

DevOps Basics: Git, GitHub, Ansible, Jenkins, Docker

1. Difference Between Git and GitHub

Git is a version control system used to track changes in your code, while GitHub is a cloud-based hosting platform for Git repositories that enables collaboration and sharing.

Git: Tool/software for version control. Works offline.

GitHub: Platform/website for storing and collaborating on Git repositories online. Requires internet connection.

2. What is Ansible

Ansible is an open-source automation tool used for configuration management, application deployment, and task automation. It uses Playbooks written in YAML to define automation tasks.

Example Use-Cases:

- 1 Install and configure software packages automatically.
- 2 Deploy applications across multiple servers.
- 3 Manage configurations such as user accounts and network settings.
- 4 Automate workflows such as full stack deployments.

3. What is Jenkins and Its Uses

Jenkins is an open-source automation server used for Continuous Integration (CI) and Continuous Deployment (CD). It automates the building, testing, and deployment of applications.

- 1 Automates build, test, and deployment processes.
- 2 Integrates with tools like GitHub, Docker, and Kubernetes.
- 3 Reduces human errors by automating repetitive DevOps tasks.
- 4 Monitors execution of jobs through a user-friendly dashboard.

4. What is a Docker Image

A Docker image is a blueprint used to create Docker containers. It contains the code, dependencies, libraries, and configurations required to run an application.

- 1 An image is like a template; when run, it becomes a container.
- 2 Example: 'python:3.10' is an image that includes Python 3.10 and its libraries.
- 3 Images can be pulled from Docker Hub using 'docker pull '.
- 4 Containers are created from images using 'docker run'.

Summary Table:

- 1 Git – Tracks code changes locally.
- 2 GitHub – Hosts Git repositories online for collaboration.
- 3 Ansible – Automates configuration and deployment tasks.
- 4 Jenkins – Automates CI/CD pipelines.
- 5 Docker Image – Blueprint for creating containers.