



Clustering Assignment Report

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Abstract

Write a client / server program that can solve the following problems:

1. Server can send a file to clients if they request.
2. Multiple clients be able to download the file concurrently
3. Clients can pause/resume the downloading.

1 Introduction

Two main concepts used in this project and it's essential to know these concepts for better understanding the purpose of this project.

- **Vagrant is a tool for building and managing virtual machine environments in a single workflow. With an easy-to-use workflow and focus on automation, Vagrant lowers development environment setup time, increases production parity, and makes the "works on my machine" excuse a relic of the past.**
- **Network File System (NFS) is a distributed file system protocol, allowing a user on a client computer to access files over a computer network much like local storage is accessed.**

2 Proposed method

First of all , I modify vagrant file to copy my videos into NFS directory after that I write python scripts for client and server. In server script i defined a method that is able to find the video and send some information about video like name and size to clients and waits for their response,if the clients want to download the video they send **y** to server or **q** to quit. server receives **y** from connection socket between them and clients have the ability to resume or pause downloading whenever they want by sending each options to server.

3 Results

```
vagrant@client1:~$ python3 client.py
connect to server: ('192.168.10.2', 9888)
name:b'/mnt/mirror/1.mp4',size:18.47
Do you want to download the file? press y(yes) or q(quit)y
download started
press r to resume or p to pause or w to download all: r
resumed from: 0.53%
press r to resume or p to pause or w to download all: r
resumed from: 1.86%
press r to resume or p to pause or w to download all: |
```

This project achieves the described goals.