



Third: Moving files into & out of an AWS EC2 Instance – Windows

Source: Adapted from instructions prepared by C. Stoner (ASF) and AWS

In this document you will find:

- A. Background
- B. Materials List
- C. Steps

A) Background

This recipe will show you how to move granules into EC2, and products out.

These instructions show you two options for moving files:

1. Using a graphical user interface (GUI). Drag and drop files.
 - a. Click [HERE](#) for **WinSCP** instructions.
2. Using the Windows Command Prompt
 - a. Click [HERE](#) for **PuTTY Secure Copy** instructions.

B) Materials

- A. Existing AWS account
- B. Existing EC2 instance
- C. WinSCP or
- D. PuTTY SSH client

C) Steps

- A. Find Your Public DNS
- B. Move granules in & out of EC2 with WinSCP
- C. Run the GMT5SAR script
- OR
- D. Find Your Public DNS
- E. Get to the Command Prompt
- F. Move granules into EC2 with PuTTY Secure Copy (PSCP)
- G. Move products out of EC2 PuTTY Secure Copy (PSCP)
- H. Run the GMT5SAR script

Transferring Files Using WinSCP

A) Find Your Public DNS

1. Open the AWS “Instances” window in the EC2 Management Console (Figure 3).
 - a. Use the **Public DNS** displayed in this window and the *PutTY Private Key (.ppk)* file you generated when you configured your EC2 instance to move files from the Windows command prompt (*discussed in sections B & C*)

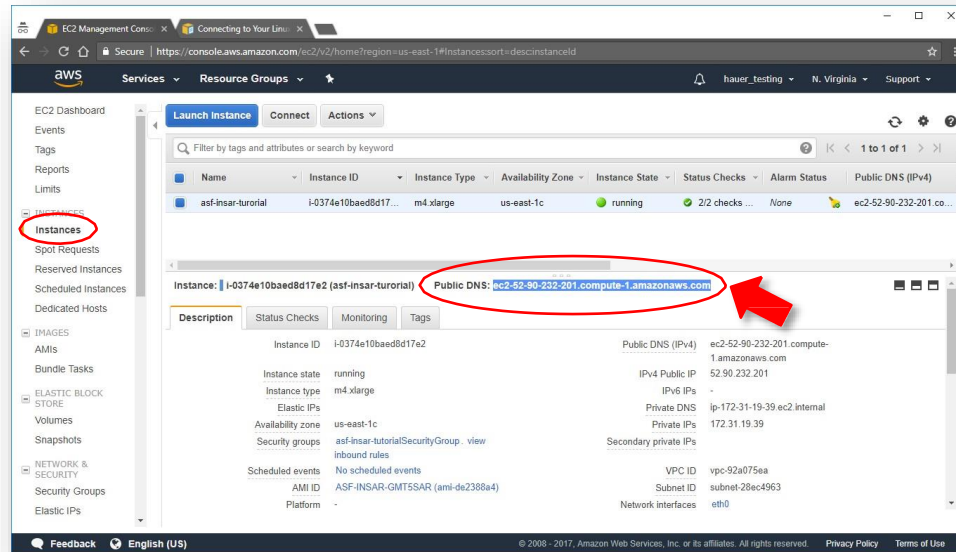


Figure 1 EC2 Management Console Instances window

B) Move files with WinSCP

2. Download and install **WinSCP**, if you don't already have it.
 - a. <https://winscp.net/eng/download.php>
 - i. Click on *Installation package* (Figure 4) and then use the default installation options

