Android Lollipop toolbox command reference

Derived from:
http://www.all-things-android.com/content/android-toolbox-command-reference

The Android toolbox command is a collection of common command-line utilities. Individual commands appear as a symbolic link (symlink) to the /system/bin/toolbox command. The commands supported by the Android 5.x toolbox are generally light-weight versions of the equivalent NetBSD command. The problem is the lack of documentation for the commands supported by Android toolbox. The only reference for individual command options is the Android source code.

The following command reference table was derived from the Lollipop 5.0 source code. The Android toolbox is an evolving product. Consequently, some of the commands may not be available on earlier versions of Android. The same statement is true for command options. Some older commands are no longer available, or are now stand-alone commands.

Following are the conventions used:
[ ]   Argument is optional.
< >   Replace string with actual value.
...   Command supports multiple occurences of argument.

Android Lollipop toolbox commands

Command Option   Description

cat
      usage: cat [-beflnstv] [-] [<file> ...]
      -b   Implies the -n option but doesn't number blank lines.
      -e   Implies the -v option, and displays a dollar sign (`$')
            at the end of each line.
      -f   Only attempt to display regular files.
      -l   Set an exclusive advisory lock on the standard output
            file descriptor.
      -n   Number the output lines, starting at 1.
      -s   Squeeze multiple adjacent empty lines, causing the output
            to be single spaced.
      -t   Implies the -v option, and displays tab characters as `^I'
            as well.
      -v   Displays non-printing characters so they are visible.

chcon
      usage: chcon <context> <path ...>
chmod
      usage: chmod [-R | --recursive] [--help] <mode> <file ...>
      -R
      --recursive   Change files and directories recursively.
      --help   Print help message and exit.
chown
      usage: chown <user>[:<group>] <file ...>
clear
      usage: clear

