What Self-Hosting Is and Why It Matters

Linux Training Academy

Lesson Overview

- What self-hosting is
- What's involved in self-hosting
- How it differs from traditional cloud-based or Software as a Service (SaaS) offerings
- Self-hosting benefits and challenges.

What is Self-Hosting?

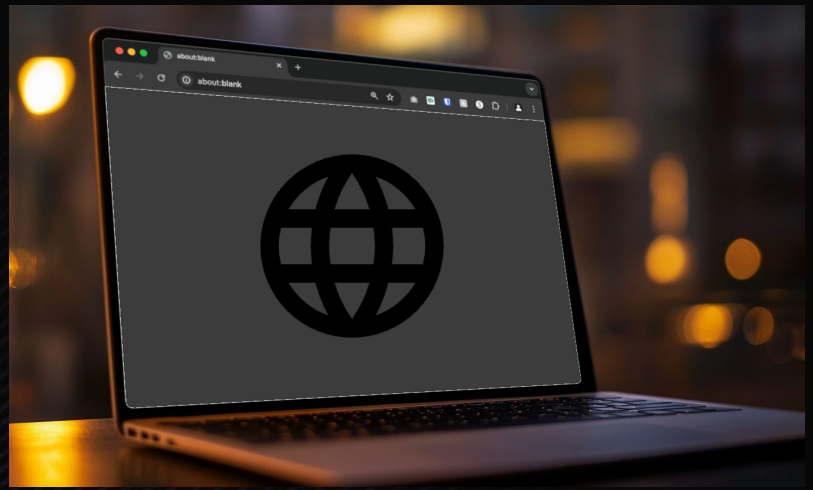
- Self-hosting: Running services, applications, or websites **you control**.
- **Accessible remotely** via smartphones, laptops, or desktops.
- You decide access levels:
  - **Private** (limited to your home network).
  - **Private but accessible over the internet** to select individuals.
  - **Publicly accessible** to everyone on the internet.
- Flexibility to tailor accessibility and privacy to your needs.

Self-Hosted vs. Traditional Applications

- Traditional Applications:
  - Installed on a specific device.
  - Limited use on that **single device** (e.g., word processor on your laptop).

Self-Hosted vs. Traditional Applications

- Self-Hosted Applications:
  - Can be accessible from multiple devices.
  - Can be used from anywhere.
- You control:
  - Who gets access.
  - From where they can access.



Self-Hosting vs. Cloud Services

- Self-Hosting:
  - **You** control the infrastructure and data.
  - No dependency on third-party providers.
- Cloud Services:
  - Infrastructure and data controlled by external providers.
  - Examples: SaaS applications and general "cloud" services.

With Self-Hosting You Are In Control

- **You are in control** of your own data:
  - **Storage**: Decide where and how it's stored.
  - **Access**: Control who and what accesses your data.
  - **Backups**: Decide how or if backups are maintained.
- You are responsible for managing services and applications that access your data.

Self-Hosted Alternatives for Cloud Storage

- Replace cloud storage services (**Google Drive, Dropbox, OneDrive, iCloud**) with self-hosted options:
  - Nextcloud
  - Seafile
  - Syncthing

- Benefits:
  - Store, sync, and share files across devices
  - Retain **complete control** of your data

Self-Hosted Alternatives for Project Management

- Replace tools like **Trello, Asana, Monday.com** with:
  - Kanboard
  - Wekan
  - OpenProject
- Features:
  - Organize to-do lists
  - Collaborate on projects
  - Retain ownership of project data

Self-Hosted Alternatives for Messaging

- Replace messaging platforms like **Slack, Microsoft Teams, Discord** with:
  - Mattermost
  - Rocket.Chat
  - Zulip
- Benefits:
  - Facilitate team communication
  - Full control over chat data and privacy

Self-Hosted Alternatives for Photo & Video Sharing

- Replace platforms like **Google Photos, Amazon Photos, Flickr** with:
  - Immich
  - Photoprism
- Features:
  - Organize and share photos/videos
  - Data privacy and control

