



ASX

ASX SFTP

External User Guide



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1. Solution Overview

To facilitate delivery of reports to Customers (ASX Clear Futures Clearing Participants (OTC and / or Futures) and their clients) from ASX, a Secure File Transfer Protocol (SFTP) service is being made available at ASX. Reports will need to be collected by the Customer from the SFTP service.

The production SFTP solution domain name is FTP.ASX.COM.AU. ASX also provide a replica solution for the testing services which has a domain name of FTPtest.ASX.COM.AU.

SFTP provides end to end encryption of data between the SFTP client and server.

Authentication to the SFTP server will require creation of SSH keys that will be registered in the SFTP server.

1.1. Business Continuity Solution

The ASX production solution will have a replicated Business Continuity instance. ASX will have a single presentation of the domain name, meaning ASX Customers will not need to make any changes in an event of an ASX site issue.

It is the responsibility of the ASX Customer to validate access from their primary and secondary sites and ensure the SSH keys are configured correctly and access to ASX SFTP is regularly tested.

1.2. User Manual Audience

The ASX SFTP External User Guide is to provide technical administrators of ASX Customers the necessary detail to connect to the ASX SFTP server and collect reports.

Users of the ASX SFPT Service will initially be:

- ASX Clear (Futures) Clearing Participants (OTC and / or Futures)
- Clients of ASX Clear (Futures) Clearing Participants (OTC and / or Futures)



Note: The initial ASX SFTP service offering will be:

- OTC - March 2014
- ASX Clear (Futures) - July 2014.

This manual is aimed at both the ASX Clear (Futures) Clearing Participants (OTC and / or Futures) and their Clients. Readers of this manual should refer to the relevant section(s) that are applicable to their or their Clearing Participant's ASX membership.

2. Requesting SFTP Access

ASX Customer Support provides support for the SFTP service. Customers requiring access to the SFTP environment will be required to submit a provided SFTP Account Request Form to:

ASX Customer Service:

Phone: (+612) 131 279

Fax: (+612) 9227 0885

Email the completed form to info@asx.com.au.

Customers will also need to provide ASX Customer Service an SSH Public Key.

2.1. SFTP Accounts

The naming convention utilised for SFTP accounts is:

- A three character customer code (e.g. XYZ, as in XYZ_Download)
- A sub-group name that identifies either:
 - The ASX product/service (e.g. OTC, as in XYZ_OTC or Futures, as in XYZ_ETD)
 - A specific name from the requester (e.g. XYZ_UserDefinedName).

The following account types are provided:

- **Multiple Service Account** - This is a generic account to access multiple ASX services, i.e. an account for an automated service. For firm code XYZ, a generic account to access multiple ASX Services (e.g. both ASX OTC and ASX Clear (Futures)), will always be set as XYZ_Download (where XYZ represents the 3 character firm code).
- **Single Service Account** - This is a generic account to access a specific ASX service, i.e. specific accounts for when different business units require segregated access to particular ASX Services. For firm code XYZ, a generic account to access a specific ASX product/service (e.g. ASX OTC), will always be set to include the name of the product/service, (e.g. XYZ_OTC (where XYZ represents the 3 character firm code)).
- **Additional Accounts** - Multiple customer defined accounts can be requested for a particular service, i.e. accounts for automated processes and an account for an operational team to troubleshoot the service via an SFTP client. In this case, the account created is based on a name provided by the requester, (e.g. for Firm XYZ, the account created will be XYZ_[Requested ID]).



Note: Each connecting device (i.e. primary and backup server) will require an SSH key, however one account can have more than one SSH key. Alternately, more than one instance of a Multiple Service Account may be requested.

2.2. Authentication (SSH Key Usage)

The SFTP service utilises SSH public and private key combinations for secure access. The requester (ASX customer) generates the SSH key combination. The SSH private key is retained by the requester and the public SSH key is provided to ASX. An SSH key combination can be utilised by more than one account. The key ensures that a very strong password is used for access to the SFTP and that no manual intervention (to enter a password) is required.



Note: ASX enforces use of 2048 bit generated SSH-2 RSA keys.

For ASX Customers to be able to download reports from the SFTP server, customers will need to provide ASX with their public key and Public IP address in addition to the SFTP Account.

