

# List of Pre-Installed Tools

This is a curated list of utility tools that are pre-installed on all Ultra.cc servers, and therefore accessible to any user who [connects to their slot terminal via Secure Shell \(SSH\)](#).

If this is your first time using a Linux terminal and/or connecting to a server via SSH, you might want to take a look at our [Ultra.cc Shell - A Beginner's Guide](#). It will cover the basics of how to navigate the Linux terminal.

This list will include a wide variety of utility tools with several use cases. Some are included in the default Linux build, while others are pre-installed by Ultra.cc staff as a complement to the official applications provided with your Ultra.cc slot.

The amount of commands and tools that you can execute and run in a Linux terminal is staggering. Add to that all the additional command parameters, options, etc. and the possibilities are endless, and pretty much impossible to remember. Luckily, most commands and tools can be appended with `--help` or in some cases even `-h` is enough.

For example, should you not remember how to list currently active screen sessions. Simply execute `screen --help` and it will fetch helpful information about `screen` from the shell's internal documentation, and conveniently print it directly in the terminal.

If that information isn't sufficiently descriptive, most tools will have an extended usage manual available and accessible in the terminal. Again, with `screen` as an example, simply execute `man screen` to read the usage manual for `screen`. For detailed instructions on how to navigate `man`, scroll down or [click here](#).

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## 7z

7-Zip is a file archiver with a high compression ratio. It supports 7z (LZMA compression algorithm), ZIP, CAB, ARJ, GZIP, BZIP2, TAR, CPIO, RPM, and DEB formats. The compression ratio in the new 7z format is 30-50% better than the ratio in ZIP format.

Below you will find two 7z usage examples.

- **List contents of archive:** `7z l name-of-archive.7z`
- **Extract contents of archive:** `7z x name-of-archive.7z`

For detailed usage instructions, follow [this link](#).

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## aria2c

aria2c is a lightweight multi-protocol CLI download utility tool. Supported protocols are HTTP(S), FTP/SFTP, BitTorrent, and MetaLink.

- **Download torrent file and data:** `aria2c https://releases.ubuntu.com/22.04/ubuntu-22.04.2-desktop-amd64.iso.torrent`

- **Limit Download speed:** `aria2c --max-download-limit=10M`  
`https://releases.ubuntu.com/22.04.2/ubuntu-22.04.2-desktop-amd64.iso`
- **Download URLs from a text file:** `aria2c -i multiurl.txt`

For detailed usage instructions, follow [this link](#).

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## cat

cat (concatenate) is a very useful tool that can output the contents of a file into your terminal, copy content to another file and a lot more.

- **Output file contents in your terminal:** `cat filename.txt`
- **Copy content of file to another file:** `cat filename1.txt > filename2.txt`

For detailed usage instructions, follow [this link](#).

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## crontab

The crontab tool is helpful when you want to automate certain commands and execute them according to a schedule. It's available in most Linux distros by default and can be accessed by executing `crontab -e`.

The scheduling format expressions can look daunting at first glance, but it is easily managed with [crontab.guru](#).

- **Schedule a script to execute 1 AM on Monday's:** `0 1 * * 1 /home/user/path/to/script.sh`

To disable *Email* being sent to the user account executing the cronjob, you can append `> /dev/null 2>&1` to the crontab entry. The above would then be entered like this: `0 1 * * 1 /home/user/path/to/script.sh > /dev/null 2>&1`

For detailed usage instructions, follow [this link](#).

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## curl

curl is a tool to transfer data from or to a server. Supported protocols are HTTP(S), FTP(S)/SFTP, SCP, TFTP, DICT, TELNET, LDAP and FILE. This utility tool is highly flexible and preferred for automation since it is designed to work without user interaction.

- **Output content of a URL in the terminal:** `curl https://ultra.cc`
- **Download and rename a file:** `curl -o hello.zip ftp://example.ftp.net/example.zip`

For detailed usage instructions, follow [this link](#).

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## fdupes

fdupes is a utility tool that lets you search and find duplicate files in a given set of directories of your choice. It will compare file sizes and MD5 signatures, followed by a byte-by-byte comparison.

- **Recursively search and show duplicates in terminal:** `fdupes -Sr /path/to/directory`
- **Recursively search and output duplicates in file:** `fdupes -SR /path/to/directory > /path/to/file.txt`

For detailed usage instructions, follow [this link](#)

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## ffmpeg

FFmpeg is a video converter capable of encoding and decoding all kinds of video formats. It is a feature-rich utility tool that can record, convert and stream audio and video.

