



LPI 305-300

LPI LPIC-3 Certification Questions & Answers

Exam Summary – Syllabus – Questions

305-300

[LPIC-3 Virtualization and Containerization](#)

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

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Know Your 305-300 Certification Well:

The 305-300 is best suitable for candidates who want to gain knowledge in the LPI Linux Professional. Before you start your 305-300 preparation you may struggle to get all the crucial LPIC-3 materials like 305-300 syllabus, sample questions, study guide.

But don't worry the 305-300 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 305-300 syllabus?
- How many questions are there in the 305-300 exam?
- Which Practice test would help me to pass the 305-300 exam at the first attempt?

Passing the 305-300 exam makes you LPIC-3 Virtualization and Containerization. Having the LPIC-3 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 305-300 LPIC-3 Certification Details:

Exam Name	LPIC-3 Virtualization and Containerization
Exam Code	305-300
Exam Price	\$200 (USD)
Duration	90 mins
Number of Questions	60
Passing Score	500 / 800
Schedule Exam	Pearson VUE
Sample Questions	LPI LPIC-3 Sample Questions
Practice Exam	LPI 305-300 Certification Practice Exam

305-300 Syllabus:

Topic	Details
Full Virtualization	
Virtualization Concepts and Theory	<p>Weight: 6</p> <p>Description: Candidates should know and understand the general concepts, theory and terminology of virtualization. This includes Xen, QEMU and libvirt terminology.</p> <p>Key Knowledge Areas:</p> <ul style="list-style-type: none"> • Understand virtualization terminology • Understand the pros and cons of virtualization • Understand the various variations of Hypervisors and Virtual Machine Monitors • Understand the major aspects of migrating physical to virtual machines • Understand the major aspects of migrating virtual machines between host systems • Understand the features and implications of virtualization for a virtual machine, such as snapshotting, pausing, cloning and resource limits • Awareness of oVirt, Proxmox, systemd-machined and VirtualBox • Awareness of Open vSwitch <p>The following is a partial list of the used files, terms and utilities:</p> <ul style="list-style-type: none"> • Hypervisor • Hardware Virtual Machine (HVM) • Paravirtualization (PV) • Emulation and Simulation • CPU flags • /proc/cpuinfo

Topic	Details
Xen	<ul style="list-style-type: none"> • Migration (P2V, V2V) <p>Weight: 3</p> <p>Description: Candidates should be able to install, configure, maintain, migrate and troubleshoot Xen installations. The focus is on Xen version 4.x.</p> <p>Key Knowledge Areas:</p> <ul style="list-style-type: none"> • Understand architecture of Xen, including networking and storage • Basic configuration of Xen nodes and domains • Basic management of Xen nodes and domains • Basic troubleshooting of Xen installations • Awareness of XAPI • Awareness of XenStore • Awareness of Xen Boot Parameters • Awareness of the xm utility <p>The following is a partial list of the used files, terms and utilities:</p> <ul style="list-style-type: none"> • Domain0 (Dom0), DomainU (DomU) • PV-DomU, HVM-DomU • /etc/xen/ • xl • xl.cfg • xl.conf • xentop
QEMU	<p>Weight: 4</p> <p>Description: Candidates should be able to install, configure, maintain, migrate and troubleshoot QEMU installations.</p> <p>Key Knowledge Areas:</p>

Topic	Details
	<ul style="list-style-type: none"> • Understand the architecture of QEMU, including KVM, networking and storage • Start QEMU instances from the command line • Manage snapshots using the QEMU monitor • Install the QEMU Guest Agent and VirtIO device drivers • Troubleshoot QEMU installations, including networking and storage • Awareness of important QEMU configuration parameters <p>The following is a partial list of the used files, terms and utilities:</p> <ul style="list-style-type: none"> • Kernel modules: kvm, kvm-intel and kvm-amd • /dev/kvm • QEMU monitor • qemu • qemu-system-x86_64 • ip • brctl • tuncctl
<p>Libvirt Virtual Machine Management</p>	<p>Weight: 9</p> <p>Description: Candidates should be able to manage virtualization hosts and virtual machines ('libvirt domains') using libvirt and related tools.</p> <p>Key Knowledge Areas:</p> <ul style="list-style-type: none"> • Understand the architecture of libvirt • Manage libvirt connections and nodes • Create and manage QEMU and Xen domains, including snapshots • Manage and analyze resource consumption of domains • Create and manage storage pools and volumes

