Exam Session - Preview Exam: Microsoft DevOps Solutions (AZ-400)

cloudacademy.com/quiz/exam/3791556/results

#1

You are using PowerShell Desired State Configuration (DSC) to ensure that the state of each virtual machine in your test environment is identical. Which component must be running on a virtual machine and is responsible for verifying and updating the state of a node?

✓ Local configuration manager (LCM)

✗ Azure Resource Manager

✗ Build agent

✗ DSC agent

Explanation

The Local Configuration Manager (LCM) must be installed and running on the virtual machine to verify and update the node's state. If you use the Azure Automation through the Azure portal, when you add a node on the State Configuration page, the LCM is set up to manage the desired state configuration.

https://docs.microsoft.com/en-us/learn/modules/protect-vm-settings-with-dsc/2-what-is-azure-automation-state-configuration

#2

You are setting up a Git repository for a new project. You want to make sure that build artifacts saved in the project's bin/ directory on a developer's local machine are not added to the remote repository. What should you do to prevent these files from being added to the source control repository?

✓

Create a `.gitignore` file in the project root directory to add a line to mark the `bin/` directory as untracked.

✗

Grant developers read-only permissions for the `bin/` directory in the git repository.

✗

Create a `.ignore` file in the `bin/` directory.

✗

Modify the build script to delete build files or directories from the project directory after a successful build.

Explanation

A `.gitignore` file in the root of a project repository tells git which files or directories it should not track. Adding a pattern to the `.gitignore` file to ignore the `bin/` directory will ensure that developers do not accidentally add binary files generated by a local build.

https://docs.microsoft.com/en-us/learn/modules/upload-project-github/2-how-to-upload-to-github

#3

A development team is setting up a continuous integration pipeline using Azure Pipelines. The team is using GitHub as its source code repository. They would like the pipeline to trigger when a commit is made to the development branch. What is the recommended authentication mechanism for granting Azure pipelines access to the GitHub repository?

✓

Azure Pipelines GitHub App

✗

OAuth Authentication

✗

Personal Access Token (PAT)

✗

Username / Password

Explanation

While it is possible to use OAuth and Personal Access Token (PAT) authentication, the preferred approach is to install the Azure Pipelines GitHub App.

https://docs.microsoft.com/en-us/azure/devops/pipelines/repos/github?view=azure-devops&tabs=yaml#access-to-github-repositories
Covered in this lecture
Monitoring Code Quality
Course:Managing Code Quality and Security Policies with Azure DevOps

4m

#4

Your team plans to use Azure Automation and Desired State Configuration (DSC) to ensure that all the VMs used in your test and production environments have the same software and configurations. You have created a PowerShell DSC definition and saved it to a local file. Assume that you are doing this configuration using 'Desired State Configuration' in Azure Automation for an existing VM. From Azure portal, what steps are needed to use this definition and ensure that your VMs are all in a consistent state? (Choose 2 answers)

✓ Compile the PowerShell DSC definition to build a configuration.

✓ Add a node to register the existing VM and apply the DSC configuration.

✗ Modify the Azure Resource Manager (ARM) template associated with the existing VM.

✗ Configure PowerShell on the VM to enable DSC.

Explanation

Using Azure Automation and DSC, two primary steps are needed to get started: (1) compile the PowerShell DSC definition to build a configuration and (2) add the node to push the configuration to the virtual machine.

/course/implementing-azure-infrastructure-compliance-and-security/desired-state-configuration-dsc/
Covered in this lecture

Desired State Configuration (DSC)
Course:Implementing Azure Infrastructure Compliance and Security

6m

#5

Azure Monitor allows you to create alerts for systems and applications that notify you of problems that need attention in real-time. Which of the following statements is incorrect about creating alerts in Azure Monitor?

✓
An Alert can be associated with only one target resource.

✗
The type of target resource associated with an alert will determine the signal types available to build the alert condition.

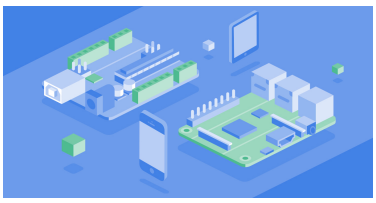
✗
Alerts are given a name, description, and a severity level.

✗
Alerts can be configured to trigger a specific action group, and different alerts can reuse an action group.

