

## PuTTy Installation and SSH Keys Generation

### Introduction

This project aims to demonstrate how to download and install PuTTy SSH client and create public and private SSH keys on Windows 11 virtual machine (VM) on UTM M1/M2/M3 in 2025.

- What is PuTTy?

PuTTy is a free, open-source terminal emulator and network file transfer application, created in 1997 by Simon Tatham, that serves a client program for SSH and Telnet and it is used primarily to log into another computer over a network or the Internet.



- What is SSH key?

SSH keys are used to identify oneself to an SSH server that uses public key cryptography and challenge-response authentication. An immediate advantage of this method over traditional password authentication is that you can be authenticated by the server without sending your password over the network. You can also use it with automation because it allows for unattended server communication.

### Lab prerequisite

- The PuTTy Terminal should be installed

### Putty Installation

- Open a Web browser
- Google PuTTy
- Enter the PuTTy Official Website
- Download

Navigate to the official PuTTy website and download the “64-bit ARM version of the MSI (Windows Installer”).

**Package files**

You probably want one of these. They include versions of all the PuTTY utilities (except the new and slightly experimental Windows pterm).  
 (You probably want the 64-bit x86 version. The 32-bit version is only for backward compatibility with very old PCs / versions of Windows.)  
 We also publish the latest PuTTY installers for all Windows architectures as a free-of-charge download at the [Microsoft Store](#); they usually take a few days to appear there after we release them.

**MSI ("Windows Installer")**

64-bit x86:	<a href="#">putty-64bit-0.83-installer.msi</a>	(signature)
64-bit Arm:	<a href="#">putty-arm64-0.83-installer.msi</a>	(signature)
32-bit x86:	<a href="#">putty-0.83-installer.msi</a>	(signature)

**Unix source archive**

.tar.gz:	<a href="#">putty-0.83.tar.gz</a>	(signature)
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**Alternative binary files**

The installer packages above will provide versions of all of these (except PuTTYtel and pterm), but you can download standalone binaries one by one if you prefer.  
 (You probably want the 64-bit x86 version. The 32-bit version is only for backward compatibility with very old PCs / versions of Windows.)

**putty.exe (the SSH and Telnet client itself)**

64-bit x86:	<a href="#">putty.exe</a>	(signature)
64-bit Arm:	<a href="#">putty.exe</a>	(signature)
32-bit x86:	<a href="#">putty.exe</a>	(signature)

➤ Run the installer

**Download PuTTY: latest release (0.83)**

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 Download: [Stable](#) · [Snapshot](#) | [Docs](#) | [Privacy](#) | [Changes](#) | [Wishlist](#)

s is 0.83, released on 2025-02-08.

page to bookmark or link to. Alternatively, here is a [permanent link to the 0.83 release](#).

ever, they are often not the most up-to-date version of the code available. If you have a problem with this release, then it might be worth trying out the [development snapshots](#), to see if the problem has already been fixed in those versions.

➤ There will a pop message indicating that this executable file may contain virus. Click okay to run the setup Wizard

This page contains download links for the latest released version of PuTTY. Currently this is 0.83, released on 2025-02-08.

When new releases come out, this page will update to contain the latest, so this is a good page to bookmark or link to. Alternatively, here is a [permanent link to the 0.83 release](#).

Release versions of PuTTY are versions we think are reasonably likely to work well. However, they are often not the most up-to-date version of the code available. If you have a problem with this release, then it might be worth trying out the [development snapshots](#), to see if the problem has already been fixed in those versions.

**Package files**

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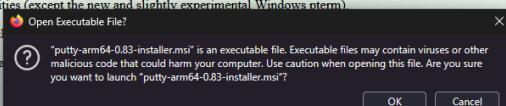
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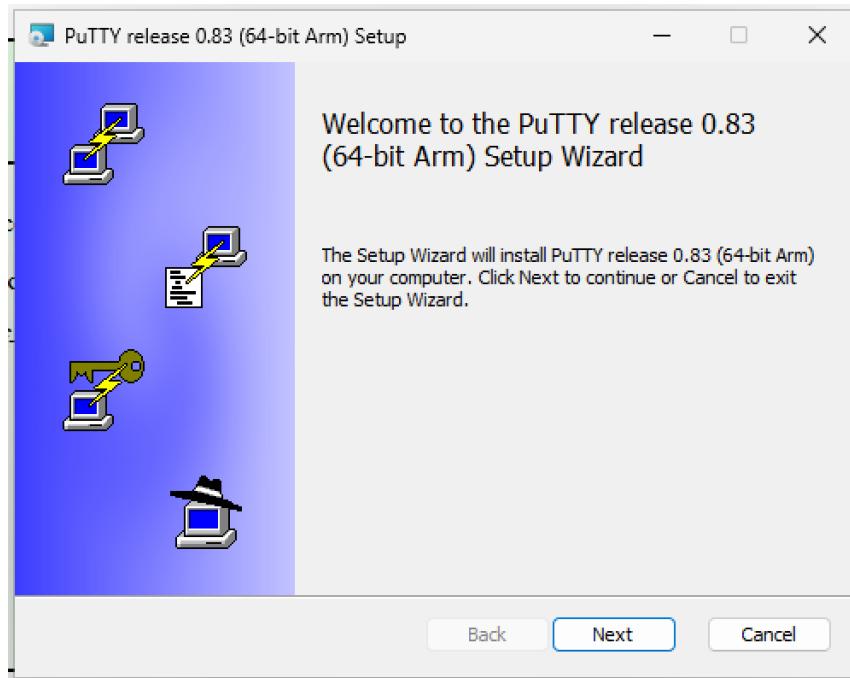
64-bit x86:	<a href="#">putty-64bit-0.83-installer.msi</a>	<a href="#">(signature)</a>
64-bit Arm:	<a href="#">putty-arm64-0.83-installer.msi</a>	<a href="#">(signature)</a>
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**Unix source archive**

