Connect to an AWS EC2 Instance – Windows & PuTTY

Includes moving files into and out of an EC2 Instance

When you have created and launched an AWS Linux EC2 instance, you can connect to it from your computer using the Secure Shell (SSH) protocol. PuTTY is a free SSH client that allows you to do this from a local computer running Windows. Once the connection has been established, you work within the EC2 instance just like you would on a local computer running Linux.

To follow this tutorial, you will first need to create and launch a Linux EC2 instance to which you will connect. Instructions for this are found in the tutorial titled, *Create a Basic Elastic Cloud Compute (EC2) Instance*.

You must have an AWS account. If you have one, click HERE to sign into it.

Generate a PuTTY Private Key (.ppk) file

1. Download and install PuTTY.
https://www.chiark.greenend.org.uk/~sgtatham/putty/latest.html

2. Open the folder in which PuTTY was installed (default path is **C: > Program Files > PuTTY**).

3. Double click on the file **puttygen.exe.**

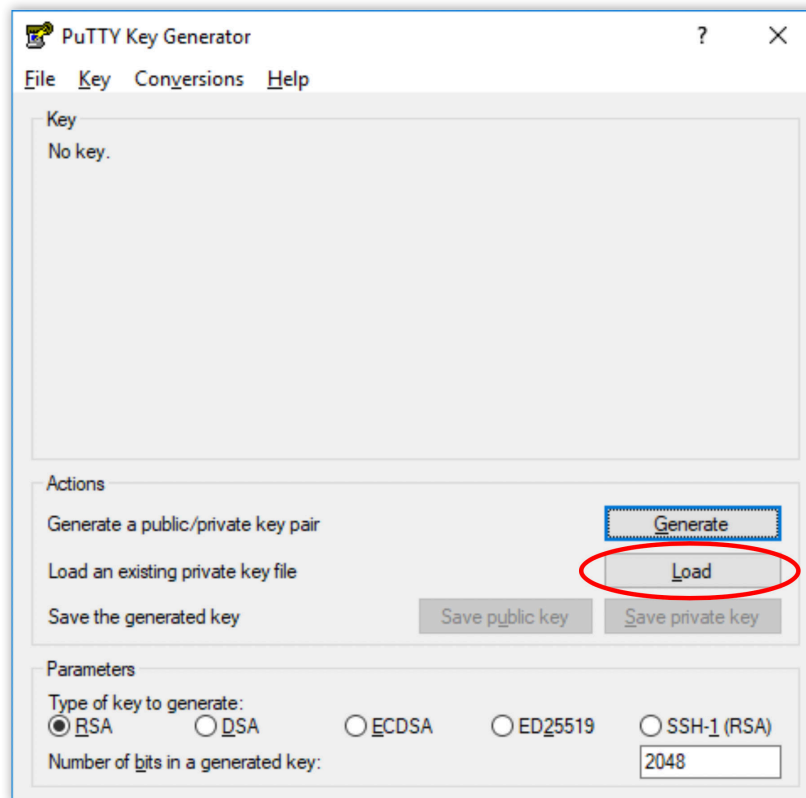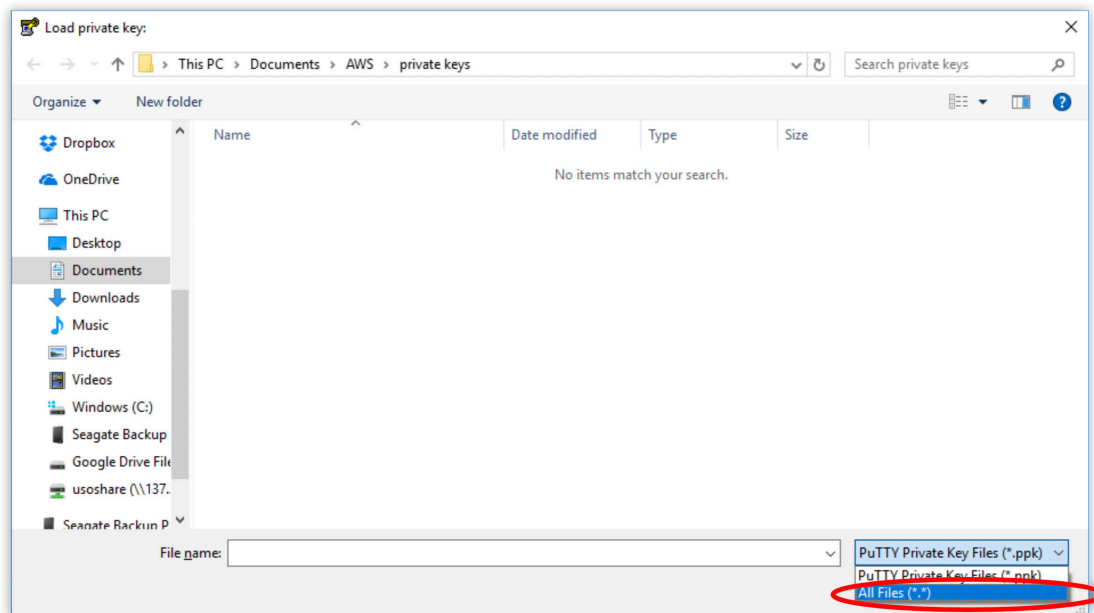The first thing you will see is shown in Figure 4.1.

Figure 4.1.

Cloud technology is evolving so fast that it is likely that some details in the primer may no longer match reality when you are trying to use it. If you find mismatches (e.g. broken third-party links), please send them to support@earthdata.gov so that we can feed them into the next release of the primer.Cab ipsum, quia consed unda am, sam doluptas nem vid maionsed ut aliquia ssinctotae pra es maiorro ribus.

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4. Click on the **Load** button in PuTTY Key Generator (Figure 4.1) and navigate to the folder that contains the private key file *(.pem)* created during the EC2 configuration process.

