

Eric Pitman Summer Workshop in Computational Science



0. Workshop environment



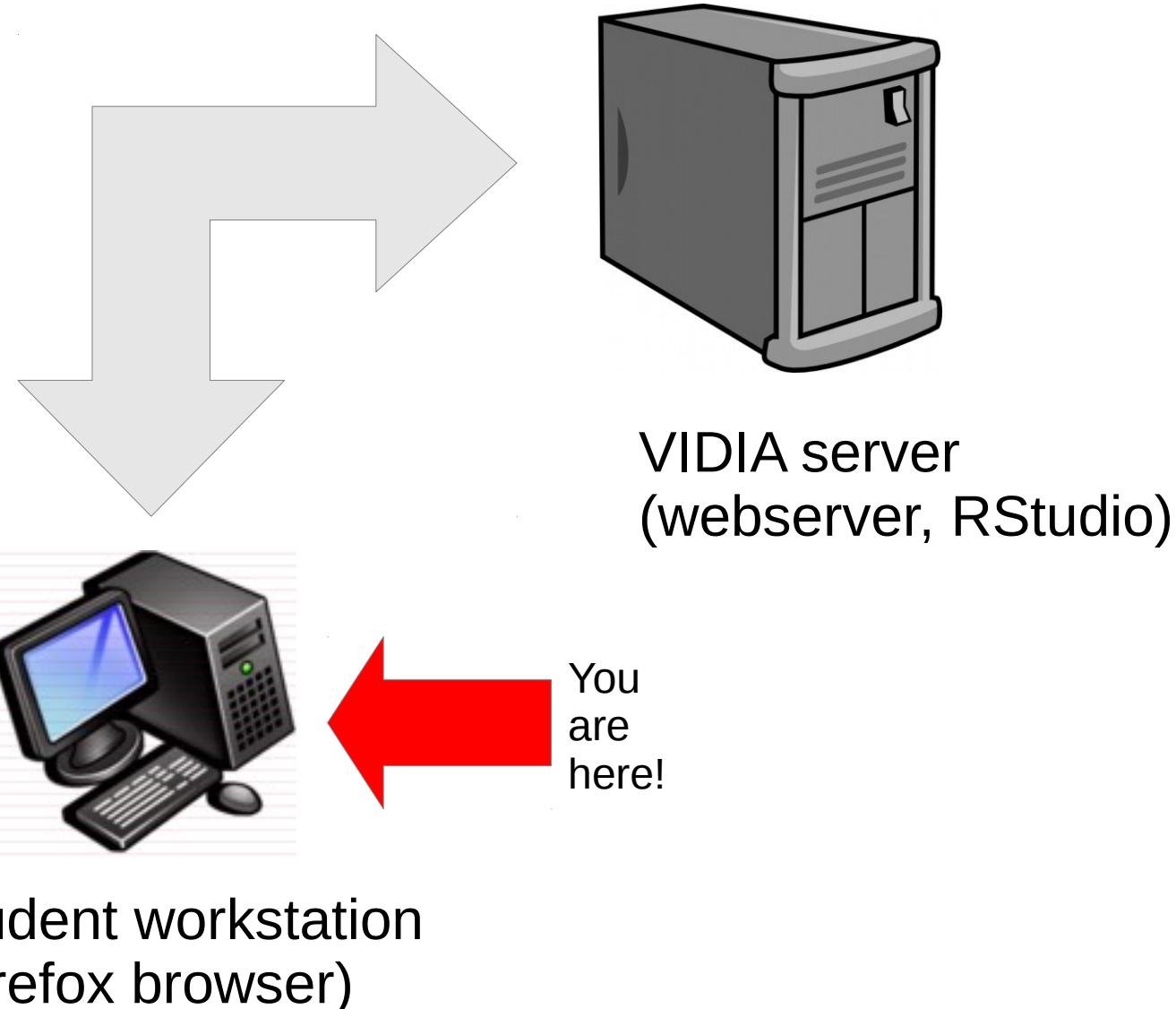
Intro to



0. Workshop environment: set up on vidia.ccr.buffalo.edu

- Register on VIDIA
- Starting the RStudio tool
- Setting up RStudio Projects: GitHub
- File transfer: using WebDAV
- Using groups on VIDIA

Workshop Computing Environment



Register on VIDIA

Use email address:

`firstname.lastname@workshop.ccr.buffalo.edu`

1. On `vidia.ccr.buffalo.edu`, click Register.
2. Specify your full name; choose username and password; specify email address; submit.
3. We will enable your account.



Create New Account screen

Create New Account

Login Information

User Login: REQUIRED

Combination of lowercase letters and numbers. No spaces or punctuation.

Password: REQUIRED

Confirm Password: REQUIRED

- Must contain at least 1 letter
- Must contain at least 1 number or punctuation mark
- Must be at least 8 characters long
- Must be no longer than 16 characters
- Must contain more than 4 unique characters
- Must not contain easily guessed words

Complete and submit:

- contact information
- username and password
- email address

Fill in required fields and submit

Login Information

User Login: **REQUIRED**

sally

User login name is available

Password: **REQUIRED**

.....

Contact Information

First Name: **REQUIRED**

Sally

Middle Name:

S

Valid E-mail: **REQUIRED**

jsperhac@yahoo.com

Confirm

jsperhac@yahoo.com

Important! You must confirm receipt of e-mail from webmaster@hubdemo.com to complete registration.

Human Check

Letters not clear?
Click to renew CAPTCHA.

Please enter the following characters you see into the textbox below.

5X4x3

Terms & Conditions

REQUIRED Yes, I have read and agree to the [Terms of Use](#).



Create Account

New account created

Create New Account

✓ Your account has been created successfully.