- **Display information of media file:** `ffmpeg -i video.mkv`
- **Convert media file:** `ffmpeg -i video_input.mkv video_output.mp4`

For detailed usage instructions, follow [this link](#)

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## ffprobe

FFprobe gathers information from multimedia streams and outputs in a human-readable fashion. For example, it can be used to check the format of the container used by a multimedia stream and the format and type of each media stream contained in it.

- **Show media file information:** `ffprobe video.mp4`
- **Inspect video stream:** `ffprobe -hide_banner -v panic -select_streams v:0 -show_entries stream=bit_rate video.mp4`

For detailed usage instructions, follow [this link](#)

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## find

find is a command-line utility tool used to find files and folders. It supports searching by file, folder, name, creation date, modification date, owner and permissions. By using the '-exec' other commands can be executed on files or folders found.

- **Find specific file:** `find ~/ -name filename.txt`
- **Find files containing certain text:** `find ~/ -type f -exec grep -l -i "replace-this-with-text-to-find" {} ;`
- **Find files with 777 permission:** `find ~/ -type f -perm 0777 -print`
- **Find files modified in the last 10min:** `find ~/ -type f -mmin -10 -exec ls -l {} +`

For detailed usage instructions, follow [this link](#)

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# flac

flac is a command-line utility tool for encoding, decoding, testing and analyzing FLAC and other audio streams.

- **Encode WAV to FLAC:** `flac filename.wav`

For detailed usage instructions, follow [this link](#)

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# fusermount

fusermount is a command-line utility used to mount and unmount FUSE filesystems. In the Ultra.cc environment, it is mainly used for Rclone mounts and MergerFS union filesystems. The below unmount command example would be used on your Rclone mount (`~/Stuff/Mount`) and MergerFS union filesystem (`~/MergerFS`).

- **Unmount FUSE filesystem:** `fusermount -uq /path/to/mount`

For detailed usage instructions, follow [this link](#)

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# hardlink

hardlink traverses one or more directories searching for duplicate files. When it finds duplicate files, it uses one of them as the master. It then removes all other duplicates and places a hardlink for each one pointing to the master file. This allows for conservation of disk space where multiple directories on a single filesystem contain many duplicate files.

- **Dry-run:** `hardlink -n /path/to/directory`
- **Show verbose summary:** `hardlink -vv /path/to/directory`
- **Show help:** `hardlink -h`

For detailed usage instructions, follow [this link](#)

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# htop

htop is an interactive process viewer for the Linux terminal, it's a highly useful utility tool as it will let you see all the processes running on the system. It is the equivalent of the task manager on Windows.

It can be accessed from the terminal by executing `htop`. Once Htop is open, you can use the mouse or arrow keys to navigate the process list. Shortcuts can be found on the F-row.

- **Setup and configure:** `F2`
- **Tree view:** `F5`
- **Kill process:** `F9`
- **Exit:** `F10`

For detailed usage instructions, follow [this link](#)

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# iostat

The iostat utility tool is used to show input/output statistics for devices, partitions and network filesystems (NFS). Within the [Ultra.cc](#) environment it is most commonly used to monitor disk IO usage.

- **Show your disk's IO usage:** `iostat -xk 2 $(findmnt -T ~ | awk 'END {print $2}')`

For detailed usage instructions, follow [this link](#)

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# jdupes

jdupes searches the given path(s) for duplicate files. Such files are found by comparing file sizes, then partial and full file hashes, followed by a byte-by-byte comparison. The default behavior with no other "action options" specified (delete, summarize, link, dedupe, etc.) is to print sets of matching files.

- **Search dupes recursively:** `jdupes -r /path/to/directory`
- **Hardlink all dupes:** `jdupes -L /path/to/directory`

For detailed usage instructions, follow [this link](#)

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# kill

kill is used to terminate a process by sending a specified signal. If no signal is specified, the TERM signal is sent. The TERM signal will kill processes which do not catch this signal. For other processes, it may be necessary to use the KILL (9) signal, since this signal cannot be caught.

The basic syntax of kill: `kill [signal] <PID>`

The process ID (PID) of a process can be found by launching [htop](#). You will find the PID of a process in the PID column to the left.

Another way of finding the PID of a process is by searching the name of a process. Simply execute `ps aux | grep deluge`, to find the PID of any running deluge process.

- **List all kill signals:** `kill -l`
- **Kill a process:** `kill -9 <PID>` or `kill -SIGKILL <PID>`

For detailed usage instructions, follow [this link](#)

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# lame

LAME is a program which can be used to create compressed mp3 audio files from raw PCM or wav data.

