MASTER-ACADEMY

DevOps
Bootcamp Curriculum

Course Curriculum : Your DevOps Bootcamp Learning Path.
https://www.master.com.bd/curriculum/devops-bootcamp

About MASTER-ACADEMY

MASTER-ACADEMY is a new e-learning platform providing live instructor-led interactive online training. We cater to professionals and students across the globe in categories like Golang, Frontend, UI/UX, NoSQL Databases, Javascript & Mobile Technologies, System Engineering, DevOps and Programming. We have an easy and affordable learning solution that is accessible to millions of learners. With our students spread across countries, we have built a community of over 3 thousands learners across the country.

About Bootcamp

The DevOps Bootcamp Program will provide you with in-depth knowledge of various DevOps tools including Git, Jenkins, Docker, Ansible, Nginx, Kubernetes and Nagios. This DevOps training is completely hands-on and designed in a way to help you become a certified practitioner through best practices in Continuous Development, Continuous Testing, Configuration Management, Server management and Continuous Integration, and finally, Continuous Monitoring of software throughout its development life cycle.
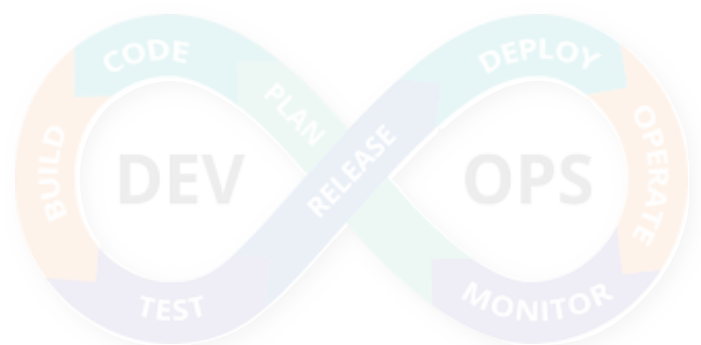
DevOps Bootcamp Curriculum

Overview of DevOps

Learning Objectives: In this module you will be introduced to the DevOps environment.

Topics:

- Why DevOps?
- What is DevOps?
- DevOps Market Trends.
- DevOps Engineer Skills.
- DevOps Delivery Pipeline.
- DevOps Ecosystem.

Version control with Git

Learning Objective: In this module you will be introduced to the DevOps environment.

Topics:

- What is version control
- What is Git
- Why Git for your organization
- Install Git
- Common commands in Git
- Working with Remote Repositories

🟦 Hands on training:

- GIT Installation, Version Control, Working with remote repository
- Branching and merging, Stashing, rebasing, reverting and resetting.
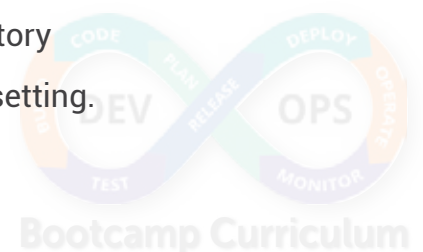
Continuous Integration using Jenkins

Learning Objective: In this module, you will know how to perform Continuous Integration using Jenkins by building and deploying test cases using golang.

Topics:

- Jenkins Management
- Adding a slave node to Jenkins
- Building Delivery Pipeline
- Pipeline as a Code
- Implementation of Jenkins in a real life Project

🖥 Hands-on training:

- Build the pipeline of jobs using Jenkins
- Create a pipeline script to deploy an application over the tomcat server

Continuous Testing with Selenium

Learning Objective: In this module, you will learn about selenium and how to automate your test cases for testing web elements. You will also get introduced to integrate Selenium with Jenkins.

Topics:

- Introduction to Selenium
- Why Selenium?
- Selenium – Webdriver
- Creating Test Cases in Selenium WebDriver (Waits)
- What and why X-Path
- Handling different controls on Webpage Framework in Selenium
- Selenium Integration with Jenkins
- Implementation of Selenium in a real life project.

🖥 Hands-on training:

- Installing Selenium
- Creating Test Cases in Selenium WebDriver
- Integrating Selenium with Jenkins

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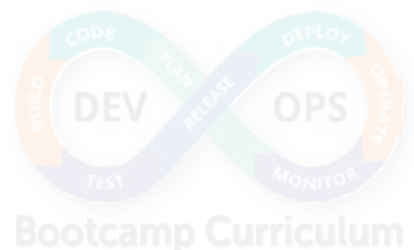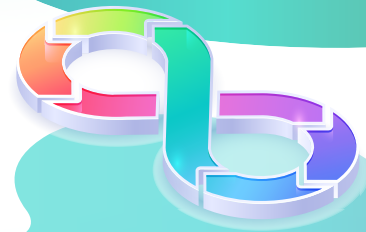
Continuous Deployment: Containerization with Docker

Learning Objective: This module introduces Docker to readers, the core concepts and technology behind Docker. Learn in detail about the container and various operations performed on it.