A confirmation email has been sent to 'jsperhac@yahoo.com'. You must click the link in that email to activate your account and resume using hubdemo.

We will enable your account; then, you can sign in to VIDIA.

User Dashboard

The screenshot displays a user dashboard with the following sections:

- My Groups:** Shows a workspace group with "approved" status. Buttons: All My Groups (1), All Groups, New Group.
- My Courses:** Shows two courses: "CCR Summer Workshop" (Active, student) and "Test Course for vidia v1.2.1" (Active, student). Buttons: All My Courses (2), All Courses.
- My Sessions:** Shows sessions for "Orange" and "Rapid Miner v5". Buttons: Open, Terminate.
- Storage (manage):** Shows 0% of 0.9GB used.
- My Projects:** Shows two projects: "Jnet Test Project" (By me | manager) and "Orange Explorations for IITG" (By J M Sperhac | collaborator). Buttons: All My Projects, All Projects, New Project.
- Resources:** Simulation Tools: RapidMiner, Orange, RStudio. Publications: All Resources.
- My Tools:** Recent, Favorites, All Tools tab. Tools listed: Rapid Miner v5, Workspace, Orange.

The left sidebar includes navigation links: Dashboard (selected), Profile, Groups (1), Account, Contributions, Collections (1), Messages (1), and Projects (2).

Running Rstudio tool on VIDIA

VIDIA Dashboard: RStudio Tool

The image shows the VIDIA dashboard for user J M Sperhac. The left sidebar contains links for Dashboard, Profile, Groups (4), Account, Contributions (11), Collections (1), Messages (25), and Projects (2). The main area has tabs for My Tools, Resources, and My Groups. A red arrow points to the Publications section under Resources.

My Tools

- Recent
- Favorites
- All Tools

- Rapid Miner v5
- Workspace
- Orange
- RStudio

These are your most recently used tools.

Resources

Simulation Tools

- RapidMiner
- Orange
- RStudio

Publications

My Courses

- CCR Summer Workshop
Active instructor
- Test Course for vidia v1.2.1
Active instructor

My Groups

- POLS 200, manager
Approaches to Political Science
- SOCL-209, manager
Social Research

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Improved Simulation Through Collaboration

Jeanette Sperhac (jsperhac)

[Logout](#)[My Account](#)[16 New Messages](#)

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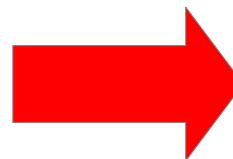
[HOME](#)[USER INFO](#)[ACCOUNTS](#)[SOFTWARE](#)[ABOUT](#)[RESEARCH GROUPS](#)[HELP!](#) (?)You are here: [Home](#) » [Tools](#) » [R Studio Tool](#) » [About](#)

R Studio Tool

By [Jeanette Sperhac](#)¹, [Steve Gallo](#)²

1. SUNY at Buffalo 2. Center for Computational Research, SUNY at Buffalo

RStudio is an IDE for the R language. It provides a multipane window environment for statistical computing and graphics in R.

[Launch Tool](#)

Version 1.0 - published on 12 Feb 2013

 Open source: [license](#) | [download](#)[View All Supporting Documents](#) [Add to your favorites!](#) Share: [Facebook](#) [Twitter](#) [Google+](#) ...

0 Citation(s)

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Published on

12 Feb 2013

Abstract

The R Studio Tool is a deployment of the RStudio IDE on the hpc2 hub. It provides a multipane window environment for statistical computing and graphics in R.

R Studio provides syntax highlighting, code completion, and smart indentation; ability to execute R code from the source editor; ability to easily manage multiple working directories using projects; and ability to quickly navigate code using type-ahead search.

hpc2 - resources: Tools: R Stud...

<https://hpc2.org/tools/rstudiotool/session/1123>

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Improved Simulation Through Collaboration

Jeanette Sperhac (jsperhac)

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16 New Messages

 Search

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You are here: [Home](#) » [resources](#) » [Tools](#) » [R Studio Tool](#) » [Session: 1123 "R Studio Tool"](#)

HELP! (?)

RStudio session:
Terminate
Suspend

[X Terminate](#)[Keep for later](#)

R Studio Tool

File Edit Code View Plots Session Project Build Tools Help

Go to file/function

Project: (None)

plot-extravaganza-mtcars.R x

ggplot2-examp >

```
1 # plot examples from statmethods.net
2 # using mtcars dataset
3 # 3 May 2013
4 # JMS
5
6
7 # pch controls point selection
8 # col controls point color
9 plot(mtcars$wt, mtcars$mpg, xlab="Vehicle Weight (lb/100 miles)", ylab="Vehicle MPG, miles/gallon"
10      , pch=8, col="darkblue")
11 abline(lm(mtcars$mpg~mtcars$wt), col="red")
12 title("Regression of Vehicle MPG on Weight")
13
14
15 # ----- Histograms -----
16
```

1:1 (Top Level) ▾ R Script ▾

Workspace History

Import Dataset

Files Plots Packages Help

New Folder Delete Rename More

Home

	Name	Size	Modified
	.Rhistory	1.4 KB	May 13, 2013, 4:28 PM
	apps		
	checkSubmit		

hpc2 - resources: Tools: R Stud...

