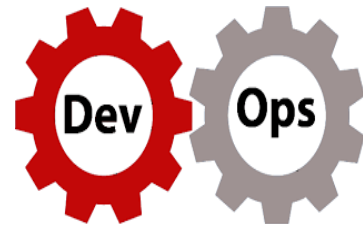




## RISE 'N' SHINE TECHNOLOGIES

Ph: 040-65574999, 8686988042

[www.risenshinetechnologies.com](http://www.risenshinetechnologies.com)



### Section 1: Introduction to DevOps

1. Overview of the existing system
2. About SDLC
3. About Agile Model
4. The Roles of Developers, Testers and Operations Teams
5. The Challenges in the existing System
6. Why DevOps
7. DevOps fundamentals and methodologies
8. Understanding The Complete Pipe Line with CI and CD Operations
9. DevOps tools
  - a. Maven
  - b. Nexus
  - c. Tomcat Server
  - d. Git and GitHub
  - e. Jenkins
  - f. Ansible and Puppet
  - g. Docker and Docker Swarm
  - h. Vagrant
  - i. Nagios

### Section 2: Unix/Linux Admin Essentials

1. Introducing Unix/Linux Operating System
2. Becoming Familiar with Unix Commands
3. File Attributes
4. I/O Redirections
5. Compressing/Uncompressing
6. VI/VIM , The King of Editors
7. Simple Filters
8. Filters Using Regular Expressions
9. File Permissions

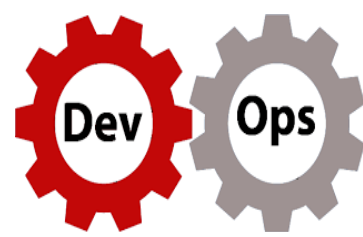
This is copyright and is licensed for the sole use by Rise 'n' Shine Technologies: Flat No: 101, MIG 18, Dharma Reddy colony, KPHB Line 3, Near JNTU, Hyderabad-500085 Ph:8686 98 8042



## RISE 'N' SHINE TECHNOLOGIES

Ph: 040-65574999, 8686988042

[www.risenshinetechnologies.com](http://www.risenshinetechnologies.com)



### 10. The Process

#### 11. Red Hat Package Manager(RPM):

- a. Overview of RPM
- b. Installing, Removing a software with YUM
- c. RPM queries
- d. RPM verifications

#### 12. Yellow Dog Update Manager(YUM):

- a. Overview of YUM
- b. Installing, Removing a software with YUM
- c. YUM queries

#### 13. Remote Access:

- a. Telnet configuration
- b. Secure Shell (SSH) configuration

### Section 3: DevOps - Shell Scripting

1. Shell Script Introduction
2. Important Points About Programming
3. Shell Script Variables
4. Shell Decision Making
5. Shell Operators
6. Return Statuses
7. Shell Iterations
8. Shell Functions
9. Real time Example

### Section 4: Shell Script Realtime Examples

1. Shell Script Real Time Examples
2. Shell Script Debugging Options
3. Shell Script Assignments

### Section 5: Python Scripting

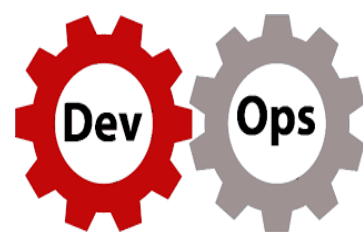
This is copyright and is licensed for the sole use by Rise 'n' Shine Technologies: Flat No: 101, MIG 18, Dharma Reddy colony, KPHB Line 3, Near JNTU, Hyderabad-500085 Ph:8686 98 8042



## RISE 'N' SHINE TECHNOLOGIES

Ph: 040-65574999, 8686988042

[www.risenshinetechnologies.com](http://www.risenshinetechnologies.com)



1. Python Introduction
2. Python Installation
3. Python Program & its Execution
4. Python Tokens and Variables
5. Python Operators
6. Python Data Types
7. Python Conditional control flow
8. Python Loops
9. Python Input and Output
10. Python Functions
11. Python Modules
12. Python Classes
13. Python Exception Handling
14. Python Regular Expressions
15. Python System Administration
16. Python Date and Time

### Section 6: AWS Services

1. Introduction of Cloud and AWS
2. AWS Account Setup and IAM
3. Launching EC2 Instance and AMI
4. EC2 Connect, User Data EIP
5. EC2 and Load Balancer (ALB)
6. ASG and Load Balancer
7. ASG and Route 53
8. RDS and VPC
9. S3 and S3 Policies
10. Cloud Watch Alerts, Events
11. Cloud Watch Logs and CLI

