

# PC-Doctor<sup>®</sup> 5<sup>™</sup> Command-line Interface Guide

# How to use the PC-Doctor Command-Line Interface

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#### **Command-line Interface In Brief**

PC-Doctor, Inc.'s Command-Line Interface provides a text-based command-line interface to the PC-Doctor Diagnostics Architecture. The PC-Doctor Command-line Interface can be used to list system devices, list diagnostic tests, run diagnostic tests, and display test results.

#### **Quick Start Commands**

The commands listed here can include options for more specific functions. For more information on available options for each command, SEE ALSO *PC*–*Doctor Command-line Interface Commands and Options* later in this document.

The following basic commands can be use to quickly begin using the PC-Doctor Command-line Interface:

Command	Function
pcd start	Starts the PC-Doctor Command-line Interface engine.
	<b>Note</b> Other commands, such as the <b>run</b> command, will call this command before executing.
pcd list	Lists available tests, available modules, or devices to test depending on which option used. Tests, modules, and devices are:
	<ul> <li>Test: PC-Doctor diagnostic that verifies a device or device function is opera- tional.</li> </ul>
	Module: A suite of PC-Doctor diagnos- tics designed for specific devices
	<ul> <li>Device: A hardware component in PCs.</li> </ul>
pcd run	Runs PC-Doctor Command-line Interface tests. This command will:
	<ul> <li>Run specified tests on available devices.</li> </ul>
	<ul> <li>Run available tests on specified devices.</li> </ul>
	<ul> <li>Run specified tests on specified devices.</li> </ul>
	<ul> <li>Run all available tests on available devices.</li> </ul>

Command	Function
pcd sysinfo	Gathers and displays detailed information about hardware devices found in the PC.
pcd stop	Stops the PC–Doctor Command-line Interface engine.
	<b>Note</b> If the PC-Doctor Command-line Interface is not stopped, it will continue to run in the background.

### **PC-Doctor Command-line Interface Commands and Options**

All command-line options are case sensitive and begin with the command **pcd**. Command-line options that obtain information or execute tests can be specified on the command-line multiple times. Each command-line option has two formats: a short version beginning with a single dash and a more descriptive version beginning with two dashes. For example, **pcd run -h** is equivalent to **pcd run -help**.

#### **Accessing Help Information — pcd help**

The **help** command lists basic information for using primary PC-Doctor commands. The following options can be used with the **help** command:

Option	Function
help -v	Lists every available help command with a detailed message explaining its function.
help <command/>	Provides a detailed help message about a specific command.
	Below is an example of the command syntax and partial results.
	Example: pcd help list
	pcd list — List modules, tests, and devices. Its options:
	-ddevice For devices or specify a device
	-fforcereenum For re-enumeration
	-hhelp Get this command's help message in detail
	-mmodule For modules or specify a module
	-ttest For tests or specify a test
	-vverbose The content listed will be in detail
	-sserver Specify a Server Location

#### **Determining Device Capabilities — pcd capabilities**

Device capabilities are basic device functions that hardware components in the PC support. A capability can be specified for devices and all tests that support that specific capability will run.

#### Options to use with the capabilities command

Option	Function
capabilities	Lists all the device capabilities that can be used for capability-specific testing. The information this command will list includes but is not limited to:
	BIOS CDROM CPU IDE Keyboard PCI
	Devices that match multiple capabilities can be listed by concatenating additional capabilities using the vertical bar " ". For example: pcd list -d CDRW DVD.
	Below is an example of the command syntax and partial results.
	Example: pcd capabilities
	All primitive device capabilities supported in PCDR 5:
	SMART Iconname: SMART Priority: 0 System Iconname: System Priority: 0 TCPIP Iconname: TCPIP Priority: 0 AGP Iconname: AGP Priority: 10
-s server	Specifies a server IP address or hostname. Required only for PC-Doctor Network Factory 5. The server collects diagnostic data and test results.

#### **Listing Modules, Tests, and Devices — pcd list**

The **list** command displays all available modules, tests, and devices. When running the list command, PC-Doctor enumerates all testable devices. This means PC-Doctor rediscovers all hardware devices in the Unit Under Test (UUT), which may take several seconds.

In addition, the **list** command identifies where modules, tests, and devices appear in the module index, test index, and device index. Indexes are lists of numeric values used to specify devices, modules, or tests on the command line. For example, a CPU might be listed as device number 10 in the device index, the CPU module as module number 23 in the module index, and the CPU Registers test as test number 55 in the test index. So, **pcd run -t 55** would be used to run the CPU Registers test on all devices that support it. See the **run** command for more information.

