CAE

Trunks aanmaken (Commands - Routers & Switches)
Meerdere poorten in 1 keer
interface range gig (int poort) - gig (int poort)
no shut (poorten opendoen)

Multi Layer Switch
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
```

Switches (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

Multi Layer Switch: VLANs aanmaken
vlan (nummer)
name vlan (nummer)

VTP version (nummer)
VTP domain (naam domain)
VTP mode (server of client)

Hulp commands (?)
VTP mode/version ?

Switches: Spanning Tree priorities (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 ?

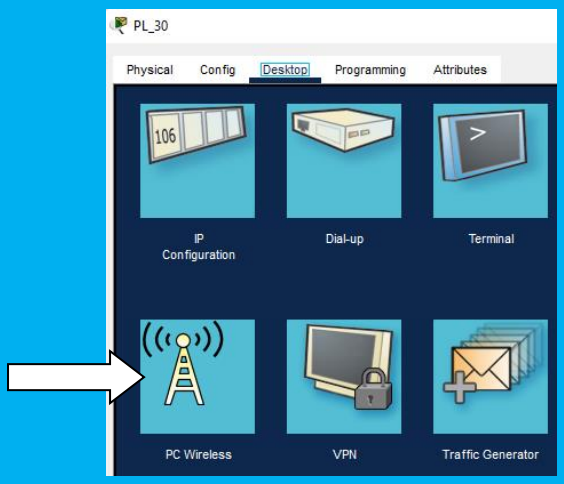
(Voorbeeld)

```
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 – Ook op poorten
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)

Multi Layer Switch: Interface VLANs (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
```

Multi Layer Switch: DHCP instellen (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 DHCP pools aanmaken
ip dhcp pool (naam pool)
default-router (default gateway IP)
network (ip adres netwerk & subnet mask)
dns-server (DNS Server IP)

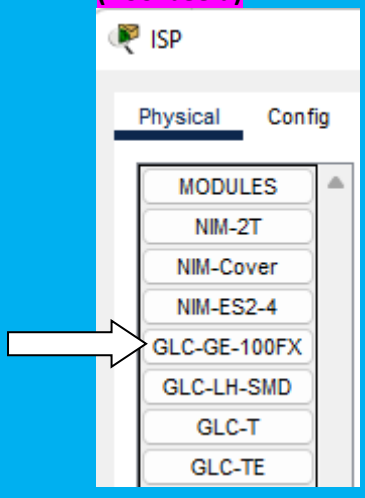
(Voorbeeld)

```
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
```

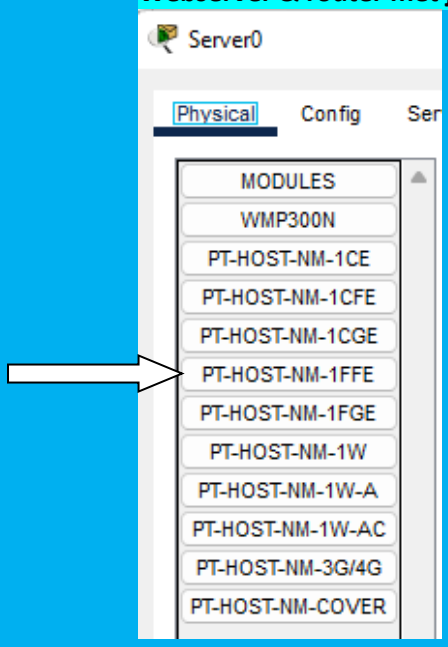
Hulp commands (?)
ip dhcp ?
ip dhcp pool ?

Routers vervangen
Van oude router belangrijke instellingen kopieren 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)

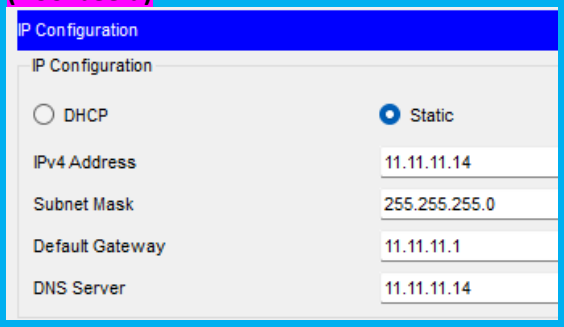


Webserver
Module/Poort in webserver plaatsen (module: PT-HOST-NM-1FFE/FastEthernet)
Webserver & router met juiste poort verbinden (Fiber/glasvezelkabel, Copper Cross Over kabel)



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 (netwerk 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