THE ULTIMATE OPEN-SOURCE TOOLKIT!

As **Mayank Sharma** knows, it's vital to have the right tools for the job. That's why he's burnt his fingers to get you these red-hot pieces of open source software.



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Ultimate open-source toolkit



The mainstream Linux distributions spend a lot of time selecting their default bouquet of programs. After all, they need the tools to cater to the largest number of users. Sure, these programs excel at what they do, but there are thousands of other brilliant software lurking in code-sharing silos like GitHub and Sourceforge, and even inside the official repositories of your favourite distribution, waiting to be discovered.

Realistically though, do you have time to try all of these tools? Do you even want to, considering that your needs are served well enough by the distro's default options? Add to that the fact that most of us have our favourite open source apps and a conviction that they work for us better than any available alternative. That said, we'll encourage you to take a step outside your comfort zone to marvel at the diversity of the Linux-verse. And don't let the number of low-quality, unmaintained programs deter you from exploration.

EXPAND YOUR FRONTIERS

"Don't let the number of low-quality, unmaintained programs deter you from exploration"

At *LXF Towers* we spend a lot of time rummaging around the source code mirrors and other places to discover new gems to cover in the magazine. This issue we've decided to collate all the best ones we've encountered in our travels. We've stayed away from including the popular mainstream tools, but you might still be familiar with some of them because they're just that good.

For the most part though, the next few pages will introduce you to graphical apps and CLI utilities that you've never come across before. No matter the type of user you are or how you use Linux, the following pages will give you plenty of open source goodies to spruce up your Linux box.

Image tools

Check out these nifty options for managing or editing your image collection.

PENCIL 2D



You can use *Pencil 2D* to create both static and animated drawings. It's a comprehensive program that will help digital designers create professional-grade cartoons and animations in multiple layers. The intuitive tool is well complemented by the video tutorials on its website. **www.pencil2d.org**

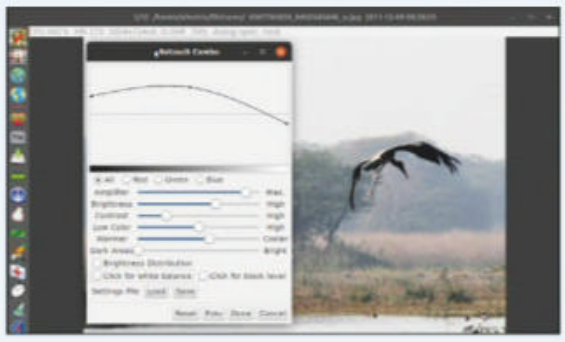
DARKTABLE

If you work with RAW images, *darktable* will help you create a professional digital darkroom to process them. The tool's interface gives you access to a full gamut of image manipulation and editing tools on par with commercial heavyweights from the likes of Adobe and Apple. **www.darktable.org**

FOTOXX

A comprehensive image-manipulation program with a rich set of retouch and edit functions that go beyond changing brightness, contrast and colour. Like most dedicated image editors, *Fotoxx* enables you to select an object or area within an image using various tools such as freehand outline, follow edges and select matching tones. Another unique feature of the tool is that it makes it possible to edit the images without using layers. You can also use *Fotoxx* to create HDR and panoramic images, reduce noise and remove dust spots, create collages, mashups, and slideshows with animations. There are also several artistic effects to help convert a photo into a line drawing, sketch, painting, embossing, cartoon, dot image, or mosaic.

On the initial launch, *Fotoxx* fires up its quick start guide in the web browser, along with a dialog to index your image library. This process can take some time depending on the number of images you have in your library. All its features can be accessed from the relevant options that are clearly labelled in the left-side panel. **https://kornelix.net/fotoxx/fotoxx.html**



You can use Fotoxx on resource-strapped machines and the program can be navigated entirely with the keyboard.

RAPID PHOTO DOWNLOADER



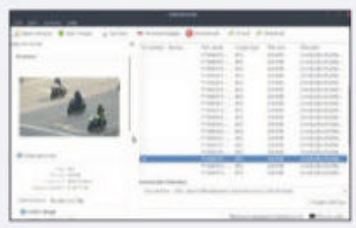
This program might seem redundant considering that most photo-management tools can import photos themselves. *Rapid Photo Downloader*, however, is designed for transferring photos and videos. It offers a lot more functionality that make it a perfect tool for downloading, processing and organising photos and videos.

The tool gives you control over how it processes and sorts the downloaded photos. The program's default rules automatically transfer the downloaded photos inside date-based subfolders.

You can also define custom rules as per your requirements. For example, you can ask the program to sort photos by their type, which comes in handy if you shoot both RAW and JPEGs. In fact, you can create complex subfolder hierarchy by defining naming rules based on Exif values, such as focal length, ISO, and so on. You can also specify an external USB storage device as the back-up destination, and the program will automatically back up the photos while downloading them from the camera. **https://damonlynch.net/rapid**

CONVERSEEN

Converseen is a straightforward frontend to various command-line conversion utilities that can convert images to and from over 100 formats, rotate and flip them, change their dimensions, and rename them in a fraction of the time it would take to perform these tasks manually. **http://converseen.fasterland.net**



Manipulate any number of images within the Action panel.



