05 - Linux

All About Linux!

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Installing Official Speedtest CLI by Ookla on Debian Linux

Date: June 3, 2025
Category: Networking / Monitoring
Backlink: N/A

Description

This guide explains how to install the official **Speedtest CLI by Ookla** on a Raspberry Pi 5 running Debian Bookworm. Unlike the legacy `speedtest-cli`, this version offers more accurate and reliable results and is the preferred tool for benchmarking internet speed.

You can get the latest repo here if it changes:

https://www.speedtest.net/apps/cli

Installation Steps

1. Add the Ookla repository

```
curl -s https://packagecloud.io/install/repositories/ookla/speedtest-cli/script.deb.sh | sudo bash
```

2. Install the Speedtest CLI

```
sudo apt install speedtest
```

> Note: If a file conflict occurs with `speedtest-cli`, you may need to rename or uninstall the legacy version.

Usage

To run a test:

```
speedtest
```

Sample output:

```
Speedtest by Ookla

     Server: Contabo - St. Louis, MO
        ISP: Spectrum
    Latency: 34.91 ms
   Download: 29.85 Mbps
     Upload: 39.39 Mbps
```

Notes

- Ookla CLI is installed at: `/usr/bin/speedtest`
- Coexists with `speedtest-cli`, which uses a different backend
- Great for:
  - Spot-checking network health
  - Logging real-world bandwidth over time
  - Comparing ISP performance

My Custom Linux Scripts Index

This page tracks custom scripts I've written or installed on my systems, primarily placed in `/usr/local/bin` for global use. Each script is either a utility, security tool, or automation helper I use regularly.

□□ Script Directory `/usr/local/bin`

This directory is in the system `$PATH` and allows me to run any executable script from **any location** in the terminal.

To make a script globally accessible:

```
sudo mv myscript.sh /usr/local/bin/myscript
sudo chmod +x /usr/local/bin/myscript
```

Then simply run:

```
myscript
```

□□ Script List

Script Name	Description	Created / Added On
`bookstack-backup`	Creates and compresses daily BookStack backup	May 4, 2025
`update-syncthing-ufw`	Dynamically updates UFW with resolved DDNS IP	May 10, 2025

Script Name	Description	Created / Added On
`syncthing-log-summary`	Summarizes UFW log attempts on Syncthing ports	May 10, 2025
`fail2ban-ip-lookup`	Enriches banned IPs with GeoIP, PTR, AbuseIPDB	May 12, 2025
`clear-fail2ban-cache`	Removes stale lookup results for a clean run	(Planned)
`mygreeting`	Test script: echoes a message from anywhere	(Planned)

□□ Tips

- Use clear, lowercase names without `.sh` extensions for simplicity
- Add versioning or logs inside long-running scripts
- Store source versions of scripts in `/opt/scripts/` or Git repo for management

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□□ Related Commands

Make a script executable:

```
chmod +x scriptname
```

Test if a command is globally accessible:

```
which scriptname
```

Check your system PATH:

```
echo $PATH
```

Top 25 Linux Commands I Use Weekly

A practical list of Linux commands I personally use most often during system monitoring, server administration, scripting, and troubleshooting.
Use this list as a quick reference or jump-off point for deeper Linux command mastery.

□□ System Monitoring & Info

Shows real-time process activity, CPU usage, memory, and system load.

```
top
```

Interactive version of `top` with easier navigation and color-coded output.

```
htop
```

Displays RAM usage with human-readable units.

```
free -h
```

Shows disk usage by mounted partitions in human-readable format.

```
df -h
```

Shows size of each item in the current directory.

```
du -sh *
```

Displays how long the system has been up and the current load.

```
uptime
```

Prints kernel version and system info.

```
uname -a
```

Displays the current user name.

```
whoami
```

□□ Networking & Firewall

Displays network interfaces and IPs.

```
ip a
```

Shows the routing table.

```
ip r
```

Shows UFW rules with index numbers for deletion.

```
sudo ufw status numbered
```

