# 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:** 04/12/2021

**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:

Connect to the virtual machine using a python script using the ssh port via
modifying a previous script from the 'Networking Labs'. Establish that the
connection was successful. Use screenshots to demonstrate that this worked. Save
them to a file named L0012345_Q3_File_1 where L0012345 is replaced by your own
L number.

## Results

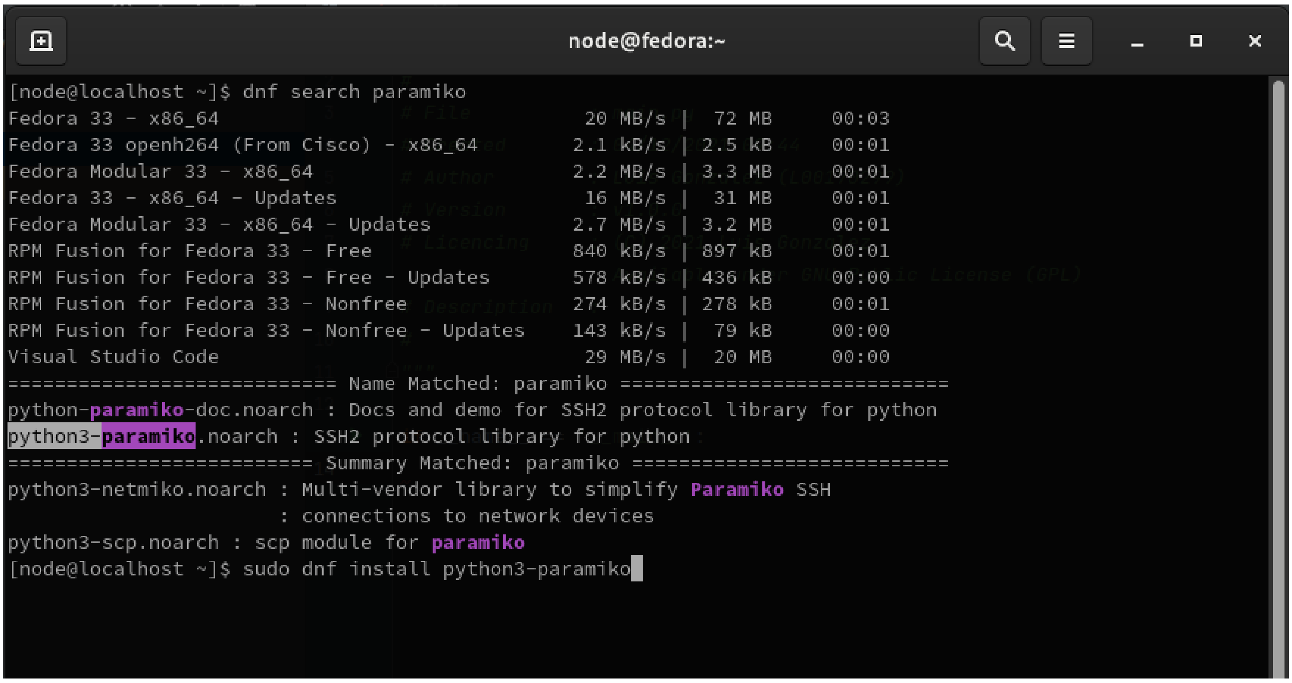
1. Library Paramiko installed successfully
2. Python Project using  Paramiko, sys and time was created
3. Project to connect to a remote machine through ssh and run basic commands tested successfully.
4. Current file, script and PyCharm project were uploaded to Student's GitHub Repository into OOPRAssignment_Q3
   https://github.com/L00170299/OOPRForServerAdmin

## Conclusions

Student found this project very interesting and useful. This could be used for personal task/projects at home.
It required a lot of reading and understanding of new syntax and modules but after a bit of research and once things started to make sense then it was just matter of put it together.
There many things that could have being different like maybe make it a class, create a config file to avoid hardcoding connection details, make functions generic so it would run commands for any Linux distribution or even Windows with openSSH.
Student really loved this project!!

