

# Bookmarks

## 2FA / Fido

- [How FIDO Works](#) - The FIDO protocols use standard public key cryptography techniques to provide stronger authentication. During registration with an online service, the user's client device creates a new key pair. It retains the private key and registers the public key with the online service. Authentication is done by the client device proving possession of the private key to the service by signing a challenge. The client's private keys can be used only after they are unlocked locally on the device by the user. The local unlock is accomplished by a user-friendly and secure action such as swiping a finger, entering a PIN, speaking into a microphone, inserting a second-factor device or pressing a button.
- [Designing and Producing 2FA tokens to Sell on Amazon](#) - I made a two factor authentication token and have made it available on Amazon. In this post I'll talk about the design, how I produced it affordably, and some metrics about selling on Amazon. If you're interested in doing something similar, you can copy everything as it's all open source.
- [Nitrokey](#)
- [SoloKeys](#)
- [Yubico](#)
- [Neowave](#)
- [Authelia](#) - is an open-source authentication and authorization server providing two-factor authentication and single sign-on (SSO) for your applications via a web portal. It acts as a companion for reverse proxies by allowing, denying, or redirecting requests.

## Ansible

- <https://www.ansible.com/webinars-training>
- <http://reclass.pantsfullofunix.net/concepts.html>
- <https://github.com/opoplowski/ansible-pfsense>
- [ansible-lint](#) - checks playbooks for practices and behavior that could potentially be improved. As a community-backed project ansible-lint supports only the last two major versions of Ansible. Visit the [Ansible Lint docs site](#).

## Apache

- [Apache Bad Bot and User-Agent Blocker](#), Spam Referrer Blocker, Bad IP Blocker and Wordpress Theme Detector Blocker
- <https://www.ducea.com/2007/10/22/apache-tips-disable-the-http-trace-method/>
- <https://security.stackexchange.com/questions/56955/is-the-http-trace-method-a-security-vulnerability>
- [mkcert](#) - mkcert is a simple tool for making locally-trusted development certificates. It requires no configuration.
- [security.txt](#)
  - <https://en.wikipedia.org/wiki/Security.txt>
  - <https://securitytxt.org/>
  - <https://krebsonsecurity.com/2021/09/does-your-organization-have-a-security-txt-file/>

## Architecture

### ArchiMate

- [Unternehmensarchitektur \(Enterprise Architecture\) im Rahmen der Informationstechnik \(IT\)](#)
- [Archi](#) - The Open Source modelling toolkit for creating ArchiMate models and sketches. Used by Enterprise Architects everywhere.
- [The Open Group](#) - works with customers and suppliers of technology products and services, and with consortia and other standards organizations to capture, clarify, and integrate current and emerging requirements, establish standards and policies, and share best practices. Our standards ensure openness, interoperability, and consensus.
- [The TOGAF® Standard, 10th Edition](#) - makes adoption of best practices easier. It will show you where to find enduring and universal concepts and proven best practice and it will also underscore where to look for new emerging ideas. Together universal concepts, best practice guidance, and emerging ideas are how you adapt the TOGAF Standard for your configured Enterprise Architecture practice.
- [Introduction & Vision of the ArchiMate Forum](#) - The Open Group ArchiMate Forum provides the open and independent modeling language for enterprise architecture, supported by various tool vendors and consulting firms. Architectural drawings used for the construction of a building, describe the various aspects of the construction and use of a building. The ArchiMate Specification, a Standard of The Open Group, defines a common language for describing the construction and operation of business processes, organizational structures, information flows, IT systems, and technical infrastructure. This insight helps stakeholders to design, assess, and communicate the consequences of decisions and changes within and between these business domains.

### BPMN

- [BPMN 2.0 - Grundelemente \(Tutorial Part 1\)](#) - Business Process Model and Notation

## UML

- <https://github.com/gaphor/gaphor> Gaphor is a UML and SysML modeling application written in Python. It is designed to be easy to use, while still being powerful. Gaphor implements a fully-compliant UML 2 data model, so it is much more than a picture drawing tool. You can use Gaphor to quickly visualize different aspects of a system as well as create complete, highly complex models.
- [PlantUML](#) - is used to draw UML diagrams, using a simple and human readable text description. Be careful, because it does not prevent you from drawing inconsistent diagrams (such as having two classes inheriting from each other, for example). So it's more a drawing tool than a modeling tool.
  - <https://www.planttext.com/>

## Audio / Music

- [master\\_me](#) - Automatic audio mastering plugin for live-streaming, podcasting and internet radio stations.
- [Mixxx](#) - Mixxx integrates the tools DJs need to perform creative live mixes with digital music files. Whether you are a new DJ with just a laptop or an experienced turntablist, Mixxx can support your style and techniques of mixing.
- [RuneAudio](#) - is a free and open source software that turns embedded hardware into Hi-Fi music players. Take an inexpensive, silent and low-consumption mini-PC and make it perform as an high fidelity digital source.
- [Mopidy](#) - is an extensible music server written in Python. Mopidy plays music from local disk, Spotify, SoundCloud, TuneIn, and more. You can edit the playlist from any phone, tablet, or computer using a variety of MPD and web clients.
- [The MagPi - Build a multi-room audio system with Raspberry Pi](#)
- [Logitech Media Server](#) - Your music on your Squeezebox. It doesn't matter if your library includes 100 tracks or 100,000. Or if you rip your own CDs or buy your music from services like iTunes and Amazon MP3. Start listening to your personal music collection on a Squeezebox in any room in your home.
- [Tenacity](#) - Tenacity is an easy-to-use multi-track audio editor and recorder for Windows, macOS, Linux and other operating systems. It is built on top of the widely popular [Audacity](#) and is being developed by a wide, diverse group of volunteers.
- [linuxdaw.org](#) - Make it easy and quick for musicians to find the tools they need. Focus on good quality software with proper UI. Promote the great developers that make the effort of supporting Linux. Showcase the software using modern web technology.
- [JACK, ALSA, Pulseaudio und Pipewire - Linux Audio verstehen und professionell nutzen](#)
- [Help please: Music Player Daemon and Real-Time Scheduling \(alsa audio output\)](#)
- [Arch Linux - realtime-privileges](#)
- [bark!](#) - low latency multi-receiver synchronised audio streaming for local networks. Transmits uncompressed 48khz stereo audio over UDP multicast
- [Ups: Automatischen Microphone Gain aktiviert?](#) - Erfüllt Euch euer spracherkennender Assistent nicht mehr jeden Wunsch? Melden die Kollegen im Videochat vielleicht, daß Ihr schon wieder mal so leise seid, dabei hattet Ihr das erst gestern richtig eingestellt? Glückwunsch, entweder Ihr seid Opfer von „wir wissen es besser“ Idioten geworden die AGC eingebaut haben oder Euch hat ein Pipewire-Glitch erwischt.

## Autofs

- [SUSE Administration Guide - On-Demand Mounting with Autofs](#)

## Bahn

- <https://bahn.expert/>
- <https://www.bahn.de/bahnbusiness/hilfe/tipps#umbuchung>
- <https://www.bahn.de/service/ueber-uns/inside-bahn/news/grossbaustellen#10>;
- [https://travix.app/?z=13&x=1233571.2&y=6348682.4&l=osm\\_standard&ol=](https://travix.app/?z=13&x=1233571.2&y=6348682.4&l=osm_standard&ol=)

## bash / CLI / Terminal

- [manpagez: man pages & more](#) - versioned manpages
- [Bash tips: Colors and formatting \(ANSI/VT100 Control sequences\)](#)
- [Bash tips: Customize the shell prompt](#)
- <https://cloudapps.herokuapp.com/imagetoascii/>
- [bash-argsparse](#) - An high level argument parsing library for bash. Inspired, by the python argparse module, bash-argsparse purpose is to replace the option-parsing and usage-describing functions commonly rewritten in all scripts.
- [Fedora Magazine - Improve your Bash scripts with Argbash](#)
- [argbash.io](#) - Argbash is a code generator - write a short definition and let Argbash modify your script so it magically starts to expose a command-line interface to your users and arguments passed using this interface as variables.
- [Bash Scripting Cheatsheet](#)
- [bashisms](#)
- [Schwanzvergleich - ;\)](#)
- [Terminals Are Sexy](#) - A curated list of Terminal frameworks, plugins & resources for CLI lovers.
- [Writing Robust Bash Shell Scripts](#)

- [starship cross-shell prompt](#) - The minimal, blazing-fast, and infinitely customizable prompt for any shell!
- [ShellCheck](#) - finds bugs in your shell scripts.
- [explainshell.com](#) - match command-line arguments to their help texts
- [GNU Stow](#) - is a symlink farm manager which takes distinct packages of software and/or data located in separate directories on the filesystem, and makes them appear to be installed in the same place. For example, /usr/local/bin could contain symlinks to files within /usr/local/stow/emacs/bin, /usr/local/stow/perl/bin etc., and likewise recursively for any other subdirectories such as .../share, .../man, and so on. This is particularly useful for keeping track of system-wide and per-user installations of software built from source, but can also facilitate a more controlled approach to management of configuration files in the user's home directory, especially when coupled with version control systems.
- [Expect command and how to automate shell scripts like magic](#)
- [30 Examples for Awk Command in Text Processing](#)
- [31+ Examples for sed Linux Command in Text Manipulation](#)
- [Linux-UNIX-Programmierung](#) - von Jürgen Wolf - Das umfassende Handbuch
- [Newsgroup: de.comp.os.unix.shell](#)
- <https://wttr.in>
  - lynx <https://www.wttr.in/nuremberg>
  - wget `—quiet -0 - http://wttr.in/nuremberg | head -7`
- [youtube-dl](#) - is a command-line program to download videos from YouTube.com and a few more sites. It requires the Python interpreter, version 2.6, 2.7, or 3.2+, and it is not platform specific. It should work on your Unix box, on Windows or on macOS. It is released to the public domain, which means you can modify it, redistribute it or use it however you like.
- [Inconsolation](#) - Adventures with lightweight and minimalist software for Linux
- [Guckes - Tools, Tools, Tools](#)
- [AutoKey](#) - a desktop automation utility for Linux and X11, formerly hosted at OldAutoKey. Updated to run on Python 3. Important: This is an X11 application, and as such will not function 100% on distributions that default to using Wayland instead of Xorg.
- [Alacritty](#) - A fast, cross-platform, OpenGL terminal emulator
- [explainshell.com](#) - write down a command-line to see the help text that matches each argument
- [jless](#) - a command-line JSON viewer. jless is a command-line JSON viewer designed for reading, exploring, and searching through JSON data. jless will pretty print your JSON and apply syntax highlighting. Use it when exploring external APIs, or debugging request payloads.
- [Moving efficiently in the CLI](#) - I'm tired of pounding on the arrow keys when moving in the command line, but I keep on forgetting the keyboard shortcuts that would help me move more efficiently, so here's a simple diagram in a flashcard format for future reference!
- [rix - dotfiles](#)
- [Terminal Trove](#) - curates and showcases all things in the terminal such as command line interface tools (CLI), text mode interface tools (TUI), developer tools and more no matter what platform or medium.

## Harald König

- [Harald König: Bash-Versteher dank Strace](#)
- [Es muss mal wieder SHELL sein...](#) - Haralds kleine Helferlein: die Shell und mehr
- [Es muss nicht immer Shell/Linux sein](#) - HW-Programmierung mit microPython auf ESP32
- [gnuplot](#) - Ein Bild sagt mehr als 1000 Zahlen ...
- [Haralds kleine Helferlein: die Shell](#) - Im Vortrag wird «interaktiv» ganz langsam und in kleinen Schritten ein Shell-Skript entwickelt - um zu demonstrieren, wie einfach das mit ein wenig Übung sein kann (und wie nützlich zum Schluss!). Mit der Shell (bash) und einer kleinen Zahl hilfreicher Kommandozeilen-Tools kann man sehr schön Daten bearbeiten, umwandeln, verarbeiten und auswerten. Einmal erlernt und geübt ist dies ein praktisches und mächtiges Werkzeug in UNIX, welches durch die grafischen Oberflächen vielfach zu Unrecht immer mehr in Vergessenheit gerät.
- [A Shell Script a Day Keeps Your Trouble Away](#)
  - [https://static.sched.com/hosted\\_files/osseu19/1f/do\\_it.sh](https://static.sched.com/hosted_files/osseu19/1f/do_it.sh)
    - Mit "strace" zum Linux- und BASH-Versteher / Linux-Versteher dank strace
  - <https://www.luga.de/download/Vortraege/lit2016-strace.pdf>
- [https://programm.froscon.org/2021/system/event\\_attachments/attachments/000/000/653/original/froscon-2021-shell-sprechstunde.pdf](https://programm.froscon.org/2021/system/event_attachments/attachments/000/000/653/original/froscon-2021-shell-sprechstunde.pdf)
- [https://programm.froscon.org/2021/system/event\\_attachments/attachments/000/000/654/original/shell-history.txt](https://programm.froscon.org/2021/system/event_attachments/attachments/000/000/654/original/shell-history.txt)
- [http://programm.openrheinruhr.de/2016/attachments/116\\_orr-2016-bash-fun-slides.pdf](http://programm.openrheinruhr.de/2016/attachments/116_orr-2016-bash-fun-slides.pdf)

## makefile

- [What is a Makefile and how does it work?](#) What is a Makefile and how does it work? Run and compile your programs more efficiently with this handy automation tool.
- [A Simple Makefile Tutorial](#) - Makefiles are a simple way to organize code compilation. This tutorial does not even scratch the surface of what is possible using make, but is intended as a starters guide so that you can quickly and easily create your own makefiles for small to medium-sized projects.
- [Makefile Tutorial by Example](#) - Learn Makefiles with the tastiest examples
- [Makefile Cookbook](#)

## Bike

- [Lezyne Micro Drive Battery Replacement](#)

## Blogs / News / Podcasts / Streaming / Digitale Magazine

- [LinuxNews.de](#)
- [GNU/Linux.ch](#)
  - [GNU/Linux News Show](#)
- [Fedora Magazine](#) - Guides, Information and News about Fedora
- [Linux Content](#) - Text, Audio, Video, 3D - Werkzeuge für Kreative
- [UNIXwork.de](#) - Wie der Name UNIXwork schon sagt, dreht sich hier alles um unixoide Betriebssysteme, hauptsächlich Linux und Solaris. Aber ich versuche auch den BSDs genügend Beachtung zu schenken. Mich interessiert vor allem systemnahe und portable Programmierung mit C, daher dürften vermehrt Artikel über diverse APIs verschiedener Betriebssysteme vorkommen.
- [Die wunderbare Welt von Isotopp](#) - Kristian Köhntopp sein Blog
- [Fefes Blog](#) - Felix von Leitner sein Blog
- [Alternativlos!](#) - Dies ist Alternativlos, die Netzbeschallung von Frank Rieger und Fefe. Wir reden über Politik, Technik, Verschwörungstheorien und was uns sonst noch so in den Sinn kommt.
- [Knowledge Brings Fear](#) - Frank Rieger sein Blog - At some point in time, you recognize that knowing more does not necessarily make you more happy. This weblog is about both: knowledge and happiness.
- [Realitätsabzweig](#) - ist eine wöchentliche Kolumne von Frank Rieger über den völlig bizarren Abzweig der Realität, in dem wir gelandet sind
- [Dirks Logbuch](#) - Dirk Deimeke sein Blog
- [opensource.com](#)
- [Open Source Alternative To](#) - Discover 400+ popular open source alternatives to your proprietary SaaS
- <https://philipp-weissmann.de/>
  - [Philipps Podcast Pastete](#)
- [Ach? Triumvirat für historisch inspirierte Humorvermittlung](#)
- [Methodisch Inkorrekt!](#) - Die Rockstars der Wissenschaft.
- [Deutschsprachige Tech Podcasts](#) - eine kuratierte Liste von deutschsprachigen Tech-Podcasts
- [kuerbis.org](#)
- [Ben Werdmuller](#)
- [OMG! Linux](#)
- [Andreas Scherbaum](#)
- [Logbuch:Netzpolitik](#) - ist ein wöchentlicher Podcast über das netzpolitische Geschehen mit Linus Neumann und Tim Pritlove.
- [Unix & Linux Stack Exchange](#) - is a question and answer site for users of Linux, FreeBSD and other Un\*x-like operating systems.
- [PREINING, Norbert](#)
- [stoeps.de](#) - the blog of Christoph Stoettner
- [Leyrers Online Pamphlet](#) - ist die persönliche Website von Martin Leyrer. Die hier veröffentlichten Beiträge spiegeln meine Ideen, Interessen, meinen Humor und fallweise auch mein Leben wider. Providing IT-Wizardry for money for over 20 years. Boldly managing systems where angels fear to tread and configuring products without proper documentation. Easily distracted by everything shiny, blinky and new.
- [Linus Neumann](#) - IT-Sicherheit, Netzpolitik, Psychologie
- [Un\\*x](#) - Schwellwert ist kein Wort.
- [TIB Themencast](#) - Das TIB-Blog ist ein Angebot der TIB - Leibniz-Informationszentrum Technik und Naturwissenschaften und Universitätsbibliothek.
- [Chris Titus Tech](#) - This site is a repository of guides, image downloads, and how to articles. You can browse the site by navigating the five sections on the top bar or using the search in the top right. I've been in IT for over 20 years and make articles and videos on YouTube to share my knowledge.
- [Die Datenschleuder](#) - das wissenschaftliche fachblatt für datenreisende. ein organ des chaos computer club.

## Betriebssysteme / Distributionen

- [Qubes OS](#) is a free and open-source, security-oriented operating system for single-user desktop computing. Qubes OS leverages Xen-based virtualization to allow for the creation and management of isolated compartments called qubes.
- [NixOS](#) Nix is a tool that takes a unique approach to package management and system configuration. Learn how to make reproducible, declarative and reliable systems.
  - [NixCon](#) - is a community-oriented conference for contributors and users of Nix and NixOS. It's about sharing experiences, inspiring people and discussing future development. We would like to learn about how you use Nix and NixOS in your organization and what you are currently working on. The growth of NixOS as a project brings its own challenges and we would like to know how you think the user experience can be improved and how NixOS can be scaled.
- [FreeDOS](#) is open source software! It doesn't cost anything to download and use FreeDOS. You can also share FreeDOS for others to enjoy! And you can view and edit our source code, because all FreeDOS programs are distributed under the GNU General Public License or a similar open source software license.
- [Gentoo](#) - is a free operating system based on Linux that can be automatically optimized and customized for just about any application or need. Extreme configurability, performance, and a top-notch user and developer community are all hallmarks of the

Gentoo experience.

- [Arch Linux](#) - a lightweight and flexible Linux® distribution that tries to Keep It Simple.
- <https://www.freebsd.org/> - FreeBSD is an operating system used to power modern servers, desktops, and embedded platforms.
- [manjaro](#) - has no adverts, licenses or fees, it respects user privacy and empowers them with full control over their hardware. It can be used for development, gaming, 3D, office or home, it can be installed on tablets, mobile, desktops, laptops and boards.
- [Pop!\\_OS](#) - is an operating system for STEM and creative professionals who use their computer as a tool to discover and create. Unleash your potential on secure, reliable open source software. Based on your exceptional curiosity, we sense you have a lot of it.
- [Tails](#) - is a portable operating system that protects against surveillance and censorship.
- [Kali Linux](#) - The most advanced Penetration Testing Distribution is an open-source, Debian-based Linux distribution geared towards various information security tasks, such as Penetration Testing, Security Research, Computer Forensics and Reverse Engineering.
- [ParrotOS](#) - provides a huge arsenal of tools, utilities and libraries that IT and security professionals can use to test and assess the security of their assets in a reliable, compliant and reproducible way. From information gathering to the final report. The Parrot system gets you covered with the most flexible environment.
- [Ubuntu](#) - The mission of Ubuntu is to bring the benefits of free software to the widest possible audience.
- [Fedora](#) - creates an innovative, free, and open source platform for hardware, clouds, and containers that enables software developers and community members to build tailored solutions for their users.
- [Plan 9 from Bell Labs](#) - Plan 9 from Bell Labs is a research system developed at Bell Labs starting in the late 1980s. Its original designers and authors were Ken Thompson, Rob Pike, Dave Presotto, and Phil Winterbottom. They were joined by many others as development continued throughout the 1990s to the present.
- [Red Hat Enterprise Linux](#) - Everywhere enterprise IT is headed, Red Hat® Enterprise Linux® is there. From the public cloud to the edge, it evolves to bring flexibility and reliability to new frontiers. This is the stable foundation for untold innovation.
- [CentOS Stream](#) - Continuously delivered distro that tracks just ahead of Red Hat Enterprise Linux (RHEL) development, positioned as a midstream between Fedora Linux and RHEL. For anyone interested in participating and collaborating in the RHEL ecosystem, CentOS Stream is your reliable platform for innovation.
- [CentOS Linux](#) - Consistent, manageable platform that suits a wide variety of deployments. For some open source communities, it is a solid, predictable base to build upon.
- [Microsoft Virtual Machines for Developers](#) - Test IE11 and Microsoft Edge Legacy using free Windows 10 virtual machines you download and manage locally
  - These virtual machines expire after 90 days. We recommend setting a snapshot when you first install the virtual machine which you can roll back to later. Mac users will need to use a tool that supports zip64, like The Unarchiver, to unzip the files.
  - The password to your VM is "Passw0rd!"
  - Might now be here: <https://developer.microsoft.com/en-us/windows/downloads/virtual-machines/>
- [Vanilla OS](#) - is an immutable and atomic Ubuntu Linux-based Point Release distribution, that receives updates at the right time, neither before nor after, without sacrificing security and functionality.

