

# awesome-sysadmin Public

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## Awesome Sysadmin

awesome

A curated list of amazingly awesome open-source sysadmin resources.

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A curated list of amazingly awesome Free and Open-Source sysadmin resources. Please read the [Pull Request template](#) if you wish to add software and consider [donating](#) to the FLOSS projects you use regularly. Please consider contributing to fix one of the pinned [issues](#) if your time allows.

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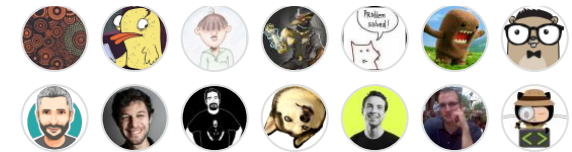
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## Software

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### Automation

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Build automation.

[Apache Ant](#) - Automation build tool, similar to make, a library and command-line tool whose mission is to drive processes described in build files as targets and extension points dependent upon each other. ([Source Code](#)) Apache-2.0

Java

[Apache Maven](#) - Build automation tool mainly for Java. A software project management and comprehension tool. Based on the concept of a project object model (POM), Maven can manage a project's build, reporting and documentation from a central piece of information. ([Source Code](#)) Apache-2.0

Java

[Bazel](#) - A fast, scalable, multi-language and extensible build system. Used by Google. ([Source Code](#)) Apache-2.0 Java

[Bolt](#) - You can use Bolt to run one-off tasks, scripts to automate the provisioning and management of some nodes, you can use Bolt to move a step beyond scripts, and make them shareable. ([Source Code](#)) Apache-2.0 Ruby

[GNU Make](#) - The most popular automation build tool for many purposes, make is a tool which controls the generation of executables and other non-source files of a program from the program's source files. ([Source Code](#)) GPL-3.0 C

[Gradle](#) - Another build automation system. ([Source Code](#)) Apache-2.0 Groovy/Java

[Rake](#) - Build automation tool similar to Make, written in and extensible in Ruby. ([Source Code](#)) MIT Ruby

## Backups

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[Backup](#) software.

See also: [Restic's list of Linux backup software](#)

[Amanda](#) - Backup and archive many computers on a network to disk, tape changer/drive or cloud storage. ([Source Code](#)) MIT C

[Backupninja](#) - Lightweight, extensible meta-backup system, provides a centralized way to configure and coordinate many different backup utilities. GPL-2.0 Shell

[BackupPC](#) - High-performance, enterprise-grade system for backing up to a server's disk.. ([Source Code](#)) GPL-3.0 Perl

[Bareos](#) - Cross-network backup solution which preserves, archives, and recovers data from all major operating systems. ([Source Code](#)) AGPL-3.0 C++/C

[Barman](#) - Backup and Recovery Manager for PostgreSQL. ([Source Code](#)) GPL-3.0 Python

[BorgBackup](#) - Deduplicating archiver with compression and authenticated encryption. ([Source Code](#)) BSD-3-Clause Python

[Burp](#) - Network backup and restore program. ([Source Code](#)) AGPL-3.0 C

[Dar](#) - Which stands for Disk ARchive, is a robust and rich featured archiving and backup software of the tar style. ([Source Code](#)) GPL-2.0 C++

[Duplicati](#) - Backup client that securely stores encrypted, incremental, compressed backups on cloud storage services and remote file servers. ([Source Code](#)) LGPL-2.1 C#

[Duplicity](#) - Encrypted bandwidth-efficient backup using the rsync algorithm. ([Source Code](#)) GPL-2.0 Python

[Proxmox Backup Server](#) - Proxmox Backup Server is an enterprise-class, client-server backup solution that is capable of backing up virtual machines, containers, and physical hosts. ([Source Code](#)) GPL-3.0 Rust

[rclone](#) - Command-line program to sync files and directories to and from different cloud storage providers.. ([Source Code](#)) MIT Go

[Rdiff-backup](#) - Reverse differential backup tool, over a network or locally. ([Source Code](#)) GPL-2.0 Python

[Restic](#) - Easy, fast, verifiable, secure and efficient remote backup tool. ([Source Code](#)) BSD-2-Clause Go

[Rsnapshot](#) - Filesystem snapshot utility based on rsync. ([Source Code](#)) GPL-2.0 Perl

[Shield](#) - A pluggable architecture for backup and restore of database systems. MIT Go

[UrBackup](#) - Client/Server Open Source Network Backup for Windows, MacOS and Linux. ([Source Code](#)) AGPL-3.0 C/C++

## Build and software organization tools

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Build and software organization tools.

[EasyBuild](#) - EasyBuild builds software and modulefiles for High Performance Computing (HPC) systems in an efficient way. ([Source Code](#)) GPL-2.0 Python

[Environment Modules](#) - Environment Modules provides for the dynamic modification of a user's environment via modulefiles. ([Source Code](#)) GPL-2.0 Tcl

[Lmod](#) - Lmod is a Lua based module system that easily handles the MODULEPATH Hierarchical problem. ([Source Code](#)) MIT Lua

[Spack](#) - A flexible package manager that supports multiple versions, configurations, platforms, and compilers. ([Source Code](#)) MIT/Apache-2.0 Python

## ChatOps

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Conversation-driven development and management.

\_See also: [/r/chatops](#)\*

[Eggdrop](#) - The oldest Internet Relay Chat (IRC) bot still in active development. ([Source Code](#)) GPL-2.0 C

[Errbot](#) - Plugin based chatbot designed to be easily deployable, extensible and maintainable. ([Source Code](#)) GPL-3.0 Python

[Hubot](#) - A customizable, life embetterment robot. ([Source Code](#)) MIT Nodejs

## Cloud Computing

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[Cloud computing](#) is the on-demand availability of computer system resources, especially data storage (cloud storage) and computing power, without direct active management by the user.

Please visit [Cloud Native Software Landscape](#)

## Code Review

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[Code review](#) is a software quality assurance activity in which one or several people check a program mainly by viewing and reading parts of its source code.

