

# Green Environment Basics

Remote Access - Windows

The CUSP Data Facility provides a computing environment for working specifically with public data, known as the Green Environment. In the Green Environment, you have access to all green data hosted in the Data Facility, as well as your home directory, project workspace, and tools such as Jupyter Notebook, ArcGIS, Excel, and more.

This guide will walk you through the basics of getting connected and setup for the first time, including how to use available tools and data.

## Install Bitvise and Load Profile

For security purposes, it is necessary to use an SSH client to access the remote desktop server. We will use Bitvise and provide a profile for setup, but you are welcome to use other clients such as PuTTY.

1. Download the zip file and extract the contents.



- 2. Double-click the **BvSshClient-Inst** file to install Bitvise.
- 3. Once installed, double-click the **Win-RDP-Profile** file to load the profile, which contains all of the connection information.

4. Under the Login tab in the Authentication box (right side), enter your CUSP ID and password. Click Save Profile to retain this information for future use.

<b>%</b>	Bitvise SSH Client 6.46	- 🗆 🗙					
Profile: Win-F	RDP-Profile.bscp (changed)	Closing behavior					
	Login         Options         Terminal         Remote Desktop         SFTP         Services         C2S         S2C	SSH About					
Load profile	Authentication Host gw.cusp.nyu.edu Username grh255						
2	Port 22 Enable obfuscation Initial method password	*					
Save profile	Obfuscation keyword Password						
	Kerberos Store encrypted passwor	d in profile					
Save profile       Password         Save profile as       Kerberos         SPN       Store encrypted password in profile         SPN       Request delegation         SSPI,Kerberos 5 key exchange       Request delegation         SSPI,Kerberos 5 authentication       SSPI,Kerberos 5 authentication         Proxy settings       Host key manager         Close profile       SSPI,Kerberos 5 authentication         Proxy settings       Host key manager         Client key manager       He         Sindic:25.304       Current date: 2016-03-01         Sindic:25.304       Bitvise SSH Client 6.46, a fully featured SSH2 client. Copyright (C) 2000-2016 by Bitvise Limited.         Sindic:25.304       Visit www.bitvise.com for latest information about our SSH2 products.         Sindic:25.304       Nur BvSh -help' to learn the supported command-line parameters.         Sindic:25.554       Loading command-line profile file 'C: Users/Graham/Desktop/WIN-RDP-Win-RDP-Profile.bscp'.         Sindic:25.554       Command-line profile file loaded successfully.							
	Login	Exit					

#### Connect using Remote Desktop

Now that you have completed the installation and profile configuration, you're ready to connect.

1. Click the Login button. Bitvise has been configured to open a Remote Desktop connection.

2. Once Connected, you will see a login prompt where you will enter your CUSP credentials.



3. After login, you will see a Windows desktop similar to the one below. You are now remotely connected to the Green Environment!



## Mount Home Directory and Project Workspace

Now that you have logged into the Green Environment for the first time, you can mount your home directory and project workspaces so that you will have access to all of your files. You will only need to do this once.

1. Open SFTP Net Drive Pro by double-clicking the icon on the Desktop.



2. Click on the **New Profile** button. Enter **compute mounts** as the Profile Name and **compute.cusp.nyu.edu** as the Server. Use your CUSP credentials for the User Name and Password.

Profile: compute mounts	\$	SFTP Net Drive Pro
Image: Compute mounts         Server: compute.cusp.nyu.edul       Pgrt: 22 ◆         User Name: aouchef         Authentication         Password:         Key Based:         Drive Letter:         Last Available         New Profile         Profile Settings         Delete Profile         Looking for more features? Please click here to share your opinion. If you need help, please click here.	Offine	Profile:       compute mounts       ✓         Server:       compute.cusp.nyu.edul       Port:       22         User Name:       aouchef         Authentication       ✓         Password:       ●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●

3. Click **Profile Settings** and ensure your settings match those shown. These settings must match exactly. **Uncheck** the boxes highlighted below and set the **Specified folder** in the second column as **/wingrdp** 

Profile S	Settings 🛛 🗶
Profile Name compute mounts	
Connection         ♥ Timeout:       30 × seconds         Use IPv6 addresses         Use proxy server       Proxy Settings         Use port knocking       Sequence         On drop try to reconnect       5 √ times         Send keep-alive every       15 ∞ minutes         SFTP Protocol       Versions:       2 √ 3 ♥ 4 ♥ 5 ♥ 6         Server Key Info       Charset for intl. characters in file names:       [Default Charset]         ♥ Use compression; level:       ↓         ♥ Query for available space       Open files in exclusive mode (no sharing)         Compatibility mode (slower, use in case of connection error)       Use custom path for SFTP server:	Drive Drive Type: Network ✓ Allow all local users to access the Drive Root folder on the Server: User's home folder Server's root folder Server's root folder On connect open in Explorer the folder on the Drive: (ex.: \Documents\2011\05) Enable files information caching Enable files content caching Show files started with dot (ex.: .mailrc) Rename existing target before moving Read-only mode Allow Windows special files (desktop.ini, autorun.inf, folder.jpg, etc.)
Looking for more features? Click here to share y	our opinion. OK Cancel

4. Click OK, then Connect. You will then see a file explorer showing the mounted folders from compute. These files are now accessible within any application on the remote desktop.

