	Hybrid Cloud
	Community Cloud
	Cloud Computing Services
	IAAS
	PAAS
	SAAS
	XAAS
AWS - Cloud Computing & EC2	Why AWS
	Brief History of AWS
	AWS Features
	How to Register Account in AWS
	Introduction to EC2
	Features of EC2
	EC2 Dashboard Overview
	About Amazon Machine Images (AMI)
	Different types of AMI's
	How to create AWS AMI
	How to create a Key Pairs
	Download a key pairs
	How to connect EC2 instances
	What is pem file
	What are default usernames to connect AMI's
	How to Login into LINUX AMI from Linux
	How to reboot the Instance
	How to stop instance
	How to terminate instance
Virtualisation & Lab Practice setup	Introduction to Virtualization
	Virtualization Types
	Hosted
	Bare metal
	Hypervisors
	Virtual Machine Setup for Lab practise

Linux	Introduction to Operating Systems
	Types of Operating Systems
	History of Unix
	General Architecture of Unix
	Unix basics
	Kernel
	Shell
	System Calls
	Utilities
	Difference between Kernel, Shell, Utilities
	Evolution of Linux
	Linux File Hierarchy Structure
	Understanding Login Screen of Linux systems
	Case Study of Login incorrect or Password Incorrect
	How to know default shell that is assigned to a user
	Linux Commands
	How to create hidden files or directories
	How to Unhide files or directories
	Understanding various Shell types
Linux File Permissions	Purpose of File Permissions
	File permission types
	Understanding symbolic Method of permissions
	Understanding Absolute Method of permissions
	How to Set read, write, execute permissions
	How to remove read, write, execute permissions
	How to change file permissions based on use case
	How to apply permission to a directory
Linux user Administration	Types of users
	User creation Process
	Useradd commands

	Usermod commands	
	Userdel commands	
	Passwd change commands	
	About /etc/passwd file	
	About /etc/shadow file	
	Sudo users	
Linux Package Management	About Utilities of Software Installation	
	Install software using RPM	
	Install Software using YUM	
	Perform consistency tests on software packages before installation	
Linux Service Management	Linux Service Management	
	Need of Service management	
	Service - start, stop, reload, restart, status	
	Chkconfig - list, on, off, runlevels	
	Systemctl - start, stop, reload, restart, status	
Shell Scripting	Introduction to Scripting	
	About Shell	
	Shell Scripting	
	Purpose of Shell Scripting	
	Various Types of Shells	
	Shell Flavours and their default shells	
	Scripting Basics	
	How to view available shells in system	
	How to switch to different shells	
	How to exit from shell	
	How to create a script file	
	File permissions for Script file	
	How to Execute Script file using relative and absolute methods	
	Exercise on creating a sample script file	
	Understanding profile scripts	

	bash_profile
	bash_logout
	Use of shebang or hashbang
	Case Study on error message related to bad interpreters
	Commenting in bash scripting
	Variables
	What is variable
	Types of variable
	Difference between System Defined and User Defined variables
	Naming Conventions to declare a Variable
	Syntax for Variable Declaration
	Few Case studies on Valid and invalid variable declarations
	Scalar Variables
	Accessing the Variables
	Reading variables from standard input
	Reading single variables from standard input
	Reading multiple variables from standard input
	Reading Variables in Silent Mode
	Reading Variables into an array
	Reading Variables into inbuilt System Built Variable REPLY
	Passing Arguments
	Passing arguments to shell script
	Passing arguments to arrays
	Difference between passing arguments to shell script and to array
	Print all arguments passed into array
	How to count the number of arguments of an array using script
	Operators
	Arithmetic Operators
	Numeric comparison Operators
	Logical Operators
	Assignment Operators
	Control Statements
	If condition