The Key Takeaway

- Self-hosted alternatives exist for **almost every application** that:
  - Offer similar functionality to mainstream services
  - Provide complete ownership of data and access

Why You Should Host Your Own Applications

Benefits of Self-Hosting - Control Over Your Data

- Full control over your data – No reliance on third-party providers.
- Avoid changes in terms of service, fee increases, or platform shutdowns.
- Freedom to manage, access, and handle data as per your rules.
- Ensures data security and reliability without external disruptions.

Benefits of Self-Hosting - Data Privacy

- **Eliminates risks** of data mining and unauthorized tracking.
- Prevents **unauthorized sharing** by third-party services.
- Self-hosted data is safe from being monetized or targeted with ads.
- Maintains **complete privacy** with no external access.

Benefits of Self-Hosting - Access Control

- Decide **where and how** applications are accessed (local, remote, or public).
- Manage accessibility based on your preferences and needs.
- Retain **full control** over availability of your apps and services.

Independence from Third Parties

- **Avoid dependence** on external companies or providers.
- Ensure services run without disruptions or surprises.
- **Freedom** to manage updates, features, and issues on your own timeline.
- Safeguard against unexpected shutdowns or price increases.

Full Control of Your Ecosystem

- Services run as long as **you** need them without disruptions.
- Complete control over **updates, features, and data management.**
- Freedom from waiting on external providers to fix issues or release features.
- Address changes and challenges **immediately** as needed.

No Forced Updates

- Avoid **forced updates** that disrupt workflows.
- **Customize** features, designs, and configurations to fit your exact needs.
- Create a stable, tailored environment free from external constraints.

Customization of Your Environment

- Tailor your environment to meet **your** exact needs.
- **Overcome limitations** of third-party platforms.
- **Freedom** to customize features, designs, and configurations.
- Build applications and services that align with **your** preferences.

Cost Savings Through Self-Hosting

- **Replace subscription services** with self-hosted alternatives.
- Many self-hosted solutions are **open source and free to use**.
- Examples of cost-saving tools:
  - **Nextcloud** or **Syncthing** for cloud storage.
  - **Jellyfin** or **Plex** for media streaming.
- **Avoid ongoing monthly fees** for licenses or premium features.

Long-Term Savings

- **Savings accumulate over time** by replacing multiple paid services.
  - Examples: Cloud storage, media streaming, team collaboration tools.
- Added benefits:
  - Privacy
  - Control
  - Customization

Affordable Hardware Options

- No up-front costs if using existing hardware (e.g., old desktops or laptops).
- Affordable starter options:
  - Raspberry Pi: ~$50
  - Micro desktop PC: ~$150
  - Used enterprise server: ~$200+
- Long-term savings outweigh initial investment.

What is a Virtual Private Server (VPS)?

- A **VPS** is a virtualized server hosted in a data center managed by a provider.
- Eliminates the need for owning or managing physical hardware.
- Provides **full control** over operating systems, configurations, and installed software.
- Enables self-hosting with the benefits of **high-performance infrastructure**.
- Offers a **hassle-free alternative** to physical servers.

Considerations When Using a VPS

- Reduces hardware management but introduces **reliance** on a hosting provider.
- Requires trust in the provider for privacy and data integrity.
- Providers may gain theoretical access to hosted data, but **practical risks are low**.
- SaaS applications often actively scan and monetize user data, unlike VPS.

