Linux 101

Everything you need to know to start using Linux.

Course Overview

Linux 101 provides you with everything you need to know to start using Linux. This course was designed for those having no experience using Linux, but wanting to learn how to use it. The course is packed with all the content usually taught in an introductory university course, but without all the filler content of a university course. It contains essential, practical information gained from over 20 years of experience using Linux and Unix systems for daily

work.

System Requirements

- A computing environment (Windows, Linux, or Mac*) capable of running a virtual machine with at least 4GB or RAM and 20GB of disk space. *Note that new MacBook Pros with the M1 chip are unable to run virtual machines such as the ones demonstrated in this course.
- A willingness to dive into Linux!

Linux 101 Learning Objectives

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- Use common Linux commands and utilities;
- Find help on new commands in Linux;
- Use advanced shell concepts such as pipes and command substitution;
- Understand the Linux filesystem hierarchy standard and use it to find files;
- Use regular expressions to execute powerful search and filter operations;
- Perform basic administrative actions normal for a Linux desktop environment; and,
- Develop short Linux shell scripts.

Linux 101 Curriculum - 5.5 Hours

Introduction

- Course Overview(4:41)
- Course Links and Files
- Linux Distributions(7:08)
- Installing Linux in VirtualBox(10:13)
- Getting Help on Discord(2:03)

Getting Started

- Introduction to the Command Line(3:43)
- Getting Help on the Command Line(2:37)
- Getting Help from ExplainShell(1:32)
- Command Line Arguments and Options(3:39)
- Looking at Text Files: more or less(3:08)
- Another Way to Look at Text Files: cat(4:51)

Files and the Filesystem

- Linux Filesystem Hierarchy Standard(7:41)

- Devices, Partitions, and Mounting(8:21)
- Absolute and Relative Paths(5:29)
- Working with Files and Directories(5:37)
- Spaces in Paths and Filenames(3:03)
- File and Path Expansion(3:34)
- Even More Looking at Text Files(3:32)
- Hard and Soft Filesystem Links(5:28)
- Compressing and Archiving Files(7:27)
- Searching the Filesystem(5:17)

Users and Groups

- Working with users and Groups(6:36)
- File and Directory Permissions(9:14)
- Changing Users(3:31)
- Changing Passwords(2:34)

Installing Software

- Linux Package Management(3:00)
- Package Management: Debian Systems(7:18)
- Package Management: RedHat Systems(3:41)
- Manually Installing Software(5:19)

Shells

- Common Command Line Shells(3:25)

Environment Variables(5:13)

Startup Files(5:25)

Redirecting Input and Output(8:02)

Pipes(2:51)

Command History(3:51)

Command Substitution(2:34)

More Utilities

Searching and Processing Text(7:58)

Manipulating Text(19:19)

Networking at the Command Line(8:18)

File Transfer Utilities(10:30)

Converting Text Files(6:20)

Text Editors

Text Editors: nano(5:46)

Text Editors: vim(11:25)

Process Management

Process Information(9:08)

Foreground and Background Processes(4:48)

Managing Processes(8:34)

Scheduling Processes with Crontab and Init.d(11:06)

Regular Expressions

- What is a Regular Expressions?(2:41)
- Searching with Regular Expressions(13:01)
- Replacing with Regular Expressions(4:06)
- Tips on Building Regular Expressions(3:18)

Scripting

- Bash Scripting: Basics(5:26)
- Bash Scripting: Control Structures(8:35)
- Bash Scripting: Loops(6:58)
- Bash Scripting: Examples(8:10)

Conclusion

- Course Conclusion(1:16)

About the Instructor: Brent Eskridge

Brent has seven years experience as a software engineer and 17 years experience as a university professor. He has experience designing and teaching courses in subjects ranging from programming to operating system design to computer architecture. He has had the pleasure to mentor and teach numerous students that have gone on to successful careers.

Brent has a Bachelor of Science in Physics and Math from Southern Nazarene University, and a Masters and PhD in Computer Science from the University of Oklahoma. He has been the principal investigator in two National Science Foundation research grants. He has also earned eJPT and Security+ certifications.

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