ipsr solutions ltd
redefining excellence

Premium Training in

System Administration, Cloud, Containers and Automation

with Free Industry Internship

(ITFS in RHCE & CLOUD)

Duration: 4 -6 months

Hands-on Training	Personal Mentoring	Live Internship	Global Certifications

- ❏ **Enterprise Linux System Administration I**
- ❏ **Enterprise Linux System Administration II**
- ❏ **RHCSA (Global Certification)**
- ❏ **Linux Automation with Ansible**
- ❏ **RHCE (Global Certification)**
- ❏ **Basic Networking, Server Administration and Containerization (Internship module)**
- ❏ **AWS cloud computing**

Along with this premium Training program, students will get an opportunity to undergo free internships from System Administration and Tech Support Divisions of IPSR. Interns will be assigned to do live projects which will eventually groom them as an IT professional who is readily employable

Units and Syllabuses

Unit 1: Enterprise Linux System Administration I

Red Hat (Enterprise Linux - RHEL 8)System Administration I (RH124) equips you with Linux® administration "survival skills" by focusing on foundational Linux concepts and core tasks. The participants will learn how to apply command-line concepts and enterprise-level tools, setting them on their journey toward becoming a full-time Linux system administrator.

Outcomes

As a result of attending this RH124 course, the participants should be able to perform essential Linux administration tasks, including installation, establishing network connectivity, managing physical storage, and basic security administration.

After completing the RH124 course the participants should be able to demonstrate these skills:

- Access the command line
- Manage files from command line
- Create, view, and edit text files
- Manage local users and groups
- Monitor and manage Linux processes
- Control services and daemons
- Control access to files with file system permissions
- Analyze and store log files
- Configure and secure the OpenSSH service
- Install and update software packages
- Access Linux file systems
- Manage Linux networking

Syllabus (RH124)

- **Get started with Red Hat Enterprise Linux**

- Describe and define open source, Linux distributions, and Red Hat Enterprise Linux.

- **Access the command line**
  - Log into a Linux system and run simple commands using the shell.

- **Manage files from the command line**
  - Copy, move, create, delete, and organize files while working from the bash shell.

- **Get help in Red Hat Enterprise Linux**
  - Resolve problems by using local help systems.

- **Create, view, and edit text files**
  - Manage text files from command output or in a text editor.

- **Manage local users and groups**
  - Create, manage, and delete local users and groups, as well as administer local password policies.

- **Control access to files**
  - Set Linux file system permissions on files and interpret the security effects of different permission settings.

- **Monitor and manage Linux processes**
  - Evaluate and control processes running on a Red Hat Enterprise Linux system.

- **Control services and daemons**
  - Control and monitor network services and system daemons using systemd.

- **Configure and secure SSH**
  - Configure secure command line service on remote systems, using OpenSSH.

- **Analyze and store logs**
  - Locate and accurately interpret logs of system events for troubleshooting purposes.

- **Manage networking**
  - Configure network interfaces and settings on Red Hat Enterprise Linux servers.

- **Archive and transfer files**
  - Archive and copy files from one system to another.

- **Install and update software**
  - Download, install, update, and manage software packages from Red Hat and yum package repositories.

- **Access Linux files systems**
  - Access, inspect, and use existing file systems on storage attached to a Linux server.

- **Analyze servers and get support**
  - Investigate and resolve issues in the web-based management interface, getting support from Red Hat to help solve problems.

- **Comprehensive review**
  - Review the content covered in this course by completing hands-on exercises.

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Unit 2: Enterprise Linux System Administration II

Red Hat (Enterprise Linux - RHEL 8)System Administration II (RH134) builds upon and lends context to the foundational knowledge established in Red Hat System Administration I (RH124). This follow-on course demonstrates more detailed use cases for Red Hat® Enterprise Linux®, preparing you for the Red Hat Certified System Administrator exam (EX200).

Outcomes
As a result of attending this RH134 course, the participants should be able to perform the key tasks needed to become a full-time Linux administrator. They will be introduced to more advanced administrative topics, such as storage management using LVM, SELinux management, and automated installation. This course goes deeper into enterprise Linux administration, including file systems and partitioning, logical volumes, SELinux, firewall configuration, and troubleshooting.
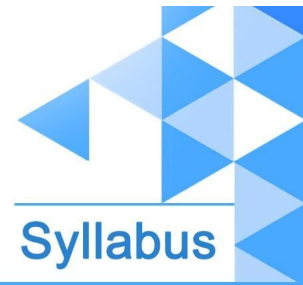
After attending this course the participants should be able to demonstrate these skills:

- Install Red Hat Enterprise Linux using Kickstart
- Manage file systems and logical volumes
- Manage scheduled jobs
- Access network file systems
- Manage SELinux
- Control firewalls
- Perform server management with the Cockpit web management utility
- Troubleshoot and obtain support
- Run containers

Syllabus (RH134)

- **Improve command line productivity**
  - Run commands more efficiently by using advanced features of the bash shell, shell scripts, and various utilities provided by Red Hat Enterprise Linux.

