

The TAMU Visualization Portal

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HPRC Short Course – Spring 2017



Outline

- Introduction to TAMU Visualization Portal
 - Overview of the portal
 - Using the portal
 - Using Abaqus CAE
 - Using Comsol GUI
 - Using ParaView

The TAMU Visualization Portal

- What is it?
- Who can use it?
- What's the benefit of using it?
- Is it free?
- What applications can be used with it?

The TAMU Visualization Portal

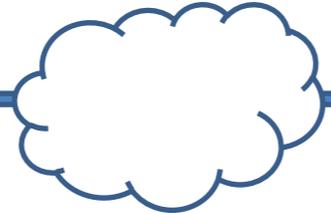
- A web service for submitting and viewing remote visualization jobs
- Ada users with our permission
- It supports major web browsers (IE, Firefox, Chrome) and can be accessed anywhere with Internet connection (VPN is needed from off-campus connections)
- It is free, but Ada allocations are charged
- Any GUI applications that support OpenGL can use the portal, including ABAQUS, ANSYS, COMSOL, Paraview, Matlab GUI, etc.

Workflow of the Portal

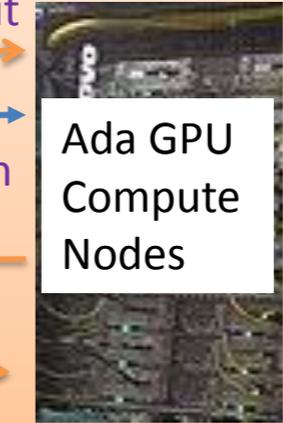
<https://ada7.tamu.edu/vis-portal>



End user



Viz webserver
Ada7



(2) The vnc job is queued and scheduled to run by LSF

(3) The job starts vncserver

(1) vncjob.submit

(4) Connection info returns

(5) Connect to vncserver

Ada cluster

Accessing the Visualization Portal

- Please request permission to access the portal by sending an email to help@hprc.tamu.edu
- If you are off-campus, please first login to the TAMU VPN
- Using a web-browser open <https://ada7.tamu.edu/vis-portal/>
- Please confirm the security exception to access the site
- Use your TAMU Net-ID and password to log into the portal.

<https://ada7.tamu.edu/vis-portal>

High Performance Research Computing
A Resource for Research and Discovery

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UNIVERSITY

Welcome to the Ada Remote Visualization Portal

The visualization portal is access-restricted. Please contact us at helpdesk@hprc.tamu.edu to request access to the portal.

Please login with your TAMU NetID and password.

NetID:

Password:

login

Enter your TAMU Net-ID

For New Remote Visualization Users

The screenshot shows the HPRC portal interface. At the top left, it says "High Performance Research Computing" and "A Resource for Research and Discovery". To the right is the Texas A&M University logo. Below the header is a navigation bar with "Home", "Jobs", and "Help". The main content area shows the user is logged in as "pingluo" with a "[logout]" link. The date is "Wednesday, April 19, 2017". A blue bullet point states: "You must set your VNC password at least once. Click 'password' to set your VNC password." Below this is a button labeled "Password" followed by the text "Set your VNC password". The footer contains "Ada Remote Visualization Portal" on the left and "help@hprc.tamu.edu" on the right.

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Home Jobs Help

You are logged in as pingluo, [\[logout\]](#) Wednesday, April 19, 2017

- You must set your VNC password at least once. Click "password" to set your VNC password.

Set your VNC password

Ada Remote Visualization Portal help@hprc.tamu.edu

Setting Your VNC Password

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Home Jobs Help

You are logged in as pingluo, [\[logout\]](#) Wednesday, April 19, 2017

Your VNC password **MUST NOT** be the same as your netid password.

Your VNC password must have at least 6 characters.

Password:

Re-type Password:

Ada Remote Visualization Portal help@hprc.tamu.edu

Submitting a Visualization Job

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Home Jobs Help

You are logged in as pingluo, [\[logout\]](#) Thursday, April 20, 2017

- Customize your job specification in the form below.
- Job specifications cannot be changed after the job is submitted.
- Email is needed only if you want to be informed when your job starts running.

Desktop resolution: width x height

Memory size (between 2 to 250): GB

Email (optional):

Submit a visualization job.

- Your VNC password has been set. If you want to change it, click "password."

Change your VNC password

Ada Remote Visualization Portal help@hprc.tamu.edu

Submitting a Visualization Job

High Performance Research Computing
A Resource for Research and Discovery

Home Jobs Help

You are logged in as pingluo, [logout](#) Thursday, April 20, 2017

- Customize your job specification in the form below.
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Desktop resolution: width x height:

Memory size (between 2 to 250):

Email (optional):

Ada Remote Visualization Portal help@hprc.tamu.edu

Desktop resolution: width x height:

Memory size (between 2 to 250):

Email (optional):

- 1024x768
- 1024x768
- 1280x960
- 1600x1024
- 1920x1080
- 2048x1280
- 2560x1440
- 3200x1800
- 3840x2160
- 4096x2304
- 4500x3000

Submitting a Visualization Job

Home Jobs Help

You are logged in as pingluo, [\[logout\]](#) Thursday, April 20, 2017

- Customize your job specification in the form below.
- Job specifications cannot be changed after the job is submitted.
- Email is needed only if you want to receive an email when your job starts running.

Desktop resolution: width x height
Memory size (between 2 to 25)
Email (optional):

Submit a visualization job.

- Your VNC password has been set. If you want to change it, click "password."

Change your VNC password

Ada Remote Visualization Portal help@hprc.tamu.edu

Your usage will be charged!

You job has been submitted.

