What Is SRD?

The **S**ecure **R**emote **D**esktop offers a fully functional Linux Gnome Desktop to the user, running on the Utility Server with local access to the CenterWide File System and specialized hardware for pre- and post-processing applications.

How do I get Started?

First off, you will need to download the SRD Client onto a machine with a functioning HPCMP Kerberos Kit. All the clients and supporting applications (A VNC Viewer) are available at the CCAC User Portal under the "HEUE" tab.

There are two main clients:

- **Java GUI Client** - a Java-based GUI for point-and-click operation, and works on Windows & Mac systems
- **Perl CLI Client** - a Perl-based commandline client and works on Windows, Mac, and Linux systems with a working Perl install.

On a Windows System you can download a specially packaged version of the Java GUI client that includes a working VNC Viewer, requiring no admin privileges to install or use.

Sites to Remember:

CCAC User Portal, to Download Clients
- https://help.ccac.hpc.mil

DAAC Website, with Information on Viz Tools
- https://daac.hpc.mil

How do I start SRD?

First get a Kerberos ticket via your usual means (CAC, SecureID, htoken, HSAM, etc)

For the **Java GUI Client**:

1. Launch the SRD.jar application
2. If this is the first launch you'll be asked to locate the HPCMP ssh application and the required vncviewer binary.
   a. On Mac, ssh is in `/usr/local/ossh/bin` and vncviewer is usually in `/opt/TurboVNC/bin`
   b. On Windows, ssh is the HPCMP plink.exe found in "`c:\Program Files\HPCMP Kerberos`" and vncviewer.exe is in the download
3. Now you need to define sites. The easiest method to initialize the system is to use the "Import" method to import the "Default Site Configuration File" available on the CCAC User Portal site.
4. Now Select a Site, & click "New". In the popup dialog select "Gnome" and click "Submit" to submit a Gnome job
5. After the job has begun running, wait approximately another 30-60s then click "Connect", then follow the on-screen prompts.

After you are finished, select your job and click "Clean" to end the job.

For the **Perl CLI Client**:

1. Edit ClientSite.pm.tmpl to include your sites & file locations, and save it as ClientSite.pm
2. Launch the CLI version (./clientNode.pl) and enter "`SET SITE <sitename>`" to select a site
3. Enter "`STATUS`" to verify connectivity and check system load, and "`INFO`" to see default jobs
4. Enter "`SUBMIT vnc /app/SRVS/pkivnc/test/gnome.sh`" to submit a job.
5. Periodically re-enter "`STATUS`" until your job transitions to "Running".
6. After approximately 30-60s, enter "`CONNECT <jobid>`"

After you are finished, be sure to "`CLEAN <jobid>`" to end your job and release the resources.

Installation and Quick Reference Guide

Secure Remote Desktop Client

Prepared for

High Performance Computing Modernization Program Office

By

Lockheed Martin Integrated Systems, Inc.

1. INTRODUCTION

There is a one-time setup that must be completed. On a desktop with proper network connectivity, a good Java install, and an HPCMP Kerberos Client install, download the Secure Remote Desktop Client Application.

The application and its required components can be downloaded via the CCAC User Portal at https://help.ccac.hpc.mil/heue/index.html .

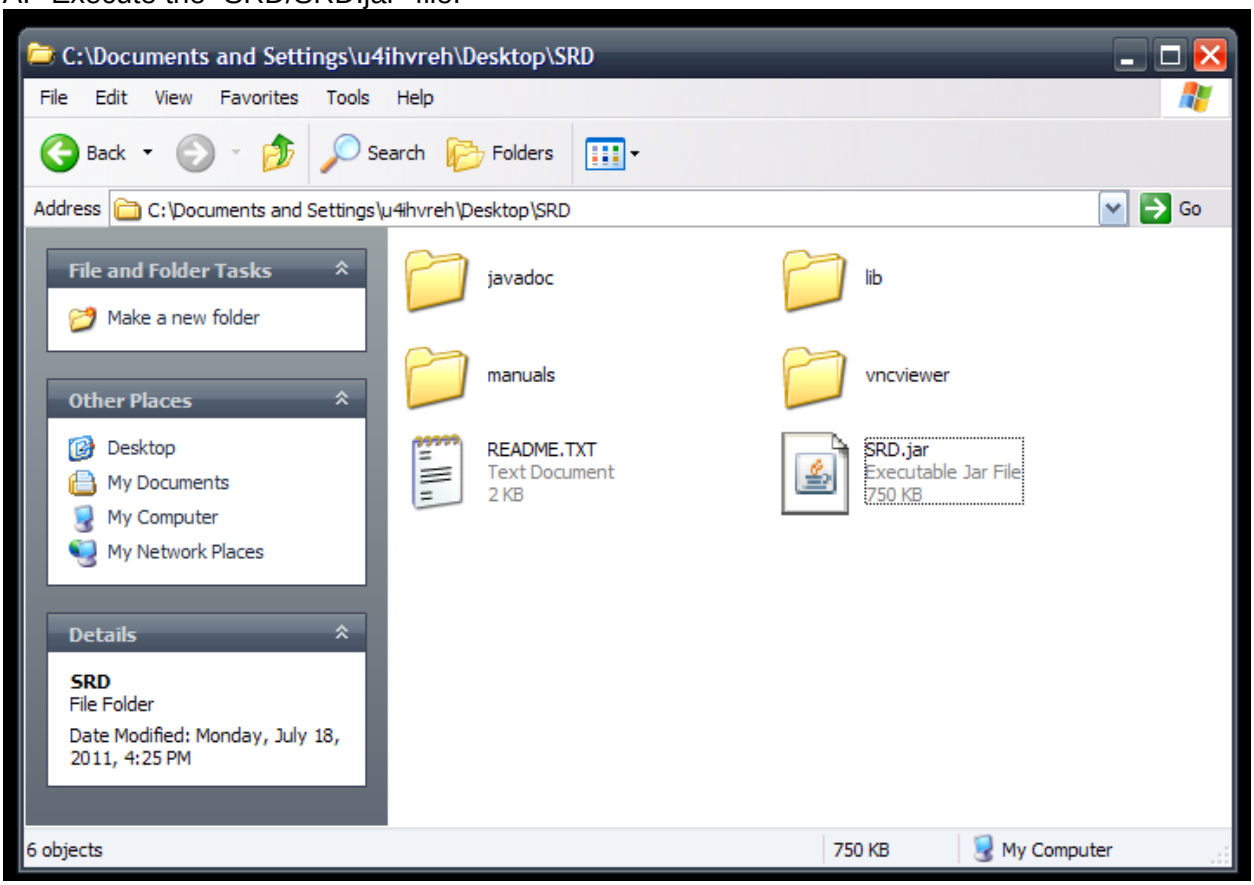
- On Windows, you can download the "Java GUI Client/TurboVNC Bundle for Windows" as a ZipFile.
- On Mac (and Windows), you can download the "Java GUI Client for Mac & Windows" as a TGZ file, and then download TurboVNC separately under the "SRD Supporting Applications" area.

In addition, download the Default Site Configuration file.

> **Note**: If using a Linux system, a separate set of Instructions is necessary for using the Perl Client. The Java GUI Client does not function on Linux.