5. Click on the **PuTTY Private Key Files** button in the lower right corner of the window (Figure 4.2) and select *All Files (*.*).*

6. Click the box next to your private key file (.pem) to select it (Figure 4.3).
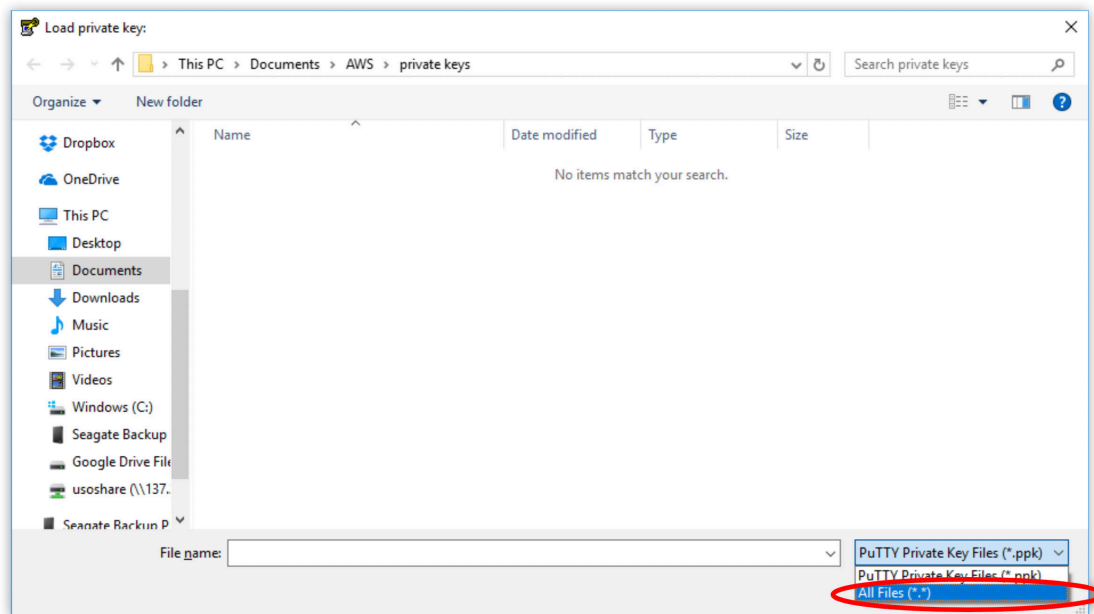

Figure 4.3.

7. Click on **Open**.

8. Click **OK** to close the *PuTTYgen Notice* pop-up window

9. In *PuTTY Key Generator*, make sure *Type of key to generate* value is set to **RSA** (Figure 4.4).
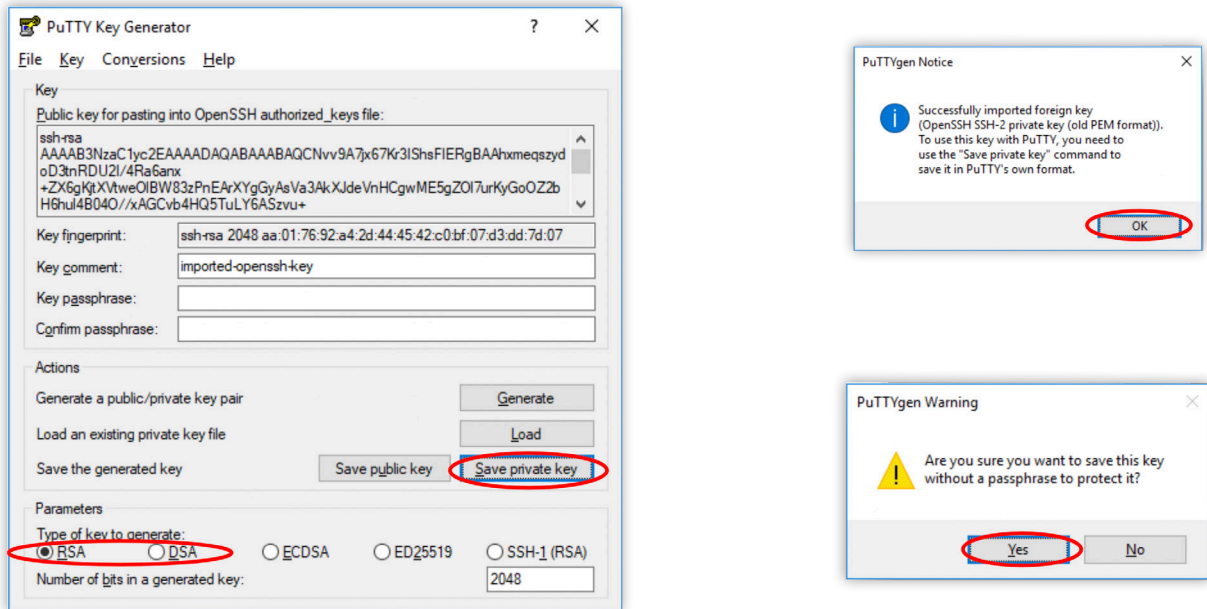

Figure 4.4.