	If else conditions	
	While Loop	
	For loop	
	Continue	
	Break	
	Case condition	
	FIle Operations using Bash Scripting	
	How to find if the file exists or not	
	How to know file type	
	How to know if the directory exists or not	
	How to know file permissions using script	
	How to know if the file is empty or not	
	Few Sample scripts	
Introduction to VCS	Introduction to VCS	
	Purpose of VCS	
	VCS Workflow	
	Types of VCS	
	Local VCS	
	Benefits	
	Drawbacks	
	Centralised VCS	
	What is CVCS	
	Benefits of CVCS	
	Drawbacks of CVCS	
	Notable Vendors of CVCS	
	DVCS	
	What is DVCS	
	Benefits of DVCS	
	Drawbacks of DVCS	
	Notable Vendors of DVCS	
	Differences between DVCS and CVCS	

Git	Introduction to Git
	Git Features
	Role of Git in Real Time
	Git installation on Windows and Screen shots
	Git installation on Linux
	Git Architecture
	Working Directory
	Staging Area (Index Area)
	Local Repo
	What is Git Repository
	Git with Local Repositories
	Git with Remote Repositories
	Git Configuration Files
	git config command usage
	Set git environment variables for global level
	Setup git repository using git init
	Stop git tracking files using git ignore
	Git Making Changes
	git add
	git status
	git status color coding system
	git commit
	Exercises on adding single files, multiple files commits
	Committing Changes in one go
	Git History - log and show
	View all commit logs
	View only latest commit logs
	git show command
	git log
	git branch
	git merge
	Comparing git project files from working area with Local Repo using git diff
	Git diff --staged

	Git Backout the Changes
	git reset HEAD
	git checkout
	git remote commands
Github	Introduction to Github
	Various vendors of Remote Repository
	Features of github
	Create Account in github
	Create Project Repository in github
	Public Repository
	Private Repository
	Create files in github
	Clone Github Repository
	Pull changes from github Repository
	Push changes to github Repository
Introduction to Continous Integeration	About Continuous Integration (C.I)
	Need of Continuous Integration
	Benefits of Continuous Integration
	Best practices of Continuous Integration
	Generic Architecture of Continuous Integration in Projects
	Continuous Integration Workflow
	Components of Continuous Integration
	Case Study - situation if there is no C.I tool used in Projects
	Few notable Continuous Integration Tools
Jenkins - CI/CD Tool	Introduction to Jenkins
	Why Jenkins
	Relation between Jenkins and Hudson
	History of Jenkins
	Why Jenkins is so popular
	Features of Jenkins

	General Features
	Technical Features
	Jenkins Architecture
	Jenkins Prerequisites
	Minimum Hardware Requirements
	Recommended Hardware Requirements
	Docker Container Requirements
	Software Requirements
	Supported Platforms
	Setup Jenkin Server
	Install Software Pre-Requisite software
	Setup Environment Variables
	Jenkins Terminologies
	Master
	Slave or Node
	Job or Project
	Executor
	Build
	Plugin
	Jenkins Dashboard Overview
	Job Listing Section
	Jenkins Menu Section
	Jenkins Menu- Item
	Jenkins Menu-People
	Jenkins Menu-Build History
	Jenkins Menu-Manage Jenkins
	Jenkins Menu-views
	Build Queue Section
	Build Executor status Section
	Jenkins - Creating Jobs in Jenkins
	Naming a Project or Job
	Choosing right Project Type
	About Project Descriptions

	Set the storage limits for old discard builds
	How to disable the build systems
	Source Code Management
	Build Triggers
	Create a Sample Project
	Understand Jenkins Job Process
	How to check Build Information
	Jenkins Build Color Code system
	Configure Jenkins Build Server
	Configure Java JDK for Jenkins Build Server
	Configure Apache Maven for Jenkins Build Server
	Configure the JAVA JDK for Build jobs in Jenkins
	Configure the Maven for Build Jobs in Jenkins
	Configure Github for Build Jobs in Jenkins
	Configure SCM-Git Plugin for Build Jobs in Jenkins
	Secure Jenkins
	Manage Jenkins Plugins
	Install Plugins
	Upgrade Plugins
	Backup plugins
	Jenkins User administration
	Create Jenkins User Accounts by various methods
	Configure Jenkins User Accounts
	Delete Jenkins User Accounts
	Configure Jenkins
	How to change the Jenkins Admin Password
	Change Home Directory
	Configure system messages in Plain text or HTML format
	Configure - Executors, Labels, Quiet Period, SCM Checkout Retry Count
	Configure - Jenkins URL Location and Admin email ID
	Build Triggers
	Configure Poll Source Code management in Jenkins
	Configure Poll SCM Changes using Crontab in Jenkins