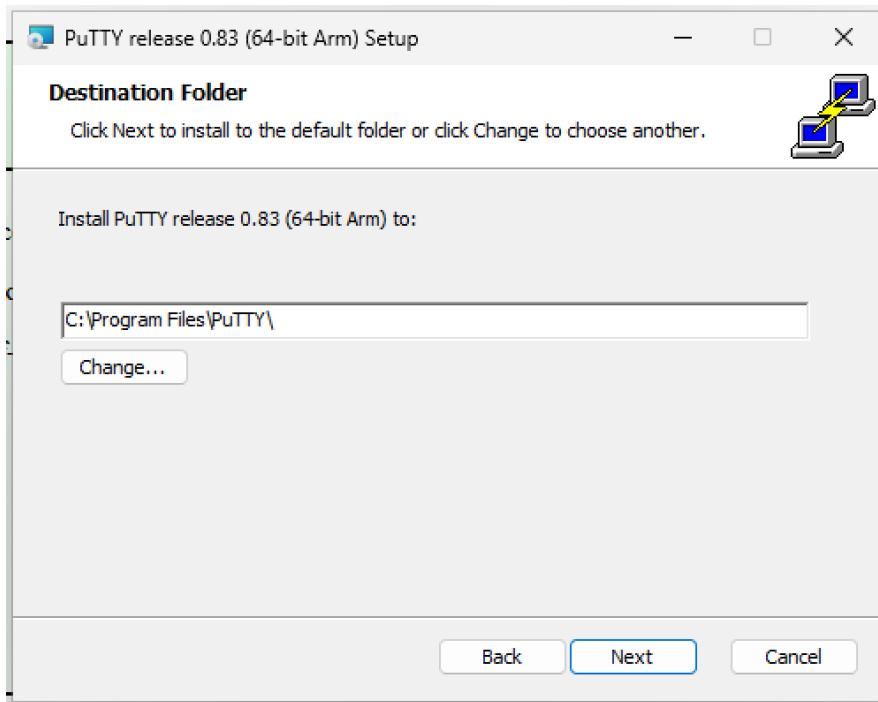
.tar.gz:	<a href="#">putty-0.83.tar.gz</a>	<a href="#">(signature)</a>
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 "putty-arm64-0.83-installer.msi" is an executable file. Executable files may contain viruses or other malicious code that could harm your computer. Use caution when opening this file. Are you sure you want to launch "putty-arm64-0.83-installer.msi"? OK Cancel

