

LETTERKENNY INSTITUTE OF TECHNOLOGY**ASSIGNMENT COVER SHEET**

Lecturer's Name: Ruth Lennon

Assessment Title: OOPR For Server Admin

Work to be submitted to: Ruth Lennon

Date for submission of work: 30/11/2021

Place and time for submitting work: Blackboard as per submission link

To be completed by the Student

Student's Name: Luis Gonzalez

Class: OOPR For Server Admin

Subject/Module: OOPR For Server Admin

Word Count (where applicable): N/A

I confirm that the work submitted has been produced solely through my own efforts.

Student's signature: Luis Gonzalez **Date:** 05/12/2021

Notes

Penalties: The total marks available for an assessment is reduced by 15% for work submitted up to one week late. The total marks available are reduced by 30% for work up to two weeks late. Assessment work received more than two weeks late will receive a mark of zero. [Incidents of alleged plagiarism and cheating are dealt with in accordance with the Institute's Assessment Regulations.]

Plagiarism: Presenting the ideas etc. of someone else without proper acknowledgement (see section L1 paragraph 8).

Cheating: The use of unauthorised material in a test, exam etc., unauthorised access to test matter, unauthorised collusion, dishonest behaviour in respect of assessments, and deliberate plagiarism (see section L1 paragraph 8).

Continuous Assessment: For students repeating an examination, marks awarded for continuous assessment, shall normally be carried forward from the original examination to the repeat examination.

Aims/Description

As per Assignment Question:

Write a Python script to determine which ports are open and display the information in a tidy format. Where port 22 is shown as open display the word "SSH" where port 80 is shown as open display the word "HTTP". Take screenshots of the code running on your system. Save them to a file named L0012345_Q4_File_1 where L0012345 is replace by your own L number. Save the script as L0012345_Q4_File_2

Results

1. Python project to scan ports and show result with ports and names successfully created
2. Current file, script and PyCharm project were uploaded to Student's GitHub Repository into OOPRAssignment_Q4
<https://github.com/L00170299/OOPRForServerAdmin>

Conclusions

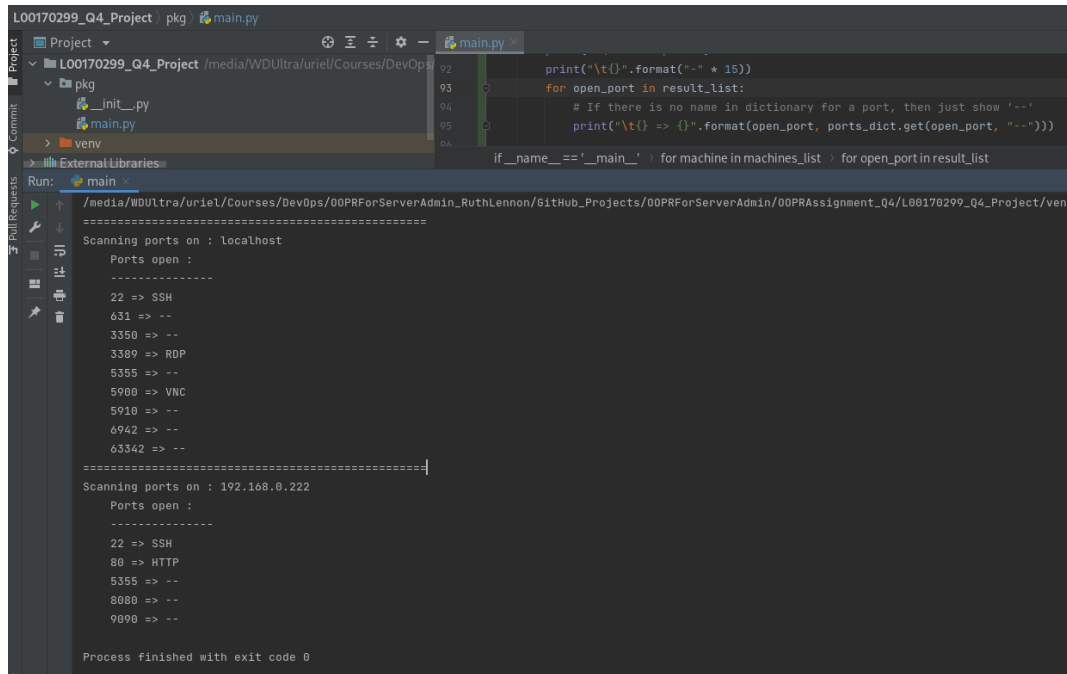
Some more reading was required to finally achieve this. Some ports appear in the list as open even though ports are not allowed in firewall (ufw). Looks like its able to tell which ports are listening, which is curious.

