

Atmosphere Tutorial

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Acknowledgement: Calvin McLean, CyVerse



PowerPoint/PDF Link with URLs

PDF

<http://www.cs.unc.edu/~dewan/734/current/lectures/AtmosphereTutorial.pdf>

PPTX

<http://www.cs.unc.edu/~dewan/734/current/lectures/AtmosphereTutorial.pptx>

Search for unique words in this presentation



Distributed Java Interactive Programs in Multiple Virtual Computers

CyVerse Access

Atmosphere Access

Creating Atmosphere Instances

Exporting Jars

Transferring Files to Instances

Interacting with Instances

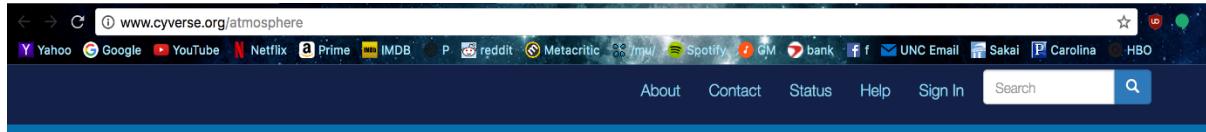
Suspending and Resuming
Instances

Shared Atmosphere Instances



Atmosphere Page

<http://www.cyverse.org/atmosphere>



PRODUCTS

- [Products Overview](#)
- [Atmosphere](#)
- [BisQue Image Analysis Environment](#)
- [Data Store](#)
- [Discovery Environment](#)
- [DNA Subway](#)
- [Learning Center](#)
- [Powered by CyVerse](#)
- [Science APIs](#)

ATMOSPHERE

Atmosphere, CyVerse's cloud-computing platform allows you to launch your own isolated virtual machine (VM) image and software, using compute resources such as CyVerse-provided software suites, and preconfigured, frequently used analysis routines, relevant algorithms, and datasets. Before you can begin using Atmosphere, you must have a CyVerse account and be granted access to Atmosphere.

ABOUT ATMOSPHERE

Atmosphere is an easy to use web application, on-demand environment that is designed to accommodate computationally and data-intense bioinformatics tasks, including Infrastructure as a Service (IaaS) with advanced APIs; Platform as a Service (PaaS), for developing and deploying software to the science community; and Software as a Service (SaaS).

KEY FEATURES

- Access virtual machine images preconfigured with an operating system and software to help you do scientific computations in domain-specific tasks
- Find and use tools with the intuitive self-service portal
- Easily manage virtual machines
- Publish your own software suites, create your own work environments, and run the software for community use
- Access your data in the Data Store, including high-performance computing (HPC) and grid computing environments
- Integrate with existing infrastructure components using API services



CyVerse Account Creation Section

Scroll Down and Click on User Management Portal



LEARNING CENTER

[Learning Center](#)

[Create Account](#)

[Manage Account](#)

[Manage Data](#)

[Choose a Product](#)

[Campus Helpers](#)

[Get Help](#)

[FAQ](#)

[Ask CyVerse](#)

[Use the Wiki and JIRA](#)

CREATE ACCOUNT

Until all services are migrated from our former project "iPlant Collaborative" to the new CyVerse system, your account will be an iPlant interface. You will not need to do anything when accounts are changed to CyVerse.

To access the CyVerse tools, apps, and services, you will need to have a user account.

Your account gives you automatic access to several different apps and services, including the Discovery Environment, CyVerse Wiki, which contains how-to information, and JIRA, our issue tracking and project management software tool for entering issues such as bugs, tasks, improvement suggestions, and more.

1. To register for a CyVerse account, go to our [user management portal](#).
2. Complete the information on the form. **NOTE:** If you think you may want to use Atmosphere, use an institutional address.
3. In the email you receive when your account is newly created, click the link in the email to validate your email and begin using your account.



Fill Registration Form



Trellis: CyVerse User Management

A centralized place for you to manage your CyVerse user profile and services.

[Login](#)

Register

After you complete the registration process, you will have automatic access to the following CyVerse services: Discovery Environment, My-Plant, CyVerse Data Store, CyVerse Wiki, TNRS and Bug and Issue Tracking.

Personal Information

First Name *

Last Name *

Gender (optional)

- Male
- Female
- Decline to Answer

Ethnicity (optional)

City *



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Requesting Atmosphere Access

<http://www.cyverse.org/atmosphere>

instances and applications launched by user, cloud monitoring, and on-demand intelligence resource allocation

Within Atmosphere, you launch an *instance* (a launched image of a virtual machine), selecting from the list of available *images* (a template of a virtual machine containing an installed operating system, software, and configuration). Though not required, it is recommended that you familiarize yourself with Linux command-line, as some actions require some degree of knowledge of the command-line interface.

READY TO GET STARTED?

- [LAUNCH ATMOSPHERE](#)
- Create an account and [request access to Atmosphere](#)
- View the list of Atmosphere images

After being registered, go back to the homepage and click on
request access to Atmosphere



Requesting Atmosphere Access

Click on User Management

About Contact Status Help Sign In Search 

3. Click the **My Profile** tab.
4. Change the fields as necessary.
5. When done, click **Update**.

ADDING APPS AND SERVICES TO YOUR ACCOUNT

When you first acquire your CyVerse account, many apps and services are available by default to you. You can request access to other apps and services, as needed. For more information on our apps and platforms, see [CyVerse Products](#).

1. Log in to [User Management](#) and open the **Apps & Services** tab.
2. Go to the **Available Services** section at the bottom.
3. Find the app or service to add and click **Request Access**.
 - When the app or service has been added, you will receive an email with access instructions. You also will be signed up for that service's email notifications about maintenance periods and outages, and more.
4. **If requesting access to Atmosphere:**
 - Specify the **instance size**, including the number of CPUs, memory in GB, and root storage in GB, needed for your instance. **Note:** Start with the smallest size until you know for certain which size you need. You can always size up but you can't size down.
 - [If you did not use an institutional email address \(as required by Atmosphere\), you will need to change your email address](#).

GOT A QUESTION?

- Ask a question!



Requesting Atmosphere Access



Trellis: CyVerse User Management

A centralized place for you to manage your CyVerse user profile and services.

[Login](#)

New User?

[Register](#)

Click to manage your CyVerse user profile information and the CyVerse services that are available to you.

Forgot your Password?

[Reset Password](#)

Click here to reset your password.

Log in with:

[CyVerse Login](#)

Click here if you have previously created a CyVerse user ID.



Requesting Atmosphere Access

Click on Request Access under Available Services

The screenshot shows the CyVerse platform's "Available Services" section. It lists several services, each with a small icon, a name, a brief description, and maintenance information. The "Atmosphere" service is highlighted with a red border around its "Request Access" button.

Service	Description	Maintained by	Action
Discovery Environment	Use hundreds of bioinformatics apps and manage data in the CyVerse Data Store from a simple web interface	CyVerse	Go to Discovery Environment File Email
My-Plant	A social networking community for plant biologists, educators and other interested parties	CyVerse	Go to My-Plant Email
TNRS	Computer-assisted standardization of plant scientific names	CyVerse	Go to TNRS File Email
Wiki	Collaborative documentation of CyVerse, its products, and services	CyVerse	Go to Wiki Email
Atmosphere	CyVerse cloud services	CyVerse	Request Access File Email



Identify Professor/Course

Student Information

Sponsor/Instructor Name *

Prasun Dewan

Sponsor/Instructor Email *

dewan@cs.unc.edu

Project/Class Name *

Comp 533, Distributed Systems

Project Description *

Used for time tests to demonstrate the difference in performance between different IPC mechanisms

How long would you need Atmosphere for this project/class? *

May 9th

Describe the Atmosphere resources required for this project/class? *

Just need the most basic allocation: 168AUs will be more than enough.

Will you be using Atmosphere for a class or workshop?

- workshop
- class
- other

Other:



Waiting for Atmosphere Access

Wait for your request to get fulfilled

Trellis: CyVerse User Management

A centralized place for you to manage your CyVerse user profile and services.

Logged in as: Brennan Proudfoot • [Logout](#)

Apps & Services

API Clients

My Profile

[My Services \(7\)](#) | [Pending Service Requests \(1\)](#) | [Available Services \(5\)](#)

Pending Requests for Services

Note: Refresh the page to see if your requests are completed.



