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# **LCE514 - Training Validation**

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## **Course Materials**

Access to the course materials, LABS and tests requires a per trainee subscription to our LMS on the Internet.

You have been given a **free** 365 day subscription to your Course Materials on our LMS.

## **Reminder of the Training Program**

- **LCE500 - CentOS 8 Linux (RHEL 8 / Oracle Linux 8) - System Administrator**

- Contents
- Prerequisites
  - Hardware
  - Software

- Internet
  - Using our infrastructure
  - Training Program
  - Skills Assessment

- **LCE501 - Managing Users and Groups**

- Contents
- Presentation
  - /etc/nsswitch.conf
  - The getent Command
  - The /etc/group and /etc/gshadow files
  - The /etc/passwd and /etc/shadow files
- Commands
  - Groups
    - groupadd
    - groupdel
    - groupmod
    - newgrp
    - gpasswd
  - Users
    - useradd
    - userdel
    - usermod
    - passwd
    - chage
- Configuration
- LAB #1 - Managing Users and Groups
- LAB #2 - su and su -
- sudo

- **LCE502 - Package Management**

- Contents
- LAB #1 - Compiling Software
  - 1.1 - ./configure
  - 1.2 - make

- 1.3 - make check
- 1.4 - make install
- LAB #2 - The rpm Command
  - 2.1 - Configuration
  - 2.2 - Usage
- LAB #3 - The dnf Command
  - 3.1 - Presentation
  - 3.2 - Configuration
  - 3.3 - Repositories
  - 3.4 - Searching for Packages
  - 3.5 - Viewing Information on and Downloading a Package
  - 3.6 - Installing a Package
  - 3.7 - Updating Packages
  - 3.8 - Deleting Packages
- Shared Libraries
  - Presentation
    - Introduction
    - Shared Object Locations
    - ld-linux.so.2
  - The ldd Command
  - The /etc/ld.so.conf File
  - The ldconfig Command

- **LCE503 - Managing File Permissions**

- Contents
- Presentation
- Preparation
- LAB #1 - Basic Unix File Permissions
  - 1.1 - Changing Permissions with chmod
    - Symbolic Mode
    - Octal Mode
    - The umask Command
  - 1.2 - Changing the Owner or the Group with chown and chgrp
    - The chown Command

- The chgrp Command
- LAB #2 - Advanced Unix Permissions
  - 2.1 - SUID/SGID bit
  - 2.2 - Inheritance Flag
  - 2.3 - Sticky bit
- LAB #3 - Extending Linux Permissions using ACLs and Attributes
  - 3.1 - ACLs
  - 3.2 - Attributes

- **LCE504 - Managing Disks and Filesystems**

- Contents
- Peripherals
- Partitions
- Partitioning
  - LAB #1 - Partitioning your Disk with the fdisk Command
  - LAB #2 - Modifier les Drapeaux des Partitions avec fdisk
- Logical Volume Manager (LVM)
  - LAB #3 - Linear Logical Volumes
    - Physical Volumes (PV)
    - Volume Groups (VG) and Physical Extents (PE)
    - Logical Volumes (LV)
  - LAB #4 - Grow a Volume
  - LAB #5 - Snapshots
  - LAB #6 - Deleting Volumes
  - LAB #7 - Mirrored Volumes
  - LAB #8 - Changing LVM Attributes
  - LAB #9 - Striped Volumes
  - LAB #10 - Managing Meta-data
- Journaled Filesystems
  - Ext3
    - Managing Ext3
    - LAB #11 - Converting Ext3 to Ext2
    - LAB #12 - Converting Ext2 to Ext3
    - LAB #13 - Using another Partition for the Journal

- LAB #14 - Changing the File System Check interval on an ext3 Filesystem
- Ext4
  - LAB #15 - Creating an Ext4 Filesystem
  - LAB #16 - Adding a Label to an Ext4 Filesystem
  - LAB #17 - Converting Ext3 to Ext4
- XFS
  - LAB #18 - Creating an XFS Filesystem
  - LAB #19 - Adding a Label to an XFS Filesystem

- **LCE505 - Process Scheduling**

- Contents
- cron
  - The /etc/crontab file
  - Time Fields
  - User Crontabs
- anacron
- at