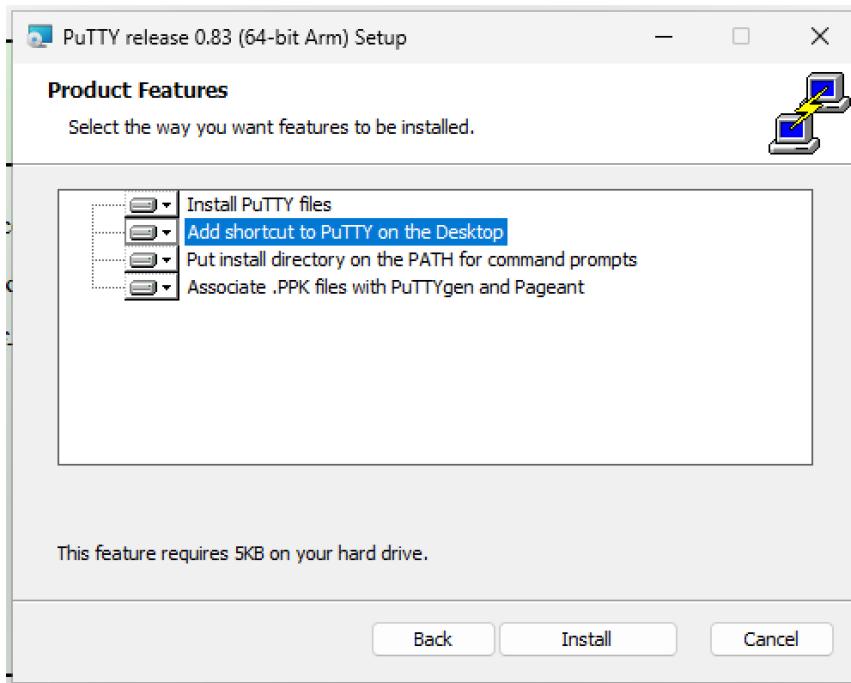
➤ Click Next



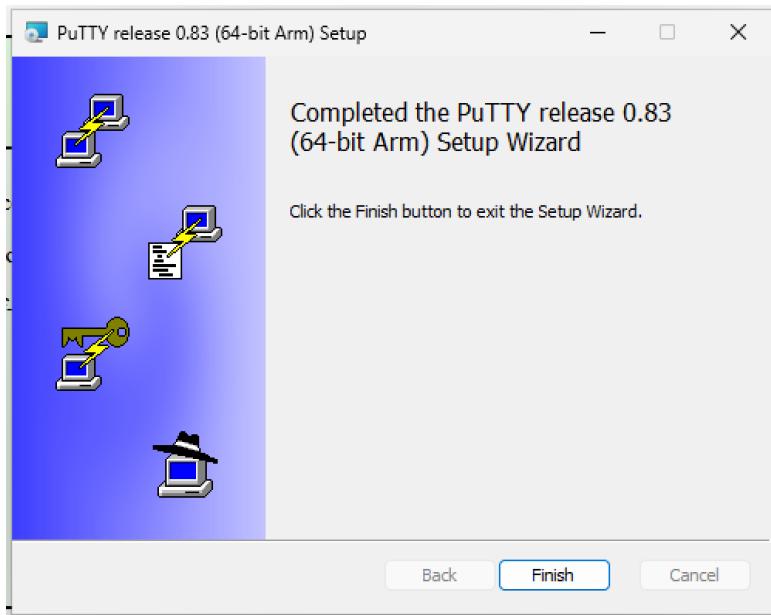
➤ Click next to accept the default installation path (usually C:\Program Files\PuTTY) and click Next.



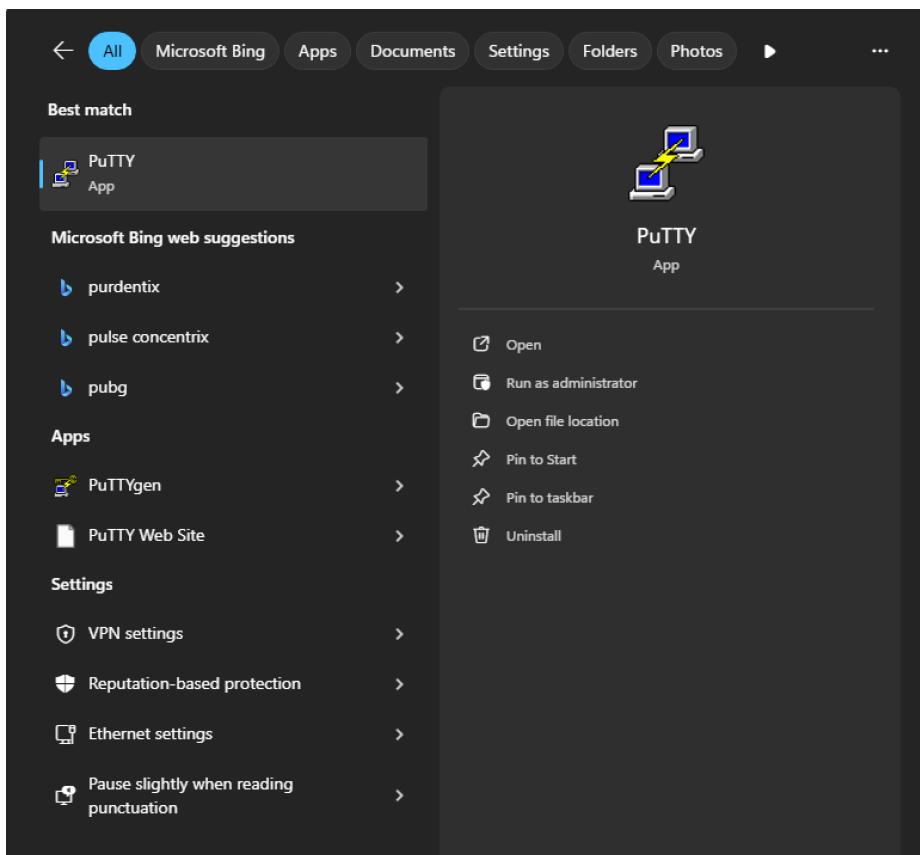
- Verify the selections to ensure that “Add Shortcut to PuTTY on the Desktop” is selected, then click “install”. The Rest of the default setting can be left unchanged.