OS X or Linux users can generate a key pair utilising the “ssh – keygen” command. E.g. ssh – keygen –t dsa (example only).

Microsoft users can utilise Appendix 1 – Windows SFTP for key generation and usage guidelines.

2.3. Account Permissions

Accounts provided for approved ASX customers will have the following access rights/permissions on the SFTP server:

- Download reports
- View their own folders
- Resume transfers.

2.4. Simultaneous Login

Multiple simultaneous logins are not allowed per Account on ASX SFTP.

2.5. Account Policies

The following account policy settings have been configured:

Settings	Security Standard
Account Lockout	A banning function will be used to ban an attacker IP for a period of time when a number of unsuccessful password attempts are detected.
Expiring Accounts	An Account will be set to expire if it has been inactive for 3 months or 90 days. A customer can request for an Account to be re-activated through ASX Customer Service. Accounts that have been inactive for 3 months will be deleted.

3. SFTP Folder Structures

The reports for each ASX service will be contained within a set structure for Customers (ASX Clear (Futures) Clearing Participants (OTC and / or Futures) and their Clients) to download. Readers of this manual should refer to the section or sections that are relevant to them.

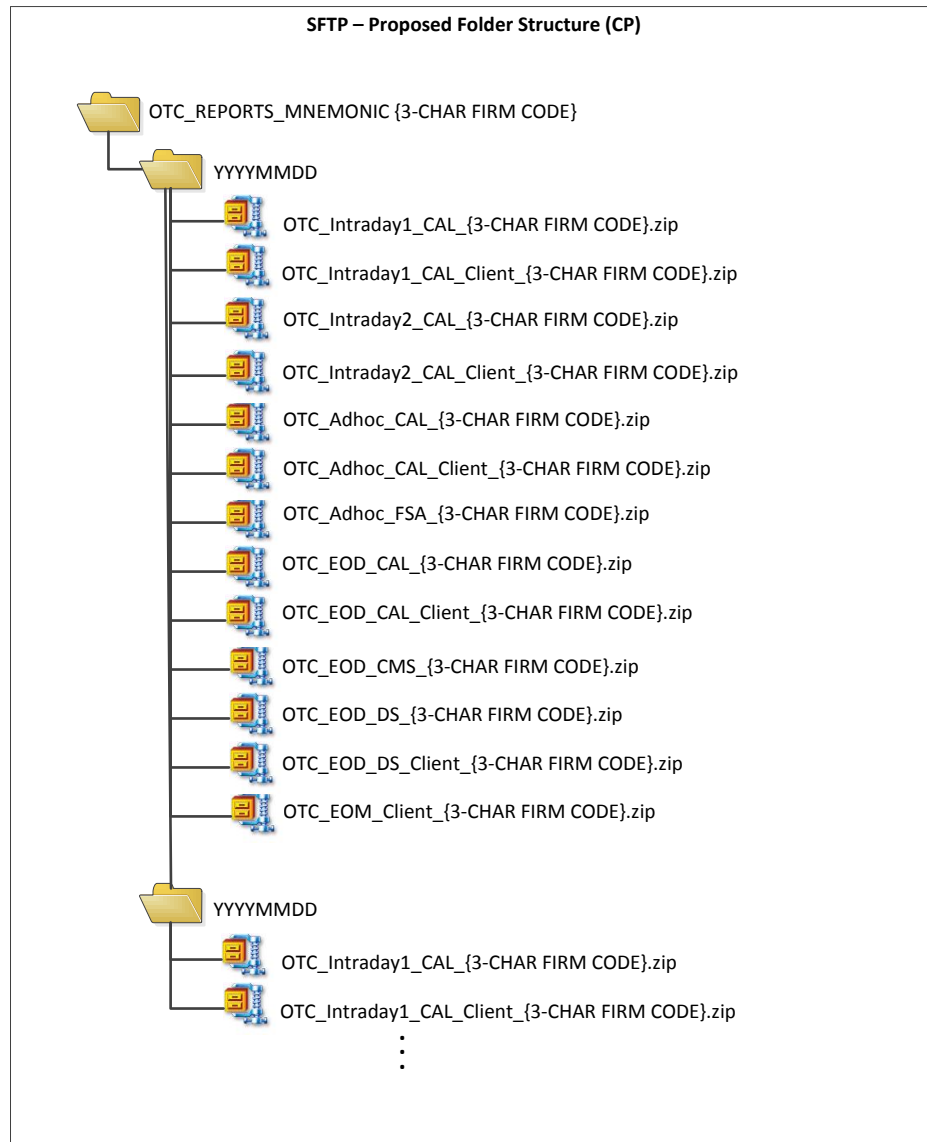
For further details on the reports contained within the folders, customers should refer to the relevant provided report specifications..

