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RH124 - Course Overview

Presentation

Objective: To prepare for the RH124 Certification.

Public: Linux Technicians and Administrators.

Prerequisites: Have worked with Red Hat Enterprise Linux for at least 2 years.

Learning method: Alternating between a clear and precise teaching scenario and practical work based on concrete cases and examples.

Assessments: Assessments using self-correcting tests.

Programme

- **RH124 - Course Overview**
 - Presentation
 - Programme
- **RH12401 - File Hierarchy System**
 - Contents
 - LAB #1 - Linux File Hierarchy System
 - 1.1 - File Types
 - 1.2 - The mount command
 - 1.3 - The umount command
 - 1.4 - The /etc/fstab file
 - Mount Options
 - LAB #2 - Unix File System
 - 2.1 - Superblock

- 2.2 - Inodes
- 2.3 - Data blocks
- 2.4 - Physical links
- 2.5 - Symbolic links

- **RH12402 - The Visual Editor**

- Contents
- Presentation
- LAB #1 - Creating, Opening and Closing files with VI
 - 1.1 - Commands
 - 1.2 - Creating a new file with VI
 - 1.3 - Opening a file in read-only mode using view
 - 1.4 - Opening a file in read-write mode using VI
- LAB #2 - The set Command
 - 2.1 - Commands
 - 2.2 - Turning on line numbering using set
- LAB #3 - Moving around within the file
 - 3.1 - Commands
- LAB #4 - Inserting Text
 - 4.1 - Commands
 - 4.2 - Inserting text
- LAB #5 - Searching for Text
 - 5.1 - Commands
 - 5.2 - Searching for and replacing text
- LAB #6 - Deleting Text
 - 6.1 - Commands
 - 6.2 - Deleting lines
- LAB #7 - Copy, Cut and Paste
 - 7.1 - Commands
 - 7.2 - Copying, Cutting and pasting text
- LAB #8 - Configuring a Personalised Interface

- **RH12403 - Help and Documentation**

- LAB #1 - Help with Commands
 - 1.1 - Help on External Commands

- 1.2 - Help on Built-In Commands
- LAB #2 - The man command
 - 2.1 - The mandb and whatis commands
 - 2.2 - The apropos command
- LAB #3 - The info command

- **RH12404 - Basic Shell Commands and Text Manipulation Tools**

- LAB #1 - Use of Basic Shell Commands
 - 1.1 - The stty Command
 - 1.2 - The date command
 - 1.3 - The who Command
 - 1.4 - The df Command
 - 1.5 - The free Command
 - 1.6 - The whoami Command
 - 1.7 - The pwd Command
 - 1.8 - The cd Command
 - 1.9 - The ls Command
 - 1.10 - The lsof Command
 - 1.11 - The touch Command
 - 1.12 - The echo Command
 - 1.13 - The cp Command
 - 1.14 - The file Command
 - 1.15 - The cat Command
 - 1.16 - The mv Command
 - 1.17 - The mkdir Command
 - 1.18 - The rmdir Command
 - 1.19 - The rm Command
 - 1.20 - The sort Command
 - 1.21 - The more Command
 - 1.22 - The less Command
 - 1.23 - The find Command
 - 1.24 - The su Command
 - 1.25 - The updatedb and locate Commands
 - 1.26 - The whereis Command

- 1.27 - The which Command
- 1.28 - The uptime Command
- 1.29 - The w Command
- 1.30 - The uname Command
- 1.31 - The du Command
- 1.32 - The clear Command
- 1.33 - The exit Command
- 1.34 - The logout Command
- 1.35 - The sleep Command
- 1.36 - The wall Command
- 1.37 - The seq Command
- 1.38 - The screen Command
- LAB #2 - Switches and Arguments
- LAB #3 - Regular Expressions
 - BREs
 - EREs
- Manipulating Text Files
 - Text-search Utilities
 - The grep Command
 - The egrep Command
 - The fgrep Command
 - LAB #4 - Using grep, egrep and fgrep
 - The Stream EDitor SED
 - LAB #5 - Using sed
 - The Text Processor AWK
 - Presentation
 - Field Separation
 - Conditions
 - A regular expression applied to a record
 - A regular expression applied to a field
 - Comparisons
 - Logical Operators
 - Built-in Variables
 - Awk Scripts

