UCSC Python for Programmers Final Project

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Introduction

The problem that I am solving with my code is for system administrators that want to get critical statistics from a server without the need to open up terminal, ssh to the server and run a bunch of commands. Instead they can simply use my script, input the hostname, username and password that has permissions to run the commands.

My script will run the following commands through a paramiko ssh session and write it to a csv file.

- df -h /
- free -h
- w (shows logged in users)

This will save system administrators time by running one script to get a top down view of critical server statistics.

Requirements

```
asn1crypto==0.24.0
bcrypt==3.1.6
cffi==1.12.2
cryptography==2.4.2
fabric==2.4.0
idna==2.8
invoke==1.2.0
paramiko==2.4.2
pyasn1==0.4.5
pycparser==2.19
PyNaCl==1.3.0
six==1.12.0
```

Description

The code is simply one long class with methods that are named after a particular task. For example:

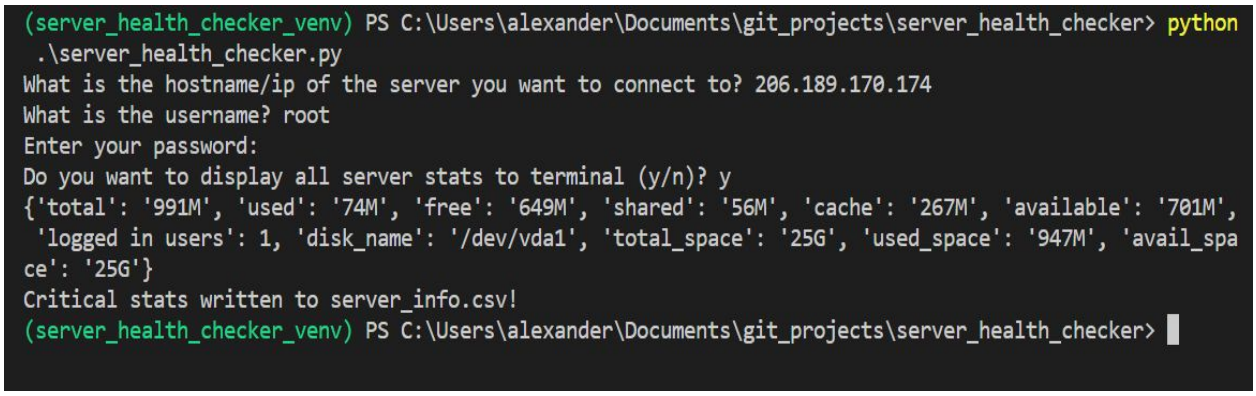
- def connect(self)
- def get_free_memory(self)
- def get_logged_in_users(self)
- def _disk_space(self)

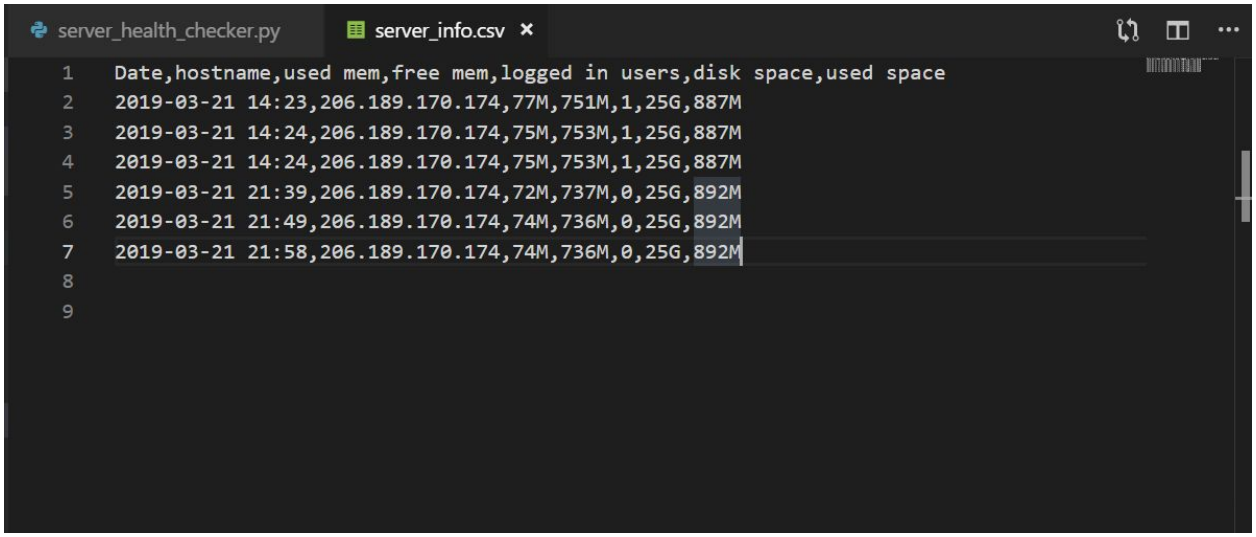
Followed by two methods that will get all the stats and another that writes to csv.

- def get_all_stats(self)
- def write_stats_to_csv(self)

The program uses simple input statements to derive information from the user and act accordingly. It can either just print all the stats in a dictionary or it can write crucial stats to a csv file called 'server_info.csv'.

Screenshots





Conclusion

In conclusion, as long as the server does password authentication and the user has sudo privileges, my program works pretty well in displaying some critical stats for a given server without the system admin sshing onto the server and getting the info themselves. A systems administrator/operator can get a top down view of some

critical status such as free memory, logged in users, and free disk space. Some nice to haves for version 2 would be:

- Check if the user has correct privileges in order to run the given commands or exit
- Allow for host key based authentication
- Switch over to SQL instead of CSV
- Enable Querying
- Allow the script to run throughout the day, get the info and data visualize the information