3.1. OTC Folder Structure

3.1.1. OTC Clearing Participant Reports

The following structure will be assessable for the OTC Clearing Participants on the SFTP server:

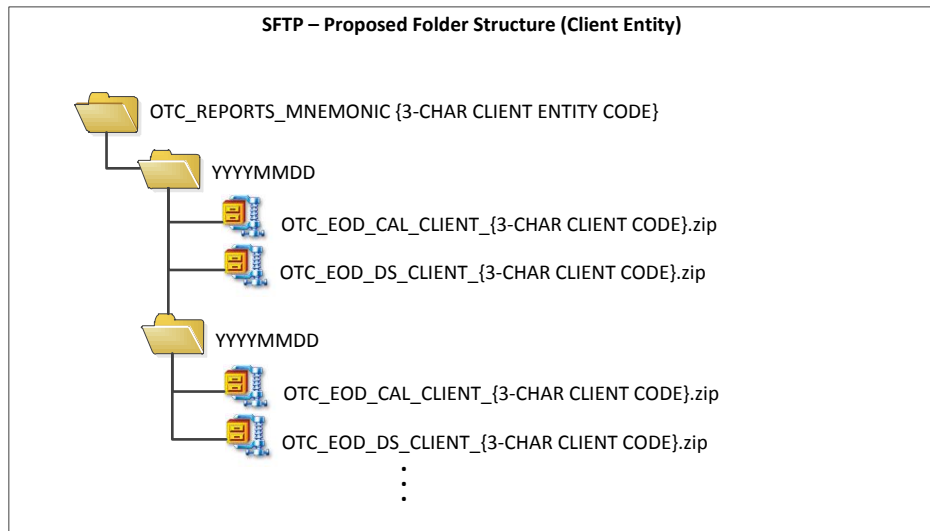
- OTC_REPORTS_<Three char Clearing Participant entity code>
 - YYYYMMDD
 - OTC_<frequency>_<source system if applicable>_<Three char Clearing Participant entity code>.zip
 - OTC_<frequency>_<source system if applicable>_CLIENT_< Three char firm or client entity code>.zip.



3.1.2. OTC Client Clearing Reports

For direct OTC Client reporting, the structure will be the same however reduced:

- OTC_REPORTS_< Three char client entity code>
 - YYYYMMDD
 - OTC_<frequency>_ [<source system if applicable>]_< Three char client entity code>.zip.



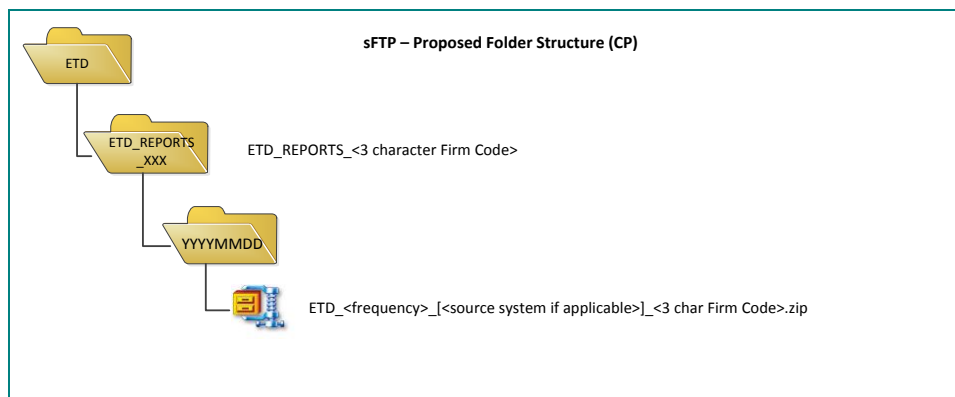
3.2. ETD Folder Structure

3.2.1. ETD Clearing Participant Reports

The following structure will be assessable for the ETD Clearing Participants on the SFTP server:

- ETD_REPORTS_<Three char Clearing Participant entity code>
 - YYYYMMDD
 - ETD_<frequency>_ [<source system if applicable>]_<Three char Clearing Participant entity code>
 - ETD_<frequency>_ [<source system if applicable>]_CLIENT_< Three char firm or client entity code>

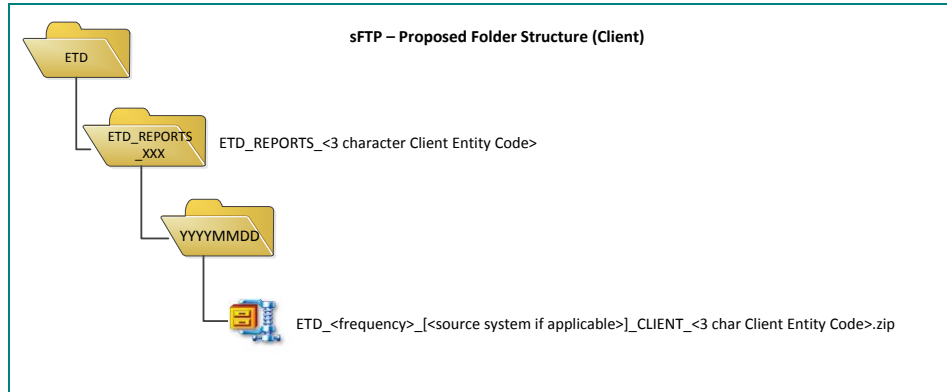
Note: unlike the OTC structure, these files will not be zipped.



3.2.2. ETD Client Clearing Reports

For direct ETD Client reporting, the structure will be the same however reduced:

- ETD_REPORTS_< Three char client entity code>
 - YYYYMMDD
 - ETD_<frequency>_<source system if applicable>_< Three char client entity code>.



Note: unlike the OTC structure, these files will not be zipped.

3.3. Report Distribution Schedule

The distribution of reports will vary between services. Customers should refer to the service specific reporting specification to confirm the report distribution schedules.

4. Accessing Reports

The ASX SFTP solution is standard. ASX customers can access the FTPtest.asx.com.au site from the command line or from any SFTP client that supports SSH connections.

UNIX and LINUX customers are able to utilise native SCP commands.

Microsoft environments do not natively support secure copy commands. Appendix 1 – Windows SFTP provides a guideline for coping files.



Note: Alternate solutions are available and it is the customer's responsibility to choose a solution appropriate to them and to licence appropriately.

5. Customer Firewall Configurations

ASX Customers connecting to the ASX SFTP solutions will need to allow the following configurations via their firewalls:

Environment	Domain Name	IP	Port
Test (IWT)	FTPtest.ASX.COM.AU	203.15.147.178	22
Production	FTP.ASX.COM.AU	203.15.145.110	22

6. Appendix 1 – Windows SFTP



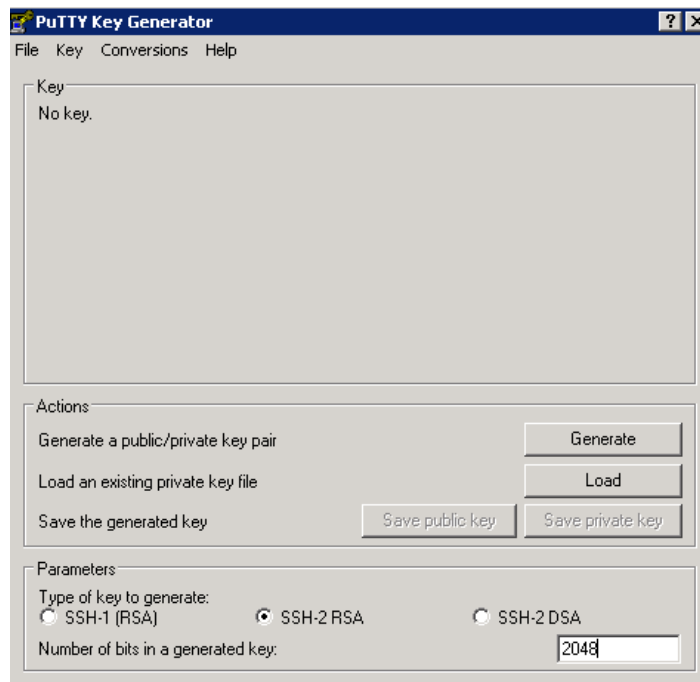
Note: There are alternate SFTP client solutions available and it is the customer's responsibility to choose a solution appropriate to them and to licence appropriately. The details are provided as example only. ASX will not provide support for PuTTY utilities. PuTTY support calls will need to be directed to the vendor.

