

## RHCE - Administration Program LINUX Syllabus

**Duration: 80Hours / 20 Classes (4hrs each class Including Theory & Lab Session) (2 Classes/ Week)**

Class	Topic	Duration
Class 1	History of Linux (GNU/LINUX)	10min
	GNU General Public License	5min
	H/D Geometry	30min
	Basic Requirement for Linux Installation	15min
	Installation – Minimal and Custom	1hrs 30min
	Assessment – 3	1hrs 30min
Class 2	Linux Commands – Part I Pw/cd/ls/who/whoami/who am i/which/cp/mv/rm/mkdir/ touch/hostname/cat/cal/eject/mount/umount/login/logout /echo/wget	2hrs
	VI Editor	30min
	Assessment – 1	1hrs 30min
Class 3	Linux Commands – Part II Halt/shutdown/poweroff/reboot/ll/dd/joe/emacs/ln/fdisk/ mke2fs/mtools/pico/sed/wc/whereis/convert/ifconfig/ncftp/ scp/hdparm/dmesg/bc/sh/at/atq/trm/date/uptime/su /switchdesk/uname	3hrs
	Assessment – 2	1hrs
Class 4	Binary/Process/Daemon	20min
	File System Hierarchy Standard	40min
	Details FSTAB	1hrs
	Archiving/Encoding/Compressing/Encrypting File Compress/Uncompress/tar/bzip2/bunzip2/gzip/gunzip/zip	30min
	Process and Job Control Ps/nice/renice/top/nohup/kill/killall/bg/fg/jobs	30min
	Assessment – 4	1hrs
Class 5	Symbolic Link / Hard Link	30min
	Comparison between Both Links	10min
	Advance Linux Commands useradd/userdel/usermod/groupadd/groupmod/groupdel passwd/id/uname/chown/chgrp/chmod/chroot	1hrs 20min
	File manipulation commands Head/tail/less/more/grep/find/awk/comm./diff/join	1hrs
	Assessment – 5	1hrs
Class 6	Shell Scripting	1hrs 30min
	Boot Process Part 1	1hrs 30min
	Assessment – 6	1hrs
Class 7	Boot Process Part 2	2hrs 30min
	Assessment – 7	1hrs 30min
Class 8	User and Group Administration – Useradd Details	1hrs
	File & Directory Permission & Security	1hrs
	Chmod/chgrp/SetUid/SetGid/StickyBit/umask	30min
	SUDO	30min
	Assessment – 8	1hrs

**Semaphore Technologies Pvt. Ltd. – (technologies.semaphore@gmail.com)**

Class 9	Software Installation With RPM / With Source Code (Tar Ball)	2hrs 30min
	X-Windows	1hrs
	Assessment – 9	30min
Class 10	User and Group Quota Management	1hrs
	Cron and Anacron	1hrs
	Autofs/Syslog Administration	1hrs
	Assessment – 10	1hrs
Class 11	Linux Kernel	1hrs
	Building Custom Kernel using CUI and GUI/Kernel Patching	1hrs 30min
	Assessment – 11	1hrs 30min
Class 12	Some Advanced Commands Df/Du/Fdformat/Eelabel/Dumpe2fs/Tune2fs/Chroot/Sync/ Mkswap/Swapon/E2fsck/iftisk	1hrs
	LVM (Logical Volume Manager) / LVM with RAID	2hrs
	Assessment – 12	1hrs
Class 13	IP Addressing – Basic	30min
	IP Address Configuration for Linux Boxes	15min
	Sub netting, bonding, Configure NIC with Multiple IP	30min
	Using Different Utility - ping/tcpdump/netstat/nmap	15min
	DHCP Server Configuration	1hrs
	SAMBA	1hrs
	Assessment – 13	30min
Class 14	VSFTPD	1hrs
	XINETD – TCPWRAPPER	30min
	OpenSSH	1hrs 30min
	Assessment – 14	1hrs
Class 15	Apache Basic Configuration/ Virtual Hosting/ Authentication Content Description and Modification Indexing /Redirection/ Logging/ Proxying Security – Using OpenSSL. Integration and Testing of PHP Module Integration and Testing of Perl Module Modular and Static Installation of Apache from Source Code. Integration of Tomcat with Apache Apache Failover/ HA with Hearbeat Software	3hrs
	Assessment – 15	1hrs
Class 16	NFS Why NFS? Server Side NFS Configuration Client Side NFS Configuration Automation of NFS Server and Client. Logging/Security/Failover High Availability of NFS Servers.	1hrs 30min
	NIS Why NIS? NIS Server Configuration NIS Client Configuration Testing from the Clients Host.conf and nsswitch.conf Advantage of NIS/Automation/Security.	1hrs 30min
	Assessment – 16	1hrs

Class 17	<p>IPTables                      Build internet firewall based on stateless and stateful firewall                      All Kind of Network address and port translation                      NAT to implement transparent Proxy                      Iptables integration with Linux router, implementing Default, Static and Dynamic Routers and VPN Support</p>	1hrs 30min
	Assessment – 17	1hrs
Class 18	<p>Squid                      Introduction to SQUID/ CLI Options                      Network Parameters/ Admin Parameters                      Caching/ Access Control List                      Authentication/ Logging                      Transparent Proxy                      Reverse Proxy                      DNS Mapping</p>	2hrs 30min
	<p>Squid Guard                      SquidGuard is a URL redirector used to use blacklists with the proxy software Squid. There are two big advantages to squidguard: it is fast and it is free. SquidGuard is published under GNU Public License.</p>	30min
	Assessment – 18	1hrs
Class 19	<p>DNS/DNS Restriction and ACL implementation/Dynamic DNS</p>	1hrs 30min
	<p>Mail – Sendmail                       SquirrelMail                      SquirrelMail is a standards-based webmail package written in PHP. It includes built-in pure PHP support for the IMAP and SMTP protocols, and all pages render in pure HTML 4.0 (with no JavaScript required) for maximum compatibility across browsers. It has very few requirements and is very easy to configure and install. SquirrelMail has all the functionality you would want from an email client, including strong MIME support, address books, and folder manipulation.</p>	2hrs
	Assessment – 19	30min
Class 20	<p>MySQL                      Introduction to RDBMS                      Installation of MySQL                      MySQL Architecture                      Creation of Database                      Simple SQL Statements                      Backup and Restore</p>	3hrs
	Assessment -21	1hrs