The Job Control Page

Home

Jobs

Help

You are logged in as pingluo, [\[logout\]](#)

Thursday, April 20, 2017

- When your job starts running, click **view** to connect to the VNC server. You will be redirected to a different page.
- Type your VNC password to login into the remote desktop.
- The GUI application must be launched with **vglrun** to use hardware acceleration.
- To go back to the main page, first toggle up the control bar at the leftmost center of your screen, and then click the disconnect button .
- Delete your job by clicking **delete** when you are done with your visualization job.

Refresh

Your job 5466914 is running.

View

Connect to the VNC server and start running GUI applications.

Delete

Delete the visualization job.

-
- Your VNC password has been set. If you want to change it, click "password."

Password

Change your VNC password

Connecting to the VNC Server



Your connection is not secure

The owner of ada7.tamu.edu has configured their website improperly. To protect your information from being stolen, Firefox has not connected to this website.

[Learn more...](#)

Go Back

Advanced

Report errors like this to help Mozilla identify and block malicious sites

ada7.tamu.edu:10056 uses an invalid security certificate.

The certificate is not trusted because it is self-signed.
The certificate is not valid for the name ada7.tamu.edu.

Error code: [SEC_ERROR_UNKNOWN_ISSUER](#)

Add Exception...

***Add exception
and accept the
certificate***

Connecting to the VNC Server

TAMU Vis-Portal

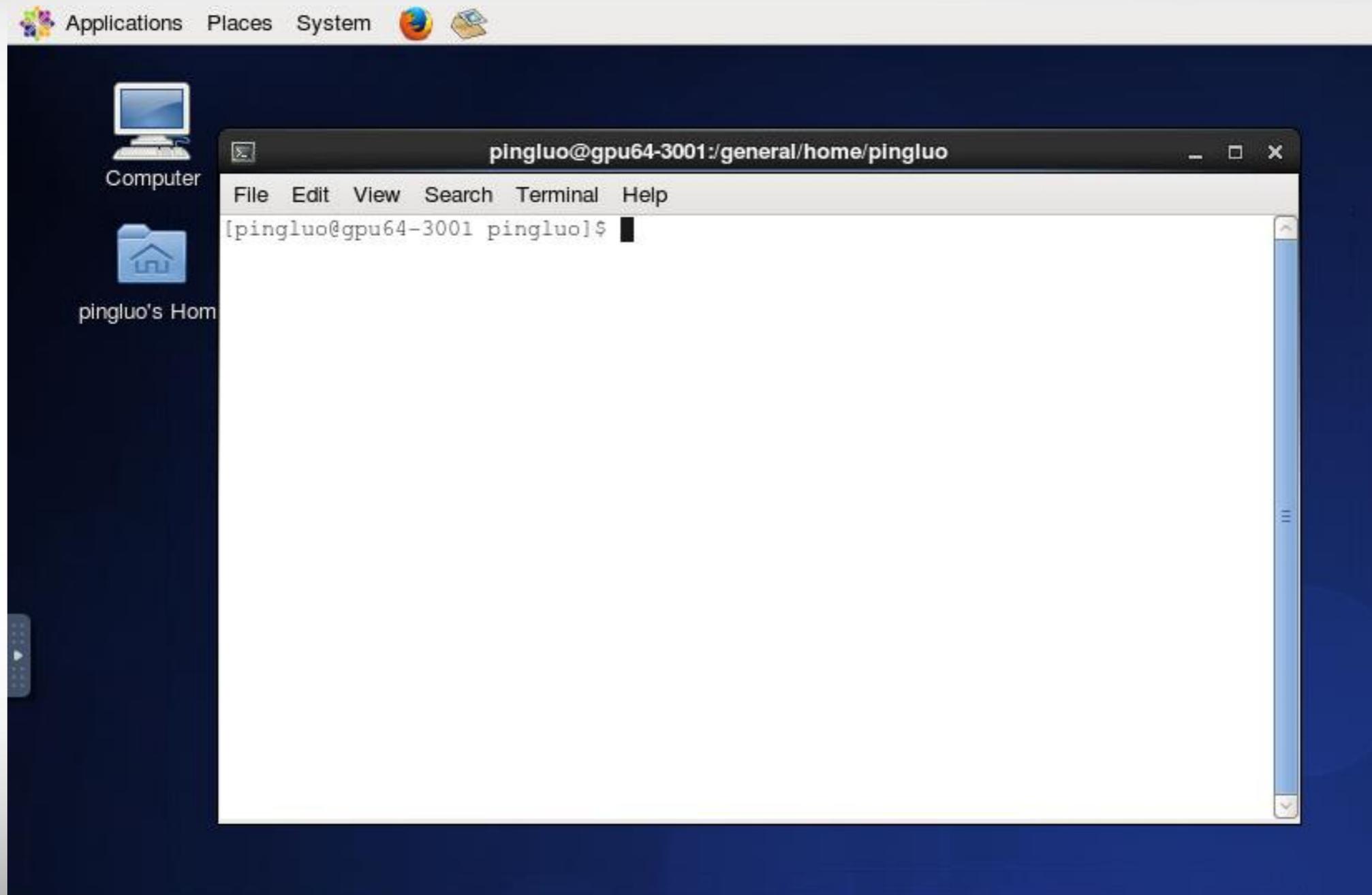
Connection

Password:

Connect

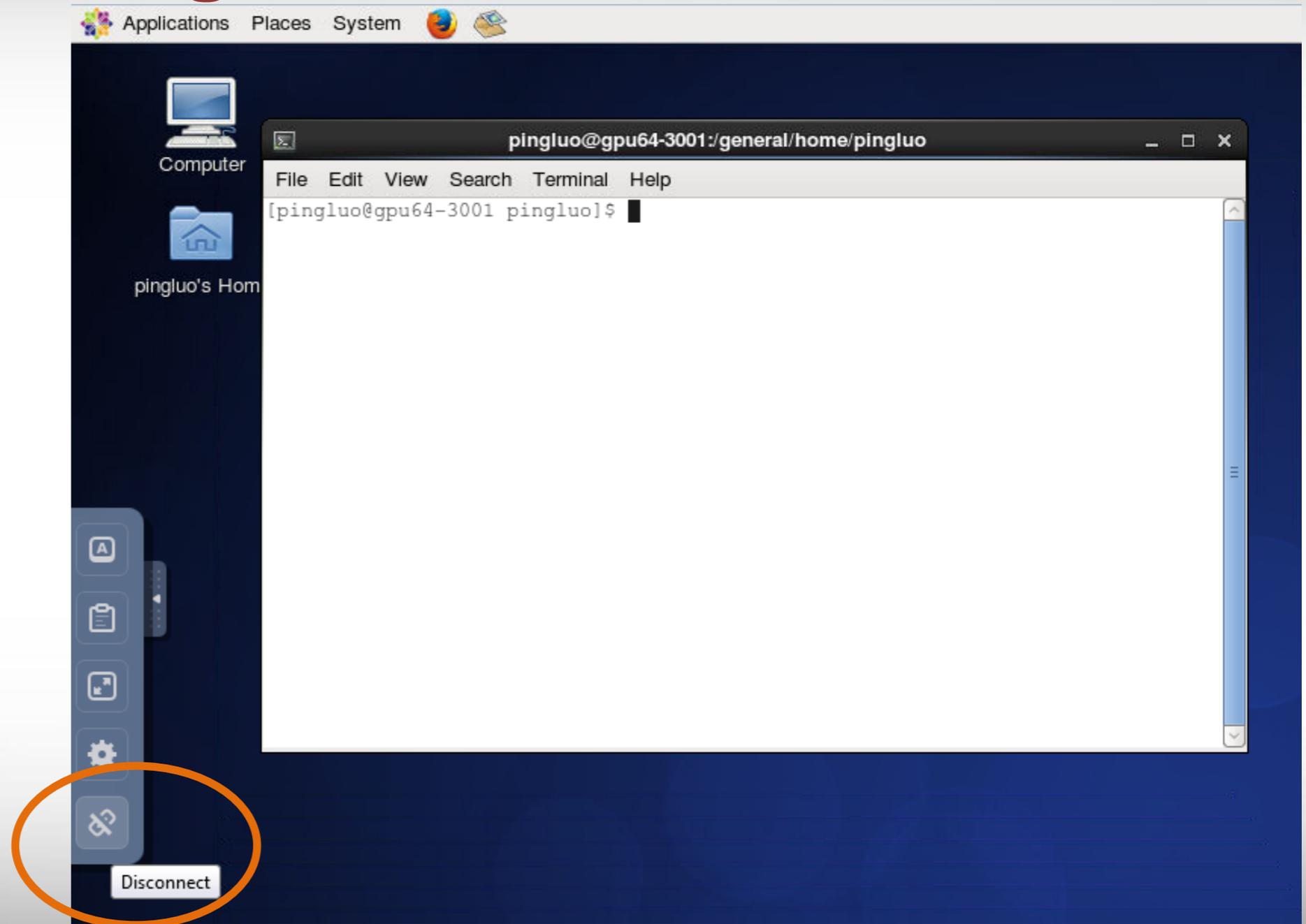
*This is your VNC password.
and not your TAMU NetID password*

The Remote Desktop



Disconnecting From the VNC Server

- Disconnecting returns the user to the job control page
- The job continues to run and can be accessed by clicking “view” on the job control page.
- Charging continues till the job is deleted from the Job Control page



Deleting a Visualization Job

- Deleting a job terminates it permanently
- Charging stops at this point
- You will be brought back to the job submission page.
- To submit a new job please repeat previous the steps

The screenshot displays the HPRC web interface. At the top, it says "High Performance Research Computing" and "A Resource for Research and Discovery" with the Texas A&M University logo. The navigation bar includes "Home", "Jobs", and "Help". Below the navigation bar, it indicates the user is logged in as "pingluo" and shows the date "Thursday, April 20, 2017".

The main content area contains a list of instructions for using the VNC server. A white dialog box with a blue border is overlaid on the page, displaying the message "You job 5466914 has been deleted." and an "OK" button.

Below the dialog box, there are several buttons and their corresponding actions:

- Refresh**: Your job 5466914 is running.
- View**: Connect to the VNC server and start running GUI applications.
- Delete**: Delete the visualization job. (This button is circled in orange in the original image.)
- Password**: Change your VNC password

At the bottom of the page, there is a note: "Your VNC password has been set. If you want to change it, click 'password.'"

