





About DevOpsSchool

DevOpsSchool is a unit of "Cotocus PVT ltd" and a leading platform which helps IT organizations and professionals to learn all the emerging technologies and trend which helps them to learn and embrace all the skills, intelligence, innovation and transformation which requires to achieve the end result, quickly and efficiently. We provide over 40 specialized programs on DevOps, Cloud, Containers, Security, AI, ML and on Big data that are focused on industry requirement and each curriculum is developed and delivered by leading experts in each domain and aligned with the industry standards.

About Course

In this decade if you are associated with IT industry or software community then certainly you have heard about trending skillset "DevOps". Definitely it's beneficial and very much rewarding to get the knowledge and certification on DevOps. DevOps is a modern approach of software development process which overcomes the challenges of earlier working models where now Development and Operation team work together in collaboration and sharing end to end responsibilities from Requirement gathering >> System Design >> System implementation >> System testing >> System deployment >> System maintenance and monitoring and gathering feedback from the end users, then again implementing the changes and releasing the product without delaying any time.



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Duration	60 Hrs	
Mode	Online (Instructor-led, live & Interactive)	
Projects (Real time scenario based)	3	



FEATURES	DEVOPSSCHOOL	OTHERS
1 Course for All (DevOps/DevSecOps/SRE)	✓	×
Faculty Profile Check	✓	×
Lifetime Technical Support	~	×
Lifetime LMS access	~	×
Top 46 Tools	~	×
Interview KIT (Q&A)	~	×
Training Notes	~	×
Step by Step Web Based Tutorials	~	×
Training Slides	~	×
Training + Additional Videos	~	×



Training

Upon completion of this program you will get 360-degree understanding of DevOps, DevSecOps and SRE. This course will give you thorough learning experience in terms of understanding the concepts, mastering them thoroughly and applying them in real work environment.

Projects

You will be given industry level real time projects to work on and it will help you to differentiate yourself with multi-platform fluency, and have real-world experience with the most important tools and platforms.

Interview

As part of this, You would be given complete interview preparations kit, set to be ready for the DevOps hotseat. This kit has been crafted by 200+ years industry experience and the experiences of nearly 10000 DevOpsSchool's DevOps learners worldwide.



AGENDA OF THE DEVOPS CERTIFIED PROFESSIONAL (DCP) TRAINING

SDLC Models & Architecture with Agile, DevOps, SRE & DevSecOps, SOA & Micro services - Concept

- Let's Understand about Software Development Model
- Overview of Waterfall Development Model
- Challenges of Waterfall Development Model
- Overview of Agile Development Model
- Challenges of Agile Development Model
- Requirement of New Software Development Model
- Understanding an existing Pain and Waste in Current Software Development Model
- What is DevOps?
- Transition in Software development model

Waterfall -> Agile -> CI/CD -> DevOps -> DevSecOps

- Understand DevOps values and principles
- Culture and organizational considerations
- Communication and collaboration practices
- Improve your effectiveness and productivity
- DevOps Automation practices and technology considerations
- DevOps Adoption considerations in an enterprise environment
- Challenges, risks and critical success factors
- What is DevSecOps?

Let's Understand DevSecOps Practices and Toolsets.

What is SRE?

Let's Understand SRE Practices and Toolsets.

- List of Tools to become Full Stack Developer/QA/SRE/DevOps/DevSecOps
- Microservices Fundamentals
- Microservices Patterns

Choreographing Services

Presentation components

Business Logic



Database access logic

Application Integration

Modelling Microservices

Integrating multiple Microservices

Avoiding Breaking Changes

Choosing the right protocols

Keeping it simple

Sync & Async

Dealing with legacy systems

Testing

What and When to test

- o Preparing for deployment
- o Monitoring Microservice Performance
- o Tools used for Microservices Demo using container