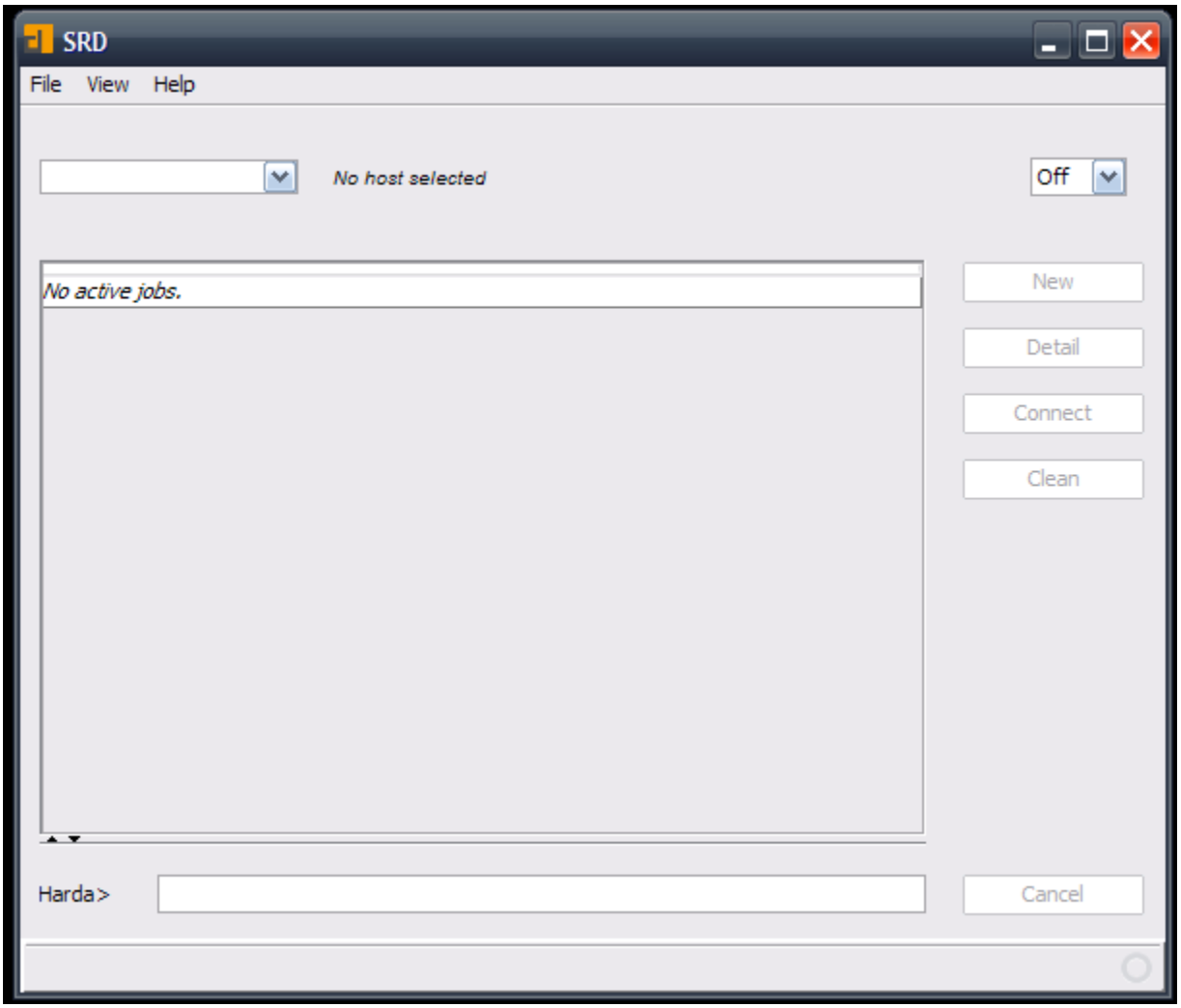
Unzip the GUI Client Package and perform the following steps:

A. Execute the "SRD/SRD.jar" file.

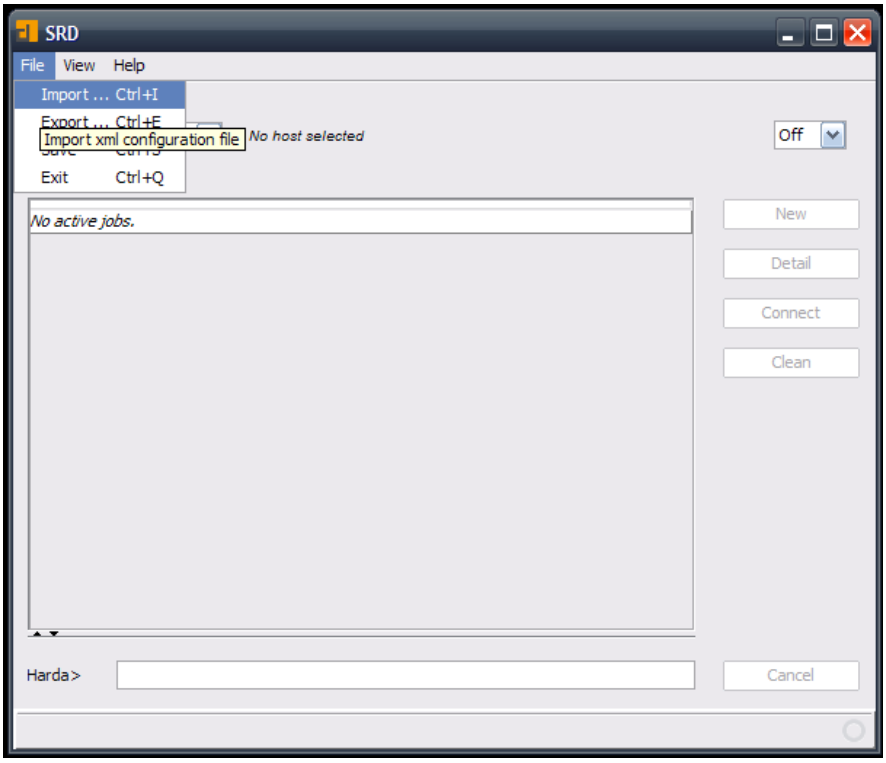


B. A popup called “SRD" will appear. If you’ve never run SRD before, it may prompt you to answer some questions.

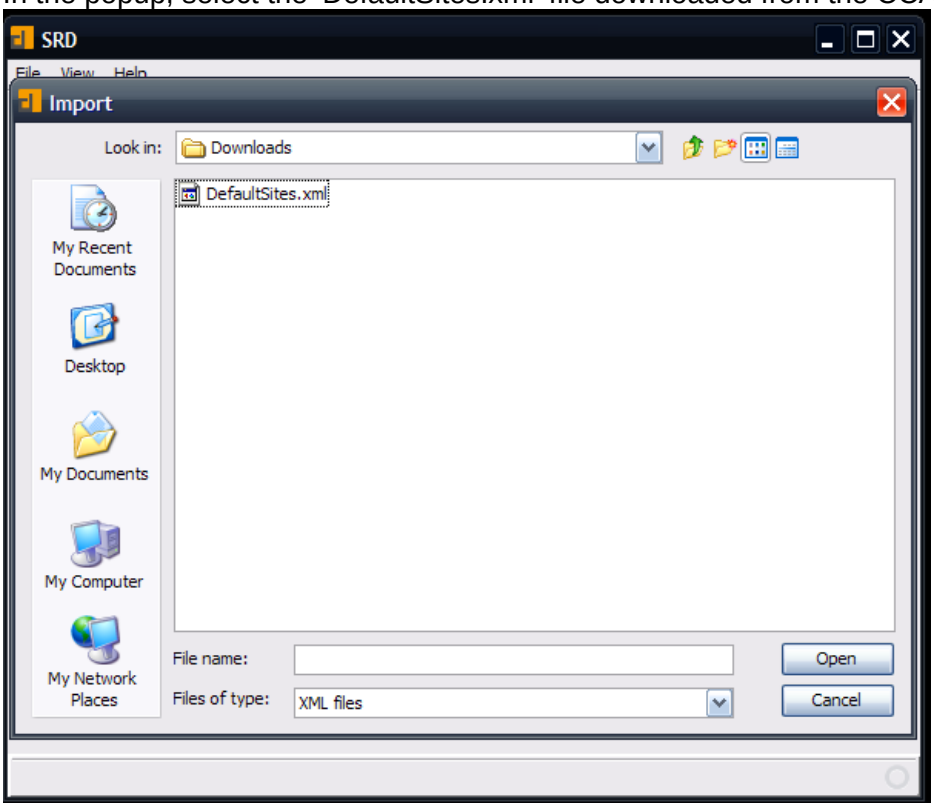
- **i.** If it asks for your SSH binary, then point it to your kerberized SSH (on Mac) or plink.exe (on Windows).
- **ii.** If it asks for a vncviewer binary, then point it to your TurboVNC install (/opt/TurboVNC/bin/vncviewer on Mac) or the vncviewer.exe binary (on Windows find it in the vncviewer subdirectory of SRD).