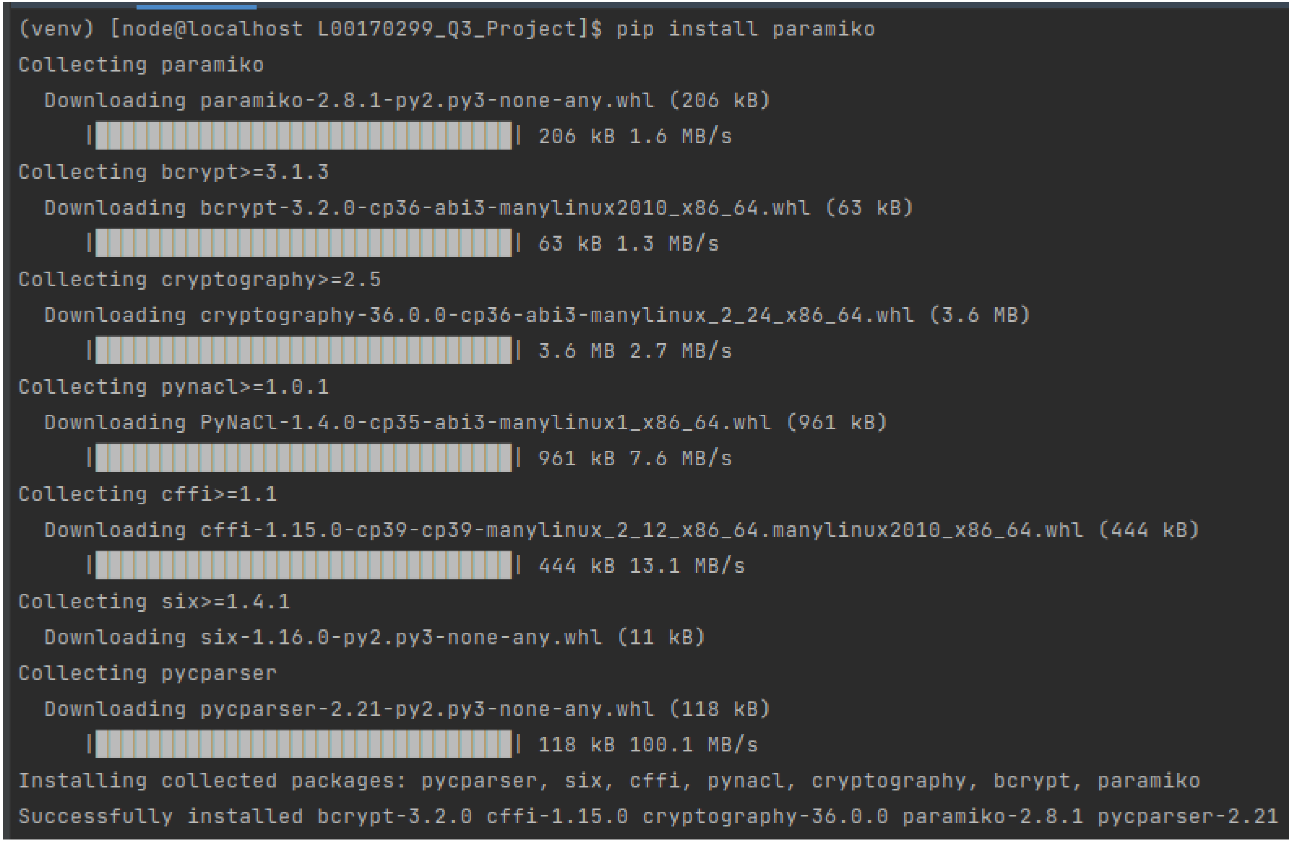
# Appendix

## Installing paramiko: Fedora pkgs



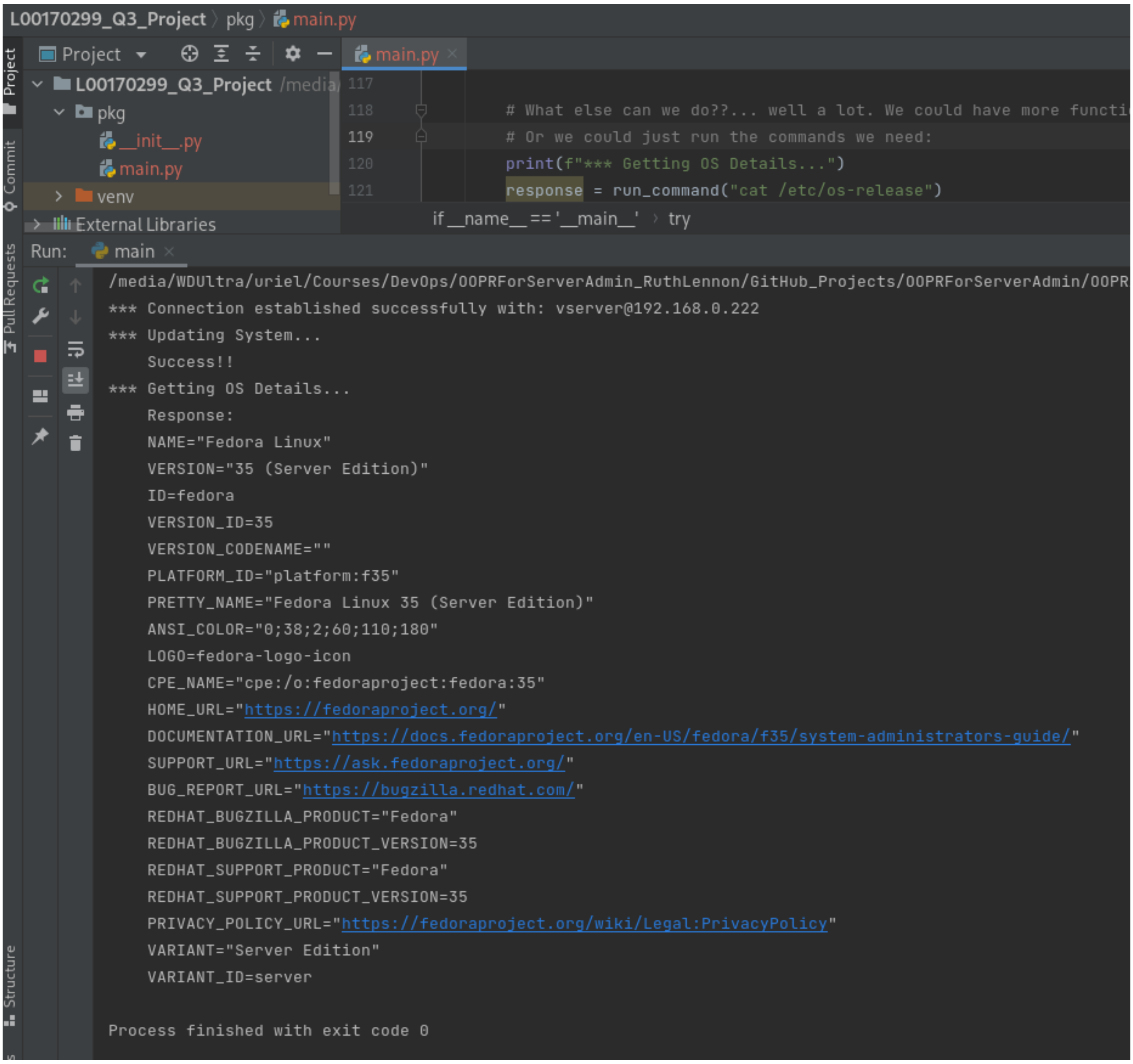
```
[node@localhost ~]$ dnf search paramiko
Fedora 33 - x86_64                            20 MB/s |  72 MB     00:03
Fedora 33 openh264 (From Cisco) - x86_64     2.1 kB/s | 2.5 kB     00:01
Fedora Modular 33 - x86_64                   2.2 MB/s | 3.3 MB     00:01
Fedora 33 - x86_64 - Updates                  16 MB/s |  31 MB     00:01
Fedora Modular 33 - x86_64 - Updates         2.7 MB/s | 3.2 MB     00:01
RPM Fusion for Fedora 33 - Free              840 kB/s | 897 kB     00:01
RPM Fusion for Fedora 33 - Free - Updates    578 kB/s | 436 kB     00:00
RPM Fusion for Fedora 33 - Nonfree           274 kB/s | 278 kB     00:01
RPM Fusion for Fedora 33 - Nonfree - Updates 143 kB/s |  79 kB     00:00
Visual Studio Code                            29 MB/s |  20 MB     00:00
============================ Name Matched: paramiko ============================
python-paramiko-doc.noarch : Docs and demo for SSH2 protocol library for python
python3-paramiko.noarch : SSH2 protocol library for python
========================== Summary Matched: paramiko ===========================
python3-netmiko.noarch : Multi-vendor library to simplify Paramiko SSH
                       : connections to network devices
python3-scp.noarch : scp module for paramiko
[node@localhost ~]$ sudo dnf install python3-paramiko
```

