



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

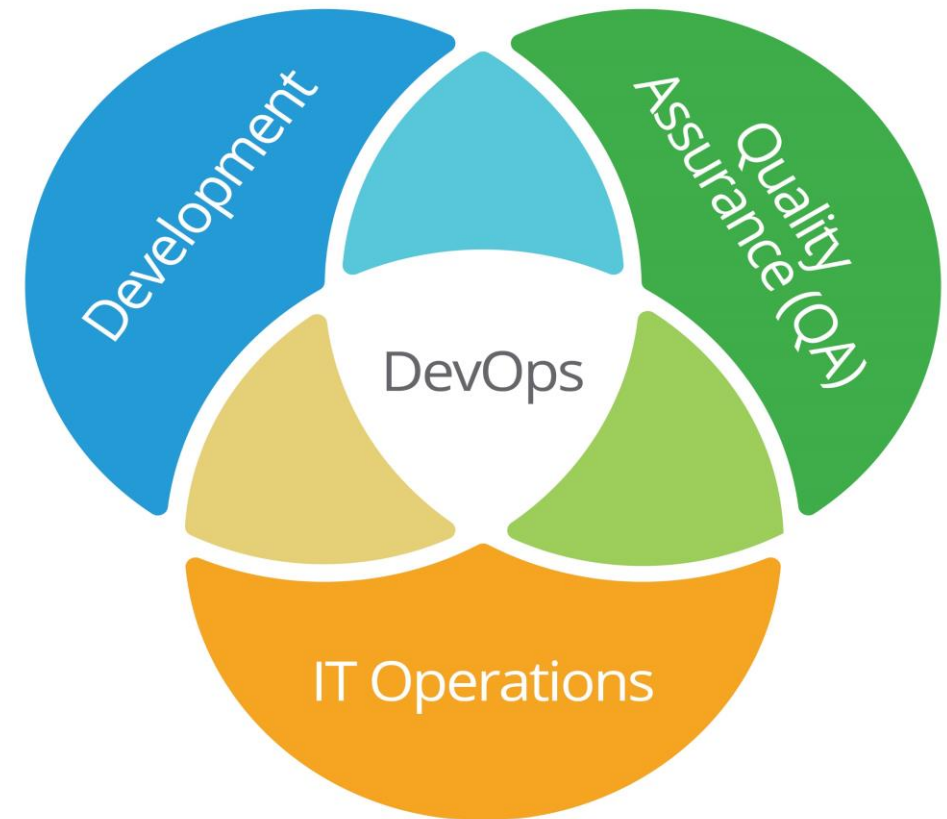
Traditional responsibility silos

- Separated disciplines.
- Fragile integration.