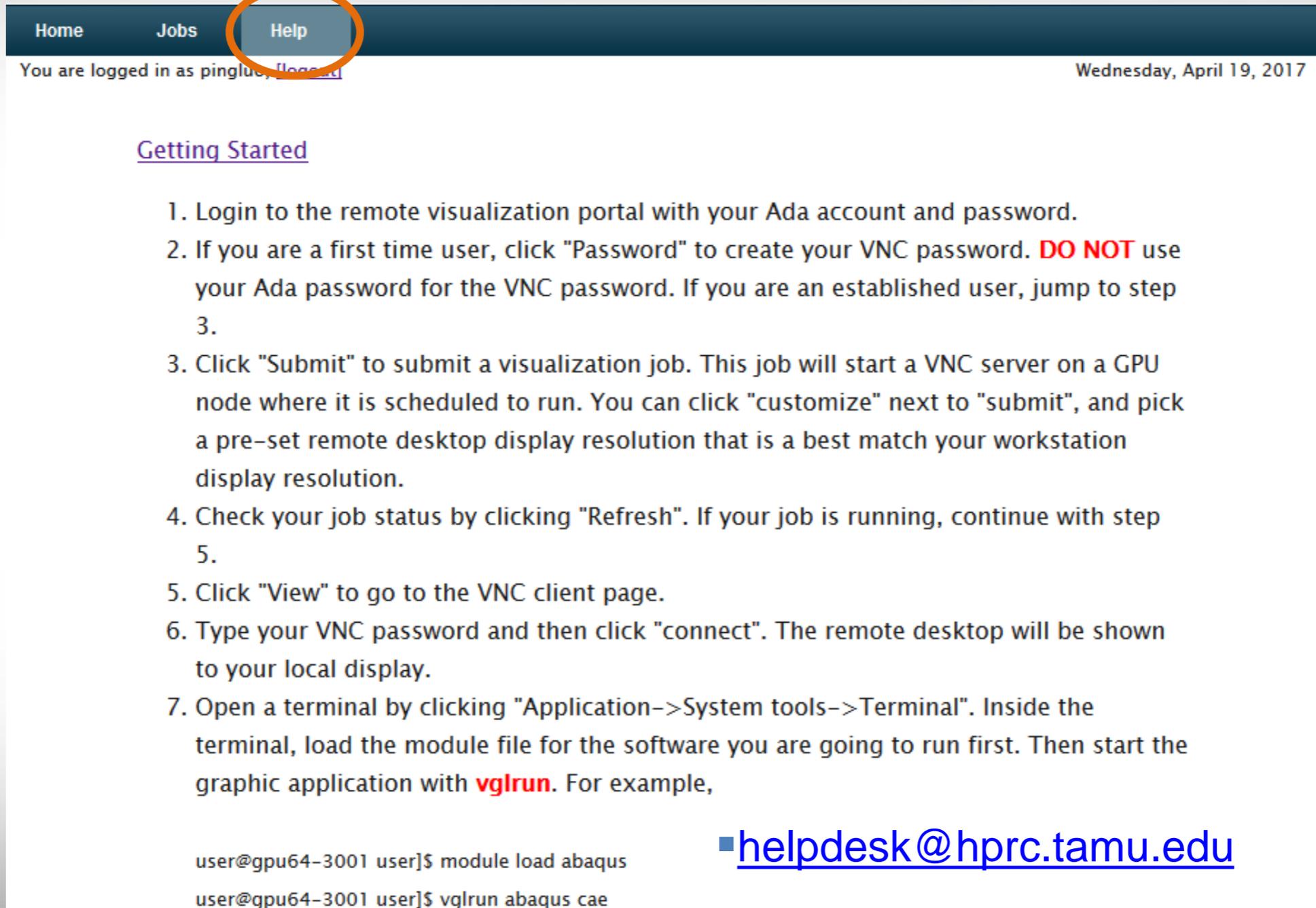
How Are SUs Charged

- Currently only one CPU core is allocated to each portal VNC job (may lift this requirement if there are needs for multiple cores)
- Maximum wall-time is 6 hours (remote visualization is for pre- and/or post-processing, not for analyzing).
- SUs are charged based on equivalent CPU cores and actual wall-time

1 SU = 1 core x 1 hour

0 - 2.56G		1 core
2.56G – 5.12G		2 cores
5.12G – 7.68G		3 cores
⋮	⋮	⋮

Getting Help!