## Installing paramiko: PyCharm environment



```
(venv) [node@localhost L00170299_Q3_Project]$ pip install paramiko
Collecting paramiko
  Downloading paramiko-2.8.1-py2.py3-none-any.whl (206 kB)
      |████████████████████████████████| 206 kB 1.6 MB/s
Collecting bcrypt>=3.1.3
  Downloading bcrypt-3.2.0-cp36-abi3-manylinux2010_x86_64.whl (63 kB)
      |████████████████████████████████| 63 kB 1.3 MB/s
Collecting cryptography>=2.5
  Downloading cryptography-36.0.0-cp36-abi3-manylinux_2_24_x86_64.whl (3.6 MB)
      |████████████████████████████████| 3.6 MB 2.7 MB/s
Collecting pynacl>=1.0.1
  Downloading PyNaCl-1.4.0-cp35-abi3-manylinux1_x86_64.whl (961 kB)
      |████████████████████████████████| 961 kB 7.6 MB/s
Collecting cffi>=1.1
  Downloading cffi-1.15.0-cp39-cp39-manylinux_2_12_x86_64.manylinux2010_x86_64.whl (444 kB)
      |████████████████████████████████| 444 kB 13.1 MB/s
Collecting six>=1.4.1
  Downloading six-1.16.0-py2.py3-none-any.whl (11 kB)
Collecting pycparser
  Downloading pycparser-2.21-py2.py3-none-any.whl (118 kB)
      |████████████████████████████████| 118 kB 100.1 MB/s
Installing collected packages: pycparser, six, cffi, pynacl, cryptography, bcrypt, paramiko
Successfully installed bcrypt-3.2.0 cffi-1.15.0 cryptography-36.0.0 paramiko-2.8.1 pycparser-2.21
```

Project output:



```
        # What else can we do??... well a lot. We could have more functi
        # Or we could just run the commands we need:
        print(f"*** Getting OS Details...")
        response = run_command("cat /etc/os-release")
```

```
/media/WDUltra/uriel/Courses/DevOps/OOPRForServerAdmin_RuthLennon/GitHub_Projects/OOPRForServerAdmin/OOPR
*** Connection established successfully with: vserver@192.168.0.222
*** Updating System...
    Success!!
*** Getting OS Details...
    Response:
    NAME="Fedora Linux"
    VERSION="35 (Server Edition)"
    ID=fedora
    VERSION_ID=35
    VERSION_CODENAME=""
    PLATFORM_ID="platform:f35"
    PRETTY_NAME="Fedora Linux 35 (Server Edition)"
    ANSI_COLOR="0;38;2;60;110;180"
    LOGO=fedora-logo-icon
    CPE_NAME="cpe:/o:fedoraproject:fedora:35"
    HOME_URL="https://fedoraproject.org/"
    DOCUMENTATION_URL="https://docs.fedoraproject.org/en-US/fedora/f35/system-administrators-guide/"
    SUPPORT_URL="https://ask.fedoraproject.org/"
    BUG_REPORT_URL="https://bugzilla.redhat.com/"
    REDHAT_BUGZILLA_PRODUCT="Fedora"
    REDHAT_BUGZILLA_PRODUCT_VERSION=35
    REDHAT_SUPPORT_PRODUCT="Fedora"
    REDHAT_SUPPORT_PRODUCT_VERSION=35
    PRIVACY_POLICY_URL="https://fedoraproject.org/wiki/Legal:PrivacyPolicy"
    VARIANT="Server Edition"
    VARIANT_ID=server

Process finished with exit code 0
```