10. Click **Save private key.**
11. Click **Yes** to close the *PuTTYgen Warning* pop-up window.
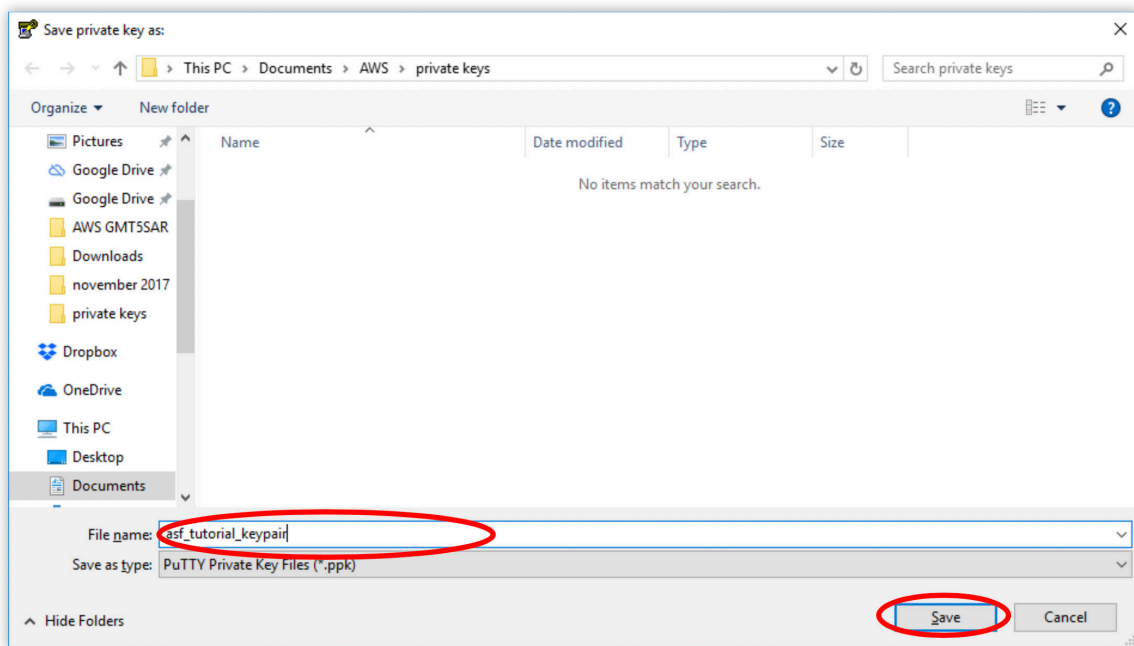12. Navigate to the location you want to store your PuTTY Private Key file (.ppk) (Figure 4.5)

Figure 4.5.

13. Give the file a name.
14. Click **Save**.
15. Close the *PuTTY Key Generator* window.

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Once you have generated a private key, you can use it whenever you need to connect to a new EC2 instance.

Connect to the EC2 instance

1. Click on the desktop icon or the **putty.exe** file in the PuTTY folder to open PuTTY.
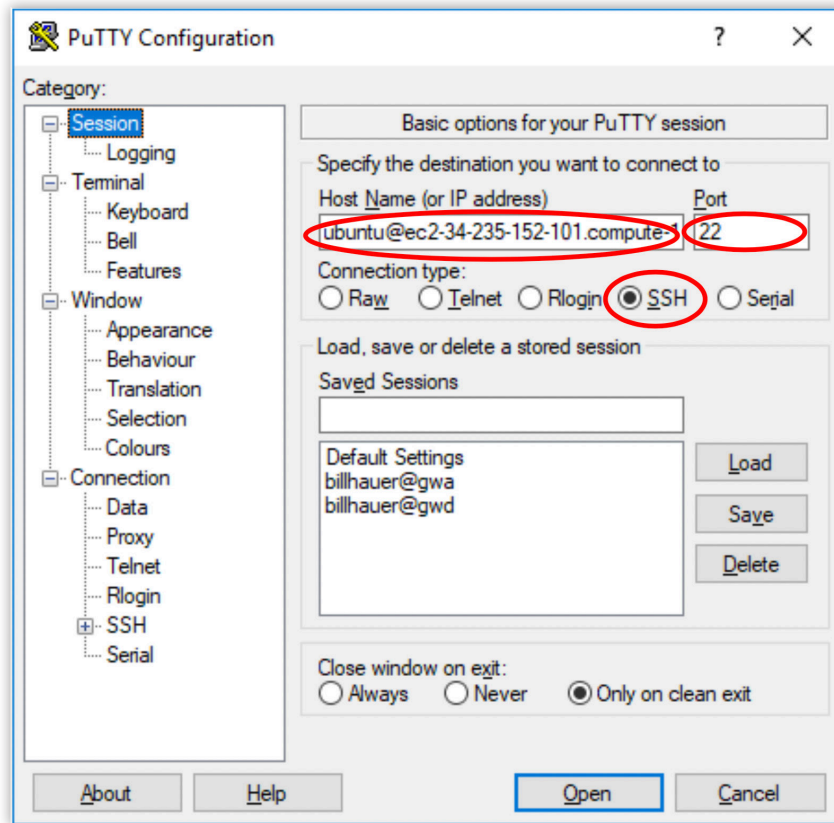2. Type **ubuntu@your_public_DNS** in the *Host Name (or IP address)* box (Figure 4.6).

Figure 4.6.

The **Public DNS** for your instance is displayed in AWS in the *EC2 Management Console Instance Description* in the middle of the screen.

