vce trainer



Reference Solution for AZ-400.75q

AZ-400

AZ-400

Microsoft Azure DevOps Solutions

Score: 800/1000

Licensed to Berend Post berend.post@it-university.nl

Version:

Time Limit: 120 Minutes

Licensed to Berend Post berend.post@it-university.nl

Design a DevOps Strategy

(6 questions)

Question 1

Your company plans to use an agile approach to software development.

You need to recommend an application to provide communication between members of the development team who work in locations around the world. The applications must meet the following requirements:

Provide the ability to isolate the members of different project teams into separate communication channels and to keep a history of the chats within those channels.
Be available on Windows 10, Mac OS, iOS, and Android operating systems.
Provide the ability to add external contractors and suppliers to projects.
Integrate directly with Azure DevOps.

What should you recommend?

- ☐ Microsoft Project
- ☐ Bamboo
- ☐ Octopus
- ☒ Slack

Explanation:

Explanation:

Slack is a popular team collaboration service that helps teams be more productive by keeping all communications in one place and easily searchable from virtually anywhere. All your messages, your files, and everything from Twitter, Dropbox, Google Docs, Azure DevOps, and more all together. Slack also has fully native apps for iOS and Android to give you the full functionality of Slack wherever you go.

Integrated with Azure DevOps

This integration keeps your team informed of activity happening in its Azure DevOps projects. With this integration, code check-ins, pull requests, work item updates, and build events show up directly in your team's Slack channel.

Note: Microsoft Teams would also be a correct answer, but it is not an option here.

References:

https://marketplace.visualstudio.com/items?itemName=ms-vsts.vss-services-slack

Licensed to Berend Post berend.post@it-university.nl

Question 2

During a code review, you discover many quality issues. Many modules contain unused variables and empty catch blocks.

You need to recommend a solution to improve the quality of the code.

What should you recommend?

- ☐ In a Grunt build task, select Enabled from Control Options.
- ☒ In a Maven build task, select Run PMD.
- ☐ In a Xcode build task, select Use xcpretty from Advanced.
- ☐ In a Gradle build task, select Run Checkstyle.

Explanation:

Explanation:

PMD is a source code analyzer. It finds common programming flaws like unused variables, empty catch blocks, unnecessary object creation, and so forth.

There is an Apache Maven PMD Plugin which allows you to automatically run the PMD code analysis tool on your project's source code and generate a site report with its results.

Incorrect Answers:

C: xcpretty is a fast and flexible formatter for xcodebuild.

References: https://pmd.github.io/

Licensed to Berend Post berend.post@it-university.nl

Question 3

Your company has an on-premises Bitbucket Server that is used for Git-based source control. The server is protected by a firewall that blocks inbound Internet traffic.

You plan to use Azure DevOps to manage the build and release processes.

Which two components are required to integrate Azure DevOps and Bitbucket? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- ☐ a deployment group
- ☐ a Microsoft-hosted agent
- ☐ service hooks
- ☒ a self-hosted agent
- ☒ an External Git service connection

Explanation:

Explanation:

E: GitLab CI/CD can be used with GitHub or any other Git server such as BitBucket. Instead of moving your entire project to GitLab, you can connect your external repository to get the benefits of GitLab CI/CD.

Note: When a pipeline uses a remote, 3rd-party repository host such as Bitbucket Cloud, the repository is configured with webhooks that notify Azure Pipelines Server or TFS when code has changed and a build should be triggered. Since on-premises installations are normally protected behind a firewall, 3rd-party webhooks are unable to reach the on-premises server. As a workaround, you can use the External Git repository type which uses polling instead of webhooks to trigger a build when code has changed.

References: https://docs.microsoft.com/en-us/azure/devops/pipelines/repos/pipeline-options-for-git

Licensed to Berend Post berend.post@it-university.nl

Question 4

Your development team is building a new web solution by using the Microsoft Visual Studio integrated development environment (IDE).

You need to make a custom package available to all the developers. The package must be managed centrally, and the latest version must be available for consumption in Visual Studio automatically.

Which three actions should you perform? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- ☒ Publish the package to a feed.
- ☒ Create a new feed in Azure Artifacts.
- ☐ Upload a package to a Git repository.
- ☐ Add the package URL to the Environment settings in Visual Studio.
- ☒ Add the package URL to the NuGet Package Manager settings in Visual Studio.
- ☐ Create a Git repository in Azure Repos.

Explanation:

Explanation:

B: By using your custom NuGet package feed within your Azure DevOps (previously VSTS) instance, you'll be able to distribute your packages within your organization with ease.

Start by creating a new feed.

A: We can publish, pack and push the built project to our NuGet feed.

E: Consume your private NuGet Feed

Go back to the Packages area in Azure DevOps, select your feed and hit "Connect to feed". You'll see some instructions for your feed, but it's fairly simple to set up.

Just copy your package source URL, go to Visual Studio, open the NuGet Package Manager, go to its settings and add a new source. Choose a fancy name, insert the source URL. Done.

Search for your package in the NuGet Package Manager and it should appear there, ready for installation. Make sure to select the appropriate feed (or just all feeds) from the top right select box.

References:

https://medium.com/medialesson/get-started-with-private-nuget-feeds-in-azure-devops-8c7b5f022a68

Licensed to Berend Post berend.post@it-university.nl

Question 5

You are developing a multi-tier application. The application will use Azure App Service web apps as the front end and an Azure SQL database as the back end. The application will use Azure functions to write some data to Azure Storage.

You need to send the Azure DevOps team an email message when the front end fails to return a status code of 200.

Which feature should you use?

- ☐ Service Map in Azure Log Analytics
- ☐ Availability tests in Azure Application Insights
- ☐ Profiler in Azure Application Insights
- ☒ Application Map in Azure Application Insights

Explanation:

Explanation:

Application Map helps you spot performance bottlenecks or failure hotspots across all components of your distributed application. Each node on the map represents an application component or its dependencies; and has health KPI and alerts status.

Incorrect Answers:

A: Service Map automatically discovers application components on Windows and Linux systems and maps the communication between services. You can use it to view your servers as you think of them--interconnected systems that deliver critical services. Service Map shows connections between servers, processes, and ports across any TCP-connected architecture with no configuration required, other than installation of an agent.

References: https://docs.microsoft.com/en-us/azure/azure-monitor/app/app-map

Licensed to Berend Post berend.post@it-university.nl

Question 6

You manage build pipelines and deployment pipelines by using Azure DevOps.

Your company has a team of 500 developers. New members are added continually to the team.

You need to automate the management of users and licenses whenever possible.

Which task must you perform manually?

- ☐ modifying group memberships
- ☐ adding users
- ☐ assigning entitlements
- ☒ procuring licenses

Explanation:

Incorrect Answers:

A: You can seamlessly replace existing solutions with group-based licensing to more easily manage licenses in Azure DevOps. You can use Group rules.

C: Member Entitlement Management APIs allow managing Entitlements that include -

License

Extensions

Project/Team memberships

References:

https://docs.microsoft.com/en-us/azure/devops/organizations/accounts/migrate-to-group-based-resource-management?view=vsts&tabs=new-nav

https://docs.microsoft.com/en-us/rest/api/azure/devops/memberentitlementmanagement/?view=azure-devops-rest-5.0

Licensed to Berend Post berend.post@it-university.nl

Implement DevOps Development Processes

(19 questions)

Question 7

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You need to recommend an integration strategy for the build process of a Java application. The solution must meet the following requirements:

The builds must access an on-premises dependency management system.
The build outputs must be stored as Server artifacts in Azure DevOps.
The source code must be stored in a Git repository in Azure DevOps.