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cmp
      usage: cmp [-bl] [-n <limit>] <file1> [<file2>]
      -b    Print differing bytes.
      -l    Output byte numbers and differing byte values.
      -n    Compare at most <limit> bytes.
cp
      usage: cp [[-r | -R] [-H | -L | -P]] [-f | -i] [-alNpv]
<source_file> <target_file>
                  cp [[-r | -R] [-H | -L | -P]] [-f | -i] [-alNpv]
<source_file ...> <target_directory>
      -r -R     If <source_file> designates a directory, cp copies the
            directory and the entire subtree connected at that point.
      -H    If the -R option is specified, symbolic links on the command
            line are followed.
      -L    If the -R option is specified, all symbolic links are
            followed.
      -P    No symbolic links are followed.  This is the default.
      -f    For each existing destination pathname, attempt to overwrite
            it. If permissions do not allow copy to succeed, remove it
            and create a new file, without prompting for confirmation.
      -i    Causes cp to write a prompt to the standard error output
            before copying a file that would overwrite an existing file.
      -a    Archive mode.  Same as -RpP.
      -l    Create hard links to regular files in a hierarchy instead of
            copying.
      -N    When used with -p, does not copy file flags.
      -p    Causes cp to preserve in the copy as many of the modification
            time, access time, file flags, file mode, user ID, group ID,
            and extended attributes, as allowed by permissions.
      -v    Cause cp to be verbose, showing files as they are copied.
date
      usage: date -u [MMDDhhmm[[CC]YY][.ss]]
              date -s MMDDhhmm[[CC]YY][.ss]
      -u    Print or set Coordinated Universal Time.
      -s    Set date and time to the string value.
dd
      usage: dd [<operands> ...]
      This is the NetBSD dd command. The NetBSD man page for dd discusses
      all the operands.
df
      usage: df [<file> ...]
dmesg
      usage: dmesg [-c]
      -c    Clear the ring buffer contents after printing.
du
      usage: du [-H | -L | -P] [-a | -d <depth> | -s] [-cghkmrx] [<file
...>]
      -H    Symbolic links on the command line are followed, symbolic
links
            in file hierarchies are not followed.
      -L    Symbolic links on the command line and in file hierarchies
            are followed.
      -P    No symbolic links are followed.  This is the default.
      -a    Display an entry for each file in a file hierarchy.
      -d    Display an entry for all files and directories <depth>
            directories deep.
      -s    Display an entry for each specified file. (Equivalent to -d 0)
      -c    Display a grand total.
      -g    Display file size in 1 GB blocks.
      -h    Print help message.
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      -k    Display file size in 1 KB blocks.
      -m    Display file on 1 MB blocks.
      -r    Generate messages about directories that cannot be read,
            files that cannot be opened, and so on. This is the default
            case.
      -x    File system mount points are not traversed.
getenforce
      usage: getenforce
getevent
      usage: getevent [-t] [-n] [-s <switchmask>] [-S] [-v [<mask>]]
                 [-d] [-p] [-i] [-l] [-q] [-c <count>] [-r] [<device>] [-
h]
      -t    Show time stamps.
      -n    Do not print newlines.
      -s    Print switch states for given bits.
      -S    Print all switch states.
      -v    Verbosity mask (errs=1, dev=2, name=4, info=8, vers=16,
            pos.events=32, props=64)
      -d    Show HID descriptor, if available.
      -p    Show possible events (errs, dev, name, pos.events).
      -i    Show all device info and possible events.
      -l    Label event types and names in plain text.
      -q    Quiet (clear verbosity mask).
      -c    Print given number of events then exit.
      -r    Print rate events as received.
      -h    Print help message.
getprop
      usage: getprop
            getprop <property>
getsebool
      usage: getsebool -a
        getsebool <boolean ...>
      -a    List all booleans.
grep
      usage:  grep [-abcDEFGHhIiJLlmnOoPqRSsUVvwxZz] [-A num] [-B num] [-
C[num]]
                 [-e pattern] [-f file] [--binary-files=value] [--
color=when]
                 [--context[=num]] [--directories=action] [--label] [--
line-buffered]
                 [pattern] [file ...]
      The Android toolbox uses the NetBSD version of grep. The NetBSD
      man page for rep describes all the options.
hd
      usage: hd [-b <offset>] [-c count] [-r delay] <file>
      -b    Start dump at specified <offset>.
      -c    Dump <count> bytes.
      -r    Causes the program to repeat the dump  after <delay>
            seconds, for <delay> times.
id
      usage: id
ifconfig
      usage: ifconfig <interface> [up | down] [mtu <value>] \
                 [-pointopoint | pointopoint <ip_address>][netmask
<address>][<ip_address>]
iftop
      usage: iftop [ -r <repeats>] [ -d <delay> ] [-h]
      -r    Repeat the header after <repeats> lines. The default is 22.
      -d    Delay in seconds before before printing another list. The
            default is one second.
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        -h      Print help message.
insmod
        usage: insmod <module.o>
ioctl
        usage: ioctl [-l <length>] [-a <argsize>] [-rdh] <device> <ioctlnr>
        -l      Length of io buffer.
        -a      Size of each argument (1-8).
        -r      Open device in read only mode.
        -d      Direct argument (no io buffer).
        -h      Print short help message.
ionice
        usage: ionice <pid> [none|rt|be|idle] [prio]
kill
        usage: kill [-<signal>] <pid ...>
            kill -l
        -l      List names of available signals.
