DevOps with Azure DevOps

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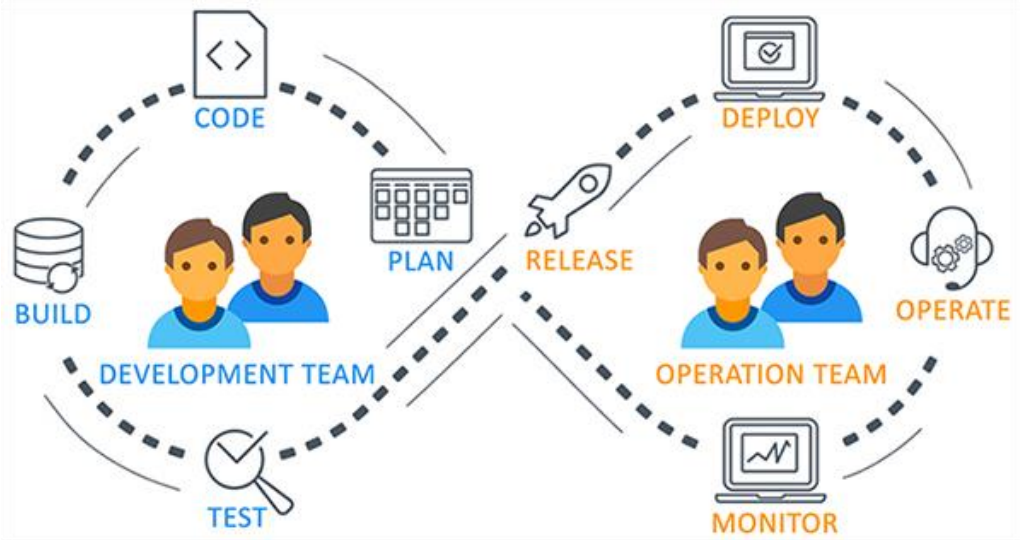
DotNetTricks

What is DevOps?

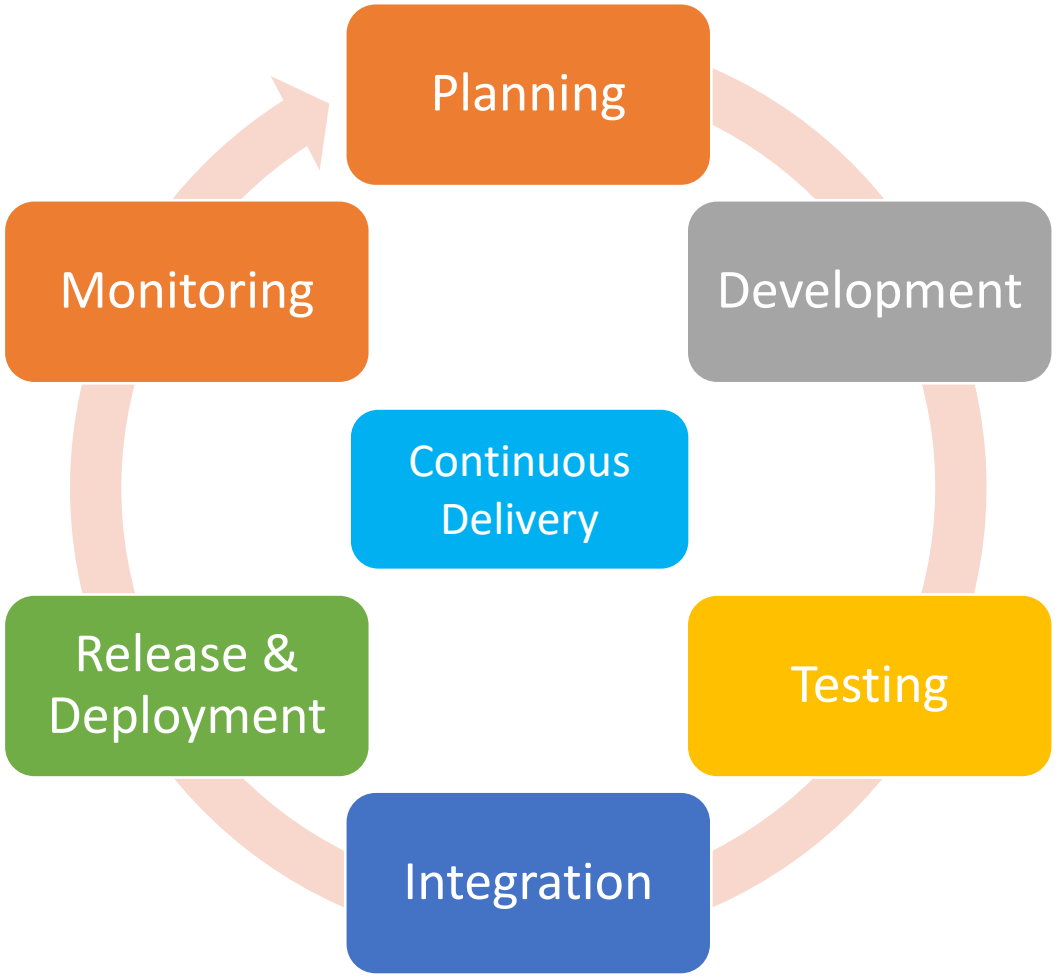
- DevOps is a set of practices which combines people, process, and tools to provide continuous delivery of value to customers.
- In other words, DevOps is a software development and delivery method which focuses on communication, integration, and collaboration between Development and Operation Teams.



