

# WinSCP and Putty Setup Guide

## Authentication Using the PIV SmartCard Instead of RSA Tokens

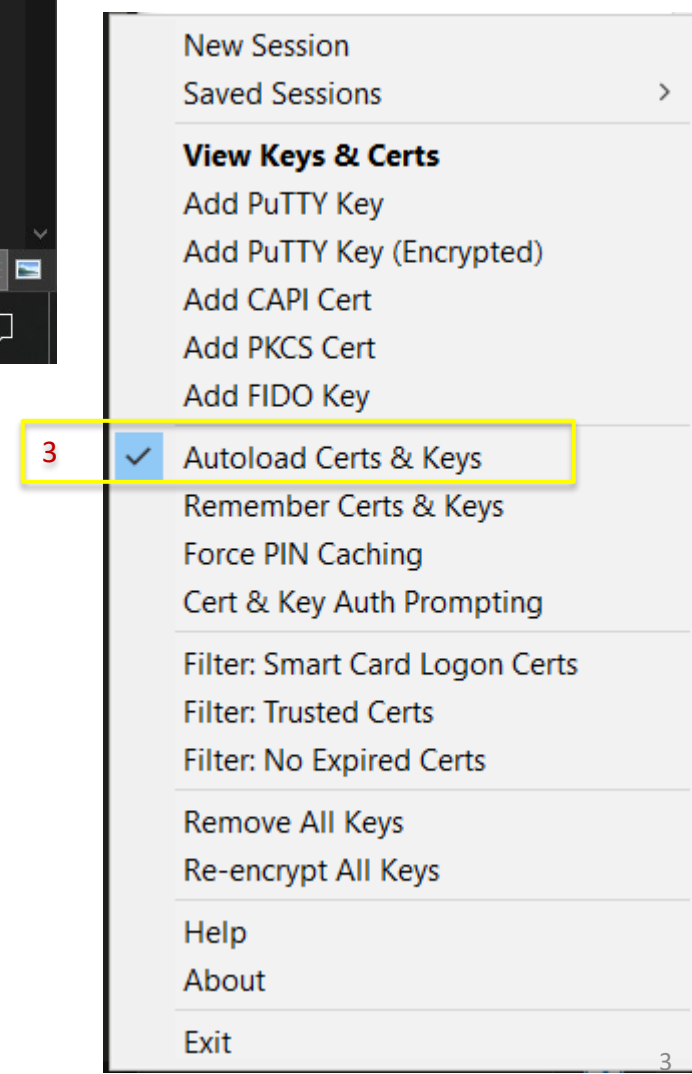
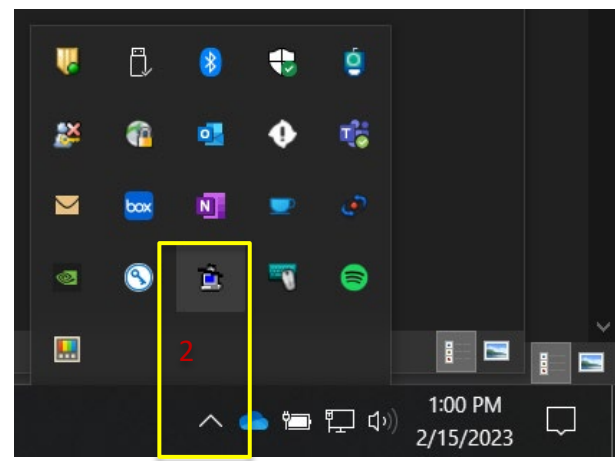
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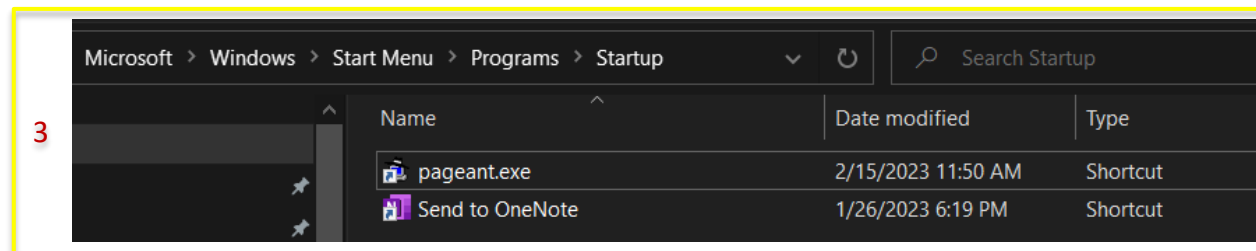
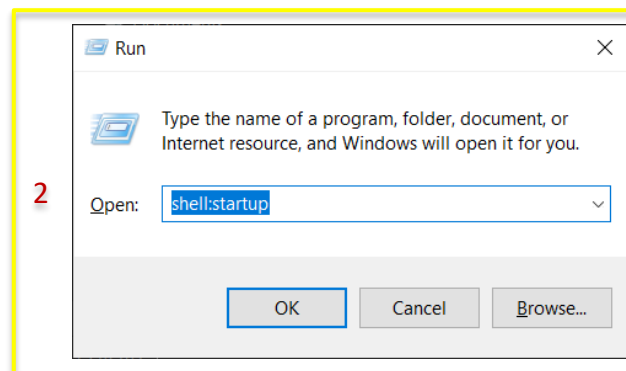
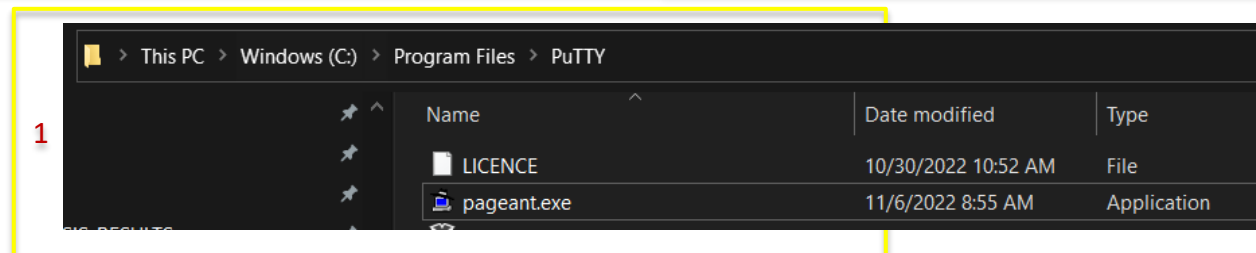
- This updated version of the setup guide configures Putty to launch automatically with and from WinSCP
- Either regular or CAC version of Putty must be installed
  - Latest version **HIGHLY** recommended
    - Putty: [Download PuTTY: latest release \(0.79\) \(greenend.org.uk\)](https://greenend.org.uk/download-putty-latest-release-0.79/)
    - Putty CAC: [GitHub - NoMoreFood/putty-cac: Windows Secure Shell Client With Support For Smart Cards, Certificates, & FIDO Keys](https://github.com/NoMoreFood/putty-cac)
- No separate Putty configuration is necessary

