

User's Guide

MERCURY

Mercury Functional Testing for Wireless

User's Guide Version 8.3

MERCURY[®]

Mercury Functional Testing for Wireless User's Guide, Version 8.3

This manual, and the accompanying software and other documentation, is protected by U.S. and international copyright laws, and may be used only in accordance with the accompanying license agreement. Features of the software, and of other products and services of Mercury Interactive Corporation, may be covered by one or more of the following patents: United States: 5,511,185; 5,657,438; 5,701,139; 5,870,559; 5,958,008; 5,974,572; 6,137,782; 6,138,157; 6,144,962; 6,205,122; 6,237,006; 6,341,310; 6,360,332, 6,449,739; 6,470,383; 6,477,483; 6,549,944; 6,560,564; 6,564,342; 6,587,969; 6,631,408; 6,631,411; 6,633,912; 6,694,288; 6,738,813; 6,738,933; 6,754,701; 6,792,460 and 6,810,494. Australia: 763468 and 762554. Other patents pending. All rights reserved.

Mercury, Mercury Interactive, the Mercury logo, the Mercury Interactive logo, LoadRunner, WinRunner, SiteScope and TestDirector are trademarks of Mercury Interactive Corporation and may be registered in certain jurisdictions. The absence of a trademark from this list does not constitute a waiver of Mercury's intellectual property rights concerning that trademark.

All other company, brand and product names may be trademarks or registered trademarks of their respective holders. Mercury disclaims any responsibility for specifying which marks are owned by which companies or which organizations.

Mercury Interactive Corporation 379 North Whisman Road Mountain View, CA 94043 Tel: (650) 603-5200 Toll Free: (800) TEST-911 Customer Support: (877) TEST-HLP Fax: (650) 603-5300

© 2005 Mercury Interactive Corporation, All rights reserved

If you have any comments or suggestions regarding this document, please send them via e-mail to documentation@mercury.com.

Contents

Introduction	5
Related Documents	5
Using Mercury Functional Testing for Wireless	5
Working with the Wireless Dashboard	6
Detecting devices	6
Dashboard Settings	8
Direct commands to the Mercury Functional Testing for Wireless Dashboard	3
Event Log 1	7
Connecting to a device	7
Start testing	8
Rebooting and shutting down a device 19	9
Disconnecting a device	9
Controlling devices and their applications1	9
Device window	0
Launching applications	0
Bringing an application to the foreground 22	2
Using the mouse and keyboard to test applications	3
Using commands and scripts	8
Capturing test information and results	1
Capturing screenshots	1
Using application text recognition 34	4
Using Mercury Functional Testing for Wireless event logs42	2
Using Mercury Functional Testing for Wireless with QuickTest Professional	5
Index	6

Introduction

This document explains how to use Mercury Functional Testing 8.3 for Wireless to control and test Symbian OS Smartphone or Windows Mobile devices.

Mercury Functional Testing for Wireless supports interactive and manual testing, as well as script execution from QuickTest Professional. It consists of Mercury QuickTest Professional and a Windows application designed to allow a Symbian OS Smartphone or Windows Mobile device to be controlled from a Windows computer. Mercury Functional Testing for Wireless enables you to create powerful automated tests for systematic testing of Smartphone devices and the applications that run on them by automating the Windows application that is controlling the Symbian OS or Windows Mobile device.

Related Documents

If you are a new Mercury Functional Testing for Wireless, the *Mercury Functional Testing 8.3 for Wireless Getting Started* manual provides a quick overview and tutorial to help you understand the basic capabilities of Mercury Functional Testing for Wireless.

The Mercury Functional Testing 8.3 for Wireless Installation Guide provides detailed instructions for installing Mercury Functional Testing for Wireless on a computer, and installing agent software on the devices that you want to test. It also specifies the list of supported devices. If you want to test other devices, for example a prototype device, contact your Mercury Functional Testing for Wireless representative to discuss additional support choices that may be available to you.

For test automation you must also install Mercury QuickTest Professional. Refer to Mercury QuickTest documentation for information on installation.

For more information on using test automation with Mercury Functional Testing for Wireless, contact your Mercury Functional Testing for Wireless representative

Using Mercury Functional Testing for Wireless

Mercury Functional Testing for Wireless supports the following activities:

- Controlling devices through the Wireless Dashboard
- Detecting devices
- Dashboard settings
- Starting testing
- Rebooting and shutting down devices
- Disconnecting devices
- Running direct device and system commands
- Checking the event log
- Device testing
- Getting device information
- Controlling device applications
- Launching applications and bringing them to the foreground
- Using the mouse and keyboard to test applications
- Using commands and scripts to test applications
- Capturing test information and results
- Capturing application screenshots
- Using application text recognition
- Accessing the file system on the device

Working with the Wireless Dashboard

Mercury Functional Testing for Wireless provides a set of high-level device control capabilities through a Windows application that presents a dashboard of devices that can be used for:

- Detecting devices
- Dashboard settings and preferences for all devices
- Direct commands
- Event logging
- Starting testing

Detecting devices

When you start Mercury Functional Testing for Wireless, it searches for Smartphone devices and displays them in the Known Devices list on the Devices tab.

📴 Mercury Fi	Inctional Testing for	Wireless Das	hboard				
Devices Setting:	s Help						
🔋 Devices 👸	🖥 Direct Commands 🛛 🏭	Event Log					
TH 🔜	his displays the list of devic	es currently know	n to Mercury Functiona	al Testing for Wireless.			
Name 🔺	🔡 Ma	inufacturer	👂 Bluetooth Id 🚽	🖳 Status	III IMEI Number	🔒 🔍 Is Test Device ?	<u> </u>
📒 ‼ThinkPa	ad Unknowr	<u>،</u> 0	00fb39b7c3b	Disconnected			
📒 📒 6680 erar	n Nokia	k − 0	01262aaef8a	Disconnected	355661008127235		
📒 📙 _§EA_No	okia 6630 🛛 Nokia	υ	0119fca8214	Disconnected	354349008811112		
adyP910i 📒	Unknown	n 0	00ad9c83e04	Disconnected			
📒 📒 Amorbii	RAN-NB Unknowr	n 0	020e03a54fa	Disconnected			
📕 📕 Avnish	Unknown	n 0	00e6d0de5a3	Disconnected			
E-ARAD-I	NB2 Unknowr	n 0	00e9bd9bf3a	Disconnected			
📕 📕 EA*Nokia	a 9300 Unknowr	n 0	01262577815	Disconnected			
📕 📕 emfipetkii	_BT Unknowr	n 0	020e0cb2b1d	Disconnected			
Eranc	Nokia	0	01262aafef5	Connected	355661008166704		
📃 Eyal kalin	ni Unknowr	n 0	0119fca822a	Disconnected			
GENUINI	E Unknowr	n 0	00272c26d2c	Disconnected			
📕 📕 LT-UDI-L	Unknown	n 0	020e07e1df2	Disconnected			
📕 Noam	Unknowr	n 0	0605733b7bc	Disconnected			
📕 Nokia 63	10i Unknowr	n 0	06057c43eaa	Disconnected			
📒 Nokia 66	00 Unknowr	1 O	00e6d5d677d	Disconnected			
📕 Nokia 66	80 Nokia	0	01262aafcbd	Disconnected	355661008161028		
🔲 Nokia 66	80 sandra Unknowr) U	U13tdtc21a4	Disconnected			
🔲 Nokia 68	20 Unknowr	1 U	UU2eeeUe7d4	Disconnected			
🔲 Histo	Unknowr	1 U	U2UeU3b4769	Disconnected			
🔲 Ruti 6630	Unknowr	1 U	UI31db8353a	Disconnected			
	HMAN-NB Unknown	1 U	UZUEU/6C535	Disconnected			~
<	Unknown	, , , , , , , , , , , , , , , , , , , ,		Liscopperied			>
Start testir	ng Stop testin	g (Clear <u>a</u> ll test devices	Connect	Disconnect	Reboot Shutdo	wn
Seady							

Tip: Watch the status bar at the bottom of the screen.

🍺 Mercury Func	tional Testing for V	Vireless D	ashboard				
Devices Settings H	Help						
🔡 Devices 🛅 D	irect Commands 🛛 🚳 E	vent Log					
-							
This d	lisplays the list of devices	currently k	nown to Mercury Function	hal Testing for Wirele	\$\$.		
四國		-	-	-			
Name 🔺	📔 🔝 🗎	ufacturer	🚯 🛛 Bluetooth Id	🖳 Status	III IMEI Number	🛛 🔒 Is Test Device ? 🧹	
📒 ‼ThinkPad	Unknown		000fb39b7c3b	Disconnected			
🧧 🧧 6680 eran	Nokia	2	001262aaef8a	Disconnected	355661008127235		
SEA_Nokia	6630 Nokia	•	00119fca8214	Disconnected	354349008811112		
adyP910i 📃	Unknown		000ad9c83e04	Disconnected			
📒 📒 AMORBIRAN	I-NB Unknown		0020e03a54fa	Disconnected			
🗧 🗍 Avnish	Unknown		000e6d0de5a3	Disconnected			
E-ARAD-NB2	2 Unknown		000e9bd9bf3a	Disconnected			
📒 📒 EA*Nokia 930	00 Unknown		001262577815	Disconnected			
📒 🚦 emfipetkii_BT	Unknown		0020e0cb2b1d	Disconnected			
Eranc	Nokia		001262aafef5	Connected	355661008166704		
📒 📴 Eyal kalimi	Unknown		00119fca822a	Disconnected			
GENUINE	Unknown		000272c26d2c	Disconnected			
📕 📒 LT-UDI-L	Unknown		0020e07e1df2	Disconnected			
📒 📒 Noam	Unknown		00605733b7bc	Disconnected			
📒 🔡 Nokia 6310i	Unknown		006057c43eaa	Disconnected			
📒 📒 Nokia 6600	Unknown		000e6d5d677d	Disconnected			
🔋 🔋 Nokia 6680	Nokia		001262aafcbd	Disconnected	355661008161028		
📃 🚦 Nokia 6680 s	andra Unknown		0013fdfc21a4	Disconnected			
🔋 🔋 Nokia 6820	Unknown		0002eee0e7d4	Disconnected			
📒 🚦 Risto	Unknown		0020e03b4769	Disconnected			
📒 📒 Ruti 6630	Unknown		0013fdb8353a	Disconnected			
🛛 🚦 RWASSERM	AN-NB Unknown		0020e076c535	Disconnected			
	Unknown		0020a07a0266	Disconnected		~	
Chatter	Chan In 1		Class all back day 1		Discourse		
Start testing	Stop testing		Ciear <u>a</u> ll test devices				
Ready							

During normal operation, Mercury Functional Testing for Wireless updates the Known Devices list if new devices connect using Infrared, USB, or Serial cable. Mercury Functional Testing for Wireless also provides a **Refresh List** option that you can use to update the list at any time.

Go to the Devices tab.

Right-click on the Known Devices list.

Select Refresh List... from the popup menu.