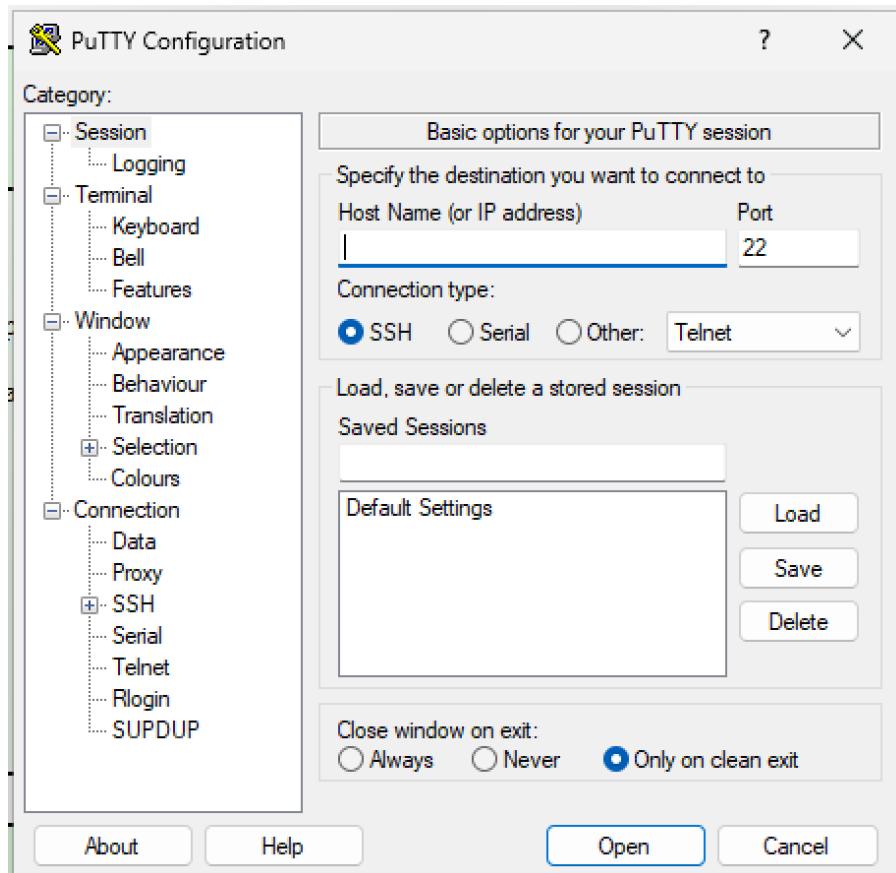
- Click Finish after the installation is completed. The installation only takes a minute. If installation lasts more than 5 minutes, then verify if the right package is chosen for an installation



- Go to the search bar and type PuTTy to ensure that it is successfully installed
- Double click the icon