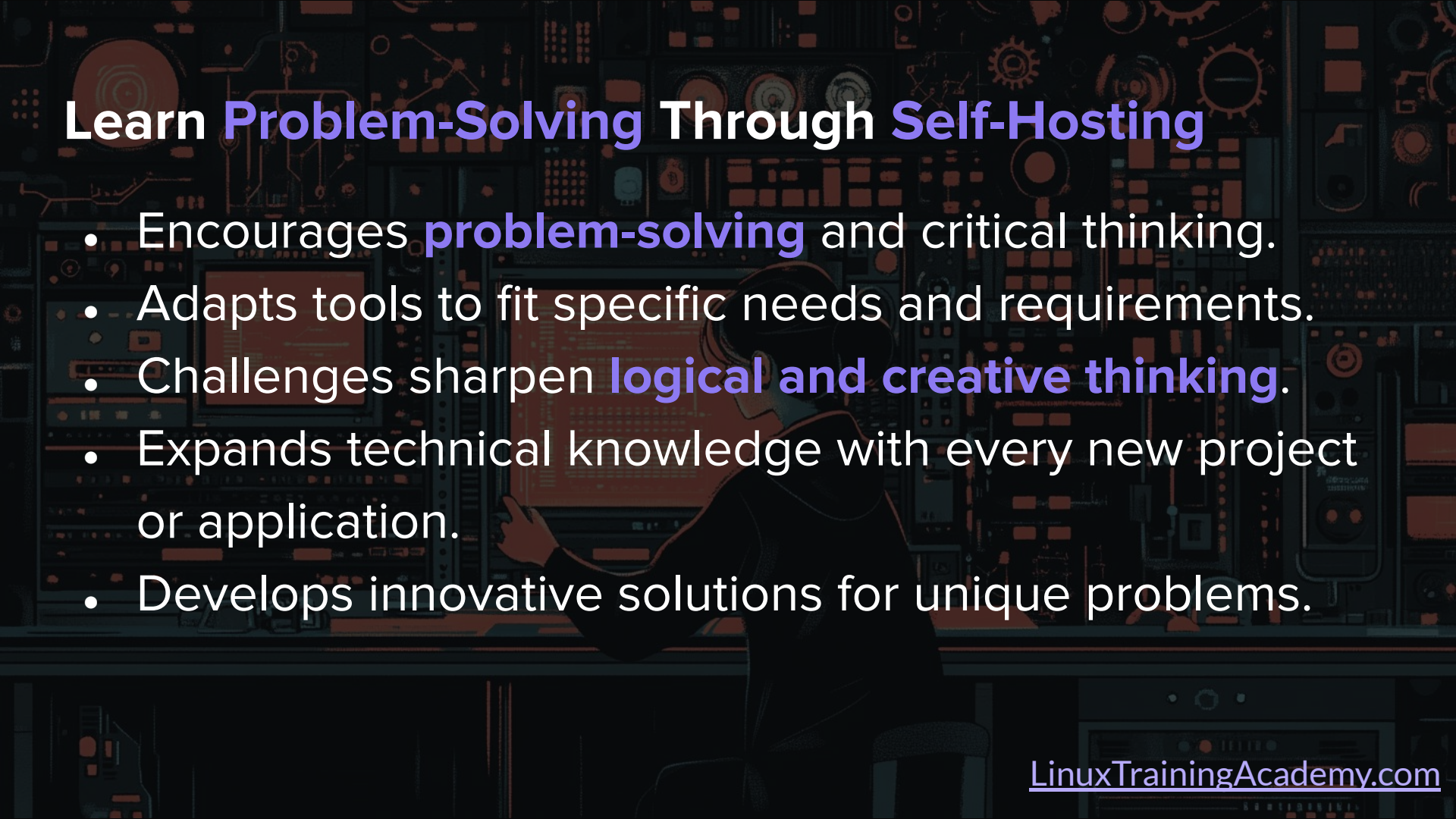
Recommended VPS Providers

- Popular VPS providers:
  - DigitalOcean
  - Vultr
  - AWS Lightsail
  - OVH Cloud
  - Hetzner

- DigitalOcean offers plans starting at $4/month with reliable service and support.
- Providers cater to a variety of needs with reputable services.