Please visit [awesome-selfhosted/Software Development - Project Management](#)

## Configuration Management

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[Configuration management \(CM\)](#) is a systems engineering process for establishing and maintaining consistency of a product's performance, functional, and physical attributes with its requirements, design, and operational information throughout its life.

[Ansible](#) - Provisioning, configuration management, and application-deployment tool. ([Source Code](#)) GPL-3.0 Python

[CFEngine](#) - Configuration management system for automated configuration and maintenance of large-scale computer systems. ([Source Code](#)) GPL-3.0 C

[Chef](#) - Configuration management tool using a pure-Ruby, domain-specific language (DSL) for writing system configuration "recipes". ([Source Code](#))



Apache-2.0 Ruby

[Puppet](#) - Software configuration management tool which includes its own declarative language to describe system configuration. ([Source Code](#)) Apache-2.0 Ruby/C

[Rudder](#) - Scalable and dynamic configuration management system for patching, security & compliance, based on CFEngine. ([Source Code](#)) GPL-3.0 Scala

[Salt](#) - Event-driven IT automation, remote task execution, and configuration management software. ([Source Code](#)) Apache-2.0 Python

## Configuration Management Database

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Configuration management database (CMDB) software.

*Related:* [IT Asset Management](#)

[Collins](#) - At Tumblr, it's the infrastructure source of truth and knowledge. ([Source Code](#)) Apache-2.0 Docker/Scala

[i-doit](#) - IT Documentation and CMDB. AGPL-3.0 PHP

[iTop](#) - Complete ITIL web based service management tool. ([Source Code](#)) AGPL-3.0 PHP

[netbox](#) - IP address management (IPAM) and data center infrastructure management (DCIM) tool. ([Demo](#), [Source Code](#)) Apache-2.0 Python

## Continuous Integration & Continuous Deployment

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[Continuous integration/deployment](#) software.

[Buildbot](#) - Python-based toolkit for continuous integration. ([Source Code](#)) GPL-2.0 Python

[CDS](#) - Enterprise-Grade Continuous Delivery & DevOps Automation Open Source Platform. ([Source Code](#)) BSD-3-Clause Go

[Concourse](#) - Concourse is a CI tool that treats pipelines as first class objects and containerizes every step along the way. ([Demo](#), [Source Code](#)) Apache-2.0 Go

[drone](#) - Drone is a Continuous Delivery platform built on Docker, written in Go. ([Source Code](#)) Apache-2.0 Go

[Factor](#) - Programmatically define and run workflows to connect configuration management, source code management, build, continuous integration, continuous deployment and communication tools. ([Source Code](#)) MIT Ruby

[GitLab CI](#) - Gitlab's built-in, full-featured CI/CD solution. ([Source Code](#)) MIT Ruby

[GoCD](#) - Continuous delivery server. ([Source Code](#)) Apache-2.0 Java/Ruby

[Jenkins](#) - Continuous Integration Server. ([Source Code](#)) MIT Java

[Laminar](#) - Fast, lightweight, simple and flexible Continuous Integration. ([Source Code](#)) GPL-3.0 C++

[PHP Censor](#) - Open source self-hosted continuous integration server for PHP projects. BSD-2-Clause PHP

[PHPCI](#) - Free and open source continuous integration specifically designed for PHP. ([Source Code](#)) BSD-2-Clause PHP

[Strider](#) - Open Source Continuous Deployment / Continuous Integration platform. ([Source Code](#)) MIT Nodejs

[werf](#) - Open Source CI/CD tool for building Docker images and deploying to Kubernetes via GitOps. ([Source Code](#)) Apache-2.0 Go

[Woodpecker](#) - Community fork of Drone that uses Docker containers. ([Source Code](#)) Apache-2.0 Go

## Control Panels

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Web hosting and server or service control panels.

[Ajenti](#) - Control panel for Linux and BSD. ([Source Code](#)) MIT Python/Shell

[Cockpit](#) - Web-based graphical interface for servers. ([Source Code](#)) LGPL-2.1  
C

[Froxlor](#) - Lightweight server management software with Nginx and PHP-FPM support. ([Source Code](#)) GPL-2.0 PHP

[HestiaCP](#) - Web server control panel (fork of VestaCP). ([Demo](#), [Source Code](#))  
GPL-3.0 PHP/Shell/Other

[ISPConfig](#) - Manage Linux servers directly through your browser. ([Source Code](#))  
BSD-3-Clause PHP

[Sentora](#) - Open-Source Web hosting control panel for Linux, BSD (fork of ZPanel). ([Source Code](#)) GPL-3.0 PHP

[Virtualmin](#) - Powerful and flexible web hosting control panel for Linux and BSD systems. ([Source Code](#)) GPL-3.0 Shell/Perl/Other

[Webmin](#) - Web-based interface for system administration for Unix. ([Source Code](#)) BSD-3-Clause Perl

## Databases

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Database servers.

Please visit [dbdb.io - Database of Databases](#)

See also: [awesome-selfhosted/Database Management](#)

## Deployment Automation

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Tools and scripts to support deployments to your servers.

[Capistrano](#) - Deploy your application to any number of machines simultaneously, in sequence or as a rolling set via SSH (rake based). ([Source Code](#)) MIT Ruby

[CloudSlang](#) - Flow-based orchestration tool for managing deployed applications, with Docker capabilities. ([Source Code](#)) Apache-2.0 Java

[CloudStack](#) - Cloud computing software for creating, managing, and deploying infrastructure cloud services. ([Source Code](#)) Apache-2.0 Java/Python

[Cobbler](#) - Cobbler is a Linux installation server that allows for rapid setup of network installation environments. ([Source Code](#)) GPL-2.0 Python

[Fabric](#) - Python library and cli tool for streamlining the use of SSH for application deployment or systems administration tasks. ([Source Code](#)) BSD-2-Clause Python

[Genesis](#) - A template framework for multi-environment BOSH deployments. MIT Perl

[munki](#) - Webserver-based repository of packages and package metadata, that allows macOS administrators to manage software installs. ([Source Code](#)) Apache-2.0 Python

[Overcast](#) - Deploy VMs across different cloud providers, and run commands and scripts across any or all of them in parallel via SSH. ([Source Code](#)) MIT Nodejs

## Diagramming

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Tools used to create diagrams of networks, flows, etc.