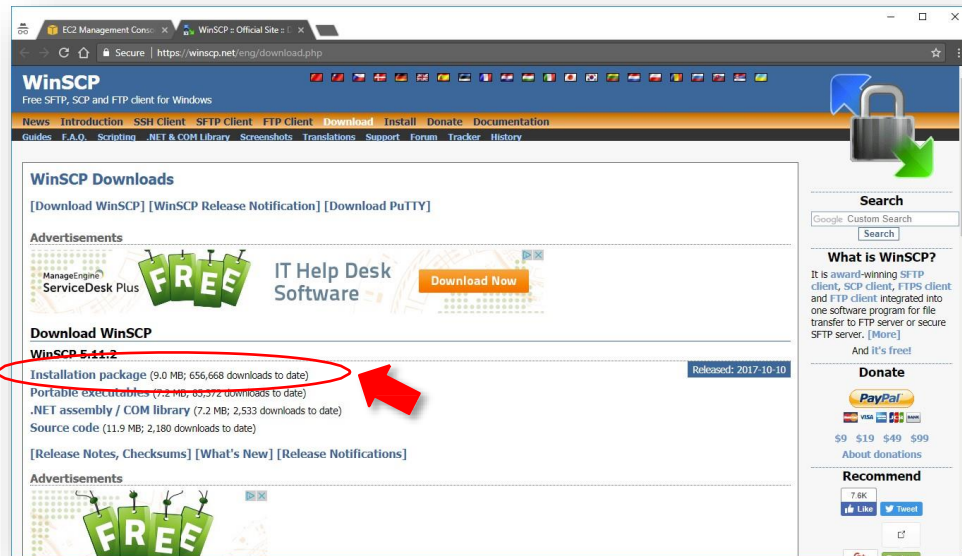



Figure 2. WinSCP download site

3. Start WinSCP by clicking on the Desktop icon 
4. In the WinSCP Login window (Figure 5)
 - a. Click on (1) **New Site**
 - b. In the (2) **Host name** box, enter the **Public DNS** displayed in your EC2 Management Console Instances window (Figure 1)
 - c. In the (3) **User name** box, type **ubuntu**
 - d. Click on the **Advanced** button

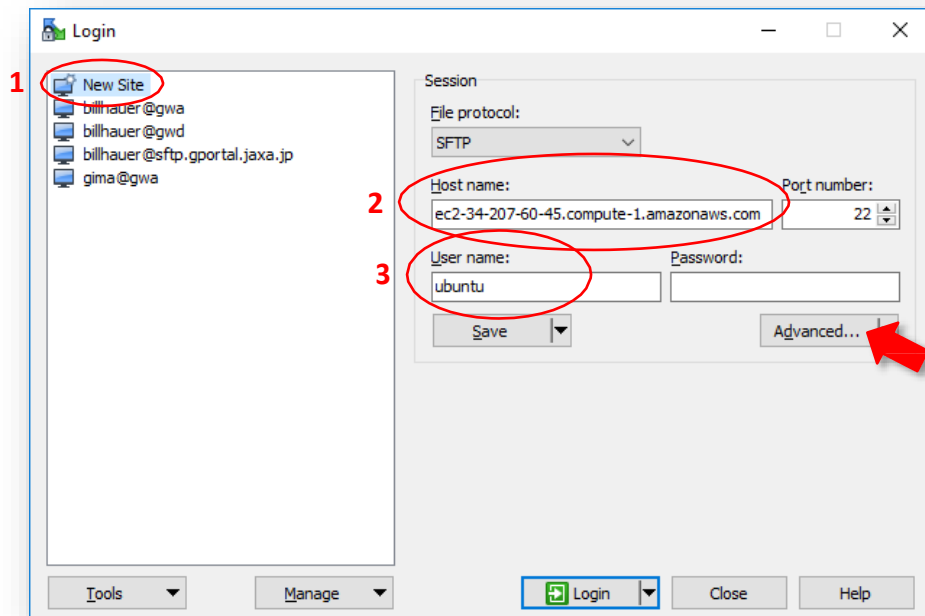


Figure 3. WinSCP Login window

5. In the *Advanced Site Settings* window (Figure 6)
 - a. Under *SSH* (1), click on *Authentication* (2)
 - b. Under *Private key file* (3), click on the [...] button and navigate to the folder where your *PuTTY Private Key (.ppk)* file is located
 - i. Select the *.ppk* file
 - c. Click on the <OK> button to close the *Advanced Site Settings* window