Atmosphere

CyVerse cloud services

Maintained by:

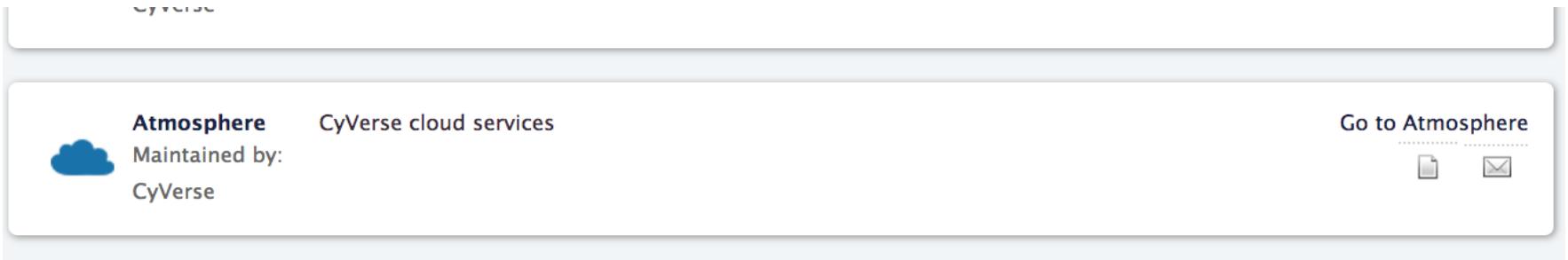
CyVerse

Request Status: Pending



Access Given

After a (possibly long) while, if you refresh you will see that
you have access



A screenshot of the CyVerse Atmosphere interface. At the top, there's a navigation bar with tabs for Home, Projects, and Groups. Below the navigation bar, there's a search bar and a user profile icon. The main content area has a light blue header with the text "Atmosphere" and "CyVerse cloud services". Underneath this, it says "Maintained by: CyVerse". On the right side of the main content area, there's a "Go to Atmosphere" button with a dotted line above it, and two small icons below it: a document and an envelope. The overall background of the slide is a light blue gradient.



Access Email Notification

You should receive an email that saying your account has been granted access

CyVerse - Atmosphere Activated

Hello Brennan Proudfoot,

We have activated your CyVerse account for access to **Atmosphere**.

To begin using Atmosphere, go to <http://atmo.cyverse.org> and login with your CyVerse username and password.

You have also been added to the Atmosphere listserv, which we use for system maintenance and upgrade announcements. If you'd like for us to remove you, please let us know.

The link to the Atmosphere documentation wiki is:

<https://pods.iplantcollaborative.org/wiki/display/atmman/Atmosphere+Manual+Table+of+Contents>.

Atmosphere is currently under heavy development, and we may need to perform maintenance on Atmosphere to deploy new features for preview access.

We welcome any suggestions that you would like to offer, such any computational tools, configurations, or new features in the user interface, to help us make Atmosphere more useful for plant science. If you have any questions, feel free to email support@cyverse.org.

As a reminder, your CyVerse username is: **bwproud**.

Sincerely,
- CyVerse Staff



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READY TO GET STARTED?

[LAUNCH ATMOSPHERE](#)

- Create an account and [request access to Atmosphere](#)
- [View the list of Atmosphere images](#)



The Images Page

<https://atmo.cyverse.org/application/images>

A screenshot of a web browser showing the CyVerse Images application. The URL in the address bar is https://atmo.cyverse.org/application/images. The page features a dark blue header with the CyVERSE logo and navigation links for 'Images' and 'Help'. Below the header are search and tag filters labeled 'SEARCH' and 'TAGS'. A large section titled 'Image Search' contains a search bar and a message indicating 100 of 311 images are being shown.

Image Search

Search across image name, tag or description

Showing 100 of 311 images

Featured Images



Ubuntu 12.04 Unity GUI
Feb 10th 17 02:39 by test-sggregory

Ubuntu 12.04 LTS (Precise Pangolin) is Canonical's sixteenth re

Featured Ubuntu Ubuntu_12



CyVerse CentOS 6.8 GUI Base
Aug 9th 16 05:06 by edwins

This is a base image for CentOS 6.8 with GNOME GUI Desktop



Java Images Page

<https://atmo.cyverse.org/application/images>

The screenshot shows the CYVERSE Java Images page. At the top, there's a navigation bar with the CYVERSE logo, a 'Images' button (which is currently active and highlighted in blue), and a 'Help' button. Below the navigation bar are two search/filter buttons: 'SEARCH' and 'TAGS'. The main section is titled 'Image Search' and contains a search bar with the word 'Java' typed into it. A red box highlights the 'Java' search term. Below the search bar, a message says 'Showing 8 results for 'Java''. The results are listed under the heading 'All Images'. The first result is 'Ubuntu 14.04 XFCE with Java 8' by 'calvinmclean', dated 'Feb 13th 17 05:29'. Its thumbnail is a green and white geometric pattern. A red box highlights this entire card. Below it is another result: 'Ubuntu 14.04.2 - Java 8' by 'sgregory', dated 'Oct 19th 15 07:52'. Its thumbnail is a yellow and orange geometric pattern. To the right of the cards, there's a black speaker icon with sound waves, indicating audio content.

CYVERSE

Images Help

SEARCH TAGS

Image Search

Java

Showing 8 results for 'Java'

All Images

 Ubuntu 14.04 XFCE with Java 8
Feb 13th 17 05:29 by calvinmclean

This image is a standard Ubuntu 14.04 OS with XFCE and Oracle Java 8 installed.

java8 Ubuntu ubuntu1404 xfce

 Ubuntu 14.04.2 - Java 8
Oct 19th 15 07:52 by sgregory

The latest version of Ubuntu 14.04.2 with Oracle Java 8

java8 Ubuntu

Launching Java 8 Image

<https://atmo.cyverse.org/application/images/1418>

The screenshot shows the CYVERSE Images application interface. At the top, there is a navigation bar with the CYVERSE logo, a 'Images' link, a 'Help' link, and a 'Login' button (which is highlighted with a red box). Below the navigation bar are search and tag filters labeled 'SEARCH' and 'TAGS'. A large blue callout box with a 'Login' button is positioned on the right side of the page. The main content area displays details for an image named 'Ubuntu 14.04 XFCE with Java 8'. It includes a green circular icon, creation date ('Created: 2/13/2017 05:29 pm EST'), creator ('Created by: calvinmclean'), a description ('Description: This image is a standard Ubuntu 14.04 OS with XFCE and Oracle Java 8 installed.'), and tags ('Tags: java8, Ubuntu, ubuntu1404, xfce'). At the bottom, there is a 'Versions' section showing a single version entry (1.0, created on Feb 13th 17, 05:35 by calvinmclean) and a note that 'Installed Oracle Java 8'. A speaker icon in the bottom right corner indicates that there is audio content associated with this slide.

CYVERSE

Images Help Login

SEARCH TAGS

Login

← Ubuntu 14.04 XFCE with Java 8

Created: 2/13/2017 05:29 pm EST

Created by: calvinmclean

Description: This image is a standard Ubuntu 14.04 OS with XFCE and Oracle Java 8 installed.

Tags: java8, Ubuntu, ubuntu1404, xfce

Versions

1.0
Feb 13th 17, 05:35 by calvinmclean

Installed Oracle Java 8

Speaker icon

Launching Java 8 Image

Screenshot of the CyVerse platform interface showing the "Images" section.

The top navigation bar includes:

- CYVERSE logo
- Dashboard
- Projects
- Images (selected)
- Providers
- Help
- bwroud ▾

The main content area shows a listing for the "Ubuntu 14.04 XFCE with Java 8" image:

- ← Ubuntu 14.04 XFCE with Java 8**
- Created:** 2/13/2017 05:29 pm EST
- Created by:** calvnmclean
- Description:** This image is a standard Ubuntu 14.04 OS with XFCE and Oracle Java 8 installed.
- Tags:** java8, Ubuntu, ubuntu1404, xfce

Actions available for this image include:

- Star icon
- + Add to Project
- Launch** (button highlighted with a red box)

Versions

Version	Last Updated	Available On
1.0	Feb 13th 17, 05:35 by calvnmclean	Installed Oracle Java 8 Available on iPlant Cloud - Tucson

Page footer:

- ©2017 CyVerse
- Feedback & Support
- A decorative footer bar featuring a speaker icon and various small icons representing different services or tools.

Create Project and Launch Image

Secure <https://atmo.cyverse.org/application/images/1418>

Yahoo Google YouTube Netflix Prime IMDB reddit Metacritic /mu/ Spotify GM bank UNC Email Sakai P Carolina HBO

CYVERSE Dashboard Projects Images Providers Help bwproud

SEARCH ← Ubuntu 14.04 LTS

Created: Created by: Description: Tags:

Versions 1.0 Feb 13th 17, 2017

Launch an Instance / Create New Project

Project Name: Comp 533

Description: Time Tests

Add to Project Launch

You'll be prompted to create a new project. After creating the project launch the image

Cancel Create

Feedback & Support

Launching Takes Time: Build Phase

CYVERSE Dashboard Projects Images Providers Help bwprout ▾

RESOURCES DETAILS OPTIONS ▾

Comp 533

NEW

Instances

Name	Status	Activity	IP Address	Size	Provider
Ubuntu 14.04 XFCE with Java 8	Build	N/A	N/A	Tiny1	iPlant Cloud - Tucson

Volumes
You have not added any volumes to this project.

