U.S. DEPARTMENT OF ENERGY'S
CYBERFORCE® PROGRAM

CyberForce® 101

AWS EC2 - Windows

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AWS EC2 101 – Launching a Windows Instance

Note: Before launching your first EC2 instance, sign up for an account. If you already have one, proceed to the next steps.

How to Launch a Windows Instance

This guide will walk you through configuring and launching a Windows instance on AWS.

1. When you first log in to AWS, you will see the screen shown in Figure 1. This is the home page of your AWS management console. The management console gives users access to the management console of other services. You navigate to these other consoles using the search bar at the top of the page. In this search bar, type in 'EC2', then hit enter to go to the EC2 management console.

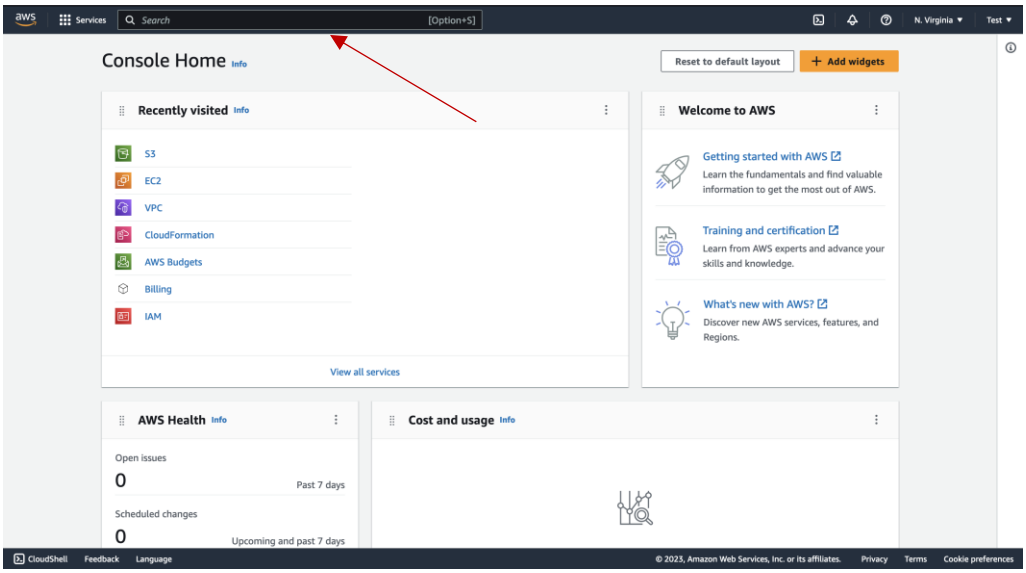


***Figure 1**. AWS Management Console Home Page.*

2. When your EC2 management console has loaded, it will look like the screen shown in Figure 3. In the middle of the screen,

there will be a button will be labeled 'Launch instance Launch instances ▼.' Click on this button.

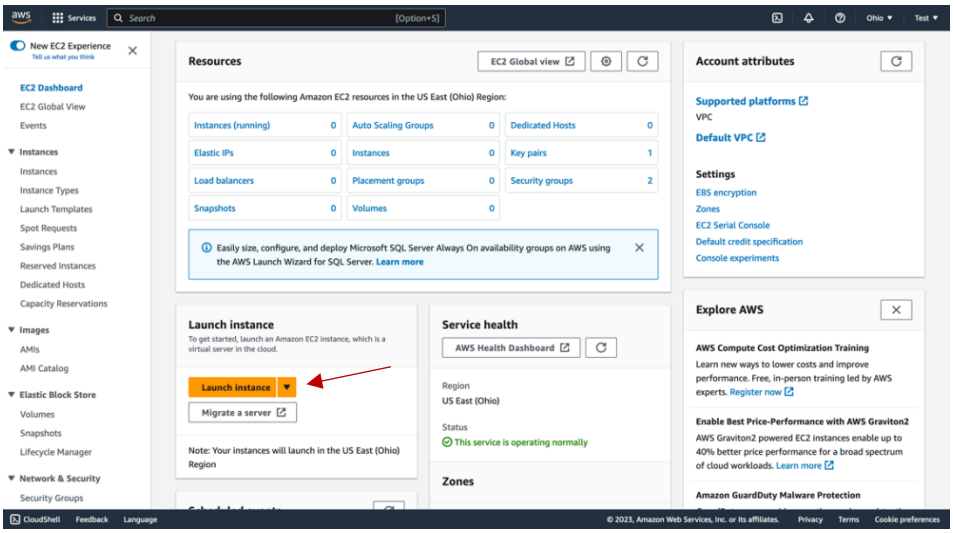


Figure 2. EC2 Management Console Home Page

3. You should now be on the page shown in Figure 3. This page is used to apply configurations to the instance you will be launching. Under 'Name and tags,' give your instance a unique name.