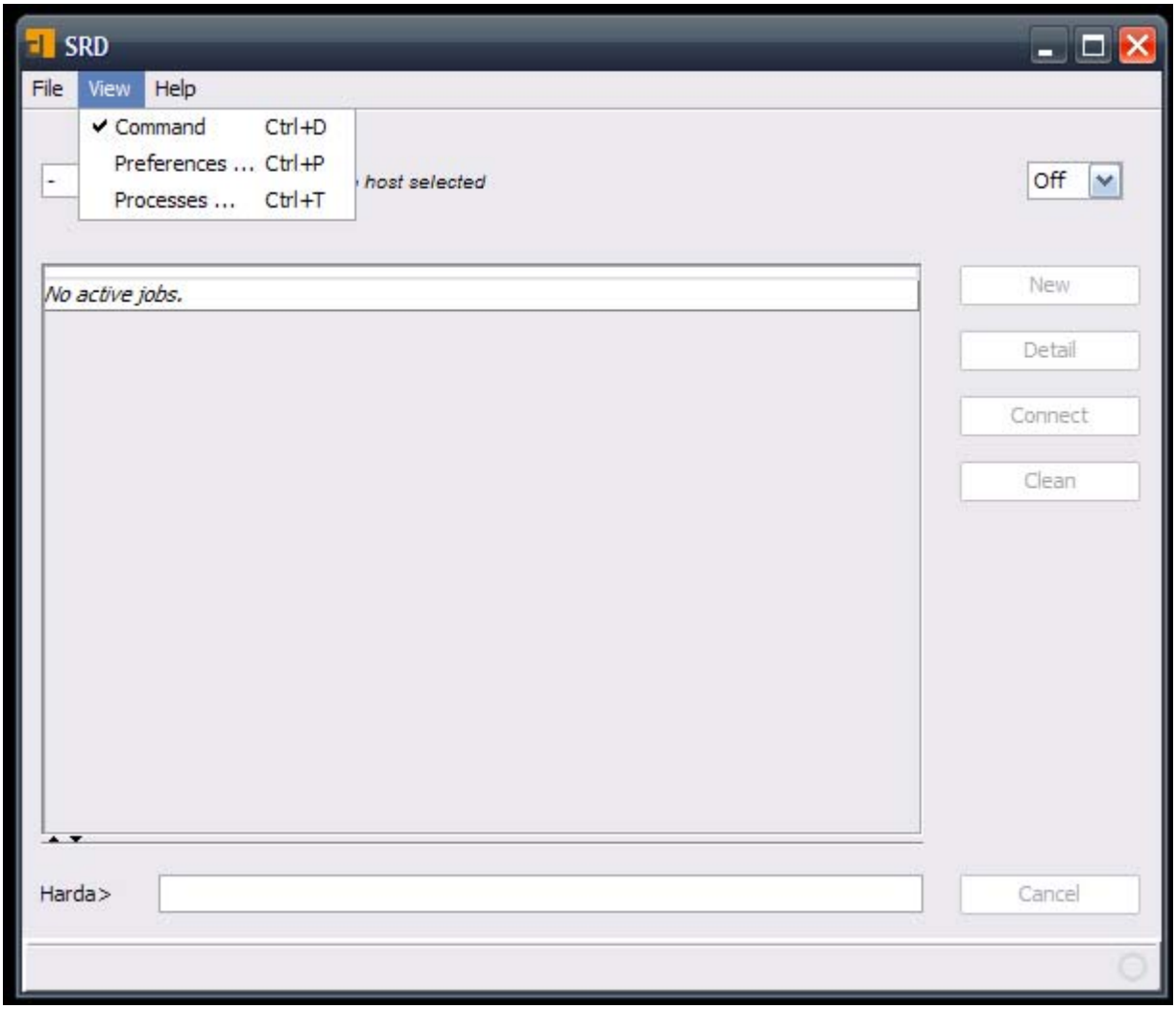
C. Under the File menu, select "Import".



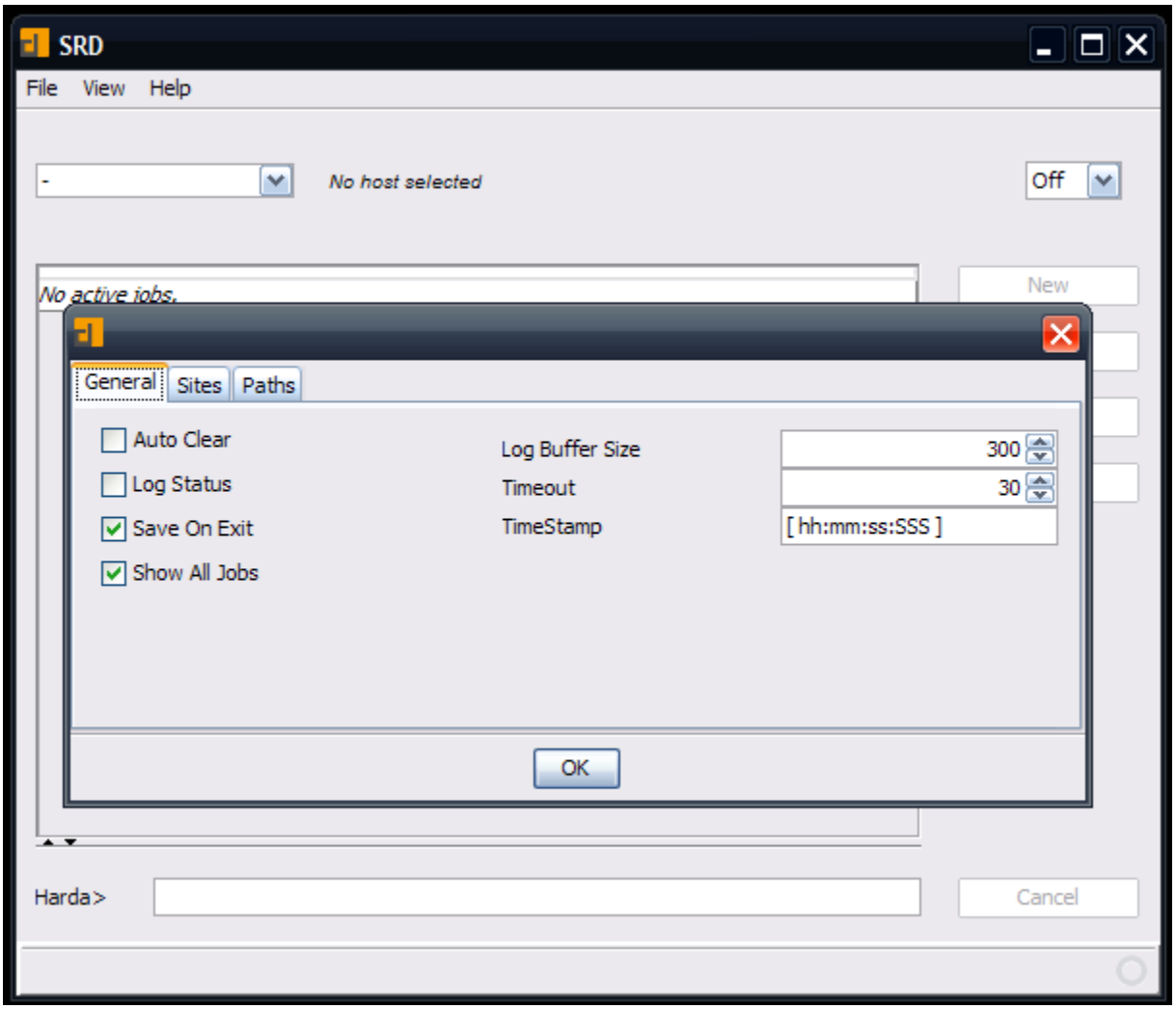
In the popup, select the 'DefaultSites.xml' file downloaded from the CCAC User Portal.



