

Running Eclipse, Tomcat, FireFox, and Antique Galleria Web Application on the CSCI Lab Machine from Home Computer

If you want to run Eclipse or other applications, which have Graphical User Interface, on CSCI Lab Machine from a home computer, you will need **X forwarding** over **ssh**. If your home computer is **Windows**, you will need to install **VcXsrv** in your home computer to get X based application displays from CSCI lab machines. If your home computer is **Mac**, you will need to install **XQuartz** for the same purpose.

This document has the information on how to get either **VcXsrv** or **XQuartz**, how to install them, how to launch them in your local machine, how to start **Eclipse** on the lab machines, how to exit from Eclipse, how to launch **Tomcat**, **Firefox**, and **Antique Galleria** web application on the lab machines, how to shutdown Tomcat, Firefox, and Antique Galleria web application, and how to shutdown VcXsrv or XQuartz ssh session.

Windows Users

Getting the VcXsrv package

Use scp to securely copy the VcXsrv-viucsci.zip file from csci.viu.ca to the local home computer.

- Open a Windows command prompt
- Navigate to the Downloads folder using "cd Downloads"
- Type "**scp username@csci.viu.ca:/srv/export/VcXsrv-viucsci.zip .**" where "username" is a valid VIU CSCI login name
- Accept the ssh fingerprint
- Enter the associated VIU CSCI password
- Confirm that the file is successfully transferred
- Extract the contents of the VcXsrv-viucsci.zip folder to a location of choice.
- Navigate to the location of the downloaded the zip file
- Right-click on the VcXsrv-viucsci.zip file and select "Extract All..."
- Select a destination and extract the files.

Launching and using the VcXsrv and Putty application

- Use Windows File Explorer to navigate to the folder containing the extracted contents of VcXsrv-viucsci.zip file
- Double click on the "**Start VcXsrv+PuTTY.cmd**" application script
- Notes:
 - No window will appear. The application is launched and an icon will appear in the system tray

- The system tray may hide icons, to check click the up arrow (^) on the right side of the task bar to reveal all system tray icons
 - If you receive an error stating "A fatal error has occurred and VcXsrv will now exit. Cannot establish any listening sockets - Make sure an X server isn't already running"
 - Check your system tray or task manager as VcXsrv is likely running due to not being shutdown previously
 - In Task Manager VcXsrv will appear under "Background Processes" in the "Processes Tab"
- Look in the system tray (at the right of the task bar) of an icon that look x like an X with a red circle around it
- If you do not see an icon there, click the up arrow (^) on the right side of the task bar to reveal all icons in the system tray
- **Right-click** on the **VcXsrv** icon to bring up the menu
- Click on "**New PuTTY Session...**" to launch the PuTTY application
- In the PuTTY Configuration window
 - Click on the "**csci.viu.ca**" saved session and click "Load"
 - Click on "Open" to connect to csci.viu.ca
 - Accept the server's host key by clicking "Yes"
 - Enter a valid CSCI username and password to login
- Once logged into otter test the ability to launch graphical applications on otter and display on the local computer
 - At the shell prompt type "xeyes" and hit enter
 - The xeyes application will open on the local PC. This application displays a set of eyes that appear to follow the mouse movements.
 - Click on the X in the top right corner to shutdown xeyes and return to the bash shell prompt

Launching various applications on Lab machines

To launch a version of Eclipse installed on one of the cub computers in the B315-115 lab

- Connect to csci.viu.ca using the "**New PuTTY Session...**" menu option in **VcXsrv** as described above.
- From otter, connect to a cub using the X Forwarding switch
 - **\$ ssh -X cub5**
- Launch a version of eclipse
 - **\$ eclipse-2019-12-jee &**
 - The & will put Eclipse in the background and return the bash prompt
 - Note: even in the background, Eclipse will print out various messages to the shell that launched it.
 - Note: to shut down Eclipse it is recommended to **not** simply close the window. Instead click on "File -> Exit"
- Launch Tomcat, Web Browser, and Antique Galleria web application
 - To Launch Tomcat type following command at the bash prompt

