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Roteamento Inter-VLAN

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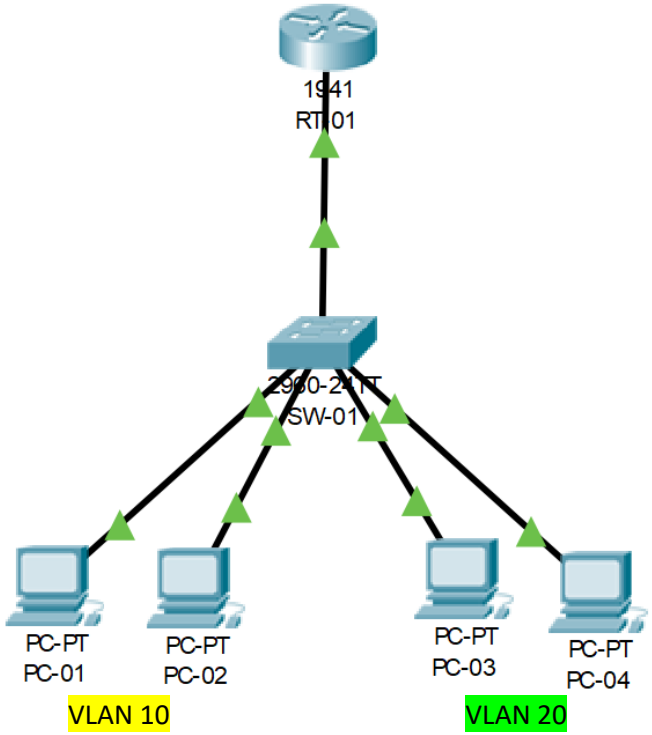
Roteamento Inter-VLAN

- Objetivo:
  - ✓ Fornecer comunicação entre dispositivos que estão em VLAN diferentes
- Para se realizar o roteamento Inter-VLAN é necessário um dispositivos de camada 3, como um Roteador ou um Switch L3



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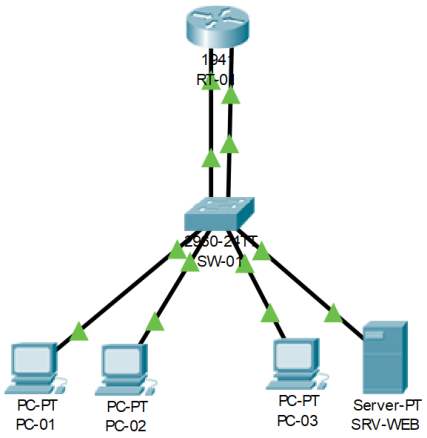
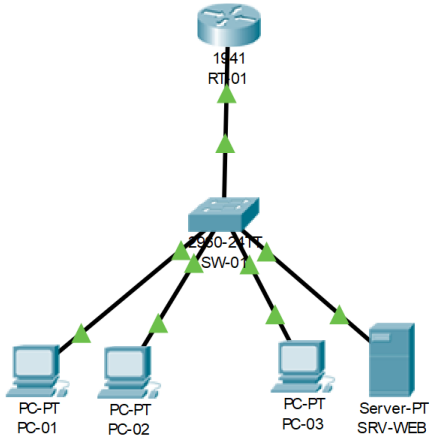
Roteamento Inter-VLAN

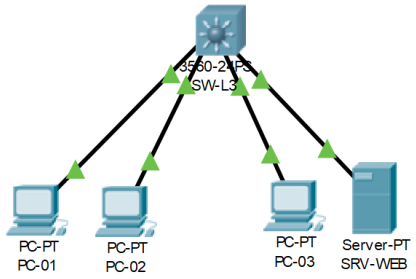
- Existem três modalidade de roteamento Inter-VLAN:
  - ✓ Roteamento Inter-VLAN Legacy
  - ✓ Roteamento Router-on-Stick
  - ✓ Roteamento com Switch L3 utilizando subinterface