- **LCE506 - Archiving and Compression**

- Contents
- Traditional Backup Tools
  - Preparation
  - The tar Command
    - Presentation
    - LAB #1 - Working with the tar Command
    - The GPL tar Command and Compression
  - The cpio Command
    - Presentation
    - LAB #2 - Working with the cpio Command
  - The dd Command
    - Presentation
    - LAB #3 - Working with the dd Command
  - The dump et restore Commands
    - Presentation
    - LAB #4 - System Backups

- Backing up the Installed Package List
- Backing up the Disk Structure
- Backing up Mount Points
- Backing up the Boot Loader
  - GRUB Legacy
  - GRUB 2 on BIOS
  - GRUB 2 on EFI
- Backing up User Files
- Rsync
  - Presentation
  - LAB #5 - Working with the rsync Command
- Compression
  - The gzip Command
    - Presentation
    - LAB #4 - Working with the gzip Command
  - The bzip2 Command
    - Presentation
    - LAB #5 - Working with the bzip2 Command
  - The xz Command
    - Presentation
    - LAB #6 - Working with the xz Command
  - Other Compression Utilities
- **LCE507 - Process Management**
  - Contents
  - Presentation
  - Process Types
  - Process Commands
    - The ps Command
    - The pgrep Command
    - The pstree Command
    - The top Command
    - The fg, bg and jobs Commands
    - The wait Command

- The nice Command
- The renice Command
- The nohup Command
- The kill Command
- The pkill Command

- **LCE508 - Managing Logs**

- Contents
- Presentation
- The dmesg Command
- Security Logging
  - The last Command
  - The lastlog Command
  - The lastb Command
  - The /var/log/secure File
- The /var/log/audit/audit.log File
  - Managing Audit Events
    - auditd
    - auditctl
  - Viewing Audit Events
    - The aureport Command
    - The ausearch Command
- The /var/log/messages File
- Applications
- rsyslog
  - Priorities
  - Facilities
  - The /etc/rsyslog.conf File
    - Modules
    - Global Directives
    - Rules
      - Facility.Priority
      - Facility!Priority
      - Facility=Priority

- Using the \* Wildcard
- n Facilities with Identical Priorities
- n Selectors with Identical Actions
- The logger Command
- The logrotate Command
- journald
  - Using Journald
    - Application Specific Messages
    - Boot Messages
    - Priority Specific Messages
    - Messages from a Specific Date Range
    - Real Time Messages
    - Searching with Key Words

- **LCE509 - Printer Management**

- Contents
- Cups
  - Protocols
  - Packages
  - Daemon
  - The /etc/cups/cupsd.conf File
  - Filters
  - Backends
  - Logs
  - Printers
  - Administration
    - The Ipstat Command
    - The Ipadmin Command
    - The accept et cupsenable Commands
    - Classes
    - The /etc/cups/printers.conf File
    - The /etc/cups/classes.conf File
    - The cancel Command
    - The Ipmove Command

- Web Interface

## • **LCE510 - System Startup and Shutdown**

- Contents
- System Startup
  - Boot Loader
    - BIOS Systems
    - EFI Systems
    - GRUB 2
      - The /boot/grub/grub.cfg File
      - The /etc/default/grub file
      - Files in the /etc/grub.d directory
  - Initramfs
    - The init Script
  - Kernel Booting Process
- Systemd
  - LAB #1 - The systemctl Command
  - LAB #2 - Configuration Files
    - 2.1 - Default Configuration Files
    - 2.1 - Overloading Default Configuration Files
  - LAB #3 - The systemd-analyze Command
  - LAB #4 - Targets
    - 4.1 - Checking the Target Dependencies
    - 4.2 - The Default Target
      - Checking the Default Target
      - Changing the Default Target
      - Changing the Default Target for the Current Session
  - LAB #5 - Managing Services
    - 5.1 - Single Service Instances
    - 5.2 - Multiple Instance Services
    - 5.3 - Disallowing Modifications to a Service Status
- LAB #6 - System Shutdown
  - 6.1 - The shutdown Command
  - 6.2 - The reboot Command

- 6.3 - The halt Command
- 6.4 - The poweroff Command

- **LCE511 - Training Validation**

- Course Materials
- Reminder of the Training Program
  - Day #1
  - Day #2
  - Day #3
  - Day #4
- Training Evaluation
- Exam - Acquired knowledge

## Training Evaluation

Please complete and submit the training evaluation form.

## Exam - Acquired knowledge

Please take the final examination.

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