- In order for WinSCP to work with the PIV card, pageant must be running and the CAPI cert for the smartcard must be loaded. To make this happen, let's first configure pageant:

1. Launch pageant
  - Find it in the Start menu or press the Windows key and type "pageant"
2. Find it in the system tray on the bottom right of the task bar
  - Looks like an old computer with a black hat
  - May have to expand the triangle
3. Right click on it and check "Autoload Certs and Keys" or "Autoload Certs" depending on version



- Now we want pageant to start automatically whenever the machine is rebooted
  1. Open Windows Explorer and navigate to C:\Program Files\PuTTY\
    - Keep this Windows Explorer window open
  2. Press the Windows Key + R to open the “Run” dialog. Type “shell:startup” without the quote marks
    - This will open the folder Windows uses to launch applications at startup
  3. While holding the Alt key, drag pageant.exe from its folder to the Startup folder
    - This will create a link (shortcut) to pageant in the Startup folder



- Launch WinSCP

- Select New Site from the session list
- Host name: "discover-nastran.nccs.nasa.gov"
- Enter your discover username
- Enter your discover password
- Click "Advanced"
- Click "Connection"
- Set Timeouts to 45 sec
- Click on Authentication
- Check the boxes shown
- Click on Proxy
- Set Proxy type to Local
- Enter the following Local Proxy command:  
`"C:\\Program Files\\PuTTY\\plink.exe" -l %user %proxyhost direct %host`  
**NOTE:** Fields 13 and 14 will be grayed out until step 12 is completed
- Enter login.nccs.nasa.gov
- Enter your username
- Click "OK"
- Click "Save"
- Check the "Save Password" box and click OK in the presented dialog
- Login into the saved session
  - Enter the PIV PIN

The image shows three sequential screenshots of the WinSCP configuration process, with numbered callouts (1-18) indicating specific steps:

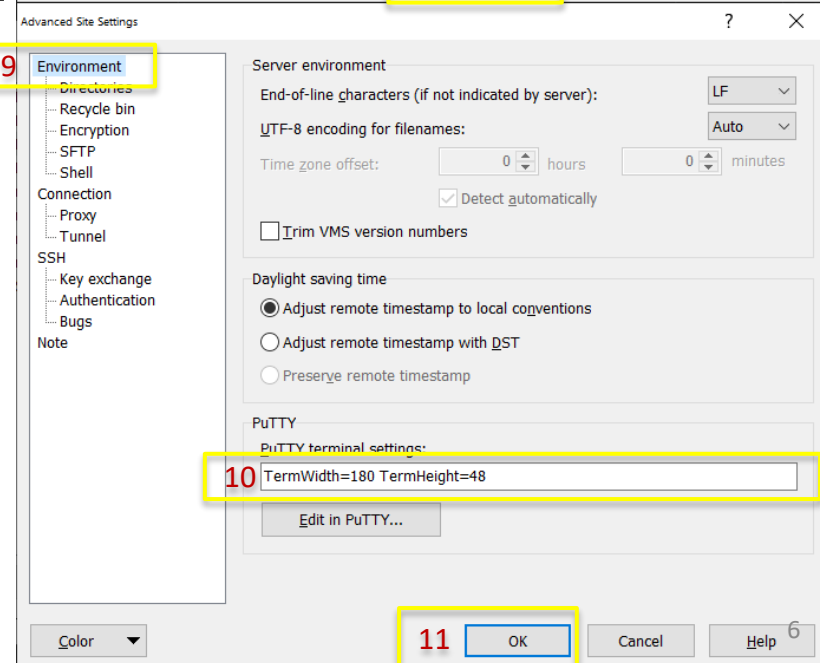
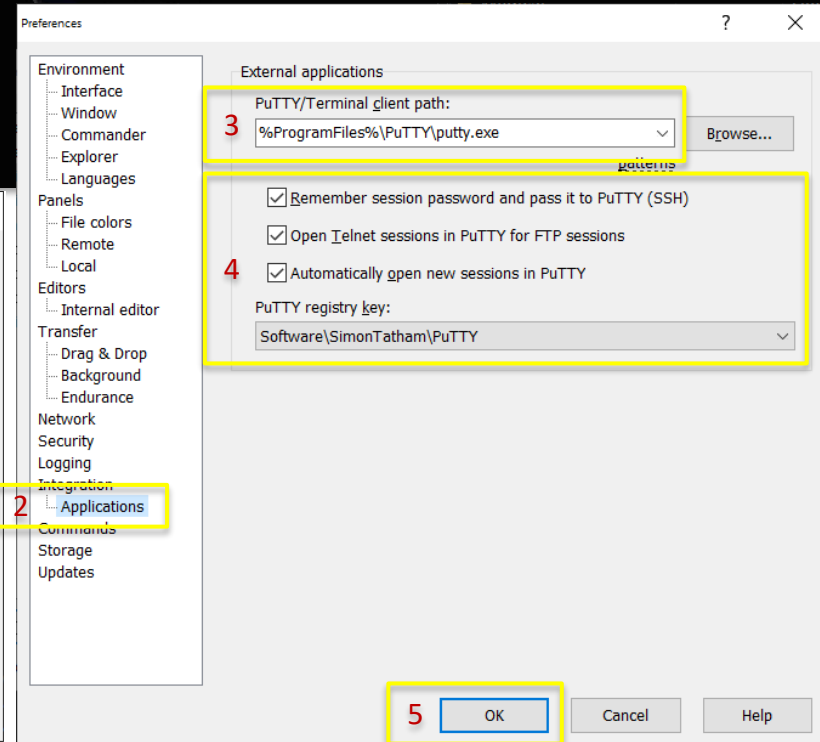
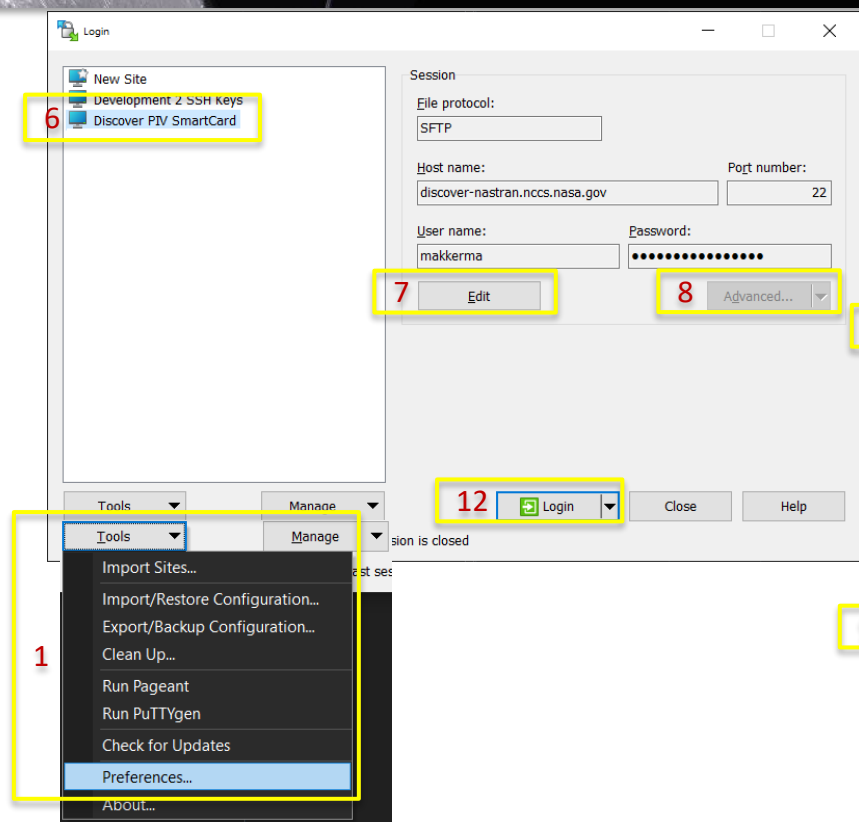
- 1:** Select 'New Site' in the 'Login' dialog.
- 2:** Enter host name 'discover-nastran.nccs.nasa.gov'.
- 3:** Enter username 'makkerma'.
- 4:** Enter password (masked).
- 5:** Click 'Advanced...'.
- 6:** Click 'Connection' in the 'Advanced Site Settings' dialog.
- 7:** Set 'Server response timeout' to 45 seconds.
- 8:** Click 'Authentication' in the 'Advanced Site Settings' dialog.
- 9:** Check 'Attempt authentication using Pageant', 'Attempt keyboard-interactive authentication', and 'Respond with a password to the first prompt'.
- 10:** Click 'Proxy' in the 'Advanced Site Settings' dialog.
- 11:** Set 'Proxy type' to 'Local'.
- 12:** Enter proxy host name 'login.nccs.nasa.gov'.
- 13:** Enter proxy user name 'makkerma'.
- 14:** Enter local proxy command: `"C:\\Program Files\\PuTTY\\plink.exe" -l %user %proxyhc`
- 15:** Click 'OK' in the proxy settings dialog.
- 16:** Click 'Save' in the 'Login' dialog.
- 17:** Check 'Save Password' in the 'Login' dialog.
- 18:** Click 'Login' in the 'Login' dialog.