Note: The **Refresh List** option does not initiate a Bluetooth search. The popup menu provides a separate **Discover Bluetooth Devices** option to initiate a Bluetooth search, because Bluetooth searches can take a comparatively long time.

Mercury Functional Testing for Wireless displays all detected devices in the Known Devices list. The known devices are then available for you to control and test, subject to the appropriate preparation.

Dashboard Settings

Mercury Functional Testing for Wireless includes configuration options for device detection and automatic refreshing.

- 1. Go to the **Dashboard** window.
- 2. Select **Settings** from the menu.
- 3. Navigate by Clicking the **General**, **Device display**, **Device Information**, **Diagnostics** and **m-Network**® tabs and selecting the required options.

General settings and preferences for all devices

Mercury Functional Testing for Wireless Configuration	×
Set configuration options for the application.	
Note that existing test devices will not be affected by any configuration changes you make here	:.
 General ☐ Device display G Device Information ☐ Diagnostics I m-Network® Bluetooth discovery ☐ Elush device cache before performing a Bluetooth discovery ☐ Perform a Bluetooth discovery on startup Bluetooth discovery timeout: 120 seconds 	
Note: You need to restart Mercury Functional Testing for Wireless for this change to take effect.	
Show device configuration dialog before starting a test device Device File-system page	
Hide system files and directories	
✓ Overwrite existing files when pasting/moving files	
OK Cancel	

The General tab contains preferences for Mercury Functional Testing for Wireless

Tip: If you wish to accept the devices in the list, deselect **Perform a Bluetooth discovery on startup.** This also results in faster startup.

Device display settings

Mercury Functional Testing for Wireless Configu	rration 🛛 🔀
Set configuration options for the application. Note that existing test devices will not be affected	d by any configuration changes you make here.
🍞 General 📒 Device display 💁 Device Information	🔠 Diagnostics 🏶 m-Network®
Enable device display Display guality: De	evice default
Use direct screen <u>a</u> ccess 4-1	bit greyscale (16 grey shades) bit greyscale (256 grey shades)
Screenshots 8-1	bit colour (256 colours) -bit colour (4096 colours)
Maximum number of screenshots:	-bit colour (165536 colours)
Directory where screenshots are stored:	evice default
C:\Documents and Settings\eranc\Application Data\M	Aercury Interactive\Mercury Funct
Filename Prefix: MFTW	,
Prompt for manual screenshot filename	
Directory where <u>m</u> anual screenshots are stored:	
C:\Documents and Settings\eranc\Application Data\M	Aercury Interactive (Mercury Fund
Show <u>c</u> onfirmation after capturing a manual screen	nshot
Pen Input	
Echo pen input on device display	
ОК	Cancel

The Device display tab contains display-related preferences for all devices controlled by Mercury Functional Testing for Wireless.

Tip: You can give all screenshot filenames a prefix relevant to the test suite or device for easy analysis.

Device Information settings

Here you can set detailed Device state settings that may help your particular device under test.

Optionally, you can configure the **Connection** monitor that will allow the listener, connection bearer, and ultimately the device under test itself to be restarted.

Connection to the device under test can be verified using simple IP ping.

Mercury Functional Testing for Wireless Configuration
Set configuration options for the application.
Note that existing test devices will not be affected by any configuration changes you make here.
🍸 General 📒 Device display 🕵 Device Information 📰 Diagnostics 🐲 m-Network®
Device state
Refresh rate:
Retrieve memory state
Retrieve <u>b</u> attery level
Retrieve active application
Retrieve dis <u>k</u> usage
Allow the m-Router listener to be restarted
Allow the connection bearer to be restarted
Allow the phone to be restarted
Verify the state of the connection when connected (ping the computer)
Maximum number of attempts: 3
OK Cancel

Tip: Select this option and test for it in scripts if you want to run unattended tests over a long period.

Diagnostics settings

Mercury Functional Test	ting for Wireless Configuration	
Set configuration o Note that existing	options for the application. test devices will not be affected by any configuration changes you ma	ake here.
🍞 General 🔒 Device di	isplay 🔼 Device Information 🔠 Diagnostics 🗶 m-Network®	
Maximum number of ever	nts in event log: 256	*
Debug information		
Enable logging to file	e	
Log Directory;	C:\Documents and Settings\eranc\Application Data\Mercur	
Trace Level;	Medium 🛛	
	OK Cancel	

Logging to a file can provide significantly more detail to track down an issue with a device under test. It is not enabled by default.

Maximum number of events in event log

Use this setting to limit the number of events Mercury Functional Testing for Wireless displays in the **Event log** panel. When Mercury Functional Testing for Wireless reaches the limit, the oldest event is deleted to make way for a new event.

Diagnostics Logging

Use the **Enable logging to file** option to create a Mercury Functional Testing for Wireless diagnostics log file.

Note: The diagnostics information is not the same as the events that Mercury Functional Testing for Wireless writes to the **Event log** panel. If you want to write events to file, see the section on Exporting events below.

If you enable diagnostics logging, use the **Log Directory** setting to specify where Mercury Functional Testing for Wireless creates diagnostic logs.

If you enable logging to file, use the **File Logging Level** setting to specify which level of diagnostics to log.

Note: Mercury recommends that you only enable diagnostics logging when you have a problem, so that you can send the logs to Mercury for analysis. It is not recommended to have logging enabled all the time.

m-Network settings

Mercury Functional Testing for Wireless Configuration
الاتين Set configuration options for the application. Note that existing test devices will not be affected by any configuration changes you make here.
🚏 General 🚦 Device display 💁 Device Information 🔢 Diagnostics ≉ m-Network®
Device Addressing
Bluetooth ID (Recommended)
Identity
Use default (recommended)
O Use Login name
O Use alternate Identity:
Identity:
Password:
OK Cancel

Tip: It is best not to change from the recommended settings unless directed by your Mercury Functional Testing for Wireless representative.

Mercury Functional Testing for Wireless uses m-Network to enable many of the Mercury Functional Testing for Wireless features, such as the ability to display the list of applications on the target device, and the ability to use the Keypad and Display tab to send key clicks to a device application.

This tab enables you to select the type of device identifier Mercury Functional Testing for Wireless uses when using m-Network pipe processors to control and interact with a device. It is recommended to use the default setting, which is Bluetooth IDs. However, if you are testing devices that do not have unique Bluetooth IDs, you can use this tab to make Mercury Functional Testing for Wireless use the identifiers that m-Router assigns when it detects devices.

Bluetooth IDs are normally unique, but prototype devices sometimes have dummy IDs that cannot be used to uniquely identify them in a test environment. In this case, Mercury Functional Testing for Wireless can use the identifiers assigned by m-Router instead.

Direct commands to the Mercury Functional Testing for Wireless Dashboard

You can use the Direct Commands tab to send commands to applications and services running on Mercury Functional Testing for Wireless.

	in neteos basinodara			
s Settings Help				
Jevices 🐻 Direct Commands 📾	EventLog			
Executes commands and	captures their output.			
You can execute mrix co Input text can be supplie	mmands (mrcmd), mrouter commands, or any ol d for commands that read from stdin.	ther programs installed on your system.		
Clear output before executing	Prepend directory to the command:	Direct commands directory (C:\Progra	am Files \Ir 🔽 [Browse
Command:		~	Execute	Abort
Additional Input:			\underline{W} rite to the pro	ocess's stdin
	N			
	ኑያ Output of	the command		
Clear		the command		

The Direct Commands tab on the dashboard provides a convenient place from where you can run an external command and have its output returned in the output window for further processing in scripts that would otherwise have no mechanism to interpret the output.

Tip: You can run MS-DOS® commands, batch files, perl scripts and other commands.

📴 Me	rcury Functiona	l Testing for \	Wireless Dashboard			
Device	s Settings Help					
	evices 📴 Direct C	ommands 📓 E	vent Log			
	Executes You can e Input text	commands and c execute mrix com can be supplied l	aptures their output. mands (mrcmd), mrouter commands, or any otł or commands that read from stdin.	ner programs installed on your system	l.	
	Clear <u>o</u> utput befor	e executing	Prepend directory to the command:	Direct commands directory (C:\Pro	ogram Files\Ir ⊻	Browse
	<u>C</u> ommand:	cmd		*	Execute	<u>A</u> bort
	Additional <u>I</u> nput:	help			Write to the pr	rocess's stdin
0	RD Remov RECOVER Recov REM Recov REM Renam RENAME Renam REPLACE Repla RMDIR Remov SET Displ SETLOCAL Begin SHIFT Shift SORT Sorts START Start SUBST ASSOC TIME Displ TITLE Sets TREE Graph TYPE Displ VER Displ VER Displ VER Displ VER Displ VER Displ VER Displ	es a directo ers readable ds comments es a file or ces files. s localizati s the positi input. s a separate iates a patt is the window i tically displ ays the window whe ctly to a di ays a disk v s files and	Pry. information from a bad or def (remarks) in batch twies or CO files. Output of the or removes windows environment ' on of environment changes in a on of replaceable parameters i window to run a specified pro with a drive letter. the system time. title for a CMD.EXE session. ays the directory structure of ients of a text file. lows version. ther to verify that your files sk. olume label and serial number. directory trees.	ective disk. NFIG.SYS. command variables. batch file. n batch files. gram or command. a drive or path. are written		
0	Readv					
\mathbf{O}	neady					

For example, you can use the Windows CMD.exe from within Mercury Functional Testing for Wireless during test procedures, as follows:

- 1. Go to the Direct Commands tab.
- 2. Make sure the Prepend directory to the command option is not selected.
- 3. Type **cmd** into the **Command** field.
- 4. Click **Execute**.

cmd runs and its output appears in the **Output** area of the **Direct Commands** tab. The **Additional Input** field becomes active, enabling you to enter additional input that will be directed to cmd. For example:

- 1. Type help into the Additional Input field.
- 2. Click Write to the pipe processor's stdin.
- 3. The help command is processed by cmd, and the output appears in the **Output** area.

In this way, you can use cmd to run scripts, move test files around, or test for the presence of files, for example.

Prepend directory to a command

Use the **Prepend directory to the command** option to control whether Mercury Functional Testing for Wireless prepends a directory to the commands that you type into the **Command** field.

By default, Mercury Functional Testing for Wireless offers some folders that are created by the Mercury Functional Testing for Wireless installation. You might keep Mercury Functional Testing for

Wireless scripts in one or more of these folders. You can use the **Browse...** button to select further folders.

For example, you can use the prepend option to specify the path to a test script or executable, as follows:

- 1. Go to the Direct Commands tab.
- 2. Make sure the Prepend directory to the command option is selected.
- Use the Browse... button to select the directory that contains the script or executable you
 want to run. Mercury Functional Testing for Wireless provides quick links to its own
 directories, or you can browse to any other directory.
- 4. Type the name of the script or executable into the **Command** field.
- 5. Click Execute.

If the script or executable can take input, the **Additional Input** field becomes enabled so that you can provide the input.

Tip: If the directory you want to select is in PATH, you can simply disable the Prepend directory to the command option, and Mercury Functional Testing for Wireless will use PATH instead.