- PuTTy is successfully installed on Windows 11

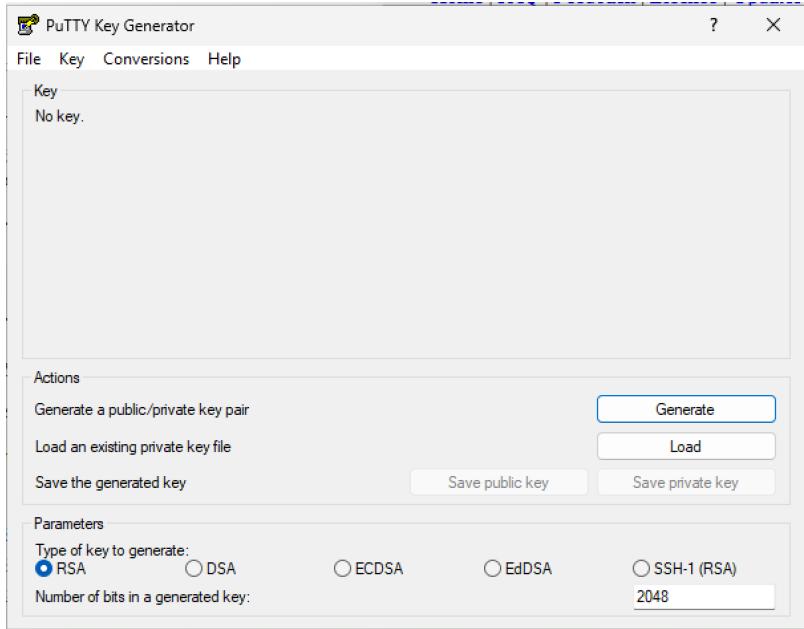


### Alternative Methods

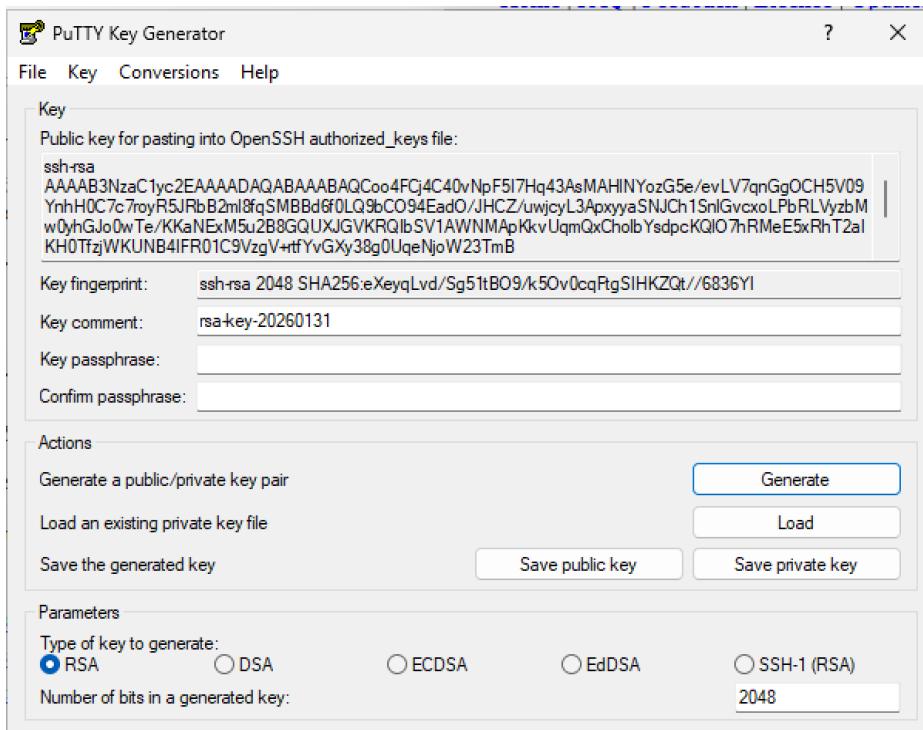
- Open the Command Prompt or PowerShell as an administrator
- Type in the command `winget install PuTTY.PuTTY`
- I refused to use this method for the learning purpose. Network Engineering and SOC are the pathways that I am heading to career wise

### Generating the SSH Keys on PuTTY

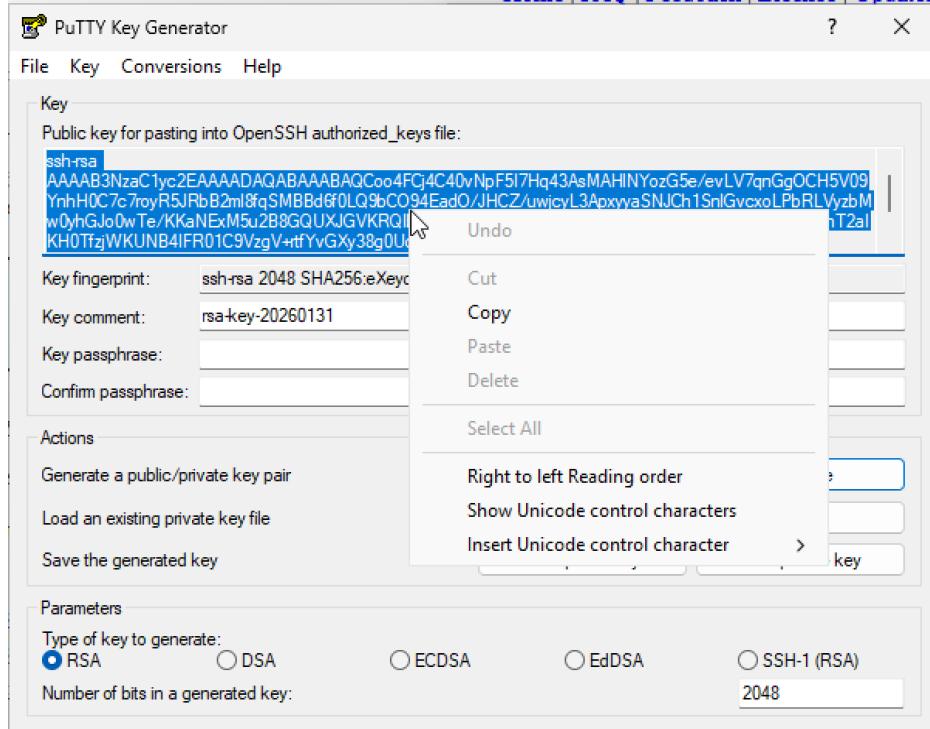
- Type PuTTy on the Windows “Search bar”, then double click PuTTygen