<https://hpc2.org/tools/rstudiotool/session/1123>

Google



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```
6  
7 # pch controls point selection  
8 # col controls point color  
9 plot(mtcars$wt, mtcars$mpg, xlab="Veh  
10      ylab="Vehicle MPG, miles/gallon"  
11      pch=8, col="darkblue")  
12 abline(lm(mtcars$mpg~mtcars$wt), col=  
13 title("Regression of Vehicle MPG on W  
14  
15 # ----- Histograms -----  
16
```

1:1 f (Top Level) R Script

Console ~/ ↻

distribution details.

R is a collaborative project with many contributors.

Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.

Type 'q()' to quit R.

> |

Storage (manage)

0% of 0GB

Files Plots Packages Help

New Folder

Delete

Rename

More

 Home

Name	Size	Modified
.Rhistory	1.4 KB	May 13, 2013, 4:28 PM
apps		
checkSubmit		
data		
possum.RData	2.6 KB	May 13, 2013, 11:26 AM
R		

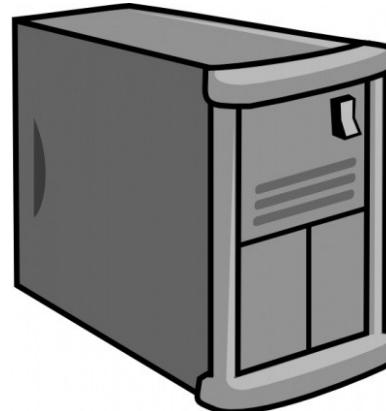
RStudio window:
Pop out
Refresh
Expand



New Window

Using Github

GitHub



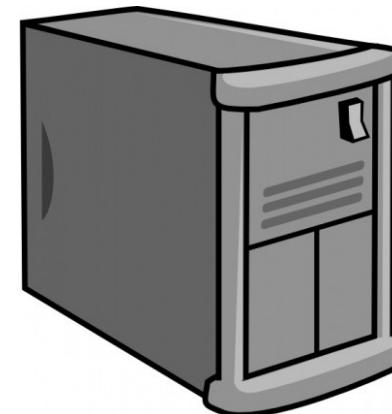
GitHub server

View files

Pull files and data

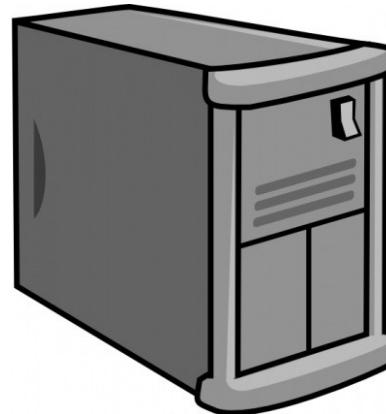


Student workstation



VIDIA server

Workshop Files and Data: GitHub

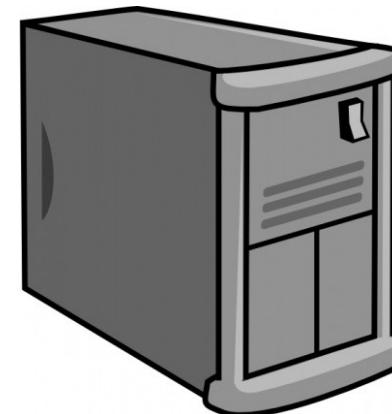


GitHub server

Pull R source files
Create RStudio project

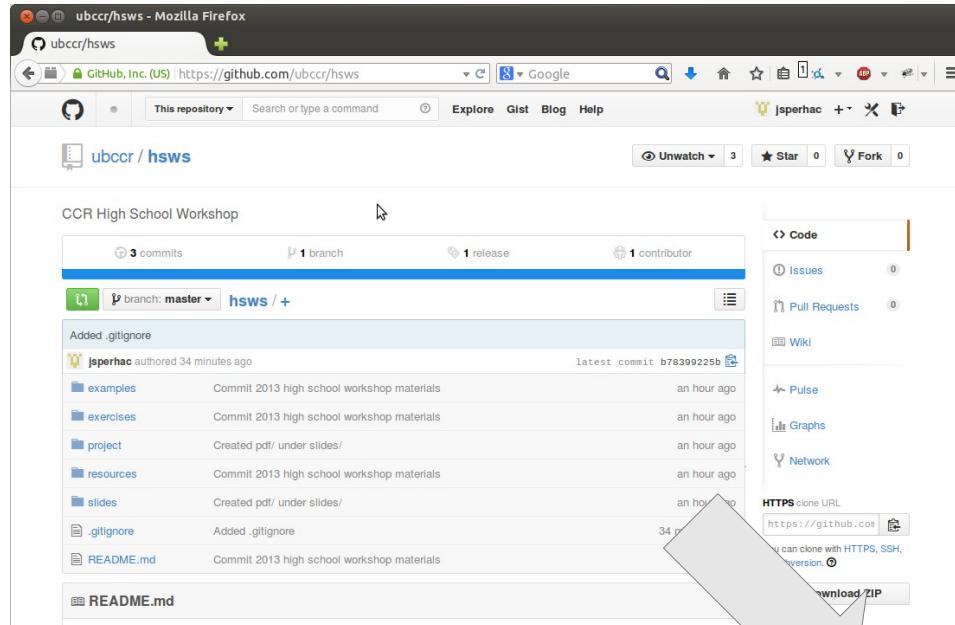


Student workstation

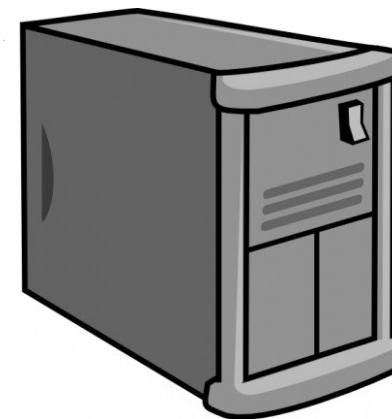


VIDIA server

Workshop Files and Data: GitHub



Student workstation

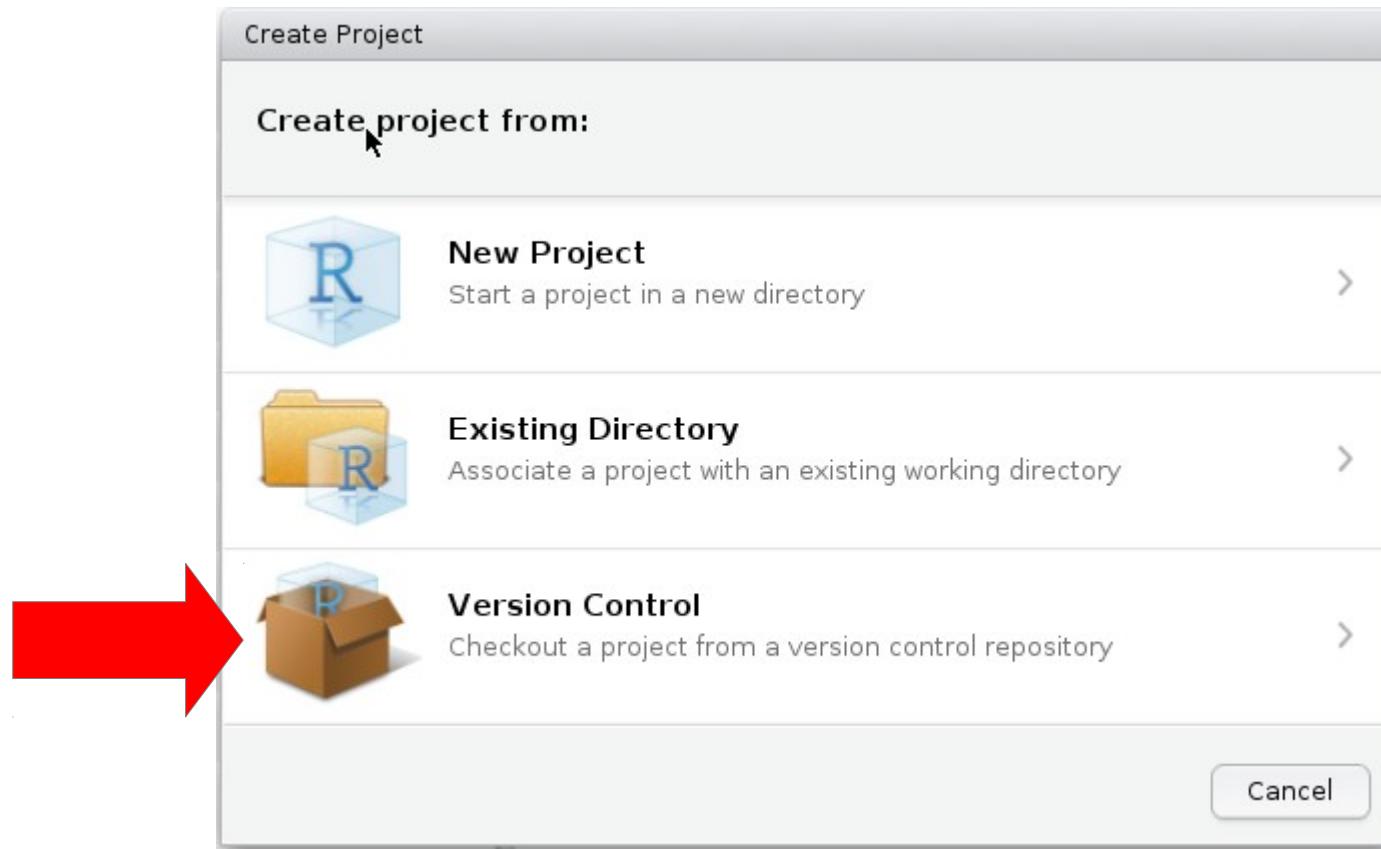


VIDIA server

