

Land DA System Training

Connecting to an HPC Environment via PuTTY

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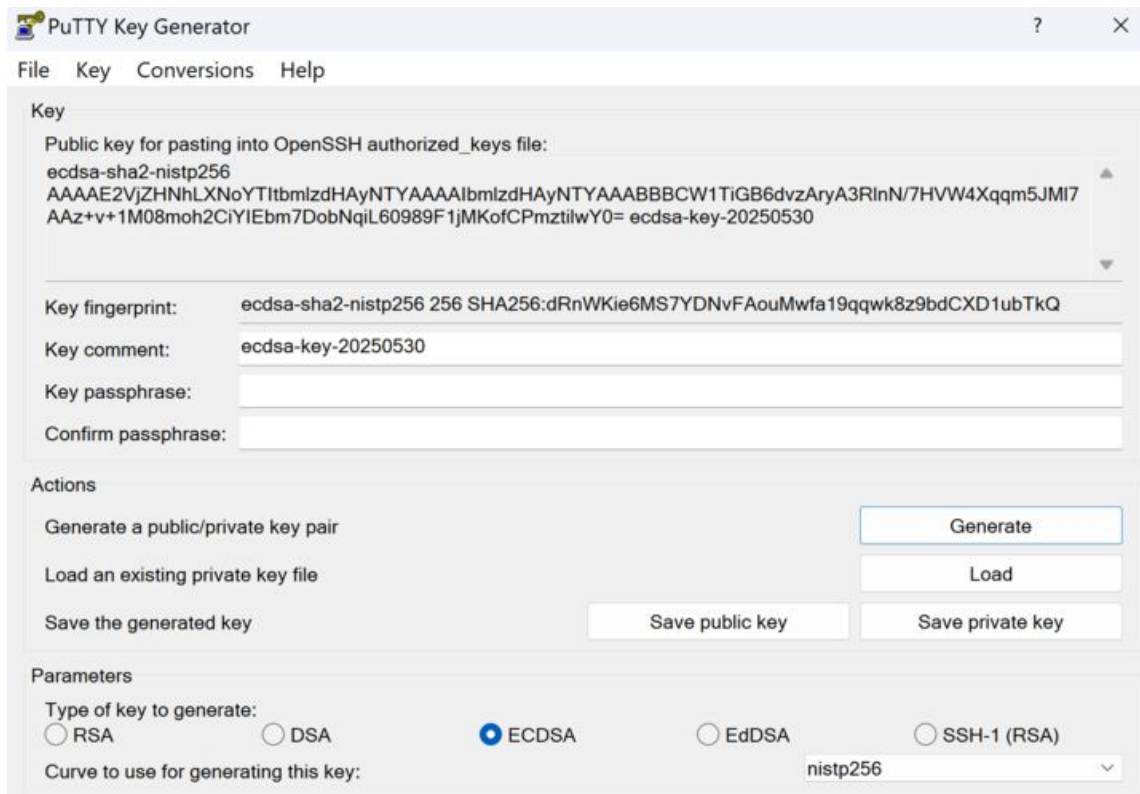


Introduction to SSH

- A **Secure SHell** (SSH) tunnel creates an encrypted connection between two computer systems. This allows users to:
 - Access and use a remote system via the command line on their local machine.
 - Transfer data securely between two systems.
- Many HPC platforms are accessed via SSH from a user's computer.
 - NOAA RDHPCS
 - Academic HPCs
 - Commercial cloud platforms (e.g., AWS EC2s)

Generate public/private key pair

- Open the PuTTYgen client and choose either ECDSA or ED25519 under the parameters field.
- Select “Generate a public/private key pair.”



The screenshot shows the PuTTY Key Generator window. The 'Key' section displays the public key for pasting into an OpenSSH authorized_keys file, the key fingerprint, and the key comment. The 'Actions' section contains buttons for 'Generate', 'Load', 'Save public key', and 'Save private key'. The 'Parameters' section shows the 'Type of key to generate' set to ECDSA and the 'Curve to use for generating this key' set to nistp256.