Explanation

A rule that makes up an alert can be associated with more than one target resource. A target resource can be things like an application or an azure resource. The target resource selected for an alert rule will determine the signal types available to build the rule condition.

https://docs.microsoft.com/en-us/learn/modules/incident-response-with-alerting-on-azure/2-explore-azure-monitor-alert-types
Covered in this lecture
Baselines and Noise
Course:Implementing Continuous Feedback with Azure DevOps



5m

#6

A development team with many team members is using Azure Pipelines to manage continuous integration for their project. The pipeline definition indicates that the pipeline should be triggered when a commit is made to the development branch: trigger: branches: include: - dev The team actively commits changes to the dev branch throughout the day and has noticed the current pipeline trigger definition results in many build runs. Which of the following actions is the best solution to reduce the number of builds run throughout the day and conserve build resources?

Add a `batch: true` definition to the trigger definition.

Use a scheduled trigger instead of a repository trigger.

Set `trigger: none` in the pipeline definition, and have developers add `/azp run` to their commit comments to initiate a build only when needed.

Add one or more parallel jobs to your build pipeline.

Explanation

The best choice in this scenario is to use the `batch` key in the pipeline definition and set it to `true`. Setting the batch flag to true will cause multiple commits to be grouped and run as a single pipeline run once a currently running build completes. Using the batch flag can help reduce the build resources needed for an active development team.

 https://docs.microsoft.com/en-us/azure/devops/pipelines/build/triggers?view=azure-devops

#7

You are using Azure Pipelines to build and deploy your application. You are already using static code analysis to detect security vulnerabilities with open source components you are using. You would like to add security penetration testing to your test deployment environment. Which of the following tools would be a good choice to provide penetration testing in the test deployment environment?

OWASP ZAP

TSLint

✗
Whitesource Bolt

✗
NUnit

Explanation

An example of a tool that can provide automated penetration testing as part of a CI / CD process is called OWASP ZAP. Recall, the Open Web Application Security Project Foundation (OWASP) is a non-profit group that aims to help organizations improve the way they test their software for security vulnerabilities. OWASP ZAP, which can perform both passive and active penetration testing on your web app.

You can add OWASP ZAP testing to your pipeline with the OWASP ZAP scanner task.

/course/managing-application-configuration-and-secrets-in-azure-1058/demo-penetration-testing/
Covered in this lecture
DEMO: Penetration Testing
Course:Managing Application Configuration and Secrets in Azure

5m

#8

Which branching strategy uses feature flags to limit any functionality that has been merged into the main branch before it is entirely ready for release?

✓
Release flow

✗
GitHub flow

✗
GitFlow

✗

Fork and pull

Explanation

Release flow is Azure DevOps' internal take on Trunk Based Development. With a release flow approach, all work is branched directly off the master trunk. This workflow approach focuses on the release schedule with the expectation to deploy code at the end of each sprint. Because deployment is not tied to a particular feature branch being completed, feature flags are needed to turn off incomplete feature work already committed to the main branch when the code is deployed.

https://docs.microsoft.com/en-us/azure/devops/learn/devops-at-microsoft/release-flow
Covered in this lecture
Summary
Course:Implementing Version Control on Azure Repos

3m

#9

Consider the following snippet from an Azure Pipeline definition file: stages: - stage: Stage A jobs: - job: ... - stage: Stage B jobs: - job: ... Which of the following statements about this pipeline definition is true? Assume that there are two or more build agents provisioned for this account.

✓
Stage A and Stage B will run **sequentially**.

✗
Stage A and Stage B will run in **parallel** if two build agents are available to handle the jobs for each stage.

✗
Stage A and Stage B will run in **parallel** if at least one build agent is available to handle the jobs for each stage.

✗
The pipeline definition is missing a required `parallel: true | false` keyword to indicate if the stages should run in parallel or sequentially.

Explanation

In the example snippet, Stage A and Stage B will run sequentially. If we wanted these stages to run in parallel, you could update the snippet to add a dependsOn key to Stage B like this:

```
stages:
- stage: Stage A
  jobs:
  - job:
    ...

- stage: Stage B
  dependsOn: []
  jobs:
  - job:
    ...
```

https://docs.microsoft.com/en-us/azure/devops/pipelines/process/stages?view=azure-devops&tabs=yaml#specify-dependencies

#10

A company will assist its clients with a new software migration that extends through each client's first three months of using the software. In the past, the most common problems clients experienced were errors related to Azure AD role and Azure resource role assignments.The company has enabled Azure Privileged Identity Management (PIM) to address this issue and will be assigning support staff to assist the client.Which role should the company assign to support staff to correct errors with Azure resource role assignments?

