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CI/CD . What? Why? How?

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What is CI/CD

CONTINUOUS INTEGRATION
THE PRACTICE OF MERGING ALL DEVELOPERS' WORKING COPIES TO A SHARED MAINLINE SEVERAL TIMES A DAY. IT'S THE PROCESS OF "MAKING"

CONTINOUS DEPLOYMENT
A SOFTWARE ENGINEERING APPROACH IN WHICH THE VALUE IS DELIVERED FREQUENTLY THROUGH AUTOMATED DEPLOYMENTS. EVERYTHING RELATED TO DEPLOYING THE ARTIFACT FITS HERE. IT'S THE PROCESS OF "MOVING" THE ARTIFACT FROM THE SHELF TO THE SPOTLIGHT

CONTTINOUS DELIVERY
THIS THE PROCESS OF INCOPERATING CONTINOUS INTEGRATION AND DEPLOYMENT INTO OUR SOFTWARE DELIVERY PROCESS

How to achieve CI/CD

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TO ACHIEVE CI/CD, WE WILL NEED TO AUTOMATED ALL PROCESS INVOLVED IN THE DEVELOPMENT AND DELIVERY OF SOFTWARE USING DEVOPS PRACTICES AND TOOLS LIKE A VERSION CONTROL SYSTEM (GITHUB) , DESIGN OF CHECKPOINT OR CHECKLIST USING PIPELINE TO HANDLE ALL PROCESS FROM THE BEGIN OF CODE COMMITS TO DEPLOYMENT OF SERVERS

SOME OF STEPS THAT CAN BE AUTOMATED INCLUDE

- COMPILE
- UNIT TEST
- STATIC ANALYSIS
- DEPENDENCY VULNERABILITY TESTING
- STORE ARTIFACT

- CREATING INFRASTRUCTURE
- PROVISIONING SERVERS
- COPYING FILES
- PROMOTING TO PRODUCTION
- SMOKE TESTING (AKA VERIFY)
- ROLLBACKS

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Why use CI/CD?

WE WILL CONSIDER A FEW REASON WHY USE CI/CD AND WHAT THEY TRANSLATE TO IN BUSINESS VALUES

1. CATCH COMPILE ERRORS AFTER MERGE - LESS DEVELOPER TIME ON ISSUES FROM NEW DEVELOPER CODE (LESS COST)
2. DETECT SECURITY VULNERABILITIES - PREVENT EMBARRASSING OR COSTLY SECURITY HOLES
3. FASTER AND MORE FREQUENT PRODUCTION DEPLOYMENTS - NEW VALUE-GENERATING FEATURES RELEASED MORE QUICKLY.
4. DEPLOY TO PRODUCTION WITHOUT MANUAL CHECKS - LESS TIME TO MARKET.
5. AUTOMATE INFRASTRUCTURE CREATION - LESS HUMAN ERROR, FASTER DEPLOYMENTS.

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Thank you for your attention!