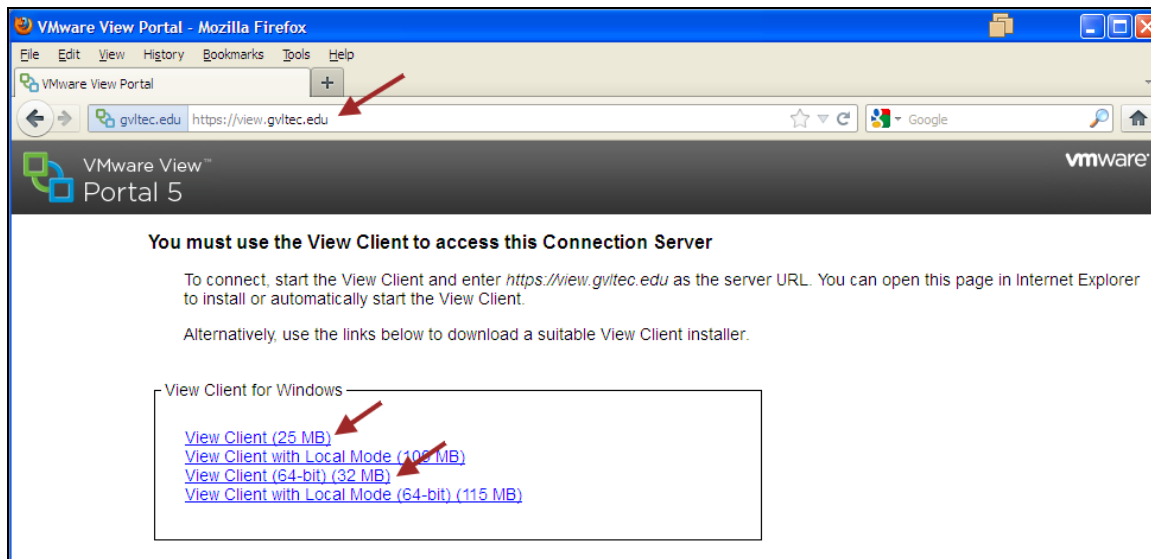


Greenville Tech has implemented a new virtual lab environment for use by students in our Red Hat Academy Linux courses. These instructions attempt to instruct our students how to setup VMware View Client on their personal computers so they can connect to our VMware Virtual Lab from anywhere in the world.

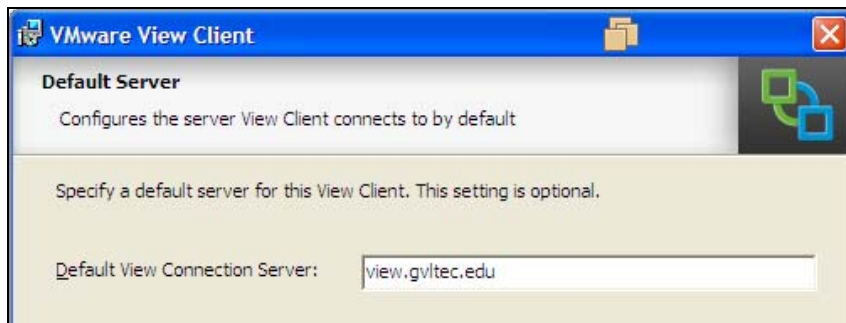
There are four sections to these instructions. The first section discusses connecting your personal computer to the Greenville Tech network infrastructure via our VMware View Server. The second section of these instructions takes you from the VMware View Desktop to the VMware vCenter Server where you can launch your virtual server in our VMware Virtual Lab. The third section instructs you on how to shutdown and leave the VMware Virtual Lab. And the fourth section instructs you on creating a Snapshot of your virtual machine.

### **Section One: Setup and Using VMWare View Client**

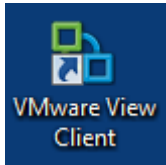
1. First you need to download and install VMware View Client on their personal computer. Open your Internet browser and visit <https://view.gvltec.edu> to access this software. You can access this web server from any network off campus or connected to the student wireless network. Currently we do not support Local mode, so download either the 32-bit or 64-bit version of **View Client**:



2. Once **VMware View Client** is successfully downloaded and saved to your local personal computer, run the downloaded executable program to install **VMware View Client**. Follow the instructions in the installation software.
3. Take all of the default options when prompted except **Default Server**.
4. When prompted, enter **view.gvltec.edu** as the **Default Server**:



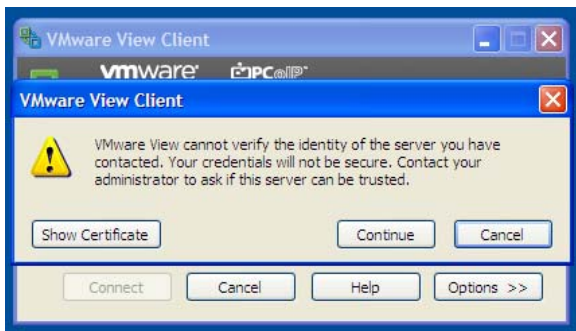
5. When **View Client** is successfully installed, there should be an icon on your personal computer's desktop to launch **VMware View**:



6. Click on the **VMware View Client** icon and launch **View**. Click on the **Connect** button to connect with **VMware View Server** on the Greenville Tech network (backbone):



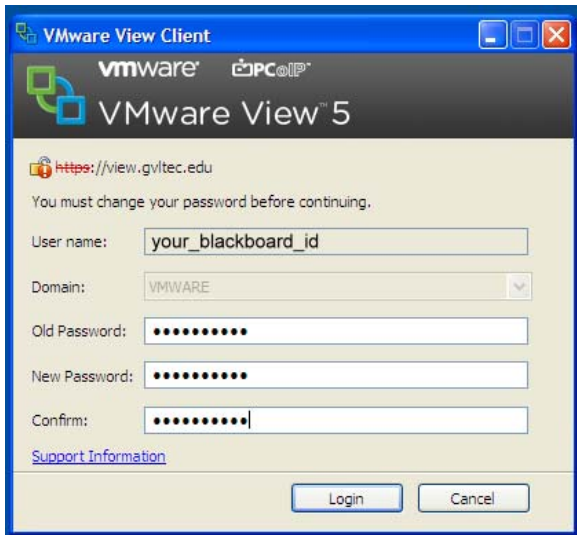
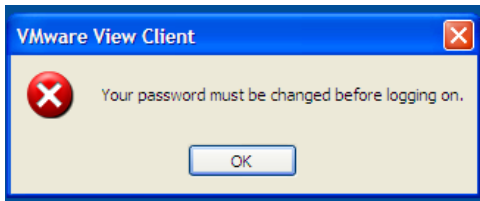
7. Currently the servers in our VMware infrastructure are "self-signed" so you will see several server certificate related warnings about this during the log in process. Click **Continue** when prompted as shown below:



- Once your personal computer is connected to our **VMware View Server**, you will be prompted to log in. Your **User name** is your **Blackboard user ID** which is also your **user name for GTC Gmail**; your temporary password is **Password01** :

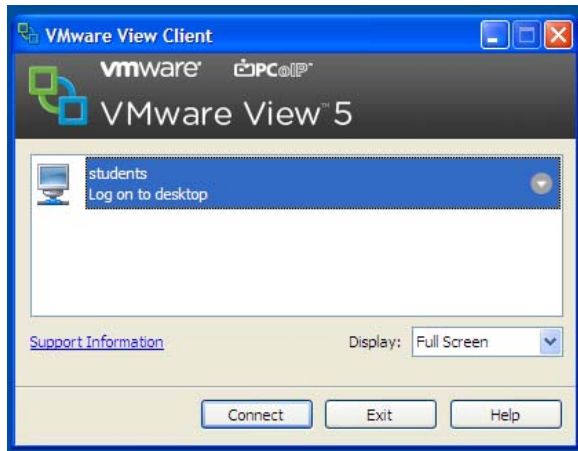


- The **first time you log in** to the **VMware View Server**, you will be asked to **change your password**. You will be changing your password in a **Microsoft Server 2008 R2 domain** with strict password permissions set. The name of the domain is **vmware.local** which is used for all on campus connections. Use a strong password for this connection. Remember your strong password because there is **NO password reset utility**. If you forget your password or make a mistake on your password, you will have to contact the System Administrator to reset your password which could take several hours or days. Protect your password:



For the strong password policy implemented on the **vmware.local** domain, visit <https://beausanders.org/vmware-links> and click on **Strong Passwords Policy**.

10. Click **Login** once you have confirmed your strong password and saved it in a safe place.
11. When your strong password has been authenticated by the **Windows Active Directory domain controller**, you will be asked to pick a **VMware View Resource Pool** to join. Currently there is only one pool named **students** so select it and click the **Connect** button:



12. When you have successfully logged in to the **VMware View Server**, you will see a **Windows XP Professional** desktop that was built for this session. You will notice that Windows XP will have to complete the last steps of its installation, like it would when launching a new XP users' desktop. This is a **temporary desktop**. This is called a **non-persistent desktop**. When you finish your session in our **VMware Virtual Lab**, this non-persistent desktop will be destroyed, so do not save any critical information in Windows XP on the **VMware View Server**.
13. Now we will move to **Section Two** of these instructions to learn how to connect to the **VMware vCenter Server**.