Allows incoming SSH connections via UFW.

```
sudo ufw allow 22/tcp
```

Lists all listening ports (older tool).

```
sudo netstat -tuln
```

Modern alternative to netstat for listing open ports.

```
ss -tuln
```

Tests network connectivity with ICMP packets.

```
ping 1.1.1.1
```

File & Directory Management

Lists files including hidden files and sizes.

```
ls -lah
```

Changes the current directory.

```
cd /path/to/directory
```

Copies a file or folder.

```
cp source destination
```

Renames or moves a file or folder.

```
mv oldname newname
```

Removes a directory and all its contents (⚠ dangerous).

```
rm -rf /path/to/folder
```

Edits files using a simple terminal-based editor.

```
nano filename.txt
```

Displays contents of a file.

```
cat filename.txt
```

Follows a log file in real time.

```
sudo tail -f /var/log/syslog
```

⚙ Package Management (Debian/Ubuntu)

Updates package list and installs available upgrades.

```
sudo apt update && sudo apt upgrade -y
```

Installs a new package by name.

```
sudo apt install packagename
```

Searches installed packages for a string.

```
dpkg -l | grep keyword
```

How I Back Up My VPS with Syncthing

This guide documents how I use Syncthing to back up my VPS's critical BookStack data folder (`/opt/bookstack_backups`) to my personal workstation automatically and securely.

□□ Backup Directory

I use a dedicated folder on my VPS for storing compressed BookStack backups:

```
/opt/bookstack_backups
```

Each backup is generated nightly via a cron job and includes both the database and uploaded content.

□□ Syncthing Folder Setup

On both the VPS and my workstation:

- Syncthing is installed and configured as a **systemd service**
- The `/opt/bookstack_backups` folder is shared
- Sync is **one-way from VPS to workstation** for integrity

To enable and start the system-wide Syncthing service (replace `yourusername`):

```
sudo systemctl enable syncthing@yourusername.service
sudo systemctl start syncthing@yourusername.service
```

To verify the service is running:

```
systemctl status syncthing@yourusername.service
```

> ⚠ Tip: If Syncthing is installed system-wide or runs under root, use the appropriate service name or create a dedicated user account just for it.

□□ UFW Firewall Rule with DDNS Lockdown

To limit Syncthing access to my workstation only, I use a dynamic DDNS-resolved UFW rule.

Example IP update script:

```
/opt/scripts/update-syncthing-ufw.sh
```

This script:

- Resolves the current DDNS IP
- Checks for existing UFW rules
- Updates UFW only when changes are detected

Example UFW rule:

```
sudo ufw allow from 123.45.67.89 to any port 22000 proto tcp
```

Blocked access attempts are logged and managed with Fail2Ban.

□□ Backup Cron Job

The backup script runs daily at **2:00 AM** using cron.

Crontab entry:

```
0 2 * * * /opt/scripts/bookstack-backup.sh
```

Script actions:

- Dumps the MySQL database
- Archives the uploaded files
- Compresses to `.tar.gz` with the date in the filename

□□ Local Redundancy Strategy

Once synced to my local system:

- Backups are **rotated weekly**
- A cleanup script deletes older archives
- Restores can be performed with:

```
tar -xzvf bookstack-backup-YYYY-MM-DD.tar.gz -C /restore/location
```

□□ Supporting Scripts

These scripts make the entire backup and security process seamless:

Script Name	Purpose
`bookstack-backup.sh`	Creates nightly backups
`update-syncthing-ufw.sh`	Updates UFW with resolved DDNS IP
`syncthing-log-summary.sh`	Parses and displays UFW-blocked Syncthing traffic
`bookstack-logrotate.conf`	Handles log file cleanup

□□ Key Takeaways

- Daily automated backup process
- Synced offsite to a secure system
- DDNS + UFW keeps access tightly controlled
- Full restore with a single `tar` command

Top Self-Hosted Applications to Run on Linux Servers

This list showcases powerful and privacy-friendly applications you can host on your own Linux server - perfect for replacing third-party services and building your own digital infrastructure. These apps can run on bare-metal servers, virtual machines, or Docker containers.