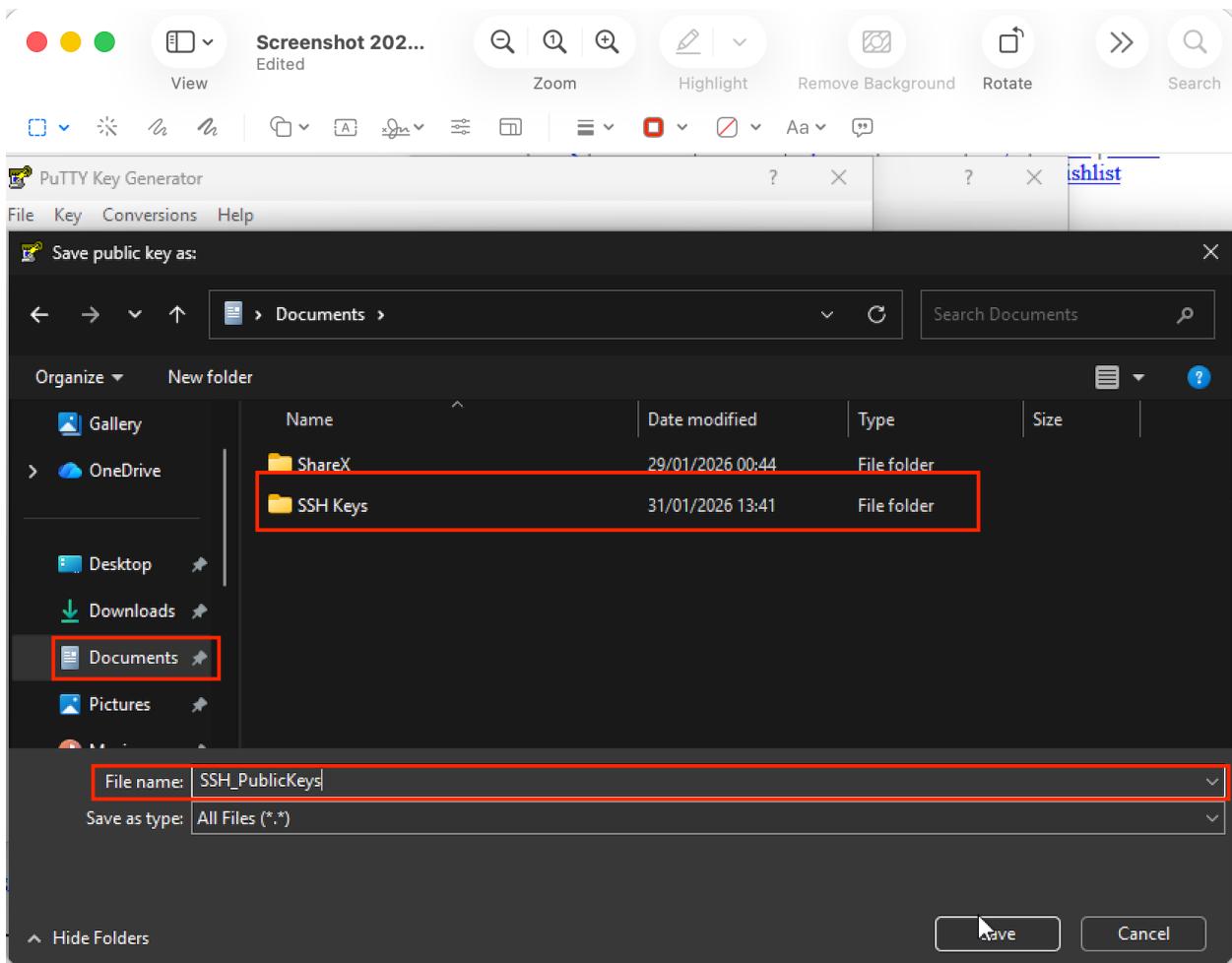
- RSA is chosen by default. Leave it unchanged
- Click “Generate”
- During the generation process, move your mouse over the blank area on the PuTTy window to create some randomness. This instruction will also be shown on top the green label indicating the generation process.
- A public and private key pair will then be generated



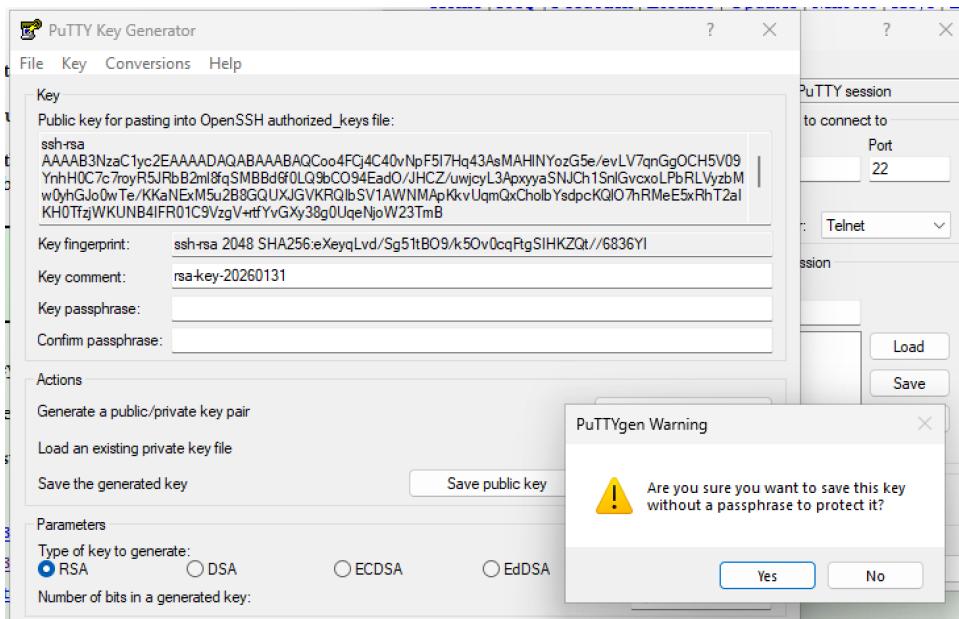
- Copy all the SSHkey from the top by highlighting the text shown after the generation. This is necessary to ensure that nothing goes wrong if forget to save it.
- Right-click the highlighted text and click copy