Improve Your Technical Skills

- Gain valuable skills in **server configuration**.
- Learn to manage **software configurations** and troubleshoot issues.
- Develop expertise in system optimization and performance tuning.
- Build knowledge in **networking, security, and resource management**.
- Enhance your technical profile, especially for IT careers.



Learn Problem-Solving Through Self-Hosting

- Encourages **problem-solving** and critical thinking.
- Adapts tools to fit specific needs and requirements.
- Challenges sharpen **logical and creative thinking**.
- Expands technical knowledge with every new project or application.
- Develops innovative solutions for unique problems.

The Joy of Self-Hosting

- Learning becomes its own **reward**.
- Offers countless opportunities to explore and **master new skills**.
- Each implemented service or solved challenge brings **a sense of accomplishment**.
- Combines technical growth with a **deeply rewarding** experience.

Supporting Open Source Software (OSS)

- Self-hosted applications are often **open source**, meaning:
  - Source code is freely available to use, modify, and share.
- Provides **flexibility** and **transparency**:
  - Examine how software works.
  - Modify to fit your needs.
  - Contribute changes to the community.
- Collaboration is essential:
  - Give back while benefiting from tools.

Submitting Bug Reports

- Submit bug reports to improve open source software:
  - Helps **identify issues**.
  - Enables maintainers to **fix problems**.
  - Improves the software for **everyone**

Updating Documentation

- Contributing to documentation helps:
  - Fix typos or clarify instructions.
  - Make software more **user-friendly**.
  - **Support new users** with clear guidance.
- Good documentation is as important as code:
  - Lowers the barrier to entry for beginners.
  - **Enables adoption** of the software.

Contributing Solutions

- **Share your solutions** if you:
  - Encounter a problem and have the skills to fix it.
- Benefits of sharing:
  - Solve the issue for yourself and others.
  - Strengthen the open source **community**.