- **Schedule future tasks**
  - Schedule commands to run in the future, either one time or on a repeating schedule.

- **Tune system performance**
  - Improve system performance by setting tuning parameters and adjusting scheduling priority of processes.

- **Control access to files with ACLs**
  - Interpret and set access control lists (ACLs) on files to handle situations requiring complex user and group access permissions.

- **Manage SELinux security**
  - Protect and manage the security of a server by using SELinux.

- **Maintain basic storage**

- ○ Create and manage storage devices, partitions, file systems, and swap spaces from the command line.

- **Manage logical volumes**
  - ○ Create and manage logical volumes containing file systems and swap spaces from the command line.

- **Implement advanced storage features**
  - ○ Manage storage using the Stratis local storage management system and use VDO volumes to optimize storage space in use.

- **Access network-attached storage**
  - ○ Use the NFS protocol to administer network-attached storage.

- **Control the boot process**
  - ○ Manage the boot process to control services offered and to troubleshoot and repair problems.

- **Manage network security**
  - ○ Control network connections to services using the system firewall and SELinux rules.

- **Install Red Hat Enterprise Linux**
  - ○ Install Red Hat Enterprise Linux on servers and virtual machines.

- **Run Containers**
  - ○ Obtain, run, and manage simple, lightweight services as containers on a single Red Hat Enterprise Linux server.

- **Comprehensive review**
  - ○ Review the content covered in this course by completing hands-on exercises.

RHCSA CERTIFICATION EXAM

The performance-based Red Hat Certified System Administrator (RHCSA) exam (EX200) tests your knowledge in areas of system administration common across a wide range of environments and deployment scenarios. The skills tested in this exam are the foundation for system administration across all Red Hat® products.

By passing this exam, you become a Red Hat Certified System Administrator. If you choose to continue your learning journey beyond RHCSA, the credential can also serve as a foundational step on your path toward our highest level of certification—Red Hat Certified Architect.

This exam is based on Red Hat® Enterprise Linux® 8.

Unit 3: Linux Automation with Ansible

Red Hat Linux Automation with Ansible (RH294) teaches the skills needed to manage large numbers of systems and applications efficiently and consistently. Candidates will learn the techniques needed to use Ansible® to automate provisioning, configuration, application deployment, and orchestration. This course is based on Red Hat® Enterprise Linux® 8 and Red Hat Ansible Engine 2.8.

Outcomes
As a result of attending this course, participants should be able to use Ansible for the purpose of automation, configuration, and management.

After completing the course the participants should be able to demonstrate these skills:

- Install and configure Ansible or Red Hat Ansible Engine on a control node.
- Create and manage inventories of managed hosts, as well as prepare them for Ansible automation.
- Run individual ad hoc automation tasks from the command line.
- Write Ansible Playbooks to consistently automate multiple tasks and apply them to managed hosts.
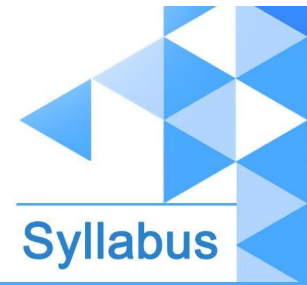
- Parameterize playbooks using variables and facts, and protect sensitive data with Ansible Vault.
- Write and reuse existing Ansible roles to simplify playbook creation and reuse code.
- Automate common Red Hat Enterprise Linux system administration tasks using Ansible.

Syllabus (RH294)

- **Introduce Ansible**
  - Describe Ansible concepts and install Red Hat Ansible Engine.

- **Deploy Ansible**
  - Configure Ansible to manage hosts and run ad hoc Ansible commands.

- **Implement playbooks**
  - Write a simple Ansible Playbook and run it to automate tasks on multiple managed hosts.

- **Manage variables and facts**
  - Write playbooks that use variables to simplify management of the playbook and facts to reference information about managed hosts.

- **Implement task control**
  - Manage task control, handlers, and task errors in Ansible Playbooks.

- **Deploy files to managed hosts**
  - Deploy, manage, and adjust files on hosts managed by Ansible.

- **Manage large projects**
  - Write playbooks that are optimized for larger, more complex projects.

- **Simplify playbooks with roles**
  - Use Ansible roles to develop playbooks more quickly and to reuse Ansible code.

- **Troubleshoot Ansible**
  - Troubleshoot playbooks and managed hosts.

