Azure DevOps

Introduction to Azure DevOps and Azure Repos

Agenda

Agenda

09 What is TFVC?

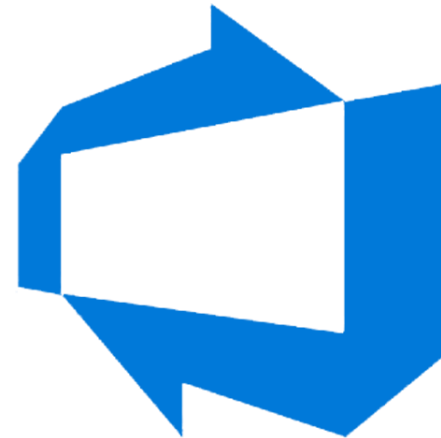**10** Using Git and TFVC in Azure Repos

11 Azure Repos Integrations

What is Azure DevOps?

What is Azure DevOps?

Azure DevOps provides developer services for support teams to plan work, collaborate on code development, and build and deploy applications.
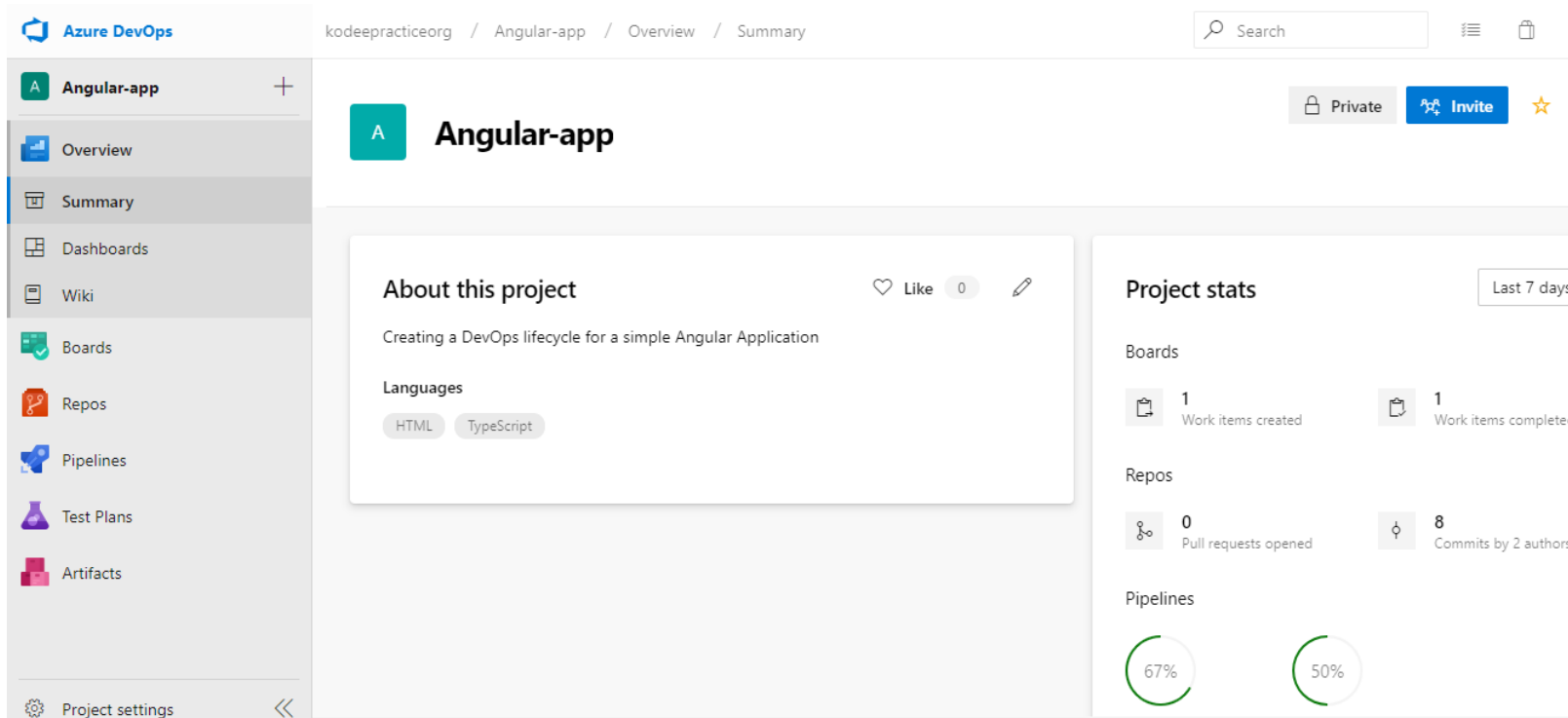
Visual Studio Team Services (VSTS) has been rebranded to Azure DevOps

