

E-Guide

77 Useful Linux Commands and Utilities

An essential guide for Linux administrators

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77 Useful Linux Commands and Utilities

Linux administrators cannot live by the GUI alone.

That's why we've compiled the most essential Linux commands into this convenient, interactive guide. We designed this guide specifically for Linux managers and system administrators as a reference library of only the most useful utilities. By learning a few simple tools, command-line cowards can turn into scripting commandos, getting the most out of Linux by executing kernel and shell commands.

A

[alias](#)

A way to run a command or a series of Unix commands using a shorter name you get associated with such commands.

How to use the [alias command](#) in Linux.

[apt-get](#)

Apt-get is a tool to automatically update a Debian machine and get and install Debian packages/programs.

[How to manage software on Ubuntu Server with "aptitude" and "apt-get".](#)
[Understanding the Debian archives and apt-get.](#)

Using apt-get to [update your Debian Machine.](#)

[Aspell](#)

GNU Aspell is a free and open source spell checker designed to replace Ispell. It can either be used as a library or as an independent spell checker.

[How to use Aspell](#) to check spelling.

[AWK, Gawk](#)

A programming-language tool used to manipulate text. The language of the AWK utility resembles the shell-programming language in many areas, although AWK's syntax is very much its own.

Learn how to [use the AWK utility.](#)

Gawk is the GNU Project's version of the AWK programming language.

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B

[bzip2](#)

A portable, fast open source program used to compress and decompress files at high rates.

How to use [bzip2 in Linux](#).

More on [how to use the bzip2](#) compression program.

C

[cat](#)

A Unix/Linux command that can read, modify or concatenate text files, most commonly used for displaying contents of files.

See how to [use cat to display contents of a file](#) in Linux.

An article on [what you can do with the cat command](#).

[cd](#)

The cd command changes the current directory in Linux, and can toggle between directories conveniently. It is similar to the CD and CHDIR commands in MS-DOS.

See more on [how to use the cd command](#) to change directories.

[chmod](#)

Chmod changes the access mode (permissions) of one or more files. Only the owner of a file or a privileged user may change the mode.

See examples of changing the permissions of files [using chmod](#).

[chown](#)

Chown changes file or group ownership, and has options to change ownership of all objects within a directory tree, and view information on objects processed.

Learn how to change [file ownership with chown](#).

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[cmp](#)

The cmp utility compares two files of any type and writes the results to the standard output. By default, cmp is silent if the files are the same; if they differ, the byte and line number at which the first difference occurred is reported.

See [IBM's examples](#) for using cmp.

[comm](#)

Comm compares lines common to the sorted files file1 and file2. Output is in three columns, from left to right: lines unique to file1, lines unique to file2, and lines common to both files.

More on [comparing lines with comm](#).

Read a brief [tutorial on using comm](#).

[cp](#)

The cp command copies files and directories, and copies can be made simultaneously to another directory if the copy is under a different name.

Find out how to [copy Linux files and directories with the cp command](#).

[cpio](#)

Cpio copies files into or out of a cpio or tar archive, which is a file that contains other files plus information about them, such as their file name, owner, timestamps, and access permissions. The archive can be another file on the disk, a magnetic tape, or a pipe. Cpio has three operating modes, and is a more efficient alternative to tar.

Learn how to use [cpio when moving files in a Unix-to-Linux port](#).

See how to [back up files with cpio](#).

[CRON](#)

CRON is a Linux system process that will execute a program at a preset time. To use CRON, a user must prepare a text file that describes the program to be executed and the times that CRON should execute them.

Then, the crontab program is used to load the text file that describes the CRON jobs into CRON.

Using [CRON to execute programs at specific times](#).

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D

[date](#)

Date sets a system's date and time. Also a useful way to output/print current information when working in a script file.

A few more [examples from IBM](#) on setting date and time with date.

[declare](#)

Declare declares variables, gives them attributes, or modifies properties of variables.

Examples of [declaring variables with declare](#).

[df](#)

Df displays the amount of disk space available on the file system containing each file name argument. With no file name, available space on all currently mounted file systems is shown.

More on [using df to display the amount of disk space available](#).

E

[echo](#)

Echo allows a user to repeat, or "echo," a string variable to standard output.

More on [using the Echo command with shell scripts](#).

[enable](#)

Enable will stop or start printers or classes.

Examples of how to [enable LP printers](#).

[env](#)

Env runs a program in a modified environment, or displays the current environment and its variables.

Examples of [changing environment variables using env](#).

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[eval](#)

Eval evaluates several arguments and concatenates them into a single command, and then reports on that argument's status.

More on [concatenating arguments with eval](#).

[exec](#)

Exec replaces the parent process by whatever command is typed. This command treats its arguments as the specification of one or more sub processes to execute.

More examples of [replacing parent processes with exec](#).

[exit](#)

The exit command terminates a script, and can return a value to the parent script.

More on [terminating scripts with exit](#).

[expect](#)

Expect talks to other interactive programs according to a script, and waits for a response, often from any string that matches a given pattern.