FROGR

Use this tool to upload content to Flickr and also access its basic upload features such as the ability to describe images, set specific licenses and categorise them into sets and group pools. **https://mariospr.org/category/frogr**

NOMACS

This image viewer can display images in all the popular image formats. In addition to the usual features it has some surprising ones such as the ability to synchronise viewing between multiple network instances. **https://nomacs.org**

ENTANGLE

Use this tool to tether and control your camera from the computer. *Entangle* will also help you set up the shot by tweaking the aperture, shutter speed, ISO and other settings and then download the image. **https://entangle-photo.org**

FLAMESHOT



You can use *Flameshot* to capture the whole or a specific portion of the screen. Additionally, it also provides you with a whole set of drawing tools to add annotations to your screenshot. **https://github.com/lupoDharkael/flameshot**

LYCHEE

Lychee has a simple user interface, and is a platform for storing and sharing photos, You can run it from a SBC like the Raspberry Pi and use it to upload, manage and share photos. **https://lychee.electerious.com**

Audio and Video

Edit your videos within an inch of their lives, and organise your music.

UMS

This streaming server will transform your Linux desktop into the ultimate media streaming station to broadcast media to other computers, smartphones, tablets, gaming consoles and even TVs. *UMS* streams media via the Universal Plug and Play (UPnP) protocols to any DLNA-compliant device. You'll have to roll-out *UMS*, although the procedure is fairly simple.

The first time you launch it, *UMS* takes you through a basic three-step configuration wizard. Although you can start streaming without further configuration, UMS does include an admin panel that offers customisable options and tips to guide new users. It also includes a minimal web interface for streaming your content.

www.universalmediaserver.com

MPV

A resource-conscious video player that also looks good on modern machines. Based on *mplayer2*, *MPV* continues the tradition of *CLI* by introducing optimised and cleaned-up code with new configuration options and features. It offers a minimal user interface that stays out of the way, enabling you to watch your videos in peace.

https://mpv.io



SHOTCUT

A fairly advanced video editor, *Shotcut* is one of the few tools that supports editing 4K videos. The program supports many audio and video formats along with a variety of transitions and effects. It has a long list of impressive features and a collection of video tutorials to help orient first-time users.

https://shotcut.org

CURLEW

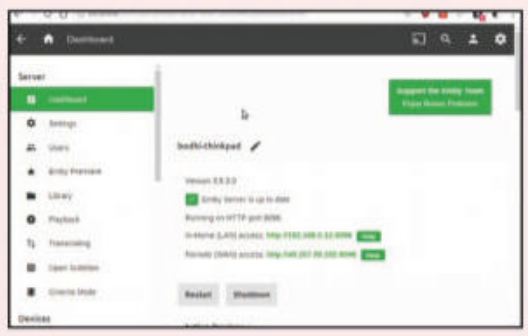
Powered by the *ffmpeg* library, *Curlew* is an easy-to-use media converter. It has the ability to crop and pad videos and convert only specified portions of files. Select from one of its preset settings for various devices and formats and you'll also be able to preview the files before the conversion.

https://curlew.sourceforge.io

EMBY

This is an all-inclusive media server that comes with plenty of features. *Emby* is a one-stop shop for accessing and viewing all your media on any device: from other computers and mobile platforms to Android TV, Chromecast, Roku, Xbox and more. Besides local folders, *Emby* enables you to add network shares, which is a great time-saver if you have media on different computers in your network. The *Emby* server is available as a pre-packaged binary and its website has installation instructions for all popular distros including Arch, CentOS, Fedora and Ubuntu. You can right-click items to reveal useful options such as downloading them, adding them to playlists and collections, converting them or editing their metadata. You can change the stream quality during playback and display full-screen. *Emby* also enables you to set up parental controls, and you can block items that have a higher rating than the maximum you've defined.

https://emby.media



Emby can also connect to TV tuner cards and DVR devices to stream and record live TV.

AIRSONIC (3S)

Based on the now closed-source project, the *Airsonic* audio streamer makes your music omnipresent. It does on-the-fly conversion and can stream files in almost any format to multiple players simultaneously.

https://airsonic.github.io

TUPITUBE

A set of tools to encourage kids to create 2D animations, *TupiTube* has an easy-to-use interface with just the right number of features and a host of textual and video documentation to get started.

www.maefloresta.com

PICARD

A nifty little tool, *Picard* will get your music collection back into shape. The program can sort your music library and fill in missing tags, rename oddly named files and identify incomplete albums.

https://picard.musicbrainz.org

TRAVERSO DAW

A powerful audio recording and editing platform, *Traverso* is a digital audio workstation tool that can do everything from creating simple recordings to editing multi-track audio.

https://traverso-daw.org

MIXXX

If you need to play DJ at an event, run through your music library with *mixxx* and use its scratchable waveform to loop beets, alter the tempo of tracks and change their pitch to create your own mix.

www.mixxx.org

Disk tools

Keep your hard drive in tip-top shape, recover lost data or delete it safely.

FOG

The constant barrage of repetitive tasks such as running checks, troubleshooting errors, swapping out dead hard disks, doing fresh installations over and over again can sap the energy out of any system admin, irrespective of the size of their network. Using *FOG* you can image and clone machines from the comforts of the admin HQ.

FOG is a complex piece of software and offers plenty of options, with various fields to describe the host images. It can also arrange them into groups for easier management. There are also several options to schedule the imaging process.

