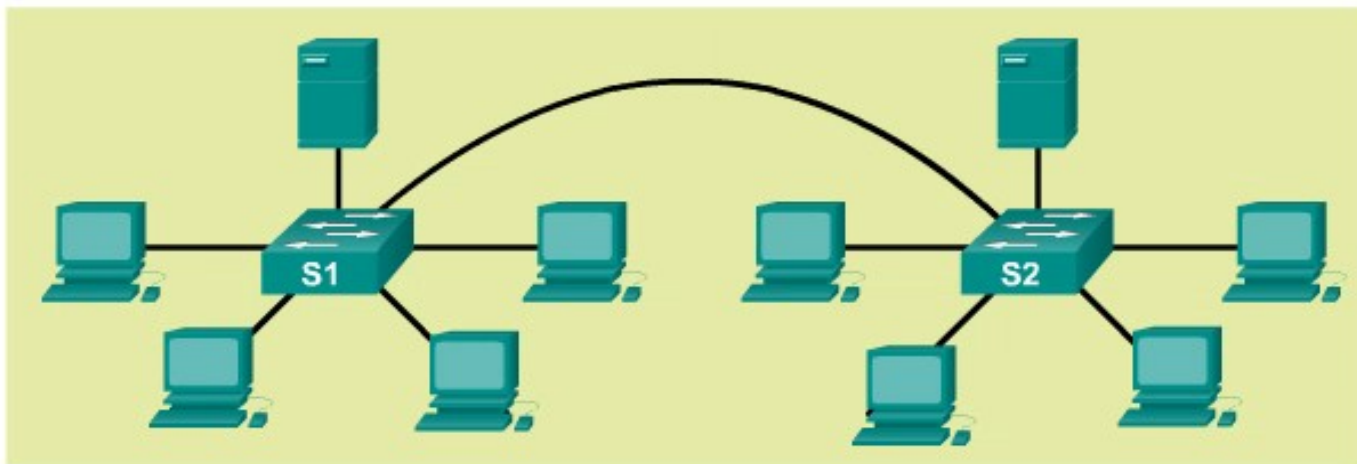
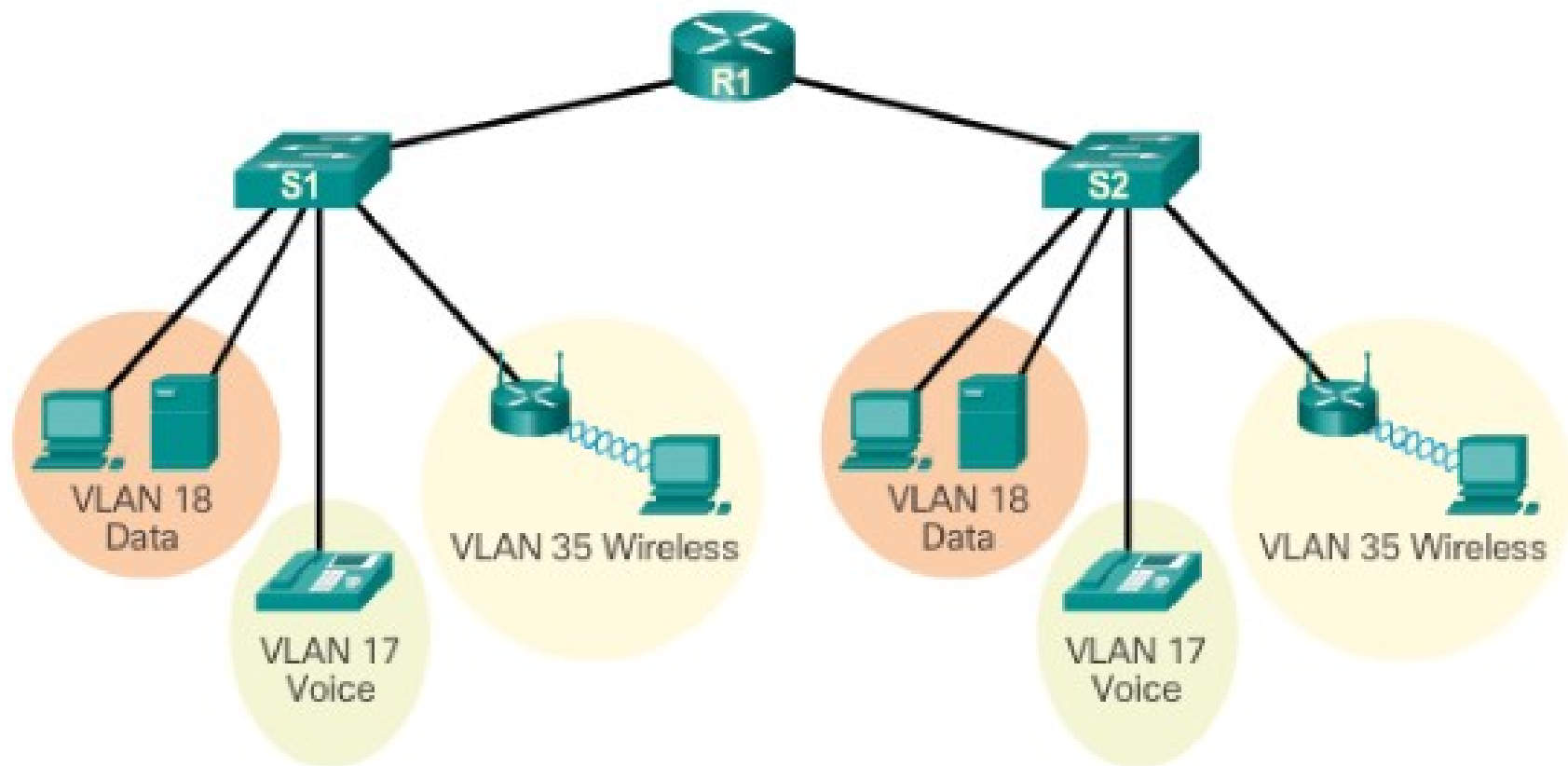


