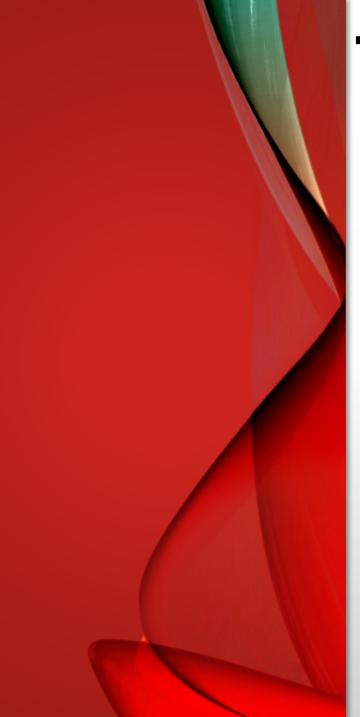# WHAT IS CI/CD?

Continuous integration/continuous delivery (CI/CD) is a software development practice that combines development and operations teams and their day-to-day tasks. It applies automation to developing, testing, and delivering applications.

- **Continuous integration (CI)** is a software development process where teams integrate code early and often into a central repository where they can run frequent tests and validate changes.

- **Continuous Delivery (CD)** is the practice of getting all updates, fixes, features, and configuration changes either into production or into the hands of end-users as quickly (and safely) as possible.

THE BUSINESS BENEFITS OF CI/CD

1. BRING PRODUCTS TO MARKET FASTER

2. ALLOWS DEVELOPERS TO DELIVER PRODUCTS CONSUMERS WANT NOW

3. CREATES FAST FEEDBACK/FAILURE LOOPS

4. CREATES NEW COMMUNICATIONS CHANNELS WITHIN THE ORGANIZATION

5. ENHANCED EMPLOYEE PRODUCTIVITY AND SATISFACTION

6. DATA-DRIVEN BUSINESS DECISIONS

1. BRING PRODUCTS TO MARKET FASTER

- Managing smaller chunks of code on an ongoing basis makes it easier and faster to isolate problems (shorter MTTR) and reduces the risk of unintended consequences in the production environment.
- Automated tests can fix bugs immediately, often reducing the backlog of even non-critical issues.
- Also, end-users will be grateful for not being made involuntary members of your QA team.
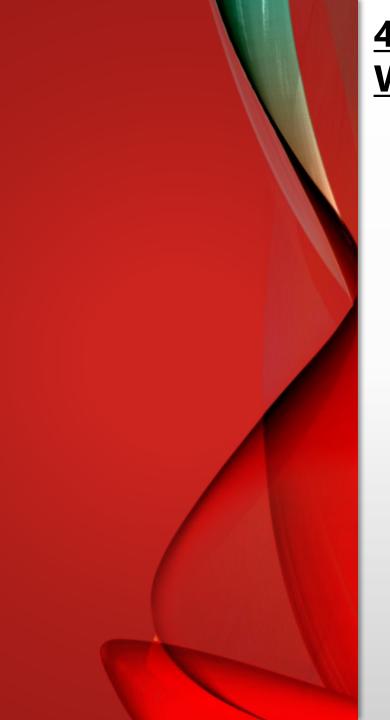
2. ALLOWS DEVELOPERS TO DELIVER PRODUCTS CONSUMERS WANT NOW

- CI/CD lets the organization achieve maximum business velocity without compromising quality.
- Evolving end-user requirements can be addressed quickly, including on-demand releases.
- Both the accelerated time-to-value and the enhanced end-user satisfaction are significant competitive advantages.
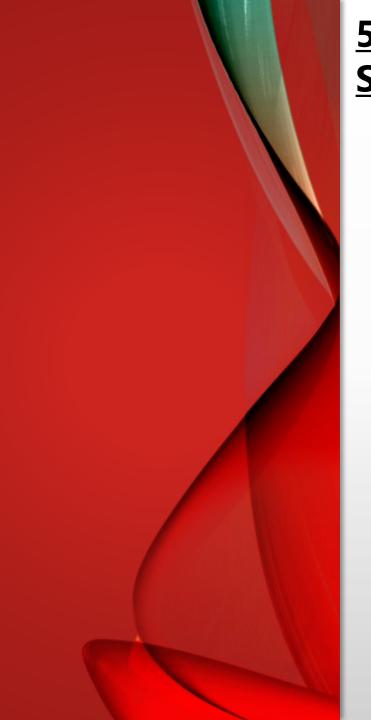
3. CREATES FAST FEEDBACK/FAILURE LOOPS

- A key CI/CD principle is that if something is going to fail, it should fail fast. With CI/CD, companies get immediate feedback from end-users on new functions and features and can respond accordingly.

- CI/CD also lends itself to rapid A-B testing, feature toggles and blue-green deploys of new production features prior to full release. If an update turns out to be problematic, it can be automatically rolled back with little to no downtime.

4. CREATES NEW COMMUNICATIONS CHANNELS WITHIN THE ORGANIZATION

- CI/CD fosters a culture of agility and innovation throughout the entire organization. It also provides a platform for communications among developers, product managers, testers and operations admins.
- These teams can now collaborate seamlessly, with a sense of shared responsibility and within an environment that values responsiveness and initiative.

5. ENHANCED EMPLOYEE PRODUCTIVITY AND SATISFACTION

- Development, IT and operations teams welcome the automation of tedious repetitive tasks that often contribute to employee burnout. Thus, employees have more time for strategic initiatives that can move the business forward.
- Also, their enhanced productivity can reduce costs.

6. DATA-DRIVEN BUSINESS DECISIONS

- CI/CD produces a lot of valuable metrics across the entire software development life cycle, including continuous monitoring and observability data from the production environment.

- These metrics support data-driven business decisions regarding product roadmaps, infrastructure requirements, team performance and more.