FOG can also be used to debug imaged computers, remotely wipe hosts and more. The server also handles regular admin tasks such as installing software and can even manage printers on the network. The *FOG* server is scalable and can manage large networks spread over multiple locations in the same building or on the other side of the planet. One of the most useful features of the *FOG* server, especially for admins of larger networks, is the multicast ability. Using this feature you can deploy multiple machines in one go. To supplement it on such large networks, you can have multiple *FOG* installations configured as storage servers that help take the load of the main *FOG* server when imaging computers.

https://fogproject.org

DUPLICATI



An easy-to-use back-up application, *Duplicati* enables you to fine-tune the list of locations you want to preserve by either defining filters or toggling one of the predefined options to exclude certain types of files. You can manage the tool via a browser-based interface. The program breaks down critical tasks into wizards and also exposes just the right number of features for the job in hand, while advanced options are just a pull-down menu away.

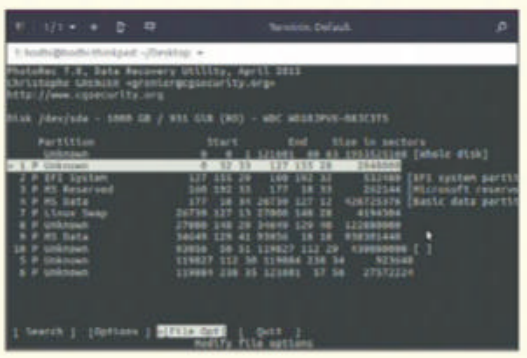
Files are encrypted with AES-256 and you can also use GPG before sending the backups to their destination. *Duplicati* also compresses all data before it's encrypted. It supports Zip and 7Z compression, and can skip compression of already compressed files such as MP3 and JPG.

www.duplicati.com

PHOTOREC

Photorec is a nifty little command-line based tool that can restore accidentally deleted files. When you delete a file, the file system just marks it as deleted, and makes the space the file occupies available to other files. *Photorec* works by recovering such files that are missing regular metadata such as a filename. Despite its name, the CLI utility can sniff files in various formats.

www.cgsecurity.org/wiki/PhotoRec



Photorec is part of almost every recovery distro and it ships along with TestDisk.

GPARTED



One of the best graphical utilities to manage partitions, you can use *Gparted* to create, delete, resize, move and copy partitions while preserving the data they house. The program works with all kinds of hard disks, SSDs, and RAID devices and supports all the filesystem in vogue.

https://gparted.org

SECURE-DELETE

The secure-delete package contains various utilities to securely delete files and wipe all traces of data in the free space on the disk. There's *srm* that make it impossible to remove any deleted files, *sfill* to wipe all data from the free space on the disk, and *sswap* to wipe data from the swap partition.

http://srm.sourceforge.net

CDEMU



The *CDemu* tool enables you to mount disc images in various formats including .ISO, .bin and .nrg. The *CLI* tool also has several graphical front-ends for Gnome and KDE desktops.

https://cdemu.sourceforge.io

DUC

If you're looking to free up some disk space, use *Duc* in the first instance to gain a better idea of the files occupying the space. The tool does a better job in inspecting your hard disk than the file manager.

https://duc.zevv.nl

DDRESCUE

Try image a failing drive with *ddrescue* before attempting recovery. The utility doesn't write zeros to bad sectors, and tries to fill in the gaps without wiping out the data already rescued.

www.gnu.org/software/ddrescue

PYDF

A replacement for *df*, *pydf* is a Python script that highlights the different types of filesystems. It has an large set of configurable parameters and various options to control its output.

https://pypi.org/project/pydf

SMARTCTL

Bundled as part of the *smartmontools* package, the *smartctl* utility controls and monitors the SMART system built into hard disks. Use the tool periodically to run self-assessment health checks on the disks.

www.smartmontools.org

File management

Control your data, where it can be accessed, and archive it, too.

EICIEL (45)

Everything in Linux is a file and the access control list (ACL) helps determine the access rights for each file. You can modify the permissions from the command line or use the graphical *Eiciel* utility that's in the official repositories of most distros.
https://rofi.roger-ferrer.org/eiciel

FSLINT

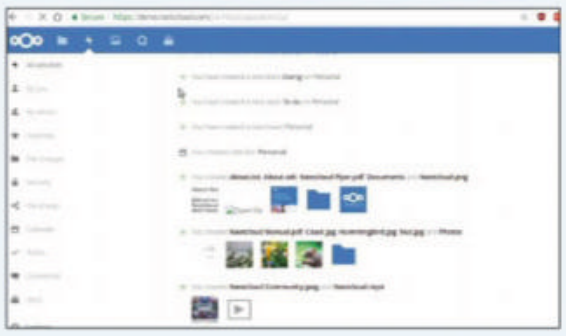
You can use the graphical *FSLint* tool for a comprehensive cleanup of your file system. It can remove duplicate files, temporary files as well as files that are otherwise difficult to locate and remove, such as files with invalid names, empty directories and bad IDs.
www.pixelbeat.org/fslint

NEXTCLOUD

Online storage services are a convenient option for accessing and sharing your data anywhere on the planet. With *Nextcloud* you can roll out a hosted storage server that gets you the convenience of an omnipresent storage service without shelling out wads of cash and your data to a third party.

Installing and rolling out *Nextcloud* is a fairly straightforward and well documented process. It has a feature-rich and intuitive web interface that shouldn't prove to be difficult to navigate even for first-time users, which is a feat in itself considering the sheer number of features it wraps underneath. The project scales well and can be used on a home network as well as an enterprise one. You can use its administration section to hook it up with other related network services such as a directory server to import users.

Sharing files with other users on the network or publicly via URLs is simple enough. The server ensures that changes made to shared files are synced to all users. It can also access files stored on a variety of cloud services such as Amazon, Google and Dropbox.
https://nextcloud.com



Nextcloud has an extensive plugins framework that enable you to use it for many deployments.