This project could be applied to some kind of maintenance or security scanning. Its an interesting one to apply to any stage/pipeline of DevOps.

For Student this project was much faster as previous examples helped a lot.

Appendix

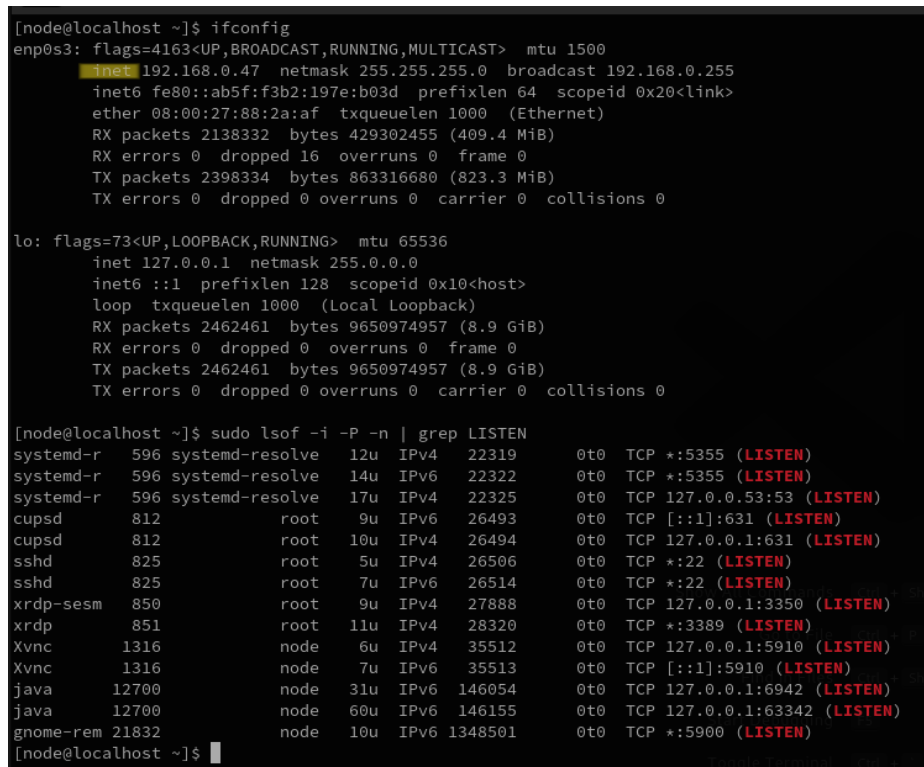
PyCharm with Output



```

L00170299_Q4_Project pkg main.py
Project
  L00170299_Q4_Project /media/WDUltra/uriel/Courses/DevOps
    pkg
      _init_.py
      main.py
    venv
      External Libraries
Run: main
/media/WDUltra/uriel/Courses/DevOps/OOPRForServerAdmin_RuthLennon/GitHub_Projects/OOPRForServerAdmin/OOPRAssignment_Q4/L00170299_Q4_Project/venv
=====
Scanning ports on : localhost
Ports open :
-----
22 => SSH
631 => --
3350 => --
3389 => RDP
5355 => --
5900 => VNC
5910 => --
6942 => --
63342 => --
=====
Scanning ports on : 192.168.0.222
Ports open :
-----
22 => SSH
80 => HTTP
5355 => --
8080 => --
9090 => --
Process finished with exit code 0
  
