

WinSCP and Putty Setup Guide for NCCS Discover-Nastran Authentication Using the PIV SmartCard Instead of RSA Tokens

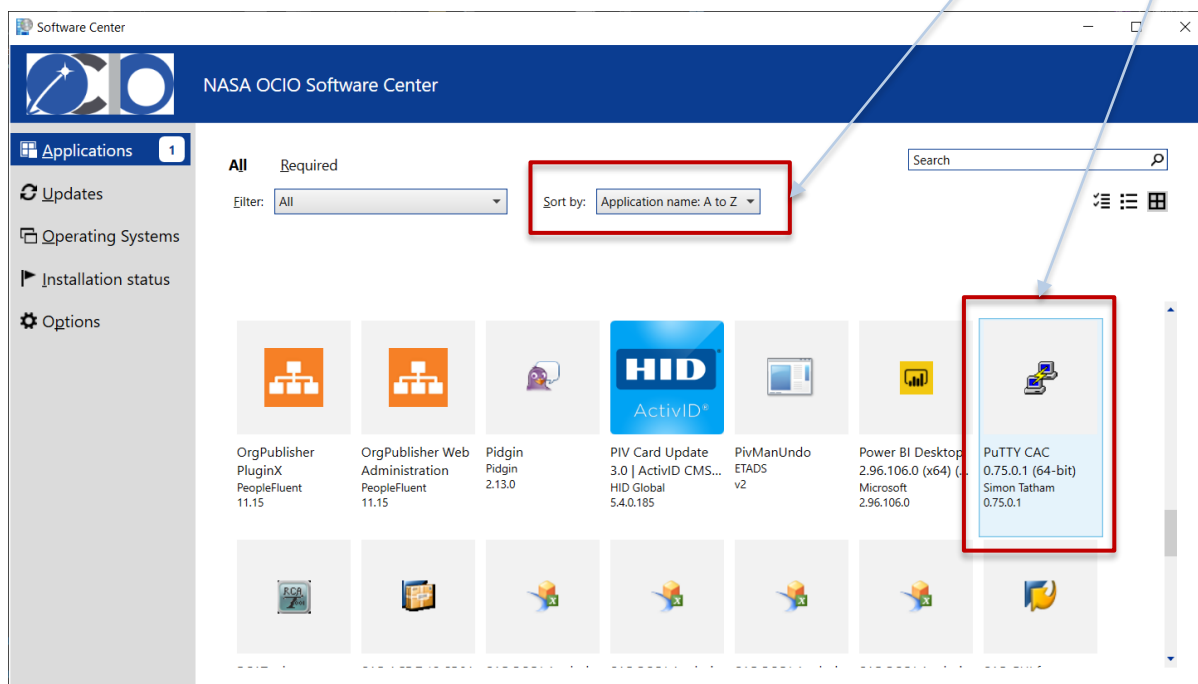
This updated version of the setup guide configures Putty to launch
automatically with and from WinSCP

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- WinSCP and the CAC version of Putty are required
 - This guide assumes that WinSCP is already installed
 - If that is not the case, Elevated Privileges will be required to install WinSCP
- EUSO managed computers come with an App called “Software Center”
- Launch Software Center
 - Press the Windows key and start typing “Software Center”
 - If you don’t have Software Center, see next page

- 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, AND is older than what’s in Software Center, you don’t need to do anything – it will be over-written
 - IF your existing installation is in C:\Program Files\PuTTY AND is newer than what Software Center has, installation will fail
 - See next page
 - 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... ☹



- If you successfully installed Putty CAC using Software Center on the previous chart, skip this chart
- Otherwise, you have the following choices
 - Request Elevated Privileges and install into C:\Program Files\PuTTY (**Recommended**)
 - Download the 64 bit [.msi installer](#) of the latest stable release of Putty CAC from [Releases · NoMoreFood/putty-cac \(github.com\)](#)
 - Run the installer
 - If getting EP is too difficult or is taking too long
 - Download the 64 bit [.zip archive](#) of the latest stable release of Putty CAC from [Releases · NoMoreFood/putty-cac \(github.com\)](#)
 - Extract the contents of the ZIP to a folder of your choice such as Documents\Software\PuTTY (aka: C:\Users\YourUserName\Documents\Software\PuTTY)
 - In this case, any further instructions in this guide that point to C:\Program Files\PuTTY should be interpreted to point to YOUR installation in C:\Users\YourUserName\Documents\Software\PuTTY or wherever you placed it

- For WinSCP to work with the PIV card, CAC 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