3. Set the Port to **22.**
4. Set the Connection Type to **SSH**.

5. Click on the **+** next to **SSH** to expand the choices in the *Category* pane on the left of the PuTTY Configuration window under *Connection* (Figure 4.7).
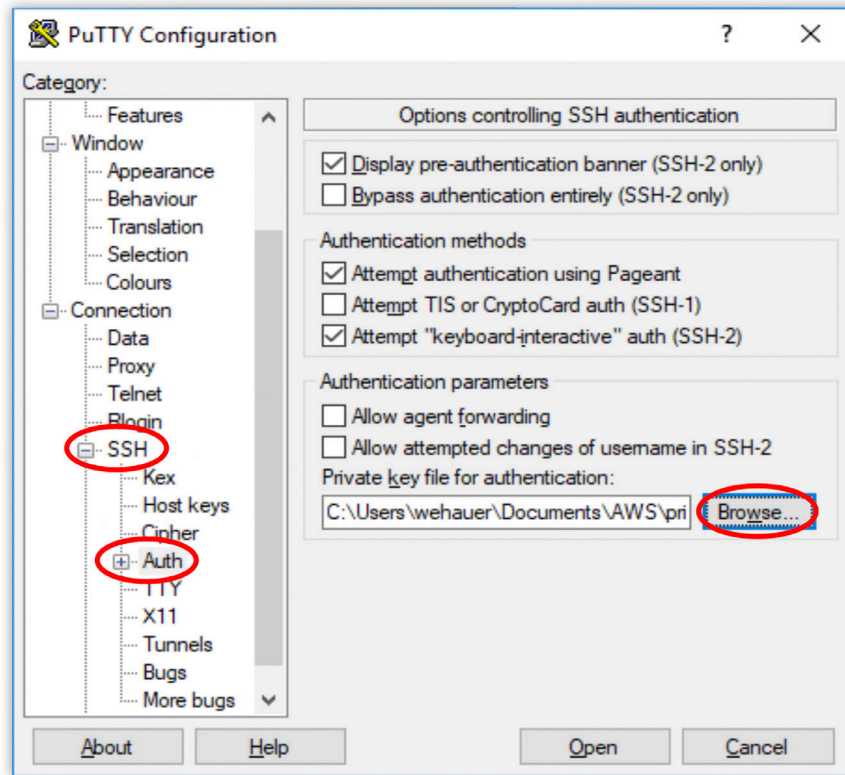

Figure 4.7.

6. Click **Browse** under *Authentication parameters* and navigate to the directory where your *PuTTY Private Key (.ppk)* file is located and select it.

7. Click **Open.**

If you want to save these settings to use later, navigate to **Sessions** in the PuTTY *Category* tree. Enter a name in the **Saved Sessions** box and click **Save** on the right.

8. Click **Open** in *PuTTY Configuration* to connect to your Instance.

If this is the first time you have connected to your Instance, a *PuTTY Security Alert* will ask you whether to proceed with the connection (Figure 4.8).

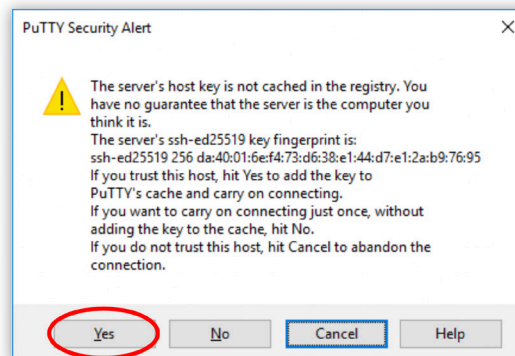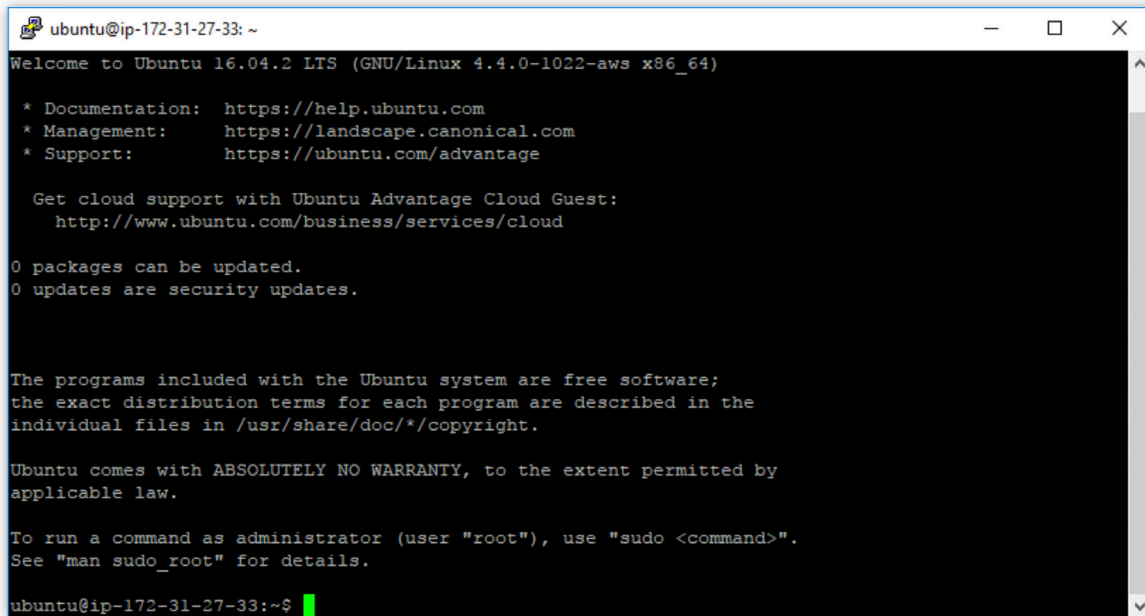9. Click **Yes** to complete the connection.

Figure 4.8

The EC2 instance window will appear (Figure 4.9).

You are now connected to your EC2 instance!

Figure 4.9

To view files and directories in a Linux (Ubuntu) instance, use the ls (list) and cd (change directory) commands.

Move files into & out of an AWS EC2 Instance – Windows

You can transfer files into and out of a Linux EC2 instance from a local computer running Windows by either of these methods:

1. **Windows Secure Copy (WinSCP):** WinSCP provides a graphical interface (GUI) that allows you to drag and drop files between your local computer and your AWS instance. This is similar to using Windows File Explorer.

2. **PuTTY Secure Copy:** PuTTY Secure Copy is run from the Windows Command Prompt.

Using an EC2 instance to process/analyze data requires that you move the files to be processed to the instance, and then remove the resulting products before the instance is terminated.

