

Term's Little Helper



A Mac OS X program by

Brattoo Propaganda Software

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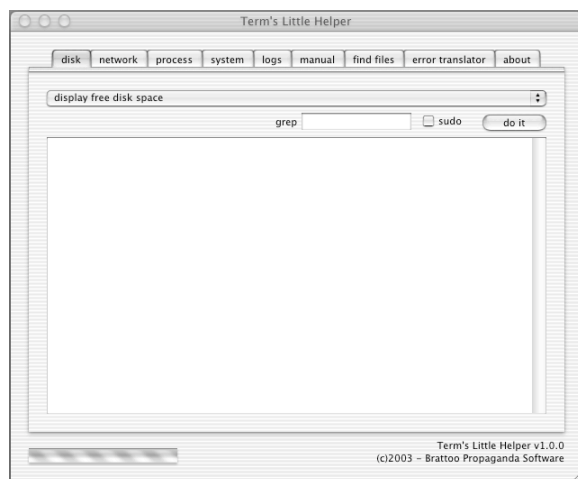
Overview

The purpose of Term's Little Helper is to make the power of the Terminal more accessible to the Mac OS X user. If you are a poweruser it may help you to make everyday tasks a little more pleasant and if you are a terminal novice it just might be the tool that you need in order to get rid of your fears and actually learn how the Terminal is working and what you can do with it.

Term's Little Helper was originally developed when I got tired of typing the same command lines everyday to check stuff like if a process was running, how it was running, how it affected the disk etc.

The interface

The interface of Term's Little Helper is very simple, a few tabs defining a few main categories of functions. Each contains a set of input fields and an output field. In the lower left corner of the interface a progress bar is located, as long as this bar is running the program is running, sometimes it might seem like if Term's Little Helper hangs, this is not the case. Some of the command lines that Term's Little Helper executes are very CPU or disk intense commands that may execute for quite a time and during that period Term's Little Helper will wait, so as long as the progress bar is running it's working but waiting. So keep that in mind and be patient.



The input fields

Each tab is equipped with a few fields used for different things, some fields are used to supply data to the commands being executed. The field "grep" is used to filter the output and there is a checkbox named "sudo" which allows you to run the commands as root.

Grep is useful when collection data of special interest, perhaps when searching for a specific process or why not filtering a log file?

Sudo gives you the possibility to run a command line as root without being logged in as root. This is extremely useful when accessing processes, logs etc that is restricted. As always, being root is fun because there's no limit to what you can do and it's dangerous too, for the same obvious reason.

One of the intentions of Term's Little helper is to make the Terminal more accessible and therefore it's in our interest to give you the exact command lines that Term's Little Helper use, that way we hope that more users will find their way to the Terminal although many Mac users. We now will guide you through the current functions of Term's Little Helper, the explanations are extracted from each commands man-page (which of course are accessible also accessible via the "manual"-tab). Good luck.

The Disk tab

display free disk space (df -i)

df displays statistics about the amount of free disk space on the specified filesystem or on the file system of which file is part. Values are displayed in 512-byte per block counts. If neither a file or a file_system operand is specified, statistics for all mounted file systems are displayed.

-i Include statistics on the number of free inodes.

display mounts (mount -v)

The mount command calls the mount(2) system call to prepare and graft a special device or the remote node (rhost:path) on to the file system tree at the point node. If either special or node are not provided, the appropriate information is taken from the fstab(5) file.

-v Verbose mode.

display disk usage statistics (du -c /)

The du utility displays the file system block usage for each file argument and for each directory in the file hierarchy rooted in each directory argument. If no file is specified, the block usage of the hierarchy rooted in the current directory is displayed.

-c Display the grand total after all the arguments have been processed.

The Network tab

query Internet domain name servers (nslookup)

Nslookup is a program to query Internet domain name servers. Nslookup has two modes: interactive and non-interactive. Interactive mode allows the user to query name servers for information about various hosts and domains or to print a list of hosts in a domain. Non-interactive mode is used to print just the name and requested information for a host or domain.

looks up records in the Network Information Center (NIC) database (whois -h geektools.com)

Whois looks up records in the Network Information Center (NIC) database.

-h Use the specified host instead of the default NIC (whois.internic.net).