Home Jobs **Help**

You are logged in as pingluo, [logout] Wednesday, April 19, 2017

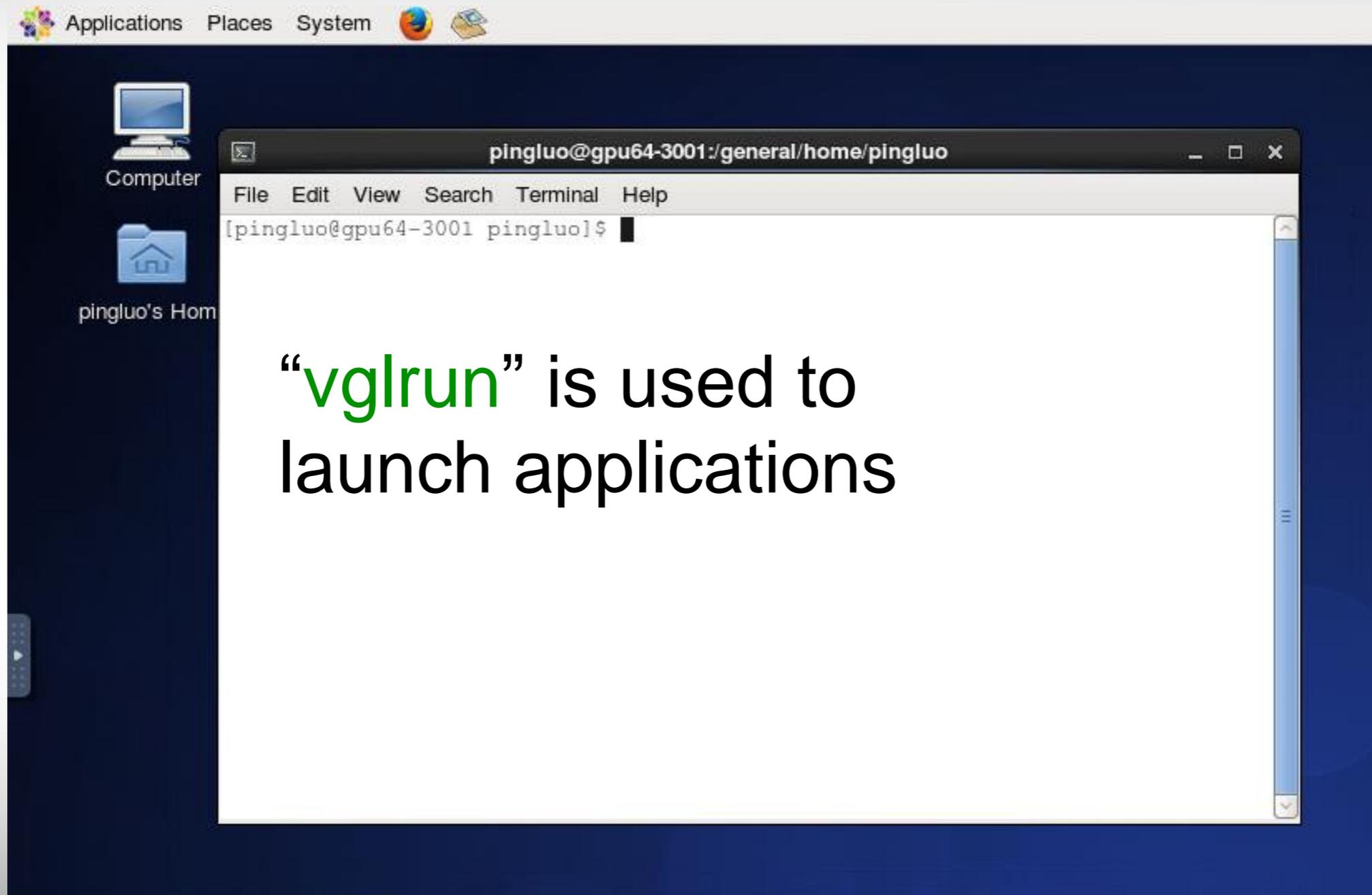
Getting Started

1. Login to the remote visualization portal with your Ada account and password.
2. If you are a first time user, click "Password" to create your VNC password. **DO NOT** use your Ada password for the VNC password. If you are an established user, jump to step 3.
3. Click "Submit" to submit a visualization job. This job will start a VNC server on a GPU node where it is scheduled to run. You can click "customize" next to "submit", and pick a pre-set remote desktop display resolution that is a best match your workstation display resolution.
4. Check your job status by clicking "Refresh". If your job is running, continue with step 5.
5. Click "View" to go to the VNC client page.
6. Type your VNC password and then click "connect". The remote desktop will be shown to your local display.
7. Open a terminal by clicking "Application->System tools->Terminal". Inside the terminal, load the module file for the software you are going to run first. Then start the graphic application with **vglrun**. For example,

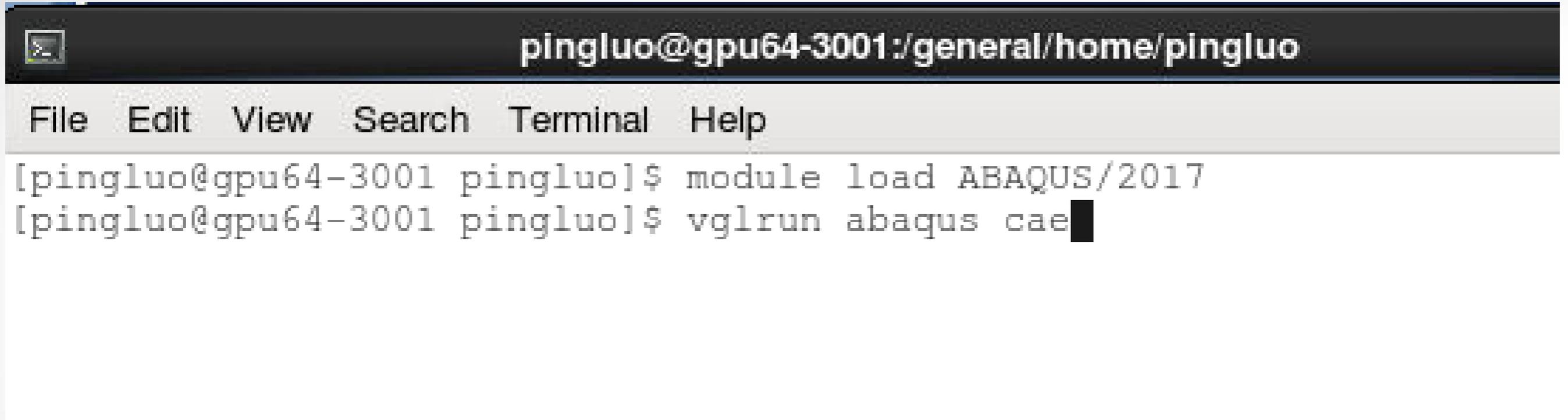
```
user@gpu64-3001 user]$ module load abaqus
user@gpu64-3001 user]$ vglrun abaqus cae
```