- The printf function
- Control Statements
 - if
 - for
 - while
 - do-while
- LAB #3 - Using awk
- LAB 7 - Other Useful Commands
 - 7.1 - The expand Command
 - 7.2 - La Commande unexpand
 - 7.3 - The cut command
 - 7.4 - The uniq Command
 - 7.5 - The tr Command
 - 7.6 - The paste Command
 - 7.7 - The split Command
 - 7.8 - The diff Command
 - 7.9 - The cmp Command
 - 7.10 - The patch Command
 - 7.11 - The strings Command
 - 7.12 - The comm Command
 - 7.13 - The head Command
 - 7.14 - The tail Command
- LAB #8 - Use the grep, tr and cut commands to extract your IPv4 address from the output of ifconfig
- LAB #9 - Use the grep, awk and sed commands to extract your IPv4 address from the output of ip

- **RH12405 - The Command Line**

- The Shell
- LAB #1 - The /bin/bash Shell
 - 1.1 - Shell Internal and External Commands
 - 1.2 - Aliases
 - 1.3 - Defining a user's shell
 - 1.4 - The Prompt
 - 1.5 - Recalling commands
 - 1.6 - Generating file name endings

- 1.7 - The interactive shell
 - Character *
 - Character ?
 - Character []
- 1.8 - The extglob option
 - ?(expression)
 - *(expression)
 - +(expression)
 - @(expression)
 - !(expression)
 - Escape characters
- 1.9 - Return Codes
- 1.10 - Redirections
- 1.11 - Pipes
- 1.12 - Command substitution
- 1.13 - Command chaining
- 1.14 - Displaying shell variables
 - Main variables
 - Internationalization and Localization Variables
 - Special variables
- 1.15 - The env command
- 1.16 - Bash Shell options
 - Examples
 - noclobber
 - noglob
 - nounset
- **RH12406 - User Management**
 - Overview
 - /etc/nsswitch.conf
 - Querying databases
 - 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 - Forcing complex passwords with PAM
 - Using Complex Passwords
 - Configuration
- su and su -
- sudo
- **RH12407 - Package Management**
 - LAB #1 - The rpm command
 - 1.1 - Configuration
 - 1.2 - Using the rpm command
 - LAB #2 - The dnf command
 - 2.1 - Overview
 - 2.2 - Configuration
 - 2.3 - Repositories
 - 2.4 - Searching for Packages
 - 2.5 - Getting Package Information and Downloading Packages
 - 2.6 - Installing a package
 - 2.7 - Updating Packages
 - 2.8 - Deleting packages
 - 2.9 - The dnf history

- 2.10 - The Application Stream Repository
- LAB #3 - Shared Libraries
 - 3.1 - Introduction
 - Storage
 - ld-linux.so.2
 - 3.2 - The ldd command
 - 3.3 - The /etc/ld.so.conf file
 - 3.4 - The ldconfig command

- **RH12408 - Managing File Permissions**

- Presentation
- Preparation
- LAB #1 - Simple Unix File Permissions
 - 1.1 - Changing File Permissions
 - The chmod Command
 - Symbolic Mode
 - Octal mode
 - The umask command
 - 1.2 - Changing the owner or group
 - The chown command
 - The chgrp command
- LAB #2 - Extended Unix File Permissions
 - 2.1 - SUID/SGID bit
 - 2.2 - Inheritance Flag
 - 2.3 - Sticky bit

- **RH12409 - Archiving and Compression**

- Types of Backup
 - Full Backup
 - Differential Backup
 - Incremental Backup
 - Decremental Backup
- Classic Backup Tools
 - Preparation
 - The Tar Command

- Overview
 - LAB #1 - Working with the tar command
 - The GPL tar command and compression
- The cpio command
 - Overview
 - LAB #2 - Working with the cpio command
- The dd command
 - Overview
 - LAB #3 - Working with the dd command
- The dump and restore commands
 - Overview
- Advanced Backup Tools
 - Unidirectional Backup Tools
 - Multidirectional Backup Tools
 - Partition Backup Tools
- LAB #4 - What to Backup First
 - Package List Backup
 - Backing up the System Hard Disk Structure
 - Backing up the System Hard Disk Mounting Points
 - Boot Loader Backup
 - GRUB Legacy
 - GRUB 2 with BIOS
 - GRUB 2 with EFI
 - User Directories Backups
- The Rsync Command
 - Overview
 - LAB #5 - Working with the rsync command
- Compression
 - The gzip command
 - Overview
 - LAB #6 - Working with the gzip command
 - The bzip2 command
 - Overview
 - LAB #7 - Working with the bzip2 command