## Debian GNU/Linux

- [Debian Project](#)
- [Debian IRC](#)
- [Debian Administrators Handbook](#)
- <https://wiki.debian.org/DebianInstaller/Preseed>
- [Debian Referenz](#)
- [Debian Fully Automatic Installation - FAI Project](#) - is a tool for unattended mass deployment of Linux. It's a system to install and configure Linux systems and software packages on computers as well as virtual machines, from small labs to large-scale infrastructures like clusters and virtual environments. You can take one or more virgin PC's, turn on the power, and after a few minutes, the systems are installed, and completely configured to your exact needs, without any interaction necessary.
  - [FAI IRC & Mailinglist](#)
- [Debian headless/remote installation](#)
- [Nala - Stop using APT](#) - Chris Titus Tech
  - [Nala - Stop Using APT](#) - APT is slow... single downloading and generally uses slow mirrors as it doesn't optimize them out of the box. It also doesn't have a history so rolling back updates can really suck. Welp, all that is now fixed with Nala and it is absolutely wonderful. Not only does it fix all that listed above but it makes the updates look beautiful.

## NAS

- [FreeNAS](#) is an operating system that can be installed on virtually any hardware platform to share data over a network. FreeNAS is the simplest way to create a centralized and easily accessible place for your data. Use FreeNAS with ZFS to protect, store, backup, all of your data. FreeNAS is used everywhere, for the home, small business, and the enterprise.
- [NAS4Free](#) is an Open Source Storage NAS (Network-Attached Storage) distribution based on FreeBSD. The NAS4Free operating system can be installed on virtually any hardware platform to share computer data storage over a computer network. 'NAS' as in "Network-Attached Storage" and '4Free' as in 'Free and open source', NAS4Free is the simplest and fastest way to create a centralized and easily-accessible server for all kinds of data easily accessed with all kinds of network protocols and from any network.
  - <http://belajarkomputerkita.blogspot.de/2015/10/configure-nas4free-with-ha.html>
- [openmediavault](#) is the next generation network attached storage (NAS) solution based on Debian Linux. It contains services like SSH, (S)FTP, SMB/CIFS, DAAP media server, RSync, BitTorrent client and many more. Thanks to the modular design of the framework it can be enhanced via plugins. openmediavault is primarily designed to be used in small offices or home offices, but is not limited to those scenarios. It is a simple and easy to use out-of-the-box solution that will allow everyone to install and

administrate a Network Attached Storage without deeper knowledge.

- <http://omv-extras.org/>

## SUSE

- <https://scc.suse.com/packages>
- [openSUSE Tumbleweed](#) - State-of-the-art desktop and server operating system. With Tumbleweed you don't have to take difficult decisions about things you value, either freedom or safety, either control or security, technology or stability - Tumbleweed lets you have your cake and eat it too!
- [openSUSE Leap](#) - A brand new way of building openSUSE and a new type of a hybrid Linux distribution. Leap uses source from SUSE Linux Enterprise (SLE), which gives Leap a level of stability unmatched by other Linux distributions, and combines that with community developments to give users, developers and sysadmins the best stable Linux experience available.
- [openSUSE MicroOS](#) - Micro Service OS providing Transactional (Atomic) Updates upon a read-only btrfs root filesystem. Designed to host container workloads with automated administration & patching. Installing openSUSE MicroOS you get a quick, small environment for deploying Containers, or any other workload that benefits from Transactional Updates. As rolling release distribution the software is always up-to-date. MicroOS offers an offline image. The main difference between the offline and self-install/raw images are that the offline image has an installer. Raw and self-install allows for customization via combustion or manually in the image after it is written to the disk. There is an option for a real-time kernel. Try MicroOS in VMs running on either Xen or KVM. Using a Raspberry Pi or other System on Chip hardware may use the preconfigured image together with the Combustion functionality for the boot process. Both preconfigured and self-installed images are intended to be used with Combustion written to a USB, which is driven to allow configuration on any first boot, with the option for default password protected changes.
- [HCL:Raspberry Pi4](#) - How to get openSUSE Tumbleweed on a Raspberry Pi 4

## Bind9

- <https://help.ubuntu.com/community/BIND9ServerHowto>
- <https://slaskdot.org/2013/08/22/graphing-dns-queries-with-bindgraph/>
- <https://www.syn-flut.de/caching-dns-resolver-mit-bind9>
- [Linux and BIND9 as a DNS Secondary for Active Directory](#) - vswitchzero.com
  - [https://wiki.ubuntuusers.de/DNS-Server\\_Bind/Sekund%C3%A4re\\_Nameserver/](https://wiki.ubuntuusers.de/DNS-Server_Bind/Sekund%C3%A4re_Nameserver/)

## Books

- [O'Reilly - Building Internet Firewalls](#)
- [Packt - Free Learning](#) - Daily Free Programming eBook from Packt
- [Linux-UNIX-Programmierung](#) - von Jürgen Wolf - Das umfassende Handbuch

## Bootloader

- <https://www.barebox.org/> barebox is a bootloader designed for embedded systems. It runs on a variety of architectures including x86, ARM, MIPS, PowerPC and others. barebox aims to be a versatile and flexible bootloader, not only for booting embedded Linux systems, but also for initial hardware bringup and development. barebox is highly configurable to be suitable as a full-featured development binary as well as for lean production systems. Just like busybox is the Swiss Army Knife for embedded Linux, barebox is the Swiss Army Knife for bare metal, hence the name.

## Browser

- [unixsheikh - choose your browser carefully](#) - Privacy on the Internet is important because privacy risks range from the gathering of statistics on users to more malicious acts such as the spreading of spyware and the exploitation of various forms of bugs (software faults). Many companies, such as Google, track which websites people visit and then use the information, for instance by sending advertising based on one's web browsing history. Sometimes prices on products are changed on the same website, depending on tracking information, and two people may view the exact same product on the exact same website yet be presented with very different prices.
- [arkenfox user.js](#) - The arkenfox user.js is a template which aims to provide as much privacy and enhanced security as possible, and to reduce tracking and fingerprinting as much as possible - while minimizing any loss of functionality and breakage (but it will happen).

## Ad Blocking Test

- [can you block it?](#) - a simple Ad Block Tester
- [IPleak.net](#) - This is the kind of information that all the sites you visit, as well as their advertisers and any embedded widget, can see and collect about you.

- [Block Ads!](#)
- [EFF - Cover Your Tracks](#) - Test your browser to see how well you are protected from tracking and fingerprinting
- <http://raymondhill.net/ublock/tests.html>
- <https://d3ward.github.io/toolz/adblock.html>
- <https://d3ward.github.io/toolz/>

## Anti-Tracking

- [Detect Font Fingerprint](#) - This page shows you the font fingerprint for your browser. This fingerprint is computed by rendering a sample text with a variety of font families. The fingerprint and supported font list are rendered below. Please note that, if you do not have a spoofer mechanism to change (mask) the fingerprint, it should remain fixed whenever you reload/visit this page.
- [WebBrowserTools](#) - A clever collection of useful web applications for your browser
  - [Font Fingerprint Defender](#)

## Browser Addons

- [uBlackList](#), [uBlackList Subscriptions](#) (Firefox/Chrome)
- [uBlock Origin](#) - Finally, an efficient wide-spectrum content blocker. Easy on CPU and memory.
  - [How to use uBlock Origin to protect your online privacy and security - uBlock Origin tutorial 2018](#)
- [floccus](#) - Sync your bookmarks across browsers via Nextcloud, WebDAV or Google Drive
- [Gesturefy](#) - Navigate, operate, and browse faster with mouse gestures! A customizable mouse gesture add-on with a variety of different commands.
- [Video DownloadHelper](#) - The easy way to download and convert Web videos from hundreds of YouTube-like sites.
- [Snowflake](#) - Help people in censored countries access the Internet without restrictions. Once you install and enable the extension, wait for the snowflake icon to turn green, this means a censored user is connecting through your extension to access the Internet!
- [KeePassXC-Browser](#) - Official browser plugin for the KeePassXC password manager (<https://keepassxc.org>).
- [Tab Reloader \(page auto refresh\)](#) - An easy-to-use tab reloader with custom reloading time settings for individual tabs

## Firefox

- [Firefox Policy Templates](#) - These policies are in active development and so might contain changes that do not work with current versions of Firefox. You should use the officially released versions if you are deploying changes. Policies can be specified using the Group Policy templates on Windows, Intune on Windows, configuration profiles on macOS, or by creating a file called policies.json. On Windows, create a directory called distribution where the EXE is located and place the file there. On Mac, the file goes into Firefox.app/Contents/Resources/distribution. On Linux, the file goes into firefox/distribution, where firefox is the installation directory for firefox, which varies by distribution or you can specify system-wide policy by placing the file in /etc/firefox/policies.
- [FireFox Privacy Script](#) - Organizations like [PrivacyTools.io](#) and [ffprofile](#) have suggested changes to make FireFox more secure and private. These changes cover suggested browser extensions, blocking telemetry, disabling 3rd-party cookies, disabling trackers, etc. This script will take the pregenerated FireFox configuration files and install them in the proper directories.

## Floorp

- [Floorp Website](#) - Floorp is built on Firefox and was built in Japan and is a new browser with excellent privacy & flexibility.
- [Floorp Browser Github Repo](#) - A Browser build for keeping the Open, Private and Sustainable Web alive. Based on Mozilla Firefox.
- [Artikel - Linuxnews.de - Floorp: Firefox on Steroids](#)

## CCC

- [Chaosdorf](#) - Das Chaosdorf ist der Düsseldorfer Ableger des Chaos Computer Club mit rund 115 Mitgliedern. Wir betreiben einen [Hackspace](#), in dem Mitglieder und Gäste an kreativen, technischen und politischen Themen arbeiten können. Der Space ist außerdem [Ort des Erfahrungsaustauschs](#) und Freizeitgestaltung.
- [WTF Kooperative eG](#) - Die Idee der „Hackergenossenschaft“ wurde zum ersten Mal auf dem 34C3 vorgestellt. Vom Start weg haben sich über 150 Personen gefunden und dafür gearbeitet, dass die Gründung gelingt. Ein Unternehmen, das allen von uns gehört, in dem jeder von uns eine Stimme und das Recht auf Mitsprache hat. Das alles ist nun machbar - in unserer WTF Kooperative eG. Zusammen bilden wir mittlerweile ein über die ganze Bundesrepublik und darüber hinaus verteiltes Kollektiv.

## Ceph

- [Rook](#) - This guide will walk you through the basic setup of a Ceph cluster and enable you to consume block, object, and file storage from other pods running in your cluster.
- [ERASURE CODE](#) A Ceph pool is associated to a type to sustain the loss of an OSD (i.e. a disk since most of the time there is one OSD per disk). The default choice when creating a pool is replicated, meaning every object is copied on multiple disks. The Erasure Code pool type can be used instead to save space.

## Colorblindness

- [Color Blind Test](#) - Check if you have a color vision deficiency by taking our free online test. Learn more about color blindness, their treatments and which type of do you have.
- [Farbenblindheit](#) - Wikipedia
- [Farbenfehlsichtigkeit](#) - Wikipedia
- [DIY red/green colorblindness aid](#) - an inexpensive DIY tool for deuteranopes.

## Container

- [How to mount Glusterfs volumes inside LXC/LXD](#) (Linux containers)
  - How do I install and configure the Gluster Native Client on a Debian or Ubuntu Linux? How do I mount Gluster volumes to access data from LXC/LXD (Linux containers)?
- [Flatcar Container Linux](#) - A community Linux distribution designed for container workloads, with high security and low maintenance.

## Buildah

- [Buildah](#) - a tool that facilitates building Open Container Initiative (OCI) container images
- <https://github.com/containers/buildah>
- <https://github.com/containers/buildah/tree/main/demos>

The Buildah package provides a command line tool that can be used to

- create a working container, either from scratch or using an image as a starting point
- create an image, either from a working container or via the instructions in a Dockerfile
- images can be built in either the OCI image format or the traditional upstream docker image format
- mount a working container's root filesystem for manipulation
- unmount a working container's root filesystem
- use the updated contents of a container's root filesystem as a filesystem layer to create a new image
- delete a working container or an image
- rename a local container

## Docker

- <https://blog.wirelessmoves.com/tag/dockerize-me>
- [Docker For Beginners: From Docker Desktop to Deployment](#)
- [Watchtower](#) - A process for automating Docker container base image updates.
- [Dodge the next Dockerpocalypse: how to own your own Docker Registry address](#)

## Kubernetes

- [Helm](#) - The package manager for Kubernetes. Helm is the best way to find, share, and use software built for Kubernetes.

## Continuous Integration / Continuous Delivery / Continuous Deployment / Continuous Testing

- [Spinnaker](#) is an open source, multi-cloud continuous delivery platform for releasing software changes with high velocity and confidence. Created at Netflix, it has been battle-tested in production by hundreds of teams over millions of deployments. It combines a powerful and flexible pipeline management system with integrations to the major cloud providers.
- [Continuous Delivery Foundation - Member Webcasts](#)
- [Continuous Delivery Foundation - Spinnaker Basics](#)
- [CircleCI](#)
- [Renovate](#) - Automated dependency updates. Multi-platform and multi-language.
- [Dependabot](#) - Automated dependency updates built into GitHub
- [Labgrid](#) - is an embedded board control python library with a focus on testing, development and general automation. It includes a remote control layer to control boards connected to other hosts.
- [Robot Framework](#) - is a generic open source automation framework. It can be used for test automation and robotic process automation (RPA).
- [Concourse](#) - is an open-source continuous thing-doer. Built on the simple mechanics of resources, tasks, and jobs, Concourse presents a general approach to automation that makes it great for CI/CD.
- [Woodpecker CI](#) - is a simple CI engine with great extensibility.
- [OpenTofu](#) - The open source infrastructure as code tool. Previously named OpenTF, OpenTofu is a fork of Terraform that is open-source, community-driven, and managed by the Linux Foundation.



## Configuration Framework

- <https://www.libelektra.org/home>

## Database

- **Apache Cassandra** - is an open source NoSQL distributed database trusted by thousands of companies for scalability and high availability without compromising performance. Linear scalability and proven fault-tolerance on commodity hardware or cloud infrastructure make it the perfect platform for mission-critical data.

## Debugging

- [Live Debugging Techniques for the Linux Kernel, Part 1 of 3](#)
- [Live Debugging Techniques for the Linux Kernel, Part 2 of 3](#)
- [Live Debugging Techniques for the Linux Kernel, Part 3 of 3](#)
- [Tracking changes in PostgreSQL](#)

## DNS

- <https://unixsheikh.com/tutorials/how-to-split-your-dns-requests-when-using-vpn.html>
- **dnswalk** - dnswalk is a DNS debugger. It performs zone transfers of specified domains, and checks the database in numerous ways for internal consistency, as well as accuracy.
- **RIPE - Taking Care Of Your Domain** - To help finding problems in DNS configurations and/or implementations there is a set of tools developed specifically for this purpose.
- **Privacy Handbuch - DNS Server** - "Die meisten DNS-Server der Zugangs-Provider verwenden kein DNSSEC für die Validierung. Zensur durch DNS-Server spielt nach der Abwehr des ZugErschwG in Deutschland nur eine geringe Rolle, kann aber auch mal ein Grund sein. Folgende zensur-freien und vertrauenswürdigen DNS-Server mit No-Logging Policy, DNSSEC Validierung und Anti-Spoofing Schutz (Testseite) kann man als Alternative zu den Default DNS-Servern der Provider empfehlen"

## Documentation

### Dokuwiki

- <https://update.dokuwiki.org/check/>
- <https://www.dokuwiki.org/plugin:sync>
- <https://github.com/woolfg/dokuwiki-plugin-gitbacked>
- [https://github.com/mplattu/dw\\_to\\_wp](https://github.com/mplattu/dw_to_wp)
- <https://github.com/vonloxy/offline-dokuwiki>
- <https://forum.dokuwiki.org/>
- **SprintDoc** - BMBF Forschungsprojekt zur Dokumentation in agilen Projekten
  - <https://www.dokuwiki.org/template:sprintdoc>

### Doxygen

- **Doxygen** - is the de facto standard tool for generating documentation from annotated C++ sources, but it also supports other popular programming languages such as C, Objective-C, C#, PHP, Java, Python, IDL (Corba, Microsoft, and UNO/OpenOffice flavors), Fortran, and to some extent D. Doxygen also supports the hardware description language VHDL.
- **bash Quellcode Dokumentation mittels Doxygen** - Vor einiger Zeit hatte ich mich mal aufgemacht um meine Bash-Dateien, welche ich täglich verwende mal sauber zu dokumentieren. Dabei habe ich verschiedene Lösungen ausprobiert (von selbstgebauten bis zu kostenpflichtigen) und bin letztendlich bei Doxygen hängen geblieben. Doxygen kann jedoch von Haus aus nicht mit bash Dateien umgehen. In diesem Beitrag zeige ich wie man das löst und Doxygen dafür vorbereitet.
- **bash-doxygen** - A basic doxygen filter (originally written in GNU sed) allowing you to add inline-documentation to your bash shell scripts.

### Misc

- **DAPS - DocBook Publishing Made Easy with a Single Command**
- **SPHINX** - Sphinx is a tool that makes it easy to create intelligent and beautiful documentation, written by Georg Brandl and licensed under the BSD license. It was originally created for the Python documentation, and it has excellent facilities for the documentation of software projects in a range of languages. Of course, this site is also created from reStructuredText sources using Sphinx!
- **Joplin** - is a free, open source note taking and to-do application, which can handle a large number of notes organised into notebooks.

The notes are searchable, can be copied, tagged and modified either from the applications directly or from your own text editor. The notes are in Markdown format.

- [ZIM Wiki](#) - Zim is a graphical text editor used to maintain a collection of wiki pages. Each page can contain links to other pages, simple formatting and images. Pages are stored in a folder structure, like in an outliner, and can have attachments. Creating a new page is as easy as linking to a nonexistent page. All data is stored in plain text files with wiki formatting. Various plugins provide additional functionality, like a task list manager, an equation editor, a tray icon, and support for version control.
- [Cherrytree](#) - A hierarchical note taking application, featuring rich text and syntax highlighting, storing data in a single xml or sqlite file.
- [HedgeDoc](#) - The best platform to write and share markdown. HedgeDoc (formerly known as CodiMD) is an open-source, web-based, self-hosted, collaborative markdown editor. You can use it to easily collaborate on notes, graphs and even presentations in real-time. All you need to do is to share your note-link to your co-workers and they're ready to go.

## Editor

- [Texteditors.org](#) - your home for text editor reviews, analysis, and commentary by the community at large. Since 2003-05-23, this has grown to be the home of the largest collection of text editor information on the web. This site is as inclusive as possible. Any platform, any OS, any chip, any language, etc. There's plenty of room for everyone. If it's a text editor that runs on a computer, the wiki wants to document it. This is a [WikiWiki](#) site, which means that anybody can create/make/delete entries.<sup>1</sup> We hope this means we will build a healthy community around the issues that matter most to us. So far, we've collected more than 2,000 text editors listed in the [EditorIndex](#).
- <https://lighttable.com/>
- <https://pulsar-edit.dev/>
- [Leah Rowe's VIM Config](#) - My setup makes many improvements: Better syntax highlighting. Nice colours generally. It shows red when a file has unsaved changes. Easy ability to view multiple buffers/files at once, easy to switch between buffers (F2/F3 for next/previous, and F12 closes a buffer). You can visually see what mode you're in. F5 yanks/copies the buffer contents (also to X11 clipboard). If you're editing files in a git repository, Vim will show you what branch you're on. Ctrl+ {H,J,K,L} or Ctrl+ {Left,Down,Right,Up} works, for easier split navigation. ...and more!

## Useful Things for Editors

- [EditorConfig](#) - helps maintain consistent coding styles for multiple developers working on the same project across various editors and IDEs. The EditorConfig project consists of a file format for defining coding styles and a collection of text editor plugins that enable editors to read the file format and adhere to defined styles. EditorConfig files are easily readable and they work nicely with version control systems.

## EFI

- <https://wiki.debian.org/GrubEFIReinstall>

## Electronics

- [Anleitung Multimeter für Einsteiger, wie geht die Messbereichsauswahl? | Geräte #11](#)
- [EspoTek Labrador Board](#) - All-in-one USB Oscilloscope, Signal Generator, Power Supply, Logic Analyzer and Multimeter
  - [Labrador Repository](#) - The EspoTek Labrador is an open-source board that turns your PC, Raspberry Pi or Android Smartphone and into a full-featured electronics lab bench, complete with oscilloscope, signal generator and more. This repo hosts all of the software and hardware that makes Labrador possible.
  - [Labrador Documentation Wiki](#)
  - <https://www.youtube.com/watch?v=pN3T11nuzi4>
- [FREENOVE Downloads](#)
- [Kondensator-Umrechnungstabelle uF - nF - pF](#) - Mit der Kondensator-Umrechnungstabelle von Farnell können Sie im Handumdrehen zwischen uF, nF und pF umrechnen.

## etckeeper

- [Konfigurationsdateien versionieren mit etckeeper](#) - Mit etckeeper lassen sich Konfigurationsdateien versionieren und bei Bedarf können vorhergehende Stände verglichen und wiederhergestellt werden.