Platform - Operating Systems - Centos/Ubuntu & VirtualBox & Vagrant

- Installing CentOS7 and Ubuntu
- Accessing Servers with SSH
- Working at the Command Line
- Reading Files
- Using the vi Text Editor
- Piping and Redirection
- Archiving Files
- Accessing Command Line Help
- Understanding File Permissions
- Accessing the Root Account
- Using Screen and Script
- Overview of Hypervisor
- Introduction of VirtualBox
- Install VirtualBox and Creating CentOS7 and Ubuntu Vms
- Understanding Vagrant
- Basic Vagrant Workflow
- Advance Vagrant Workflow
- Working with Vagrant VMs
- The Vagrantfile
- Installing Nginx
- Provisioning
- Networking
- Sharing and Versioning Web Site Files
- Vagrant Share
- Vagrant Status
- Sharing and Versioning Nginx Config Files
- Configuring Synced Folders



Platform - Cloud - AWS

- Introduction of AWS
- Understanding AWS infrastructure
- Understanding AWS Free Tier
- IAM: Understanding IAM Concepts
- IAM: A Walkthrough IAM
- IAM: Demo & Lab
- Computing:EC2: Understanding EC2 Concepts
- Computing:EC2: A Walkthrough EC2
- Computing:EC2: Demo & Lab
- Storage: EBS: Understanding EBS Concepts
- Storage:EBS: A Walkthrough EBS
- Storage:EBS: Demo & Lab
- Storage:S3: Understanding S3 Concepts
- Storage:S3: A Walkthrough S3
- Storage:S3: Demo & Lab
- Storage:EFS: Understanding EFS Concepts
- Storage:EFS: A Walkthrough EFS
- Storage:EFS: Demo & Lab
- Database: RDS: Understanding RDS MySql Concepts
- Database:RDS: A Walkthrough RDS MySql
- Database:RDS: Demo & Lab
- ELB: Elastic Load Balancer Concepts
- ELB: Elastic Load Balancer Implementation
- ELB: Elastic Load Balancer: Demo & Lab
- Networking: VPC: Understanding VPC Concepts
- Networking: VPC: Understanding VPC components
- Networking:VPC: Demo & Lab



Platform - Containers - Docker

- What is Containerization?
- Why Containerization?
- How Docker is good fit for Containerization?
- How Docker works?
- Docker Architecture
- Docker Installations & Configurations
- Docker Components
- Docker Engine
- Docker Image
- Docker Containers
- Docker Registry
- Docker Basic Workflow
- Managing Docker Containers
- Creating our First Image
- Understading Docker Images
- Creating Images using Dockerfile
- Managing Docker Images
- Using Docker Hub registry
- Docker Networking
- Docker Volumes
- Deepdive into Docker Images
- Deepdive into Dockerfile
- Deepdive into Docker Containers
- Deepdive into Docker Networks
- Deepdive into Docker Volumes
- Deepdive into Docker Volume
- Deepdive into Docker CPU and RAM allocations
- Deepdive into Docker Config
- Docker Compose Overview
- Install & Configure Compose
- Understanding Docker Compose Workflow
- Understanding Docker Compose Services
- Writing Docker Compose Yaml file
- Using Docker Compose Commands
- Docker Compose with Java Stake
- Docker Compose with Rails Stake
- Docker Compose with PHP Stake
- Docker Compose with Nodejs Stake



Planning and Designing - Jira & Confluence

Jira

Overview of Jira

Use cases of Jira

Architecture of Jira

Installation and Configuraration of Jira in Linux

Installation and Configuraration of Jira in Windows

Jira Terminologies

Understanding Types of Jira Projects

Working with Projects

Working with Jira Issues

Adding Project Components and Versions

Use Subtasks to Better Manage and Structure Your Issues

Link Issues to Other Resources

Working in an Agile project

Working with Issues Types by Adding/Editing/Deleting

Working with Custom Fields by Adding/Editing/Deleting

Working with Screens by Adding/Editing/Deleting

Searching and Filtering Issues

Working with Workflow basic

Introduction of Jira Plugins and Addons.