Developers can work in the cloud using Azure DevOps Services or on-premises using Azure DevOps Server.

What is Azure DevOps?

A sample Azure DevOps project summary view

Benefits: Azure DevOps

Orchestration

Rapid Deployment

Easy Automation

Effective Monitoring

Azure DevOps Services vs Azure DevOps Server

Azure DevOps Services

- The cloud offering, Azure DevOps Services, provides a scalable, reliable, and globally available hosted service.

- It's backed by a 99.9% SLA, monitored by our 24/7 operations team, and available in local data centers around the world.

- You either authenticate with Microsoft account credentials or with Azure AD credentials, depending on your organization setup.

Azure DevOps Server

- The on-premises offering, Azure DevOps Server, is built on a SQL Server back end. Customers usually choose the on-premises version when they need their data to stay within their network.

- When they want access to SQL Server reporting services that integrate with Azure DevOps Server data and tools.

- With Azure DevOps Server, you connect to an intranet server (for example, https://tfs.corp.contoso.com:8080/tfs).

Azure DevOps Services

Azure DevOps Services

Azure Boards

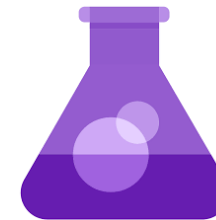**Azure Pipelines**

Azure Artifacts

Azure Repos

Azure Test Plans

Key Features of Azure DevOps

Key Features of Azure DevOps

Dashboards
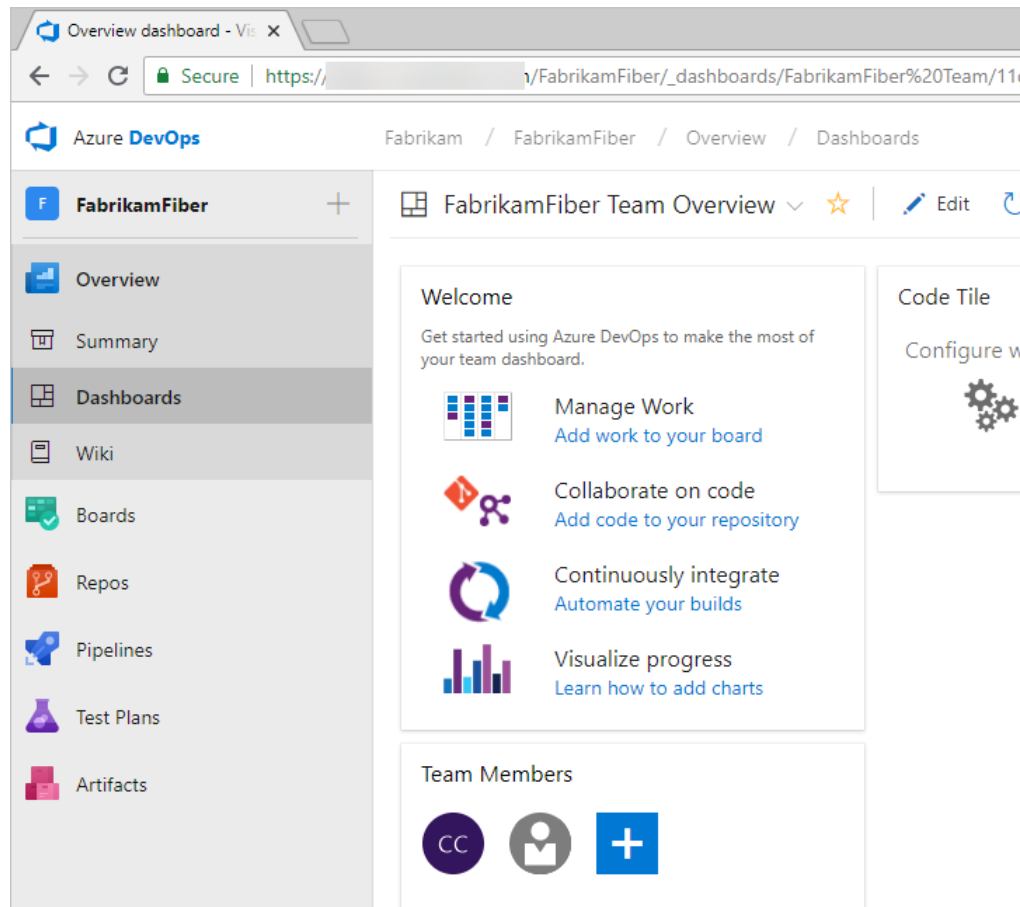
From Dashboards, you gain access to user-configurable dashboards.