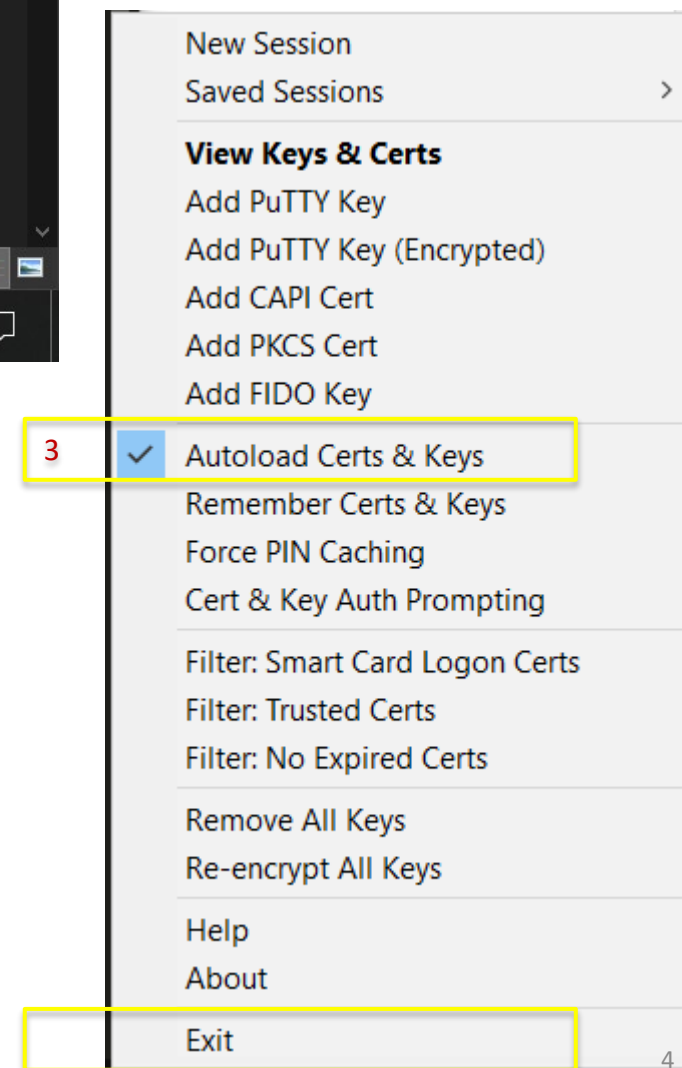
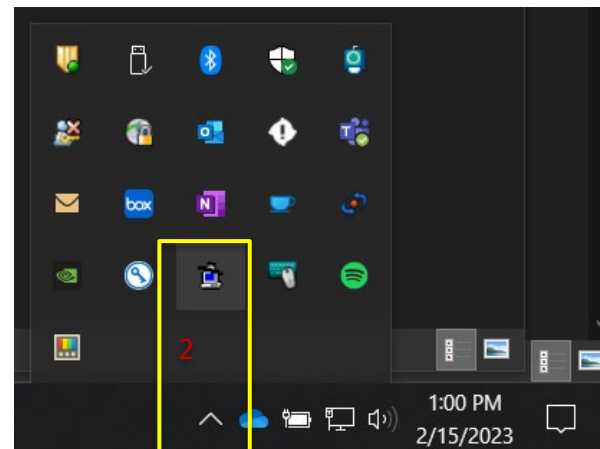
- If you installed to C:\Program Files\PuTTY, find it in the Start menu or press the Windows key and type "pageant"
- If you installed to your own folder, navigate to it with Windows Explorer and launch by double-clicking