■ helpdesk@hprc.tamu.edu

Launching Applications

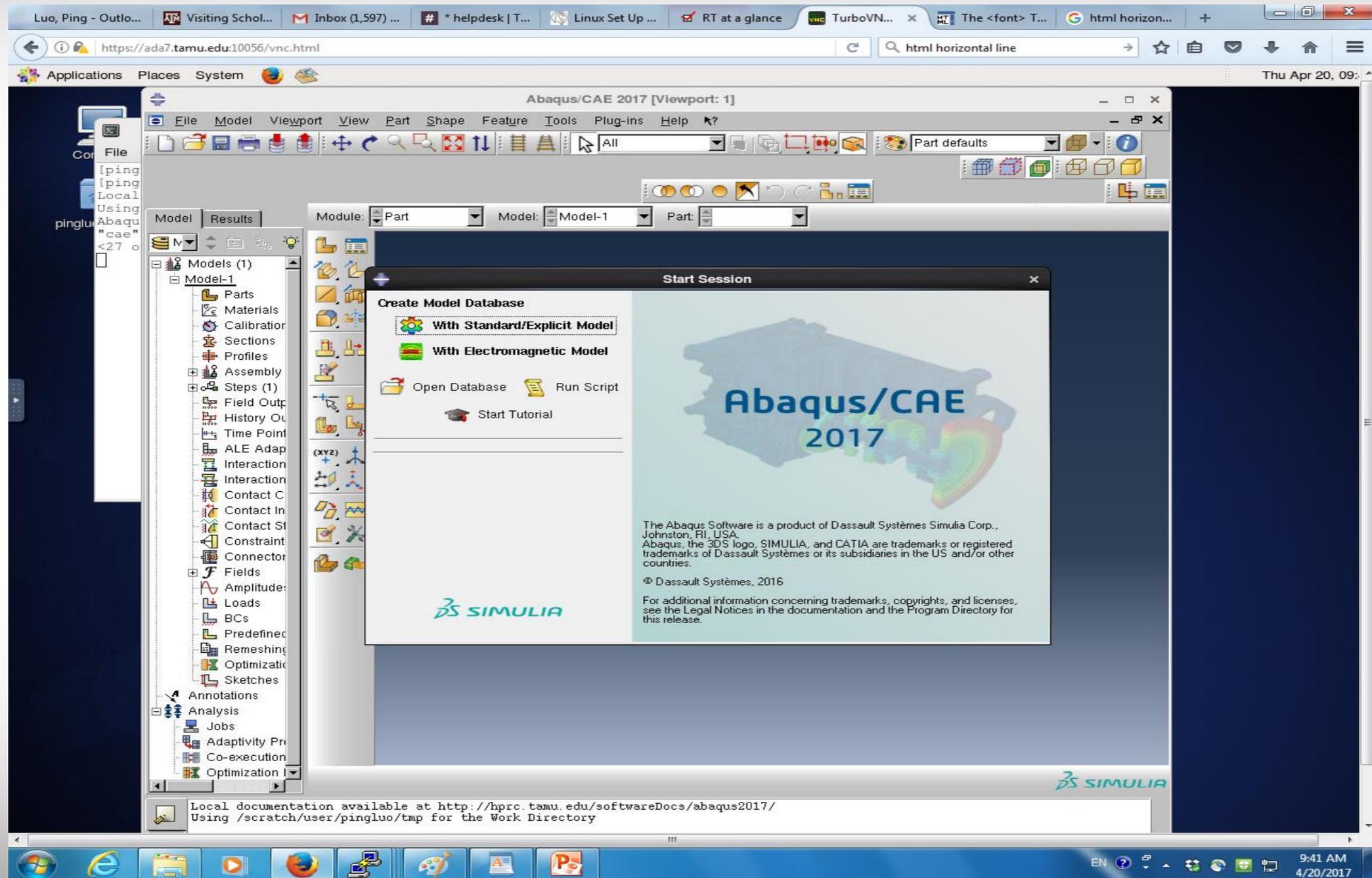


Using Abaqus CAE

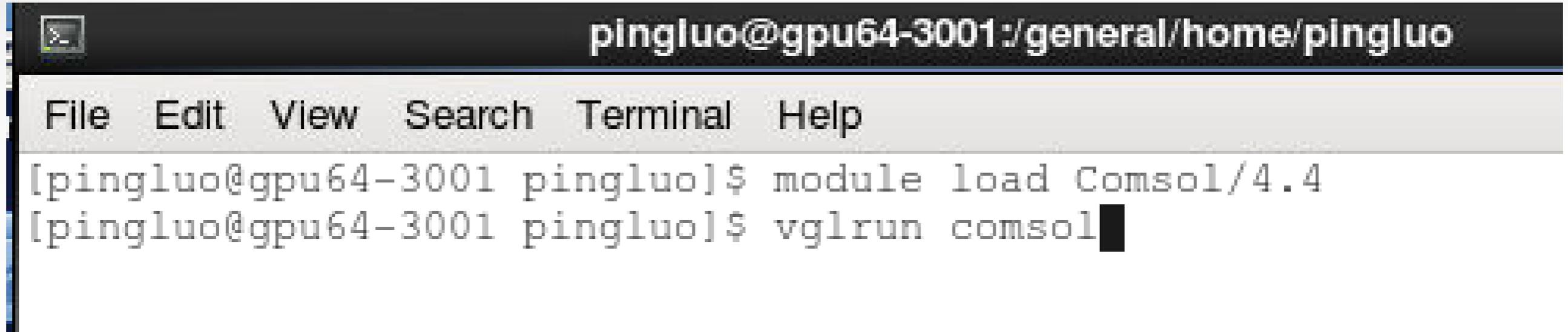


```
pingluo@gpu64-3001:/general/home/pingluo  
File Edit View Search Terminal Help  
[pingluo@gpu64-3001 pingluo]$ module load ABAQUS/2017  
[pingluo@gpu64-3001 pingluo]$ vglrun abaqus cae
```