Basic syntax: `lame [options] <infile> <outfile>`

- **Highest quality 128kbps encoding:** `lame -h filename.wav filename.mp3`

For detailed usage instructions, follow [this link](#)

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## lftp

lftp is a feature-rich CLI FTP client that often is favored for its ability to handle multi-segmented transfers. Supported protocols are FTP(S), SFTP, HTTP(S), HFTP, FISH and FILE. It is also able to handle BitTorrent, though it is not recommended as there are better solutions for that.

A detailed setup guide can be found [here](#).

- **Connect to a server:** `lftp sftp://username@servername.usbx.me`
- **Download file in 5 segments:** `pget -n 5 ubuntu.iso`
- **Download folder in 5 segments:** `mirror --use-pget-n=5 NameOfDirectory`

For detailed usage instructions, follow [this link](#)

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## man

The Linux man utility tool is possibly one of the most important tools. The name *man* is a shortened version of *manual pages* and it holds the usage manual for basically all the usual Linux build tools and commands.

To access the usage manual, simply execute `man <name-of-tool>`. For example, should you want to read the usage manual for Htop, you can execute `man htop`. Once inside the usage manual, press `h` for help and `q` to quit.

- **Access usage manual for man:** `man man`
- **Search within a usage manual:** `/<keyword>`. For example, to search for the word get, type `/get` and press **ENTER**.
- **Repeat previous search forward:** Press `n` to search previous word forward.
- **Repeat previous search backwards:** Press `N` to search previous word backwards.

For detailed usage instructions, follow [this link](#)

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## md5sum

The md5sum utility tool is designed to verify data integrity using the MD5 algorithm. This tool is useful if you have downloaded a file and want to make sure it is the correct file and not some malicious virus that can corrupt your system.

- **Store MD5 checksum in file:** `md5sum /path/to/file.iso > checksum.md5`
- **Verify checksum of file:** `md5sum -c checksum.md5`

For detailed usage instructions, follow [this link](#)

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## mediainfo

mediainfo supplies technical and tag information about a video or audio file. Information can be viewed and exported in different formats, such as text, CSV and HTML.

- **Display media file information:** `mediainfo video.mkv`
- **Display media file information with HTML tags:** `mediainfo --Output=HTML video.mkv`

For detailed usage instructions, follow [this link](#)

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## metaflac

The metaflac utility tool can list, add, remove, or edit metadata in one or more FLAC files.

- **Show MD5 signature of file:** `metaflac --show-md5sum file1.flac`
- **Remove tags from multiple files:** `metaflac --remove-tag=DESCRIPTION --remove-tag=COMMENT file1.flac file2.flac file3.flac`

For detailed usage instructions, follow [this link](#)

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## mktorrent

The mktorrent utility tool is used to create BitTorrent metainfo files used by trackers and torrent clients. It can create metainfo files for single files or complete directories.

- **Set private flag:** `mktorrent -p filename.torrent`
- **Add comment to metainfo:** `mktorrent -c <add-comment-here> filename.torrent`

For detailed usage instructions, follow [this link](#)

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## mkvtoolnix-gui

mkvtoolnix-gui is a set of utility tools used to create, alter and inspect Matroska (MKV) files. This toolset is very useful for those who create encodes or need to extract information from media files.

As your Ultra.cc slot doesn't have access to an X server, the mkvtoolnix-gui cannot be used. However, the utility tools that are included can be used from a terminal. See below for more information about the individual tools.

## mkvextract

mkvextract is included in mkvtoolnix-gui, and as the name suggests, this utility tool can extract tracks from Matroska (MKV) media containers. At the time of writing this, it can extract tracks, tags, attachments, chapters, CUE sheets and timecodes.

- **Extract tracks:** `mkvextract tracks source.mkv --raw 1:destination.raw`
- **Extract tags into a XML file:** `mkvextract tags source.mkv > tags.xml`

For detailed usage instructions, follow [this link](#)

## mkvinfo

The mkvinfo utility tool can be used to print information about elements in Matroska (MKV) files. The output can be limited to a list of tracks in the file, including information about the codecs used.

- **Save info to file:** `mkvinfo -v media.mkv -r info.txt`

For detailed usage instructions, follow [this link](#)

## mkvmerge

The mkvmerge utility tool can be used to merge streams from several media files into a Matroska (MKV) file.

- **Merge two media files into one:** `mkvmerge -o full.mkv file1.mkv + file2.mkv`

For detailed usage instructions, follow [this link](#)

## mkvpropedit

The mkvpropedit utility tool can be used to modify properties of Matroska (MKV) files without having to do a complete remux.