Jira Integration with Github

Confluence

Exploring Confluence benefits and resources

Configuring Confluence

Navigating the dashboard, spaces, and pages

Creating users and groups

Creating pages from templates and blueprints

Importing, updating, and removing content

Giving content feedback

Watching pages, spaces, and blogs

Managing tasks and notifications

Backing up and restoring a site

Admin tasks

- Add/Edit/Delete new users
- Adding group and setting permissions
- Managing user permissions
- Managing addons or plugins
- Customizing confluence site



Installing Confluence

- Evaluation options for Confluence
- Supported platforms
- Installing Confluence on Windows
- Activating Confluence trial license
- Finalizing Confluence Installation

Backend Programming Language 2 - Python/Flask with MySQL DB

- Planning Discuss some of the Small Project Requirement which include Login/Registration with Some Students records CRUD operations.
- Design a Method --> Classes -> Interface using Core Python
 Fundamental of Core Python with Hello-world Program with Method --> Classes
- Coding in Flask using HTML CSS JS MySQL
 Fundamental of Flask Tutorial of Hello-World APp
- UT 2 Sample unit Testing using Python test
- Package a Python App
- AT 2 Sample unit testing using Selenium

Technology Demonstration

Software Planning and Designing using JAVA

Core Python

Flask

mySql

pytest

Selenium

HTML

CSS

Js.



Source Code Versioning - Git using GitHub - 4 hrs.

• Introduction of Git

- Installing Git
- Configuring Git
- Git Concepts and Architecture
- How Git works?
- The Git workflow
- Working with Files in Git

Adding files

Editing files

Viewing changes with diff

Viewing only staged changes

Deleting files

Moving and renaming files

Making Changes to Files

Undoing Changes

Reset

Revert

- Amending commits
- Ignoring Files
- Branching and Merging using Git
- Working with Conflict Resolution
- Comparing commits, branches and workspace
- Working with Remote Git repo using Github
- Push Pull Fetch using Github
- Tagging with Git

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Code Analysis & Securing Code (SAST) - SonarQube & Coverity Scan & Snyk

- What is SonarQube?
- Benefits of SonarQube?
- Alternative of SonarQube
- Understanding Various License of SonarQube
- Architecture of SonarQube
- How SonarQube works?
- Components of SonarQube
- SonarQube runtime requirements
- Installing and configuring SonarQube in Linux
- Basic Workflow in SonarQube using Command line
- Working with Issues in SonarQub
- Working with Rules in SonarQube
- Working with Quality Profiles in SonarQube
- Working with Quality Gates in SonarQube
- Deep Dive into SonarQube Dashboad
- Understanding Seven Axis of SonarQube Quality
- Workflow in SonarQube with Maven Project
- Workflow in SonarQube with Gradle Project
- OWASP Top 10 with SonarQube



Build Management - Maven and Gradle

Maven

- Introduction to Apache Maven
- Advantage of Apache Maven over other build tools
- Understanding the Maven Lifecycle and Phase
- Understanding the Maven Goals
- Understanding the Maven Plugins
- Understanding the Maven Repository
- Understanding and Maven Release and Version
- Prerequisite and Installing Apache Maven
- Understanding and using Maven Archetypes
- Understanding Pom.xml and Setting.xml
- Playing with multiples Maven Goals
- Introducing Maven Dependencies
- Introducing Maven Properties
- Introducing Maven Modules
- Introducing Maven Profile
- Introducing Maven Plugins
- How can Maven benefit my development process?
- How do I setup Maven?
- How do I make my first Maven project?
- How do I compile my application sources?
- How do I compile my test sources and run my unit tests?
- How do I create a JAR and install it in my local repository?
- How do I use plugins?
- How do I add resources to my JAR?
- How do I filter resource files?
- How do I use external dependencies?
- How do I deploy my jar in my remote repository?
- How do I create documentation?
- How do I build other types of projects?
- How do I build more than one project at once?



Gradle

- What is Gradle?
- · Why Gradle?
- Installing and Configuring Gradle
- Build Java Project with Gradle
- Build C++ Project with Gradle
- Build Python Project with Gradle
- Dependency Management in Gradle
- Project Structure in Gradle
- Gradle Tasks
- Gradle Profile and Cloud
- Gradle Properties
- Gradle Plugins

Package Management - Packer & Artifactory - 2 + 2 = 4hrs

Artifactory

- Artifactory Overview
- Understanding a role of Artifactory in DevOps
- System Requirements
- Installing Artifactory in Linux
- Using Artifactory
- Getting Started
- General Information
- Artifactory Terminology
- Artifactory Repository Types
- Artifactory Authentication
- Deploying Artifacts using Maven
- Download Artifacts using Maven
- Browsing Artifactory
- Viewing Packages
- Searching for Artifacts
- Manipulating Artifacts

Packer

Getting to Know Packer

What is Packer?

