

HOW TO USE SFTP TO SECURELY TRANSFER FILES WITH A REMOTE SERVER

Table of Contents:

- ❖ Objective
- ❖ Before you start
- ❖ How to configure a recording for remote data upload
 - Using EMpower to configure a recording for remote data upload
- ❖ How to download data from the server
 - Step 1: Creating a connection site to remote server using WinSCP
 - Step 2: Set up synchronization between a local folder and remote data
 - Step 3: Downloading new data from the server
 - Step 4: Using the new data in EMpower

Objective

This manual provides information on how to use EMpower to configure a recording for remote data upload and how to download time-series and other metadata files from the server to your local computer.

To perform a secure file transfer between the remote server and local computer we will use **WinSCP** (an sftp client for windows).

NOTE: This manual is intended for Windows users only

Before you start:

Before starting, make sure you have the following

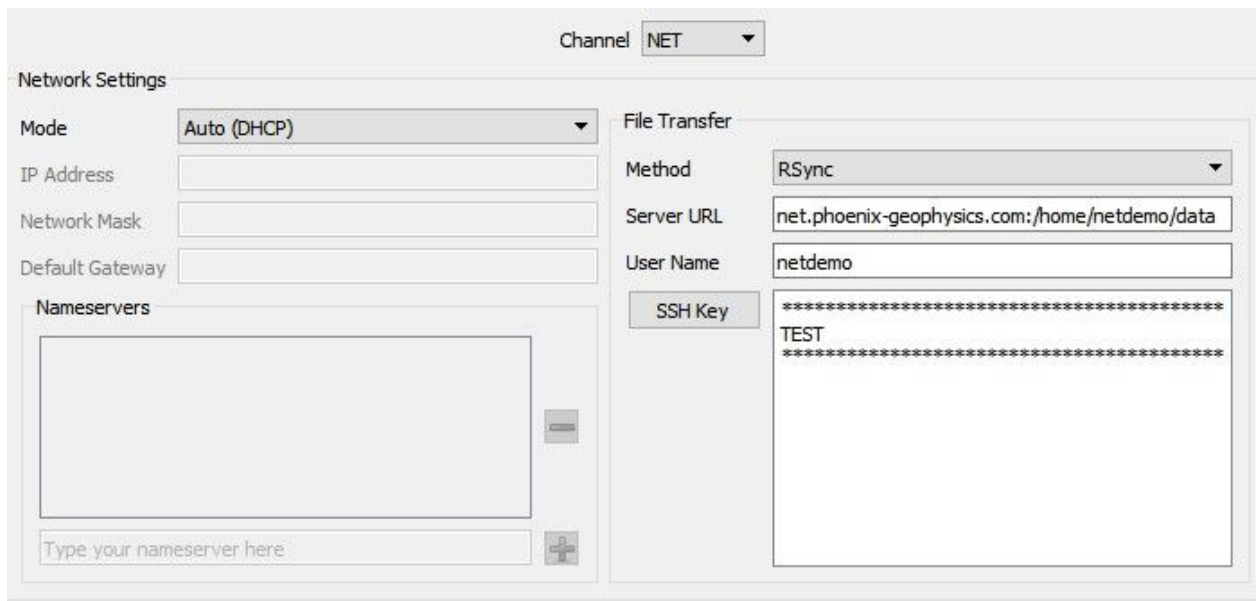
1. Downloaded WinSCP in your computer
 - a. <https://winscp.net/eng/download.php>
2. Be able to connect to the remote server
 - a. Here is the information that will be needed to connect to the server:
 - i. **Host Name** of the server (i.e. www.example.com)
 - ii. A **username** set up in the server (i.e. *testUser*)
 - iii. **Password** of the username *testUser*. However, we recommend using a **private SSH key** instead.
Contact your server administrator for more on how to set up your ssh key.

How to configure a recording for remote data upload

Using Config Creator you can set up a configuration file for remote data upload.

