



**Microsoft Partner**  
Gold Cloud Platform  
Silver Learning

# Azure DevOps

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# Module 1

- Application Lifecycle management (ALM)
- Traditional Responsibility Silos
- What is DevOps
- Benefits of DevOps
  - DevOps for Developers
  - DevOps for Testers
  - DevOps for IT Operations



# Application Lifecycle management

- ALM is much broader concept than SDLC
- Is a PRODUCT LIFECYCLE MANAGEMENT applied on software projects.
- ALM Components:
  - Governance
  - Development
  - Maintenance ( Operations)
- The Popular ALM Tools:
  - Microsoft TFS (On Premise)
  - Azure DevOps (earlier: VSTS)
  - Jira (Atlassian)
  - TeamForge

# Application Lifecycle management

- Can ALM work with an environment that grows more complex?
- How can it promotes people over process (agile) principle?
- Need for ALM (Lehman's Laws of Software evolution) :
  - Continuing Change
  - Increasing Complexity
  - Self regulation
  - Organizational Stability
  - Continuing Growth
  - Feedback System

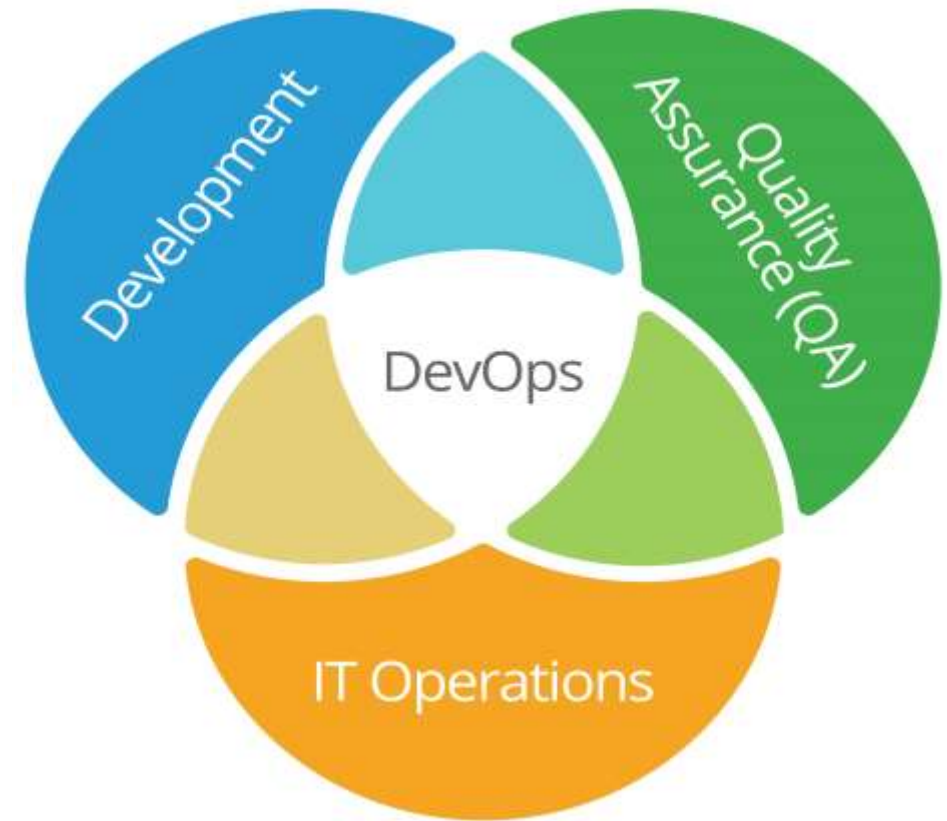
# Traditional responsibility silos

- Separated disciplines.
- Fragile integration.