[Diagrams.net](#) - A.K.A. [Draw.io](#). Easy to use Diagram UI with a plethora of templates. ([Source Code](#)) Apache-2.0 JavaScript/Docker

[Kroki](#) - API for generating diagrams from textual descriptions. ([Source Code](#)) MIT Java

[Mermaid](#) - Javascript module with a unique, easy, shorthand syntax. Integrates into several other tools like Grafana. ([Source Code](#)) MIT Nodejs/Docker

## Distributed Filesystems

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Network distributed filesystems.

See also: [awesome-selfhosted/File Transfer - Object Storage & File Servers](#)

[Ceph](#) - Distributed object, block, and file storage platform. ([Source Code](#)) LGPL-3.0 C++

[DRBD](#) - Distributed replicated storage system, implemented as a Linux kernel driver. ([Source Code](#)) GPL-2.0 C

[GlusterFS](#) - Software-defined distributed storage that can scale to several petabytes, with interfaces for object, block and file storage. ([Source Code](#)) GPL-2.0/LGPL-3.0 C

[Hadoop Distributed Filesystem \(HDFS\)](#) - Distributed file system that provides high-throughput access to application data. ([Source Code](#)) Apache-2.0 Java

[JuiceFS](#) - Distributed POSIX file system built on top of Redis and S3. ([Source Code](#)) Apache-2.0 Go

[Kubo](#) - Implementation of IPFS, a global, versioned, peer-to-peer filesystem that seeks to connect all computing devices with the same system of files. Apache-

2.0/MIT Go

[LeoFS](#) - Highly available, distributed, replicated eventually consistent object/blob store. ([Source Code](#)) Apache-2.0 Erlang

[Lustre](#) - Parallel distributed file system, generally used for large-scale cluster computing. ([Source Code](#)) GPL-2.0 C

[Minio](#) - High-performance, S3 compatible object store built for large scale AI/ML, data lake and database workloads. ([Source Code](#)) AGPL-3.0 Go

[MooseFS](#) - Fault tolerant, network distributed file system. ([Source Code](#)) GPL-2.0 C

[OpenAFS](#) - Distributed network file system with read-only replicas and multi-OS support. ([Source Code](#)) IPL-1.0 C

[Openstack Swift](#) - A highly available, distributed, eventually consistent object/blob store. ([Source Code](#)) Apache-2.0 Python

[Perkeep](#) - A set of open source formats, protocols, and software for modeling, storing, searching, sharing and synchronizing data (previously Camlistore). ([Source Code](#)) Apache-2.0 C

[TahoeLAFS](#) - Secure, decentralized, fault-tolerant, peer-to-peer distributed data store and distributed file system. ([Source Code](#)) GPL-2.0 Python

[XtreemFS](#) - Distributed, replicated and fault-tolerant file system for federated IT infrastructures.. ([Source Code](#)) BSD-3-Clause Java

## DNS - Control Panels & Domain Management

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DNS server control panels, web interfaces and domain management tools.

Related: [DNS - Servers](#)

See also: [awesome-selfhosted/DNS](#)

[Atomia DNS](#) - DNS management system. ISC Per1

[Designate](#) - DNSaaS services for OpenStack. ([Source Code](#)) Apache-2.0 Python

[DNSControl](#) - Synchronize your DNS to multiple providers from a simple DSL.  
([Source Code](#)) MIT Go/Docker

[DomainMOD](#) - Manage your domains and other internet assets in a central location. ([Source Code](#)) GPL-3.0 PHP

[nsupdate.info](#) - Dynamic DNS service. ([Demo](#), [Source Code](#)) BSD-3-Clause  
Python

[octoDNS](#) - DNS as code - Tools for managing DNS across multiple providers.  
MIT Python

[Poweradmin](#) - Web-based DNS control panel for PowerDNS server. ([Source Code](#)) GPL-3.0 PHP

[SPF Toolbox](#) - Application to look up DNS records such as SPF, MX, Whois, and more. ([Source Code](#)) MIT PHP

## DNS - Servers

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[DNS](#) servers.

Related: [DNS - Control Panels & Domain Management](#)

See also: [awesome-selfhosted/DNS](#)

[Bind](#) - Versatile, classic, complete name server software. ([Source Code](#)) MPL-2.0  
C

[CoreDNS](#) - Flexible DNS server. ([Source Code](#)) Apache-2.0 Go

[djbdns](#) - A collection of DNS applications, including tinydns. ([Source Code](#)) cc0-1.0 C

[dnsmasq](#) - Provides network infrastructure for small networks: DNS, DHCP, router advertisement and network boot. ([Source Code](#)) GPL-2.0 C

[Knot](#) - High performance authoritative-only DNS server. ([Source Code](#)) GPL-3.0 C

[NSD](#) - Authoritative DNS name server developed speed, reliability, stability and security. ([Source Code](#)) BSD-3-Clause C

[PowerDNS Authoritative Server](#) - Versatile nameserver which supports a large number of backends. ([Source Code](#)) GPL-2.0 C++

[Unbound](#) - Validating, recursive, and caching DNS resolver. ([Source Code](#)) BSD-3-Clause C

[Yadifa](#) - Clean, small, light and RFC-compliant name server implementation developed from scratch by .eu. ([Source Code](#)) BSD-3-Clause C

## Editors

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Open-source code editors.

[Atom Community](#) - A fork of [atom](#) A hackable text editor from Github. MIT JavaScript

[Brackets](#) - Code editor for web designers and front-end developers. ([Source Code](#)) MIT JavaScript

[Eclipse](#) - IDE written in Java with an extensible plug-in system. ([Source Code](#)) EPL-1.0 Java

[Geany](#) - GTK2 text editor. ([Source Code](#)) GPL-2.0 C/C++



[GNU Emacs](#) - An extensible, customizable text editor-and more. ([Source Code](#))

GPL-3.0 C

[Haroopad](#) - Markdown editor with live preview. ([Source Code](#)) GPL-3.0

JavaScript

[ICEcoder](#) - Code editor awesomeness, built with common web languages.

