Brandon de Bruyn 6854
PRG522 FA2

Title

Question 1:

1.1 Describe the following terms as they are used in DevOps.

a. Technical debt and its sources:

Technical debt is that the accumulation of sub-optimal technical decisions remodelled the lifetime of an application. Eventually, it gets harder and harder to alter things: it's the 'sand within the gears' that sees IT initiatives grind to a halt.

When it involves software development, technical debt is that the concept certain necessary work gets delayed during the event of a software project to hit a deliverable or deadline. Technical debt is that the coding you want to do tomorrow because you took a shortcut to deliver the software today

b. Maven packages:

Maven packaging is an important aspect of any project. It specifies the type of artifact the project produces. Generally, a build produces a jar, war, pom, or other executable. Maven offers many default packaging types and provides the flexibility to define a custom one.

Maven is a powerful project management tool that is based on POM (project object model). It is used for projects build, dependency and documentation.

1.2 Describe source control and its benefits

Source control is important for maintaining a single source of truth for development teams. Plus, using it helps facilitate collaboration and accelerates release velocity. That's because it allows multiple developers to work on the same codebase. They can commit and merge code without conflicts.

1.3 Distinguish between Git and Team Foundation Version Control

The major difference with branching between Git and TFVC is that TFVC makes copies of the parent from which it branched while Git branches are just pointers to a commit. On the other hand, Git simply creates a new stream of commits for a branch. Thereby keeping only deltas between commits and branches.

Team Foundation Version Control (TFVC) is a centralized version control system provided by Microsoft as part of Azure DevOps Services, Azure DevOps Server and Team Foundation Server.

1.4 What is a pull request? Discuss.

A pull request is an event in Git where a contributor asks a maintainer of a Git repository to review code they want to merge into a project.

An example of a pull request is where you as a project manager wants to merge a certain branch like “Back-End SQL Connection Branch” to the main Branch, The Project Manager will open a Pull Request to pull the new content of the Back-End Branch to merge it into the Main branch for public use.

1.5 Describe a pipeline is Azure DevOps.

Azure Pipelines automatically builds and tests code projects to make them available to others. It works with just about any language or project type. Azure Pipelines combines continuous integration (CI) and continuous delivery (CD) to test and build your code and ship it to any target constantly and consistently.

1.6 Describe the benefits of continuous integration in DevOps.

Continuous integration is a DevOps software development practice where developers regularly merge their code changes into a central repository, after which automated builds and tests are run.

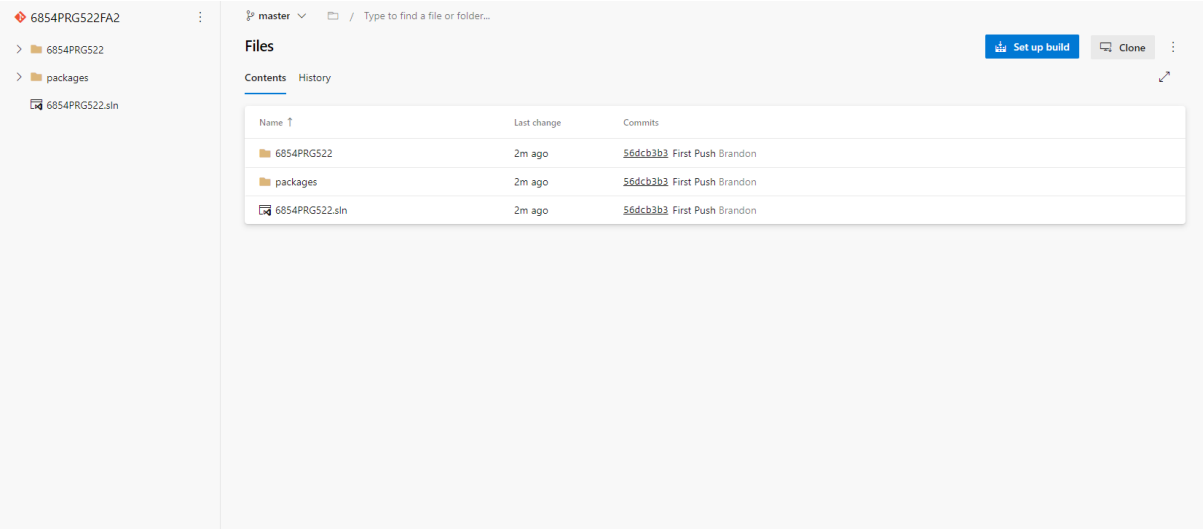
Benefits of continuous integration.

- Smaller code changes are simpler (more atomic) and have fewer unintended consequences.
- Fault isolation is simpler and quicker.
- Mean time to resolution (MTTR) is shorter because of the smaller code changes and quicker fault isolation.
- More Test Reliability Using CI/CD, test reliability improves due to the bite-size and specific changes introduced to the system, allowing for more accurate positive and negative tests to be conducted.
- Faster Release Rate Failures are detected faster and as such, can be repaired faster, leading to increasing release rates.
- Smaller Backlog Incorporating CI/CD into your organization’s development process reduces the number of non-critical defects in your backlog.