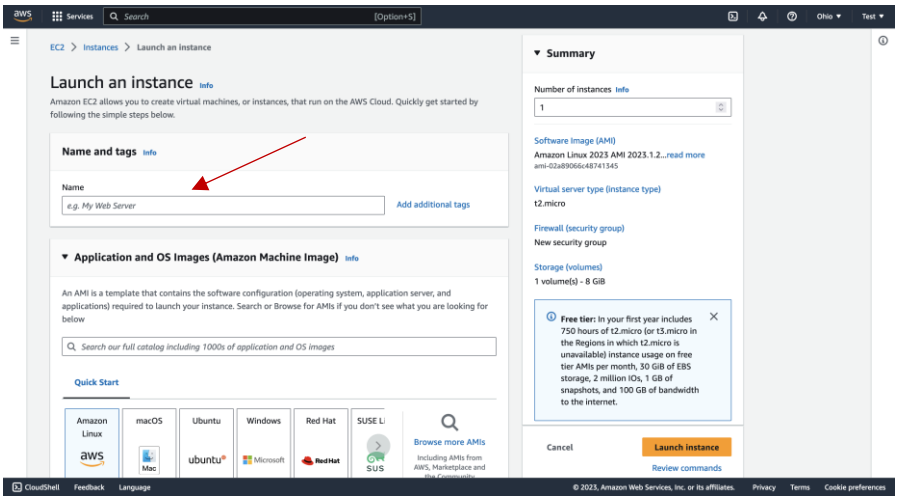


Figure 3. EC2 Launch Instance settings.

4. Next, in the 'Application and OS Images' section, shown in Figure 4, click on Windows under 'Quick Start.' By default, the Amazon Machine Image (AMI) should be set to **Microsoft Windows Server 2022**. If not, please select this option.