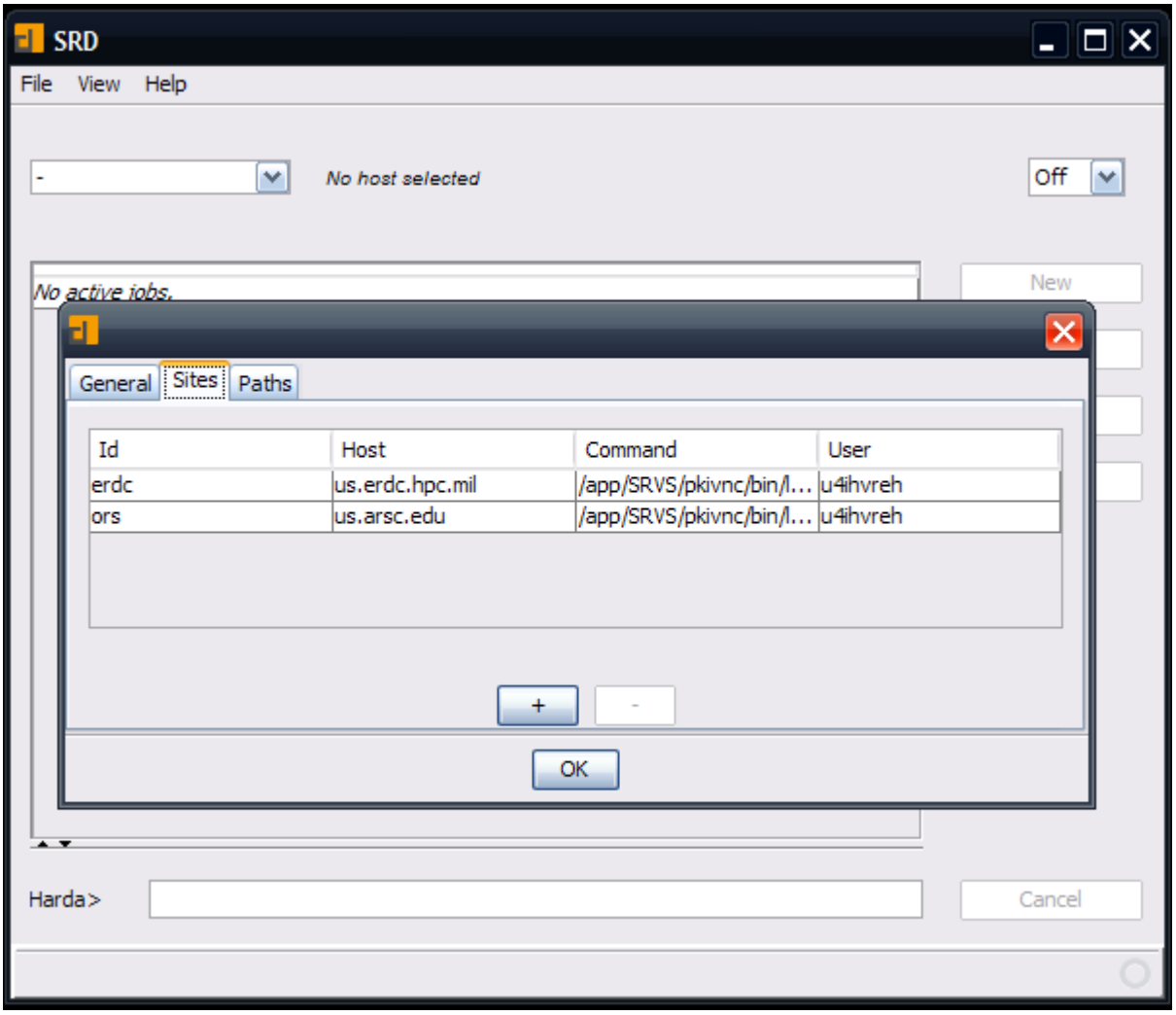
D. Under the View menu, select "Preferences".



E. Under the General Tab make sure "Save On Exit" is checked.



F. Under the Sites tab, make sure sites are in the list.

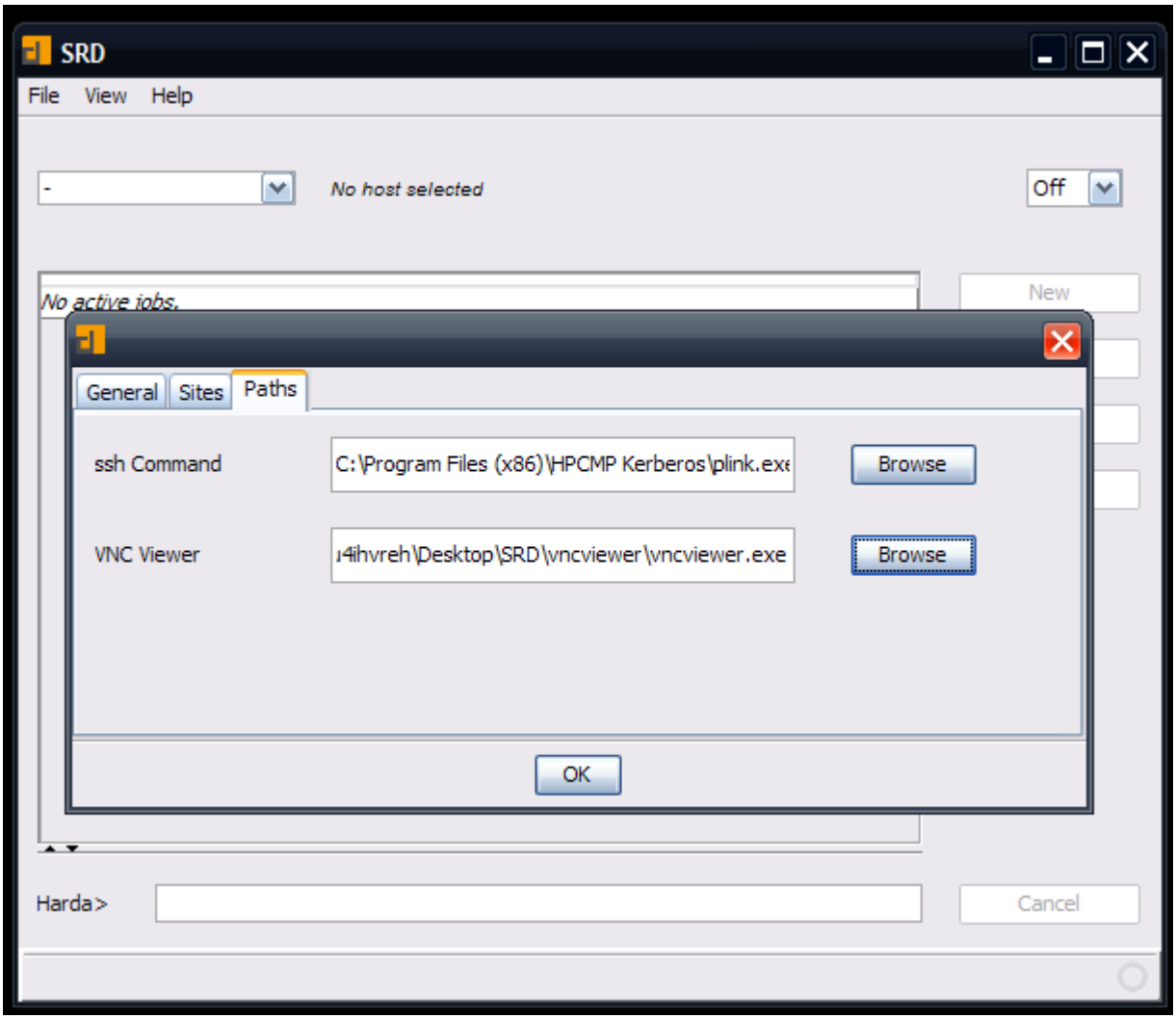


To assure everything was imported correctly:

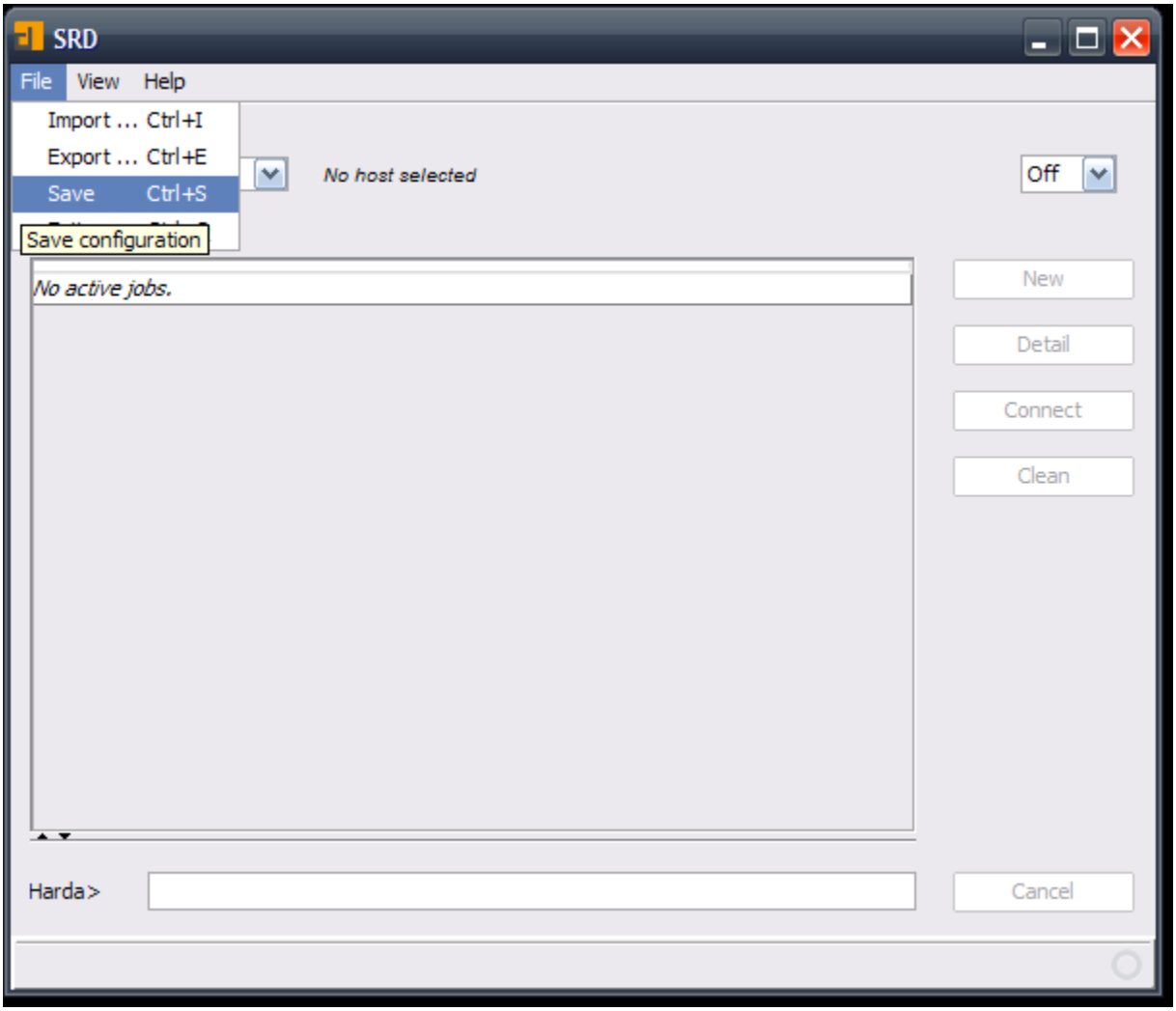
- ✓ Ensure the 'ID' column reads the site you are interested in.
- ✓ Ensure the 'Host' column contains the name of the Utility Server there. It should be 'us.<site>' (examples: us.erdc.hpc.mil, us.arl.hpc.mil, or us.arsc.edu).
- ✓ Double-click the 'USERNAME' in the User column (on the right), and change it to your Unix Username
- ✓ Press **'Enter'** after each field as it is corrected

G. Under the Paths tab:
   - If using Windows, ensure the 'ssh' command line points to the location of the plink.exe inside of the HPCMP Kerberos Client Install.
   - If using Windows, ensure the VNC Viewer option points to the included vncviewer.exe in the vncviewer folder alongside the Harda.jar.
   - If using a Mac, ensure the VNC Viewer option points to a suitable vncviewer binary installed via whatever means desired, and the 'ssh' command points to your Kerberized SSH (usually in /usr/KRB5/bin).
   - Select **OK**.

Note: Simply closing the window will not save your settings.