Solution: Configure the build pipeline to use a Hosted VS 2017 agent pool. Include the Java Tool Installer task in the build pipeline.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation:

Explanation:

Instead use Octopus Tentacle.

References:

https://explore.emtecinc.com/blog/octopus-for-automated-deployment-in-devops-models

Licensed to Berend Post berend.post@it-university.nl

Question 8

You have an Azure DevOps organization named Contoso, an Azure DevOps project named Project1, an Azure subscription named Sub1, and an Azure key vault named vault1.

You need to ensure that you can reference the values of the secrets stored in vault1 in all the pipelines of Project1. The solution must prevent the values from being stored in the pipelines.

What should you do?

- ☒ Create a variable group in Project1.
- ☐ Add a secure file to Project1.
- ☐ Modify the security settings of the pipelines.
- ☐ Configure the security policy of Contoso.

Explanation:

Explanation:

Use a variable group to store values that you want to control and make available across multiple pipelines.

References:

https://docs.microsoft.com/en-us/azure/devops/pipelines/library/variable-groups

Licensed to Berend Post berend.post@it-university.nl

Question 9

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You need to recommend an integration strategy for the build process of a Java application. The solution must meet the following requirements:

The builds must access an on-premises dependency management system.
The build outputs must be stored as Server artifacts in Azure DevOps.
The source code must be stored in a Git repository in Azure DevOps.

Solution: Configure an Octopus Tentacle on an on-premises machine. Use the Package Application task in the build pipeline.

Does this meet the goal?

- ☒ Yes
- ☐ No

Explanation:

Explanation:

Octopus Deploy is an automated deployment server that makes it easy to automate deployment of ASP.NET web applications, Java applications, NodeJS application and custom scripts to multiple environments.

Octopus can be installed on various platforms including Windows, Mac and Linux. It can also be integrated with most version control tools including VSTS and GIT.

When you deploy software to Windows servers, you need to install Tentacle, a lightweight agent service, on your Windows servers so they can communicate with the Octopus server.

When defining your deployment process, the most common step type will be a package step. This step deploys your packaged application onto one or more deployment targets.

When deploying a package you will need to select the machine role that the package will be deployed to.

References:

Licensed to Berend Post berend.post@it-university.nl

https://octopus.com/docs/deployment-examples/package-deployments

https://explore.emtecinc.com/blog/octopus-for-automated-deployment-in-devops-models

Question 10

You have an Azure Resource Manager template that deploys a multi-tier application.

You need to prevent the user who performs the deployment from viewing the account credentials and connection strings used by the application.

What should you use?

- ☒ Azure Key Vault
- ☐ a Web.config file
- ☐ an Appsettings.json file
- ☐ an Azure Storage table
- ☐ an Azure Resource Manager parameter file

Explanation:

Explanation:

When you need to pass a secure value (like a password) as a parameter during deployment, you can retrieve the value from an Azure Key Vault. You retrieve the value by referencing the key vault and secret in your parameter file. The value is never exposed because you only reference its key vault ID. The key vault can exist in a different subscription than the resource group you are deploying to.

References: https://docs.microsoft.com/en-us/azure/azure-resource-manager/resource-manager-keyvault-parameter

Licensed to Berend Post berend.post@it-university.nl

Question 11

Your team uses an agile development approach.

You need to recommend a branching strategy for the team's Git repository. The strategy must meet the following requirements.

Provide the ability to work on multiple independent tasks in parallel.
Ensure that checked-in code remains in a releasable state always.
Ensure that new features can be abandoned at any time.
Encourage experimentation.

What should you recommend?

- ☐ a single long-running branch
- ☐ multiple long-running branches
- ☐ a single fork per team member
- ☒ a single-running branch with multiple short-lived topic branches

Explanation:

Explanation:

Topic branches, however, are useful in projects of any size. A topic branch is a short-lived branch that you create and use for a single particular feature or related work. This is something you've likely never done with a VCS before because it's generally too expensive to create and merge branches. But in Git it's common to create, work on, merge, and delete branches several times a day.

Reference:

https://git-scm.com/book/en/v2/Git-Branching-Branching-Workflows

Question 12

Your company uses cloud-hosted Jenkins for builds.

You need to ensure that Jenkins can retrieve source code from Azure Repos.

Which three actions should you perform? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- ☐ Create a webhook in Jenkins.
- ☒ Add the Team Foundation Server (TFS) plug-in to Jenkins.
- ☐ Add a domain to your Jenkins account.
- ☒ Create a personal access token in your Azure DevOps account.
- ☒ Create a service hook in Azure DevOps.

Explanation:

Licensed to Berend Post berend.post@it-university.nl

Explanation:

B: Jenkins' built-in Git Plugin or Team Foundation Server Plugin can poll a Team Services repository every few minutes and queue a job when changes are detected.

D: Use Azure DevOps/ Visual Studio Team Services to create an access token, and use th

E: For those who need tighter integration, Team Services provides two additional ways to achieve it: 1) the Jenkins Service Hook, and 2) Jenkins build and release tasks.)

References:

https://blogs.msdn.microsoft.com/devops/2017/04/25/vsts-visual-studio-team-services-integration-with-jenkins/

http://www.aisoftwarellc.com/blog/post/how-to-setup-automated-builds-using-jenkins-and-visual-studio-team-foundation-server/2044

Question 13

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You need to recommend an integration strategy for the build process of a Java application. The solution must meet the following requirements:

The builds must access an on-premises dependency management system.
The build outputs must be stored as Server artifacts in Azure DevOps.
The source code must be stored in a Git repository in Azure DevOps.

Solution: Install and configure a self-hosted build agent on an on-premises machine. Configure the build pipeline to use the Default agent pool. Include the Java Tool Installer task in the build pipeline.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation:

Explanation:

Instead use Octopus Tentacle.

 Licensed to Berend Post berend.post@it-university.nl

References:

https://explore.emtecinc.com/blog/octopus-for-automated-deployment-in-devops-models

Question 14

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You integrate a cloud-hosted Jenkins server and a new Azure DevOps deployment.

You need Azure DevOps to send a notification to Jenkins when a developer commits changes to a branch in Azure Repos.

Solution: You create a service hook subscription that uses the code pushed event.

Does this meet the goal?

- ☒ Yes
- ☐ No

Explanation:

Explanation:

You can create a service hook for Azure DevOps Services and TFS with Jenkins.

References:

https://docs.microsoft.com/en-us/azure/devops/service-hooks/services/jenkins

Licensed to Berend Post berend.post@it-university.nl

Question 15

Your company uses Azure DevOps.

Only users who have accounts in Azure Active Directory can access the Azure DevOps environment.

You need to ensure that only devices that are connected to the on-premises network can access the Azure DevOps environment.

What should you do?

- ☐ Assign the Stakeholder access level all users.
- ☐ In Azure Active Directory, configure risky sign-ins.
- ☐ In Azure DevOps, configure Security in Project Settings.
- ☒ In Azure Active Directory, configure conditional access.

Explanation:

Explanation:

Conditional Access is a capability of Azure Active Directory. With Conditional Access, you can implement automated access control decisions for accessing your cloud apps that are based on conditions.

Conditional Access policies are enforced after the first-factor authentication has been completed.