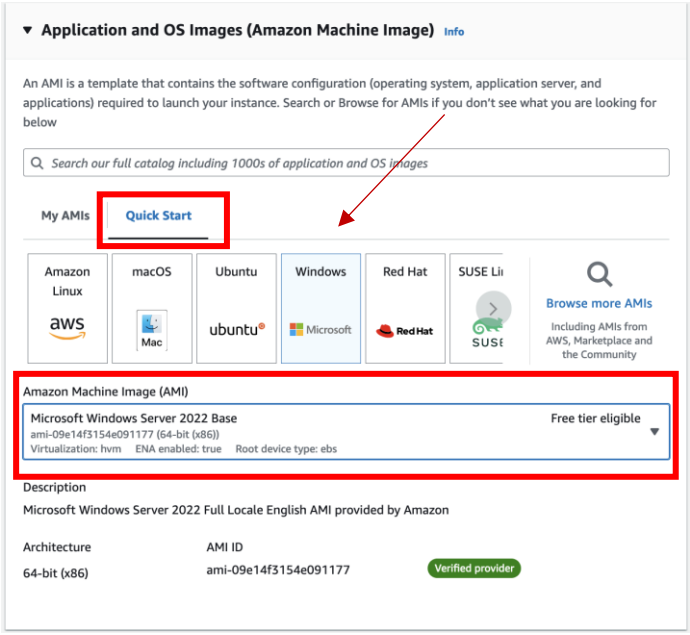


Figure 4. *EC2 Operating System Configuration.*

5. The next setting to choose is the instance type. Select **t2.micro,** as shown in Figure 4.1.

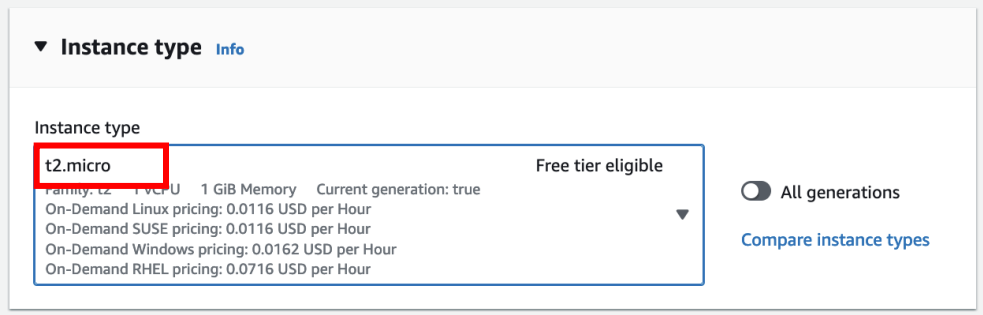


Figure 4.1 *EC2 Operating System Configuration.*

6. Under the 'Key pair' setting in Figure 5, click **Create new key pair.** A small window, Figure 6, will pop up. Enter a name for your new key pair, keep the default settings, then click 'Create key pair.' A [.pem] will be automatically downloaded. **Do not lose this file!** This file will be used to decrypt the admin password. Without the admin password, you will not be able to

log in.

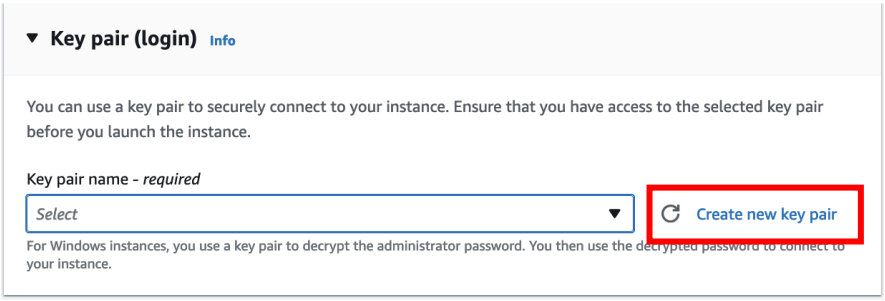


Figure 5. EC2 Key pair setting.

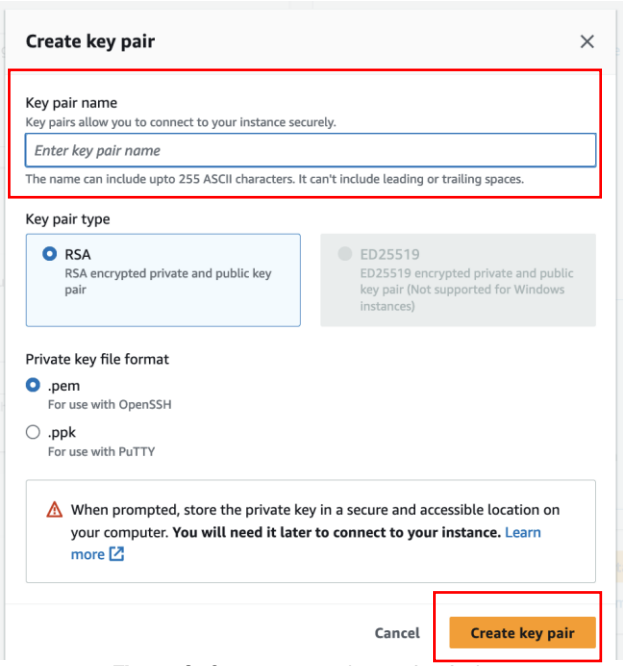


Figure 6. Create a new key pair window.

7. Next is the **Network settings**. You can leave all these settings to the default options. *Note: By default, any IP can connect to your instance. You can keep this default option or click on the drop-down menu, shown in Figure 7, then click **My IP**.* Choosing this setting will only allow access from your current public IP.