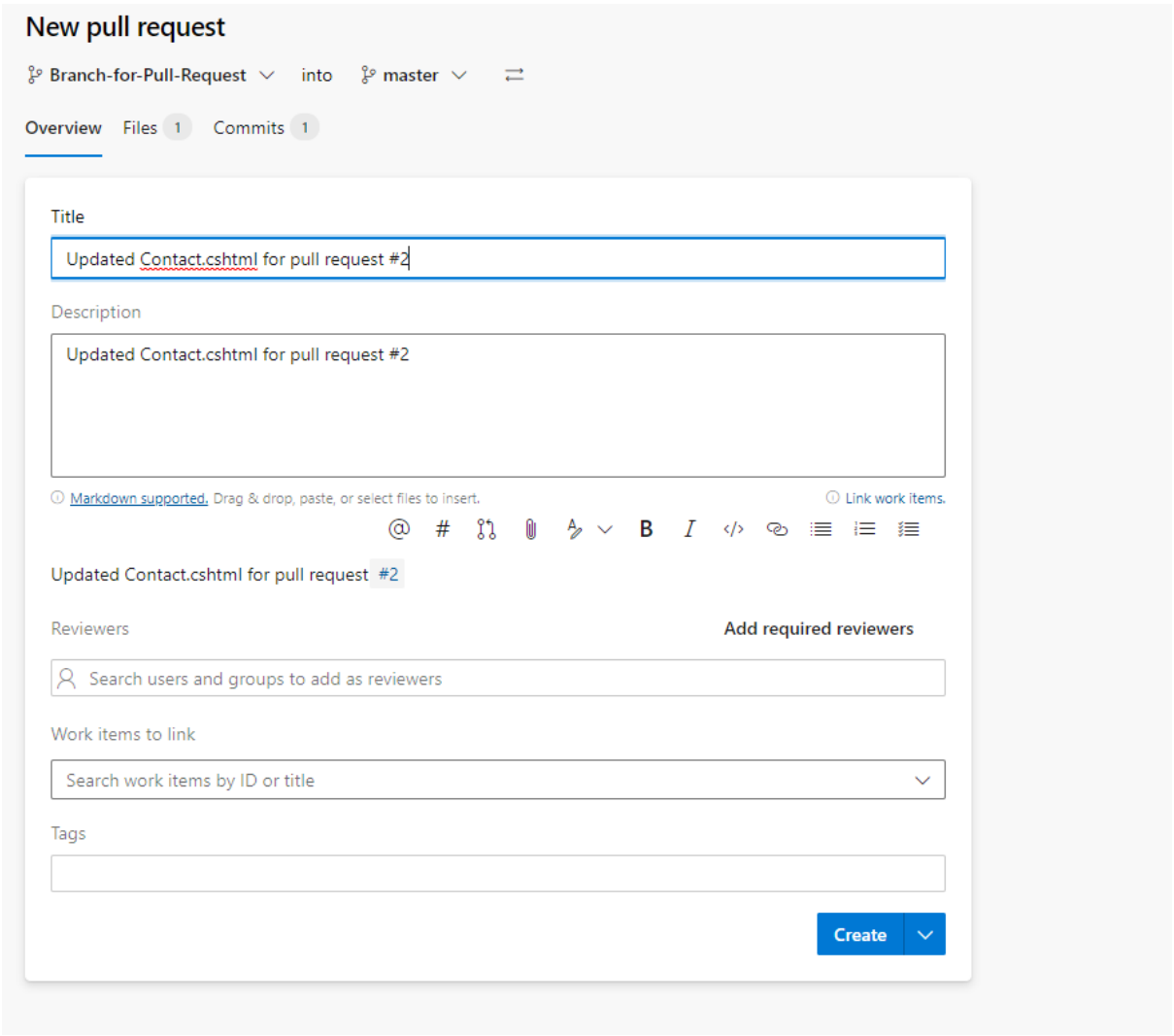
Question 2:

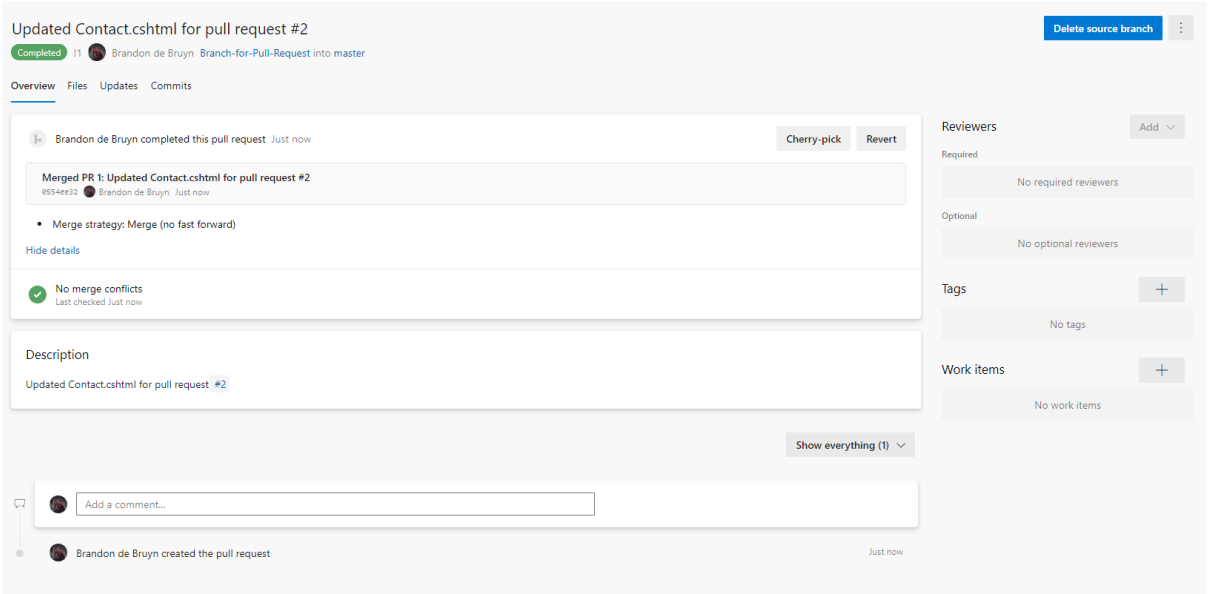
2.1

```
PS C:\Users\tiger\Desktop\PRG522\Formative\FA2\vs2019\6854PRG522FA2> git push -u origin --all
Enumerating objects: 295, done.
Counting objects: 100% (295/295), done.
Delta compression using up to 8 threads
Compressing objects: 100% (278/278), done.
Writing objects: 100% (295/295), 34.52 MiB | 6.67 MiB/s, done.
Total 295 (delta 72), reused 0 (delta 0), pack-reused 0
remote: Analyzing objects... (295/295) (4523 ms)
remote: Storing packfile... done (702 ms)
remote: Storing index... done (35 ms)
To https://dev.azure.com/6854/6854PRG522FA2/_git/6854PRG522FA2
 * [new branch]      master -> master
Branch 'master' set up to track remote branch 'master' from 'origin'.
PS C:\Users\tiger\Desktop\PRG522\Formative\FA2\vs2019\6854PRG522FA2>
```