Legacy



Router-on-a-Stick



Switch L3

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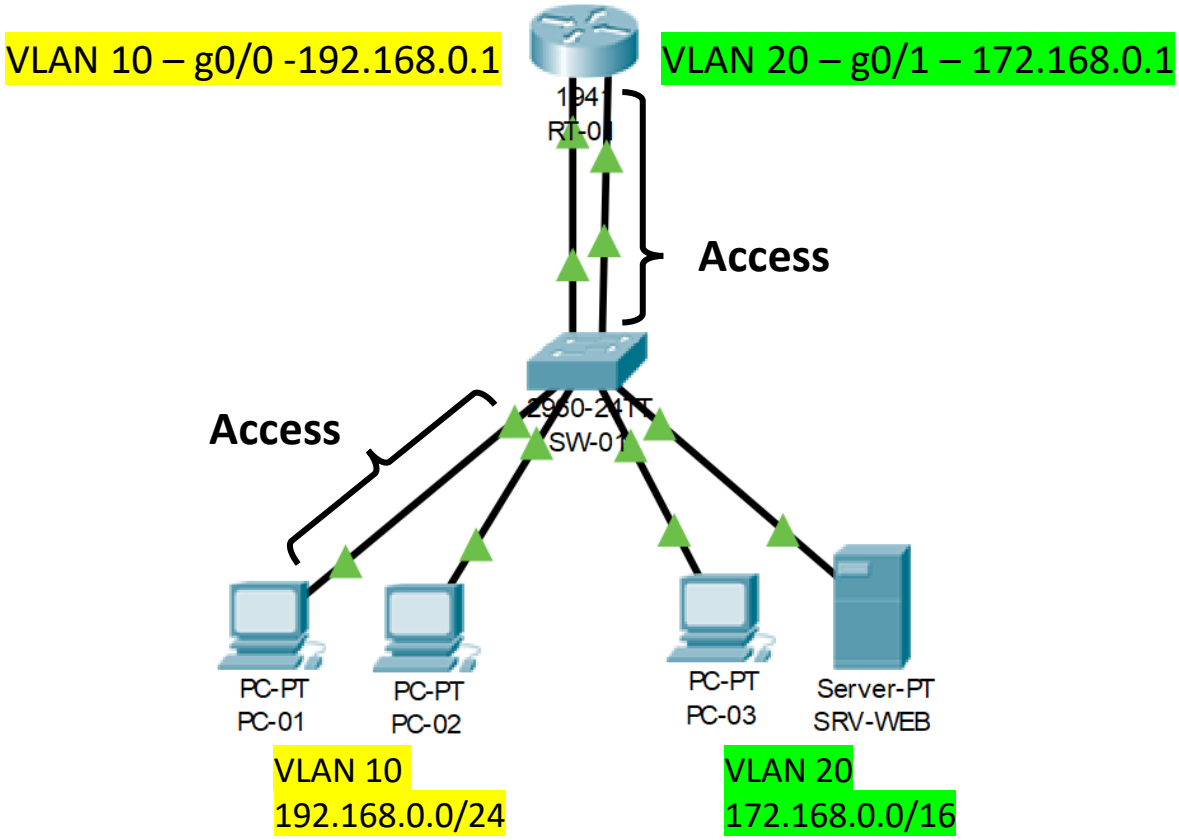
Roteamento Legacy

- Primeira técnica de roteamento Inter-VLAN
- Utiliza uma interface do roteador para cada VLAN da rede
- Não mais utilizada, por ter um custo mais alto e baixa escalabilidade



