Fundamentals of Jenkins

VIGNESH S

Types of Projects

Freestyle Project:

Purpose: A Freestyle project is the simplest type of Jenkins project. It provides a great deal of flexibility and is often used for building, testing, and deploying software.

Usage: You can configure this project type using a graphical interface. It allows you to define build steps, post-build actions, and triggers. This project type is suitable for many types of automation tasks.

Types of Projects

Pipeline Project:

Purpose: Pipeline projects are based on the Jenkins Pipeline plugin and provide a way to define builds and deployment pipelines as code.

Usage: You write your pipeline using the Groovy-based DSL (Declarative or Scripted) in a Jenkinsfile. This approach allows you to version control your build and deployment process, making it easier to manage complex workflows.

Types of Projects

Multi-configuration Project (Matrix Project):

Purpose: Matrix projects are used for running the same build or test job with multiple configurations, such as different platforms or environments.

Usage: You define axes (combinations of parameters) and a single build job, and Jenkins runs the job for each axis. This is particularly useful for cross-platform testing.

Types of projects

Multibranch Pipeline Project:

Purpose: This project type is specifically for multi-branch code repositories like Git branches or Bitbucket branches.

Usage: Jenkins scans the repository for branches and automatically creates build pipelines for each branch. This is excellent for handling continuous integration for multiple feature branches.

Types of Projects

Folder:

Purpose: Folders are used to organize and group related Jenkins jobs.

Usage: You can create folders to categorize and manage your projects better. This is particularly useful in large Jenkins setups where you want to maintain organization and control access.

What are Slaves ?

In Jenkins, **an agent, also known as a Jenkins slave** or node, plays a crucial role in distributing and executing build and automation tasks.

Agents are separate machines or computing resources that are connected to a Jenkins master.

They help offload the workload from the Jenkins master and enable parallel execution of jobs, which is essential for efficient and scalable continuous integration and continuous delivery (CI/CD) pipelines.

Node Types

Permanent Agents:

These agents are typically long-lived and are set up on dedicated machines. They are always available for running jobs.

Cloud Agents:

Cloud agents are provisioned dynamically when needed, based on the demand for jobs. They are particularly useful for scaling Jenkins in the cloud.

Labeling

Agents can be labeled with descriptive names or tags.

Jenkins jobs can be configured to run on specific agents based on these labels.

For example, you can have agents labeled as "Windows," "Linux," or "Testing," and jobs can be set to run on agents with matching labels.

JENKINS

LETS HANDS ON !!