Template Week 6 – Networking

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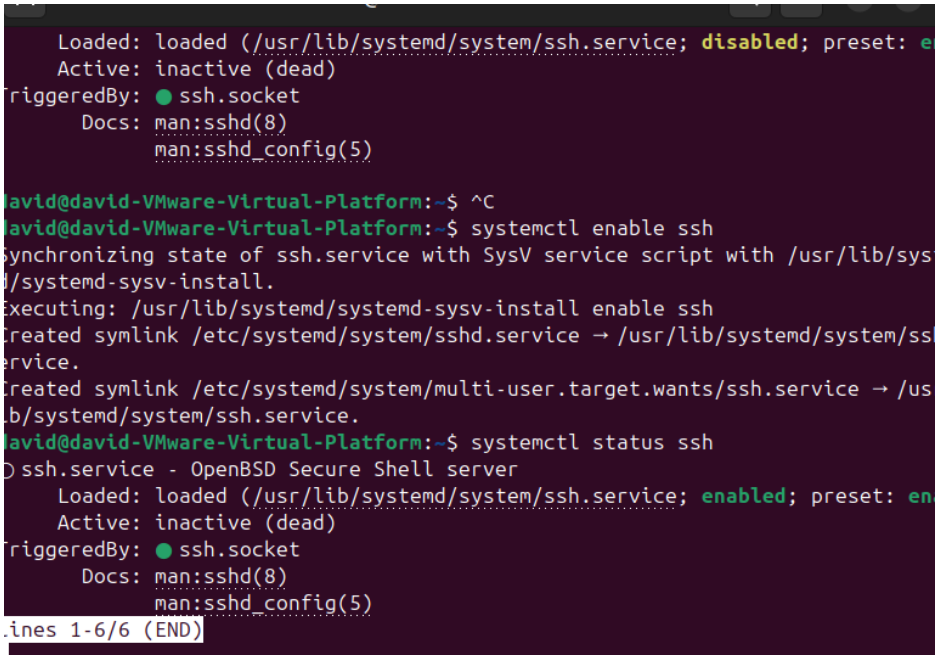
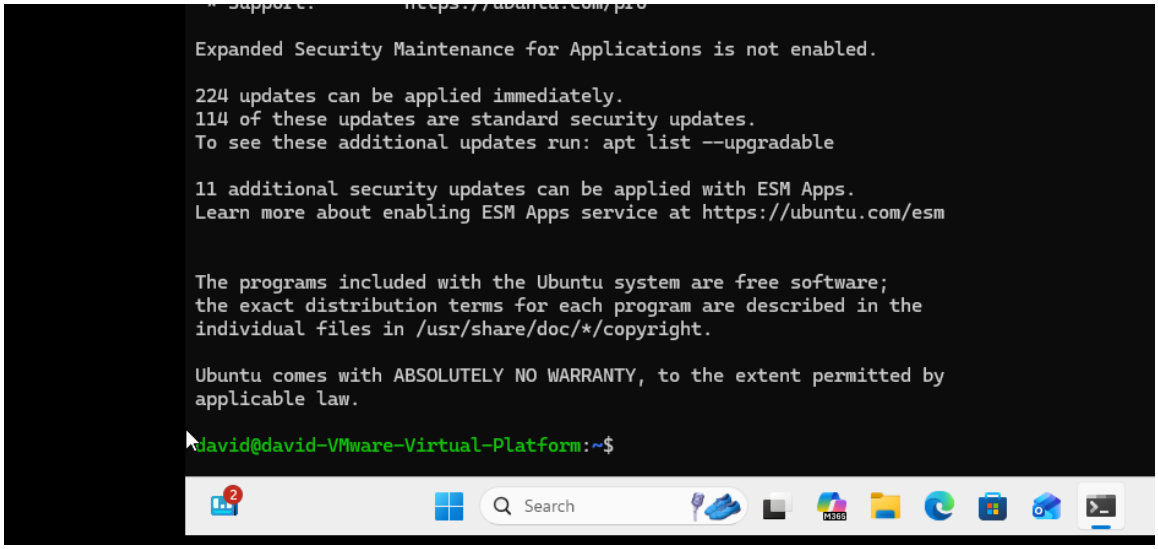
Assignment 6.1: Working from home

Screenshot installation openssh-server:



Screenshot successful SSH command execution:

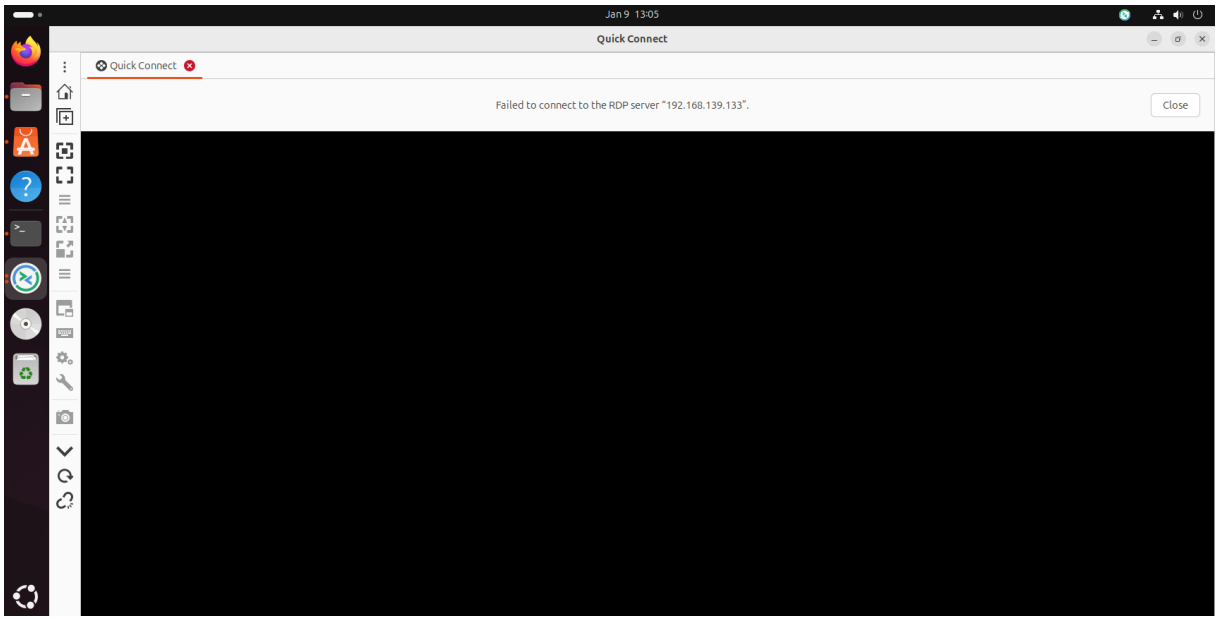


Screenshot successful execution SCP command:

```
C:\Users\david>ls -l text.txt
'ls' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\david>scp C:\Users\david\Documents\text.txt david@192.168.139.132:"C:\home\david\text.txt"
david@192.168.139.132's password:
scp: dest open "C:/home/david/text.txt": No such file or directory
scp: failed to upload file C:/Users/david/Documents/text.txt to C:/home/david/text.txt

C:\Users\david>scp C:\Users\david\Documents\text.txt david@192.168.139.132:/home/david/text.txt"
david@192.168.139.132's password:
text.txt                                                    100%    0     0.0KB/s   00:00

C:\Users\david>
```

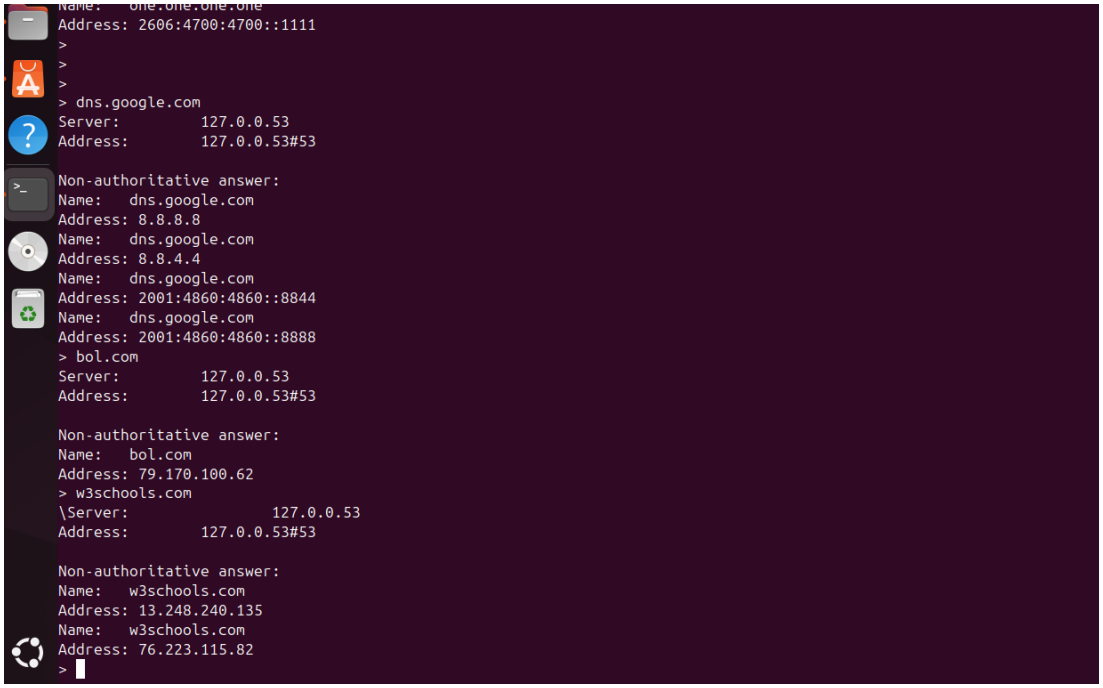
Activate Windows
Go to Settings to activate Windows.