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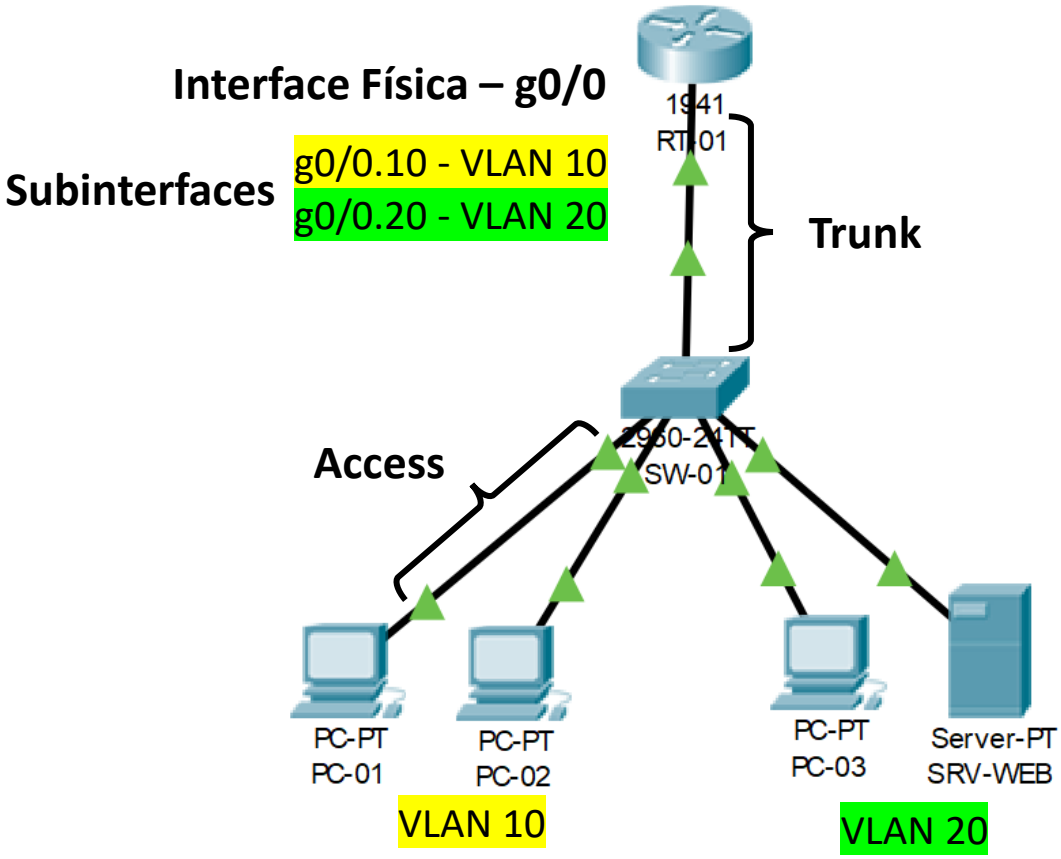
Router-on-a-Stick

- ❑ Substitui o modelo Legacy
- ❑ Utiliza uma única interface que suporta todas as VLAN
- ❑ Utiliza interfaces virtuais/subinterfaces