# Broadcast Domäne



# VLAN

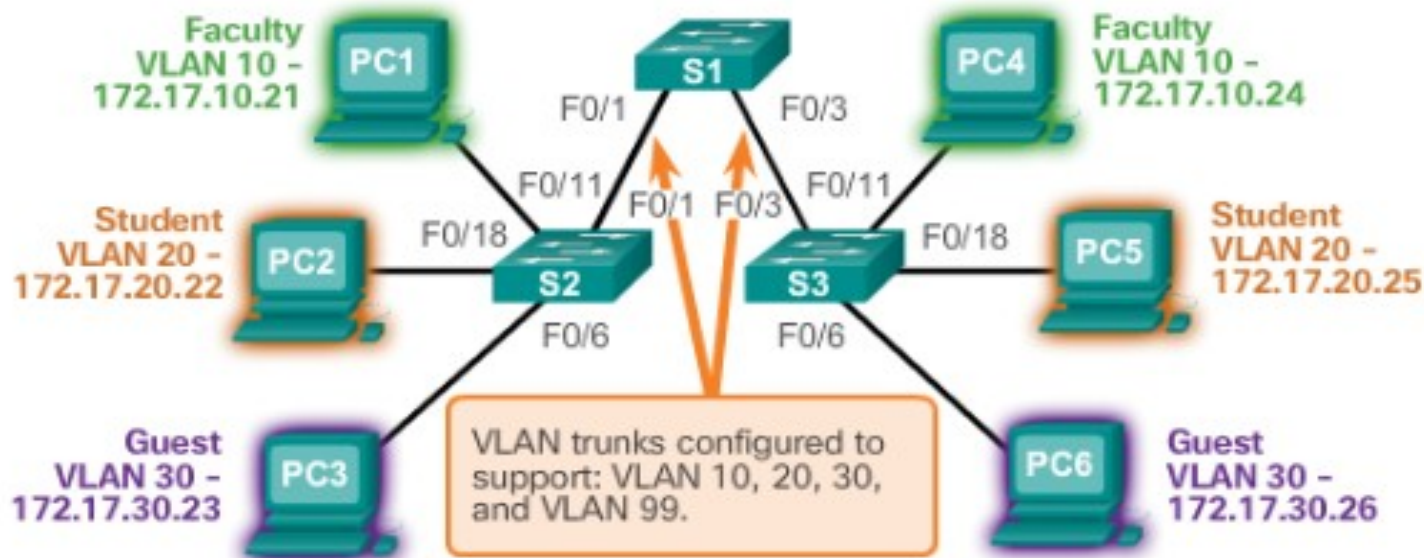


# VLAN

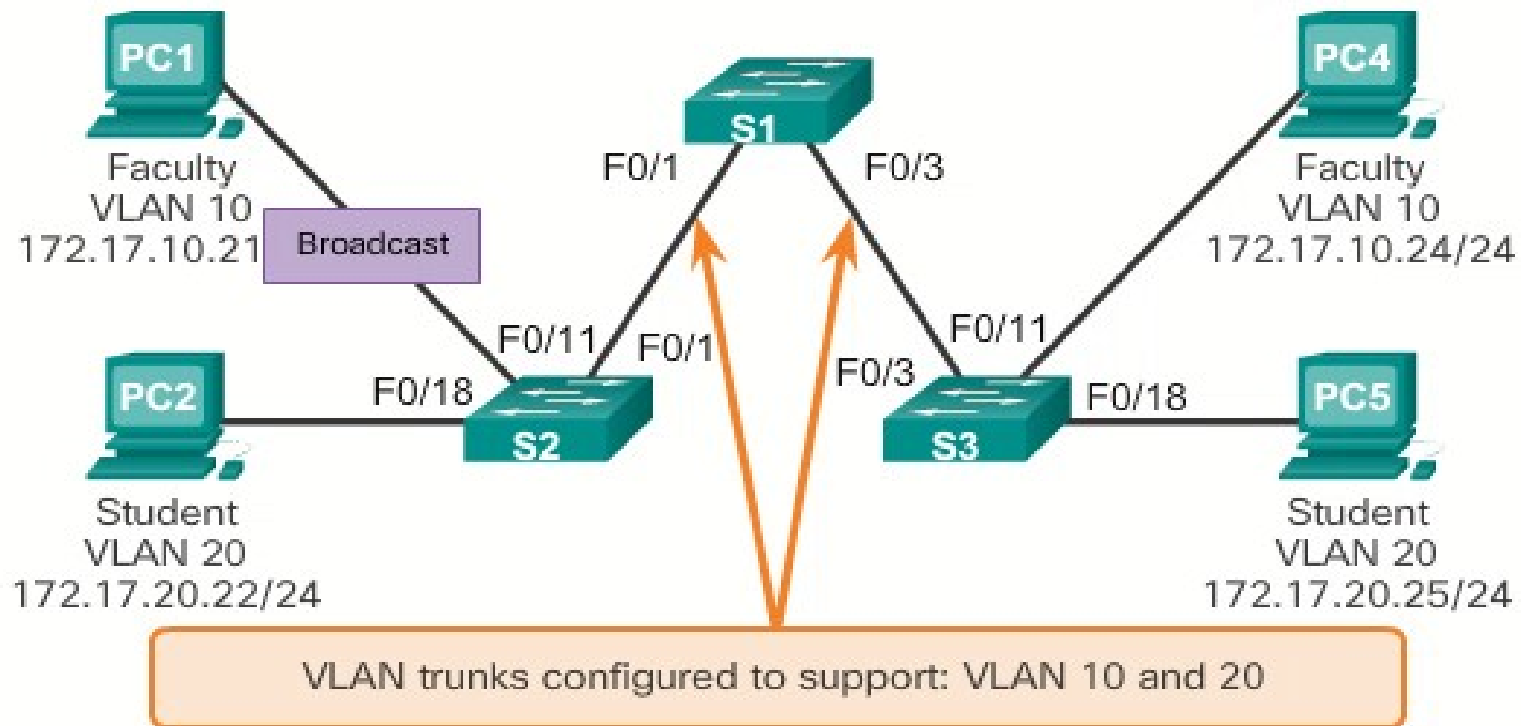
- Vorteile
  - Höhere Sicherheit
  - Senkung der Kosten
  - Performancesteigerung
  - Kleinere Broadcast Domänen
  - Effizienteres Management
- Nachteile
  - Am Anfang mehr Konfigurationsarbeit

