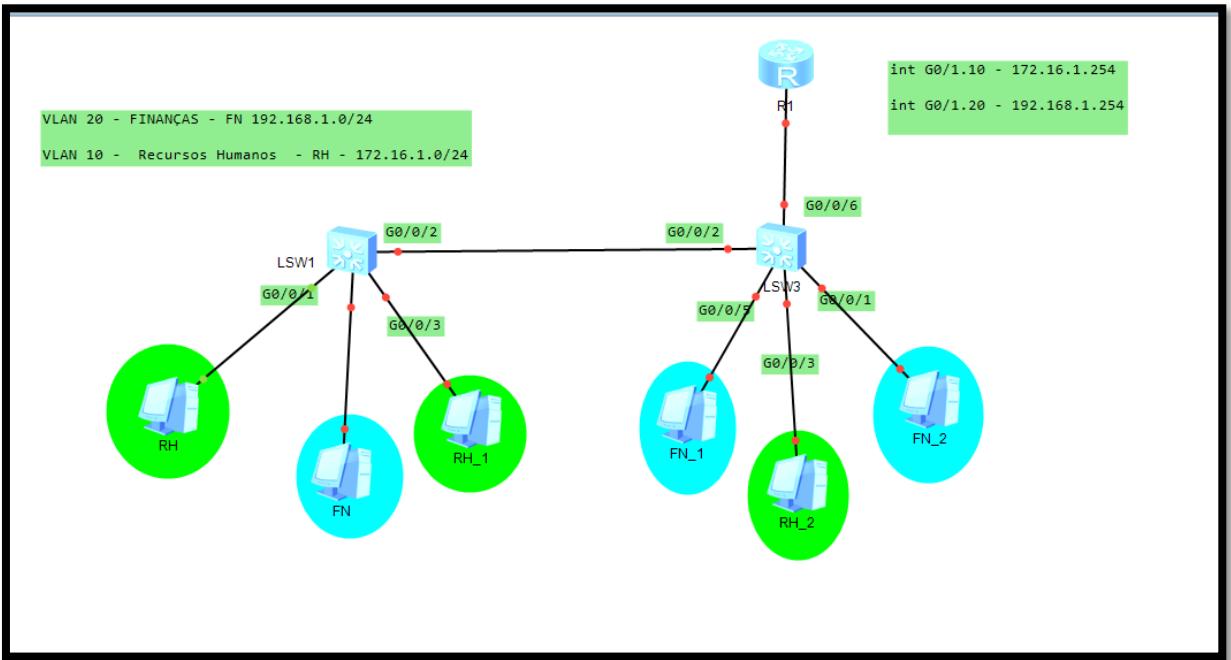
Pinging 192.168.1.2 with 32 bytes of data:
Reply from 192.168.1.2: bytes=32 time=21ms TTL=127
Reply from 192.168.1.2: bytes=32 time=10ms TTL=127
Reply from 192.168.1.2: bytes=32 time=14ms TTL=127
Reply from 192.168.1.2: bytes=32 time=2ms TTL=127

Ping statistics for 192.168.1.2:
  Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
  Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 21ms, Average = 11ms

C:\>
```

At the bottom left of the main window area, there is a small checkbox labeled "Top".

HUAWEI



1.- Criar as vlans no primeiro switch

```
[S1]vlan 10
[S1-vlan10]description RH
[S1-vlan10]quit
```

```
[S1]vlan 20
[S1-vlan20]description FN
[S1-vlan20]quit
```

1.1 – Visualizar as vlans