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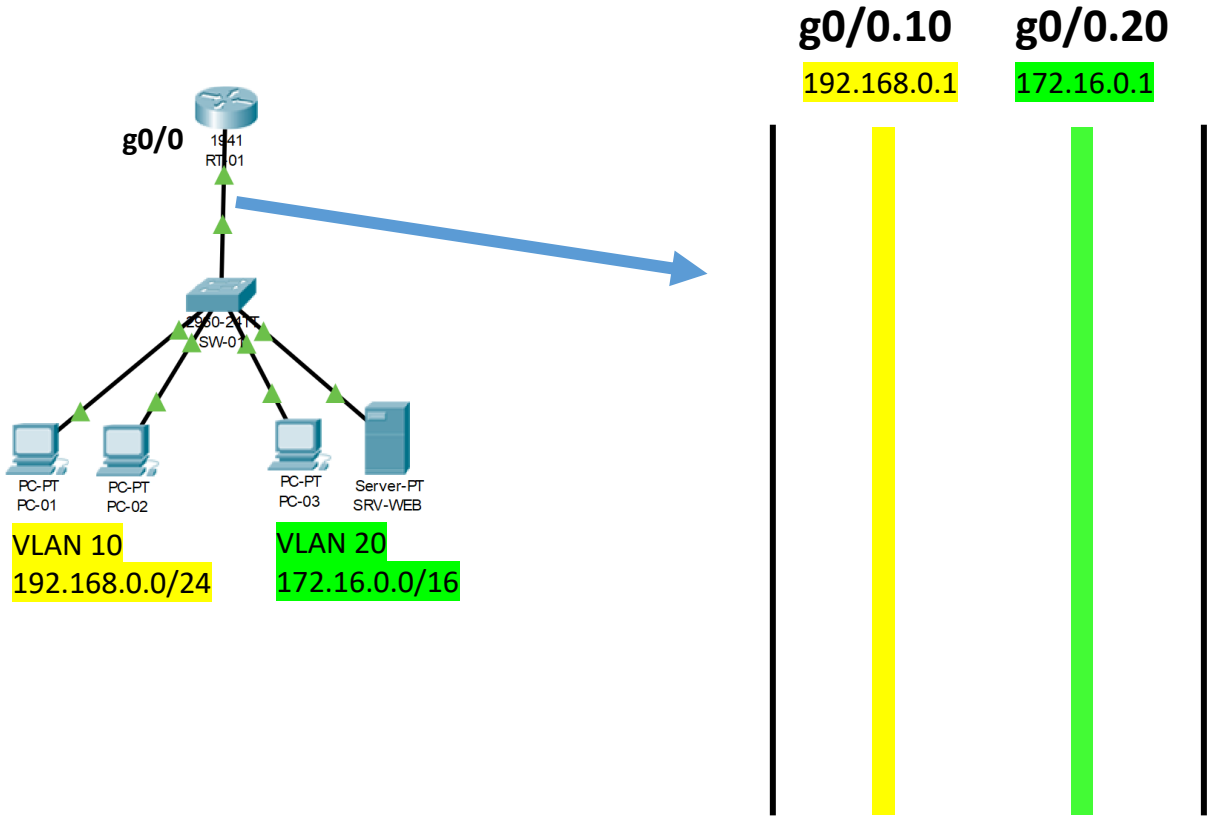
Router-on-a-Stick - Subinterface

- Com a subinterfaces, é possível criar diversas interfaces virtuais utilizando uma única interface física



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Router-on-a-Stick - Configurações