Find Your EC2 Instance Public DNS

1. Open the AWS "Instances" window in the *EC2 Management Console* (Figure 4.10).

The **Public DNS** of your EC2 instance displayed in this window will be used in the next two sections.
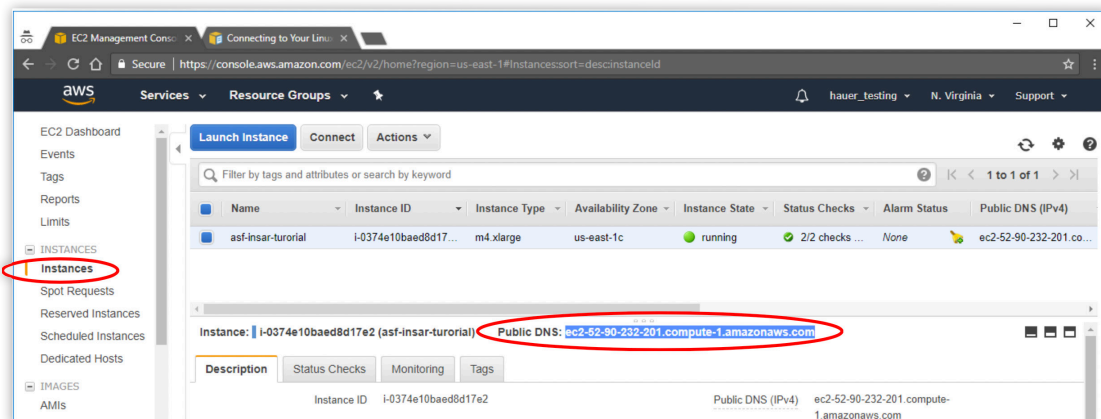

Figure 4.10

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Transferring Files Using WinSCP

1. Download **WinSCP.** https://winscp.net/eng/download.php
2. Click on **Installation package** (Figure 4.11) and then use the default installation options.
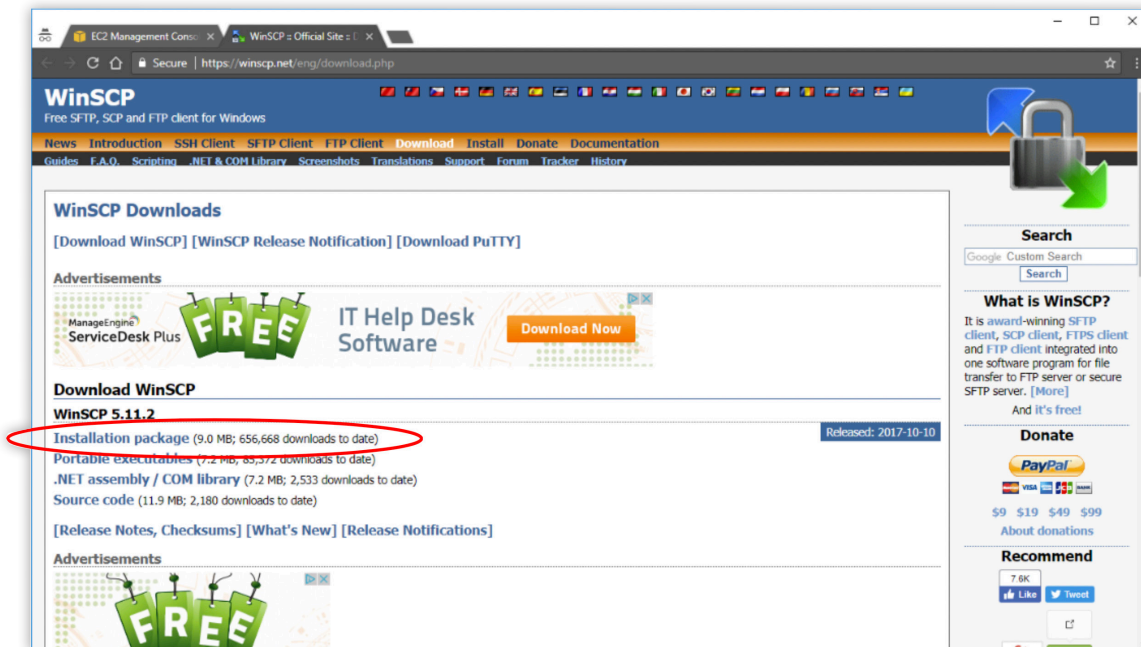