OPEN MEDIA VAULT

If you need more protection for your data than a simple back-up solution, then you need to convert an unused computer (or even a Raspberry Pi) into a dedicated network attached storage (NAS) device with the Debian-based *Open Media Vault* (*OMV*) server.

OMV is straightforward to roll out and simple to manage, thanks to its well-designed browser-based user interface, which makes it suitable for even non-technical users. It supports all the popular deployment mechanisms, including several levels of software RAID, and you can access the data it holds using all the popular network protocols such as SSH, SMB/CIFS, FTP and Rsync. The server also has an extensive permissions systems to control access to the shared volumes and folders. The server is modular and can be extended with a variety of official and third-party plugins. For instance you can turn your NAS into a torrent client to download data directly into the NAS storage or use it to stream stored music across the network.
www.openmediavault.org

SYNCTHING

The open source alternative to the popular but proprietary *BitTorrent Sync*, *Syncthing* can sync your files between computers over your LAN or across the web. The service uses a global discovery server to connect clients anywhere on the Internet.
https://syncthing.net



Use Syncthing's browser-based interface to add shared folders and all of your various devices.

CATFISH

A graphical alternative to the find and locate CLI utilities, *Catfish* is a versatile tool that has various options to help you prune the search results and find the file you were looking for.
www.twotoasts.de/index.php/catfish

PEAZIP

The graphical compression utility can read most archiving formats and boasts of some useful data security features such as the ability to create archives with encryption and two-factor authentication.
www.peazip.org

EXIFTOOL

A CLI utility for working with metadata in images, *exiftool* helps you manipulate the files based on their metadata. Users can also use it to strip all metadata before sharing images online.
www.sno.phy.queensu.ca/~phil/exiftool/

TKDIFF

A graphical front-end to the *diff* utility, you can use *TkDiff* to compare two files. The tool can connect with a range of source code management systems and has several other features.
https://tkdiff.sourceforge.io

RANGER

Ranger has a curses-based interface that works inside the console. The tool supports *Vi* keybindings, makes use of the rifle file launcher and is able to preview images and videos.
https://github.com/ranger/ranger

Communication

Chat securely or set up your own social network. In your face, Facebook!

JITSI

An all-in-one instant messaging app, *Jitsi* has an impressive set of audio and video-conferencing features. As a VoIP client, it enables you to make calls using the Session Initiation Protocol (SIP). It has all the features you'd expected from a softphone in that it can mute, put on hold, transfer and record calls. It can also make registrar-less SIP calls to other *Jitsi* users on the local network.

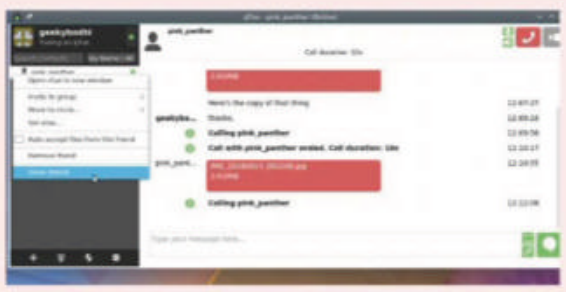
You can use *Jitsi* to make video calls to one user or to several on both SIP and XMPP networks, while using *Jitsi Videobridge*, you can host multi-user video calls. It's also a capable IM client with several unique features including the ability to stream and share the desktop of users at both ends of the call at the same time.

https://jitsi.org

TOX

If regular IM clients aren't secure enough for you, use the *Tox* IM protocol which encrypts all chats with the NaCl encryption library and instead of a central server, routes them over direct P2P connections between users. The IM uses *Tox* IDs, which are public keys of peers instead of a user account and also allow for greater anonymity.

https://tox.chat



There are several apps that can communicate using the Tox protocol and one of the most popular ones is qTox, which works on several platforms.

BEEBEEP

An IM client with a difference, *BeeBEEP* is designed to connect you directly with peers on your network. It'll automatically detect other *BeeBEEP* users on the network and provides all the features of a modern chat client and apart from encrypted text messages, can also share files.

http://beebeep.sourceforge.net

OPENFIRE

There are several XMPP-based IM servers available but *Openfire* is one of the easiest to manage. It implements many of the commonly used functions of the XMPP protocol. While you can use any XMPP-compatible IM client to chat through *Openfire*, it works best with its own *Spark* client. **www.igniterealtime.org/projects/openfire**

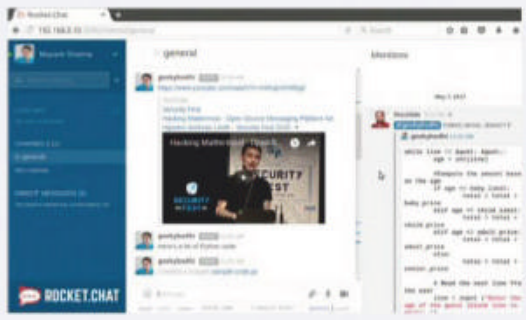
ROCKET.CHAT

Billing itself as the 'ultimate chat platform', *Rocket.Chat* is filled with useful features. In addition to essentials ones like threaded conversations and the ability to edit and delete messages, the collaborative communications server offers several interesting ones such as live chat, with which you can use *Rocket.Chat* to have conversations with visitors to your website.

You can roll out *Rocket.Chat* on a snap-supported distro with a single command, and it also support deployments over Docker and a wide range of PaaS services. It can also import your data from another service like *Slack* or *Hipchat* and with the SlackBridge plug-in can also mirrors messages received in a *Slack* channel or private group into *Rocket.Chat* in real-time.