PuTTY Key Generator

File Key Conversions Help

Key

Public key for pasting into OpenSSH authorized_keys file:

```
ecdsa-sha2-nistp256
AAAAE2VjZHNhLXNoYTItbmlzdHAyNTYAAAAIbmlzdHAyNTYAAABBCW1TiGB6dvzAryA3RlnN/7HVV4Xqqm5JMI7
AAz+v+1M08moh2CiYIEbm7DobNqiL60989F1jMKofCPmztWY0= ecdsa-key-20250530
```

Key fingerprint: ecdsa-sha2-nistp256 256 SHA256:dRnWKie6MS7YDNvFAouMwfa19qqwk8z9bdCXD1ubTkQ

Key comment: ecdsa-key-20250530

Key passphrase:

Confirm passphrase:

Actions

Generate a public/private key pair Generate

Load an existing private key file Load

Save the generated key Save public key Save private key

Parameters

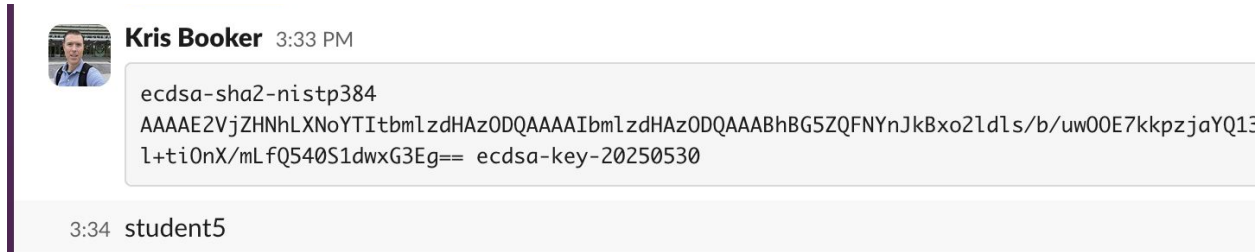
Type of key to generate:

☐ RSA ☐ DSA ☒ ECDSA ☐ EdDSA ☐ SSH-1 (RSA)

Curve to use for generating this key: nistp256

Generate public/private key pair

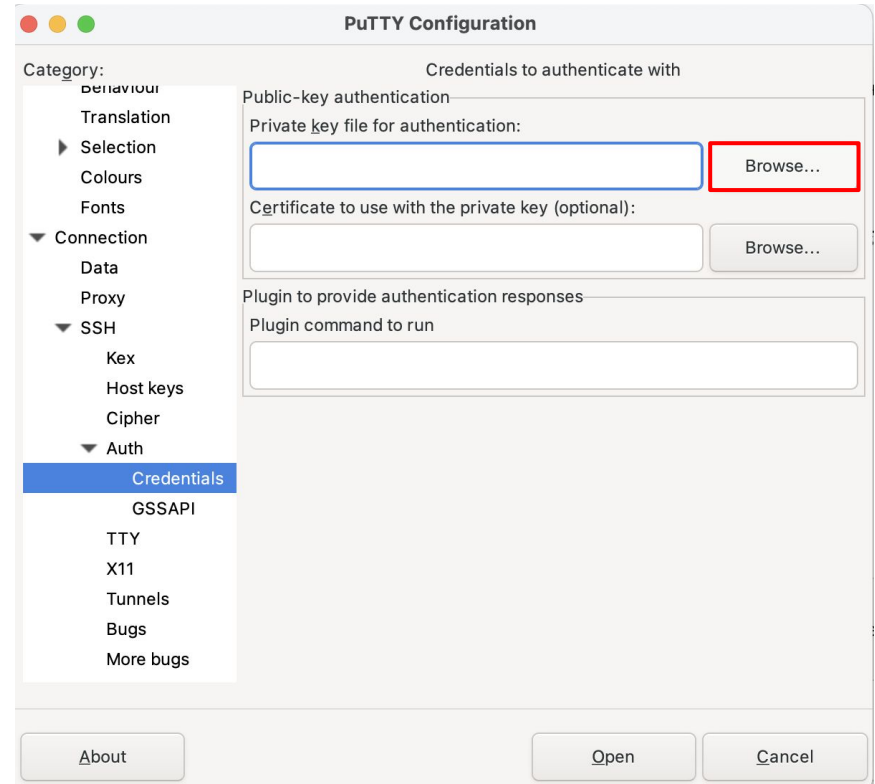
- Copy and paste the section under “Public key for pasting into OpenSSH authorized_keys file:” to the Slack workspace channel **#cadre-publickeys** with your student number (e.g., student 5).