Images
You have not added any images to this project.

Links
You have not added any

You'll be redirected to a screen that looks like this until you get access, which can take some time



Active Instance

RESOURCES DETAILS OPTION

Comp 533

NEW  

Instances

<input type="checkbox"/>	Name	Status	Activity	IP Address	Size	Provider
<input type="checkbox"/>	 Ubuntu 14.04 XFCE with Java 8	 Active	N/A	128.196.64.122	Tiny1	iPlant Cloud - Tucson

Volumes

You have not added any volumes to this project.

Images

You have not added any images to this project.

Links

You have not

After getting access your window will look like this with the status active and the IP address of the new “machine” that has been computed for you



Email about Created Instance

AA

Atmosphere Admin <atmo-notify@cyverse.org>

Today, 2:36 AM

Proudfoot, Brennan William; Atmosphere Admin <atmo-notify@cyverse.org> ▾

Hello Brennan Proudfoot,

The CyVerse instance <Ubuntu 14.04 XFCE with Java 8> is running and ready for use.

Your Instance Information:

- * Name: Ubuntu 14.04 XFCE with Java 8
- * IP Address: 128.196.64.122
- * SSH Username: bwproud
- * SSH Keys deployed for root:
- * UUID: e2faec60-6530-47e9-a126-59f8a1ea16fa
- * Cloud Provider: iPlant Cloud - Tucson
- * Launched at: Mar, 11 2017 07:30:41 UTC (Mar, 11 2017 00:30:41 Arizona time)

This e-mail notification was auto-generated after instance launch

This email provides you with both the ip address and your ssh username



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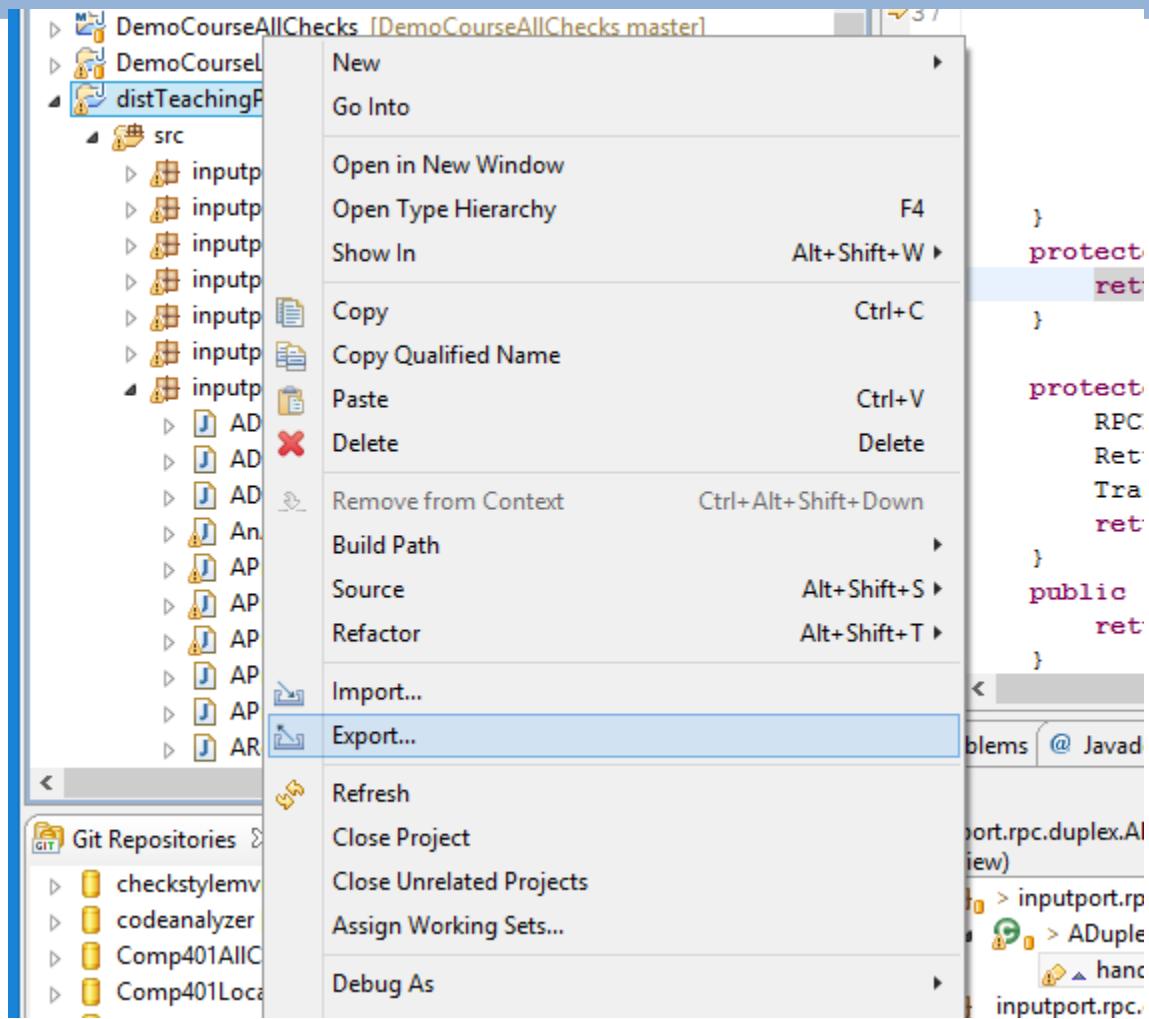
Interacting with Instances