✓ Subscription Administrator

✗ Global Administrator

✗ Privileged Role Administrator

✗ Cloud Application Administrator

Explanation

For Azure AD roles in Privileged Identity Management, only a user who is in the Privileged Role Administrator or Global Administrator role can manage assignments for other administrators. Global Administrators, Security Administrators, Global Readers, and

Security Readers can also view assignments to Azure AD roles in Privileged Identity Management.

For Azure resource roles in Privileged Identity Management, only a subscription administrator, a resource Owner, or a resource User Access administrator can manage assignments for other administrators. Users who are Privileged Role Administrators, Security Administrators, or Security Readers do not by default have access to view assignments to Azure resource roles in Privileged Identity Management.

https://docs.microsoft.com/en-us/azure/active-directory/privileged-identity-management/pim-configure#who-can-do-what

#11

Which of the following statements describes a use case where using the Azure Monitor Log Streaming Service is a good choice to help identify an issue with your web application? (Choose 2 answers)

You are debugging an issue in a test environment and need to see the real-time output after making code changes and redeploying your application.

You are debugging an issue with a distributed application running on multiple instances.

You would like to monitor the system logs for the virtual machine hosting your application.

You would like to monitor the web server logs.

Explanation

Azure Monitor Log Streaming Service is a good choice if you are debugging an issue in a test environment and need to see the real-time output after making code changes and redeploying your application or if you would like to monitor the web server logs. If you have a distributed application that is deployed across multiple machines, the log streaming service is not the appropriate choice.

https://docs.microsoft.com/en-us/learn/modules/capture-application-logs-app-service/4-view-live-application-logging-activity-with-the-log-streaming-service

#12

You have just completed some work on a feature branch in your local git repository. You would like to share this code with another developer on your team. You are not ready to merge the code with the main development branch. What action should you take to share your code?

✓ Use the `git push` command to upload your local branch to the remote repository.

✗ Create a pull request for your branch.

✗ Create a zip file that includes all the changed files, and upload them to the git repository.

✗ Use the `git add` command to add your local branch to a remote repository.

Explanation

After completing work in a local branch, it is considered a best practice to push (save) your work to the remote repository. This step has two important purposes: (1) it serves as a back up for your work, and (2) it makes your work visible to the rest of the team. You can push your work even before you are ready to create a pull request. The git command you use to push code to the remote repository is `git push`.

https://docs.microsoft.com/en-us/azure/devops/repos/git/pushing?view=azure-devops&tabs=visual-studio

#13

A development team is currently using a Jenkins server to automatically build and test a Java-based application whenever changes are merged into the main development branch of their Git repository. Recently, the development team decided to migrate to Azure DevOps and is considering using an Azure-based alternative to Jenkins to automatically build and test their code. Which of the following Azure DevOps services is the most appropriate choice?

✓ Azure Pipelines

✗ Azure Artifacts

Azure Test Plans

GitHub Actions for Azure

Explanation

Azure Pipelines is a service that provides the ability to build, test, and deploy your application code. Azure Pipelines supports building a wide variety of projects developed using almost any programming language. Azure Pipelines offers features to help teams implement continuous integration and delivery using industry best practices.

/course/implementing-and-managing-azure-build-infrastructure/azure-pipelines/
Covered in this lecture
Azure Pipelines
Course:Implementing and Managing Azure Build Infrastructure

6m

#14

Which file type is used to define an Azure Resource Manager (ARM) template?

JSON file

YAML file

XML file

PowerShell script file

Explanation

An ARM template defines your project's infrastructure and configuration, and it is written using JavaScript Object Notation (JSON). Within an ARM template, you can specify the resources to deploy and the configuration for those resources. For more information about

the schema used to assemble an ARM template, take a look at the Azure ARM Template documentation.

https://docs.microsoft.com/en-us/azure/azure-resource-manager/templates/overview

#15

Your team has just connected your GitHub Enterprise repository to Azure Boards. The Azure Board you are using has three columns to manage work item progress: ToDo, Doing, Done. You have been working on work item 118 in Azure Boards and have pushed your code to the remote repository and created a pull request. When the pull request is approved and merged, you would like work item 118 in Azure Boards to automatically transition to the Done column. Which of the following actions will make the work item transition to the Done column when the pull request is merged? (Choose 2 answers)