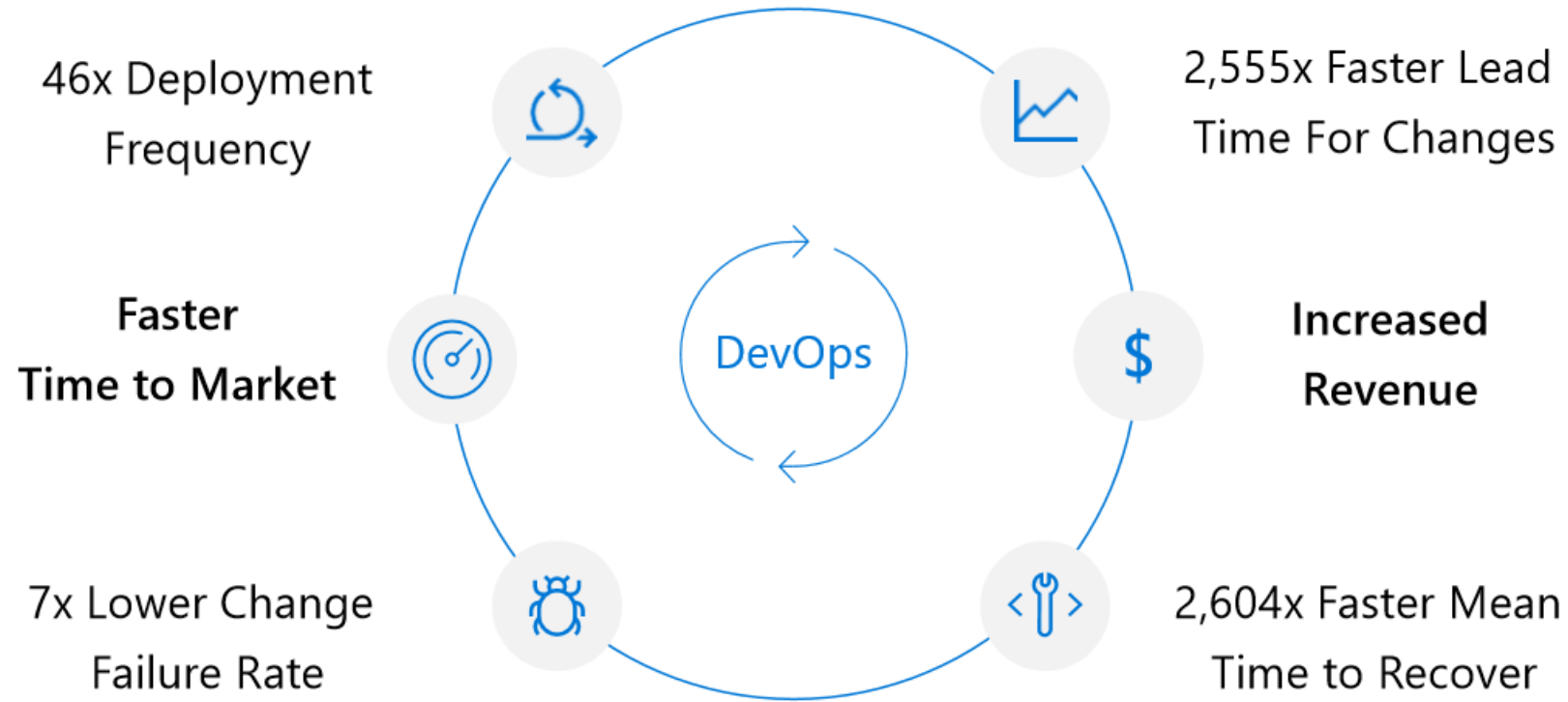


Introduction to DevOps

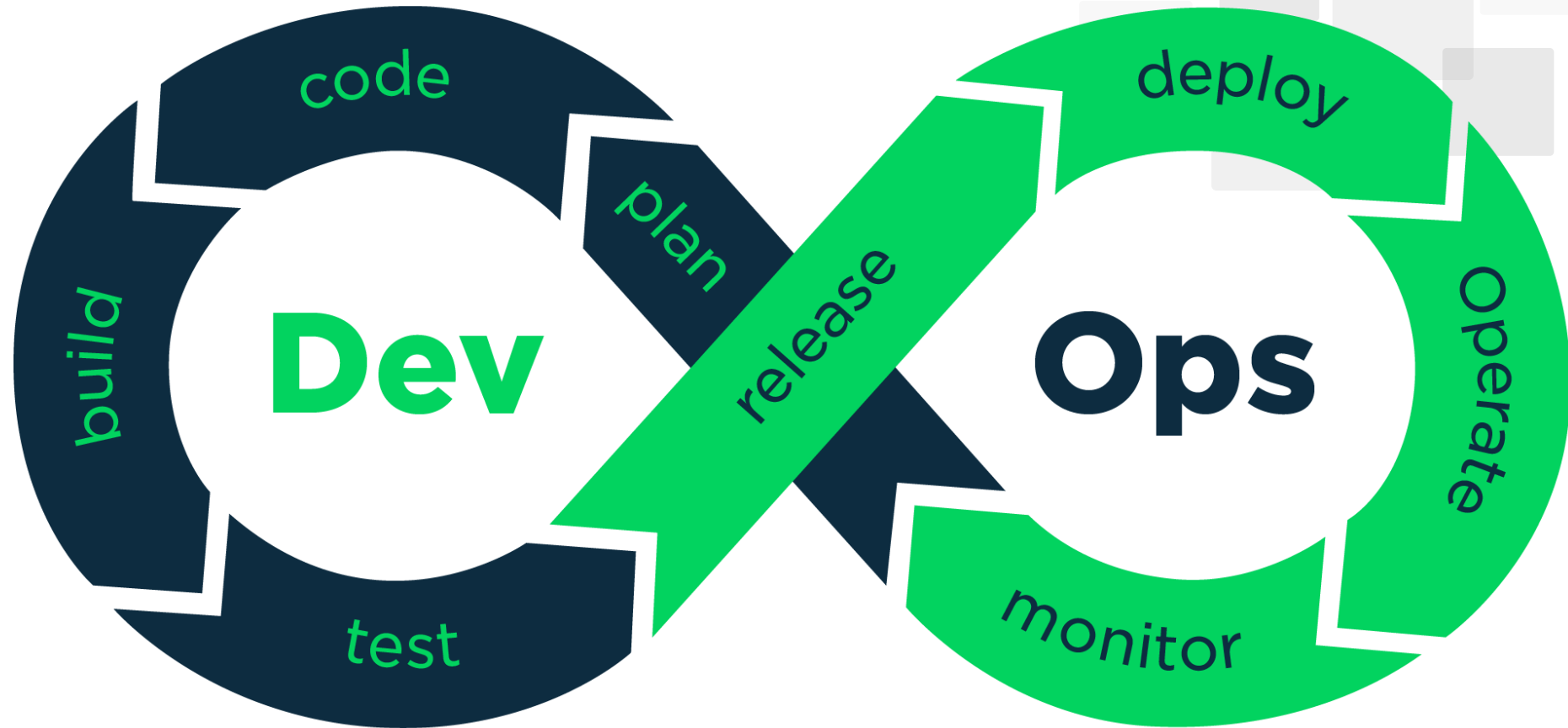
DevOps is the union of *people*, *process* and *products* to enable continuous delivery of value to your end users.