Ligar a interface física

RT-01(config)# interface g0/0

RT-01(config-if)#no shutdown

Criar subinterface

RT-01(config)#interface g0/0.**[id-da-vlan]**

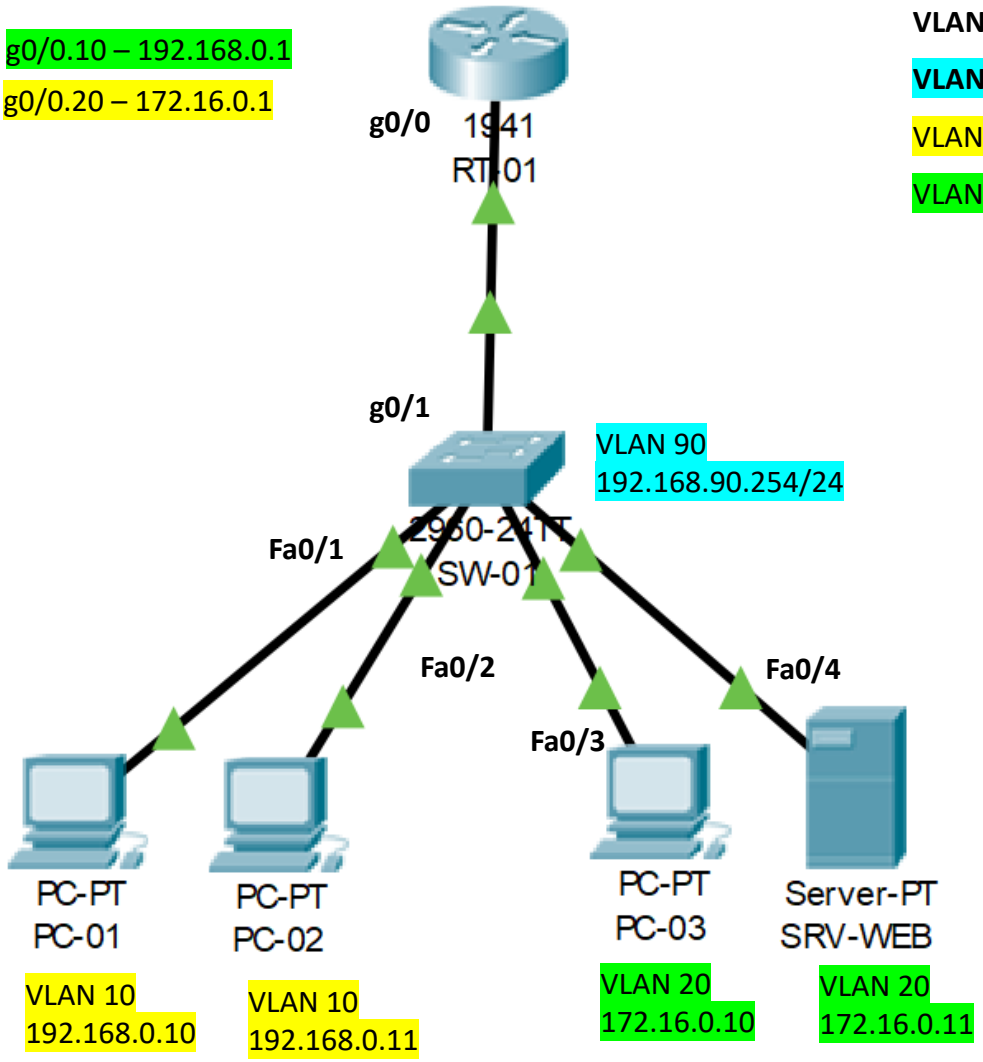
Atrelar aquela subinterface a uma VLAN

RT-01(config-subif)#encapsulation dot1q **[id-da-vlan]**

Inserir endereço IP na subintercace

RT-01(config-subif) ip address **[endereço-ip] [máscara-de-subrede]**

Router-on-a-Sticky – Configuração completa do cenário



VLAN 99 – Nativa

VLAN 90 – Gerenciamento

VLAN 10 – FINANCAS

VLAN 20 - SERVERS

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Router-on-a-Sticky – Configuração completa do cenário

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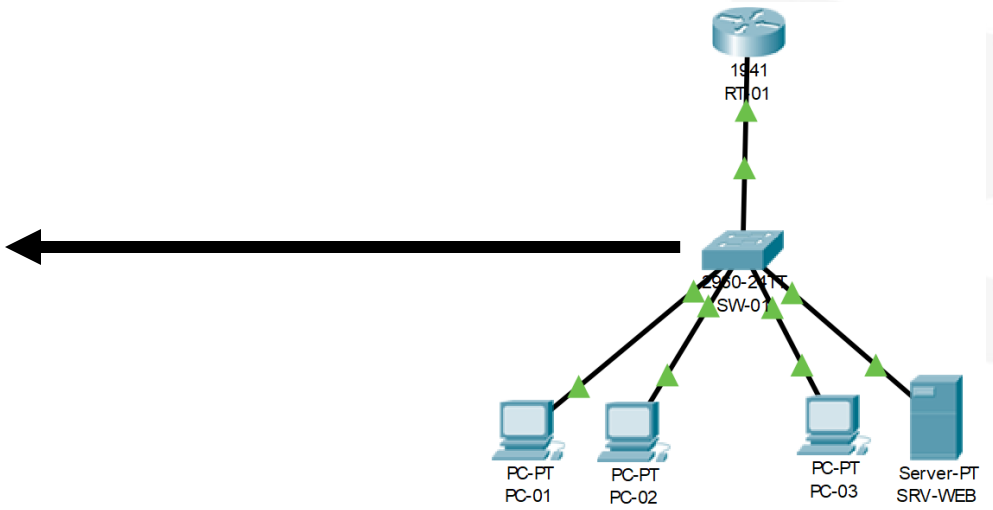
```
SW-01(config)# vlan 10
SW-01(config-vlan)# name RH
SW-01(config)# vlan 20
SW-01(config-vlan)# name SERVERS
SW-01(config)# vlan 90
SW-01(config-vlan)# name GERENCIAMENTO
SW-01(config)# interface fa0/1
SW-01(config-if)# switchport mode access
SW-01(config-if)# switchport access vlan 10
SW-01(config)# interface fa0/2
SW-01(config-if)# switchport mode access
SW-01(config-if)# switchport access vlan 10
SW-01(config)# interface fa0/3
SW-01(config-if)# switchport mode access
SW-01(config-if)# switchport access vlan 20
SW-01(config)# interface fa0/4
SW-01(config-if)# switchport mode access
SW-01(config-if)# switchport access vlan 20
```