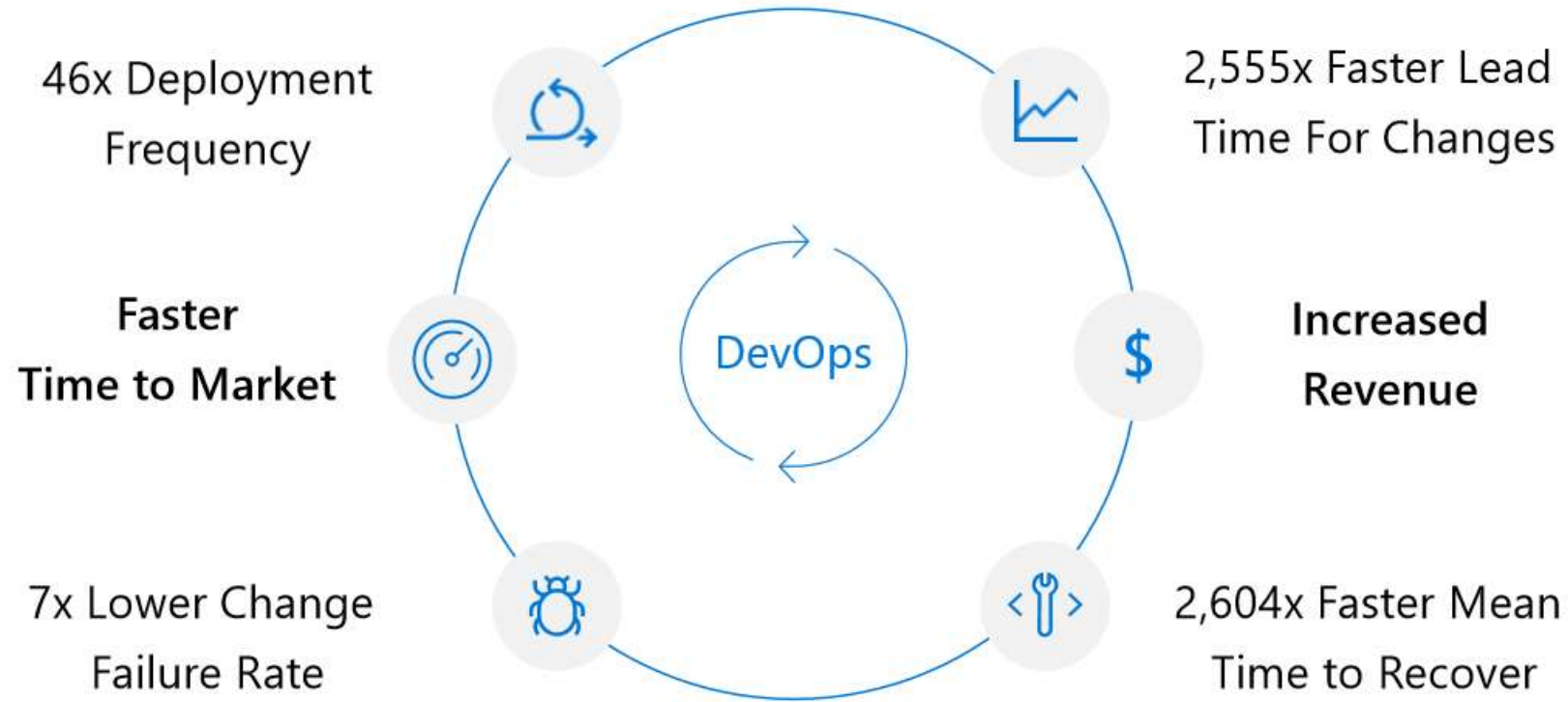


# Introduction to DevOps

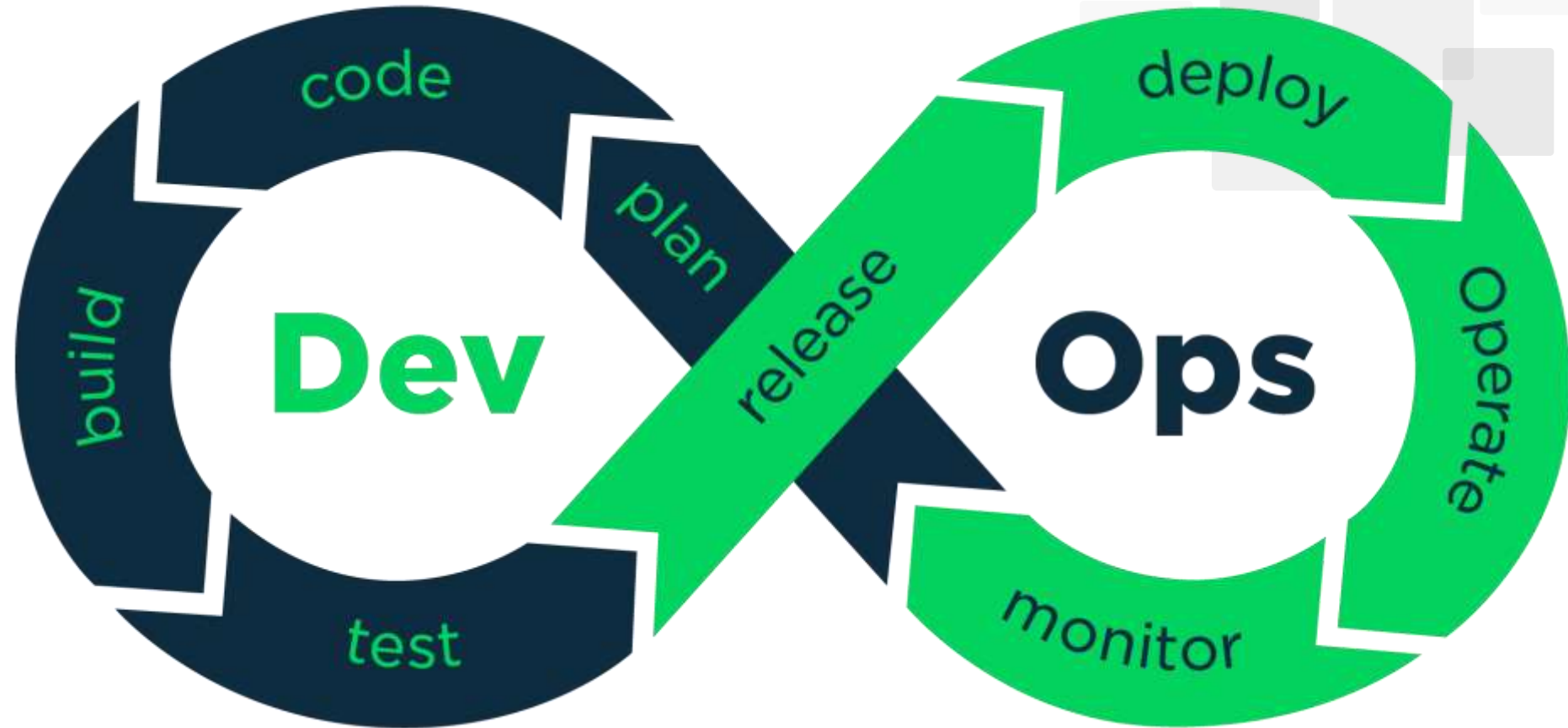
**DevOps** is the union of *people*, *process* and *products* to enable continuous delivery of value to your end users.



# Introduction to DevOps

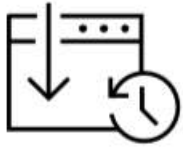


# DevOps : The Workflow





# DevOps : Workflows



Continuous Integration (CI)

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Continuous Deployment (CD)



Continuous Learning & Monitoring



# DevOps : Benefits

- To Developers:
  - Automation (in Build & Integration)
  - Continuous Integration
  - Continuous feedback
- To Testers:
  - Continuous Testing ( Automation in Testing )
  - Continuous Feedback.
  - Integrating Test tools.
  - Identical test environments
  - Continuous Collaboration with Developers
- To Operations
  - Continuous Monitoring
  - Continuous Feedback
  - Identical environments