Save what is Packer?



- Installing Packer
- Save Installing Packer
- The Packer workflow and components
- Save The Packer workflow and components
- The Packer CLI
- Save The Packer CLI
- Baking a Website Image for EC2
 - Select an AWS AMI base
 - Save Select an AWS AMI base
 - Automate AWS AMI base build
 - Save Automate AWS AMI base build
 - Using build variables
 - Save Using build variables
 - Provision Hello World
 - Save Provision Hello World
 - Provision a basic site
 - Save Provision a basic site
- Customization with a Config Management Tool
 - Simplify provisioning with a config tool
 - Save Simplify provisioning with a config tool
 - Use ansible to install the webserver
 - Save Use ansible to install the webserver
 - Debugging
 - Save Debugging
- Building Hardened Images
 - Use Ansible modules to harden our image
 - Save Use Ansible modules to harden our image
 - Baking a Jenkins image
 - Save Baking a Jenkins image
- Building a Pipeline for Packer Image
 - Validate Packer templates
 - Save Validate Packer templates
 - Create a manifest profile
 - Save Create a manifest profile
 - Testing
 - Save Testing
 - CI pipeline
 - Save CI pipeline



Unit Testing & Acceptance Testing & Coverage - Junit & Selenium & Jmeter & Jacoco - 4hrs

- What is Unit Testing
- Tools for Unit Testing
- What is Junit?
- How to configure Junit?
- Writing Basic Junit Test cases
- Running Basic Junit Test cases
- Junit Test Results
- Introduction To Selenium
- Components of Selenium
 - Selenium IDE
 - Selenium Webdriver
 - Selenium Grid
- Installing and Configuring Selenium
- Working with Selenium IDE
- Working With Selenium Webdriver with Java Test Case
- · Setup and Working with Selenium Grid
- Overview of Code Coavegar Process
- Introduction of Jacoco
- How Jacoco works!
- How to install Jaoco?
- Setup testing Envrionement with Jacoco
- Create test data files using Jacoco and Maven
- Create a Report using Jacoco
- Demo Complete workflow of Jacoco with Maven and Java Project



Configuration & Deployment Management - Ansible - 4 hrs

- Overflow of Configuration Management
- Introduction of Ansible
- Ansible Architecture
- Let's get started with Ansible
- Ansible Authentication & Authorization
- Let's start with Ansible Adhoc commands
- Let's write Ansible Inventory
- Let's write Ansible Playbook
- Working with Popular Modules in Ansible
- Deep Dive into Ansible Playbooks
- Working with Ansible Variables
- Working with Ansible Template
- Working with Ansible Handlers
- Roles in Ansible
- Ansible Galaxy



Container Orchestration - Kubernetes & Helm Introduction - 4 hrs

- Understanding the Need of Kubernetes
- Understanding Kubernetes Architecture
- Understanding Kubernetes Concepts
- Kubernetes and Microservices
- Understanding Kubernetes Masters and its Component

kube-apiserver

etcd

kube-scheduler

kube-controller-manager

Understanding Kubernetes Nodes and its Component

kubelet

kube-proxy

Container Runtime

Understanding Kubernetes Addons

DNS

Web UI (Dashboard)

Container Resource Monitoring

Cluster-level Logging

- Understand Kubernetes Terminology
- Kubernetes Pod Overview
- Kubernetes ReplicationContrller Overview
- Kubernetes Deployment Overview
- Kubernetes Servcie Overview
- Understanding Kubernetes running environment options
- Working with first Pods
- Working with first ReplicationContrller
- Working with first Deployment
- Working with first Services
- Introducing Helm
- Basic working with Helm



Infrastructure Coding - Terraform

Deploying Your First Terraform Configuration

Introduction

What's the Scenario?