- Click the “Save private key” button.
 - This should open a dialog box for you to save your private key file on your laptop.
 - Take note of the private key name and directory location on your laptop (usually C:\Users\<username>\.ssh).

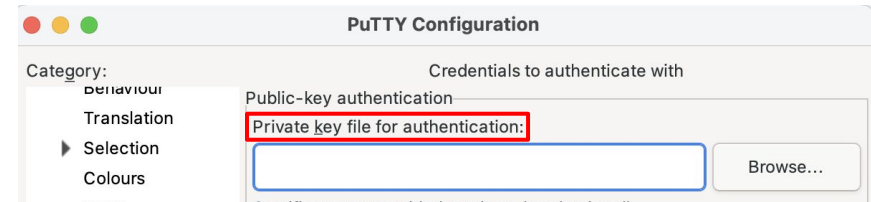
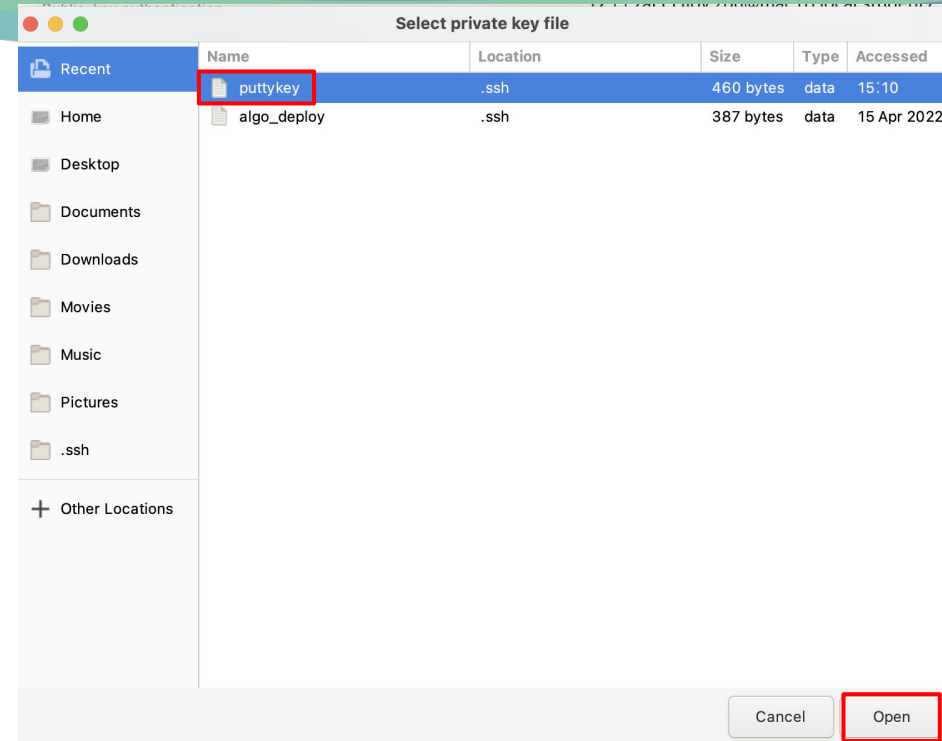
Connecting with PuTTY

- Load the PuTTY client and navigate the sidebar menu to SSH → Auth → Credentials
- Click the **Browse** button