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Router-on-a-Sticky – Configuração completa do cenário

SW-01(config)# interface vlan 90

SW-01(config-if)# ip address 192.168.90.254 255.255.255.0

SW-01(config-if)# description INTERFACE DE GERENCIAMENTO

SW-01(config-if)# no shutdown

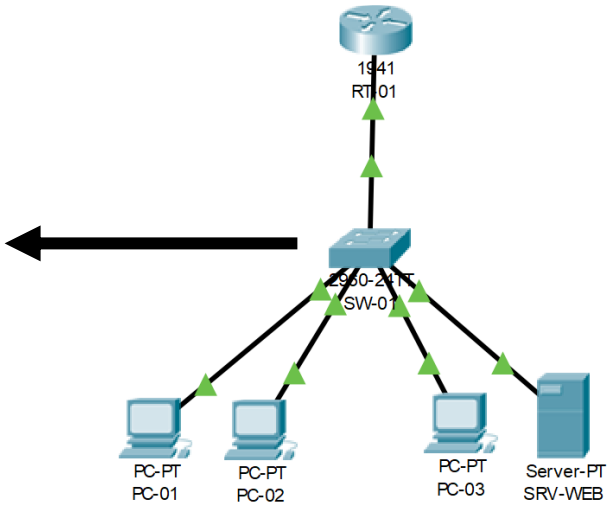
SW-01(config)# interface g0/1

SW-01(config-if)# switchport mode trunk

SW-01(config-if)# switchport trunk native vlan 99

SW-01(config-if)# switchport trunk allowed vlan 10,20,90,99

SW-01(config-if)# do wr



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Router-on-a-Stick - Configurações