References:

https://docs.microsoft.com/en-us/azure/active-directory/conditional-access/overview

Question 16

Your company has a project in Azure DevOps for a new web application.

The company identifies security as one of the highest priorities.

You need to recommend a solution to minimize the likelihood that infrastructure credentials will be leaked.

What should you recommend?

- ☐ Add a Run Inline Azure PowerShell task to the pipeline.
- ☒ Add a PowerShell task to the pipeline and run Set-AzureKeyVaultSecret.
- ☐ Add a Azurre Key Vault task to the pipeline.
- ☐ Add Azure Key Vault references to Azure Resource Manger templates.

Explanation:

Explanation:

Licensed to Berend Post berend.post@it-university.nl

Azure Key Vault provides a way to securely store credentials and other keys and secrets.

The Set-AzureKeyVaultSecret cmdlet creates or updates a secret in a key vault in Azure Key Vault.

References:

https://docs.microsoft.com/en-us/powershell/module/azurerm.keyvault/set-azurekeyvaultsecret

Question 17

You are automating the build process for a Java-based application by using Azure DevOps.

You need to add code coverage testing and publish the outcomes to the pipeline.

What should you use?

- ☒ Cobertura
- ☐ Bullseye Coverage
- ☐ MSTest
- ☐ Coverlet
- ☐ NUnit
- ☐ Coverage.py

Explanation:

Explanation:

Use Publish Code Coverage Results task in a build pipeline to publish code coverage results to Azure Pipelines or TFS, which were produced by a build in Cobertura or JaCoCo format.

References:

https://docs.microsoft.com/en-us/azure/devops/pipelines/tasks/test/publish-code-coverage-results

Licensed to Berend Post berend.post@it-university.nl

Question 18

You are designing the development process for your company.

You need to recommend a solution for continuous inspection of the company's code base to locate common code patterns that are known to be problematic.

What should you include in the recommendation?

- ☐ Microsoft Visual Studio test plans
- ☐ Gradle wrapper scripts
- ☒ SonarCloud analysis
- ☐ the JavaScript task runner

Explanation:

Explanation:

SonarCloud is a cloud service offered by SonarSource and based on SonarQube. SonarQube is a widely adopted open source platform to inspect continuously the quality of source code and detect bugs, vulnerabilities and code smells in more than 20 different languages.

Note: The SonarCloud Azure DevOps extension brings everything you need to have your projects analyzed on SonarCloud very quickly.

Incorrect Answers:

A: Test plans are used to group together test suites and individual test cases. This includes static test suites, requirement-based suites, and query-based suites.

References:

https://docs.travis-ci.com/user/sonarcloud/

https://sonarcloud.io/documentation/integrations/vsts/

Licensed to Berend Post berend.post@it-university.nl

Question 19

DRAG DROP

You are configuring Azure Pipelines for three projects in Azure DevOps as shown in the following table.

Project name	Project Details
Project1	The project team provides preconfigured YAML files that it wants to use to manage future pipeline configuration changes.
Project2	The sensitivity of the project requires that the source code be hosted on the managed Windows server on your company's network.
Project3	The project team requires a centralized version control system to ensure that developers work with the most recent version.

Which version control system should you recommend for each project? To answer, drag the appropriate version control systems to the correct projects. Each version control system may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

Version Control Systems

- Assembla Subversion
- Bitbucket Cloud
- Git in Azure Repos
- GitHub Enterprise

Answer Area

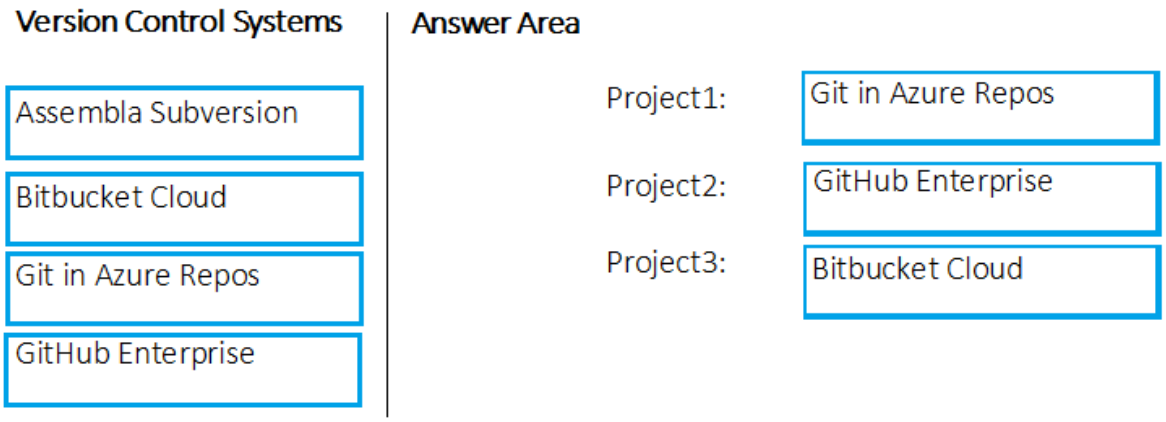
Project1: [ ]

Project2: [ ]

Project3: [ ]

Licensed to Berend Post berend.post@it-university.nl

Solution:



Explanation:

Explanation:

Project1:Git in Azure Repos

Project2: Github Enterprise

GitHub Enterprise is the on-premises version of GitHub.com. GitHub Enterprise includes the same great set of features as GitHub.com but packaged for running on your organization's local network. All repository data is stored on machines that you control, and access is integrated with your organization's authentication system (LDAP, SAML, or CAS).

Project3: Bitbucket cloud

One downside, however, is that Bitubucket does not include support for SVN but this can be easily amended migrating the SVN repos to Git with tools such as SVN Mirror for Bitbucket .

Note: SVN is a centralized version control system.

Incorrect Answers:

Bitbucket:

Bitbucket comes as a distributed version control system based on Git.

Note: A source control system, also called a version control system, allows developers to collaborate on code and track changes. Source control is an essential tool for multi-developer projects.

Licensed to Berend Post berend.post@it-university.nl

Our systems support two types of source control: Git (distributed) and Team Foundation Version Control (TFVC). TFVC is a centralized, client-server system. In both Git and TFVC, you can check in files and organize files in folders, branches, and repositories.

References:

https://www.azuredevopslabs.com/labs/azuredevops/yaml/

https://enterprise.github.com/faq

Question 20

Your company builds a multi-tier web application.

You use Azure DevOps and host the production application on Azure virtual machines.

Your team prepares an Azure Resource Manager template of the virtual machine that you will use to test new features.

You need to create a staging environment in Azure that meets the following requirements:

Minimizes the cost of Azure hosting
Provisions the virtual machines automatically
Uses the custom Azure Resource Manager template to provision the virtual machines

What should you do?

- ☐ In Azure Cloud Shell, run Azure CLI commands to create and delete the new virtual machines in a staging resource group.
- ☐ In Azure DevOps, configure new tasks in the release pipeline to deploy to Azure Cloud Services.
- ☐ From Azure Cloud Shell, run Azure PowerShell commands to create and delete the new virtual machines in a staging resource group.
- ☒ In Azure DevOps, configure new tasks in the release pipeline to create and delete the virtual machines in Azure DevTest Labs.