Additional input to commands

You can use the **Command** field to invoke a command that can run indefinitely and require additional input. For example, you can run a test script that prompts you to specify test parameters. Whenever the active command requires input, Mercury Functional Testing for Wireless activates the **Additional Input** field. Type the necessary input and click **Write to the pipe processor's stdin**.

Copying command output

All output from direct commands is written to the **Output** panel of the **Direct Commands** tab. This can include output from test scripts, for example, so it can be useful to capture some of the output for future reference.

You can select and copy information from the Output panel, as follows:

- 1. Use your mouse to select one or more lines of text in the Output panel.
- 2. Right-click on the **Output** panel and select **Copy selected line(s)** from the popup menu.

You can then paste the selected lines to another application, such as a text editor.

🏷 Mercury Fun	ctiona	Testing for V	Vireless D	ashboard				
Devices Settings	Help							
🔐 Devices 📴	Direct C	ommands 🏭 E	vent Log					
Command E: Yi In	xecutes ou can e iput text	commands and c execute mrix comm can be supplied fi	aptures their nands (mrcmo or commands	output. d), mrouter commands, s that read from stdin.	or any othe	er programs installed on your system	L.	
Clear <u>o</u> utp	ut before	e executing	Prepen	d directory to the comr	nand:	Direct commands directory (C:\Pro	ogram Files\Ir ⊻	Browse
<u>C</u> ommand:		cmd				*	Execute	<u>A</u> bort
Additional Inp	ut:	help					Write to the p	rocess's stdin
REM REN RENAME REPLACE RMDIR SET SET	Recor Renam Repla Repla Displ Begin	ds comments es a file or es a file or ces files. es a directo ays, sets, o s localizati	(remarks) files. files. r remover on of e) in batch files	Ctrl+F	ables.		
SHIFT	Shift	s the positi input.	on of r	Copy selected line(s)	Ctrl+C	itch files.		
SUBST	ASSOC	s a separate iates a path avs or sets	with a the sys	Clear	Ctrl+Del	— I or command.		
TITLE	Sets Graph	the window t ically displ	itle fo ays the	Select all	Ctrl+A	_ Jrive or path.		
TYPE VER VERIFY VOL XCOPY	Displ Displ Tells corre Displ Copie	ays the cont ays the Wind Windows whe ctly to a di ays a disk v s files and	ents of a ows versi ther to v sk. olume lat directory	a text file. ion. verify that your pel and serial r / trees.	files number.	are written		
Clear								
Ready								

Tip: The popup menu contains a Select All option to simplify selecting all output, if required.

Event Log

ercury Functio	nal Testing for W	ireless Dashboard				
es Settings Help)					
Devices 🤠 Direc	et Commands 🛛 👸 Eve	ent Log				
Command						
Line Execut	tes commands and cap an execute mrix comma	ptures their output. ands (mrcmd), mrouter (commands, or any oth	er programs installed on your syste	m.	
V Input t	ext can be supplied for	r commands that read f	rom stdin.			
Clear <u>o</u> utput be	fore executing	Prepend directory	to the command:	Direct commands directory (C:\F	Program Files\Ir ⊻	<u>B</u> rowse
<u>C</u> ommand:	cmd			×	 Execute 	<u>A</u> bort
Additional Input:	help				Write to the p	rocess's stdin
RD Rem RECOVER Rec REM Rec REN Ren RENAME Ren REPLACE Ren	noves a director covers readable cords comments (names a file or names a file or	y. information fro remarks) in bat files. files.	m a bad or defe ch files or COM	ctive disk. FIG.SYS.		
RD Rem RECOVER Rec REM Rec REN Ren RENAME Ren REPLACE Rep MDIR Rem SET Dis SETLOCAL Beg SHIFT Shi	oves a director overs readable ords comments (ames a file or acces files. oves a director plays, sets, or ins localizatio fts the positio	y. information fro remarks) in bat files. files. remover the converse n of the converse	m a bad or defe ch files or CON Ctrl+F chedline(c) Ctrl+C	ctive disk. FIG.SYS. ables. ich file. ich files.		
RD Rem RECOVER REC REM REC REN REN REPLACE REP RHDIR REM SET DIS SETLOCAL BEG SHIFT SHI SORT SOT START STA	noves a director overs readable ords comments (lames a file or laces files. noves a director plays, sets, or plays, sets, or fins localizatio fts the positio ts input. urts a separate	y. information fro remarks) in bat files. files. remover kind n of r copy sele windover	m a bad or defe ch files or CON Ctrl+F cted line(s) Ctrl+C	ables. ch file. ch file. tch files. or command.		
RD Rem RECOVER Rec REM Rec REN Ren RENAME Ren REPLACE Rep RMDIR Rem SET DIS SETLOLE REG SHITT SIG SHITT SIG SURT SC SUBST ASS SUBST ASS TIME DIS	noves a director overs readable ords comments (names a file or laces files. noves a director plays, sets, or ins localizatio fts the positio fts input. ints a separate ociates a path plays or sets t	y. information fro remarks) in bat files. files. remover remov	m a bad or defe ch files or CON <u>Ctrl+F</u> cted line(s) Ctrl+C Ctrl+Del	ables. rch file. tch file. ich file. ich files.		
RD Rem RECOVER Rec REM Rec REN Ren REPLACE Rep RMDIR Rem SET Dis SETLOCAL Beg SHIFT Shi SORT Son START Sta SUBST Ass TIME Dis TITLE Set TREE Gra	noves a director overs readable ords comments (names a file or names a file or names a files. noves a director plays, sets, or nins localizatio fts the positio fts the positio fts input. urts a separate ociates a path plays or sets t is the window ti phically displa	y. information fro remarks) in bat files. files. remov n of c n of c copy sele windov with c he sys tle fc Select all	m a bad or defe ch files or CON Ctrl+F cted line(s) Ctrl+C Ctrl+Del Ctrl+A	ables. ch file. ch file. or command. urive or path.		
RD Rem RECOVER Rec REM Ren REN Ren REPLACE Rep RMDIR Rem SET Dis SETLOCAL Beg SHIFT Shi SORT Son START Sta SUBST ASS TIME Dis TITLE SET TREE Gra TYPE DIS	noves a director overs readable ords comments (names a file or laces files. noves a director plays, sets, or ins localizatio fts the positio fts the positio fts input. rts a separate ociates a path plays or sets t is the window ti phically displa plays the conte plays the windo	y. information fro remarks) in bat files. remove n of e n of e windov with e he sys the tle fo ys the sversion.	m a bad or defe ch files or CON Ctrl+F cted line(s) Ctrl+C Ctrl+Del Ctrl+A ile.	ables. ch file. ch file. tch files. or command.		
RD Rem RECOVER Rec REM Ren RENAME Ren REPLACE Rep RMDIR RET SET DIS SETLOCAL Beg SHIFT ShI SORT SON START Sta SUBST ASS TIME DIS TIME DIS VER DIS VER DIS VER DIS VER DIS CON	noves a director overs readable ords comments (names a file or names a file or names a file or plays, sets, or plays, sets, or nins localizatio fts the positio ts input. rrts a separate ociates a path plays or sets t is the window ti phically displa plays the conte plays the window plays the window plays the window s windows whet rectly to a dis	y. information fro remarks) in bat files. remove n of c window with c he sys the factor of a text f ws version. her to verify t k.	m a bad or defe ch files or CON Ctrl+F cted line(s) Ctrl+C Ctrl+Del Ctrl+A ile. hat your files	ables. Ich file. Ich files. Ich files. Ich files. Ich files. Ich files. Ich files. Ich files. Ich files. Ich files. Ich files.		
RD Rem RECOVER Rec REM Ren RENAME Ren REPLACE Rep RODIR RET SET DIS SETLOCAL Beg SHIFT ShI SORT SON START Sta SUBST ASS TIME DIS TITLE Set TREE Gra VER DIS VER DIS VE	noves a director overs readable ords comments (lames a file or laces files. 10ves a director plays, sets, or fins localizatio fts the positio fts the positio ts input. rrts a separate ociates a path plays or sets t s the window ti phically displa plays the conte plays the windo tis windows whet plays the windo tis windows whet rectly to a dis plays a disk vo ies files and d	y. information fro remarks) in bat files. remove kind n of r window with a he sys tle for ys the nts of a text f we version. her to verify t k. lume label and irectory trees.	m a bad or defe ch files or CON Ctrl+F cted line(s) Ctrl+C Ctrl+Del Ctrl+A ile. hat your files serial number.	ables. FIG.SYS. ch file. tch files. or command. rive or path. are written		
RD Rem RECOVER Rec REM Ren RENAME Ren REPLACE Rep RMDIR Rem SET DIS SETLOCAL Beg SHIFT ShI SORT Son START Sta SUBST ASS TIMLE DIS VER DIS VER DIS VER DIS VER DIS VER DIS VER DIS VER DIS	noves a director overs readable ords comments (names a file or names a file or names a file or plays, sets, or ins localizatio fts the positio fts input. The aseparate ociates a path plays or sets t phically displa plays the windo law indows whet rectly to a dis plays a disk vo ies files and d	y. information fro remarks) in bat files. remover files. No of copy sele window with of the sys the for ys the state for select all ys the her to verify t k. lume label and irectory trees.	m a bad or defe ch files or COM Ctrl+F cted line(s) Ctrl+C Ctrl+Del Ctrl+A ile. hat your files serial number.	ables. ch file. tch files. or command. rive or path. are written		
RD Rem RECOVER Rec REM Rec REN Ren REPLACE Rep RMDIR Rem SET DIS SETLOCAL Beg SHIFT Shi SORT START Sta SUBST ASS TIME DIS TITLE Set TREE Gra TYPE DIS VER DIS VER DIS VER DIS VER IFY Tel COP	noves a director overs readable ords comments (names a file or laces files. Noves a director plays, sets, or ins localizatio fts the positio fts the positio fts input. The aseparate ociates a path plays or sets t s the window ti phically displa plays the conte plays the conte plays the windo 1s windows whet rectly to a dis plays a disk vo ies files and d	y. information fro remarks) in bat files. files. remove n of copy sele window with copy sele window with copy sele Copy sele Copy sele Clear he sys file for select all ys the for select all ys the ther to verify t k. lume label and irectory trees.	m a bad or defe ch files or COM <u>Ctrl+F</u> cted line(s) Ctrl+C Ctrl+Del Ctrl+A ile. hat your files serial number.	ables. ch file. ch file. tch files. or command. rive or path. are written		
RD Rem RECOVER Rec REM Rec REN Ren REPLACE Rep RMDIR Rem SET DIS SETLOCAL Beg SHIFT Shi SORT SO START Sta SUBST ASS TIME DIS SUBST ASS TIME DIS VER DIS VER DIS VER DIS VER DIS VER IFY TEI VER DIS XCOPY COP	noves a director overs readable ords comments (names a file or lames a file or laces files. plays, sets, or ins localizatio fts the positio fts the positio fts the positio fts sinput. unts a separate ociates a path plays or sets t is the window ti phically displa plays the conte plays the windo la windows whet rectly to a dis plays a disk vo nies files and d	y. information fro remarks) in bat files. remover n of end window with end the sys the for select all ys the sversion. her to verify t k. lume label and irectory trees.	m a bad or defe ch files or COM Ctrl+F cted line(s) Ctrl+C Ctrl+Del Ctrl+A ile. hat your files serial number.	ables. FIG.SYS. ch file. tch files. or command. rive or path. are written		
RD Rem RECOVER Rec REM Rec REM Ren REPLACE Rep RMDIR Rem SET DIS SETLOCAL Beg SHIFT ShI SORT SON START Sta SUBST ASS TIME DIS SUBST ASS TIME DIS VER DIS VER DIS VER DIS VER DIS VER DIS VER DIS VER COPY COP	noves a director overs readable ords comments (names a file or lames a file or laces files. <u>Noves a director</u> plays, sets, or ins localizatio fts the positio fts the positio fts the positio fts sinput. Ints a separate ociates a path ociates a path plays or sets t is the window ti phically displa plays the conte plays the windo ls windows whet rectly to a dis plays a disk vo ies files and d	y. information fro remarks) in bat files. files. remove n of c window with he sys the sys the factor he factor	m a bad or defe ch files or CON Ctrl+F cted line(s) Ctrl+C Ctrl+Del Ctrl+A ile. hat your files serial number.	ables. ch file. ch file. tch files. or command. rive or path. are written		

Detailed information and errors generated by the component technologies used by Mercury Functional Testing for Wireless are displayed here where your scripts can address them.