In the pull request title, include the mention: `Fixes AB#118`

In the pull request description, include the mention: `Fixed AB#118`

In the pull request comment, include the mention: `Fixes AB#118`

In the pull request title, include the mention: `AB#118`

Explanation

Using Azure Boards with GitHub, it is possible to add mention tags to commit comments and to a pull request's title or description to automatically link your work in GitHub to work items in Azure Boards. If you would like to automatically transition a work item to the `Done` column in Azure Boards upon completion of a pull request, you will need to add `fix`, `fixes`, or `fixing` before the work item mention.

https://docs.microsoft.com/en-us/azure/devops/boards/github/link-to-from-github?view=azure-devops

Covered in this lecture

Lab 04: Clones Stages

Course:Implementing Continuous Delivery on Azure

9m

#16

The stakeholders for a software development project would like access to information about the progress of the project. The team has decided to create a dashboard that includes a real-time burnup chart to show the team's progress with completed work and a chart that shows the product build history. Which two statements are true regarding how this project dashboard can be created? (Choose 2 answers)

✓ The dashboard can be built using **Azure DevOps'** dashboard collaboration tool and the chart/widget catalog.

✗ Any user in the **Contributor** security group can create the dashboard.

✗ The dashboard can be built using **Azure Monitor** and selecting the appropriate charts from a chart/widget catalog.

✓ **Azure Boards** must be enabled for the project.

Explanation

Azure DevOps provides support to build dashboards that keep stakeholders and team members informed about your project's progress. To access the dashboard feature, open Azure DevOps services in the Azure portal, and select the "Dashboards" blade. From here, you can create a new dashboard or view an existing dashboard.

All members of the 'Project Valid Users' security group can view a dashboard by default, but to create or edit a dashboard, you must be a team admin, project admin, or have the appropriate dashboard permissions.

Finally, in the scenario specified in this example, the team would like a burn-up chart on the dashboard to provide information about completed work items. For this information, Azure Boards must be enabled for the project.

https://docs.microsoft.com/en-us/azure/devops/report/dashboards/dashboards?view=azure-devops

#17

Your team would like to get work item event notifications in Microsoft Teams from Azure Boards when their project board is updated. You have decided to use the Azure Boards app for Microsoft Teams. Which of the following statements about integrating Azure Boards with Microsoft Teams is correct? (Choose 2 answers)

Any member of the Azure Boards Project **Contributors** security group can set up an Azure Board subscription in a Teams channel.

The Azure Boards app for Microsoft Teams allows team members to create work items from within a Teams channel.

A Teams channel can be linked to one or more Azure Boards projects.

A Teams channel can subscribe to one or more work item events.

Explanation

To set up an Azure Board subscription in a Teams channel, a user must be a member of the Azure Boards Project Administrators group or Team Administrators group. Once configured, it is possible to subscribe to one or more work item events in a given channel. Examples of work item events are: "work item created" or "work item updated." It is possible to create a work item directly from within the Teams channel. Finally, a Teams channel can only be linked to one Azure Boards project.

 https://docs.microsoft.com/en-us/azure/devops/boards/integrations/boards-teams?view=azure-devops

#18

A DevOps team is building a continuous integration pipeline for a software project using Azure Pipelines. Because the team already has an Azure virtual machine dedicated to building their application, they would like to configure Azure Pipelines to use the existing VM during the build process. Which of the following is required to allow Azure Pipelines to interact with this self-hosted build machine?

Build agent software needs to be installed on the virtual machine.

Docker needs to be installed on the virtual machine.

✕

The build machine must be running the Windows operating system.

✕

PowerShell needs to be installed on the virtual machine.

Explanation

With Azure Pipelines, a build agent is responsible for performing build tasks. There are two types of build agents: (1) Microsoft-hosted and (2) self-hosted. Because the DevOps team in this scenario already has a build infrastructure set up, using a self-hosted build agent is an appropriate choice. The build agent will need to be installed on the existing build machine to connect to Azure Pipelines and receive notifications about build jobs.

https://docs.microsoft.com/en-us/learn/modules/host-build-agent/2-choose-a-build-agent
Covered in this lecture
Azure Build Agents
Course:Implementing and Managing Azure Build Infrastructure

7m

#19

You are using Azure Key Vault to store user credentials as template parameters.You need to create a new key vault (CA_Vault.092022) and add a secret (092022_Password), so you type the code below into Azure CLI. az group create --name ExampleGroup --location centralusaz keyvault create \ --name ExampleVault \ --resource-group ExampleGroup \ --location centralus \ --enabled-for-template-deployment true__missing__ --vault-name CA_Vault.092022 --name "Trust_Is_Not_A_Control_CA0922" --value "092022_Password"What choice below correctly completes the Azure CLI command?

