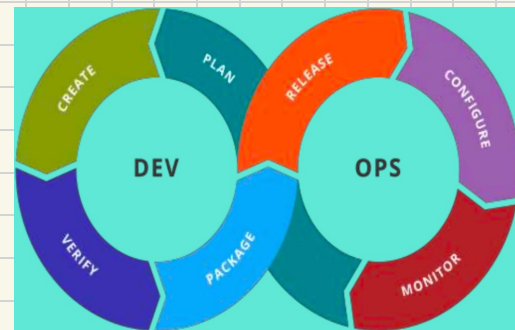


DEVOPS

DEVOPS IS A METHODOLOGY THAT COMBINES SW DEVELOPMENT AND IT OPERATIONS. IT AIMS TO IMPROVE COLLABORATION, AUTOMATION AND SPEED ACROSS THE ENTIRE SW LIFE CYCLE.

DEVOPS HAS THESE GOALS:

- INCREASE THE SPEED OF DEVELOPMENT AND DEPLOYMENT.
- REDUCE DOWNTIME AND HUMAN ERRORS.
- CREATE A COLLABORATIVE CULTURE BETWEEN DEVELOPMENT AND OPERATIONS.



CURRENT BUSINESS PROBLEMS

DEVOPS SOLVES COMMON BUSINESS PROBLEMS, INCLUDING:

- SLOW CHANGE: COMPANIES OFTEN STRUGGLE TO RESPOND QUICKLY TO MARKET NEEDS.
- RISKY DEPLOYMENTS: MANUAL RELEASES CAN BE SLOW AND ERROR-PRONE.
- OPERATIONAL INSTABILITY: PROBLEM FIXES TAKE TIME, DELAYING INNOVATION.
- PROCESS FRAGMENTATION: POOR TEAM COLLABORATION, LACK OF PROPERLY CONFIGURED ENVIRONMENTS, AND HUMAN ERRORS DURING DEPLOYMENTS.

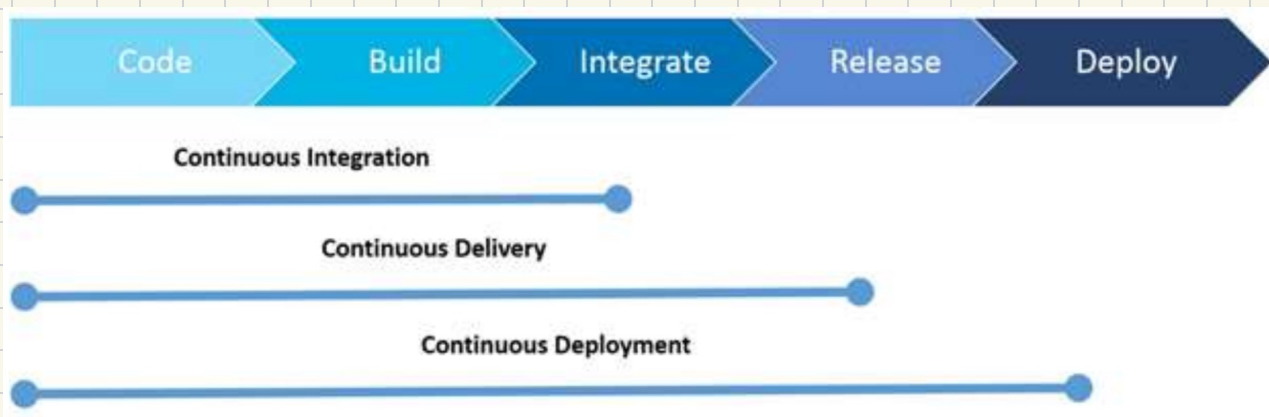
KEY DEFINITIONS OF DEVOPS

- COLLABORATION AND COMMUNICATION. DEVOPS BRINGS TOGETHER DEVELOPMENT, OPERATIONS AND BUSINESS TEAMS TO SHARE RESPONSIBILITY AND IMPROVE TRANSPARENCY.
- AUTOMATION: DELIVERY AND INFRASTRUCTURE CHANGES ARE AUTOMATED TO REDUCE TIME AND ERRORS.
- CULTURE: AT THE HEART OF DEVOPS IS A SHIFT IN MINDSET TOWARDS CONTINUOUS COOPERATION AND INNOVATION.

DEVOPS LIFECYCLE

DEVOPS TRANSFORMS THE TRADITIONAL SW DELIVERY CYCLE INTO A CONTINUOUS CYCLE, INTEGRATING:

- CONTINUOUS INTEGRATION (CI): DEVELOPERS FREQUENTLY INTEGRATE CODE INTO A SHARED REPOSITORY. AUTOMATIC TESTS VERIFY EVERY CHANGE, ENSURING STABLE CODE.
- CONTINUOUS DELIVERY (CD): EACH BUILD IS KEPT READY FOR DEPLOYMENT. RELEASES ARE AUTOMATED AND CAN HAPPEN WITH A SIMPLE COMMAND.
- CONTINUOUS DEPLOYMENT: NEXT STOP TO CD. EVERY CHANGE THAT PASSES THE AUTOMATED TESTS IS DEPLOYED DIRECTLY TO PRODUCTION.



KEY DEVOPS CONCEPTS

- **INFRASTRUCTURE AS CODE (IAC):** THE INFRASTRUCTURE IS MANAGED WITH VERSIONED CODE, ALLOWING AUTOMATION AND CONSISTENCY.
- **AUTOMATED TESTING:** FREQUENT AUTOMATED TESTING IMPROVES CODE QUALITY AND REDUCES DEVELOPMENT TIME.
- **APPLICATION PERFORMANCE MONITORING (APM):** CONTINUOUS MONITORING TO IDENTIFY AND RESOLVE PERFORMANCE ISSUES.
- **CONFIGURATION MANAGEMENT:** TOOLS LIKE PUPPET OR CHEF ENSURE UNIFORM AND REPETABLE SETUPS.
- **CI/CD PIPELINE:** FLOW THAT INTEGRATES BUILD, TEST AND DEPLOYMENT INTO ONE CONTINUOUS PROCESS.

