Welcome to my CSI3660 website for my class project GMOD Server

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I will create a GMOD Server to connect and play basic GMOD maps and gametypes. This is created on the Google Cloud VM Instance created for Sys Admin class in the F2018 semester.

Done on CentOS Linux distribution

Required commands/apps/services: **wget, screen, httpd** (can get through sudo yum install)

Before starting, go to the machine's/user's home directory and create a new directory called Steam. This gives you a workspace to install and setup the server. Make this your working directory before starting the steps below.

Steps to create, configure, start, connect and addon to the Server:

1. **Install SteamCMD**

   Enter command: wget http://media.steampowered.com/client/steamcmd_linux.tar.gz (downloads and sets the zipped file into current working directory)

   Then enter: tar -xvzf steamcmd_linux.tar.gz (unpacks the zipped files into current working directory)

   You now have steamcmd installed(enter command ls to view directory contents).

   You can now start steamcmd by entering the command: **screen ./steamcmd.sh**

2. **Install GMOD**

   Start steamcmd, as mentioned above, and login anonymously by entering the command "login anonymous".

   Create a directory for the server with the command **"force_install_dir -decided server folder name-"**. This will place the server directory in the current working directory.

   With that directory created, enter the command **"app_update 4020 -validate"** in steamcmd. This will download and update gmod to the previously created directory.

   BTW, you can place the created directory wherever you want. I placed my server directory (I named gmod) in my home directory. The app_update command will know where to place and install GMOD.

   Exit steamcmd by the entering the command **"quit"**

   CONGRATULATIONS! YOU NOW HAVE GMOD INSTALLED.

3. **Configure the Server**

   To name your server, simply go to this location /home/-user-/**gmod/garrysmod/cfg** or /home/-user-/Steam/**gmod/garrysmod/cfg**

   (wherever you installed GMOD through steamcmd, we want to get to the cfg directory).

There is a list of configuration files. The one we care about is **server.cfg**. Open it with any text editor you're comfortable with. The file is empty to begin with.

Type in **"hostname -decided server name-"**. This will give your server the name you decided on.

You can do more with this file. For example, give your server a password that people would need to know in order to join (it is not hidden, shown as plaintext).

Look up what other server configurations you can do here! Whatever fits your needs.

4. **Configure the Firewall**

   There are two ports we need to let network traffic through. **27005 and 27015**

   Configure the server's firewall to allow these two. BUT, since this is being done on a Google Cloud VM, we also need to configure the firewall outside of our server at **VPC Network -> Firewall Rules**

   You will be setting up two new rules here. One for in traffic and one for out traffic. You can do both ports for UDP by using commas (27005, 27015).

   OUT = Egress, IN = Ingress

   For OUT, you need to make it Egress, Allow on match, Filter your machine's subnet (network), and specify UDP for ports 27005 and 27015

   For IN, you need to make it Ingress, Allow on match, and specify UDP for ports 27005 and 27015.

   (You need to look up what you would want to do with all the other options)

5. **Starting the Server**

   To start the server, you will need to run the **srcds_run** executable file found in your server directory that we previously installed GMOD to through steamcmd.

   You can run a test like so,

   -server_directory_path-/srcds_run -game garrysmod -maxplayers 16 +gamemode sandbox +map gm_construct

   Once it is all done and you see "VAC secure mode is activated", the server is up and running!

   You are able to input commands at this point, but they will be server related. Enter "status" and it will give the server's current status. It also gives the server's public IP address, which you should have because of httpd. THIS IS IMPORTANT.

   You can make starting the server an executable bash script. Will help save a lot of time!

   #!/bin/bash

   -server_directory_path-/srcds_run -game garrysmod -maxplayers 16 +gamemode sandbox +map gm_flatgrass

6. **Connecting to the Server**

   In order to connect to the server, you will need its Public IP Address and Garry's Mod for desktop.

Once you start GMOD for desktop, go to Options and hit the "~" or "`" key, which will open up the terminal for GMOD.

Enter the command: connect -server's Public IP Address- If you setup the server with a password, it would be: connect -server's Public IP Address-; password -server's password- (The password you put in the cfg file "server.cfg", sv_password)

If you were not able to connect, be sure that GMOD is up to date, that all files needed are ready and available, and that the server firewalls mentioned before are properly configured to allow ports 27005 and 27015.

7. **Adding Content to the Server**

One of the first things you would want to add is Counter Strike:Source. This helps the server out and gives you some basic maps.

To do this you will need to startup steamcmd and login anonymously again. Use the command force_install_dir to create a directory, which we'll call "css".

It would be best to put this in the same directory in which you installed GMOD to earlier.

Now run the command "app_update 232330 -validate". This will install Counter Strike:Source to the directory you just created.

With that done, you will need to go to the GMOD cfg directory that held the server.cfg file. This time we are interested in the **mount.cfg** file.

In it you will uncomment the line of code starting with "cstrike" and change the text next to it to be the **absolute path** to the cstrike directory found in your newly created css directory that has CS:S installed.

If you start the server again, you will notice it loading CS:S. To test if the mounting is successful, enter this to your server: **maps cs**. If nothing appears, CS:S is not properly mounted. If map names appear, CS:S has been properly mounted for server use.

But, how do we add content that isn't distributed/created by Valve?

For that you will need to create or use a Steam Workshop Collection.
https://steamcommunity.com/app/4000/workshop/

With a collection you can add gamemodes, maps, and other assets to your server

You just need to add this to your server startup script:

-server_directory_path-/srcds_run -game garrysmod -maxplayers 16 **+host_workshop_collection -Collection ID Number-** +gamemode sandbox +map gm_flatgrass

The Collection's ID Number can be found by visiting the Collection's webpage and looking at the webpage address. EX: https://steamcommunity.com/sharedfiles/filedetails/?id=**Collection ID Number**

If you want to utilize any of the addons you bring into your server in this way, be sure to know or how to find out their file/folder names. For example, to have the server play the gamemode Murder, the script has to have it say "murder" after +gamemode instead of sandbox. For Prop Hunt, it would be prop_hunt.

The collection I created to use for this Class Project has this ID: **1570753070**

YOU CAN NOW START, CONNECT AND ADDON TO YOUR SERVER!!

ERRORS/ISSUES

- **"Failed to load 32-bit libtinfo.so.5 or libncurses.so.5"** Fix: sudo yum install ncurses-libs.i686
- Prop Hunt seeker suicide creates errors, doesn't crash the server. I have yet to find or implement a fix.
- Lots of "Unknown command" messages when starting the server. Doesn't seem to impact the server when running. I have yet to find or implement a fix.