Explanation:

Explanation:

You can use the Azure DevTest Labs Tasks extension that's installed in Azure DevOps to easily integrate your CI/CD build-and-release pipeline with Azure DevTest Labs. The extension installs three tasks:

Create a VM

Create a custom image from a VM

Delete a VM

Licensed to Berend Post berend.post@it-university.nl

The process makes it easy to, for example, quickly deploy a "golden image" for a specific test task and then delete it when the test is finished.

References: https://docs.microsoft.com/en-us/azure/lab-services/devtest-lab-integrate-ci-cd-vsts

Question 21

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You need to recommend an integration strategy for the build process of a Java application. The solution must meet the following requirements:

The builds must access an on-premises dependency management system.
The build outputs must be stored as Server artifacts in Azure DevOps.
The source code must be stored in a Git repository in Azure DevOps.

Solution: Configure the build pipeline to use a Hosted Ubuntu agent pool. Include the Java Tool Installer task in the build pipeline.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation:

Explanation:

Instead use Octopus Tentacle.

Reference:

https://explore.emtecinc.com/blog/octopus-for-automated-deployment-in-devops-models

Licensed to Berend Post berend.post@it-university.nl

Question 22

You are automating the testing process for your company.

You need to automate UI testing of a web application.

Which framework should you use?

- ☐ JaCoco
- ☒ Selenium
- ☐ Xamarin.UITest
- ☐ Microsoft.CodeAnalysis

Explanation:

Explanation:

Performing user interface (UI) testing as part of the release pipeline is a great way of detecting unexpected changes, and need not be difficult. Selenium can be used to test your website during a continuous deployment release and test automation.

References:

https://docs.microsoft.com/en-us/azure/devops/pipelines/test/continuous-test-selenium?view=azure-devops

Question 23

Your company uses a Git repository in Azure Repos to manage the source code of a web application. The master branch is protected from direct updates. Developers work on new features in the topic branches.

Because of the high volume of requested features, it is difficult to follow the history of the changes to the master branch.

You need to enforce a pull request merge strategy. The strategy must meet the following requirements:

Consolidate commit histories.
Merge the changes into a single commit.

Which merge strategy should you use in the branch policy?

- ☒ squash merge
- ☐ fast-forward merge
- ☐ Git fetch
- ☐ no-fast-forward merge

Explanation:

Licensed to Berend Post berend.post@it-university.nl

Explanation:

Squash merging is a merge option that allows you to condense the Git history of topic branches when you complete a pull request. Instead of each commit on the topic branch being added to the history of the default branch, a squash merge takes all the file changes and adds them to a single new commit on the default branch.

A simple way to think about this is that squash merge gives you just the file changes, and a regular merge gives you the file changes and the commit history.

Note: Squash merging keeps your default branch histories clean and easy to follow without demanding any workflow changes on your team. Contributors to the topic branch work how they want in the topic branch, and the default branches keep a linear history through the use of squash merges. The commit history of a master branch updated with squash merges will have one commit for each merged branch. You can step through this history commit by commit to find out exactly when work was done.

References: https://docs.microsoft.com/en-us/azure/devops/repos/git/merging-with-squash

Question 24

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You integrate a cloud-hosted Jenkins server and a new Azure DevOps deployment.

You need Azure DevOps to send a notification to Jenkins when a developer commits changes to a branch in Azure Repos.

Solution: You create an email subscription to an Azure DevOps notification.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation:

Explanation:

You can create a service hook for Azure DevOps Services and TFS with Jenkins.

Licensed to Berend Post berend.post@it-university.nl

References:

https://docs.microsoft.com/en-us/azure/devops/service-hooks/services/jenkins

Question 25

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You integrate a cloud-hosted Jenkins server and a new Azure DevOps deployment.

You need Azure DevOps to send a notification to Jenkins when a developer commits changes to a branch in Azure Repos.

Solution: You add a trigger to the build pipeline.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation:

Explanation:

You can create a service hook for Azure DevOps Services and TFS with Jenkins.

References:

https://docs.microsoft.com/en-us/azure/devops/service-hooks/services/jenkins

Licensed to Berend Post berend.post@it-university.nl

Implement Continuous Integration

Case Study (2 questions)

Case Study
This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other question on this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next sections of the exam. After you begin a new section, you cannot return to this section.

To start the case study
To display the first question on this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.
Overview

Contoso, Ltd. is a manufacturing company that has a main office in Chicago.

Existing Environment

Contoso plans to improve its IT development and operations processes by implementing Azure DevOps principles. Contoso has an Azure subscription and creates an Azure DevOps organization.

The Azure DevOps organization includes:

The Docker extension
A deployment pool named Pool7 that contains 10 Azure virtual machines that run Windows Server 2016

The Azure subscription contains an Azure Automation account.

Requirements
Planned changes

Contoso plans to create projects in Azure DevOps as shown in the following table.

 Licensed to Berend Post berend.post@it-university.nl

Project name	Project details
Project 1	Project1 will provide support for incremental builds and third-party SDK components
Project 2	Project2 will use an automatic build policy. A small team of developers named Team2 will work independently on changes to the project. The Team2 members will not have permissions to Project2.
Project 3	Project3 will be integrated with SonarQube
Project 4	Project4 will provide support for a build pipeline that creates a Docker image and pushes the image to the Azure Container Registry. Project4 will use an existing Dockerfile.
Project 5	Project5 will contain a Git repository in Azure Reports and a continuous integration trigger that will initiate a build in response to any change except for changes within /folder1 of the repository.
Project 6	Project6 will provide support for build and deployment pipelines. Deployment will be allowed only if the number of current work items representing active software bugs is 0.
Project 7	Project7 will contain a target deployment group named Group7 that maps to Pool7. Project7 will use Azure Automation State Configuration to maintain the desired state of the computers in Group7.

Technical requirements

Contoso identifies the following technical requirements:

Implement build agents for Project1.
Whenever possible, use Azure resources.
Avoid using deprecated technologies.
Implement a code flow strategy for Project2 that will:
-Enable Team2 to submit pull requests for Project2.
-Enable Team2 to work independently on changes to a copy of Project2.
-Ensure that any intermediary changes performed by Team2 on a copy of Project2 will be subject to the same restrictions as the ones defined in the build policy of Project2.
Whenever possible implement automation and minimize administrative effort.
Implement Project3, Project5, Project6, and Project7 based on the planned changes
Implement Project4 and configure the project to push Docker images to Azure Container Registry.

Question 26

In Azure DevOps, you create Project3.

You need to meet the requirements of the project.

What should you do first?

- ☐ From Azure DevOps, modify the build definition.
- ☐ From SonarQube, obtain an authentication token.
- ☒ From Azure DevOps, create a service endpoint.
- ☐ From SonarQube, create a project.

Explanation:

Licensed to Berend Post berend.post@it-university.nl

Explanation:

The first thing to do is to declare your SonarQube server as a service endpoint in your VSTS/DevOps project settings.

References:
https://docs.sonarqube.org/display/SCAN/Analyzing+with+SonarQube+Extension+for+vsts-TFS

Question 27

You need to implement Project4.

What should you do first?

- ☐ Add the FROM instruction in the Dockerfile file.
- ☐ Add a Copy and Publish Build Artifacts task to the build pipeline.
- ☒ Add a Docker task to the build pipeline.
- ☐ Add the MAINTAINER instruction in the Dockerfile file.

Explanation:

Explanation:

Scenario: Implement Project4 and configure the project to push Docker images to Azure Container Registry.

Project 4	Project4 will provide support for a build pipeline that creates a Docker image and pushes the image to the Azure Container Registry. Project4 will use an existing Dockerfile.