```
[S1]display vlan
```

```
[S1]display vlan
The total number of vlans is : 3
-----
U: Up;          D: Down;          TG: Tagged;          UI: Untagged;
MP: Vlan-mapping;      ST: Vlan-stacking;
#: ProtocolTransparent-vlan;  *: Management-vlan;
-----
VID Type    Ports
-----
1   common   UT:GE0/0/1(U)    GE0/0/2(U)    GE0/0/3(U)    GE0/0/4(U)
     GE0/0/5(D)    GE0/0/6(D)    GE0/0/7(D)    GE0/0/8(D)
     GE0/0/9(D)    GE0/0/10(D)   GE0/0/11(D)   GE0/0/12(D)
     GE0/0/13(D)   GE0/0/14(D)   GE0/0/15(D)   GE0/0/16(D)
     GE0/0/17(D)   GE0/0/18(D)   GE0/0/19(D)   GE0/0/20(D)
     GE0/0/21(D)   GE0/0/22(D)   GE0/0/23(D)   GE0/0/24(D)

10  common
20  common
-----
VID Status  Property    MAC-LRN Statistics Description
-----
1   enable  default    enable  disable    VLAN 0001
10  enable  default    enable  disable    FN
20  enable  default    enable  disable    RH
[S1]
```

2 – Associar as portas a vlan

```
[S1]int g0/0/1
[S1-GigabitEthernet0/0/1]port link-type access
[S1-GigabitEthernet0/0/1]port default vlan 10
[S1-GigabitEthernet0/0/1]quit

[S1]int g0/0/4
[S1-GigabitEthernet0/0/4]port link-type access
[S1-GigabitEthernet0/0/4]port default vlan 20
[S1-GigabitEthernet0/0/4]quit

[S1]int g0/0/3
[S1-GigabitEthernet0/0/3]port link-type access
[S1-GigabitEthernet0/0/3]port default vlan 10
[S1-GigabitEthernet0/0/3]quit
```

2 – Visualizar se as portas foram associadas a vlans

```
[S1]display vlan
The total number of vlans is : 3
-----
U: Up;          D: Down;          TG: Tagged;          UT: Untagged;
MP: Vlan-mapping;      ST: Vlan-stacking;
#: ProtocolTransparent-vlan;  *: Management-vlan;
-----
VID Type    Ports
-----
1   common   UT:GE0/0/2(U)        GE0/0/5(D)        GE0/0/6(D)        GE0/0/7(D)
                GE0/0/8(D)        GE0/0/9(D)        GE0/0/10(D)       GE0/0/11(D)
                GE0/0/12(D)       GE0/0/13(D)       GE0/0/14(D)       GE0/0/15(D)
                GE0/0/16(D)       GE0/0/17(D)       GE0/0/18(D)       GE0/0/19(D)
                GE0/0/20(D)       GE0/0/21(D)       GE0/0/22(D)       GE0/0/23(D)
                GE0/0/24(D)

10  common   UT:GE0/0/1(U)        GE0/0/3(U)

20  common   UT:GE0/0/4(U)
```

1.- Criar as vlans no segundo switch

```
[S2]vlan 10
[S2-vlan10]description RH
[S1-vlan10]quit
```

```
[S2]vlan 20
[S2-vlan20]description FN
[S2-vlan20]quit
```

1.1 – Visualizar se as vlans foram criadas

```
[S1]display vlan
```

```
[S1]display vlan
The total number of vlans is : 3
-----
U: Up;          D: Down;          TG: Tagged;          UT: Untagged;
MP: Vlan-mapping;      ST: Vlan-stacking;
#: ProtocolTransparent-vlan;  *: Management-vlan;
-----
VID Type    Ports
-----
1   common   UT:GE0/0/1(U)        GE0/0/2(U)        GE0/0/3(U)        GE0/0/4(U)
                GE0/0/5(D)        GE0/0/6(D)        GE0/0/7(D)        GE0/0/8(D)
                GE0/0/9(D)        GE0/0/10(D)       GE0/0/11(D)       GE0/0/12(D)
                GE0/0/13(D)       GE0/0/14(D)       GE0/0/15(D)       GE0/0/16(D)
                GE0/0/17(D)       GE0/0/18(D)       GE0/0/19(D)       GE0/0/20(D)
                GE0/0/21(D)       GE0/0/22(D)       GE0/0/23(D)       GE0/0/24(D)