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1. BookStack

- **Website:** https://www.bookstackapp.com/
- **Description:** A free, open-source platform for organizing and storing documentation. Great for internal IT documentation, personal notes, SOPs, and wiki-style knowledgebases.
- Stack: PHP, Laravel, MySQL, Apache/Nginx.

☁ 2. Nextcloud

- **Website:** https://nextcloud.com/
- **Description:** Your personal cloud storage platform. Includes file sync, calendar, contacts, password management, and online document collaboration.
- Stack: PHP, MariaDB/PostgreSQL, Apache/Nginx.

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3. Obsidian Sync / Remote Vault Hosting

- **Website:** https://obsidian.md/ *(self-host via Syncthing, Git, or WebDAV)*
- **Description:** While Obsidian itself is a desktop app, you can self-host vaults using tools like Syncthing, Git, or WebDAV over HTTPS to sync notes across devices.

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4. Docker / Portainer

- **Website (Docker):** https://www.docker.com/
- **Website (Portainer):** https://www.portainer.io/
- **Description:** Docker enables running apps in containers. Portainer is a web UI to manage Docker containers easily. Perfect for self-hosting multiple apps.

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5. Grafana + Prometheus

- **Website (Grafana):** https://grafana.com/
- **Website (Prometheus):** https://prometheus.io/
- **Description:** Popular monitoring stack for collecting, analyzing, and visualizing metrics from servers, containers, or IoT devices.

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6. Pi-hole

- **Website:** https://pi-hole.net/
- **Description:** A network-wide ad blocker that runs on Linux. Blocks ads, tracking domains, and telemetry before they reach your devices.

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7. Mail-in-a-Box

- **Website:** https://mailinabox.email/
- **Description:** Easily set up your own mail server with spam filtering, webmail, and encryption. Designed for small personal or project-based email hosting.

□□ 8Uptime Kuma

- **Website:** https://github.com/louislam/uptime-kuma
- **Description:** A beautiful, self-hosted monitoring tool for checking the availability of websites, servers, ports, and services with alerts.

□□ 9Vaultwarden (Bitwarden alternative)

- **Website:** https://github.com/dani-garcia/vaultwarden
- **Description:** A lightweight, self-hosted implementation of the Bitwarden server API, ideal for personal password management across devices.

□□ 10Jitsi Meet

- **Website:** https://jitsi.org/jitsi-meet/
- **Description:** A secure, open-source video conferencing platform. Can be hosted privately to run your own Zoom/Meet-style meetings.

□□ Bonus Picks

App	Purpose
Gitea	Lightweight self-hosted Git service (GitHub alternative)
Plex / Jellyfin	Self-hosted media server for movies, music, and TV

App	Purpose
Home Assistant	Smart home automation platform
Homer / Dashy	Custom startpages or dashboards for organizing links
FreshRSS / Miniflux	Private RSS feed reader

□□ Summary

These apps are perfect for:

- Replacing third-party cloud services
- Hosting your own private productivity and media tools
- Learning Linux server admin, Docker, and security

□□ Linux Tools for Infrastructure Monitoring

This page covers the best open-source tools for monitoring the health, performance, and security of your Linux infrastructure - whether you're managing a single server or an entire fleet of systems and services.

□□ 1. Grafana

- **Website:** https://grafana.com/
- **Description:** A powerful visualization platform that integrates with dozens of data sources (Prometheus, InfluxDB, Loki, etc.). Create dashboards to track CPU, memory, disk, services, and uptime in real-time.
- □□ Best For: Building beautiful dashboards with historical metrics.

□□ 2. Prometheus

- **Website:** https://prometheus.io/
- **Description:** A time-series database used to collect metrics from systems and services. Designed to work with Grafana for alerting and long-term analysis.
- □□ Best For: Polling server metrics and alerting on thresholds.

□□ 3. Netdata

- **Website:** https://www.netdata.cloud/

- **Description:** Real-time performance monitoring with minimal setup. Tracks hundreds of metrics per second with beautiful visualizations out of the box.
- □□ Best For: Lightweight, real-time local or remote monitoring.