Rocket.Chat also enables you to have a video conference with your team. You can also record and send voice messages to a public or a private conversation.

https://rocket.chat/community



Rocket.Chat enables you to preview links shared during a conversation including those from popular services like Twitter and YouTube.

SIGNAL

The *Signal* messaging app helps secure communications over the mobile network. The app is endorsed by top security experts and uses end-to-end encryption to secure all your text, audio and video calls.

https://signal.org

RIOT.IM

The Matrix protocol enables users registered with one service provider to seamlessly communicate with users of another. *Riot.im* is one of the best clients based on the federated Matrix protocol.

https://about.riot.im

RETROSHARE

A P2P communications and file sharing platform, *RetroShare* creates encrypted connections between friends. You can add friends by sharing your keys privately or you can exchange them via a chat server.

http://retroshare.net

SOGO

One of the best alternatives to MS Exchange, *SOGo* has all the necessary groupware functions with native desktop and mobile clients. Try the online demo before deploying it on your server.

https://sogo.nu

HUMHUB

With *HumHub* you can deploy your own social network on the internet network. It has all the standard social networking features you'd expect and the project's website hosts an online demo as well.

www.humhub.org

Productivity

Put some order into your life with these finance, web filtering and admin tools.

OSMO

A personal information manager (PIM) helps you keep track and organise all the information coming in from various sources. *Osmo* is a lightweight PIM that helps manage appointments, tasks, contacts and notes. The application has a straightforward and integrated interface with four tabs on the top for Calendar, Tasks, Contact and Notes. The program lacks any menus, but the action-linked buttons at the top change as you switch between the four components. The Calendar pane provides a simple functional calendar along with some related information such as the week number and the number of days to the end of the year. You can double-click a date to add notes or right-click a date to add a task.

The options for defining a task in *Osmo* are housed within a basic and an advanced tab. Use the basic tab to define the due date and time and assign the task a priority, while the advanced tab enables you to mark the task as recurrent and define relevant properties. You can store the address of your contact using the Contacts pane. It sports additional features including a search function, a birthday browser, as well as the ability to point out the address of a contact on Google Maps. The Notes pane makes it possible to jot down text using rich text editing functions and you can optionally encrypt all your notes using a password. **http://clayo.org/osmo**

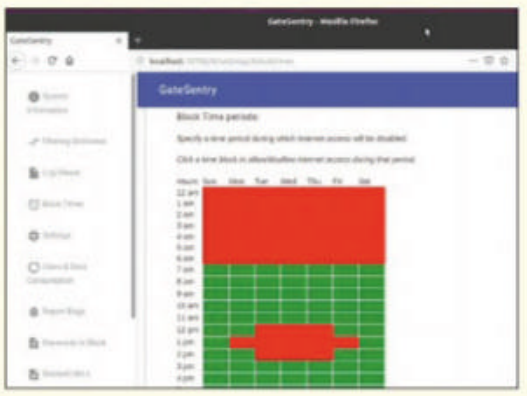
FOCUSWRITER

Scribble without distraction with the *FocusWriter* text editor, which runs full-screen and uses an auto-hide menu for a clean workspace. The editor supports the popular text formats and has basic support for ODT files as well.

The primary goal of *FocusWriter* is to enable you to focus on the writing, so while the tool might lack some of the dexterity of the mainstream text editors, it has several unique features that are more tuned towards this objective. You can set alarms to trigger after a certain period has elapsed, or at a particular time and also set yourself targets in *FocusWriter*. An interesting feature is Focused Text, which fades out everything except the section you're typing – a whole paragraph, a block of three lines, or just the current line. **https://gottcode.org/focuswriter**

GATESENTRY

A simple web filter, *GateSentry* works on Linux as well as the Raspberry Pi. It's easy to deploy and configure. *GateSentry* authenticates users and filters traffic by websites, content type as well as by time. The simple proxy server can display data consumption statistics and can also enables you to remotely disable a user's access. **http://gatesentryfilter.abdullahirfan.com**



GateSentry can also filter traffic over HTTPS once you install its certificate on your devices.

KIMAI V2

Kimai tracks work times and prints out a summary of your activities. It can be used for a single user or multiple ones and can manage multiple customers, projects. The program has a browser-based dashboard that you can fiddle around with using the demo installation on the project's homepage. **https://v2.kimai.org**

SIMPLESCREEN RECORDER

Contrary to its name, *SSR* is flush with features and gives its users a good amount of control over the screencast. The tool can record the entire screen and also enables you to select and record windows and regions on the desktop. **www.maartenbaert.be/simplescreenrecorder**

TURTL

A note-taking tool with a focus on privacy, *Turtl* has an impressive list of features. It can create different types of notes and makes it possible for you to attach images and other files to the notes that you've created. **https://turtlapp.com**

DICTION

A CLI utility, *Diction* helps flags words that are commonly misspelt. It can create better copies by flagging words that are commonly associated with beginner's mistakes and to even suggest better wording. **www.gnu.org/software/diction**

TASK COACH

A simple to-do manager, *Task Coach* simplifies the process of defining and following up on tasks. You can also use the tool to assign a priority to tasks along with a completion date and an optional reminder. **www.taskcoach.org**

EQONOMIZE

Eqonomize is a personal expense manager with a clean interface and all the features you need to help organise your finances. The program can track single or multiple accounts and fix budgets. **https://eqonomize.github.io**

STRETCHLY

A simple app that pops in to remind you to take a break. It has a couple of preset break intervals and the break windows share ideas to help you relax. You can control the tool from its tray icon. **https://hovancik.net/stretchly**

System Administration

Find out exactly what's going on under the hood of your Linux box.