RT-01(config)# interface g0/0

RT-01(config-if)#no shutdown

RT-01(config)#interface g0/0.10

RT-01(config-if)#encapsulation dot1q 10

RT-01(config-if) ip address 192.168.0.1 255.255.255.0

RT-01(config-if)# description GATEWAY VLAN 10

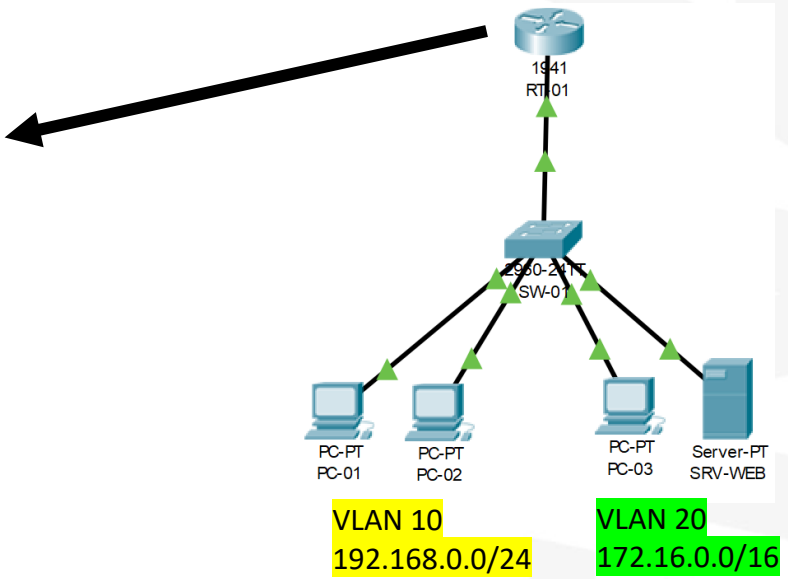
RT-01(config)#interface g0/0.20

RT-01(config-if)#encapsulation dot1q 20

RT-01(config-if) ip address 172.16.0.1 255.255.0.0

RT-01(config-if)# description GATEWAY VLAN 20

RT-01(config-if)# do wr



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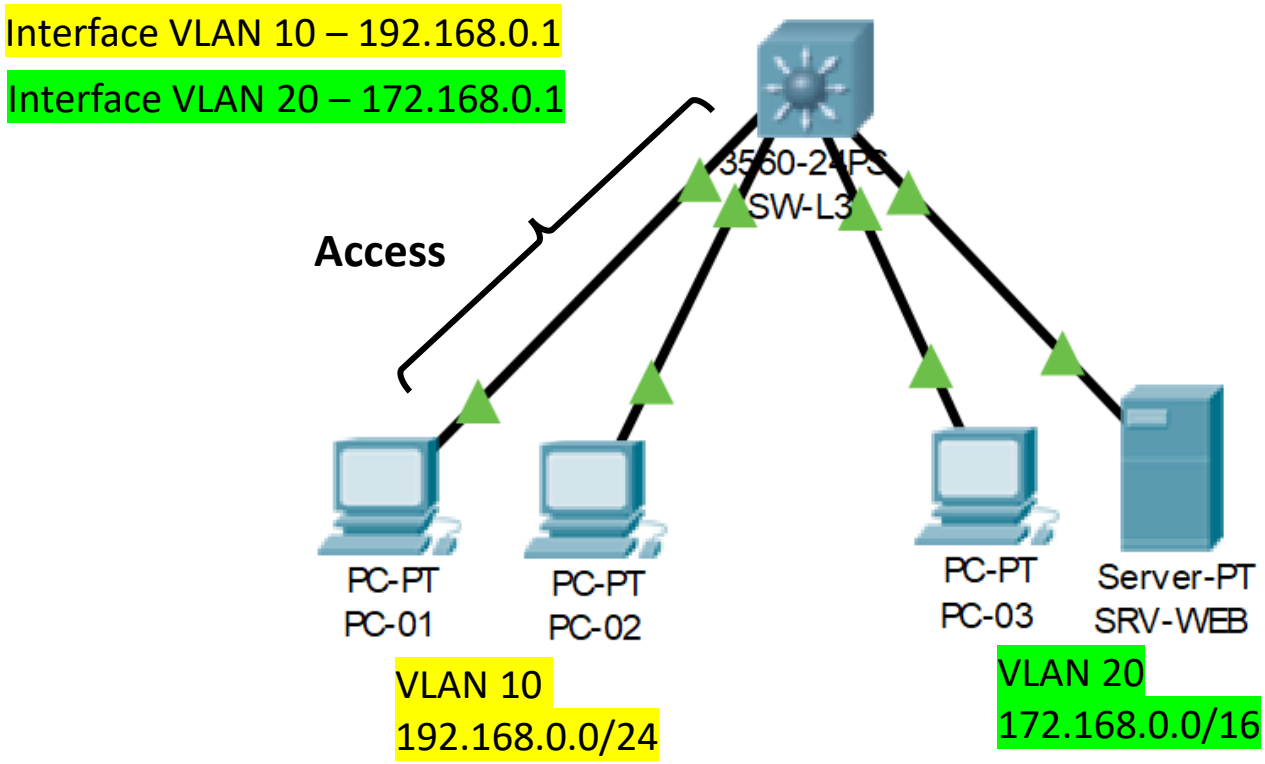
Roteamento com Switch Layer 3

- Técnica semelhate ao Router-on-a-Stick
- Utiliza interfaces virtuais (SVI – Switch Virtual Interfaces) para servir como gateway das VLANs
- Fornece maior rapidez, uma vez que Camada 2 e 3 estão no mesmo dispositivo
- Mais caro de se implementar



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EXERCÍCIO DE FIXAÇÃO

Topologia com Router-on-a-Stick