

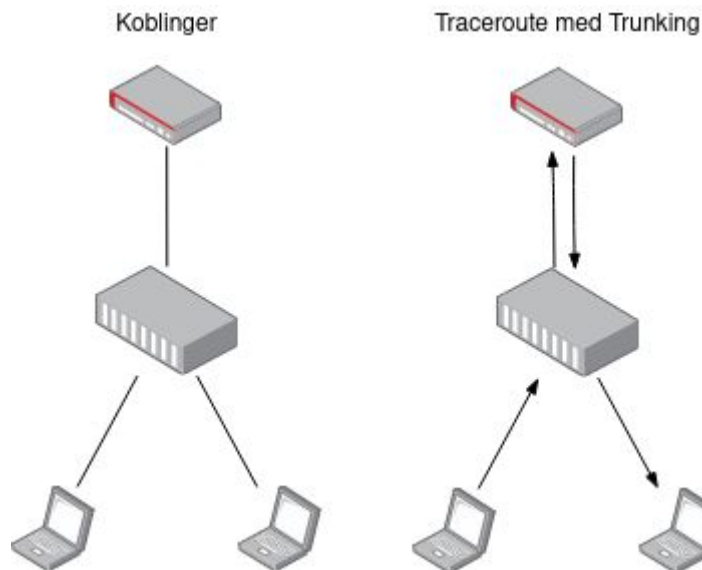
Øving 7 - VLAN trunking

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I denne øvingen har vi satt opp en ruter og switsj med 2 VLAN nettverk.

Vi brukte disse nettverkene til å vise at dersom vi ville kommunisere med hverandre måtte vi gjennom ruter.

I ruteren kan vi se at vi har laget 2 nye VLAN nettverk med id 4 og 6.



VLAN Membership

VLAN: ☒ Enable

Create VLANs and assign the Outgoing Frame Type.

Up to four new VLANs can be created. VLAN IDs must be in the range (4...4094)

| VLAN ID | Description | Inter VLAN Routing | Device Management | LAN1 | LAN2 | LAN3 | LAN4 |
|------------------------------|-------------|--------------------|-------------------|----------|----------|----------|----------|
| <input type="checkbox"/> 1 | Default | Enabled | Enabled | Untagged | Untagged | Untagged | Untagged |
| <input type="checkbox"/> 25 | Guest | Disabled | Disabled | Tagged | Tagged | Tagged | Tagged |
| <input type="checkbox"/> 100 | Voice | Disabled | Disabled | Tagged | Tagged | Tagged | Tagged |
| <input type="checkbox"/> 4 | Test | Enabled | Disabled | Tagged | Tagged | Tagged | Tagged |
| <input type="checkbox"/> 6 | Test2 | Enabled | Enabled | Tagged | Tagged | Tagged | Tagged |

Da vi kobler en pc til hver VLAN kan vi se i ruteren at disse får hver sin ip adresse hvor base adressen 192.168.x.1-255 vil x'en endre seg ut fra hvilket VLAN man er på.

Her ser vi at vi kan traceroute fra VLAN 5, med ip 192.168.5.100 til VLAN 4, med ip 192.168.4.100. Tracerouten går først ut til routeren for å bli sendt til det andre VLAN'et.

```
madsen@MadsenPc:~/nett$ traceroute 192.168.4.100
traceroute to 192.168.4.100 (192.168.4.100), 30 hops max, 60 byte packets
 1  192.168.1.1 (192.168.1.1)  0.579 ms  10009.456 ms  10009.442 ms
 2  192.168.4.100 (192.168.4.100)  3.336 ms  3.330 ms  3.299 ms
```

Portene på switsjen ser slik ut. Begge nettverk deler port 1, denne er koblet til ruter. Vi bruker trunk på port 1 og rester er Access porter, som pc'er kan kobles til. I tillegg er port 1 satt til å bruke tags for å vise til hvilket VLAN pakkene tilhører.

Port to VLAN

Filter: VLAN ID equals to **6**

AND Interface Type equals to **Port**

| Interface | g1 | g2 | g3 | g4 | g5 | g6 | g7 | g8 |
|-----------|-------------------------------------|--------------------------|--------------------------|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Access | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Trunk | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| General | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Member | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Tagged | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Untagged | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> |
| PVID | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |

Apply Cancel

Port to VLAN

Filter: VLAN ID equals to **4**

AND Interface Type equals to **Port**

| Interface | g1 | g2 | g3 | g4 | g5 | g6 | g7 | g8 |
|-----------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Access | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Trunk | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| General | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Member | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Tagged | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Untagged | <input type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input checked="" type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| PVID | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Apply Cancel

Her ser vi traceroute fra 192.168.4.100 til 192.168.5.100, hvor ruteren også er del av veien mellom VLAN-ene

```
sebastian@sebastian-GL553VD:~/planning$ traceroute 192.168.5.100
traceroute to 192.168.5.100 (192.168.5.100), 30 hops max, 60 byte packets
 1  192.168.1.1 (192.168.1.1)  0.560 ms  10008.007 ms  10007.988 ms
 2  192.168.5.100 (192.168.5.100)  3.136 ms  2.981 ms  3.132 ms
```

Under ser du IP-adressene hver enhet blir gitt nå koblet til hvert sitt VLAN, uten VLAN er adressene slik du ser på bilde nr 3.

DHCP Status

☒ IPv4
 ☐ IPv6

☒ VLAN
 ☐ Option 82

VLAN ID:

DHCP Server: 192.168.4.1

Dynamic IP Used: 1

Static IP Used: 0

DHCP Available: 49

Total: 50

| DHCP Status Table | | | | | |
|-----------------------|------------------|-----------|---------------|-------------------|----------------------------------|
| | Client Host Name | Rule Name | IP Address | MAC Address | Client Lease Time |
| <input type="radio"/> | MadsenPc | | 192.168.4.101 | e8:6a:64:a6:df:94 | 23 Hours, 59 Minutes, 47 Seconds |

DHCP Status

☒ IPv4
 ☐ IPv6

☒ VLAN
 ☐ Option 82

VLAN ID:

DHCP Server: 192.168.5.1

Dynamic IP Used: 1

Static IP Used: 0

DHCP Available: 49

Total: 50

| DHCP Status Table | | | | | |
|-----------------------|------------------|-----------|---------------|-------------------|-------------------|
| | Client Host Name | Rule Name | IP Address | MAC Address | Client Lease Time |
| <input type="radio"/> | MadsenPc | | 192.168.5.100 | e8:6a:64:a6:df:94 | 1 Days, 1 Seconds |

Uten VLAN blir alle koblet til samme nettverk.

| DHCP Status Table | | | | | |
|---------------------------------------|-------------------|-----------|---------------|-------------------|----------------------------------|
| | Client Host Name | Rule Name | IP Address | MAC Address | Client Lease Time |
| <input type="radio"/> | Pascal-PC | | 192.168.1.100 | 64:51:06:06:04:23 | 23 Hours, 59 Minutes, 32 Seconds |
| <input type="radio"/> | MadsenPc | | 192.168.1.101 | e8:6a:64:a6:df:94 | 23 Hours, 59 Minutes, 34 Seconds |
| <input type="radio"/> | sebastian-GL553VD | | 192.168.1.102 | 10:7b:44:24:8d:be | 23 Hours, 59 Minutes, 31 Seconds |
| <input type="radio"/> | switchD3A75B | | 192.168.1.103 | 00:59:dc:d3:a7:5b | 23 Hours, 59 Minutes, 35 Seconds |
| <input type="button" value="Delete"/> | | | | | |