

LPIC1-101 (temario)

System Architecture

- Determine and configure hardware settings
 - Key Knowledge Areas:
 - Enable and disable integrated peripherals
 - Configure systems with or without external peripherals such as keyboards
 - Differentiate between the various types of mass storage devices
 - Know the differences between coldplug and hotplug devices
 - Determine hardware resources for devices
 - Tools and utilities to list various hardware information (e.g. lsusb, lspci, etc.)
 - Tools and utilities to manipulate USB devices
 - Conceptual understanding of sysfs, udev, dbus
 - The following is a partial list of the used files, terms and utilities:
 - /sys/
 - /proc/
 - /dev/
 - modprobe
 - lsmod
 - lspci
 - lsusb
- Boot the system
 - Key Knowledge Areas:
 - Provide common commands to the boot loader

- and options to the kernel at boot time
 - Demonstrate knowledge of the boot sequence from BIOS to boot completion
 - Understanding of SysVinit and systemd
 - Awareness of Upstart
 - Check boot events in the log files
- Terms and Utilities:
 - dmesg
 - BIOS
 - bootloader
 - kernel
 - initramfs
 - init
 - SysVinit
 - systemd
- Change runlevels / boot targets and shutdown or reboot system
 - Key Knowledge Areas:
 - Set the default runlevel or boot target
 - Change between runlevels / boot targets including single user mode
 - Shutdown and reboot from the command line
 - Alert users before switching runlevels / boot targets or other major system events
 - Properly terminate processes
 - Terms and Utilities:
 - /etc/inittab
 - shutdown
 - init
 - /etc/init.d/
 - telinit
 - systemd
 - systemctl
 - /etc/systemd/
 - /usr/lib/systemd/
 - wall

Linux Installation and Package Management

- Design hard disk layout
 - Key Knowledge Areas:
 - Allocate filesystems and swap space to separate partitions or disks
 - Tailor the design to the intended use of the system
 - Ensure the /boot partition conforms to the hardware architecture requirements for booting
 - Knowledge of basic features of LVM
 - Terms and Utilities:
 - / (root) filesystem
 - /var filesystem
 - /home filesystem
 - /boot filesystem
 - swap space
 - mount points
 - partitions
- Install a boot manager
 - Key Knowledge Areas:
 - Providing alternative boot locations and backup boot options
 - Install and configure a boot loader such as GRUB Legacy
 - Perform basic configuration changes for GRUB 2
 - Interact with the boot loader

- The following is a partial list of the used files, terms and utilities:
 - menu.lst, grub.cfg and grub.conf
 - grub-install
 - grub-mkconfig
 - MBR
- Manage shared libraries
 - Key Knowledge Areas:
 - Identify shared libraries
 - Identify the typical locations of system libraries
 - Load shared libraries
 - Terms and Utilities:
 - ldd
 - ldconfig
 - /etc/ld.so.conf
 - LD_LIBRARY_PATH
- Use Debian package management
 - Key Knowledge Areas:
 - Install, upgrade and uninstall Debian binary packages
 - Find packages containing specific files or libraries which may or may not be installed
 - Obtain package information like version, content, dependencies, package integrity and installation status (whether or not the package is installed)
 - Terms and Utilities:
 - /etc/apt/sources.list
 - dpkg
 - dpkg-reconfigure
 - apt-get
 - apt-cache
 - aptitude
- Use RPM and YUM package management
 - Key Knowledge Areas:
 - Install, re-install, upgrade and remove

- packages using RPM and YUM
 - Obtain information on RPM packages such as version, status, dependencies, integrity and signatures
 - Determine what files a package provides, as well as find which package a specific file comes from
 - Terms and Utilities:
 - rpm
 - rpm2cpio
 - /etc/yum.conf
 - /etc/yum.repos.d/
 - yum
 - yumdownloader
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GNU and Unix Commands

- Work on the command line
- Key Knowledge Areas:
 - Use single shell commands and one line command sequences to perform basic tasks on the command line
 - Use and modify the shell environment including defining, referencing and exporting environment variables
 - Use and edit command history
 - Invoke commands inside and outside the defined path
- Terms and Utilities:
 - bash
 - echo

- env
 - export
 - pwd
 - set
 - unset
 - man
 - uname
 - history
 - .bash_history
- Process text streams using filters
 - Key Knowledge Areas:
 - Send text files and output streams through text utility filters to modify the output using standard UNIX commands found in the GNU textutils package
 - Terms and Utilities:
 - cat
 - cut
 - expand
 - fmt
 - head
 - join
 - less
 - nl
 - od
 - paste
 - pr
 - sed
 - sort
 - split
 - tail
 - tr
 - unexpand
 - uniq
 - wc
- Perform basic file management
 - Key Knowledge Areas:

- Copy, move and remove files and directories individually
- Copy multiple files and directories recursively
- Remove files and directories recursively
- Use simple and advanced wildcard specifications in commands
- Using find to locate and act on files based on type, size, or time
- Usage of tar, cpio and dd
- Terms and Utilities:
 - cp
 - find
 - mkdir
 - mv
 - ls
 - rm
 - rmdir
 - touch
 - tar
 - cpio
 - dd
 - file
 - gzip
 - gunzip
 - bzip2
 - xz
 - file globbing
- Use streams, pipes and redirects
 - Key Knowledge Areas:
 - Redirecting standard input, standard output and standard error
 - Pipe the output of one command to the input of another command
 - Use the output of one command as arguments to another command
 - Send output to both stdout and a file

- Terms and Utilities:
 - tee
 - xargs
- Create, monitor and kill processes
 - Key Knowledge Areas:
 - Run jobs in the foreground and background
 - Signal a program to continue running after logout
 - Monitor active processes
 - Select and sort processes for display
 - Send signals to processes
 - Terms and Utilities:
 - &
 - bg
 - fg
 - jobs
 - kill
 - nohup
 - ps
 - top
 - free
 - uptime
 - pgrep
 - pkill
 - killall
 - screen
- Modify process execution priorities
 - Key Knowledge Areas:
 - Know the default priority of a job that is created
 - Run a program with higher or lower priority than the default
 - Change the priority of a running process
 - Terms and Utilities:
 - nice
 - ps
 - renice

- top
 - Search text files using regular expressions
 - Key Knowledge Areas:
 - Create simple regular expressions containing several notational elements
 - Use regular expression tools to perform searches through a filesystem or file content
 - Terms and Utilities:
 - grep
 - egrep
 - fgrep
 - sed
 - regex(7)
 - Perform basic file editing operations using vi
 - Key Knowledge Areas:
 - Navigate a document using vi
 - Use basic vi modes
 - Insert, edit, delete, copy and find text
 - Terms and Utilities:
 - vi
 - /, ?
 - h,j,k,l
 - i, o, a
 - c, d, p, y, dd, yy
 - ZZ, :w!, :q!, :e!
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Devices, Linux Filesystems, Filesystem Hierarchy Standard

- Create partitions and filesystems

- Key Knowledge Areas:
 - Manage MBR partition tables
 - Use various mkfs commands to create various filesystems such as:
 - -ext2/ext3/ext4
 - -XFS
 - -VFAT
 - Awareness of ReiserFS and Btrfs
 - Basic knowledge of gdisk and parted with GPT
- Terms and Utilities:
 - fdisk
 - gdisk
 - parted
 - mkfs
 - mkswap
- Maintain the integrity of filesystems
 - Key Knowledge Areas:
 - Verify the integrity of filesystems
 - Monitor free space and inodes
 - Repair simple filesystem problems
 - Terms and Utilities:
 - du
 - df
 - fsck
 - e2fsck
 - mke2fs
 - debugfs
 - dumpe2fs
 - tune2fs
 - XFS tools (such as xfs_metadump and xfs_info)
- Control mounting and unmounting of filesystems
 - Key Knowledge Areas:
 - Manually mount and unmount filesystems
 - Configure filesystem mounting on bootup
 - Configure user mountable removable filesystems

- Terms and Utilities:
 - /etc/fstab
 - /media/
 - mount
 - umount
- Manage disk quotas
 - Key Knowledge Areas:
 - Set up a disk quota for a filesystem
 - Edit, check and generate user quota reports
 - Terms and Utilities:
 - quota
 - edquota
 - repquota
 - quotaon
- Manage file permissions and ownership
 - Key Knowledge Areas:
 - Manage access permissions on regular and special files as well as directories
 - Use access modes such as suid, sgid and the sticky bit to maintain security
 - Know how to change the file creation mask
 - Use the group field to grant file access to group members
 - Terms and Utilities:
 - chmod
 - umask
 - chown
 - chgrp
- Create and change hard and symbolic links
 - Key Knowledge Areas:
 - Create links
 - Identify hard and/or soft links
 - Copying versus linking files
 - Use links to support system administration tasks
 - Terms and Utilities:
 - ln

- ls
- Find system files and place files in the correct location
 - Key Knowledge Areas:
 - Understand the correct locations of files under the FHS
 - Find files and commands on a Linux system
 - Know the location and purpose of important file and directories as defined in the FHS
 - Terms and Utilities:
 - find
 - locate
 - updatedb
 - whereis
 - which
 - type
 - /etc/updatedb.conf