Terraform Components

Updating Your Configuration with More Resources

Introduction

Terraform State and Update

What's the Scenario?

Data Type and Security Groups

Configuring Resources After Creation

Introduction

What's the Scenario?

Terraform Provisioners

Terraform Syntax

Adding a New Provider to Your Configuration

Introduction

What's the Scenario?

Terraform Providers

Terraform Functions

Intro and Variable

Resource Creation

Deployment and Terraform Console

Updated Deployment and Terraform Commands



Continuous Integration - Jenkins - 4 hrs.

- Let's understand Continuous Integration
- What is Continuous Integration
- Benefits of Continuous Integration
- What is Continuous Delivery
- What is Continuous Deployment
- Continuous Integration Tools
- What is Jenkins
- History of Jenkins
- Jenkins Architecture
- Jenkins Vs Jenkins Enterprise
- Jenkins Installation and Configurations
- Jenkins Dashboard Tour
- Understand Freestyle Project
- Freestyle General Tab
- Freestyle Source Code Management Tab
- Freestyle Build Triggers Tab
- Freestyle Build Environment
- Freestyle Build
- Freestyle Post-build Actions
- Manage Jenkins
- My Views
- Credentials
- People
- Build History
- Creating a Simple Job
- Simple Java and Maven Based Application
- Simple Java and Gradle Based Application
- Simple DOTNET and MSBuild Based Application
- Jobs Scheduling in Jenkins
- Manually Building
- Build Trigger based on fixed schedule
- Build Trigger by script
- Build Trigger Based on pushed to git
- Useful Jobs Configuration
- Jenkins Jobs parameterised

- Execute concurrent builds
- Jobs Executors
- Build Other Projects
- Build after other projects are built
- Throttle Builds
- Jenkins Plugins
- Installing a Plugin
- Plugin Configuration
- Updating a Plugin
- Plugin Wiki
- Top 20 Useful Jenkins Plugins
- Using Jenkins Pluginss Best Practices
- Jenkins Node Managment
- Adding a Linux Node
- Adding a Windows Nodes
- Nodes Management using Jenkins
- Jenkins Nodes High Availability
- Jenkins Integration with other tools
- Jira
- Git
- SonarQube
- Maven
- Junit
- Ansible
- Docker
- AWS
- Jacoco
- Coverity
- Selenium
- Gradle
- Reports in Jenkins
- Junit Report
- SonarQube Reports
- Jacoco Reports
- Coverity Reports
- Selenium Reports
- Test Results
- Cucumber Reports

- Jenkins Node Managment
- Adding a Linux Node
- Adding a Windows Nodes
- Nodes Management using Jenkins
- Jenkins Nodes High Availability
- Notification & Feedback in Jenkins
- CI Build Pipeline & Dashboard
- Email Notification
- Advance Email Notification
- Slack Notification
- Jenkins Advance Administrator
- Security in Jenkins
- Authorization in Jenkins
- Authentication in Jenkins
- Managing folder/subfolder
- Jenkins Upgrade
- Jenkins Backup
- Jenkins Restore
- Jenkins Command Line



Infrastructure Monitoring Tool - Datadog

Real-time monitoring

Datadog provides real-time monitoring of your infrastructure and applications, allowing you to quickly identify and resolve issues before they impact your users.

Customizable dashboards

With Datadog, you can create customizable dashboards that give you a real-time view of your entire infrastructure. These dashboards can be tailored to your specific needs and can include metrics and alerts for all of your systems and applications.

Integrations

Datadog integrates with a wide range of third-party tools and services, allowing you to monitor and manage your entire IT stack from a single platform.

Collaboration

Datadog provides collaboration tools that enable your IT team to work together to resolve issues quickly and efficiently.

Automatic alerting

Datadog can be configured to automatically alert you when certain metrics or events occur. You can set up alerts for things like server downtime, high CPU usage, or application errors.

Comprehensive metrics

Datadog collects and analyzes a wide range of metrics from your infrastructure and applications, including server performance, network traffic, and application logs.

Machine learning

Datadog's machine learning capabilities can help you identify anomalies and patterns in your data, allowing you to proactively address issues before they become critical.



