EDUSUM
#1 Online Certification Guide

COMPTIA XK0-004

CompTIA Linux+ Certification Questions & Answers

Exam Summary – Syllabus –Questions

XK0-004
CompTIA Linux+
90 Questions Exam – 720/900 Cut Score – Duration of 90 minutes

Table of Contents:

Know Your XK0-004 Certification Well:

The XK0-004 is best suitable for candidates who want to gain knowledge in the CompTIA Infrastructure. Before you start your XK0-004 preparation you may struggle to get all the crucial Linux+ materials like XK0-004 syllabus, sample questions, study guide.

But don't worry the XK0-004 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 XK0-004 syllabus?
- How many questions are there in the XK0-004 exam?
- Which Practice test would help me to pass the XK0-004 exam at the first attempt?

Passing the XK0-004 exam makes you CompTIA Linux+. Having the Linux+ certification opens multiple opportunities for you. You can grab a new job, get a higher salary or simply get recognition within your current organization.

CompTIA XK0-004 Linux+ Certification Details:

Exam Name	CompTIA Linux+
Exam Code	XK0-004
Exam Price	$338 (USD)
Duration	90 mins
Number of Questions	90
Passing Score	720 / 900
Books / Training	**CertMaster Learn for Linux+**
Schedule Exam	**Pearson VUE** **CompTIA Marketplace**
Sample Questions	**CompTIA Linux+ Sample Questions**
Practice Exam	**CompTIA XK0-004 Certification Practice Exam**

XK0-004 Syllabus:

Topic	Details
	Hardware and System Configuration - 21%

Explain Linux boot process concepts.	1. Boot loaders
	
	• GRUB
	• GRUB2
	
	2. Boot options
	
	• UEFI/EFI
	• PXE
	• NFS
	• Boot from ISO
	• Boot from HTTP/FTP
	
	2. File locations
	
	• /etc/default/grub
	• /etc/grub2.cfg
	• /boot
	• /boot/grub
	• /boot/grub2
	• /boot/ef
	
	3. Boot modules and files
	
	• Commands
	  mkinitrd
	  dracut
	  grub2-install
	  grub2-mkconfig
	• initramfs
	• efi files
	• vmlinuz
	• vmlinux
	
	4. Kernel panic

Given a scenario, install, configure, and monitor kernel modules.	1. Commands • lsmod

Topic	Details
	• insmod • modprobe • modinfo • dmesg • rmmod • depmod 2. Locations • /usr/lib/modules/[kernelversion] • /usr/lib/modules • /etc/modprobe.conf • /etc/modprobe.d/
Given a scenario, configure and verify network connection parameters.	1. Diagnostic tools • ping • netstat • nslookup • dig • host • route • ip • ethtool • ss • iwconfig • nmcli • brctl • nmtui 2. Configuration files • /etc/sysconfig/network-scripts/ • /etc/sysconfig/network • /etc/hosts • /etc/network • /etc/nsswitch.conf • /etc/resolv.conf • /etc/netplan • /etc/sysctl.conf

Topic	Details
	• /etc/dhcp/dhclient.conf 3. Bonding • Aggregation • Active/passive • Load balancing
Given a scenario, manage storage in a Linux environment.	1. Basic partitions • Raw devices • GPT • MBR 2. File system hierarchy • Real file systems • Virtual file systems • Relative paths • Absolute paths 3. Device mapper • LVM • mdadm • Multipath 4. Tools • XFS tools • LVM tools • EXT tools • Commands mdadm fdisk parted mkfs iostat df du mount umount lsblk blkid dumpe2fs resize2fs

Topic	Details

	fsck
	tune2fs
	e2label
	
	5. Location
	
	- /etc/fstab
	- /etc/crypttab
	- /dev/
	- /dev/mapper
	- /dev/disk/by-
	  id
	  uuid
	  path
	  multipath
	- /etc/mtab
	- /sys/block
	- /proc/partitions
	- /proc/mounts
	