Topic	Details
	<ul style="list-style-type: none"> • Create and manage virtual networks • Migrate domains between nodes • Understand how libvirt interacts with Xen and QEMU • Understand how libvirt interacts with network services such as dnsmasq and radvd • Understand libvirt XML configuration files • Awareness of virtlogd and virtlockd <p>The following is a partial list of the used files, terms and utilities:</p> <ul style="list-style-type: none"> • libvirtd • /etc/libvirt/ • virsh (including relevant subcommands)
Virtual Machine Disk Image Management	<p>Weight: 3</p> <p>Description: Candidates should be able to manage virtual machines disk images. This includes converting disk images between various formats and hypervisors and accessing data stored within an image.</p> <p>Key Knowledge Areas:</p> <ul style="list-style-type: none"> • Understand features of various virtual disk image formats, such as raw images, qcow2 and VMDK • Manage virtual machine disk images using qemu-img • Mount partitions and access files contained in virtual machine disk images using libguestfish • Copy physical disk content to a virtual machine disk image • Migrate disk content between various virtual machine disk image formats • Awareness of Open Virtualization Format (OVF) <p>The following is a partial list of the used files, terms and utilities:</p>

Topic	Details
	<ul style="list-style-type: none"> • qemu-img • guestfish (including relevant subcommands) • guestmount • guestumount • virt-cat • virt-copy-in • virt-copy-out • virt-diff • virt-inspector • virt-filesystems • virt-rescue • virt-df • virt-resize • virt-sparsify • virt-p2v • virt-p2v-make-disk • virt-v2v • virt-sysprep
<p>Container Virtualization</p>	
<p>Container Virtualization Concepts</p>	<p>Weight: 7</p> <p>Description: Candidates should understand the concept of container virtualization. This includes understanding the Linux components used to implement container virtualization as well as using standard Linux tools to troubleshoot these components.</p> <p>Key Knowledge Areas:</p> <ul style="list-style-type: none"> • Understand the concepts of system and application container • Understand and analyze kernel namespaces • Understand and analyze control groups • Understand and analyze capabilities

Topic	Details
	<ul style="list-style-type: none"> • Understand the role of seccomp, SELinux and AppArmor for container virtualization • Understand how LXC and Docker leverage namespaces, cgroups, capabilities, seccomp and MAC • Understand the principle of runc • Understand the principle of CRI-O and containerd • Awareness of the OCI runtime and image specifications • Awareness of the Kubernetes Container Runtime Interface (CRI) • Awareness of podman, buildah and skopeo • Awareness of other container virtualization approaches in Linux and other free operating systems, such as rkt, OpenVZ, systemd-nspawn or BSD Jails <p>The following is a partial list of the used files, terms and utilities:</p> <ul style="list-style-type: none"> • nsenter • unshare • ip (including relevant subcommands) • capsh • /sys/fs/cgroups • /proc/[0-9]+/ns • /proc/[0-9]+/status
LXC	<p>Weight: 6</p> <p>Description: Candidates should be able to use system containers using LXC and LXD. The version of LXC covered is 3.0 or higher.</p> <p>Key Knowledge Areas:</p> <ul style="list-style-type: none"> • Understand the architecture of LXC and LXD