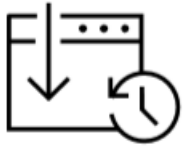
Introduction to DevOps



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

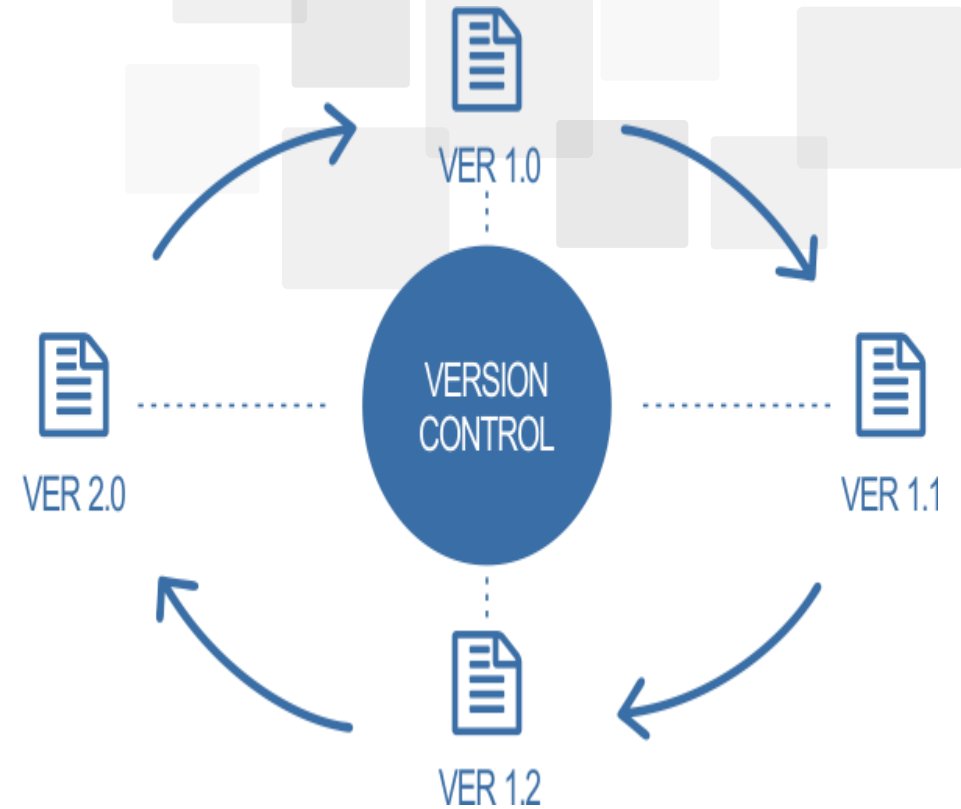


Module 2

- 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

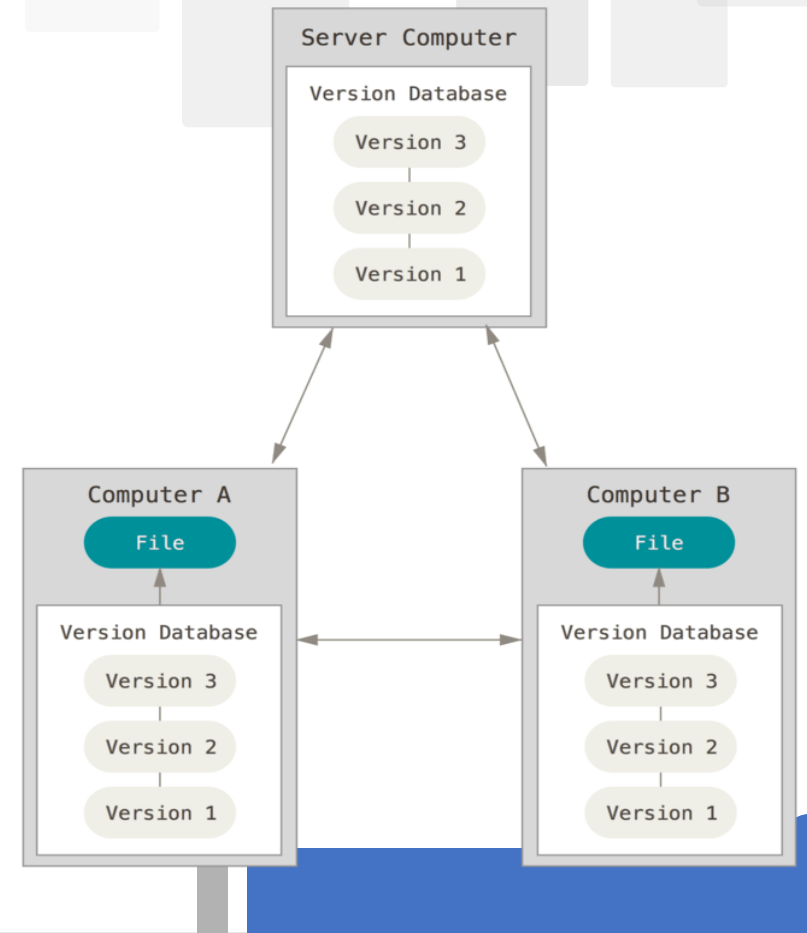
Source Code Management / Version Control System

- 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"