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

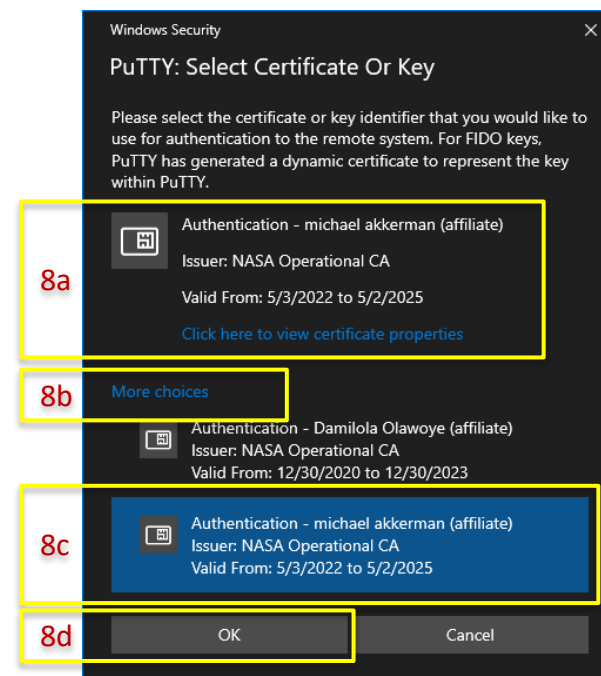
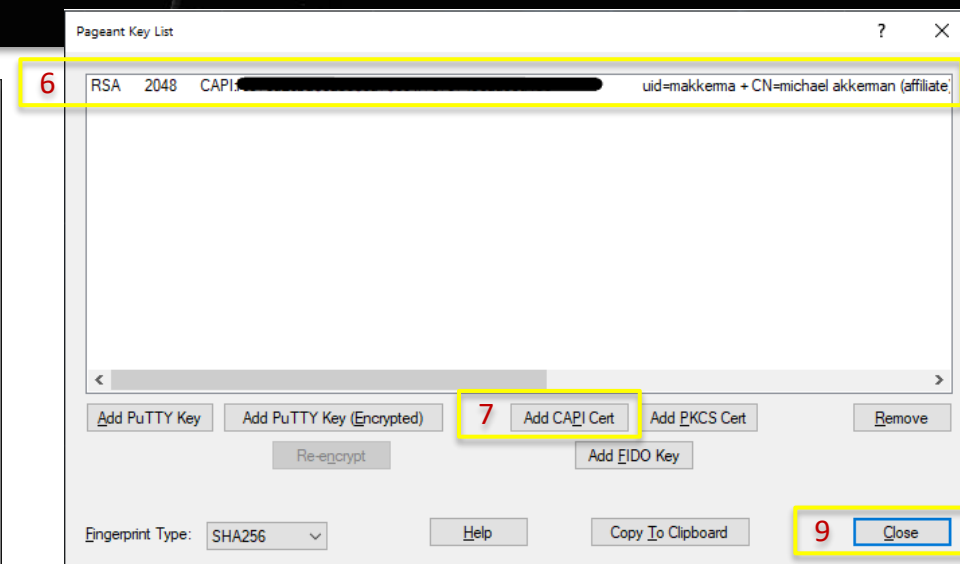
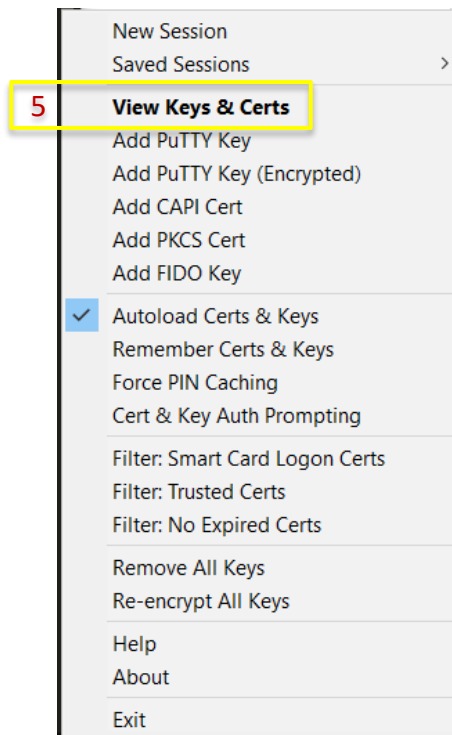
3. Right click on it and check "Autoload Certs and Keys" or "Autoload Certs" depending on version

- If you do not have the options shown on the right, then the wrong (non-CAC) version of Pageant is running. In this case:
 - Exit Pageant
 - Start over with 1 above but make triple sure you launch the CAC version from the folder where you installed it

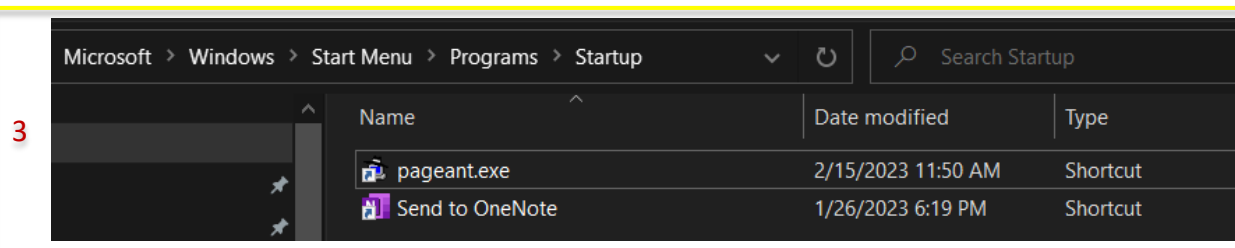
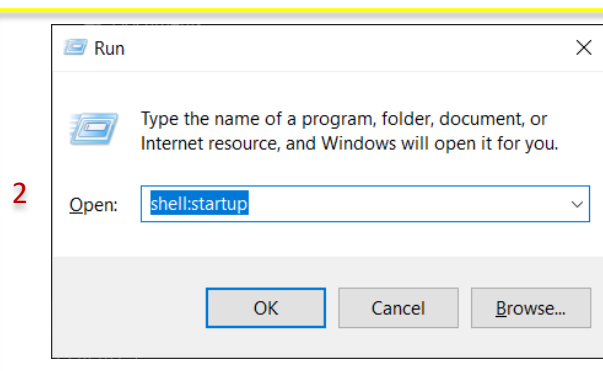
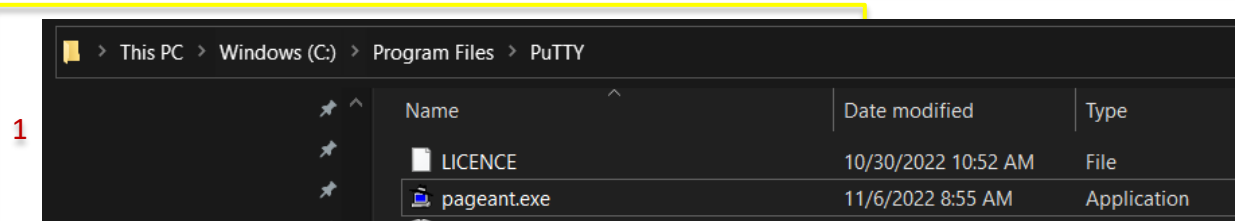