	6. File system types
	
	- ext3
	- ext4
	- xfs
	- nfs
	- smb
	- cifs
	- ntfs

Compare and contrast cloud and virtualization concepts and technologies.	1. Templates - VM - OVA - OVF - JSON - YAML - Container images 2. Bootstrapping - Cloud-init - Anaconda

Topic	Details
	• Kickstart
	3. Storage
	• Thin vs. thick provisioning
	• Persistent volumes
	• Blob
	• Block
	4. Network considerations
	• Bridging
	• Overlay networks
	• NAT
	• Local
	• Dual-homed
	5. Types of hypervisors
	6. Tools
	• libvirt
	• virsh
	• vmm
Given a scenario, configure localization options.	**1. File locations**
	• /etc/timezone
	• /usr/share/zoneinfo
	2. Commands
	• localectl
	• timedatectl
	• date
	• hwclock
	3. Environment variables
	• LC_*
	• LC_ALL
	• LANG
	• TZ
	4. Character sets
	• UTF-8

Topic	Details
	• ASCII • Unicode
Systems Operation and Maintenance - 26%	

Given a scenario, conduct software installations, configurations, updates, and removals.	1. Package types
	
	• .rpm
	• .deb
	• .tar
	• .tgz
	• .gz
	
	2. Installation tools
	
	• RPM
	• Dpkg
	• APT
	• YUM
	• DNF
	• Zypper
	
	3. Build tools
	
	• Commands
	  make
	  make install
	  ldd
	• Compilers
	• Shared libraries
	
	4. Repositories
	
	• Configuration
	• Creation
	• Syncing
	• Locations
	
	5. Acquisition commands
	
	• wget
	• curl

Given a scenario, manage users and groups.	1. Creation

Topic	Details
	- useradd - groupadd 2. Modification - usermod - groupmod - passwd - chage 3. Deletion - userdel - groupdel 4. Queries - id - whoami - who - w - last 5. Quotas - User quota - Group quota 6. Profiles - Bash parameters User entries - .bashrc - .bash_profile - .profile - Global entries /etc/bashrc /etc/profile.d/ /etc/skel /etc/profile 7. Important files and file contents /etc/passwd /etc/group

Topic	Details
	• /etc/shadow
Given a scenario, create, modify, and redirect files.	1. Text editors • nano • vi 2. File readers • grep • cat • tail • head • less • more 3. Output redirection • < • > • | • << • >> • 2> • &> • stdin • stdout • stderr • /dev/null • /dev/tty • xargs • tee • Here documents 4. Text processing • grep • tr • echo • sort • awk • sed

Topic	Details
	• cut
	• printf
	• egrep
	• wc
	• paste
	5. File and directory operations
	• touch
	• mv
	• cp
	• rm
	• scp
	• ls
	• rsync
	• mkdir
	• rmdir
	• ln Symbolic (soft) Hard
	• unlink
	• inodes
	• find
	• locate
	• grep
	• which
	• whereis
	• diff
	• updatedb
Given a scenario, manage services.	1. Systemd management • Systemctl Enabled Disabled Start Stop Mask Restart Status Daemon-reload

Topic	Details
	• Systemd-analyze blame • Unit files Directory locations Environment parameters • Targets • Hostnamectl • Automount 2. SysVinit • chkconfig on off level • Runlevels Definitions of 0–6 /etc/init.d /etc/rc.d /etc/rc.local /etc/inittab Commands - runlevel - telinit • Service Restart Status Stop Start Reload
Summarize and explain server roles.	1. NTP 2. SSH 3. Web 4. Certificate authority 5. Name server 6. DHCP 7. File servers 8. Authentication server 9. Proxy 10. Logging 11. Containers 12. VPN 13. Monitoring 14. Database 15. Print server

Topic	Details
	16. Mail server 17. Load balancer 18. Clustering
Given a scenario, automate and schedule jobs.	1. cron 2. at 3. crontab 4. fg 5. bg 6. & 7. kill 8. Ctrl+c 9. Ctrl+z 10. nohup
Explain the use and operation of Linux devices.	1. Types of devices • Client devices • Bluetooth • WiFi • USB • Monitors • GPIO • Network adapters • PCI • HBA • SATA • SCSI • Printers • Video • Audio 2. Monitoring and configuration tools • lsdev • lsusb • lspci • lsblk • dmesg • lpr • lpq • abrt