**Note** Indexes are dynamic lists and will change between runs of PC-Doctor.

Capability options can be included with the **list** command. If specifying a device capability when using the **-m**, **-t**, or **-d** option, PC-Doctor Command-line Interface will list all the tests, modules, and devices that support that capability.:

Option	Function
-d device	Lists all the available testable hardware devices that PC-Doctor detects.
	Examples for listing devices and modules:  pcd list -d -m
	pcd list -d <device name=""> -m</device>
	pcd list -d -m <module name=""></module>
	pcd list -d <device name=""> -m <module name=""></module></device>
	Examples for listing devices and tests:  pcd list -d -t
	pcd list -d <device name=""> -t</device>
	pcd list -d -t <test name=""></test>
	pcd list -d <device name=""> -t <test name=""></test></device>
	Examples for listing devices with a capability:
	pcd list -d <capability> -m</capability>
	pcd list -d <capability> -m <module name=""> pcd list -d <capability> -t</capability></module></capability>
	pcd list -d <capability> -t <test name=""></test></capability>
	<b>Note</b> The order in which the <b>-m</b> , <b>-d</b> , and <b>-t</b> options are entered change the results of the display.
	Below is an example of the command syntax and results.
	Example: pcd list -d CPU -m
	One or more devices with modules:
	Device: CPU:0 – CPU:0
	OS Locator: CPU:0
	HW Locator: CPU:0
	Device Type: CPU:0
	20: Module: pcdrsysinfoprocessor<
	Device Information> — This module gathers information about the CPU.
	Type: SYSINFO
-f forcereenum	Forces PC-Doctor to re-enumerate all available devices for test.
-h help	Provides a detailed listing of the possible uses for the list command.

Option	Function
-m module	Lists module with the specified module name.
	Examples for listing modules and devices:
	pcd list -m -d
	pcd list -m <module name=""> -d</module>
	pcd list -m <module name=""> -d <device name=""></device></module>
	Examples for listing modules and tests:
	pcd list -m -t
	pcd list -m <module name=""> -t</module>
	pcd list -m -t <test name=""></test>
	pcd list -m <module name=""> -t <test name=""></test></module>
	Examples for listing modules for a device capability:
	pcd list -m -d <capability></capability>
	pcd list -m <module name=""> -d <capability></capability></module>
	Note The order in which the -m, -d, and -t options are entered change the
	results of the display.
	Below is an example of the command syntax and results.
	Example: pcd list -m pcdrcpu -t
	One or more modules with tests:
	Module: pcdrCPU <cpu test=""> — This module tests CPUs.</cpu>
	Type: DIAG
	34: Test: RegisterTest <pcdrcpu> — CPU Register test</pcdrcpu>
	35: Test: CacheTest <pcdrcpu> — CPU Cache test</pcdrcpu>
	36: Test: MathRegisterTest <pre></pre>
	37: Test: MMXTest <pcdrcpu> — CPU MMX test</pcdrcpu>
	38: Test: SSETest <pre>cpcdrCPU&gt; — CPU SSE test</pre>
	39: Test: SSE2Test <pcdrcpu> — CPU SSE2 test</pcdrcpu>

Option	Function
-t test	Lists all the available tests for each available PC-Doctor diagnostic module.
	Examples for displaying tests and modules:
	pcd list -t -m pcd list -t <test name=""> -m</test>
	pcd list -t <test harne=""> -III  pcd list -t -m <module name=""></module></test>
	pcd list -t <test name=""> -m <module name=""></module></test>
	Examples for listing tests and devices:  pcd list -t -d
	pcd list -t <test name=""> -d</test>
	pcd list -t <test name=""> -d <device name=""></device></test>
	Examples for listing tests and devices for a capability:  pcd list -t -d <capability></capability>
	pcd list -t <test name=""> -d <capability></capability></test>
	<b>Note</b> The order in which the <b>-m</b> , <b>-d</b> , and <b>-t</b> options are entered change the results of the display.
	Below is an example of the command syntax and results.
	Example: pcd list -t <patterntest> -d</patterntest>
	One or more Tests with Devices:
	Test: PatternTest <pcdrharddrive> — Hard Drive Pattern Test</pcdrharddrive>
	Test: PatternTest <pcdrfloppy> — Floppy Drive Pattern Test 26: Device: Floppy disk drive — Floppy disk drive OS Locator: \\?\FDC#GENERIC_FLOPPY_DRIVE# HW Locator: AUX:2:0 Device Type: FloppyDrive</pcdrfloppy>
	Test: PatternTest <pcdrcmos> — CMOS Pattern Test 36: Device: CMOS — CMOS</pcdrcmos>
	OS Locator: CMOS
	HW Locator: System  Device Type: CMOS
	Test: PatternTest <pcdrmemory> — Memory Pattern Test 70: Device: System Memory — Memory OS Locator: Memory HW Locator: MEM Device Type: Memory</pcdrmemory>
-v verbose	Provides more detailed information when used with one of the above list options.