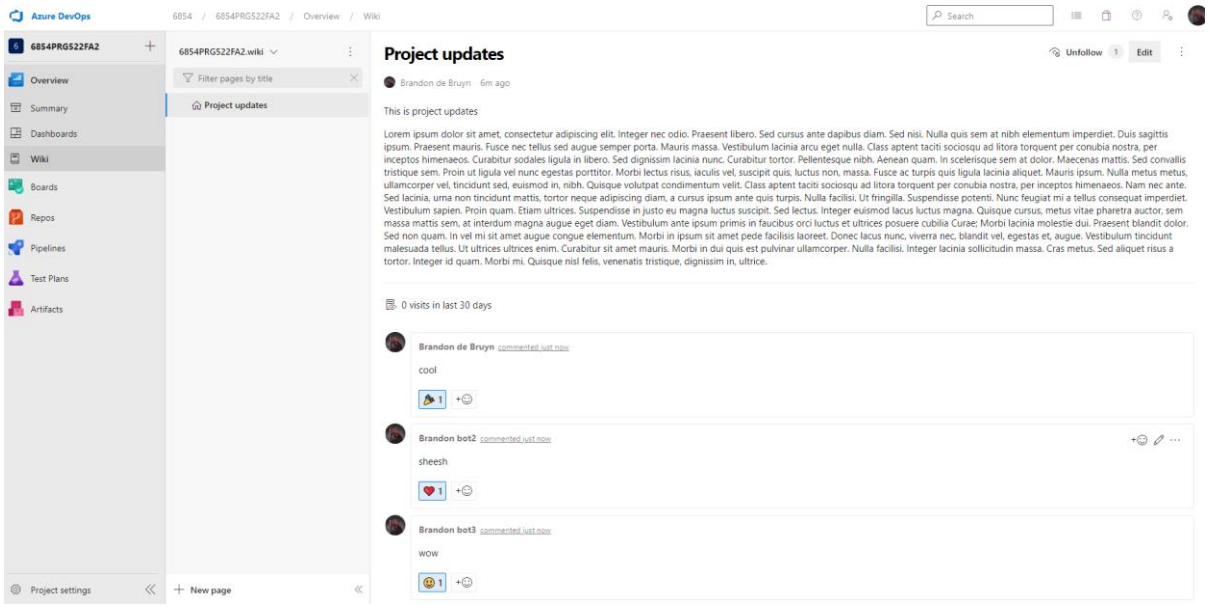


2.2

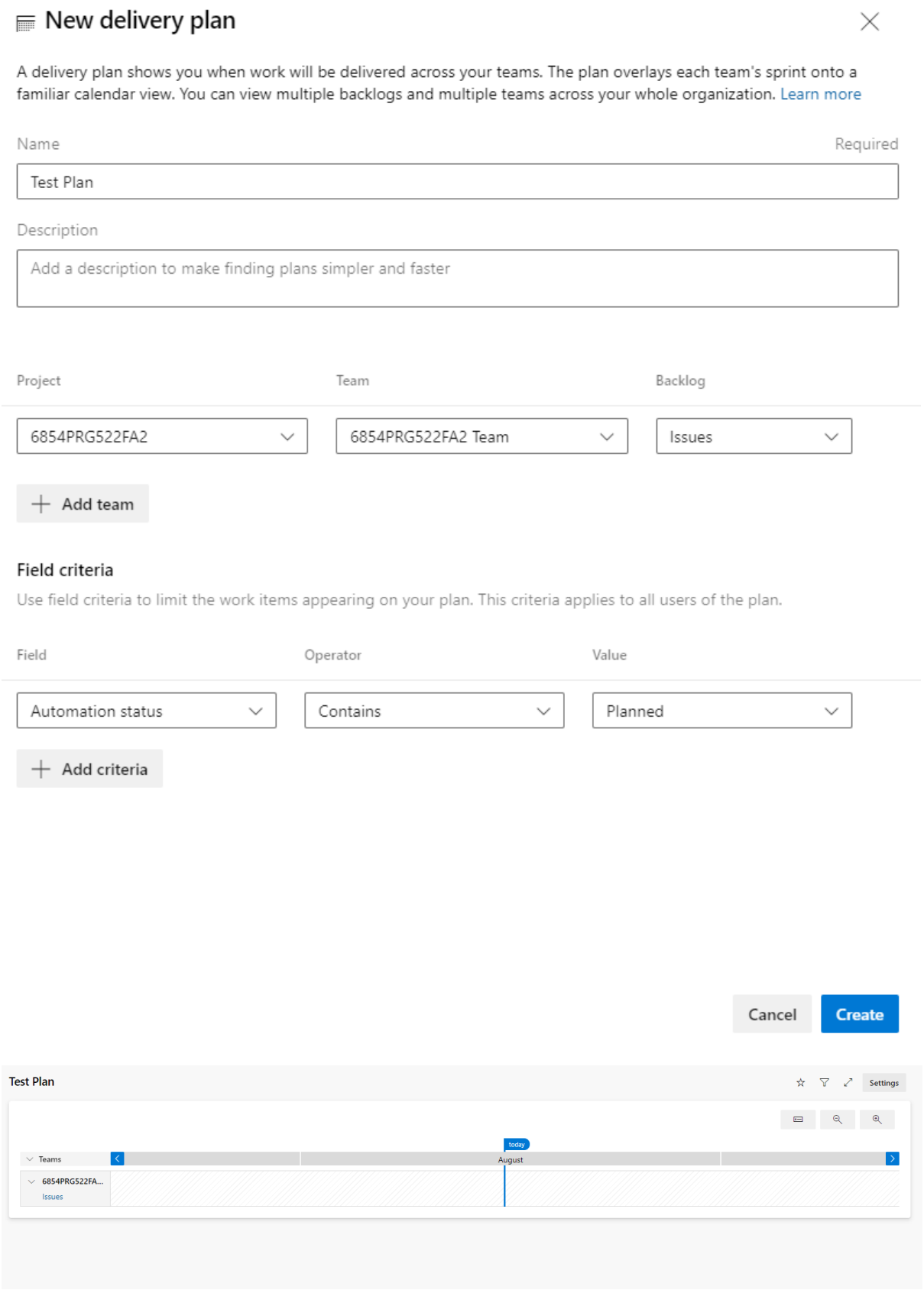

New pull request
Branch-for-Pull-Request
into
master
Overview
Files 1
Commits 1
Title
Updated Contact.cshtml for pull request #2
Description
Updated Contact.cshtml for pull request #2
Markdown supported. Drag & drop, paste, or select files to insert.
Link work items.
Updated Contact.cshtml for pull request #2
Reviewers
Add required reviewers
Search users and groups to add as reviewers
Work items to link
Search work items by ID or title
Tags
Create


Updated Contact.cshtml for pull request #2
Completed
Brandon de Bruyn Branch-for-Pull-Request into master
Delete source branch
Overview
Files
Updates
Commits
Brandon de Bruyn completed this pull request Just now
Cherry-pick
Revert
Merged PR 1: Updated Contact.cshtml for pull request #2
Brandon de Bruyn Just now
Merge strategy: Merge (no fast forward)
Hide details
No merge conflicts
Last checked Just now
Description
Updated Contact.cshtml for pull request #2
Reviewers
Add
Required
No required reviewers
Optional
No optional reviewers
Tags
No tags
Work items
No work items
Show everything (1)
Add a comment...
Brandon de Bruyn created the pull request
Just now