Load the PIV Certificate

4. Find Pageant in your system tray again
5. Right click on it and click on “View Keys and Certs”
6. If you have something that looks like 6 in the picture to the right with your username, then you are all set
 - Skip to step 9
7. If your Key List is blank, click “Add CAPI Cert”
8. 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
 - d. Click OK
9. You should now have something like 6 in your Key List.
 - Press “Close”



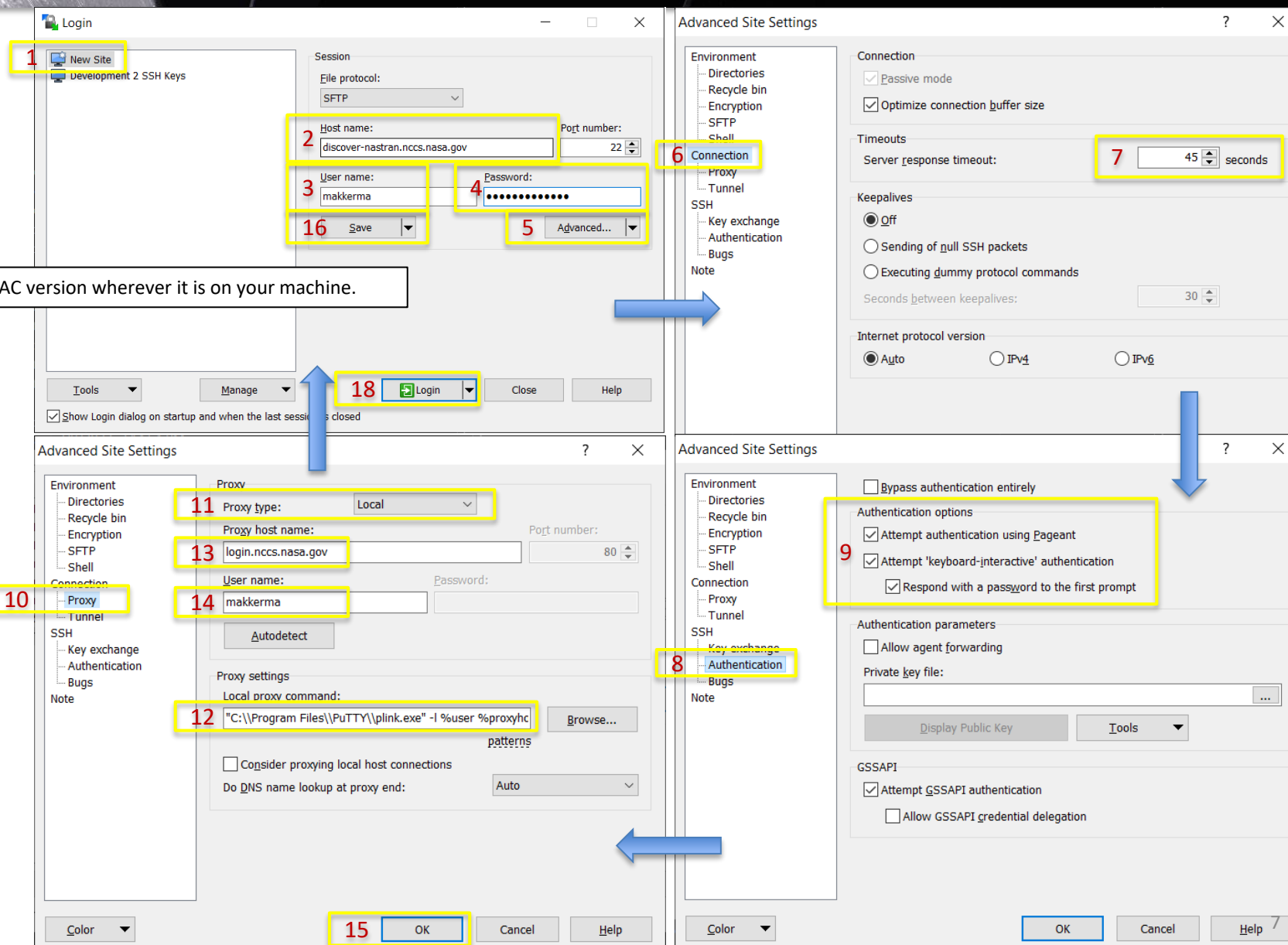
- Now we want pageant to start automatically whenever the machine is rebooted
 1. Open Windows Explorer and navigate to your CAC Putty installation. C:\Program Files\PuTTY\, C:\Users\YourUserName\Documents\Software\PuTTY, or wherever you installed it
 - Press Windows + Left Arrow to dock this window to the left half of the screen
 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
 - Press Windows + Right Arrow to dock this window to the right half of the screen
 3. **While holding the Alt key**, drag pageant.exe from the Windows Explorer window on the left to the window on the right (from its folder to the Startup folder)
 - This will create a link (shortcut) to pageant in the Startup folder
 - Do not move or copy – create a shortcut!