You use Azure Container Registry Tasks commands to quickly build, push, and run a Docker container image natively within Azure, showing how to offload your "inner-loop" development cycle to the cloud. ACR Tasks is a suite of features within Azure Container Registry to help you manage and modify container images across the container lifecycle.

References:

https://docs.microsoft.com/en-us/azure/container-registry/container-registry-quickstart-task-cli

Licensed to Berend Post berend.post@it-university.nl

(15 questions)

Question 28

Your company has a project in Azure DevOps.

You need to ensure that when there are multiple builds pending deployment, only the most recent build is deployed.

What should you use?

- ☐ deployment conditions
- ☒ deployment queue settings
- ☐ release gates
- ☐ pull request triggers

Explanation:

Explanation:

The options you can choose for a queuing policy are:

Number of parallel deployments

If you specify a maximum number of deployments, two more options appear:

- Deploy all in sequence

- Deploy latest and cancel the others: Use this option if you are producing releases faster than builds, and you only want to deploy the latest build.

Incorrect Answers:

C: Release gates allow automatic collection of health signals from external services, and then promote the release when all the signals are successful at the same time or stop the deployment on timeout. Typically, gates are used in connection with incident management, problem management, change management, monitoring, and external approval systems.

References:

https://docs.microsoft.com/en-us/azure/devops/pipelines/process/stages?tabs=classic&view=azure-devops#queuing-policies

Licensed to Berend Post berend.post@it-university.nl

Question 29

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

Your company has a project in Azure DevOps for a new web application.

You need to ensure that when code is checked in, a build runs automatically.

Solution: From the Pre-deployment conditions settings of the release pipeline, you select After stage.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation:

Explanation:

Instead, In Visual Designer you enable continuous integration (CI) by:

Select the Triggers tab.

Enable Continuous integration.

References:

https://docs.microsoft.com/en-us/azure/devops/pipelines/get-started-designer

Licensed to Berend Post berend.post@it-university.nl

Question 30

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

Your company has a project in Azure DevOps for a new web application.

You need to ensure that when code is checked in, a build runs automatically.

Solution: From the Triggers tab of the build pipeline, you select Enable continuous integration.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation:

Explanation:

In Visual Designer you enable continuous integration (CI) by:

Select the Triggers tab.

Enable Continuous integration.

A continuous integration trigger on a build pipeline indicates that the system should automatically queue a new build whenever a code change is committed.

References:

https://docs.microsoft.com/en-us/azure/devops/pipelines/get-started-designer

Licensed to Berend Post berend.post@it-university.nl

Question 31

You have 50 Node.js-based projects that you scan by using WhiteSource. Each project includes Package.json, Package-lock.json, and Npm-shrinkwrap.json files.

You need to minimize the number of libraries reports by WhiteSource to only the libraries that you explicitly reference.

What should you do?

- ☐ Configure the File System Agent plug-in.
- ☒ Add a devDependencies section to Package-lock.json.
- ☐ Configure the Artifactory plug-in.
- ☐ Delete Package-lock.json.

Explanation:

Explanation:

Separate Your Dependencies

Within your package.json file be sure you split out your npm dependencies between devDependencies and (production) dependencies. The key part is that you must then make use of the --production flag when installing the npm packages. The --production flag will exclude all packages defined in the devDependencies section.

References: https://blogs.msdn.microsoft.com/visualstudioalmrangers/2017/06/08/manage-your-open-source-usage-and-security-as-reported-by-your-cicd-pipeline/

Licensed to Berend Post berend.post@it-university.nl

Question 32

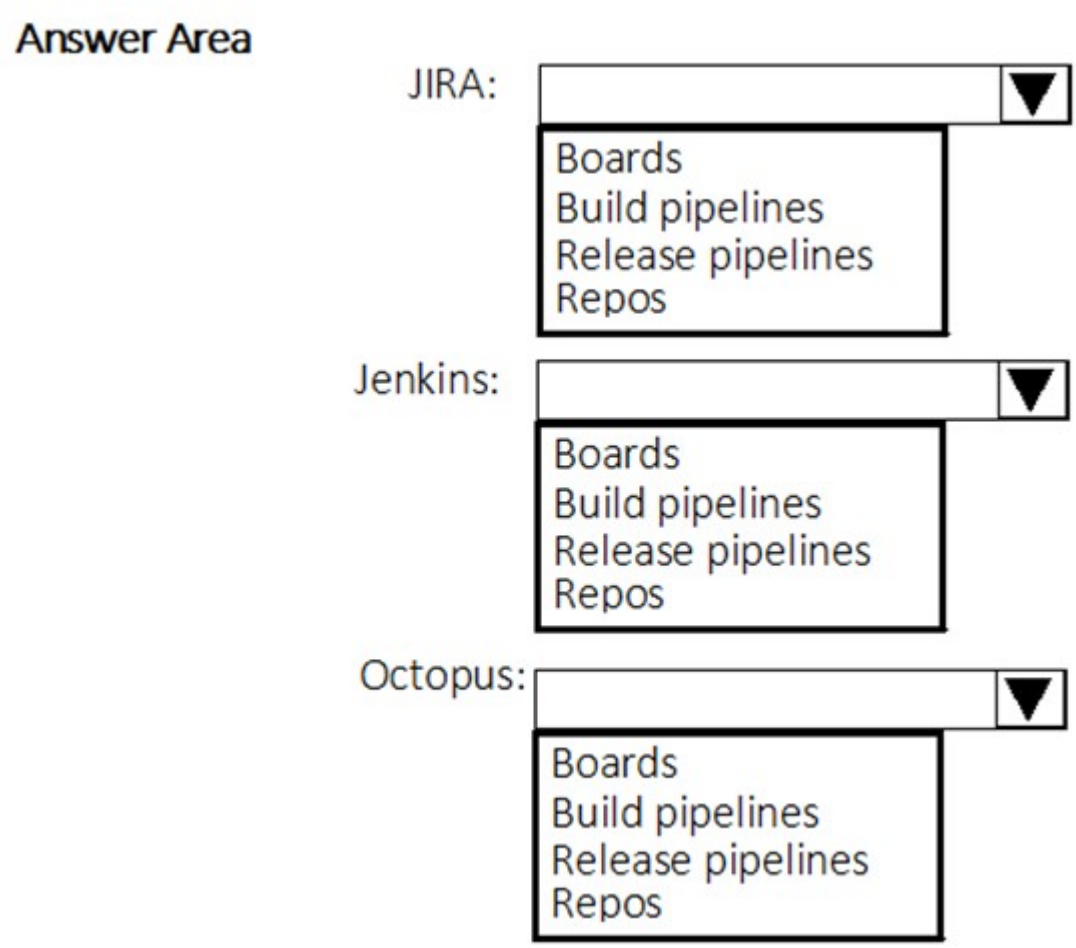
HOTSPOT

You currently use JIRA, Jenkins, and Octopus as part of your DevOps processes.

You plan to use Azure DevOps to replace these tools.