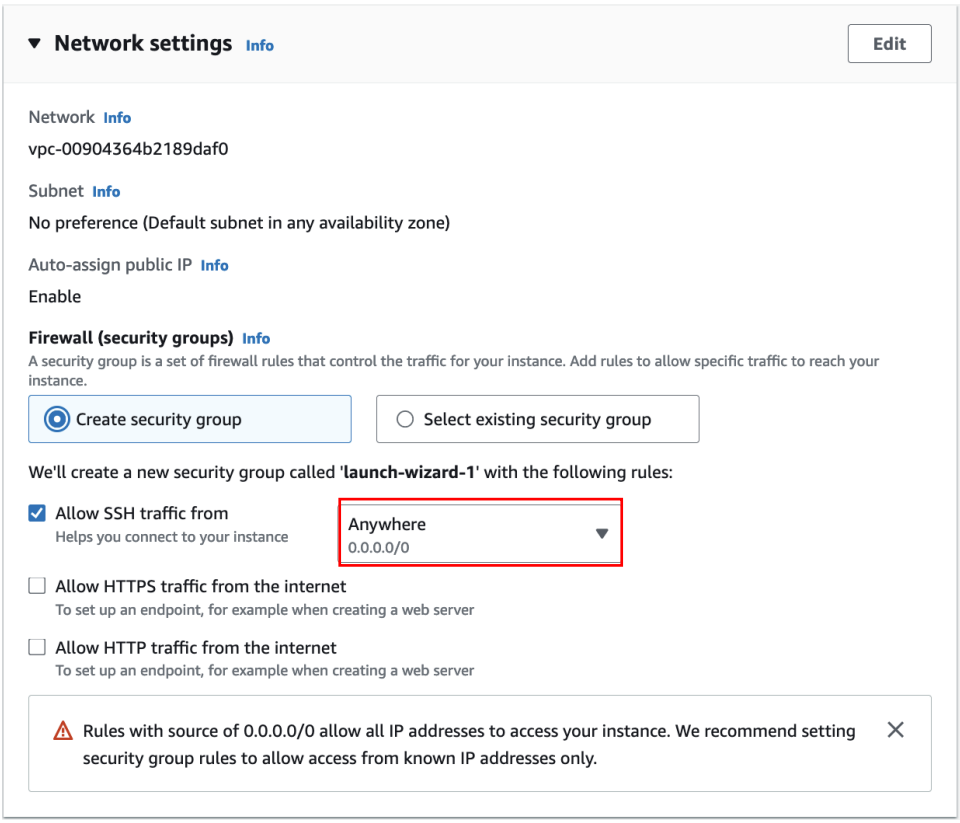


Figure 7. EC2 Network settings.

8. The **Configure Storage** setting lets you to decide how much storage to give your instance. Keep this the default value or allocate as much storage as you want.

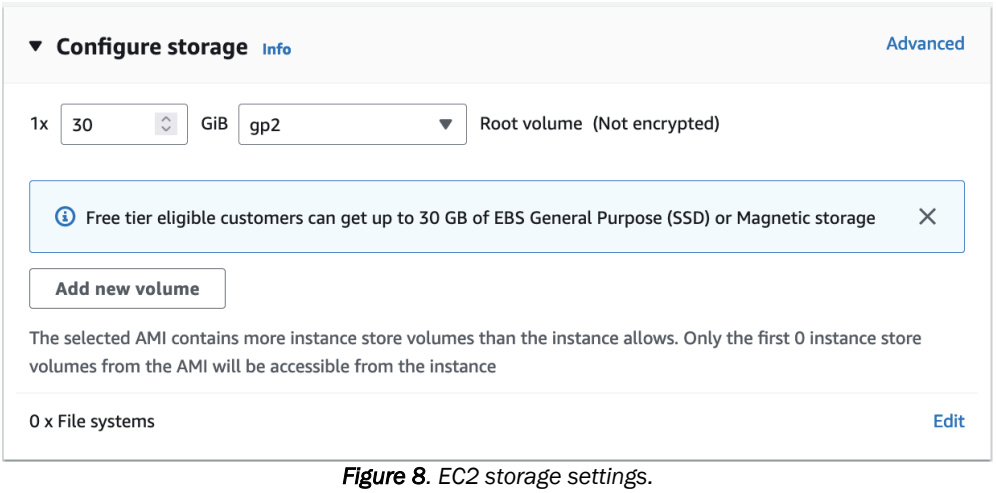
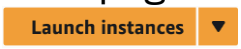


Figure 8. EC2 storage settings.