Option	Function
-s server	Specifies a server location. Required only for PC-Doctor Network Factory 5.
	Example for specifying the server location:  pcd list -s <server including="" port="" url=""></server>

#### Running Tests—pcd run

The **run** command runs available tests on specified devices. Use index IDs (device index, module index, test index) displayed by the list command for testing specific devices, or running specific modules and tests. See the **list** command on the preceding page for more information on acquiring index IDs.

Option	Function
-a maxtime	Specifies the maximum test time in seconds allowed for testing.
	Example: pcd run -d -a 1000
-d device	Runs all available tests for a specified device. If a device is not specified , PC-Doctor Command-line Interface will run all available tests on all available devices.
	Examples for running all tests on all devices:  pcd run -d  pcd run -d -t
	Examples for running all tests for a device:  pcd run -d <deviceindex>  pcd run -d <deviceindex> -t</deviceindex></deviceindex>
	Examples for running a specific device's test:  pcd run -d <deviceindex> -t <testindex></testindex></deviceindex>
	Below is an example of the command syntax and partial results for running CPU tests using the device index number.
	Example: pcd run -d 38 -t
	****** Run All Tests For A Device *****
	Current Client's Process ID: 752
	Script: Starting
	Script: Percent Completed: 0 Elapsed Time: 10ms
	TestRun: RegisterTest <pcdrcpu; 1;="" index:0="" pass=""> Device: CPU:0: CPU:0 <cpu:0></cpu:0></pcdrcpu;>
	Starts to run!!! Percent Completed: 100; Elapsed Time: 531ms
	Results: PASS

Option	Function
-e errorlimit	Specifies the number of errors PC-Doctor Command-line Interface will allow before all running tests are stopped.
-f file	Loads and runs a specific xml test script file.
	Example: pcd run -f <filename></filename>
-h help	Provides a detailed listing of the possible uses for the run command.
-i diagfile	Specifies the name of the diaginfo file. When using this option, PC-Doctor includes additional diagnostic information in the log file.
	Example: pcd run -i diag.xml
-l parallel	Runs specified tests simultaneously.
paraner	Note This command is incompatible with the -f option.
	Example: pcd -d <deviceindex> -l</deviceindex>
-p param	Modifies the value of a specified parameter.
param	Example: pcd run -d -t -p MaxLen=10 -p time=30
-r repeat	Specifies the number of times to run a test cycle.
Topout	Example: pcd run -d -r 2
-y sysinfo	Gathers device and configuration information for the tested PC.
	Below is an example of logging system information to a sysinfo.xml log file
	Example: pcd run -d -t -x -y -i sysinfo.xml
-t test	Runs the specified test on an available device.
1631	Examples for running all tests on all devices:  pcd run -t  pcd run -t -d
	Below is an example of running test #3 from the test index on all devices that support it
	Example: pcd run -t 3

#### Options to use with the run command

Option	Function
-v verbose	Provides more detail when using thediaginfo orsysinfo command.
	Below is an example of logging verbose-style system information to a sysinfo.xml log file  Example: pcd run -d -t -v -x -y -i sysinfo.xml
-x xml	Generates xml formatted logs when using thediaginfo orsysinfo option
-s server	Specifies a server location. Required only for PC-Doctor Network Factory 5.

### Starting PC-Doctor — pcd start

The **start** command starts the PC-Doctor engine and supports the following options:

#### Options to use with the start command

Option	Function		
-h help	Provides a detailed listing of the possible uses for the start command.		
	Example: pcd start -h		
-p path	Specifies the directory path for the PC-Doctor engine file.		
	Example: pcd start -p C:\PC-Doctor 5\bin		
-s server	Specifies a server location. Required only for PC-Doctor Network Factory 5.		

# **Stopping PC-Doctor** — pcd stop

The **stop** command halts the PC-Doctor engine and supports the following options:

Option	Function
-h help	Provides a detailed listing of the possible uses for the stop command.

