

Routing and switching practicum 2

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Vraag 1:

Elk sub-sub-net kan 16 hosts adresseren

1^e host

```
1.2.3.32/28
```

2^e host

```
1.2.3.63/28
```

Vraag 2:

```
NA : 166.60.0.0/16
BA : 166.60.251.255/16
Subnetmask : 255.255.0.0
```

Vraag 3:

```
Hoofdnetwerk als binair : 1010 0110 . 0011 1100 . 0000 0000 . 0000 0000
```

Subnet 0

Binair

```
NA : 1010 0110 . 0011 1100 . 0000 0000 . 0000 0000
BA : 1010 0110 . 0011 1100 . 0000 1111 . 1111 1111
```

IP - adres

```
NA : 166.60.0.0/20
BA : 166.60.15.255/20
```

Subnet 6

Binair

```
NA : 1010 0110 . 0011 1100 . 0110 0000 . 0000 0000
BA : 1010 0110 . 0011 1100 . 0110 1111 . 1111 1111
```

IP - adres

```
NA : 166.60.96.0/20
BA : 166.60.111.255/20
```

Vraag 4:

```
Hoofdnetwerk : 166.60.96.0/20
Hoofdnetwerk als binair : 1010 0110 . 0011 1100 . 0110 0000 . 0000 0000
```

Subnet 0

Binair

```
NA : 1010 0110 . 0011 1100 . 0100 0000 . 0000 0000
BA : 1010 0110 . 0011 1100 . 0100 0000 . 1111 1111
Subnetmask : 1111 1111 . 1111 1111 . 1111 1100 . 0000 0000
```

IP - adres

```
NA : 166.60.64.0/22
BA : 166.60.64.255/22
Subnetmask : 255.255.252.0
```

Vraag 5

Gegeven een /24 netwerk, is het kleinste subnet dat je kan gebruiken /30 dit is omdat het maar 2 bruikbare IP-adressen heeft.

Cisco

128	64	32	16	8	4	2	1
8	7	6	5	4	3	2	1

Vraag 1

IPv4 Address/Prefix	Network Address	Broadcast Address	Total Number Of Hosts Bits	Total Number of Hosts
192.168.100.25/28	192.168.100.0/28	192.168.100.255/28	4	14
172.30.10.130/30	172.30.10.130/30	172.30.10.255/30	2	2
10.1.113.75/19	10.1.113.64/19	10.1.113.255	13	8190
198.133.219.250/24	198.133.219.0/24	198.133.219.255/24	8	254
128.107.14.191/22	128.107.12.0/22	128.107.12.255/22	10	1022
172.16.104.99/27	172.16.104.96/27	172.16.104.255/27	5	30

Vraag 2

Pobleem 1

Given	
Host IP Adres	192.168.200.139
Original subnet mask	255.255.255.0
New Subnet Mask:	255.255.255.224
-----	-----
Find	
Number of Subnet Bits	19
Number of Subnets Created	32
Number of Host Bits per Subnet	13
Number of Hosts per Subnet	8190
Network Address of this Subnet	192.168.192.0
IPv4 Address of First Host on this Subnet	192.168.192.1
IPv4 Address of Last Host on this Subnet	192.168.192.254
IPv4 Broadcast Address on this Subnet	192.168.223.255

Pobleem 2

Given	
Host IP Adres	10.101.99.228
Original subnet mask	255.0.0.0
New Subnet Mask:	255.255.128.0
-----	-----
Find	
Number of Subnet Bits	8
Number of Subnets Created	512
Number of Host Bits per Subnet	24
Number of Hosts per Subnet	32766
Network Address of this Subnet	10.0.0.0
IPv 4 Address of First Host on this Subnet	10.0.0.1
IPv 4 Address of Last Host on this Subnet	10.255.255.254
IPv 4 Broadcast Address on this Subnet	10.255.255.254

Pobleem 3

Given	
Host IP Adres	172.22.32.12
Original subnet mask	255.255.0.0
New Subnet Mask:	255.255.224.0
-----	-----
Find	
Number of Subnet Bits	16
Number of Subnets Created	32
Number of Host Bits per Subnet	24
Number of Hosts per Subnet	32766
Network Address of this Subnet	172.22.0.0

Given	
IPv 4 Address of First Host on this Subnet	172.22.0.1
IPv 4 Address of Last Host on this Subnet	172.22.255.254
IPv 4 Broadcast Address on this Subnet	172.22.255.255

Problem 4

Given	
Host IP Address	192.168.1.245
Original subnet mask	255.255.0.0
New Subnet Mask:	255.255.255.252
-----	-----
Find	
Number of Subnet Bits	16
Number of Subnets Created	16384
Number of Host Bits per Subnet	8
Number of Hosts per Subnet	2
Network Address of this Subnet	192.168.0.0
IPv 4 Address of First Host on this Subnet	192.168.0.1
IPv 4 Address of Last Host on this Subnet	192.168.255.254
IPv 4 Broadcast Address on this Subnet	192.168.255.255

Problem 5

Given	
Host IP Address	128.107.0.55
Original subnet mask	255.255.0.0
New Subnet Mask:	255.255.255.0
-----	-----
Find	
Number of Subnet Bits	15
Number of Subnets Created	512
Number of Host Bits per Subnet	13
Number of Hosts per Subnet	254
Network Address of this Subnet	128.106.0.0
IPv 4 Address of First Host on this Subnet	128.106.0.1
IPv 4 Address of Last Host on this Subnet	128.107.255.254
IPv 4 Broadcast Address on this Subnet	128.107.255.255

Problem 6

Given	
Host IP Address	192.135.250.180
Original subnet mask	255.255.255.0
New Subnet Mask:	255.255.255.248
-----	-----
Find	
Number of Subnet Bits	24
Number of Subnets Created	32

Given	
Number of Host Bits per Subnet	8
Number of Hosts per Subnet	6
Network Address of this Subnet	192.135.250.0
IPv 4 Address of First Host on this Subnet	192.135.250.1
IPv 4 Address of Last Host on this Subnet	192.135.250.254
IPv 4 Broadcast Address on this Subnet	192.135.250.254