6.1. Generating an SSH Key on Windows using PuTTY

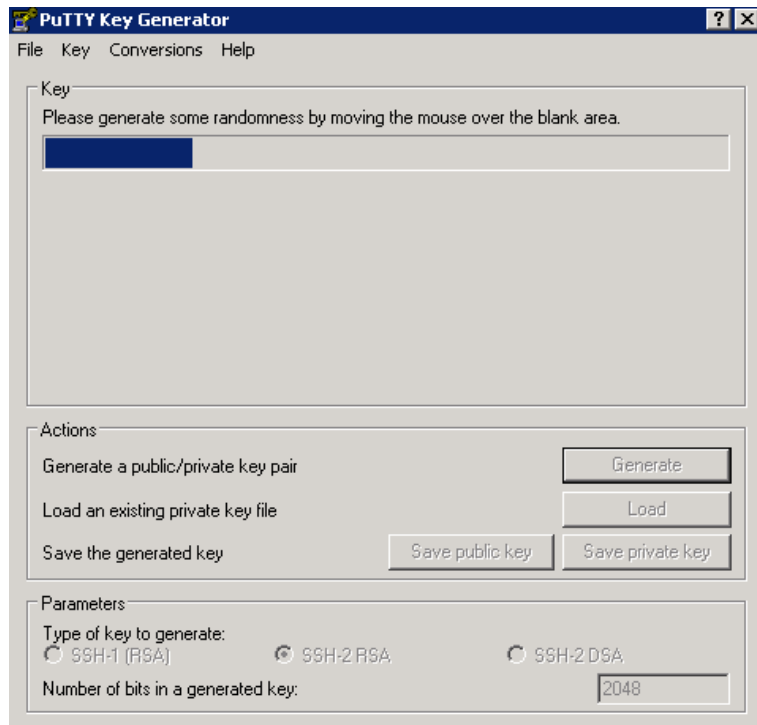
More details of this tool can be found at [PuTTY](#).

To generate an SSH Key on Windows using PuTTY:

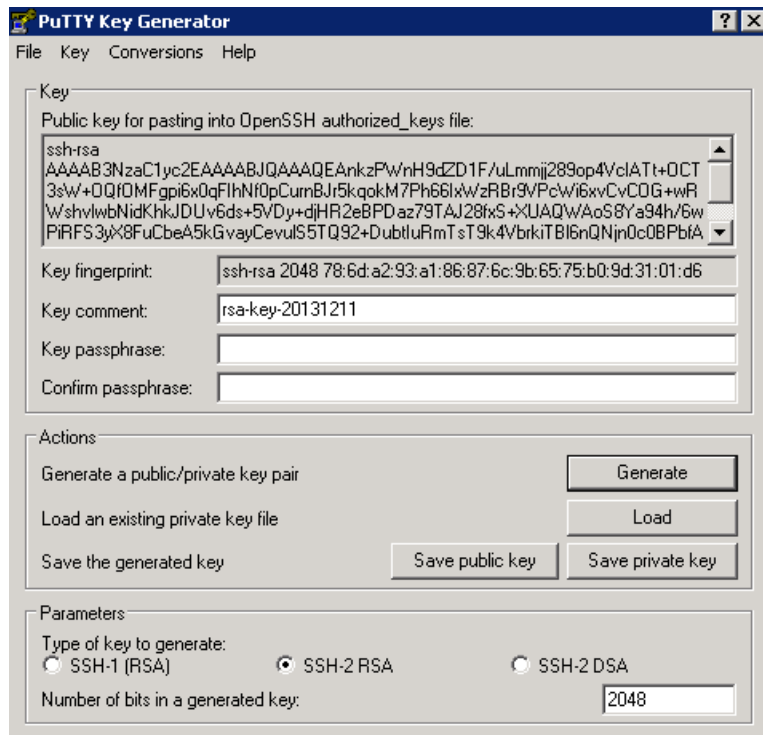
1. Download and start the puttygen.exe generator.