([Demo](#), [Source Code](#)) MIT PHP

[jotgit](#) - Git-backed real-time collaborative code editing. MIT Nodejs

[KDevelop](#) - IDE by the people behind KDE. ([Source Code](#)) GFDL-1.2 C++

[Micro](#) - A modern and intuitive terminal-based text editor. ([Source Code](#)) MIT

Go

[Nano](#) - Easy to use, customizable text editor. ([Source Code](#)) GPL-3.0 C

[Notepad++](#) - GPLv2 multi-language editor with syntax highlighting for

Windows. ([Source Code](#)) GPL-2.0 C++

[TextMate](#) - A graphical text editor for OS X. ([Source Code](#)) GPL-3.0 C++

[Vim](#) - A highly configurable text editor built to enable efficient editing. ([Source](#)

[Code](#)) Vim C

[VSCodium](#) - An open source cross-platform extensible code editor based on [VS](#)

[Code by Microsoft](#) removing their non-free additions. ([Source Code](#)) MIT

TypeScript

## Identity Management

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[Identity management](#) (IdM), also known as identity and access management (IAM or IdAM), is a framework of policies and technologies to ensure that the right users (that are part of the ecosystem connected to or within an enterprise) have the appropriate access to technology resources.

Please visit [Identity Management - LDAP](#), [Identity Management - Tools and web interfaces](#), [Identity Management - Single Sign-On SSO](#)

## Identity Management - LDAP

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[Lightweight Directory Access Protocol \(LDAP\)](#) is an open, vendor-neutral, industry standard application protocol for accessing and maintaining distributed directory information services over an Internet Protocol (IP) network.

[389 Directory Server](#) - Enterprise-class Open Source LDAP server for Linux.

([Source Code](#)) GPL-3.0 C

[Apache Directory Server](#) - Extensible and embeddable directory server, certified LDAPv3 compatible, with Kerberos 5 and Change Password Protocol support, triggers, stored procedures, queues and views. ([Source Code](#)) Apache-2.0 Java

[FreeIPA](#) - Integrated security information management solution combining Linux (Fedora), 389 Directory Server, Kerberos, NTP, DNS, and Dogtag Certificate System (web interface and command-line administration tools). ([Source Code](#))

GPL-3.0 Python/C/JavaScript

[FreeRADIUS](#) - Multi-protocol policy server (radiusd) that implements RADIUS, DHCP, BFD, and ARP and associated client/PAM library/Apache module. ([Source Code](#)) GPL-2.0 C

[lldap](#) - Light (simplified) LDAP implementation with a simple, intuitive web interface and GraphQL support. GPL-3.0 Rust

[OpenLDAP](#) - Open-source implementation of the Lightweight Directory Access Protocol (server, libraries and clients). ([Source Code](#)) OLDAP-2.8 C

## Identity Management - Single Sign-On (SSO)

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[Single sign-on \(SSO\)](#) is an authentication scheme that allows a user to log in with a single ID to any of several related, yet independent, software systems.

[Authelia](#) - The Single Sign-On Multi-Factor portal for web apps. ([Source Code](#))

Apache-2.0 Go

[Authentik](#) - Flexible identity provider with support for different protocols.

(OAuth 2.0, SAML, LDAP and Radius). ([Source Code](#)) MIT Python

[KeyCloak](#) - Open Source Identity and Access Management. ([Source Code](#))

Apache-2.0 Java

## Identity Management - Tools and web interfaces

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Miscellaneous utilities and web interfaces for identity management systems.

[BounCA](#) - A personal SSL Key / Certificate Authority web-based tool for creating self-signed certificates. ([Source Code](#)) Apache-2.0 Python

[easy-rsa](#) - Bash script to build and manage a PKI CA. GPL-2.0 Shell

[Fusion Directory](#) - Improve the Management of the services and the company directory based on OpenLDAP. ([Source Code](#)) GPL-2.0 PHP

[LDAP Account Manager \(LAM\)](#) - Web frontend for managing entries (e.g. users, groups, DHCP settings) stored in an LDAP directory. ([Source Code](#)) GPL-3.0

PHP

[Libravatar](#) - Libravatar is a service which delivers your avatar (profile picture) to other websites. ([Source Code](#)) AGPL-3.0 Python

[Pomerium](#) - An identity and context aware access-proxy inspired by BeyondCorp. ([Source Code](#)) Apache-2.0 Docker/Go

[Samba](#) - Active Directory and CIFS protocol implementation. ([Source Code](#))

GPL-3.0 C

[Smallstep Certificates](#) - A private certificate authority (X.509 & SSH) and related tools for secure automated certificate management. ([Source Code](#)) Apache-2.0

Go

[ZITADEL](#) - Cloud-native Identity & Access Management solution providing a platform for secure authentication, authorization and identity management.

([Source Code](#)) Apache-2.0 Go/Docker/K8S

## IT Asset Management

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IT [asset management](#) software.

[GLPI](#) - Information Resource-Manager with an additional Administration Interface. ([Source Code](#)) GPL-3.0 PHP

[OCS Inventory NG](#) - Asset management and deployment solution for all devices in your IT Department. ([Source Code](#)) GPL-2.0 PHP/Perl

[OPSI](#) - Hardware and software inventory, client management, deployment, and patching for Linux and Windows. ([Source Code](#)) GPL-3.0/AGPL-3.0 OVF/Python

[RackTables](#) - Datacenter and server room asset management like document hardware assets, network addresses, space in racks, networks configuration.