- Add, configure, and manage dashboards
- Configure widgets that you add to dashboards
- Quickly go to different areas of your project

Key Features of Azure DevOps

Collaboration Services

- Team dashboards for everyone to view
- Project wiki which has all information about the current project
- Discussion within work item forms
- Linking of work items, commits, pull requests, and other artifacts to support traceability
- Alerts and change notifications managed per user, team, project, or organization
- Ability to request and manage feedback
- Analytics service, analytic views, and Power BI reporting

Key Features of Azure DevOps

Service hooks

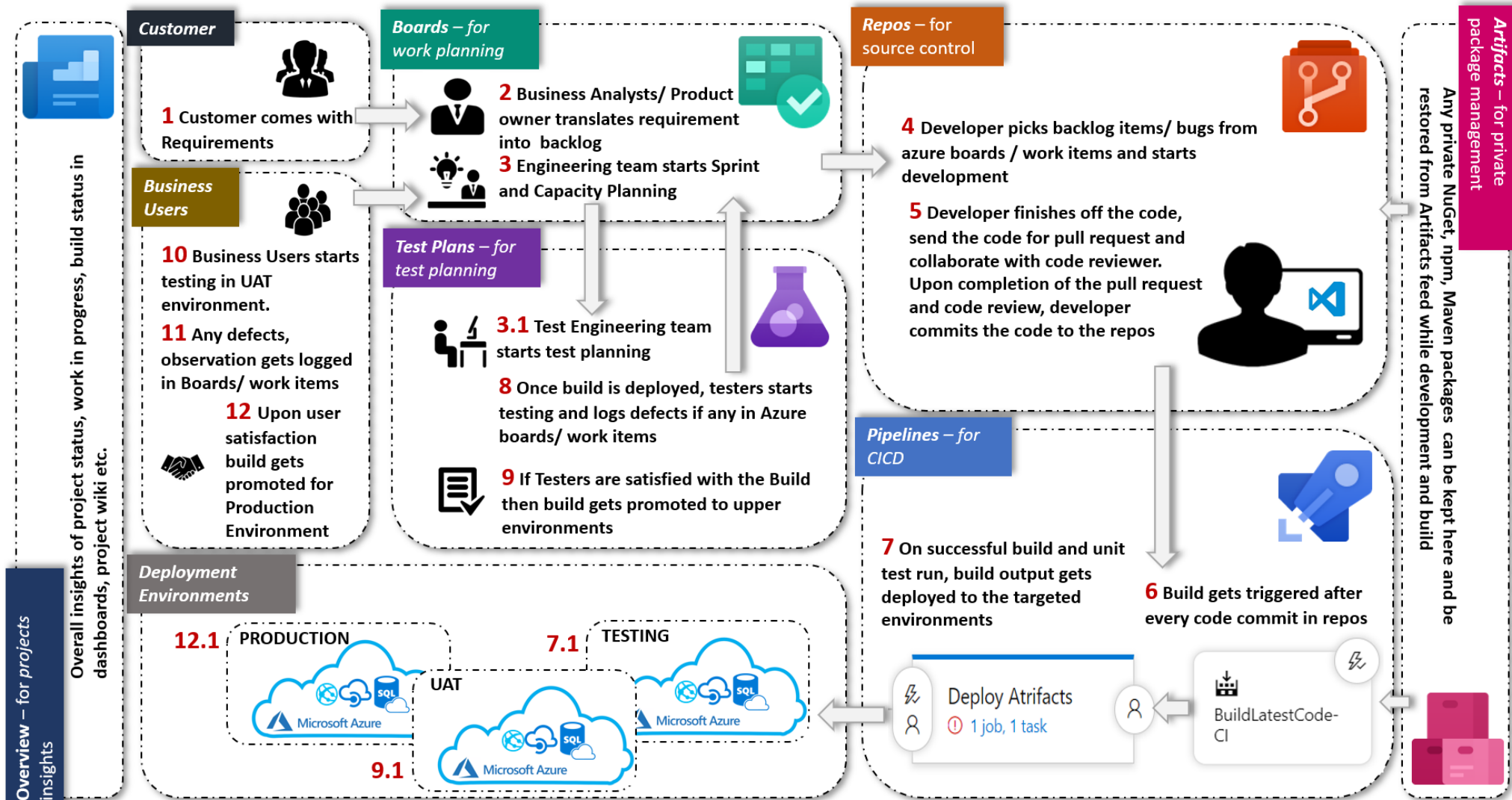| Pipelines	Collaborate	Customer support	Plan and track	Integrate
AppVeyor	Flowdock	UserVoice	Trello	Azure Service Bus
Bamboo	HipChat (No longer supported)	Zendesk		Azure Storage
Jenkins	Hubot			Grafana
MyGet	Office 365			Web Hooks
Slack	Slack		Slack	Zapier
Microsoft Teams	Microsoft Teams		Microsoft Teams	Datadog

Service hooks enable you to complete tasks on other services when events happen within your project hosted on Azure DevOps.

For example, you can send a push notification to your team's mobile devices when a build fails. You can also use service hooks in custom apps and services as a more efficient way to drive activities in your projects.

Azure DevOps Architecture

Azure DevOps Architecture

IntelliPaat

Azure **DevOps**

Customer

1 Customer comes with Requirements

Business Users

10 Business Users starts testing in UAT environment.

