LINUX ESSENTIALS- RHEL 7

S.No	Main Topics	Sub Topics	Points to be covered
1	Installation of RHEL 7		
		Hardware prerequisite for installation	
		Media available for installing	
		Types of Installation?	GUI , Text , Network boot.
		Purpose of the OS	Functionality of the OS
		Creating partitions	Using DRUID
2	Booting Process		
		Run levels	1. Default run level execution process 2. Run levels in booting 3. Run levels & start scripts 4. Shutdown & kill scripts 5. Files executed while log on process
		log in process	Files executed while log on process
3.1	Linux Usage Basics		
		Log into a Red Hat Enterprise Linux system	Login Process
		Start X from a console	GNOME, KDE, XDM
		Access the command line from X	
		using a CLI terminal	
		using a GUI terminal window	
		using a Remote console	SSH , Telnet
		Exploring Desktop Environment	Gnome , KDE
3.2	Getting Commands and Help		
		The purpose and usage of some simple commands	Basic commands in Linux
		Use the built-in help resources in Red Hat Enterprise Linux	1. How to get help using whatis, 2. command--help & info
		Use Man command	
4	Linux File System		
		Understanding the Linux File System	1.File system used & types

		Partitioning file systems	1.Creating , modifying & deleting Partition 2.Mounting , unmounting - temp/Permanent 3.Changing file system - toggle id change
		Converting a file system	1. How to convert - ext3 , ext2
		File System Recovery	1. The FSCK Program
		Seven Fundamental file types	"-,d,l,b,c,p,s"
		NFS file system	1. What is NFS? 2. Creating & mounting a NFS.
		Setup file system quotas	1. Configuration of file quotas 2. Quota On Options 3. Quota Off Options
		Disk	1. Introduction to Disk. 2.Types of Disk. 3. Limits of Basic Disks. 4.What is Dynamic Disk & Advantages.
		Logical Volume Manager	1. Introduction of logical volume 2. How to create logical volume 3. How to manage logical volume 4. Introduction to LVM Snapshot
		RAID - Software RAID druid	1.What is Raid? 2.RAID levels? 3.Types of Raid. 4.Comparision HW vs SW Raid. 5.How to setup and manage the software RAID Devices (Configuration) 6.Creating Raid Volumes.
5	Package management		
		Package	1. What is a package? 2. What is a Package Management System and its functions? 3. Types of Packages(Binary and Source) 4. Package Formats used. 5.What is Software repositories? 6.Examples of package management software.
		Synaptics	1.How to use Synaptics PM.
		Red hat Package Manager	1. What is an RPM ? 2. RPM Commands 3. Using Rpm to manage packages
		YUM Package Manager	1.What is YUM? 2.How to Use YUM? 3.How to update Packages using YUM?

6	User Administration		
		User Account Categories	1. Administrative User 2. Normal User 3. Sudo User
		User Account Files & Location	1. Administrative User 2. Normal User 3. Sudo User
		Understanding UID & GID.	
		Creating User Accounts	1. Adding users directly by editing /etc/passwd file 2. Adding users by commands (CLI) 3. Adding users using Red Hat user manager Interface (GUI)
		Creating Groups	1. Creating groups , GID. 2. Assigning users to group. 3. Creating users directly by editing /etc/gpasswd file 4. Adding groups by commands (CLI) 5. Adding users to groups using Red Hat user manager Interface (GUI)
		Change your password	1. Changing passwd directly by editing /etc/passwd file 2. Changing passwd by commands (CLI) 3. Changing passwd using Red Hat user manager Interface (GUI)
		Understand the nature of root privileges	What is root in Linux ? What are the commands that only root user can execute .
		Evaluate your privileges	check all the privileges
		Basic User Environment	1. /etc/bashrc 2. /etc/profile 3. /etc/profile.d
		Setting up and Managing Disk Quotas	1. Quota setting in the kernel 2. Quota package 3. Quota management commands
		File , Directory & Device permissions by User/Group	1.What are the types of permissions in Linux? 2.What are default permissions ? 3.Adding , Modifying ,Revoking File Permission.
		SUDO User Account	1. What is Sudo? 2. Configuring Sudo users. 3. Performing Root Privilege access via Sudo user