	Trigger Builds Remotely using URL
	Trigger Builds using Token ID
	Trigger Builds based on build Pipeline or other Projects
	Case Study on Access Denied Error message when trigger builds remotely
	Build triggers Periodically
	Build triggers when changes pushed to Github or SCM
	Distributed Builds
	What is Distributed Build
	Architecture of Distributed Build
	Configure Jenkins Master Server
	Configure Jenkins Slave Server
	Configure authentication between Master-Slave
	Setup Relationship between Master and Slave
	Configure Project to build on Jenkins slave server
	Configure Various Launch options using SSH, Java Web Start
	Email Notifications in Jenkins
	Purpose of Email Notification
	Email Notification plugins
	Configure Email Notification in Jenkins
	Demonstrate usage of email notification on builds
Introduction to Build Tools	What is Build
	Purpose of Build Tools
	Build Tools Ideology
	Evolution of Build Tools
	Few Notable Build Tools
	Environment Based Build Tools
	Java Based Build Tools
Build Tool - Maven	About to Build tools
	Introduction to Apache Maven
	Maven Architecture
	Installation of Maven

	Various Phases of Maven
	Configure path variables for Apache Maven in Jenkins
	Create Pipeline for Maven builds in Jenkins
Introduction to Configuration Management	Introduction Configuration Management
	Configuration Management terminologies
	Configuration Management tools
	Difference between various cm tools
Ansible	Introduction To Ansible
	Features Of Ansible
	Use Cases Of Ansible
	What Can Do In Production Environment
	Ansible Documentation
	How Ansible Is Different From Configuration Management Tools
	Ansible Architecture
	Ansible Control Machine Requirements
	Ansible Installation Process On RHEL
	Ansible Terminologies
	How Ansible Works
	Ansible Lab-setup
	YAML Basics
	Representation Of Array In Yaml
	Representation Of Dictionary In Yaml
	Non-group Inventory File
	Group Inventory File
	Ansible Inventory Parameters
	Ansible Exercise - To Setup Inventory File And Perform Ping Test
	Ansible Playbooks and Modules
	Ansible Playbooks
	Sample Ansible Playbook
	Ansible Playbook Format
	Ansible Modules

	Chef Common Cookbook Components
	Chef Cookbook Types
	Chef help procedures
	How to create Cookbooks in Chef
	About cookbook component - Recipes
	About Cook Component - Unit Testing
	About Cook Component - Integration Testing
	How to track changes in chef using git
	How to configure Git on a Chef cookbook
	Procedure to be followed when made changes to a Cookbook
	How to apply Semantic versioning on Cookbook
	How to verify the syntax errors in recipe file
	LAB Exercises on Cookbook and Recipe
	Applying semantic versioning with changes on cookbook
	Setup apache web server
	Demonstrate functionality test on recipe files in a cookbook
	Applying chef-client methods
	How to apply single recipes using chef-client in local mode
	What is Local mode
	What is Runlist
	How to apply chef-client using runlist on single cookbook
	How to apply chef-client using runlist on multiple cookbooks
	How to use include_recipe method
	Sample case studies
	Chef knife commands
	Create a cookbook using knife command
	Delete a cookbook using knife command from workstation
	Delete a cookbook using knife command
	How to Upload a cookbook to chef server
	How to attach a recipe or cookbook to chef node
	list nodes using knife command
	See details about node using knife command
	knife command to check all cookbook list