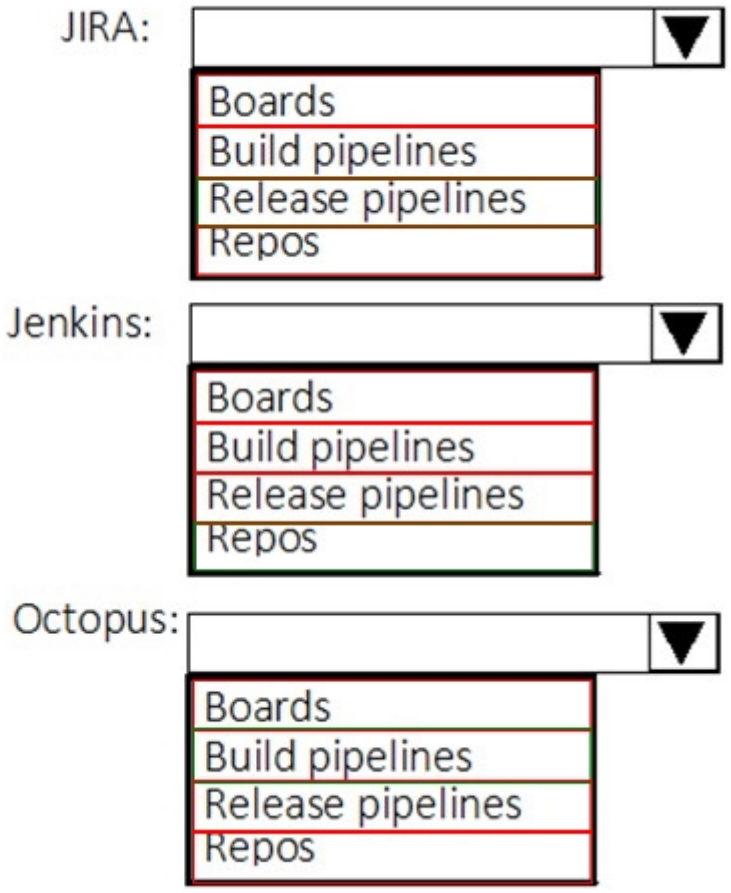
Which Azure DevOps service should you use to replace each tool? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.



Licensed to Berend Post berend.post@it-university.nl

Answer Area



Solution:

Explanation:

Explanation:

JIRA: Release pipelines

Atlassian's Jira Software is a popular application that helps teams to plan, track, and manage software releases, whereas Octopus Deploy helps teams automate their development and operations processes in a fast, repeatable, and reliable manner. Together, they enable teams to get better end-to-end visibility into their software pipelines from idea to production.

Jenkins: Repos

One way to integrate Jenkins with Azure Pipelines is to run CI jobs in Jenkins separately. This involves configuration of a CI pipeline in Jenkins and a web hook in Azure DevOps that invokes the CI process when source code is pushed to a repository or a branch.

Octopus: Build pipelines

Licensed to Berend Post berend.post@it-university.nl

References:

https://octopus.com/blog/octopus-jira-integration

https://www.azuredevopslabs.com/labs/vstsextend/jenkins/

Question 33

You have a project in Azure DevOps. You have an Azure Resource Group deployment project in Microsoft Visual Studio that is checked in to the Azure DevOps project.

You need to create a release pipeline that will deploy resources by using Azure Resource Manager templates. The solution must minimize administrative effort.

Which task type should you include in the solution?

- ☐ Azure Cloud Service Deployment
- ☐ Azure RM Web App Deployment
- ☒ Azure PowerShell
- ☐ Azure App Service Manage

Explanation:

Explanation:

There are two different ways to deploy templates to Azure DevOps Services. Both methods provide the same results, so choose the one that best fits your workflow.

Add a single step to your build pipeline that runs the PowerShell script that's included in the Azure Resource Group deployment project (Deploy-AzureResourceGroup.ps1). The script copies artifacts and then deploys the template.

Add multiple Azure DevOps Services build steps, each one performing a stage task.

The first option has the advantage of using the same script used by developers in Visual Studio and providing consistency throughout the lifecycle.

References:

https://docs.microsoft.com/en-us/azure/vs-azure-tools-resource-groups-ci-in-vsts

Licensed to Berend Post berend.post@it-university.nl

Question 34

You are developing an open source solution that uses a GitHub repository.

You create a new public project in Azure DevOps.

You plan to use Azure Pipelines for continuous build. The solution will use the GitHub Checks API.

Which authentication type should you use?

- ☒ OAuth
- ☐ GitHub App
- ☐ a personal access token
- ☐ SAML

Explanation:

Explanation:

You can authenticate as a GitHub App.

References: https://developer.github.com/apps/building-github-apps/authenticating-with-github-apps/

Question 35

SIMULATION

You have an Azure function hosted in an App Service plan named az400-9940427-func1.
You need to configure az400-9940427-func1 to upgrade the functions automatically whenever new code is committed to the master branch of https://github.com/Azure-Samples/functions-quickstart.
To complete this task, sign in to the Microsoft Azure portal.

Explanation:

Explanation:

1. Open Microsoft Azure Portal

2. Log into your Azure account, select App Services in the Azure portal left navigation, and then select configure az400-9940427-func1.

3. On the app page, select Deployment Center in the left menu.

4. On the Build provider page, select Azure Pipelines (Preview), and then select Continue.

Licensed to Berend Post berend.post@it-university.nl

5. On the Configure page, in the Code section:

For GitHub, drop down and select the Organization, Repository, and Branch you want to deploy continuously.

6. Select Continue.

7. On the Test page, choose whether to enable load tests, and then select Continue.

8. Depending on your App Service plan pricing tier, you may see a Deploy to staging page. Choose whether to enable deployment slots, and then select Continue.

9. After you configure the build provider, review the settings on the Summary page, and then select Finish.

References:

https://docs.microsoft.com/en-us/azure/app-service/deploy-continuous-deployment

Question 36

Your company develops a client banking application that processes a large volume of data.

Code quality is an ongoing issue for the company. Recently, the code quality has deteriorated because of an increase in time pressure on the development team.

You need to implement static code analysis.

During which phase should you use static code analysis?

- ☒ integration testing
- ☐ staging
- ☐ production release
- ☐ build

Explanation:

Explanation:

The Secure Development Lifecycle (SDL) Guidelines recommend that teams perform static analysis during the implementation phase of their development cycle.

Licensed to Berend Post berend.post@it-university.nl

Note: The company should focus in particular on the implementation of DevOps tests to assess the quality of the software from the planning stage to the implementation phase of the project.

References:

https://secdevtools.azurewebsites.net/

Question 37

You have an Azure DevOps organization named Contoso and an Azure DevOps project named Project1.

You plan to use Microsoft-hosted agents to build container images that will host full Microsoft .NET Framework apps in a YAML pipeline in Project1.

What are two possible virtual machine images that you can use for the Microsoft-hosted agent pool? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- ☐ vs2017-win2016
- ☒ ubuntu-16.04
- ☒ win1803
- ☐ macOS-10.13
- ☐ vs.2015-win2012r2

Explanation:

Explanation:

The Microsoft-hosted agent pool provides 7 virtual machine images to choose from:

Ubuntu 16.04 (ubuntu-16.04)

Windows Server 1803 (win1803) - for running Windows containers

Visual Studio 2019 Preview on Windows Server 2019 (windows-2019)

Visual Studio 2017 on Windows Server 2016 (vs2017-win2016)

Visual Studio 2015 on Windows Server 2012R2 (vs2015-win2012r2)

macOS X Mojave 10.14 (macOS-10.14)

macOS X High Sierra 10.13 (macOS-10.13)

References:

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

Licensed to Berend Post berend.post@it-university.nl

Question 38

You plan to create an image that will contain a .NET Core application.