## Eye & Ear Candy

- [projectM](#) - The most advanced open-source music visualizer
- <https://www.reddit.com/r/unixporn/>
- [KDE Video LockScreen](#)

- [Zoomquilt](#)
- [Arkadia Zoomquilt](#)
- [Zoomquilt 2](#)
- [Hydromeda Zoomquilt](#)
- [Girih](#) - A Girih tiling editor in the browser.
- [Simple Linux Logo](#) - by [Dablim](#)
- [matrix](#) - (web-based green code rain, made with love)
- [Ottoman Vector Patterns \(Seamless\)](#)
- [Geometry - The Language of Symmetry in Islamic Art](#)
- [naturemood](#) - Nature ambiance recordings from the command-line.
- [Radiohead - KID A MNESIA EXHIBITION](#)
- [Monuments To Guilt - Museum of exclusionary design](#) - <https://louisthings.itch.io/monuments-to-guilt>

## Clothing

- [Freewear](#) - Open Source T-shirts - FOSS projects merchandise
- <https://eventelibre.org/en/vetements/191-517-sweat-shirt-debian-zip.html#/6-size-s>
- <https://eventelibre.org/en/t-shirts/124-139-t-shirt-alionet.html#/8-size-l/47-color-green>
- <https://eventelibre.org/en/t-shirts/125-147-t-shirt-alionet-design.html#/8-size-l/47-color-green>

## Movies

- [The Man with the Movie Camera 1929 michael nyman edition](#)
- [Man with a Movie Camera \(1929\) movie](#)
- [nc towel.blinkenlights.nl 23 - ascii star wars](#)

## TV

- [MediathekViewWeb](#) - ist eine einfache Browser-Oberfläche für den Zugriff auf die Filmliste des MediathekView Projekts. Im Gegensatz zu MediathekView muss bei MediathekViewWeb weder ein Programm installiert noch eine Filmliste heruntergeladen werden, die Suche steht deshalb augenblicklich im Browser zur Verfügung. Da die Abfrage auf dem Server durchgeführt wird, die Anforderungen an das Endgerät (Browser) minimal sind, und weil kein Java installiert werden muss, lässt sich die Website auch auf Smartphones und Tablets nutzen.

## fail2ban

- [Anleitung: Fail2ban mit mehreren Servern synchronisieren](#)
- [fail2ban schützt owncloud hinter Reverse-Proxy](#)
- [How to ban something other as host \(IP address\), like user or mail, etc.](#)
- [Fail2Ban configuration file for black-listing via nginx](#)

## Fediverse

- [friendica](#) - A Decentralized Social Network
- [diaspora\\*](#) - The online social world where you are in control
- [dandelion\\*](#) - This is an unofficial webview based client for the community-run, distributed social network diaspora\*.
- I've never liked Twitter, so no links to mastodon :P

## Filesystem

- [Filesystem Hierarchy Standard](#) - Der Linux Filesystem Hierarchie Standard erklärt (was liegt wo?)
- [Filesystem Hierarchy Standard](#) - This page is the home of the Filesystem Hierarchy Standard (FHS).
- [XDG Base Directory Specification](#) - Various specifications specify files and file formats. This specification defines where these files should be looked for by defining one or more base directories relative to which files should be located. (Used by KDE)

## BTRFS

- [Working with Btrfs - General Concepts](#)

## ZFS

- [Sanoid](#) - is a policy-driven snapshot management tool for ZFS filesystems. When combined with the Linux KVM hypervisor, you can use it to make your systems functionally immortal.

## Finanzamt / Steuer

- [Einkommenssteuer Anlage K](#) - Zustimmung zur Übertragung von Kinderfreibeträgen und Freibeträgen für den Betreuungs- und Erziehungs- oder Ausbildungsbedarf

## Flatpak

- [Flatseal - The Essential Flatpak](#) - Chris Titus Tech
  - [Flatseal: The Best Flatpak Addon](#) - Managing Flatpak permissions and file storage outside of the flatpak can be difficult to manage. Flatseal fixes all that!
- [Das Flatpak-Berechtigungssystem](#)
- [Building your first Flatpak](#) - This tutorial provides a quick introduction to building Flatpaks. In it, you will learn how to create a basic Flatpak application, which can be installed and run.

## FZF

- <https://www.linuxuprising.com/2021/03/a-quick-introduction-to-fzf-interactive.html>
- <https://github.com/junegunn/fzf/wiki>

## Git

- [Graphical Git Clients](#)
- [GitAhead - Understand Your History](#) - GitAhead is a graphical Git client designed to help you understand and manage your source code history. It's available as a pre-built binary for Windows, Linux, and macOS, or can be built from source by following the directions below.
- [git-xargs](#) - git-xargs is a command-line tool (CLI) for making updates across multiple GitHub repositories with a single command
- [Git pull multiple repositories at once](#)
- [A new use case for git submodules](#)
- [gitup \(the git-repo-updater\)](#) - gitup is a tool for updating multiple git repositories at once. It is smart enough to handle several remotes, dirty working directories, diverged local branches, detached HEADs, and more. It was originally created to manage a large collection of projects and deal with sporadic internet access.
- [chezmoi](#) - Manage your dotfiles across multiple diverse machines, securely. With chezmoi, pronounced /ʃeɪ mwa/ (shay-moi), you can install chezmoi and your dotfiles from your GitHub dotfiles repo on a new, empty machine with a single command.
- [Lazygit](#) - A simple terminal UI for git commands, written in Go with the gocui library.
- [//grep.app](#) - Search across a half million git repos

## Gitea

- <https://docs.gitea.io/en-us/backup-and-restore/>
- <https://software.opensuse.org/download/package?package=gitea&project=devel%3Atools%3Aascm>
- <https://docs.gitea.io/en-us/command-line/>
- <https://docs.gitea.io/en-us/faq/>
- <https://discourse.gitea.io/t/move-gitea-to-another-server/1513>
- <https://discourse.gitea.io/t/upgrade-gitea-docker-compose/427>
- <https://gitea.com/gitea/tea>

## Gitlab

- [Gitlab Reference architectures](#) -

self-managed - The GitLab Reference Architectures have been designed and tested by the GitLab Quality and Support teams to provide recommended deployments at scale.

## Grafik / DTP / Illustration / Animation / Video / Photos / Images / Fonts / Textsatz

- [Welcome to Smithsonian Open Access](#) - where you can download, share, and reuse millions of the Smithsonian's images—right now, without asking. With new platforms and tools, you have easier access to more than 4.4 million 2D and 3D digital items from our collections—with many more to come. This includes images and data from across the Smithsonian's 19 museums, nine research

centers, libraries, archives, and the National Zoo.

- [Sweet Home 3D](#) - ist ein frei erhältlicher Innenraum Planer des ihnen beim Einrichten ihrer Wohnung hilft - auf einem 2D Plan mit 3D Ansicht.

## Software

- [Triangula](#) - An iterative algorithm to generate high quality triangulated and polygonal art from images. Triangula uses a modified genetic algorithm to triangulate or polygonate images. It works best with images smaller than 3000px and with fewer than 3000 points, typically producing an optimal result within a couple of minutes.
- [Primitive Pictures](#) - Reproducing images with geometric primitives. A target image is provided as input. The algorithm tries to find the single most optimal shape that can be drawn to minimize the error between the target image and the drawn image. It repeats this process, adding one shape at a time. Around 50 to 200 shapes are needed to reach a result that is recognizable yet artistic and abstract.
- [Image Decompiler](#) - Arranges triangles in order to minimize the difference between the framebuffer and the source image. Currently only handles PNG images.
- [Triangle](#) - is a tool for generating triangulated image using delaunay triangulation. It takes a source image and converts it to an abstract image composed of tiles of triangles.
- [MyOSMatic](#) (Hartmut) - This is a free software web service that allows you to generate maps of cities using OpenStreetMap data. The generated maps are available in PNG, PDF and SVG formats and are ready to be printed.
- [PosteRazor](#) - The PosteRazor cuts a raster image into pieces which can afterwards be printed out and assembled to a poster.
- [darktable](#) - is an open source photography workflow application and raw developer. A virtual lighttable and darkroom for photographers. It manages your digital negatives in a database, lets you view them through a zoomable lighttable and enables you to develop raw images and enhance them.
  - <https://docs.darktable.org/usermanual/3.8/de/>
- [Krita](#) - is a professional FREE and open source painting program. It is made by artists that want to see affordable art tools for everyone. Concept art, texture and matte painters, illustrations and comics.
- [GIMP](#) - The Free & Open Source Image Editor GIMP is a cross-platform image editor available for GNU/Linux, macOS, Windows and more operating systems. It is free software, you can change its source code and distribute your changes. Whether you are a graphic designer, photographer, illustrator, or scientist, GIMP provides you with sophisticated tools to get your job done. You can further enhance your productivity with GIMP thanks to many customization options and 3rd party plugins.
- [Inkscape - Draw Freely](#) - Whether you are an illustrator, designer, web designer or just someone who needs to create some vector imagery, Inkscape is for you! Flexible drawing tools, broad file format compatibility, powerful text tool, bezier and spiro curves.
  - [Serienbriefe mit Inkscape](#) - Mit Text-Platzhaltern und einer CSV-Datei können in Inkscape personalisierte Grafiken generiert werden.
- [Scribus - Open Source Desktop Publishing](#) - a page layout program for Linux, FreeBSD, PC-BSD, NetBSD, OpenBSD, Solaris, OpenIndiana, Debian GNU/Hurd, Mac OS X, OS/2 Warp 4, eComStation, Haiku and Windows. Since its humble beginning in the spring of 2001, Scribus has evolved into one of the premier Open Source desktop applications.
- [Blender](#) - is the free and open source 3D creation suite. It supports the entirety of the 3D pipeline-modeling, rigging, animation, simulation, rendering, compositing, motion tracking and video editing.
- [OBS Open Broadcaster Software](#) - Free and open source software for video recording and live streaming.
- [Natron](#) - Cross platform & open-source compositor for visual effects and motion graphics industry. Natron is a powerful Digital Compositor that can handle all of your 2D/2.5D needs. Its robust OIIO file formats and OpenFX architecture is what make Natron the most flexible open source compositor for the visual effects community. Its interface and functionally are the same across all platforms such as macOS, Linux and Windows. Natron has a powerful keying, roto/rotopaint, 2D tracking tools that are staple for all current film production project that requires visual effects.
- [Kdenlive](#) - Free and Open Source Video Editor. Kdenlive is an open source video editor. The project was started around 2003. Kdenlive is built on Qt and the KDE Frameworks libraries. Most of the video processing is done by the MLT Framework, which relies on many other open source projects like FFmpeg, frei0r, movit, ladspa, sox, etc... Our software was designed to answer most needs, from basic video editing to professional work.
- [RawTherapee](#) - is a powerful, cross-platform raw photo processing system, released as Free Software (GPLv3). It is designed for developing raw files from a broad range of digital cameras and targeted at users ranging from enthusiast newcomers who wish to broaden their understanding of how digital imaging works to professional photographers. RawTherapee provides a powerful suite of tools for you to produce amazing photos and showcase your creativity.
- [Glaximate](#) - is a simple and fast vector graphics animation program.
- [Rembg](#) - Rembg is a tool to remove images background.
  - [linuxnews.de - Bildbearbeitung: Hintergründe mit Rembg entfernen](#)

## 3D

- [OpenSCAD The Programmers Solid 3D CAD Modeller](#)

## Fonts

- <https://www.nerdfonts.com/cheat-sheet>

## LaTeX

- [Malte Schmitz - LaTeX-Einführung](#)
- [MalteSchmitz - LaTeX](#)
- <https://www.mlte.de/latex/latex-talk/>

## Photos

- [unsplash.com](https://unsplash.com) - Beautiful, free images gifted by the world's most generous community of photographers. Better than any royalty free or stock photos.
- [pexels.com](https://pexels.com) - Die schönsten kostenlosen Fotos, lizenzfreien Bilder und Videos von unseren kreativen Nutzern.

## Hardware

- [joycond](#) - is a linux daemon which uses the evdev devices provided by hid-nintendo (formerly known as hid-joycon) to implement joycon pairing. Nintendo Gamepads.

## HowTos

- <https://tldp.org/HOWTO/HOWTO-INDEX/howtos.html>
- [How to Install and Configure CWP\(CentOS Web Panel\) on CentOS](#) - CWP is free and open source web hosting control panel for CentOS Servers. CWP (CentOS Web Panel) provides a powerful web interface through which we can manage our CentOS Servers and its services, apart from it CWP can also be used to create and manage shared hosting servers.
- [How to mount Glusterfs volumes inside LXC/LXD \(Linux containers\)](#) - How do I install and configure the Gluster Native Client on a Debian or Ubuntu Linux? How do I mount Gluster volumes to access data from LXC/LXD (Linux containers)?
- [The Linux Information Project \(LINFO\)](#) - This project is dedicated to providing high quality, comprehensive and easily accessible information about Linux and other free software. (New to Linux? Start here.)
- [Automatically Connect to a Network Drive on Mac OS X Start Up & Login](#)
- [unixwork - Einfacher Proxy mit netcat](#) - eine Anleitung inklusive Erklärung wie man mit netcat einen Proxy für eine TCP-Verbindung baut, der bei Bedarf auch den Traffic anzeigt oder speichert.
- [Automatically Connect to a Network Drive on Mac OS X Start Up & Login](#)

## HDD Encryption

- [Linupedia.org](https://linupedia.org) - OpenSUSE - Partitionierung eines komplett verschlüsselten Linux-Systems
- <https://www.opensuse-forum.de/thread/12669-full-disk-encryption/>
- <https://joros.blog/posts/opensuse-full-disk-encryption/>
- [https://de.opensuse.org/SDB:Verschl%C3%BCsseltes\\_root\\_file\\_system](https://de.opensuse.org/SDB:Verschl%C3%BCsseltes_root_file_system)

## Embedded OS Programming

- [Operating System development tutorials in Rust on the Raspberry Pi](#)

## pfSense

- [pfSense - Troubleshooting Upgrades](#) - This document describes methods of troubleshooting problems firewalls may encounter when attempting to run a pfSense® software upgrade.

## SSH

- [Routing SSH traffic with Traefik v2](#)
- [SSH over SSL, episode 4: a HAproxy based configuration](#) - In this article, I am describing how to SSH to a remote server as discreetly as possible, by concealing the SSH packets into SSL. The server will still be able to run an SSL website.

## IaaS/PaaS

- [IONOS Cloud](#) - Compute Engine (ex ProfitBricks)
- [Amazon Lightsail](#) offers easy-to-use virtual private server (VPS) instances, containers, storage, databases, and more at a cost-effective monthly price.

## Infrastructure Management

- <https://www.uyuni-project.org/>
- <https://github.com/openSUSE/yomi>
- <https://www.nomadproject.io/>
- <https://www.consul.io/>
- **The Update Framework (TUF)** helps developers maintain the security of software update systems, providing protection even against attackers that compromise the repository or signing keys. TUF provides a flexible framework and specification that developers can adopt into any software update system. TUF is hosted by the Linux Foundation as part of the Cloud Native Computing Foundation (CNCF) and is used in production by various tech companies and open source organizations. A variant of TUF called Uptane is widely used to secure over-the-air updates in automobiles.
- **Mender** - Secure, risk tolerant and efficient over-the-air updates for all device software. Remotely update, configure, troubleshoot and monitor your connected device fleet at scale. Mender is an open-source, over-the-air (OTA) update manager for IoT and embedded Linux devices. Its client-server architecture enables the central management of software deployments, including functionality such as dynamic grouping, phased deployments, and delta updates. Mender also supports powerful extensions to configure, monitor, and troubleshoot devices. Features include remote terminal access, port forwarding, file transfer, and device configuration. It integrates with Azure IoT Hub and AWS IoT core.
- **Foreman** is a complete lifecycle management tool for physical and virtual servers. We give system administrators the power to easily automate repetitive tasks, quickly deploy applications, and proactively manage servers, on-premise or in the cloud.
- **Katello** is a systems life cycle management plugin to Foreman. Katello allows you to manage thousands of machines with one click. Katello can pull content from remote repositories into isolated environments, and make subscriptions management a breeze. Currently, it is able to handle Fedora and Red Hat Enterprise Linux based systems.
- **orcharhino** is THE solution for orchestrating data centers! Automate your deployment and configuration management as well as your lifecycle and patch management. Oversee everything via a unified interface.
- **puppet** helps enterprises modernize, manage and bring into compliance hybrid infrastructure through continuous automation.
- **Red Hat Ansible Automation Platform** is a foundation for building and operating automation across an organization. The platform includes all the tools needed to implement enterprise-wide automation.
- **Rundeck** - Rundeck is an open-source software Job scheduler and Run Book Automation system for automating routine processes across development and production environments. It combines task scheduling multi-node command execution workflow orchestration and logs everything that happens.
- **Teleport** - The easiest, most secure way to access infrastructure. Only the open-source Teleport Access Plane consolidates connectivity, authentication, authorization, and audit into a single platform to improve security & agility.
- **m23 — Open Source Network Deployment for Linux** - m23 is a free software distribution system licensed under the GPL, which installs and administers clients with Debian, Ubuntu, Kubuntu, Linux, Mint and Xubuntu. m23 is controlled via web browser. The installation of a new m23 client is done in only three steps and the integration of existing clients is possible, too. Group functions and mass installation tools make managing a vast number of clients comfortable. Client backup and server backup are included to avoid data loss. With the integrated virtualisation software, m23 can create and manage virtual m23 clients, that run on real m23 clients or the m23 server. Scripts and software packages (for installation on the clients) can be created directly from the m23 web interface.
- **i-doit** - IT Service Management. Eine umfassende (IT-)Dokumentation. Eine CMDB nach ITIL. Ein ISMS gemäß ISO 27001 & IT-Grundschutz.
- **Univention Corporate Server** - Univention Corporate Server (UCS) ist die innovative Basis, um Serveranwendungen und ganze IT-Infrastrukturen wirtschaftlich zu betreiben und einfach zu administrieren. UCS eignet sich optimal für das Management verteilter, heterogener und virtualisierter IT-Umgebungen, egal ob Sie Microsoft Windows, Mac OS X oder Linux-Systeme einsetzen. Das integrierte Identity- und Infrastrukturmanagementsystem macht die einfache Administration von Anwendungen, Benutzerinnen und Benutzern und Ressourcen möglich. Server- und Desktop-Systeme können zentral, standort- und plattformübergreifend über eine intuitiv bedienbare Weboberfläche verwaltet werden. UCS lässt sich dank standardisierter Schnittstellen leicht in vorhandene Umgebungen integrieren. Das integrierte App Center bietet eine große Zahl von Enterprise-Lösungen, die mit wenigen Klicks in Betrieb genommen oder virtuell betrieben werden können. Umfassende Active Directory-Funktionen ermöglichen sowohl die Integration mit Microsoft Windows-Umgebungen als auch deren Ablösung.
- **Uyuni** - is an open source systems management solution, forked from [Spacewalk](#). It is the upstream community project from which [SUSE Manager](#) is derived. ( Repo: <https://github.com/uyuni-project/uyuni>)
- **endoflife.date** - End-of-life (EOL) and support information is often hard to track, or very badly presented. endoflife.date documents EOL dates and support lifecycles for various products. endoflife.date aggregates data from various sources and presents it in an understandable and succinct manner. It also makes the data available using an [easily accessible API](#) and has iCalendar support. endoflife.date currently tracks 259 products.
- **php - Supported Versions** - Each release branch of PHP is fully supported for two years from its initial stable release. During this period, bugs and security issues that have been reported are fixed and are released in regular point releases. After this two year period of active support, each branch is then supported for an additional year for critical security issues only. Releases during this period are made on an as-needed basis: there may be multiple point releases, or none, depending on the number of reports. Once the three years of support are completed, the branch reaches its end of life and is no longer supported. [A table of end of life branches is available.](#)

### CLI

- <https://github.com/smxi/smxi> - Tool for Debian Sid, Debian Testing, and Debian Stable system maintenance.

## Firewall

- [Tufin](#) enables organizations to automate their security policy visibility, risk management, provisioning and compliance across their multi-vendor, hybrid environment. Customers gain visibility and control across their network, ensure continuous compliance with security standards and embed security enforcement into workflows and development pipelines.

## Proxies

- [Traefik](#) - is an open-source Edge Router that makes publishing your services a fun and easy experience. It receives requests on behalf of your system and finds out which components are responsible for handling them.
- [HAProxy](#) - is a free, very fast and reliable reverse-proxy offering high availability, load balancing, and proxying for TCP and HTTP-based applications. It is particularly suited for very high traffic web sites and powers a significant portion of the world's most visited ones. Over the years it has become the de-facto standard opensource load balancer, is now shipped with most mainstream Linux distributions, and is often deployed by default in cloud platforms. Since it does not advertise itself, we only know it's used when the



admins report it

- [NGINX Reverse Proxy](#) - Configure NGINX as a reverse proxy for HTTP and other protocols, with support for modifying request headers and fine-tuned buffering of responses.
- [Apache Module mod\\_proxy](#) - mod\_proxy and related modules implement a proxy/gateway for Apache HTTP Server, supporting a number of popular protocols as well as several different load balancing algorithms. Third-party modules can add support for additional protocols and load balancing algorithms.