# VLAN

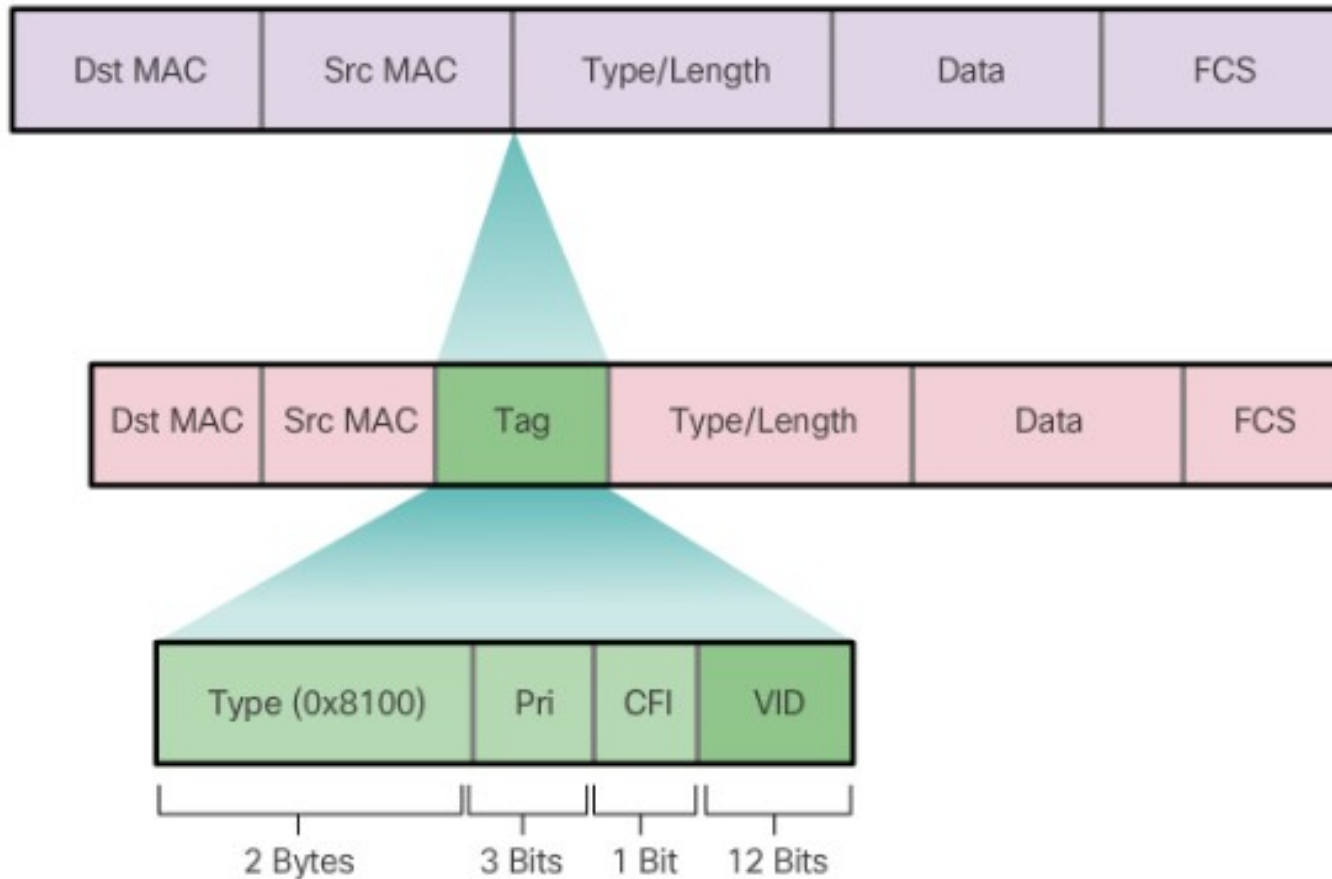
- Trunk Ports
  - verbinden Switchs
  - leiten VLAN Pakete von einem Switch zu anderen.