10  common
20  common

VID Status  Property    MAC-LRN Statistics Description
-----
1   enable  default    enable  disable  VLAN 0001
10  enable  default    enable  disable  FN
20  enable  default    enable  disable  RH
[S1]
```

2 – Associar as portas a vlan

```
[S2]int g0/0/5
[S2-GigabitEthernet0/0/5]port link-type access
[S2-GigabitEthernet0/0/5]port default vlan 20
[S2-GigabitEthernet0/0/5]quit

[S2-GigabitEthernet0/0/3]int g0/0/3
[S2-GigabitEthernet0/0/3]port link-type access
[S2-GigabitEthernet0/0/3]port default vlan 10

[S2-GigabitEthernet0/0/1]int g0/0/1
[S2-GigabitEthernet0/0/1]port link-type access
[S2-GigabitEthernet0/0/1]port default vlan 20
```

2.1 – Visualizar se as foram portas associadas a vlans

```
[S1]display vlan
```

```
[S2]display vlan
The total number of vlans is : 3
-----
U: Up;          D: Down;         TG: Tagged;        UT: Untagged;
MP: Vlan-mapping;   ST: Vlan-stacking;
#: ProtocolTransparent-vlan;  *: Management-vlan;
-----

VID Type    Ports
-----
1   common   UT:GE0/0/2(U)    GE0/0/4(D)    GE0/0/6(U)    GE0/0/7(D)
                GE0/0/8(D)    GE0/0/9(D)    GE0/0/10(D)   GE0/0/11(D)
                GE0/0/12(D)   GE0/0/13(D)   GE0/0/14(D)   GE0/0/15(D)
                GE0/0/16(D)   GE0/0/17(D)   GE0/0/18(D)   GE0/0/19(D)
                GE0/0/20(D)   GE0/0/21(D)   GE0/0/22(D)   GE0/0/23(D)
                GE0/0/24(D)

10  common   UT:GE0/0/3(U)

20  common   UT:GE0/0/1(U)    GE0/0/5(U)
```

3– Habilitar a porta trunk nos switchs

```
[S1]int g0/0/2
[S1-GigabitEthernet0/0/2]port link-type trunk
[S1-GigabitEthernet0/0/2]port trunk allow-pass vlan 10 20
```

```
[S2]int g0/0/2
[S2-GigabitEthernet0/0/2]port link-type trunk
[S2-GigabitEthernet0/0/2]port trunk allow-pass vlan 10 20
```

Obs -- a porta do switch 2 ligado ao rateador também deve estar no modo trunk

```
[S2]int g0/0/6
[S2-GigabitEthernet0/0/6]port link-type trunk
[S2-GigabitEthernet0/0/6]port trunk allow-pass vlan 10 20
```

3.1 – Visualizar as portas trunk

```
[S2]display vlan
```

```
[S2]display via
[S2]display vlan
The total number of vlans is : 3
-----
U: Up;          D: Down;          TG: Tagged;          UT: Untagged;
MP: Vlan-mapping;  ST: Vlan-stacking;
#: ProtocolTransparent-vlan;  *: Management-vlan;
-----
VID  Type      Ports
-----
1    common    UT:GE0/0/2(U)    GE0/0/4(D)    GE0/0/6(U)    GE0/0/7(D)
                  GE0/0/8(D)    GE0/0/9(D)    GE0/0/10(D)   GE0/0/11(D)
                  GE0/0/12(D)   GE0/0/13(D)   GE0/0/14(D)   GE0/0/15(D)
                  GE0/0/16(D)   GE0/0/17(D)   GE0/0/18(D)   GE0/0/19(D)
                  GE0/0/20(D)   GE0/0/21(D)   GE0/0/22(D)   GE0/0/23(D)
                  GE0/0/24(D)
10   common    UT:GE0/0/3(U)
                  TG:GE0/0/2(U)    GE0/0/6(U)
20   common    UT:GE0/0/1(U)    GE0/0/5(U)
                  TG:GE0/0/2(U)    GE0/0/6(U)
```

4. - Configurando o roteador