## Proxmox

- [Proxmox](#) - powerful and efficient open-source software to simplify your server management. Our main products - Proxmox Virtual Environment, Proxmox Backup Server, and Proxmox Mail Gateway - enable you to implement an affordable, secure, and open-source IT infrastructure. With the Proxmox technology you'll get those comprehensive yet easy-to-use software solutions you've always wanted.
- <https://pve.proxmox.com/>
- [Before I do anything on Proxmox, I do this first...](#)
- [Proxmox - Installation](#)
- [Proxmox - Erste Schritte](#)
- [Learn Linux TV - Proxmox Full Course](#)
- [10 Watt HA Proxmox Cluster ft. ZimaBoard](#)
- [pxinst.sh](#) - Proxmox install Script on top of a plain Debian

## Service / Asset Management / IPAM / Identity Management

- [GLPI Project](#) - The most complete open source service management software. Your open source tool to manage Helpdesk and IT assets!
- [itop](#) - easy service management.
- [Snipe-IT Asset Management](#)
- [\[https://www.keycloak.org/ | Keycloak\]](https://www.keycloak.org/) - Open Source Identity and Access Management. Add authentication to applications and secure services with minimum effort. No need to deal with storing users or authenticating users. Keycloak provides user federation, strong authentication, user management, fine-grained authorization, and more.
- IPAM / Network / Firewall / Security-MGMT / Automation:
  - [phpIPAM](#) - is an open-source web IP address management application (IPAM). Its goal is to provide light, modern and useful IP address management. It is php-based application with MySQL database backend, using jQuery libraries, ajax and HTML5/CSS3 features.
  - [algosec](#) - Fast, secure application delivery and security policy management across public and private clouds, containers, and on-premises networks.
  - [FIREMON](#) - Reduce risk, enforce compliance, and speed change for your cloud and firewall network security policies. Real-time cloud security, compliance, inventory, and threat detection with just-in-time authorization control. Learn what's actually in your environment and how it's connected internally and externally.
  - [tufin](#) - Security Policy Automation for the Agile Enterprise. Secure your network and cloud environments, and deploy a Zero Trust Architecture with the industry's most powerful security policy automation technology. Achieve end-to-end network security across your hybrid enterprise infrastructure, powered by a single solution designed for both network and cloud security teams.
  - [NetBox](#) - NetBox exists to empower network engineers. Since its release in 2016, it has become the go-to solution for modeling and documenting network infrastructure for thousands of organizations worldwide. As a successor to legacy IPAM and DCIM applications, NetBox provides a cohesive, extensive, and accessible data model for all things networked. By providing a single robust user interface and programmable APIs for everything from cable maps to device configurations, NetBox serves as the central source of truth for the modern network. Is the leading solution for modeling and documenting modern networks. By combining the traditional disciplines of IP address management (IPAM) and datacenter infrastructure management (DCIM) with powerful APIs and extensions, NetBox provides the ideal "source of truth" to power network automation. Available as open source software under the Apache 2.0 license, NetBox serves as the cornerstone for network



- automation in thousands of organizations.
  - kann out of the box keine Firewallregeln verwalten
- [NetBox - capirca plugin](#) - This project is no longer maintained and does not work with current NetBox releases! This plugin tries to implement a simple abstraction for Access Control Lists (ACLs) in NetBox by leveraging the capirca ACL abstraction.
- [capirca](#) - is designed to utilize common definitions of networks, services and high-level policy files to facilitate the development and manipulation of network access control lists (ACLs) for various platforms. It was developed by Google for internal use, and is now open source.
- [nautobot](#) - is a Network Source of Truth and Network Automation Platform built as a web application atop the Django Python framework with a PostgreSQL or MySQL database.
  - fork von NetBox
- [Nautobot](#) - is a Network Source of Truth that is the foundation required for successful Enterprise Network Automation.
- [https://www.reddit.com/r/networking/comments/skp0t5/netbox\\_for\\_firewall\\_rules/?rdt=55192](https://www.reddit.com/r/networking/comments/skp0t5/netbox_for_firewall_rules/?rdt=55192)

## Software Repositories / Packages / Images / Artifacts

- [Pulp](#) - One tool for different content types. With Pulp, you can fetch, upload, and distribute content from a wide variety of content types. Add the plugins for the different content you want to work with and use Pulp to manage them all.
- [rpm-ostree](#) - is a hybrid image/package system. It combines libostree as a base image format, and accepts RPM on both the client and server side, sharing code with the dnf project; specifically libdnf. and thus bringing many of the benefits of both together.
- [JFrog DEVOPS & SECURITY THAT WORK FOR DEVELOPERS](#) - Drive software packages from developers to production with a scalable, ecosystem-integrated platform; universal repository, continuous holistic security, CI/CD, and robust, customizable software distribution all the way to edge devices.

## KVM over IP

- <https://geekworm.com/>
- <https://pikvm.org/>

## SSSD

- [SSSD](#) - Open Source Client for Enterprise Identity Management. Enroll your Linux machine into an Active Directory, FreeIPA or LDAP domain. Use remote identities, policies and various authentication and authorization mechanisms to access your computer.
- [Quick Start Guide](#) - This page provides brief instructions to configure SSSD with FreeIPA, AD, and LDAP.
- [Using AutoFS with Active Directory](#) - This article shows how to use AutoFS and Kerberos to automatically mount shared folders on a Microsoft Windows Server via Common Internet File System (CIFS).

## ISPConfig

- [sjau/perfectDebian](#) An installer script to automate a "Perfect Debian Server" for ISPConfig according to till's instructions
- <https://www.howtoforge.com/ispconfig-autoinstall-debian-ubuntu/> Perfect Server Automated ISPConfig 3 Installation on Debian 10 - 11 and Ubuntu 20.04

## KDE

- [KDE IRC](#)
- [XDG Base Directory Specification](#) - Various specifications specify files and file formats. This specification defines where these files should be looked for by defining one or more base directories relative to which files should be located. (Used by KDE)
- [org.kde.video](#) - Using KDE Plasma 5.8 or higher? Use the contents of this repository to create an animated wallpaper or lock screen. This is NOT my original work. I learned how to do it from a [KDE Forum discussion](#).
- [Transfuse](#) - A small script to backup, compress, and restore your plasma desktop user configurations
- [Plasma Customization Saver](#) - This is a widget to save and manage your desktop customizations, you can save your current desktop customization and it will list all your past saved ones, you can restore the customization with just one click, also you can export/import customization to other machines.
- [Konsave \(Save Linux Customization\)](#) - A CLI program that will let you save and apply your Linux customizations with just one command! Konsave also lets you share your dot files to your friends in an instant! It officially supports KDE Plasma but it can be used on all other desktop environments too!
- [KDE Configuration Files Paths](#) - and other useful things... in this repository are noted many config files for different KDE related stuff. and also some handful of commands that might help you to automatize workflow. Examples like using kwriteconfig5 for different files.
- [KDE System Administration/Configuration Files](#) - KDE uses a simple text-based file format for all its configuration files. It consists of key-value pairs that are placed in groups. All KDE configuration files use UTF-8 encoding for text outside the ASCII range. The start of a group is indicated by a group name that is placed in square brackets. All the key-value entries that follow belong to the group. The group ends when either another group starts or when the end of the file is reached. Entries at the top of the file that are not preceded by a group name belong to the default group
- [The KDE Education Project](#) - We make free educational software for children and adults, students and teachers. We make software

for you. Free Educational Software based on the KDE technologies: students, parents, children, teachers, adults, you can freely use our software, copy it, modify it to your needs and enjoy learning!

- [KDE Users: Up Your Konsole Game](#) - A few things you probably aren't using in Konsole

## Klassiker

- <https://www.comconsult.com/richtige-mtu-size/>

## Kurse

### ArchiMate / Archi

- [Archimate](#) - an introduction
- [Archi Five Minute Guides](#)
- [1.1 Getting to Know Archi | Archi - Archimate Toolkit 5 minute guide](#) - This video is the first in a series of five minute guides on using the Archi ArchiMate modelling toolkit. It is aimed at any level, interested in Enterprise Architecture Modelling. The session covers getting to know the basics of Archi and includes: How to navigate the User Interface. The purpose and function of the windows. Introduces some Archi Terminology. Key concepts of the ArchiMate Layers. A brief introduction to relationships.
- [Enterprise Engineering with Archimate - Thomas Keller, Zürcher Hochschule für Angewandte Wissenschaften](#)

### Atix

- <https://atix.de/en/newsroom/webinars/> - In our webinars, we show you how open source-based tools help with data center automation. In doing so, we present the features of various solutions such as Kubernetes, Puppet, orcharhino and give tips on handling. Webinars are performed live and can be accessed on demand afterwards.

### Bash

- [Taming the Terminal](#) by Bart Busschots
- [Advanced Bash-Scripting Guide](#) - This tutorial assumes no previous knowledge of scripting or programming, yet progresses rapidly toward an intermediate/advanced level of instruction . . . all the while sneaking in little nuggets of UNIX® wisdom and lore. It serves as a textbook, a manual for self-study, and as a reference and source of knowledge on shell scripting techniques. The exercises and heavily-commented examples invite active reader participation, under the premise that the only way to really learn scripting is to write scripts. This book is suitable for classroom use as a general introduction to programming concepts.

### BPMN

- [BPMN 2.0 - Grundelemente \(Tutorial Part 1\)](#) - Business Process Model and Notation
- [BPMN 2.0 - Business Process Model and Notation](#) - alle Videos

### Computer Science

- [Harvard CS50 - Full Computer Science University Course](#)

### Docker

- [Docker Tutorial for Beginners](#) - A Full DevOps Course on How to Run Applications in Containers

### Firewall

- [Lesson 1: Examining the Most Common Firewall Misconfigurations](#)
- [Best Practices in Firewall Management](#)

### Git

- [Learn Git Branching](#) - Interested in learning Git? Well you've come to the right place! "Learn Git Branching" is the most visual and interactive way to learn Git on the web; you'll be challenged with exciting levels, given step-by-step demonstrations of powerful features, and maybe even have a bit of fun along the way.

## Jenkins

- [Introduction to Jenkins \(LFS167x\)](#) - Learn the fundamentals required to implement Continuous Integration (CI) and Continuous Delivery (CD) workflows using the Jenkins automation server in this free course.

## Linux

- [Linux Foundation: Introduction to Linux](#) - This free self-paced course will teach you how to develop a good working knowledge of Linux using both the graphical interface and command line.
- [LPI: Linux Essentials](#)
- [linuxkurs.ch - Linux lernen](#) - Vom Einsteiger zum Linux-Profi.

## Linux Lan Routing For Beginners

- [Linux LAN Routing for Beginners: Part 1](#) - Carla Schroder offers an overview of hardware and operating systems, plus IPv4 addressing basics, in this tutorial.
- [Linux LAN Routing for Beginners: Part 2](#) - Last week we reviewed IPv4 addressing and using the network admin's indispensable ipcalc tool: Now we're going to make some nice LAN routers.

## Makefile

- [Makefile Tutorial by Example](#) - Learn Makefiles with the tastiest examples

## Kubernetes

- [EdX: Introduction to Kubernetes](#) - Want to learn Kubernetes? Get an in-depth primer on this powerful system for managing containerized applications.

## Penetration Testing

- [PortSwigger - Web Security Academy](#) - Free, online web security training from the creators of Burp Suite

## Practical Networking For Linux Admins

- [Practical Networking for Linux Admins 1: TCP/IP](#) - We take a practical look at some TCP/IP fundamentals, so you can manage multiple network connections.
- [Practical Networking for Linux Admins 2: Real IPv6](#) - When last we met, we reviewed essential TCP/IP basics for Linux admins in Practical Networking for Linux Admins: TCP/IP. Here, we will review network and host addressing and find out whatever happened to IPv6?
- [Practical Networking for Linux Admins 3: IPv4 and IPv6 LAN Addressing](#) - We're cruising now. We know important basics about TCP/IP and IPv6. Today we're learning about private and link-local addressing. Yes, I know, I promised routing. That comes next.
- [Practical Networking for Linux Admins 4: IPv6 Routing](#) - Our story so far: We have learned the important bits about TCP/IP, IPv6, and IPv4 and IPv6 LAN Addressing, which is all very excellent. But, if you want your computers to talk to each other, then you must know about routing.

## Project Management

- [Introduction to Project Management](#) - Learn the principles of project management and apply them in your own work and life.

## Proxmox

- [Learn Linux TV - Proxmox Full Course](#)

## Python

- [codecademy - python code challenges for beginners](#)
- [python.org - python code challenges for beginners](#)
- [fosslife - how to graph in python](#)
- [learnbyexample - Learn Python By Example](#)
- [learnpython.org - interactive Python tutorial](#)
- [fosslife - Make a Countdown and Pomodoro Timer in Python](#)
- [freecodecamp.com - Learn Python - Full Course for Beginners](#)

- [PythonForBeginners - Python Tutorial](#)

## SSH

- [OpenSSH Teil 1: Grundlagen \(Johannes Franken\)](#) PDF
- [OpenSSH Teil 2: SSH-Tunnels \(Johannes Franken\)](#) PDF
- [OpenSSH Teil 3: Firewalls durchbohren \(Johannes Franken\)](#) PDF
- [Udemy: SSH Basics for Cloud Security - Using the Secure Shell in Real Life](#)

## Lernen

- <https://parker.bus.sfu.ca/online.pdf>
- <https://files.eric.ed.gov/fulltext/EJ1154117.pdf>
- [OpenBoard](#) - Interaktives Whiteboard für Schulen und Universitäten
- [TryHackMe](#) - Byte-sized gamified lessons. Learning cyber security on TryHackMe is fun and addictive. Earn points by answering questions, taking on challenges and maintain your hacking streak through short lessons.

## Linux/Unix

- [What You Need To Know](#) - When you can't find your UNIX System Administrator (O'Reilly Book Online)
- [Learn Linux TV](#)

## Netzwerk

- [Was Du schon immer über Netzwerke wissen wolltest, Dich aber nie getraut hast zu fragen.](#)
- [Netzwerkgrundlagen - Von Ethernet bis IP](#)
- [Dynamische Routingprotokolle Aufzucht und Pflege - BGP](#)
- [L2/L3 für Fortgeschrittene](#) - Helle und dunkle Magie im Linux-Netzwerkstack, Bridges, VLANs, vlan-aware-bridges, Bondage/LACP & Routingtabellen, PBR, VRFs, NetNS
- [Overlays & IP-Fabrics - viele Wege führen nach Rom und warum Layer2 keine Lösung ist](#)
- [My First Network - FrOSCon Network Track](#)
- [Kris Köhntopp - Internet mit Kugelschreibern \(und Bussen\) - IP](#)
- [Kris Köhntopp - Internet mit Kugelschreibern \(und ein Päckchen für Mama\) - Routing](#)

## Netzwerk Labor

- FILIUS
  - <https://www.lernsoftware-filius.de/Startseite>
  - [https://flathub.org/apps/details/de.lernsoftware\\_filius.Filius](https://flathub.org/apps/details/de.lernsoftware_filius.Filius)
  - <https://www.lernsoftware-filius.de/Begleitmaterial>
  - [https://www.lernsoftware-filius.de/downloads/Beispielaufgaben\\_Filius.pdf](https://www.lernsoftware-filius.de/downloads/Beispielaufgaben_Filius.pdf)

## Programmieren (Grundlagen)

- [Karel The Robot](#) - is a simple teaching environment for imperative programming basics. The original idea was developed in the 1970s by Richard Pattis at Stanford University
  - [Programmieren Lernen: Die BESTE Methode \(für Anfänger\)](#) - Wie lerne ich programmieren? Eine Frage, die sich viele stellen. Die gute Nachricht: Jeder kann programmieren lernen. Die schlechte: Leider kann man dabei viel falsch machen und es wird aus meiner Sicht oft falsch unterrichtet. Ein beliebter Fehler fängt mit der Fragestellung an, welche Programmiersprache die richtige zum Lernen sei. Die Antwort lautet: überhaupt keine. Wenn man mit dem Programmieren anfangen will, ist es besser, effektiver und letztlich zeitsparender, erst einmal die Basics zu lernen, die in jeder Programmiersprache wichtig sind.
- [Scratch](#) - is the world's largest coding community for children and a coding language with a simple visual interface that allows young people to create digital stories, games, and animations. Scratch is designed, developed, and moderated by the [Scratch Foundation](#), a nonprofit organization. Scratch promotes computational thinking and problem solving skills; creative teaching and learning; self-expression and collaboration; and equity in computing. Scratch is always free and is available in more than 70 languages.
- [OpenHPI - Programmieren lernen mit Python 2023](#) - Du bist Schüler:in zwischen 12 und 18 Jahren? Du hast bisher noch keine Programmierkenntnisse oder möchtest gerne Python lernen? Dann bist du hier genau richtig! In diesem vierwöchigen kostenlosen Einsteigerkurs lernst du spielerisch die Grundlagen der Programmierung in Python kennen. Neues Wissen vertiefen wir mit praktischen Beispielen und helfen so, den beiden Schlangen Simon und Stella ihre Probleme zu lösen. Gleichwohl sich der Kurs vor

allem an Schüler:innen richtet, ist die Teilnahme für alle offen.

## Software Design Patterns

- <https://gitlab.hochschule-stralsund.de/pattern-park/pattern-park-app>
- <https://gitlab.com/patternpark>

## Libre Office

- [Libre Office - Calc Guide](#)
- [Libre Office - Math Guide](#)

## Linux Software Raid

- [https://raid.wiki.kernel.org/index.php/Linux\\_Raid](https://raid.wiki.kernel.org/index.php/Linux_Raid)

## LUKS

- [luks encryption with loopback file](#)
- [Clevis](#) - is a pluggable framework for automated decryption. It can be used to provide automated decryption of data or even automated unlocking of LUKS volumes.
- [Tang](#) - is a server for binding data to network presence. This sounds fancy, but the concept is simple. You have some data, but you only want it to be available when the system containing the data is on a certain, usually secure, network. This is where Tang comes in.
- [CLT2023 - 1000 Server verschlüsselt booten](#)
- [How to backup and restore LUKS header on Linux](#)
- [Backup and Restore of an encrypted Linux system](#) - In this blog post I want to write a little bit about backup and restore of encrypted Linux servers with Veeam Agent for Linux.
- [How to backup and restore LUKS header on Linux](#)

## Mailserverbetrieb

- <https://postmaster.t-online.de/>
- <https://www.rackaid.com/blog/email-blacklists/>
- <http://rob0.nodns4.us/postscreen.html>
- <https://www.spamhaus.org/faq/section/ISP%20Spam%20Issues>
- [https://en.wikipedia.org/wiki/Comparison\\_of\\_DNS\\_blacklists](https://en.wikipedia.org/wiki/Comparison_of_DNS_blacklists)
- <https://spameatingmonkey.com/services/SEM-URI>
- <http://www.mfaq.info/> - Diese Webseite enthält Angaben zu Fehlermeldungen, die Sie von unserem Mailserver erhalten haben können. Diese Fehlermeldungen hängen mit Schutzmaßnahmen zusammen, welche wir aufgrund der massiven Zunahme von Spamsendungen einführen mußten. Ein Großteil der unerwünschten Mails stammt von Servern ohne "ReverseDNS" Eintrag bzw. von Servern, die über eine dynamische IP-Nummer angebunden sind. Wir lehnen daher den Verbindungsaufbau mit solchen Servern ab.
- [workararound.org - The ISPmail guide](#) - A complete and educational guide to running your own mail server on Debian. The famous ISP-style mail server tutorial lives here. Learn how to set up your own fully-functional mail server using Postfix, Dovecot IMAP/POP3 and MySQL backend on a Debian server just like your favorite mail or website hosting provider. This guide is a voluntary project with no profit in mind. Go ahead and learn to run your own mail server.
- [https://en.wikipedia.org/wiki/Forward-confirmed\\_reverse\\_DNS](https://en.wikipedia.org/wiki/Forward-confirmed_reverse_DNS)
- [Using Postfix DNS SRV record resolution feature](#) - In March 2011 Apple Inc. proposed [RFC 6186](#) that describes how domain name system service (DNS SRV) records should be used for locating email submission and accessing services. The design presented in the RFC is now supported by Postfix since version 3.8.0. With the new functionality, you can now use DNS SRV records for load distribution and auto-configuration.

## MariaDB / MySQL

- [Galera Cluster](#) for MySQL is a true Multi-Master Cluster based on synchronous replication. It's an easy-to-use, high-availability solution, which provides high system up-time, no data loss and scalability for future growth.
- <https://aphyr.com/posts/327-call-me-maybe-mariadb-galera-cluster>

## Messenger / Chatops

- [matrix](#) - An open network for secure, decentralized communication

## MISC

- [Organspendeausweis](#)
- [Logitech Media Server](#)
- [Unperfekthaus - Essen](#)

## Mobile Phones

- [SHIFTPHONES](#)
- <https://volla.online/>
- <https://www.fairphone.com/>
- <https://murena.com/> - Escape digital surveillance now. We combine privacy by design smartphones with safe and transparent online services.

## Android / Ubuntu

- [/e/OS](#) - ist ein Open-Source-Betriebssystem für Mobiltelefone, das mit sorgfältig ausgewählten Anwendungen kombiniert wird. Sie bilden ein datenschutzfreundliches sicheres System für Ihr Smartphone. Und es sind nicht nur bloße Behauptungen: Open-Source bedeutet überprüfbare Privatsphäre. /e/OS hat akademische Anerkennung von Forschenden der Universität Edinburgh und des Trinity College in Dublin erhalten.
- [iodéOS](#) - is an Android based Operating System freed from Google trackers. iodéOS analyses in real-time data requests from your apps and allows you to :
  - see the identity of all recipients and the quantity of data they wish to collect
  - block if you want unwanted recipients (advertisements, malwares, spams, statistics & trackers)
  - measure how privacy-respectful your apps are
- <https://ubuntu-touch.io/>
  - <https://ubports.com/>
- [GrapheneOS](#) - The private and secure mobile operating system with Android app compatibility. Developed as a non-profit open source project.
- [CalyxOS](#) - Everyone needs a phone. Not everyone wants to be spied on. Reclaim your privacy with CalyxOS.