Topic	Details

	• CUPS
	• udevadm
	  add
	  reload-rules
	  control
	  trigger
	
	3. File locations
	
	• /proc
	• /sys
	• /dev
	• /dev/mapper
	• /etc/X11
	
	4. Hot pluggable devices
	
	• /usr/lib/udev/rules.d (System rules - Lowest priority)
	• /run/udev/rules.d (Volatile Rules)
	• /etc/udev/rules.d (Local Administration - Highest priority)
	• /etc/udev/rules.d

Compare and contrast Linux graphical user interfaces.	1. Servers • Wayland • X11 2. GUI • Gnome • Unity • Cinnamon • MATE • KDE 3. Remote desktop • VNC • XRDP • NX • Spice 4. Console redirection

Topic	Details
	• SSH port forwarding Local Remote X11 forwarding VNC 5. Accessibility
Security - 19%	
Given a scenario, apply or acquire the appropriate user and/or group permissions and ownership.	1. File and directory permissions • Read, write, execute • User, group, other • SUID • Octal notation • umask • Sticky bit • SGID • Inheritance • Utilities chmod chown chgrp getfacl setfacl ls ulimit chage 2. Context-based permissions • SELinux configurations disabled permissive enforcing • SELinux policy targeted • SELinux tools setenforce getenforce sestatus setsebool getsebool chcon

Topic	Details
	restorecon ls -Z ps -Z • AppArmor aa-disable aa-complain aa-unconfined /etc/apparmor.d/ /etc/apparmor.d/tunables 3. Privilege escalation • su • sudo • wheel • visudo • sudoedit 4. User types • Root • Standard • Service
Given a scenario, configure and implement appropriate access and authentication methods.	1. PAM • Password policies • LDAP integration • User lockouts • Required, optional, or sufficient • /etc/pam.d/ • pam_tally2 • faillock 2. SSH • ~/.ssh/ known_hosts authorized_keys config id_rsa id_rsa.pub • User-specific access • TCP wrappers

Topic	Details
	/etc/ssh/ ssh_config sshd_config - ssh-copy-id - ssh-keygen - ssh-add 3. TTYs /etc/securetty /dev/tty# 4. PTYs 5. PKI - Self-signed - Private keys - Public keys - Hashing - Digital signatures - Message digest 6. VPN as a client - SSL/TLS - Transport mode - Tunnel mode - IPSec - DTLS
Summarize security best practices in a Linux environment.	1. Boot security - Boot loader password - UEFI/BIOS password 2. Additional authentication methods - Multifactor authentication Tokens - Hardware - Software OTP Biometrics - RADIUS - TACACS+

Topic	Details

	• LDAP
	• Kerberos
	  kinit
	  klist
	
	3. Importance of disabling root login via SSH
	4. Password-less login
	
	• Enforce use of PKI
	
	5. Chroot jail services
	6. No shared IDs
	7. Importance of denying hosts
	8. Separation of OS data from application data
	
	• Disk partition to maximize system availability
	
	9. Change default ports
	10. Importance of disabling or uninstalling unused and unsecure services
	
	• FTP
	• Telnet
	• Finger
	• Sendmail
	• Postfix
	
	11. Importance of enabling SSL/TLS
	12. Importance of enabling auditd
	13. CVE monitoring
	14. Discouraging use of USB devices
	15. Disk encryption
	
	• LUKS
	
	16. Restrict cron access
	17. Disable Ctrl+Alt+Del
	18. Add banner
	19. MOTD

Given a scenario, implement logging services.	1. Key file locations • /var/log/secure • /var/log/messages • /var/log/[application] • /var/log/kern.log

Topic	Details
	2. Log management • Third-party agents • logrotate • /etc/rsyslog.conf • journald journalctl 3. lastb

Given a scenario, implement and configure Linux firewalls.	1. Access control lists
	
	• Source
	• Destination
	• Ports
	• Protocol
	• Logging
	• Stateful vs. stateless
	• Accept
	• Reject
	• Drop
	• Log
	