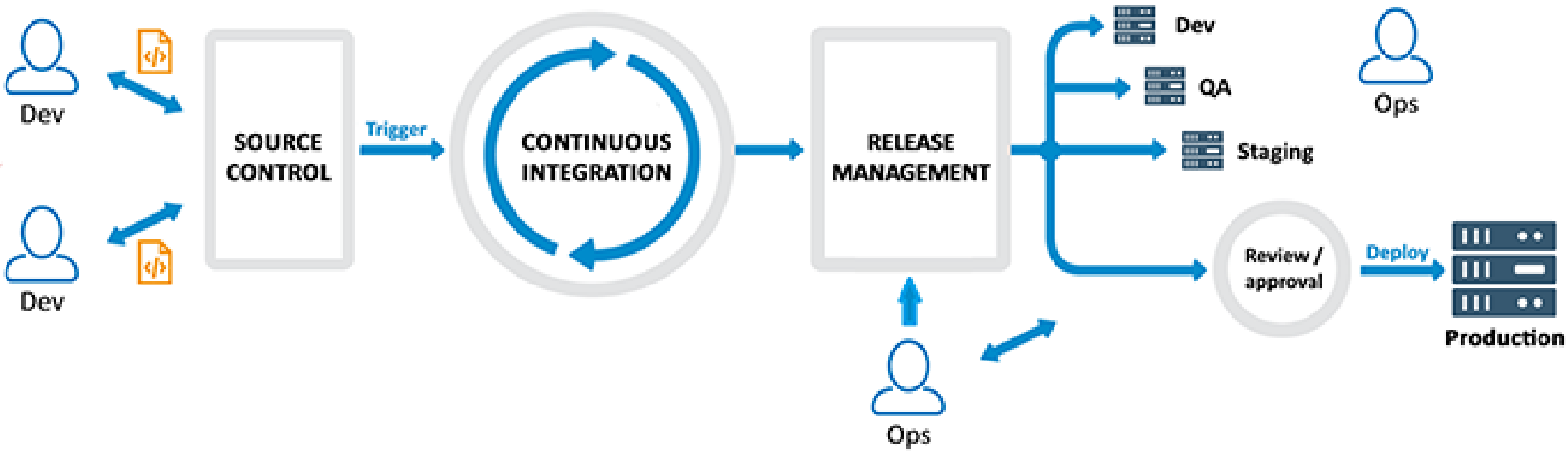
Need of DevOps

- In traditional process, the development and operation were isolated activities.
- Team members spend a lot of time in testing, deploying, and designing instead of building the project.
- Manual code deployment leads to errors in production.
- Development and operation teams have their own timelines. Usually separate timelines are not in sync which cause further delays in delivery.

DevOps Lifecycle



How DevOps Works?



DevOps Advantages

- Faster releases through CI/CD.
- More engaged and collaborative Dev and Operation teams.
- Faster operational support.
- Less failures and continuous improvement.
- Transparency between the Dev and Operation teams.
- Constant monitoring and better adaption.
- Increase efficiency.

DevOps Tools

Tools for Planning

- Azure Boards
- Jira

Tools for Code Management

- Git
- TFVC

Tools for Testing Automation

- Azure Test Plans
- Selenium
- JMeter

Tools for Build

- Azure Pipelines
- Ant
- Maven

Tools for CI/CD

- Azure Pipelines
- Jenkins
- TeamCity

Tools for Configuration

- Puppet
- Chef
- Ansible

Tools for Monitor

- Splunk
- Nagios

Who is DevOps Engineer?

- A system administrator who also knows how to write code
- A developer who knows the basics of system administration
- An engineer who can be a full time system administrator and full-time developer for only the cost of one salary.