```

localhost with ports listening (open):



```

[node@localhost ~]$ ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.0.47 netmask 255.255.255.0 broadcast 192.168.0.255
    inet6 fe80::ab5f:f3b2:197e:b03d prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:88:2a:af txqueuelen 1000 (Ethernet)
    RX packets 2138332 bytes 429302455 (409.4 MiB)
    RX errors 0 dropped 16 overruns 0 frame 0
    TX packets 2398334 bytes 863316680 (823.3 MiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 2462461 bytes 9650974957 (8.9 GiB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 2462461 bytes 9650974957 (8.9 GiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

[node@localhost ~]$ sudo lsof -i -P -n | grep LISTEN
systemd-r 596 systemd-resolve 12u IPv4 22319 0t0 TCP *:5355 (LISTEN)
systemd-r 596 systemd-resolve 14u IPv6 22322 0t0 TCP *:5355 (LISTEN)
systemd-r 596 systemd-resolve 17u IPv4 22325 0t0 TCP 127.0.0.53:53 (LISTEN)
cupsd 812 root 9u IPv6 26493 0t0 TCP [::]:631 (LISTEN)
cupsd 812 root 10u IPv4 26494 0t0 TCP 127.0.0.1:631 (LISTEN)
sshd 825 root 5u IPv4 26506 0t0 TCP *:22 (LISTEN)
sshd 825 root 7u IPv6 26514 0t0 TCP *:22 (LISTEN)
xrdp-sesm 850 root 9u IPv4 27888 0t0 TCP 127.0.0.1:3350 (LISTEN)
xrdp 851 root 11u IPv4 28320 0t0 TCP *:3389 (LISTEN)
Xvnc 1316 node 6u IPv4 35512 0t0 TCP 127.0.0.1:5910 (LISTEN)
Xvnc 1316 node 7u IPv6 35513 0t0 TCP [::]:5910 (LISTEN)
java 12700 node 31u IPv6 146054 0t0 TCP 127.0.0.1:6942 (LISTEN)
java 12700 node 60u IPv6 146155 0t0 TCP 127.0.0.1:63342 (LISTEN)
gnome-rem 21832 node 10u IPv6 1348501 0t0 TCP *:5900 (LISTEN)
  
```

vserver (192.168.0.222) with ports listening (open):

```
[vserver@fedora ~]$ ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.0.222 netmask 255.255.255.0 broadcast 192.168.0.255
    inet6 fe80::a00:27ff:fe2b:e60f prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:2b:e6:0f txqueuelen 1000 (Ethernet)
    RX packets 500126 bytes 48137201 (45.9 MiB)
    RX errors 0 dropped 16 overruns 0 frame 0
    TX packets 469671 bytes 28904772 (27.5 MiB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

[vserver@fedora ~]$ sudo lsof -i -P -n | grep LISTEN
[sudo] password for vserver:
systemd      1          root    55u  IPv6  21291      0t0  TCP *:9090 (LISTEN)
systemd-r    687  systemd-resolve  11u  IPv4  21916      0t0  TCP *:5355 (LISTEN)
systemd-r    687  systemd-resolve  13u  IPv6  21919      0t0  TCP *:5355 (LISTEN)
systemd-r    687  systemd-resolve  17u  IPv4  21922      0t0  TCP 127.0.0.53:53 (LISTEN)
sshd         760          root     3u  IPv4  22185      0t0  TCP *:22 (LISTEN)
sshd         760          root     4u  IPv6  22187      0t0  TCP *:22 (LISTEN)
httpd        803          root     4u  IPv6  22670      0t0  TCP *:80 (LISTEN)
java         822      jenkins  115u  IPv6  22801      0t0  TCP *:8080 (LISTEN)
httpd        856      apache    4u  IPv6  22670      0t0  TCP *:80 (LISTEN)
httpd        857      apache    4u  IPv6  22670      0t0  TCP *:80 (LISTEN)
httpd        858      apache    4u  IPv6  22670      0t0  TCP *:80 (LISTEN)
```