### Section 7: AWS Project – Assignment 1

1. AWS Assignment – Problem Statement

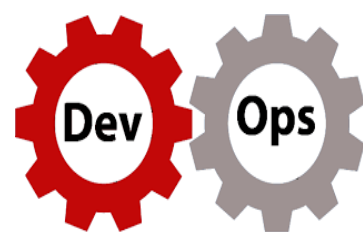
This is copyright and is licensed for the sole use by Rise 'n' Shine Technologies: Flat No: 101, MIG 18, Dharma Reddy colony, KPHB Line 3, Near JNTU, Hyderabad-500085 Ph:8686 98 8042



## RISE 'N' SHINE TECHNOLOGIES

Ph: 040-65574999, 8686988042

[www.risenshinetechnologies.com](http://www.risenshinetechnologies.com)



### 2. AWS Assignment – Solution Statement

#### Section 8: IAC – Terraform

1. Terraform Introduction
2. Terraform Setup
3. Terraform Providers
4. Terraform Resources
5. Terraform Variables
6. Terraform Outputs
7. Lab Practice

#### Section 9: AWS Project – Assignment 2

8. AWS Assignment – Problem Statement
9. AWS Assignment – Solution Statement

#### Section 10: DevOps Maven - Build Tool

1. Maven - Environment Setup
2. Maven - Build Life Cycle
3. Maven - Creating, Building & Testing Project
4. Maven - Project Templates
5. Maven - Snapshots vs. Releases
6. Maven - Dependencies and Repositories
7. Maven - Web Application
8. Maven - Distribution Management

#### Section 11: Deployment - Tomcat Web Server

1. Installation of Tomcat
2. Starting and Stopping Tomcat
3. Configurations
4. Deployments and types of deployments
5. Debugging logs

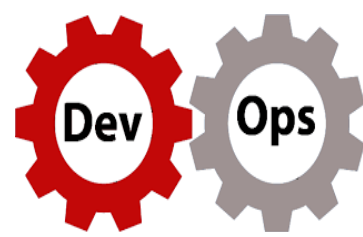
This is copyright and is licensed for the sole use by Rise 'n' Shine Technologies: Flat No: 101, MIG 18, Dharma Reddy colony, KPHB Line 3, Near JNTU, Hyderabad-500085 Ph:8686 98 8042



## RISE 'N' SHINE TECHNOLOGIES

Ph: 040-65574999, 8686988042

[www.risenshinetechnologies.com](http://www.risenshinetechnologies.com)



### Section 12: Artifactory Repository Management - NEXUS

1. Installing and Running Nexus
2. Using the Nexus User Interface
3. Managing Snapshots and Releases
4. Integrating Maven and Nexus Repository

### Section 13: Source Code Management Tool - Git

1. Introduction
2. What is a distributed version control system?
3. Installation and Configuration
4. Git Commands
5. Managing Branches and Tags
6. Branching Strategies - Sequential and Parallel
7. Git Merge and Merge Tool
8. Git Stashing

### Section 14: Source Code Management Tool - GITHUB

1. Introduction to Github
2. Secure Communication
3. Working with Github
4. GitHub Repositories Mgmt

### Section 15: DEVOPS: Ansible

1. Getting started with Ansible
2. Installing Ansible
3. Creating our Ansible playground
4. Creating our Ansible repository
5. Executing modules
6. Running arbitrary commands
7. Ansible playbooks

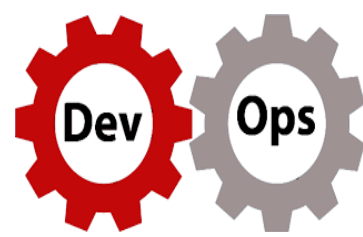
This is copyright and is licensed for the sole use by Rise 'n' Shine Technologies: Flat No: 101, MIG 18, Dharma Reddy colony, KPHB Line 3, Near JNTU, Hyderabad-500085 Ph:8686 98 8042



## RISE 'N' SHINE TECHNOLOGIES

Ph: 040-65574999, 8686988042

[www.risenshinetechnologies.com](http://www.risenshinetechnologies.com)



8. Creating a playbook
9. Creating roles to deploy and start our web application

### Section 16: Introduction to Virtualization

1. Overview of the existing system
2. About Virtualization
3. Advantages of Virtualization
4. Types of Virtualizations

### Section 17: DEVOPS: Vagrant

1. Vagrant Intro
2. Setting Up Vagrant
3. Using Vagrant
4. Automated Provisioning

### Section 18: Containers - Docker

1. Introduction to Docker

- Introduction
- Containers vs VMs
- The Key Features of Docker
- The Docker History
- Docker Workflow and Components