- **Automate Linux administration tasks**
  - Automate common Linux system administration tasks with Ansible.

RHCE CERTIFICATION

Red Hat Certified Engineer (RHCE) is known as the "Crown Jewel of Linux Certifications" and it proves the eligibility of candidates on live systems. This certification is achieved by passing the RHCSA Certification Exam - EX200 and the RHCE Certification Exam EX294.

Unit 4: Basic Networking, Server Administration and Containerization (Internship module)

- **Server Configuration for Website/Web Apps**
- **Server Hardening, Server Tuning, etc.**
- **Server Monitoring and Troubleshooting**
- **Shell Scripting, Git, Mail server, DNS and FTP Server**
- **Basics of Jenkins**
- **cPanel/WHM Installation and Hands on Practice**
- **Basic Hardware and Networking**
- **Introduction to Container Services.**
  - **Installing and configuring Docker.**
  - **Understand Docker Hub and download images.**
  - **Creating containers on Docker pushing images to Docker Hub.**

Unit 5: AWS Cloud Computing

Section 1: Fundamentals of AWS Cloud Computing

- **Introduction to Cloud Computing**
- **Cloud Environment Architecture**
- **Cloud Computing Models**
- **Introduction to Amazon Web Services**
- **AWS Global Infrastructure**

Section 2: Elastic Compute Cloud

- **Launching our first EC2 instance**
- **EC2 instance types & Pricing Models**
- **Creating AMI and Image Templates**
- **Understanding Security Groups - a Server side Firewall**

Section 3: Virtual Private Cloud

- **Introduction to Network Switches & Virtual Private Cloud**
- **VPC & Subnets**
- **Private and Public Subnets**
- **Internet Gateways, VPC Peering & NAT Gateways**
- **VPN Setup**
- **IP Addressing in AWS**

Section 4: Storage

- **Introduction to Block & Object storage mechanism**
- **Introduction to Elastic Block Store - EBS**
- **EBS Snapshots**
- **EBS Volume Types**
- **Instance Store Volumes**

- **Introduction to Simple Storage Service (S3)**
- **Features of S3**
- **Storage Types**
- **Static Website Hosting**
- **Versioning**
- **Life Cycle Policy**
- **Cross Region Replication**
- **Encryption**
- **Basics of Athena**
- **Introduction to EFS**
- **Connect a drive via network**
- **Share the drive among multiple servers**

Section 5: Elastic Load Balancers and Elasticity

- **Understanding High Availability Configuration**
- **ELB Configuration with Classic and Application Load Balancers**
- **Auto Scaling**

Section 6: Identity & Access Management

- **Understanding the IAM Policies**
- **IAM User, IAM Policy and IAM Role**

Section 7: Databases

- **Introduction to Relational Databases**
- **Creating our first database structure in MySQL**
- **Getting started with DynamoDB**
- **Know about ElastiCache, Redshift**

Section 8: Decoupling Applications

- **Amazon SQS**
- **Amazon SNS**

- **Amazon SES**
- **Kinesis Overview**

Section 9: Domain Name System

- **Introduction to DNS**
- **Understanding DNS Records**
- **Introduction to Route53**
- **Register a Domain using Route 53**
- **Manage DNS Hosts**

Section 10: AWS CloudFront

- **Introduction to CloudFront**
- **CloudFront with S3**
- **CloudFront Advanced Concepts**

Section 11: AWS ECS

- **Getting Started with Containerization**
- **ECS Services and Tasks**
- **Load Balancing in ECS**
- **ECS Scaling**

Section 12: AWS Storage Extras

- **AWS Snowball**
- **Storage Gateways**
- **Hands on API Gateways**

Section 13: Serverless Computing

- **Serverless Introduction**
- **Lambda**
- **Setting up Server Auto Start with a Lambda Function**
- **Elastic Beanstalk**
- **Host a Sample PHP website using Elastic Beanstalk**

Section 14: AWS CLI and SDK

- **Getting Started with AWS CLI**
- **AWS CLI setup on EC2 instances**
- **Connect EC2 instance with other AWS services like S3 or SNS or SES**

Section 15: AWS Encryptions

- **AWS Security**
- **KMS Overview**
- **SSM Parameter Store**
- **CouldHSM**

Section 16: Migration Service and Disaster Recovery

- **Database Migration Services**
- **DataSync Overview**
- **AWS Backups**

Section 17: Monitoring

- **Understanding CloudWatch**
- **Setup Alarms for Matrix changes**
- **Auditing AWS environment with CloudTrail**
- **Schedule Event Rules using Target based services**

Section 18: Other Services

- **AWS Key Management Service**
- **Systems Manager Parameter Store**

Contact Us

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