**PYTHON SCRIPTS**

**TASKS:**

1. Add a User
2. Add Groups
3. Add Users to a group
4. Create Directory
5. Assign User & Group ownership to a Directory
6. Test if users or Dir exists, if not create it
7. SSH in Python
8. Fabric
9. Webserver provisioning with Python Fabric
10. Python Virtualenv
11. Python for various other tasks

**LOCAL EXECUTION OF PYTHON SCRIPTS**

**Launch of three Vagrantfile in VirtualBox:**

* Get your vagrantfile ready in a dir on your pc
* open git bash and type: cd /f/vagrant-vms/python
* cat vagrantfile
* vagrant up (this powers up all the three vms)
* vagrant ssh scriptbox (to login to a particular linux named scriptbox)
* sudo –i
* mkdir /opt/pyscripts
* cd /opt/pyscripts
* mkdir ostasks
* To execute python commands directly without a script:

1. python (for python2 interpreter)

python3 (for python3 interpreter)

1. To use Linux commands in Python interpreter in gitbash

import os

os.system(“ls”) (if the linux command was successful, it would return an exit code of 0)

os.chdir() (change directory command)

os.getcwd() (returns the current working directory)

os.path.exists() (check if a path exists)

* Script to check if a file or directory exist!
* vim check-file.py
* #!/usr/bin/python3
* import os
* ls –l /usr/bin/python3 (Checking the python3 interpreter path if it exist)
* path = ‘ /tmp/testfile.txt’
* if os.path.isdir(path):
* print(“It is a Directory”)
* elif os.path.isfile(path):
* print(“It is a file.”)
* else:
* print(“File or Dir. does not exist”)
* :wq (to exit the vim editor)
* chmod +x check-file.py (give the script executable rights permission)
* ./check-file.py (to execute the script)
* your result should be file doesn’t exist
* create the file
* touch /tmp/testfile.txt
* ./check-file.py (to execute the script)
* your result should be file exist
* **### To Add a User in Linux:**
* Open your git-bash: vim useradd.py

#!/user/bin/python3

import os  
  
userlist = ["alpha", "beta", "gamma"]  
  
print("Adding users to system")  
print("#################################################")  
  
# Loop to Add Users from userlist  
for user in userlist:  
 exitcode = os.system("id {}".format(user) )  
 if exitcode != 0:  
 print("User {} does not exist. Adding it....".format(user))  
 print("#################################################")  
 print()  
 os.system("useradd {}".format(user))  
 else:  
 print("User already exist. Skipping it....")  
 print("#################################################")  
 print()

* :wq
* chmod +x useradd.py
* ./useradd.py
* **### To Add a group in Linux:**

#!/user/bin/python3

import os  
  
userlist = ["alpha", "beta", "gamma"]  
  
print("Adding users to system")  
print("#################################################")  
  
# Loop to Add Users from userlist  
for user in userlist:  
 exitcode = os.system("id {}".format(user) )  
 if exitcode != 0:  
 print("User {} does not exist. Adding it....".format(user))  
 print("#################################################")  
 print()  
 os.system("useradd {}".format(user))  
 else:  
 print("User already exist. Skipping it....")  
 print("#################################################")  
 print()  
  
# Condition to check if group exists or not add if it does not exist.  
exitcode = os.system("grep science /etc/group")  
if exitcode != 0:  
 print("Group science does not exist. Adding it....")  
 print("#################################################")  
 print()  
 os.system("groupadd science")  
else:  
 print("Group already exist. Adding it....")  
 print("#################################################")  
 print()

* :wq
* chmod +x useradd.py
* ./useradd.py
* **### To Add all the three users into the group in Linux:**

#!/user/bin/python3

import os  
  
userlist = ["alpha", "beta", "gamma"]  
  
print("Adding users to system")  
print("#################################################")  
  