Figure 4.11

3. Click on the Desktop icon to start WinSCP.
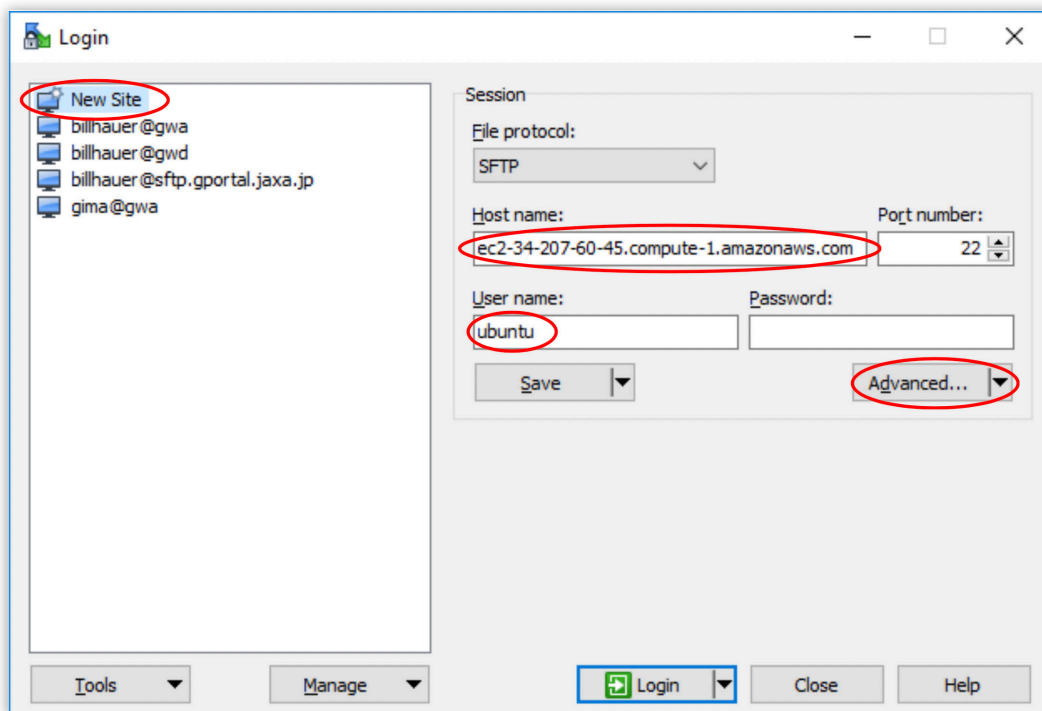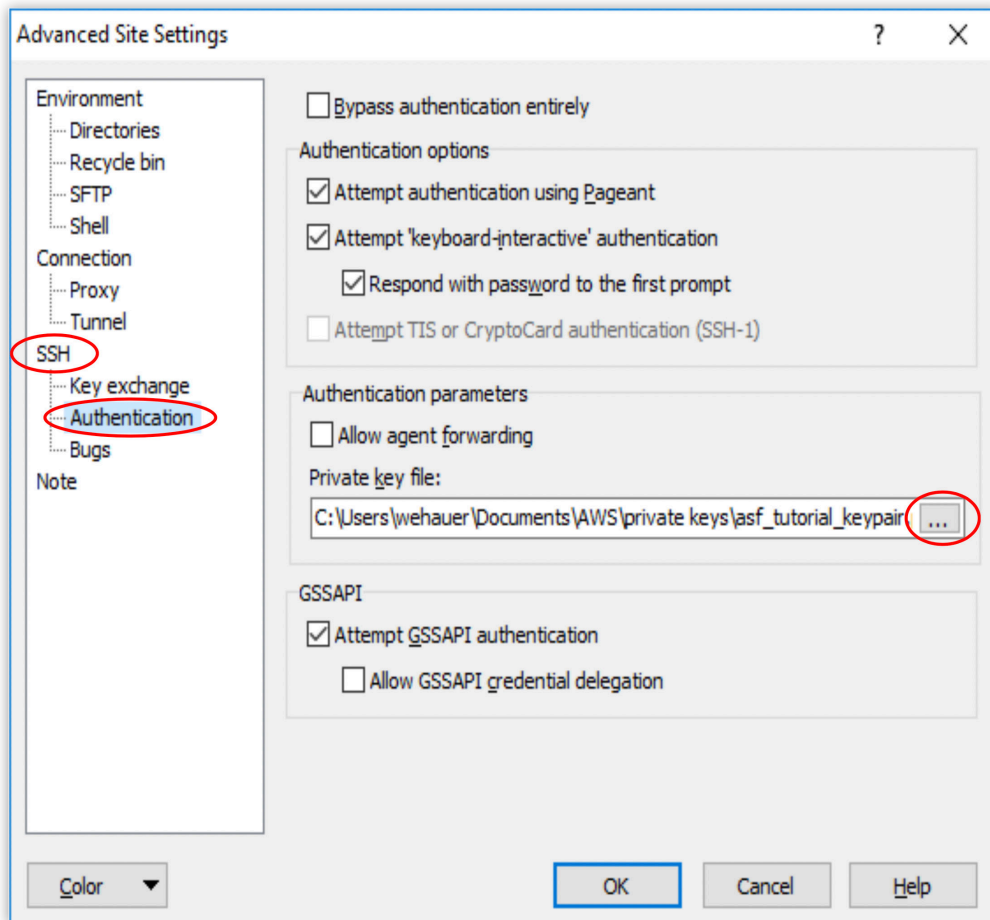4. Click on **New Site** (Figure 4.12).

Figure 4.12

5. Enter the **Public DNS** displayed in your *EC2 Management Console Instances* window into the Host Name box.
6. Type **ubuntu** in the **User name** boxs**.**
7. Select the Advanced dropdown menu and, under Sessions, select **Advanced**.
8. Click on **Authentication** under **SSH** (Figure 4.13).

<p align="center">**Figure 4.13**</p>

9. Click on the ⋯ button under **Private key file** and navigate to the folder where your PuTTY Private Key (.ppk) file is located and select it.

Instructions for creating a PuTTY Private Key (.ppk) file can be found in the tutorial titled *Connect to an AWS EC2 Instance – Windows & PuTTY*.

10. Click on the **OK** button to close the *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 (Figure 4.14). A pop-up window will appear where you can name the settings.
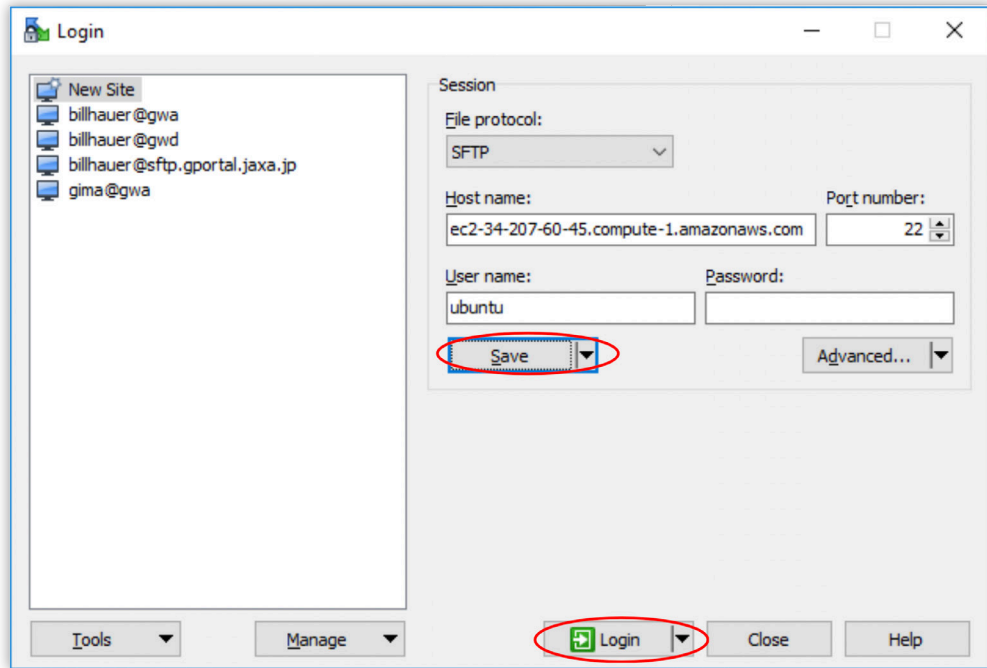
11. Click the **Login** button.