		Set ACLs	1.What is ACL & its advantages? 2. Creating Access ACL's,Default ACL's and ACL entry for File & Directories. 3. Handling ACL's(methods of handling) 4. What is the functionalities and effects of each ACL's.
7	**System Administration Tools**		
7.1	**Text Processing Tools**		
		Introduction	1. What is Text Processing tool? 2. Use of text Processing tools? 3. Types of Text processing tool
		Usage of Text Tools	1. Viewing file contents using More/Less and cut 2. Viewing file excerpts using Head and Tail 3. Extracting Text by Keyword using grep 4. Extracting Text by Column or Field using cut
		Introduction and different modes of vim	1. Introduction to vim 2. Advantages and Disadvantages of vim 3. How to open a file? 4. How to modify a file using insert mode? 5. How to save a file using EX?
		Command Mode	1. How to use command mode? 2. Different keys to use moving around in a file 3. Search and replace using command mode 4. Manipulating text command mode (Replace , Cut , Copy) 5. How to use put (paste) 6. Undoing changes in command mode
		Visual Mode	1. What is visual mode 2. Character-oriented highlighting 3. Line-oriented highlighting 4. How to use multiple window in a single vim 5. Configuring vi and vim
7.2	**Text Editor**		
		Use the two primary modes of **vi** and **vim**	

		Navigate text and enter Insert mode	
		Change, delete, yank, and put text	
		Undo changes	
		Search a document	
		Save and exit	
7.3	**Basic System Configuration Tools**		
		Configure date settings	date
		Send text to the printer	lp
		Configure Printer settings	Supported printer connections, Printer commands
		Configure network settings	Managing Ethernet connections, Ethernet devices, Dns files, Network settings in GUI & Command mode
7.4	**Finding & Processing Files**		
		Use **locate**	
		Use **Find**	
		Use **Whereis** command	
		use **which** command	
		locating man pages by subject	
		Use **the Gnome Search tool**	
8	**Network Services**		
8.2	**Network Configuration**		
		Configure interfaces	1. /etc/sysconfig/network-scripts/ifcfg-device file , Setup Command (CLI)
		Assigning Ip Address	How to Setup IPV4? How to Setup IPv6?
		Configuring DNS , DHCP , GATEWAY address	1. /etc/sysconfig/network-scripts/ifcfg-device file , Setup Command (CLI)
8.3	**System Service Access Control**		
		Daemon Specification	1. Daemon Name, Syntax 2. Client Specification 3. Macro Definitions - Host Name macros & Host and service macro
8.4	**Network Resource Access Control**		

		To Understand Netfilter Architecture	1. What is Netfilter ? 2. What are the are the advantages of Netfilter
		iptables	1.What is Iptables? 2.Allowing and blocking incoming traffic 3.How to Perform NAT operation.
8.6	**Linux DHCP**		
		Installation	What is dhcpd.conf file and the use
		Configuration	
8.7	**SSH**		
		SSH	1. What is SSH? 2. What are the various commands in SSH?
9	**Backup & Restore**		
		Perform backups & Restore	1. What is backup 2. Why we need backup 3. What are the types of backup 4. What to backup 5. Preferred backup media 6. Test backup 7. How to backup 8. How to restore 9. Automate backups on Linux
10	**Troubleshooting**		
		Develop a strategy for troubleshooting	1. What is X mode? 2. Things to check in X mode? 3. Things to check in Networking? 4. Command to fault analysis? 5. How to Generate additional information's?
		Fix problems in different areas of the Linux system	1. Order of the booting process? 2. Sequence to check the problem? 3. How to find out problem in a particular area?
		Boot the system into various run levels	1. What is run level? 2. Explaining different run levels 3. Explaining recovery run levels
		Use the Rescue environment	1. What is rescue environment? 2. Situations to use rescue environment?