Topic	Details
	<ul style="list-style-type: none"> • Manage LXC containers based on existing images using LXD, including networking and storage • Configure LXC container properties • Limit LXC container resource usage • Use LXD profiles • Understand LXC images • Awareness of traditional LXC tools <p>Partial list of the used files, terms and utilities:</p> <ul style="list-style-type: none"> • lxd • lxc (including relevant subcommands)
Docker	<p>Weight: 9</p> <p>Description: Candidate should be able to manage Docker nodes and Docker containers. This include understand the architecture of Docker as well as understanding how Docker interacts with the node's Linux system.</p> <p>Key Knowledge Areas:</p> <ul style="list-style-type: none"> • Understand the architecture and components of Docker • Manage Docker containers by using images from a Docker registry • Understand and manage images and volumes for Docker containers • Understand and manage logging for Docker containers • Understand and manage networking for Docker • Use Dockerfiles to create container images • Run a Docker registry using the registry Docker image <p>Partial list of the used files, terms and utilities:</p> <ul style="list-style-type: none"> • dockerd

Topic	Details
	<ul style="list-style-type: none"> • /etc/docker/daemon.json • /var/lib/docker/ • docker • Dockerfile
Container Orchestration Platforms	<p>Weight: 3</p> <p>Description: Candidates should understand the importance of container orchestration and the key concepts Docker Swarm and Kubernetes provide to implement container orchestration.</p> <p>Key Knowledge Areas:</p> <ul style="list-style-type: none"> • Understand the relevance of container orchestration • Understand the key concepts of Docker Compose and Docker Swarm • Understand the key concepts of Kubernetes and Helm • Awareness of OpenShift, Rancher and Mesosphere DC/OS
VM Deployment and Provisioning	
Cloud Management Tools	<p>Weight: 2</p> <p>Description: Candidates should understand common offerings in public clouds and have basic feature knowledge of commonly available cloud management tools.</p> <p>Key Knowledge Areas:</p> <ul style="list-style-type: none"> • Understand common offerings in public clouds • Basic feature knowledge of OpenStack • Basic feature knowledge of Terraform • Awareness of CloudStack, Eucalyptus and OpenNebula

Topic	Details
	<p>Partial list of the used files, terms and utilities:</p> <ul style="list-style-type: none"> • IaaS, PaaS, SaaS • OpenStack • Terraform
Packer	<p>Weight: 2</p> <p>Description: Candidates should be able to use Packer to create system images. This includes running Packer in various public and private cloud environments as well as building container images for LXC/LXD.</p> <p>Key Knowledge Areas:</p> <ul style="list-style-type: none"> • Understand the functionality and features of packer • Create and maintain template files • Build images from template files using different builders <p>Partial list of the used files, terms and utilities:</p> <ul style="list-style-type: none"> • Packer
cloud-init	<p>Weight: 3</p> <p>Description: Candidates should be able to use cloud-init to configure virtual machines created from standardized images. This includes adjusting virtual machines to match their available hardware resources, specifically, disk space and volumes. Additionally, candidates should be able to configure instances to allow secure SSH logins and install a specific set of software packages. Furthermore, candidates should be able to create new system images with cloud-init support.</p> <p>Key Knowledge Areas:</p> <ul style="list-style-type: none"> • Understanding the features and concepts of cloud-init, including user-data, initializing and configuring cloud-init

Topic	Details
	<ul style="list-style-type: none"> • Use cloud-init to create, resize and mount file systems, configure user accounts, including login credentials such as SSH keys and install software packages from the distribution’s repository • Integrate cloud-init into system images • Use config drive datasource for testing <p>Partial list of the used files, terms and utilities:</p> <ul style="list-style-type: none"> • cloud-init • user-data • /var/lib/cloud/
Vagrant	<p>Weight: 3</p> <p>Description: Candidate should be able to use Vagrant to manage virtual machines, including provisioning of the virtual machine.</p> <p>Key Knowledge Areas:</p> <ul style="list-style-type: none"> • Understand Vagrant architecture and concepts, including storage and networking • Retrieve and use boxes from Atlas • Create and run Vagrantfiles • Access Vagrant virtual machines • Share and synchronize folder between a Vagrant virtual machine and the host system • Understand Vagrant provisioning, i.e. File and Shell provisioners • Understand multi-machine setup <p>Partial list of the used files, terms and utilities:</p> <ul style="list-style-type: none"> • vagrant • Vagrantfile

LPI 305-300 Sample Questions:

Question: 1

What is the usual way to gain command line access to computing instances in an IaaS cloud?