# **Gathering System Information through PC-Doctor** — pcd sysinfo

The **sysinfo** command gathers all available system information from the PC-Doctor engine. Use the following options with the **sysinfo** command:

# Options to use with the sysinfo command

Option	Function
-C	Displays system information for devices based on a capability.
capability	Note Use the capabilities command to retrieve a list of device capabilities.
	Below is an example of the command syntax and partial results.
	Example: pcd sysinfo -c CDROM
	One or more Device:
	Device: Lite-on LTN483S 48x Max — CD-ROM Drive OS Locator: \\?\IDECdRomLite-on_LTN483S_48x_Max HW Locator: IDE:1:0 Device Type: Optical Icon Name: CDROM Child Bus Ids: Device Id: 17 Parent HW GUID: CHAN:1Channel1\Device\ide\Pcilde0Channel1-1 Children HW GUID: Bus Type: IDE Capabilities Type: IDE\Optical\CDROM Properties: Property: Driver Name — Driver Name Key: DriverName Value: \\.\D: Source Module: pcdrsysinfostorage
-f	Type: Tier1 SysInfo RequiredForTests  Forces PC-Doctor to re-enumerate all available devices for test.
forcereenum	
-h help	Provides a detailed listing of the possible uses for the sysinfo command.
-i	Specifies the name of the system information log file.
diagfile	<b>Note</b> A file extension of .xml or txt must included when specifying a sysinfo log file name. If specifying .xml output, the -x option must be included with the sysinfo command (see the next page).
	Example: pcd sysinfo -i sysinfo.txt

# Options to use with the sysinfo command

Option	Function			
-v verbose	Provides more detail when using the sysinfo command.			
	<b>Note</b> A file extension of .xml or txt must included when specifying a sysinfo log file name. If specifying .xml output, the -x option must be included with the sysinfo command (see below).			
	Example: pcd sysinfo -v -i sysinfo.txt			
-x xml	Generates xml formatted logs when using the sysinfo command.			
Aiiii	Note A file extension of .xml must be included when specifying xml output.			
	Example: pcd sysinfo -v -x -i sysinfo.xml			
-s server	Specifies a server location. Required only for PC-Doctor Network Factory 5.			

# **Gathering PC-Doctor Test Run Information — pcd tests**

The **tests** command lists basic information about all test runs and halts any running test runs. Use the following options with the **tests** command:

Option	Function		
-h help	Provides a detailed listing of the possible uses for the tests command.		
-s stop	Stops all tests.		
-s <test index="">stop</test>	Stops the specified test. <b>Example:</b> pcd tests -s 30		
	Example. pcd lesis -5 50		

#### Launching the Text Mode User Interface — pcd ui

The Text Mode User Interface (TMUI) is a text-based user interface with limited graphical user interface functionality. All core functions of PC-Doctor Command-line Interface can be performed with the TMUI, such as run diagnostics, generate system information reports, and create custom test scripts. Use the following options with the **ui** command:

Option	Function
-h help	Provides a detailed listing of the possible uses for the tests command.
-s server	Specifies a server location. Required only for PC-Doctor Network Factory 5.

#### Launching a PC-Doctor Network Factory 5 Client — pcd uut

The **uut** command specifies configuration settings for a specified uut such as server location, uut ID number, and the test group the uut belongs to. Use the following options with the **uut** command:

**Note** A PC-Doctor Network Factory 5 server must be set up before using this command.

Option	Function		
-h help	Get detailed Help messages for this command.		
-s server	Specifies a server location. Required only for PC-Doctor Network Factory 5.		
	Note A server location must be specified when using the uut command.		
	Examples: pcd uut -s 127.0.0.1		
-id uutid	Specifies a Unit Under Test (UUT) identity.		
	<b>Note</b> A uut ID must be specified when using the uut command. The maximum length of this value is 100 characters. The default value is the MAC address for the network interface card connected to the network where the PC-Doctor Network Factory 5 server is located.		
	Example: pcd uut -s <server-url> -id <uut-mac-address></uut-mac-address></server-url>		
-g uutgroup	Specifies a test group that the UUT belongs to. A test group is a logical collection of systems. For example, Rack 1, Rack 2, Rack 3, and so on.		
	<b>Note</b> A uut ID must be specified when using the uut command. The default value is "generic."		
	Example: pcd uut -s <server-url> -id <uut-mac-address> -g <test group=""></test></uut-mac-address></server-url>		