Why geektols.com? Sometimes it results in more interesting information and we like it.

show network status (netstat)

The netstat command symbolically displays the contents of various network-related data structures. There are a number of output formats, depending on the options for the information presented. The first form of the command displays a list of active sockets for each protocol. The second form presents the contents of one of the other network data structures according to the option selected. Using the third form, with a wait interval specified, netstat will continuously display the information regarding packet traffic on the configured network interfaces. The fourth form displays statistics for the specified protocol or address family. The fifth form displays per-interface statistics for the specified protocol or address family. The sixth form displays mbuf(9) statistics. The seventh form displays routing table for the specified address family. The eighth form displays routing statistics.

show network status. Show per-protocol statistics (netstat -p)

as "show network status"

-p protocol Show statistics about protocol, which is either a well-known name for a protocol or an alias for it. Some protocol names and aliases are listed in the file /etc/protocols. The special protocol name ``bdg" is used to show bridging statistics.

show network status. Show the routing tables (netstat -r)

as "show network status"

- r Show the routing tables. Use with -a to show protocol-cloned routes. When -s is also present, show routing statistics instead. When -l is also present, netstat assumes more columns are there and the maximum transmission unit ("mtu") are also displayed.

Displays NFS statistics (nfsstat)

Nfsstat displays statistics kept about NFS client and server activity

report on current Samba connections

This tool is part of the Samba suite. smbstatus is a very simple program to list the current Samba connections.

ping server (send ICMP ECHO_REQUEST packets to network hosts) (ping -c 5)

Ping uses the ICMP protocol's mandatory ECHO_REQUEST datagram to elicit an ICMP ECHO_RESPONSE from a host or gateway. ECHO_REQUEST datagrams ("pings") have an IP and ICMP header, followed by a "struct timeval" and then an arbitrary number of "pad" bytes used to fill out the packet.

- c count Stop after sending (and receiving) count ECHO_RESPONSE packets.

The Process tab

display process status (ps xuavw)

Ps displays a header line followed by lines containing information about your processes that have controlling terminals. This information is sorted by controlling terminal, then by process ID.

The information displayed is selected based on a set of keywords (see the -L -O and -o options). The default output format includes, for each process, the process' ID, controlling terminal, cpu time (including both user and system time), state, and associated command.

The process file system (see procfs(5)) should be mounted when ps is executed, otherwise not all information will be available.

- x Display information about processes without controlling terminals.
- u Display information associated with the following keywords: user, pid, %cpu, %mem, vsz, rss, tt, state, start, time and command. The -u option implies the -r option.
- a Display information about other users' processes as well as your own.
- v Display information associated with the following keywords: pid, state, time, sl, re, pagein, vsz, rss, lim, tsiz, %cpu, %mem and command. The -v option implies the -m option.
- w Use 132 columns to display information, instead of the default which is your window size. If the -w option is specified more than once, ps will use as many columns as necessary without regard for your window size.

terminate process, non-catchable, non-ignorable kill (kill -9)

The kill utility sends a signal to the processes specified by the pid operand(s).

Only the super-user may send signals to other users' processes.

-signal A non-negative decimal integer, specifying the signal to be sent instead of the default TERM.

Some of the more commonly used signals:

1	HUP (hang up)
2	INT (interrupt)
3	QUIT (quit)
6	ABRT (abort)
9	KILL (non-catchable, non-ignorable kill)
14	ALRM (alarm clock)
15	TERM (software termination signal)

show system usage statistics (top -wl1)

top displays a running sample of system usage statistics. It operates in various modes, but by default shows cpu utilization and memory usage for each process in the system.

-w Specifying the -w option generates additional columns in the output producing a much wider display of data. The additional columns include VPRVT, along with the delta information for #PRTS, RPRVT, RSHRD, RSIZE and VSIZE (see descriptions following).

-l Using the -l option switches from the default screen mode to a logging mode suitable for saving the output to a file. You may specify the number of samples to be output before top exits, the default is 1 sample.

The System tab

show Mach virtual memory statistics (vm_stat)

vm_stat displays Mach virtual memory statistics. If the optional interval is specified, then vm_stat will display the statistics every interval seconds. In this case, each line of output displays the change in each statistic (an interval count of 1 displays the values per second). However, the first line of output following each banner displays the system-wide totals for each statistic.

show printer queue status (lpq -la)

pq shows the current print queue status on the named printer. Jobs queued on the default destination will be shown if no printer or class is specified on the commandline.