# Loop to Add Users from userlist  
for user in userlist:  
 exitcode = os.system("id {}".format(user) )  
 if exitcode != 0:  
 print("User {} does not exist. Adding it....".format(user))  
 print("#################################################")  
 print()  
 os.system("useradd {}".format(user))  
 else:  
 print("User already exist. Skipping it....")  
 print("#################################################")  
 print()  
  
# Condition to check if group exists or not add if it does not exist.  
exitcode = os.system("grep science /etc/group")  
if exitcode != 0:  
 print("Group science does not exist. Adding it....")  
 print("#################################################")  
 print()  
 os.system("groupadd science")  
else:  
 print("Group already exist. Adding it....")  
 print("#################################################")  
 print()  
   
# To Add all the three Users into the group Science..  
for user in userlist:  
 print("Adding user {} in the science group".format(user))  
 print("##################################################")  
 print()  
 os.system("usermod -G science {}".format(user))

* :wq
* chmod +x useradd.py
* ./useradd.py
* **### To create a Directory in Linux:**

#!/user/bin/python3

import os  
  
userlist = ["alpha", "beta", "gamma"]  
  
print("Adding users to system")  
print("#################################################")  
  
# Loop to Add Users from userlist  
for user in userlist:  
 exitcode = os.system("id {}".format(user) )  
 if exitcode != 0:  
 print("User {} does not exist. Adding it....".format(user))  
 print("#################################################")  
 print()  
 os.system("useradd {}".format(user))  
 else:  
 print("User already exist. Skipping it....")  
 print("#################################################")  
 print()  
  
# Condition to check if group exists or not add if it does not exist.  
exitcode = os.system("grep science /etc/group")  
if exitcode != 0:  
 print("Group science does not exist. Adding it....")  
 print("#################################################")  
 print()  
 os.system("groupadd science")  
else:  
 print("Group already exist. Adding it....")  
 print("#################################################")  
 print()  
  
# To Add all the three Users into the group Science..  
for user in userlist:  
 print("Adding user {} in the science group".format(user))  
 print("##################################################")  
 print()  
 os.system("usermod -G science {}".format(user))  
  
# To create a Directory in Linux  
print("Adding directory - science dir")  
print("##################################################")  
print()  
  
if os.path.isdir("/opt/science\_dir"):  
 print("Directory already exist, skipping it")  
else:  
 os.mkdir("/opt/science dir")

* :wq
* chmod +x useradd.py
* ./useradd.py
* **### To assign ownership and permission to a Directory in Linux**

#!/user/bin/python3

import os  
  
userlist = ["alpha", "beta", "gamma"]  
  
print("Adding users to system")  
print("#################################################")  
  
# Loop to Add Users from userlist  
for user in userlist:  
 exitcode = os.system("id {}".format(user) )  
 if exitcode != 0:  
 print("User {} does not exist. Adding it....".format(user))  
 print("#################################################")  
 print()  
 os.system("useradd {}".format(user))  
 else:  
 print("User already exist. Skipping it....")  
 print("#################################################")  
 print()  
  
# Condition to check if group exists or not add if it does not exist.  
exitcode = os.system("grep science /etc/group")  
if exitcode != 0:  
 print("Group science does not exist. Adding it....")  
 print("#################################################")  
 print()  
 os.system("groupadd science")  
else:  
 print("Group already exist. Adding it....")  
 print("#################################################")  
 print()  
  
# To Add all the three Users into the group Science..  
for user in userlist:  
 print("Adding user {} in the science group".format(user))  
 print("##################################################")  
 print()  
 os.system("usermod -G science {}".format(user))  
  
# To create a Directory in Linux  
print("Adding directory - science dir")  
print("##################################################")  
print()  
  
if os.path.isdir("/opt/science\_dir"):  
 print("Directory already exist, skipping it")  
else:  
 os.mkdir("/opt/science dir")  
   
# To assign ownership and permission to a Directory in Linux  
print("Assigning permission and ownership to the directory.")  
print("##################################################")  
print()  
os.system("chown :science /opt/science\_dir")  
   
os.system("chmod 770 /opt/science\_dir")

* :wq
* chmod +x useradd.py
* ./useradd.py