## Lineage OS

- [Lineage OS](#) - A free and open-source operating system for various devices, based on the Android mobile platform.
- [Lineage OS - Supported Devices](#)

## Misc

- [opengapps](#) - Google Apps (a.k.a. GApps) are the proprietary Google-branded applications that come pre-installed with most Android devices, such as Google Play Services, Play Store, Gmail, Maps, etc. Due to licensing restrictions, these apps do not come pre-installed with ROMs others than those from vendors that are part of the [Open Handset Alliance](#) and must be installed as a sideload package by the user themselves.
- [F-Droid](#) - is an installable catalogue of FOSS (Free and Open Source Software) applications for the Android platform. The client makes it easy to browse, install, and keep track of updates on your device.
- [scrcpy](#) - scrcpy (pronounced "screen copy") - This application mirrors Android devices (video and audio) connected via USB or over TCP/IP, and allows to control the device with the keyboard and the mouse of the computer. It does not require any root access. It works on Linux, Windows and macOS.
- [ntfy \(pronounced notify\)](#) - is a simple HTTP-based pub-sub notification service. It allows you to send notifications to your phone or desktop via scripts from any computer, and/or using a REST API. It's infinitely flexible, and 100% free software.

## postmarketOS

- [postmarketOS](#) - A real Linux distribution for phones and other mobile devices
- [postmarketOS - supported devices](#)

## Modbus

- <https://en.wikipedia.org/wiki/Modbus>
- <https://blog.softwaretoolbox.com/opc-modbus-function-codes>
- <https://www.youtube.com/watch?v=FYPQgnQE9fk>
- <https://www.youtube.com/watch?v=E1nsgukeKKA>
- <https://www.udemy.com/course/mastering-modbus-rs485-network-communication/>
- <https://www.udemy.com/course/mastering-modbus-tcpip-network-communication/>
- <https://modbus.org/specs.php>
- <https://pymodbus.readthedocs.io/en/latest/>
- <https://pypi.org/project/pyModbusTCP/>

Gesetzt:

- <https://pypi.python.org/pypi/colorlog>
- <https://pypi.python.org/pypi/modbus-tcp-server>
- <https://pypi.python.org/pypi/EasyModbus>

```
colorlog>=4.6,<6.0
attrs>=21.0
modbus-tcp-server>=0.6
EasyModbus>=1.4
```

## Multimonitor

- [Disper](#) - is an on-the-fly display switch utility. It is intended to be used just before giving a presentation with a laptop, when all one wants is that the beamer, which has just been connected, is able to show whatever you prepared.

## Nextcloud

- [floccus](#) - Cross-browser bookmarks sync with full control and full privacy.
- [Backup Nextcloud with separate DATA folder and the database?!?!?](#)
- [Experimenting with clustering and data replication in Nextcloud with MariaDB Galera and SyncThing](#)

## NFS

- [Enterprise Networking Planet - Implement NFSv4: Domains and Authentication](#)
- [Opensource.com - How to use autofs to mount NFS shares](#)
  - [NetApp - NFS Best Practice and Implementation Guide](#)

## nginx

- [Nginx Proxy Manager](#) - Expose your services easily and securely. I created this project to fill a personal need to provide users with a easy way to accomplish reverse proxying hosts with SSL termination and it had to be so easy that a monkey could do it. This goal hasn't changed. While there might be advanced options they are optional and the project should be as simple as possible so that the barrier for entry here is low.
- [Observability and Remote Configuration with NGINX Agent](#) - NGINX Agent is a lightweight daemon that can be deployed alongside your NGINX Open Source or NGINX Plus instance. Significantly, NGINX Agent enables a number of capabilities not provided by NGINX Open Source
- [Authelia](#) - is an open-source authentication and authorization server providing two-factor authentication and single sign-on (SSO) for your applications via a web portal. It acts as a companion for reverse proxies by allowing, denying, or redirecting requests.
- [mjs: nginx config for Nextcloud](#) - If you updated to Nextcloud 27 or 28, you might encounter the message „Your webserver does not serve .mjs files using the JavaScript MIME type.“

## NTP

- [Comparison of NTP implementations](#)
- [Manage NTP with Chrony](#)

## Office365

- <http://davmail.sourceforge.net/index.html>
- <https://github.com/Ericsson/exchangeconnector> NOT SUPPORTED BY LATEST THUNDERBIRD
- <https://github.com/jobisoft/TbSync> WORKING BUT NOT ALLOWED BY OUR IT DEPARTMENT
- <https://github.com/aluxnimm/outlookcaldavsynchronizer/releases>
- <https://gnulinux.ch/der-ewige-workaround>

## ÖPNV

- **Travelynx** - erlaubt das Einchecken in Züge im Netz der Deutschen Bahn. So können die eigenen Fahrten später inklusive Echtzeitdaten und eingetragenen Servicemeldungen nachvollzogen und brennende Fragen wie „Wie viele Stunden habe ich letzten Monat im Zug verbracht?“ beantwortet werden.
- **DBF** - ist ein inoffizieller Abfahrtsmonitor für den Regional- und Fernverkehr mit dem Ziel, Daten aus verschiedenen Quellen übersichtlich zusammenzutragen. Der Fokus liegt auf Zügen im Netz der Deutschen Bahn; eingeschränkte Unterstützung für Nahverkehr und Züge in anderen Netzen lässt sich optional zuschalten.
- **TRAVIC** - Transit Visualization Client
- **bahn.expert**
- **Öffi** - Der König des Fahrplanschungels! All-in-one App für die Öffentlichen Verkehrsmittel. Verbindungs-Abfragen (von Haustür zu Haustür), Echtzeit-Abfahrtszeiten (inkl. Verspätungen), Nahegelegene Haltestellen (mit Karte) und interaktive Netzpläne. Öffi nutzt die offiziellen Fahrplan- und Verbindungsdaten des gewählten Verkehrsverbunds! Dadurch ist sichergestellt, daß Störungen sofort angezeigt werden, wenn sie vom Verkehrsverbund erfasst sind.

## PAAS

- **Amazon Lightsail** - Accelerate your cloud project with Lightsail. Everything you need to jumpstart your project on AWS—compute, storage, and networking—for a low, predictable price.
- **Jiffybox** - Ihr JiffyBox CloudServer: Unbegrenzte Möglichkeiten zu klar begrenzten Kosten.
- **ProfitBricks** - ist der einzige deutsche Cloud-Computing-Anbieter für Infrastructure as a Service (IaaS) mit eigens entwickelter Virtualisierung.

## Penetration Testing

- <https://github.com/e-m-b-a/emba>
- **Burp Suite Community Edition** - Start your web security testing journey for free - download our essential manual toolkit.
- <https://shop.hak5.org/>
- <https://cirt.net/Nikto2>
- **PyRIC** - Python Radio Interface Controller Linux wireless library for the Python Wireless Developer and Pentester
- **Shodan** - Search Engine for the Internet of Everything. Shodan is the world's first search engine for Internet-connected devices. Discover how Internet intelligence can help you make better decisions.
- **Censys** - continually scans the entire public IPv4 address space on 3,592+ ports using automatic protocol detection to present the most accurate representation of the Internet's current state. Censys also leverages redirects and the Domain Name System to discover and scan (~39M) in-use IPv6 addresses.
- **mitmproxy** - is a free and open source interactive HTTPS proxy. mitmproxy is your swiss-army knife for debugging, testing, privacy measurements, and penetration testing. It can be used to intercept, inspect, modify and replay web traffic such as HTTP/1, HTTP/2, WebSockets, or any other SSL/TLS-protected protocols. You can prettify and decode a variety of message types ranging from HTML to Protobuf, intercept specific messages on-the-fly, modify them before they reach their destination, and replay them to a client or server later on.
- **Linux Privilege Escalation: Automated Script**
- **PEASS-ng - Privilege Escalation Awesome Scripts SUITE new generation**
  - Here you will find privilege escalation tools for Windows and Linux/Unix\* and MacOS.
  - These tools search for possible local privilege escalation paths that you could exploit and print them to you with nice colors so you can recognize the misconfigurations easily.
  - Check the Local Windows Privilege Escalation checklist from [book.hacktricks.xyz](http://book.hacktricks.xyz)
  - **WinPEAS** - Windows local Privilege Escalation Awesome Script (C#.exe and .bat)
  - Check the Local Linux Privilege Escalation checklist from [book.hacktricks.xyz](http://book.hacktricks.xyz)
  - **LinPEAS** - Linux local Privilege Escalation Awesome Script (.sh)
- **Hettis Hacking Schummelzettel**
- **Huhnitor** - An intergalactic serial monitor for the **ESP8266 Deauther v3**
  - **Coming Huhn: Deauther Andromeda Hardware**
- <https://www.computersecuritystudent.com/UNIX/SUDO/lesson2/index.html>
- **MITRE ATT&CK®** - is a globally-accessible knowledge base of adversary tactics and techniques based on real-world observations. The ATT&CK knowledge base is used as a foundation for the development of specific threat models and methodologies in the private sector, in government, and in the cybersecurity product and service community. With the creation of ATT&CK, MITRE is fulfilling its mission to solve problems for a safer world — by bringing communities together to develop more effective



cybersecurity. ATT&CK is open and available to any person or organization for use at no charge.

- [Skipfish](#) - is an active web application security reconnaissance tool. It prepares an interactive sitemap for the targeted site by carrying out a recursive crawl and dictionary-based probes. The resulting map is then annotated with the output from a number of active (but hopefully non-disruptive) security checks. The final report generated by the tool is meant to serve as a foundation for professional web application security assessments
- [Nikto](#) - is a pluggable web server and CGI scanner written in Perl, using rfp's LibWhisker to perform fast security or informational checks.
- [SSLyze](#) - is a fast and powerful SSL/TLS scanning tool and Python library. SSLyze can analyze the SSL/TLS configuration of a server by connecting to it, in order to ensure that it uses strong encryption settings (certificate, cipher suites, elliptic curves, etc.), and that it is not vulnerable to known TLS attacks (Heartbleed, ROBOT, OpenSSL CCS injection, etc.).
  - <https://got-tty.org/sslyze-ssl-scanner>

## pfSense

- [How to Install and Configure BGP in GNS3 using pfSense](#)
- [pfStore: pfSense Guides](#)
- [Networking: Bringing IPv6 into your network using pfSense](#)
- [Dualstack IPv6 + IPv4 mit pfSense an DSL der Telekom](#)
- [pfSense OpenVPN Server und User einrichten - Tutorial](#)
- [pfSense: WireGuard-Roadwarrior-Server einrichten](#)

## Hardware

- <https://www.voleatech.de/de/>
- <https://www.varia-store.com/de/>
- <https://www.ipu-system.de/index.html>

## Policies / RFCs

- [IRS - 11.1.4 Content Policies and Standards for Intranet Sites](#)

## Postfix

- [5 top tips for reviewing your postfix mail queue - wirehive](#)
- <https://grokshop.tv/stop-spam-with-postfix-email-server/>
- <https://www.syn-flut.de/spamassassin-erkennungsrate-deutlich-verbessern>
- [https://wiki.gentoo.org/wiki/Mailfiltering\\_Gateway](https://wiki.gentoo.org/wiki/Mailfiltering_Gateway)
- <http://www.open-spf.org/>
- <https://help.ubuntu.com/community/Postfix/SPF>
- <https://manpages.debian.org/testing/postfix-policyd-spf-python/policyd-spf.conf.5.en.html>
- [rob0's postscreen\(8\) configuration](#) - The purpose of this document is to supplement, but not to replace, the Postfix Postscreen Howto, by showing a real-world example of what can be done with DNSBL scoring. The DNSBL sites and scores I use are ones I can recommend for general usage. But in all cases, one should never use a DNSBL unless one is familiar with its policies: purpose, listing, removal, and usage. Links are provided inline for your convenience.
- [POSTSCREEN\\_README](#)
- [postscreen\(8\)](#)
- [Jim Seymour's suggestions/examples for Postfix anti-UCE configuration.](#) - (Aka: Postfix Anti-UCE Cheat Sheet)

## Projektmanagement

- [Unternehmensberatung Axel Schröder: Netzplantechnik und ihre Funktionen \( PDF \)](#)

## Puppet

- [Puppet mit r10k](#) - Mithilfe von r10k und Hierarchical Configuration Management lassen sich zeitgemässe Konfigurationsmanagement-Systeme aufbauen.

## Python

- [Documenting Python Code: A Complete Guide](#)

- [Managing Multiple Python Versions With pyenv](#) - Have you ever wanted to contribute to a project that supports multiple versions of Python but aren't sure how you would easily test all the versions? Are you ever curious about the latest and greatest versions of Python? Maybe you'd like to try out these new features, but you don't want to worry about messing up your development environment. Luckily, managing multiple versions of Python doesn't have to be confusing if you use pyenv.
- [Using Python and NetworkManager to control the network](#) - NetworkManager is the default network management service on Fedora and several other Linux distributions. Its main purpose is to take care of things like setting up interfaces, adding addresses and routes to them and configuring other network related aspects of the system, such as DNS.
- [Gridcosm](#) - is a collaborative art project in which artists from around the world contribute images to a compounding series of graphical squares. Each level of Gridcosm is made up of nine square images arranged into a 3x3 grid.
- [Fabric](#) - is a high level Python (2.7, 3.4+) library designed to execute shell commands remotely over SSH, yielding useful Python objects in return. It builds on top of Invoke (subprocess command execution and command-line features) and Paramiko (SSH protocol implementation), extending their APIs to complement one another and provide additional functionality.
  - [Invocations](#) - is a collection of reusable Invoke tasks, task collections and helper functions. Originally sourced from the Invoke project's own project-management tasks file, they are now highly configurable and used across a number of projects, with the intent to become a clearinghouse for implementing common best practices. Currently implemented topics include (but are not limited to): management of Sphinx documentation trees, Python project release lifecycles, dependency vendoring, running test suites (unit, integration, coverage-oriented, etc), console utilities such as confirmation prompts, and more.
  - [Patchwork](#) is a mid-level library of Unix system administration primitives such as "install package" or "create user account", interrogative functionality for introspecting system state, and other commonly useful functions built on top of the Fabric library. Specifically: Primary API calls strive to be idempotent: they may be called multiple times in a row without unwanted changes piling up or causing errors. Patchwork is just an API: it has no concept of "recipes", "manifests", "classes", "roles" or other high level organizational units. This is left up to the user or wrapping libraries. This is one way Patchwork differs from larger configuration management frameworks like Chef or Puppet. Patchwork is closest in nature to those tools' "resources." It is implemented in shell calls, typically sent over SSH from a local workstation. However, where possible, its functions expect a baseline Invoke Context object and can thus run locally or remotely, depending on the specific context supplied by the caller.
- [pipx](#) — Install and Run Python Applications in Isolated Environments
- [Tenacity](#) - is an Apache 2.0 licensed general-purpose retrying library, written in Python, to simplify the task of adding retry behavior to just about anything. It originates from a fork of retrying which is sadly no longer maintained. Tenacity isn't api compatible with retrying but adds significant new functionality and fixes a number of longstanding bugs. The simplest use case is retrying a flaky function whenever an Exception occurs until a value is returned.
- [How do you set up a local testing server?](#) - This article explains how to set up a simple local testing server on your machine, and the basics of how to use it.
- [http.server — HTTP servers](#) - This module defines classes for implementing HTTP servers. Warning: http.server is not recommended for production. It only implements basic security checks.
- [Tracing Python](#) - Based on a discussion on IRC and Mastodon: "How can I get access to the return values of my (Python-) programs functions?" And more generally, how can I trace function execution in Python, showing function parameters and return values?

## Raspberry Pi

- [The Idiot-Proof Guide to Upgrading Raspberry Pi from Buster to Bullseye](#)
- [Rolling with openSUSE Tumbleweed on a Raspberry Pi 4](#)
- [https://en.opensuse.org/HCL:Raspberry\\_Pi4](https://en.opensuse.org/HCL:Raspberry_Pi4)
- <https://medium.com/swlh/running-hashicorp-nomad-consul-pihole-and-gitea-on-raspberry-pi-3-b-f3f0d66c907>
- [HiFiBerry User Gallery](#) - HiFiBerry Projects
- [RaspAP](#) - is feature-rich wireless router software that just works on many popular Debian-based devices, including the Raspberry Pi. Our popular Quick installer creates a known-good default configuration for all current Raspberry Pis with onboard wireless. A fully responsive, mobile-ready interface gives you control over the relevant services and networking options. Advanced DHCP settings, WireGuard and OpenVPN support, SSL certificates, security audits, captive portal integration, themes and multilingual options are included.
- [DietPi](#) - Highly optimised minimal Debian OS. DietPi is extremely lightweight at its core, with features of low process/memory footprint and DietPi-RAMlog installed by default, to get the maximum performance from your device.
- [The MagPi](#) - Build a multi-room audio system with Raspberry Pi
- [Coding World - Jugend Programmiert Starter Kit für den Raspberry Pi](#) - Das Jugend Programmiert Starter Kit bietet einen einfachen und verständlichen Einstieg in die Programmierwelt und richtet sich an alle Menschen die gerne praxisorientiert lernen.
- [Rootless Podman, systemd, and Docker Compose files](#) - This is a summary of how I run a set of Docker (actually, Podman) containers for my Home Assistant setup on a Raspberry Pi. It works reasonably well for me, so I am sharing it here in the hope that it is useful to others.

## Requirements

- [Basiswissen Requirements Engineering: Aus- und Weiterbildung nach IREB-Standard zum Certified Professional for Requirements Engineering Foundation Level \(iSQI-Reihe\) Gebundene Ausgabe - 1. April 2021](#)
- [Unified Modeling Language - UML](#)
  - [Deployment diagram](#)
- [Systems Modeling Language - SysML](#)

- [SysML Diagram Tutorial / SysML diagram types](#)
- [Activity diagram](#)
- [Sequence diagram](#)
- [State diagram](#)
- [Use case diagram](#)
- [Block Definition Diagram](#)
- [Internal Block Diagram](#)
- [Package diagram](#)
- [Parametric diagram](#)
- **Interview Effects**
  - [Als Rosenthal-Effekt, Versuchsleiter\(erwartungs\)effekt oder Versuchsleiter-Artefakt](#) - wird in der Sozialpsychologie das Resultat eines Versuchsleiter-Versuchspersonen-Verhältnisses bezeichnet, durch das sich positive Erwartungen, Einstellungen, Überzeugungen sowie positive Stereotype des Versuchsleiters in Form einer „selbsterfüllenden Prophezeiung“ auf das Ergebnis des Experiments auswirken.
  - [Rezenzeffekt](#) - Beim Rezenzeffekt (englisch recency effect) handelt es sich um ein psychologisches Phänomen. Er besagt, dass später eingehende Informationen einen größeren Einfluss auf die Erinnerungsleistung einer Person ausüben als früher eingehende Informationen. Im engeren Sinne ist der Rezenzeffekt ein Phänomen, der das Kurzzeitgedächtnis betrifft. Im weiteren Sinne tritt er auf, wenn zuletzt wahrgenommenen Informationen aufgrund der besseren Erinnerungsfähigkeit stärkeres Gewicht verliehen wird als früheren Informationen. Er tritt bei fast allen Beurteilungsszenarien auf.
  - [Halo-Effekt](#) - Der Halo-Effekt (von englisch halo, Heiligenschein) ist eine aus der Sozialpsychologie bekannte kognitive Verzerrung. Dabei schließt man von bekannten Eigenschaften einer Person auf unbekannte.
  - [Tendency to Self Promotion](#) - Self-promotion, also known as self-advertisement, is a great way to showcase the skills, talents, and achievements of the individual. Often people will promote themselves by telling about their achievements.
- [Kano-Modell](#) - Das Kano-Modell (auch: Das Kano-Modell der Kundenzufriedenheit) ist ein Modell zum systematischen Erringen der Kundenzufriedenheit in einem Projekt oder für ein komplexes Produkt. Es beschreibt den Zusammenhang zwischen dem Erreichen bestimmter Eigenschaften eines Produktes / einer Dienstleistung und der erwarteten Zufriedenheit von Kunden.[1] Aus der Analyse von Kundenwünschen leitete Noriaki Kano (\* 1940), Professor an der Universität Tokio, 1978 ab, dass Kundenanforderungen unterschiedlicher Art sein können. Das nach ihm benannte Kano-Modell erlaubt es, die Wünsche (Erwartungen) von Kunden zu erfassen und bei der Produktentwicklung zu berücksichtigen.
- [MoSCoW-Priorisierung](#) - Die MoSCoW-Priorisierung ist eine Methode, die im Bereich des Projektmanagements verwendet wird und es dem Projektmanager ermöglicht, die Umsetzung der Anforderungen anhand ihrer Wichtigkeit und ihrer Auswirkung zu priorisieren. Seinen Ursprung hat die MoSCoW-Priorisierung in der agilen Methode DSDM und kommt heute als Priorisierungstechnik für Projektabnahme- und Qualitätskriterien u. a. in PRINCE2 zum Einsatz.
- [Requirements Prioritization Introduction](#)

## Requirements Management Software

- [Ephemeris](#) - System Engineering and requirements management application. [Try the web application for a demo](#)
- [Open Source Requirements Management Tool](#) - (OSRMT) is a configurable, free open source solution that gives you an easy-to-install and easy-to-use solution for defining and managing software requirements. Designed to be a continuation for [OSRMT v1.5](#). Requirements analysis is critical to the success of software products. It includes determining the needs to satisfy, resolving conflicting requirements as well as analyzing, documenting, validating and managing requirements. - adapted from Wikipedia Requirements Analysis. A problem clearly stated is a problem half solved. - Dorothea Brande, Every hour spent understanding the requirements better saves a week of implementation. - unknown
- [rmToo](#) - Open Source Requirements Management Tool
  - <https://pypi.org/project/rmtoo/>
- [Free and Open Source Software Requirements Management Tools](#) - List

## RPM

- [Run a command before downloading or installing a package with RPM/DNF](#)

## Search Engines

- <https://searx.github.io/searx/> - Searx is a free internet metasearch engine which aggregates results from more than 70 search services. Users are neither tracked nor profiled. Additionally, searx can be used over Tor for online anonymity.
- <https://docs.searxng.org/> - SearXNG development has been started in the middle of 2021 as a fork of the searx project.
- [Whoogle Search](#) - Get Google search results, but without any ads, javascript, AMP links, cookies, or IP address tracking. Easily deployable in one click as a Docker app, and customizable with a single config file. Quick and simple to implement as a primary search engine replacement on both desktop and mobile.
  - <https://gnulinux.ch/jst-whoogle-besser-als-google>

## Signal Messenger

- [Bot mit Signal](#) - Bisher fand ich es ganz praktisch jeden Tag über die Telegram API eine Nachricht über den aktuellen Zustand

meiner Homematic zu bekommen. Für meine privaten Chats mag ich Telegram aber nicht nutzen. Nach dem Abschied von WhatsApp ist hier meine Wahl auf Signal gefallen. Nun liegt es nahe die Benachrichtigungsfunktion auch auf Signal zu übertragen. Signal selber bietet anscheinend keine direkte API wie Telegram, es gibt aber ein Comandline Interface. Da ich über eigene Server im Internet verfüge sollte damit eine entsprechende Funktionalität realisierbar sein, so dass ich neben WhatsApp auch auf Telegram verzichten kann.