Introduction to Azure DevOps

- Formally known as VSTS (Visual Studio Team Services).
- Provides full application lifecycle management from planning to coding, and from testing to build and deployment.
- Offers CI/CD for every team, every app and every platform.

Azure DevOps Offerings

Azure Boards

Plan, track, and discuss work across teams, deliver value to your users faster.

Azure Repos

Unlimited cloud-hosted private Git repos. Collaborative pull requests, advanced file management, and more.

Azure Pipelines

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

Azure Test Plans

The test management and exploratory testing toolkit that lets you ship with confidence.

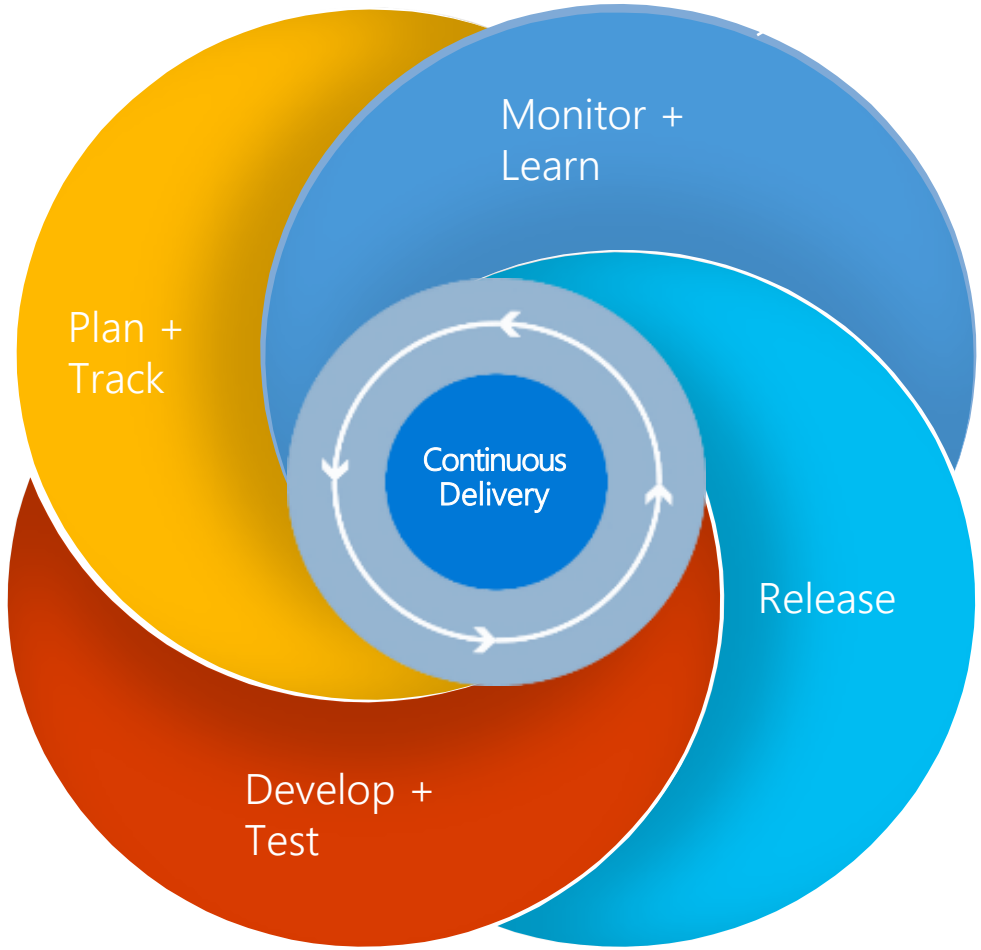
Azure Artifacts

Create, host, and share packages. Easily add artifacts to CI/CD pipelines.