        -<signal> <signal> is one of the names display by the -l option.
            The command does not support signal numbers, only names.
            The default signal is TERM.
ln
        usage: ln [-s] <target> <name>
        -s      Create symbolic link, instead of hard link.
load_policy
        usage: load_policy <policy_file>
log
        usage: log [-p <priorityChar>] [-t tag] <message>
        -p    0 is unknown, [1 | *] is default, [2 | v] is verbose, [ 3 | d]
            is debug, [4 | i ] is information, [5 | w] is warning, [6 | e
]
            is error, [7 | f] is fatal, [8 | s] is silent.
        -t    Mark every line to be logged with the specified <tag>.
        -h    Print help message, which is not totally accurate.
ls
        usage: ls [-lnsRdZaFi] <files ...>
        -l      Use the long list format.
        -n      Like -l, but uses numeric UIDs and GIDs.
        -s      Print the allocated size of each file in blocks.
        -R      Recursively list subdirectories.
        -d      List directories instead of contents. Does not dereference
                symbolic links.
        -Z      If it exists, print the SELinux security context for the
                file.
        -a      Do not ignore entries beginning with a '.'.
        -F      Append indicator (one of */=>@|) to entries.
        -i      Print the inode number for each file.
lsmod
        usage: lsmod
lsof
        usage: lsof [<pid> | /proc/<pid> | /proc/<pid>/task/<pid2>]
md5
        usage: md5 <filename ...>
mkdir
        usage: mkdir [-p | --parents] [--help] <target>
        -p
        --parents  Create parent directories as needed.
        --help      Print usage message.
mkswap
        usage: mkswap <filename>
mount
        usage: mount [-o <options>] [-r] [-w] <device>|<dir>
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             mount [-o <options>] [-t <type>] <device> <dir>
       -o    The valid options are async, atime, noatime, bind, dev,
             nodev, diratime, nodiratime, dirsync, exec, noexec,
             move, recurse, rec, remount, ro, rw, suid, nosuid, sync,
             verbose, unbindable, private, slave, shared.
       -r    Mount  filesystem as read-only.
       -t    The filesystem type.
       -w    Mount the filesystem read/write. This is the default.
             A synonym is -o rw
mv
       usage: mv <source ...> <destination>
nandread
       usage: nandread [-d <dev>] [-f <file>] [-s <sparesize>] [-R] [-S
<start>] [-L <length>] [-vh]
       -d    Read from <dev>.
       -f    Write to <file>.
       -s    Number of spare bytes in file (default 64).
       -R    Raw mode.
       -S    Start offset (default 0).
       -L    Length (default 0).
       -v    Print info.
       -h    Print help message.
netstat
       usage: netstat
newfs_msdos
       usage: newfs_msdos [-<options>] <special> [<disktype>]
       -@    Create file system at specified offset.
       -B    Get bootstrap from file.
       -C    Create image file with specified size.
       -F    FAT type (12, 16, or 32).
       -I    Volume ID.
       -L    Volume label.
       -N    Do not create file system: just print out parameters.
       -O    OEM string.
       -S    Bytes/sector
       -a    Sectors/FAT
       -b    Block size
       -c    Sectors/cluster
       -e    Root directory entries
       -f    Standard format
       -h    Drive heads
       -i    File system info sector
       -k    Backup boot sector
       -m    Media descriptor
       -n    Number of FATs
       -o    Hidden sectors
       -r    Reserved sectors
       -s    File system size (sectors)
       -u    Sectors/track
notify
       usage: notify [-m <event_mask>] [-c <event_count>] [-p] [-v
<level>]
         [-w <width>] <path> [<path ...]
       -m    The default is IN_ALL_EVENTS, which includes (IN_ACCESS |
IN_MODIFY | IN_ATTRIB | IN_CLOSE_WRITE | IN_CLOSE_NOWRITE | IN_OPEN |
IN_MOVED_FROM | IN_MOVED_TO | IN_DELETE | IN_CREATE | IN_DELETE_SELF |
IN_MOVE_SELF)
       -c    Number of events to display. The default is 1.
       -p    Print file name and event.
       -v    Verbose level 1 or 2.  The default level is 2.
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            -w    Width of line to display. The default is 80 characters.
printenv
      usage: printenv [<variable...>]
ps
      usage: ps [-t] [-x] [-Z] [-P] [-p] [-c] [pid] [name]
            -t    Shows the threads for a process. The PID for the first
                  value in a thread group is the TID. The PPID of each thread
                  points to the TID for the thread group. See the details in
                  /proc/[pid]/task.
            -x    The user and system time in seconds is printed after the
                  process name.
            -Z    Displays the SELinux label for a process, when running in
                  either the Permissive or Enforcing mode.
            -P    Shows the scheduling policy (PCY) used by the process. The
                  defined scheduling policies are fg (foreground), bg
                  (background) or blank (no policy).
            -p    The Linux kernel actually uses a range of 0 to 139 for
                  process priority. Priorities in the range of 0 to 99 are
                  assigned to real time processes. Normal processes have a
priority
                  between 100 and 139, with 120 being the default. To the
kernel,
                  the highest priority is 0. The kernel function that creates
                  /proc/[pid]/stat performs a little math magic to create the
                  values shown in the ps command. While all this is nice for
                  human viewers, the kernel scheduler uses a calculated priority
                  that constantly varies.
            -c    For Android versions 4.x and above, this option shows the CPU
                  on which the process was running at the point in time when the