## Snapper

- [SDB:Snapper - Was ist Snapper?](#) - Snapper ist ein openSUSE eigenes Tool um Btrfs-Snapshots einfach zu verwalten. Neben dem Löschen von bereits angelegten Snapshots und dem Erstellen von neuen Snapshots können Snapshots miteinander verglichen werden. Snapper kann sowohl mit Befehlen im Terminal eingesetzt werden, als auch durch ein Modul in YaST. Beide Varianten greifen intern auf die libsnapper C++-Bibliothek zurück.
- [System Recovery and Snapshot Management with Snapper](#) - Being able to do file system snapshots providing the ability to do rollbacks on Linux is a feature that was often requested in the past. Snapper, with the Btrfs file system or thin-provisioned LVM volumes now fills that gap.
- [LinuxUser 12/2018 OpenSuse-Tipps: System wiederherstellen mit Snapper](#) - OpenSuse ist im Moment die einzige der großen Distributionen, die das als Ersatz für Ext4 geplante Dateisystem Btrfs als Standard einsetzt. Die Distribution aus Nürnberg nutzt dabei ein Feature des Filesystems für eine Snapshot-Funktion. Windows-Anwender kennen diese als Wiederherstellungspunkte, die das System bei kritischen Operationen automatisch anlegt.
- [Rollback - How to Recover from Boot Problems](#) - As you might know it is possible to boot a btrfs snapshot of your root filesystem. That allows you to recover from certain boot problems of your system. The approach is to manually boot a snapshot that is known to work and then setup the system to use a read-write snapshot of that snapshot per default. So far this only works with btrfs and the system must be properly configured, e.g. mountpoint for subvolumes must be included in /etc/fstab, esp. for /.snapshots. With openSUSE 13.2 all of that should work out of the box.
- [BTRFS - Incremental Backup](#) - BTRFS has some key capabilities which enable efficient backup solutions: Instant, Atomic COW Snapshots. Since the snapshots are atomic, when a snapshot is restored it appears to applications as if a power loss had occurred (and the filesystem has gone back to an earlier state). Thus it is possible to backup databases without stopping them beforehand. Incremental Snapshot Transfer. Efficiently determining and streaming the differences between two snapshots if they are either snapshots of the same underlying subvolume, or have a parent-child relationship. This is far quicker than e.g. rsync could, especially on large file systems. (For instance, rsync cannot be aware of mere metadata changes like filename, location etc but the FS itself is certainly aware of it.) This page presents some approaches to leverage these capabilities.

## SSH

- [Secure Secure Shell](#) - You may have heard that the NSA can decrypt SSH at least some of the time. If you have not, then read the [latest batch of Snowden documents](#) now. All of it.
- [SSH implementation comparison](#) - Ciphers, Compression formats, Hostkey formats, Key exchange protocols, Message authentication codes (MACs), User authentication methods, Protocol extensions

## Stickers

- <https://mwarning.github.io/chaos-sticker-collection/>

## Synology

- [Synology Diskstation DS212j Download Center](#) - You can find the documents and files regarding the operating system, packages, desktop utilities and so on for your Synology product to enjoy the latest and versatile features.
- [Synology Diskstation DS220j Download Center](#) - You can find the documents and files regarding the operating system, packages, desktop utilities and so on for your Synology product to enjoy the latest and versatile features.
- [SynoCommunity](#) - provides packages for Synology-branded NAS devices. Packages are provided for free and made by developers on their free time.
- [hyperbackup-verschlüsselung-client-side-encryption-details](#)
- [Encrypted Off-Site Backups with Synology Hyper Backup](#)
- [Encrypt existing folder\(s\)](#)

## systemd

- [systemd Overrides](#) - Mithilfe von systemd Overrides können systemd Definitionen an die eigenen Bedürfnisse angepasst werden.
- [System and Service Credentials](#) - The systemd service manager supports a "credential" concept for securely acquiring and passing credential data to systems and services. The precise nature of the credential data is up to applications, but the concept is intended to provide systems and services with potentially security sensitive cryptographic keys, certificates, passwords, identity information and similar types of information. It may also be used as generic infrastructure for parameterizing systems and services.

## Telekom

- <https://www.telekom.de/hilfe/geraete-zubehoer/telefone-und-anlagen/informationen-zu-telefonanlagen/schnittstellenbeschreibung-n-fuer-hersteller>
- <https://www.telekom.de/hilfe/downloads/1tr112.zip>

## Testing

- **Expecco** - Die Besonderheit von expecco besteht darin, dass sich erstmals verschiedene Technologien durchgängig in einem vollständigen Testszenario verbinden lassen. Deshalb können Sie mit diesem System selbst höchst komplexe und vernetzte Anwendungen in einem einzigen Testlauf frühzeitig auf Schwachstellen prüfen. expecco enthält bereits alle Elemente, die Sie für eine effiziente Testautomatisierung benötigen. Sie können das Basissystem je nach Projektstand und individuellen Anforderungen mit den passenden Plugins erweitern. Jede unterstützte Technologie verfügt über komplett ausprogrammierte Bibliotheken und direkt ablauffähige Funktionsbausteine. Mit expecco wird der vollautomatisierte End-to-End-Test zur Realität.
- **Ranorex** - With the time pressures of manual and multi-platform regression testing, it may seem impossible to get a test automation project off the ground. Many automation tools require advanced coding skills, are limited to only certain platforms, or require complex integrations to automate your user interface. Ranorex Studio solves these challenges with easy-to-use tools for codeless test automation, along with a quick-start tutorial and comprehensive user guide for same-day productivity. Testers with little or no experience in programming can use Ranorex Studio's capture and replay functionality to build reliable automated test cases without writing a single line of code. The built-in methodology simplifies strategies such as data-driven testing, keyword-driven testing, and test execution based on conditions. Test automation experts can rapidly automate tests in C# or VB.NET using Ranorex Studio's full automation IDE.
- **OWASP - Source Code Analysis Tools** - Source code analysis tools, also referred to as Static Application Security Testing (SAST) Tools, are designed to analyze source code or compiled versions of code to help find security flaws. Some tools are starting to move into the IDE. For the types of problems that can be detected during the software development phase itself, this is a powerful phase within the development life cycle to employ such tools, as it provides immediate feedback to the developer on issues they might be introducing into the code during code development itself. This immediate feedback is very useful, especially when compared to finding vulnerabilities much later in the development cycle

## Tools

### Automation

- **Node-RED 2023 Einführung mit Home Assistant** - Neben der grundlegenden Bedienungen erkläre ich euch anhand eines konkreten Beispiels die wichtigsten Nodes aus Node-RED. Darüber hinaus gibt es den ein oder anderen Kniff zu sehen, sowie die Möglichkeit des Debuggen wird dargestellt.
- **dotool** - reads actions from stdin and simulates keyboard/mouse input using Linux's uinput module. It works systemwide and supports keyboard layouts. (xdotool alternative - works with wayland)
- **libei** - is a library for Emulated Input, primarily aimed at the Wayland stack. (xdotool for wayland)

### Website-Prüfung

- **LinkChecker** - is a free, GPL licensed website validator. LinkChecker checks links in web documents or full websites. It runs on Python 3 systems, requiring Python 3.8 or later.

### Backup / Recovery

- **ElkarBackup** - If you are a sysadmin who need a backup solution in order to save files from different machines, sometimes in your own network, but sometimes in external networks through VPN or ssh connections, sometimes with requirement of doing some actions before or after the backup (i.e. your own checks, test etc.), Elkarbackup is your solution.
  - <https://github.com/elkarbackup/elkarbackup-scripts>
- **StoreBackup** ist eine sehr speichereffizientes Platte-zu-Platte Backup Suite für GNU/Linux und andere unixoide Systeme.
- **Rclone** - rsync for cloud storage is a command line program to sync files and directories to and from a lot of clouds and webdav
- **Kup Backup System** - Kup is created for helping people to keep up-to-date backups of their personal files. Connecting a USB hard drive is the primary supported way to store files, but saving files to a server over a network connection is also possible for advanced users. When you plug in your external hard drive Kup will automatically start copying your latest changes, but of course it will only do so if you have been active on your computer for some hourse since the last time you took a backup (and it can of course ask you first, before copying anything). In general Kup tries to not disturb you needlessly. There are two types of backup schemes supported, one which keeps the backup folder completely in sync with what you have on your computer, deleting from the backup any file that you have deleted on your computer etc. The other scheme also keeps older versions of your files in the backup folder.
- **Back In Time** - It is an easy-to-use backup tool for files and folders. It runs on GNU Linux and provides a command line tool backintime and a Qt5 GUI backintime-qt both written in Python3. It uses rsync to take manual or scheduled snapshots and stores them locally or remotely through SSH. Each snapshot is its own folder with copies of the original files, but unchanged files are hard-linked between snapshots to save space.

- [ReaR - Relax-and-Recover](#) - is a setup-and-forget Linux bare metal disaster recovery solution. It is easy to set up and requires no maintenance so there is no excuse for not using it.
- [FOSDEM: Relax-and-Recover \(ReaR\) Basics with Demo on Real Hardware](#) - Introducing Relax-and-Recover (ReaR) for the novice users. What is it and what can it mean for you? Is Disaster Recovery useful to consider it or not? How can ReaR assist you with DR? ReaR can store the details about your systems on disks (NAS, USB, SAN,...) or network (PXE, NFS, CIFS,...) including the complete backup. It also creates a bootable image which you need to recreate your system from scratch. Furthermore, thanks to the modular concept, ReaR integrates perfectly with external backup solutions (be commercial and/or open source ones) to do the backup and restore part which makes ReaR very scalable in big enterprises. ReaR scales even with Cloud solutions and is the heart of another great project (DRLM or Disaster Recovery Linux Manager). Relax-and-Recover (ReaR) is the de facto standard generic (bare metal) disaster recovery framework for all kind of Linux systems. ReaR is in common use by admins for disaster recovery on thousands and thousands of Linux server systems.
- [DRLM - Disaster Recovery Linux Manager](#) - is a Centralized Management Open Source solution for small-to-large Disaster Recovery implementations using ReaR. Is an easy-to-use software to manage your growing ReaR infrastructure. Is written in the bash language (like ReaR) and offers all needed tools to efficiently manage your GNU/Linux disaster recovery backups, reducing Disaster Recovery management costs. ReaR is great solution, but when we're dealing with hundreds of systems, could be complex to manage well all ReaR deployments. With DRLM you can, easily and centrally, deploy and manage ReaR installations for all your GNU/Linux systems in your DataCenter(s). DRLM is able to manage all required services (TFTP, DHCP-PXE, NFS, ...) with no need of manual services configuration. Only with few easy commands, the users will be able to create, modify and delete ReaR clients and networks, providing an easy way to boot and recover your GNU/Linux systems through network with ReaR. Furthermore DRLM acts as a central scheduling system for all ReaR installations. Is able to start rear backups remotely and store the rescue-boot/backup in DR images easily managed by DRLM.
- [Geekbundle - Backups mit etckeeper, Gitea, restic, Minio](#)
  - [Restic Vortrag CCCC 2016](#)
  - [restic](#) - Restic is a modern backup program that can back up your files from Linux, BSD, Mac and Windows. To many different storage types, including self-hosted and online services. Easily, being a single executable that you can run without a server or complex setup. Effectively, only transferring the parts that actually changed in the files you back up. Securely, by careful use of cryptography in every part of the process. Verifiably, enabling you to make sure that your files can be restored when needed. Freely - restic is entirely free to use and completely open source.
- [Partclone](#) - is a program similar to the well-known backup utility "Partition Image" a.k.a partimage. Partclone provides utilities to save and restore used blocks on a partition and is designed for higher compatibility of the file system by using existing libraries, e.g. e2fslibs is used to read and write the ext2 partition. Partclone now supports ext2, ext3, ext4, hfs+, reiserfs, reiser4, btrfs, vmfs3, vmfs5, xfs, jfs, ufs, ntfs, fat(12/16/32), exfat, f2fs, nilfs.

## Bookstack

- [BookStack Installation](#) - Admin Documentation
  - [BookStack - uberspace guide](#)
  - [Laravel](#) - HowtoForge
  - [Laravel on ISPConfig](#) - HowtoForge

## Boot Loader/System

- [Boot-Repair](#) - simple tool to recover access to your Operating Systems. Easy-to-use (repair in 1 click ! ). Free (GPL open-source license). Helpful (Boot-Info diagnose to get help by email or on your favorite forum). Safe (automatic backups). Reliable (300.000 users per year). Can recover access to Windows (XP, Vista, Windows7, Windows8, Windows10, Windows11). Can recover access to Debian, Ubuntu, Mint, Fedora, OpenSuse, ArchLinux... Can recover access to any OS (Windows, MacOS, Linux..) if your PC contains Debian, Ubuntu, Mint, Fedora, OpenSuse, ArchLinux, or derivative. Can repair the boot when you have the "GRUB Recovery" error message. Options to reinstall GRUB2/GRUB1 bootloader easily (OS by default, purge, unhide, kernel options...)... and much more ! (UEFI, SecureBoot, RAID, LVM, Wubi, filesystem repair...)

## Bootable USB Stick

- <https://www.ventoy.net/en/index.html> Ventoy is an open source tool to create bootable USB drive for ISO/WIM/IMG/VHD(x)/EFI files.
  - <https://www.linuxuprising.com/2021/12/ventoy-multi-boot-usb-creator-adds-new.html>

## Cloud / Collaboration

- [CryptPad](#) - is a collaborative office suite that is end-to-end encrypted and open-source.====
- [Nextcloud](#) - Regain control over your data. Remote collaboration made easy. On-premises or cloud. Customizable and scaleable. No data leaks to third parties.
- [ownCloud](#) - Secure Cloud Platform - your collaboration tool. The most essential productivity tool since email. Store. Share. Work.
- [Homeoffice Arbeitsplätze - Teil II](#) - Der zweite Teil der Homeoffice-Serie dreht sich um Terminalserver. Dabei ist das Konzept alt, sehr alt. (Apache Guacamole / Nextcloud)

## Debian / Ubuntu

- [Debtrees visualisiert die Abhängigkeit von Paketen](#)
- [Mit Dpigs die Größe von installierten Paketen anzeigen](#)

## Diagnose

- [bandwhich](#) - This is a CLI utility for displaying current network utilization by process, connection and remote IP/hostname. bandwhich sniffs a given network interface and records IP packet size, cross referencing it with the /proc filesystem on linux, lsof on macOS, or using WinAPI on windows. It is responsive to the terminal window size, displaying less info if there is no room for it. It will also attempt to resolve ips to their host name in the background using reverse DNS on a best effort basis.
- [crt.sh Certificate Search](#) - Enter an Identity (Domain Name, Organization Name, etc), a Certificate Fingerprint (SHA-1 or SHA-256) or a crt.sh ID

## Digital Signage

- <https://info-beamer.com>

## DISTCC / CCACHE

- [Icecream](#) - was created by SUSE based on distcc. Like distcc, Icecream takes compile jobs from a build and distributes them among remote machines allowing a parallel build. But unlike distcc, Icecream uses a central server that dynamically schedules the compile jobs to the fastest free server. This advantage pays off mostly for shared computers, if you're the only user on x machines, you have full control over them.
- [distcc](#) - a fast, free distributed C/C++ compiler
- [Ccache](#) - is a compiler cache. It speeds up recompilation by caching previous compilations and detecting when the same compilation is being done again.

## Document Management

- [Paperless-ngx](#) - Paperless-ngx is a document management system that transforms your physical documents into a searchable online archive so you can keep, well, less paper.

## File Synchronisation

- [Create Synchronicity](#) is a powerful and lightweight open source backup and synchronization program, available in many languages. (What can it do?) Create Synchronicity is especially light: zipped, it weights about 220 kB (that's 15 times less than an average MP3 file). It makes backing up your files extremely easy, while remaining fully customizable.
- [FullSync](#) is a universal file synchronization and backup tool which is highly customizable and expandable. It is especially for developers, but the basic functionality is easy enough for everyone.
- [Syncthing](#) replaces proprietary sync and cloud services with something open, trustworthy and decentralized. Your data is your data alone and you deserve to choose where it is stored, if it is shared with some third party and how it's transmitted over the Internet.
- [Rclone](#) - rsync for cloud storage is a command line program to sync files and directories to and from a lot of clouds and webdav
- [FreeFileSync](#) - is a folder comparison and synchronization software that creates and manages backup copies of all your important files. Instead of copying every file every time, FreeFileSync determines the differences between a source and a target folder and transfers only the minimum amount of data needed. FreeFileSync is Open Source software, available for Windows, macOS, and Linux.

## File Transfer

- [F\\*EX \(Frams' Fast File EXchange\)](#) - is a service to send big (large, huge, giant, ...) files from a user A to a user B.
- [Fpsync](#) - To demonstrate fpart possibilities, a program called 'fpsync' is provided within the tools/ directory. This tool is a shell script that wraps fpart(1) and rsync(1), cpio(1) or tar(1) to launch several synchronization jobs in parallel as presented in the previous section, but while the previous example used GNU Parallel to schedule transfers, fpsync provides its own -embedded- scheduler. It can execute several synchronization processes locally or launch them on several nodes (workers) through SSH.

## Firewall

- <https://github.com/evlsocket/opensnitch> OpenSnitch is a GNU/Linux application firewall. (Client side)
- <https://modsecurity.org/>
- <https://github.com/SpiderLabs/ModSecurity>
- <https://github.com/SpiderLabs/ModSecurity/tree/v2/master>
- <https://github.com/ironbee/ironbee/> IronBee is a new open source project to build a universal web application security sensor. This repository contains the core IronBee engine and development framework for extending IronBee.

- <https://github.com/nbs-system/naxsi> NAXSI means Nginx Anti XSS & SQL Injection. Technically, it is a third party nginx module, available as a package for many UNIX-like platforms. This module, by default, reads a small subset of simple (and readable) rules containing 99% of known patterns involved in website vulnerabilities. For example, <, | or drop are not supposed to be part of a URI.
- <https://github.com/zecure/shadowd> Shadow Daemon is a collection of tools to detect, record and prevent attacks on web applications. Technically speaking, Shadow Daemon is a web application firewall that intercepts requests and filters out malicious parameters. It is a modular system that separates web application, analysis and interface to increase security, flexibility and expandability.
- <https://github.com/p0pr0ck5/lua-resty-waf/> lua-resty-waf - High-performance WAF built on the OpenResty stack
- <https://www.vultureproject.org/doc/waf/waf.html> Vulture allows you to filter incoming and outgoing web traffic and block threats like injection, cross site scripting... and other attacks of the OWASP Top10. It is relying on mod\_security, mod\_defender (fork of Naxsi), and mod\_svm (Machine learning based on Support Vector Machines) to filter HTTP traffic.
- <https://owasp.org/www-project-enterprise-security-api/> ESAPI (The OWASP Enterprise Security API) is a free, open source, web application security control library that makes it easier for programmers to write lower-risk applications. The ESAPI libraries are designed to make it easier for programmers to retrofit security into existing applications. The ESAPI libraries also serve as a solid foundation for new development.
- [https://github.com/CoolerVoid/raptor\\_waf](https://github.com/CoolerVoid/raptor_waf) Raptor is a Web application firewall made in C, uses DFA to block SQL injection, Cross-site scripting, and path traversal. <http://funguscodes.blogspot.com.br/>

## Markdown

- [glow](#) - Glow is a terminal based markdown reader designed from the ground up to bring out the beauty—and power—of the CLI. Use it to discover markdown files, read documentation directly on the command line and stash markdown files to your own private collection so you can read them anywhere. Glow will find local markdown files in subdirectories or a local Git repository. By the way, all data stashed is encrypted end-to-end: only you can decrypt it.