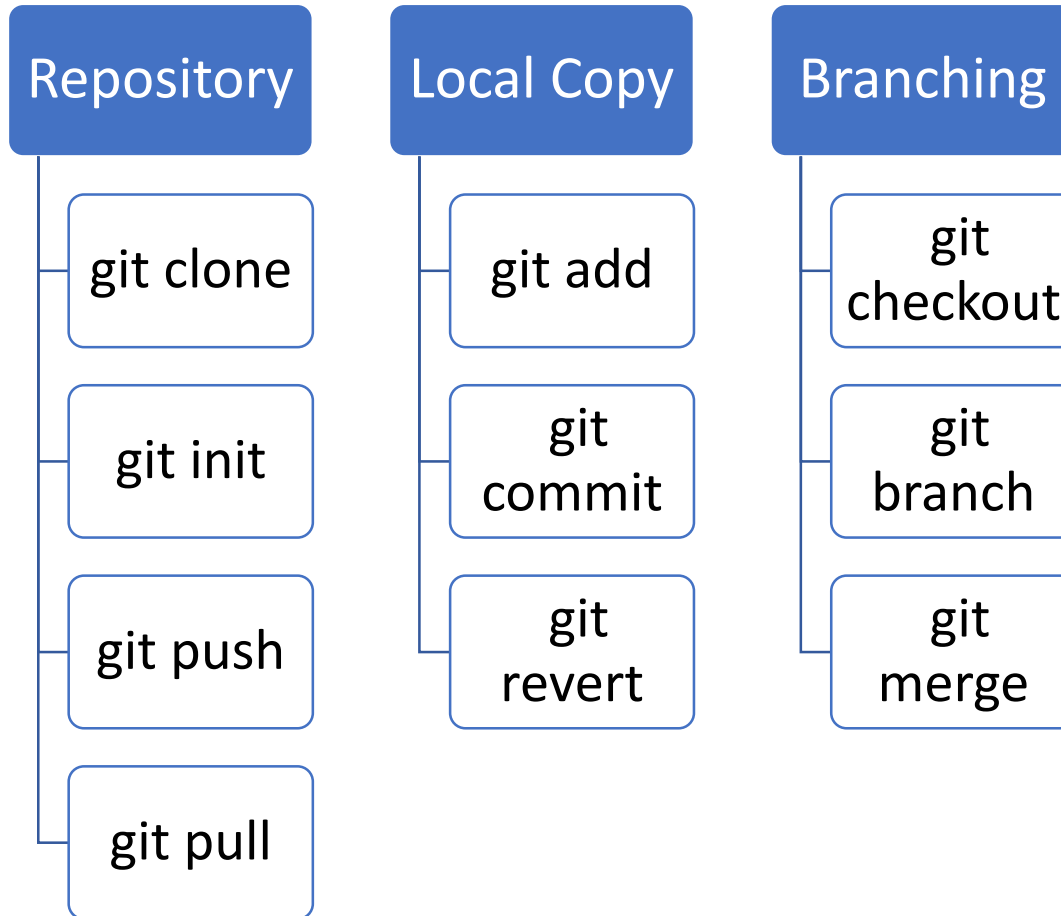


Overview of Git

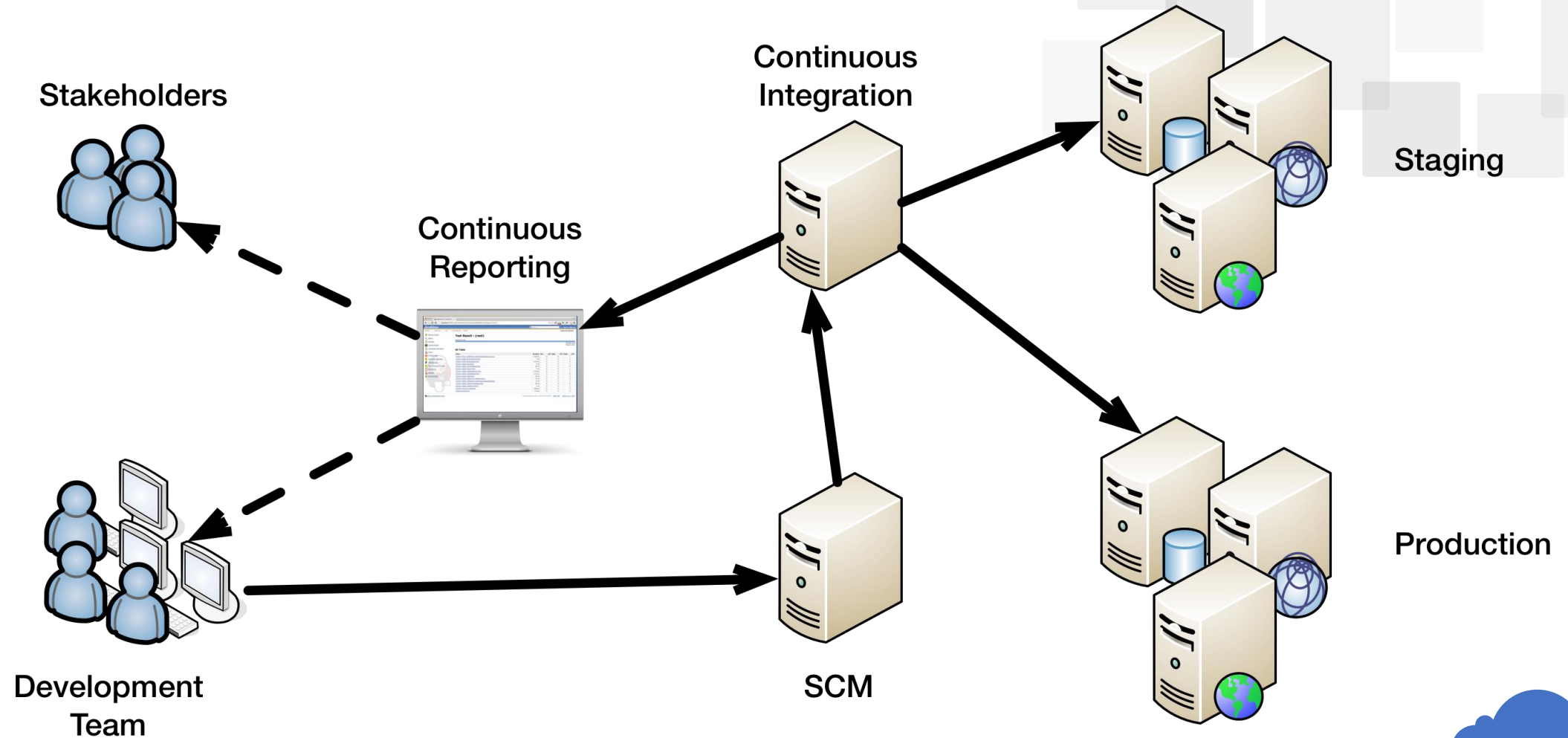
- An Open source distributed version control system designed for speed and efficiency.
- A Distributed nature makes entire version history available to everyone.
- Allows team to work offline.
- Uses snapshots to record revisions/version.
- Most popular SCM in open source community.