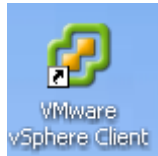
These instructions assume that you are using a Microsoft Windows operating system on your personal computer. VMware has released versions of **VMware View Client for Android, iPad, and Ubuntu Linux**. You will find links to more information and/or downloads for these other versions of **VMware View Client** at <https://beausanders.org/vmware-links>.

Connecting to the **VMware Virtual Lab** using **VMware View** is **limited to off campus remote connections only**. Greenville Tech has purchased a limited number of simultaneous connections (seats) that can connect to our campus network (backbone) and the **VMware Virtual Lab from off campus**, so we do not want to use **VMware View licenses** except when off campus.

Once connected to the Greenville Tech network **OR** while on campus and using the Greenville Tech network (backbone) you will connect to the **VMware Virtual Lab** via **VMware vSphere Client** to the **VMware vCenter Server** which is explained in Section Two of these instructions.

**Section Two: Logging in to VMware vCenter and Launching Your Virtual Machine**

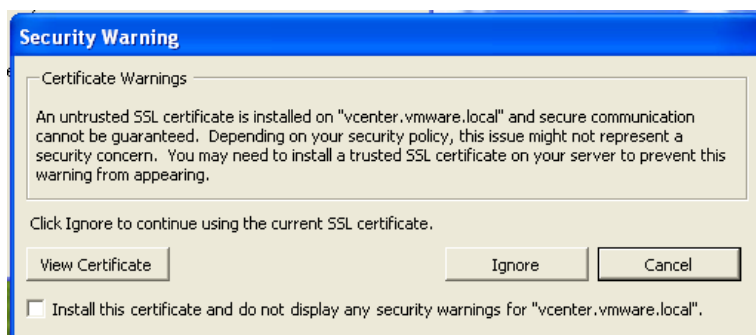
1. Once you have remotely logged into **VMware View *from off campus*** **OR** successfully logged in to one of our lab computers on campus, look for the **VMware vSphere Client** icon on the desktop and click on it to start logging in to our **VMware vCenter Server**:



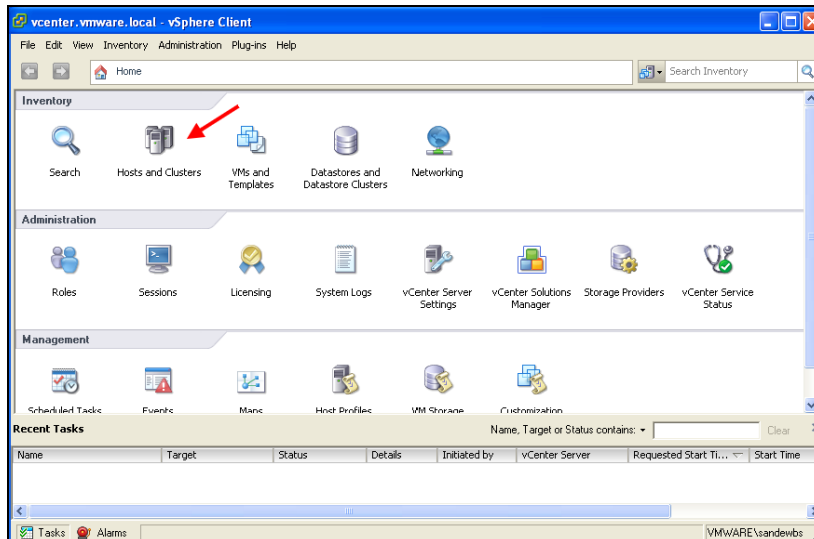
2. Next you will see the **VMware vSphere Client** log in screen. Enter the **host name** for our **VMware vCenter Server** which is **vcenter.vmware.local**. Once again enter your Blackboard user ID for your **VMware User name** and enter your strong password entered in the **VMware View Client** and then click the **Login** button:



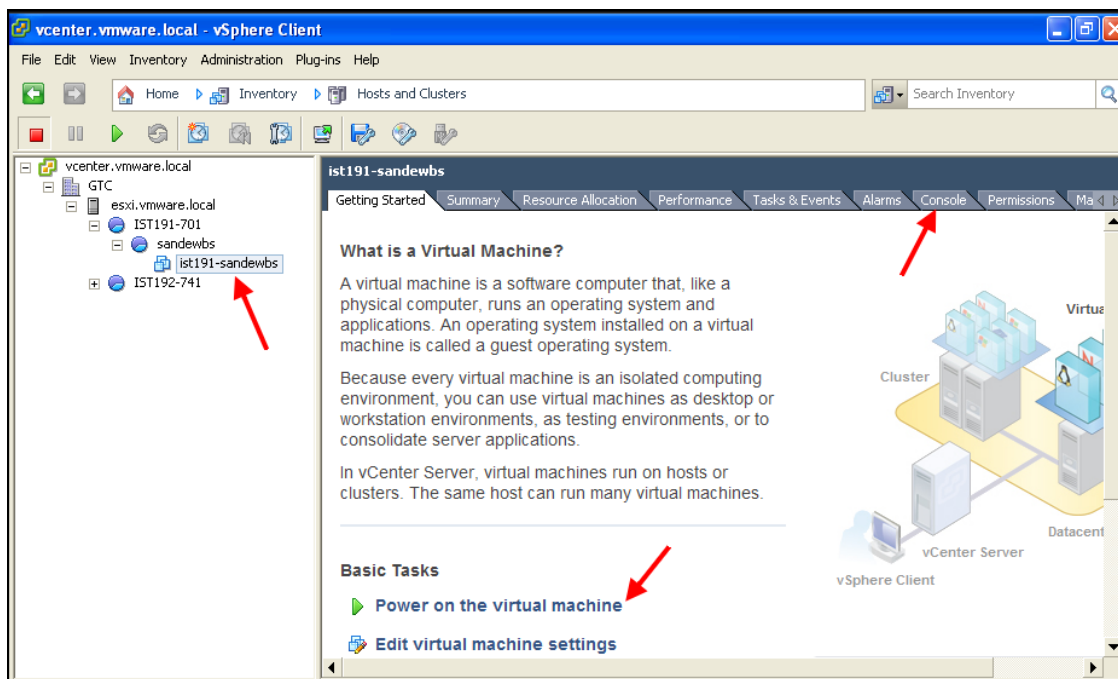
3. Once again because we have "self-signed" our server certificates you will get a warning screen as shown below. Click **Ignore** and move forward to vCenter.



- Now you will enter our **VMware vCenter Server** and see the first screen of the management system as shown below. Click on **Hosts and Clusters** to get to your virtual machine:

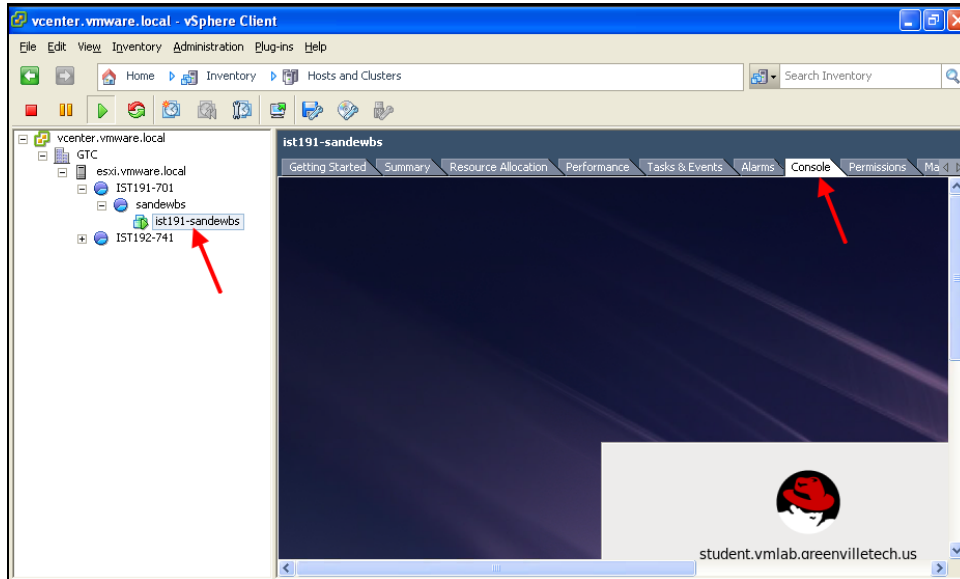


- Next you will see the **VMware vCenter Server Management screen**. It has many tabs and options, but you will only use a few of them to launch your virtual machine. First you will need to expand the tree in the left pane of the screen so you can access your virtual machine:



- At this point you will want to work from left to right across the **vCenter screen**. Expand the tree on the left as far as you can and select your virtual machine which is at the end of your branch of the tree. You will recognize the name as your Blackboard user ID.
- Next click on **Power on the virtual machine** as pointed out in the previous screen shot.