	2. Technologies
	
	• firewalld
	  Zones
	  Run time
	• iptables
	  Persistency
	  Chains
	• ufw
	  /etc/default/ufw
	  /etc/ufw/
	• Netfilter
	
	3. IP forwarding
	
	• /proc/sys/net/ipv4/ip_forward
	• /proc/sys/net/ipv6/conf/all/forwarding
	
	4. Dynamic rule sets
	
	• DenyHosts

Topic	Details
	• Fail2ban • IPset 5. Common application firewall configurations • /etc/services • Privileged ports
Given a scenario, backup, restore, and compress files.	1. Archive and restore utilities • tar • cpio • dd 2. Compression • gzip • xz • bzip2 • zip 3. Backup types • Incremental • Full • Snapshot clones • Differential • Image 4. Off-site/off-system storage • SFTP • SCP • rsync 5. Integrity checks • MD5 • SHA
Linux Troubleshooting and Diagnostics - 20%	
Given a scenario, analyze system properties and remediate accordingly.	1. Network monitoring and configuration

Topic	Details

	• Latency
	  Bandwidth
	  Throughput
	
	• Routing
	
	• Saturation
	
	• Packet drop
	
	• Timeouts
	
	• Name resolution
	
	• Localhost vs. Unix socket
	
	• Adapters
	  RDMA drivers
	
	• Interface configurations
	
	• Commands
	  nmap
	  netstat
	  iftop
	  route
	  iperf
	  tcpdump
	  ipset
	  Wireshark
	  - tshark
	  netcat
	  traceroute
	  mtr
	  arp
	  nslookup
	  dig
	  host
	  whois
	  ping
	  nmcli
	  ip
	  tracepath
	
	2. Storage monitoring and configuration
	
	• iostat
	
	• ioping
	
	• IO scheduling
	  cfq
	  noop
	  deadline

Topic	Details
	• du
	• df
	• LVM tools
	• fsck
	• partprobe
	3. CPU monitoring and configuration
	• /proc/cpuinfo
	• uptime
	• loadaverage
	• sar
	• sysctl
	4. Memory monitoring and configuration
	• swapon
	• swapoff
	• mkswap
	• vmstat
	• Out of memory killer
	• free
	• /proc/meminfo
	• Buffer cache output
	5. Lost root password
	• Single user mode
Given a scenario, analyze system processes in order to optimize performance.	1. Process management
	• Process states Zombie Uninterruptible sleep Interruptible sleep Running
	• Priorities
	• Kill signals
	• Commands nice renice top time ps

Topic	Details
	lsof pgrep pkill • PIDs
Given a scenario, analyze and troubleshoot user issues.	1. Permissions • File • Directory 2. Access • Local • Remote 3. Authentication • Local • External • Policy violations 4. File creation • Quotas • Storage • Inode exhaustion • Immutable files 5. Insufficient privileges for authorization • SELinux violations 6. Environment and shell issues
Given a scenario, analyze and troubleshoot application and hardware issues.	1. SELinux context violations 2. Storage • Degraded storage • Missing devices • Missing volumes • Missing mount point • Performance issues • Resource exhaustion • Adapters SCSI RAID

Topic	Details
	SATA HBA - /sys/class/scsi_host/host#/scan • Storage integrity Bad blocks 3. Firewall • Restrictive ACLs • Blocked ports • Blocked protocols 4. Permission • Ownership • Executables • Inheritance • Service accounts • Group memberships 5. Dependencies • Patching • Update issues • Versioning • Libraries • Environment variables • GCC compatibility • Repositories 6. Troubleshooting additional hardware issues • Memory • Printers • Video GPU drivers • Communications ports • USB • Keyboard mapping • Hardware or software compatibility issues • Commands dmidecode lshw