Suspending and Resuming
Instances

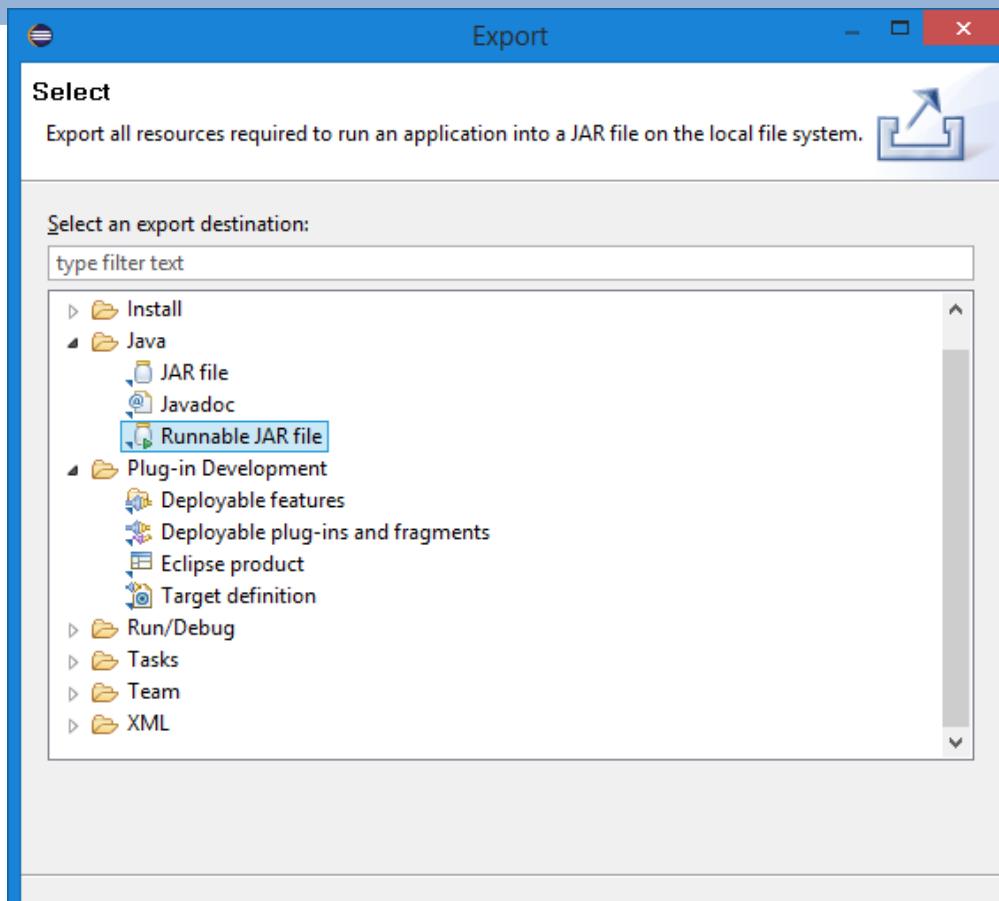
Shared Atmosphere Instances



Exporting an Eclipse Project



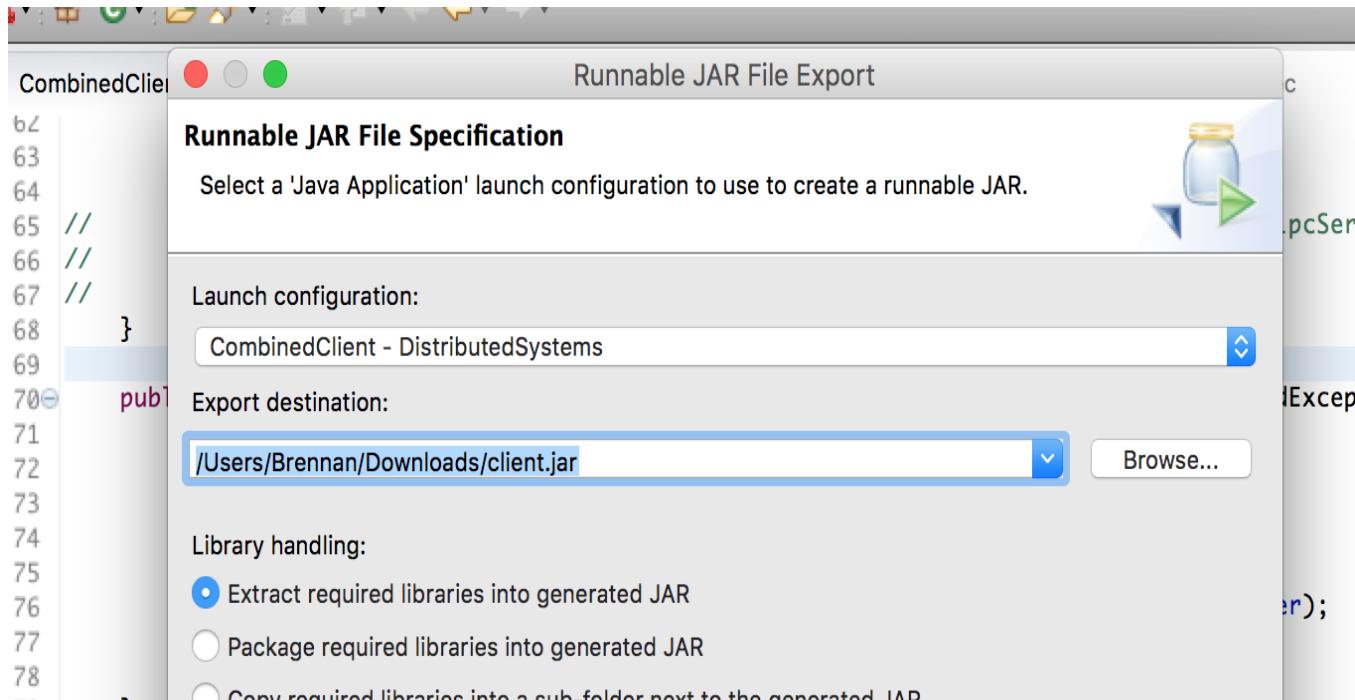
Runnable Jar



Runnable jar includes identity of the main class



Identifying the Main in Jar



Export your client and server as different executable jar files with different launch configurations



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Transferring Files

<https://pods.iplantcollaborative.org/wiki/display/atmman/Managing+Your+Atmosphere+Data>

The screenshot shows a web browser window with the URL <https://pods.iplantcollaborative.org/wiki/display/atmman/Managing+Your+Atmosphere+Data>. The page title is "Managing Your Atmosphere Data". The content includes sections on "Installing binaries and storing data" and "Using your CyVerse Data Store in Atmosphere". A sidebar on the right contains a "Helpful Links" section with links to "On This Page" and "Related Pages". The bottom of the page has a footer with Atlassian Confluence information and a navigation bar at the bottom.

This space searches only documentation in the Atmosphere space. To search all CyVerse wiki content, use the box at the upper right.

For overview information, see [Atmosphere](#) on the CyVerse website.

Search

> Getting Started
> Using Projects
> Using Instances
» Selecting Your Default Cloud Provider
> Using Volumes
» Managing Your Atmosphere Data
> Getting Help with Atmosphere

Managing Your Atmosphere Data

Created by kennedy, last modified on Sep 20, 2016

You can install binaries and store data, as well as use your CyVerse Data Store in Atmosphere.

You also can back up and restore your data using a script. For information, see [Backing Up and Restoring Your Data to the Data Store](#).

Installing binaries and storing data

- Install your tool binaries in `/usr/local/bin/`
- To retrieve your data in the future, store your data in `/mydata`, where you have mounted your volume.

Using your CyVerse Data Store in Atmosphere

There are three ways to access data from the CyVerse Data Store:

- **Use FUSE to mount the Data Store**

For direct-file system-based access where your data appears as a drive on your instance, see [Using FUSE to mount the CyVerse Data Store](#). Although not a high-throughput method, this method does not require modifications to your existing programs.
- **Use iCommands or Cyberduck to copy the data to your instance**

iCommands is preinstalled on all Atmosphere instances, so you only need to

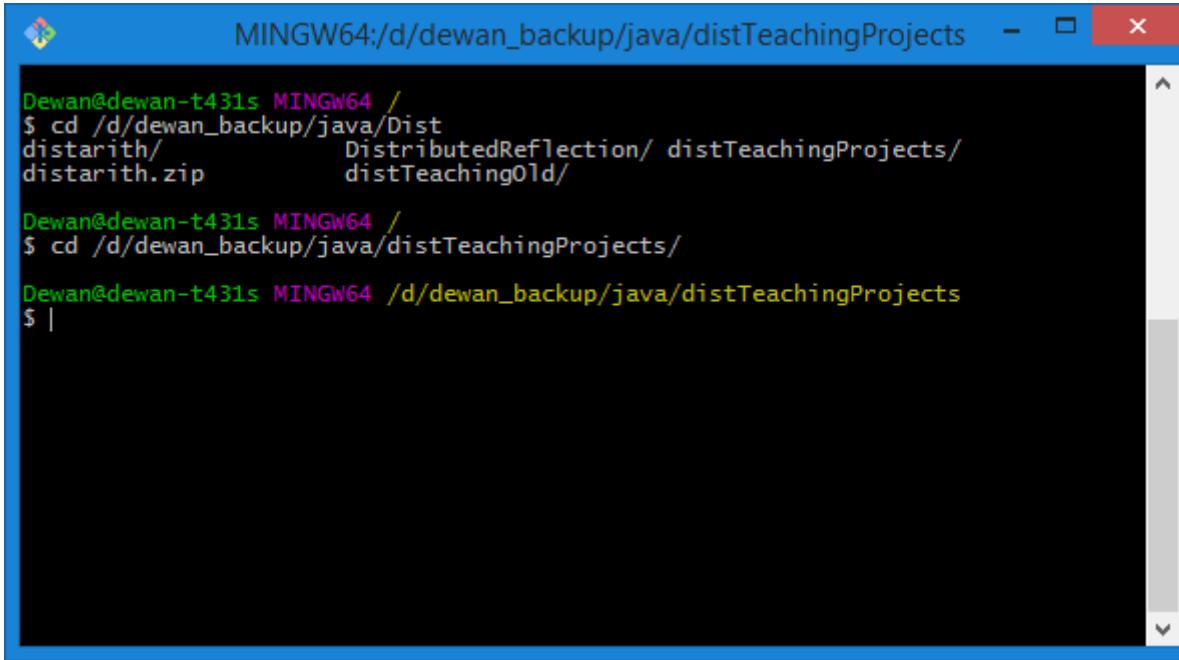
Powered by a free Atlassian Confluence Open Source Project License granted to The iPlant Collaborative, University of Arizona. Evaluate Confluence today.

Powered by Atlassian Confluence 5.5.7, Team Collaboration Software · Report a bug · Atlassian News
All content on this site is ©2017 iPlant Collaborative. Documentation is licensed under a Creative Commons Attribution 3.0 Unported License.