8. Now click on the **Console** tab to see your virtual machine boot up.



9. Just like **VMware Workstation**, you will need to click your mouse in the virtual machine frame to change focus to the guest operating system. Then press **Ctrl-Alt-Enter** at the same time to enlarge your virtual machine to **full screen**. To toggle back to the **vCenter frame**, once again press **Ctrl-Alt-Enter** at the same time.

Your **Red Hat Academy virtual machine** is an exact duplicate of the VMs in our ET314 classroom:

- Classroom server: **rha-server.vmware.local** (IP address **192.168.0.254/24**)
- Classroom subnet: **192.168.0.0/24**
- All of your work will be saved on your virtual machine server which can be accessed remotely off-campus using **VMware View Client** and locally on campus using **VMware vSphere Client**
- Lab grades completed either remotely or on campus are saved on the Red Hat Academy server in Raleigh
- Only you, VMware Virtual Lab administrators (3), Greenville Tech IT administrators, and Tutors have access to your virtual machine; no other student can log in to your virtual machine
- If you are taking more than one Greenville Tech RHA Linux course, you will have only one virtual machine to use for all of your classes
- The Greenville Tech wireless student network is considered "off-campus" for this VMware implementation; you will need to access the VMware Virtual Lab via **VMware View Client** when using the **Greenville Tech wireless network**
- Your virtual machine will be deleted as soon as the semester is over



### **Section Three: Shutting Down Your Virtual Machine and Leaving the VMware Virtual Lab**

Please be considerate of our limited server resources and other students who want to access and use the VMware Virtual Lab. Please shutdown or suspend your virtual machine before leaving the VMware Virtual Lab. Students leaving idle virtual machines running will be warned only once and thereafter will receive severe point deductions from labs.

1. **Press Ctrl-Alt-Enter to toggle back to a vCenter frame, if you have not already done so.** If you do not minimize your virtual machine prior to shutting down, you will lose mouse and keyboard control and therefore lose control of vCenter. If this happens, you will have to kill the vCenter process in your host operating system on your local personal computer which could corrupt your installation.
2. Now **shutdown RHEL6** running in your virtual machine.
3. Once your RHEL6 virtual machine has shutdown, exit out of **vSphere Client**.
4. If you logged in remotely using **VMware View**, you will need to **shutdown the Windows XP desktop** which will close the **VMware View Client**.

### **Section Four: Creating a Snapshot of Your Virtual Machine**

1. You are encouraged to keep a **Snapshot** of your virtual machine. Only take a Snapshot when your virtual machine is working correctly. You never know when that good Snapshot will be necessary to get your virtual machine back in working order. To create a Snapshot, **right-click on your virtual machine** in the **left pane of vCenter**.
2. Click on **Snapshot** in the shortcut menu.
3. Click on **Take Snapshot** to create a snapshot.
4. Click on **Snapshot Manager** to manages the snapshots for your virtual machine.
5. Click on **Revert to Current Snapshot** to return your virtual machine to the current snapshot.

If you have any questions, contact your instructor at [beau.sanders@gvltec.edu](mailto:beau.sanders@gvltec.edu).

#### ***Thank You and Kudos***

*It has taken over a year to launch our VMware Virtual Lab. Many people have contributed to this project. Your instructor would like to thank the following fellow Greenville Tech employees, as well as consultants, and technical giants in my book:*

*Zach Underwood, RHCE and System Administrator for Synterra Corp, for installing and configuring our VMware Virtual Lab environment as well as tirelessly consulting with his former instructor on all things related to VMware.*

*Wayne Dutrow and Nora Greenway, System Administrators for the Business/Public Service Division, for preparing the grant to acquire the funding for this project, scheduling and attending countless meetings, specifying and ordering all of the hardware and software, and keeping us on schedule.*

*Tim Tennis and his staff in the Greenville Tech IT Department for keeping us safe and secure while helping us through the Greenville Tech firewall and on to the backbone of our campus network.*

*Mark Krawczyk, Assistant Dean and Network Systems Administration Department Head, and Dr. Lenna Young, Dean for the Business/Public Service Division, for their help, support, and patience through this project.*