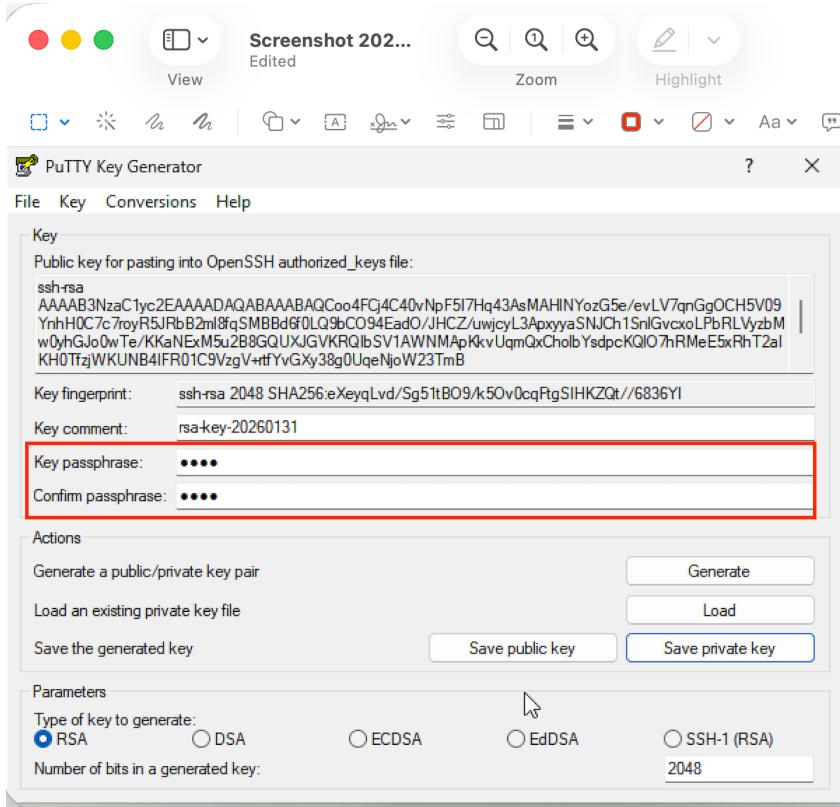
- Otherwise, click “Save public key”
- Choose a destination to save the file



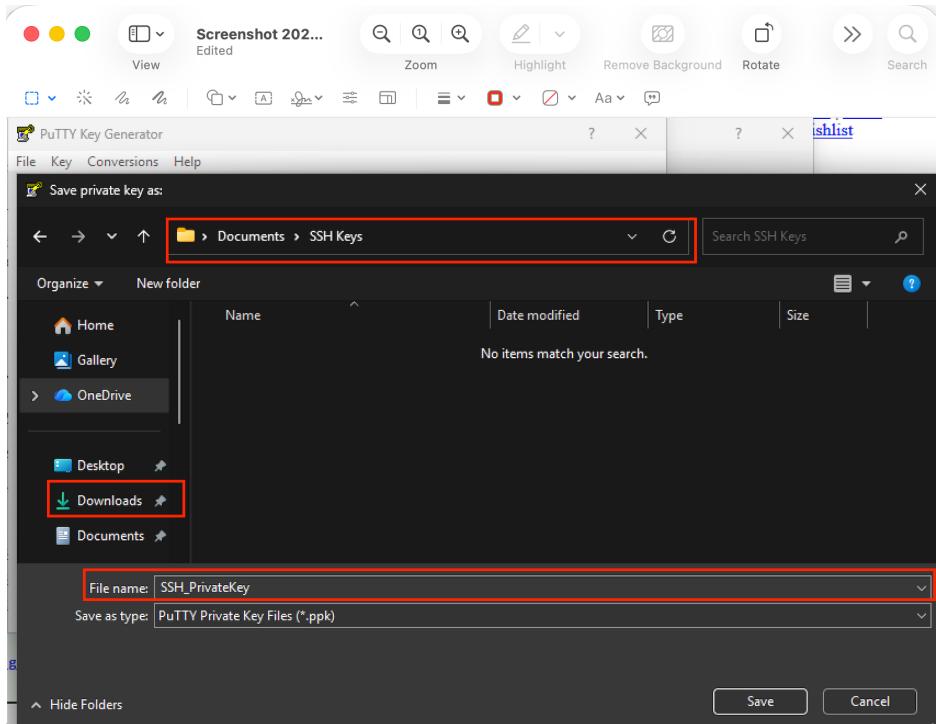
- Click “Save private key”
- There will be a pop warning if you wish to save the private key with a passphrase