AtmosphereAccess.pptx AtmosphereAccess.pptx AtmosphereAccess.pptx AtmosphereAccess.pdf Show all



SFTP (not FTP) Client



```
Dewan@dewan-t431s MINGW64 /  
$ cd /d/dewan_backup/java/Dist  
distarith/           DistributedReflection/ distTeachingProjects/  
distarith.zip        distTeachingOld/  
  
Dewan@dewan-t431s MINGW64 /  
$ cd /d/dewan_backup/java/distTeachingProjects/  
  
Dewan@dewan-t431s MINGW64 /d/dewan_backup/java/distTeachingProjects  
$ |
```

Git Bash is an SFTP Client

Change directory to folder containing the files to be uploaded



Uploading Files

```
dhcp00774:Downloads Brennan$ sftp bwroud@128.196.64.122
```

sftp into the ip address you are emailed with your username and upload your client and server and any files they access such as image files

```
*****  
Access is restricted to AUTHORIZED USERS only! If  
you are not authorized LEAVE NOW!  
*****
```

```
bwroud@128.196.64.122's password:
```

```
Connected to 128.196.64.122.
```

```
sftp> put client.jar
```

```
Uploading client.jar to /home/bwroud/client.jar
```

```
client.jar 100% 4942KB 4.8MB/s 00:01
```

```
sftp> put server.jar
```

```
Uploading server.jar to /home/bwroud/server.jar
```

```
server.jar 100% 4942KB 4.8MB/s 00:01
```



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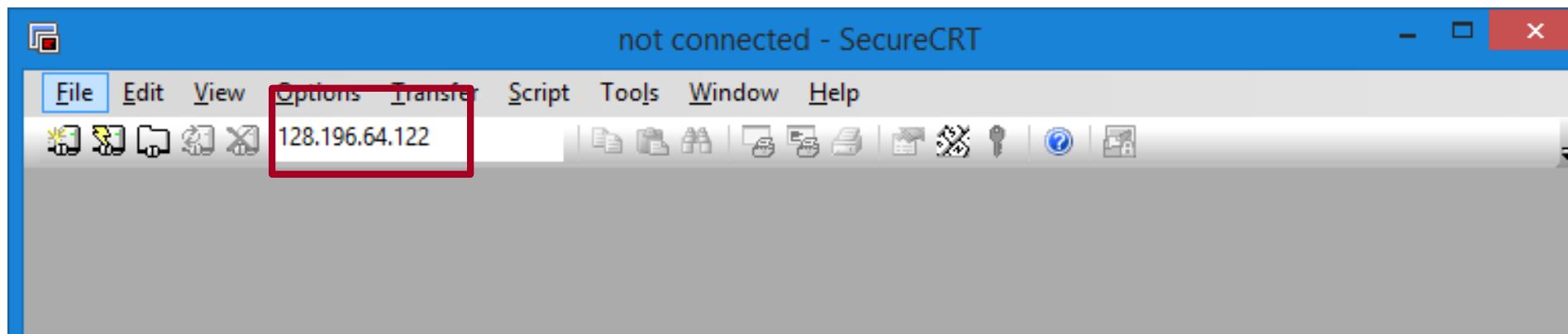
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SSH Connection



Enter CyVerse login name and password



Two SSH Sessions to Same Instance

To run your program (in headless mode), ssh into the ip address and run your jars using the “java –jar” commands

```
File
Home
idr
Sphere
Welcome to
Google Chrome
Last login: Sat Mar 11 02:07:41 2017 from 152.23.243.12
bwprproud@128:~$ java -jar server.jar
W***Creating proxy out of interface: interface a3.gipc.GIPCClientObject call to
equals() and toString() will not be executed remotely even if these Object metho
ds have been overridden
client added
1
client added
1
```

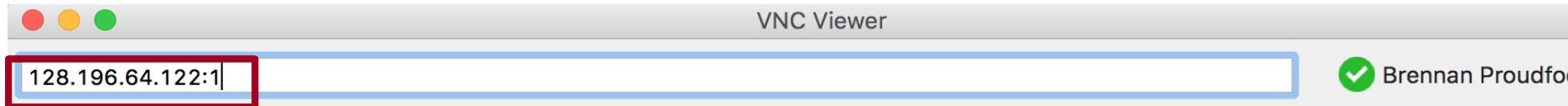
```
Brennan — bwprproud@128: ~ — ssh bwprproud@128.196.64.122 — 80x24
atomic mode set to true
Exiting waiting mode for atomicity change
NIO - Time Test 3(atomic mode): Execution took 0.19 seconds
Entering waiting mode for IPC mechanism change
IPC mode set to RMI
Exiting waiting mode for IPC mechanism change
Setting local mode to true
atomic mode set to false
Exiting waiting mode for atomicity change
RMI - Time Test 1(Local mode): Execution took 0.016 seconds
Setting local mode to false
RMI - Time Test 2(Nonatomic mode): Execution took 1.062 seconds
atomic mode set to true
Exiting waiting mode for atomicity change
RMI - Time Test 3(atomic mode): Execution took 1.905 seconds
Entering waiting mode for IPC mechanism change
IPC mode set to GIPC
Exiting waiting mode for IPC mechanism change
Setting local mode to true
atomic mode set to false
Exiting waiting mode for atomicity change
GIPC - Time Test 1(Local mode): Execution took 0.003 seconds
Setting local mode to false
```

sphere

GUI program will either not run saying no X server or run in headless mode



VNC Viewer Remote Desktop

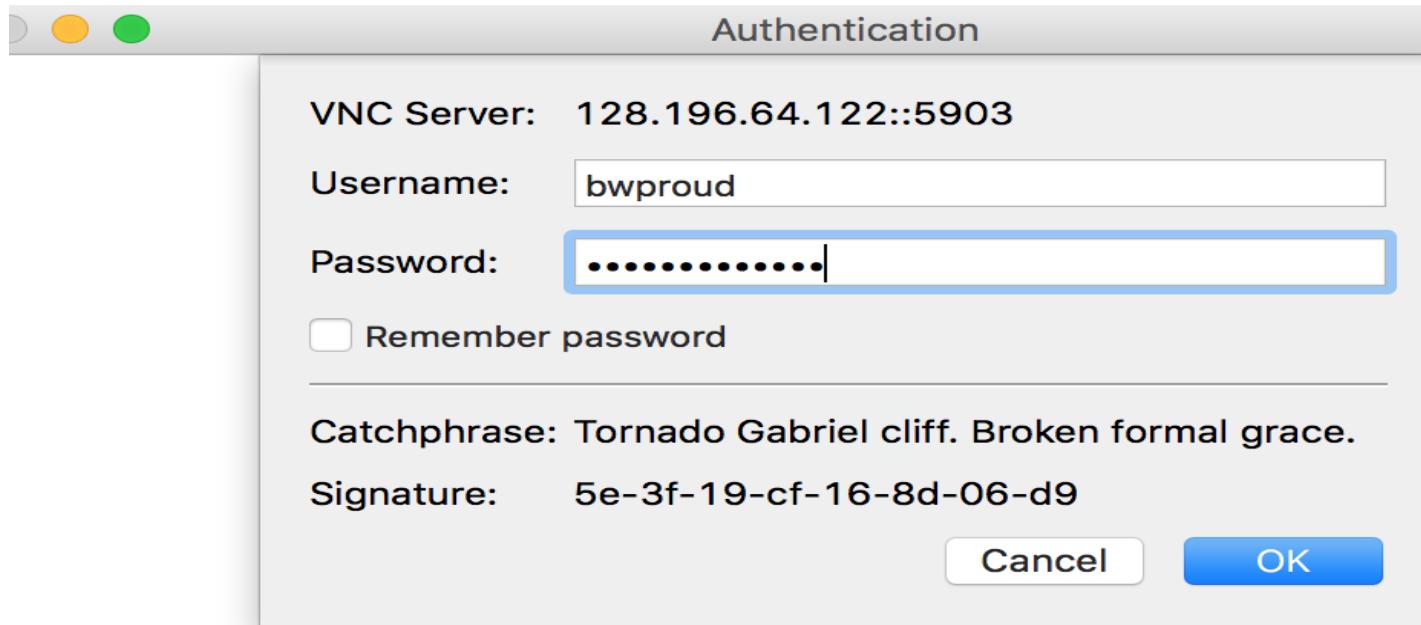


Download and launch VNCViewer and in the address bar put your images ip address at port 1

