Explain the Fundamentals and Benefits of CI/CD to Achieve, Build, and Deploy Automation for Software Products

What is CI/CD ?

CI/CD is abbreviation of continuous integration and continuous deployment.

Continuous integration : The practice of merging all developers' working copies to a shared mainline several times a day. Compiling,testing the the whole project whenever a commit happen to discover bugs or problem as early as possible

Continuous deployment.: automating the creation and configuration of the infrastructure required for the SW product to change from code to cash. It also responsible for migrating to the new deployments , appling smoke tests, cleaning up any unrequired infrastructure and revert back and undo any deployment if an error happen during the pipeline

Why CI/CD

- Developers can focus most of their time on building more value.

- More revenue as a result of optimum application availability.

- Reduce costs by catching problems early and avoiding downtime.

- Preserves company image by early detection and mitigation of security vulnerabilities.

- Increase customer satisfaction and retention by frequent releases of new, valuable features.

- Less human error, Faster deployments

- Less infrastructure costs from unused resources

- Less time to market