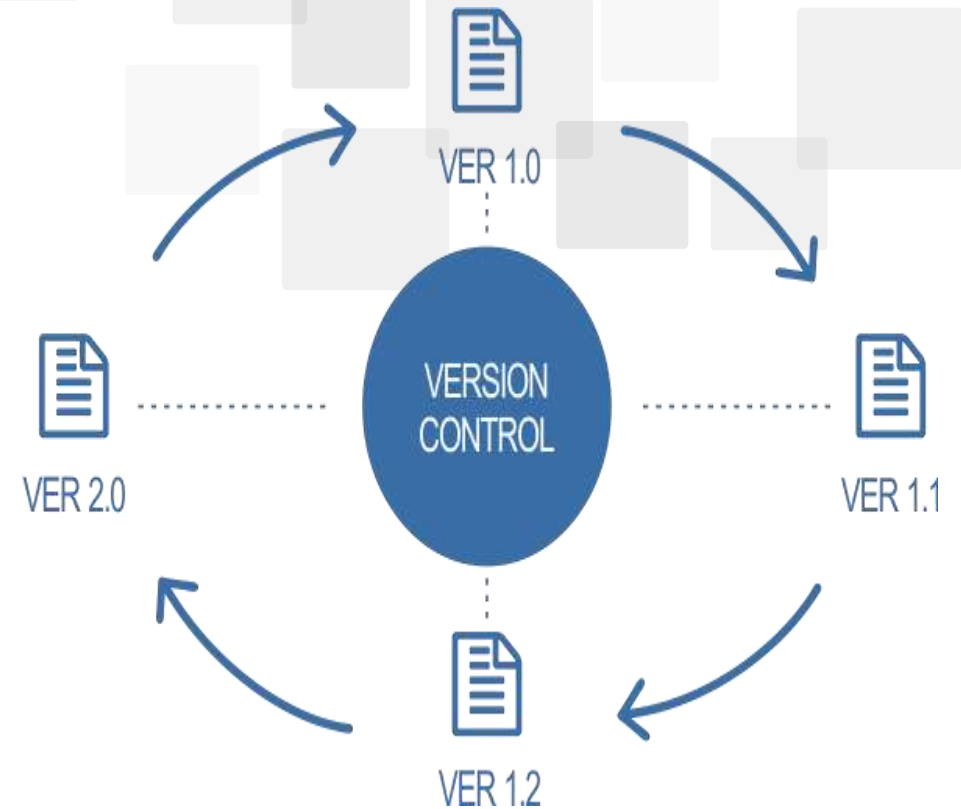


## Module 2

- What & Why SCM
- Quick overview of Git
- DevOps Workflows:
  - Continuous Integration (Build & Test )
  - Continuous Deployment (Release )
- CI/CD Tool chain
  - Integrating Build Tools
  - Integrating Test Tools
  - Integrating SCM
  - Integrating deployment tools

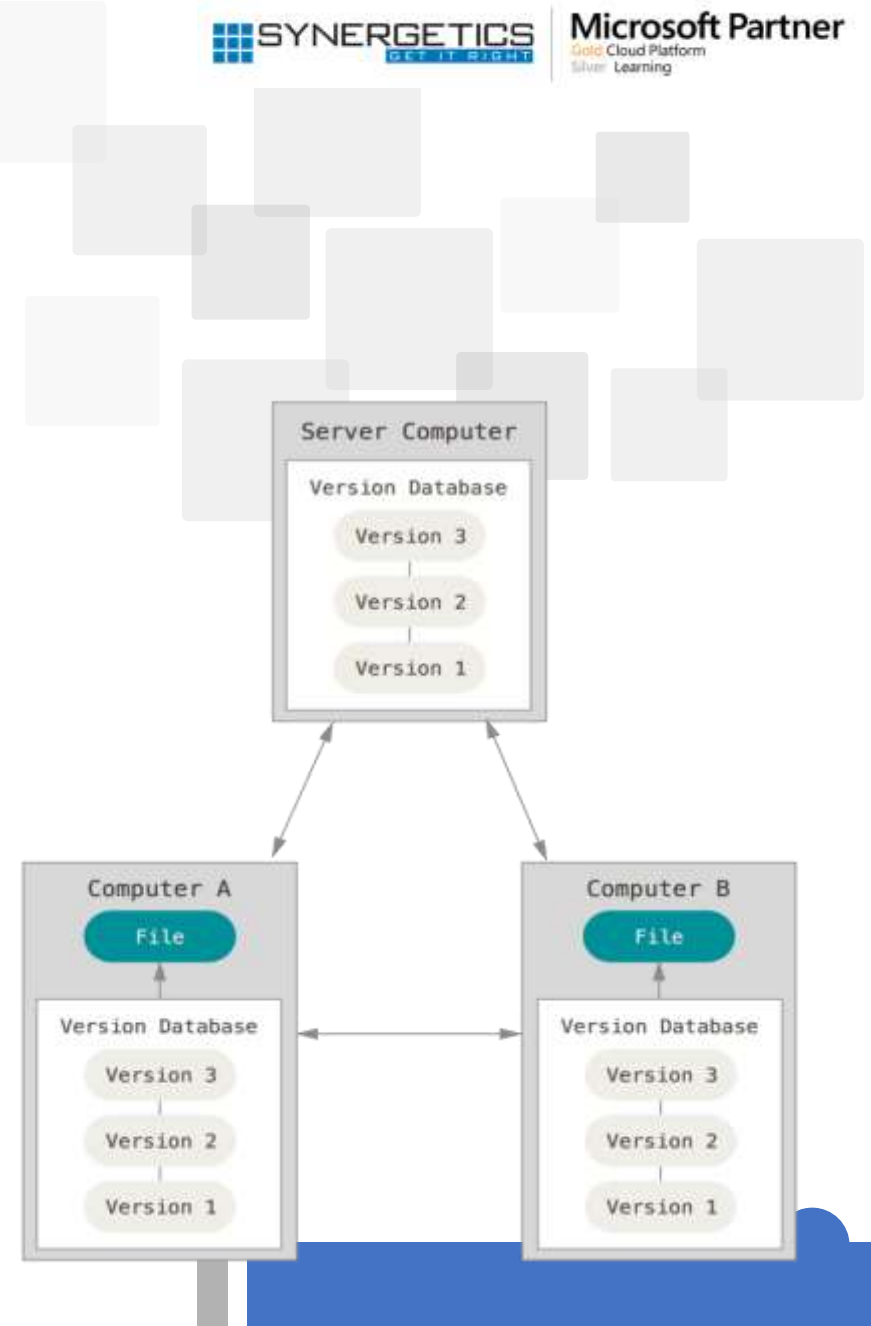
# Source Code Management / Version Control System