Connecting to a device

To test a device, you first need to connect Mercury Functional Testing for Wireless to it.

For Bluetooth devices, connection is not automatic. A Bluetooth device can appear in the **Known Devices** list as Disconnected, and you can create a connection, as follows:

- 1. Go to the **Devices** tab.
- 2. Right-click on a disconnected Bluetooth device in the Known Devices list.
- 3. Select **Connect** *device* using **Bluetooth** from the popup menu, or click the **Connect** button.

Mercury Functional Testing for Wireless attempts to connect to the selected device. The device might accept the connection automatically, or prompt its user to authorize the connection.

Note: The Connect function works for the recommended Bluetooth implementation, but might not work for other implementations. If a connection fails, use the Bluetooth user interface provided with your Windows computer and your phone to make a connection, and then use the Mercury Functional Testing for Wireless refresh function to refresh the **Known Devices** list.

When connected, Mercury Functional Testing for Wireless updates the Known Devices list to show a device Status of Connected. The next step is **Start testing** a connected device.

Devices using other types of connectivity are listed as Connected as soon as you make the physical cable connection, or the device moves into line-of-sight of the Infrared sensor.

Tip: Mercury Functional Testing for Wireless can detect devices that it may not be able to connect to, and generate error events when you attempt to connect. You need to prepare devices to receive Mercury Functional Testing for Wireless connections.

Tip: If the device you want to connect to is not in the Known Devices list, ensure that it is turned on, is reachable using your chosen connectivity type (for example, that Bluetooth is enabled on the device, or a USB device is plugged in to Mercury Functional Testing for Wireless), and then rightclick on the Known Devices list and select **Refresh List...** or **Discover Bluetooth Devices** from the popup menu.

Start testing

Before you can Start testing a connected device, you must set it as a test device.

- 1. Go to the **Devices** tab.
- 2. Select a connected device in the Known Devices list.
- 3. Click the **Start testing** button.

🖢 Mercury Functional Testing for Wireless Dashboard						
Devices Settings Help						
🔋 Devices 🛛 🖉 Direct Comm	ands 🚳 Event Log					
~m						
This displays the	list of devices currently k	nown to Mercury Function	al Testing for Wireles	s.		
Name 🔺	😥 Manufacturer	🚯 Bluetooth Id	🖳 Status	III IMEI Number	🔼 Is Test Device ? 🔼	
📒 !!ThinkPad	Unknown	000fb39b7c3b	Disconnected			
📕 6680 eran	Nokia	001262aaef8a	Disconnected	355661008127235		
📕 _§EA_Nokia 6630	Nokia	00119fca8214	Disconnected	354349008811112		
adyP910i 📃	Unknown	000ad9c83e04	Disconnected			
d AMORBIRAN-NB	Unknown	0020e03a54fa	Disconnected			
📕 📕 Avnish	Unknown	000e6d0de5a3	Disconnected			
📕 E-ARAD-NB2	Unknown	000e9bd9bf3a	Disconnected			
📃 EA*Nokia 9300	Unknown	001262577815	Disconnected			
emfipetkii_BT	Unknown	0020e0cb2b1d	Disconnected			
Eranc	Nokia 📐	001262aafef5	Connected	355661008166704		
📃 Eyal kalimi	Unknown	00119fca822a	Disconnected			
📕 🗐 GENUINE	Unknown	000272c26d2c	Disconnected			
📃 LT-UDI-L	Unknown Wireley	/s all devices known to Me ss	rcury Functional Tes			
📕 Noam	Unknown	006097330700	Disconnected			
📕 Nokia 6310i	Unknown	006057c43eaa	Disconnected			
📒 Nokia 6600	Unknown	000e6d5d677d	Disconnected			
📃 Nokia 6680	Nokia	001262aafcbd	Disconnected	355661008161028		
📒 Nokia 6680 sandra	Unknown	0013fdfc21a4	Disconnected			
📃 Nokia 6820	Unknown	0002eee0e7d4	Disconnected			
📕 🗐 Risto	Unknown	0020e03b4769	Disconnected			
📕 Ruti 6630	Unknown	0013fdb8353a	Disconnected			
📕 RWASSERMAN-NB	Unknown	0020e076c535	Disconnected			
	Hoknown	0020a07a0266	Disconnected			
Start testing	Stop testing	Clear all test devices	Connect	Disconnect	Beboot Shutdown	
ojur tosting	o top tosting	ologi <u>a</u> li tost dovidos	<u>c</u> onnect			
-						
🔵 Ready						

When complete, Mercury Functional Testing for Wireless sets the status of **Is Test Device**? to **Yes** and launches a **Device** window with a Window caption starting with the Bluetooth name of the device under test.

Rebooting and shutting down a device

Mercury Functional Testing for Wireless can reboot and shut down devices to which it is connected.

For example, you can use these options during testing to return a device to a known state for further testing, or to recover from a serious device application failure.

To reboot or shut down a device:

- 1. Select a connected device from the Known Devices list.
- 2. Click Reboot or Shutdown, as required.

Mercury Functional Testing for Wireless reboots or shuts down the selected device.

You can reboot or shut down a connected device regardless of whether you have set the device as the target device for testing.

Tip: Mercury Functional Testing for Wireless does not automatically reconnect to a rebooted device.

Disconnecting a device

When you have finished testing a particular device, you can disconnect it from Mercury Functional Testing for Wireless.

Tip: For non-Bluetooth connections, it is advisable to disconnect by physically disconnecting the relevant cable or moving the Infrared device out of the line-of-sight.

For Bluetooth connections, use the **Disconnect** button, as follows:

- 1. Go to the Devices tab in the Dashboard.
- 2. Select a connected device in the Known Devices list.
- 3. Click the **Disconnect** button.

Mercury Functional Testing for Wireless disconnects the device, and its status in the Known Devices list changes to Disconnected.

Controlling devices and their applications

Mercury Functional Testing for Wireless provides powerful options for controlling and testing applications through the device-specific window for each device under test.

For each device you can:

- Launch applications.
- Bring applications to the foreground so that you can interact with them.
- Use your mouse to simulate clicking device buttons.
- Use your keyboard to type text into the application.
- Use your mouse to simulate pen input to an application, if the device supports pen input.
- Use direct commands and scripts to run sophisticated, repeatable tests.

Mercury Functional Testing for Wireless also provides a range of options for capturing and processing test results and application output that can be easily acted upon in an automation script.

Device window

Mercury Functional Testing for Wireless Dashboard						
Devices Settings Help						
😫 Devices 📴 Direct Com	nmands 📓 Event Log					
📕 🚃 👘 This displays th	e list of devices currently k	nown to Mercury Function	hal Testing for Wirele	\$\$.		
Name 🔺	📔 Manufacturer	🚯 Bluetooth Id	🙁 Status	III IMEI Number	Is Test Device ?	
📕 !!ThinkPad	Unknown	000fb39b7c3b	Disconnected			
🧧 6680 eran	Nokia	001262aaef8a	Disconnected	355661008127235		
SEA_Nokia 6630	Nokia	00119fca8214	Disconnected	354349008811112		
adyP910i	Unknown	000ad9c83e04	Disconnected			
AMORBIRAN-NB	Unknown	0020e03a54fa	Disconnected			
📕 Avnish	Unknown	000e6d0de5a3	Disconnected			
E-ARAD-NB2	Unknown	000e9bd9bf3a	Disconnected			
EA*Nokia 9300	Unknown	001262577815	Disconnected			
emfipetki_BT	Unknown	0020e0cb2b1d	Disconnected			
Eranc	Nokia 💦	001262aafef5	Connected	355661008166704		
🧾 Eyal kalimi	Unknown	00119fca822a	Disconnected			
GENUINE	Unknown	000272c26d2c	Disconnected	tion of Court		
📕 LT-UDI-L	Unknown Wirele	/s all devices known to Mi ss	ercury Functional Te	sting for		
📒 Noam	Unknown	006037330700	Disconnected			
📕 Nokia 6310i	Unknown	006057c43eaa	Disconnected			
📕 Nokia 6600	Unknown	000e6d5d677d	Disconnected			
📕 📕 Nokia 6680	Nokia	001262aafcbd	Disconnected	355661008161028		
📕 📕 Nokia 6680 sandra	Unknown	0013fdfc21a4	Disconnected			
📃 Nokia 6820	Unknown	0002eee0e7d4	Disconnected			
📕 📕 Risto	Unknown	0020e03b4769	Disconnected			
📃 🗐 Ruti 6630	Unknown	0013fdb8353a	Disconnected			
BWASSERMAN-NB	Unknown	0020e076c535	Disconnected			
	Hokoowo	0020±07±0266	Disconnected			
Charlesting	Chan Institut	Class all test devices	Connect	Discourset	Bahaah Chuddaum	
Start testing	stop testing	ciear air test devices		Disconnect	<u>neuoot</u> <u>srutuowh</u>	
🔵 Ready						

Mercury Functional Testing for Wireless displays a new window for each device under test.

Tip: The Window caption begins with the name of the target device that is easy to identify in a test automation script.

There is no software limit to the number of device windows that can be displayed. Hardware or lineof-sight limits are the only limitation.

The name of the target device is shown in the status bar at the bottom of the Mercury Functional Testing for Wireless screen. The status bar also shows the connection status and some information about the memory resources of the target device. Detailed information is available on the Device Information tab.

You can now control and test applications on the target device.

Launching applications

Mercury Functional Testing for Wireless displays a list of the applications present on the target device. The list is in the **Applications** tab of the **Device** window. It can take Mercury Functional Testing for Wireless several seconds to display the list.