- The xz command
 - Overview
 - LAB #8 - Working with the xz command
- Other utilities

- **RH12410 - Process Management**

- Overview
- Process Types
- Lab #1 - Process commands
 - 1.1 - The ps command
 - 1.2 - The pgrep command
 - 1.3 - The pstree command
 - 1.4 - The top command
 - 1.5 - The fg, bg and jobs commands
 - 1.6 - The wait command
 - 1.7 - The nice command
 - 1.8 - The renice command
 - 1.9 - The nohup command
 - 1.10 - The kill command
 - 1.11 - The pkill command

- **RH12411 - Managing Logs**

- Overview
- The dmesg Command
- LAB #1 - Security Monitoring
 - 1.1 - The last Command
 - 1.2 - The lastlog Command
 - 1.3 - The lastb Command
 - 1.4 - The /var/log/secure File
 - 1.5 - Audit Event Management
 - The /var/log/audit/audit.log File
 - auditd
 - auditctl
 - audispd
 - Viewing audit Events

- The aureport Command
 - The ausearch Command
- The /var/log/messages File
- Applications
- LAB #2 - rsyslog
 - 2.1 - Priorities
 - 2.2 - Facilities
 - 2.3 - /etc/rsyslog.conf
 - Modules
 - Global Directives
 - Rules
 - Facility.Priority
 - Facility!Priority
 - Facility=Priority
 - Using the * Wildcard
 - n Facilities with Identical Priorities
 - n Selectors with Identical Actions
- LAB #3 - The logger Command
- LAB #4 - The logrotate Command
- LAB #5 - Logging with journald
 - 5.1 - Viewing Logs
 - 5.2 - Application Specific Messages
 - 5.3 - Boot Messages
 - 5.4 - Priority Specific Messages
 - 5.5 - Messages from a Specific Date or Time Range
 - 5.6 - Real Time Messages
 - 5.7 - Searching with Key Words
- LAB #6 - The NTP Server
 - 6.1 - Overview
 - 6.2 - The chronyd Service
 - 6.2 - The /etc/chrony.conf File

- **RH12412 - Service and Daemon Management**

- Systemd

- LAB #1 - The systemctl command
- LAB #2 - Configuration Files
 - 2.1 - Default Configuration Files
 - 2.2 - Overriding the Default Configuration Files
- LAB #3 - The systemd-analyze command
- LAB #4 - Systemd Targets
 - 4.1 - Checking target dependencies
 - 4.2 - The Default Target
- LAB #5 - Managing Services
 - 5.1 - Managing Single Instances
 - 5.2 - Managing Multiple Instances
 - 5.3 - Prohibiting Service Status Changes

- **RH12413 - Network Management**

- Understanding IPv4
 - TCP headers
 - UDP Headers
 - Fragmentation and Re-encapsulation
 - Addressing
 - Subnet Masks
 - VLSM
 - Ports and Sockets
 - The /etc/services File
 - Ethernet Address Resolution
- Understanding IPv6
 - Overview
 - IPv6 addresses
 - Subnet Masks
 - IPv6 Reserved Addresses
 - Link-local Addresses
 - DHCPv6
- Configuring the Network
 - The nmcli Command
- LAB #1 - Network Configuration

- 1.1 - Connections and Profiles
- 1.2 - Name Resolution
- 1.3 - Adding a Second IP Address to a Profile
- 1.4 - The hostname Command
- 1.5 - The ip Command
- 1.6 - Manually Enabling/Disabling an Interface
- 1.7 - Static Routing
 - The ip Command
 - Enable Routing on the Server
- LAB #2 - Network diagnostics
 - 2.1 - ping
 - 2.2 - netstat -i
 - 2.3 - traceroute
 - 2.4 - tracepath
- LAB #3 - Remote Connections
 - 3.1 - Telnet
 - 3.2 - wget
 - 3.3 - ftp
 - 3.4 - SSH
 - Overview
 - SSH-1
 - SSH-2
 - Password Authentication
 - Asymmetric key Authentication
 - Server Configuration
 - Client Configuration
 - SSH Tunnels
 - 3.5 - SCP
 - Overview
 - Usage
 - 3.6 - Setting up Asymmetric Keys

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