Using [expect](#) for responses.

[export](#)

Export converts files into another format than the one it is currently in. Once a file is exported, it can be accessed by any application that uses the format.

Examples of [exporting data from a database with export](#).

F

[find](#)

Find searches the directory tree to find particular groups of files that meet specified conditions, including --name and --type, -exec and --size, and --mtime and --user.

Efficiently [locating files with find](#).

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[for, while](#)

For and while are used to execute or loop items repeatedly as long as conditions are met.

More on [looping items with the for command](#).

More on [looping items with the while command](#).

[free](#)

Free displays the total amount of free and used physical memory and swap space in the system, as well as the buffers and cache used by the kernel.

Learn [how to use the free command](#) to optimize a computer's memory.

G

gawk

See AWK.

[grep](#)

Grep searches file(s) for a given character string or pattern, and can replace the string with another one. One method of searching for files within Linux.

Examples of [searching with grep](#).

[gzip](#)

Gzip is the GNU project's open source program used for file compression, compressing web pages on the server end for decompression in the browser.

Popular for streaming media compression, and can concatenate and compress several streams simultaneously.

Examples of [using gzip for compressing files](#).

I

[ifconfig](#)

Ifconfig is used to configure the kernel-resident network interfaces. It is used at boot time to set up interfaces. After that, it is usually only needed when debugging or when system tuning is needed.

Examples of [using ifconfig to configure a network](#).

Using [ifconfig to detect Linux network configuration problems](#).

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[ifup](#)

Ifup configures a network interface/enables a network connection.

More on the [ifup command](#) in configuring network interfaces.

[ifdown](#)

Ifdown shuts down a network interface/disables a network connection.

More on shutting down networks [with ifdown](#).

L

[less, more](#)

The less command lets an admin scroll through configuration and error log files, displaying text files one screen at a time, with backward or forward moving available in files. More mobility within files than in more.

View several different file types [with less](#).

Similar to less, more pages through text one screen at a time, but is more limited in moving in files.

See a [few examples](#) of displaying files with more.

[locate, slocate](#)

Locate reads one or more databases and writes file names matching patterns to output.

Finding files/directories efficiently [with locate](#).

Like locate, slocate, or secure locate, provides a way to index and quickly search for files, but also securely stores file permissions and ownership so unauthorized users will be unable to view such files.

See [an example of using slocate](#) as a quick secure way to index files.

[lft](#)

Lft is similar to traceroute in determining connection routes, but gives a lot more information for debugging connections or finding where a box/system is. It displays route packets and file types.

More on [displaying route packets with lft](#).

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[ln](#)

The ln command creates new names for a file by hard linking, letting multiple users share one file.

Examples of [hard linking files with ln](#).

A few more [examples of using ln](#).

[ls](#)

The ls command lists files and directories within the current working directory, and admins can determine when configuration files were last edited.

The ls command is also discussed in [this tip](#).

Examples of [listing files and directories with ls](#).

M

[man](#)

Short for "manual," man allows a user to format and display the user manual built into Linux distributions, which documents commands and other aspects of the system.

The man command is also discussed in [this tip](#).

See how to use the [man command](#).

See [examples of formatting man pages](#).

[mc](#)

A visual shell, text-based file manager for Unix systems.

An extensive guide to [managing files with mc](#).

more

See less.

N

[neat](#)

Neat is a GNOME GUI admin tool which allows admins to specify information needed to set up a network card, among other features.

Setting up an NTL Cable Modem [using neat](#).

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Where [neat falls in](#) when building a network between Unix and Linux systems.

[netconfig, netcfg](#)

Netconfig configures a network, enables network products and displays a series of screens that ask for configuration information.

Configuring networks [using Red Hat netcfg](#).

[netstat](#)

Netstat provides information and statistics about protocols in use and current TCP/IP network connections. A helpful forensic tool in figuring out which processes and programs are active on a computer and involved in networked communications.

More on checking network statuses [with the netstat command](#).

[nslookup](#)

Nslookup allows a user to enter a host name and find the corresponding IP address. A reverse of the process to find the host name is also possible.

More [from Microsoft](#) on how to find IP addresses with nslookup.

O

[od](#)

Od is used to dump binary files in octal (or hex, binary) format to standard output.

Examples of [dumping files with od](#).

More on od [from IBM](#).

P

[passwd](#)

Passwd updates a user's authentication tokens (changes the current password).

Some [IBM examples](#) on changing passwords with passwd.

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[ping](#)

Ping allows a user to verify that a particular IP address exists and can accept requests. Can be used to test connectivity and determine response time, and ensure that a host computer the user is trying to reach is actually operating. Examples [from IBM](#) of using ping to verify IP addresses.

[ps](#)

Ps reports statuses of current processes in a system. Some examples of using the [ps command](#).

[pwd](#)

The pwd (print working directory) command displays the name of the current working directory. A basic Linux command. Learn the [differences between \\$ PATH and pwd](#). Using [pwd](#) to print the current working directory.