- Maintain multiple revisions (versions) for your source code.
- Allow a quick revert to older revisions (versions).
- Allows maintaining multiple branches.
- Provide collaboration between developers through "Continuous Integration"

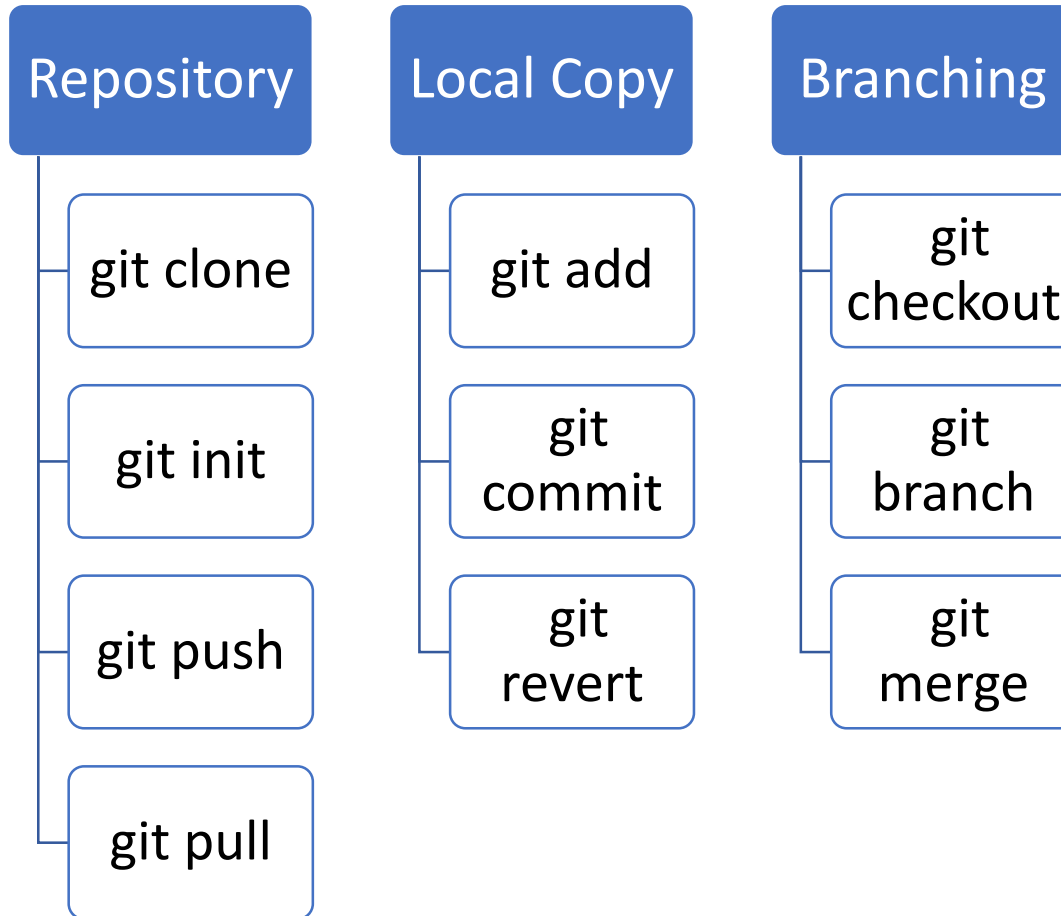


# Overview of Git

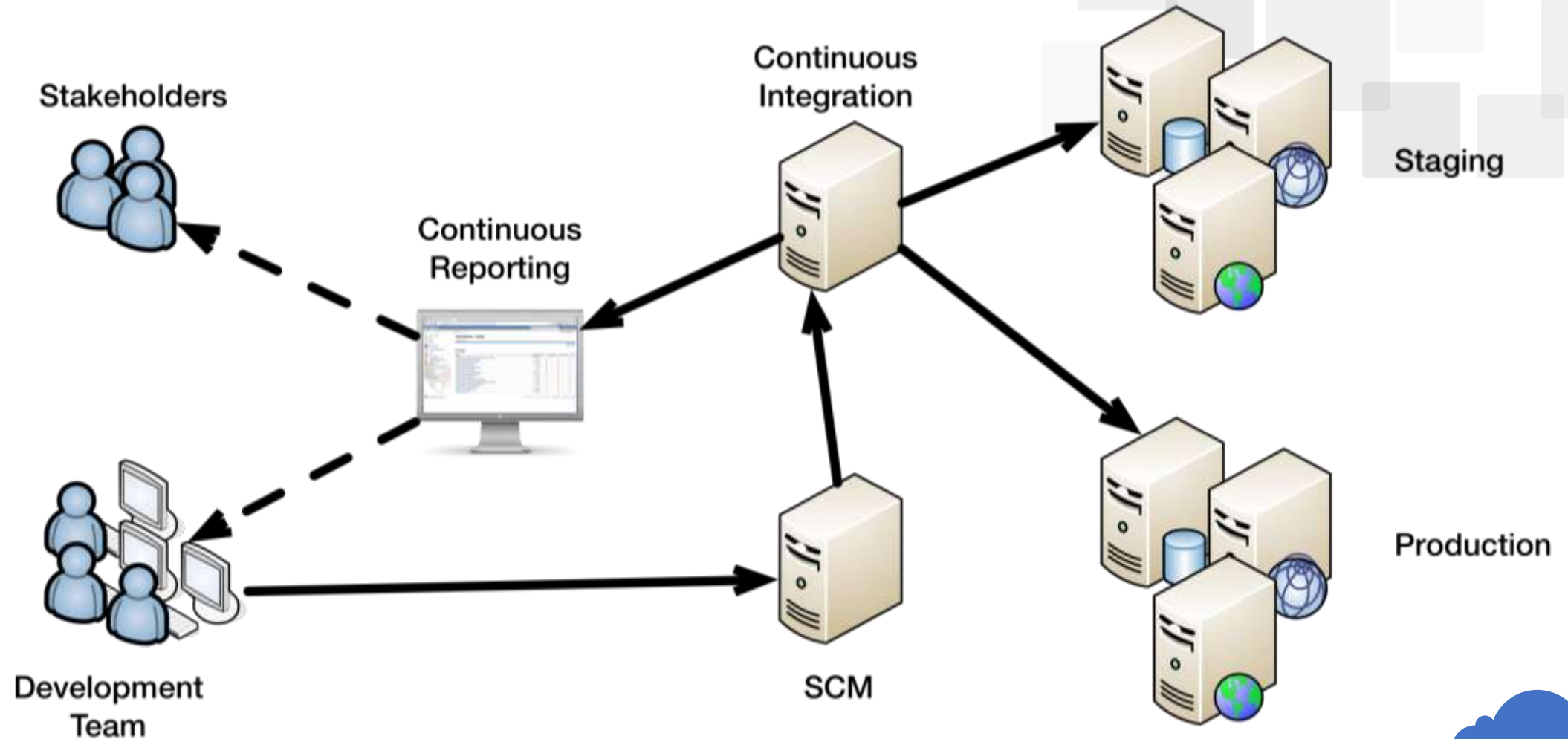
- An Open source distributed version control system designed for speed and efficiency.
- A Distributed nature makes entire version history available to everyone.
- Allows team to work offline.
- Uses snapshots to record revisions/version.
- Most popular SCM in open source community.



