Benefits of implementing a CI/CD pipeline

1. Reduce risk

Finding and fixing bugs late in the development process is expensive and time-consuming. This is especially true when there are issues with features that have already been released to production.
With a CI/CD pipeline, you can give the ability to detect issues as soon as they occur and to fix them immediately. You are essentially mitigating risks in real time.

2. Deliver faster

Organizations are moving toward releasing features multiple times a day. This is not an easy task but with a CI/CD pipeline, multiple daily releases can be made a reality.
Product features can be build, test and deploy automatically with almost no manual intervention. This is accomplished using various tools, frameworks, and systems.

3. Expend less manual effort

This is also a vital component of having a successful CI/CD implementation. Once you build features and check in code, tests should be automatically triggered to make sure that the new not break existing features and that the new features are working correctly.
Throughout this process, you will be getting constant notifications through different channels, giving you plenty of information about the build, test and deploy cycles.

4. Generate extensive logs

If something is wrong, you need to understand why. You need a mechanism to study the system in production over time and identify key performance metrics. Observability is a technical solution that helps in this effort.
One key aspect of observability is logging information. Logs are a rich source of information to understand what is happening beneath the UI and study application behavior.
With a CI/CD pipeline, extensive logging information is generated in each stage of the development process. There are various tools available to analyze these logs effectively and get immediate feedback about the system.

5. Make easier rollbacks

One of the biggest advantages of a CI/CD pipeline is you can roll back changes quickly. If any new code changes break the production application, you can immediately return the application to its previous state. Usually, the last successful build gets immediately deployed to prevent production outages.
The world is moving toward rapid release cycles, and CI/CD pipelines have accelerated the release rate. With careful planning and implementation, such a pipeline can help you find defects faster, implement fixes immediately, and increase overall customer satisfaction.

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Summary

To stay competitive in the current market, companies strive release features as fast as possible. The platform that best enables these rapid release cycles is a CI/CD pipeline.

The pipeline consists of different sets of tools and frameworks that help teams, and other people involved in the project to deliver software to the end-users and provides more opportunities to be agile and helps to increase the overall efficiency of the software delivery process.

The groundwork for implementing a pipeline can be time-consuming, but the benefits outweigh the time, cost, and effort spent on this endeavor.