R

[read](#)

Read is used to read lines of text from standard input and assign values of each field in the input line to shell variables for further processing. Examples [from IBM](#) on using read.

[RPM](#)

Red Hat Package Manager (RPM) is a command-line driven program capable of installing, uninstalling and managing software packages in Linux. A [white paper](#) on using RPM. The Differences of [yum and RPM](#). Examples of [installing packages with RPM](#).

[rsync](#)

Rsync synchs data from one disk or file to another across a network connection. Similar to rcp, but has more options. A tip on [backing up data with rsync](#). How to use [rsync to back up a directory in Linux](#).

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S

[screen](#)

The GNU screen utility is a terminal multiplexor in which a user can use a single terminal window to run multiple terminal applications or windows.

A [tutorial](#) on running multiple windows and other uses of screen.

A tip on the [uses of screen](#).

[sdiff](#)

Sdiff finds differences between two files by producing a side-by-side listing indicating lines that are different. It then merges the files and outputs results to outfile.

Example of [contrasting files with sdiff](#).

More [examples from IBM](#) on the sdiff command.

[sed](#)

Sed is a stream editor that is used to filter text in a pipeline, distinguishing it from other editors. Sed takes text input and performs operation(s) on it and outputs the modified text. Typically used for extracting part of a file using pattern matching or substituting multiple occurrences of a string within a file.

More on [extracting and replacing parts of a file with sed](#).

Several more [examples from IBM](#) on using sed for filtering.

[shutdown](#)

Shutdown is a command that turns off the computer and can be combined with variables such as -h for halt after shutdown or -r for reboot after shutdown.

Shut down or halt a computer [with shutdown](#).

slocate

See locate.

[Snort](#)

Snort is an open source network intrusion detection system and packet sniffer that monitors network traffic, looking at each packet to detect dangerous payloads or suspicious anomalies. Based on libpcap.

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Stopping hackers [with Snort](#).
More [from Red Hat](#) on using Snort.

[sort](#)

Used to sort lines of text alphabetically or numerically according to fields;
supports multiple sort keys.

Examples of [sorting through lines of text with the sort command](#).

More [examples of sort](#) with multiple sort keys.

[sudo](#)

Sudo allows a system admin to give certain users the ability to run some (or
all) commands at the root level, and logs all commands and arguments.

A [tutorial](#) on giving permissions to users with the sudo command.

[SSH](#)

SSH is a command interface used for securely gaining access to a remote
computer, and is used by network admins to control servers remotely.

A [comprehensive tutorial](#) on secure access to remote computers with SSH.

T

[tar](#)

The tar program provides the ability to create archives from a number of
specified files, or extract files from such an archive.

Examples of [creating archives with tar](#).

[TOP](#)

TOP is a set of protocols for networks that perform distributed information
processing in offices, and it displays the tasks on the system that take up the
most memory. TOP can sort tasks by CPU usage, memory usage and
runtime.

Monitoring system processes [with TOP](#).

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[tr](#)

Used to translate or delete characters from a text stream, writing to standard output, but does not accept file names as arguments -- only inputs from standard input.

Examples [from IBM](#) of translating characters with tr.

[traceroute](#)

Traceroute determines and records a route through the Internet between two computers and is useful for troubleshooting network/router issues. If the domain does not work or is not available, an IP can be tracerouted.

A tutorial on [using traceroute to determine network issues](#).

U

[uname](#)

Uname displays the name current operating system, and can print information about the mentioned system.

Examples of viewing information on the current operating system [with uname](#).

[uniq](#)

Uniq compares adjacent lines in a file, and removes/reports any duplicated lines. Removing duplicate lines [with the uniq command](#).

A [tip from IBM](#) on removing redundant lines with uniq.

V

[vi](#)

Vi is a text editor that allows a user to control the system by solely using the keyboard instead of a combination of mouse selections and keystrokes.

An entire [guide to using vi](#) to easily control a system with the keyboard.

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[vmstat](#)

Vmstat is used to get a snapshot of everything in a system, reporting information on such items as processes, memory, paging, and cpu activity. A good method for admins in determining where issues/slowdown in a system may be occurring.

How to [keep an eye on Linux performance with vmstat](#) and others.

Examples of [viewing system memory usage with vmstat](#).

W

[wc](#)

wc counts the number of words, lines and characters of text files, and produces a count for multiple files if several files are selected.

More [from IBM](#) on displaying word counts with wc.

[wget](#)

Wget is a network utility that retrieves files from the Web supporting http, https and ftp protocols. It works non-interactively, in the background, while a user is logged off. Can create local versions of remote websites, re-creating directories of original sites.

Examples of [creating mirror images of sites with wget](#).

while

See for.

[whoami](#)

Whoami prints or writes the user/login name associated with the current user ID to the standard output.

Examples [from IBM](#) of determining which login name is used with whoami.

X

[xargs](#)

Xargs reads, builds and executes arguments from standard input. Blank lines in the input are ignored.

Examples [from IBM](#) of running commands from input with xargs.



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Free resources for technology professionals

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