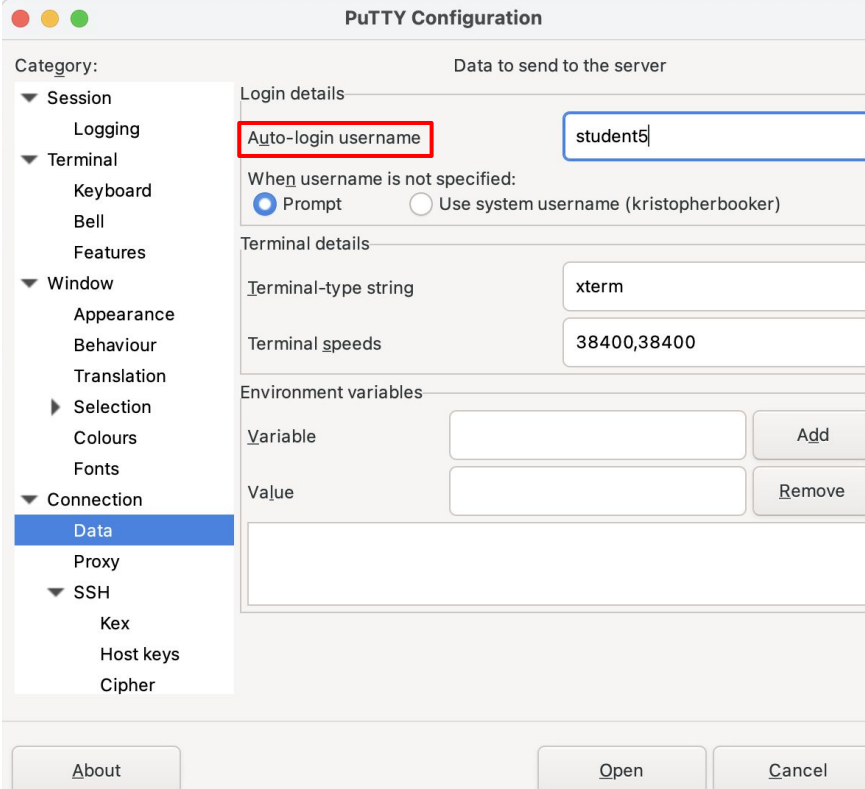
Connecting with PuTTY

- Navigate to the location of the private key file you generated with PuTTYGen
- Select the key file (file name might differ from example)
- Click “Open”
- This should populate the *private key file for authentication* dialog box with the name and location of your private key file.



Connecting with PuTTY

- Navigate to Connection → Data
- In the *Auto-login username* dialog box enter your assigned student number (e.g., student5)



The screenshot shows the PuTTY Configuration window. On the left, the 'Category' list is expanded to 'Connection', and 'Data' is selected. The 'Data to send to the server' section is active. In the 'Login details' subsection, the 'Auto-login username' field is highlighted with a red rectangle and contains the text 'student5'. Below it, the 'When username is not specified' section has the 'Prompt' radio button selected. The 'Terminal details' section shows 'Terminal-type string' as 'xterm' and 'Terminal speeds' as '38400,38400'. The 'Environment variables' section is empty. At the bottom, there are 'About', 'Open', and 'Cancel' buttons.

Connecting with PuTTY

- Navigate in the sidebar menu to Session at the very top.
- In the Host Name (or IP address) dialog box, enter jump.epic.noaa.gov
- Click *Open*
- This should launch a terminal window session and connect you to your HPC environment controller node.

PuTTY Configuration

Category: **Session**

Basic options for your PuTTY session

Specify the destination you want to connect to

Host Name (or IP address) Port

Connection type: ☒ SSH ☐ Serial ☐ Other: Telnet

Load, save or delete a stored session

Saved Sessions

Default Settings

Load

Save

Delete

Close window on exit: ☒ Always ☐ Never ☐ Only on clean exit

About Open Cancel

Connecting to an HPC Environment

- If you run the `ls` command, you will see the Land DA container (`.img`) file, the `inputs` data directory, and a `rocoto` directory:

```
[ubuntu@ip-10-29-82-122:~$ ls
Land-DA_v2.1_inputs.tar.gz  rocoto
inputs                      ubuntu22.04-intel-landda-daconsortium.img
```