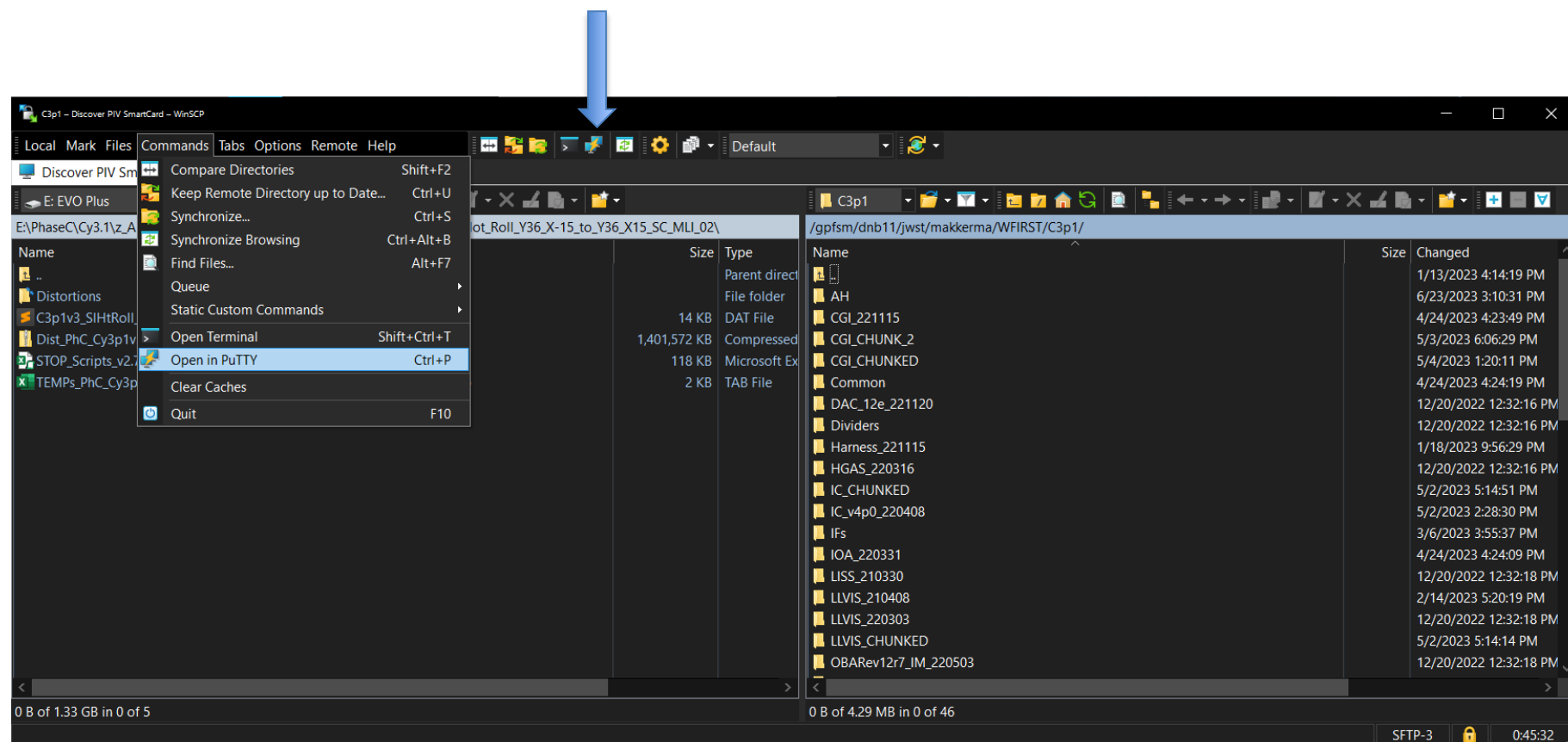
# Configure Putty to Launch from WinSCP

## Launch WinSCP

1. Select Tools > Preferences
2. Click on Applications
3. Confirm that the path to Putty is correct. If not, use the Browse button to find it.
4. Configure the other check-boxes as shown
  - NOTE: If you don't want Putty to launch automatically, don't check the last box
5. Click "OK" to save the preferences
6. Select the session saved on the previous page
7. Click "Edit"
8. Click "Advanced"
9. Click on "Environment"
10. The default Putty window is rather small – I like a much bigger one, 180 columns x 48 rows. Set your own favorite size using the syntax shown.
  - NOTE: this box will be grayed out if there is a Putty session with the same name as the WinSCP session. In this case, rename one or the other.
11. Press "OK"
12. Click "Login" – this will now open a WinSCP session and a Putty session



- To open additional Putty windows,
  - Choose “Commands” > “Open in PuTTY” from the Menu Bar or
  - Click the corresponding button in the tool-bar
- NOTE: Preferences configured on the previous page can also be accessed through “Options” > “Preferences” on the Menu Bar
  - Putty window size configuration cannot be accessed this way