- **Name specific track:** `mkvpropedit media.mkv --edit track:a2 --set name=Comments`

For detailed usage instructions, follow [this link](#)

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## mtr

mtr is a utility tool made to diagnose network issues. It combines the functionality of the traceroute and ping programs into a single tool for easy usage.

We have written a guide with basic usage instructions, and it can be found [here](#).

- **Show mtr report:** `mtr -w -c 100 <IP-or-Domain>`
- **Show usage instructions:** `mtr --help`

For detailed usage instructions, follow [this link](#)

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# ncdu

The Ncurses Disk Usage, or the more commonly shortened version ncdu, is a utility tool that is based on the more basic `du`. It provides a fast way to see what files and directories are using your disk space.

We have written a guide with basic usage instructions, and it can be found [here](#).

- **Scan and show file tree:** `ncdu -x`

For detailed usage instructions, follow [this link](#)

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# pidstat

The pidstat utility tool is used for monitoring individual tasks that are being managed by the kernel. It can also be used to monitor child processes of selected tasks.

- **Show disk IO per process:** `pidstat -dl 2`

For detailed usage instructions, follow [this link](#)

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# pip

This is not so much a utility tool, but more of a package manager for Python packages. Python is a very versatile language and with pip you have access to a lot of Python packages.

- **Install Python package:** `pip install <package-name>`
- **Install Python 3 package:** `pip3 install <package-name>`
- **List installed packages:** `pip list`

For detailed usage instructions, follow [this link](#)

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# pkill

pkill is a command-line utility that sends signals to the processes of a running program based on given criteria. The processes can be specified by their full or partial names, a user running the process, or other attributes.

The basic syntax of pkill: `pkill [OPTIONS] <PATTERN>`

- **List all kill signals:** `kill -l`
- **Kill a specific process:** `pkill -9 deluge`
- **Kill a process with matching argument:** `pkill -9 -f "ping 8.8.8.8"`
- **Gracefully terminate a specific process:** `pkill -15 deluge`

For detailed usage instructions, follow [this link](#)

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# pwd

This utility tool was made with one goal in mind, to print the name of the current/working directory.

- **Show absolute path without symlinks:** `pwd -P`
- **Show absolute path with symlinks:** `pwd -L`

For detailed usage instructions, follow [this link](#)

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# rar

The rar utility tool is used for creating RAR archives and is closely related to the utility tool called unrar, which is used to extract the content of a RAR archive. You can read more about unrar [here](#).

- **Create RAR archive:** `rar a archive.rar <folder-name>`
- **Set archive password:** `rar a -p archive.rar`

For detailed usage instructions, follow [this link](#)

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# rdfind

rdfind is a command line tool that finds duplicate files. It is useful for compressing backup directories or just finding duplicate files. It compares files based on their content, NOT on their file names.

- **Check for dupes:** `rdfind /path/to/directory`
- **Check for dupes in two directories:** `rdfind /path/to/directory /path/to/directory`

For detailed usage instructions, follow [this link](#)

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# rsync

The rsync utility tool is a fast and versatile file-copying tool that can handle both local and remote connections. It is one of the most popular file-copying tools and is praised for its ease of use and stability.

- [Initial Setup](#)
- [Rsync Backup Script](#)

For detailed usage instructions, follow [this link](#)

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# screen

The screen utility tool is a window manager that multiplexes a physical terminal between several processes. This is very useful when you are handling SSH connections as they will be dropped and close when you exit the session. With screen you can set up a virtual terminal within the remote machine you have connected to via SSH.

Once the screen session is set up, you can then detach from the screen session and close your SSH connection. The screen session will continue to run while you are disconnected. This allows you to reconnect to your remote machine at a later point in time, and then reattach to the screen session to continue working where you left off.

- **Reattach if possible, otherwise start a new session:** `screen -R <session-name>`
- **Detach from session:** Press `CTRL + a` and then `d`

For detailed usage instructions, follow [this link](#)

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## SOX

SoX - Sound eXchange, the Swiss Army knife of audio manipulation. SoX reads and writes audio files in most popular formats and can optionally apply effects to them; it can combine multiple input sources, synthesise audio, and, on many systems, act as a general purpose audio player or a multi-track audio recorder.

- **Translate fileformats:** `sox filename.au filename.wav`
- **Concatenate two audio files:** `sox -m music.mp3 voice.wav mixed.flac`

For detailed usage instructions, follow [this link](#)

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## systemctl

This is not so much a utility tool, but more of a system tool. But, as it is present in most Linux distros and used to manage services on your Ultra.cc slot, we decided to include it on the list. Below we will use `nginx.service` as an example, but this can be replaced with other services.

