

The background is a deep blue gradient. On the left side, there is a cluster of interlocking gears of various sizes, some with a metallic texture and others appearing as simple outlines. To the right of the gears, a complex network graph is visible, consisting of numerous small white dots connected by thin white lines, forming a web-like structure. The overall aesthetic is technological and modern.

# *Udapeople:* CI/CD Automation Switch

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# CI/CD Fundamentals

- ❖ The practice of merging all developers' working copies to a shared mainline several times a day (CI)
  - Triggering automatic compile
  - Test runs
  - Static analysis of code
- ❖ An engineering practice in which teams produce and release value/products in short cycles (CD)
  - Automated Infrastructure/environment provisioning
  - Automated Deployment
- ❖ **In Summary:** CI/CD is a set of development practices aimed at automating the building, testing, and deployment of applications.



# Benefits of CI

- ❖ Less bugs get shipped to production. This reduces cost as less time is spent on issues from new developers code.
- ❖ Security vulnerabilities are detected and quickly. This avoids unwarranted additional cost to Udapeople since embarrassing and costly security holes are detected fast and closed.
- ❖ Testing costs are reduced drastically as the CI server can run hundreds of tests in the matter of seconds. This also reduces the time to market of Udapeople.
- ❖ The Udapeople QA team will spent less time testing and concentrate their efforts improving the test algorithms. This will drastically reduces test related costs.
- ❖ Faster mean time to resolution for Udapeople as developers are alerted for any build fail. This in turn protects revenue.



# Benefits of CD

- ❖ Faster and more frequent deployment to production. This will increase revenue since the value generating features of Udapeople will be released more quickly.
- ❖ Automated Infrastructure creation and cleanup. This avoids the cost introduced by human errors when creating infrastructure and also reduce the cost accrued in unused resources.
- ❖ Faster and accelerated feedback loop with Udapeople customers as releases are done more often. This increases customer retention and revenue protection.
- ❖ Deployment to production are done without manual checks. This increases revenue as there will be less time to market for Udapeople.
- ❖ Smoke test will be automated thereby reducing downtime from a deploy related crash or bug and in turn protects revenue.



# Why not CI/CD?

- ❖ One of the traditional cost associated with continuous integration is the cost of installation and maintenance of a CI server.
- ❖ This cost can be reduced drastically by utilizing cloud based services like CircleCI, Github Actions etc.
- ❖ With all the benefits of CI/CD mentioned coupled with the low cost of implementation using cloud services, I believe we will be smiling to the banks after endorsing CI/CD for Udapeople.
- ❖ THANK YOU