11 Any defects, observation gets logged in Boards/ work items

12 Upon user satisfaction build gets promoted for Production Environment

Boards – for work planning

2 Business Analysts/ Product owner translates requirement into backlog

3 Engineering team starts Sprint and Capacity Planning

Test Plans – for test planning

3.1 Test Engineering team starts test planning

8 Once build is deployed, testers starts testing and logs defects if any in Azure boards/ work items

9 If Testers are satisfied with the Build then build gets promoted to upper environments

Repos – for source control

4 Developer picks backlog items/ bugs from azure boards / work items and starts development

5 Developer finishes off the code, send the code for pull request and collaborate with code reviewer. Upon completion of the pull request and code review, developer commits the code to the repos

Artifacts – for private package management

Any private NuGet, npm, Maven packages can be kept here and be restored from Artifacts feed while development and build

Pipelines – for CICD

7 On successful build and unit test run, build output gets deployed to the targeted environments

6 Build gets triggered after every code commit in repos

Deployment Environments

12.1 PRODUCTION

Microsoft Azure

UAT

Microsoft Azure

9.1

7.1 TESTING

Microsoft Azure

Deploy Atrifacts
⊘ 1 job, 1 task

BuildLatestCode-CI

Overview – for projects insights

Overall insights of project status, work in progress, build status in dashboards, project wiki etc.

