Project Progress Report

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Overview: We would like to compare two distributed shells by comparing their efficiency, ease of use among other parameters in grading programming homeworks located on virtual machines of distributed system.

Responsibilities:
The two shells we will compare is pssh(Yaxin) and dish(Aidai)
Setup of google cloud environment - Yaxin and Aidai (separate for both of us)
Report findings - Yaxin and Aidai (separate for each shell)
Analyze findings - Yaxin and Aidai together

Value to User Community:
The prospective user community for which our project is targeted is teaching teams of programming courses and distributed shell users. We will build a grading system to facilitate grading of programming homeworks as well as provide comparison of distributed shells on building an application.

Research Questions:

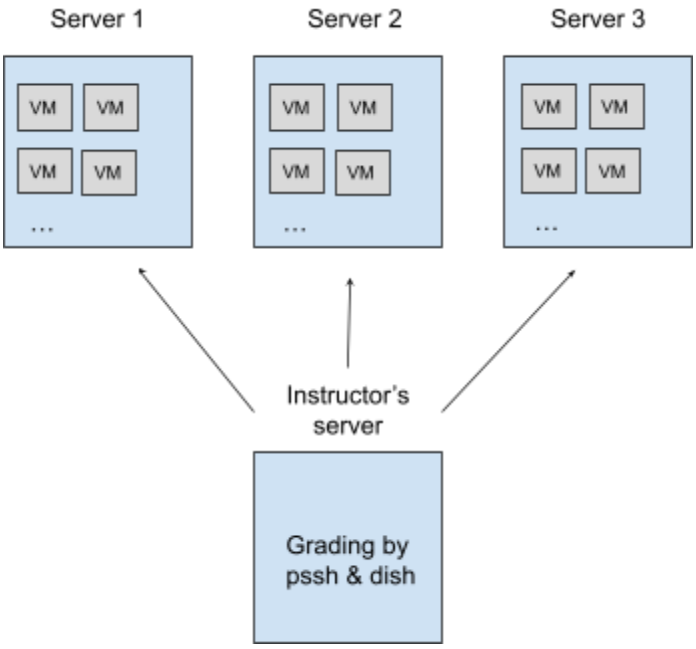
- How easy it is to set up the environment and configuration for each shell to be able to grade homework on distributed systems?
- What is the capacity for virtual machines/physical servers?
- What are the criteria for comparison of two shells?

Demo:

We have designed an example environment infrastructure and configuration file based on which each shell will run a ‘grading script’ (see image below). Each virtual machine will be dedicated to a student where he/she will put homework files. Given the list of servers’ IP addresses, an instructor will be able to run a command that reads from configuration file.

An example of command can be:

```
./grading hw1.config
```



The key of the grading component is configuration file that can approximately can look like this:

```
Hw1:
    repo: github.com/…                      Grading script can on github or
    local_file: grader.py                   local file
    commands: [pip install numpy, python grader.py]
    destination: /home/guest/hw1            This is where the grading script will be
                                            fetched from github to each VM
    Results_path: …/                        This is where the grading results will go
```

We will put all the code files in the github repo.