A VNC Server is automatically started for the owner of the instance



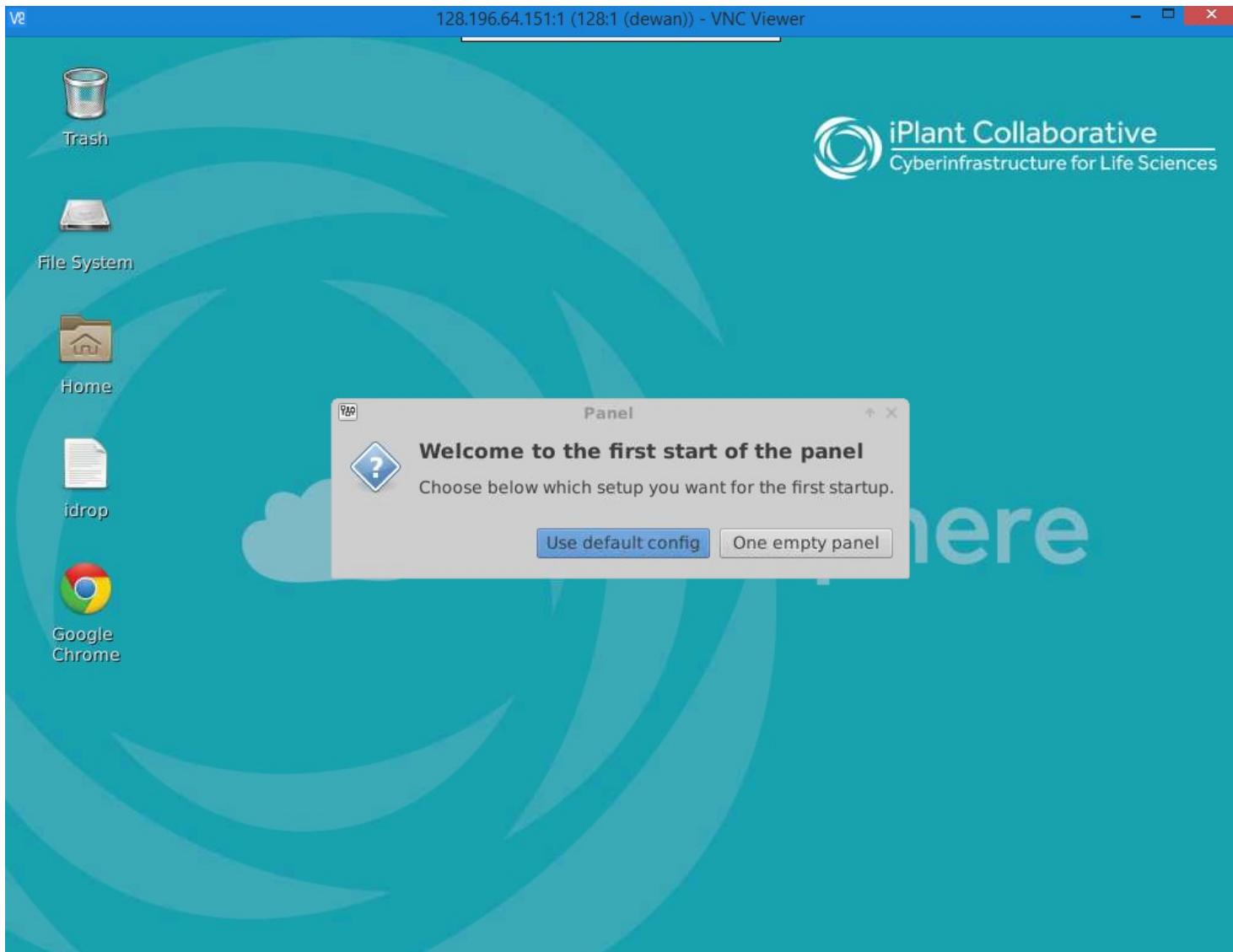
Logging in using CyVerse Credentials



Login using your cyverse username and password



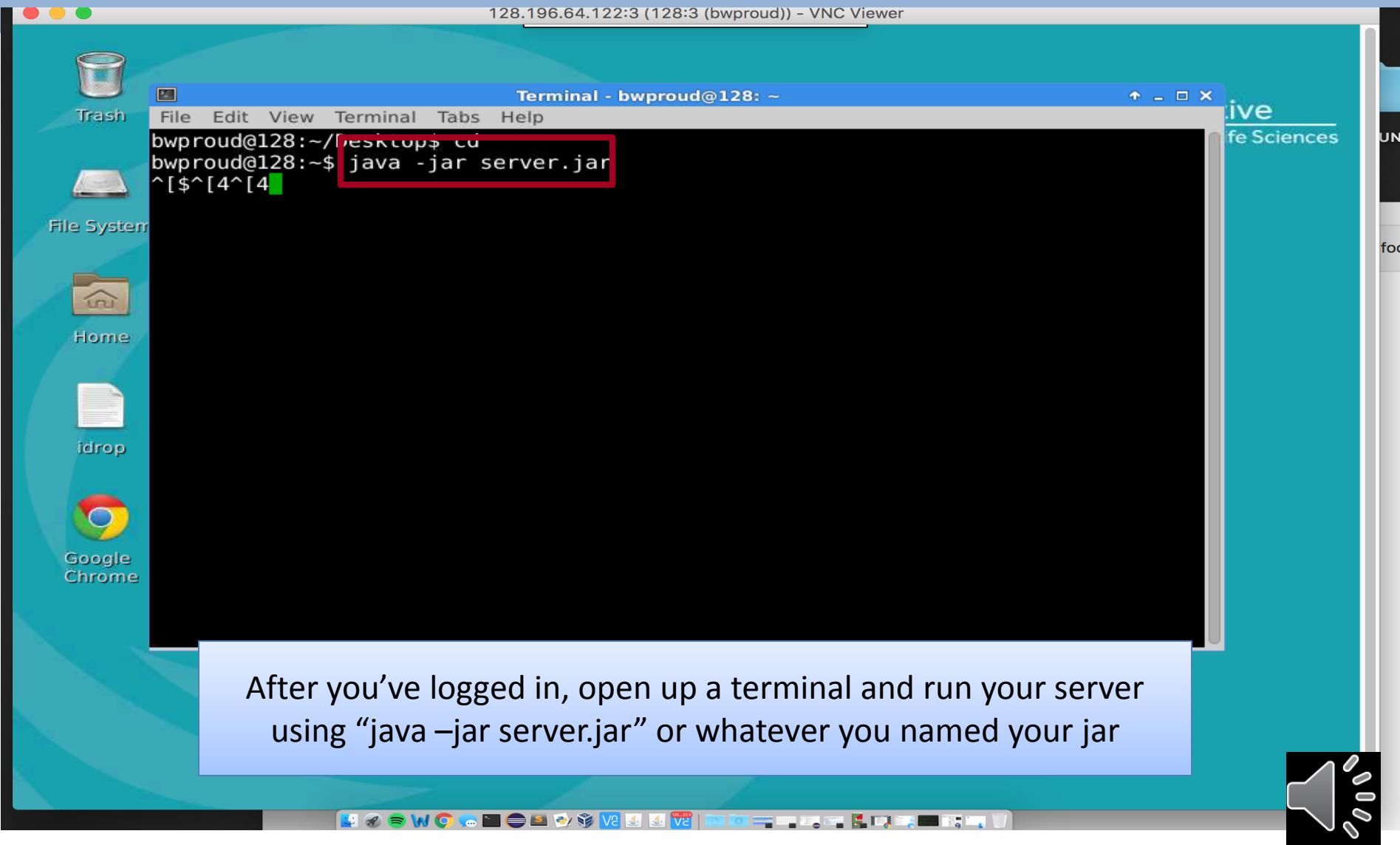
Remote Desktop to Instance



Launch Terminal Emulator



Using a Terminal



Running Client on Same Instance

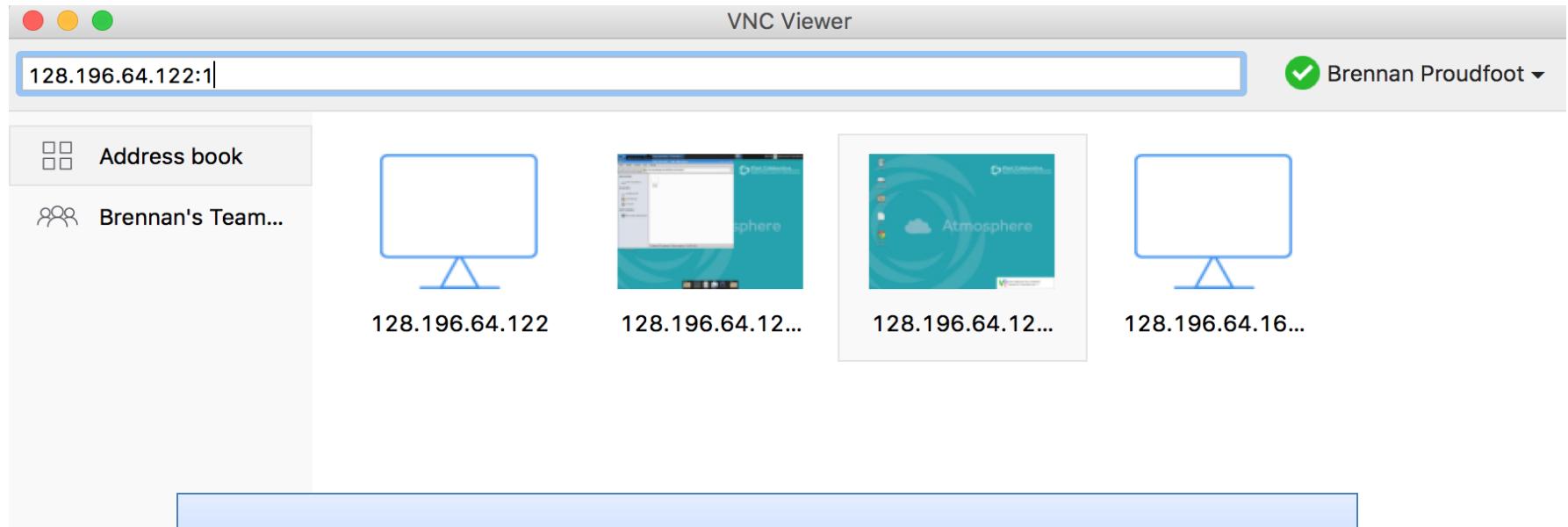
The screenshot shows a VNC session on a Mac OS X desktop. In the foreground, a terminal window titled "Terminal - bwproud@128: ~" displays the output of a Java application. The application performs several time tests and prints out its results and internal state changes. A tooltip box highlights the text "If you do the same with client jar, your program should run".

```
NIO - Time Test 2(Nonatomic mode): Execution took 5.876 seconds  
atomic mode set to true  
Exiting waiting mode for atomicity change  
NIO - Time Test 3(atomic mode): Execution took 0.454 seconds  
Entering waiting mode for IPC mechanism change  
IPC mode set to RMI  
Exiting waiting mode for IPC mechanism change  
Setting local mode to true  
atomic mode set to false  
Exiting waiting mode for atomicity change  
RMI - Time Test 1(Local mode): Execution took 4.164 seconds  
Setting local mode to false  
RMT - Time Test 2(Nonatomic mode): Execution took 5.005 seconds
```