H. Select 'Save' under the File Menu.

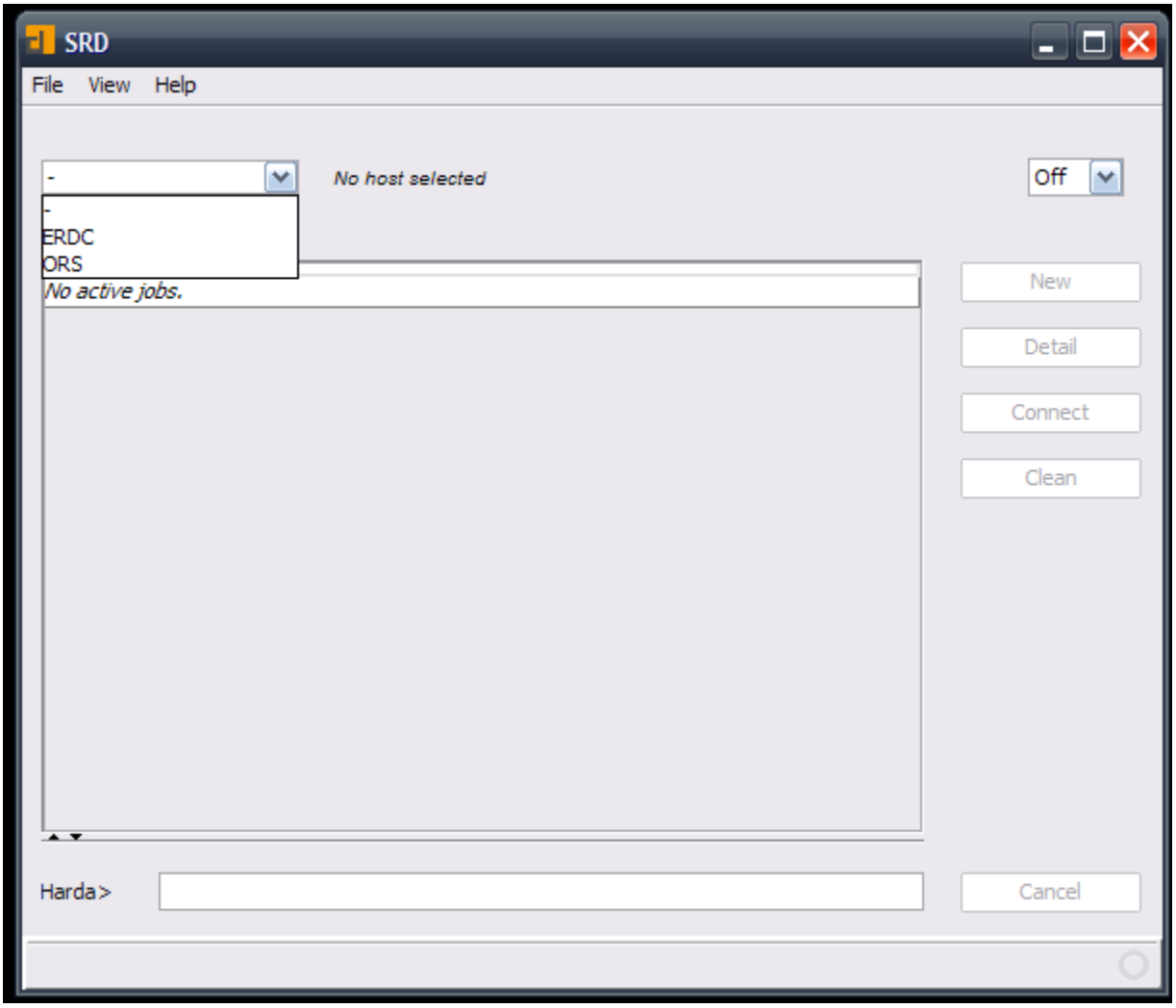


2. Establishing First Remote Desktop

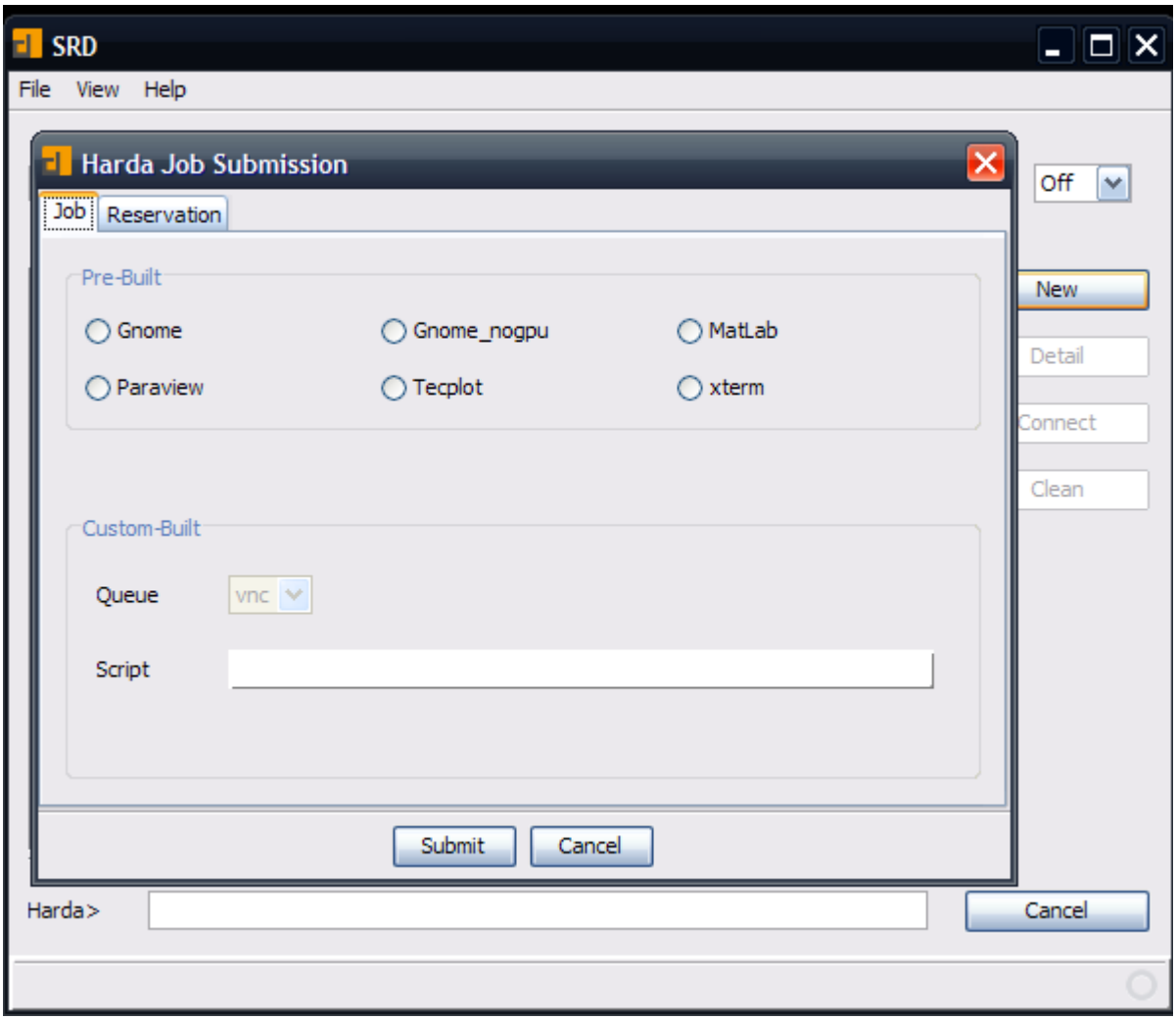
To get the first Remote Desktop:

A. Obtain a valid Kerberos Ticket and confirm the ability to SSH (via putty on Windows, or Kerberized SSH on Mac) directly to a Utility Server

B. From the dropdown in the upper-left, select your site.



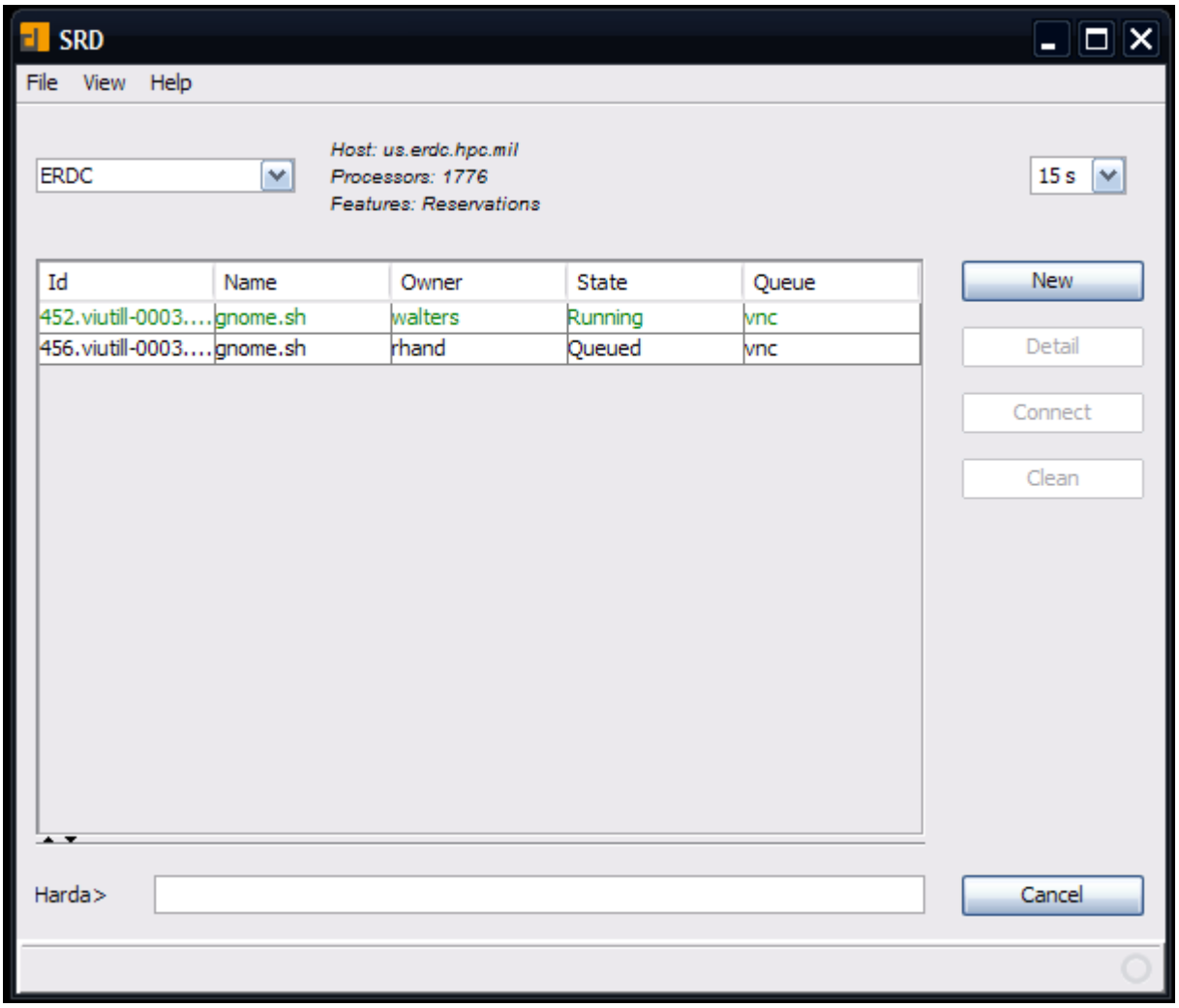
C. Click the 'New' button on the Right. Then select the 'Gnome' pre-built option from the top. Click 'Submit'.



