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#1 Online Certification Guide

LPI 201-450

LPI LPIC-2 201 Certification Questions & Answers

Exam Summary – Syllabus –Questions

201-450

LPIC-2 Linux Engineer

60 Questions Exam – 500/800 Cut Score – Duration of 90 minutes

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Know Your 201-450 Certification Well:

The 201-450 is best suitable for candidates who want to gain knowledge in the LPI Linux System Administration. Before you start your 201-450 preparation you may struggle to get all the crucial LPIC-2 201 materials like 201-450 syllabus, sample questions, study guide.

But don't worry the 201-450 PDF is here to help you prepare in a stress free manner.
The PDF is a combination of all your queries like-

- What is in the 201-450 syllabus?
- How many questions are there in the 201-450 exam?
- Which Practice test would help me to pass the 201-450 exam at the first attempt?

Passing the 201-450 exam makes you LPIC-2 Linux Engineer. Having the LPIC-2 201 certification opens multiple opportunities for you. You can grab a new job, get a higher salary or simply get recognition within your current organization.

LPI 201-450 LPIC-2 201 Certification Details:

Exam Name	LPIC-2 Linux Engineer
Exam Code	201-450
Exam Price	$200 (USD)
Duration	90 mins
Number of Questions	60
Passing Score	500 / 800
Schedule Exam	LPI Marketplace
Sample Questions	LPI LPIC-2 Sample Questions
Practice Exam	**LPI 201-450 Certification Practice Exam**

201-450 Syllabus:

Topic	Details
Capacity Planning	
Measure and Troubleshoot Resource Usage	**Weight:** 6 **Description:** Candidates should be able to measure hardware resource and network bandwidth, identify and troubleshoot resource problems. **Key Knowledge Areas:** **-** Measure CPU usage - Measure memory usage - Measure disk I/O - Measure network I/O - Measure firewalling and routing throughput - Map client bandwidth usage - Match / correlate system symptoms with likely problems - Estimate throughput and identify bottlenecks in a system including networking **The following is a partial list of the used files, terms and utilities:** **-** iostat - netstat - w - top - sar - processes blocked on I/O - blocks out - vmstat - pstree, ps - Isof - uptime - swap - blocks in
Predict Future Resource Needs	**Weight:** 2 **Description:** Candidates should be able to monitor resource usage to predict future resource needs. **Key Knowledge Areas:** **-** Use monitoring and measurement tools to monitor IT infrastructure usage. - Predict capacity break point of a configuration - Observe growth rate of capacity usage - Graph the trend of capacity usage

Topic	Details
	- Awareness of monitoring solutions such as Icinga2, Nagios, collectd, MRTG and Cacti **The following is a partial list of the used files, terms and utilities:** **-** diagnose - predict growth - resource exhaustion
Linux Kernel	
Kernel Components	**Weight:** 2 **Description:** Candidates should be able to utilize kernel components that are necessary to specific hardware, hardware drivers, system resources and requirements. This objective includes implementing different types of kernel images, identifying stable and development kernels and patches, as well as using kernel modules. **Key Knowledge Areas:** **-** Kernel 2.6.x, 3.x and 4.x documentation **Terms and Utilities:** **-** /usr/src/linux/ - /usr/src/linux/Documentation/ - zImage - bzImage - xz compression
Compiling a kernel	**Weight:** 3 **Description:** Candidates should be able to properly configure a kernel to include or disable specific features of the Linux kernel as necessary. This objective includes compiling and recompiling the Linux kernel as needed, updating and noting changes in a new kernel, creating an initrd image and installing new kernels. **Key Knowledge Areas:** **-** /usr/src/linux/ - Kernel Makefiles - Kernel 2.6.x/3.x make targets - Customize the current kernel configuration. - Build a new kernel and appropriate kernel modules. - Install a new kernel and any modules. - Ensure that the boot manager can locate the new kernel and associated files. - Module configuration files