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File Home Share	View				$\vee$
🔄 🏵 👻 🕆  🗣 🕨 Thi	s PC + compute mounts (Z:) +	~ C	Search com	pute mounts (Z:)	,P
☆ Favorites	Name	Date modified	Туре	Size	
Desktop	🎴 gcdf	2/29/2016 3:52 PM	File folder		
Downloads	scratch gscratch	2/7/2016 12:00 AM	File folder		
Recent places	🎍 gws	2/26/2016 4:42 PM	File folder		
	homedirs	2/28/2016 5:41 PM	File folder		
🛤 This PC					
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Documents					
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📔 Music					
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🊢 Local Disk (C:)					
👝 DATAPART1 (D:)					
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4 items 1 item selected					800

The directories are to be used as follows:

- /gws/projects/project\_id This is where green project workspaces
   can be accessed.
- **/gscratch/share** A temporary directory for sharing data with other users. Please do not keep work or data here long term, as it is not backed up and will be deleted periodically.
- /homedirs/cuspid Your home directory for saving all of your personal
  files.

# Launch Applications

All commonly used applications can be found on the Desktop. Simply double-click to open. Additional applications, such as other Microsoft Office programs, can be found within the Start menu.

## Load Data

One of the best features of the Data Facility is that all open green data listed in the Data Catalog is already mounted, meaning you no longer need to download or transfer data to and from your local machine.

Here is an example on how you can begin using this data in your work.

1. Open Jupyter Hub and enter your CUSP credentials when prompted.



2. Click the New Button, and then Python 2.



 In a separate browser tab, go to <u>https://datahub.cusp.nyu.edu/catalog</u> and find the NYPD Motor Vehicle Collisions dataset. Once there, under Data and Resources, click on Explore, then Go to resource next to Urban Profiler.



4. You are now viewing the dataset in Urban Profiler. Click on the **Code Snippets** tab. Copy the two lines of code in the **Load with Pandas** section and paste them into your Jupyter Notebook.

Load with Pandas
To import this dataset on python with Pandas on the variable data, run this code inside Python or iPython Notebook:
<pre>import pandas data = pandas.read_csv('/projects/open/NYCOpenData/nycopendata/data/h9gi-nx95/1428430582/h9gi-nx95')</pre>

5. Run the code cell, then verify the data was loaded using head or a similar command.

n [2]:	da	data.head()												
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	1	04/04/2015	21:15	QUEENS	11357	40.781291	-73.814200	(40.7812915, -73.8141997)	20 AVENUE	150 STREET	NaM			
	2	04/04/2015	16:52	QUEENS	11385	40.702595	-73.855293	(40.7025952, -73.8552926)	WOODHAVEN BOULEVARD	MYRTLE AVENUE	Nat			
	3	04/04/2015	9:30	MANHATTAN	10025	40.804886	-73.962474	(40.8048862, -73.9624735)	WEST 113 STREET	AMSTERDAM AVENUE	NaM			
	4	04/04/2015	9:41	QUEENS	11428	40.715144	-73.749356	(40.7151436, -73.7493556)	211 STREET	JAMAICA AVENUE	NaN			

#### SFTP: Transfer Files To and From Local Machine

You may have code or datasets on your local machine that you would like to move to the Green Environment to work with. This can be done using an SFTP client.

Note: You are responsible for adhering to the CUSP Data Facility Policies and ensuring that any data transferred do not contain personally identifiable information and will not be combined with other data in the Data Facility for purposes of re-identification.

- 1. Download and install <u>WinSCP</u> or your preferred SFTP client.
- 2. Open WinSCP and enter the settings shown below. Make sure to use **SFTP** as the file protocol and use your CUSP ID and password.

<b>6</b> 1	Login - WinSCP	- 🗆 🗙
Vew Site	Session Eile protocol: SFTP Host name: staging.cusp.nyu.edu	Port number:
	User name: Password:	
	Edit	Advanced 💌
Tools   Manage	Login 🔽 Close	Help

3. Click **Login.** You will see a directory called **home** on the right-hand side. Expand **home**, then expand your user directory. Here you will see all of your files. Your local files will be shown on the left. You can now drag and drop files between your local machine and your home folder.

B Desktop - Green Env - WinSCP -										×
Local Mark Files Comn	nands Sessi	on Options Remote	Help							
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\mu GIS		File folder	12/23/2015 10:05:11 PM		🔒 Desktop		11/1/2015 8:00:31 PM	rwxr-xr-x	grh255	
퉬 Manhattan		File folder	2/8/2015 1:02:40 AM		🐌 Emergenex		3/1/2016 9:04:52 PM	FWXFWXF-X	grh255	
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SA-Final.gdb		File folder	5/13/2015 5:18:45 PM		🔒 lib		10/28/2015 4:06:59 PM	PWXPWXP-X	grh255	
SA-Resources		File folder	5/3/2015 12:05:58 PM		🛃 lib64		10/28/2015 4:06:59 PM	PWXPWXPWX	grh255	
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11-2.pdf	165 KB	Adobe Acrobat D	4/15/2015 12:48:46 AM		DF_101.ipynb	162 KB	11/4/2015 6:34:26 PM	rw-rw-r	grh255	
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