- **\$ tomcat/apache-9.0.30/bin/startup.sh &**
- To Launch Firefox and Antique Galleria Web Application type the following at bash prompt
 - **\$ firefox &**
 - You will see the browser window in your local machine.
 - Type "**http://localhost:8080/antiquegalleria/**" at browser's address bar.
 - You will get your web application in the browser.
- Shutdown Firefox and Antique Galleria Web Application
 - To shutdown the browser, simply close the browser window.
 - To shutdown Tomcat type
 - **\$ tomcat/apache-9.0.30/bin/shutdown.sh &**

Shutting down VcXsrv

- Once all launched applications are shutdown correctly, exit the ssh session by typing "**exit**" at the bash prompt.
- If connected to a lab machine, it is necessary to type exit and hit enter a few times in order to close down the session to otter.
- Exiting the ssh session to otter (csci.viu.ca) will close the PuTTY window
- Right click on the VcXsrv X icon in the system tray to open the menu
- If you do not see an icon there, click the up arrow (^) on the right side of the task bar to reveal all icons in the system tray
- Click on "Exit..." to shut down the application.
- Confirm that there are 0 clients connected and click "Exit"

Mac Users

Getting and Installing the XQuartz package

- Browse to <https://www.xquartz.org/> and download the version 2.7.11 dmg file.
- In Finder, double-click on the downloaded dmg file.
- In the XQuartz window double-click on the XQuartz.pkg package to launch the installer
- In the "Install XQuartz" window
- Click "Continue"
- Read the Important Information, click "Continue"
- Click Agree to agree to the software license agreement
- Click "Install"
- If required, enter credentials to allow the install to proceed and click "Install Software"
- [Software will install]
- A permissions window may prompt to allow the installer to access the System Events. Click "OK"
- Click "OK" for the message "You will need to log out and log back in..."
- Click "Close" when the installation completes
- If prompted about moving the installer to Trash, click "Move to Trash"
- Log out and log back in so that XQuartz will be picked up as the default X server and so the shell display variable will be set correctly.

Launching and using the XQuartz application

- Launch the Terminal application
- Use Spotlight Search to locate "terminal" app and launch it
- Connect to csci.viu.ca using X forwarding and ssh
- **\$ ssh -X user@csci.viu.ca**
- Using the -X (X forwarding) switch will cause the XQuartz app to launch on the local Mac upon successful login
- Accept the server's host key by type "y"
- Enter a valid CSCI password to login
- Once logged into otter test the ability to launch graphical applications on otter and display on the local computer
- At the shell prompt type "xeyes" and hit enter
- The xeyes application will open on the local Mac. This application displays a set of eyes that appear to follow the mouse movements.
- Click on the red circle in the top left corner to shutdown xeyes and return to the shell prompt

Launching various applications on Lab machines

To launch a version of Eclipse installed on one of the cub computers in the B315-115 lab

- Connect to csci.viu.ca using csci.viu.ca using X forwarding and ssh
 - **\$ ssh -X user@csci.viu.ca**
- From otter, connect to a cub using the X Forwarding switch
 - **\$ ssh -X cub5**
- Launch a version of eclipse
 - **\$ eclipse-2019-12-jee &**
 - The & will put Eclipse in the background and return the bash prompt
 - Note: even in the background, Eclipse will print out various messages to the shell that launched it.
 - Note: to shut down Eclipse it is recommended to **not** simply close the window. Instead click on "File -> Exit"
- Launch Tomcat, Web Browser, and Antique Galleria web application
 - To Launch Tomcat type following at bash prompt
 - **\$ tomcat/apache-9.0.30/bin/startup.sh &**
 - Launch Firefox and Antique Galleria Web Application
 - **\$ firefox &**
 - You will see the browser window in your local machine.
 - Type "**http://localhost:8080/antiquegalleria/**" at browser's address bar.
 - You will get your web application in the browser.
 - Shutdown Firefox and Antique Galleria Web Application
 - To shutdown the browser, simply close the browser window.
 - To shutdown Tomcat type
 - **\$ tomcat/apache-9.0.30/bin/shutdwon.sh &**

Shutting down XQuartz

- Once all launched applications are shutdown correctly, exit the ssh session to otter by typing "exit" at the bash prompt.
- If connected to a lab machine, it is necessary to type exit and hit enter a few times in order to close down the session to otter.
- Exiting the ssh session to otter (csci.viu.ca) will return to the local shell prompt
- Right click on the XQuartz X icon in the dock to open the menu
- Click on "Exit..." to shut down the application.