GLANCES

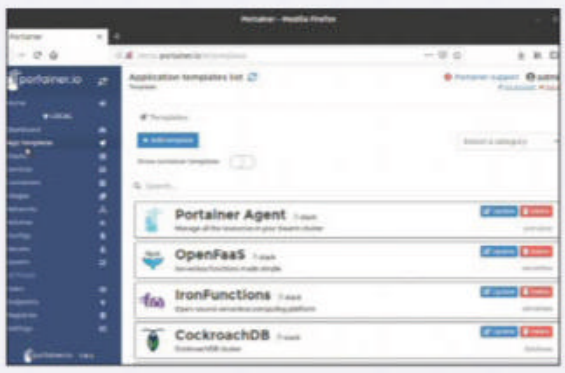
Glances is a Python script that smartly displays a lot of information about your current session inside a standard terminal window. You can use the tool to monitor remote machines and use the built-in web interface to monitor machines using a web browser.
https://nicolargo.github.io/glances

FIREJAIL

Firejail enhances security by isolating programs and processes inside limited sandboxed environments. By locking away the web browser or any tool that can be compromised, *firejail* prevents a compromised program from accessing critical areas of the filesystem.
https://firejail.wordpress.com

PORTAINER

Using Docker via the terminal isn't all that cumbersome and the tool is well documented. To make your life easier however, you can use *Portrainer*, which is an open source, web-based graphical front-end that supports all the features exposed by the Docker API. You can use it to manage containers, images, networks, and volumes and it can manage a standalone Docker environment, or a Docker Swarm.



You can use Portainer to pull images from Docker Hub or a private registry.

From its dashboard you can create containers and view and manage all available ones. You can obtain real-time stats such as CPU and memory usage and various other details about the running containers and even access a container's console, all from within the browser window. *Portainer* is available as a Docker container so you can install it with a single command. To create containers you can use one of the dozens of predefined templates. The tool can be used by multiple users and has useful user-management functions. You can for example use it to define the levels of access any other users have to *Portainer*, and the aspects of Docker they can manage from within *Portainer*.
https://portainer.io

BOOTCHART

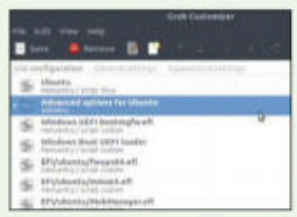
One of the major causes of longer boot times is that your system starts unnecessary tools and services during startup. But before you axe them, it's best to get a picture of what's happening while your distro boots up.

Bootchart is a simple utility that enables you to profile your Linux boot process and help measure the loading times of different services. It's now merged with Systemd. Fire up a terminal and enter `systemd-analyze time` to know the breakup of the boot duration. Similarly, `systemd-analyze blame` will list all running units ordered by the time they took to start.

To generate an image of the boot process, type `systemd-analyze plot > boot.svg`. From this image you can find all the active processes and can remove any you don't need. For example, if you print occasionally, you can disable CUPS from starting at the boot time. Furthermore, the image also helps you spot processes that take control of all resources and force the other processes to wait, slowing boot up.
www.bootchart.org

GRUB CUSTOMIZER

There are several reasons you might want to change the default boot loader behaviour and the *Grub Customizer* tool will help you do just that. The graphical tool can modify all aspects of the boot process and can even tweak how the Grub screen looks. **https://launchpad.net/grub-customizer**



Grub Customizer also helps restore order when you've accidentally wiped clean the MBR.

REMMINA

A very usable remote desktop client, *Remmina* supports a wide range of protocols. It performs well and offers useful features such as the flexibility to change the quality settings of the connection on the fly.
https://remmina.org

INXI

A CLI tool that lists info about the hardware in your computer. With *inxi* you can collate details about the kit, including vendor details, device driver configuration and more.
https://github.com/smxi/inxi

POWERTOP

Intel developed the *PowerTOP* utility to track down apps that eat up your laptop's battery. The CLI utility offers suggestions to tweak power-guzzling tools to squeeze more juice from your laptop's battery.
https://01.org/powertop

STACER

Stacer is a system monitor that helps you track different aspects of your installation. It can also show alert messages when values for a parameter exceed a certain threshold.
https://oguzhaninan.github.io/Stacer-Web

LOGWATCH

Logwatch parses, analyses and filters logs and then generates daily reports on your system's log activity. The utility also enables you to control the level of the report's verbosity.
https://sourceforge.net/projects/logwatch

Internet tools

Make your online time more efficient with this collection of utilities.

UGET

By default, the lightweight *uGet* download manager relies on *curl*, but if you install the aria2 package, it can take on some more features, such as the ability to download torrents.

