# **Research Data Services (RDS)**

# Using Stata on Linux server

*Stata* on the Linux server can be run with either graphical user interface or the command line interface.

- With the graphical interface, Stata looks and runs very similarly to how the program runs on a Windows PC. The limitation of the graphical interface is that when the connection to the Linux server ends, Stata stops.
- With the command line interface, Stata can be run in batch mode. Stata can continue to run even after the connection to the Linux server ends.

## The last page of these notes has the commands for invoking Stata on Linux.

Using the Linux server to run Stata requires three pieces of software: an SSH program, an SFTP program and an X11 program. Windows PCs require additional software. Macintosh and Linux computers have built-in SSH, SFTP and X11.

- SSH (Secure SHell) is a protocol for making a connection to the Linux server. SSH provides an encrypted terminal session on the server. RDS recommends *PuTTY* to make SSH connections; PuTTY is freeware. PuTTY is available at: <u>http://www.chiark.greenend.org.uk/~sgtatham/putty/</u> An alternative to PuTTY is *SecureCRT*; SecureCRT is available through Penn. In the PuTTY window, you will invoke Stata.
- SFTP (SSH File Transfer Protocol) is a protocol for copy files between the desktop or laptop computer and the Linux server. RDS recommends *WinSCP*, WinSCP is freeware and interacts with puTTY. WinSCP is available at: <a href="http://winscp.net/eng/index.php">http://winscp.net/eng/index.php</a>
   An alternative is *FileZilla*: FileZilla is also freeware. In the WinSCP window, you

An alternative is *FileZilla*; FileZilla is also freeware. In the WinSCP window, you can copy data files, do files and results files to and from the server.

X11 is the protocol for rendering graphics on the Linux server. An X11 program is necessary in order to use the graphical user interface. RDS recommends *Xming*; Xming has a freeware version. Xming is available at: <a href="http://www.straightrunning.com/XmingNotes/">http://www.straightrunning.com/XmingNotes/</a>

An alternative is *Cygwin/X*; Cygwin/X is also freeware. Commercial X11 programs may also be purchased.

The server running Stata is: *pils.ssc.upenn.edu* 

# > Configuring Xming and WinSCP

✤ To configure Xming...Start XLaunch



...select "Multiple Windows" then click the Next> button

X
•
1

## ...Start no client then click the Next> button

#### Select how to start Xming

Choose session type and whether a client is started immediately.



● Start no client This will just start Xming. You will be able to start local clients later.
◯ Start a program
This will start a local or remote program which will connect to Xming. You will be able to start local clients later too. Remote programs are started using PuTTY/SSH.
Open session via XDMCP
This will start a remote XDMCP session. Starting local clients later is limited. This option is not available with the "Multiple windows" mode.
< Back Next > Cancel Help

# ...click the Next> button

#### Specify parameter settings

Enter clipboard, remote font server, and all other parameters.

Clipboard Start the integrated clipboard manager	No Access Control Disable Server Access Control
Remote font server (if any) Additional parameters for Xming	
Additional parameters for PuTTY or SSH	
< Back	Next > Cancel Help

...Save configuration to config.xlaunch on your desktop and then click the Finish button

Configuration complete Choose whether to save your settings to an XML file.
Click Finish to start Xming.
You may also 'Save configuration' for re-use (run automatically or alter via -load option). Save configuration Include PuTTY Password as insecure dear text
< Back Finish Cancel Help

If Windows asks..."Do you want to keep blocking this program?" Click the "Keep Blocking" button.



After you save, you will see this icon on your desktop:



When Xming is running, you will see this icon in the tray section of the task bar



You can now run Xming by clicking on the desktop icon.



The tray icon will indicate if Xming is already running.



You do not need to restart Xming (Trying to start Xming when it is already running causes no harm.)

✤ To configure WinSCP, Start..WinSCP

WinSCP	Key tools
	Documentation
	Support forum
	C WinSCP
	WinSCP Web Site

... Under Session ...

...Type "pils.ssc.upenn.edu" in the Host name field and your PennKey-name in the User name field and then click the Save button.

RDS recommends that you do NOT save your password.

WinSCP Login		? 🗙
Session Stored sessions Environment Directories SSH Preferences	Session         Host name:         pils.ssc.upenn.edu         User name: <pennkey-name>         Private key file:         Protocol         File protocol:         SFTP         ✓ Allow SCF</pennkey-name>	Po <u>r</u> t number: 22 📚  P fallback Select color
Advanced options		~
About Langu	ages Login Save	Close

Save session as	×
Save session as:	
Save password (not recommended)	
	elp

...configure WinSCP to interact with puTTY..click Preferences and then the Preferences button

WinSCP Login		? 🔀
Session Stored sessions Environment Directories SSH Preferences	Interface     Norton Commander	<ul> <li>two panels (left for local directory, right for remote directory)</li> <li>keyboard shortcuts like in Norton Commander (and other similar programs as Total Commander, Midnight Commander)</li> <li>drag &amp; drop to/from both panels</li> </ul>
	C Explorer-like	- only remote directory - keyboard shortcuts like in Windows Explorer - drag & drop
	Other general options:	Preferences
Advanced options		
About Langua	ges La	ogin Save Close