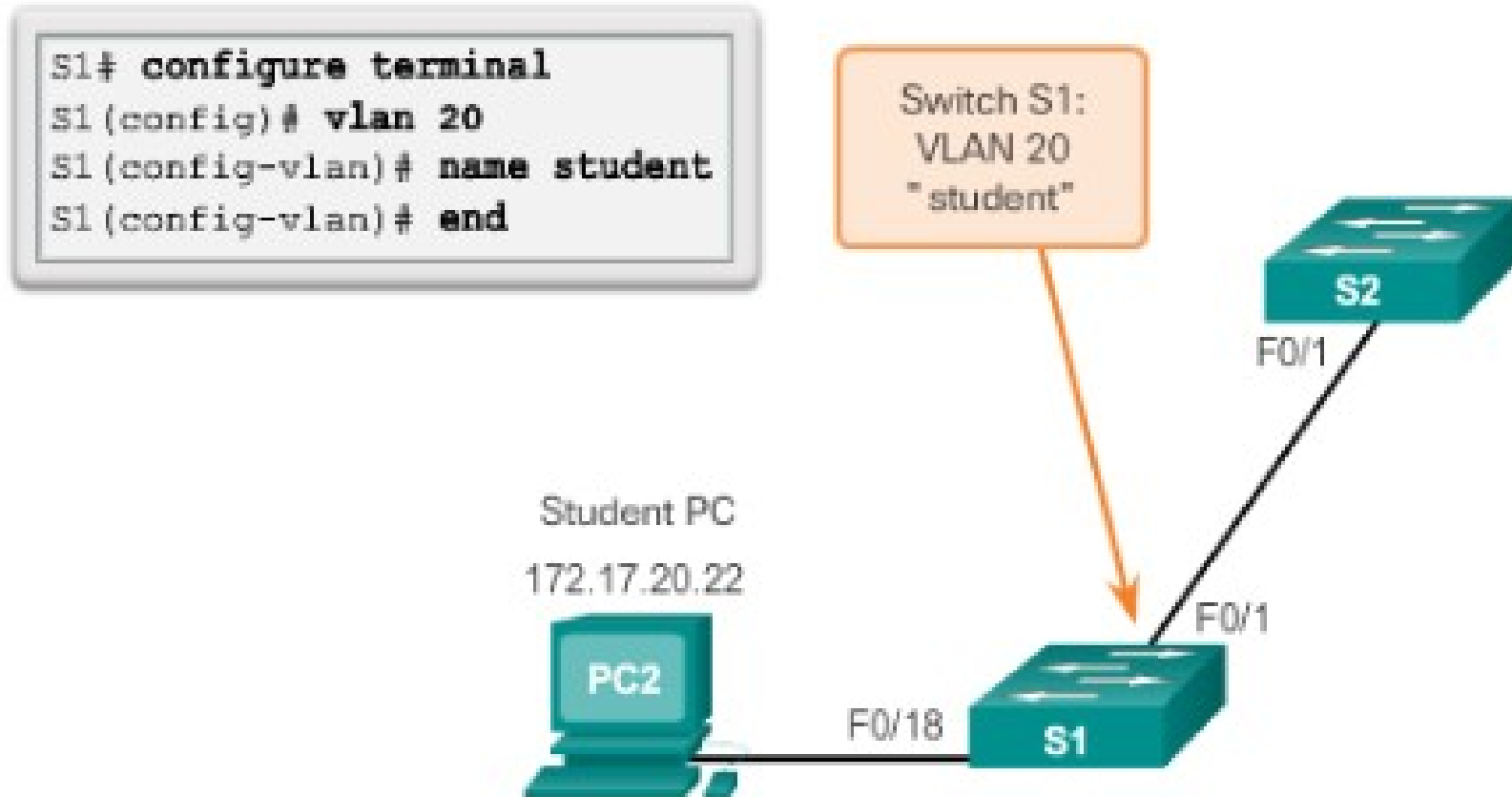
# Broadcast Domänen mit VLANs



# Ethernet 802.1Q Frame

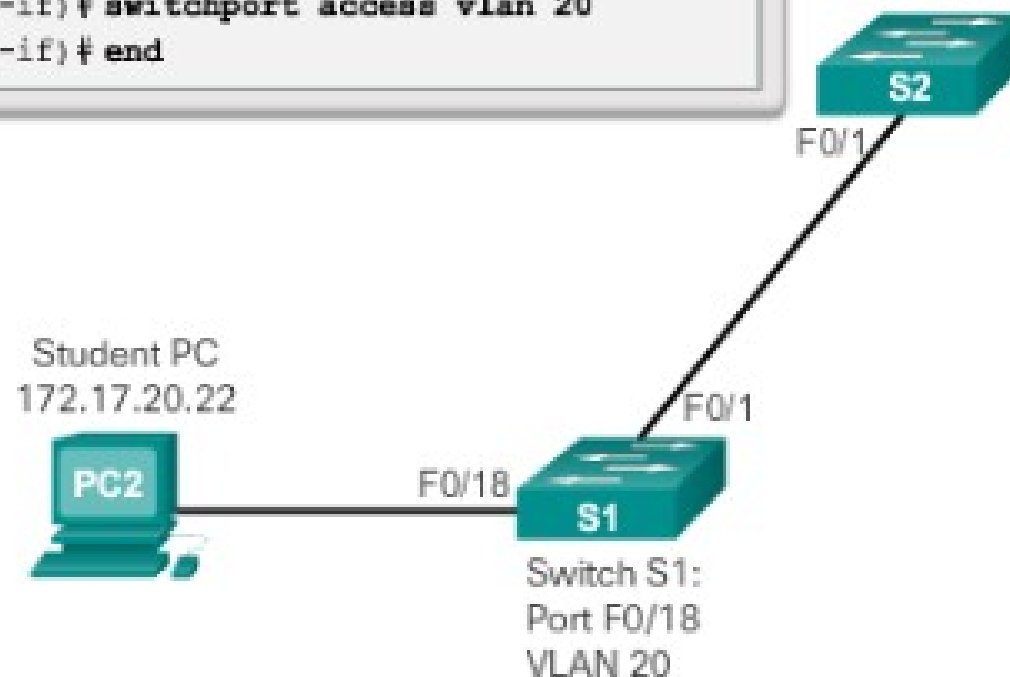


# VLAN erstellen



# Ports in VLANs zuweisen

```
s1# configure terminal
s1(config)# interface F0/18
s1(config-if)# switchport mode access
s1(config-if)# switchport access vlan 20
s1(config-if)# end
```





# VLAN Übung

- Übung 3.2.1.7

# Konfiguration TRUNK

## Cisco Switch IOS Commands

Enter global configuration mode.	<code>S1# configure terminal</code>
Enter interface configuration mode.	<code>S1(config)# interface <i>interface_id</i></code>
Force the link to be a trunk link.	<code>S1(config-if)# switchport mode trunk</code>
Specify a native VLAN for untagged 802.1Q trunks.	<code>S1(config-if)# switchport trunk native vlan <i>vlan_id</i></code>
Specify the list of VLANs to be allowed on the trunk link.	<code>S1(config-if)# switchport trunk allowed vlan <i>vlan-list</i></code>
Return to the privileged EXEC mode.	<code>S1(config-if)# end</code>

# Konfiguration TRUNK

```
S1(config)# interface f0/1
S1(config-if)# switchport mode trunk
S1(config-if)# switchport trunk native vlan 99
S1(config-if)# end
S1# show interfaces f0/1 switchport