([Demo](#), [Source Code](#)) GPL-2.0 PHP

[Ralph](#) - Asset management, DCIM and CMDB system for large Data Centers as well as smaller LAN networks. ([Demo](#), [Source Code](#)) Apache-2.0 Python/Docker

[Snipe IT](#) - Asset & license management software. ([Source Code](#)) AGPL-3.0 PHP

## Log Management

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Log management tools: collect, parse, visualize...

[Fluentd](#) - Data collector for unified logging layer. ([Source Code](#)) Apache-2.0

Ruby

[Flume](#) - Distributed, reliable, and available service for efficiently collecting, aggregating, and moving large amounts of log data. ([Source Code](#)) Apache-2.0

Java

[GoAccess](#) - Real-time web log analyzer and interactive viewer that runs in a terminal or through the browser. ([Source Code](#)) MIT C

[Loki](#) - Log aggregation system designed to store and query logs from all your applications and infrastructure. ([Source Code](#)) AGPL-3.0 Go

[rsyslog](#) - Rocket-fast system for log processing. ([Source Code](#)) GPL-3.0 C

## Mail Clients

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An [email client](#), email reader or, more formally, message user agent (MUA) or mail user agent is a computer program used to access and manage a user's email.

[aerc](#) - Terminal MUA with a focus on plaintext and features for developers.

([Source Code](#)) MIT Go

[Claws Mail](#) - Old school email client (and news reader), based on GTK+. ([Source Code](#)) GPL-3.0 C

[ImapSync](#) - Simple IMAP migration tool for copying mailboxes to other servers.

([Source Code](#)) NLPL Perl

[Mutt](#) - Small but very powerful text-based mail client. ([Source Code](#)) GPL-2.0

C

[Sylpheed](#) - Still developed predecessor to Claws Mail, lightweight mail client.

([Source Code](#)) GPL-2.0 C

[Thunderbird](#) - Free email application that's easy to set up and customize.

([Source Code](#)) MPL-2.0 C/C++

## Metrics & Metric Collection

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Metric gathering and display software.

*Related:* [Databases](#), [Monitoring](#)

[Beats](#) - Single-purpose data shippers that send data from hundreds or thousands of machines and systems to Logstash or Elasticsearch. ([Source Code](#))

Apache-2.0 Go

[Collectd](#) - System statistics collection daemon. ([Source Code](#)) MIT C

[Diamond](#) - Daemon that collects system metrics and publishes them to Graphite (and others). MIT Python

[Grafana](#) - A Graphite & InfluxDB Dashboard and Graph Editor. ([Source Code](#))

AGPL-3.0 Go

[Graphite](#) - Scalable graphing server. ([Source Code](#)) Apache-2.0 Python

[RRDtool](#) - Industry standard, high performance data logging and graphing system for time series data. ([Source Code](#)) GPL-2.0 C

[Statsd](#) - Daemon that listens for statistics like counters and timers, sent over UDP or TCP, and sends aggregates to one or more pluggable backend services.

MIT Nodejs

[tcollector](#) - Gathers data from local collectors and pushes the data to OpenTSDB. ([Source Code](#)) LGPL-3.0/GPL-3.0 Python

[Telegraf](#) - Plugin-driven server agent for collecting, processing, aggregating, and writing metrics. MIT Go

## Miscellaneous

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Software that does not fit in another section.

[Chocolatey](#) - The package manager for Windows. ([Source Code](#)) Apache-2.0  
C#/PowerShell

[Clonezilla](#) - Partition and disk imaging/cloning program. ([Source Code](#)) GPL-2.0  
Perl/Shell/Other

[DadaMail](#) - Mailing List Manager, written in Perl. ([Source Code](#)) GPL-2.0 Perl

[Fog](#) - Cloning/imaging solution/rescue suite. ([Source Code](#)) GPL-3.0  
PHP/Shell

[phpList](#) - Newsletter and email marketing software. ([Source Code](#)) AGPL-3.0  
PHP

## Monitoring

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Monitoring software.

*Related:* [Metrics & Metric Collection](#)

[Adagios](#) - Web based Nagios interface for configuration and monitoring (replacement to the standard interface), and a REST interface. ([Source Code](#))  
AGPL-3.0 Docker/Python

[Alerta](#) - Distributed, scalable and flexible monitoring system. ([Source Code](#))

Apache-2.0 Python

[Bloonix](#) - Bloonix is a monitoring solution that helps businesses to ensure high availability and performance. ([Source Code](#)) GPL-3.0 Perl

[Bosun](#) - Monitoring and alerting system by Stack Exchange. ([Source Code](#)) MIT  
Go

[Cacti](#) - Web-based network monitoring and graphing tool. ([Source Code](#)) GPL-2.0 PHP

[cadvisor](#) - Analyzes resource usage and performance characteristics of running containers. Apache-2.0 Go

[checkmk](#) - Comprehensive solution for monitoring of applications, servers, and networks. ([Source Code](#)) GPL-2.0 Python/PHP

[dashdot](#) - A simple, modern server dashboard for smaller private servers. ([Demo](#)) MIT Nodejs/Docker

[EdMon](#) - A command-line monitoring application helping you to check that your hosts and services are available, with notifications support. MIT Java

[eZ Server Monitor](#) - A lightweight and simple dashboard monitor for Linux, available in Web and Bash application. ([Source Code](#)) GPL-3.0 PHP/Shell

[glances](#) - Open-source, cross-platform real-time monitoring tool with CLI and web dashboard interfaces and many exporting options. ([Source Code](#)) GPL-3.0  
Python

[Healthchecks](#) - Monitoring for cron jobs, background services and scheduled tasks. ([Source Code](#)) BSD-3-Clause Python

[Icinga](#) - Nagios fork that has since lapped nagios several times. Comes with the possibility of clustered monitoring. ([Source Code](#)) GPL-2.0 C++

[LibreNMS](#) - Fully featured network monitoring system that provides a wealth of features and device support. ([Source Code](#)) GPL-3.0 PHP



[Linux Dash](#) - A low-overhead monitoring web dashboard for a GNU/Linux machine. MIT Nodejs/Go/Python/PHP

[Monit](#) - Small utility for managing and monitoring Unix systems. ([Source Code](#))

AGPL-3.0 C

[Munin](#) - Networked resource monitoring tool. ([Source Code](#)) GPL-2.0

Perl/Shell

[Naemon](#) - Network monitoring tool based on the Nagios 4 core with performance enhancements and new features. ([Source Code](#)) GPL-2.0 C

[Nagios](#) - Computer system, network and infrastructure monitoring software application. ([Source Code](#)) GPL-2.0 C

[Netdata](#) - Distributed, real-time, performance and health monitoring for systems and applications. Runs on Linux, FreeBSD, and MacOS. ([Source Code](#))

GPL-3.0 C

[NetXMS](#) - Open Source network and infrastructure monitoring and management. ([Source Code](#)) LGPL-3.0/GPL-3.0 Java/C++/C

[Observium Community Edition](#) - Network monitoring and management platform that provides real-time insight into network health and performance.