2. Select **SSH2 RSA** in the Parameters frame.
3. Set Number of bits in a generated key to 2048.
4. Click Generate.



5. Move your pointer in the small screen in order to generate the key pairs.

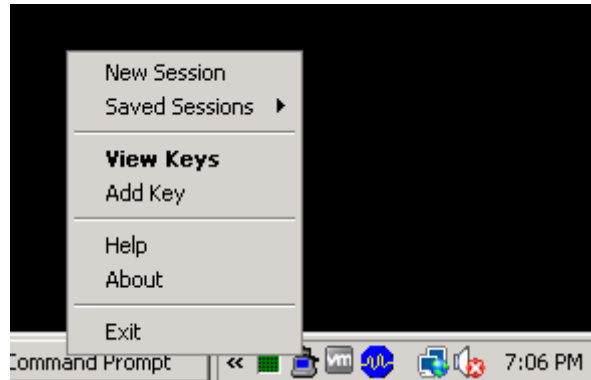


6. Enter a key comment, which will identify the key (useful when you use several SSH keys).
7. It is optional to type in the passphrase and confirm it. The passphrase is used to protect your key. However you will be asked for it when you connect via SSH.
8. Click "Save private key" to save your private key.
9. Click "Save public key" to save your public key.
10. Provide the public key to the ASX Customer Service.

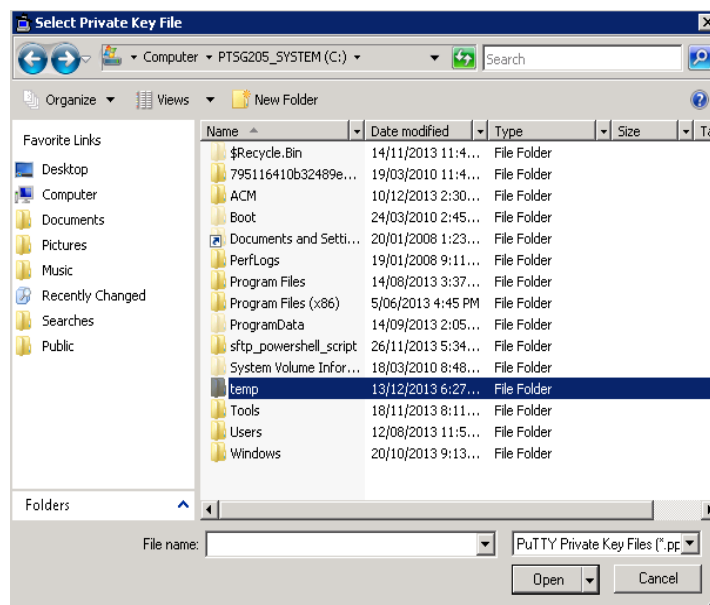
6.2. Using PSFTP Commands to SFTP Files with Windows

To download reports from the ASX SFTP server via Windows:

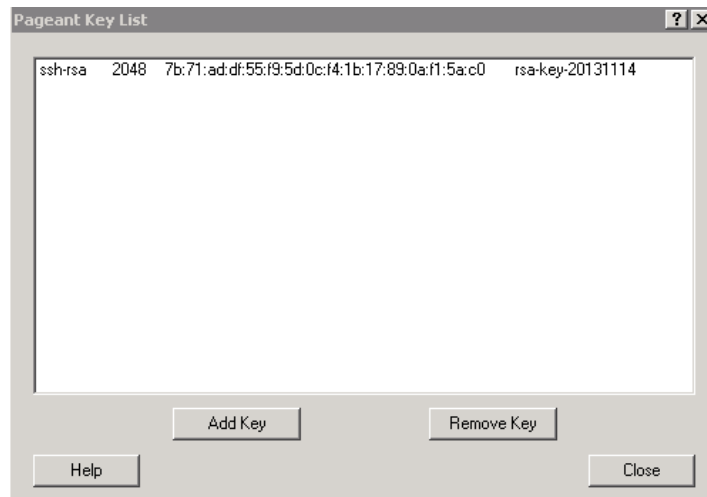
1. Download Pageant (SSH authentication agent) and PSFTP (SFTP client) from the [PUTTY website](#).
2. Start Pageant.exe. A Pageant icon will appear on the system tray.