If you do the same with client jar, your program should run

```
Exiting waiting mode for IPC mechanism change  
Setting local mode to true  
atomic mode set to false  
Exiting waiting mode for atomicity change  
GIPC - Time Test 1(Local mode): Execution took 3.618 seconds  
Setting local mode to false
```

Interacting with Multiple Instances



Can have multiple VNC or SSH sessions to different instances

To create each new instance, go to the Image URL and launch it
(see “Launching Java 8 Image”)



Conserving Resources

Dashboard Projects Images Providers Help dewa

RESOURCES

test

NEW

Instances

Go to Projects Tab to see Instances

If you exhaust your quota, instance will be automatically suspended but will need to wait to accumulate credit a la free calling minutes

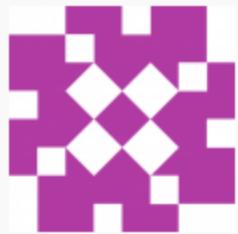
Click on instance to manipulate it

<input type="checkbox"/> Name	Status	Activity	IP Address	Size	Provider
<input type="checkbox"/> Ubuntu 14.04 XFCE with Java 8	● Suspended	N/A	N/A	Tiny1	iPlant Cloud - Tucson
<input type="checkbox"/> Ubuntu 14.04 XFCE with Java 8	● Suspended	N/A	N/A	Tiny1	iPlant Cloud - Tucson
<input type="checkbox"/> Ubuntu 14.04 XFCE with Java 8	● Suspended	N/A	N/A	Tiny1	iPlant Cloud - Tucson
<input type="checkbox"/> Ubuntu 14.04 XFCE with Java 8	● Suspended	N/A	N/A	Tiny1	iPlant Cloud - Tucson
<input type="checkbox"/> Ubuntu 14.04 XFCE with Java 8	● Active	N/A	128.196.64.151	Tiny1	iPlant Cloud - Tucson

Volumes



Instance Operations



Ubuntu 14.04 XFCE with Java 8

Instance Details

Status ● Active

Activity N/A

Size tiny1 (1 CPUs, 4 GB memory, 30 GB root)

IP Address 128.196.64.151

Launched Mar 11, 2017 (27 minutes ago)

Based on Ubuntu 14.04 XFCE with Java 8

Provider iPlant Cloud - Tucson

Actions

Report

Image

Suspend

Stop

Reboot

Redeploy

Delete

Links

Open Web Shell



Reactivating

Instances

Name	Status	Activity	IP Address	Size	Provider
Ubuntu 14.04 XFCE with Java 8	Suspended	N/A	N/A	Tiny1	iPlant Cloud - Tucson
Ubuntu 14.04 XFCE with Java 8	Suspended	N/A	N/A	Tiny1	iPlant Cloud - Tucson
Ubuntu 14.04 XFCE with Java 8	Suspended	N/A	N/A	Tiny1	iPlant Cloud - Tucson
Ubuntu 14.04 XFCE with Java 8	Suspended	N/A	N/A	Tiny1	iPlant Cloud - Tucson
Ubuntu 14.04 XFCE with Java 8	Active	N/A	128.196.64.151	Tiny1	iPlant Cloud - Tucson

Volumes

Will get new IP address when unsuspended.

AtmosphereAccess.pptx AtmosphereAccess.pptx AtmosphereAccess.pptx AtmosphereAccess.pdf



Reactivating

NEW [Resources > Ubuntu 14.04 XFCE with Java 8](#)

 Ubuntu 14.04 XFCE with Java 8

Actions

-  Report
-  **Resume**
-  Reboot
-  Delete

Instance Details

Status	 Suspended
Activity	N
...	...

Uploaded files should still be accessible

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Resuming Problems

Instances

	Name	Status	Activity	IP Address	Size	Provider
<input type="checkbox"/>	 Ubuntu 14.04 XFCE with Java 8	● Suspended	N/A	N/A	Tiny1	iPlant Cloud - Tucson
<input type="checkbox"/>	 Ubuntu 14.04 XFCE with Java 8	● Active	Networking	128.96.64.163	Tiny1	iPlant Cloud - Tucson
<input type="checkbox"/>	 Ubuntu 14.04 XFCE with Java 8	● Suspended	N/A	N/A	Tiny1	iPlant Cloud - Tucson
<input type="checkbox"/>	 Ubuntu 14.04 XFCE with Java 8	● Suspended	N/A	N/A	Tiny1	iPlant Cloud - Tucson
<input type="checkbox"/>	 Ubuntu 14.04 XFCE with Java 8	● Suspended	N/A	N/A	Tiny1	iPlant Cloud - Tucson

May get deployment error or resuming may hang, so save changed files before suspending



Distributed Java Interactive Programs in Multiple Virtual Computers

CyVerse Access:

Atmosphere Access

Creating Atmosphere Instances

Exporting Jars

Transferring Files to Instances

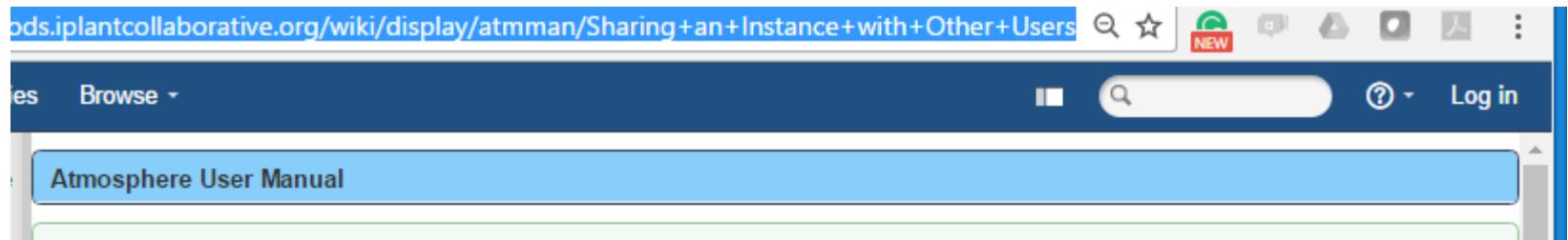
Interacting with Instances

Suspending and Resuming
Instances

Shared Atmosphere Instances



Sharing an Instance



A screenshot of a web browser window. The address bar shows the URL: <https://pods.iplantcollaborative.org/wiki/display/atmman/Sharing+an+Instance+with+Other+Users>. The browser interface includes a search bar, a 'Log in' button, and various icons. The main content area displays the 'Atmosphere User Manual' page with the title 'Sharing an Instance with Other Users'.

<https://pods.iplantcollaborative.org/wiki/display/atmman/Sharing+an+Instance+with+Other+Users>



Atmosphere Manual / Atmosphere Manual Table of Contents / Using Instances

Tools ▾

Sharing an Instance with Other Users

Created by sriramus, last modified by lkennedy on Oct 04, 2016

You can add additional users to an instance. The new user must be a registered CyVerse user.

1. If necessary, connect to your instance via SSH or VNC.
2. Log in as the root user and enter your CyVerse password when prompted, to be given root privileges:

```
sudo su -
```

3. Using a text editor, open the `/etc/group` file:

- a. Find the line listing all users who belong to the `users` group. In most cases, this will be your userid (e.g., `jane`).
- b. Add the new username to the end of the line, substituting the new username for `henri`, as in the following example:

```
users:x:100:jane,henri
```

4. Repeat for each additional user to add to the instance.

5. When done, save the changes and exit the file.



Sharing an Instance

128.196.64.151 - SecureCRT

File Edit View Options Transfer Script Tools Window Help

Enter host <Alt+R>

128.196.64.151 x

```
System Load: 0.13      Processes: 137
Usage of /home: 0.1% of 29.40GB  Users logged in: 0
Memory usage: 7%
Swap usage: 0%
IP address for eth0: 172.25.207.3

Graph this data and manage this system at:
https://landscape.canonical.com/

Get cloud support with Ubuntu Advantage Cloud Guest:
http://www.ubuntu.com/business/services/cloud

welcome to

The Ubuntu logo is displayed as a grid of blue and white squares forming a stylized 'Ubuntu' wordmark.

Last login: Sat Mar 11 16:08:17 2017 from 24.211.227.198
dewan@128:~$ sudo su -
[sudo] password for dewan:
Sorry, try again.
[sudo] password for dewan:
root@128:~# vi /etc/group
```

Ready ssh2: AES-256-CTR | 25, 26 | 25 Rows, 83 Cols | VT100 | CAP NUM ...