9. Finally, on the page's right side, click the button labeled 'Launch instance.' 

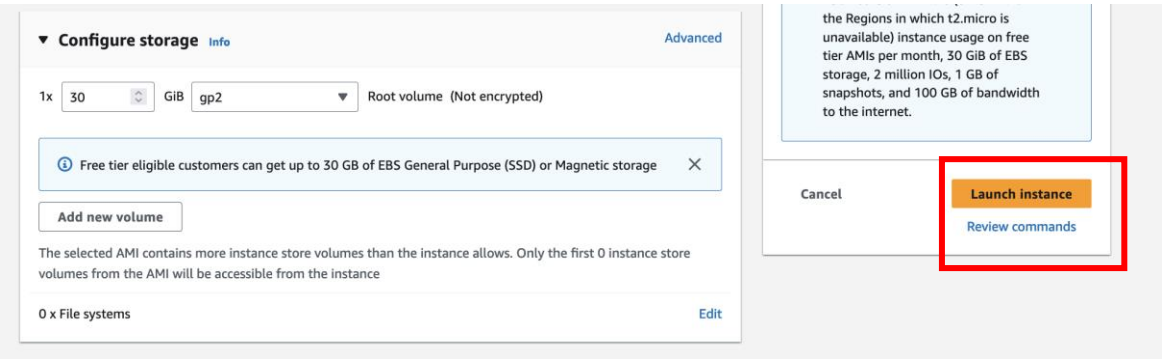


***Figure 9**. Location of 'Launch instance' button.*

10. After launching, you should be given a confirmation, as shown in Figure 10.

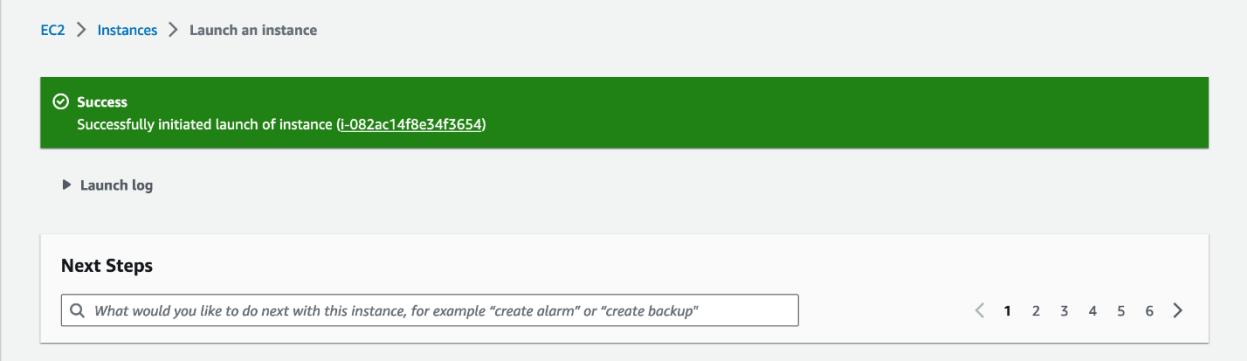


***Figure 10.** Confirmation screen.*

11. Navigate back to the EC2 console to view the status of your new instance. Before your instance is ready to connect, you will see that the field labeled 'Status check' is set to 'Initializing.' It will take a couple of minutes for your instance to be ready.

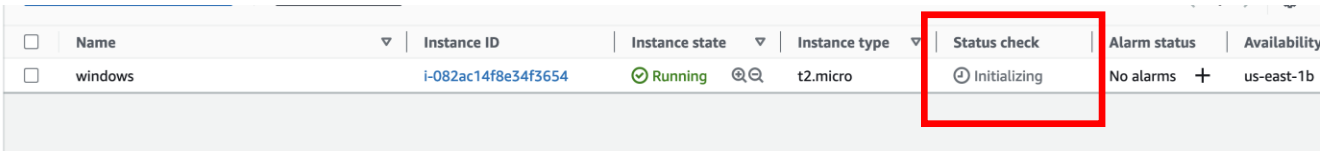


***Figure 11**. Instance status.*

Connecting to your Windows Instance

When your new Windows instance is ready to connect the **Status check** field will be green, as shown in Figure 12. You can proceed with the following steps.

1. To connect to your Windows instance, click on the check box next to your instance name, then click **Connect** at the top of the page. This will bring you to a page showing you details on how to connect to your Windows machine.

Note: Before connecting to your instance, please ensure you have a Remote Desktop client for connecting to your instance. This guide will use the Microsoft Remote Desktop applications for MAC. You can download this application from the [Apple App Store](#).