- **Show status of systemd service:** `systemctl --user status nginx.service`
- **Stop systemd service:** `systemctl --user stop nginx.service`
- **Start systemd service:** `systemctl --user start nginx.service`
- **Restart systemd service:** `systemctl --user restart nginx.service`
- **Reload systemd daemon:** `systemctl --user daemon-reload`

For detailed usage instructions, follow [this link](#)

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## tail

The tail utility tool lets you "tail" the latest output of a file. This is useful for when you have a log file that is updating in real-time and you only want to see the latest output of the log file.

- **Show output of log file in real-time:** `tail -f filename.log`
- **Show 50 last lines of a file:** `tail -n 50 filename.txt`

For detailed usage instructions, follow [this link](#)

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## tar

The tar utility tool is a simple archiving tool used to save multiple files together into a single file archive. This is useful when you need to transfer a lot of files as you can archive them all and then restore them once you have transferred the single archived tar file.

- **Create file archive:** `tar -cf archive.tar file1 file2`
- **List all files in archive:** `tar -tvf archive.tar`
- **Extract all files from archive:** `tar -xvf archive.tar`

For detailed usage instructions, follow [this link](#)

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## tmux

The tmux utility tool is a terminal multiplexer and it enables a number of terminals to be created, accessed, and controlled from a single screen. tmux may be detached from a screen and continue running in the background, then later reattached.

When tmux is started it creates a new session with a single window and displays it on screen. A status line at the bottom of the screen shows information on the current session and is used to enter interactive commands.

This utility tool is very useful when you are handling SSH connections as they will be dropped and close when you exit the session. With tmux you can set up a virtual terminal within the remote machine you have connected to via SSH.

Once the tmux session is set up, you can then detach from the tmux session and close your SSH connection. The tmux session will continue to run while you are disconnected. This allows you to reconnect to your remote machine at a later point in time, and then reattach to the tmux session to continue working where you left off.

Should you need a tmux cheatsheet, you can find it [here](#).

- **Create tmux session:** `tmux new -s <session-name>`
- **Attach to a session:** `tmux attach -t <session-name>`
- **List sessions:** `tmux ls`
- **New session window:** Press `CTRL + b` and then `c`
- **New vertical pane:** Press `CTRL + b` and then `%`
- **New horizontal pane:** Press `CTRL + b` and then `"`
- **Close pane:** Press `CTRL + b` and then `x`
- **Detach from session:** Press `CTRL + b` and then `d`

For detailed usage instructions, follow [this link](#)

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## tree

The tree utility tool is a simple yet effective tool. It is used to list the contents of a directory in a tree-like format.

- **List content recursively, hidden files included:** `tree -a`
- **List only directories:** `tree -d`
- **List content with full path prefix:** `tree -f`

For detailed usage instructions, follow [this link](#)

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## unzip

As the name suggests, the unzip utility tool can list, test and extract compressed files in a ZIP archive. Unzip is closely related to zip, which is used to create ZIP archives. You can read more about it [here](#).

- **Extract ZIP:** `unzip filename.zip`
- **Extract ZIP to specific path:** `unzip filename.zip -d /path/to/destination_folder/`
- **List content of ZIP archive:** `unzip -l filename.zip`

For detailed usage instructions, follow [this link](#)

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## unrar

The unrar utility tool is used for extracting the content of RAR archives. To create a RAR archive, see the rar utility tool instead, which you can read more about [here](#).

- **Extract RAR archive:** `unrar x archive.rar`
- **List content of RAR archive:** `unrar l archive.rar`

For detailed usage instructions, follow [this link](#)

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## wget

The wget utility tool is a popular non-interactive network downloader. It supports HTTP, HTTPS and FTP. It is known for being a robust and stable tool that can be used on many systems.

- **Download file:** `wget https://releases.ubuntu.com/22.04.2/ubuntu-22.04.2-desktop-amd64.iso`
- **Download files from a file with URLs:** `wget -i download-file-list.txt`

For detailed usage instructions, follow [this link](#)

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## which

The which utility tool is useful for when you want to see the full path of where a shell command or tool is stored. Below we will use the utility tool `htop` as an example for how you can use which to see the full path.

- **Show full path:** `which htop`

Expected output:

```
user@host: ~$ which htop
/usr/bin/htop
```

For detailed usage instructions, follow [this link](#)

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## zip

The zip utility tool is used to package and compress ZIP files. It can be used in conjunction with the utility tool called unzip, which is used to extract ZIP archives. You can read more about unzip [here](#).

- **Create ZIP archive:** `zip -r archive.zip <folder-name>`

For detailed usage instructions, follow [this link](#)

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