The list shows the name of the application, its caption, its current status (Running or Stopped), and whether it is in the foreground or background.

You can start an application that is currently stopped, or bring an application in the background to the foreground as follows:

1. Go to the **Applications** tab.

- 2. Select the application in the Applications list.
- 3. Click the Activate button.

🕵 Eranc - Mercury Functional	Testing for Wireless			
Device Settings Help				
S Device Information	and Display 🚯 Applications 🐲 m-Network	© Commands 📴 Device	e Text Content 😪 Device I	-ile-system
This page displays the lis	t of all the applications installed on the test Devi	ce and indicates which on	es are currently running	
Name 🔺	Application Caption	I Status	Eoreground / Backgr	bund A
	PrinceO(Persia-Warrior/Within	Stopped	Background	
About	About product	Stopped	Background	
AdileMessender	AgileMessenger	Stopped	Background	
Appinst	Installer	Stopped	Background	
	App. manager	Stopped	Background	≡
Autolock	Autolock	Running	Background	
S Browser	Web	Stopped	Background	
\delta BtUi	Bluetooth	Stopped	Background	
🔕 bva	<no caption=""></no>	Stopped	Background	
Salcsoft	Calculator	Stopped	Background	
\delta Calendar	Calendar N	Stopped	Background	
Samcorder	Camera 😽	Ctoppod	Pookaround	
🔷 CbsUiApp	Cell broadcast	applications installed on tr		
S CERTSAVER	Save certificate	Stopped	Background	
🔇 Chat	IM	Stopped	Background	
S ClockApp	Clock	Stopped	Background	
S CodViewer	Download	Stopped	Background	
SonnectionMonitorUi	Conn. manager	Stopped	Background	
Sonverter	Converter	Stopped	Background	
🔷 cshelp	Help	Stopped	Background	
🔷 DataMoverCli	Data transfer	Stopped	Background	
S DdViewer	Download	Stopped	Background	
DRMRightsManager	Activ, keys	Stopped	Background	
ileManager 🌕	File manager	Stopped	Background	
S GS	Settings	Running	Background	
S ImagePrintApp	Image print	Stopped	Background	
ImageViewer	<no caption=""></no>	Stopped	Background	<u>×</u>
Selected application - Curre	ent foreground application			ist control
	Name	Caption	n	
Activate	ScreenSaver	ScreenSa	aver	Refresh
O Poodu	Erana (Makia Makia 6600)	anastad Tatal Marray	- 20.00 M/P	more 4.10 MiP
neauy		nected rotal Memory	20.00 MID Free Me	mory: 4.10 MID

Tip: The list refreshes periodically. In scripts, click the **Refresh** button before relying on the contents of the application list.

Mercury Functional Testing for Wireless sends a command to the device to launch the application. If successful, the application's status is updated to Running.

The list also shows whether the application is running in the foreground or background. If it is running in the foreground, you can go to the Keypad and Display tab and see the application on Mercury Functional Testing for Wireless's representation of the device display.

If an application is running in the background, you can bring it to the foreground so that you can test it interactively with your mouse and keypad, and capture screen information and textual content. Alternatively, you can use commands and scripts to test it while it is running in the background.

Tip: In many cases, you can also launch an application by using the Mercury Functional Testing for Wireless display representation on the Keypad and Display tab, enabling you to simulate the way a user would launch an application, where appropriate.

Bringing an application to the foreground

Device applications can run in the foreground or background. An application in the foreground is one that displays its output on the device display, enabling a user to interact with it.

During testing, you might want to bring an application to the foreground so that you can interact with it using your mouse and keyboard, and capture screen displays and textual content for analysis.

Bring a running application to the foreground:

- 1. Go to the **Applications** tab.
- 2. Select the application from the Applications list.
- 3. Click the **Activate** button. Even if the application is stopped, it will start running and then come to the foreground.

Mercury Functional Testing for Wireless sends a command to the device to bring the application to the foreground.

The application that was previously running in the foreground moves to the background.

🔉 Eranc - Mercury Functional 1	esting for Wireless			
Device Settings Help				
🔼 Device Information 📙 Keypad ar	nd Display 🚯 Applications 🐲 m-Network® C	ommands 📴 Devic	e Text Content 🛼 Device File-sustem	1
This page displays the list of	of all the applications installed on the test Device (and indicates which or	nes are currently running	
Name A	Application Caption	🛛 🛄 Status	Poreground / Background	
[10196d91]	PrinceOfPersia-WarriorWithin	Stopped	Background	
About	About product	Stopped	Background	
AgileMessenger	AgileMessenger	Stopped	Background	
Appinst	Installer	Stopped	Background	_
AppMngr	App. manager	Stopped	Background	=
Autolock	Autolock	Running	Background	
Srowser	Web	Stopped	Background	
S B(U)	Bluetooth	Stopped	Background	
S bva	<no caption=""></no>	Stopped	Background	
S Calcsoft	Calculator	Stopped	Background	
	Calendar	Stopped	Background	
	Displays all apr	plications installed on I	this test device.	
S CbsUiApp	Cell broadcast	Jiopped	Dackground	
CERTSAVER	Save certificate	Stopped	Background	
S Chat	IM	Stopped	Background	
S ClockApp	Clock	Stopped	Background	
	Download	Stopped	Background	
	Conn. manager	Stopped	Background	
S Converter	Converter	Stopped	Background	
	Help	Stopped	Background	
S DataMoverCli	Data transfer	Stopped	Background	
S DdViewer	Download	Stopped	Background	
DRMRightsManager	Activ. keys	Stopped	Background	
S FileManager	File manager	Stopped	Background	
S GS	Settings	Running	Background	
ImagePrintApp	Image print	Stopped	Background	
S ImageViewer	<no caption=""></no>	Stopped	Background	<u> </u>
			J	
Selected application - Current	foreground application		List control	
	Name	Captio	n	
Activate	ScreenSaver	ScreenS	aver	h
🔵 Ready	Eranc (Nokia Nokia 6680) Conne	cted Total Memo	ry: 20.00 MiB Free Memory: 4.10	MiB

Tip: In many cases, you can also bring an application to the foreground by using the Mercury Functional Testing for Wireless display representation on the Keypad and Display tab, enabling you to simulate the way a user would bring an application to the foreground, where appropriate.

Using the mouse and keyboard to test applications

One of Mercury Functional Testing for Wireless's powerful test options is the ability to simulate user interaction with an application. Mercury Functional Testing for Wireless provides a graphic representation of the target device on the Keypad and Display tab, and you can use your mouse and keyboard to activate device buttons and input text.

For example, you can make a phone call, add a contact to the contacts application, book a meeting in the calendar application, or use an application that you are developing.

You can:

- See a representation of the device display.
- Use your mouse to activate device keys.
- Use your mouse as a pen to write on the device display, if appropriate.
- Use your keyboard to send text input.

If you are testing a new application, these options enable you to simulate normal usage. Using Mercury Functional Testing for Wireless with Mercury QuickTest Professional, you can record and automate such tests.

Using the device display

When you are connected to a target device, the Keypad and Display tab provides a graphic representation of the target device's display screen.

For example, the following shows the representation of a Nokia 6630, with its unique keypad.

Note: There was no need to make a 'skin' to represent the device since the primary requirement here is for ease of automated testing, not emulation.

ranc - Mercury Functional Testing for Wireless
e Settings Help
Device Information Keypad and Display Applications & m-Network® Commands Provide Text Content
Phone Keypad Phone Keypad Ph
Language Send Text English I Iext: Input mode: Alpha-numeric Send Cagture now
Beadu Erano (Nokia Nokia 6680) Connected Total Memory 20.00 MiR Free Memory 4.09 MiR

As the device's screen content changes, Mercury Functional Testing for Wireless updates its representation accordingly. The update rate varies according to the speed of the network connection between the device and Mercury Functional Testing for Wireless.

During testing, you can use the device display to see whether an application behaves as expected. You can also take manual and automatic screenshots for comparison purposes.

For devices that support pen input, you can use your mouse to simulate pen input directly onto the Mercury Functional Testing for Wireless representation of the device display.

Using the mouse to activate device keys

You can use your mouse to activate the keys on the target device. Simply click on a key on the **Keypad and Display** tab to activate the corresponding key on the device. For example, click a sequence of keys to dial a phone number.

A feature common to all devices is the significance of key-click duration, or the rapidity of repeated clicks. For example, when entering a name:

• Pressing 2 three times in quick succession enters "c".

- Pressing 2 three times with a one-second pause after each press enters "aaa".
- Holding 2 for one second enters "2".

Mercury Functional Testing for Wireless supports a comprehensive set of key-click options. For interactive use, you can use your mouse clicks exactly as you would use the device keys themselves, clicking rapidly or slowly, or holding a key for a period of time.

To facilitate recording of tests, Mercury Functional Testing for Wireless also provides key-click options on a popup menu that you can access by right-clicking on a key.

🚯 Eranc - Mercury Functional Testing for Wireless	
Device Settings Help	
🔼 Device Information 📒 Keypad and Display 🚯 Applications 🗱 m-Network® Commands 🖺 Device Text Content 🕵 Device File-system	
Voice Tag Device Display Imaging Contacts Calendar Imaging Clock Web	
Phone Keypad Cick, then wait 1 second Hold for 1 second, then release Hold Release Repeat Click pris 7 tor 8 wxyz9 + * 100 #	
Language Send Text English Iext: Input mode: Alpha-numeric Send Cagture now	
Ready Eranc (Nokia Nokia 6680) Connected Total Memory: 20.00 MiB Free Memory: 4.08 MiE	

The options are:

- Click, then wait 1 second
- Hold for 1 second, then release
- Hold (hold indefinitely)
- Release (release a key that is being held indefinitely)
- Repeat click
- Repeat click, then wait 1 second

The two Repeat options display a Repeat clicks dialog box that you use to specify how many clicks you want to make.

Tip: Mercury Functional Testing for Wireless also provides a text field that you can use to input text more easily, if exercising the device keys is not the main purpose of your test.

Pen input

If the device and application that you are testing support pen input, you can simulate pen strokes by clicking and dragging the mouse button on Mercury Functional Testing for Wireless's representation of the display.

You can control whether each individual device under test updates its representation of the display to show your pen strokes, as follows:

- 1. Select the device's **Settings** > **Configuration** menu option.
- 2. Go to the Device Display tab.
- 3. Use the Echo pen input on device display option, as required.

Mercury Functional Testing for Wireless Device Configuration - Eranc (001262a [
Set configuration options for test device:							
Eranc (001262aafef5)							
These settings will only apply for the current test session.							
📒 Device display 🕵 Device Information							
Enable device display Display quality: 16-bit colour (65536 colours)							
Use direct screen access							
Screenshots							
Maximum number of screenshots: 200							
Directory where screenshots are stored:							
C:\Documents and Settings\eranc\Application Data\Mercury Interactive\Mercury Funct							
Filename Prefix: METW							
Prompt for manual screenshot filename							
Directory where manual screenshots are stored:							
C:\Documents and Settings\eranc\Application Data\Mercury Interactive\Mercury Funct							
Show confirmation after centuring a manual screenshot							
Echo pen input on device display							
OK Cancel							

Sending text input

Mercury Functional Testing for Wireless provides a **Send Text** box as an alternative to clicking on the keypad. You can use this, for example, to type a name, phone number, or Web site address into an application.