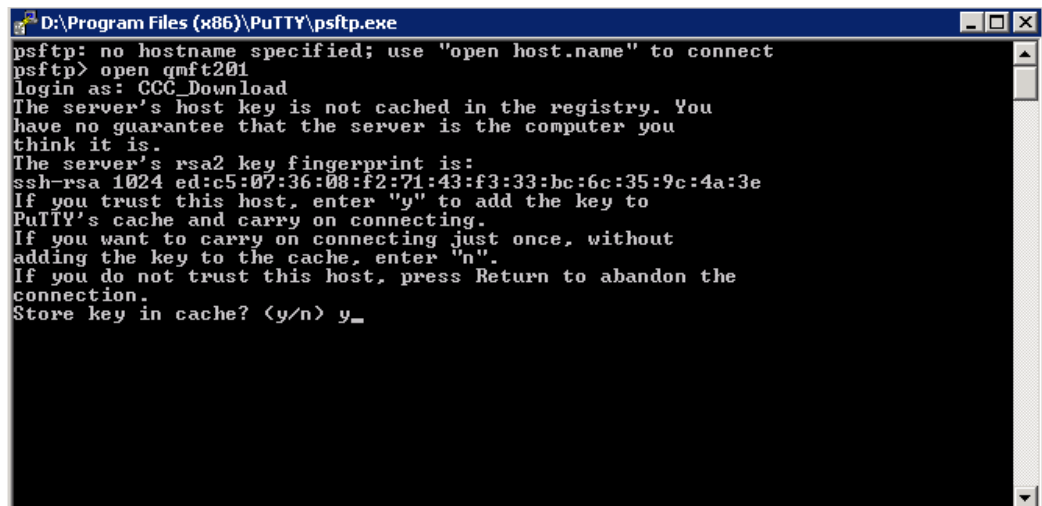
3. Right click the icon and select Add Key. Pageant will bring up a file dialog, labelled "Select Private Key File".
4. Find your private key file in this dialog, and press "Open".



5. Right click the Pageant icon and select View Key. The selected private key is displayed.



6. Start psftp.exe. A PSFTP command window will be launched.
7. `psftp > open ftptest.asx.com.au` --- open a connection to ASX SFTP server.
8. For the first time connection PSFTP will ask if you trust the host and add the rsa2 key to cache. Enter "y".



9. Enter username.
10. `psftp > ls` --- list directories in remote server.
11. `psftp > cd 20131213` --- change directory to where the file copy from e.g. 20131213.
12. `psftp > ls` --- list files under the directory.
13. `psftp > lcd c:\temp` --- change local working directory to where the file copy to e.g. c:\temp.

```

D:\Program Files (x86)\PuTTY\psftp.exe
psftp: no hostname specified; use "open host.name" to connect
psftp> open QMFT201
login as: CCC_Download
Using username "CCC_Download".
Further authentication required
CCC_Download@QMFT201's password:
Remote working directory is /
psftp> ls
Listing directory /
drwxrwxrwx  1 0      0           0 Dec 13 18:17 .
drwxrwxrwx  1 0      0           0 Dec 13 18:17 ..
drwxrwxrwx  1 0      0           1 Dec 13 16:22 20131213
psftp> cd 20131213
Remote directory is now /20131213
psftp> ls
Listing directory /20131213
drwxrwxrwx  1 0      0           0 Dec 13 18:18 .
drwxrwxrwx  1 0      0           0 Dec 13 18:18 ..
-rwxrwxrwx  1 0      0          166 Dec 13 16:22 OTC_Daily_CCC.zip
psftp> lcd c:\temp
New local directory is c:\temp
psftp> quit

```

14. psftp > get OTC_Daily_CCC.zip --- copy the zip file e.g. OTC_Daily_CCC.zip from remote server.
15. psftp > quit --- terminate the session.

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