Log Monitoring Tool - Splunk

- What Is Splunk?
- Overview
- Machine Data
- Splunk Architecture
- Careers in Splunk

- Setting up the Splunk Environment
- Overview
- Splunk Licensing
- Getting Splunk
- Installing Splunk
- Adding Data to Splunk

- Basic Searching Techniques
- Adding More Data
- Search in Splunk
- Demo: Splunk Search
- Splunk Search Commands
- Splunk Processing Langauge
- Splunk Reports
- Reporting in Splunk
- Splunk Alerts
- Alerts in Splunk

- Enterprise Splunk Architecture
- Overview
- Forwarders
- Enterprise Splunk Architecture
- Installing Forwarders
- Installing Forwarders
- Troubleshooting Forwarder Installation
- Splunking for DevOps and Security
- Splunk in DevOps
- DevOns Demo

- Splunk in Security
- Enterprise Use Cases

- Application Development in Splunkbase
- What Is Splunkbase?
- Navigating the Splunkbase
- Creating Apps for Splunk
- Benefits of Building in Splunkbase

- Splunking on Hadoop with Hunk
- What Is Hadoop?
- Running HDFS Commands
- What Is Hunk?
- Installing Hunk
- Moving Data from HDFS to Hunk

- Composing Advanced Searches
- Splunk Searching
- Introduction to Advanced Searching
- Eval and Fillnull Commands
- Other Splunk Command Usage
- Filter Those Results!
- The Search Job Inspector

- Creating Search Macros
- What Are Search Macros?
- Using Search Macros within Splunk
- Macro Command Options and Arguments
- Other Advanced Searching within Splunk



Application Performance Monitoring - NewRelic

- Introduction and Overview of NewRelic
- What is Application Performance Management?
- Understanding a need of APM
- Understanding transaction traces
- What is Application Performance?
- APM Benefits
- APM Selection Criteria
- Why NewRelic is best for APM?
- What is NewRelic APM?
- How does NewRelic APM work?
- NewRelic Architecture
- NewRelic Terminology
- Installing and Configuring NewRelic APM Agents for Application
- Register a Newrelic Trial account
- Installing a JAVA Agent to Monitor your Java Application
- Installing a PHP Agent to Monitor your PHP Application
- Installing New Relic Agent for .NET Framework Application
- Installing a Docker based Agent to Monitor your Docker based Application
- Understanding of NewRelic Configration settings of newrelic.yml
- Understanding of NewRelic Agent Configration settings
- Working with NewRelic Dashboard
- Understanding a transactions
- Understanding Apdex and Calculating and Setting Apdex Threshold
- Understanding Circuit break
- Understanding Throughput
- Newrelic default graphs
- Understanding and Configuring Service Maps
- Understanding and Configuring JVM
- Understanding Error Analytics
- Understanding Violations
- Understanding and Configuring Deployments
- Understanding and Configuring Thread Profiler
- Depp Dive into Transaction Traces
- Profiling with New Relic
- Creating and managing Alerts
- Working with Incidents
- Sending NewRelic Alerts to Slack
- Assessing the quality of application deployments
- Monitoring using Newrelic
- View your applications index
- APM Overview page
- New Relic APM data in Infrastructure
- Transactions page
- Databases and slow queries
- Viewing slow query details
- External services page
- Agent-specific UI
- Viewing the transaction map

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- Deep Dive into Newrelic Advance
- Newrelic transaction alerts

- Configure abnd Troubleshoot and Cross Application Traces
- NewRelic Service Level Agreements
- Troubleshooting NewRelic
- Understanding and Configuring NewRelic X-Ray Sessions
- Deep Dive into NewRelic Agent Configuration
- Adding Custom Data with the APM Agent
- Extending Newrelic using Plugins
- Finding and Fixing Application Performance Issues with New Relic APM
- Setting up database montioring using Newrelic APM
- Setting up and Configuring Newrelic Alerts

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- Working with NewRelic Performance Reports
- Availability report
- Background jobs analysis report
- Capacity analysis report
- Database analysis report
- Host usage report
- Scalability analysis report
- Web transactions analysis report
- Weekly performance report.



Thank you!

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