To send text to the target device:

- 1. Go to the Send Text panel at the bottom of the Keypad and Display tab.
- 2. Enter the text or numbers in the **Text** box.
- 3. Select the Input mode that the application on the device is expecting.

🚯 Eranc - Mercury Functio	onal Testing for Wireless			
<u>D</u> evice <u>S</u> ettings <u>H</u> elp				
Device Settings Help	vpad and Display 💽 Application	s * m-Network® Commands Device Display Notes Notes Notes Notes	Pr Device Text Content	Device File-system
		Phone Keypad Phone Keypad Ph	Lock Keypad	
Language English	nd Text Text: hello world	Input mode: Alpha-numer	ric 🖌 Se <u>n</u> d	Device Display Capture now
Ready	Eranc (Nokia Nokia 6680)	Connected	Total Memory: 20.00 MiB	Free Memory: 3.80 MiB

The exact list of modes available depends on the application you are testing.

Click Send.

Mercury Functional Testing for Wireless transmits the text to the device exactly as if you had clicked on the various keys to create the text. This enables you to enter text efficiently for tests in which testing the keypad is not the main objective.

Using commands and scripts

One of Mercury Functional Testing for Wireless's powerful features is the ability to use m-Network commands. Commands can be easily executed on a connected device.

The Direct Commands tab provides the following direct command options:

- Clear output manually or automatically
- Prepend a directory to a command
- · Write additional input to the standard input of the currently executing process
- Select and copy output

m-Network commands to a connected device

Mercury Functional Testing for Wireless supports a set of m-Network commands that you can send to a connected device for execution. The commands are executed by m-Network pipe processors that you install on the device when preparing to use Mercury Functional Testing for Wireless.

These enable you to interact directly with the software running on the device.

For example:

- 1. Select an active Device window.
- 2. Go to the m-Network Commands tab.
- 3. Type mrcmd "mrMr -I" into the m-Network Command field.
- 4. Click Execute.
- 5. Mercury Functional Testing for Wireless executes the command on the device, and displays the command output in the Output panel of the Direct Commands tab.

🔉 Eranc -	Mercury Functional	Testing for Wireless				
<u>D</u> evice <u>S</u> et	ttings <u>H</u> elp					
🔒 Device	e Information 📔 Keypad	and Display 🚯 Application	ns 🏽 🏶 m-Netu	work® Command	s 📴 Device Text Conte	ent 🕵 Device File-system
Comma	nd					
	Enter an m-Network® cor	mmand and then click on [Ex	ecute]. For inst	ance,		
1	displays the list of all the p	processes running on the curr	rent test phone	. For more inform	ation, please read the doo	cumentation.
	ear output before executing	-				
m-Nel	twork® Command:	mr -l			~	Evecute Abort
A .1.10						
Additi	onal Input:					Write to the process's stdin
mrT	cp.dl1 r.dl1	25412 3.1.0 (091 16300 3.1.0 (091)(026) C:/)(023) C:/	system/libs system/libs	/mrix/ 0x10201010 /mrix/ 0x10201006	
Tot	al size in bytes:19	22/16 3.1.0 (091 55212	.)(U33) C:/	system/11bs	/mr1x/ 0x10200TTT	
***	**************************************	**************************************	mponents**		****************	
lua	s.exe	6284 6285	C:/	system/prog	rams/	
mri	x_gprs.rua x_logging.lua	18667	3/	system/libs	/mrix/	
mrip	x_option.lua x_phone.lua	7045 3966		system/libs system/libs	/mrix/	
mri	x_select.lua x_versit.lua	4704 5938	C:/ C:/	system/libs system/libs	/mri×/ /mri×/	
Tot	al size in bytes:59	3973 9462	C:/	system/11bs	/mrix/	
***	******************	****mrix NON-CORE pi	ipe process	ors******	***********	
mrC	onnection.dll	16276 3.1.0 (091)(012)	system/libs	/mrix/ 0x10201034	
mrb	s.dll	2836 3.1.0 (091 8804 3.1.0 (091)(002) C:/)(015) C:/	system/libs system/libs	/mrix/ 0x07112222 /mrix/ 0x1020100c	
mr II mr K	mage.dll eyboard.dll	14196 3.1.0 (091 17192 3.1.0 (091)(024) C:/)(020) C:/	system/libs system/libs	/mrix/ 0x10201001 /mrix/ 0x10201003	
mnL	aunch.dll hutdown.dll	9380 3.1.0 (091 6192 3.1.0 (091)(022) ⊂:/)(018) ⊂:/	system∕libs system∕libs	/mrix/ 0x10201004 /mrix/ 0x1020100d	≡
mnPi mnAi	rofile.dll genda.dll	4792 3.1.0 (091 46720 3.1.0 (091)(015) C:/)(033) C:/	system/libs system/libs	/mrix/ 0x1020100a /mrix/ 0x10200ff6	
mrs	torage.dll etConfig.dll	32396 3.1.0 (091 52824 3.1.0 (091)(023) ⊂:/)(032) ⊂:/	system/libs svstem/libs	/mrix/ 0x1020100e /mrix/ 0x10201007	
mnSj	ysinfo.dll luetooth.dll	9348 3.1.0 (091 64152 3.1.0 (091)(021) C:/	system/libs	/mrix/ 0x1020100f /mrix/ 0x10200ff8	
mrC	ontacts.dll essage.dll	54660 3.1.0 (091 45600 3.1.0 (091)(057) C:/	system/libs	/mrix/ 0x10200ffb	
mrP	rompt.dll	26472 3.1.0 (091 41444 3.1.0 (091)(033) C:/	system/libs	/mrix/ 0x1020100b	~
			,,,	- , ,	,	
	Clear					
Read	ly	Eranc (Nokia Nokia 6680)		Connected	Total Memory: 20.00 MiE	B Free Memory: 2.77 MiB

Tip: Use m-Network to populate items like contacts from a file through stdin before running an automated test.

In this example, the output is a list of m-Network pipe processors.

If a particular command can take additional input, the **Additional Input** field activates, and the command waits for you to provide the necessary input.

To use m-Network effectively, refer to its command reference documentation, which is part of the on-line help.

Clearing m-Network command output

Mercury Functional Testing for Wireless provides the following ways to clear the output of commands:

- Use the Clear output before executing option to make Mercury Functional Testing for Wireless clear output before each new command.
- Use the Clear button beneath the Output panel to clear the panel at any time.

• Right-click on the Output panel and select **Clear** from the popup menu.

Note: If you execute a command that can take additional input, then output arising from each fresh input is appended to the output display. Mercury Functional Testing for Wireless clears the output only when you issue a new command. For example, if you use the **Command** field to run cmd.exe, all output for the lifetime of cmd is appended to the output display. Mercury Functional Testing for Wireless clears the display when you terminate cmd and execute another command.

Note: All output is cleared, not just the selected line(s).

Capturing test information and results

Mercury Functional Testing for Wireless supports several ways to capture test information and results.

Mercury Functional Testing for Wireless supports:

- Capturing screenshots
- Using application text recognition
- Using Mercury Functional Testing for Wireless event logs

These options enable you to capture information manually or automatically so that you can process it offline. For example, you can compare screenshots to see whether a particular test has a consistent effect on a device's display, or analyze text to see whether an application is producing consistent output.

Capturing screenshots

Mercury Functional Testing for Wireless supports manual and automatic screenshot capture.

Manual capture enables you to capture a screenshot during a manual test, for example, if a test produces an unexpected change to the display.

Automatic capture enables Mercury Functional Testing for Wireless to take a screenshot whenever the display changes. When the display is constantly changing, for example, if the device is being used in camera mode, Mercury Functional Testing for Wireless takes periodic screenshots.

Mercury Functional Testing for Wireless uses the Portable Network Graphics format (.png) for screenshots, and files are typically just a few kilobytes in size.

Manual screenshots

The Keypad and Display tab contains a Capture Now... button.

🚯 Eranc - Mercury Functional Testing for Wireless
Device Settings Help
🔼 Device Information 🗧 Keypad and Display 🍺 Applications 🕸 m-Network® Commands 📴 Device Text Content 🕵 Device File-system
Voice Tag
Phone Keypad Phone Keypad Ph
Language Send Text English Iext: hello world Input mode: Alpha-numeric Send Cagture now
Ready Eranc (Nokia Nokia 6680) Connected Total Memory: 20.00 MiB Free Memory: 3.60 MiB

For example, clicking the Menu key brings up the phone menu on the device.

Device screen capture

To save a screen capture, press Capture now... and click Save

You can use the button at any time to capture the current appearance of the target device display.

Save Device sc	reenshot to file				? 🔀
Save in:	🚞 Manual	v	6	D 📂 🛄 •	
My Recent Documents					
My Documents				\mathbf{k}	
My Computer					
	File name:	MFTW20051107153724		*	Save
My Network	Save as type:	Portable Network Graphics files (*.pn	ig)	*	Cancel

Tip: Use the Configuration settings in the dashboard to set the prefix.

By default, Mercury Functional Testing for Wireless:

- Displays a success message when it saves a screenshot to file
- Saves files under C:\Documents and Settings for the user account, for example:

You can use the device display configuration options to change these behaviors, if required. For example, you can define your own filename prefix and disable the success messages.

Automatic screenshots

You can use the device display configuration options to enable automatic screen capturing. This feature makes it easy to capture display information during automated tests.

Mercury Functional Testing for Wireless Device Configuration - France (001262a	$\mathbf{\Sigma}$							
Set configuration options for test device:								
Eranc (001262aafef5)								
These settings will only apply for the current test session.								
🔒 Device display 💁 Device Information								
Enable device display Display quality: 16-bit colour (65536 colours)								
Maximum number of screenshots; 200								
Directory where screenshots are stored:								
C:\Documents and Settings\erand\Application Data\Mercury Interactive\Mercury Eurol								
Filename Prefix: MFTW T								
Prompt for manual screenshot filename	ot filen							
Directory where manual screenshots are stored: [Functional Testing for Wireless]	the de							
C:\Documents and Settings\eranc\Application Data\Mercury Interactive\Mercury Funct								
Show confirmation after capturing a manual screenshot								
Pen Input								
Echo pen input on device display								
	_							
OK Cancel								

When enabled, Mercury Functional Testing for Wireless takes screenshots every time the target device display changes. When the display is constantly changing, for example, if the device is in camera mode, Mercury Functional Testing for Wireless takes screenshots periodically.

The options also enable you to define a file name prefix for screenshot files, choose the screenshots folder, and specify a limit to the number of screenshots Mercury Functional Testing for Wireless will create.

Note: If Mercury Functional Testing for Wireless reaches the file limit for automatic screenshots, it deletes the oldest file to make way for a new screenshot.