DevOps with Azure DevOps

Agile Planning

Dashboards
Kanban Boards
Task boards



Monitoring

Telemetry
Diagnostics
Analysis

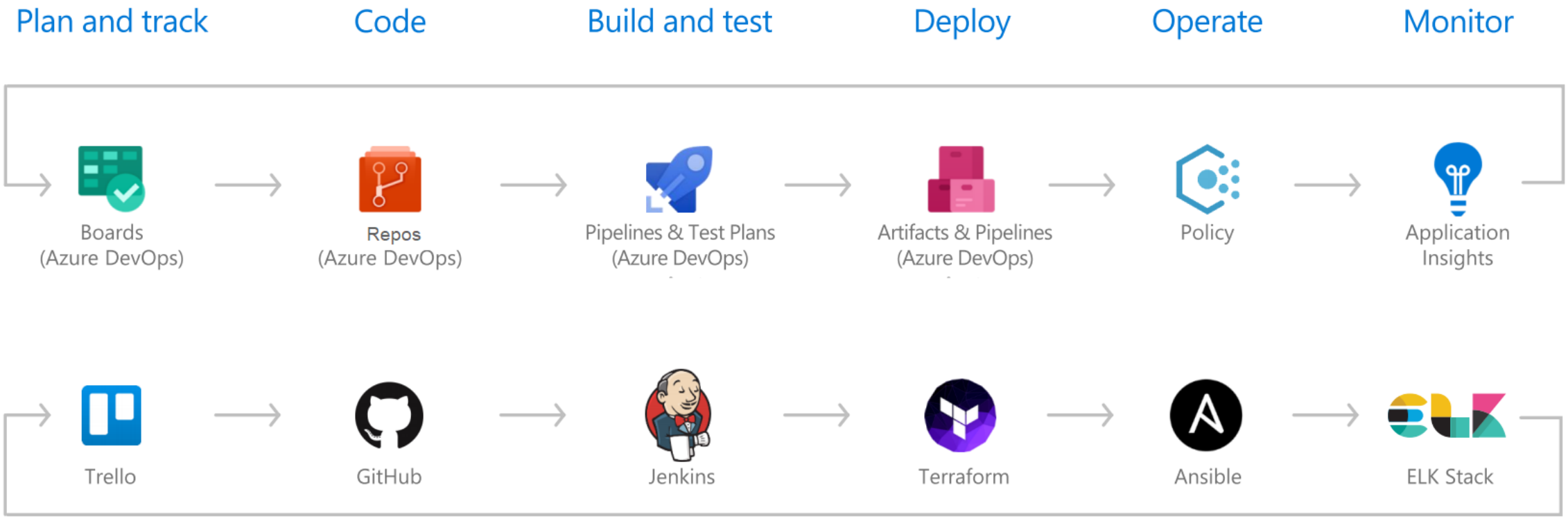
Build and Test

Git Source Control
Modern Code Workflow
Continuous Integration
Continuous Testing
Package Management
Open Source Compliance

Delivery

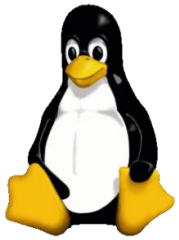
Deployment of app and infrastructure
PaaS, IaaS and Containers

Azure DevOps and Third Party Tools



Azure DevOps Platform Supports







Azure DevOps Services vs. Azure DevOps Server

- TFS is now Azure DevOps Server and Visual Studio Team Services is now Azure DevOps Services.
- Both provide the same essential services, but Azure DevOps Services offers cloud platform whereas Azure DevOps Server is the on-premises server.
- Although both works similar, Azure DevOps services provide benefits like simplified server management, access to the latest release immediately and remote site connectivity etc.

Azure DevOps Services Pricing

INDIVIDUAL SERVICES

Azure Pipelines

1 Free Microsoft-hosted CI/CD
1 Free Self-Hosted CI/CD

Start free

- 1 Microsoft-hosted job with 1,800 minutes per month for CI/CD and 1 self-hosted job with unlimited minutes per month
- $40 per extra Microsoft-hosted CI/CD parallel job and $15 per extra self-hosted CI/CD parallel job with unlimited minutes

Azure Artifacts

2 GiB free,
then starting at $2 per GiB

Start free

- Industry-leading NuGet Server
- Support for Maven, npm, and Python packages
- Upstream sources to help protect open-source dependancies
- Integrated with Azure Pipelines
- Sophisticated access controls

USER LICENSES

Basic Plan

First 5 users free,
then $6 per user per month

Start free

- **Azure Pipelines:** Includes the free offer from INDIVIDUAL SERVICES
- **Azure Boards:** Work item tracking and Kanban boards
- **Azure Repos:** Unlimited private Git repos
- **Azure Artifacts:** 2 GiB free per organization