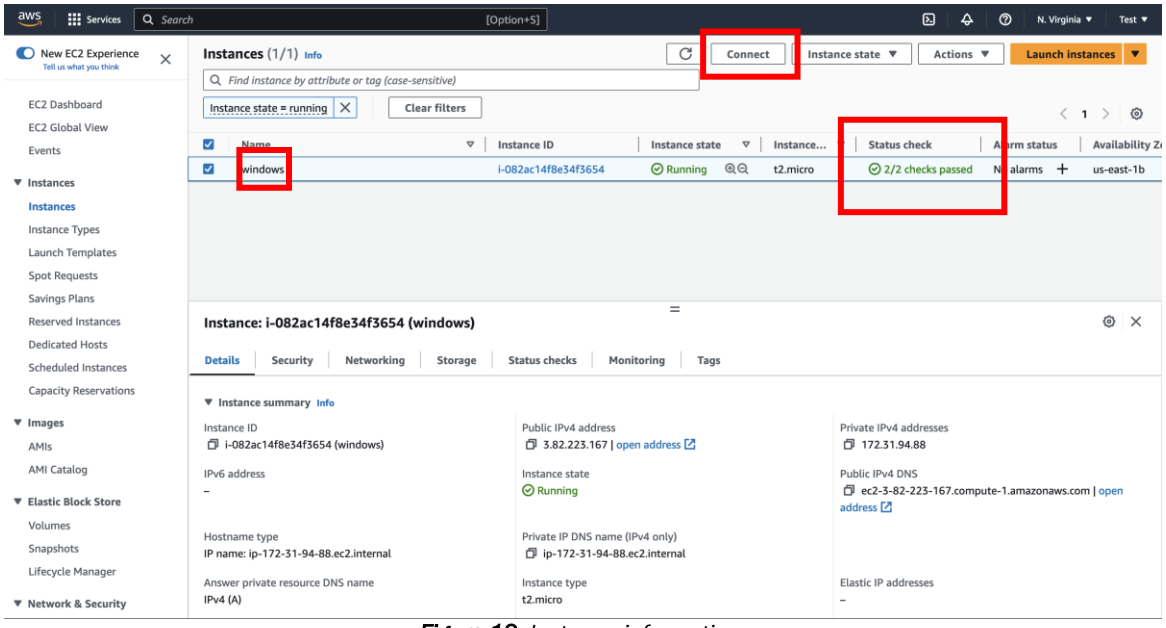


***Figure 12**. Instance information.*

2. After clicking **Connect** on the previous page, you will be directed to a page like the one shown in Figure 13. Click on the tab labeled 'RDP client.' This page will give you details on how to connect to your instance. Now click on the **Download remote desktop file** button . This will download a [.rdp] file. This is a

configuration file that already has the settings and information needed to connect to your instance. Next, click on **Get password** to continue.

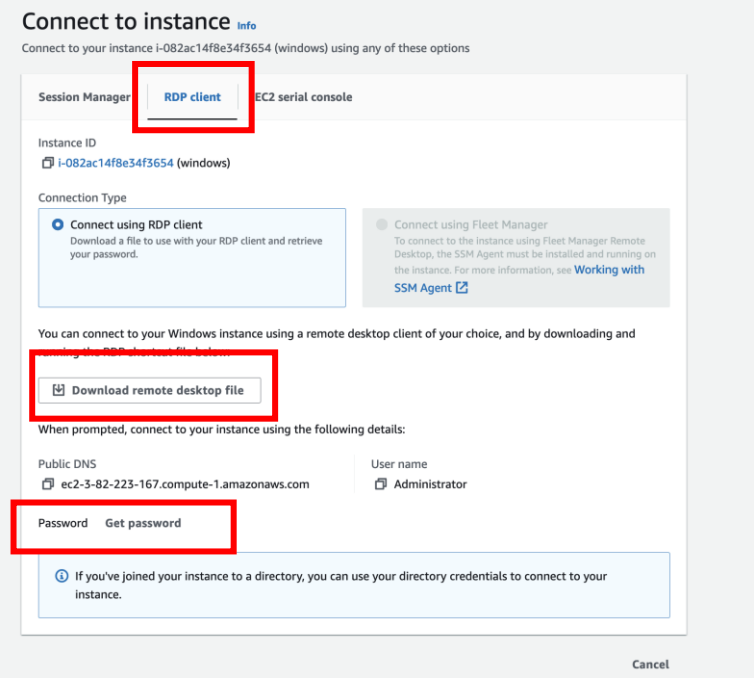


Figure 13. *Details about connecting to your instance.*

3. You should now be on the page shown in Figure 14. To connect to your instance, you must have a password for the Administrator account on your instance. To get this password, you must use the private key created in step 6 to decrypt the password. Click on the **Upload private key file** button to upload your private key. When you finish uploading, the contents of the private key will be shown in the text box. Finally, click the **Decrypt password** button to retrieve your password.