□□ 4. Nagios Core / Icinga

- **Website (Nagios):** https://www.nagios.org/
- **Website (Icinga):** https://icinga.com/
- **Description:** Highly configurable systems used for availability and alerting. Monitor hosts, services, network ports, and more. Icinga is a modern fork with a web-based UI and API.
- □□ Best For: Enterprise monitoring, email alerts, and service uptime.

□□ 5. Fail2Ban

- **Website:** https://www.fail2ban.org/
- **Description:** Protects Linux servers from brute-force attacks by monitoring logs and banning malicious IPs. Supports SSH, web servers, FTP, and more.
- □□ Best For: Security hardening and log-based intrusion response.

□□ 6. Uptime Kuma

- **Website:** https://github.com/louislam/uptime-kuma
- **Description:** Self-hosted uptime monitoring tool with slick UI, notifications, and graphing. Great alternative to services like UptimeRobot.
- □□ Best For: Ping/HTTP/TCP/port checks with alerts and history.

□□ 7. Cockpit

- **Website:** https://cockpit-project.org/

- **Description:** A web-based GUI for managing Linux servers. Includes system monitoring, service control, storage, and terminal access.
- □□ Best For: System admins who want visual system control via browser.

□□ 8. Monit

- **Website:** https://mmonit.com/monit/
- **Description:** Lightweight and scriptable monitoring tool for services, processes, filesystems, and files. Can auto-restart failed services.
- □□ Best For: Simple auto-recovery and alerting for daemon failures.

□□ 9. Logwatch / Logrotate

- **Logwatch:** Summarizes daily logs into human-readable reports
- **Logrotate:** Manages and compresses rotating system logs
- □□ Best For: Keeping log files clean and readable, alerting on anomalies.

□□ 10. Elastic Stack (ELK: Elasticsearch, Logstash, Kibana)

- **Website:** https://www.elastic.co/what-is/elk-stack
- **Description:** A full-featured log management and analytics suite. Used to centralize logs, search them efficiently, and build dashboards.
- □□ Best For: High-scale log aggregation and event correlation.

□□ Summary

These tools help monitor:

- System resources (CPU, RAM, disk)
- Uptime and service health
- Security threats and log anomalies
- Network traffic and performance

They range from real-time dashboards (Netdata, Grafana) to reactive protection tools (Fail2Ban) and enterprise-level observability stacks (ELK, Nagios)

□□□ Security-Focused Linux Distributions for Anonymous Browsing & Penetration Testing

Anonymous Browsing & Lightweight Live OSes

1. **Tails (The Amnesic Incognito Live System)**

- **Website:** https://tails.net/
- **Description:** A Debian-based distro focused on privacy and anonymity. It routes all traffic through Tor and leaves no trace on the host system unless explicitly configured.

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2. **Knoppix**

- **Website:** http://www.knoppix.org/
- **Description:** One of the earliest and most reliable Live CD distros. Ideal for system recovery, general use, and educational environments.

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3. **Puppy Linux**

- **Website:** https://puppylinux.com/
- **Description:** Lightweight, fast, and runs entirely in RAM. Puppy Linux is perfect for older machines and quick anonymous sessions.

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4. **Tiny Core Linux**

- **Website:** http://tinycorelinux.net/
- **Description:** The smallest Linux distribution with a GUI (around 11MB). Extremely minimal and modular — great for custom builds and embedded use.

Advanced Privacy & Security Operating Systems

5. **Qubes OS**

- **Website:** https://www.qubes-os.org/
- **Description:** A highly secure desktop OS that uses Xen virtualization to isolate tasks in separate “qubes.” Built for serious privacy-conscious users.

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6. **Whonix**

- **Website:** https://www.whonix.org/
- **Description:** A two-VM architecture (Gateway + Workstation) that forces all traffic through Tor. Designed to prevent IP and DNS leaks even if apps are misconfigured.