Launch WinSCP

1. Select New Site from the session list
2. Host name: "discover-nastran.nccs.nasa.gov"
3. Enter your discover username
4. Enter your discover password
5. Click "Advanced"
6. Click "Connection"
7. Set Timeouts to 45 sec
8. Click on Authentication
9. Check the boxes shown
10. Click on Proxy
11. Set Proxy type to Local
12. 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
13. Enter login.nccs.nasa.gov
14. Enter your username
15. Click "OK"
16. Click "Save"
17. Check the "Save Password" box and click OK in the presented dialog
18. Login into the saved session
 - Enter the PIV PIN

Point to the CAC version wherever it is on your machine.



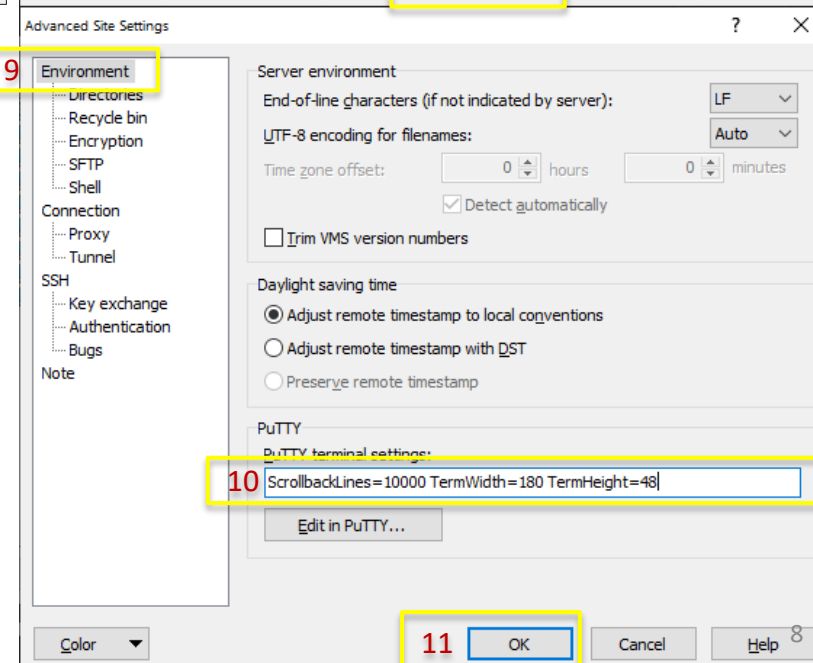
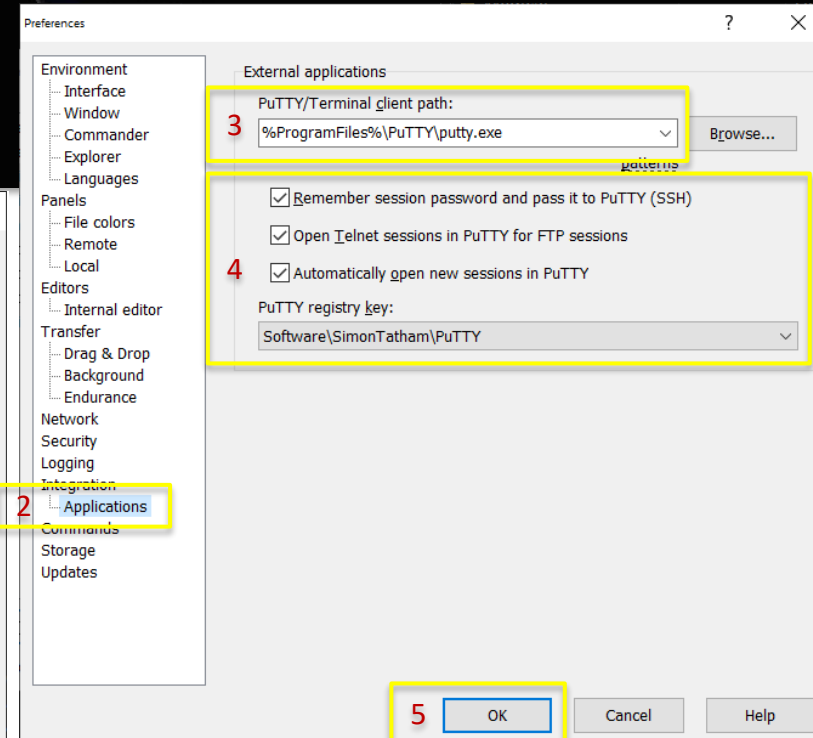
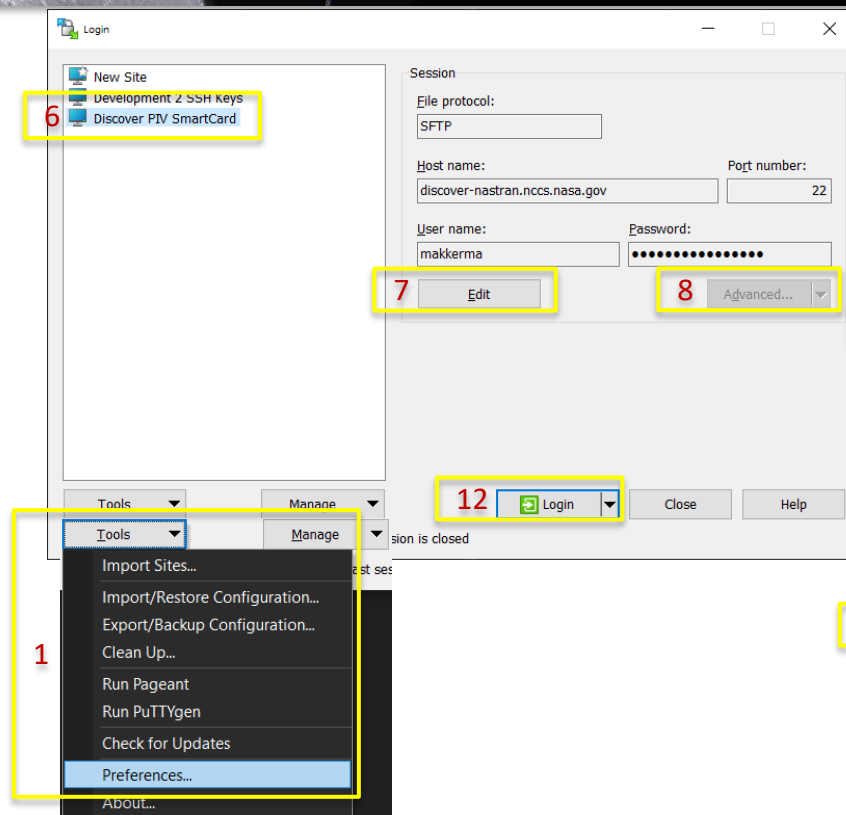
The image shows three screenshots of the WinSCP configuration process with numbered callouts:

- Top Screenshot (Login dialog):**
 - 1. New Site button
 - 2. Host name: discover-nastran.nccs.nasa.gov
 - 3. User name: makkerma
 - 4. Password field (masked with dots)
 - 5. Advanced... button
 - 6. Connection tab selected in the left sidebar
 - 7. Server response timeout: 45 seconds
 - 16. Save button
 - 18. Login button
- Middle Screenshot (Advanced Site Settings - Proxy tab):**
 - 10. Proxy tab selected in the left sidebar
 - 11. Proxy type: Local
 - 13. Proxy host name: login.nccs.nasa.gov
 - 14. User name: makkerma
 - 12. Local proxy command: "C:\\Program Files\\PuTTY\\plink.exe" -l %user %proxyhost direct %host
 - 15. OK button
- Bottom Screenshot (Advanced Site Settings - Authentication tab):**
 - 8. Authentication tab selected in the left sidebar
 - 9. Authentication options:
 - Attempt authentication using Pageant
 - Attempt 'keyboard-interactive' authentication
 - Respond with a password to the first prompt

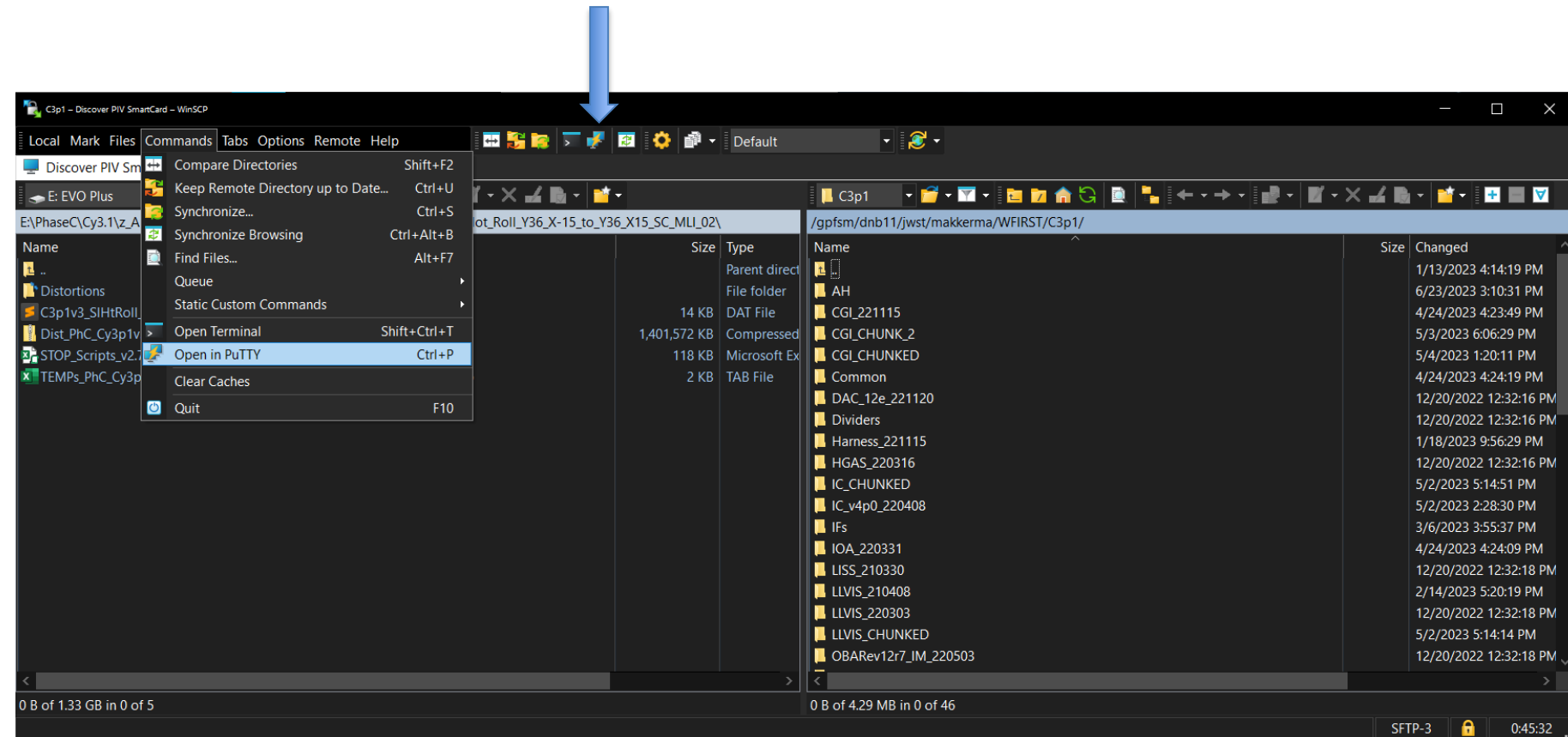
Configure Putty to Launch from WinSCP

Launch WinSCP

1. Select Tools > Preferences
2. Click on Applications
3. Confirm that the path to Putty CAC 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, with more history. 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.

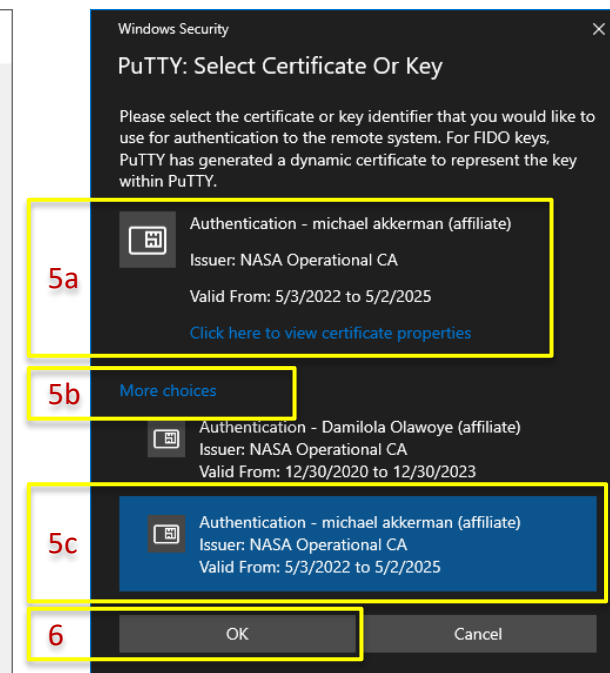
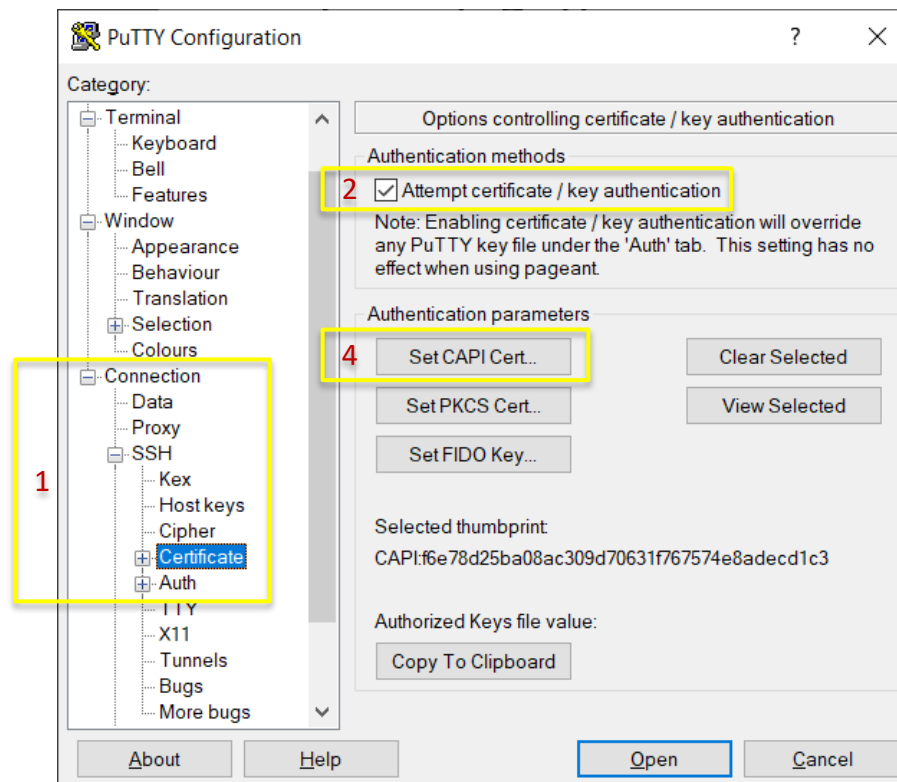
Stand-Alone Putty CAC Setup

