

CAE

Trunks aanmaken (Commands - Routers & Switches)

Meerdere poorten in 1 keer

interface range gig (int poort) - gig (int poort)

no shut (poorten opendoen)

switchport mode trunk

switchport trunk native vlan (nummer)

description vlan (nummer)

(Voorbeeld)

```
interface GigabitEthernet1/0/1
  switchport trunk native vlan 99
  switchport mode trunk
!
interface GigabitEthernet1/0/2
  switchport trunk native vlan 99
  switchport mode trunk
!
interface GigabitEthernet1/0/3
  switchport trunk native vlan 99
  switchport mode trunk
!
interface GigabitEthernet1/0/4
  switchport trunk native vlan 99
  switchport mode trunk
!
interface GigabitEthernet1/0/5
  switchport trunk native vlan 99
  switchport mode trunk
```

(Voor eindapparaten)

switchport mode access

switchport access vlan (nummer)

(Voorbeeld)

```
interface FastEthernet0/1
  description vlan 10
  switchport access vlan 10
  switchport mode access
!
interface FastEthernet0/2
  description vlan 10
  switchport access vlan 10
  switchport mode access
!
interface FastEthernet0/3
  description vlan 10
  switchport access vlan 10
  switchport mode access
!
interface FastEthernet0/4
  description vlan 10
  switchport access vlan 10
  switchport mode access
!
interface FastEthernet0/5
  description vlan 10
  switchport access vlan 10
  switchport mode access
```

Trunks verwijderen (Commands)

```
no switchport
no switchport trunk
no switchport mode trunk
no switchport trunk native vlan
no switchport mode access
no switchport access vlan
```

VTP inrichten (Commands)

VLANs checken = `do show vlan brief/show vlan brief`

Eerst VLANs aanmaken

```
vlan (nummer)
name vlan (nummer)
```

VTP version (nummer)

VTP domain (naam domain)

VTP mode (server of client)

Hulp commands (?)

VTP ?

VTP mode ?

Spanning Tree priorities op switches (Commands)

(Root = mode)

`spanning-tree vlan 1-100 root primary`

`spanning-tree vlan 1-100 priority (bridge priority nummer)`

Hulp commands (?)

`spanning-tree ?`

`spanning-tree vlan ?`

`spanning-tree vlan 1-100 ?`

`spanning-tree vlan 1-100 root ?`

(Voorbeeld)

```
spanning-tree vlan 1-100 priority 4096
```

Access Point Instellingen (draadloos)

(Op elke access point)

Poorten = Aan

Bandwidth/Duplex = Auto

SSID = (naam)

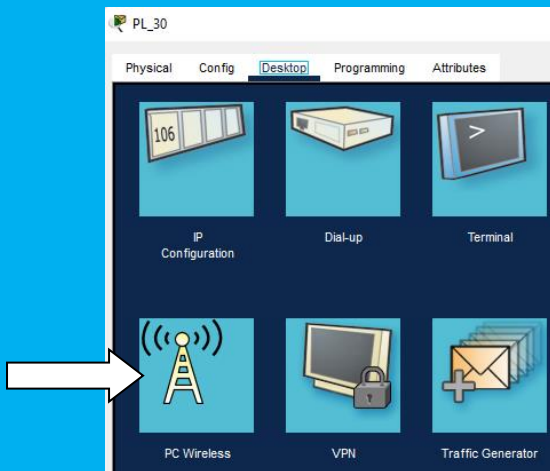
Authentication/Beveiliging instellen

Sleutel/Password = (wachtwoord instellen)

(Op elke laptop)

Laptop: netwerkkaart module toevoegen (module: WPC300N)

Desktoptabblad: Op PC Wireless verbinding maken met juiste VLAN netwerk



Printer: IP instellingen

Poorten = Aan

Bandwidth/Duplex = Auto

Alle printers: IP adressen geven

IP-adres/Subnet mask/Default gateway/DNS Server IP

Router: DHCP Server/Client instellen (Commands)

interface (naam poort)

description (DHCP Server of Client)

ip address DHCP

no shut

Hulp commands (?)

ip address ?