✕

Az keyvault update

✕

Az keyvault set-policy

✕

Set-AzKeyVaultAccessPolicy

Az keyvault secret set

Explanation

To create a new key vault and add a secret, use:

```
az group create --name ExampleGroup --location centralus
az keyvault create \
  --name ExampleVault \
  --resource-group ExampleGroup \
  --location centralus \
  --enabled-for-template-deployment true
az keyvault secret set --vault-name ExampleVault --name "ExamplePassword" --value "hVFkk965BuUv"
```

https://docs.microsoft.com/en-us/azure/azure-resource-manager/templates/key-vault-parameter?tabs=azure-cli

#20

You have been asked to look at user behavior analytics to understand how your customers are using your web applications. Specifically, you would like to know which pages users most often navigate to after visiting your application's homepage. Which of the following Azure Application Insights features allows you to visualize user navigation patterns?

User Flows

Cohorts

Funnels

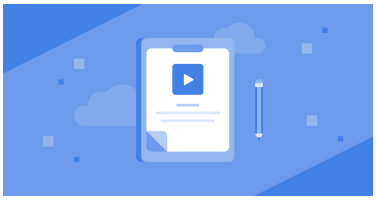
Usage analytics

Explanation

Application Insights provides several features to help track user behavior analytics in your application. One of these is User Flows and is used to track user navigation patterns providing a visual graph showing how users go from one page to the next in an application.

https://docs.microsoft.com/en-us/azure/azure-monitor/app/usage-flows

Covered in this lecture
SRE, Other Frameworks, and Trends
Course:SRE, Other Frameworks And Trends



12m

#21

Your development team is creating a new Azure DevOps project. The team has decided to create a project wiki to document team processes and project information within Azure DevOps. Which of the following statements are true about using an Azure DevOps project wiki? (Choose 2 answers)

✓ Members of the **Contributors** security group can create and edit a project wiki page.

✓ Members of the **Stakeholder** security group **do not** have permission to create a project wiki.

✗ Permissions to access the wiki can be granted on a per-page basis.

✗ When you create an Azure DevOps team project, a Git repository for a project wiki is created by default.

Explanation

With Azure DevOps services, a collaboration wiki can be created for any project. By default, a wiki and the corresponding Git repository is **not** automatically created when a team project is created. Instead, a member of the Project Administrators security group must create the wiki. Once created, any member of the Contributors group can create or edit a wiki page.

Stakeholders have only read access to a project wiki and are not permitted to create or edit a wiki project or wiki page. Permissions to access a wiki or at the project level and not on a per-page basis.

https://docs.microsoft.com/en-us/azure/devops/project/wiki/wiki-create-repo?view=azure-devops&tabs=browser

#22

You are setting up a release pipeline to deploy your application to a development environment after a pull request is merged with the development branch. This pipeline should also deploy the development build to the test environment each day at 3 A.M. To build this pipeline, you have decided to use the classic user interface editor in Azure Pipelines. What steps do you need to take to set up this pipeline? Choose from the following steps: Add an artifact to the pipeline with a source type "build". Add a stage named "dev-deploy" to the pipeline to deploy the application to the development environment. Add a stage named "test-deploy" to the pipeline to deploy the application to the test environment.

✓

- Step (1) configured with a **continuous deployment trigger**.
- Step (2) configured with an **after release trigger**.
- Step (3) configured with an **after stage trigger** set to "dev-deploy" and scheduled to trigger at 3 AM

✗

- Step (1) configured with a **pull request trigger**
- Step (2) configured with a **manual trigger**
- Step (3) configured with an **after stage trigger set to "dev-deploy"** and scheduled to trigger at 3 AM.

✗

- Step (1) configured with a **continuous deployment trigger**.
- Step (2) configured with a **scheduled trigger at 3 AM**.
- Step (3) configured with an **after stage trigger** set to "dev-deploy".

✗

- Step (1) configured with a pull request trigger.
- Step (2) configured with an **after release trigger** scheduled to trigger at 3AM.
- Step (3) configured with an **after release trigger**.