Using Abaqus CAE

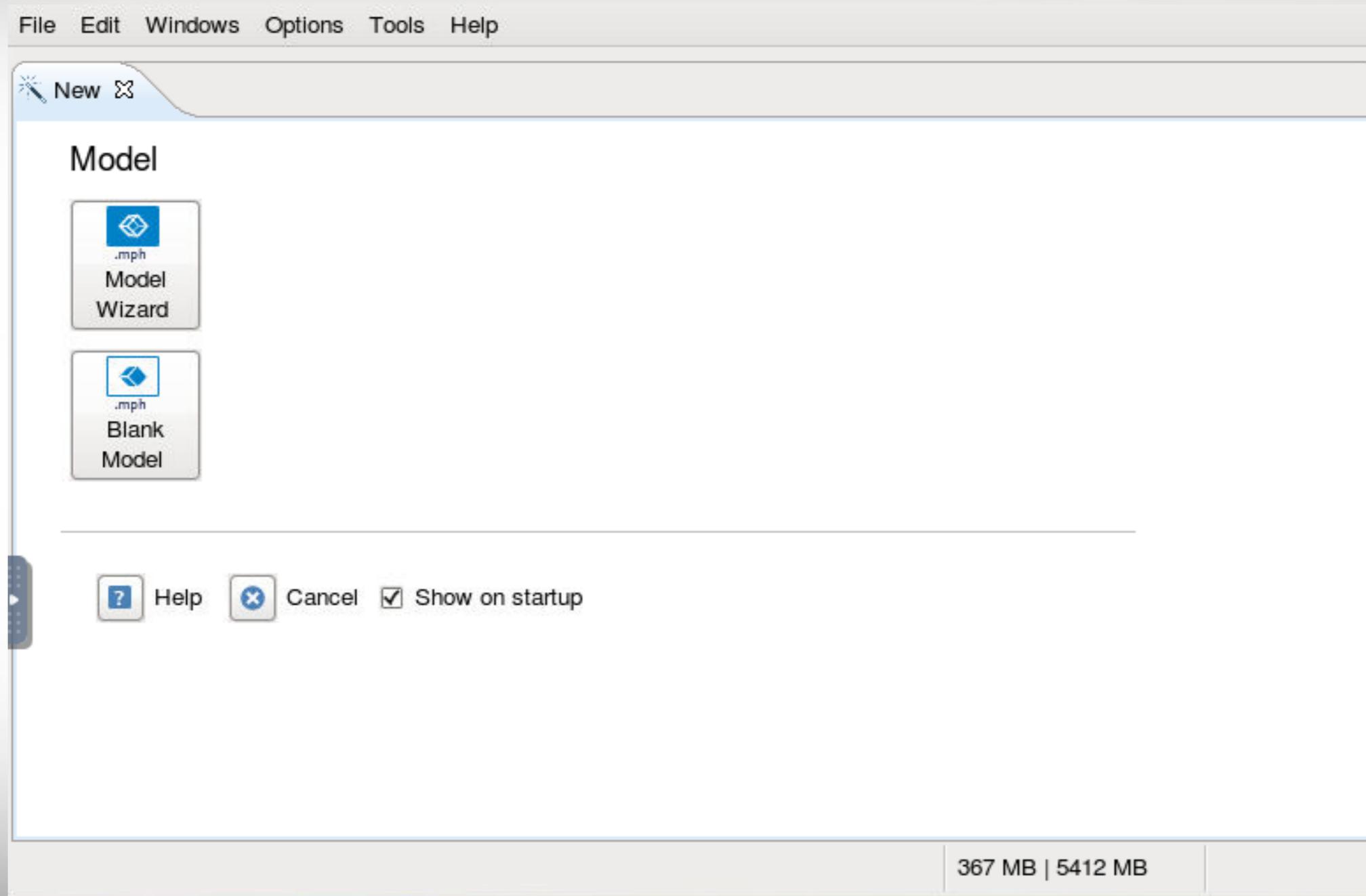


Using the Comsol GUI

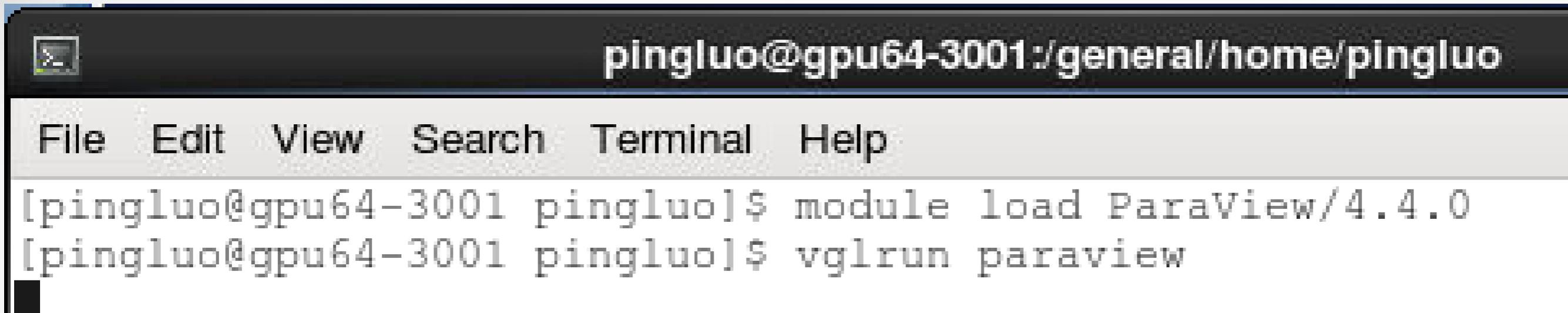
A terminal window with a title bar that reads 'pingluo@gpu64-3001:/general/home/pingluo'. The window has a menu bar with 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The terminal content shows two commands: '[pingluo@gpu64-3001 pingluo]\$ module load Comsol/4.4' and '[pingluo@gpu64-3001 pingluo]\$ vglrun comsol' with a black cursor at the end of the second line.

```
pingluo@gpu64-3001:/general/home/pingluo
File Edit View Search Terminal Help
[pingluo@gpu64-3001 pingluo]$ module load Comsol/4.4
[pingluo@gpu64-3001 pingluo]$ vglrun comsol
```