- a) By providing a public SSH key to the cloud management system and using the matching private SSH key to log into the instances.
- b) Usually computing instances are accessed through a web frontend and do not allow command line access.
- c) By either telnet or SSH using the credentials of the cloud management system account with administrative privileges.
- d) By using a telnet session with the credentials set and publicized by the creator of the computing instance's system image.
- e) By using a VNC console which does not require authentication when it is invoked via the cloud management system.

Answer: a

Question: 2

When KVM is launched with the parameter `-boot order=n`, which of the following devices will be searched for a bootable operating system?

- a) All floppy, CDROM, and hard disk drives in that order.
- b) All network interfaces attached to the VM.
- c) No devices are searched and the user is prompted to choose the boot device.
- d) All hard disks and no other devices.
- e) No devices are searched in order to support directly booting a Linux kernel.

Answer: b

Question: 3

When preparing a public machine image for the provisioning of new cloud computing instances, which of the following steps should be done?

(Choose TWO correct answers.)

- a) Remove all default users and groups, including root and nobody.
- b) Remove all configuration files from `/etc/` that were not manually modified.
- c) Remove all confidential data from the image.
- d) Remove all remote login services (i.e. SSH) from the image.
- e) Remove all private SSH keys from the image.

Answer: c, e

Question: 4

What does IaaS stand for?

- a) Integration as a Service
- b) Intelligence as a Service
- c) Instances as a Service
- d) Infrastructure as a Service
- e) Information as a Service

Answer: d

Question: 5

Within the graphical output of a KVM virtual machine, which key sequence switches to the KVM monitor of the VM?

- a) Ctrl-Alt-1
- b) Ctrl-Alt-0
- c) Ctrl-Alt-4
- d) Ctrl-Alt-2
- e) Ctrl-Alt-3

Answer: d

Question: 6

In order to use the option `dom0_mem` to limit the amount of memory assigned to the Xen Domain-0, where must this option be specified?

- a) In its Makefile, when Xen is built.
- b) In the configuration file `/etc/xen/Domain-0.cfg`, when Xen starts.
- c) In the bootloader configuration, when Xen is booted.
- d) In its `.config` file, when the Domain-0 kernel is built.
- e) In any of Xen's global configuration files.

Answer: c

Question: 7

When used with KVM, which of the following block device image formats support snapshots?

- a) qcow
- b) dmg
- c) qcow2
- d) qed
- e) raw

Answer: c

Question: 8

How can data be shared between several virtual machines running on the same Linux-based host system?

- a) By mounting other VM's file systems from `/dev/virt-disks/remote/`.
- b) By using a network file system or file transfer protocol.
- c) By default, Linux-based virtualization products provide full access to the host system to all virtual machines.
- d) By setting up a ramdisk in one virtual machine and mounting it using its UUID in the other VMs.
- e) By attaching the same virtual hard disk to all virtual machines and activating EXT4 sharing extensions on it.

Answer: b

Question: 9

Which of the following statements are true regarding IaaS computing instances?
(Choose TWO correct answers.)

- a) Creation of new instances can be automated by using scripts or APIs and service interfaces.
- b) The root file system of a computing instance is always persistent and can be accessed after the instance is destroyed.
- c) Each and every user of an IaaS cloud has exactly one computing instance.
- d) Once created, computing instances are seldom deleted in order to ensure the accessibility of the instance's data.
- e) Instances may be created when needed and destroyed when they become obsolete.

Answer: a, e

Question: 10

Which options to the `xl` command will deactivate a running Xen virtual machine?
(Choose TWO correct answers.)

- a) `destroy`
- b) `remove`
- c) `shutdown`
- d) `stop`
- e) `halt`

Answer: a, c

Study Guide to Crack LPI LPIC-3 305-300 Exam:

- Getting details of the 305-300 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 305-300 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 305-300 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 305-300 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 305-300 practice tests is must. Continuous practice will make you an expert in all syllabus areas.

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