

A Practical Guide To Linux Commands Editors And Shell Programming

Command (computing)

ISBN 978-0-13-937681-8. Sobell, Mark G. (2014). A Practical Guide to Linux Commands, Editors, and Shell Programming (3rd ed.). Prentice Hall. ISBN 978-0-13-308504-4

In computing, a command is a high-level instruction received via an external interface that directs the behavior of a computer program. Commonly, commands are sent to a program via a command-line interface, a script, a network protocol, or as an event triggered in a graphical user interface.

Many commands support arguments to specify input and to modify default behavior. Terminology and syntax varies but there are notable common approaches. Typically, an option or a flag is a name (without whitespace) with a prefix such as dash or a slash that modifies default behavior. An option might have a required value that follows it. Typically, a flag refers to an option that does not have a following value. A parameter is an argument that specifies input to the command and its meaning is based on its position in the command line relative to other parameters; generally ignoring options. A parameter can specify anything, but often it specifies a file by name or path.

The term command is sometimes also used for internal program instructions, but often other terms are more appropriate such as statement, expression, function, or conditional. For example, printing a message in Bash is via the command...

Berkeley r-commands

(2010). A Practical Guide to Linux Commands, Editors, and Shell Programming. Pearson Education, Inc. ISBN 978-0-13-136736-4. "Unix job control command list"

The Berkeley r-commands are a suite of computer programs designed to enable users of one Unix system to log in or issue commands to another Unix computer via TCP/IP computer network. The r-commands were developed in 1982 by the Computer Systems Research Group (CSRG) at the University of California, Berkeley, based on an early implementation of TCP/IP (the protocol stack of the Internet).

The CSRG incorporated the r-commands into their Unix operating system, the Berkeley Software Distribution (BSD). The r-commands premiered in BSD v4.1. Among the programs in the suite are: rcp (remote copy), rexec (remote execution), rlogin (remote login), rsh (remote shell), rstat, ruptime,

and rwho (remote who).

The r-commands were a significant innovation, and became de facto standards for Unix operating systems. With wider public adoption of the Internet, their inherent security vulnerabilities became a problem, and beginning with the development of Secure Shell protocols and applications in 1995, its adoption entirely supplanted the deployment and use of r-commands (and Telnet) on networked systems.

== Protocol ==

The original Berkeley package that provides rlogin also features rcp (remote-copy...

Linux

and management in general. Linux distributions support shell scripts, AWK, sed and make. Many programs also have an embedded programming language to support

Linux (LIN-uuks) is a family of free and open-source software Unix-like operating systems based on the Linux kernel, which was first released on 17 September 1991 by Linus Torvalds. Some members of the family are typically packaged as a distribution (a.k.a. distro), which includes the kernel alongside supporting system software and libraries developed by third parties—such as GNU, Red Hat, and X.Org—to create a complete operating system; however, not all Linux-based operating systems are considered distros, with Android being an example. Linux was originally designed as a clone of Unix and is distributed under the copyleft GPL license.

There are many thousands of Linux distributions, many based directly or indirectly on other distributions; popular Linux distros include Debian, Fedora Linux, Linux Mint, Arch Linux, and Ubuntu, while commercial distributions include Red Hat Enterprise Linux, SUSE Linux Enterprise, and ChromeOS. Linux distributions are frequently used in server platforms. Many Linux distributions use the word "Linux" in their name, but the Free Software Foundation uses and recommends the name "GNU/Linux", to emphasize the use and importance of GNU software in many distributions...

Secure Shell

Security 26). Sobell, Mark (2012). A Practical Guide to Linux Commands, Editors, and Shell Programming (3rd ed.). Upper Saddle River, NJ: Prentice Hall. pp. 702–704

The Secure Shell Protocol (SSH Protocol) is a cryptographic network protocol for operating network services securely over an unsecured network. Its most notable applications are remote login and command-line execution.

SSH was designed for Unix-like operating systems as a replacement for Telnet and unsecured remote Unix shell protocols, such as the Berkeley Remote Shell (rsh) and the related rlogin and rexec protocols, which all use insecure, plaintext methods of authentication, such as passwords.

Since mechanisms like Telnet and Remote Shell are designed to access and operate remote computers, sending the authentication tokens (e.g. username and password) for this access to these computers across a public network in an unsecured way poses a great risk of third parties obtaining the password and achieving the same level of access to the remote system as the telnet user. Secure Shell mitigates this risk through the use of encryption mechanisms that are intended to hide the contents of the transmission from an observer, even if the observer has access to the entire data stream.

Finnish computer scientist Tatu Ylönen designed SSH in 1995 and provided an implementation in the form of two...

Chsh

chsh(1): change your login shell – Linux User Commands Manual
chsh(1) – Darwin and macOS General Commands Manual
passwd(1) – Solaris 11.4 User Commands Reference Manual

chsh (an abbreviation of "change shell") is a command on Unix-like operating systems that is used to change a login shell. Users can either supply the pathname of the shell that they wish to change to on the command line, or supply no arguments, in which case chsh allows the user to change the shell interactively.

== Usage ==

chsh is a setuid program that modifies the /etc/passwd file, and only allows ordinary users to modify their own login shells. The superuser can modify the shells of other users, by supplying the name of the user whose shell is to be modified as a command-line argument. For security reasons, the shells that both ordinary users and the superuser can specify are limited by the contents of the /etc/shells file, with the pathname of the shell being required to be exactly as it appears in that file. (This security feature is alterable by re-compiling the source code for the command with a different configuration option, and thus is not necessarily enabled on all systems.) The superuser can, however, also modify the password file directly, setting any user's shell to any executable file on the system without reference to /etc/shells and without using chsh.