What is Azure Repos?

What is Azure Repos?

Azure Repos is a set of version control tools that you can use to manage your code. Whether your software project is large or small, using version control as soon as possible is a good idea.

Compare Git and TFVC

Compare Git and TFVC

Which version control to choose?

- Git is a distributed version control system. Each developer has a copy of the source repository on their dev machine.

- You might have to resolve conflicts when you get, check in, merge, or unshelve.

- You can check in large binary files. You might also want to use NuGet in combination or as an alternative.

- TFVC is a centralized version control system. Typically, team members have only one version of each file on their dev machines.

- You might have to resolve conflicts when you pull or merge.

- You can check in small binary files as you would regular files. Use Git-LFS to store your large binary files in Azure Repos.

Key concepts in Azure Repos

Key concepts in Azure Repos

Let's do a quick brush up of the key concepts

Branch

Branches are lightweight references that keep a history of commits and provide a way to isolate changes for a feature from your main branch and other work.

Commit

A commit is a group of changes saved to your local repository. You can share these changes to the remote repository by pushing.

Fork

A fork is a complete copy of a repository, including all files, commits, and (optionally) branches.

Key concepts in Azure Repos

Let's do a quick brush up of the key concepts

Project

A project provides a place where a group of people can plan, track progress, and collaborate on building software solutions.

Pull Request

Pull requests let your team review code and give feedback on changes before you merge it into the main branch.

Pull

A pull command updates the code in your local repository with the changes from other members of your team that are in the remote repository.

Key concepts in Azure Repos

Let's do a quick brush up of the key concepts

Branch Policies

Branch policies are an important part of the Git workflow. You use them to help protect the important branches in your development, like main. Branch policies enable you to:

- Isolate work in progress from the completed work in your main branch.
- Guarantee that changes build before they get to main.
- Limit who can contribute to specific branches.
- Enforce who can create branches and the naming guidelines for the branches.

