

# LPI Linux Essentials

Dimostra di possedere le competenze fondamentali necessarie per il tuo prossimo lavoro o per una promozione.

La diffusione di Linux aumenta in tutto il mondo: utenti, enti governativi e industrie (che vanno dall'automotive all'esplorazione spaziale) adottano tecnologie Open Source. Questa espansione dell'Open Source nelle imprese sta ridefinendo i tradizionali ruoli di lavoro ICT (Information and Communication Technology) e richiedendo più competenze Linux. Che tu stia iniziando la tua carriera Open Source, che tu stia cercando un avanzamento, verificare in modo indipendente il tuo set di competenze può aiutarti a distinguerti agli occhi dei responsabili delle risorse umane o a quelli dei tuoi manager.

Il certificato di sviluppo professionale Linux Essentials (PDC) funge anche da trampolino di lancio ideale per il percorso di certificazione professionale LPIC più avanzato, per amministratori di sistemi Linux.

**Versione corrente:** 1.6 (codice dell'esame 010-160)

**Prerequisiti:** Non ci sono prerequisiti per questa certificazione

**Requisiti:** Superamento dell'esame 010 di Linux Essentials

**Periodo di validità:** Tutta la vita

**Le lingue:** Inglese, tedesco, giapponese. Le seguenti lingue saranno pubblicate da Spring 2019: italiano, spagnolo, francese, portoghese (brasiliiano), olandese, cinese (semplificato), cinese (tradizionale)

**Nota:** La versione 1.5 (codice dell'esame 010-500) sarà disponibile fino a luglio 2019 nelle seguenti lingue: inglese, tedesco. L'esame può essere redatto nelle seguenti lingue solo per gli esami d'esame cartacei: portoghese (brasiliiano), italiano, spagnolo (moderno), cinese (semplificato), cinese (tradizionale)

**Per ottenere la certificazione Linux Essentials il candidato deve:**

- avere una conoscenza del settore Linux e Open Source e conoscenza delle più popolari applicazioni Open Source;
- comprendere i componenti principali del sistema operativo Linux e avere la competenza tecnica per lavorare sulla command line di Linux;
- avere una conoscenza di base di argomenti relativi alla sicurezza e all'amministrazione come la gestione di utenti / gruppi e le autorizzazioni.

**Il certificato di sviluppo professionale di Linux Essentials convalida una comprovata comprensione di quanto segue:**

- FOSS, le varie Community e licenze.
- Conoscenza delle applicazioni Open Source in riferimento a equivalenti Closed Source.
- Concetti di base di hardware, processi, programmi e componenti del sistema operativo Linux.
- Come lavorare sulla command line e con i file.
- Come creare e ripristinare backup e archivi compressi.
- Sicurezza del sistema, utenti / gruppi e permessi dei file per le directory pubbliche e private.
- Come creare ed eseguire semplici script.



**Blue Lighthouse**  
Edizione Formazione

# Programma dettagliato d'esame

## Topic 1: The Linux Community and a Career in Open Source

### 1.1 Linux Evolution and Popular Operating Systems

**Weight:** 2

**Description:** Knowledge of Linux development and major distributions.

**Key Knowledge Areas:**

- Distributions
- Embedded Systems
- Linux in the Cloud

**The following is a partial list of the used files, terms and utilities:**

- Debian, Ubuntu (LTS)
- CentOS, openSUSE, Red Hat, SUSE
- Linux Mint, Scientific Linux
- Raspberry Pi, Raspbian
- Android

### 1.2 Major Open Source Applications

**Weight:** 2

**Description:** Awareness of major applications as well as their uses and development.

**Key Knowledge Areas:**

- Desktop applications
- Server applications
- Development languages
- Package management tools and repositories

**The following is a partial list of the used files, terms and utilities:**

- OpenOffice.org, LibreOffice, Thunderbird, Firefox, GIMP
- Nextcloud, ownCloud
- Apache HTTPD, NGINX, MariaDB, MySQL, NFS, Samba
- C, Java, JavaScript, Perl, shell, Python, PHP
- dpkg, apt-get, rpm, yum

## 1.3 Open Source Software and Licensing

**Weight: 1**

Description: Open communities and licensing Open Source Software for business.

**Key Knowledge Areas:**

- Open source philosophy
- Open source licensing
- Free Software Foundation (FSF), Open Source Initiative (OSI)

**The following is a partial list of the used files, terms and utilities:**

- Copyleft, Permissive
- GPL, BSD, Creative Commons
- Free Software, Open Source Software, FOSS, FLOSS
- Open source business models

## 1.4 ICT Skills and Working in Linux

**Weight: 2**

**Description:** Basic Information and Communication Technology (ICT) skills and working in Linux.

**Key Knowledge Areas:**

- Desktop skills
- Getting to the command line
- Industry uses of Linux, cloud computing and virtualization

**The following is a partial list of the used files, terms and utilities:**

- Using a browser, privacy concerns, configuration options, searching the web and saving content
- Terminal and console

- Password issues
- Privacy issues and tools
- Use of common open source applications in presentations and projects

