

CYSE-270- Linux System For Cybersecurity

Assignment –10

Networking Basics - Subnetting (100 points)

Understanding subnetting takes time and practice. Using the methods covered during the class, fill in the following tables for **Network, broadcast, first IP, Last IP** and **Max. Hosts in the network**.

The column for IP address should be in Decimal format for each, except number of hosts. (Refer to the examples in the slide for week 10-Networking Basics)

Task-A: (50 Points)

Category	IP Address	Binary Format
Address	192.168.100.4	11000000.10101000.01100100.00000100
Netmask /28	255.255.255.240	11111111.11111111.11111111.11110000
Network address	192.168.100.0	11000000.10101000.01100100.00000000
Broadcast address	192.168.100.15	11000000.10101000.01100100.00001111
First IP	192.168.100.1	11000000.10101000.01100100.00000001
Last IP	192.168.100.14	11000000.10101000.01100100.00001110
Maximum host in the network	14	

Task-B: (50 points)

Category	IP Address	Binary Format
Address	170.1.0.0	10101010.00000001.00000000.00000000
Netmask /26	255.255.255.192	11111111.11111111.11111111.11000000

Network address	170.1.0.0	10101010.00000001.00000000.00000000
Broadcast address	170.1.0.63	10101010.00000001.00000000.00111111
First IP	170.1.0.1	10101010.00000001.00000000.00000001
Last IP	170.1.0.62	10101010.00000001.00000000.00111110
Maximum host in the network	62	

Extra Credit (10 points)

Write a bash script to print out 0~10 in shell scripts by using for loop and while loop, respectively? Please submit the screenshot for the script and its output, both.

```

Nov 23 19:46
john@john-VirtualBox: ~
john@john-VirtualBox:~$ nano loop_script.sh
john@john-VirtualBox:~$ chmod +x loop_script.sh
john@john-VirtualBox:~$ ./loop_script.sh
Using for loop:
0
1
2
3
4
5
6
7
8
9
10
Using while loop:
0
1
2
3
4
5
6
7
8
9
10
john@john-VirtualBox:~$

```

```
john@john-VirtualBox: ~
GNU nano 8.3 loop_script.sh
#!/bin/bash

echo "Using for loop:"
for i in {0..10}
do
    echo $i
done

echo "Using while loop:"
j=0
while [ $j -le 10 ]
do
    echo $j
    j=$((j+1))
done

[ Bad lock file is ignored: ./loop_script.sh.swp ]
^G Help      ^O Write Out  ^F Where Is   ^K Cut        ^T Execute    ^C Location
^X Exit      ^R Read File  ^\ Replace    ^U Paste      ^J Justify    ^_ Go To Line
```