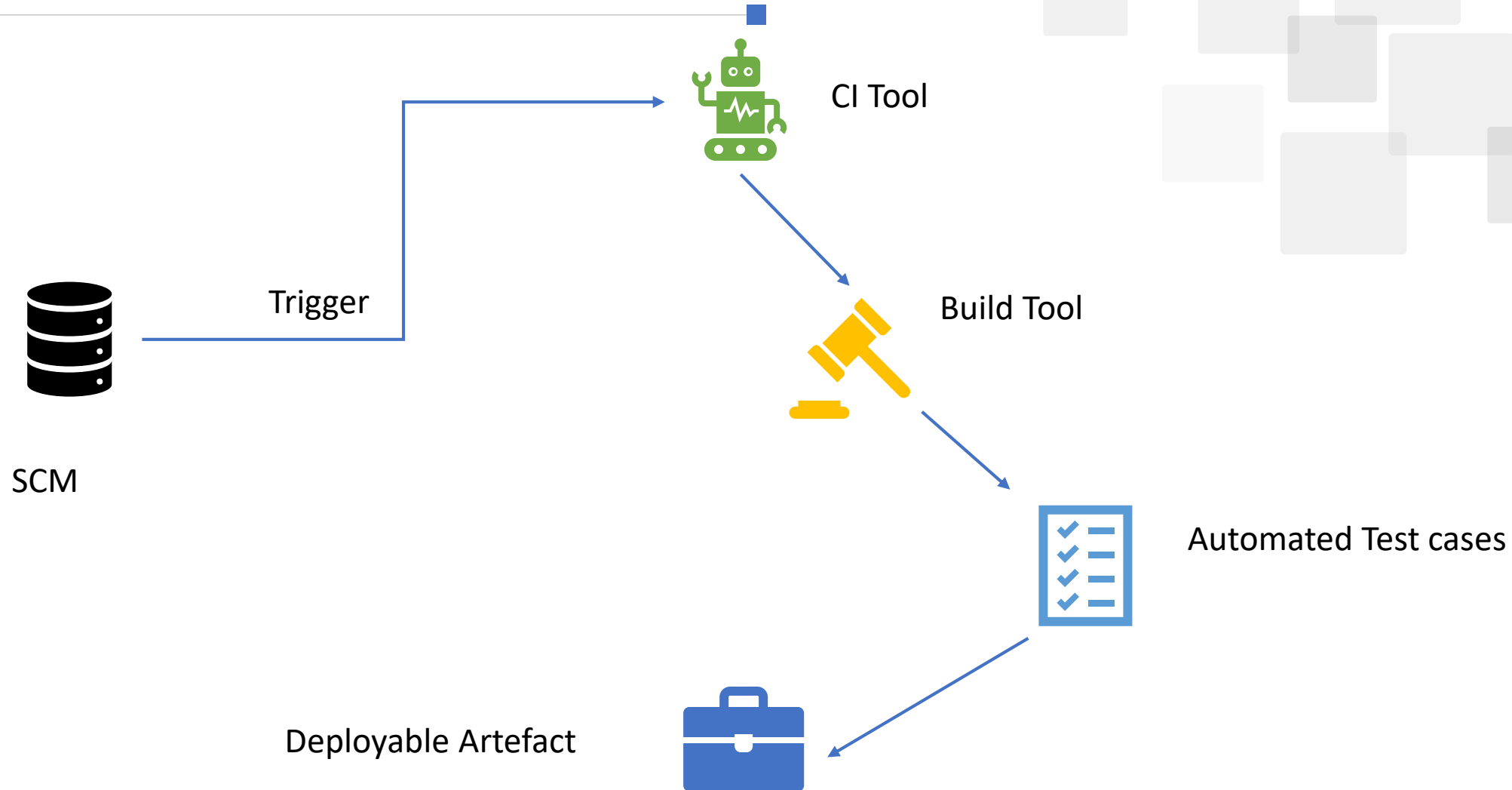
GIT Cheat sheet



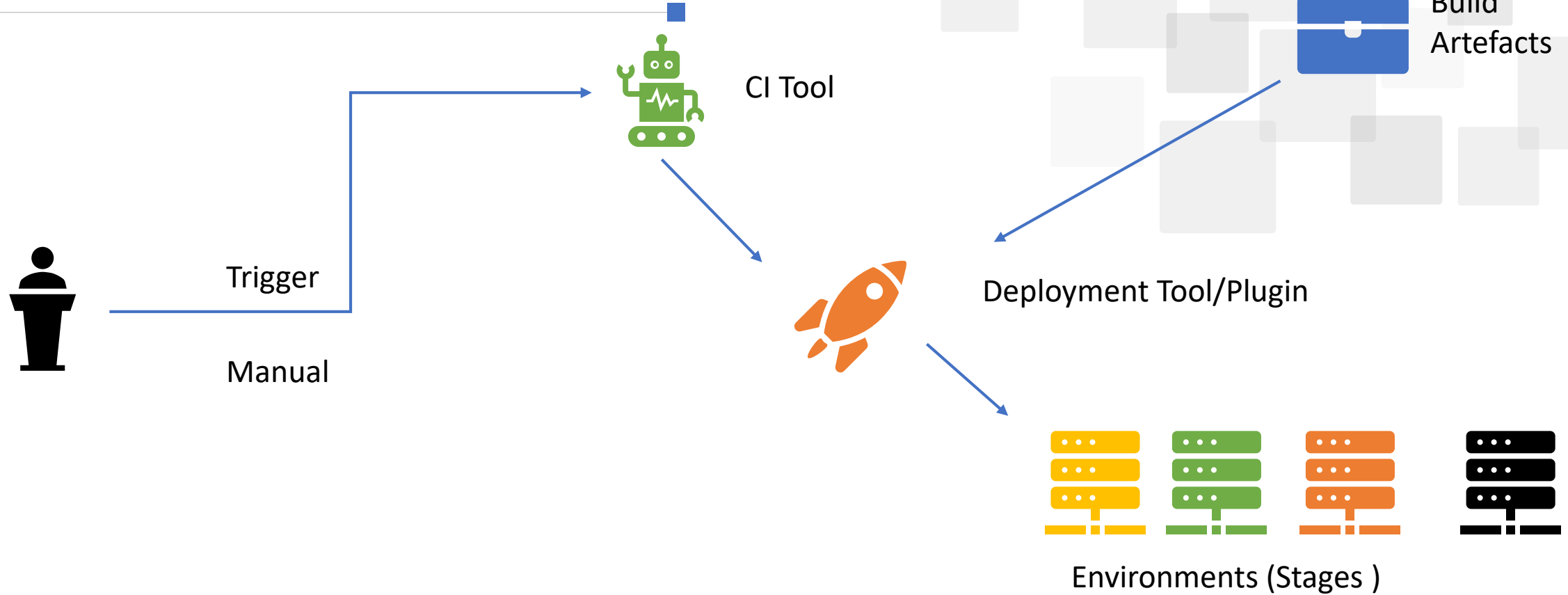
DevOps Work Flow



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