Figure 4.14

12. The first time you connect to your instance, you will be asked about connecting to an unknown server. Click the **Yes** button to continue (Figure 4.15).
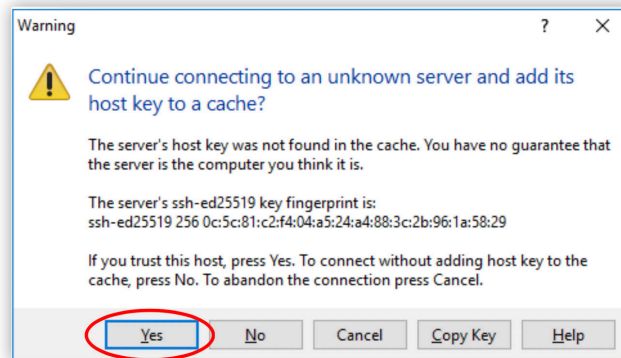

Figure 4.15

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.

After you have connected, the left pane of the window will display the file contents of your computer and the right pane displays the contents of your EC2 instance (Figure 4.16).
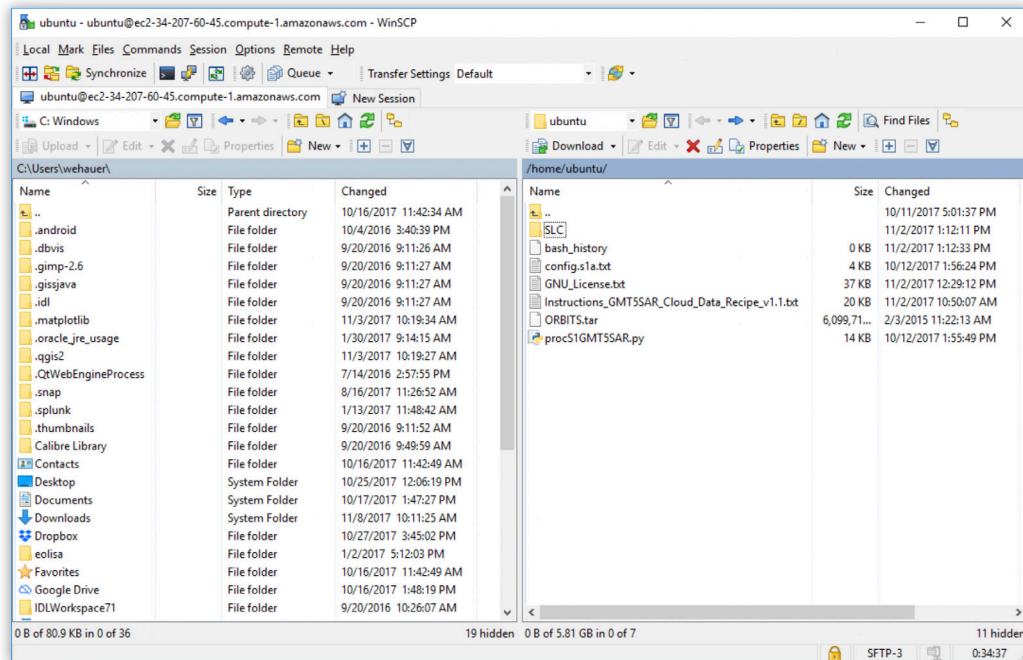

Figure 4.16

13. Drag and drop files from your computer into your EC2 instance to process. When processing is complete, drag and drop the products from EC2 to your computer.

Important: Files must be transferred from your EC2 instance to your computer before you terminate the instance! When you transfer files, a copy of the files will be left on the instance. These will be deleted when the instance is terminated.

Transferring Files Using PuTTY Secure Copy (SCP)

Windows 10 Users

1.Click on the **Start** button ▦ at the extreme left of the Taskbar (Figure 4.17).
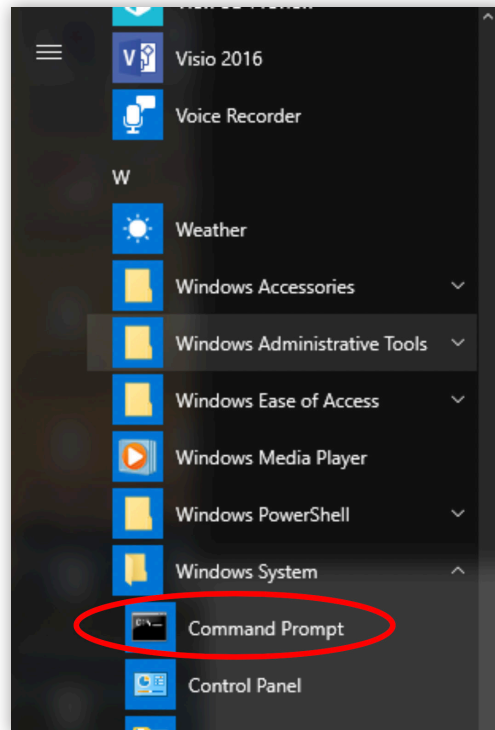

Figure 4.17

2. Scroll down the list of Apps to the Windows System folder.

3. Select **Command Prompt**.

You can also click the **Start** button and type cmd; then select **Command Prompt** from the search results.