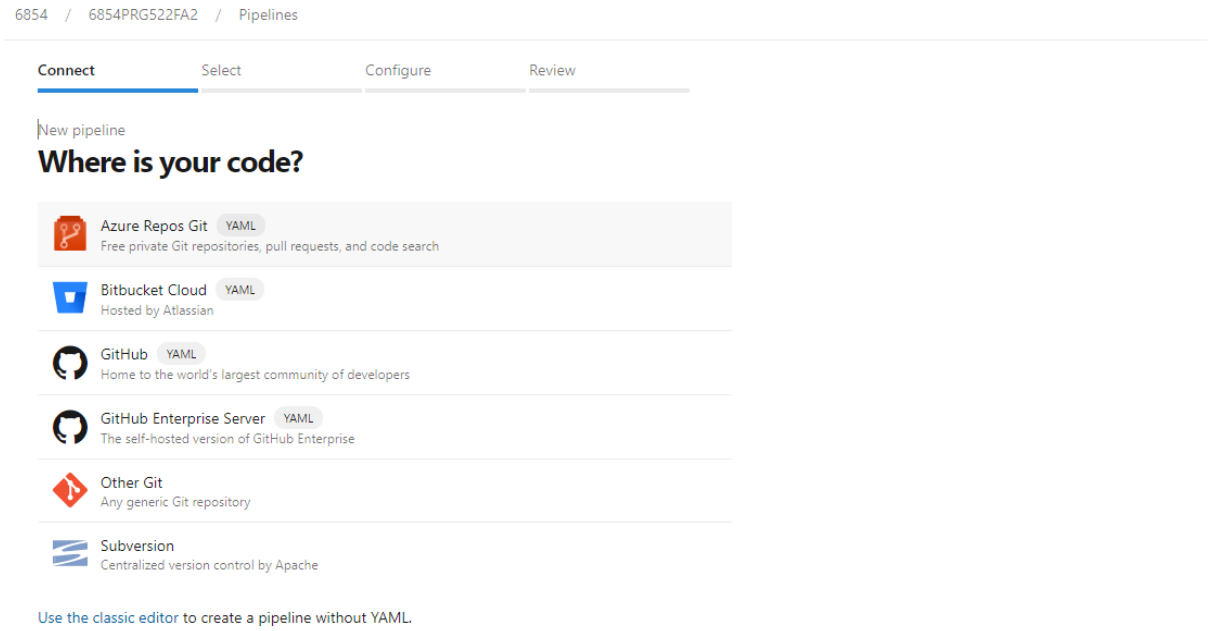
2.3

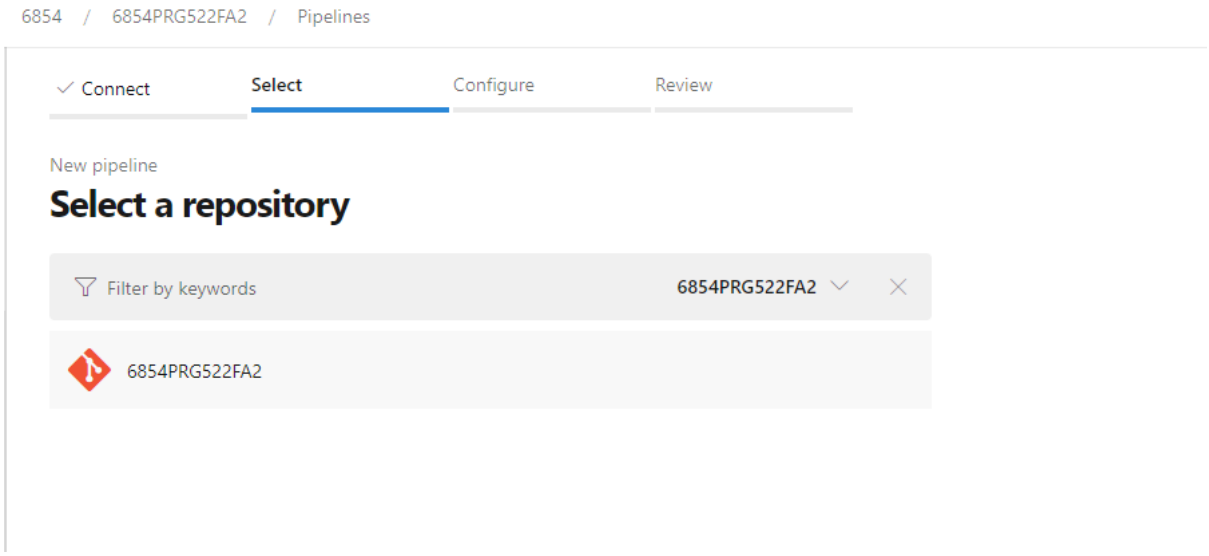

Azure DevOps
6854 / 6854PRG522FA2 / Overview / Wiki
Search
6854PRG522FA2
Overview
Summary
Dashboards
Wiki
Boards
Repos
Pipelines
Test Plans
Artifacts
Project settings
6854PRG522FA2.wiki
Filter pages by title
Project updates
New page
Project updates
Unfollow 1
Edit
Brandon de Bruyn 6m ago
This is project updates
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Integer nec odio. Praesent libero. Sed cursus ante dapibus diam. Sed nisi. Nulla quis sem at nibh elementum imperdiet. Duis sagittis ipsum. Praesent mauris. Fusce nec tellus sed augue semper porta. Mauris massa. Vestibulum lacinia arcu eget nulla. Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos himenaeos. Curabitur sodales ligula in libero. Sed dignissim lacinia nunc. Curabitur tortor. Pellentesque nibh. Aenean quam. In scelerisque sem at dolor. Maecenas mattis. Sed convallis tristique sem. Proin ut ligula vel nunc egestas porttitor. Morbi lectus risus, iaculis vel, suscipit quis, luctus non, massa. Fusce ac turpis quis ligula lacinia aliquet. Mauris ipsum. Nulla metus metus, ullamcorper vel, tincidunt sed, euismod in, nibh. Quisque volutpat condimentum velit. Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos himenaeos. Nam nec ante. Sed lacinia, urna non tincidunt mattis, tortor neque adipiscing diam, a cursus ipsum ante quis turpis. Nulla facilisi. Ut fringilla. Suspendisse potenti. Nunc feugiat mi a tellus consequat imperdiet. Vestibulum sapien. Proin quam. Etiam ultrices. Suspendisse in justo eu magna luctus suscipit. Sed lectus. Integer euismod lacus luctus magna. Quisque cursus, metus vitae pharetra auctor, sem massa mattis sem, at interdum magna augue eget diam. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia Curae; Morbi lacinia molestie dui. Praesent blandit dolor. Sed non quam. In vel mi sit amet augue congue elementum. Morbi in ipsum sit amet pede facilisis laoreet. Donec lacus nunc, viverra nec, blandit vel, egestas et, augue. Vestibulum tincidunt malesuada tellus. Ut ultrices ultrices enim. Curabitur sit amet mauris. Morbi in dui quis est pulvinar ullamcorper. Nulla facilisi. Integer lacinia sollicitudin massa. Cras metus. Sed aliquet risus a tortor. Integer id quam. Morbi mi. Quisque nisl felis, venenatis tristique, dignissim in, ultrice.
0 visits in last 30 days
Brandon de Bruyn commented just now
cool
1
Brandon bot2 commented just now
sheesh
1
Brandon bot3 commented just now
wow
1