```
[Router-GigabitEthernet0/0/1] int g0/0/1
[Router-GigabitEthernet0/0/1] undo shutdown
```

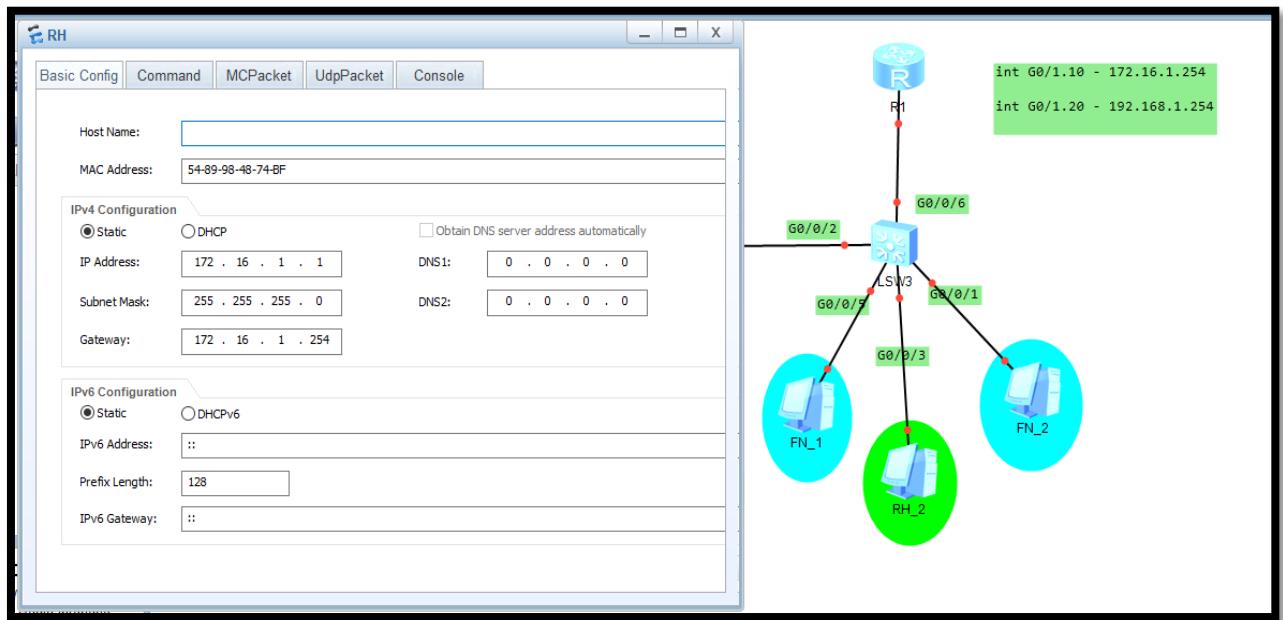
4. 1 – Configurando as sub-interfaces no roteador

```
[Router] int g0/0/1.10
[Router-GigabitEthernet0/0/1.10] vlan-type dot1 10
[Router-GigabitEthernet0/0/1.10] ip address 172.16.1.254 255.255.255.0
[Router] quit