2. Setting up the Environment

- Setting up the Environment
- Docker for Unix
- Introducing Sample App

3. Getting Started with Docker

- Launching our first Container
- Making Containers Persist
- Connecting to a Running Container
- Pause, Stop Remove

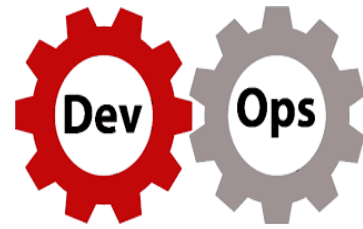
This is copyright and is licensed for the sole use by Rise 'n' Shine Technologies: Flat No: 101, MIG 18, Dharma Reddy colony, KPHB Line 3, Near JNTU, Hyderabad-500085 Ph:8686 98 8042



## RISE 'N' SHINE TECHNOLOGIES

Ph: 040-65574999, 8686988042

[www.risenshinetechnologies.com](http://www.risenshinetechnologies.com)



### 4. Container Operations

Port Mappings

Renaming, Top, Attaching and Detaching

Inspecting Containers and Foregrounding

Limiting Resources - Memory

Prioritizing CPU Utilization

### 5. Dockerising your own App

package an application into a Docker Image

Building Docker Image

Launching and customizing a Container

Committing the container into an Image and Validating

Troubleshooting Image Builds, Publishing to Docker Hub

Automating Image builds with a Dockerfile

Image build and Image Tagging

### 6. Docker Networking

Docker Host Networking Primer

Inspecting the default Bridge

Creating Networks - Bridge, None and Host

## Section 19 – DevOps – Docker Compose

Docker Limitations

Introduction of Docker Compose

Setting Docker Compose

Real time Example with Docker Compose

## Section 20 – DevOps – Kubernetes with Real time Project

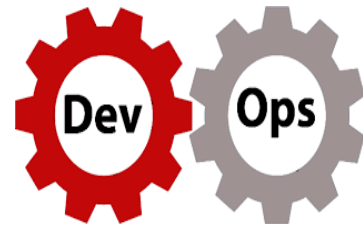
Limitations from Docker and Docker Compose



## RISE 'N' SHINE TECHNOLOGIES

Ph: 040-65574999, 8686988042

[www.risenshinetechnologies.com](http://www.risenshinetechnologies.com)



Introduction of COE

Which COE is recommended?

About Kubernetes

Architecture of Kubernetes

Installation of Kubernetes using Kubeadm

Real time Project:

Understanding Namespaces

Understanding Pods

Understanding Replication Set

Understanding Deployments

Understanding Services

Deployment Strategy

### Section 21: DEVOPS : LOGGING, MONITORING and Performance

1. Troubleshooting
2. How to monitor the Servers
3. Nagios
  1. Installation of Nagios
  2. Configuring Nagios
  3. Monitoring Nagios

### Section 22: Jenkins - Continuous Integration Tool

1. Overview of CI, CD and Jenkins
2. Installation and Configuration
  - Download and Installation of Jenkins
  - Configuration of Jenkins
  - Configure your First Build Job
  - Running the build job for first time

3. Code Quality Analysis Using SonarQube

Download and Installation of SonarQube

This is copyright and is licensed for the sole use by Rise 'n' Shine Technologies: Flat No: 101, MIG 18, Dharma Reddy colony, KPHB Line 3, Near JNTU, Hyderabad-500085 Ph:8686 98 8042

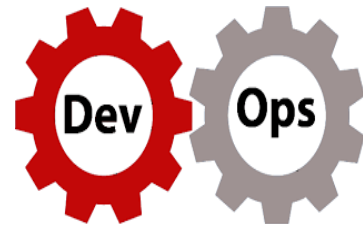




## RISE 'N' SHINE TECHNOLOGIES

Ph: 040-65574999, 8686988042

[www.risenshinetechnologies.com](http://www.risenshinetechnologies.com)



### Overview of SonarQube

#### 4. Working with Jenkins Plugins

- Configure Parameterized Builds
- Integration of SonarQube in Jenkins
- Track Status of Build Jobs using Delivery Pipeline Plugin
- Basic and Advanced Email Notifications
- Approval Process Automation using Promotion Plugin

#### 5. Security and Monitoring

- Configure Basic Security in Jenkins
- Role Based Authorization
- Monitoring and Backup

### Section 23: CI and CD End to End Project with Docker and Kubernetes

---