PUTTY DRIVER

INTRODUCTION

PuttyDriver adds automation and robotics functionality to the popular open source PuTTY SSH and Telnet client developed by Simon Tatham and others.

Scripts can be recorded, edited and replayed to assist with Systems Administration and integration of Legacy Applications with modern systems. PuTTY screens and commands processed are captured automatically to log files.

PuttyDriver includes interactive record and replay functionality and can communicate interactively with one or more PuTTY sessions using the Microsoft Windows Message Queue. Alternatively, scripts can be run via the PuTTY command line for batch processing.

Testing has successfully been undertaken with servers running a variety of Unix/Linux platforms. A sample script for a standard Raspberry Pi OS installation is included and is referenced in this document.

PuttyDriver currently consists of two application files - ***PuttyDriver.xlsb*** (Excel 32 bit) and ***putty.exe,*** together with a SQLite database. ODBC driver for SQLite must be installed and can be downloaded from here.

putty.exe is a slightly modified 0.83 version of PuTTY with a small amount of additional C code, to provide the scripting and message queue interface. Project files with source code can be found at https://github.com/christyler80/PuttyDriver.

See the 'Getting Started' section of this document for details of how to run PuttyDriver. There is also a brief mp4 video that shows PuttyDriver being used.

Please also see DB Data Manager for additional database interface documentation.

Planned future versions of PuttyDriver include VB.NET and C# applications to assist with PuttyDriver script and session management for integration of Legacy Applications with modern systems.

At this time:

- PuttyDriver requires 32-bit versions of Microsoft Excel 2016 or later.
- Microsoft Excel 64-bit versions are not currently supported.
- 32-bit or 64-bit versions of Microsoft Windows 10 operating system or later are supported.
- Other operating systems (e.g., Apple, Linux) are not supported.