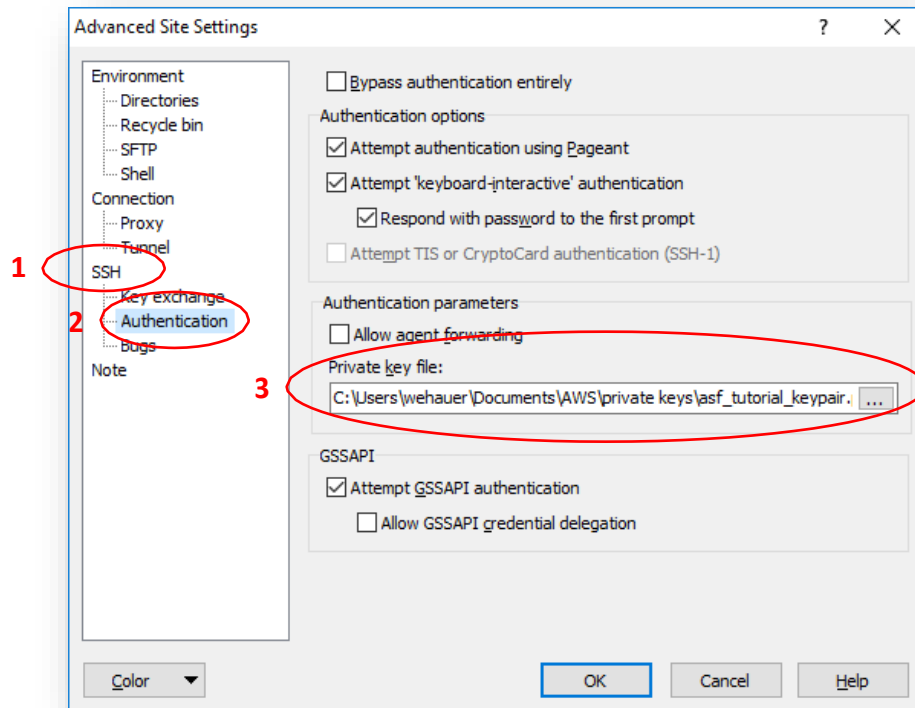
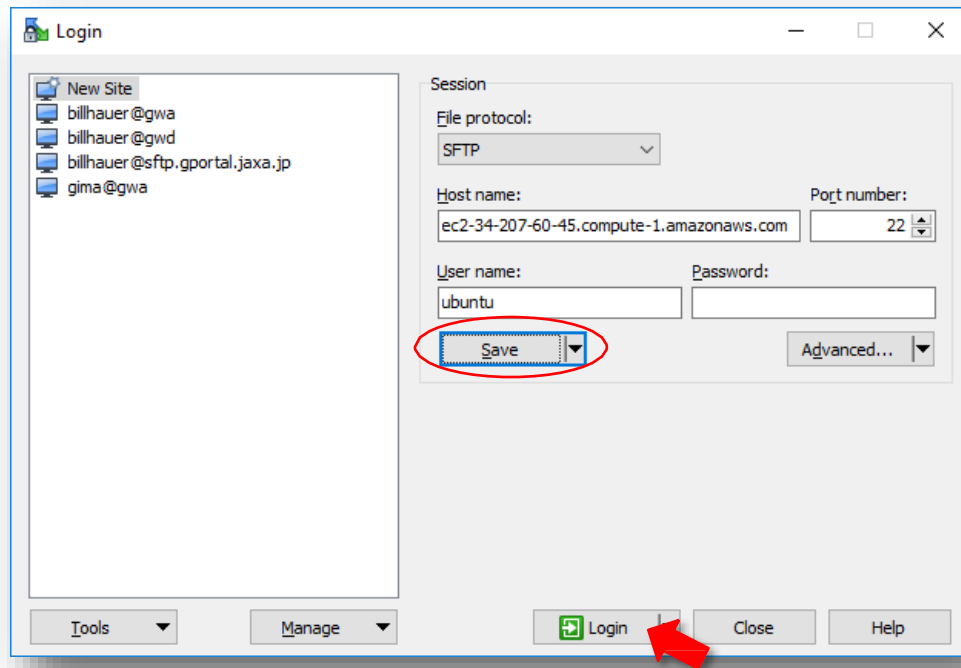


Figure 4. WinSCP Advanced Site Settings window

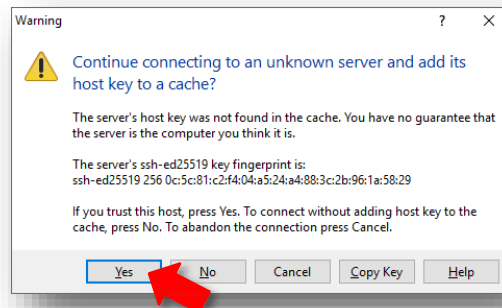
If you want to save your settings to use again later, click on the <Save> button in the WinSCP *Login* window and name the settings.