Option	Function			
-c config	Specifies to which configuration a UUT belongs. The default value for -c is "Generic".			
-p phase	Specifies to which test phase a UUT belongs. The default value for -p is "Generic".			
-a uutalias	Specifies an alias for the UUT. Aliases are used to identify UUTs in the Monitoring Console and help determine a UUTs diagnostic configuration. The default value is empty. For more information on the Monitoring Console, SEE ALSO "PC-Doctor Network Factory 5 – Technician User Guide".			
	Example: pcd uut -a BurnIn			
-v verbose	Specifies that screen printout will be in detail.			
-ui tmui	View progress and results in the Text Mode User Interface (TMUI) on the UUT.			
-e extra	Specifies extra data to associate with the UUT as key1=value1, key2=value2. This option is used to add additional information to the PC-Doctor Network Factory 5 database. The database must be configured with the fields associated to the key1, key2 values. Adding these fields is accomplished from the Monitoring Console of the PC-Doctor Network Factory 5 server.			
	Example: pcd uut -s 127.0.0.1:8080 -e "tester=my-tester,tester_email=my-tester@testers.com			
-eo extraonly	Specifies extra data to associate with the UUT as key1=value1, key2=value2. This option is used to add additional information to the PC-Doctor Network Factory 5 database. The database must be configured with the fields associated to the key1, key2 values. Adding these fields is accomplished from the Monitoring Console of the PC-Doctor Network Factory 5 server.			
	<b>Example:</b> pcd uut -s 127.0.0.1:8080 -e "tester=my-tester,tester_email=my-tester@testers.com			
	Note Does not run scripts			

# **Getting PC-Doctor Network Factory 5 Version Information** — pcd version

The **version** command displays PC-Doctor engine and module version information. Use the following options with the **version** command:

#### Options to use with the version command

Option	Function			
-h help	Provides a detailed listing of the possible uses for the version command.			
-d device	Specifies the version number for modules that run on a specific device.			
-m module	Specifies the version number for a specific module.			

#### **PC-Doctor Return Codes**

Each time PC-Doctor is executed, it will return one of the following values. If multiple tests are run, it will return PASS if all the tests pass. Otherwise, PC-Doctor will return the lowest numbered error it encounters. For example, if any test in the group fails, PC-Doctor will return FAILED.

For linux, typing **echo \$?** in the BASH shell will print the return code from the previously executed command.

Return Code	Value	Description
DONGLECHECKFAILED	-6	Either USB or LPT Dongle required to run this version of PC-Doctor Command-line Interface was not found.
LICENSEEXPIRED	-5	The license for this version of PC-Doctor Command-line Interface has expired.
LICENSEAUTHENTICA- TIONFAILED	-4	License validation failed for this version of PC-Doctor Command-line Interface.
UNKNOWNERROR	-3	A module handler, usually the UI or engine, has encountered a problem and cannot get a result from the module. This is a default value for a test result, returned when no result can be obtained.
TESTNOTSTARTED	-2	The module has not started testing, and may be waiting to start or is currently initializing.
TESTINGINPROGRESS	-1	The test is currently running, but has not finished, so no result is available yet.
PASS	0	No hardware defects were detected.
INTERNALERROR	3	The test module encountered an unknown internal error that is unrelated to the testing of the hardware.
FAIL	4	A hardware defect was detected.
USERABORTED	5	The user stopped the test before it could be completed.
DEVICEBUSY	6	Another hardware test is currently using this device.
INSUFFICIENTPRIVILEGE	7	The user does not have sufficient access rights to run this test.
NOTSUPPORTED	8	This test cannot be run on this device. Usually found when a device does not support the functionality that a test needs to run and this was not discovered until test time.

Return Code	Value	Description
BADPARAMS	9	Bad parameters were passed to the module from the starting program.
NOMEDIA	10	Required media to run test was not found in the device.
NODEVICE	11	This device was not detected on the system. In the case of a hot swappable device, it may have been removed.
NOTEST	12	This test is no longer detected on the system. This may occur when a module has changed in the middle of testing.
NOMODULE	13	This module is no longer detected on the system. This may occur when a module is removed from the system.
EXECFAILED	14	The execution of the module failed.
MODULEFAILEDTOSTART	15	The module failed to startup and communicate with the engine correctly.
DUPLICATEGUID	16	The diagnostic module reported two objects with the same name and therefore could not run.
MAXTIMEEXCEEDED	17	The test was cancelled because the maximum amount of time for testing was exceeded.
EXITEDABNORMALLY	18	The diagnostic module exited for an unknown reason.

#### **For More Information**

#### Contact

PC-Doctor, Inc. 9805 Double R Blvd. Suite 301 Reno, NV 89521

**Phone**: 775-336-4000 **Fax**: 775-336-4099

**E-mail:** support@pc-doctor.com **Web:** http://www.pc-doctor.com