Rstudio Project management

Create Project in RStudio

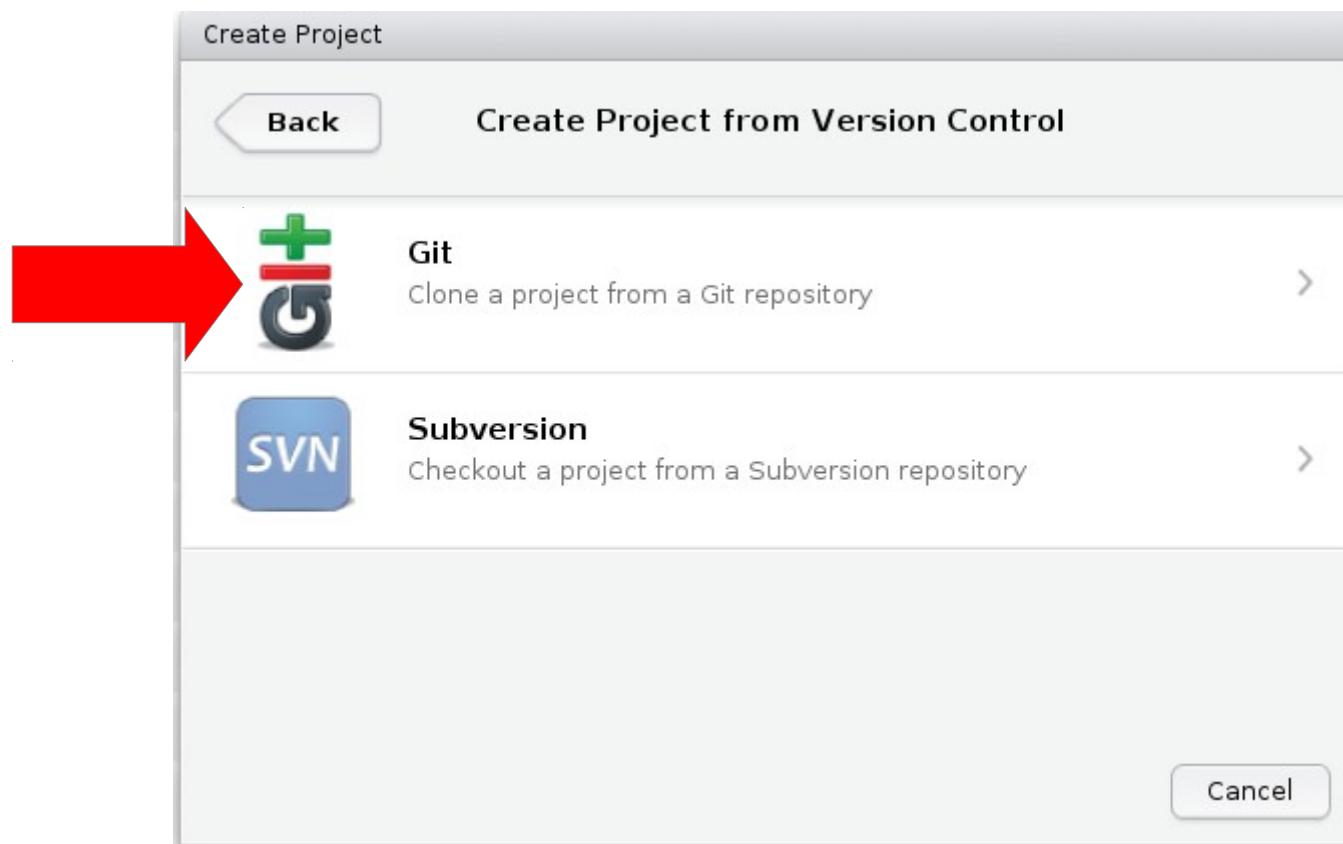
1. In the RStudio menu:
 - Select Project: Create Project
 - Select Version Control



Create Project in RStudio

2. In RStudio:

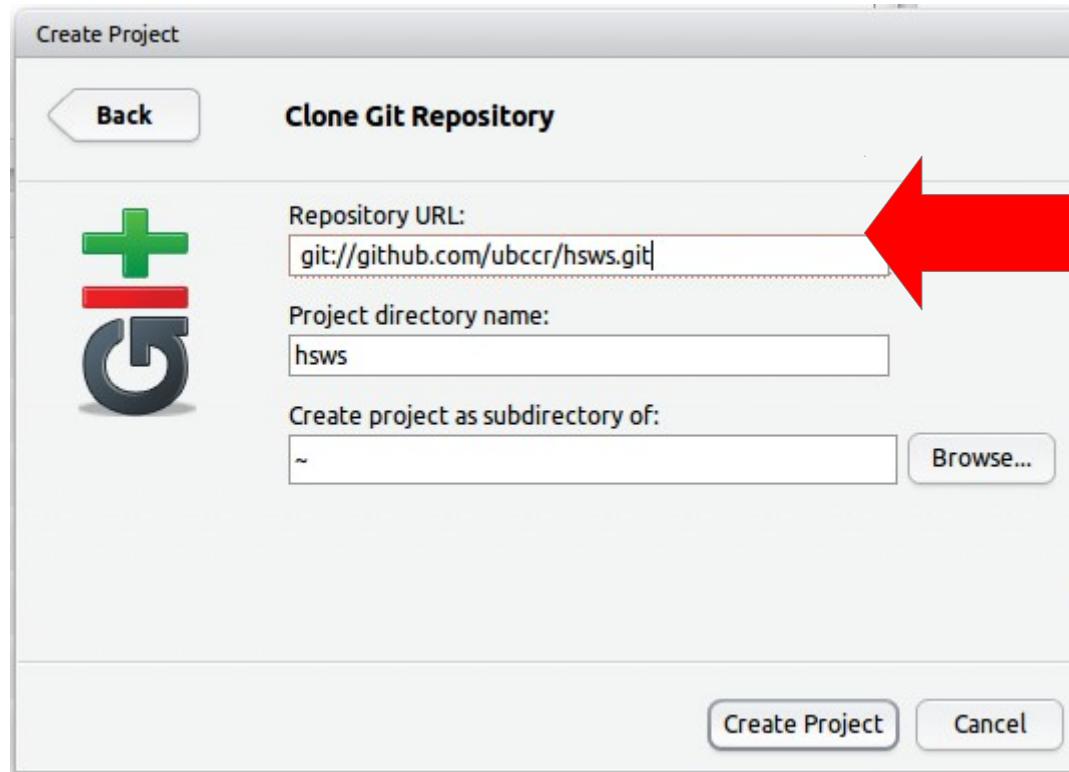
Next, select Git



Create Project in RStudio

3. In RStudio:

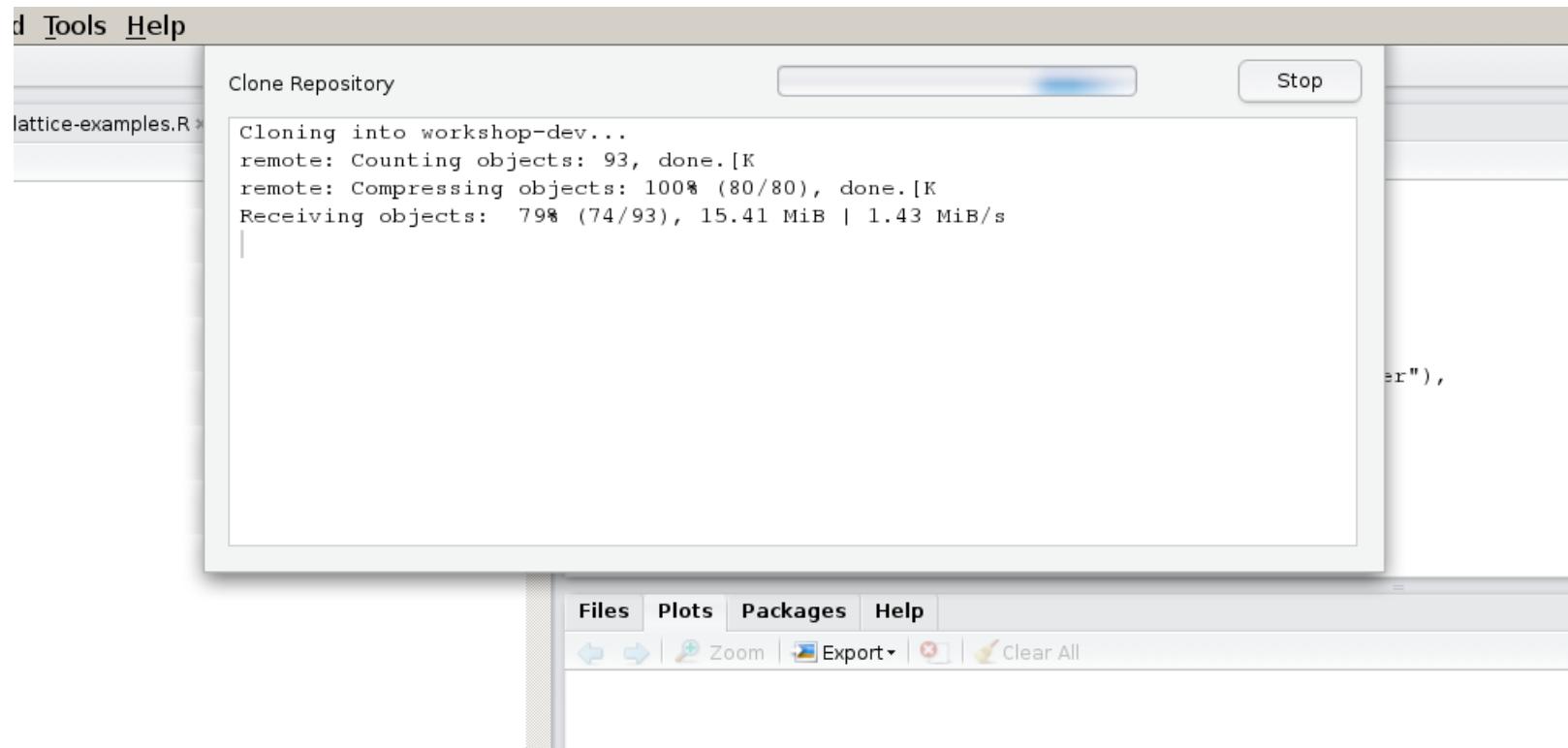
- Type the Repository URL as shown
- Use a unique project directory name



git://github.com/ubccr/hsws.git

Create Project in RStudio

4. RStudio copies the files from GitHub to your home directory on VIDIA.



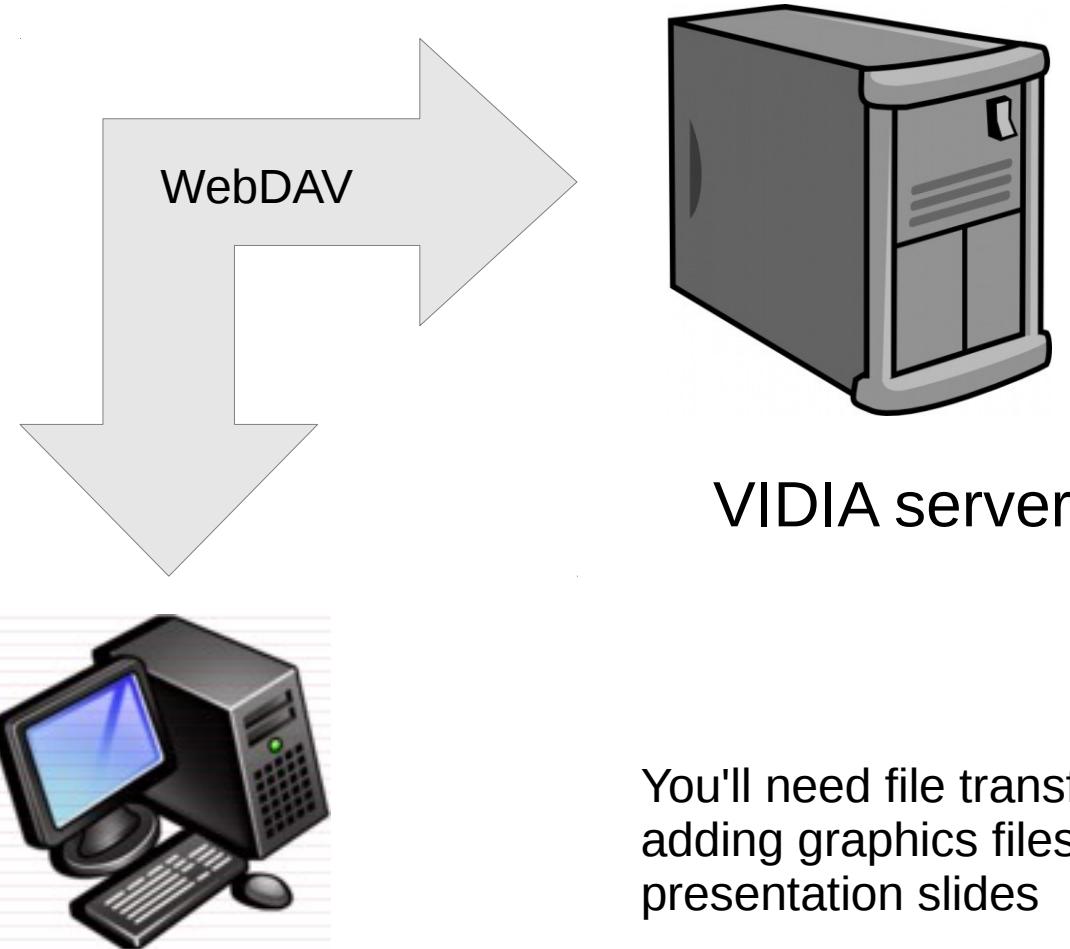


Create Project in RStudio

- Selecting the project sets the working directory
- Your RStudio project contains directories:
 - examples
 - exercises
 - project
 - resources

File transfer to and from VIDIA

File Transfer

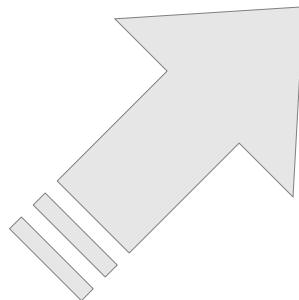


Student workstation

You'll need file transfer for adding graphics files to your presentation slides

File Transfer: WebDAV

Home folder



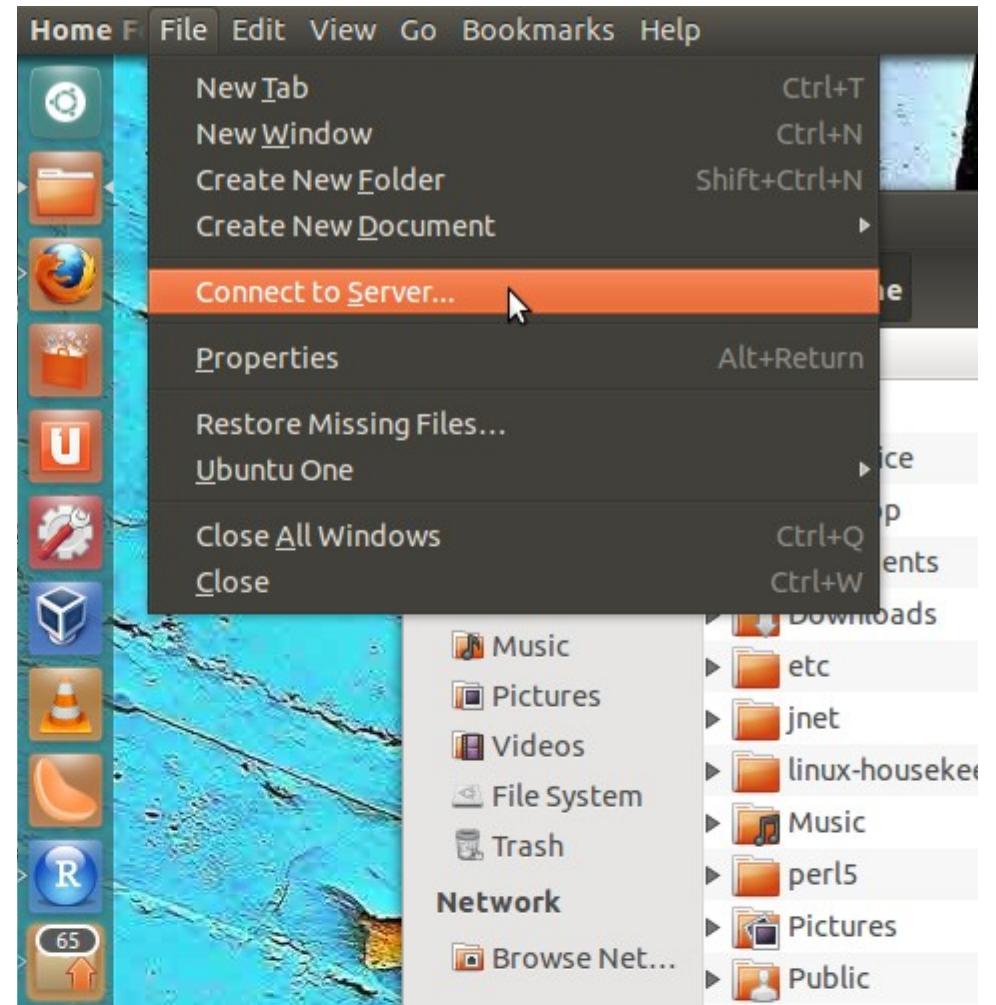
Student workstation

File Transfer: WebDAV

File: Connect to Server...



Student workstation

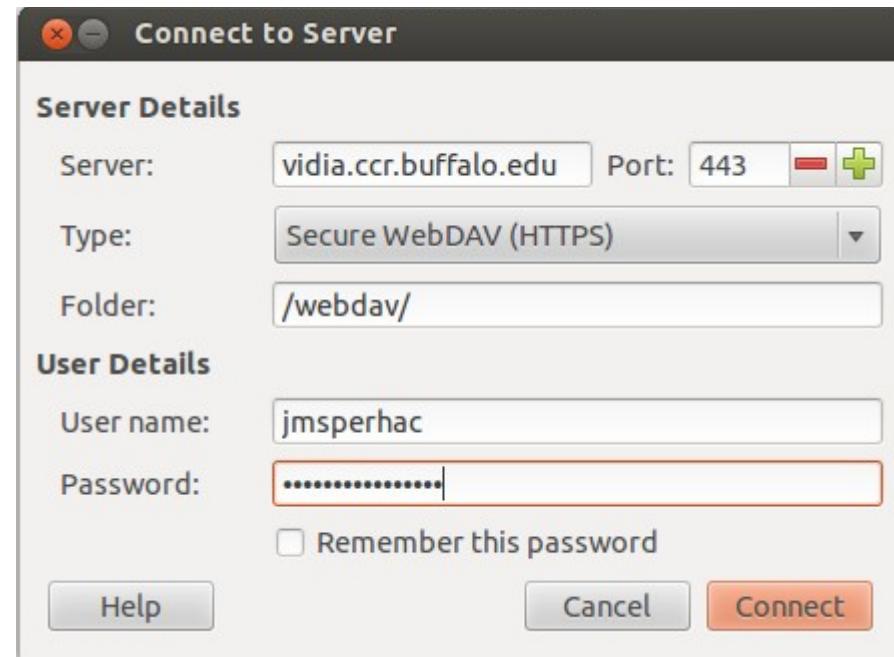


File Transfer: WebDAV

Use your VIDIA user credentials

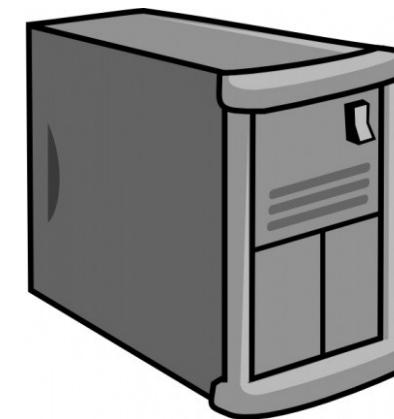
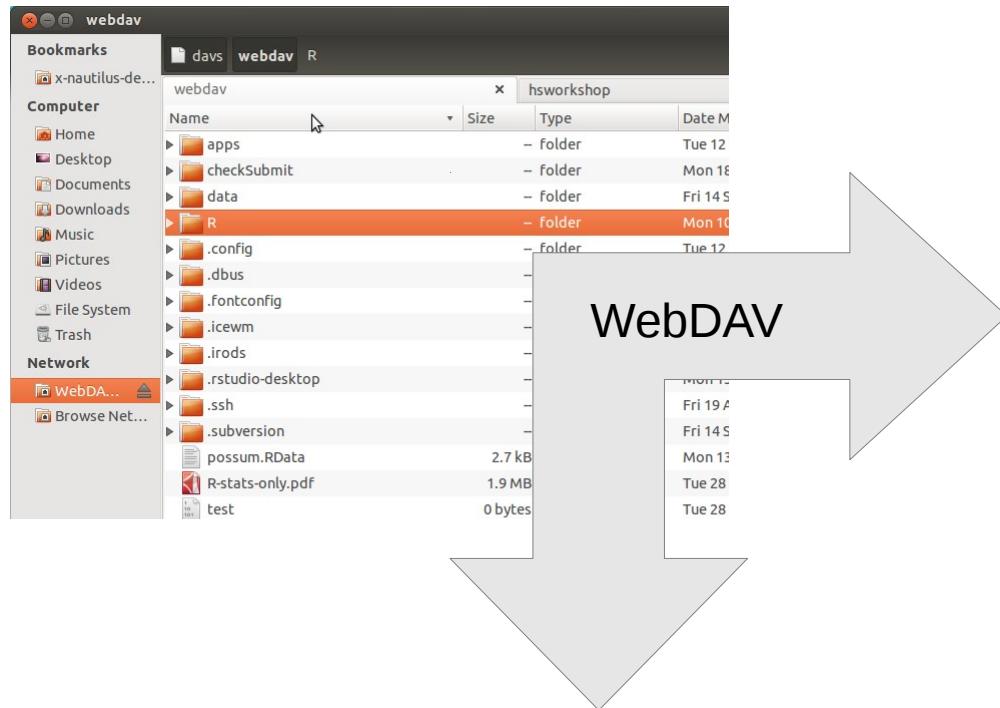


Student workstation



Server: vidia.ccr.buffalo.edu
Type: Secure WebDAV
Folder: /webdav

File Transfer



VIDIA server



Student workstation

Groups on VIDIA