Screenshot remmina:

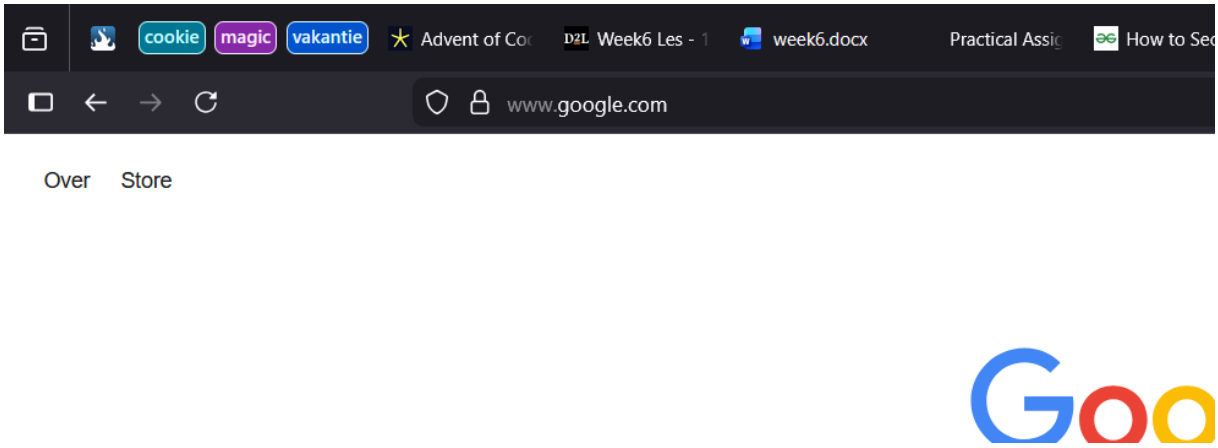


Assignment 6.2: IP addresses websites

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?

128 bruikbare ip adressen

1 bit is twee opties 2 is 4 enz. Na 7 heb je 128.

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

126 computer bruikbare ip adressen

Check your two previous answers with this Linux command: `ipcalc 192.168.110.128/25`

```
Hosts/Net: 126                    Cl

david@david-VMware-Virtual-Platforr
```

Explain the above calculation in your own words.

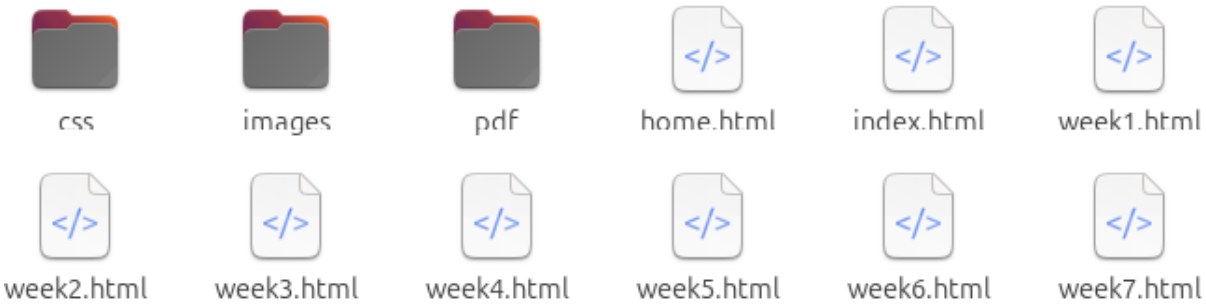
Er zijn in totall 32 bits om het ip address te laten zien 25 daarvan zijn vast de rest kan worden aangepast dus je houd 7 bits over.

Assignment 6.4: HTML

Screenshot IP address Ubuntu VM:

```
192.168.139.132/24
```

Screenshot of Site directory contents:



Screenshot python3 webserver command:

```
david@david-VMware-Virtual-Platform:~/site$ python3 -m http.server 8000
Serving HTTP on 0.0.0.0 port 8000 (http://0.0.0.0:8000/) ...
192.168.139.1 - - [09/Jan/2026 16:07:31] code 404, message File not found
192.168.139.1 - - [09/Jan/2026 16:07:31] "GET /site/ HTTP/1.1" 404 -
----------------------------------------
Exception occurred during processing of request from ('192.168.139.1', 60886)
Traceback (most recent call last):
  File "/usr/lib/python3.12/socketserver.py", line 692, in process_request_thread
    self.finish_request(request, client_address)
  File "/usr/lib/python3.12/http/server.py", line 1311, in finish_request
    self.RequestHandlerClass(request, client_address, self,
  File "/usr/lib/python3.12/http/server.py", line 672, in __init__
    super().__init__(*args, **kwargs)
  File "/usr/lib/python3.12/socketserver.py", line 761, in __init__
    self.handle()
  File "/usr/lib/python3.12/http/server.py", line 436, in handle
    self.handle_one_request()
  File "/usr/lib/python3.12/http/server.py", line 404, in handle_one_request
    self.raw_requestline = self.rfile.readline(65537)
                           ^^^^^^^^^^^^^^^^^^^^^^^^^^
  File "/usr/lib/python3.12/socket.py", line 707, in readinto
    return self._sock.recv_into(b)
           ^^^^^^^^^^^^^^^^^^^^^^^
```

Screenshot web browser visits your site

Assignment 6.5: Network segment

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**