Search your code

Search your code

Use the search box in repos to search within the repository
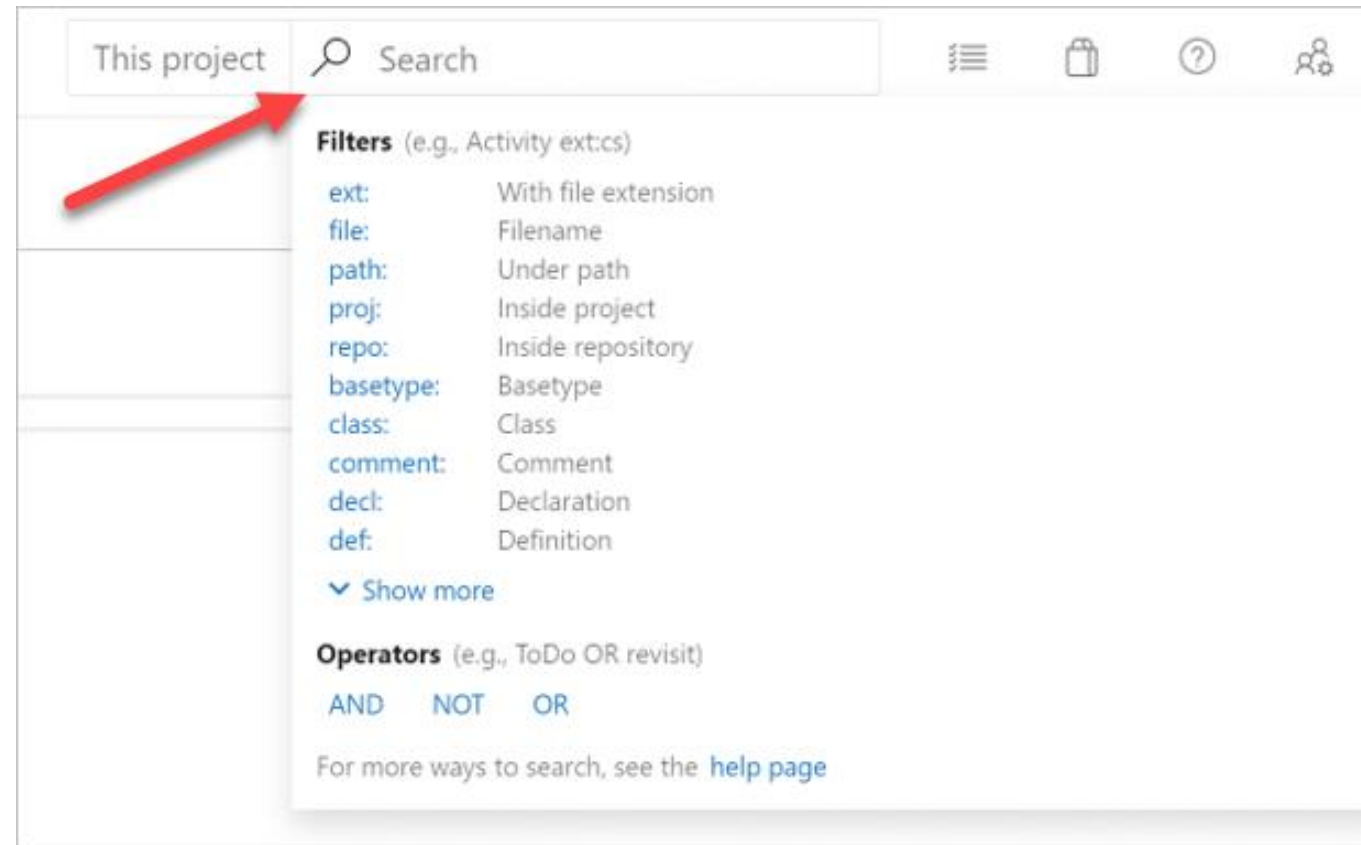
Search your code

View all related code files and the keyword will be highlighted

Search your code

Sort the results as you need using the drop-down list of properties, or by relevance.