On most...

Outline of the Perl programming language

overview of and topical guide to the Perl programming language: Perl – high-level, general-purpose, interpreted, multi-paradigm, dynamic programming language

The following outline is provided as an overview of and topical guide to the Perl programming language:

Perl – high-level, general-purpose, interpreted, multi-paradigm, dynamic programming language. Perl was originally developed by Larry Wall in 1987 as a general-purpose Unix

scripting language to make report processing easier. Since then, it has undergone many changes and revisions and become widely popular amongst programmers. Larry Wall continues to oversee development of Raku. Note that Perl and Raku are receiving ongoing development, therefore making Perl a family of programming languages. It stands for Practical Extraction and Reporting Language which processes data using pattern matching technique.

== What type of thing is Perl? ==

Perl can be described as all of the following types of things:

Family of programming languages – a programming language is an artificial language designed to communicate instructions to a machine, particularly a computer. Programming languages can be used to create programs that control the behavior of a machine and/or to express algorithms precisely. Both Perl and Raku are each considered a:

General-purpose programming language – programming language...

Linux from Scratch

Linux From Scratch (LFS) is a type of Linux installation, and the name of a book written by Gerard Beekmans, and as of May 2021, mainly maintained by Bruce

Linux From Scratch (LFS) is a type of Linux installation, and the name of a book written by Gerard Beekmans, and as of May 2021, mainly maintained by Bruce Dubbs. The book gives readers instructions on how to build a Linux system from source. The book is available freely from the Linux From Scratch site.

== Projects under LFS ==

Linux From Scratch is a way to install a working Linux system by building all components of it manually. This is, naturally, a longer process than installing a pre-compiled Linux distribution. According to the Linux From Scratch site, the advantages to this method are a compact, flexible and secure system and a greater understanding of the internal workings of the Linux-based operating systems.

To keep LFS small and focused, the book Beyond Linux From Scratch (BLFS) was created, which presents instructions on how to further develop the basic Linux system that was created in LFS. It introduces and guides the reader through additions to the system including the X Window System, desktop environments (KDE, GNOME, Xfce, LXDE), productivity software, web browsers, programming languages and tools, multimedia software, and network management and system administration...

Yelp (software)

ISBN 978-1-4842-0067-4. OCLC 883396549. Sobell, Mark G.

(2014). A practical guide to Fedora and Red Hat Enterprise Linux (7th ed.). Upper Saddle River, NJ: Prentice Hall

Yelp, also known as the GNOME Help Browser, is the default help viewer for GNOME that allows users to access help documentation. Yelp follows the freedesktop.org help system specification and reads mallard, DocBook, man pages, info, and HTML documents. HTML is available by using XSLT to render XML documents into HTML.

Yelp has a search feature as well as a toolbar at the top for navigation through previously viewed documentation.

Yelp can be accessed by typing yelp either into GNOME Shell, after pressing Alt+F2 within GNOME, or within a terminal using the yelp [file] format. The command gnome-help can also be used to access Yelp.

Although Yelp is not required for GNOME to function, it is required to view GNOME's help documentation. Ubuntu also uses yelp to provide a customized help interface for its software.

A format string vulnerability in GNOME versions 2.19.90 and 2.24 allowed arbitrary code execution through Yelp.

== References ==

Linux adoption

uses a customized Linux kernel with a separate runtime environment and software stack compared to the vast majority of other Linux-based systems. Linux runs

Operating systems based on Linux, also called Linux distributions, have been adopted by households, nonprofit organizations, businesses, and governments.

Android, which runs on Linux, is the world's most widely used computer operating system. As of October 2024, Android has 45% of the global operating system market followed by Windows with 26%. Notably, Android uses a customized Linux kernel with a separate runtime environment and software stack compared to the vast majority of other Linux-based systems.

Linux runs on almost every type of device, all the top 500 most powerful supercomputers in the world, desktop computers, laptops, the International Space Station, smartphones, smartwatches, TVs, and cars. Additional large systems like The New York Stock Exchange, the Pentagon, and social media platforms like Facebook, YouTube, and X (formerly Twitter) all run on Linux. Microsoft's cloud service depends on Linux.

In August 2010, Jeffrey Hammond, principal analyst at Forrester Research, declared, "Linux has crossed the chasm to mainstream adoption," a statement attested by the large number of enterprises that had transitioned to Linux during the late-2000s recession. In a company survey...

Genera (software)

incremental and interactive development of complex software using a mix of programming styles with extensive support for object-oriented programming. The Lisp

Genera is a commercial operating system and integrated development environment for Lisp machines created by Symbolics. It is essentially a fork of an earlier operating system originating on the Massachusetts Institute of Technology (MIT) AI Lab's Lisp machines which Symbolics had used in common with Lisp Machines, Inc. (LMI), and Texas Instruments (TI). Genera was also sold by Symbolics as Open Genera, which runs Genera on computers based on a Digital Equipment Corporation (DEC) Alpha processor using Tru64 UNIX. In 2021 a new version was released as Portable Genera which runs on Tru64 UNIX on Alpha, Linux on x86-64 and Arm64 Linux, and macOS on x86-64 and Arm64 (Apple Silicon M Series). It is released and licensed as proprietary software.

Genera is an example of an object-oriented operating system based on the programming language Lisp.

Genera supports incremental and interactive development of complex software using a mix of programming styles with extensive support for object-oriented programming.

== MIT's Lisp machine operating system ==

The Lisp Machine operating system was written in Lisp Machine Lisp. It was a one-user workstation initially targeted at software developers for...

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