## Misc

- [Network Equipment Simulator \(NESi\)](#)
- [webhook](#) is a lightweight configurable tool written in Go, that allows you to easily create HTTP endpoints (hooks) on your server, which you can use to execute configured commands. You can also pass data from the HTTP request (such as headers, payload or query variables) to your commands. [webhook](#) also allows you to specify rules which have to be satisfied in order for the hook to be triggered.
- [MinIO](#)'s high performance, Kubernetes-native object storage suite is built for the demands of the hybrid cloud. Software-defined, it delivers a consistent experience across every Kubernetes environment.
- [Apache Crail](#) is a fast multi-tiered distributed storage system designed from ground up for high-performance network and storage hardware. It marks the backbone of the Crail I/O architecture, which is described in more detail on <https://crail.incubator.apache.org>.
- [Search Replace DB](#) - This script was made to aid the process of migrating PHP and MySQL based websites. Works with most common CMSes.
- [Pandoc](#) - If you need to convert files from one markup format into another, pandoc is your swiss-army knife.
- [Sphinx](#) is a tool that makes it easy to create intelligent and beautiful documentation, written by Georg Brandl and licensed under the BSD license. It was originally created for the Python documentation, and it has excellent facilities for the documentation of software projects in a range of languages. Of course, this site is also created from reStructuredText sources using Sphinx!
- [eCard-API-Framework](#) - Das eCard-API-Framework (BSI-TR03112) entstand vor dem Hintergrund der im Jahr 2005 von der Bundesregierung verabschiedeten eCard-Strategie (siehe Kowa07 und HoSt11), die auf die breite Verwendbarkeit der im Rahmen der verschiedenen Kartenprojekte der Bundesverwaltung ausgegebenen und genutzten Chipkarten abzielt. Dies umfasst insbesondere den neuen Personalausweis, die elektronische Gesundheitskarte, die elektronische Steuererklärung (ELSTER) und weitere Anwendungen zur Steigerung der Effizienz in der öffentlichen Verwaltung (ELENA, De-Mail, RESISCAN, TR-ESOR, Open Data etc.).
- [Tuleap](#) - Tuleap is an open source tool for Scrum, Kanban, waterfall, requirement management. Plan, track, code and collaborate on software projects, you get everything at hand.
- [Stacer](#) - Linux System Optimizer and Monitoring
- [Mattermost](#) - Finally, an open source platform for developer collaboration. Secure, flexible, and integrated with the tools you love.
- [Jami](#) is free software for universal communication which respects freedoms and privacy of its users. Its main goal is to provide a communication framework and end-user applications to make audio or video calls, send text messages and make generic data transfers. It makes this possible via multiple paradigms: a modern decentralized approach using a DHT to find peers or classical centralized SIP as a soft-phone. The domain of usage is not limited to physical users, it also includes integration with connected objects (IoT).
- [Rocket.Chat](#) - The communications platform for companies where complete privacy is business critical.
- [Piwigo](#) - Manage your photo library with Piwigo. Piwigo is open source photo management software. Manage, organize and share your photo easily on the web. Designed for organisations, teams and individuals.
- [honk](#) - Take control of your honks and join the federation. An ActivityPub server with minimal setup and support costs. Spend more time using the software and less time operating it. No attention mining. No likes, no faves, no polls, no stars, no claps, no counts. Purple color scheme. Custom emus. Memes too. Avatars automatically assigned by the NSA. The button to submit a new honk says "it's gonna be honked". The honk mission is to work well if it's what you want. This does not imply the goal is to be what you want.
- [ssllh](#) - accepts connections on specified ports, and forwards them further based on tests performed on the first data packet sent by the remote client. Probes for HTTP, TLS/SSL (including SNI and ALPN), SSH, OpenVPN, tinc, XMPP, SOCKS5, are implemented, and any other protocol that can be tested using a regular expression, can be recognised. A typical use case is to allow serving several



services on port 443 (e.g. to connect to SSH from inside a corporate firewall, which almost never block port 443) while still serving HTTPS on that port.

- [topgrade](#) - Keeping your system up to date usually involves invoking multiple package managers. This results in big, non-portable shell one-liners saved in your shell. To remedy this, topgrade detects which tools you use and runs the appropriate commands to update them. ([see also](#))
- [ruffle](#) - is a Flash Player emulator built in the Rust programming language.
- [X2Go](#) - X2Go enables you to access a graphical desktop of a computer over a low bandwidth (or high bandwidth) connection. X2Go is a Remote Desktop solution, which some vendors vaguely call Remote Control. This is not to be confused with Microsoft Remote Desktop Connection, which is a competing Remote Desktop solution and protocol. With X2Go, you mainly access Linux computers. The Linux computer you are accessing is the X2Go Server. (There are ways to connect to a Windows computer as well; some of them are only available with the Linux X2Go Client.)
  - [Using the X2Go Desktop Sharing Feature](#)
- [OpenCelium](#) - verbindet auf einfache Art Applikationen, damit sie nahtlos kommunizieren und Daten einfach untereinander austauschen können. Mit OpenCelium wird so aus dem Schreiben und Aktualisieren von API-Skripts für den IT-Administrator ein einfaches Drag & Drop an einem komfortablen Frontend. Open Source API-Hub OpenCelium. Systeme miteinander verbind z.B. i-doit, Icinga2, CheckMK, ZnuNy, OTOBO, JIRA, Trello uvm. (SOAP, REST etc.)
  - <https://docs.opencelium.io/en/prod/>
- [Monica](#) - Personal Relationship Manager - is an open-source web application to organize and record your interactions with your loved ones. We call it a PRM, or Personal Relationship Management. Think of it as a CRM (a popular tool used by sales teams in the corporate world) for your friends or family.
- [Cronic](#) - is a shell script to help control the most annoying feature of cron: unwanted emailed output, or "cram" (cron spam).
- [Awesome-Selfhosted](#) - Self-hosting is the practice of hosting and managing applications on your own server(s) instead of consuming from SaaS providers. This is a list of [https://en.wikipedia.org/wiki/Free\\_software](https://en.wikipedia.org/wiki/Free_software) > [Free Software network services](#) and [web applications](#) which can be hosted on your own server(s). [Non-Free](#) software is listed on the [Non-Free](#) page. [HTML version](#) (recommended), [Markdown version](#) (legacy).

## Logging / Log Files

- [Splunk](#)
- [Fluentd](#) - is an open source data collector for unified logging layer. Fluentd allows you to unify data collection and consumption for a better use and understanding of data.
- [Graylog Open](#) - provides the core centralized log management functionality you need to collect, enhance, store, and analyze data. Support is through Graylog's online resources, community, and other Open groups.
- [Logstash](#) - is a free and open server-side data processing pipeline that ingests data from a multitude of sources, transforms it, and then sends it to your favorite "stash." Centralize, transform & stash your data.
- [Fluent Bit](#) - is a super fast, lightweight, and highly scalable logging and metrics processor and forwarder. It is the preferred choice for cloud and containerized environments.
- [ELK Stack](#) - „ELK“ ist die Abkürzung für drei Open-Source-Projekte: Elasticsearch, Logstash und Kibana. Elasticsearch ist eine Suchmaschine und Analytics Engine. Logstash ist eine serverseitige Datenverarbeitungspipeline, die Daten aus unterschiedlichen Quellen gleichzeitig ingestiert, sie umwandelt und dann an einen Speicherort, z. B. an Elasticsearch, sendet. Kibana ermöglicht die Visualisierung von Daten durch Diagramme und Tabellen in Elasticsearch. Der Elastic Stack ist im Grunde eine Entwicklungsstufe des ELK Stack.
- [Paessler - syslog](#) - Syslog steht für System Logging Protocol und ist ein Standard-Protokoll, das verwendet wird, um Systemprotokoll- oder Ereignismeldungen an einen spezifischen Server zu senden, der als Syslog-Server bezeichnet wird. Es wird in erster Linie verwendet, um unterschiedliche Geräteprotokolle von mehreren verschiedenen Computern an einem zentralen Standort für Überwachungs- und Kontrollzwecke zu sammeln.

## Monitoring

- [Top 11 Open Source Linux Monitoring tools](#)
- [Sensu](#) - Full-stack monitoring for today's business. Monitor servers, services, application health, and business KPIs. Collect and analyze custom metrics. Get notified about failures before your users do. Give your business the competitive advantage it deserves.
- [Uptime Kuma](#) - It is a self-hosted monitoring tool like "Uptime Robot". Monitoring uptime for HTTP(s) / TCP / HTTP(s) Keyword / Ping / DNS Record / Push / Steam Game Server / Docker Containers. Fancy, Reactive, Fast UI/UX. Notifications via Telegram, Discord, Gotify, Slack, Pushover, Email (SMTP), and 90+ notification services. 20 second intervals. Multi Languages. Multiple Status Pages. Map Status Page to Domain. Ping Chart. Certificate Info. Proxy Support. 2FA available.
- [Huginn](#) - Create agents that monitor and act on your behalf. Your agents are standing by! Huginn is a system for building agents that perform automated tasks for you online. They can read the web, watch for events, and take actions on your behalf. Huginn's Agents create and consume events, propagating them along a directed graph. Think of it as a hackable version of IFTTT or Zapier on your own server. You always know who has your data. You do.
- [Kieker](#) - Application performance monitoring and dynamic software analysis. The internal behavior of large-scale software systems cannot be determined on the basis of static (e.g., source code) analysis alone. Kieker provides complementary dynamic analysis capabilities, i.e., monitoring and analyzing a software system's runtime behavior — enabling Application Performance Monitoring and Architecture Discovery.

## Networking

- [Global Socket](#) - Connect like there is no firewall. Securely. Global Socket allows two workstations on different private networks to

communicate with each other. Through firewalls and through NAT - like there is no firewall.

- [sshuttle](#) - where transparent proxy meets VPN meets ssh. As far as I know, sshuttle is the only program that solves the following common case: Your client machine (or router) is Linux, FreeBSD, or MacOS. You have access to a remote network via ssh. You don't necessarily have admin access on the remote network. The remote network has no VPN, or only stupid/complex VPN protocols (IPsec, PPTP, etc). Or maybe you are the admin and you just got frustrated with the awful state of VPN tools. You don't want to create an ssh port forward for every single host/port on the remote network. You hate openssh's port forwarding because it's randomly slow and/or stupid. You can't use openssh's PermitTunnel feature because it's disabled by default on openssh servers; plus it does TCP-over-TCP, which has terrible performance.
  - [Using Sshuttle as a service](#)
  - [sshuttle einfache und schnelle VPN-Alternative](#)
- [node-dhcp](#) - is a RFC compliant DHCP client and server implementation on top of node.js.
- [Getting started with socat, a multipurpose relay tool for Linux](#) - If you need an advanced sysadmin tool for your toolbox, this is the one. Socat allows for bidirectional data transfers from one location to another.
- [ASN Lookup Tool and Traceroute Server](#) - ASN / RPKI validity / BGP stats / IPv4v6 / Prefix / ASPath / Organization / IP reputation / IP geolocation / IP fingerprinting / Network recon / lookup tool / Web traceroute server. This script serves the purpose of having a quick OSINT command line tool at disposal when investigating network data, which can come in handy in incident response scenarios as well (with features such as bulk geolocation and threat scoring).

## OCR / Texterkennung

- [NormCap](#) - OCR powered screen-capture tool to capture information instead of images. For Linux, macOS and Windows.

## Password Management

- [KeePass](#) - Today you need to remember many passwords. You need a password for the Windows network logon, your e-mail account, your website's FTP password, online passwords (like website member account), etc. etc. etc. The list is endless. Also, you should use different passwords for each account. Because if you use only one password everywhere and someone gets this password you have a problem... A serious problem. The thief would have access to your e-mail account, website, etc. Unimaginable.
- [Passman](#) - Passman is a full featured password manager. Features: Vaults, Vault key is never sent to the server, Credentials are client side encrypted with 256bit AES, Credentials are server side, encrypted with 256bit AES, Ability to add custom fields to credentials, Built-in OTP (One Time Password) generator, Password analyzer, Share passwords internally and via link in a secure manner. Import from various password managers (KeePass, LastPass, DashLane, ZOH0, Clipperz.is ) For an demo of this app visit <https://demo.passman.cc>
- [pass - the standard unix password manager](#) - Password management should be simple and follow Unix philosophy. With pass, each password lives inside of a gpg encrypted file whose filename is the title of the website or resource that requires the password. These encrypted files may be organized into meaningful folder hierarchies, copied from computer to computer, and, in general, manipulated using standard command line file management utilities.
- [vaultwarden](#) - Alternative implementation of the Bitwarden server API written in Rust and compatible with upstream Bitwarden clients\*, perfect for self-hosted deployment where running the official resource-heavy service might not be ideal.

## Paywall avoidance

- [Ladder](#) - is a web proxy to help bypass paywalls. This is a selfhosted version of [1ft.io](#) and [12ft.io](#). It is inspired by [13ft](#).
- [Archive.today](#) - is a time capsule for web pages! It takes a 'snapshot' of a webpage that will always be online even if the original page disappears. It saves a text and a graphical copy of the page for better accuracy and provides a short and reliable link to an unalterable record of any web page

## Projekt- & Taskmanagement

- [OpenProject](#) - Open source project management software. Efficient classic, agile or hybrid project management in a secure environment. OpenProject can be installed on-premises in your own infrastructure, having full control and 100% data ownership. You know where your data is stored and what happens to it, without external influence.
- [Kanboard](#) is a project management software that focuses on the Kanban methodology.
  - <https://play.google.com/store/apps/details?id=com.gojaponte.khanos>
- [kabmat](#) - TUI program for managing kanban boards with vim-like keybindings
- [Vikunja](#) - The open-source, self-hostable to-do app. Organize everything, on all platforms.
- [Foam](#) - is a personal knowledge management and sharing system inspired by Roam Research, built on Visual Studio Code and GitHub.

## Remote Access

- [RustDesk](#) - Open source virtual / remote desktop infrastructure for everyone! A remote desktop software, the open source TeamViewer alternative, works out of the box, no configuration required. You have full control of your data, with no concerns about security. You can use our public rendezvous/relay server, or self-hosting, or write your own server.
- [HopToDesk](#) - is a free remote desktop tool allowing users to share their screen and allow remote control access to their computers and devices. Unlike other similar tools such as TeamViewer or AnyDesk, HopToDesk is free for both personal and business use,

provides true end-to-end encryption for all peer communications, and open source.

## Remote Shell (shared)

- [tmate](#) - Instant Terminal Sharing. Once installed, launch tmate with `tmate`. You should see something like `ssh PMhmes4XeKQyBR2JtvnQt6BJw@nyc1.tmate.io` appearing. This allows others to join your terminal session. All users see the same terminal content at all time. This is useful for pair programming where two people share the same screen, but have different keyboards.

## Static Website Generators

- [Pelican](#) - is a static site generator that requires no database or server-side logic.
  - <https://docs.getpelican.com/en/latest/>
- [Publii](#) - is a desktop-based CMS for Windows, Mac and Linux that makes creating static websites fast and hassle-free, even for beginners.
- [Hugo](#) - is one of the most popular open-source static site generators. With its amazing speed and flexibility, Hugo makes building websites fun again.
- [Bludit](#) - takes care of the security and privacy of the users. Bludit doesn't track or uses external libraries, frameworks and other resources.

## Time Tracking

- [Kimai](#) - Free time-tracking for everyone. Kimai is an open-source time tracking solution. It tracks work time and prints out a summary of your activities on demand. Yearly, monthly, daily, by customer, by project ... Its simplicity is its strength. Due to Kimai's browser based interface it runs cross-platform, even on your mobile device. With Kimai, the boring process of feeding Excel spreadsheets with your working hours is not only simplified, it also offers dozens of other exciting features that you don't even know you're missing so far!

## tmux

- <https://github.com/remi/teamocil>

## Webtracking

- [Plausible](#) - is lightweight and open source web analytics. No cookies and fully compliant with GDPR, CCPA and PECR. Made and hosted in the EU, powered by European-owned cloud infrastructure.
- [Matomo](#) - Alternative zu Google Analytics für Teams, die Wert auf Datenschutz und Compliance legen. Gewinnen Sie beruhigende Sicherheit mit Matomo – eine DSGVO-konforme Webanalytik-Lösung, die 100 % präzise Daten liefert

## Tor

- <https://support.torproject.org/abuse/>
- [https://support.torproject.org/abuse/#abuse\\_ban-tor](https://support.torproject.org/abuse/#abuse_ban-tor)
- <https://2019.www.torproject.org/projects/tordnsel.html.en>
- <https://check.torproject.org/cgi-bin/TorBulkExitList.py>
- <https://check.torproject.org/>

## udev

- [Writing udev rules by Daniel Drake \(dsd\)](#)

## Umwelt

- [Sand & Stein - Pfannenbeschichtung](#) - Verleihe Deiner Pfanne neuen Glanz! Sende uns Deine abgenutzte Pfanne und wir verpassen ihr ein Premium-Finish. Unabhängig von Marke oder Hersteller – wir sorgen für erstklassige Qualität bei der Neubeschichtung.

## Veranstaltungen

- [cal.guckles.net](https://cal.guckles.net) - ein Kalender für Freie Software Events in Europa

- Chaos Computer Club & Umfeld
  - <https://events.ccc.de/>
  - <https://media.ccc.de/>
  - Häcksen & R3S - FireShonks 2022 Dec. 27th - 30th, 2022
  - [///Hacking in Parallel - Berlin/// 2022](#) - Dec. 27th - 30th, 2022
  - [Reconnect To Chaos 2022 - Potsdam](#) Dec. 27th - 30th, 2022
  - [Dezentrale Jahresendveranstaltung 2022](#) - Aufzeichnungen
  - [Intergalaktische Erfahrungsreise 2023](#) - 23.000 Meilen über dem Meer - 20. - 23.7.2023 Bamberg
  - [#tabsvongesternacht](#) - »Dass wir das Problem nicht verstehen ist ganz sicher kein Grund, keine Lösung anzubieten!« - Das Gruppentherapiesprechstundenkneipendings für Stay@homes, Nerds, Brotbackende, Hausbootbewohnende, Aquarienbetreibende, Reifrocklötende und alle, die Bock haben
- Chemnitzer Linuxtage
  - <https://chemnitzer.linux-tage.de/2021/en/programm/workshops>
  - <https://chemnitzer.linux-tage.de/2022/en/programm>
  - <https://chemnitzer.linux-tage.de/2023/de/programm>
- FOSDEM
  - <https://archive.fosdem.org/2021/schedule/events/>
  - <https://archive.fosdem.org/2022/schedule/events/>
  - <https://fosdem.org/2023/schedule/>
  - <https://fosdem.org/2023/schedule/events/>
- FrOSCon
  - <https://programm.froscon.org/2022/>
- Kieler Open Source und Linuxtage / Kielux
  - <https://www.kieler-linuxtage.de/>
  - <https://kielux.de/>
- Linuxday.at
  - GNU/LinuxDay in Vorarlberg - am 30. Sept. 2023
  - <https://www.linuxday.at/vortraege/2021>
- Tux Tage
  - <https://www.tux-tage.de/programm/>
  - <https://tuxtage3d.com/>
  - <https://jitsi.tux-tage.de/>
- [OpenRheinRuhr](#) - ist eine Messe mit Kongress rund um das Thema „Freie Software“. Freie Software ist aus Firmen, Verwaltungen, Bildungseinrichtungen und Privathaushalten nicht mehr wegzudenken. In der bevölkerungsreichsten Region Europas bietet der OpenRheinRuhr e.V. durch Ausstellungen, Vorträge und Workshops Informationen über Freie Software. Auch Themen jenseits der Technik, wie „Bürgerrechte im Netz“ oder die Handhabung von Lizenzen werden behandelt. Vorträge in mehreren Tracks sprechen Menschen mit unterschiedlichem Kenntnisstand an - vom Anfänger bis zum Profi. Entwickler & Projekte bekommen die Gelegenheit zum Erfahrungsaustausch.
- [19. Augsburger Linux-Infotag 2023](#) - 29. April 2023, HS Augsburg - Nach drei Jahren pandemiebedingter Pause wird die traditionelle Veranstaltungsreihe nun endlich wieder aufgenommen. Wir freuen uns auf angeregten Austausch und aktuelle Informationen rund um Linux, Open-Source und kreative Anwendungen von Technik, Wissenschaft und Bildung — und vor allem darauf, unsere Gäste wiederzusehen!
- [Tübix](#) - Der Tübix ist ein [Linuxtag](#) und fand 2015-2019 jeweils gegen Juni in [Tübingen](#) statt. Die Folien (pdf) und Tonspuren (ogg) der vergangenen Jahre sind unter [Downloads/Archiv](#) zu finden.
- Der **Tübix findet 2023 voraussichtlich am 1. Juli wieder statt**. Weitere Details und ein Cfp werden zu gegebener Zeit veröffentlicht.
- Die Videos vom Tübix 2019 sind online: [TIMMS Link](#)

