

Computing for the Math (P)refresher

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Opening a new VNC session

We will be using special FAS Linux servers (`icegov1.unix.fas.harvard.edu` through `icegov4.unix.fas.harvard.edu`) that have been configured for the Government Department for use in methods courses. These servers are connected to the regular FAS computing system, so that you have access to the e-mail and filespace that you would normally use by logging into `fas.harvard.edu`. You can use any SSH program to connect to the servers, we suggest that you connect via VNC (Virtual Network Computing).

There is a special script that you can use to connect to the servers using VNC, which automates most of the process:

1. If you are at an HMDC lab computer, double-click on the folder called `HMDC_VNC`, which should be on the desktop.
2. If you are using a different Windows computer, set a web browser to `http://www.hmdc.harvard.edu/HMDC_VNC.EXE`
3. Double-click on the icon that says “`Double_Click_ME`” and follow the instructions. Ignore any warning messages from anti-spyware programs.
4. While the script is creating your VNC session, it will ask you for the server name (we will assign you to servers), then your username, and finally your password. It will then tell you what your session number is; try to remember this number.

*Earlier versions of this document were drafted by Olivia Lau, Ryan T. Moore, Dan Hopkins, Ian Yohai, and probably a bunch of other people.

5. A window will open entitled “plink.exe”; you can minimize this window, but don’t close it while you are using your VNC session or the link to the servers will be broken.

The configuration files that you need to setup your VNC session should be automatically downloaded into your account. You should get a message that says something like “To finish your configuration, type `source .cshrc` at the prompt.”¹ Do as it asks, and it should say “Checking for GOV 2001 environment settings...” You should only have to do this once, even if you create different VNC sessions.

Once this is done, you are ready to go! Open a terminal window by clicking on “Applications” in the upper left-hand corner and moving the mouse over “System Tools>>Terminal”.

Connecting to an existing session

Reconnecting to your VNC session is easy with the script. If you are using the computer from which you created the session, look in the “HMDC_VNC” folder. There should be an icon with the name of the server followed by your username. For example:

```
icegov1.unix.fas.harvard.edu-kellerm
```

will connect to my VNC session on icegov1. Double-click on the icon and enter your password when asked.

If you are working from a different computer, you will have to double-click the “Double_Click_ME” icon again to connect. Enter the name of the server on which your existing session is located, followed by your username and password. The script should be smart enough to figure out whether you have an existing VNC session on that server.

Connecting w/o the script

It is possible, although tedious, to create a new VNC session or connect to an existing session without using the script. You need a secure shell program (such as SecureCRT) and an VNC program (such as TightVNC). We strongly recommend using the script!

¹If you don’t see this, you may have to download the configuration files manually. Type the following at the prompt:

```
wget -q 'http://www.hmdc.harvard.edu/GOV_2001/setup.sh' -O - | sh
```

If you want to access your VNC session from a Mac, the process is very similar to the one described here. Using the terminal, follow steps 1-7 of “Connecting to a new session”, then see

http://people.hmdc.harvard.edu/~mathpre/vnc/macos_X/index.html
for more details.

Connecting to a New Session

1. Click on SecureCRT. You can always connect to FAS, but we’re going to open VNC over this connection, so we’ll create a VNC session on one of the “icegov” machines.
2. Create a connection to the icegov server on which you will have your VNC session. Click on the “New Session” button. Name the session “icegov1” (or icegov2, etc.), use the “ssh2” protocol, enter the host-name “icegov1.unix.fas.harvard.edu”, and click “ok”.
3. Enter your FAS username and password. Now you should be connected to your designated icegov server. This is a standard terminal prompt, so you can check e-mail via `pine` or work in your filespace.
4. To create a new VNC session, type “vncserver” at the prompt.
5. You will be assigned a session number; this is the number after the colon. For example, “icegov1.unix.fas.harvard.edu:2” means that you have session 2 on icegov1. Remember your session number!
6. If this is the first time that you have connected to the icegov servers, you may have to ensure that your configuration files are appropriately installed. You should get a message that says something like “To finish your configuration, type `source .cshrc` at the prompt.”² Do as it asks, and it should say “Checking for GOV 2001 environment settings...”
7. Type “logout” at the prompt to disconnect from the server; there is some more setup work to do.
8. Before reconnecting to your icegov machine, click on the hand with the letter: Session Options.

²If you don’t see this, you may have to download the configuration files manually. Type the following at the prompt:

```
wget -q 'http://www.hmdc.harvard.edu/GOV_2001/setup.sh' -O - | sh
```

9. Click Port Forwarding. Click Add.
10. Enter Name = vncXX, Port = 59XX, where XX is the two-digit representation of your VNC session number (in the example, “07”). Click OK.
11. Reconnect to the icegov machine using your FAS username and password; you should be back at the prompt again.
12. Find your VNC application; in the HMDC labs, you can use TightVNC (which you can download for free).
13. Enter “localhost:XX”, where XX is the session number. It will then ask for your session password, which is the same as your login password. Your VNC desktop should appear.

Connecting to an Existing Session

1. Open SecureCRT.
2. Create a connection to the appropriate machine, if necessary (“icegov2.fas.harvard.edu”, e.g.).
3. Ensure that Port Forwarding is set up for your VNC session on that icegov machine (see above).
4. Connect to the machine on which your VNC session resides.
5. Type `vncfinger` to ensure that your session is there.
6. Open your VNC client, such as TightVNC, and connect to your session.

Troubleshooting

How do I print? It is possible to print directly from your VNC session, but it is likely to print in the basement of the Science Center. The easiest way to print in CGIS is to use SecureFX to move files from your home directory to your local computer.

Why is the screen only partially filled? When you launch a VNC session for the first time, it records the screen resolution. It will remain at this resolution even if you connect to the same session from a different computer. Unfortunately, you will need to 1) return to a computer with the

same resolution as the original, 2) kill your VNC session and start over, or 3) deal with it.

Why do I have multiple VNC sessions? There are two ways that you can have multiple VNC sessions. If you have sessions on multiple servers, then you have been connecting to the servers incorrectly. Each time that you connect to a server, the script will create a new session if it can't find one already active. It doesn't know that you meant to type "icegov2" but accidentally typed "icegov3". If you have multiple sessions on a single server, then you have probably created them manually by typing "vncserver" at the prompt. In either case, you need to pick one session and kill all of the others, lest all of your sessions be killed for you.

How do I kill my VNC session? To kill your VNC session, you can use your session number (e.g. :3 on icegov1) to kill the session directly. After logging into your server, type the following at the terminal:

```
vncserver -kill :3
```

Using the command `vncfinger` at a terminal prompt will tell you your VNC session number.

You can also kill your VNC session manually (or any other process running through your account). First, you need to identify the process number:

```
ps -u USERNAME
```

This will give you a list of the processes that you are running.

PID	TTY	TIME	CMD
5525	?	00:00:00	gconfd-2
5527	?	00:00:00	gnome-keyring-d
5761	?	00:00:00	gnome-keyring-d
6016	?	00:00:01	Xvnc
6020	?	00:00:00	gnome-session

Look for the PID associated with Xvnc. If you have more than one Xvnc process, you need to kill them all. To kill a process, type the following at a terminal prompt:

```
kill 6016
```

Try to avoid killing processes; it is (almost) always better to quit gracefully from within the process or using `vncserver`. Use this method as a last resort.