Topic	Details
	- Use DKMS to compile kernel modules. - Awareness of dracut **Terms and Utilities:** - mkinitrd - mkinitramfs - make - make targets (all, config, xconfig, menuconfig, gconfig, oldconfig, mrproper, zImage, bzImage, modules, modules_install, rpm-pkg, binrpm-pkg, deb-pkg) - gzip - bzip2 - module tools - /usr/src/linux/.config - /lib/modules/kernel-version/ - depmod - dkms
Kernel runtime management and troubleshooting	**Weight:** 4 **Description:** Candidates should be able to manage and/or query a 2.6.x, 3.x or 4.x kernel and its loadable modules. Candidates should be able to identify and correct common boot and run time issues. Candidates should understand device detection and management using udev. This objective includes troubleshooting udev rules. **Key Knowledge Areas:** - Use command-line utilities to get information about the currently running kernel and kernel modules - Manually load and unload kernel modules - Determine when modules can be unloaded - Determine what parameters a module accepts - Configure the system to load modules by names other than their file name. - /proc filesystem - Content of /, /boot/ , and /lib/modules/ - Tools and utilities to analyze information about the available hardware - udev rules **Terms and Utilities:** - /lib/modules/kernel-version/modules.dep - module configuration files in /etc/ - /proc/sys/kernel/ - /sbin/depmod - /sbin/rmmod - /sbin/modinfo - /bin/dmesg

Topic	Details
	- /sbin/lspci - /usr/bin/lsdev - /sbin/lsmod - /sbin/modprobe - /sbin/insmod - /bin/uname - /usr/bin/lsusb - /etc/sysctl.conf, /etc/sysctl.d/ - /sbin/sysctl - udevmonitor - udevadm monitor - /etc/udev/
System Startup	
Customizing SysV-init system startup	**Weight:** 3 **Description:** Candidates should be able to query and modify the behaviour of system services at various targets / run levels. A thorough understanding of the systemd, SysV Init and the Linux boot process is required. This objective includes interacting with systemd targets and SysV init run levels. **Key Knowledge Areas:** - Systemd - SysV init - Linux Standard Base Specification (LSB) **Terms and Utilities:** - /usr/lib/systemd/ - /etc/systemd/ - /run/systemd/ - systemctl - systemd-delta - /etc/inittab - /etc/init.d/ - /etc/rc.d/ - chkconfig - update-rc.d - init and telinit
System Recovery	**Weight:** 4 **Description:** Candidates should be able to properly manipulate a Linux system during both the boot process and during recovery mode. This objective includes using both the init utility and init-related kernel options. Candidates should be able to determine the cause of errors in loading and usage

Topic	Details
	of bootloaders. GRUB version 2 and GRUB Legacy are the bootloaders of interest. Both BIOS and UEFI systems are covered. **Key Knowledge Areas:** - BIOS and UEFI - NVMe booting - GRUB version 2 and Legacy - grub shell - boot loader start and hand off to kernel - kernel loading - hardware initialisation and setup - daemon/service initialisation and setup - Know the different boot loader install locations on a hard disk or removable device. - Overwrite standard boot loader options and using boot loader shells. - Use systemd rescue and emergency modes. **Terms and Utilities:** - mount - fsck - inittab, telinit and init with SysV init - The contents of /boot/, /boot/grub/ and /boot/efi/ - EFI System Partition (ESP) - GRUB - grub-install - efibootmgr - UEFI shell - initrd, initramfs - Master boot record - systemctl
Alternate Bootloaders	**Weight:** 2 **Description:** Candidates should be aware of other bootloaders and their major features. **Key Knowledge Areas:** - SYSLINUX, ISOLINUX, PXELINUX - Understanding of PXE for both BIOS and UEFI - Awareness of systemd-boot and U-Boot **Terms and Utilities:** - syslinux - extlinux - isolinux.bin - isolinux.cfg - isohdpfx.bin

Topic	Details
	- efiboot.img - pxelinux.0 - pxelinux.cfg/ - uefi/shim.efi - uefi/grubx64.efi
Filesystem and Devices	
Operating the Linux filesystem	**Weight:** 4 **Description:** Candidates should be able to properly configure and navigate the standard Linux filesystem. This objective includes configuring and mounting various filesystem types. **Key Knowledge Areas:** - The concept of the fstab configuration - Tools and utilities for handling swap partitions and files - Use of UUIDs for identifying and mounting file systems - Understanding of systemd mount units **Terms and Utilities:** - /etc/fstab - /etc/mtab - /proc/mounts - mount and umount - blkid - sync - swapon - swapoff
Maintaining a Linux filesystem	**Weight:** 3 **Description:** Candidates should be able to properly maintain a Linux filesystem using system utilities. This objective includes manipulating standard filesystems and monitoring SMART devices. **Key Knowledge Areas:** - Tools and utilities to manipulate and ext2, ext3 and ext4 - Tools and utilities to perform basic Btrfs operations, including subvolumes and snapshots - Tools and utilities to manipulate XFS - Awareness of ZFS **Terms and Utilities:** - mkfs (mkfs.*) - mkswap - fsck (fsck.*)

