Summary on Jenkins

Module Summary

PW SKILLS

1. Jenkins Architecture

- Jenkins follows a master-agent architecture. The master manages the build process and orchestrates agents. Agents perform the actual execution of builds and tasks. This setup ensures scalability and distributed workload handling.

2. Files, Plugins, Jobs (Upstream & Downstream)

- **Files:** Jenkins uses configuration files (like config.xml) for jobs and builds.
- **Plugins:** Jenkins supports numerous plugins to extend functionality, like Git, Docker, or Slack integrations.
- **Jobs:** Jobs are tasks Jenkins runs. Upstream jobs trigger other jobs, while downstream jobs are triggered by upstream jobs upon completion.

3. Jenkins Installation

- Jenkins can be installed on various platforms, using methods like installing from a .war file, native packages (e.g., for Ubuntu), or using Docker.

4. Jenkins Integration with GitHub

- Jenkins integrates easily with GitHub, allowing automatic triggering of builds when changes are pushed to a GitHub repository. This is achieved using webhooks and the Git plugin in Jenkins.

5. Build Triggers and Scheduling

- Build triggers define when a Jenkins job should run. You can set up manual triggers, GitHub webhooks, or schedule builds using a cron-like syntax for periodic execution.

6. Jenkins Installation

- Jenkins installation is straightforward, supporting many platforms and methods (via .war file, packages, or Docker). After installation, configuration happens through a web interface.