Topics:

- Shipping Transportation Challenges
- Introducing Docker
- Understanding images and containers
- Running Hello World in Docker
- Introduction to Container
- Container Life Cycle
- Sharing and Copying
- Base Image
- Docker File
- Working with containers
- Publishing Image on Docker Hub
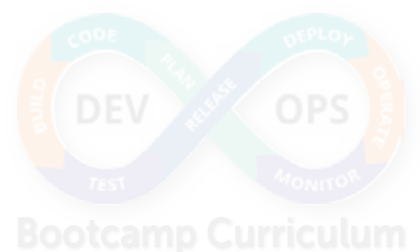
Hands-on training:

- Create and Implement docker images and containers

Containerization with Docker: Ecosystem and Networking

Learning Objective: In this module, you will learn to integrate different containers using docker.

Topics:

- Introduction to Docker Ecosystem
- Docker Compose
- Docker Swarm
- Managing Containers
- Running Containers

- Introduction to Docker Networking
- Network Types
- Docker Container Networking
- Implementation of Docker in a real life Project

Hands-on training:

- Use Docker Compose to create a WordPress site
- Start Containers on a Cluster with Docker Swarm
- Deploy a multi-tier application over a cluster
- Scale an application
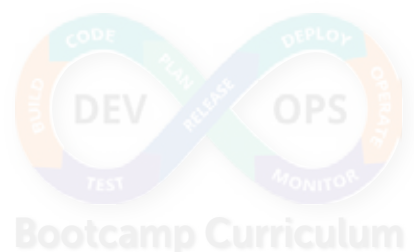
Configuration Management with Ansible.

Learning Objective: In this module, you will learn to install Ansible and configure ansible roles. You will also learn to write playbooks and finally execute ad hoc-commands using Ansible.

Topics:

- Introduction to Ansible
- Ansible Installation
- Understanding YAML
- Configuring Ansible Roles
- Write Playbooks
- Executing adhoc command

Hands-on training:

- Installing Ansible
- Configuring Ansible Role
- Write Playbooks
- Execute adhoc commands.

Continuous Monitoring with Nagios

Learning Objective: Learn how to continuously monitor your tasks using various plugins and implementing Nagios Commands.

Topics:

- Introduction to Continuous Monitoring
- Introduction to Nagios
- Installing Nagios
- Nagios Plugins(NRPE) and Objects
- Nagios Commands and Notification

📘 Hands-on training:

- Installing Nagios
- Monitoring of different servers using Nagios
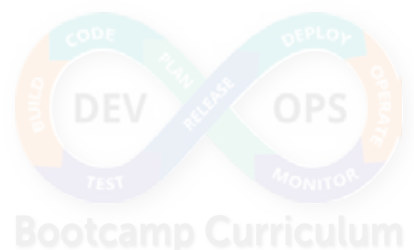
Introduction to DevOps on Cloud

Learning Objective: Learn about various cloud services and service providers, also get the brief idea of how to implement DevOps using AWS.

Topics:

- Why Cloud?
- Introduction to Cloud Computing
- Why DevOps on Cloud?
- Introduction to AWS
- Various AWS services
- DevOps using AWS

📘 Hands on training:

- AWS
- Digitalocean

Introduction to SSH

Learning objective: Learn fundamentals of SSH along with some basic DevOps and Linux stuff. Learn local Ubuntu/windows server to a remote Digital Ocean Droplet to work with. Create sets of SSH keys for those as well as Github.

Topics:

- What is Secure Shell (SSH)
- How Does it Work?

🔷 Hands on training:

- How to connect to an SSH server from different operating systems.
- How to generate ssh key (private & public key pair)
- How to transfer files via SSH File Transfer Protocol (SFTP).
- How to transfer files using secure copy (SCP).
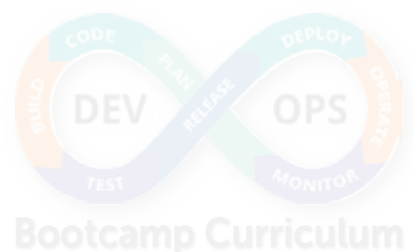- How to set up your own SSH server on Linux.

High performance server NGINX

Learning objective: Basic to advanced. Learn how to set up and configure an Nginx web server from the start.

Topics:

- Configure NGINX as a web server
- Learn to tweak NGINX for optimal performance
- Secure NGINX with some security best practises

🔷 Hands on training:

- Installing nginx
- Configuring nginx
- Virtual host setup