Note: If you stop your EC2 instance and restart it, a new Public DNS will be assigned. You will need to copy and paste this into the WinSCP *Host name* box before you can connect.

6. Click the <Login> button



- 7 The first time you connect to your instance, you will be asked about connecting to an unknown server
- a Click the <Yes> button to continue



8. After you have connected, the left pane will display the file contents of your computer and the right pane displays the contents of your EC2 instance (Figure 7)

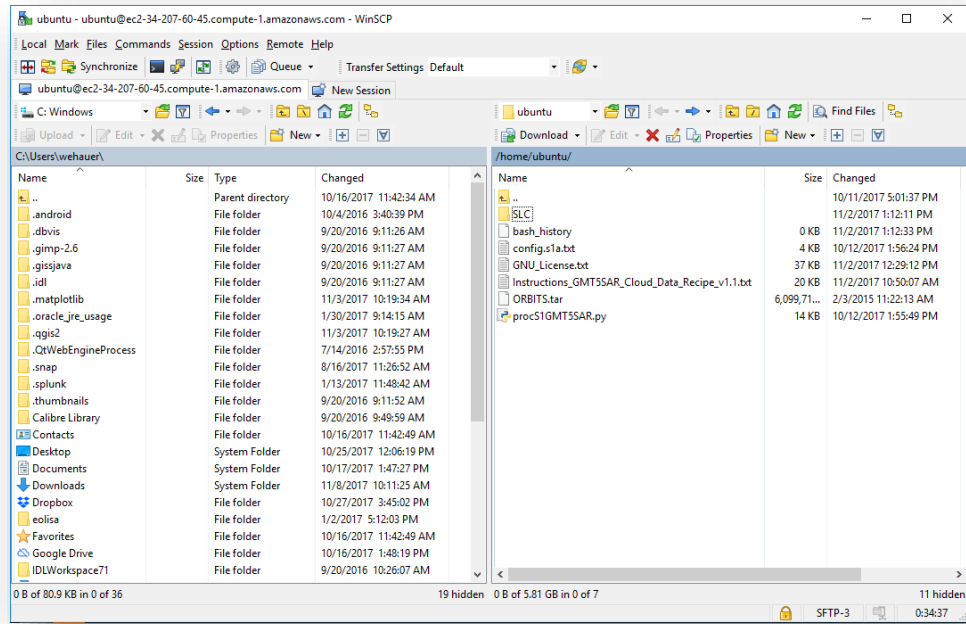


Figure 5. WinSCP connection displaying your Windows computer in the left pane and your EC2 instance in the right

9. Drag and drop granules into EC2. After you run the GMT5SAR script, drag InSAR products from EC2 to your computer.

Make InSAR Products

- Create your InSAR products by running the GMT5SAR script from the command line in your EC2 instance.
- Included in the EC2 AMI are:
 - Two sample Sentinel-1 granules
 - Plain text instructions for running the script

1. Or use the PDF Data Recipe:

"Sentinel-1 InSAR and Unwrapping with GMT5SAR - Cloud"

To view the plain text instructions for running the script that are included in the AMI:

1. Connect to your EC2 instance using PuTTY
2. At the command line prompt, use the `less` command. Type

```
~$ less Instructions_GMT5SAR_Cloud_Data_Recipe_v1.1.txt
```

3. Press the **[Space]** bar to go down one page, **[B]** to go back one page, the **[Up]** and **[Down]** arrow keys to move one line at a time, and **[Q]** to quit.