QPL-1.0 PHP

[openITCOCKPIT Community Edition](#) - Monitoring Suite featuring seamless integrations with Naemon, Checkmk, Grafana and more. ([Demo](#), [Source Code](#))

GPL-3.0 deb/Docker

[Performance Co-Pilot](#) - Lightweight, distributed system performance and analysis framework. ([Source Code](#)) LGPL-2.1/GPL-2.0 C

[PHP Server Monitor](#) - Open source tool to monitor your servers and websites. ([Source Code](#)) GPL-3.0 PHP

[PhpSysInfo](#) - A customizable PHP script that displays information about your system nicely. ([Source Code](#)) GPL-2.0 PHP

[Prometheus](#) - Service monitoring system and time series database. ([Source Code](#)) Apache-2.0 Go

[Riemann](#) - Flexible and fast events processor allowing complex events/metrics analysis. ([Source Code](#)) EPL-1.0 Java

[rtop](#) - Interactive, remote system monitoring tool based on SSH. MIT Go

[ruptime](#) - Classic system status server. AGPL-3.0 Shell

[Scrutiny](#) - Web UI for hard drive S.M.A.R.T monitoring, historical trends & real-world failure thresholds. MIT Go

[Sensu](#) - Monitoring tool for ephemeral infrastructure and distributed applications. ([Source Code](#)) MIT Go

[Status](#) - Simple and lightweight system monitoring tool for small homeservers with a pleasant web interface. ([Demo](#)) MIT Python

[Thruk](#) - Multibackend monitoring web interface with support for Naemon, Nagios, Icinga and Shinken. ([Source Code](#)) GPL-1.0 Perl

[Wazuh](#) - Unified XDR and SIEM protection for endpoints and cloud workloads. ([Source Code](#)) GPL-2.0 C

[Zabbix](#) - Enterprise-class software for monitoring of networks and applications. ([Source Code](#)) GPL-2.0 C

## Network Configuration Management

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Network configuration management tools.

[GNS3](#) - Graphical network simulator that provides a variety of virtual appliances. ([Source Code](#)) GPL-3.0 Python

[OpenWISP](#) - Open Source Network Management System for OpenWRT based routers and access points. ([Demo](#), [Source Code](#)) GPL-3.0 Python

[Oxidized](#) - Network device configuration backup tool. Apache-2.0 Ruby

[phpIPAM](#) - Open source IP address management with PowerDNS integration.

([Source Code](#)) GPL-3.0 PHP

[RANCID](#) - Monitor network devices configuration and maintain history of changes. ([Source Code](#)) BSD-3-Clause Perl/Shell

[rConfig](#) - Network device configuration management tool. ([Source Code](#)) GPL-3.0 PHP

## PaaS

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[Platform-as-a-Service](#) software allows customers to provision, instantiate, run, and manage a computing platform and one or more applications, without the complexity of building and maintaining the infrastructure typically associated with developing and launching the application. Also includes [Serverless computing](#) and [Function-as-a-service \(FaaS\)](#) software.

[CapRover](#) - Build your own PaaS in a few minutes. ([Demo](#), [Source Code](#))

Apache-2.0 Docker/Nodejs

[Coolify](#) - An open-source & self-hostable Heroku / Netlify alternative (and even more). ([Source Code](#)) Apache-2.0 Docker

[Dokku](#) - An open-source PaaS (alternative to Heroku). ([Source Code](#)) MIT

Docker/Shell/Go/deb

[fx](#) - A tool to help you do Function as a Service with painless on your own servers. MIT Go

[Kubero](#) - A self-hosted Heroku PaaS alternative for Kubernetes that implements GitOps. ([Demo](#), [Source Code](#)) GPL-3.0 K8S/Nodejs/Go

[LocalStack](#) - LocalStack is a fully functional local AWS cloud stack. This includes Lambda for serverless computation. ([Source Code](#)) Apache-2.0

Python/Docker/K8S

[Nhost](#) - Firebase Alternative with GraphQL. Get a database and backend configured and ready in minutes. ([Source Code](#)) MIT Docker/Nodejs/Go

[OpenFaaS](#) - Serverless Functions Made Simple for Docker & Kubernetes. ([Source Code](#)) MIT Go

[Tau](#) - Easily build Cloud Computing Platforms with features like Serverless WebAssembly Functions, Frontend Hosting, CI/CD, Object Storage, K/V Database, and Pub-Sub Messaging. ([Source Code](#)) BSD-3-Clause

Go/Rust/Docker

[Trusted-CGI](#) - Lightweight self-hosted lambda/applications/cgi/serverless-functions platform. MIT Go/deb/Docker

## Packaging

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A [package manager](#) or package-management system is a collection of software tools that automates the process of installing, upgrading, configuring, and removing computer programs for a computer in a consistent manner.

[aptly](#) - Swiss army knife for Debian repository management. ([Source Code](#)) MIT Go

[fpm](#) - Versatile multi format package creator. ([Source Code](#)) MIT Ruby

[omnibus-ruby](#) - Easily create full-stack installers for your project across a variety of platforms. Apache-2.0 Ruby

[tito](#) - Builds RPMs for git-based projects. GPL-2.0 Python

## Project Management

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Web-based project management and bug tracking systems.