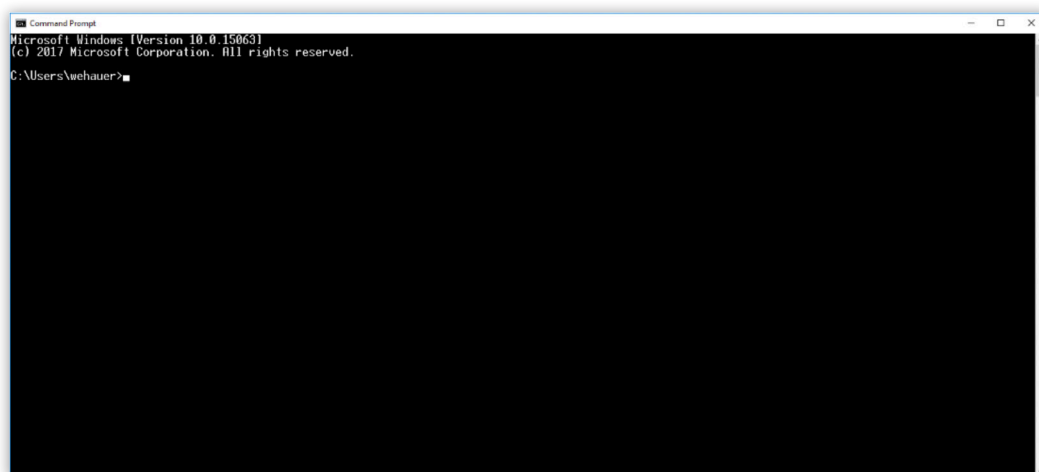In either case, the *Command Prompt* window will open (Figure 4.18).

Figure 4.18

<u>Windows 7 users</u>

1. Click on the **Start** button ⊞ at the left of the Taskbar.

2. Type **cmd** in the **Search programs and files** box (Figure 4.19).

Figure 4.19

3. Select **Command Prompt** from the search results.

The *Command Prompt* window will open as in Figure 4.18 above.

When using PSCP to transfer files between your computer and your EC2 instance, 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 in which the file is located.

For example, if *AWSkey.ppk* file is stored in a folder named *keys*, include the path C:\Users\username\keys\AWSkey.ppk in the PSCP command.

Move a file into your EC2 instance

1. At the Windows command prompt, type (*notice where spaces are placed*):

> C:\> pscp -i *yourkey.ppk yourfilename* ubuntu@public_DNS:/home/ubuntu/

2. Move your *awskey.ppk* file to your *Downloads* folder using Windows File Explorer or provide a path to the folder in which your .ppk file is located.

3. Navigate to your *Downloads* folder using the change directory (**cd**) command at the Windows command prompt.

> C:\Users*username*>cd Downloads

and press **Enter.**

4. Type the PSCP command, which includes your *.ppk* filename (and path if necessary), the name of the file you want to transfer, the *Public DNS* of your EC2 instance, and the path to a folder in your instance: (Figure 4.20).

> C:\> pscp -i awskey.ppk S1A_EW_GRD.zip ubuntu@ec2-52-89-147-172.us-east-2.compute.amazonaws.com:/home/ubuntu/
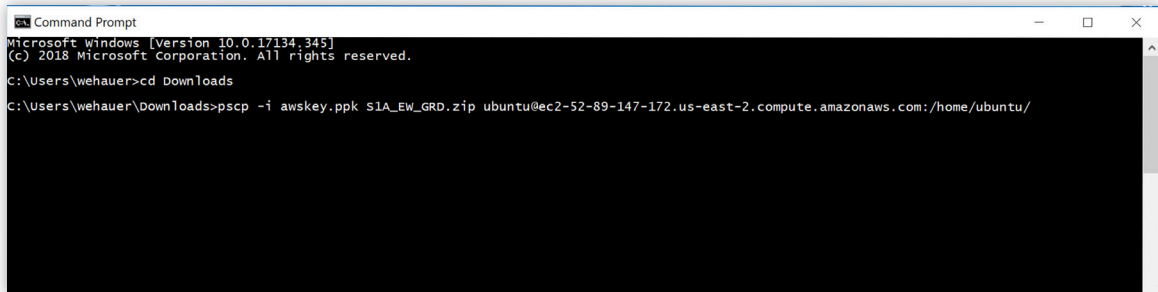

Figure 4.20

> C:\> pscp -i C:\<*path*>*yourkey*.ppk C:\<*path*>*yourfilename* ubuntu@*public_DNS*:/home/ubuntu

Command syntax: brackets <> indicate optional <u>paths</u> to your *.ppk* file and the file you want to move *if they are not in the folder you are in*

Move a file out of your EC2 instance

1. At the Windows command prompt, type:

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

Example: Move a product generated from an application out of your EC2 instance PRODUCT directory to the Data folder on your Windows computer.

2. Use Windows File Explorer to move a copy of my *awskey.ppk* file to your *Data* folder or provide a path to the folder in which your .ppk file is located.

> **NOTE:** If you don't include a local 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/[*folder*]/*filename*

3. At the Windows command prompt, navigate to your *Data* folder using the <u>change directory</u> (**cd**) command:

> C:\> *cd Data*

And press **Enter**.

4. At the command prompt, type the PSCP command, which includes your *.ppk* filename, the Public DNS of your EC2 instance, and the name of the file you want to transfer.

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

> C:\> *pscp -i awskey.ppk ubuntu@ec2-52-89-147-172.us-east-2.compute.amazonaws.com:/home/ubuntu/PRODUCT/F2_unw_phase.tif C:\data_files*

> **Important:** Files must be transferred from your EC2 instance to your computer before you terminate the instance or they will be deleted!