Transferring Files Using PuTTY Secure Copy (PSCP)

C) Find Your Public DNS

1. Open the AWS “Instances” window in the EC2 Management Console (*Figure 1*).
 - a. You will use the *Public DNS* displayed in this window and the *PuTTY Private Key (.ppk)* file you generated when you configured your EC2 instance to move files from the Windows command prompt (discussed in sections C and D)

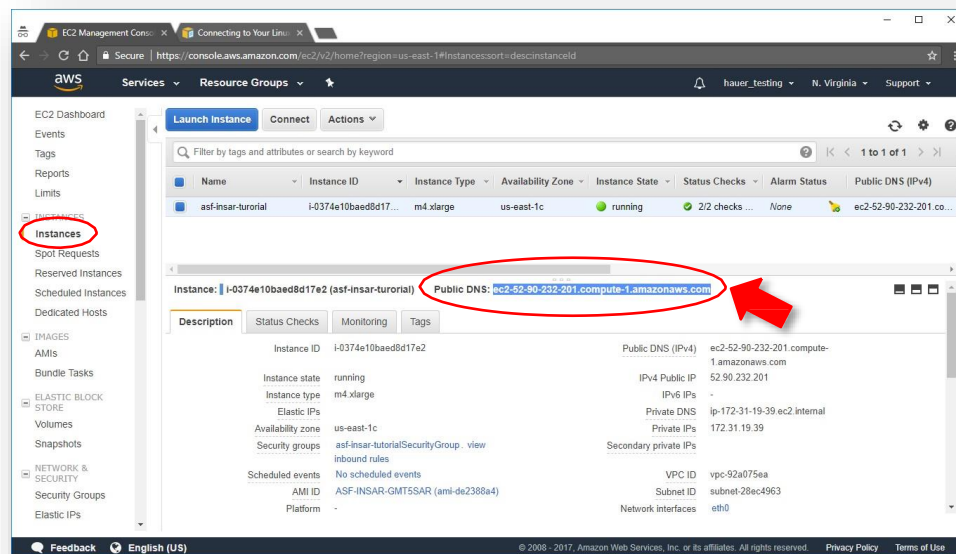


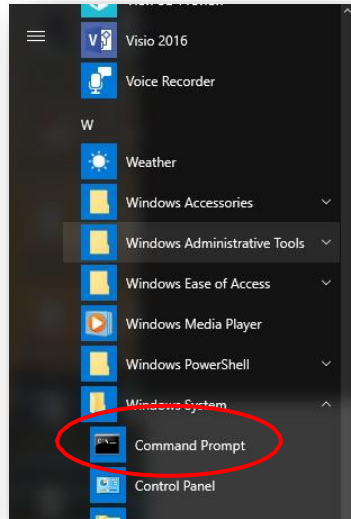
Figure 6. The EC2 Management Console 'Instances' window

Command Prompt

D) Get to the Command Prompt

2. Open a Windows Command Prompt window
Windows 10 (scroll down for Windows 7)

- a. Click on the **Start** button  at the extreme left of the Taskbar
- b. Scroll down the list of Apps to the *Windows System* folder
- c. Expand the folder and click on *Command Prompt*



- d. Or, click the **Start** button and type **cmd**
 - Select *Command Prompt* from the search results
- e. A *Command Prompt* window will open (*Figure 2*)