Topic	Details
	- tune2fs, dumpe2fs and debugfs - btrfs, btrfs-convert - xfs_info, xfs_check, xfs_repair, xfsdump and xfsrestore - smartd, smartctl
Creating and configuring filesystem options	**Weight:** 2 **Description:** Candidates should be able to configure automount filesystems using AutoFS. This objective includes configuring automount for network and device filesystems. Also included is creating filesystems for devices such as CD-ROMs and a basic feature knowledge of encrypted filesystems. **Key Knowledge Areas:** - autofs configuration files - Understanding of automount units - UDF and ISO9660 tools and utilities - Awareness of other CD-ROM filesystems (HFS) - Awareness of CD-ROM filesystem extensions (Joliet, Rock Ridge, El Torito) - Basic feature knowledge of data encryption (dm-crypt / LUKS) **Terms and Utilities:** - /etc/auto.master - /etc/auto.[dir] - mkisofs - cryptsetup
Advanced Storage Device Administration	
Configuring RAID	**Weight:** 3 **Description:** Candidates should be able to configure and implement software RAID. This objective includes using and configuring RAID 0, 1 and 5. **Key Knowledge Areas:** - Software raid configuration files and utilities **Terms and Utilities:** - mdadm.conf - mdadm - /proc/mdstat - partition type 0xFD
Adjusting Storage Device Access	**Weight:** 2 **Description:** Candidates should be able to configure kernel

Topic	Details
	options to support various drives. This objective includes software tools to view & modify hard disk settings including iSCSI devices. **Key Knowledge Areas:** - Tools and utilities to configure DMA for IDE devices including ATAPI and SATA - Tools and utilities to configure Solid State Drives including AHCI and NVMe - Tools and utilities to manipulate or analyse system resources (e.g. interrupts) - Awareness of sdparm command and its uses - Tools and utilities for iSCSI - Awareness of SAN, including relevant protocols (AoE, FCoE) **Terms and Utilities:** - hdparm, sdparm - nvme - tune2fs - fstrim - sysctl - /dev/hd*, /dev/sd*, /dev/nvme* - iscsiadm, scsi_id, iscsid and iscsid.conf - WWID, WWN, LUN numbers
Logical Volume Manager	**Weight:** 3 **Description:** Candidates should be able to create and remove logical volumes, volume groups, and physical volumes. This objective includes snapshots and resizing logical volumes. **Key Knowledge Areas:** - Tools in the LVM suite - Resizing, renaming, creating, and removing logical volumes, volume groups, and physical volumes - Creating and maintaining snapshots - Activating volume groups **Terms and Utilities:** - /sbin/pv* - /sbin/lv* - /sbin/vg* - mount - /dev/mapper/ - lvm.conf

Topic	Details
Network Configuration	
Basic networking configuration	**Weight:** 3 **Description:** Candidates should be able to configure a network device to be able to connect to a local, wired or wireless, and a wide-area network. This objective includes being able to communicate between various subnets within a single network including both IPv4 and IPv6 networks. **Key Knowledge Areas:** - Utilities to configure and manipulate ethernet network interfaces - Configuring basic access to wireless networks **Terms and Utilities:** - ip - ifconfig - route - arp - iw - iwconfig - iwlist
Advanced Network Configuration and Troubleshooting	**Weight:** 4 **Description:** Candidates should be able to configure a network device to implement various network authentication schemes. This objective includes configuring a multi-homed network device and resolving communication problems. **Key Knowledge Areas:** - Utilities to manipulate routing tables - Utilities to configure and manipulate ethernet network interfaces - Utilities to analyze the status of the network devices - Utilities to monitor and analyze the TCP/IP traffic **Terms and Utilities:** - ip - ifconfig - route - arp - ss - netstat - lsof - ping, ping6 - nc

Topic	Details
	- tcpdump - nmap
Troubleshooting Network Issues	**Weight:** 4 **Description:** Candidates should be able to identify and correct common network setup issues, to include knowledge of locations for basic configuration files and commands. **Key Knowledge Areas:** - Location and content of access restriction files - Utilities to configure and manipulate ethernet network interfaces - Utilities to manage routing tables - Utilities to list network states. - Utilities to gain information about the network configuration - Methods of information about the recognized and used hardware devices - System initialization files and their contents (SysV init process) - Awareness of NetworkManager and its impact on network configuration **Terms and Utilities:** - ip - ifconfig - route - ss - netstat - /etc/network/, /etc/sysconfig/network-scripts/ - ping, ping6 - traceroute, traceroute6 - mtr - hostname - System log files such as /var/log/syslog, /var/log/messages and the systemd journal - dmesg - /etc/resolv.conf - /etc/hosts - /etc/hostname, /etc/HOSTNAME - /etc/hosts.allow, /etc/hosts.deny
System Maintenance	
Make and install programs from source	**Weight:** 2 **Description:** Candidates should be able to build and install