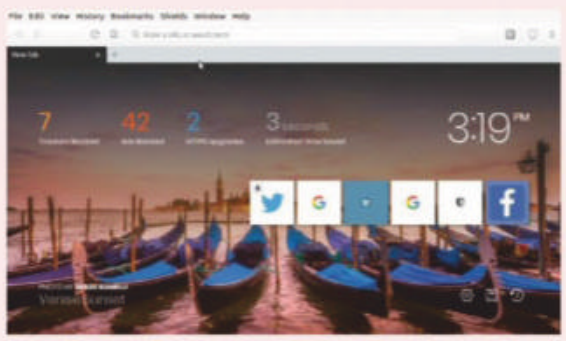
UGet is an all-round downloader that has all the features you'd expect from a download manager. It features a download queue, can pause and resume downloads and also accelerates downloads by grabbing files from multiple parallel streams. Furthermore, batch downloads are one of its specialities. You can use the tool to prioritise the download queue and even regulate the speed of the downloads individually. *UGet* can also shut down and hibernate your computer once it's finished downloading all the files.

https://ugetdm.com

BRAVE

While popular browsers can be equipped to thwart information leaks, *Brave* ships with privacy-strengthening features. The Brave project promises two improvements over the competition: privacy and speed. One of them is achieved by blocking ads and trackers, which has the pleasant side effect of improving the browsing speed.

https://brave.com



Since blocking ads may rob sites of revenue, Brave has some unique compensating tricks.

WALLABAG

A read-it-later tool, *wallabag* began when Google Reader was shuttered in 2013. You can install it on your own server or use it via its own service that costs about £8/year. *Wallabag* has impressive features including the ability to save articles, filter them by reading time, and more.

www.wallabag.org

TOR BUNDLE

Tor enables users to browse the web anonymously. Its goal is to prevent people from tracking you online. The *Tor Browser Bundle* includes everything you need to connect to the Tor network of relays including a customised version of *Firefox* known as the *Tor Browser*.

www.torproject.org/projects/torbrowser.html.en

RAMBOX

Most desktop distros ship with a default messaging tool that enables you to sign into multiple online messaging services. These tools can sign into only a handful of the popular services.

In contrast, *Rambox* can plug into over 100 online messaging and email services. Every added service resides within its own tab, from where you browse the message history, write messages to your contacts, or use the other means of communication supported by the service. The tool will also display notifications. *Rambox* can also sync configurations if you use it on multiple computers. The program respects your privacy. Instead of storing your personal data, *Rambox* uses the **partition:persist** attribute of the <webview> tag to create a persistent connection with the signed-in service. You can also set a master password and ask the tool to lock itself after a predefined period of inactivity.

http://rambox.pro



The tool is available as a Snap and AppImage binary that you can use without installing.

MAGIC WORMHOLE

A Python script that creates single-use encrypted channels to ferry files between computers across the Internet identified via pronounceable code.

https://github.com/warner/magic-wormhole

UBLOCK ORIGIN

The *uBlock Origin* browser extension is an ad-blocker that also blocks tracking servers, malware domains, and more. It's available in the app stores of all mainstream web browsers. **https://github.com/gorhill/uBlock/**

QUITERSS

QuiteRSS has all the features that you'd expect from a news reader. It can pull in RSS and Atom feeds, apply labels to each item and offers plenty of customisation options to boot.

https://quiterss.org

VOCAL

A feature-rich podcast grabber, *Vocal* can subscribe to and stream podcasts on-the-fly or download them for offline listening. It integrates with popular desktops and has smart library management functions.

https://vocalproject.net

UFTPD

uftpd ships with defaults that work for most users. It's designed for home users and developers who need a simple FTP server, but aren't too particular about being secure.

http://troglobit.com/projects/uftpd

Security tools

Ensure ne'er-do-wells don't get their hands on your system and files.

ZULUCRYPT

While you can control access to the data on your computer using user accounts and file permissions, they aren't enough to prevent a determined intruder from gaining access to your private files. The only reliable mechanism to keep your personal data to yourself is to encrypt it. Sure, working with encrypted data is an involved process, but it'll go a long way in reinforcing your security and insulating your data.

zuluCrypt is a graphical encryption tool that has an intuitive, easy-to-follow interface. Using the program you can create an encrypted disk within a file, a partition and even USB disks. It can also encrypt individual files with GPG. *zuluCrypt* can perform block device encryption, which means that it can encrypt everything written to a certain block device. The block device can be a whole disk, a partition or even a file mounted as a loopback device. With block device encryption, the user creates the file system on the block device, and the encryption layer transparently encrypts the data before writing it to the actual lower block device. While encrypted, the storage areas just appears like a large blob of random data and doesn't even reveal its directory structure. All these functions and more and accessed via the excellent user interface. **http://mhogomchungu.github.io/zuluCrypt**

GUFW

Gufw is the graphical front end for *UFW*, the uncomplicated firewall, which is one of the easiest front-end for *iptables*. The tool has a simple interface and includes predefined profiles to regulate incoming and outgoing traffic. You can alter the incoming and outgoing policies of the profiles as per your requirements. You can also use *Gufw* to define specific rules for allowing traffic for individual apps and services. **http://gufw.org**



Switch to the Report tab to get the live network traffic report.

BITWARDEN

The *BitWarden* password manager does end-to-end encryption and uses AES 256-bit as well as PBKDF2 to secure your data. It goes through this trouble because unlike its peers it stores your encrypted passwords in a remote Microsoft Azure cloud. The app can also import passwords from over 24 sources. **https://bitwarden.com**

OSQUERY

You can keep an eye on your network using the *osquery* CLI tool that enables you to query your devices just like a database. You can use the tool to check logged in users, keep an eye on the firewall, identify outdated kernels and keep an eye on the loaded kernel modules and the running processes. **https://osquery.io**

STEGOSUITE

Steganography is the art of concealing data inside another seemingly harmless message or image. The most common mechanism for implementing it is by replacing unused data in regular computer files with bits of information that aren't visible when viewing the original piece of data. Steganography is mostly used to complement encryption.