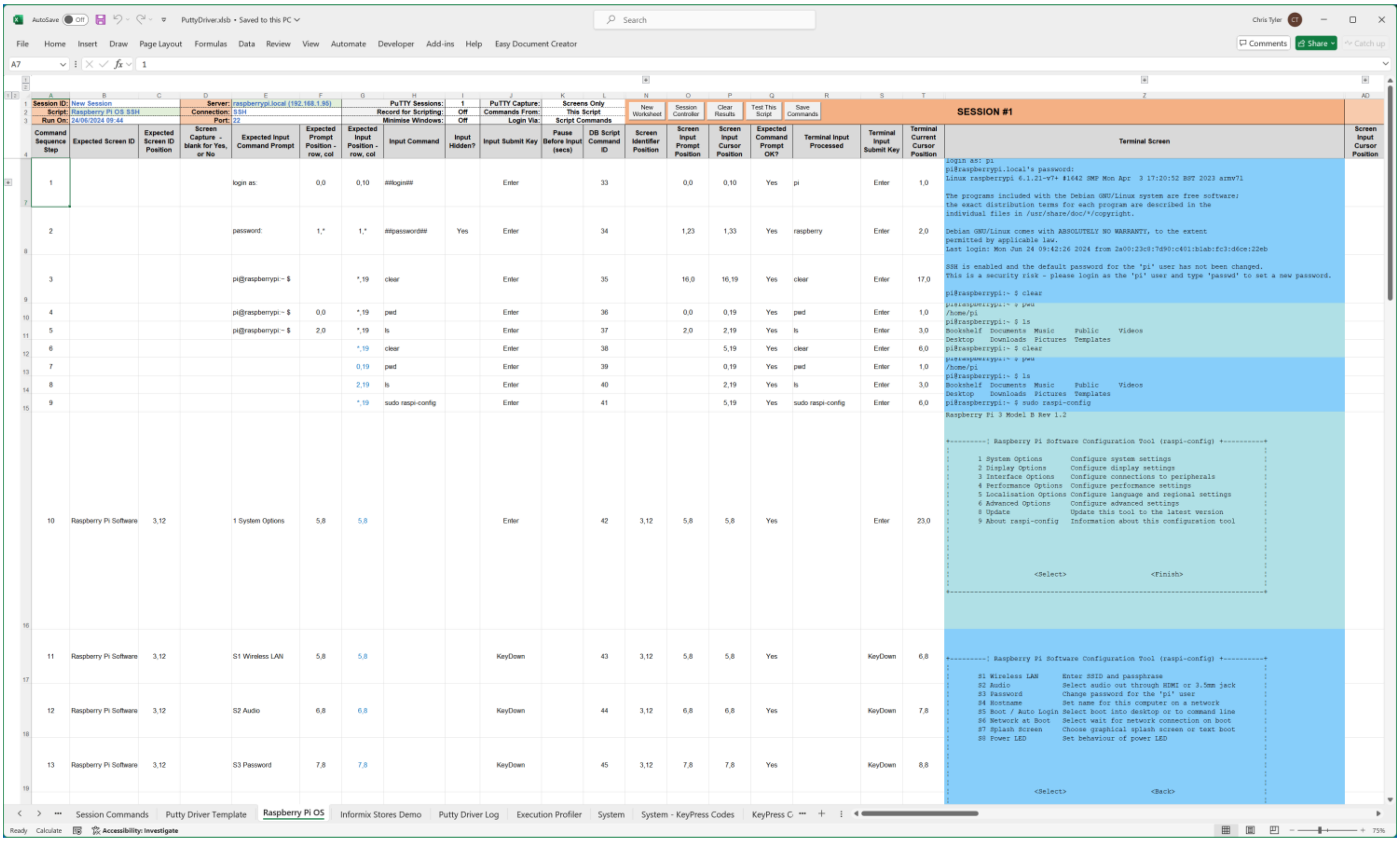
Chris Tyler, January 2025

www.christyler.uk

LICENSE

GETTING STARTED

1. Download the Zip file from GitHub and extract into a folder.
2. Run putty.exe and connect to a server using SSH (or Telnet), using its IP address or Server Name.
3. Check that login and password are both OK and close putty.exe.
4. Open the PuttyDriver.xlsb workbook and using the 'Example Template' worksheet, type the ***IP address*** or ***Server Network Name*** into cell E1. Leave the ***Script Name*** in cell B2 blank.



Session ID:	New Session	Server:	raspberrypi.local (192.168.1.95)	PuTTY Sessions:	1
Script:	Raspberry Pi OS SSH	Connection:	SSH	Record for Scripting:	Off
Run On:	24/06/2024 09:44	Port:	22	Minimise Windows:	Off

PuTTY Capture:	Screens Only
Commands From:	This Script
Login Via:	Script Commands

SESSION #1

Command Sequence Step	Expected Screen ID	Expected Screen ID Position	Screen Capture - blank for Yes, or No	Expected Input Command Prompt	Expected Prompt Position - row, col	Expected Input Position - row, col	Input Command	Input Hidden?	Input Submit Key	Pause Before Input (secs)	DB Script Command ID	Screen Identifier Position	Screen Input Prompt Position	Screen Input Cursor Position	Expected Command Prompt OK?	Terminal Input Processed	Terminal Input Submit Key	Terminal Current Cursor Position
1				login as:	0,0	0,10	##login##		Enter		33		0,0	0,10	Yes	pi	Enter	1,0
2				password:	1,*	1,*	##password##	Yes	Enter		34		1,23	1,33	Yes	raspberry	Enter	2,0
3				pi@raspberrypi:~ $		*,19	clear		Enter		35		16,0	16,19	Yes	clear	Enter	17,0
4				pi@raspberrypi:~ $	0,0	*,19	pwd		Enter		36		0,0	0,19	Yes	pwd	Enter	1,0
5				pi@raspberrypi:~ $	2,0	*,19	ls		Enter		37		2,0	2,19	Yes	ls	Enter	3,0
6						*,19	clear		Enter		38			5,19	Yes	clear	Enter	6,0
7						0,19	pwd		Enter		39			0,19	Yes	pwd	Enter	1,0
8						2,19	ls		Enter		40			2,19	Yes	ls	Enter	3,0
9						*,19	sudo raspi-config		Enter		41			5,19	Yes	sudo raspi-config	Enter	6,0
10	Raspberry Pi Software	3,12		1 System Options	5,8	5,8			Enter		42	3,12	5,8	5,8	Yes		Enter	23,0
11	Raspberry Pi Software	3,12		S1 Wireless LAN	5,8	5,8			KeyDown		43	3,12	5,8	5,8	Yes		KeyDown	6,8
12	Raspberry Pi Software	3,12		S2 Audio	6,8	6,8			KeyDown		44	3,12	6,8	6,8	Yes		KeyDown	7,8
13	Raspberry Pi Software	3,12		S3 Password	7,8	7,8			KeyDown		45	3,12	7,8	7,8	Yes		KeyDown	8,8