Penetration Testing & Digital Forensics Distros

7. **Kali Linux**

- **Website:** https://www.kali.org/
- **Description:** The go-to distro for penetration testers. Includes hundreds of security tools pre-installed. Also offers live boot, forensic mode, and persistence options.

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8. **Parrot Security OS**

- **Website:** https://www.parrotsec.org/
- **Description:** A Debian-based alternative to Kali with tools for pen testing, secure communications, and programming. Suitable for both security professionals and privacy-minded users.

Next Steps

You can boot most of these distros from a USB stick using Rufus (Windows) or `dd` (Linux/macOS). Some, like Tails and Qubes, have specific installation instructions, so be sure to follow their official guides.

□□□ Lightweight Linux Distributions for Reviving Old Hardware

This page highlights Linux distributions specifically designed to run efficiently on older or resource-constrained hardware. These systems are ideal for breathing new life into legacy laptops, desktops, or low-spec devices while maintaining decent usability, speed, and sometimes even modern software support.

⚡ 1. **Puppy Linux**

- **Website:** https://puppylinux.com/
- **Description:** Ultra-lightweight and fast. Boots entirely into RAM for fast performance, even on systems with as little as 256MB RAM. Offers various versions based on Ubuntu, Debian, or Void.

⚡ 2. **Tiny Core Linux**

- **Website:** http://tinycorelinux.net/
- **Description:** One of the smallest Linux distros in existence (~11MB for Core). Offers a modular system where users can add only what they need. Ideal for advanced users building highly customized systems.

⚡ 3. **antiX**

- **Website:** https://antixlinux.com/
- **Description:** A fast, systemd-free Debian-based distribution that runs well on machines with as little as 256MB of RAM. Includes tools for old hardware detection and has a focus on efficiency.

⚡ 4. **Bodhi Linux**

- **Website:** https://www.bodhilinux.com/
- **Description:** A minimalistic Ubuntu-based distro that uses the Moksha desktop environment. Lightweight but still provides a visually pleasant experience.

⚡ 5. **LXLE**

- **Website:** https://www.lxle.net/
- **Description:** Based on Ubuntu/Lubuntu LTS releases, LXLE offers a lightweight experience with a familiar desktop layout and enhanced performance for aging computers.

⚡ 6. **Slax**

- **Website:** https://www.slax.org/
- **Description:** A portable, fast, and modular Linux OS based on Debian. It can run from USB or CD with persistence support, making it ideal for quick-use scenarios or repurposed devices.

⚡ 7. **Linux Lite**

- **Website:** https://www.linuxliteos.com/

- **Description:** Designed to ease Windows users into Linux. Based on Ubuntu LTS with a simple XFCE desktop and low system requirements. Runs well on older laptops.

□□ Summary

These distributions are excellent for:

- Refurbishing and reusing old laptops/desktops
- Setting up lightweight workstations
- Educational or kiosk setups
- Low-resource VMs or embedded applications

□□□ Beginner-Friendly Linux Distributions for Daily Use

This page highlights Linux distributions that are particularly well-suited for new users transitioning from Windows or macOS. These distros prioritize ease of use, polished interfaces, large communities, and reliable long-term support.

□□ 1. Linux Mint

- **Website:** https://www.linuxmint.com/
- **Description:** Based on Ubuntu LTS, Linux Mint is widely considered one of the best starting points for new users. It offers three desktop options (Cinnamon, MATE, XFCE) and comes with many essentials pre-installed.

□□ 2. Ubuntu

- **Website:** https://ubuntu.com/
- **Description:** One of the most popular Linux distributions. Backed by Canonical, Ubuntu provides a modern GNOME desktop and a massive ecosystem. Offers excellent driver support, software availability, and community help.

□□ 3. Zorin OS

- **Website:** https://zorin.com/os/

- **Description:** A visually appealing distro designed for users switching from Windows. Offers a Windows-like interface, smooth UX, and comes in both free and Pro versions. Ideal for schools and personal computing.