## Verbraucherschutz

- [Teltarif.de - Neue Regeln: Tarife für Handy und Internet leichter kündbar](#)
- [Verbraucherzentrale NRW - Telefon-, Handy- und Internetverträge: Wichtige neue Kundenrechte](#)

## Vereine / Organisationen

- [Anoxinon e.V.](#) - für ein gemeinschaftliches Internet
- [Hostsharing eG](#) - ist eine Gemeinschaft von Menschen, die ihre Websites und Webanwendungen in einer gemeinsam betriebenen Community Cloud nachhaltig, unabhängig und technisch perfekt hosten wollen. Als starke und solidarische Genossenschaft bieten wir Webhosting, wie es sein sollte. Und zwar für alle. Für Privatpersonen, Freiberufler und kleine Vereine ebenso wie für IT-Systemhäuser, Reseller, Agenturen und mittelständische Unternehmen (KMU).
- [Digitalcourage e.V. \(FOEBUD\)](#) - Freiheit, Grundrechte und Demokratie.
- [Chaos Computer Club e.V.](#) - Der Chaos Computer Club e. V. (CCC) ist die größte europäische Hackervereinigung und seit über

- dreißig Jahren Vermittler im Spannungsfeld technischer und sozialer Entwicklungen.
- [erlangen.ccc.de](https://erlangen.ccc.de) - Bits'n'Bugs e.V.
- [Nürnberger Hackspace K4CG](#)
- [Codeberg](#) is a democratic community-driven, non-profit software development platform operated by Codeberg e.V. and centered around Codeberg.org, a Gitea-based software forge.
- [Projekt 31](#) - Das Projekt 31 begreift sich als offenes, auf Eigeninitiative basierendes Projekt, welches versucht verschiedensten emanzipatorischen Ideen und Praxisansätzen offen zu stehen und diese in einem gemeinsamen Prozess zu realisieren. Es soll der Vereinzelung in der Gesellschaft entgegen wirken und Menschen dazu motivieren sich einzubringen und ihr Umfeld aktiv zu gestalten.
- [Signal Foundation](#) - Developing open source privacy technology that protects free expression and enables secure global communication.
- [The Document Foundation](#) - It is an independent self-governing meritocratic entity, created by a large group of Free Software advocates, in the form of a charitable Foundation under German law (gemeinnützige rechtsfähige Stiftung des bürgerlichen Rechts). It continues to build on the foundation of the dedicated work by the OpenOffice.org Community. It was created in the belief that the culture born of an independent Foundation brings out the best in contributors and will deliver the best software for users. It is open to any individual who agrees with our core values and contributes to our activities. It welcomes corporate participation, e.g. by sponsoring individuals to work as equals alongside other contributors in the community. The Document Foundation is proud to be the home of LibreOffice, the next evolution of the world's leading free office suite, and The Document Liberation Project, a community of developers united to free users from vendor lock-in of content by providing powerful tools for the conversion of proprietary file formats to the corresponding ODF format.
- [Softwerkskammer Nürnberg Regionalgruppe](#) - Software Craft und Testing Communities in Deutschland, Österreich und der Schweiz.
- [Bluepingu](#) - Wir sind ein eingetragener und als gemeinnützig anerkannter Verein aus der Region Nürnberg / Fürth. Unser Ziel ist es unsere Städte und unsere Region lebenswerter und grüner zu machen und die natürlichen Lebensgrundlagen auf unserem Planeten zu erhalten. Wir denken global und handeln lokal. Unsere Projekte und Veranstaltungen sind für alle Bürger\*innen offen und zeigen, dass ein nachhaltiger und ressourcenschonender Lebensstil nicht nur unsere Zukunft sichert, sondern auch Spaß macht.
- [Greenpeace Energy - Green Planet Energy](#) - Greenpeace Energy oder - seit Herbst 2021 - unter neuen Namen als Green Planet Energy: unser Ziel ist und bleibt die Energiewende, eine Energieversorgung aus rein erneuerbaren Quellen, ohne Kohle und Atom.
- [adminForge](#) - bietet euch kostenlose Dienste an. In der Service Beschreibung findet ihr mehr Infos zu den Diensten. Unser Ziel ist es euch eine freie und datensparsame Alternative zu bekannten Diensten zur Verfügung zu stellen.

## Video Conferencing

- [Senfcall.de](#) - Privatsphäre respektierende Videokonferenzen

## VIM

- [Vim Tips Wiki](#) - This wiki is about Vim, an open-source, powerful and configurable text editor. We aim to exchange tips and tricks with other Vim users. Please help by improving or adding comments to any tip. If you are new to Vim, we have plenty of tips that will help you get started.
- [10 Advanced Vim Features \(You Probably Didn't Know\)](#)

## Virtualization

- <https://github.com/wimpysworld/quickemu>
- <https://linuxcontainers.org/lxc/introduction/>
- <https://linuxcontainers.org/lxd/introduction/>
- [DATEV - Virtualisierung: Erfahrungen aus der Praxis](#)
- [Virtualbox Downloads - Guest Additions, etc](#)
  - [Cannot download VirtualBox Guest Additions disk image file](#)

## Voice Assistant

- [Open Assistant](#) - Our first step towards open source artificial intelligence is a VUI, or a "voice user interface." This voice interface needs to function offline for total privacy and to enable the most common system tasks to be performed quickly with simple spoken commands. Conversational elements could be included as well, for testing and entertainment purposes.

## Vorlagen

- [17+ Project Outline Examples & Templates](#)

## Websites

- <https://zoomquilt.org/>
- <https://zoomquilt2.com/>
- <http://somethingnothing.net/>
- <http://www.ro.me/film>

## Webshops

- [memo - Nachhaltig Einkaufen](#)
- [Tischanschlussfeld.com](https://Tischanschlussfeld.com) - Shop für Tischtanks

## Webtools

- [Team Cymru IP to ASN Lookup v1.0](#)
- [Certificate Search](#)
- [CryptCheck](#) - check for cryptography security level and best practices compliance.
- [Travic Public Transportation Transit Visualization](#)
- [Regex 101](#) has gone over many iterations, and started as a simple hobby project which has now grown to become one of the largest regex testing services in the world. You can view all the iterations over on the web archive.
- [GNU sed live editor](#) - GNU sed stream editor compiled to JavaScript.
- [DeepL - Translator](#)
- [Grafikkarten Rangliste](#)
- [Google Safe Browsing Site Status](#) - Google's Safe Browsing technology examines billions of URLs per day looking for unsafe websites. Every day, we discover thousands of new unsafe sites, many of which are legitimate websites that have been compromised. When we detect unsafe sites, we show warnings on Google Search and in web browsers. You can search to see whether a website is currently dangerous to visit.
- [gressgraph](#) - Visualize Your iptables Firewall. gressgraph produces a graph of your iptables ruleset using Graphviz. You can use the graph to look for vulnerabilities or redundancies, get a "feel" for a network, showcase your firewall.
- [internex - IPv6 Subnet Calculator](#)
- [Heise - IPv4 Netzwerkrechner1](#)
- [XKPassword](#) - XKCD Password generator
- [Bahn Experte](#) - Dein Begleiter um Stressfrei Bahn zu fahren. Sucht die besten Informationen aus allen Quellen um dich ans Ziel zu bringen.
- [Gehaltsrechner \(Arbeitgeber\)](#)
- [Gehaltsrechner \(Arbeitnehmer\)](#)
- [Geopedia](#) - explore, discover and travel the globe
- [ifconfig.co](#) - What is my IP address?
- [sprunge.us](#) - command line pastebin.
- [termbin.com](#) - Terminal Pastebin
- [Rebex SSH Check](#) - This free SSH testing tool checks the configuration of given server accessible over internet. We don't ask you for any login or password, this service only returns information available during SSH handshake - notably supported encryption and MAC algorithms, and an overview of offered server public keys.
- [Blacklight](#) - A Real-Time Website Privacy Inspector By Surya Mattu. Who is peeking over your shoulder while you work, watch videos, learn, explore, and shop on the internet? Enter the address of any website, and Blacklight will scan it and reveal the specific user-tracking technologies on the site—and who's getting your data. You may be surprised at what you learn.

## WiFi

- [HORST - Highly Optimized Radio Scanning Tool](#) - horst is a small, lightweight IEEE802.11 WLAN analyzer with a text interface. Its basic function is similar to tcpdump, Wireshark or Kismet, but it's much smaller and shows different, aggregated information which is not easily available from other tools. It is made for debugging wireless LANs with a focus on getting a quick overview instead of deep packet inspection and has special features for Ad-hoc (IBSS) mode and mesh networks. It can be useful to get a quick overview of what's going on all wireless LAN channels and to identify problems.

## Windows

- [Microsoft Edge Developer - Virtual Machines](#) - Test IE11 and Microsoft Edge Legacy using free Windows 10 virtual machines you download and manage locally. These virtual machines **expire after 90 days**. We recommend setting a snapshot when you first install the virtual machine which you can roll back to later. Mac users will need to use a tool that supports zip64, like The Unarchiver, to unzip the files. The **password to your VM is "Passw0rd!"**.
- [AutoMe](#) - Keyboard macro & Mouse macro program. Leading Windows macro recorder. AutoMe is an Award winning automation system, which helps you fully automate your work on computers. We control computer through keyboard and mouse. AutoMe can automate compute related tasks by simulating mouse movements, mouse clicks, and keyboard key presses. The windows macro

automation software can record and replay mouse and keyboard macros so that mouse keyboard actions such as mouse clicks, mouse movements, keyboard key presses can be repeated whenever you want.

- **FileMenu Tools** - The application adds built-in utilities to perform operations on files and folders and adds custom commands which let you run external applications, copy/move to a specific folder or delete specific file types. With FileMenu Tools, you also can customize the "Send to..." submenu, and either enable or disable context-menu commands added by other applications.
- **MobaXterm** is your ultimate toolbox for remote computing. In a single Windows application, it provides loads of functions that are tailored for programmers, webmasters, IT administrators and pretty much all users who need to handle their remote jobs in a more simple fashion. MobaXterm provides all the important remote network tools (SSH, X11, RDP, VNC, FTP, MOSH, ...) and Unix commands (bash, ls, cat, sed, grep, awk, rsync, ...) to Windows desktop, in a single portable exe file which works out of the box.
- **Windows Subsystem for Linux** - The Windows Subsystem for Linux lets developers run a GNU/Linux environment, including most command-line tools, utilities, and applications - directly on Windows, unmodified, without the overhead of a traditional virtual machine or dualboot setup
- **MSYS2** - Software Distribution and Building Platform for Windows. MSYS2 is a collection of tools and libraries providing you with an easy-to-use environment for building, installing and running native Windows software.
- **mRemoteNG** - is a fork of mRemote: an open source, tabbed, multi-protocol, remote connections manager for Windows. mRemoteNG adds bug fixes and new features to mRemote and allows you to view all of your remote connections in a simple yet powerful tabbed interface.
- **Cygwin** - a large collection of GNU and Open Source tools which provide functionality similar to a Linux distribution on Windows. A DLL (cygwin1.dll) which provides substantial POSIX API functionality.
- **WinPython** - is a free open-source portable distribution of the Python programming language for Windows XP/7/8, designed for scientists, supporting both 32bit and 64bit versions of Python 2 and Python 3.
- **WinSCP** - is an open source free SFTP client, FTP client, WebDAV client, S3 client and SCP client for Windows. Its main function is file transfer between a local and a remote computer. Beyond this, WinSCP offers scripting and basic file manager functionality.
- **PuTTY** - is a free implementation of SSH and Telnet for Windows and Unix platforms, along with an xterm terminal emulator. It is written and maintained primarily by Simon Tatham.
- **MinGW** - oder Mingw32 ist eine Portierung der Entwicklerwerkzeuge GNU Compiler Collection und GNU Debugger für Windows. Es ist unabhängig von dem konkurrierenden Projekt Mingw-w64. MinGW entstand aus dem Cygwin-Projekt heraus. Es wird, anders als bei Cygwin, keine Kompatibilitätsschicht in Form einer DLL benötigt.
- **Sysinternals - Process Explorer**
- **Microsoft PowerToys** - Hilfsprogramme zum Anpassen von Windows

## Run Task with elevated privileges

- **Can Genshin Impact be run as non-administrator on Windows 10?**
  - **Robotronic - RunAsRob overview** - Run an application as administrator, run under system account, run as service or run as different user. Set program privileges instead of user rights and limit administrator privileges on selected applications. RunAsRob offers four fundamentally different methods to start a program with other privileges than the logged on user.
- **Make Me Admin** - is a simple, open-source application for Windows that allows standard user accounts to be elevated to administrator-level, on a temporary basis.

## Notepad++

- <https://notepad-plus-plus.org/>
- **MARKDOWN BASICS: Tips To Enable Notepad++ Markdown Preview And Syntax Highlighting**
- Plugins → Plugins Admin → MarkdownViewer++ → install
- <https://github.com/Edditoria/markdown-plus-plus>

## Wissen

- **What is a 1x Engineer?** - You might have already heard of a 10x engineer. Probably too often, actually. If there's such a thing as a 10x engineer, surely there must be a 1x engineer, too?
- **Checkliste für Universaldilettanten** - A jack of all trades is a master of none, but oftentimes better than a master of one. Die VerwalterInnen der menschlichen Ressourcen suchen daher gerne so genannte "T-Shaped-Professionals". Der senkrechte Strich des T symbolisiert dabei das Spezialwissen, während der Querstrich das Breitenwissen darstellt. Stoeps und leyrer erzählen aus dem Nähkästchen von (in Summe) über 60 Jahren IT Erfahrung, welche Themen aus ihrer Sicht in dem den Querstrich nicht fehlen sollten.
- **Bus Factor** - The bus factor is a measurement of the risk resulting from information and capabilities not being shared among team members, derived from the phrase "in case they get hit by a bus".
- **Dunning-Kruger Effect** - The Dunning-Kruger effect is the cognitive bias whereby people with low ability at a task overestimate their ability.
- **How Many .com Domain Names Are Unused?** - When looking for .com names, I've been frustrated by how many are already taken but appear to be unused. It can feel like people are registering every pronounceable combination of letters in every major language, and even the unpronounceable short ones. Is there rampant domain speculation, or do I just think of the same names as everyone else? Let's look at the data...
- **More Developers, More Problems** - How do we reduce bugs in software? The conventional wisdom is wrong, and the data will surprise you. Software developers widely believe that more code equates to more bugs. The exact relationship is not well-understood, but many assume it to be linear (i.e. "bugs per thousand lines of code"). However, the top 100,000 most popular

GitHub repositories show no such constant relationship between lines of code and issues. Further, lines of code is not a reliable indicator of (reported) bug count.

- [Project Awesome](#) - Curated list of awesome lists
- [Project Awesome - Testing Section](#)
- [How To Ask Questions The Smart Way](#)
- [Wie man Fragen richtig stellt](#)
- [Das XY-Problem ist ein Kommunikationsproblem](#) - welches hauptsächlich bei der Kundenbetreuung und ähnlichen Situationen auftritt. Hierbei wird das eigentliche Problem, X, von der Person, die Unterstützung sucht, verschleiert. Anstelle direkt nach einer Lösung für das Problem X zu fragen, fragt diese Person nach der Lösung für ein sekundäres Problem, Y. Hierbei glaubt der Fragende, dass die Lösung von Problem Y erlaubt, das eigentliche Problem X zu lösen.
- [When U.S. air force discovered the flaw of averages](#)
- [Kruskal Count and Kangaroo Method](#)
- [Reality has a surprising amount of detail](#)
- [Welcome to Smithsonian Open Access](#) - where you can download, share, and reuse millions of the Smithsonian's images—right now, without asking. With new platforms and tools, you have easier access to more than 4.4 million 2D and 3D digital items from our collections—with many more to come. This includes images and data from across the Smithsonian's 19 museums, nine research centers, libraries, archives, and the National Zoo.
- [Hufeisen im Kopf und die Gleichsetzung von rechts und links](#) - Die Extremismustheorie behauptet, dass die Mitte der Gesellschaft von ihren Rändern bedroht wird. Eigentlich egal, ob von links oder rechts. Doch besonders die Gleichsetzung von Rechtsextremismus und Linksextremismus führt oft dazu, rechte Gewalt zu verharmlosen. Ein Interview zur Extremismustheorie mit den Herausgebern des Sammelbandes „Extrem Unbrauchbar“.
- [Online Etymology Dictionary](#) - This is a map of the wheel-ruts of modern English. Etymologies are not definitions; they're explanations of what our words meant and how they sounded 600 or 2,000 years ago. The dates beside a word indicate the earliest year for which there is a surviving written record of that word (in English, unless otherwise indicated). This should be taken as approximate, especially before about 1700, since a word may have been used in conversation for hundreds of years before it turns up in a manuscript that has had the good fortune to survive the centuries.
- [To Live in Their Utopia: Why Algorithmic Systems Create Absurd Outcomes](#)
- [Die Lobbypedia](#) - ist ein unabhängiges und kritisches Lobbyismus-Lexikon. Wir beleuchten den Einfluss von Lobbyismus auf Politik und Öffentlichkeit. Ein Projekt von LobbyControl e.V.
- [Blind men and an elephant](#)
- [Das Braess-Paradoxon](#) - ist eine Veranschaulichung der Tatsache, dass eine zusätzliche Handlungsoption unter der Annahme rationaler Einzelentscheidungen zu einer Verschlechterung der Situation für alle führen kann. Das Paradoxon wurde 1968 von dem deutschen Mathematiker Dietrich Braess veröffentlicht.
- [linux-hardware.org](#) - This is a project to anonymously collect hardware details of Linux-powered computers over the world and help people to collaboratively debug hardware related issues, check for Linux-compatibility and find drivers.
- [bsd-hardware.info](#) - This is a project to anonymously collect hardware details of BSD-powered computers over the world and help people to collaboratively debug hardware related issues, check for BSD-compatibility and find drivers.
- [The Bastard Operator From Hell](#) - The semi-complete, gluten free, cold pressed and high fibre BOFH archives, torn straight from the Bastard's own jotter pad by the very forces of nature, now loving presented in a hard-to-see font by your favourite web renderer.
- [yak shaving](#)
  - Any apparently useless activity which, by allowing you to overcome intermediate difficulties, allows you to solve a larger problem. "I was doing a bit of yak shaving this morning, and it looks like it might have paid off."
  - A less useful activity done consciously or subconsciously to procrastinate about a larger but more useful task. "I looked at a reference manual for my car just to answer one question, but I spent the whole afternoon with my nose buried in it, just yak shaving, and got no work done on the car itself."
- [RITA -- The Reliable Internetwork Troubleshooting Agent](#) - A Description of the usage of Nondeterministic Troubleshooting and Diagnostic Methodologies as applied to today's complex nondeterministic networks and environments.
- [Why Corporate America Is Obsessed With "Company Culture"](#)
- [Industrial melanism](#) - is an evolutionary effect prominent in several arthropods, where dark pigmentation (melanism) has evolved in an environment affected by industrial pollution, including sulphur dioxide gas and dark soot deposits.
- [bikeshedding](#) - The term was coined as a metaphor to illuminate Parkinson's Law of Triviality. Parkinson observed that a committee whose job is to approve plans for a nuclear power plant may spend the majority of its time on relatively unimportant but easy-to-grasp issues, such as what materials to use for the staff bikeshed, while neglecting the design of the power plant itself, which is far more important but also far more difficult to criticize constructively. It was popularized in the Berkeley Software Distribution community by Poul-Henning Kamp and has spread from there to the software industry at large.
- [isotopp: Fefe ist ja ein herzensguter Mensch, aber leider viel zu optimistisch.](#) - Er geht davon aus, daß Dinge funktionieren würden, wenn Firmen sie selbst machen.
- [Emojipedia](#) - Home of Emoji Meanings
- [The Lexicon of Comicana](#)
- [Cynefin framework](#) - shows the four habitats of the Cynefin Framework - Clear, Complicated, Complex, and Chaotic - plus Confusion as the state of not knowing. The Cynefin framework (/ka'nevɪn/ kuh-NEV-in) is a conceptual framework used to aid decision-making. Created in 1999 by Dave Snowden when he worked for IBM Global Services, it has been described as a "sense-making device".
- [Linux Distribution Timeline](#)
  - [Linux Distributions Timeline - Version 22.10](#)
- [Keeping the lights on \(KTLO\): what it means in IT and why it matters](#)
- [Kristian Köhntopp - Der Admin-Beruf](#)
- [Scunthorpe problem](#) - The Scunthorpe problem is the unintentional blocking of online content by a spam filter or search engine because their text contains a string (or substring) of letters that appear to have an obscene or otherwise unacceptable meaning. Names, abbreviations, and technical terms are most often cited as being affected by the issue.
- [Software rot](#) - (bit rot, code rot, software erosion, software decay, or software entropy) is the deterioration of software quality or



performance over time that leads to it becoming faulty, unusable, or needing upgrade. [Heroku - Software Erosion](#)

## IPv6

- [Google IPv6 Stats](#) - Google collects statistics about IPv6 adoption in the Internet on an ongoing basis. We hope that publishing this information will help Internet providers, website owners, and policy makers as the industry rolls out IPv6.
- [Hurricane Electric - Global IPv6 Deployment Progress Report](#) - This page was developed in order to provide metrics for global IPv6 deployment.

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