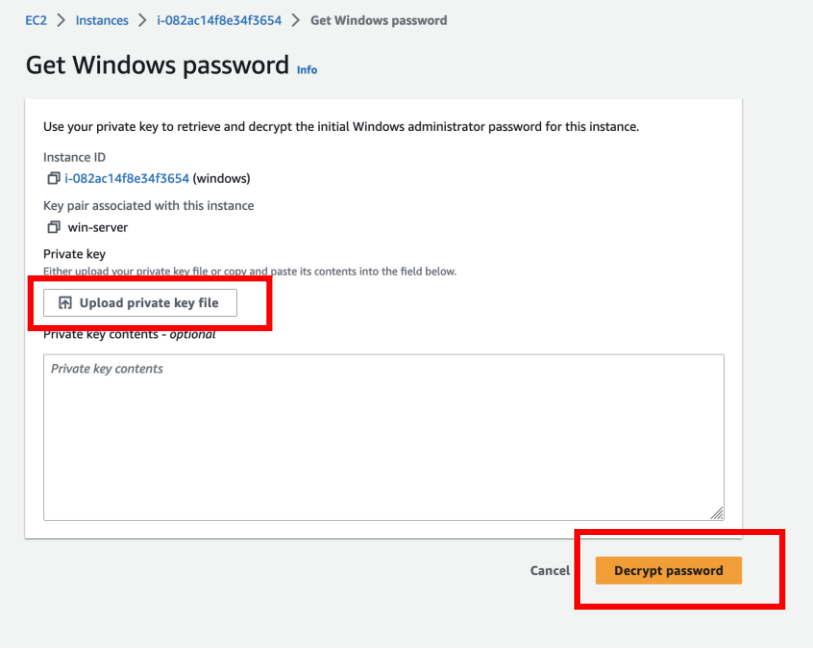


***Figure 14**. Details about connecting to your instance.*

4. You should be back on the screen you were on before, Figure 13. Notice that you now have a password shown under the **Password** field; see Figure 15. Copy this password and username, and make sure you don't lose these credentials.

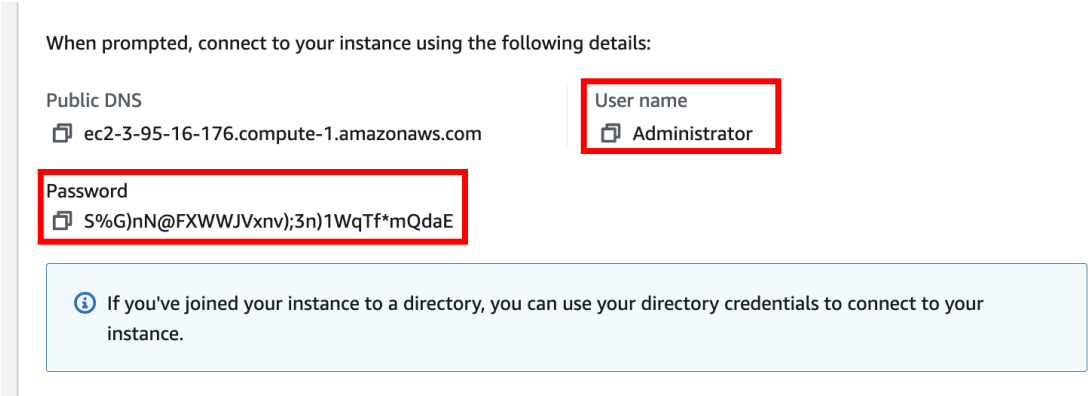


***Figure 15**. Credentials for your instance.*

5. Open the Microsoft Remote Desktop Application, your window should look like Figure 16. Locate the [.rdp] download file, then drag and drop the file to this window.

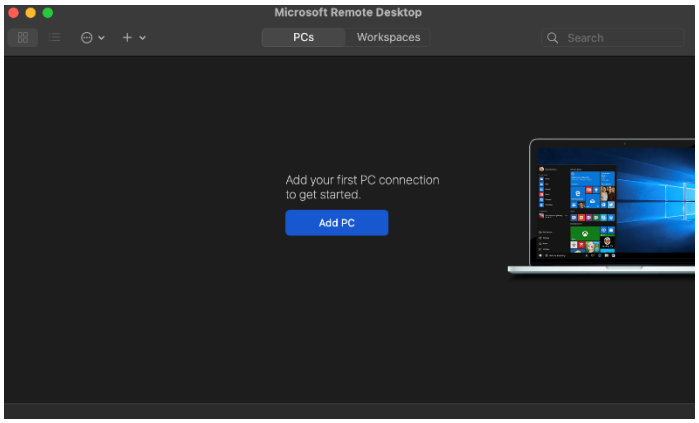


***Figure 16**. Microsoft Remote Desktop.*

6. Your RDP client should now have the Windows instance added; see Figure 17. Double-click on the PC you just added. You receive a prompt to enter a password. Use the password you copied from the previous step, then follow the prompts that show up.