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4. elementary OS

- **Website:** https://elementary.io/
- **Description:** Known for its sleek, macOS-inspired Pantheon desktop. elementary OS emphasizes design consistency, privacy, and minimalism. Great for users who appreciate aesthetics.

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5. Pop!_OS

- **Website:** https://pop.system76.com/
- **Description:** Built by System76 for developers, creators, and gamers. Based on Ubuntu with GNOME, but customized with tiling window support and hardware acceleration. Great for daily use and performance.

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6. Fedora Workstation

- **Website:** https://getfedora.org/en/workstation/
- **Description:** A cutting-edge, developer-friendly distro backed by Red Hat. Includes the latest GNOME and Wayland by default. Ideal for users looking to stay close to upstream innovations.

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7. Manjaro Linux

- **Website:** https://manjaro.org/
- **Description:** Arch-based but designed for accessibility. Comes in multiple desktop flavors (XFCE, KDE, GNOME) with a friendly installer and robust package management. Great for learning Arch without complexity.

Summary

These distros are excellent for:

- Daily home or office use
- Users switching from Windows/macOS
- Beginner to intermediate Linux learners
- Out-of-the-box functionality with minimal setup

□□□ Linux Distributions for Developers

This page outlines Linux distributions that are particularly developer-friendly — whether you're writing code, compiling software, managing containers, or deploying apps. These distros emphasize performance, customizability, and access to cutting-edge development tools.

□□ 1. Pop!_OS

- **Website:** https://pop.system76.com/
- **Description:** Built by System76, Pop!_OS comes pre-installed with developer tools and includes excellent GPU support for AI/ML workloads. Its tiling window manager and performance tweaks make it ideal for coders and devops engineers.

□□ 2. Fedora Workstation

- **Website:** https://getfedora.org/en/workstation/
- **Description:** Sponsored by Red Hat, Fedora is favored by developers who want a clean GNOME environment with the latest programming languages, libraries, and container tools. DNF package manager and Flatpak integration offer flexibility.

□□ 3. Arch Linux (and Manjaro)

- **Website (Arch):** https://archlinux.org/
- **Website (Manjaro):** https://manjaro.org/
- **Description:** Arch offers complete control and up-to-date packages. Best for experienced devs who want to build a fully custom environment. Manjaro is a more beginner-friendly Arch alternative with graphical tools and easier setup.

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4. Ubuntu (or Ubuntu Minimal)

- **Website:** https://ubuntu.com/
- **Description:** A staple for many devs, especially in enterprise environments. Ubuntu LTS is stable and widely supported across cloud platforms, making it perfect for backend, frontend, or full-stack development.

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5. Debian

- **Website:** https://www.debian.org/
- **Description:** Known for its rock-solid stability, Debian is a great base for development environments that value consistency. It also serves as the base for many other distros (like Ubuntu).

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6. openSUSE Tumbleweed

- **Website:** https://get.opensuse.org/tumbleweed/
- **Description:** A rolling-release distro with cutting-edge packages. The YaST control center and zypper package manager make system configuration and development setup straightforward.

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7. NixOS

- **Website:** https://nixos.org/

- **Description:** A unique distro that uses declarative configuration and atomic updates. Great for developers managing reproducible environments or working with complex dependency trees.

□□ Summary

These developer-friendly distros are ideal for:

- Programming in Python, JavaScript, C++, Go, Rust, etc.
- Running containers (Docker, Podman, Kubernetes)
- Building and testing applications across environments
- Scripting, automation, and infrastructure-as-code

□□ Linux Distributions for Media & Content Creation

This page highlights Linux distros tailored for creators — including video editors, graphic designers, audio producers, and 3D artists. These distros come pre-equipped or are optimized for creative workflows, often featuring real-time kernels, pro-grade multimedia tools, and excellent hardware support.

□□ 1. Ubuntu Studio

- **Website:** https://ubuntustudio.org/
- **Description:** A multimedia-focused flavor of Ubuntu featuring a real-time kernel and a wide suite of creative software (Ardour, Kdenlive, GIMP, Blender, etc.). Ideal for video/audio editing, digital painting, photography, and more.