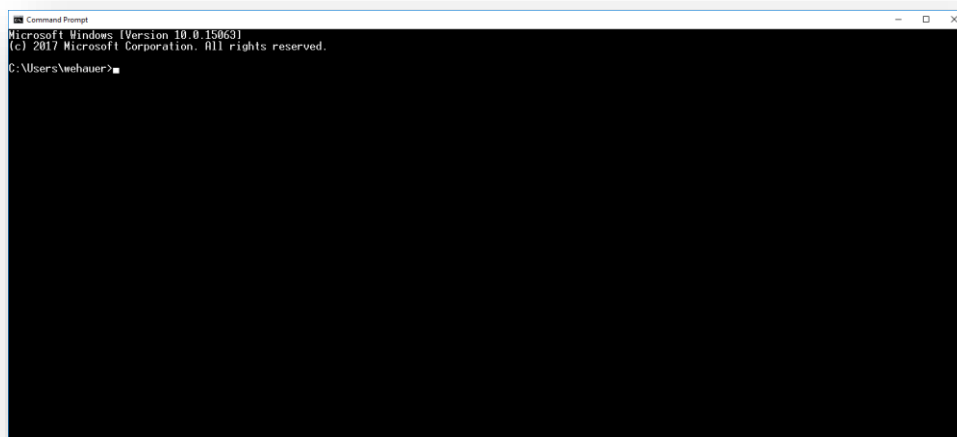
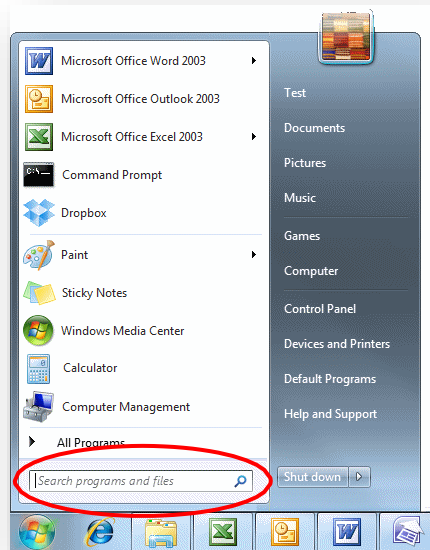


Figure 7. The Windows Command Prompt window

- **Windows 7**

- a. Click on the **Start** button  at the left of the Taskbar
- b. In the *Search programs and files* box, type **cmd**
 - Select *Command Prompt* from the search results



- c. A *Command Prompt* window will open (*Figure 2*)

Into EC2 – PuTTY Secure Copy (PSCP)

When using PSCP to transfer files between your computer and your EC2 instance (discussed in sections E and F), your *PuTTY Private Key (.ppk)* file must be in the folder you are working in, or you must provide a [path](#) in the PSCP command to the folder the file is located in.

For example, if my *awskey.ppk* file is stored in a folder named *keys*, I would include the path **C:\Users\wehauer\keys\awskey.ppk** in my PSCP command.

E) Move Granules into EC2

Move a file (*filename*) from your computer to your EC2 instance */home/ubuntu* directory. This will allow the GMT5SAR script to access it for processing.

- At the Windows command prompt (*notice where spaces are placed*):

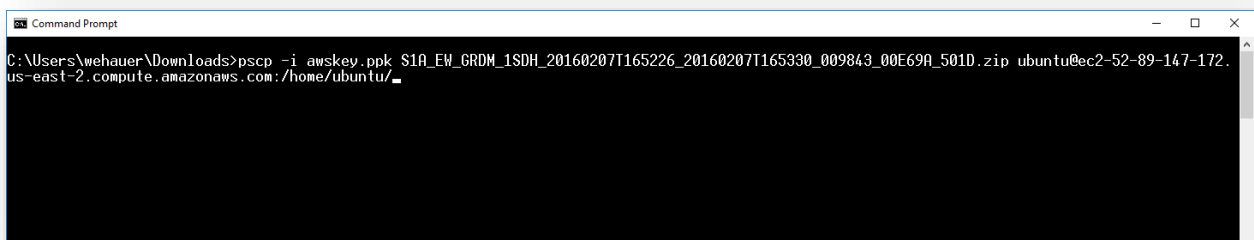
```
C:>pscp -i yourkey.ppk yourfilename ubuntu@EC2_publicDNS:/home/ubuntu/
```

- **Example:** I want to move a Sentinel-1A file from my Windows computer *Downloads* folder to the */home/ubuntu* directory of my EC2 instance.
 - I use Windows File Explorer to move the Sentinel-1A file and my *awskey.ppk* file to my *Downloads* folder (if they aren't already there)
 - At the Windows command prompt, I navigate to my *Downloads* folder using the [change directory \(cd\)](#) command:

```
C:\Users\wehauer>cd Downloads
```

and press **<Enter>**
 - At the command prompt, I type the PSCP command, which includes my *.ppk* filename, the name of the file I want to transfer, and the *Public DNS* of my EC2 instance:

```
C:\Users\wehauer\Downloads>pscp -i awskey.ppk  
S1A_EW_GRDM_1SDH_20160207T165226_20160207T165330_009843_00E69A_501D.zip  
ubuntu@ec2-52-89-147-172.us-east-2.compute.amazonaws.com:/home/ubuntu/
```