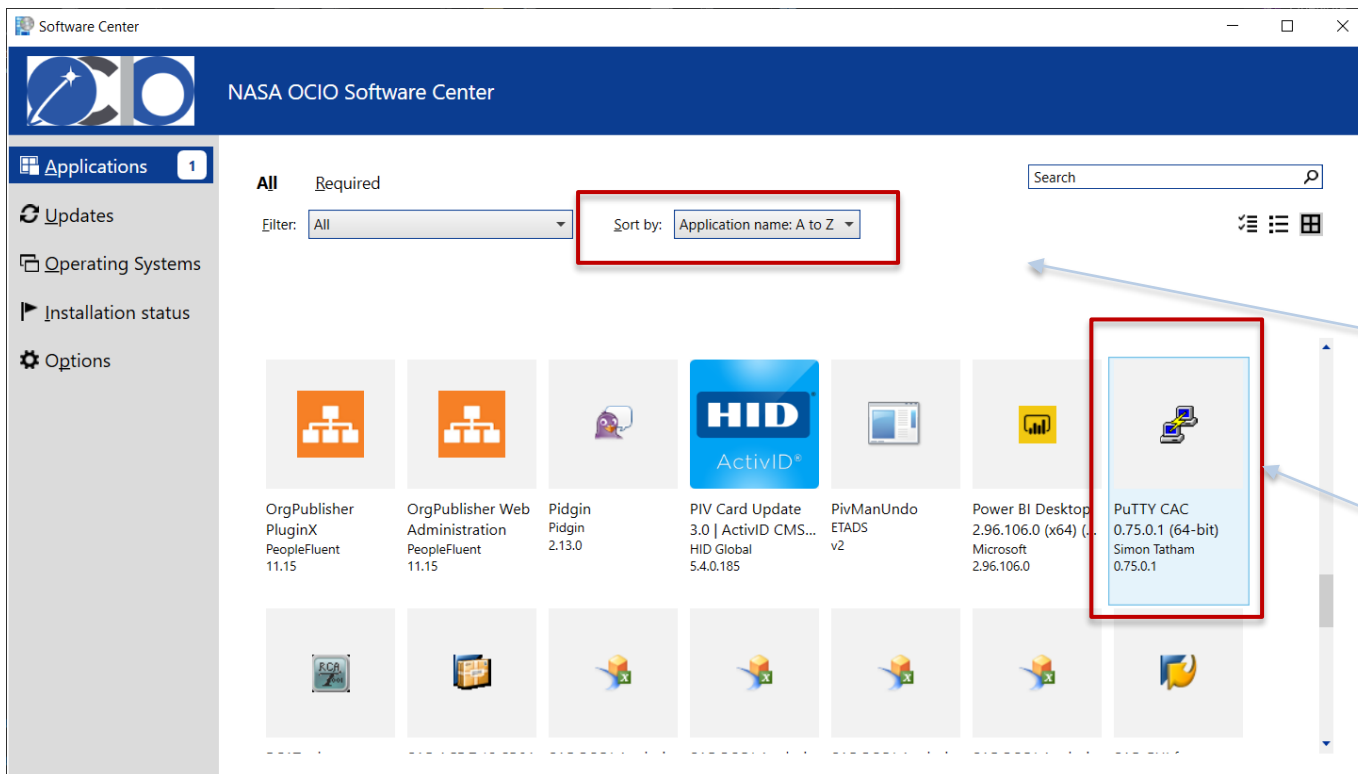
NOTE: If properly configured, Putty sessions launched from WinSCP should not ask for server name or password – everything should be filled out automatically. If this is not happening, you likely have Putty and WinSCP sessions with the same name. Rename one or the other.

## Stand-Alone Putty CAC Setup

**OBSOLETE**

Provided only for traceability to previous version and for folks who wish to run Putty without WinSCP