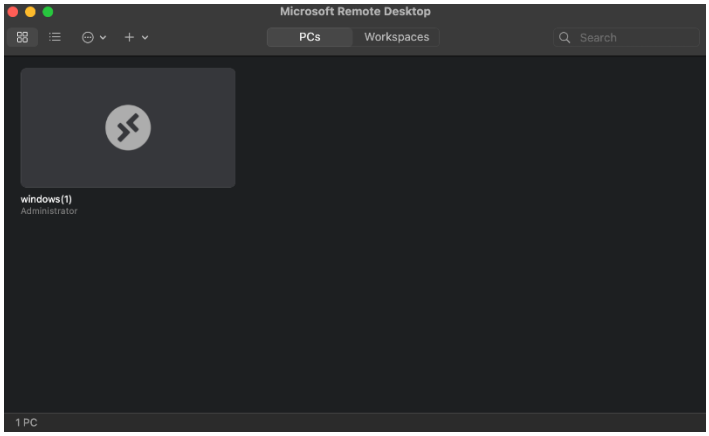


***Figure 17**. Window Instance.*

Congratulations, you should now be logged in and have access to your new Windows instance.

Cleaning up your instance

Knowing how to clean up is essential after you finish using your Windows instance. You have several options for managing your instance when it's not in use. The first option is to leave it running and never turn it off. For this option, there are no additional steps to follow. Although it is possible to leave your instance running,

understand that this may come with unwanted or unforeseen charges to your account.

The next option you have is to shut down the instance. Shutting down allows you to turn the instance off without worrying about losing any work you have. You can do this by clicking **Start** and then select **Power** > **Shut down**. The other way to shut down your instance is through the EC2 console.

1. Navigate to your EC2 console. Select the instance that you want to shut down. Then on the top right of the page, click on **Instance state** button Instance state. You will see a drop-down as shown in Figure 18. Click on **Stop instance** to shut down the instance.

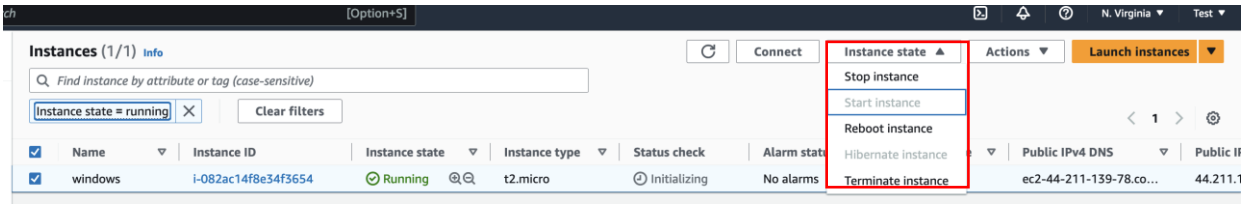


***Figure 18**. Instances clean-up options.*

As you can see, in Figure 18, from the drop-down menu, options other than **Stop instance** are available and do the following:

- **Reboot instance:** This option will restart your operating system like a typical computer.

- **Hibernate instance:** When you hibernate an instance, EC2 will signal the operating system (OS) to go into hibernation (suspend-to-disk). All the contents in your system's memory (RAM) will be saved to your attached storage volume. Then when the instance is started again, the following occurs:
    - The EBS root volume is restored to its previous state.
    - The RAM contents are reloaded.
    - The processes that were previously running on the instance are resumed.

    - Previously attached data volumes are reattached, and the instance retains its instance ID.

- **Terminate instance:** When this option is selected, it will permanently delete your instance. Any data saved you have will permanently be deleted. Only use this option if you no longer need your instance for anything.

Sources

- https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/Hibernate.html
- https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/terminating-instances.html
- https://docs.aws.amazon.com/AWSEC2/latest/WindowsGuide/EC2_GetStarted.html#ec2-connect-to-instance-windows