Interface IP adressen instellen (Commands)

interface (naam poort)

ip address (ip adres & subnet mask)

Interface/IP adressen instellen op Multi Layer Switch (Commands)

interface (naam poort)

no switchport

ip address (ip adres & subnet mask)

VLANs maken op Multi Layer Switch (Commands)

Alle VLANs aanmaken

interface vlan (nummer)

ip address (ip adres & subnet mask)

ip helper-address (DNS server IP)

Bekabeling in juiste poort/interface VLAN (nummer) aansluiten

(Voorbeeld)

```
interface Vlan10
  mac-address 00e0.b08e.e301
  ip address 172.16.10.1 255.255.255.0
  ip helper-address 11.11.11.14
!
interface Vlan20
  mac-address 00e0.b08e.e302
  ip address 172.16.20.1 255.255.255.0
  ip helper-address 11.11.11.14
!
interface Vlan30
  mac-address 00e0.b08e.e303
  ip address 172.16.30.1 255.255.255.0
  ip helper-address 11.11.11.14
!
interface Vlan40
  mac-address 00e0.b08e.e304
  ip address 172.16.40.1 255.255.255.0
  ip helper-address 11.11.11.14
!
interface Vlan50
  mac-address 00e0.b08e.e305
  ip address 172.16.50.1 255.255.255.0
  ip helper-address 11.11.11.14
!
interface Vlan99
  mac-address 00e0.b08e.e306
  ip address 172.16.99.1 255.255.255.0
  ip helper-address 11.11.11.14
```

DHCP instellen op Multi Layer Switch (Commands)

IP adressen uitsluiten

ip dhcp excluded-address (ip adres range)

(Voorbeeld)

```
ip dhcp excluded-address 172.16.99.0 172.16.99.50
ip dhcp excluded-address 172.16.10.0 172.16.10.50
ip dhcp excluded-address 172.16.20.0 172.16.20.50
ip dhcp excluded-address 172.16.30.0 172.16.30.50
ip dhcp excluded-address 172.16.40.0 172.16.40.50
ip dhcp excluded-address 172.16.50.0 172.16.50.50
```

DHCP pool aanmaken (Commands)

Alle VLAN netwerken aanmaken

ip dhcp pool (naam pool)

default-router (default gateway IP)

network (ip adres netwerk & subnet mask)

dns-server (DNS Server IP)

(Voorbeeld)

```
ip dhcp pool VLAN10
network 172.16.10.0 255.255.255.0
default-router 172.16.10.1
dns-server 11.11.11.14
ip dhcp pool VLAN20
network 172.16.20.0 255.255.255.0
default-router 172.16.20.1
dns-server 11.11.11.14
ip dhcp pool VLAN30
network 172.16.30.0 255.255.255.0
default-router 172.16.30.1
dns-server 11.11.11.14
ip dhcp pool VLAN40
network 172.16.40.0 255.255.255.0
default-router 172.16.40.1
dns-server 11.11.11.14
ip dhcp pool VLAN50
network 172.16.50.0 255.255.255.0
default-router 172.16.50.1
dns-server 11.11.11.14
ip dhcp pool VLAN99
network 172.16.99.0 255.255.255.0
default-router 172.16.99.1
dns-server 11.11.11.14
```

Hulp commands (?)

ip dhcp ?

ip dhcp pool ?

Routers vervangen

Van oude router belangrijke instellingen kopiëren en plaatsen in nieuw router

Oude router vervangen

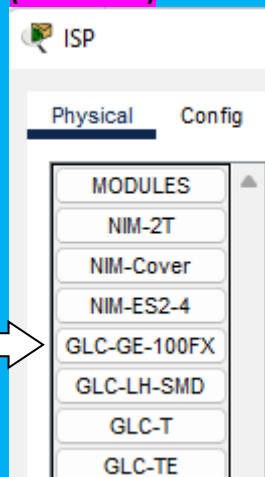
Nieuwe router plaatsen

Interface kabelpoorten onthouden

Oude kabels vervangen door nieuwe kabels

In nieuw router glasvezelkabel plaatsen (module: GLC-GE-100-FX/GigabitEthernet)

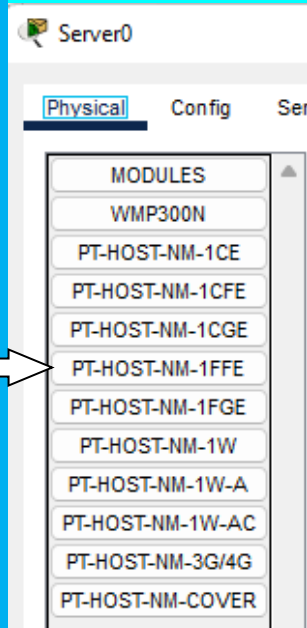
(Voorbeeld)



Webserver

Module/Poort in webserver plaatsen (module: PT-HOST-NM-1FFE/FastEthernet)