Note: The other “Pre-Built” options will launch a desktop with the desired application already loaded. The exact selection of Pre-Built scripts will vary over time and from system to system.

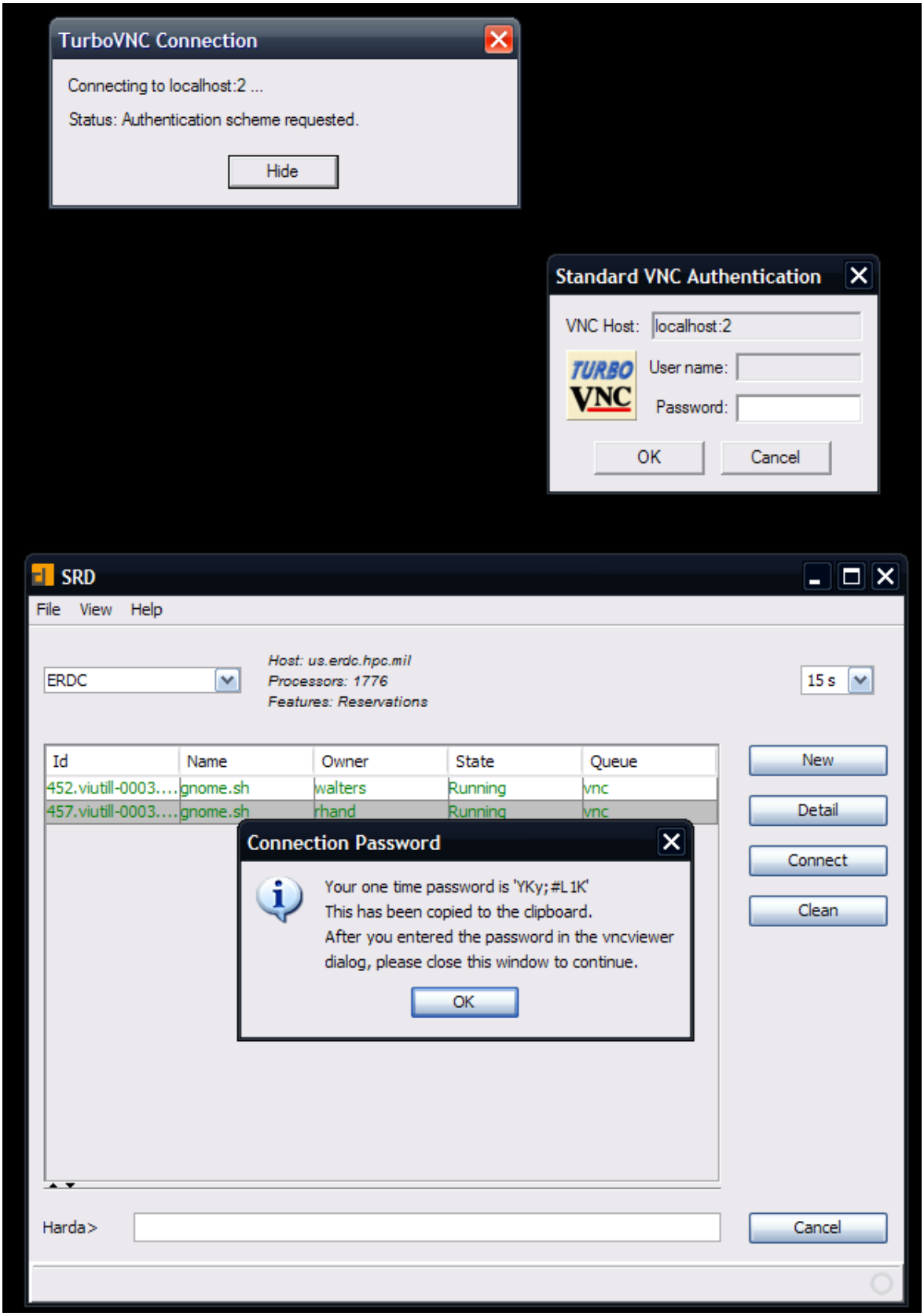
Note: The “Custom-Built” area is for submitting your own scripts, based on examples available on the Utility Servers in the $SAMPLES_HOME/SRD directory.

Your job should be in the top list of running jobs, either as 'Queued' or 'Running'. When running, it will appear in green.



D. Allow 10 to 15 seconds for everything to get running and when ready, select your job (the green one) from the list and click 'Connect'.

E. **On Windows**, If everything works, a popup called "Standard VNC Authentication" should appear, asking for a password. Click in the box, and touch Ctrl-V (Paste) to enter the randomly generated password (or manually type it from the popup in the SRD Gui). On a Mac, this is done automatically.


TurboVNC Connection
Connecting to localhost:2 ...
Status: Authentication scheme requested.
Hide
Standard VNC Authentication
VNC Host: localhost:2
User name:
Password:
OK
Cancel
SRD
File View Help
ERDC
Host: us.erdc.hpc.mil
Processors: 1776
Features: Reservations
15 s
Id Name Owner State Queue
452.viutill-0003.... gnome.sh walters Running vnc
457.viutill-0003.... gnome.sh rhand Running vnc
New
Detail
Connect
Clean
Connection Password
Your one time password is 'YKy;#L1K'
This has been copied to the clipboard.
After you entered the password in the vncviewer dialog, please close this window to continue.
OK
Harda>
Cancel