□□ 2. AV Linux

- **Website:** https://www.bandshed.net/avlinux/
- **Description:** A performance-tuned Debian-based distro for audio and video professionals. Ships with JACK, Ardour, Carla, and other low-latency audio tools. Great for serious musicians and producers.

□□ 3. Fedora Design Suite

- **Website:** https://spins.fedoraproject.org/design/
- **Description:** A Fedora Spin tailored for graphic artists. Includes Inkscape, GIMP, Darktable, Blender, and other tools used in 2D/3D creative workflows.

□□ 4. KXStudio (repositories + tools)

- **Website:** https://kx.studio/
- **Description:** KXStudio isn't a standalone distro anymore, but its repos are widely used for enhancing multimedia production on Debian-based systems. Includes powerful tools like Cadence, Carla, and JACK control apps.

□□ 5. Apodio (Audio Production)

- **Website:** http://apodio.org/
- **Description:** A lesser-known but feature-rich distro based on Debian, designed for audio/video performance, installation art, streaming, and live performance work. Suited for audio-visual artists.

✏ 6. Arch/Manjaro with Custom Creative Setup

- **Website (Manjaro):** https://manjaro.org/
- **Description:** With access to the Arch User Repository (AUR), Manjaro or Arch can be tailored into a powerful content creation system. Especially great if you want up-to-date packages like Blender, Olive, and DaVinci Resolve.

□□ Summary

These distros are ideal for:

- Video editing and post-production (e.g., Kdenlive, Shotcut, DaVinci Resolve)
- Audio engineering and recording (e.g., Ardour, JACK, Carla)
- Digital illustration and 3D modeling (e.g., Krita, Inkscape, Blender)
- Photography workflows (e.g., Darktable, RawTherapee)

🎮 Gaming on Linux: Best Distributions for Gamers

This guide lists Linux distributions optimized or commonly used for gaming — whether you're running native Linux titles, emulating consoles, or using Proton via Steam. These distros focus on performance, compatibility, graphics support, and ease of use for gamers.

🥇 1. Pop!_OS

- **Website:** https://pop.system76.com/
- **Description:** Known for its excellent hardware support, especially for NVIDIA GPUs. Includes hybrid graphics support out of the box and works well with Steam and Lutris. Frequently updated and great for both gaming and development.

🥈 2. SteamOS (HoloISO)

- **Website:** https://github.com/theVakhovskeIsTaken/holoiso
- **Description:** A community rebuild of the Steam Deck's SteamOS 3.0 (based on Arch). Ideal for gaming-focused PCs and living room setups. Has the Steam Big Picture interface and Proton preconfigured.

🥉 3. Garuda Linux (Gaming Edition)

- **Website:** https://garudalinux.org/
- **Description:** A flashy, performance-optimized Arch-based distro with a dedicated gaming edition. Comes with tools like GameMode, Lutris, Steam, and pre-tuned performance

enhancements.

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4. Manjaro

- **Website:** https://manjaro.org/
- **Description:** Beginner-friendly Arch-based distro with great driver support and access to AUR. Supports Steam, Wine, Proton GE, and retro emulators. Rolling release keeps your drivers and kernel up to date.

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5. Ubuntu / Ubuntu GamePack

- **Website (Ubuntu):** https://ubuntu.com/
- **Website (GamePack):** https://ualinux.com/en/ubuntu-gamepack
- **Description:** Ubuntu has widespread compatibility and a massive community. GamePack is a special version with pre-installed game platforms like Steam, Wine, PlayOnLinux, Lutris, and over 85 game launchers.

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6. Fedora Games Spin

- **Website:** https://spins.fedoraproject.org/games/
- **Description:** A Fedora spin packed with hundreds of open-source games pre-installed. Great for exploring native Linux gaming and retro titles.

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7. Batocera.linux *(Bonus: Retro Gaming Console)*

- **Website:** https://batocera.org/
- **Description:** A plug-and-play Linux distro focused entirely on retro console emulation. Turns a PC, Raspberry Pi, or other SBC into a retro gaming machine. Perfect for arcade cabinets or living room gaming setups.