Basic + Test Plans

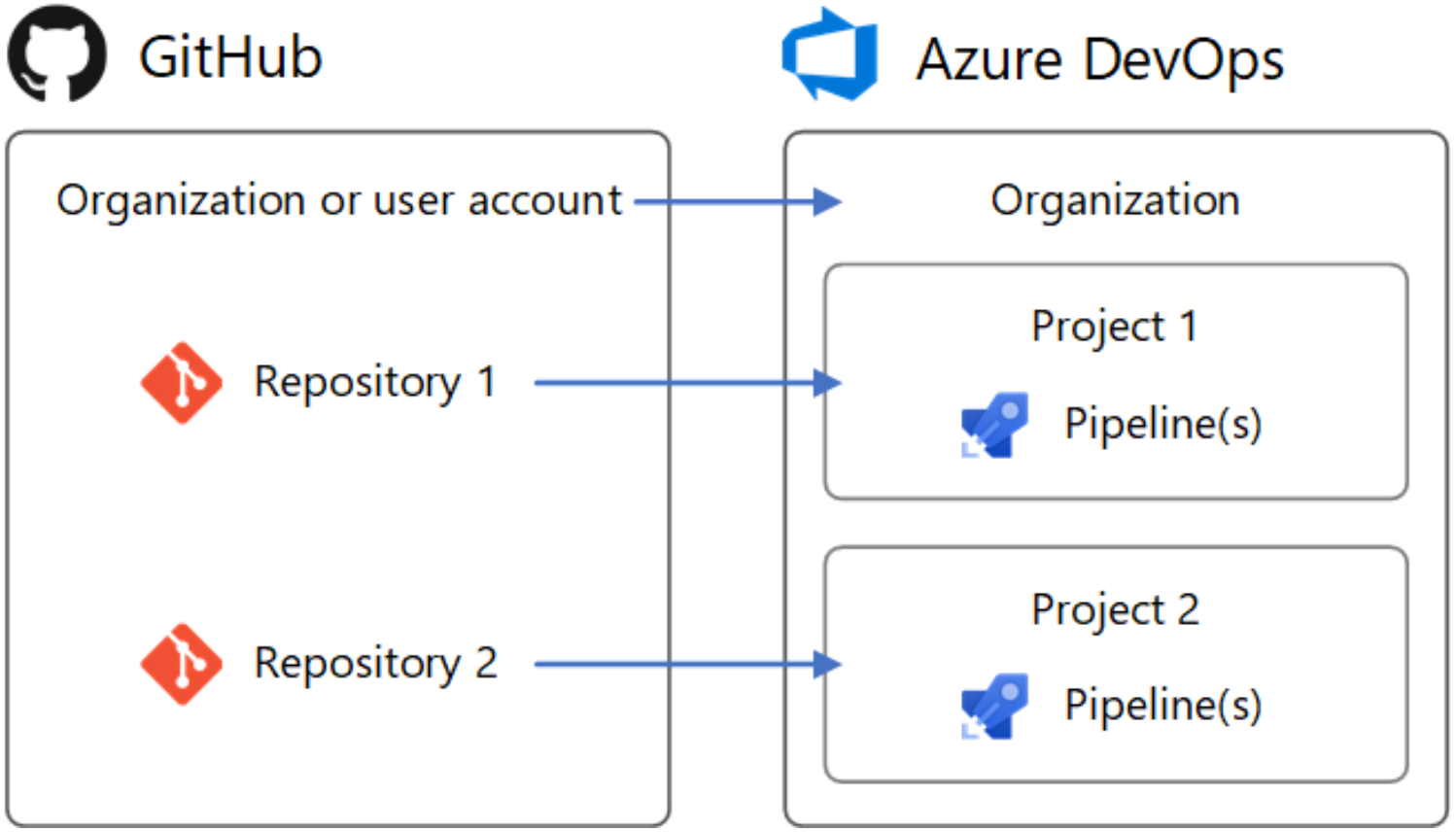
$52 per user
per month

30 day free trial

- Includes all Basic plan features
- Test planning, tracking & execution
- Browser-based tests with annotation
- Rich-client test execution
- User acceptance testing
- Centralized reporting

Source: www.azure.microsoft.com/en-us/pricing/details/devops/azure-devops-services

Azure DevOps



User Access Level

- **Stakeholder**: Provides partial access and can be assigned to unlimited users for free. Assign to users who need access to a limited set of features.
- **Basic**: Provides access to most features. Assign to users with a Visual Studio subscription, an Azure DevOps Server CAL, and to users for whom you're paying for Basic access in an organization.
- **Visual Studio subscription**: Assign to users who already have a Visual Studio subscription. If you assign Basic or Stakeholder, they also receive their Visual Studio subscription benefits upon sign-in.

Azure Dashboard

- Used to access important information related to Works Assigned, Build History, and Test Plans.
- Supports Customized widgets to provide deep inside of your project and progress workflow.
- Supports Charts, Widgets, reports, and Integration with Power BI.

Azure Wiki

- Wiki makes your documentation work easy.
- Team members collaborate and work together to create project documentation, user manuals, functional documents, technical documents etc.
- Used to explain project Vision, epics, specifications, release notes, coding standards and best practices or other content with team members and stakeholders to learn