You have a Dockerfile file that contains the following code. (Line numbers are included for reference only.)

```
01 FROM microsoft/dotnet:2.1-sdk
02 COPY ./
03 RUN dotnet publish -c Release -o out
04 FROM microsoft/dotnet:2.1-sdk
05 COPY -from=0 /out /
06 WORKDIR /
07 ENTRYPOINT ["dotnet", "appl.dll"]
```

You need to ensure that the image is as small as possible when the image is built.

Which line should you modify in the file?

- ☒ 1
- ☐ 3
- ☐ 4
- ☐ 7

Explanation:

Explanation:

Multi-stage builds (in Docker 17.05 or higher) allow you to drastically reduce the size of your final image, without struggling to reduce the number of intermediate layers and files.

With multi-stage builds, you use multiple FROM statements in your Dockerfile. Each FROM instruction can use a different base, and each of them begins a new stage of the build. You can selectively copy artifacts from one stage to another, leaving behind everything you don't want in the final image.

References: https://docs.docker.com/develop/develop-images/multistage-build/#use-multi-stage-builds

Licensed to Berend Post berend.post@it-university.nl

Question 39

Your company is building a new solution in Java.

The company currently uses a SonarQube server to analyze the code of .NET solutions.

You need to analyze and monitor the code quality of the Java solution.

Which task types should you add to the build pipeline?

- ☐ Grunt
- ☐ Chef
- ☒ Maven
- ☐ Gulp

Explanation:

Explanation:

SonarQube is a set of static analyzers that can be used to identify areas of improvement in your code. It allows you to analyze the technical debt in your project and keep track of it in the future. With Maven and Gradle build tasks, you can run SonarQube analysis with minimal setup in a new or existing Azure DevOps Services build task.

References:

https://docs.microsoft.com/en-us/azure/devops/java/sonarqube?view=azure-devops

Question 40

Your company is building a new solution in Java.

The company currently uses a SonarQube server to analyze the code of .NET solutions.

You need to analyze and monitor the code quality of the Java solution.

Which task types should you add to the build pipeline?

- ☐ Chef
- ☒ Gradle
- ☐ Octopus
- ☐ Gulp

Explanation:

Explanation:

SonarQube is a set of static analyzers that can be used to identify areas of improvement in your code. It allows you to analyze the technical debt in your project and keep track of it in the future. With Maven and Gradle build tasks, you can run SonarQube analysis with minimal setup in a new or existing Azure DevOps Services build task.

Licensed to Berend Post berend.post@it-university.nl

References:

https://docs.microsoft.com/en-us/azure/devops/java/sonarqube?view=azure-devops

Question 41

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

Your company has a project in Azure DevOps for a new web application.

You need to ensure that when code is checked in, a build runs automatically.

Solution: From the Pre-deployment conditions settings of the release pipeline, you select Batch changes while a build is in progress.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation:

Explanation:

Instead, In Visual Designer you enable continuous integration (CI) by:

Select the Triggers tab.

Enable Continuous integration.

References:

https://docs.microsoft.com/en-us/azure/devops/pipelines/get-started-designer

Licensed to Berend Post berend.post@it-university.nl

Question 42

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

Your company has a project in Azure DevOps for a new web application.

You need to ensure that when code is checked in, a build runs automatically.

Solution: From the Continuous deployment trigger settings of the release pipeline, you enable the Pull request trigger setting.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation:

Explanation:

In Visual Designer you enable continuous integration (CI) by:

Select the Triggers tab.

Enable Continuous integration.

References:

https://docs.microsoft.com/en-us/azure/devops/pipelines/get-started-designer

Licensed to Berend Post berend.post@it-university.nl

Implement Continuous Delivery

Case Study (1 questions)

Case Study
This is a case study. Case studies are not timed separately. You can use as much exam time as you would like to complete each case. However, there may be additional case studies and sections on this exam. You must manage your time to ensure that you are able to complete all questions included on this exam in the time provided.

To answer the questions included in a case study, you will need to reference information that is provided in the case study. Case studies might contain exhibits and other resources that provide more information about the scenario that is described in the case study. Each question is independent of the other question on this case study.

At the end of this case study, a review screen will appear. This screen allows you to review your answers and to make changes before you move to the next section of the exam. After you begin a new section, you cannot return to this section.

To start the case study
To display the first question on this case study, click the Next button. Use the buttons in the left pane to explore the content of the case study before you answer the questions. Clicking these buttons displays information such as business requirements, existing environment, and problem statements. If the case study has an All Information tab, note that the information displayed is identical to the information displayed on the subsequent tabs. When you are ready to answer a question, click the Question button to return to the question.
Overview

Litware, Inc. is an independent software vendor (ISV). Litware has a main office and five branch offices.

ExistingEnvironment
Application Architecture

The company's primary application is a single monolithic retirement fund management system based on ASP.NET web forms that use logic written in VB.NET. Some new sections of the application are written in C#.

Variations of the application are created for individual customers. Currently, there are more than 80 live code branches in the application's code base.

The application was developed by using Microsoft Visual Studio. Source code is stored in Team Foundation Server (TFS) in the main office. The branch offices access the source code by using TFS proxy servers.

Architectural Issues

 Licensed to Berend Post berend.post@it-university.nl

Litware focuses on writing new code for customers. No resources are provided to refactor or remove existing code. Changes to the code base take a long time, as dependencies are not obvious to individual developers.

Merge operations of the code often take months and involve many developers. Code merging frequently introduces bugs that are difficult to locate and resolve.

Customers report that ownership costs of the retirement fund management system increase continually. The need to merge unrelated code makes even minor code changes expensive.

Customers report that bug reporting is overly complex.

Requirements
Planned changes

Litware plans to develop a new suite of applications for investment planning. The investment planning applications will require only minor integration with the existing retirement fund management system.

The investment planning applications suite will include one multi-tier web application and two iOS mobile applications. One mobile application will be used by employees; the other will be used by customers.

Litware plans to move to a more agile development methodology. Shared code will be extracted into a series of packages.

Litware has started an internal cloud transformation process and plans to use cloud-based services whenever suitable.

Litware wants to become proactive in detecting failures, rather than always waiting for customer bug reports.

Technical requirements

The company's investment planning applications suite must meet the following requirements:

New incoming connections through the firewall must be minimized.
Members of a group named Developers must be able to install packages.
The principle of least privilege must be used for all permission assignments.
A branching strategy that supports developing new functionality in isolation must be used.
Members of a group named Team Leaders must be able to create new packages and edit the permissions of package feeds.
Visual Studio App Center must be used to centralize the reporting of mobile application crashes and device types in use.
By default, all releases must remain available for 30 days, except for production releases, which must be kept for 60 days.
Code quality and release quality are critical. During release, deployments must not proceed between stages if any active bugs are logged against the release.

Licensed to Berend Post berend.post@it-university.nl

The mobile applications must be able to call the share pricing service of the existing retirement fund management system. Until the system is upgraded, the service will only support basic authentication over HTTPS.
The required operating system configuration for the test servers changes weekly. Azure Automation State Configuration must be used to ensure that the operating system on each test server is configured the same way when the servers are created and checked periodically.
Current Technical Issue

The test servers are configured correctly when first deployed, but they experience configuration drift over time. Azure Automation State Configuration fails to correct the configurations.

Azure Automation State Configuration nodes are registered by using the following command.

```
Register-AzureRmAutomationDscNode
  -ResourceGroupName 'TestResourceGroup'
  -AutomationAccountName 'LitwareAutomationAccount'
  -AzureVMName $vname
  -ConfigurationMode 'ApplyOnly'
```

Question 43

What should you use to implement the code quality restriction on the release pipeline for the investment planning applications suite?