Using application text recognition

Mercury Functional Testing for Wireless provides powerful text recognition facilities that enable you to capture the textual output of an application during testing.

Using Mercury QuickTest Professional, you can create test scripts that react dynamically to application text.

Mercury Functional Testing for Wireless provides two views of captured text on the Target Device Text Content tab:

- The Standard view provides a simple representation of text on the target device display. This view does not attempt to display any information about the precise position of the various text items, or the fonts being used to display them on the target device.
- The Detailed view provides a list of the text elements on the target device, and provides tabulated information about fonts and positioning. The detailed view enables you to export the information to file.

When you use the text recognition mechanism, you need to select a text recognition profile appropriate to the target device. Mercury Functional Testing for Wireless provides a set of profiles for supported devices, and you can edit them or create your own.

The text recognition mechanism provides several options that enable you to focus on a particular section of the target device display.

Note: The text recognition mechanism does not only recognize individual characters; its analysis enables it to recognize words. For example, Mercury Functional Testing for Wireless can recognize the word "Menu" rather than the individual letters "M", "e", "n", and "u".

Using Standard text display

On the Target Device Text Content tab, the Standard view provides a simple presentation of the text on the target device display, for example:

	Kouped and Display 🕒 Applications	🕐 m Notwork® Commande		Deurice File austern
	Keypad and Display Y Applications	♣ m-ivetwork ♥ Commands		Contraction Device File-system
This page pe	forms text-recognition for this test device.			
Standard view	🗾 Detailed view 🧧 Source Bitmap 🏋	💊 DrawText() calls log		
Notos				
hello				<u>~</u>
world				
N				
		h		
Displays a	I the words recognised on the screen of t	the phone		
Displays a	I the words recognised on the screen of t	he phone		
Displays a	II the words recognised on the screen of t	he phone		×
Displays a	II the words recognised on the screen of t	he phone		~
Displays a	II the words recognised on the screen of t	he phone		V
Displays a	II the words recognised on the screen of t	the phone		M
Displays a	II the words recognised on the screen of t	the phone	Source screen	<u></u>
Displays a	II the words recognised on the screen of t Series_60_v2.6_(Nokia_6630)Comr New Save Sa	nonLatin	Source screen	
Displays a	II the words recognised on the screen of t Series_60_v2.6_(Nokia_6630)Comr New Save Sa	nonLatin	Source screen Freeze Use Region: Top left: X:	
Displays a Displays a XML output ecogniser Current grofile:	II the words recognised on the screen of t Series_60_v2.6_(Nokia_6630)Comr New Save Sa U St	the phone nonLatin <u>vv</u> e as Delete yle Q Scaling fac A	Source screen Freeze Use Region: Top left: X: Bottom right: X:	
	I the words recognised on the screen of t Series_60_v2.6_(Nokia_6630)Comr New Save Sa U St Normal	the phone nonLatin ♥ 1⊻e as Delete yle ♥ Scaling fac ▲	Source screen Freeze Use Region: Top left: X: Bottom right: X:	0 ,Y: 0) 0 ,Y: 0)
	I the words recognised on the screen of t Series_60_v2.6_(Nokia_6630)Comr New Save Sa U St Normal Normal Normal	the phone nonLatin ♥ ave as Delete yle ♥ Scaling fac ▲	Source screen Freeze Use Region: Top left: X: Bottom right: X: Invert Inore horizontal line	0 , Y: 0) 0 , Y: 0) 1 gnore top line
	I the words recognised on the screen of t Series_60_v2.6_(Nokia_6630)Comr New Save Sa U St Normal Normal Normal Normal Normal	the phone nonLatin ave as Delete yle Q Scaling fac	Source screen Freeze Use Region: Top left: X: Bottom right: X: Ignore horizontal line Information	0 , Y: 0) 0 , Y: 0) 1 gnore top line s to band:
	I the words recognised on the screen of t Series_60_v2.6_(Nokia_6630)Comr New Save Sa U St Normal Normal Normal Normal	the phone	Source screen Freeze Use Region: Top left: X: Bottom right X: Invert Ignore horizontal line Information Low: 00	 Y:) y:) Ignore top line s h band: High: 127 ♀
	I the words recognised on the screen of t Series_60_v2.6_(Nokia_6630)Comr New Save Sa U St Normal Normal Normal	the phone	Source screen Freeze Use Region: Top left: X: Bottom right X: Invert Ignore horizontal line Information Low: 0 \$	0, Y: 0) 0, Y: 0) 1 Ignore top line ts h band: High: 127 🗣

The view does not update dynamically. You need to invoke text recognition as follows:

- 1. Go to the Target Device Text Content tab.
- 2. Select a text recognition profile appropriate to the target device.
- 3. Set any text recognition options you require.
- 4. Click Recognise to invoke text recognition.

Text recognition takes a few seconds, depending on the complexity of the selected profile and options. Mercury Functional Testing for Wireless provides a progress indicator, and you can abort the process if you choose.

On completion, Mercury Functional Testing for Wireless updates the Standard view to show the text that it has recognized.

The appearance of the text in the Standard view depends on whether the **XML output** option was selected when you invoked text recognition.

If XML output **was not** selected, the text is laid out in a simple representation of the way it appears on the target device display. For example, if two words appear on the same line in the target device display, then they appear on the same line in the Standard view.

If XML output **was** selected, the text is displayed in XML format. The XML includes font information and the position of the text on the target display. For example:

S Eranc - Mercury Functional Testing for Wireless	
Device Settings Help	
🚱 Device Information 🚦 Keypad and Display 🍺 Applications 🕸 m-Network® Commands 🖺 Device Text Content 🐁 Device File-system	
This page performs text-recognition for this test device.	
🗯 Word 📩 Coordinates 🖪 Font name	
Notes 56 6 95 27 CorpCompatible19 hello 7 63 42 78 CorpCompatible13 world 47 63 86 78 CorpCompatible13	
Displays all the words recognised on the screen of the phone with their relative position and the font they use	
Exp <u>o</u> rt	
	_
Current profile: Series_60_v2.6_(Nokia_6630)CommonLatin Source screen New Save Save as Delete New Save Save as Delete	
I Font name U Style Q Scaling fac ▲	
Aco13 Normal Bottom right: (X: U Y: U)	
Acc21 Normal Information Information Information Information	
Acpo Normal Information band:	
Low: 0 C High: 127 C	
<u>Recognise</u> <u>Abort</u> 0%]
Eranc (Nokia Nokia 6680) Connected Total Memory: 20.00 MiB Free Memory: 3.33 I	MiB

You can use Windows Copy/Paste to move the contents of the Standard view to a file, if required.

If you go to the Detailed view tab, the same text is shown with tabulated information about fonts and position.

S. Eranc - Mercury Functional Testing for Wireless	
Device Settings Help	
🚱 Device Information 🔋 Keypad and Display 🍺 Applications 🕱 m-Network® Commands 🖺 Device Text Content 🐾 Device File-system	
This page performs text-recognition for this test device.	
🗱 Standard view 🔄 Detailed view 🔄 Source Bitmap 🛛 🏊 DrawText() calls log	-
Word ☆ Coordinates A Font name	
Hollo 7 63 42 78 CorpCompatible13 world 47 63 86 78 CorpCompatible13	
Displays all the words recognised on the screen of the phone with their relative position and the font they use	
Export	
Hecogniser Current profile: Series_60_v2.6_(Nokia_6630)CommonLatin New Save Save Save as Delete Use Region:	
Image: Style Image: Style	
Aco13 Normal Invert Information	
Acp5 Normal Ignore horizontal lines	
agnsym11 Normal View Information band:	
Low: 0 C High: 127 C	
<u>Recognise</u> <u>Abort</u>	
Ready Eranc (Nokia Nokia 6680) Connected Total Memory: 20.00 MiB Free Memory: 3.33	MiB

Tip: You can export this data for further processing in .csv file format. Click Export.

If you go to the Source Bitmap tab, it is possible to see the screen being used for recognition. The screen can be frozen for pinpoint accuracy, and the region can be selected using the mouse or by typing coordinates into the Use Region fields in the Source screen region.

Eranc - Mercury Fur	ctional Testing for Wireless			
ice Settings Help				
Device Information 🛛 🔒	Keypad and Display 🚯 Applications 🐲 m-Netv	vork® Command:	s 📴 Device Text Content	🞭 Device File-system
This page perfo	orms text-recognition for this test device.			
🗱 Standard view 🗉] Detailed view 📔 Source Bitmap 🐴 DrawText) calls log		
🚟 Word 📩	Coordinates A Font name			
in Notes in hello in world	Solution Solution 56 6 95 27 CorpCompatible19 7 63 47 8 CorpCompatible13 47 63 86 78 CorpCompatible13 47 63 64			
	Displays all the words recognised on the screen of with their relative position and the font they use	the phone		
				Export
Current profile:	Series_60_v2.6_(Nokia_6630)CommonLatin New Save Save Save	▶ Delete	Source screen	
🖪 Font name	🛛 🖳 🔍	Scaling fac 📥	Topierc (X:	
Aco13	Normal	=	Bottom right: (X:	
Aco21	Normal			Ignore top line
Acp5	Normal		Ignore <u>norizontal lines</u>	bandt
agnsym11	Normal	~	Low: 0	High: 127 🌲
		2		
<u>R</u> ecognise	Abort			0%
Ready	Eranc (Nokia Nokia 6680)	Connected	Total Memory: 20.00 MiB	Free Memory: 3.33 MiB

Tip: Narrowing down the region improves performance.

Using Detailed text display

The Detailed view provides tabulated information about the text recognized on the target device display. For each recognized text item or word, the view shows the text itself, the coordinates of the text on the display, and the font used on the display.

Exporting Detailed text analysis

On the **Target Device Text Content**, **Detailed view** tab, use the **Export...** button to export text information to a **.csv** (comma separated values) file.

Understanding text recognition

Mercury Functional Testing for Wireless uses text recognition profiles to determine which text fonts it needs to search for in a target device display.

Mercury Functional Testing for Wireless provides a set of profiles for the supported Smartphone devices, and you can edit them and create your own.

For example, Mercury Functional Testing for Wireless provides the following profiles for Series 60 version 2.6 devices:

- Series 60 V.26 Nokia 6630 Common
- Series 60 V.26 Nokia 6630 Common Latin

These profiles provide different levels of text recognition to suit different test scenarios.

If you compare the Common profile with the Latin profile, you will see that the Latin profile contains fewer font definitions. The Common profile enables Mercury Functional Testing for Wireless to recognize more words, but the Latin profile enables Mercury Functional Testing for Wireless to focus on the fonts that are typically used for a particular purpose, and ignore all other fonts. Thus, with some knowledge of an application, you can create and select profiles to optimize performance for different test cases.

Managing text recognition profiles

Mercury Functional Testing for Wireless provides a set of text recognition profiles, but you can edit them and create your own to suit your test scenarios and the font usage of particular applications. If you have particular requirements, contact your Mercury Functional Testing for Wireless representative to discuss how to extend the range of font definitions supported by Mercury Functional Testing for Wireless.