Try assembling more complex search strings using the operators and functions

Search your code
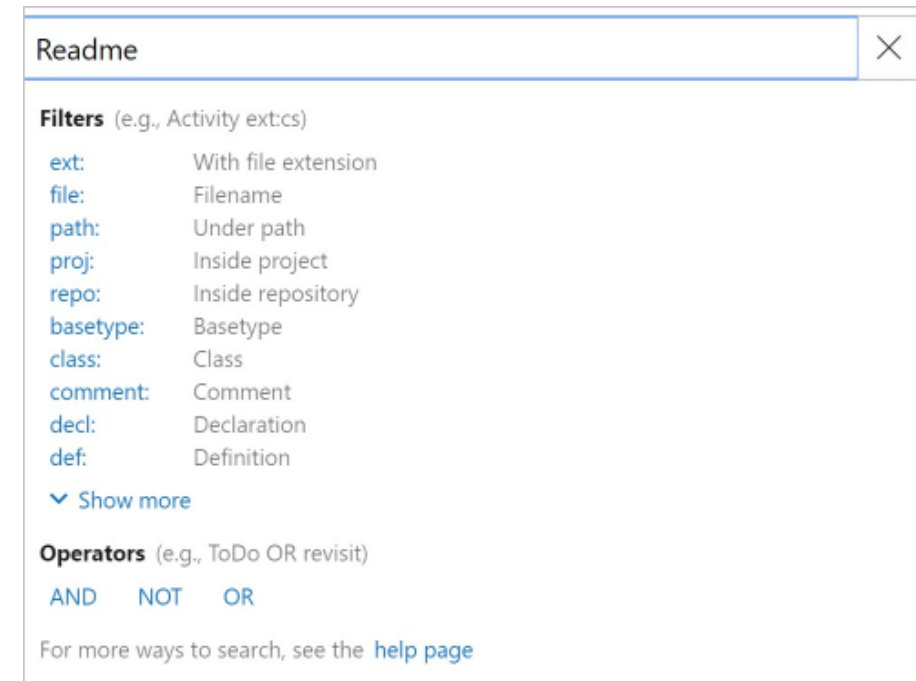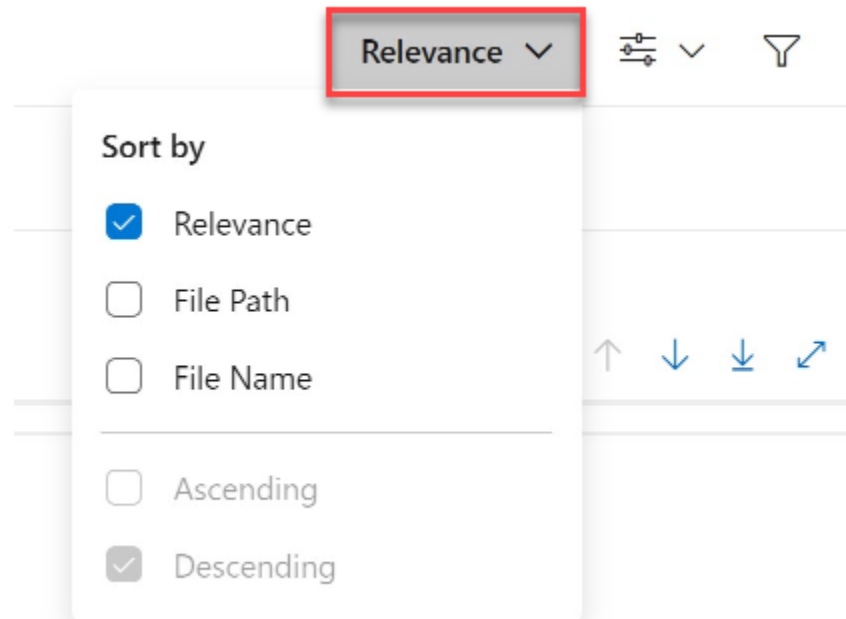
Use the tabs in the results page to view the history of the file and to compare versions of the file

What is TFVC?

What is TFVC?