Stegosuite is a graphical tool that can hide text messages as well as any type of file inside an image. Fire up the tool, select an image, point to the files you want to hide inside it and enter a secret key to burn it in the image. To get the secret files from the image load it once again and use the Extract button along with the secret key to grab the hidden files and message from the image. **https://stegosuite.org**

MTR

MTR is a simple CLI network diagnostic tool that combines the functionality of the *traceroute* and *ping* utilities. So along with the path of the packet it displays a wealth of other relevant information. **www.bitwizard.nl/mtr**

AIDE

You can use *AIDE* to help spot intrusions by checking the integrity of the files by comparing their properties such as permissions against a baseline database created on the initial run. **http://aide.sourceforge.net**

NIKTO2

A CLI web server scanner that hunts for potential problems like server misconfigurations and outdated versions and version-specific issues. It can also perform automated tests against security vulnerabilities. **https://cirt.net/Nikto2**

JOHN THE RIPPER

A password cracker, *John the Ripper* is used for exposing weak Unix passwords. It's a CLI tool but also has a graphical interface called Johnny that exposes its various command line options. **www.openwall.com/john**

MALTRAIL

MalTrail is a malicious-traffic detection system that uses publicly accessible blacklists, custom user-defined lists and more to detect and log any malicious traffic. **https://github.com/stamparm/maltrail**

Developer tools

Make your coding life easier with this collection of capable utilities.

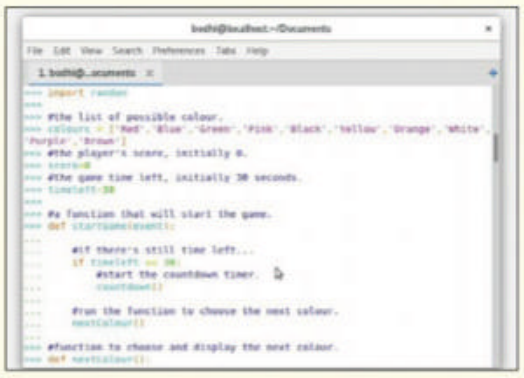
ATOM

Atom describes itself as a hackable text editor. Developed by GitHub, the tool has a built-in package manager that enables users to search and install plugins from within it. About 80 plugins ship with the utility by default. One of its more interesting features is the find and replace function that can also modify text across multiple files as you type.

Atom can also be used as an IDE and one of its highlights is the smart autocomplete feature. There's also a bracket matcher feature that highlights the line-number of the closing bracket corresponding to the one under your cursor. You can also define custom key bindings and add more functionality with packages for items such as minimaps and syntax-specific snippet libraries. **https://atom.io**.

BPYTHON

A Python shell that provides modern IDE-like features inside a terminal window. You can start using it with the default settings and then customise it by editing its config file. The shell does code completion and will also display a list of expected parameters. It highlights syntax as you type and the Rewind feature checks the entire code, which is kept in memory.
https://bpython-interpreter.org



Bpython enables you to save a session to a file, or even send it to pastebin.

ETHERPAD

Collaboration is key to any project. The *Etherpad* text editor enables users to collaborate on text in real-time. It runs inside the web browser and enables participants to interact via a text-based chat. It's full of features and you can take it for a spin on its website.
http://etherpad.org

VIRT-MANAGER

The *Virtual Machine Manager* is the open source graphical frontend for creating KVM-based VMs. It uses the *qemu-kvm* hypervisor, which is a version of the *qemu* machine emulator, and includes a *VNC* and SPICE client that displays a graphical console to the running VM. **https://virt-manager.org**

TURNKEY APPLIANCES

Installing network accessible software or web applications on a server can be quite a task because they require a lot of infrastructure software, which might take you hours to put together. From database servers to basic libraries, you'll have to spend quite a while to assemble a fully functional web server before you can deploy an application on the network.

Furthermore, if you plan to serve users from outside the network, you need to thoroughly examine your web server for any security leaks. This is a major undertaking in itself.

This is where *Turnkey Linux* shines. Using its virtual appliances you can deploy a new server app in no time. Put simply, a *TurnKey* virtual appliance is a self-contained system that packs in a fully functional instance of a web app with just enough components of an operating system to power that tool. The system works straight out of the box and can be deployed on either bare metal or on top of virtual hardware.

Turnkey Linux appliances are available in several formats depending on the hardware you want to deploy them on, from bare metal to OpenStack clouds. Importantly though, once they're up and running, irrespective of the platform, they all give you the same interface to administer and manage the web app.
www.turnkeylinux.org

OCELOT GUI

The database client can connect and interact with a MySQL or MariaDB server. You can use to create queries and it can highlight syntax and can fetch and display results from the **database.**
https://github.com/ocelot-inc/ocelotgui

DOXYGEN

Use this CLI tool to generate HTML documentation from the comments in your code. The tool supports many programming languages and can cross-reference the documentation with the code for referrals.
www.doxygen.nl

INFER

If you work with Java, C, C++ or Objective C, use *Infer* to weed out bugs The tool includes various analysis and its most interesting feature is that it can work across several procedures across various files.
https://fbinfer.com

MARK TEXT

The markdown editor supports the GitHub markdown spec and the CommonMark spec. It has a live preview, several editing modes and inline Math support and can export documents.
https://marktext.github.io/website

MANTA

When you've completed a project, use *Manta* to generate invoices and receipts. The invoicing app has a clean interface and several templates that you can customise as per your requirements.
https://github.com/hql287/Manta LXF