Each profile specifies one or more font definitions that Mercury Functional Testing for Wireless can recognize, for example:

• Alb19,0,1,0,256

You can create a new profile, as follows:

- 1. Go to the **Device Text Content** tab.
- 2. Click the New... button in the Profile area.

Mercury Functional Testing for Wireless creates a new profile file, and allows you to name it and select its target fonts and sizes.

Mercury Functional Testing for Wireless automatically adds the new file to the list of profiles you can select. Mercury Functional Testing for Wireless will also automatically add any other .ifp file you put into the same folder.

Tip: Mercury Functional Testing for Wireless provides a Common profile for each of the device types it supported. Each of the Common profiles contains a complete list of fonts that Mercury Functional Testing for Wireless can recognize for the relevant device type. The Common profiles are therefore a useful reference when creating and editing profiles.

Tip: If you use **Save As...** to create a new file, ensure that the text editor creates a file with the .ifp extension rather than .txt.

You can delete a profile, as follows:

Go to the Device Text Content tab.

Select the profile you want to delete in the Current profile... list.

Click the **Delete...** button.

Mercury Functional Testing for Wireless prompts for confirmation that you want to delete the file. Click **Yes**.

Mercury Functional Testing for Wireless - Confirm operation				
2	The profile Series_60_v2.6_(Nokia_6630)CommonLatin will be permanently deleted. Are you sure ?			
	Yes No			

Mercury Functional Testing for Wireless displays a message to confirm that it has deleted the file. Click **OK**.

Understanding font definitions

The format of a font definition is as follows:

fontname,emphasis,scaling,firstchar,lastchar

where:

fontname is the name of a font, for example, Alb19. The font name indicates font size (in this case, 19).

emphasis can be:

0 (none or normal)

- 1 (bold)
- 2 (underlined)

scaling specifies a scaling factor for the font, usually 1.

firstchar and *lastchar* specify the range of characters to be recognized. For example 0,127 enables Mercury Functional Testing for Wireless to recognize most standard alphanumeric characters, but not characters with European diacritics or Unicode characters. A range of 0,256 includes most European diacritic characters, and a range of 0,65535 includes Unicode characters.

The time Mercury Functional Testing for Wireless takes to complete text recognition is related to the number of fonts specified in the selected profile, and the range of characters to be recognized for each font.

Mercury Functional Testing for Wireless supports a set of font definitions used by most applications on the supported devices. For each type of supported device, Mercury Functional Testing for Wireless provides a Common profile that includes the complete set of font definitions that Mercury Functional Testing for Wireless supports for that device type.

If you have requirements for additional fonts, for example, because you are developing a new application with unusual font requirements, your Mercury Functional Testing for Wireless representative to discuss how to extend the range of font definitions supported by Mercury Functional Testing for Wireless.

Setting text recognition options

Mercury Functional Testing for Wireless enables you to set a number of text recognition options.

XML output

Use this option to control whether Mercury Functional Testing for Wireless generates XML output or a simple text representation of the target device display in the Standard view.

This option has no effect on the Detailed view.

Use Region

Use this option if you want Mercury Functional Testing for Wireless to run text recognition on a particular area of the target device display, and ignore everything else, as follows:

- 1. Go to the Target Device Text Content tab.
- 2. Select the **Use Region** checkbox.
- 3. Specify coordinates for the top left and bottom right corners of the area you want Mercury Functional Testing for Wireless to analyze.
- 4. Click Recognise to run text recognition.

Mercury Functional Testing for Wireless displays an error dialog box you if you specify invalid coordinates.

Invert

Use this option if the application you are testing uses light text on a dark background.

Ignore top line

Use this option if the text you are analyzing is so closely spaced that one line of text prevents the next line from being analyzed accurately.

By default, the text recognition mechanism expects each character to be surrounded by white space. However, on some devices, lines of text are so closely spaced that underlined text, in particular, can render the line beneath it difficult to analyze. In such cases, you can use the **Ignore top line** option to ignore the row of pixels above a character that the analyzer normally expects to be white.

Threshold

Use this option to specify the level of darkness that Mercury Functional Testing for Wireless treats as black for the purposes of recognizing text. This option can be useful if you find that text recognition is inaccurately analyzing text on colored backgrounds, for example.

By default, any value below the threshold is treated as black. If you select the **Invert** option, values above the threshold are treated as black.

Using Mercury Functional Testing for Wireless event logs

Mercury Functional Testing for Wireless generates Info, Warning, and Error events as required during normal operation.

You can:

- Filter events
- Export events
- Clear events
- Limit the maximum number of events displayed

Filtering events

By default, Mercury Functional Testing for Wireless displays all events (subject to the maximum events setting) in the Event Log panel. You can filter events as follows:

s Settings	Help						
evices a	Direct Command	s 📓 Event Log					
🕘 Th	e event log displa	vs important informatio	in warnings and errors (renerate	ed hy Mercury Fun	ctional Testing	
8			,	,			
tered By:	None						毘 🗈 💀
🗄 Type	📼 Source				Device	🕎 Text	^
1) Info	mrKeyboard			Eranc	(001262aafef5)	Scan-code <kkpplus> sent successfully</kkpplus>	
1) Info	mrKeyboard			Eranc	(001262aafef5)	Scan-code <kdev0> sent successfully</kdev0>	
🖲 Info	mrKeyboard			Eranc	(001262aafef5)	Scan-code <kdev3> sent successfully</kdev3>	
🗊 Info	mrKeyboard			Eranc	(001262aafef5)	Scan-code <kright> sent successfully</kright>	
🗊 Info	mrKeyboard			Eranc	(001262aafef5)	Scan-code <kdown> sent successfully</kdown>	
🗊 Info	mrKeyboard			Eranc	(001262aafef5)	Scan-code <kdev3> sent successfully</kdev3>	
🗊 Info	mrKeyboard			Eranc	(001262aafef5)	Scan-code <kleft> sent successfully</kleft>	
🗊 Info	mrKeyboard			Eranc	(001262aafef5)	Scan-code <kdown> sent successfully</kdown>	
Info	mrKeyboard			Eranc	(001262aafef5)	Scan-code <kdown> sent successfully</kdown>	
🕖 Info	mrKeyboardト	Copy selected line(s) Ctrl+C	Eranc	(001262aafef5)	Scan-code <kapp0> sent successfully</kapp0>	
🕖 Info	mrKeyboard -			Eranc	(001262aafef5)	Scan-code <kkpplus> sent successfully</kkpplus>	,
1) Info	mrKeyboard	Find	Ctrl+F	Eranc	(001262aafef5)	Scan-code <kdev0> sent successfully</kdev0>	
Into	mrKeyboard -	Filtor		Eranc	(001262aatet5)	Scan-code <kleft> sent successfully</kleft>	
U Info	mrKeyboard	Filler		Eranc	(UU1262aarer5)	Scan-code <kdev3> sent successfully</kdev3>	
	mrkeyboard	Export		Eranc	(001262aarer5)	Scan-code <klert> sent successfully</klert>	
U INFO Nacional	mrkeyboard	Clear log	Ctrl+Del	Eranc	(001262aarer5) (001262aafer5)	Scan-code <kright> sent successfully</kright>	
	mrKeyboard -	Cical log		Eranc	(001262aalei5) (001262aafof5)	Scap.code <kdev3> sent successfully</kdev3>	
DIDFO	mrKeyboard	Select all	Ctrl+A	Erapo	(001262aafef5)	Scan-code <ki in=""> sent successfully</ki>	
1 Info	mrimage			Erand	(001262aafef5)	Processed machine info.	
1 Info	mrKeyboard			Erapo	(001262aafef5)	Scan-code <kknplus> sent successfully</kknplus>	,
1 Info	mrKeyboard			Eranc	(001262aafef5)	Scan-code <kdev0> sent successfully</kdev0>	
1 Info	mrImage			Eranc	(001262aafef5)	mrImage started.	
1 Info	mrImage			Eranc	(001262aafef5)	Processed machine info.	
🗊 Info	mrKeyboard			Eranc	(001262aafef5)	mrKeyboard started.	
🗊 Info	Mercury Functio	nal Testing for Wirele	ss Test Device Window	Eranc	(001262aafef5)	Device config file 'C:\Program Files\Mer	cury\Mercury
🗊 Info	Mercury Functio	nal Testing for Wirele	ss Dashboard	Eranc	(001262aafef5)	Setting test device.	
1 Info	m-Douter			Franc	(001262aafaf5)	Device connected	×
							>
splaying 28	of 28 event(s).						

- 1. Click the filter icon at the top of the Event Log panel (or right-click in the events list area and select **Filter...**).
- 2. Use the Filter Event Log dialog box to define a filter, and click OK.

🧸 Filter Event Log	X
Filter the event log to only display certain eve	nts.
Filter By:	
● None	
O Type: 🚫 😣 Error	~
○ Matching <u>S</u> ource Text:	✓
O Matching Event Text:	×
O Matching Device:	~
ОК	Cancel

The **Type** filter enables you to filter for Info, Warning, or Error events.

The **Matching Source Text** filter enables you to filter for events from a particular m-Network pipe processor, for example, when you click on a key on the Keypad and Display tab, Mercury Functional Testing for Wireless uses the mrKeyboard pipe processor. The drop-down list provides a list of pipe processors that Mercury Functional Testing for Wireless uses. You can use pipe processors directly on the Mercury Functional Testing for Wireless **Direct Commands** tab.

The **Matching Event Text** filter enables you to filter for events containing a particular text string that you specify. For example, you could use this filter to display events relating to a particular device by specifying its name or Bluetooth ID.

When you click **OK**, Mercury Functional Testing for Wireless applies the filter to the set of events currently displayed, and to all subsequent events.

Exporting events

You can export the events currently displayed in the Event log panel, as follows:

Click the export log icon (or right-click on the events list area and select Export...)

The Save Event Log dialog box appears.

Specify a file name and location, and save the log file.

Clearing events

You can clear the event log, as follows:

1. Click on the clear event log icon (or right-click on the events list area and select **Clear** log...)

Mercury Functional Testing for Wireless clears the events list area.

Using Mercury Functional Testing for Wireless with QuickTest Professional

Mercury Functional Testing for Wireless is a powerful application, and becomes even more powerful when used in conjunction with QuickTest Professional, which enables you to record and automate interactive test procedures. For example, Mercury QuickTest Professional enables you to record a test and repeat it exactly, or repeat it with different parameters. For further information on how to use Mercury Functional Testing for Wireless in this way, contact your Mercury Functional Testing for Wireless representative.

Index

applications foreground, 22 launching, 20 capture screen, 31 devices clear target, 19 connecting, 17 detecting, 6 disconnecting, 19 display, 23 reboot, 19 set target, 18 shutdown, 19 direct commands, 28 event log, 42 Keypad and Display tab, 23 m-Network, 29 mouse control, 24 pen input, 26 pipe processors, 29 refresh known devices, 6 repeat clicks, 24 screenshots, 31 scripting, 28 send text, 27 text input, 27 text recognition, 34 options, 41 profiles, 40