...Integration...Applications

Add -X to the PuTTY path. (The "X" must be the capital letter) Check the box "Remember session password and pass it to PuTTY Check the box..."Automatically open new session in PuTTY Click OK button

Preferences	? 🔀
Environment Window Panels Commander Explorer Editors Transfer Presets Drag & Drop Background Endurance Integration Applications Commands Storage Updates	External applications PuTTY path: %PROGRAMFILES%/PuTTY/putty.exe Browse Reset Remember session password and pass it to PuTTY (SSH) Open Telnet sessions in PuTTY for FTP sessions Automatically open new sessions in PuTTY
Export	OK Cancel Help

...Create a desktop shortcut to start WinSCP and connect to pils.ssc.upenn.edu "C:\Program Files\WinSCP\WinSCP.exe" <PennKey-name>@pils.ssc.upenn.edu

Create Shortcut	
	This wizard helps you to create shortcuts to local or network programs, files, folders, computers, or Internet addresses. Type the location of the item: TC:\Program Files\WinSCP\WinSCP.exe Prowse PennKey-name>@pils.ssc.upenn.edu Click Next to continue.
	< Back Next > Cancel

Name the shortcut WinSCP-pils and click the Finish button

Select a Title for the Program	
	Type a name for this shortcut: WinSCP-pils
	< Back Finish Cancel

You should now have two icons on your desktop:



You are now ready to run Stata on the Linux server.

## > Connecting to the server and running Stata

(1) If Xming is not already running, click on the desktop icon:



(2) Click on the icon to connect to pils.ssc.upenn.edu with WinSCP



This icon will start both WinSCP and PuTTY

WinSCP will prompt for your Linux password.

Password -	@pils.ssc.upenn.edu	×
Searching for host Connecting to host Authenticating Using usemame "	".	
Password:		
(	OK Cancel Help	

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🕒 My documents 🔹 👻 😓 🖛 🗢 👘 🖬 🕅 🖓 🚱 🗄						C PennName	• 🖼   + - + - 🛍 🙆 🚮 🔮 📴				
\Documents and Settings\	\My Do	cuments	/home/ PerinName								
Vame + Ext	Size	Туре	Changed	Attr	~	Name 🔶 Ext	Size Ch	nanged	Rights	Owner	
<u>a</u>		Parent directory	2/22/2010	r		🖰 stata 10	-	2/9/2010 10:42	CONVE-VE-X		
Downloads		File Folder	1/25/2010			C stata11		2/19/2010 2:21	CIMPT-YE-Y		
My Music		File Folder	9/2/2009	r		C.stata9	-	7/11/2006 1:55	rwxr-xr-x		
My Pictures		File Folder	1/11/2010	r				8.8			
My SAS Files		File Folder	12/18/200								
My Videos		File Folder	6/23/2008	r							
equations.docx	16,633	Microsoft Office	9/3/2009	a							
						ado	9	9/22/2008 1:32	rwxr-xr-x		
						DB	-	5/21/2009 11:4	rwxr-xr-x		
						Desktop		2/15/2010 9:37	rwx		
						home	a	11/26/2003 10:	rwx		
						LinuxDemo	1	1/30/2006 4:31	rwxr-xr-x		
						public_html	1	1/20/2010 11:4	rwxr-xr-x		
						asuser 🔁	2	3/19/2002 3:55	rwx		
						asuser.v91	i	12/21/2005 10:	rwx		
						asuser.v92	1	10/30/2008 3:1	rwx		
						StataDemo	2	2/25/2009 3:31	rwxr-xr-x		
					×						

### WinSCP opens a Window:

Files on the desktop computer are in the left pane while files on the Linux server are in the right pane. Files may be dragged between the two panes.

If PuTTY does not open automatically click on the PuTTY button in toolbar:

The PuTTY terminal window is:



At the "\$" prompt... To invoke the graphical interface version of Stata: **xstata &** (Linux commands are case sensitive, so type this command in all lower case. The ampersand (&) is part of the command.

To invoke Stata Special Edition: **xstata-se &** To invoke Stata Parallel Edition: **xstata-mp &** 

Closing the terminal session will end the graphical sessions.

To run a Stata job and be able to disconnect from the server, use the nohup (nohup stands for nohangup) command:

## nohup stata -b do stata-do-filename & or

## nohup stata-se -b do stata-do-filename &

or

## nohup stata-mp -b do stata-do-filename &

Substitute your do file name for stata-do-filename. Stata commands are read from that file. Results will written to the file: **nohup.out** 

With nohup, you can start a Stata job, logout and log back in later to check results. You can start jobs and check results from different locations.

You can copy results from the server with WinSCP

The command to logout of Linux is: **exit**