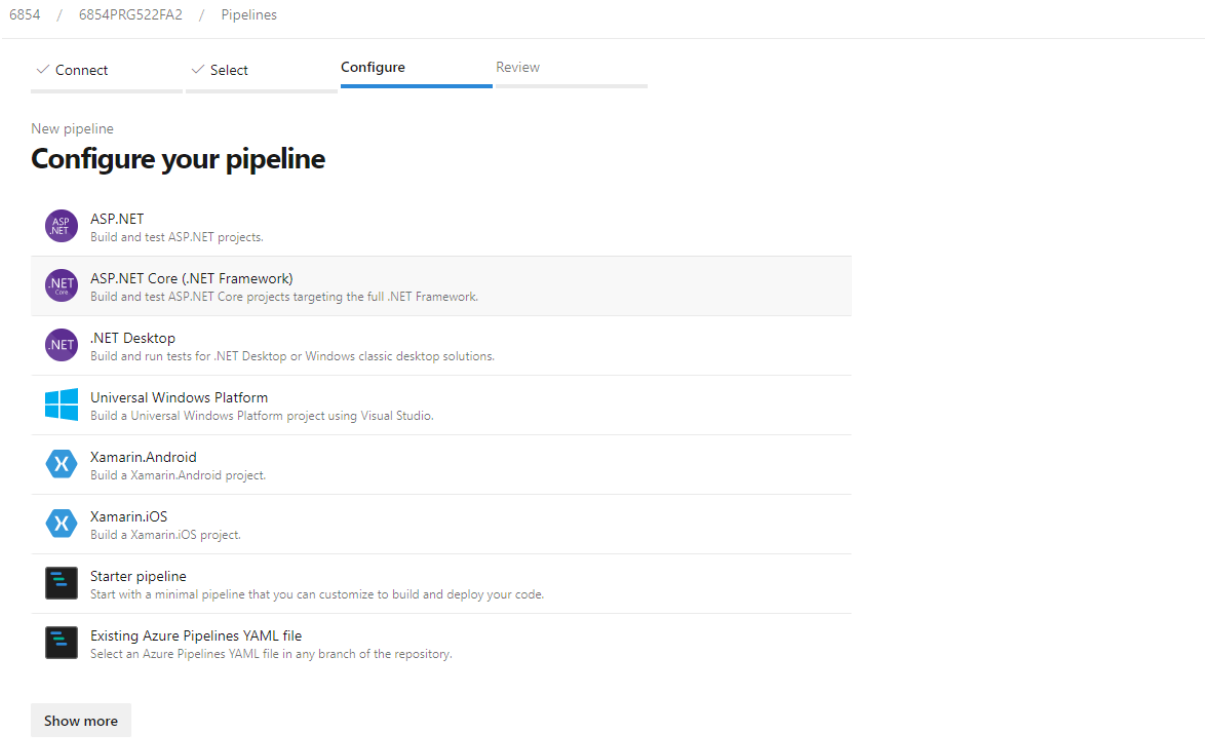
2.4

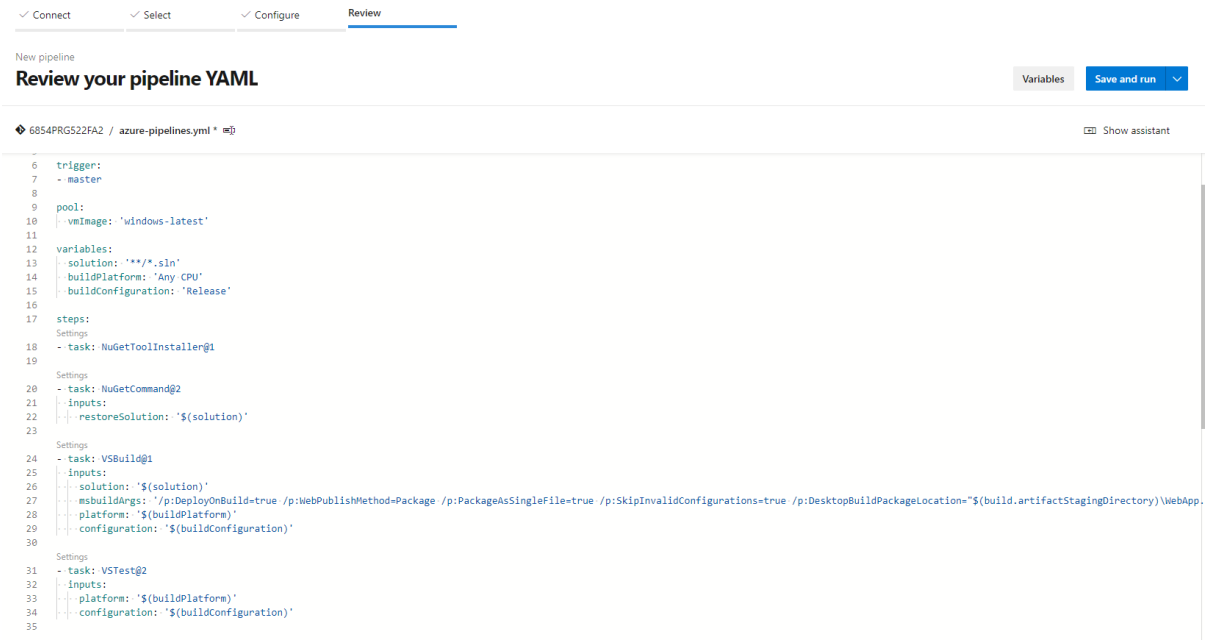

New delivery plan
A delivery plan shows you when work will be delivered across your teams. The plan overlays each team's sprint onto a familiar calendar view. You can view multiple backlogs and multiple teams across your whole organization. Learn more
Name
Required
Test Plan
Description
Add a description to make finding plans simpler and faster
Project
Team
Backlog
6854PRG522FA2
6854PRG522FA2 Team
Issues
Add team
Field criteria
Use field criteria to limit the work items appearing on your plan. This criteria applies to all users of the plan.
Field
Operator
Value
Automation status
Contains
Planned
Add criteria
Cancel
Create
Test Plan
Settings
today
Teams
August
6854PRG522FA...
Issues