                  data was collected from the relevant kernel data structure.
                  Since the kernel constantly load balances processors, the
                  CPU changes.
readlink
      usage: readlink [-nfqs] <filename>
            -n    Skip newlines.
            -f    Check that the path is the real path, and not a symbolic link.
            -q -s      Suppress printing of error messages.
renice
      usage: renice [-r] [-t <type>] <priority> <pids ...>
                  renice -g <pid>
            -r    Adjust real-time priority.
            -t    The <type> values are RR, FIFO, NORMAL, OTHER.
            -g    Print the priority for the specified <pid>.
restorecon
      usage: restorecon [-nrRv] <pathname...>
            -n    Do not change file labels.
            -r -R      Recursively change the labels for files and directories.
            -v    Show changes in file labels.
rm
      usage: rm [-rR] [-f] <target>
            -r -R      Recursively remove directories and their contents.
            -f    Ignore non-existent files and never prompt.
rmdir
      usage: rmdir <directory>
rmmod
      usage: rmmod <module>
route
      usage: route
         route add default dev <device>
                  route add default gw <gateway_address> dev <device>
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                route add -net <network_address> netmask <netmask>
                 gw <gateway_address>
runcon
        usage: runcon <context> <program> <args...>
schedtop
        usage: schedtop [-d <seconds>] [-bitamun]
        -d    The delay time in seconds. A fractional value is allowed,
              as the command converts the time into microseconds. The
              default value is 3 seconds.
        -b    Attempts to clear the screen after each cycle. May work
              with adb, but not with terminal emulator.
        -i    Suppress display of idle process.
        -t    Display threads.
        -a    Use alternate screen. This option is not compatible with -b.
        -m    Display time in microseconds.
        -u    Display time in milliseconds.
        -n    Display time in seconds.
sendevent
        usage: sendevent <device> <type> <code> <value>
setconsole
        usage: setconsole [-d <dev>] [-v <vc>] [-gtncpoh]
        -d    Use <dev> instead of /dev/tty0.
        -v    Switch to virtual console <vc>.
        -g    Switch to graphics mode.
        -t    Switch to text mode.
        -n    Create and switch to new virtual console.
        -c    Close unused virtual consoles.
        -p    Print new virtual console.
        -o    Print old virtual console.
        -h    Print help message.
setenforce
        usage: setenforce [ Enforcing | Permissive | 1 | 0 ]
setprop     usage: setprop <key> <value>
setsebool
        usage: setsebool <boolean_name> [ 1 | 0 | true | false | on | off ]
sleep
        usage: sleep <seconds>
smd
        usage: smd [-<port>] <message>
        -<port>    Integer port nimber. The default is 0.
start
        usage: start <service>
        Defaults to starting surfaceflinger and zygote.
stop
        usage: stop <service>
        Defaults to stopping surfaceflinger and zygote.
swapoff
        usage: swapoff <filename>
swapon
        usage: swapon [-p <prio>] [-h] <filename>
        -p    The value of prio must be between 0 and 32767.
        -h    Prints a short help message.
sync
        usage: sync
toolbox
        usage: toolbox [<command>]
top
        usage: top [-m <max_procs>] [-n <iteration>] [-d <delay>] [-s
<column>] [-t] [-h]
        -m    The default behavior of the top command is to display all
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             processes. This option limits the number of processes
             displayed.
        -n   Controls the number of iterations to display before exiting.
             The default value is -1, which provides continuous updates.
             To exit the command you must use <CTRL>C.
        -d   An integer value that determines the delay, in seconds,
             between updates. The default value is 3 seconds.
        -s   This option determines the <column> used to sort the output
             (cpu, vss, rss, thr). The default is to sort the output by
cpu.
        -t   Show threads instead of processes.
        -h   Displays a short description of the command options.
touch
        usage: touch [-a] [-m] [-l] [-d] [-t YYYYMMDD[.hhmmss]] <file>
        -a   Only change the access time.
        -m   Only change the modification time.
        -l   Change the symbolic link and not the effected file.
        -d   Print a debug message showing the changes made.
        -t   Use the time specified by YYYYMMDD[.hhmmss], instead of the
             current time.
umount
        usage: umount <path>
uptime
        usage: uptime
vmstat
        usage: vmstat [-n <iterations>] [-d <delay>] [-r <header_repeat>]
[-h]
        -n   Determines the number of rows to print. The default value is
             -1, which continues printing until command is terminated
             with <CTRL>C.
        -d   The number of seconds before printing the next row. The
default
             value is 1 second.
        -r   Sets the number of rows to print before repeating the header.
             Zero means never repeat. The default value is 20.
        -h   Prints a brief help message.
watchprops
        usage: watchprops
wipe
        usage: wipe [system|data|all|nuke]
        system     Erases the entire system directory, except for
/system/etc/ppp.
        data Erases the entire data directory, except for /data/misc,
             /data/local, /data/local/tmp, /data/data, /data/app_private,
             and /data/app.
        all  Performs both the system and data options.
        nuke Same as all, except this option reboots the Android device.
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