- I chose to add a passphrase to provide an extra layer of security

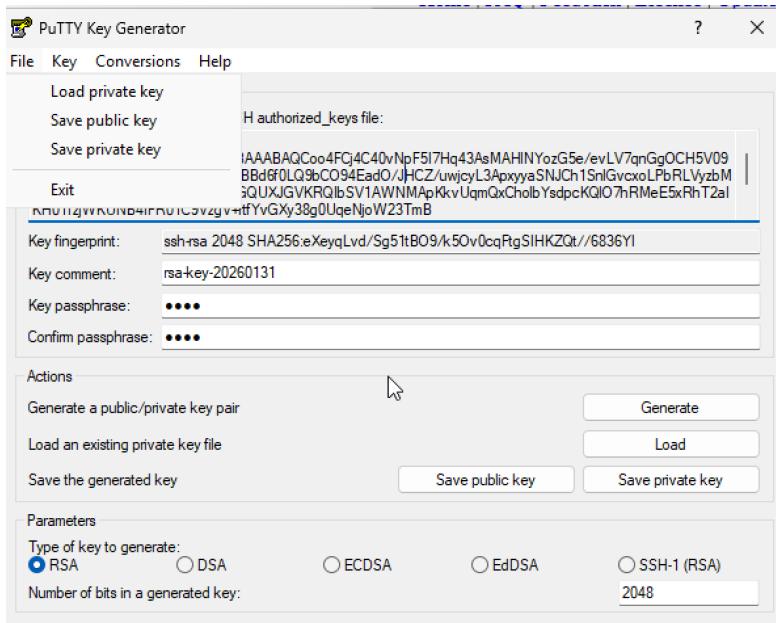


- Choose a destination and click “Save File” to save the key

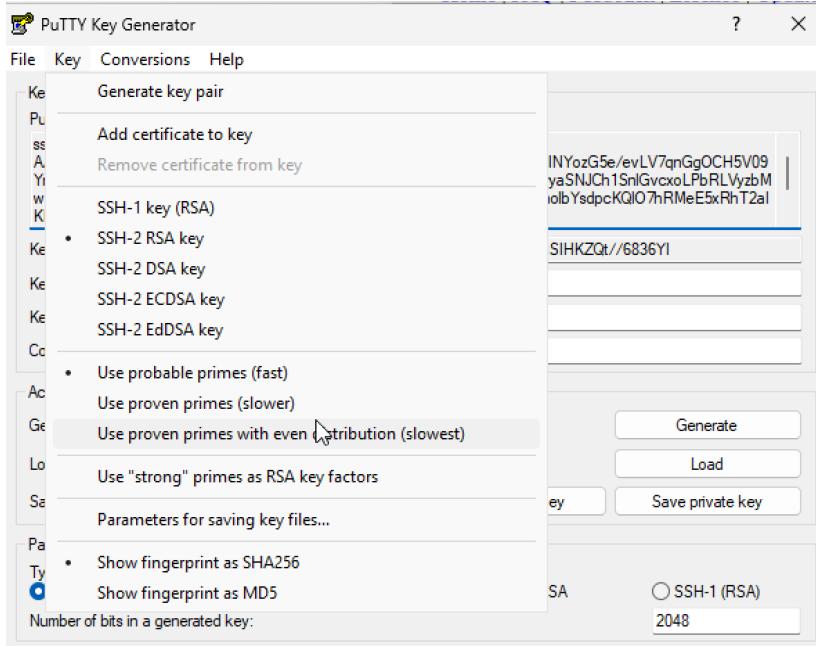


## Load Key:

In case you want to load your key, click on right pane and click “Load private key” from the drop down.



Here you can see other functions that can be configured on the PuTTyKey Generator, such as “Adding certificate to key”



## Note

Providing a passphrase for your SSH key provides an extra layer of security, but it can also cause issues when you are run automated scripts that require the protected key.

The ssh-agent can manage your keys. You enter the passphrase once. The ssh-agent keeps your key in its memory and pulls it up when needed. If you want the ssh-agent manage your keys, issue the following command:

```
eval $(ssh-agent)
```

After the program starts the ssh-add command to add your public key to the agent, the ssh-add utility searches for default keynames, of which id\_rsa is one, and adds them to the ssh-agent. After you type your password, the "unlocked" key is stored with ssh-agent and can be used to authenticate against other servers.

```
root@bck1:~# ssh-add  
Enter passphrase for /root/.ssh/id_rsa:  
Identity added: /root/.ssh/id_rsa (/root/.ssh/id_rsa)  
root@bck1:~#
```

Each time that you open a new terminal session, you are prompted for the key passphrase. Consider running the following commands to append your .bash\_profile file so that ssh-agent starts with every bash session and adds your key.

```
echo 'eval $(ssh-agent)' >> ~/.bash_profile  
echo 'ssh-add' >> ~/.bash_profile
```

## Conclusion

This lab projects helps equip people with the knowledge and skills to download and install PuTTY SSH client and create their own public and private SSH keys.