Using the Comsol GUI



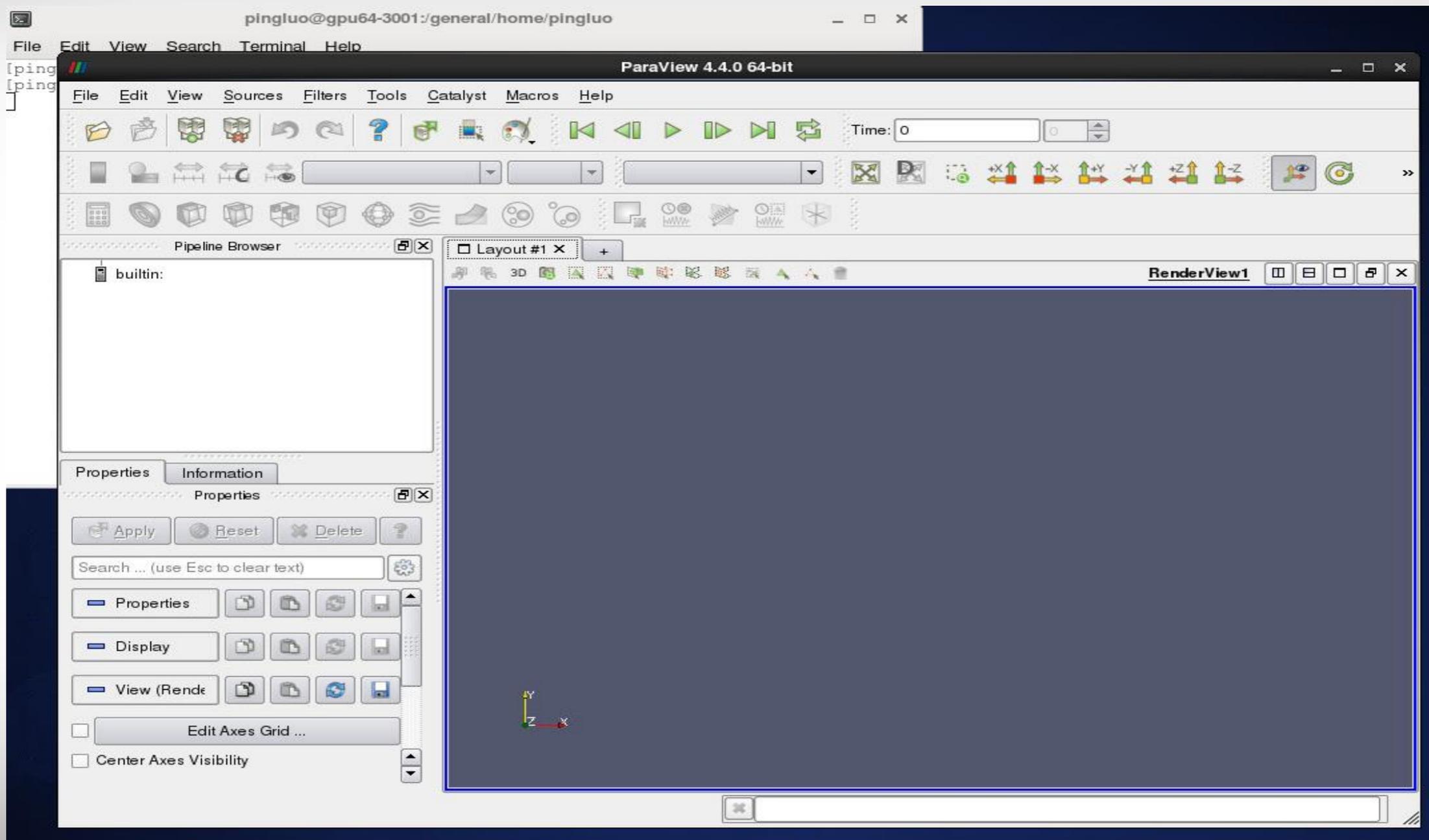
Using ParaView



A terminal window with a dark title bar containing the text 'pingluo@gpu64-3001:/general/home/pingluo'. The window has a menu bar with 'File', 'Edit', 'View', 'Search', 'Terminal', and 'Help'. The terminal content shows two commands being executed: 'module load ParaView/4.4.0' and 'vglrun paraview'. A cursor is visible at the end of the second line.

```
pingluo@gpu64-3001:/general/home/pingluo
File Edit View Search Terminal Help
[pingluo@gpu64-3001 pingluo]$ module load ParaView/4.4.0
[pingluo@gpu64-3001 pingluo]$ vglrun paraview
```

Using ParaView



Announcements

Short course

Introduction to
Databases

Wed, Apr 26
3:00 pm - 5:00 pm

Seminar

Toughness, Roughness and
Crack Path Engineering for
Improved Fracture Resistance

[Alan Needleman](#)

University Distinguished
Professor

Koldus Building: 110

May 1, 2017: 2:00 - 03:00 pm

Research Computing Week

RESEARCH COMPUTING WEEK

SAVE THE DATE: JUNE 5 - 9

Register today!

Submit abstracts for posters
and talks at:
<http://u.tamu.edu/HPRCweek>



Attractions

Workshops and tutorials
Guest Speakers
Networking Social
Poster session



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