Benefits of CI/CD

Explain the fundamentals and benefits of CI/CD to achieve, build, and deploy automation for cloud-based software products.

what is CI/CD pipeline ?

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 seamless CI/CD pipeline.

The pipeline consists of different sets of tools and frameworks that help developers, testers, operations teams, and other people involved in the project to deliver software to the end-users. It provides teams 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 and may involve a steep learning curve, but the benefits outweigh the time, cost, and effort spent on this endeavor.

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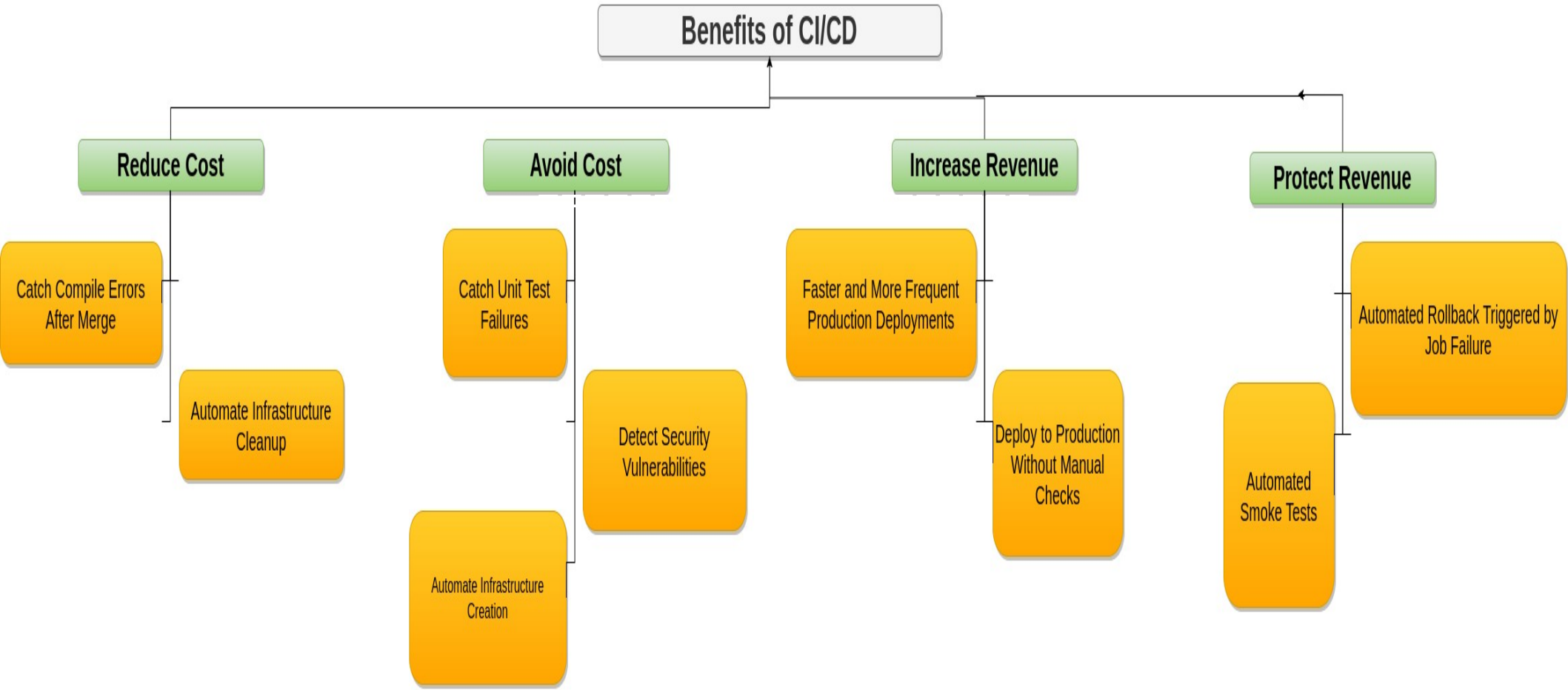

Technical Language	Value	Translation
Catch Compile Errors After Merge	Reduce Cost	Less developer time on issues from new developer code
Catch Unit Test Failures	Avoid Cost	Less bugs in production and less time in testing
Detect Security Vulnerabilities	Avoid Cost	Prevent embarrassing or costly security holes
Automate Infrastructure Creation	Avoid Cost	Less human error, Faster deployments
Automate Infrastructure Cleanup	Reduce Cost	Less infrastructure costs from unused resources
Faster and More Frequent Production Deployments	Increase Revenue	New value-generating features released more quickly
Deploy to Production Without Manual Checks	Increase Revenue	Less time to market
Automated Smoke Tests	Protect Revenue	Reduced downtime from a deploy-related crash or major bug
Automated Rollback Triggered by Job Failure	Protect Revenue	Quick undo to return production to working state

5 Benefits of Implementing a CI/CD Pipeline

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 test and deploy code more frequently, giving testers the ability to detect issues as soon as possible
Deliver faster	Organizations are moving toward releasing features multiple times a day. This is not an easy task; only a handful of companies like Netflix, Amazon, and Facebook have been able to achieve this goal. But, with a seamless CI/CD pipeline, multiple daily releases can be made a reality.
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 code does not break existing features and that the new features are working correctly.
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.

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CI/CD BEST PRACTICES