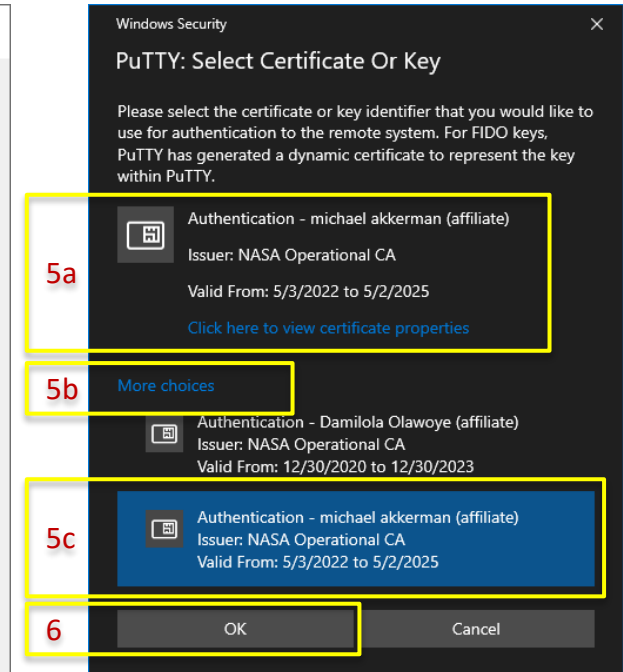
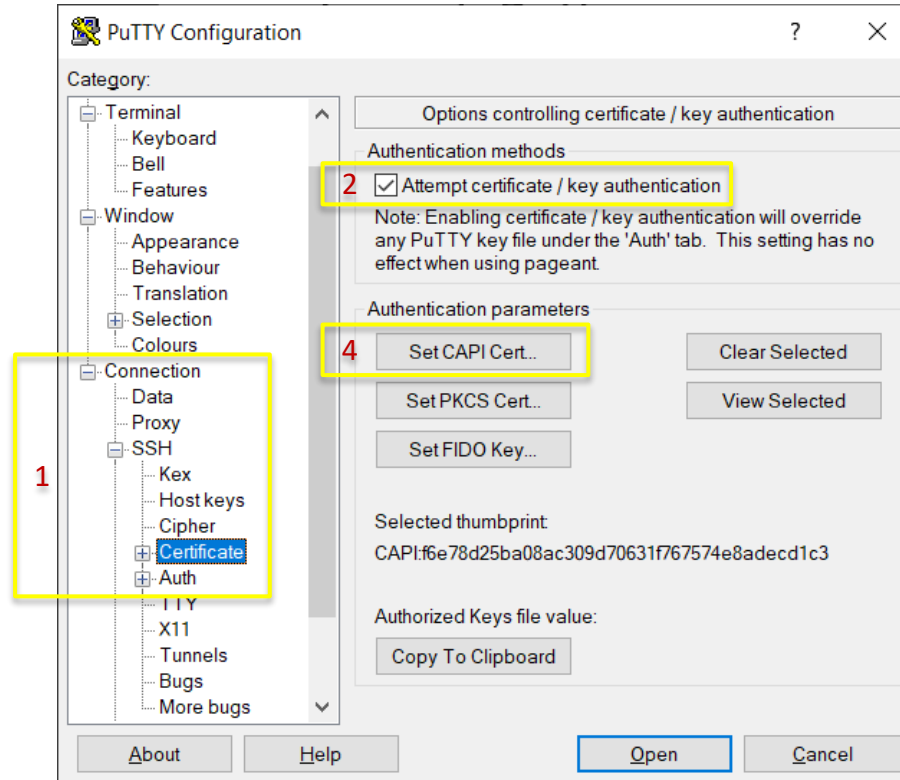




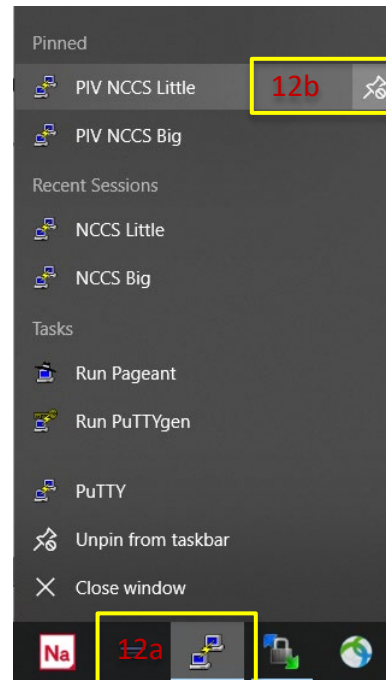
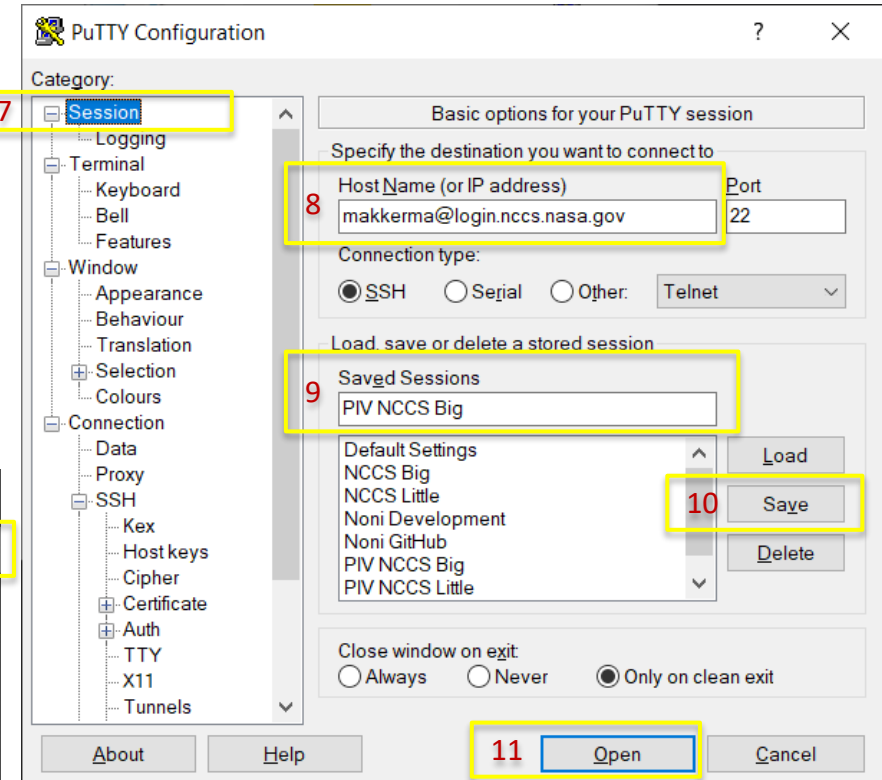
- EUSO managed computers come with an App called “Software Center”
- Launch Software Center
  - Press the Windows key and start typing “Software Center”
- Change sort order to “Application Name: A to Z”
- Find PuTTY CAC
  - Can also use the Search box in the upper right
- Click on it and install
  - **NOTE:** Software Center will install Putty CAC in C:\Program Files\PuTTY. If your existing installation is in this directory, you don’t need to do anything – it will be over-written. If you have a previous installation elsewhere, uninstall it first to avoid confusion
    - To uninstall, press the Windows key, type “Add or”, select “Add or Remove Programs”, find Putty on the list, click on it, and select “Uninstall”
    - This may require the dreaded Elevated Privileges... ☹️