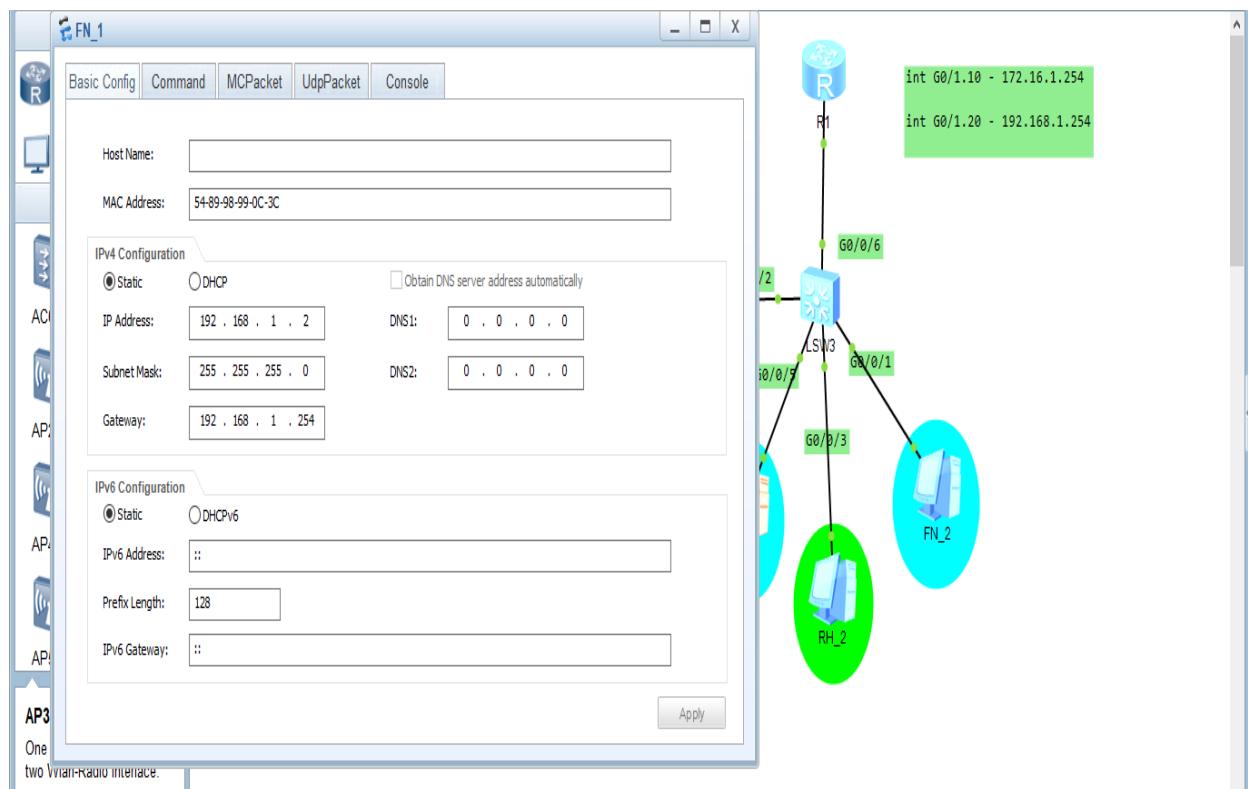
[Router] int g0/0/1.20
[Router-GigabitEthernet0/0/1.20] vlan-type dot1 20
[Router-GigabitEthernet0/0/1.20] ip address 192.168.1.254 255.255.255.0
```

Verificar a conexão entre os dispositivos

PC RH



PC FN



Tracert de 172.16.1.1 para 192.168.1.2

Ping de 172.16.1.1 para 192.168.1.2

```
PC>
PC>
PC>
PC>
PC>
PC>
PC>
PC>
PC>
PC>tracert 192.168.1.2
traceroute to 192.168.1.2, 8 hops max
(ICMP), press Ctrl+C to stop
 1  172.16.1.254  437 ms  78 ms  62 ms
 2  *192.168.1.2  594 ms  109 ms

PC>ping 192.168.1.2
Ping 192.168.1.2: 32 data bytes, Press Ctrl_C to break
From 192.168.1.2: bytes=32 seq=1 ttl=127 time=500 ms
From 192.168.1.2: bytes=32 seq=2 ttl=127 time=157 ms
From 192.168.1.2: bytes=32 seq=3 ttl=127 time=141 ms
From 192.168.1.2: bytes=32 seq=4 ttl=127 time=141 ms
From 192.168.1.2: bytes=32 seq=5 ttl=127 time=672 ms

--- 192.168.1.2 ping statistics ---
 5 packet(s) transmitted
 5 packet(s) received
 0.00% packet loss
 round-trip min/avg/max = 141/322/672 ms

PC>
```