		Download a cookbook from Chef Server to Workstation
		How to generate metadata of a cookbook
		How to test a cookbook syntax using knife commands
		How to check recent change status on chef node
		How to bootstrap a node
		How to delete a node
		Implementation Procedures of Chef in Real Time
	Puppet	Introduction To Puppet
		Puppet Features
		Puppet Use-cases
		Puppet Documentation
		Puppet Architecture
		How Puppet Works
		Execution Flow Of Puppet Master And Puppet Agent
		Puppet Terminologies
		Puppet Master System Requirements
		Puppet Agent System Requirements
		Lab Setup - Puppet Infrastructure for Practise
		Puppet Master Prerequisites
		Setup Puppet Master
		Setup Puppet Master Memory Allocation
		Setup Puppet Master Services
		Puppet Agent Prerequisites
		Setup Puppet Agent
		Setup Puppet Agent Services
		Puppet Configuration Files
		Make Entries Into Configuration Files
		Configuration File Of Puppet Master
		Configuration File Of Puppet Agent
		Request For Puppet Agent Certificate From Server
		Puppet Cert Commands
		Puppet Resources

		Resources Types
		Built In Resources
		Defined Resources
		Custom Resources
		Puppet Resources Declaration
		Sample Puppet DSL Code
		How To Find Resource Types In Puppet
		Puppet Describe
		Puppet Code Creation Process
		Puppet Parser
		Puppet Apply
		Steps To Execute Puppet Code
		Puppet Classes
		Class Definition And Syntax
		Sample Class Code
		Puppet Class Exercise
		Puppet Manifests
		Puppet Config Print Utility
		Puppet Code Execution Process On Agents
	Docker	Introduction to Docker
		Why docker
		What is a container
		Relation between container and docker
		Docker features
		Why docker is so popular
		Difference between container and image
		Containers History
		Docker Architecture
		Docker Editions
		Docker system Requirements
		Docker installation and setup
		How to verify docker installation

	About Docker version
	How to see list images in docker
	What is Docker Registries
	How to see all docker images
	How to pull images from docker registries
	What is Pulling in docker
	Difference between Docker Pull, run, Push
	How to run docker image
	How to exit from container without killing it
	How to exit from container by killing it
	How to see all running container on docker host
	How to check the history of all containers
	How to stop a container that is running
	How to find latest containers that are created
	How to get inside of already a running container
	How to start a container and remove it once task is completed
	How to delete or remove a container
	How to delete or remove image from docker host
	Relation between Images and Containers
	How to attach a port of docker host to docker container
	How to run a container in background
	Difference between docker container run and docker container start
	How to specify a name to docker container
	How to see container logs
	How to see processes that are currently running in a docker container
	How to see all commands related to a container
	How to remove docker multiple containers
	How to check docker container metadata using docker inspect
	how to see docker container stats
	How to list what ports are being used by docker container
	How to see Docker Image History
	How to see docker image metadata
	How to tags docker images

		How to log into docker registries using docker CLI
		How to logout from docker registries using docker CLI
		How to push docker image to docker registries
		About Docker file
		How to create Dockerfile to build an image
		How to build an image from Dockerfile
		About Dockerfile Instructions
	Kubernetes	What is kubernetes
		Features of kubernetes
		Architecture of kubernetes
		Kubernetes Master
		Kubernetes nodes
		Kubernetes components
		Kube-api server
		etcd (cluster store)
		Kube-scheduler
		Node
		Kube-proxy
		Kubelet
		pods
		Multi container pod
		Pod limitations
		Replica sets
		Deployments
		Installation of Kubernetes
	Nagios	Ways of monitoring
		Why Nagios so Cool?
		Architecture of Nagios
		Plugins, Config files
		Dashboard overview
		Nagios working process

	Nagios Installation & Nagios Configuration
Vagrant	Introduction to Vagrant
	Features of Vagrant
	Vagrant Architecture
	Vagrant Terminologies
	setup of Vagrant
	Vagrant Commands (CLI)
	Configure Vagrant File
Projects	1. Project on Git
	2. Jenkins Project on Maven CI/CD Pipeline
	3. Ansible Project - Deploy and configure NTP Node Server
	4. Project on Puppet - Using Puppet, create a puppet code to deploy Apache web server
	5. Chef Project - To deploy and configures containerization Docker Server
	6. Docker Project
	7. Kubernetes Project
	8. Shell Scriting Project
Others	1. Resume Preparation Support
	2. Material is provided in form of PDF Soft Copies.