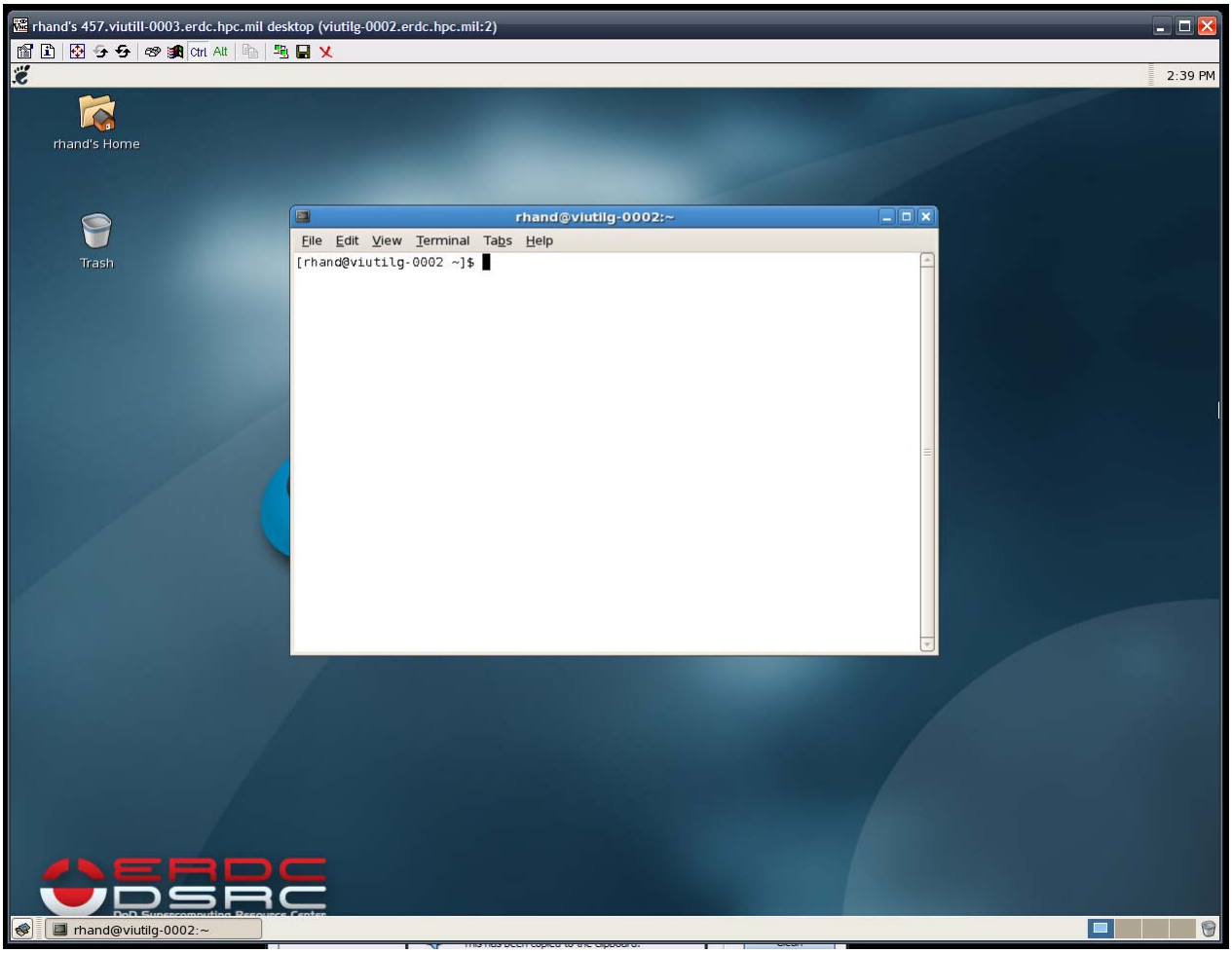
Should the operation fail and the Log contains a comment “If you do not trust this host…etc.,” manually open a terminal (cmd.exe on Windows) and manually SSH (or plink on Windows) to the desired utility server and say 'Y' when asked about storing the key. Then logout, close the Terminal window and try to connect again.

Other things to check if unable to connect:

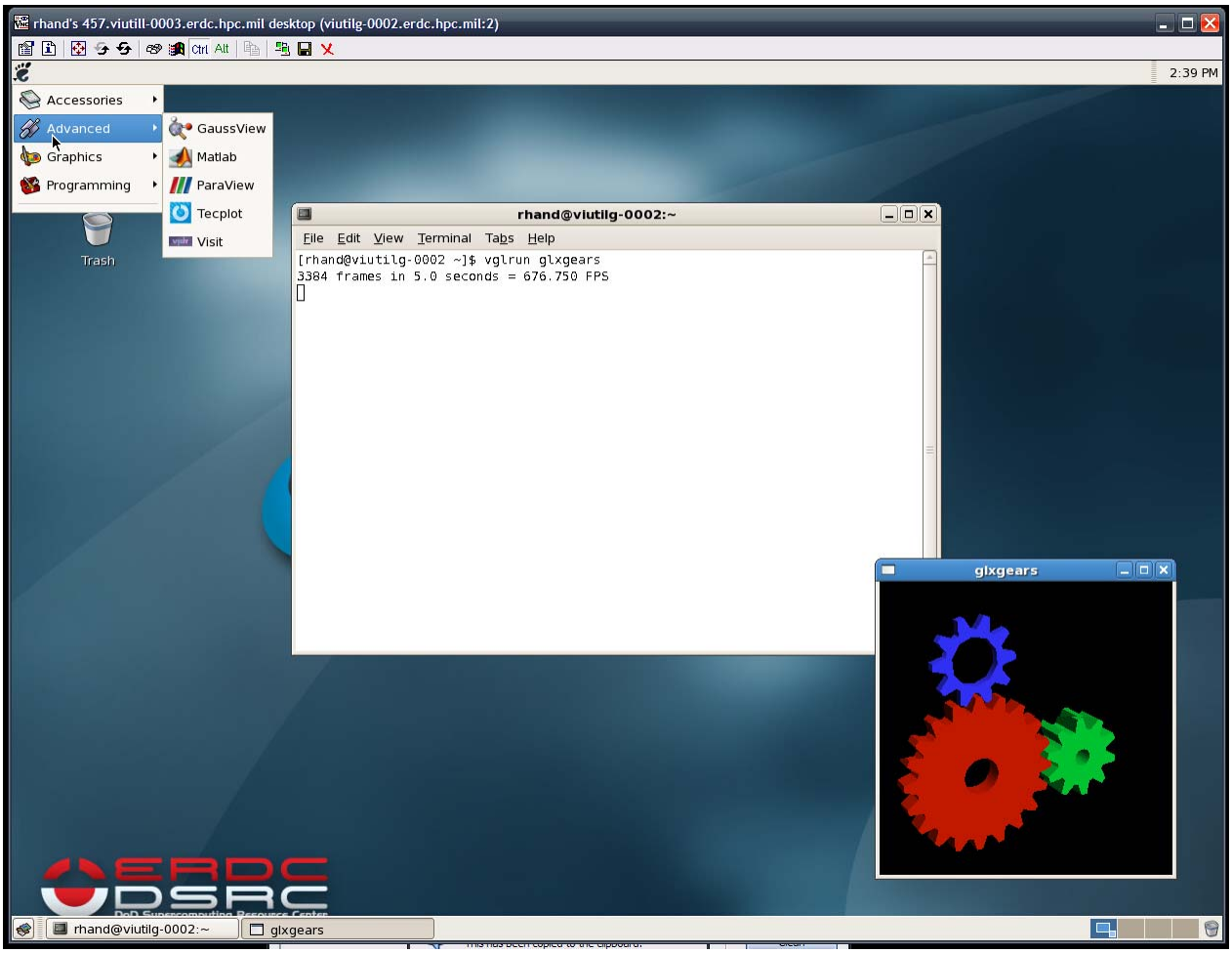
- Try getting a new Kerberos Ticket; maybe yours has expired.
- Verify that you can SSH to the Utility Server Login Node.
- Verify that your job is running (qstat)
- Verify that, from the Utility Server Login Node, you can then SSH to your granted Graphics Node
- Verify that you have properly configured the Secure Remote Desktop Client to use the correct SSH and VNCViewer

F. A Linux Gnome desktop with a Terminal window should appear.

Click the Gnome “foot” icon in the upper left corner to see some pre-installed apps like ParaView, or run whatever is desired in the terminal window.



For hardware accelerated applications, simply prefix the run with 'vglrun'. As an example, see the screen below:



G. In the terminal window run 'vglrun glxgears' and see it run at an impressive 700 fps.

3. Cleaning Up

A. Once you're done with your session, you need to shut down SRD and release your node for other users. To do this, simply select your job from the list and select the "Clean" button.

Note: Due to PBS, it can sometimes take 20-30s before your job will actually disappear from the list of running jobs.