Topic	Details
	an executable program from source. This objective includes being able to unpack a file of sources. **Key Knowledge Areas:** - Unpack source code using common compression and archive utilities - Understand basics of invoking make to compile programs - Apply parameters to a configure script - Know where sources are stored by default **Terms and Utilities:** - /usr/src/ - gunzip - gzip - bzip2 - xz - tar - configure - make - uname - install - patch
Backup operations	**Weight:** 3 **Description:** Candidates should be able to use system tools to back up important system data. **Key Knowledge Areas:** - Knowledge about directories that have to be include in backups - Awareness of network backup solutions such as Amanda, Bacula, Bareos and BackupPC - Knowledge of the benefits and drawbacks of tapes, CDR, disk or other backup media - Perform partial and manual backups. - Verify the integrity of backup files. - Partially or fully restore backups. **Terms and Utilities:** - /bin/sh - dd - tar - /dev/st* and /dev/nst* - mt - rsync

Topic	Details
Notify users on system-related issues	**Weight:** 1 **Description:** Candidates should be able to notify the users about current issues related to the system. **Key Knowledge Areas:** - Automate communication with users through logon messages - Inform active users of system maintenance **Terms and Utilities:** - /etc/issue - /etc/issue.net - /etc/motd - wall - /sbin/shutdown - systemctl

LPI 201-450 Sample Questions:

Question: 1

Where are the udevd configuration settings stored?

a) /lib/modules
b) /boot
c) /etc/udev/rules.d
d) /etc/udev/udev.conf

Answer: d

Question: 2

Which command should be used to force filesystems to write metadata residing in memory to the filesystem media structures?

a) unmount
b) fuser
c) lsof
d) sync
e) dmesg

Answer: d

Question: 3

Which of the following map types can be found in the /etc/auto.master file?

(Choose all that apply.)

a) Built-in
b) Direct
c) Indirect
d) SMART
e) Road

Answer: a, b, c

Question: 4

To shut down your system without sending a message to users, use which of the following /sbin/shutdown options?

a) -c
b) -k
c) --no-wall
d) --wall

Answer: c

Question: 5

What command can you use both to display and to set the IP address, netmask, and default router values?

a) ifconfig
b) iwconfig
c) router
d) ifup
e) ip

Answer: e

Question: 6

When using the tar command for an incremental backup, a snapshot file is created. This snapshot file should have which of the following file extensions as part of its name?

a) .tar
b) .tgz
c) .tar.snap
d) .snap
e) .snar

Answer: e

Question: 7

Which was the first bootloader program used in Linux?

a) GRUB Legacy
b) LILO
c) GRUB2
d) SYSLINUX
e) ISOLINUX

Answer: b

Question: 8

Which of the following commands checks for inconsistencies but does not conduct any repairs for an XFS filesystem?

a) xfs_check
b) xfsdump
c) xfs_info
d) xfs_metadump
e) xfsrestore

Answer: a

Question: 9

How many bits are used in an IPv6 address?

a) 32
b) 64
c) 128
d) 256
e) 8

Answer: c

Question: 10

Which transport layer protocol guarantees packet delivery?

a) TCP
b) UDP
c) ICMP
d) DNS
e) DHCP

Answer: a

Study Guide to Crack LPI LPIC-2 201 201-450 Exam:

- Getting details of the 201-450 syllabus, is the first step of a study plan. This pdf is going to be of ultimate help. Completion of the syllabus is must to pass the 201-450 exam.
- Making a schedule is vital. A structured method of preparation leads to success. A candidate must plan his schedule and follow it rigorously to attain success.
- Joining the LPI provided training for 201-450 exam could be of much help. If there is specific training for the exam, you can discover it from the link above.
- Read from the 201-450 sample questions to gain your idea about the actual exam questions. In this PDF useful sample questions are provided to make your exam preparation easy.
- Practicing on 201-450 practice tests is must. Continuous practice will make you an expert in all syllabus areas.

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