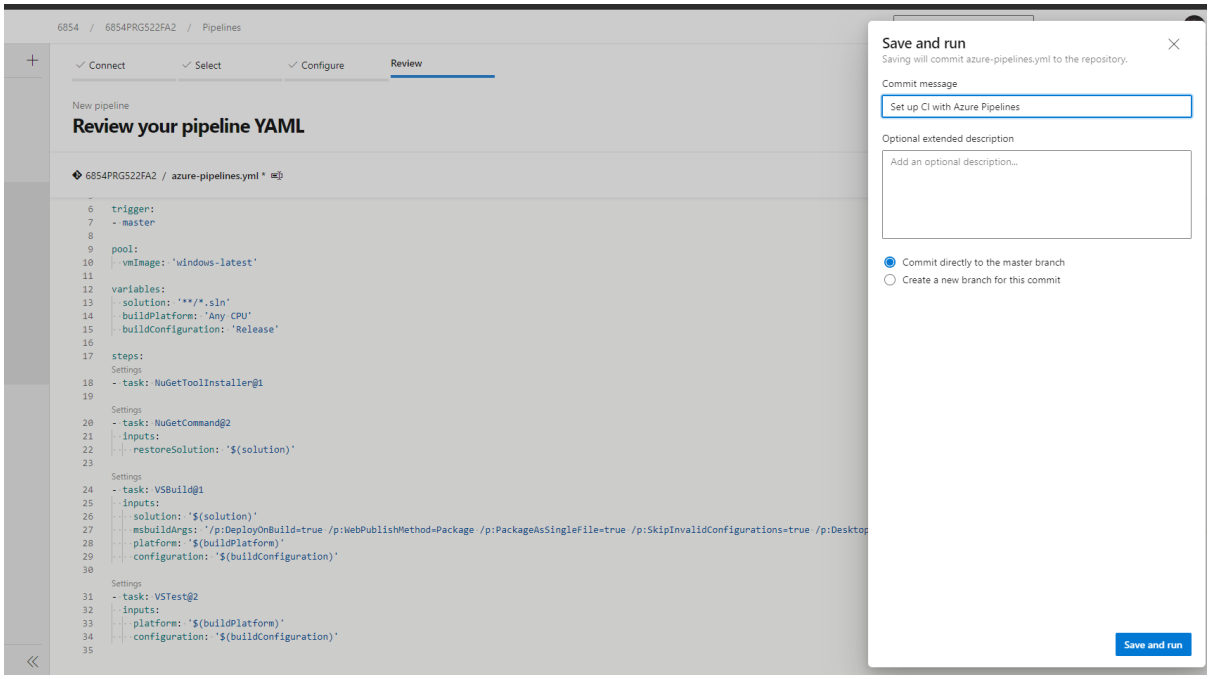
2.5

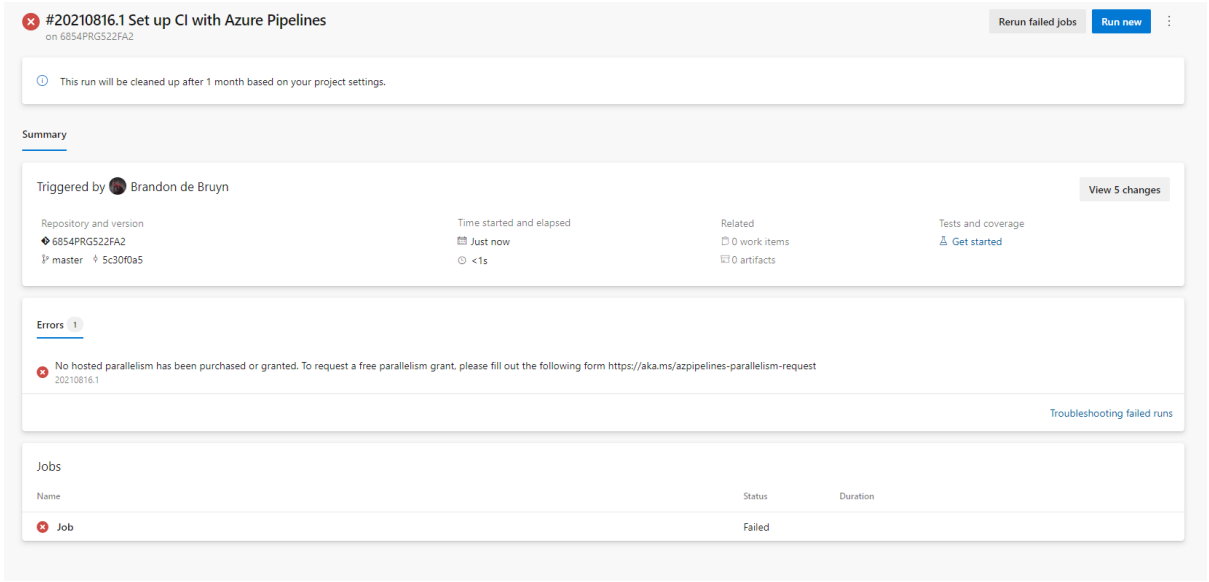

6854 / 6854PRG522FA2 / Pipelines
Connect
Select
Configure
Review
New pipeline
Where is your code?
Azure Repos Git YAML
Free private Git repositories, pull requests, and code search
Bitbucket Cloud YAML
Hosted by Atlassian
GitHub YAML
Home to the world's largest community of developers
GitHub Enterprise Server YAML
The self-hosted version of GitHub Enterprise
Other Git
Any generic Git repository
Subversion
Centralized version control by Apache
Use the classic editor to create a pipeline without YAML.


6854 / 6854PRG522FA2 / Pipelines
Connect
Select
Configure
Review
New pipeline
Select a repository
Filter by keywords
6854PRG522FA2
6854PRG522FA2


6854 / 6854PRG522FA2 / Pipelines
Connect
Select
Configure
Review
New pipeline
Configure your pipeline
ASP.NET
Build and test ASP.NET projects.
ASP.NET Core (.NET Framework)
Build and test ASP.NET Core projects targeting the full .NET Framework.
.NET Desktop
Build and run tests for .NET Desktop or Windows classic desktop solutions.
Universal Windows Platform
Build a Universal Windows Platform project using Visual Studio.
Xamarin.Android
Build a Xamarin.Android project.
Xamarin.iOS
Build a Xamarin.iOS project.
Starter pipeline
Start with a minimal pipeline that you can customize to build and deploy your code.
Existing Azure Pipelines YAML file
Select an Azure Pipelines YAML file in any branch of the repository.
Show more


Connect
Select
Configure
Review
New pipeline
Review your pipeline YAML
Variables
Save and run
6854PRG522FA2 / azure-pipelines.yml *
Show assistant
trigger:
- master
pool:
vmImage: 'windows-latest'
variables:
solution: '**/*.sln'
buildPlatform: 'Any CPU'
buildConfiguration: 'Release'
steps:
Settings
- task: NuGetToolInstaller@1
Settings
- task: NuGetCommand@2
inputs:
restoreSolution: '$(solution)'
Settings
- task: VSBuild@1
inputs:
solution: '$(solution)'