Terminal Screen

Screen Input Cursor Position

```
login as: pi
pi@raspberrypi.local's password:
Linux raspberrypi 6.1.21-v7+ #1642 SMP Mon Apr  3 17:20:52 BST 2023 armv7l

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Mon Jun 24 09:42:26 2024 from 2a00:23c8:7d90:c401:b1ab:fc3:d6ce:22eb

SSH is enabled and the default password for the 'pi' user has not been changed.
This is a security risk - please login as the 'pi' user and type 'passwd' to set a new password.

pi@raspberrypi:~ $ clear
pi@raspberrypi:~ $ pwd
/home/pi
pi@raspberrypi:~ $ ls
Bookshelf  Documents  Music     Public     Videos
Desktop    Downloads  Pictures  Templates
pi@raspberrypi:~ $ clear
pi@raspberrypi:~ $ pwd
/home/pi
pi@raspberrypi:~ $ ls
Bookshelf  Documents  Music     Public     Videos
Desktop    Downloads  Pictures  Templates
pi@raspberrypi:~ $ sudo raspi-config
Raspberry Pi 3 Model B Rev 1.2


+---------¦ Raspberry Pi Software Configuration Tool (raspi-config) +----------+
:                                                                              :
:       1 System Options       Configure system settings                       :
:       2 Display Options      Configure display settings                      :
:       3 Interface Options    Configure connections to peripherals            :
:       4 Performance Options  Configure performance settings                  :
:       5 Localisation Options Configure language and regional settings        :
:       6 Advanced Options     Configure advanced settings                     :
:       8 Update               Update this tool to the latest version          :
:       9 About raspi-config   Information about this configuration tool       :
:                                                                              :
:                                                                              :
:                                                                              :
:                                                                              :
:                                                                              :
:                    <Select>                     <Finish>                     :
:                                                                              :
+------------------------------------------------------------------------------+



+---------¦ Raspberry Pi Software Configuration Tool (raspi-config) +----------+
:                                                                              :
:       S1 Wireless LAN      Enter SSID and passphrase                         :
:       S2 Audio             Select audio out through HDMI or 3.5mm jack       :
:       S3 Password          Change password for the 'pi' user                 :
:       S4 Hostname          Set name for this computer on a network           :
:       S5 Boot / Auto Login Select boot into desktop or to command line       :
:       S6 Network at Boot   Select wait for network connection on boot        :
:       S7 Splash Screen     Choose graphical splash screen or text boot       :
:       S8 Power LED         Set behaviour of power LED                        :
:                                                                              :
:                                                                              :
:                                                                              :
:                                                                              :
:                    <Select>                     <Back>                       :
:                                                                              :
```

5. Press the 'Record New Script' button. PuTTY (***putty.exe***) should open.
6. Login into PuTTY as usual, i.e., using a valid user ID and password.
7. These commands and the PuTTY screen should be captured automatically, in rows 6 and 7 of the spreadsheet.
8. Type 2 or 3 additional commands Into PuTTY - e.g., '*pwd*' or '*ls*'. These should also be captured in the spreadsheet.
9. When finished, close PuTTY as normal.
10. Passwords are usually often 'hidden'. If so, type '*Yes*' Into the '*Input Hidden?*' column 'G' on row 7 if not already present.
11. To replay these commands, press the 'Clear Results' button, followed by the 'Test This Script' button.
12. As before, PuTTY (putty.exe) should open but this time, PuttyDriver should log in automatically using the credentials used in step 6 and automatically run the commands typed in step 8.
13. The PuTTY screen(s) should be captured automatically, both in Excel and as text files, in a new 'Capture' folder.
14. Script execution can be controlled using the '*Expected Screen ID*', '*Expected Screen ID Position*', '*Expected Input Command Prompt*', '*Expected Cursor Position*' and '*Expected Cursor Position*' columns.
15. See the 'Raspberry PI OS' worksheet for examples of how the '*Expected*' fields can be set and use of '*' wildcard for Cursor position where X or Y are known, but not both (e.g., after running list files command).
16. After recording a new script, Use the ‘Save Script Commands’ function to save the script commands for future use.
17. Use the ‘Session Controller’ to manage servers and to access/re-run existing scripts.
18. Scripts can be also modified and changes saved using these worksheets (e.g., add screen identification text/numbers).