□□ Key Tools & Technologies for Gaming on Linux

- **Proton (via Steam Play):** Runs many Windows games natively on Linux.
- **Lutris:** Game launcher that manages Wine, emulators, and native games.
- **GameMode:** Optimizes system performance while gaming.
- **Wine & DXVK:** Enables running Windows games and applications.
- **MangoHUD:** On-screen performance overlay (FPS, temps, etc.).

□□ Summary

These distros are ideal for:

- PC gaming via Steam, Lutris, or native Linux ports
- Retro console emulation
- Living room or handheld gaming setups
- Gamers who want control without sacrificing performance

□□ Best Linux Distributions for Servers & Self-Hosting

This guide highlights Linux distributions best suited for servers — whether you're running a home lab, self-hosting services, deploying to the cloud, or managing enterprise infrastructure. These distros are chosen for their stability, performance, long-term support, and wide compatibility.

□□ 1. Debian

- **Website:** https://www.debian.org/
- **Description:** Renowned for its rock-solid stability and long release cycles, Debian is ideal for critical servers and VPS deployments. It's often the base for other distros and has massive community support.
- □□ Best For: Web servers, mail servers, VPS hosting, home lab projects.

☁ 2. Ubuntu Server (LTS)

- **Website:** https://ubuntu.com/server
- **Description:** Built on Debian, but with more frequent updates and extensive cloud support. Ubuntu Server LTS is widely used on AWS, Azure, and DigitalOcean. Backed by Canonical with 5+ years of updates.
- □□ Best For: Beginners, VPS admins, Docker, Proxmox VMs, and self-hosting.

□□ 3. AlmaLinux / Rocky Linux

- **Website (AlmaLinux):** https://almalinux.org/
- **Website (Rocky Linux):** https://rockylinux.org/
- **Description:** Enterprise-ready RHEL-compatible distros, maintained by the community after CentOS shifted upstream. Both are stable, reliable, and used in production environments.
- □□ Best For: Enterprises replacing CentOS, cPanel, corporate workloads.

□□ 4. openSUSE Leap / MicroOS

- **Website:** https://www.opensuse.org/
- **Description:** Leap is a stable release based on SUSE Linux Enterprise. MicroOS is geared toward containerized and transactional workloads (like Kubernetes or Podman).
- □□ Best For: Immutable server environments, transactional updates, devops.

□□ 5. Arch Linux (For Custom Server Builds)

- **Website:** https://archlinux.org/
- **Description:** Not for beginners, but allows total control over every package and service. Minimal by design — ideal for lean, customized headless servers with only what you need.
- □□ Best For: Expert users, minimal server deployments, LXC/containers.

□□ 6. Proxmox VE (Hypervisor)

- **Website:** https://www.proxmox.com/en/proxmox-ve
- **Description:** A powerful Debian-based server OS for running VMs and containers. Offers a web UI, ZFS support, backups, snapshots, and clustering. Ideal for homelabs and small businesses.
- □□ Best For: Virtualization, KVM/QEMU, LXC containers, storage servers.

🔴 Red Hat Enterprise Linux (RHEL)

- **Website:** https://www.redhat.com/en/technologies/linux-platforms/enterprise-linux
- **Description:** A premium, subscription-based Linux distribution used in many corporate environments. Offers certifications, technical support, and strong enterprise integrations.
- 🧠 Best For: Certified production environments, mission-critical apps.

🧠 Bonus: Lightweight Headless Distros

- **DietPi** – https://dietpi.com/
  Minimal Debian-based distro optimized for SBCs and low-resource servers.
- **Alpine Linux** – https://alpinelinux.org/
  Tiny, security-focused Linux for containers and minimal setups (5MB install size).

🧠 Summary

These Linux server distros are ideal for:

- Home servers and self-hosted services (BookStack, Nextcloud, etc.)
- Cloud deployments (VPS, AWS, DigitalOcean)
- Virtualization, containers, and web hosting
- Secure, long-term infrastructure