Self-Hosting Challenges

Challenges of Self-Hosting

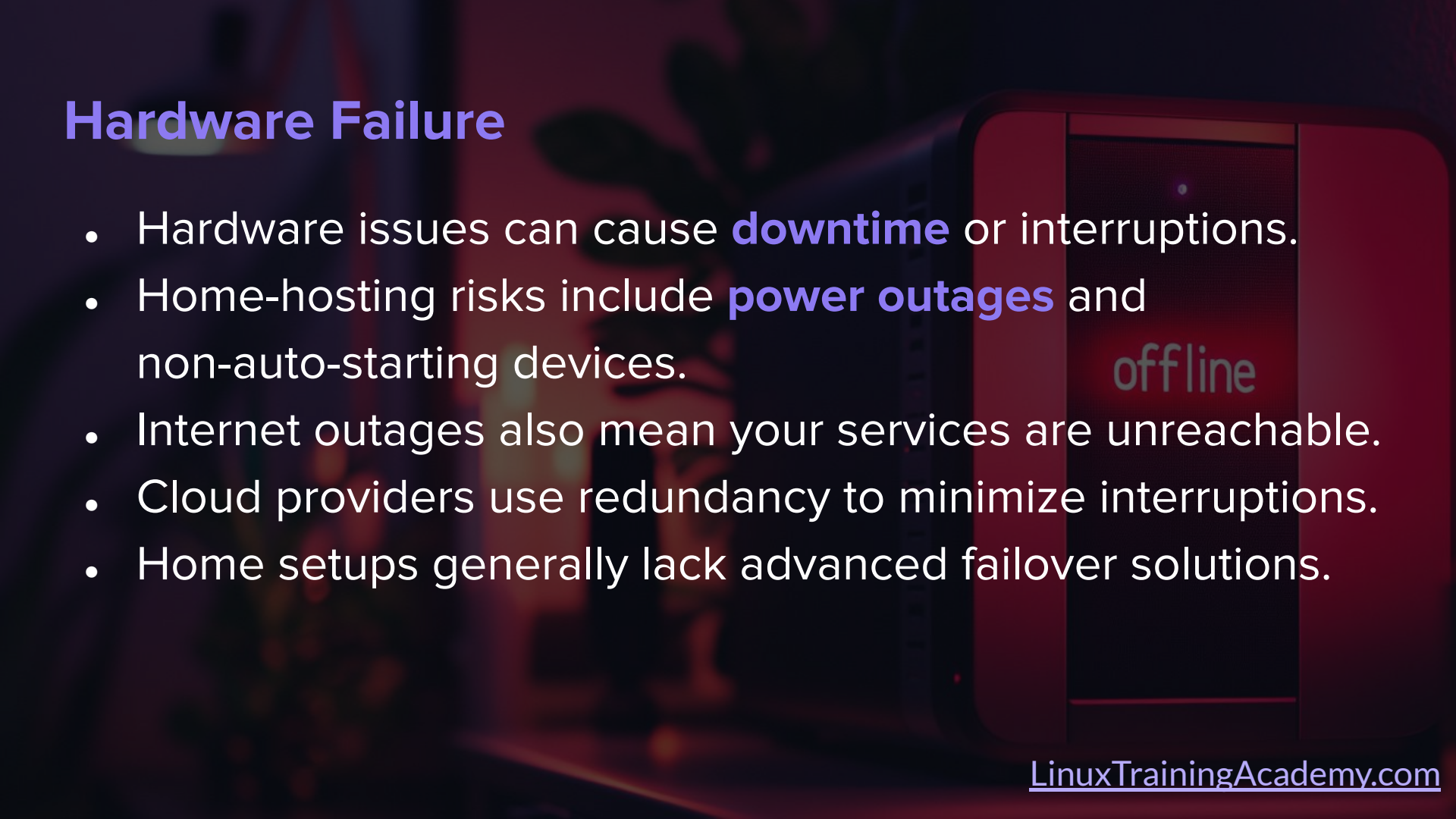
- Self-hosting provides many benefits but comes with **responsibilities**.
- It's essential to understand the **pitfalls** before deciding if it’s right for you.
- With great control comes the need for **self-reliance**.
- Evaluating both benefits and challenges helps make an informed decision.

Total Control Means Total Responsibility

- Total control of your environment = total **responsibility**.
- You handle **technical support, troubleshooting, and solutions**.
- Issues like **server crashes, data corruption, or missing backups** are yours to resolve.
- Can be overwhelming for newcomers or those without technical experience.
- Online communities exist, but the onus is on you.

Hardware Failure

- Hardware issues can cause **downtime** or interruptions.
- Home-hosting risks include **power outages** and non-auto-starting devices.
- Internet outages also mean your services are unreachable.
- Cloud providers use redundancy to minimize interruptions.
- Home setups generally lack advanced failover solutions.



You're Responsible for Securing Your Data

- **Securing data** is entirely your responsibility.
- Only authorized users should access your environment.
- Learn to deploy in a way that's **secure** and unreachable by hackers.
- Carefully consider **security implications** before enabling external access.
- This course covers secure deployment techniques.

Self-Hosting Takes Work and Patience

- Self-hosting is rewarding, but requires **effort**.
- Expect challenges, especially in the beginning.
- Resolving issues builds **technical expertise** over time.
- Skills that seem daunting will become routine.
- It’s not just about apps—it's about **owning your digital life**.

Lesson Recap

- **Self-hosting** means running applications, services, or websites under your control.
- Unlike cloud or SaaS, you control **data access and management**.
- Supports alternatives to popular services such as:
  - Cloud storage
  - Project management tools
  - Messaging platforms
- Benefits include:
  - **Enhanced privacy**
  - **Independence**
  - **Cost savings**

Lesson Recap

- **Responsibility** is key in self-hosting:
  - Maintenance
  - Troubleshooting
  - Securing your environment
- Requires effort but builds valuable **technical skills**.
- Offers ownership of your digital life.
- Despite challenges, **self-hosting is rewarding and empowering**.