

Template Week 6 – Networking

Student number: 573512

Assignment 6.1: Working from home

Screenshot installation openssh-server:

Screenshot successful SSH command execution:

Screenshot successful execution SCP command:

Screenshot remmina:

Assignment 6.2: IP addresses websites

Relevant screenshots nslookup command:

Screenshot website visit via IP address:

Assignment 6.3: subnetting

How many IP addresses are in this network configuration 192.168.110.128/25?

What is the usable IP range to hand out to the connected computers?

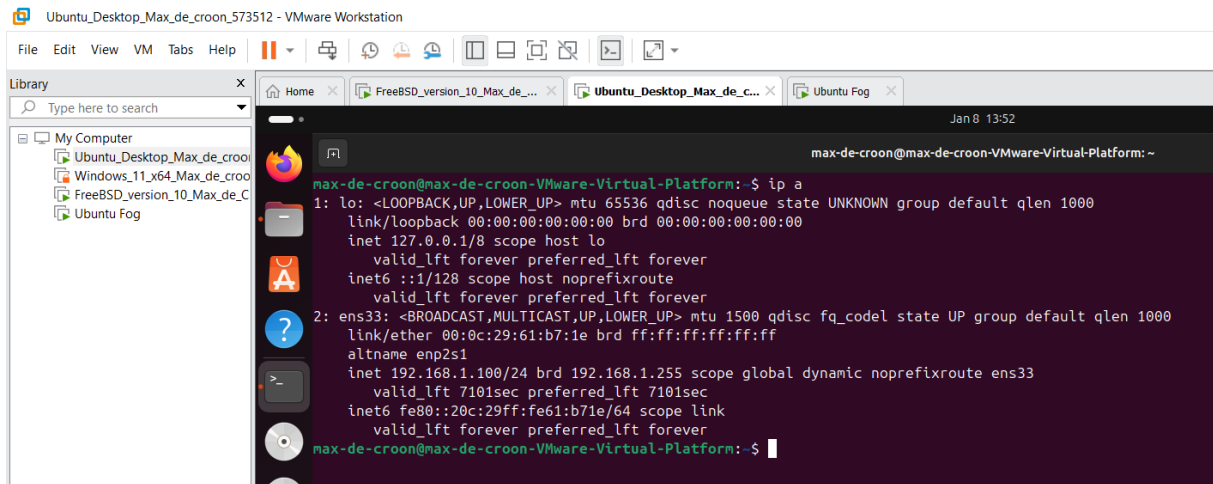
Check your two previous answers with this calculator:

<https://www.calculator.net/ip-subnet-calculator.html>

Explain the above calculation in your own words.

Assignment 6.4: HTML

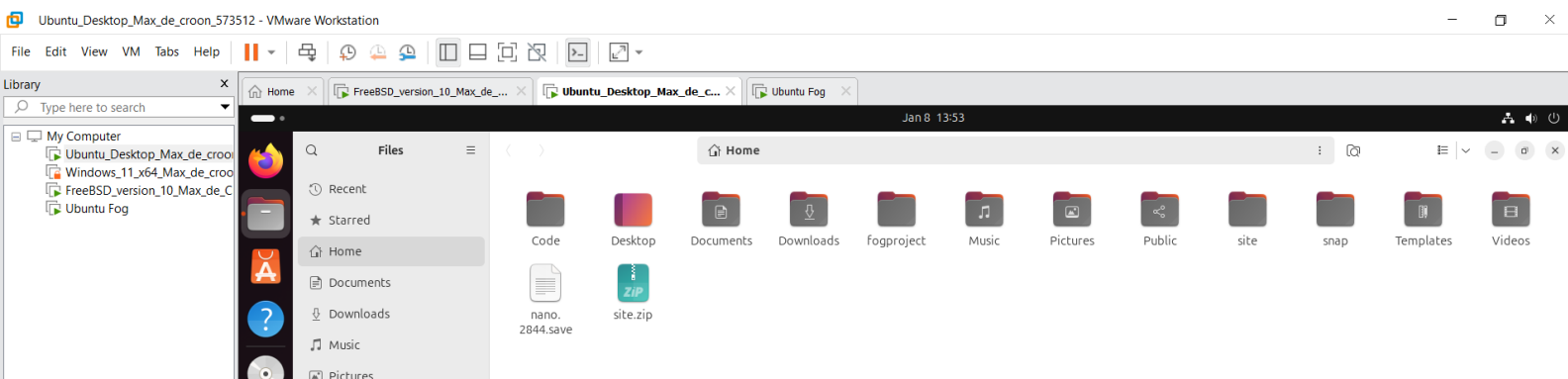
Screenshot IP address Ubuntu VM:



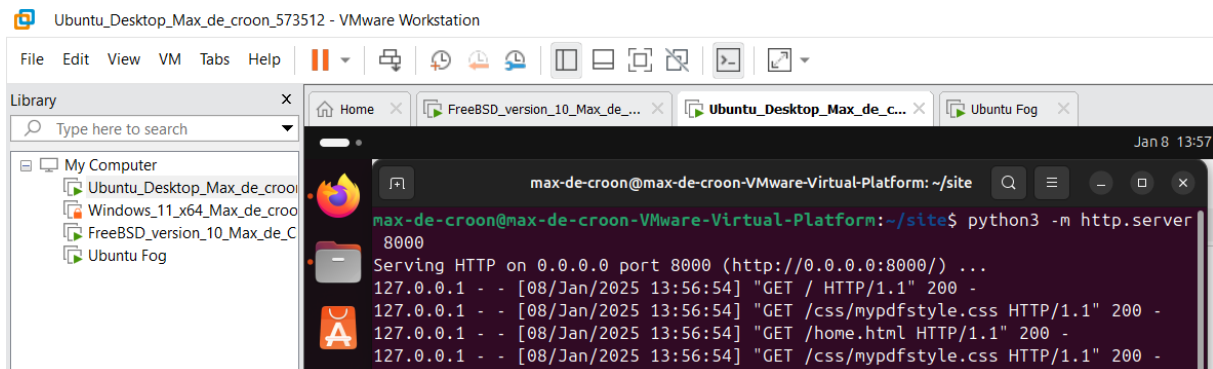
The screenshot shows a terminal window titled "max-de-croon@max-de-croon-VMware-Virtual-Platform: ~". The user has entered the command `ip a`. The output displays network interface details for `lo` and `ens33`.

```
max-de-croon@max-de-croon-VMware-Virtual-Platform: ~$ ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host noprefixroute
        valid_lft forever preferred_lft forever
2: ens33: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 00:0c:29:61:b7:1e brd ff:ff:ff:ff:ff:ff
    altname enp2s1
    inet 192.168.1.100/24 brd 192.168.1.255 scope global dynamic noprefixroute ens33
        valid_lft 7101sec preferred_lft 7101sec
    inet6 fe80::20c:29ff:fe61:b71e/64 scope link
        valid_lft forever preferred_lft forever
max-de-croon@max-de-croon-VMware-Virtual-Platform: ~$
```

Screenshot of Site directory contents:



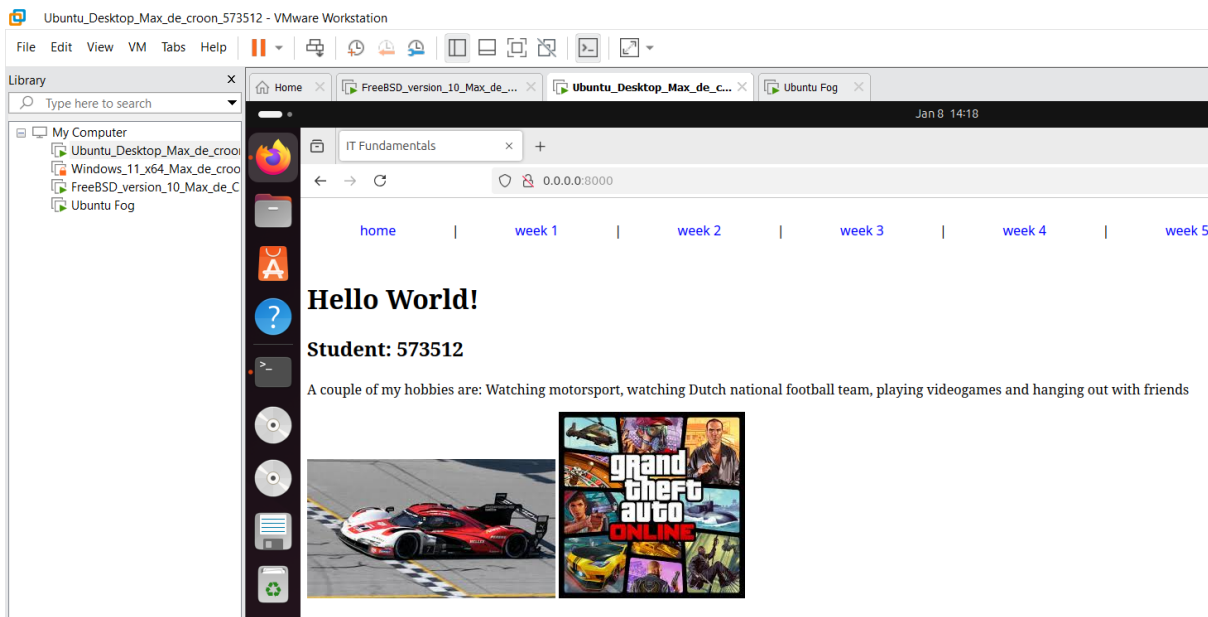
Screenshot python3 webserver command:



The screenshot shows a terminal window titled "max-de-croon@max-de-croon-VMware-Virtual-Platform: ~/site". The user has entered the command `python3 -m http.server 8000`. The output shows the server serving HTTP on port 8000 and handling several GET requests.

```
max-de-croon@max-de-croon-VMware-Virtual-Platform: ~/site$ python3 -m http.server 8000
Serving HTTP on 0.0.0.0 port 8000 (http://0.0.0.0:8000/) ...
127.0.0.1 - - [08/Jan/2025 13:56:54] "GET / HTTP/1.1" 200 -
127.0.0.1 - - [08/Jan/2025 13:56:54] "GET /css/mypdfstyle.css HTTP/1.1" 200 -
127.0.0.1 - - [08/Jan/2025 13:56:54] "GET /home.html HTTP/1.1" 200 -
127.0.0.1 - - [08/Jan/2025 13:56:54] "GET /css/mypdfstyle.css HTTP/1.1" 200 -
```

Screenshot web browser visits your site



Bonus point assignment – week 6

Remember that bitwise java application you've made in week 2? Expand that application so that you can also calculate a network segment as explained in the PowerPoint slides of week 6. Use the bitwise & AND operator. You need to be able to input two Strings. An IP address and a subnet.

IP: 192.168.1.100 and subnet: 255.255.255.224 for /27

Example: 192.168.1.100/27

Calculate the network segment

IP Address: 11000000.10101000.00000001.01100100

Subnet Mask: 11111111.11111111.11111111.11100000

Network Addr: 11000000.10101000.00000001.01100000

This gives 192.168.1.96 in decimal as the network address.

For a /27 subnet, each segment (or subnet) has 32 IP addresses (2^5).

The range of this network segment is from 192.168.1.96 to 192.168.1.127.

Paste source code here, with a screenshot of a working application.

Ready? Save this file and export it as a pdf file with the name: [week6.pdf](#)