Browse HUBzero Groups

Groups: Browse

A Test Group (Invite Only)
jmsGroup (Open)
R Workshop (Open)
R Workshop Staff (Closed)

HUBzero Group Page



Group Member ▾

- [Overview](#)
- [Members](#) 4
- [Wiki](#) 1
- [Messages](#)
- [Resources](#) 2
- [Discussion](#)
- [Blog](#)
- [Wish List](#)

R Workshop ► Overview

• data visualization • R programming • statistics • workshop

ABOUT THE GROUP

The R Workshop group consists of students and instructors for the R Workshop.

GROUP MEMBERS

	 Jnet Sperhac	 J M Sperhac UB CCR
	 Jeanette M Sperhac	 Sally S Smith

HUBzero Resources

Resources: Teaching Materials

Teaching Materials ▾ Go

Tag	Resources	Sort by Title	Info
[All]	> Introductory R References	>	Introductory R References
data structures (1)	> Lecture 1	>	Reference material: introductory R textbooks
data visualization (2)	> Lecture 2	>	Learn more >
	> Lecture 3	>	
R programming (7)	> Lecture 4	>	
reference (1)	> Lecture 5	>	
statistics (1)	> Plotting Examples	>	
variables (1)	R Workshop Project		
	R Workshop Staff Materials		

Introductory R References

Reference material: introductory R textbooks

Learn more >

Download (PDF)

review(s) (Review this)
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6 Scalars, Vectors, Arrays and Matrices

6.1 “Declarations”

6.2 Generating Useful Vectors with “:”, seq() and rep()

6.3 Vector Arithmetic and Logical Operations

6.4 Recycling

6.5 Vector Indexing

6.6 Vector Element Names

6.7 Matrices

6.7.1 General Operations

6.7.2 Matrix Row and Column Names