Please visit [awesome-selfhosted/Project Management](#)

## Queuing

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[Message queues](#) and [message broker](#) software, typically used for inter-process communication (IPC), or for inter-thread communication within the same process.

See also: [Cloud Native Landscape - Streaming & Messaging](#)

[ActiveMQ](#) - Java message broker. ([Source Code](#)) Apache-2.0 Java

[BeanstalkD](#) - A simple, fast work queue. ([Source Code](#)) MIT C

[Gearman](#) - Fast multi-language queuing/job processing platform. ([Source Code](#))  
BSD-3-Clause C++

[NSQ](#) - A realtime distributed messaging platform. ([Source Code](#)) MPL-2.0 Go

[ZeroMQ](#) - Lightweight queuing system. ([Source Code](#)) GPL-3.0 C++

## Remote Desktop Clients

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[Remote Desktop](#) client software.

See also: [awesome-selfhosted/Remote Access](#)

[Remmina](#) - Feature-rich remote desktop application for linux and other unixes.

([Source Code](#)) GPL-2.0 C

[Tiger VNC](#) - High-performance, multi-platform VNC client and server. ([Source](#)

[Code](#)) GPL-2.0 C++

[X2go](#) - X2Go is an open source remote desktop software for Linux that uses the NoMachine/NX technology protocol. ([Source Code](#)) GPL-2.0 Perl

## Router

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Software for management of [router](#) hardware.

[DD-WRT](#) - A Linux-based firmware for wireless routers and access points, originally designed for the Linksys WRT54G series. ([Source Code](#)) GPL-2.0 C

[OpenWrt](#) - A Linux-based router featuring Mesh networking, IPS via snort and AQM among many other features. ([Source Code](#)) GPL-2.0 C

[OPNsense](#) - An open source FreeBSD-based firewall and router with traffic shaping, load balancing, and virtual private network capabilities. ([Source Code](#))

BSD-2-Clause C/PHP

[pfSense CE](#) - Free network firewall distribution, based on the FreeBSD operating system with a custom kernel and including third party free software packages for additional functionality. ([Source Code](#)) Apache-2.0 Shell/PHP/Other

## Service Discovery

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[Service discovery](#) is the process of automatically detecting devices and services on a computer network.

[Consul](#) - Consul is a tool for service discovery, monitoring and configuration.

([Source Code](#)) MPL-2.0 Go

[etcd](#) - Distributed K/V-Store, authenticating via SSL PKI and a REST HTTP Api for shared configuration and service discovery. ([Source Code](#)) Apache-2.0 Go

[ZooKeeper](#) - ZooKeeper is a centralized service for maintaining configuration information, naming, providing distributed synchronization, and providing group services. ([Source Code](#)) Apache-2.0 Java/C++

## Software Containers

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[Operating system-level](#) virtualization.

[Docker Compose](#) - Define and run multi-container Docker applications. ([Source Code](#)) Apache-2.0 Go

[Docker Swarm](#) - Manage cluster of Docker Engines. ([Source Code](#)) Apache-2.0 Go

[Docker](#) - Platform for developers and sysadmins to build, ship, and run distributed applications. ([Source Code](#)) Apache-2.0 Go

[LXC](#) - Userspace interface for the Linux kernel containment features. ([Source Code](#)) GPL-2.0 C

[LXD](#) - Container "hypervisor" and a better UX for LXC. ([Source Code](#)) Apache-2.0 Go

[OpenVZ](#) - Container-based virtualization for Linux. ([Source Code](#)) GPL-2.0 C

[Podman](#) - Daemonless container engine for developing, managing, and running OCI Containers on your Linux System. Containers can either be run as root or in rootless mode. Simply put: alias docker=podman. ([Source Code](#)) Apache-2.0 Go

[Portainer Community Edition](#) - Simple management UI for Docker. ([Source Code](#)) Zlib Go

[systemd-nspawn](#) - Lightweight, chroot-like, environment to run an OS or command directly under systemd. ([Source Code](#)) GPL-2.0 C

## Status Pages

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[Uptime](#) is a measure of system reliability, expressed as the percentage of time a machine, typically a computer, has been working and available.

Please visit [awesome-selfhosted/Status / Uptime Pages](#)

## Troubleshooting

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Troubleshooting tools.

[grml](#) - Bootable Debian Live CD with powerful CLI tools. ([Source Code](#)) GPL-3.0 Shell

[mitmproxy](#) - A Python tool used for intercepting, viewing and modifying network traffic. Invaluable in troubleshooting certain problems. ([Source Code](#)) MIT Python

[mtr](#) - Network utility that combines traceroute and ping. ([Source Code](#)) GPL-2.0 C

[Sysdig](#) - Capture system state and activity from a running Linux instance, then save, filter and analyze. ([Source Code](#)) Apache-2.0 Docker/Lua/C

[Wireshark](#) - The world's foremost network protocol analyzer. ([Source Code](#)) GPL-2.0 C



## Version control

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Software versioning and revision control.

[Darcs](#) - Cross-platform version control system, like git, mercurial or svn but with a very different approach: focus on changes rather than snapshots. ([Source Code](#)) GPL-2.0 Haskell

[Fossil](#) - Distributed version control with built-in wiki and bug tracking. ([Source Code](#)) BSD-2-Clause C

[Git](#) - Distributed revision control and source code management (SCM) with an emphasis on speed. ([Source Code](#)) GPL-2.0 C

[Mercurial](#) - Distributed source control management tool. ([Source Code](#)) GPL-2.0 Python/C/Rust

[Subversion](#) - Client-server revision control system. ([Source Code](#)) Apache-2.0 C

## Virtualization

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Virtualization software.