1. Configure all your recording parameters as desired
2. Click on the 'Net' Channel (either by clicking on receiver panel on the left side of the window or by switching the combo box at the top right of the window)
3. Configure the following:
 - a. Mode: *DHCP (Auto)*
 - b. File Transfer Method: *RSync*
 - c. Server URL: (*i.e. net.phoenix-geophysics.com:/home/netdemo/data*)
 - d. Username: (*i.e. netdemo*)
 - e. Provide the SSH private key

Here is an example setup:



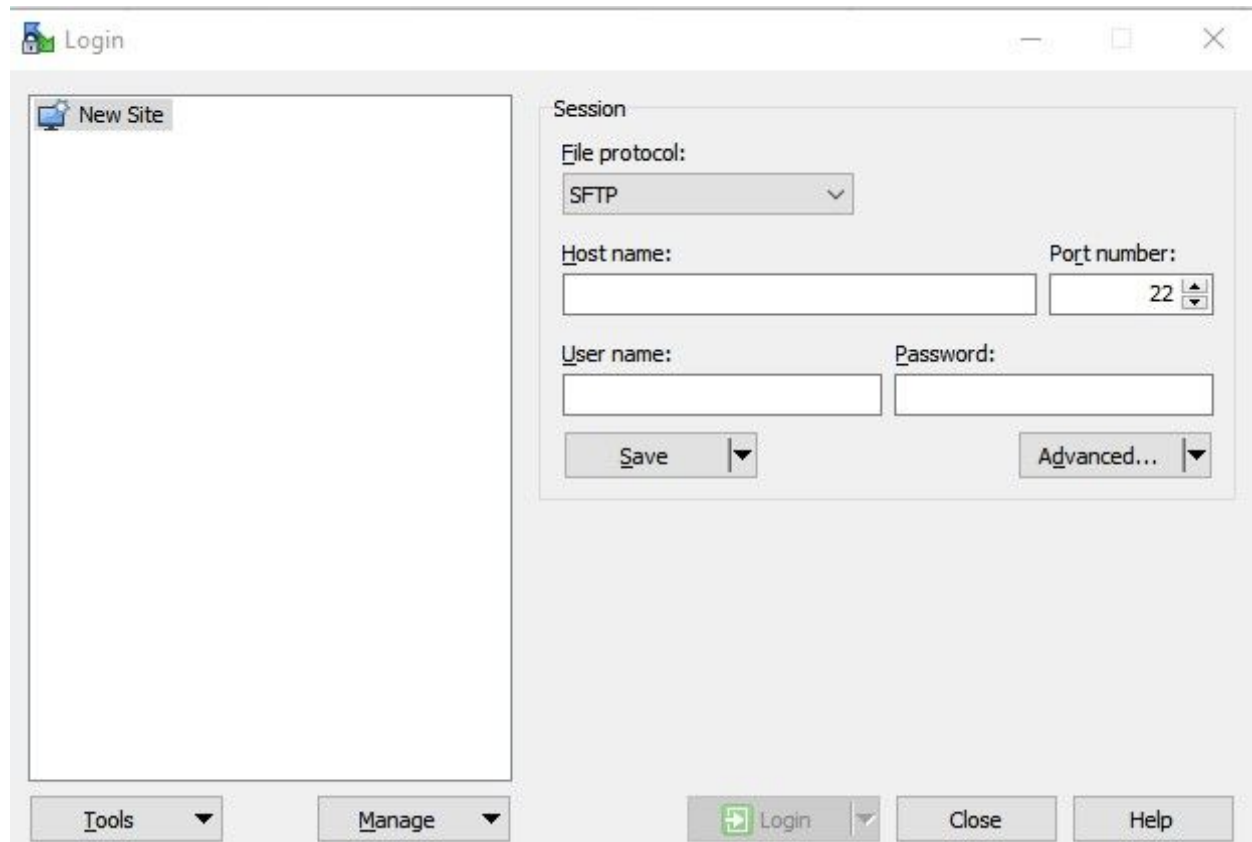
The screenshot shows the 'Config Creator' interface with the 'Channel' set to 'NET'. The 'Network Settings' section includes a 'Mode' dropdown set to 'Auto (DHCP)', and empty text boxes for 'IP Address', 'Network Mask', and 'Default Gateway'. Below this is a 'Nameservers' section with a large empty text area and a 'Type your nameserver here' input field. The 'File Transfer' section includes a 'Method' dropdown set to 'RSync', a 'Server URL' text box containing 'net.phoenix-geophysics.com:/home/netdemo/data', and a 'User Name' text box containing 'netdemo'. An 'SSH Key' button is present, and the key content area shows a placeholder with 'TEST' between two lines of asterisks.

Note: you should provide a valid ssh key!