Topic	Details
Automation and Scripting - 14%	
Given a scenario, deploy and execute basic BASH scripts.	1. Shell environments and shell variables • PATH • Global • Local • export • env • set • printenv • echo 2. #!/bin/bash 3. Sourcing scripts 4. Directory and file permissions • chmod 5. Extensions 6. Commenting • # 7. File globbing 8. Shell expansions • ${} • $() • ` ` 8. Redirection and piping 9. Exit codes • stderr • stdin • stdout 10. Metacharacters 11. Positional parameters 12. Looping constructs • while • for • until

Topic	Details
	13. Conditional statements • if • case 14. Escaping characters
Given a scenario, carry out version control using Git.	1. Arguments • clone • push • pull • commit • merge • branch • log • init • config 2. Files • gitignore • .git/
Summarize orchestration processes and concepts.	1. Agent 2. Agentless 3. Procedures 4. Attributes 5. Infrastructure automation 6. Infrastructure as code 7. Inventory 8. Automated configuration management 9. Build automation

CompTIA XK0-004 Sample Questions:

Question: 1

A Linux administrator issues the following command with root or sudo privileges:
rpm -i installpackage.rpm
Once the command is issued, the console outputs the following error message: failed dependency. The administrator confirmed in a previous step that all dependencies have already been installed.
Which of the following commands should the administrator issue to bypass this error message?

a) rpm -e installpackage.rpm
b) rpm -i installpackage.rpm
c) rpm -i installpackage.rpm --nodeps
d) rpm -qa installpackage.rpm

Answer: c

Question: 2

A Linux administrator is confirming information on a system. The administrator issues a series of commands and views the following output:
search homebizbook.com nameserver 205.70.100.12 nameserver 205.70.100.13
Which of the following commands did the administrator issue?

a) cat /etc/hosts
b) cat /etc/nsswitch.conf
c) cat /etc/resolv.conf
d) cat /etc/networks

Answer: c

Question: 3

A Linux server has been experiencing performance spikes over the course of two weeks. The administrator needs to create a report and determine the cause of the performance spikes. Which of the following commands, along with information in /var/log/messages, will help troubleshoot the issue?

a) loadavarage
b) uptime
c) vmstat
d) sar

Answer: d

Question: 4

A systems administrator wants to ensure users are greeted with a warning message when they log in to deter fraudulent activity. The systems administrator should:

a) enforce the use of PKI.
b) implement multifactor authentication.
c) configure disk encryption.
d) create a MOTD or banner.

Answer: d

Question: 5

A datacenter administrator assigns a ticket to a junior Linux administrator regarding a Linux server that is presenting issues with excessive CPU consumption and causing instability in a specific application.

The junior Linux administrator troubleshoots the Linux server and finds several zombie processes running on it.

Which of the following commands would effectively fix the issue?

a) Kill -9 pid
b) Kill -s SIGCHLD pid
c) kill -9 all
d) kill -9 SIG pid

Answer: b

Question: 6

A Linux server is providing time services to several VMs. Which of the following hardening techniques will BEST reduce the risk of the time server being targeted for an attack?

a) Change the default port.
b) Add a warning banner.
c) Block time services.
d) Stop time services.

Answer: a

Question: 7

Which of the following statements BEST describes what the command cat /proc/meminfo will display?

a) Hardware-specific CPU information
b) Hardware-specific motherboard information
c) Hardware-specific RAM information
d) Hardware-specific NIC information

Answer: c

Question: 8

A Linux administrator is investigating an unscheduled restart of an application server and wants to check for successful logins prior to the restart. Which of the following commands would display this information?

a) last
b) who
c) dmesg
d) reboot
e) uptime

Answer: a

Question: 9

Which of the following ls command options will list hidden files and folders?

a) ls -lh
b) ls -la
c) ls -lr
d) ls -lt

Answer: b

A systems administrator wants to load custom modules. Which of the following directories is most appropriate to keep load module settings persistent?

a) /etc/kernel
b) /etc/modprobe.d
c) /etc/sysconfig
d) /usr/lib/modules

Answer: b

Study Guide to Crack CompTIA Linux+ XK0-004 Exam:

- Getting details of the XK0-004 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 XK0-004 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 CompTIA provided training for XK0-004 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 XK0-004 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 XK0-004 practice tests is must. Continuous practice will make you an expert in all syllabus areas.

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