Explanation

The classic user interface editor in Azure Pipelines for building a release pipeline has two sections: (1) An area to add artifacts and (2) an area to add pipeline stages. A release pipeline starts with the artifact, and for the release pipeline in this scenario, the artifact is source type "Build" with a continuous deployment trigger. Next, two stages are needed: one for the development environment and one for the test environment. The development environment stage should include an "after release" trigger that is fired whenever a new release is available. And the test environment stage should include an "after stage" trigger with a schedule configuration that indicates that it should occur at the specified time after the development stage completes.

/course/implementing-continuous-delivery-on-azure/lab-02-set-up-stages/

Covered in this lecture
Lab 02: Set Up Stages
Course:Implementing Continuous Delivery on Azure

6m

#23

You have been asked to use Azure Monitor and create an alert that will fire when any virtual machine in a resource group has not logged a heartbeat in the last hour. To create this alert, you need to build a query using the Kusto Query Language (KQL). You have come up with the following query but are missing the keyword used to aggregate the results: Heartbeat | where TimeGenerated < ago(1d) | where ResourceGroup == "resource-group-name" | _____??_____ max(TimeGenerated) by Computer What is the keyword missing from this query?

✓ `summarize`

✗ `join`

✗ `group by`

✗ `union`

Explanation

Writing log queries is common when building alerts in Azure Monitor, and it is helpful to understand how to use KQL to write these queries. For the query given in this example, the missing keyword used to indicate an aggregation is ' `summarize` '. If you are not familiar with Kusto and would like to learn more, check out this Getting started with Kusto article.

https://docs.microsoft.com/en-us/azure/azure-monitor/insights/monitor-vm-azure

#24

You have created a ARM service connection in your Azure Pipeline between external software and an Azure VM with a managed service identity. The connection is working properly, but then IT discovers an issue with the Azure Pipeline and replaces it with a new one. As a result of this update, you discover the service connection no longer functions.What is the most efficient and effective step to address this issue?

✗ Edit the project permissions for the existing ARM service connection using Azure Portal.

✓ Edit the pipeline permissions for the existing ARM service connection using Azure Portal.

✗ Update the existing managed service identity in Azure AD

✗ Update the existing managed service identity in Azure AD. Replace the Azure Pipeline service connection with an Azure PowerShell command.

Explanation

The most efficient and effective solution is to update the pipeline permissions for existing ARM service connection. The other solutions either fail to address the actual problem by editing the project permissions or updating the existing managed service ID, or would be overkill by replacing the service connection rather than editing it.

https://docs.microsoft.com/en-us/azure/devops/pipelines/library/service-endpoints?view=azure-devops&tabs=yaml#pipeline-permissions

#25

A development team is building on a common NuGet package to be used by several other development teams in their organization. The team has decided to make their package available to the other teams using Azure Artifacts. What is the name of the entity that stores and manages packages in Azure Artifacts?

✓
Artifact feed

✗
Artifact repository

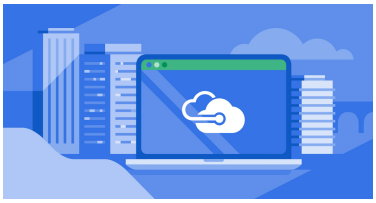
✗
Artifact library

✗
Artifact pipeline

Explanation

If you would like to share and manage packages in Azure Artifacts, you will need to create an artifact feed. An artifact feed can store and manage packages of any type (NuGet, Python, Maven, etc.). Additionally, an artifact feed can be used as a repository for your project's external package dependencies.

🔗 /course/implementing-dependency-management-with-azure-devops/what-is-dependency-management/
Covered in this lecture
What is Dependency Management?
Course:Implementing Dependency Management With Azure DevOps



7m

🔖
#26

Your team is using a GitFlow workflow and has decided merges for all pull requests should keep the history as it happened for the feature branch being merged into the target (develop) branch. Which of the following merge strategies should you use?

✓
Basic merge (no fast-forward)

✗
Squash merge

✗

Rebase and fast-forward

Rebase with a merge commit

Explanation

The merge strategy you select when merging a pull request will impact the target branch's historical view. For this reason, many teams like to enforce a merge strategy so that when they are viewing the history of a branch, it is consistent over time. The basic merge with no fast forward will preserve the commit history exactly as it happened and create a commit record in the target branch when the pull request is merged.

https://docs.microsoft.com/en-us/azure/devops/repos/git/branch-policies?view=azure-devops#limit-merge-types