## Topic 2: Finding Your Way on a Linux System

### 2.1 Command Line Basics

**Weight:** 3

**Description:** Basics of using the Linux command line.

**Key Knowledge Areas:**

- Basic shell
- Command line syntax
- Variables
- Quoting

**The following is a partial list of the used files, terms and utilities:**

- Bash
- echo
- history
- PATH environment variable
- export
- type

### 2.2 Using the Command Line to Get Help

**Weight:** 2

**Description:** Running help commands and navigation of the various help systems.

**Key Knowledge Areas:**

- Man pages
- Info pages

**The following is a partial list of the used files, terms and utilities:**

- man
- info
- /usr/share/doc/

- locate

## 2.3 Using Directories and Listing Files

**Weight:** 2

**Description:** Navigation of home and system directories and listing files in various locations.

**Key Knowledge Areas:**

- Files, directories
- Hidden files and directories
- Home directories
- Absolute and relative paths

**The following is a partial list of the used files, terms and utilities:**

- Common options for ls
- Recursive listings
- cd
- . and ..
- home and ~

## 2.4 Creating, Moving and Deleting Files

**Weight:** 2

**Description:** Create, move and delete files and directories under the home directory.

**Key Knowledge Areas:**

- Files and directories
- Case sensitivity
- Simple globbing

**The following is a partial list of the used files, terms and utilities:**

- mv, cp, rm, touch
- mkdir, rmdir

## Topic 3: The Power of the Command Line

## 3.1 Archiving Files on the Command Line

**Weight:** 2

**Description:** Archiving files in the user home directory.

**Key Knowledge Areas:**

- Files, directories
- Archives, compression

**The following is a partial list of the used files, terms and utilities:**

- tar
- Common tar options
- gzip, bzip2, xz
- zip, unzip

## 3.2 Searching and Extracting Data from Files

**Weight:** 3

**Description:** Search and extract data from files in the home directory.

**Key Knowledge Areas:**

- Command line pipes
- I/O redirection
- Basic Regular Expressions using ., [, \*, and ?

**The following is a partial list of the used files, terms and utilities:**

- grep
- less
- cat, head, tail
- sort
- cut
- wc

## 3.3 Turning Commands into a Script

**Weight:** 4

**Description:** Turning repetitive commands into simple scripts.

**Key Knowledge Areas:**

- Basic shell scripting
- Awareness of common text editors (vi and nano)

**The following is a partial list of the used files, terms and utilities:**

- #! (shebang)
- /bin/bash
- Variables
- Arguments
- for loops
- echo
- Exit status

## Topic 4: The Linux Operating System

### 4.1 Choosing an Operating System

**Weight:** 1

**Description:** Knowledge of major operating systems and Linux distributions.

**Key Knowledge Areas:**

- Differences between Windows, OS X and Linux
- Distribution life cycle management

**The following is a partial list of the used files, terms and utilities:**

- GUI versus command line, desktop configuration
- Maintenance cycles, beta and stable

### 4.2 Understanding Computer Hardware

**Weight:** 2

**Description:** Familiarity with the components that go into building desktop and server computers.

**Key Knowledge Areas:**



- Hardware

**The following is a partial list of the used files, terms and utilities:**

- Motherboards, processors, power supplies, optical drives, peripherals
- Hard drives, solid state disks and partitions, /dev/sd\*
- Drivers

## 4.3 Where Data is Stored

**Weight:** 3

**Description:** Where various types of information are stored on a Linux system.

**Key Knowledge Areas:**

- Programs and configuration
- Processes
- Memory addresses
- System messaging
- Logging

**The following is a partial list of the used files, terms and utilities:**

- ps, top, free
- syslog, dmesg
- /etc/, /var/log/
- /boot/, /proc/, /dev/, /sys/

## 4.4 Your Computer on the Network

**Weight:** 2

**Description:** Querying vital networking configuration and determining the basic requirements for a computer on a Local Area Network (LAN).

**Key Knowledge Areas:**

- Internet, network, routers
- Querying DNS client configuration
- Querying network configuration

**The following is a partial list of the used files, terms and utilities:**

- route, ip route show
- ifconfig, ip addr show
- netstat, ss
- /etc/resolv.conf, /etc/hosts
- IPv4, IPv6
- ping
- host

## Topic 5: Security and File Permissions

### 5.1 Basic Security and Identifying User Types

**Weight:** 2

**Description:** Various types of users on a Linux system.

**Key Knowledge Areas:**

- Root and standard users
- System users

**The following is a partial list of the used files, terms and utilities:**

- /etc/passwd, /etc/shadow, /etc/group
- id, last, who, w
- sudo, su

### 5.2 Creating Users and Groups

**Weight:** 2

**Description:** Creating users and groups on a Linux system.

**Key Knowledge Areas:**

- User and group commands
- User IDs

**The following is a partial list of the used files, terms and utilities:**

- /etc/passwd, /etc/shadow, /etc/group, /etc/skel/
- useradd, groupadd
- passwd

## 5.3 Managing File Permissions and Ownership

**Weight:** 2

**Description:** Understanding and manipulating file permissions and ownership settings.

**Key Knowledge Areas:**

- File and directory permissions and ownership

**The following is a partial list of the used files, terms and utilities:**

- ls -l, ls -a
- chmod, chown

## 5.4 Special Directories and Files

**Weight:** 1

**Description:** Special directories and files on a Linux system including special permissions.

**Key Knowledge Areas:**

- Using temporary files and directories
- Symbolic links

**The following is a partial list of the used files, terms and utilities:**

- /tmp/, /var/tmp/ and Sticky Bit
- ls -d
- ln -s