Name: Fa0/1
Switchport: Enabled
Administrative Mode: trunk
Operational Mode: trunk
Administrative Trunking Encapsulation: dot1q
Operational Trunking Encapsulation: dot1q
Negotiation of Trunking: On
Access Mode VLAN: 1 (default)
Trunking Native Mode VLAN: 99 (VLAN0099)
Administrative Native VLAN tagging: enabled
Voice VLAN: none
Administrative private-vlan host-association: none
Administrative private-vlan mapping: none
Administrative private-vlan trunk native VLAN: none
Administrative private-vlan trunk Native VLAN tagging: enabled
Administrative private-vlan trunk encapsulation: dot1q
Administrative private-vlan trunk normal VLANs: none
Administrative private-vlan trunk associations: none
Administrative private-vlan trunk mappings: none
Operational private-vlan: none
Trunking VLANs Enabled: ALL
Pruning VLANs Enabled: 2-1001
<output omitted>
```

# Konfiguration TRUNK

- Übung 3.2.2.5
- Übung 3.2.4.7
- Übung 3.2.4.8

# Router on a Stick

- Router on a Stick Routing
  - ein Trunk Port führt vom Switch zum Router
  - beim Router werden sub-interfaces benutzt
  - siehe Video
  - Übung: 5.1.3.6 Packet Tracer - Configuring Router-on-a-Stick Inter-VLAN Routing Instructions