[Ganeti](#) - Cluster virtual server management software tool built on top of KVM and Xen. ([Source Code](#)) BSD-2-Clause Python/Haskell

[KVM](#) - Linux kernel virtualization infrastructure. ([Source Code](#)) GPL-2.0/LGPL-2.0 C

[OpenNebula](#) - Build and manage enterprise clouds for virtualized services, containerized applications and serverless computing. ([Source Code](#)) Apache-

2.0 C++

[oVirt](#) - Manages virtual machines, storage and virtual networks. ([Source Code](#))

Apache-2.0 Java

[Packer](#) - A tool for creating identical machine images for multiple platforms from a single source configuration. ([Source Code](#)) MPL-2.0 Go

[Proxmox VE](#) - Virtualization management solution. ([Source Code](#)) GPL-2.0

Perl/Shell

[QEMU](#) - QEMU is a generic machine emulator and virtualizer. ([Source Code](#))

LGPL-2.1 C

[Vagrant](#) - Tool for building complete development environments. ([Source Code](#))

BUSL-1.1 Ruby

[VirtualBox](#) - Virtualization product from Oracle Corporation. ([Source Code](#)) GPL-

3.0/CDDL-1.0 C++

[XCP-ng](#) - Virtualization platform based on Xen Source and Citrix® Hypervisor (formerly XenServer). ([Source Code](#)) GPL-2.0 C

[Xen](#) - Virtual machine monitor for 32/64 bit Intel / AMD (IA 64) and PowerPC 970 architectures. ([Source Code](#)) GPL-2.0 C

## VPN

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VPN software.

[DefGuard](#) - True enterprise WireGuard with MFA/2FA and SSO. ([Source Code](#))

Apache-2.0 Rust

[Dockovpn](#) - Out-of-the-box stateless dockerized OpenVPN server which starts in less than 2 seconds. ([Source Code](#)) GPL-2.0 Docker

[Firezone](#) - WireGuard based VPN Server and Firewall. ([Source Code](#)) Apache-2.0 Docker

[Gluetun VPN client](#) - VPN client in a thin Docker container for multiple VPN providers, written in Go, and using OpenVPN or Wireguard, DNS over TLS, with a few proxy servers built-in. MIT docker

[Headscale](#) - Self-hostable fork of [Tailscale](#), cross-platform clients, simple to use, built-in (currently experimental) monitoring tools. BSD-3-Clause Go

[Nebula](#) - A scalable p2p VPN with a focus on performance, simplicity and security. MIT Go

[ocserv](#) - Cisco AnyConnect-compatible VPN server. ([Source Code](#)) GPL-2.0 C

[OpenVPN](#) - Uses a custom security protocol that utilizes SSL/TLS for key exchange. ([Source Code](#)) GPL-2.0 C

[SoftEther](#) - Multi-protocol software VPN with advanced features. ([Source Code](#)) Apache-2.0 C

[sshuttle](#) - Poor man's VPN. LGPL-2.1 Python

[strongSwan](#) - Complete IPsec implementation for Linux. ([Source Code](#)) GPL-2.0 C

[WireGuard](#) - Very fast VPN based on elliptic curve and public key crypto. ([Source Code](#)) GPL-2.0 C

## Web

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[Web servers](#) and [reverse proxies](#).

Please visit [awesome-selfhosted/Web Servers](#)

# List of Licenses

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AGPL-3.0 - [GNU Affero General Public License 3.0](#)  
Apache-2.0 - [Apache, Version 2.0](#)  
BSD-2-Clause - [BSD 2-clause "Simplified"](#)  
BSD-3-Clause - [BSD 3-Clause "New" or "Revised"](#)  
BUSL-1.1 - [Business Source License 1.1](#)  
CC0-1.0 - [Public Domain/Creative Common Zero 1.0](#)  
CDDL-1.0 - [Common Development and Distribution License 1.0](#)  
EPL-1.0 - [Eclipse Public License 1.0](#)  
GFDL-1.2 - [GNU Free Documentation License 1.2](#)  
GPL-1.0 - [GNU General Public License 1.0](#)  
GPL-2.0 - [GNU General Public License 2.0](#)  
GPL-3.0 - [GNU General Public License 3.0](#)  
IPL-1.0 - [IBM Public License v1.0](#)  
ISC - [ISC License](#)  
LGPL-2.0 - [GNU Lesser General Public License v2](#)  
LGPL-2.1 - [GNU Lesser General Public License v2.1](#)  
LGPL-3.0 - [GNU Lesser General Public License v3](#)  
MIT - [MIT License](#)  
MPL-2.0 - [Mozilla Public License](#)  
NLPL - [No Limit Public License](#)  
OLDAP-2.8 - [Open LDAP Public License v2.8](#)  
QPL-1.0 - [Q Public License 1.0](#)

Vim - [Vim License](#)

Zlib - [zlib License](#)

## External links

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## Communities / Forums

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[ArsTechnica OpenForum](#) - IT Forum which is attached to a large news site.

[Reddit](#) - Really, really large bulletin board system.

[/r/Linux](#) - News and information about Linux.

[/r/LinuxQuestions](#)

[/r/SysAdmin](#)

[Spiceworks Community](#) - General enterprise IT news and small articles.

[StackExchange Network](#) - Q&A communities.

[Server Fault](#) - StackExchange community for system and network administrators.

## Repositories

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*Software package repositories.*

[AlternativeTo](#) - Find alternatives to software you know and discover new software.

[deb.sury.org](#) - Repository with LAMP updated packages for Debian and Ubuntu.

[ElRepo](#) - Community Repo for Enterprise Linux (RHEL, CentOS, etc).

[EPEL](#) - Repository for RHEL and compatibles (CentOS, Scientific Linux).

[IUS](#) - Community project that provides RPM packages for newer versions of select software for Enterprise Linux distributions.

[Remi](#) - Repository with LAMP updated packages for RHEL/Centos/Fedora.

[Software Collections](#) - Community Release of [Red Hat Software Collections](#). Provides updated packages of Ruby, Python, etc. for CentOS/Scientific Linux 6.x.

## Websites

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[Cloud Native Software Landscape](#) - Compilation of software and tools for cloud computing.

[ArchWiki](#) - Arch Linux Wiki which has really nice written articles valid for other distros.