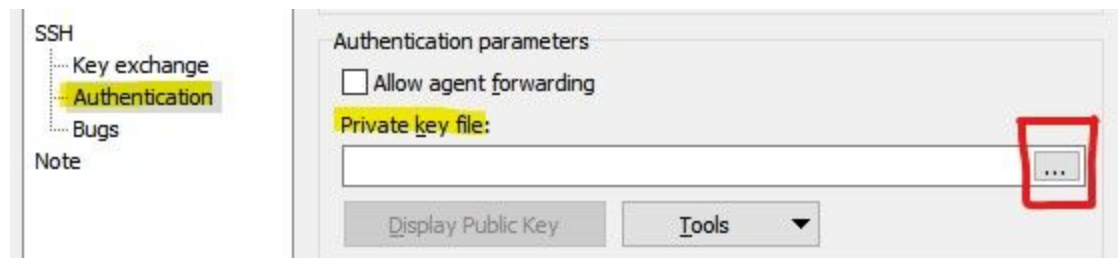
4. Save the config file to SD card

HOW TO DOWNLOAD DATA FROM THE SERVER

Step 1: Creating a connection site to the remote server using WinSCP



- Make sure File protocol is set to **SFTP**
- Provide the **hostname** of your server
- Leave the Port Number to **22** (default for ssh transferring)
- Enter your **username** and **password**
 - NOTE: if an ssh key has been set up then no need to provide the password. Instead do the following:
 1. Click on 'Advanced...'
 2. On left Panel under SSH click on 'Authentication'
 3. On the 'Private key file' click on the button to locate your private key



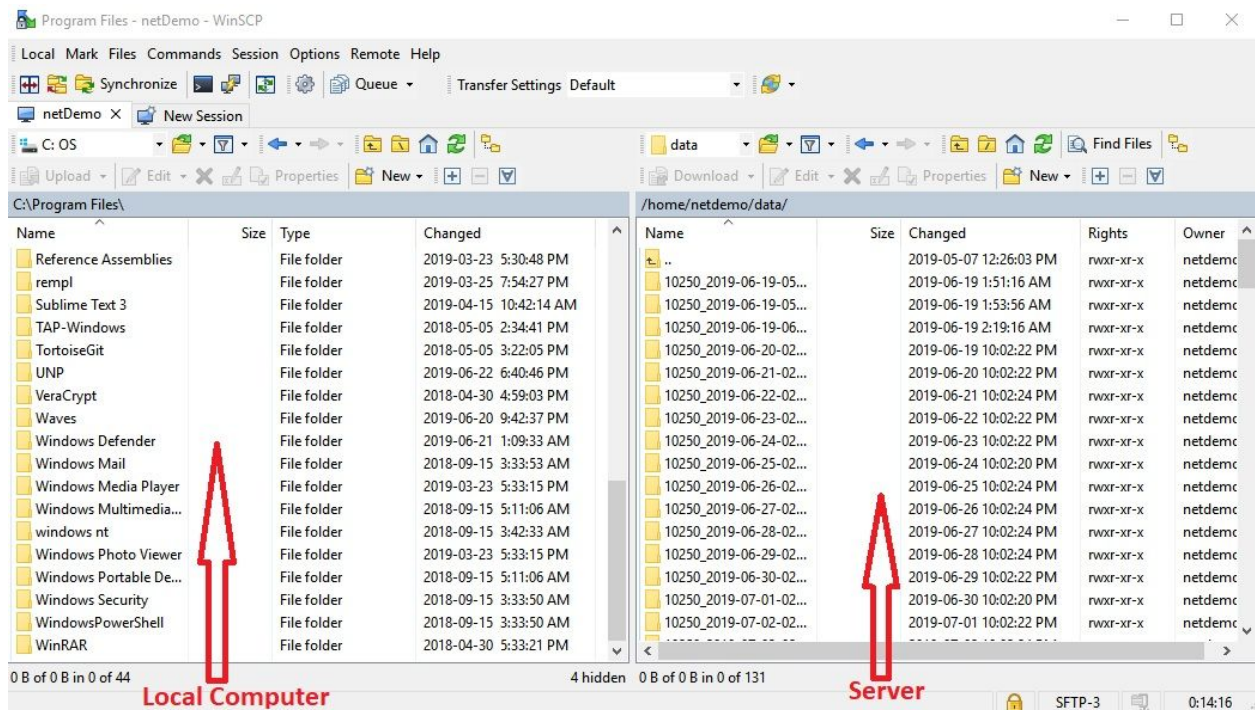
*If you get prompted to allow key conversion, click Ok

- Save your site configuration by clicking 'Manage' / 'Save As...'
- Click 'Login'

Step 2: Set up synchronization between a local folder and remote data

Once you are logged in to your server through WinSCP, you should have something similar to the following.