The interval option allows you to continuously report the jobs in the queue until the queue is empty; the list of jobs is shown every interval seconds.

-a reports jobs on all printers.

-l requests a more verbose (long) reporting format.

print the mail queue (mailq -v)

Mailq prints a summary of the mail messages queued for future delivery. The first line printed for each message shows the internal identifier used on this host for the message with a possible status character, the size of the message in bytes, the date and time the message was accepted into the queue, and the envelope sender of the message. The second line shows the error message that caused this message to be retained in the queue; it will not be present if the message is being processed for the first time. The status characters are either * to indicate the job is being processed; X to indicate that the load is too high to process the job; and - to indicate that the job is too young to process. The following lines show message recipients, one per line.

Mailq is identical to ``sendmail -bp".

-v Print verbose information. This adds the priority of the message and a single character indicator (``+' or blank) indicating whether a warning message has been sent on the first line of the message. Additionally, extra lines may be intermixed with the recipients indicating the ``controlling user" information; this shows who will own any programs that are executed on behalf of this message and the name of the alias this command expanded from, if any. Moreover, status messages for each recipient are printed if available.

display who is logged in (who -TuH)

The who utility displays a list of all users currently logged on, showing for each user the login name, tty name, the date and time of login, and hostname if not local.

-T Print a character after the user name indicating the state of the terminal line: '+' if the terminal is writable; '-' if it is not; and '?' if a bad line is encountered.

-u Print the idle time for each user.

-H Write column headings above the regular output.

show how long system has been running (uptime)

The uptime utility displays the current time, the length of time the system has been up, the number of users, and the load average of the system over the last 1, 5, and 15 minutes.

display system data structures, Print the open file table (pstat -f)

Pstat displays open file entry, swap space utilization, terminal state, and vnode data structures. If corefile is given, the information is sought there, otherwise in /dev/kmem. The required namelist is taken from /vmunix unless system is specified. The -n option specifies that devices should be printed out by major/minor number rather than by name.

-f Print the open file table with these headings:

LOC	The core location of this table entry.
TYPE	The type of object the file table entry points to.
FLG	Miscellaneous state variables encoded thus:
R	open for reading
W	open for writing
A	open for appending
S	shared lock present
X	exclusive lock present
I	signal pgrp when data ready
CNT	Number of processes that know this open file.
MSG	Number of messages outstanding for this file.
DATA	The location of the vnode table entry or socket structure for this file.
OFFSET	The file offset (see lseek(2)).

display system data structures, Print the active vnodes (pstat -v)

as above.

-v Print the active vnodes. Each group of vnodes corresponding to a particular filesystem is preceded by a two line header. The first line consists of the following:

*** MOUNT fstype from on on fsflags

where fstype is one of ufs, nfs, mfs, or pc; from is the filesystem is mounted from; on is the directory the filesystem is mounted on; and fsflags is a list of optional flags applied to the mount (see mount(8)). the first part of which are fixed, and the second part are filesystem type specific. The headers common to all vnodes are:

ADDR	Location of this vnode.
TYP	File type.
VFLAG	A list of letters representing vnode flags:
R	VROOT
T	VTEXT
L	VXLOCK
W	VXWANT
E	VEXLOCK
S	VSHLOCK
T	VLWAIT
A	VALIASED
B	VBWAIT
USE	The number of references to this vnode.
HOLD	The number of I/O buffers held by this vnode.
FILEID	The vnode fileid. In the case of ufs this is the inode number.
IFLAG	Miscellaneous filesystem specific state variables encoded thus:
	For ufs:
L	locked
U	update time (fs(5)) must be corrected

A	access time must be corrected
W	wanted by another process (L flag is on)
C	changed time must be corrected
S	shared lock applied
E	exclusive lock applied
Z	someone waiting for a lock
M	contains modifications
R	has a rename in progress

For nfs:

W	waiting for I/O buffer flush to complete
P	I/O buffers being flushed
M	locally modified data exists
E	an earlier write failed
X	non-cacheable lease (nqnfs)
O	write lease (nqnfs)
G	lease was evicted (nqnfs)

SIZ/RDEV	Number of bytes in an ordinary file, or major and minor device of special file.
----------	---

display system data structures, Print table for terminals (pstat -t)
as above

-t Print table for terminals with these headings:

RAW	Number of characters in raw input queue.
CAN	Number of characters in canonicalized input queue.
OUT	Number of characters in output queue.
MODE	See tty(4).
ADDR	Physical device address.
DEL	Number of delimiters (newlines) in canonicalized input queue.
COL	Calculated column position of terminal.
STATE	Miscellaneous state variables encoded thus:

T	delay timeout in progress
W	waiting for open to complete
O	open
F	outq has been flushed during DMA
C	carrier is on
B	busy doing output
A	process is awaiting output
X	open for exclusive use
S	output stopped
H	hangup on close

PGRP	Process group for which this is controlling terminal.
DISC	Line discipline; blank is old tty OTTYDISC or `new tty' for NTTYDISC or `net' for NETLDISC (see bk(4)).

report I/O statistics (iostat)

iostat displays kernel I/O statistics on terminal, disk and cpu operations. By default, iostat displays one line of statistics averaged over the machine's run time. The use of -c presents successive lines averaged over the wait period. The -l option causes iostat to print raw, unaveraged values.

file status (fstat -nv)

Fstat identifies open files. A file is considered open by a process if it was explicitly opened, is the working directory, root directory, active pure text, or kernel trace file for that process. If no options are specified, fstat reports on all open files in the system.

- n Numerical format. Print the device number (maj,min) of the filesystem the file resides in rather than the mount point name; for special files, print the device number that the special device refers to rather than the filename in /dev; and print the mode of the file in octal instead of symbolic form.
- v Verbose mode. Print error messages upon failures to locate particular system data structures rather than silently ignoring them. Most of these data structures are dynamically created or deleted and it is possible for them to disappear while fstat is running. This is normal and unavoidable since the rest of the system is running while fstat itself is running.

The Log tab

display the system message buffer (dmesg)

Dmesg displays the contents of the system message buffer.

CUPS access log (/var/log/cups/access_log)

CUPS error log (/var/log/cups/error_log)

CUPS page log (/var/log/cups/page_log)

daily cronjob log (/var/log/daily.out)

weekly cronjob log (/var/log/weekly.out)

monthly cronjob log (/var/log/monthly.out)

FTP log (/var/log/ftp.log)

HTTPD access log (/var/log/httpd/access_log)

HTTPD error log (/var/log/httpd/error_log)

samba NMBD log (/var/log/samba/log.nmbd)

samba SMBD log (/var/log/samba/log.smbd)

lookupd log (/var/log/lookupd.log)

printer spooler log (/var/log/lpr.log)

mail spooler log (/var/log/mail.log)

netinfo log (/var/log/netinfo.log)

console log (/private/var/tmp/console.log)

system log (/var/log/system.log)

secure log (/var/log/secure.log)

The Manual tab

display the on-line manual pages (man)

Man formats and displays the on-line manual pages. This version knows about the MANPATH and PAGER environment variables, so you can have your own set(s) of personal man pages and choose whatever program you like to display the formatted pages. If section is specified, man only looks in that section of the manual. You may also specify the order to search the sections for entries and which preprocessors to run on the source files via command line options or environment variables.

search the whatis database

apropos searches a set of database files containing short descriptions of system commands for keywords and displays the result on the standard output. whatis displays only complete word matches.

keyword really is a regular expression, please read grep(1) manual page for more information about its format.

The Find Files tab

locate files (locate)

locate searches a database for all pathnames which match the specified pattern. The database is recomputed periodically, and contains the pathnames of all files which are publicly accessible.

Shell globbing and quoting characters (`*`, `?`, `\`, `[` and `]`) may be used in pattern, although they will have to be escaped from the shell. Preceding any character with a backslash (`\`) eliminates any special meaning which it may have. The matching differs in that no characters must be matched explicitly, including slashes (`/`).

As a special case, a pattern containing no globbing characters (`foo`) is matched as though it were `*foo*`.

update the locate database (/usr/libexec/locate.updatedb)

The Error Translator tab

This function utilizes parts of the Developer Toolkit and does it like this:

Cat

```
/System/Library/Frameworks/CoreServices.framework/Versions/Current/Frameworks/CarbonCore.framework/Versions/Current/Headers/MacErrors.h | grep '= -searchFor,' | sed 's/= -searchFor,/'g'
```