OBSOLETE

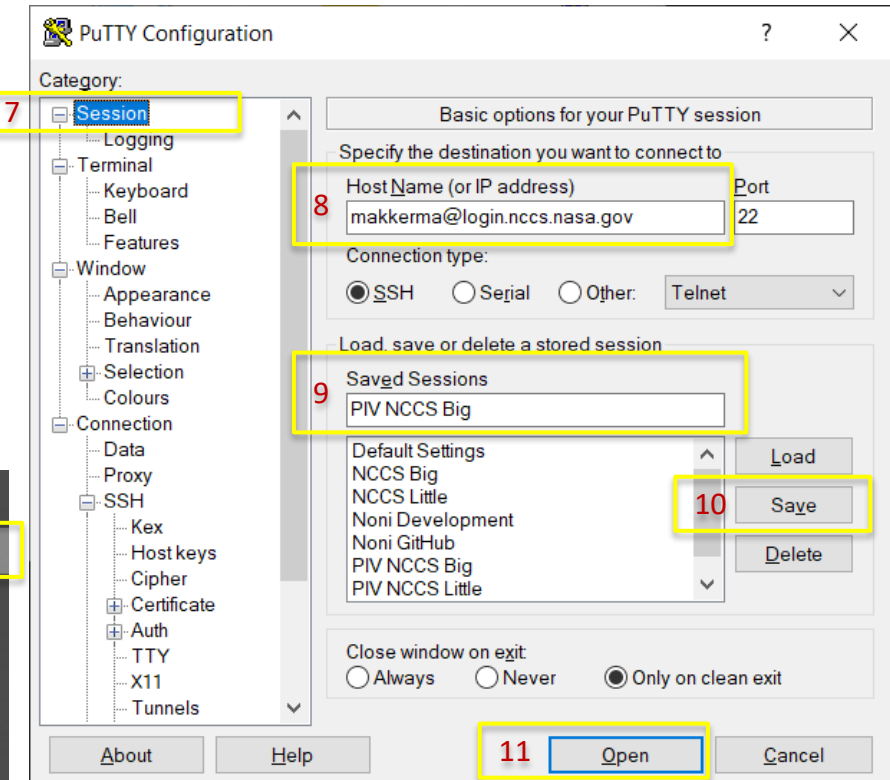
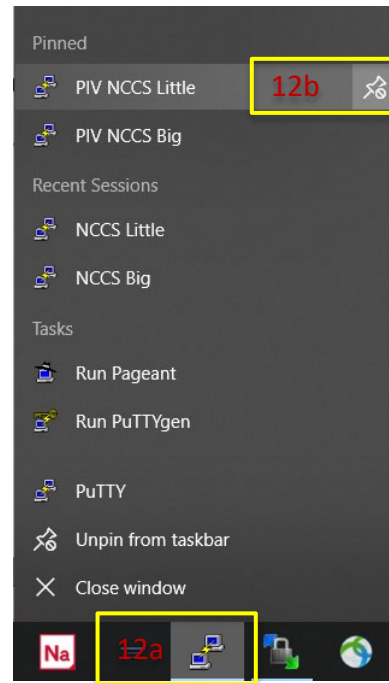
Provided only for traceability to previous version and for folks who wish to run Putty without WinSCP

- 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”