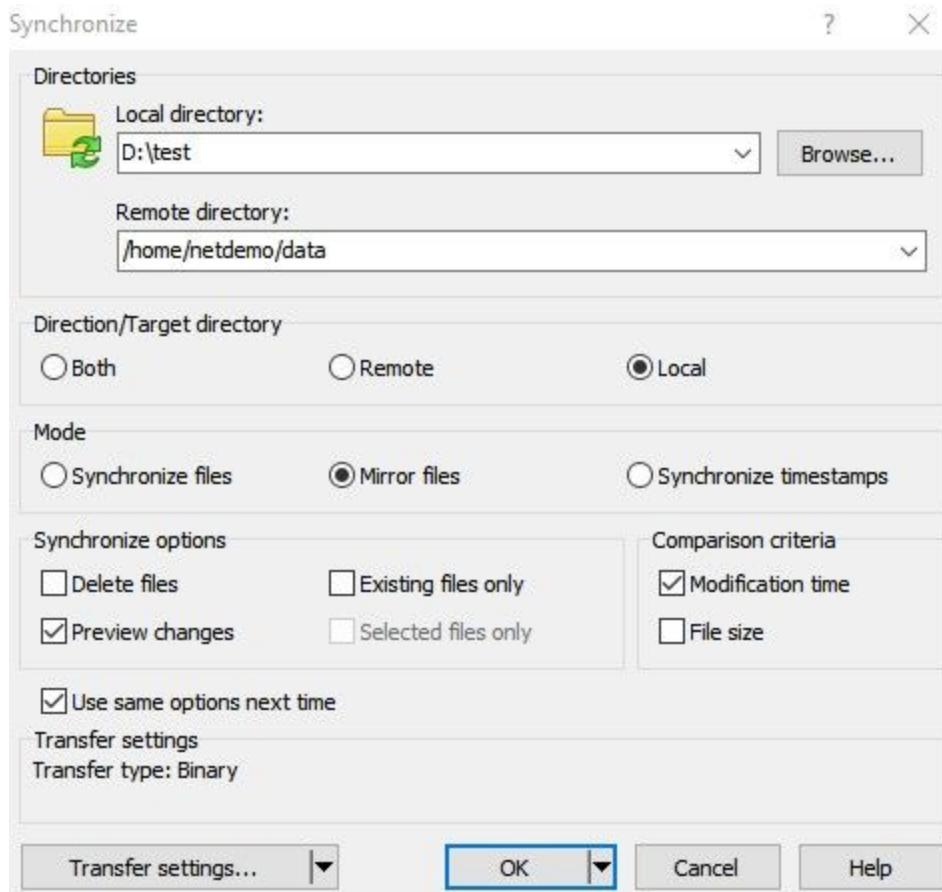
Note that the left pane displays your local computer data, and the right pane displays the server data.



Now set up synchronization between data in the server and your local computer.

1. Navigate to the data directory on the server side (Right Pane)
2. Navigate to the local directory where you want to transfer the data
3. Click 'Synchronize' and use the following settings
 - Direction/Target directory: *Local*
 - Mode: *Mirror files*
 - Check the 'Use the same options the next time'
4. Click 'Ok' to initiate the transfer
 - Accept the key warning

Below is an example of 'Synchronize' settings dialog parameters:



Step 3: Downloading new data from the server

1. Login to the site created in Step 1 (WinSCP)
2. Navigate to the data folder in server and local directory in your computer
3. Click 'Synchronize', and all the new data will be securely copied over
 - Alternatively, you can select any particular recording to copy by
 - a. Multiselect recordings in the server-side panel
 - b. In the 'Synchronize' dialog tick 'Selected Files Only' under 'Synchronization options'

Step 4: Using the new data in EMpower

- After downloading the data on your local computer, then EMpower could be used to view/process the data

***** IMPORTANT ***** Every time you synchronize new data, remember to delete the 'empower_recmeta.json' file from each updated recording.