Team Foundation Version Control (TFVC) is a centralized version control system. Typically, team members have only one version of each file on their dev machines.
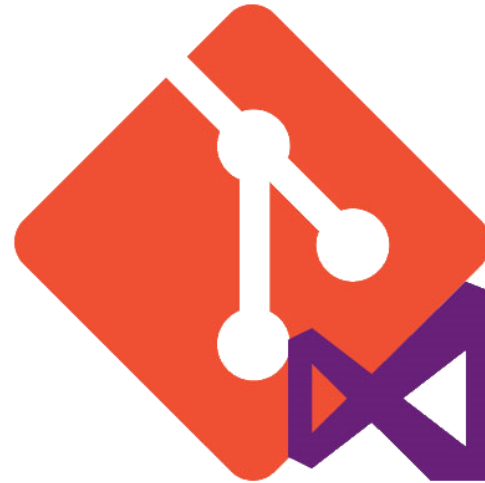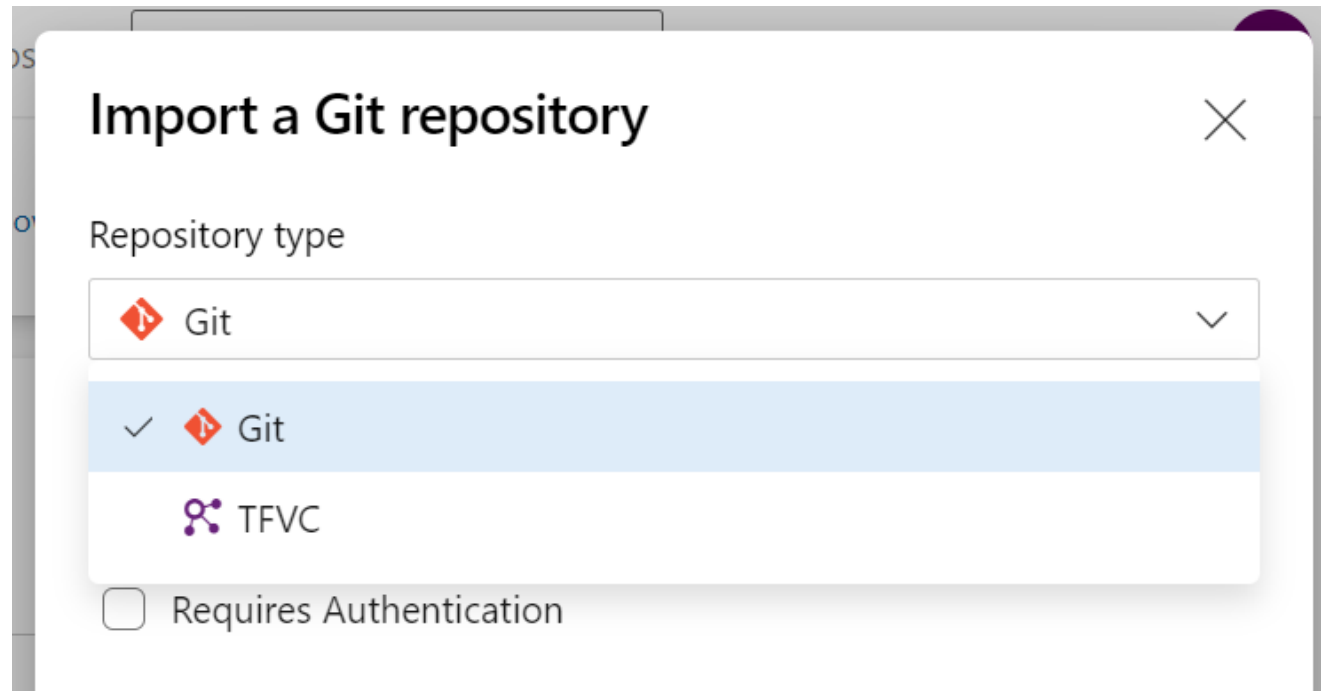

Historical data is maintained only on the server. Branches are path-based and created on the server.

Using Git and TVFC in Azure Repos

Using Git and TVFC in Azure Repos

In Azure Repos, you can choose between Git or TVFC for the version control.

Azure Repos Integration

Azure Repos Integration
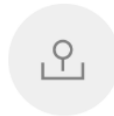
Azure Repos with Slack

If you use Slack, you can use the Azure Repos app for Slack to easily monitor your Azure repositories.

Azure Repos APP 10:01 PM
Simon Lee pushed 3 commits

518b38e2 - Upgraded web interface code to support dialogs
821s4dc6 - Fixed accessibility bugs in login screen
450cd8c9 - Added OAuth authentication layer
master | SmartHotel360

Azure Repos APP 10:09 PM
Simon Lee created a pull request

30: Update device drivers to enable version interoperability
Target branch   Source branch
master   Cortana_Drivers
Reviewers
[Smart city project]\Dev Leads, [Smart city project]\Product Managers
SmartHotel360

To create subscriptions in a Slack channel for repository-related events, you must be a member of the Azure Project Administrators group or Team Administrators group.

Azure Repos Integration

Azure Repos with Microsoft Teams

If you use Microsoft Teams, you can use the Azure Repos app for Teams to easily monitor your repositories.

Hands-on: Azure Repos with GitHub

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US: 1-800-216-8930 (TOLL FREE)

support@intellipaat.com

24/7 Chat with Our Course Advisor