Sharing an Instance

128.196.64.151 - not connected - SecureCRT

File Edit View Options Transfer Script Tools Window Help

Enter host <Alt+R>

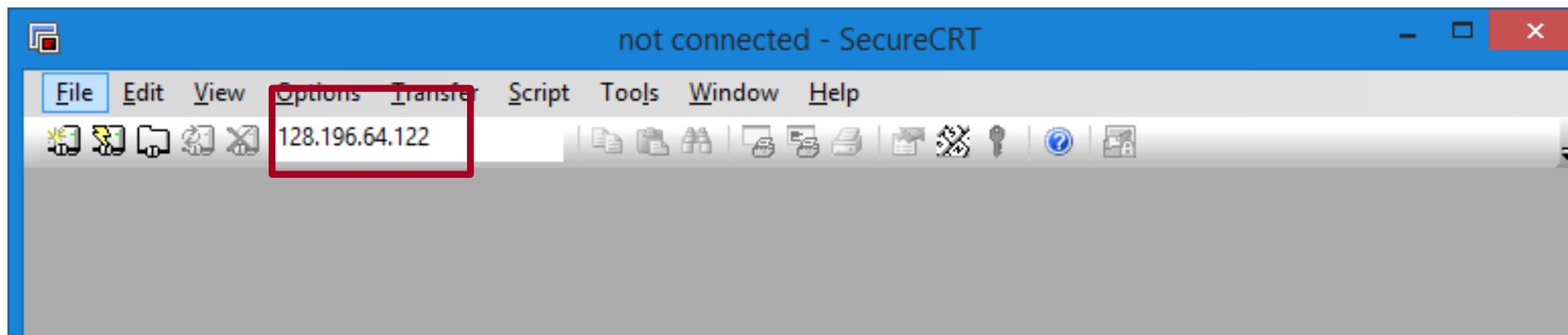
128.196.64.151 x

```
irc:x:39:  
src:x:40:  
gnats:x:41:  
shadow:x:42:  
utmp:x:43:  
video:x:44:  
sasl:x:45:  
plugdev:x:46:  
staff:x:50:  
games:x:60:  
users:x:100:dewan, _bwproud  
nogroup:x:65534:  
libuuid:x:101:  
netdev:x:102:  
crontab:x:103:  
syslog:x:104:  
fuse:x:105:  
messagebus:x:106:  
mlocate:x:107:  
ssh:x:108:  
landscape:x:109:  
admin:x:110:  
ntp:x:111:  
"/etc/group" 61L, 781C written  
root@128:~# exit
```

Ready | 25, 17 | 25 Rows, 83 Cols | VT100 | CAP NUM ...



New User Can SSH



New User Needs VNCServer

```
bwproud@128:~$ vncserver  
VNC(R) Server 5.2.3 (r8648) 64-bit (Jan 28 2015 15:47:49)  
Copyright (C) 2002-2015 RealVNC Ltd.  
VNC is a registered trademark of RealVNC Ltd in the U.S. and in other  
countries.  
Protected by UK patent 2481870; US patent 8760366.  
See http://www.realvnc.com for information on VNC.  
For third party acknowledgements see:  
http://www.realvnc.com/products/vnc/documentation/5.2/acknowledgements.txt
```

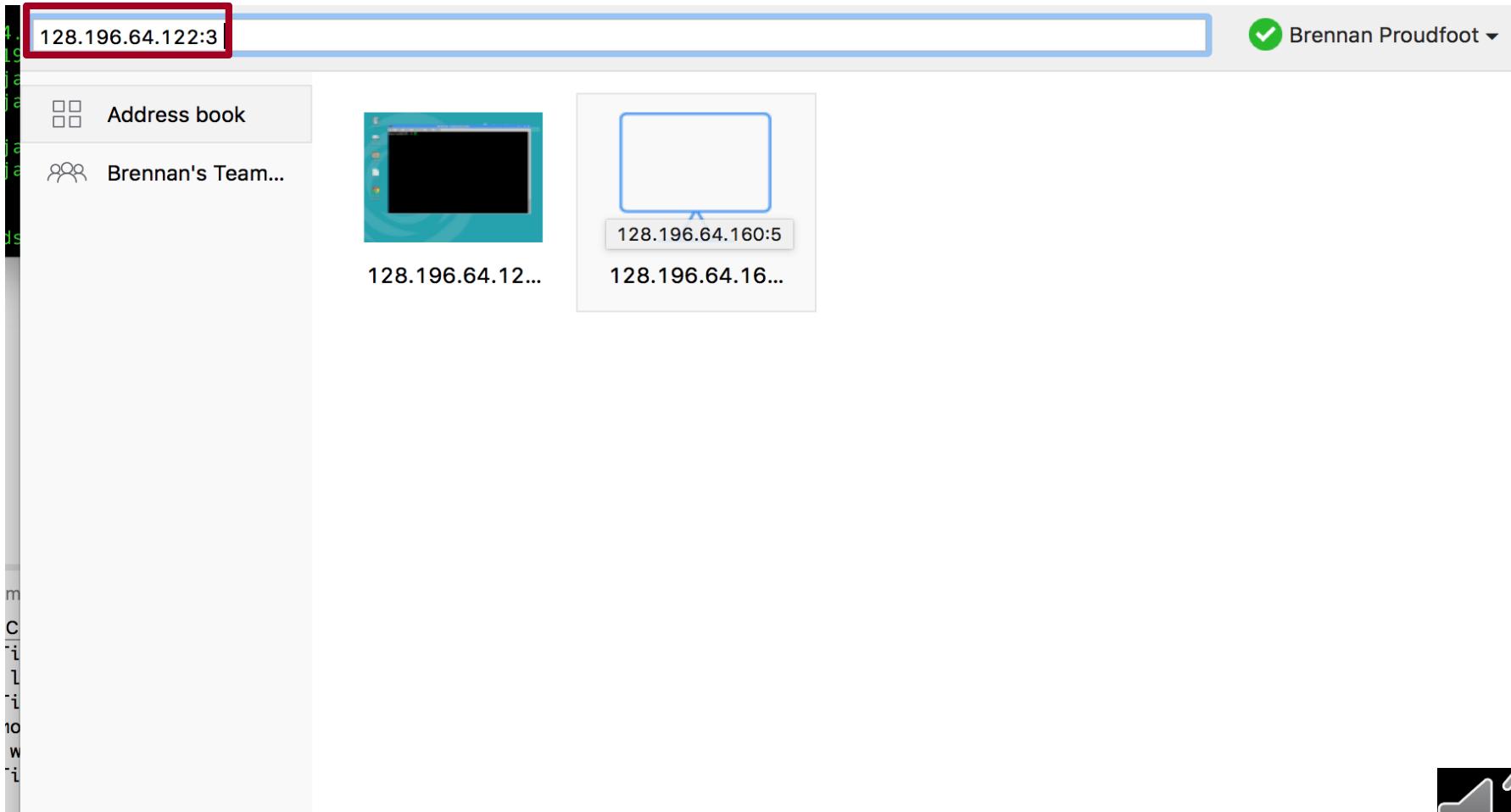
Run the vncserver command to find the ip address with port to access the GUI

```
VNC Server catchphrase: "Tornado Gabriel cliff. Broken formal grace."  
signature: 5e-3f-19-cf-16-8d-06-d9
```

```
Log file is /home/bwproud/.vnc/128.196.64.122:5.log  
New desktop is 128.196.64.122:5 (172.28.104.2:5)
```



VNC Client Now Uses Different Port



Killing VNC Server

```
vncserver -kill :3
```



Other Resources

YouTube atmosphere iplant

Atmosphere Cloud Computing
iPlant Collaborative • 1/3 videos

Atmosphere Cloud – Minute Tour
iPlant Collaborative

Atmosphere Cloud – Launching, Connecting, Suspending, Terminating
iPlant Collaborative

Atmosphere Cloud – Data transfer, Volumes, and Imaging
iPlant Collaborative

Atmosphere

Cloud computing for life sciences

- Choose an existing image or customize
- Instances up to 16-Core/128GB RAM
- Access via shell or VNC
- Share your image with selected users, or make them public