- Command syntax (brackets indicate optional [paths](#) to your *.ppk* file and file you want to move if they are not in the directory you are in):

```
C:>pscp -i C:[path]\yourkey.ppk C:[path]\yourfilename ubuntu@publicDNS:/home/ubuntu
```

Out of EC2 – PuTTY Secure Copy (PSCP)

F) Move Products out of EC2

Move a file (*filename*) from your EC2 instance */home/ubuntu* directory to a folder on your Windows computer

- At the Windows command prompt:

```
C:>pscp -i yourkey.ppk ubuntu@EC2_publicDNS:/home/ubuntu/yourfilename
```

```
C:[local_destination_path]\[folder]
```

- *Note that the .ppk file must be in the folder you run the command from, or you must include the [path](#) to the file in your PSCP command*

If you don't include a destination path and folder in the command, the file will download into the folder the command is run from. In this case, the command syntax would be:

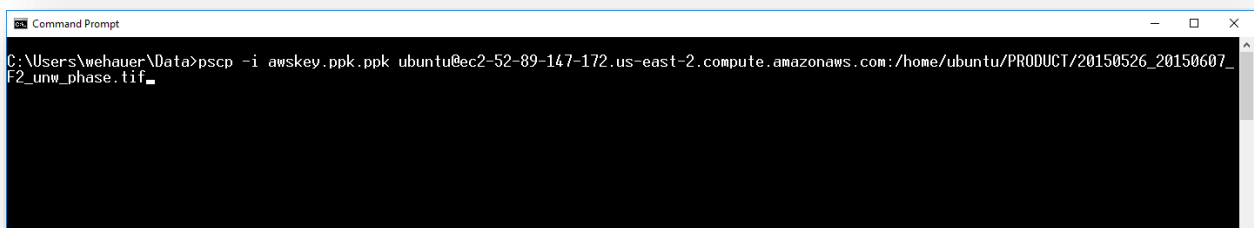
```
C:>pscp -i C:[path]\yourkey.ppk ubuntu@publicDNS:/home/ubuntu/[directory]/filename
```

- **Example:** I want to move the phase-unwrapped product generated from the GMT5SAR tutorial out of my EC2 instance *PRODUCT* directory to the *Data* folder on my Windows computer
 - I use Windows File Explorer to move a copy of my *awskey.ppk* file to my *Data* folder
 - At the Windows command prompt, I navigate to my *Data* folder using the [change directory \(cd\)](#) command:

```
C:\Users\wehauer>cd Data
```

and press **<Enter>**
 - At the command prompt, I type the PSCP command, which includes my *.ppk* filename, the *Public DNS* of my EC2 instance, and the name of the file I want to transfer. *Since I am running the command from the folder I want to file to end up in, I don't need to include a destination path and folder:*

```
C:\Users\wehauer\Data>pscp -i awskey.ppk ubuntu@ec2-52-89-147-172.us-east-2.compute.amazonaws.com:/home/ubuntu/PRODUCT/20150526_20150607_F2_unw_phase.tif
```



- Command syntax (brackets indicate optional [paths](#) to your .ppk file and the file on your EC2 instance):

```
C:>pscp -i C:\[path]\yourkey.ppk ubuntu@publicDNS:/home/ubuntu/[path]/yourfilename  
C:\[local_destination_path]
```

Make InSAR Products

G) Run the GMT5SAR Script

- a. Create your InSAR products by running the GMT5SAR script from the command line in your EC2 instance.
- b. Included in the EC2 AMI are:
 - i. Two sample Sentinel-1 granules
 - ii. Plain text instructions for running the script
 1. Or use the PDF Data Recipe:

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5. At the command line prompt, use the *less* command. Type

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6. Press the **[Space]** bar to go down one page, **[B]** to go back one page, the **[Up]** and **[Down]** arrow keys to move one line at a time, and **[Q]** to quit.