msbuildArgs: '/p:DeployOnBuild=true /p:WebPublishMethod=Package /p:PackageAsSingleFile=true /p:SkipInvalidConfigurations=true /p:DesktopBuildPackageLocation="$(build.artifactStagingDirectory)\WebApp.
platform: '$(buildPlatform)'
configuration: '$(buildConfiguration)'
Settings
- task: VSTest@2
inputs:
platform: '$(buildPlatform)'
configuration: '$(buildConfiguration)'


6854 / 6854PRG522FA2 / Pipelines
Connect
Select
Configure
Review
New pipeline
Review your pipeline YAML
6854PRG522FA2 / azure-pipelines.yml *
trigger:
- master
pool:
vmImage: 'windows-latest'
variables:
solution: '**/*.sln'
buildPlatform: 'Any CPU'
buildConfiguration: 'Release'
steps:
Settings
- task: NuGetToolInstaller@1
Settings
- task: NuGetCommand@2
inputs:
restoreSolution: '$(solution)'
Settings
- task: VSBuild@1
inputs:
solution: '$(solution)'
msbuildArgs: '/p:DeployOnBuild=true /p:WebPublishMethod=Package /p:PackageAsSingleFile=true /p:SkipInvalidConfigurations=true /p:Desktop
platform: '$(buildPlatform)'
configuration: '$(buildConfiguration)'
Settings
- task: VSTest@2
inputs:
platform: '$(buildPlatform)'
configuration: '$(buildConfiguration)'
Save and run
Saving will commit azure-pipelines.yml to the repository.
Commit message
Set up CI with Azure Pipelines
Optional extended description
Add an optional description...
Commit directly to the master branch
Create a new branch for this commit
Save and run


#20210816.1 Set up CI with Azure Pipelines
on 6854PRG522FA2
Rerun failed jobs
Run new
This run will be cleaned up after 1 month based on your project settings.
Summary
Triggered by Brandon de Bruyn
View 5 changes
Repository and version
6854PRG522FA2
master 5c30f0a5
Time started and elapsed
Just now
<1s
Related
0 work items
0 artifacts
Tests and coverage
Get started
Errors 1
No hosted parallelism has been purchased or granted. To request a free parallelism grant, please fill out the following form https://aka.ms/azpipelines-parallelism-request
20210816.1
Troubleshooting failed runs
Jobs
Name
Status
Duration
Job
Failed