- Launch Putty

- Find it in the Start Menu or type “Putty” after pressing the Windows key
1. Under Connection, expand the SSH section and click on “Certificate”
  2. Check the “Attempt certificate / key authentication” box
  3. Insert your PIV card into your computer or reader
  4. Click “Set CAPI Cert”
  5. Select your certificate
    - a. If the shown certificate is yours, click on it to select
    - b. Otherwise, click on “More choices”
    - c. Select the certificate with your name
  6. Click “OK”



7. Click on "Session"
8. In the "Host Name (or IP address) field, enter YourUserName@login.nccs.nasa.gov
9. Give your session a name
10. Save the session
11. Open the session
  - Enter your PIV PIN
  - In the Putty terminal window, at the Host: prompt, type discover-nastran
  - At the Password: prompt, enter you NCCS password
12. For easier access in the future
  - a. Right-click on Putty in the Taskbar
  - b. Pin your session to the Taskbar



## SPECIAL USE CASE

Start Pageant with Specified Private SSH Keys

**If you don't know what this, you don't need it.**

## Start Pageant with Specified Private SSH Keys

- **If all you are trying to do is set up WinSCP, please skip this slide**
- For folks who need to load additional SSH Keys into their pageant session, such as those using Git on 448share that was not configured directly through Tortoise Git, please follow the instructions below
  4. Right-click on the pageant shortcut created in the Startup folder using instructions on the previous page
    - Select “Properties”
  5. On the “Shortcut” tab, in the “Target” field, after the pageant.exe statement, add the following:
    - --encrypted “full\_path\private\_key\_that\_you\_want\_to\_load.ppk”
      - E.g., in my case, the Target field would look like:  
"C:\Program Files\PuTTY\pageant.exe" --encrypted "C:\Users\makkerma\Documents\Software\PuTTY\_Private\_Key\_for\_wfirst-im\_Git.ppk"
      - --encrypted loads the private key without asking for the pass-phrase at startup. Pageant will ask for the pass-phrase when the private key is used, such as when Pushing or Pulling in Git. If --encrypted is omitted, the pass-phrase will be requested at Windows startup.
      - The dialog for the pass-phrase may not come to the fore-ground. If that happens, switch to it using the Task Bar.
    - Multiple ppks may be listed in series
  6. Click “OK”

NOTE: The CAPI cert may also be loaded this way, instead of via “Autoload Certs and Keys”. To do that, you will need the ID of the cert. To get it:

- With Pageant running, right-click on its icon in the System Tray and select “View Keys and Certs”
- Select the cert with your name and push the “Copy to Clipboard” button at the bottom of the window
- Paste into a text editor
- Copy the string that begins with CAPI: followed by a bunch of numbers and letters
- Paste this string into the Target field of the pageant shortcut as described in Step 5 above
- E.g., mine looks like this:

```
"C:\Program Files\PuTTY\pageant.exe" CAPI:f6e78d25ba08ac309d70631f767574e8adecd1c3 --encrypted  
"C:\Users\makkerma\Documents\Software\PuTTY_Private_Key_for_wfirst-im_Git.ppk"
```