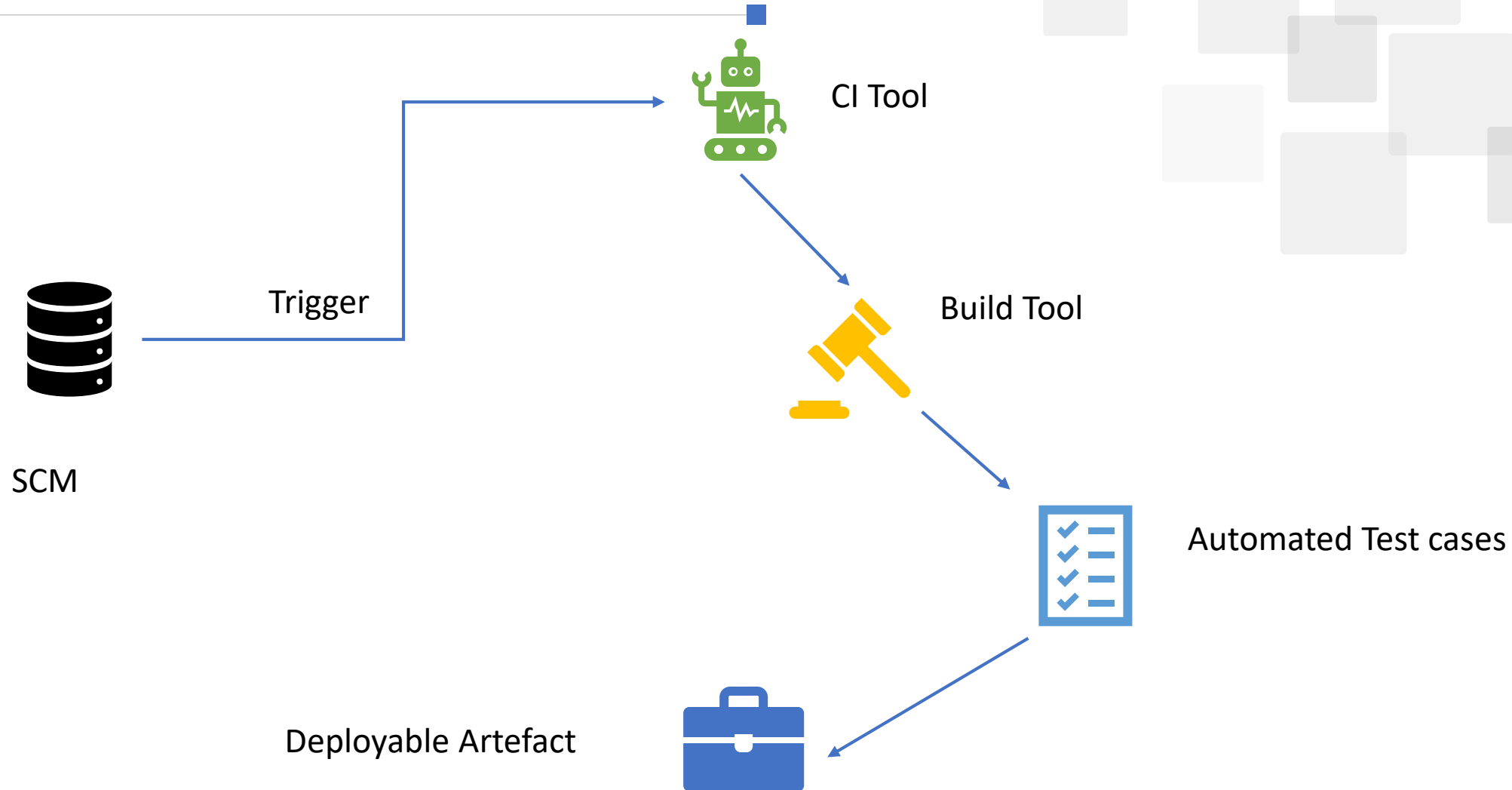
# GIT Cheat sheet



# DevOps Work Flow

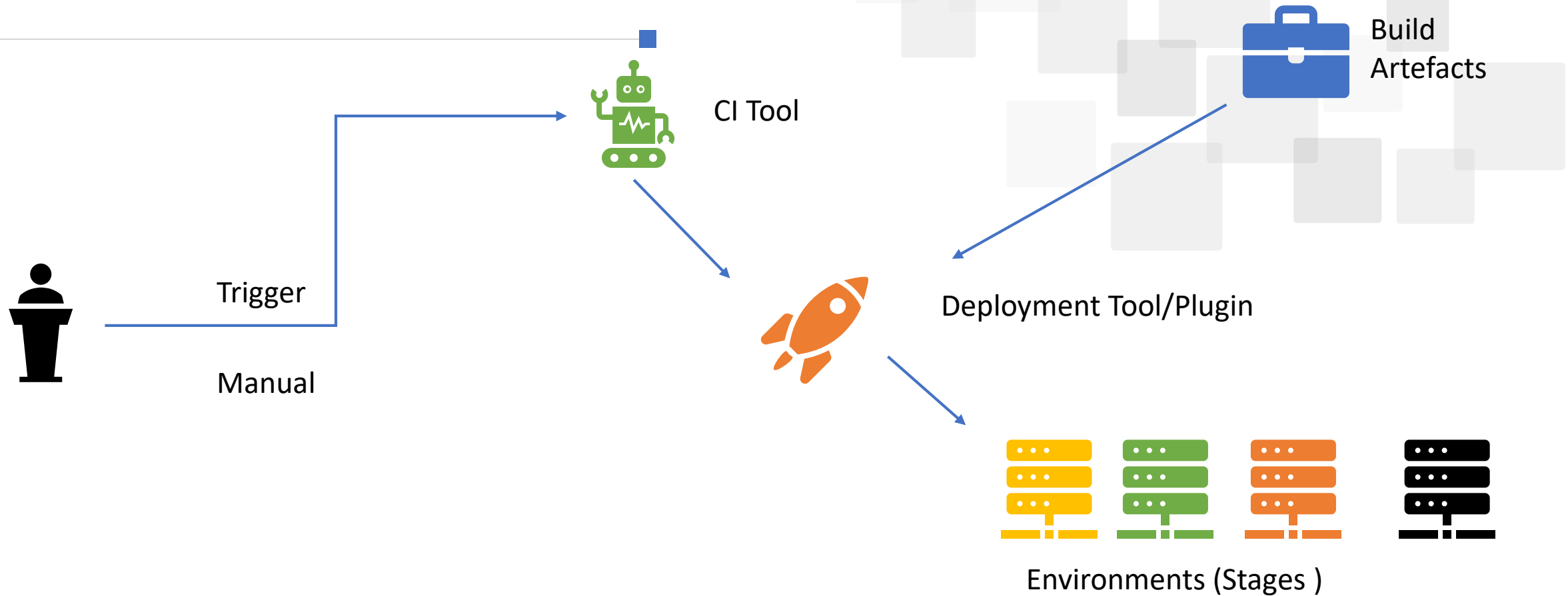


# DevOps Work flows : Continuous Integration (CI)





# DevOps Work flows : Continuous Deployment



# CI/CD Tool chain

Technology / Platform	Build Tool	Test (Unit & Integration)	Build Agent Platform
Java	Maven, ANT & Gradle	Junit, TestNG	Linux or Windows
DOT NET	MS Build, Visual Studio Build	Nunit	Windows
Python	Pip	PyTest	Linux or Windows
NodeJS	Npm	Mocha	Linux or Windows

## Common Tools

Tool	Features
Azure DevOps	CI/CD and Complete ALM, Available as Service
Jenkins	CI/CD, but no ALM, Available as community (FREE) and managed service
Circle CI	CI/CD, but no ALM, Available as a managed service
WebDeploy	Plugin Used by Most CI/CD Tools for Deployment
FTP Deploy	Plugin Used by Most CI/CD Tools for Deployment
Git	Distributed Version Control System

## Module 3

- Introduction to Azure DevOps (a.k.a. VSTS)
- Project Templates
- Dashboard
- Backlog, WorkItems, Iterations
- SCM Configuration
- Pipelines: Build & Release

# Azure DevOps

- Hosted ALM And DevOps Tool
- Earlier known as Visual Studio Team Services (VSTS).
- Supports Multiple development platforms.
- Large collection of community plugins.



# Azure DevOps



## Azure Boards

Deliver value to your users faster using proven agile tools to plan, track, and discuss work across your teams.



## Azure Test Plans

Test and ship with confidence using manual and exploratory testing tools.



## Azure Pipelines

Build, test, and deploy with CI/CD that works with any language, platform, and cloud. Connect to GitHub or any other Git provider and deploy continuously.



## Azure Artifacts

Create, host, and share packages with your team, and add artifacts to your CI/CD pipelines with a single click.



## Azure Repos

Get unlimited, cloud-hosted private Git repos and collaborate to build better code with pull requests and advanced file management.



<https://azure.com/devops>

# Demo 1: Sign up for Azure DevOps

- Objective :
  - Sign up for FREE azure devops subscription. Get started with Azure DevOps and explore the features.
  - This demo also acts as a pre-requisite for next all demos.
  - Time : 10 Minutes

# Azure DevOps Project Templates

- Project Templates (Work Item Process Templates) defines the building blocks of work item tracking system and supports the inheritance of projects through a Visual user interface.
- Existing Options:
  - Agile
  - CMMI
  - Scrum