Webserver & router met juiste poort verbinden (Fiber/glasvezelkabel, Copper Cross Over kabel)



Webserver IP instellingen instellen

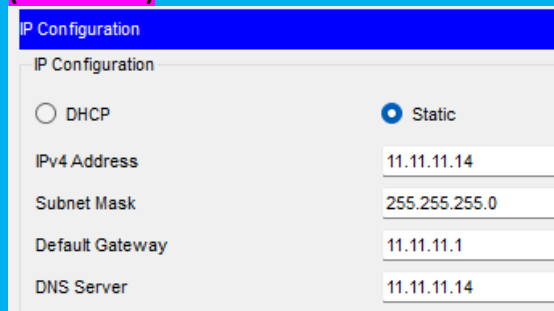
IP adres

Subnet Mask

Default Gateway

DNS Server

(Voorbeeld)



DHCP instellen op router (Commands)

interface (naam poort)

description (naam)

ip address dhcp

Interface IP adressen instellen (Commands)

interface (naam poort)

ip address (ip adres & subnet mask)

IP interfaces checken

show ip interface brief

(Routeren) Static Routes (Commands)

ip route (network IP/Subnet Mask/IP adres)

(Voorbeeld)

```
ip route 172.16.10.0 255.255.255.0 10.1.1.2
ip route 172.16.20.0 255.255.255.0 10.1.1.2
ip route 172.16.30.0 255.255.255.0 10.1.1.2
ip route 172.16.40.0 255.255.255.0 10.1.1.2
ip route 172.16.50.0 255.255.255.0 10.1.1.2
ip route 172.16.99.0 255.255.255.0 10.1.1.2
```

OSPF op Router (Commands)

router ospf (nummer)

router-id (nummer)

network (ip adres/wildcard mask/area 0)

passive-interface (interface)

default-information originate

(Voorbeeld)

```
router ospf 1
router-id 1.1.1.1
log-adjacency-changes
passive-interface GigabitEthernet0/0/0
network 11.11.11.0 0.0.0.255 area 0
network 12.12.12.0 0.0.0.255 area 0
network 13.13.13.0 0.0.0.255 area 0
default-information originate
```

Access Lists (Netwerkverkeer beveiliging)

(Voorbeeld)

```
access-list 150 deny ip 172.16.50.0 0.0.0.255 172.16.10.0 0.0.0.255
access-list 150 deny ip 172.16.50.0 0.0.0.255 172.16.20.0 0.0.0.255
access-list 150 deny ip 172.16.50.0 0.0.0.255 172.16.30.0 0.0.0.255
access-list 150 deny ip 172.16.50.0 0.0.0.255 172.16.40.0 0.0.0.255
access-list 150 deny ip 172.16.50.0 0.0.0.255 172.160.0.0 0.0.0.255
```

Default Static IP Routes (Routeren/Internet)

ip route 0.0.0.0 0.0.0.0 (ip van netwerk)

(Voorbeeld)

```
ip classless
ip route 0.0.0.0 0.0.0.0 10.1.1.1
```

IP routes checken: **do show ip route/c**

Subnet Mask Cheat Sheet

| | Addresses | Hosts | Netmask | Amount of a Class C |
|-----|-----------|-------|-----------------|---------------------|
| /30 | 4 | 2 | 255.255.255.252 | 1/64 |
| /29 | 8 | 6 | 255.255.255.248 | 1/32 |
| /28 | 16 | 14 | 255.255.255.240 | 1/16 |
| /27 | 32 | 30 | 255.255.255.224 | 1/8 |
| /26 | 64 | 62 | 255.255.255.192 | 1/4 |
| /25 | 128 | 126 | 255.255.255.128 | 1/2 |
| /24 | 256 | 254 | 255.255.255.0 | 1 |
| /23 | 512 | 510 | 255.255.254.0 | 2 |
| /22 | 1024 | 1022 | 255.255.252.0 | 4 |
| /21 | 2048 | 2046 | 255.255.248.0 | 8 |
| /20 | 4096 | 4094 | 255.255.240.0 | 16 |
| /19 | 8192 | 8190 | 255.255.224.0 | 32 |
| /18 | 16384 | 16382 | 255.255.192.0 | 64 |
| /17 | 32768 | 32766 | 255.255.128.0 | 128 |
| /16 | 65536 | 65534 | 255.255.0.0 | 256 |

SolarWorks Subnet Calculator

<https://www.solarwinds.com/free-tools/advanced-subnet-calculator>