- ☒ a pre-deployment approval
- ☐ a deployment gate
- ☐ a post-deployment approval
- ☐ a trigger

Explanation:

Explanation:

When a release is created from a release pipeline that defines approvals, the deployment stops at each point where approval is required until the specified approver grants approval or rejects the release (or re-assigns the approval to another user).

Scenario: Code quality and release quality are critical. During release, deployments must not proceed between stages if any active bugs are logged against the release.

References: https://docs.microsoft.com/en-us/azure/devops/pipelines/release/approvals/approvals

Licensed to Berend Post berend.post@it-university.nl

(12 questions)

Question 44

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an approval process that contains a condition. The condition requires that releases be approved by a team leader before they are deployed.

You have a policy stating that approvals must occur within eight hours.

You discover that deployment fail if the approvals take longer than two hours.

You need to ensure that the deployments only fail if the approvals take longer than eight hours.

Solution: From Post-deployment conditions, you modify the Timeout setting for post-deployment approvals.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation:

Explanation:

Use Pre-deployments conditions instead.

Use a gate instead of an approval instead.

References:

https://docs.microsoft.com/en-us/azure/devops/pipelines/release/approvals/gates

Licensed to Berend Post berend.post@it-university.nl

Question 45

Your company has a project in Azure DevOps for a new web application.

The company uses ServiceNow for change management.

You need to ensure that a change request is processed before any components can be deployed to the production environment.

What are two ways to integrate ServiceNow into the Azure DevOps release pipeline? Each correct answer presents a complete solution.

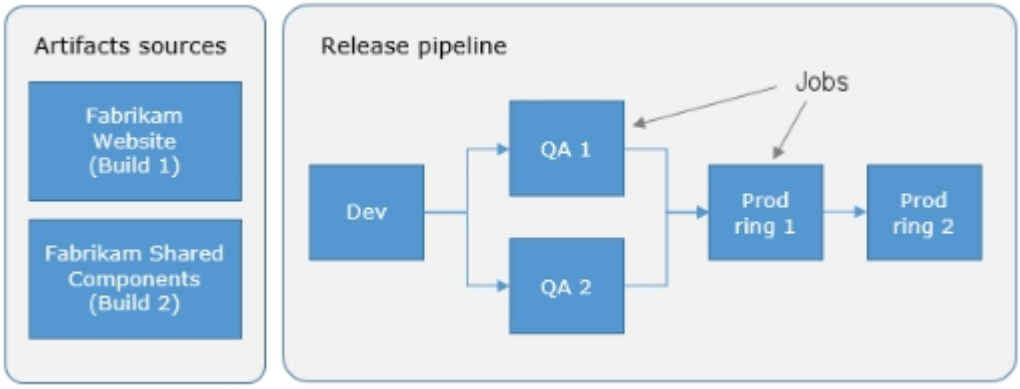
NOTE: Each correct selection is worth one point.

- ☐ Define a deployment control that invokes the ServiceNow REST API.
- ☒ Define a pre-deployment gate before the deployment to the Prod stage.
- ☐ Define a deployment control that invokes the ServiceNow SOAP API.
- ☒ Define a post-deployment gate after the deployment to the QA stage.

Explanation:

Explanation:

An example of a release pipeline that can be modeled through a release pipeline in shown below:



In this example, a release of a website is created by collecting specific versions of two builds (artifacts), each from a different build pipeline. The release is first deployed to a Dev stage and then forked to two QA stages in parallel. If the deployment succeeds in both the QA stages, the release is deployed to Prod ring 1 and then to Prod ring 2. Each production ring represents multiple instances of the same website deployed at various locations around the globe.

References: https://docs.microsoft.com/en-us/azure/devops/pipelines/release

Licensed to Berend Post berend.post@it-university.nl

Question 46

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You plan to create a release pipeline that will deploy Azure resources by using Azure Resource Manager templates. The release pipeline will create the following resources:

Two resource groups
Four Azure virtual machines in one resource group
Two Azure SQL databases in other resource group

You need to recommend a solution to deploy the resources.

Solution: Create two standalone templates, each of which will deploy the resources in its respective group.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation:

Explanation:

Use a main template and two linked templates.

References: https://docs.microsoft.com/en-us/azure/azure-resource-manager/resource-group-linked-templates

Licensed to Berend Post berend.post@it-university.nl

Question 47

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an approval process that contains a condition. The condition requires that releases be approved by a team leader before they are deployed.

You have a policy stating that approvals must occur within eight hours.

You discover that deployment fail if the approvals take longer than two hours.

You need to ensure that the deployments only fail if the approvals take longer than eight hours.

Solution: From Pre-deployment conditions, you modify the Timeout setting for pre-deployment approvals.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation:

Explanation:

Use a gate instead of an approval instead.

References: https://docs.microsoft.com/en-us/azure/devops/pipelines/release/approvals/gates

Licensed to Berend Post berend.post@it-university.nl

Question 48

This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure DevOps project.

Your build process creates several artifacts.

You need to deploy the artifacts to on-premises servers.

Solution: You deploy an Azure self-hosted agent to an on-premises server. You add a Copy and Publish Build Artifacts task to the deployment pipeline.

Does this meet the goal?

- ☒ Yes
- ☐ No

Explanation:

Explanation:

To build your code or deploy your software using Azure Pipelines, you need at least one agent.

If your on-premises environments do not have connectivity to a Microsoft-hosted agent pool (which is typically the case due to intermediate firewalls), you'll need to manually configure a self-hosted agent on on-premises computer(s). The agents must have connectivity to the target on-premises environments, and access to the Internet to connect to Azure Pipelines or Team Foundation Server.

References:

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

Licensed to Berend Post berend.post@it-university.nl

Question 49

Your company hosts a web application in Azure. The company uses Azure Pipelines for the build and release management of the application.

Stakeholders report that the past few releases have negatively affected system performance.

You configure alerts in Azure Monitor.

You need to ensure that new releases are only deployed to production if the releases meet defined performance baseline criteria in the staging environment first.

What should you use to prevent the deployment of releases that fall to meet the performance baseline?

- ☐ an Azure Scheduler job
- ☐ a trigger
- ☒ a gate
- ☐ an Azure function

Explanation:

Explanation:

Scenarios and use cases for gates include:

Quality validation. Query metrics from tests on the build artifacts such as pass rate or code coverage and deploy only if they are within required thresholds.

Use Quality Gates to integrate monitoring into your pre-deployment or post-deployment. This ensures that you are meeting the key health/performance metrics (KPIs) as your applications move from dev to production and any differences in the infrastructure environment or scale is not negatively impacting your KPIs.

Note: Gates allow automatic collection of health signals from external services, and then promote the release when all the signals are successful at the same time or stop the deployment on timeout. Typically, gates are used in connection with incident management, problem management, change management, monitoring, and external approval systems.

References:

https://docs.microsoft.com/en-us/azure/azure-monitor/continuous-monitoring

https://docs.microsoft.com/en-us/azure/devops/pipelines/release/approvals/gates?view=azure-devops

Licensed to Berend Post berend.post@it-university.nl

Question 50

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You plan to create a release pipeline that will deploy Azure resources by using Azure Resource Manager templates. The release pipeline will create the following resources:

Two resource groups
Four Azure virtual machines in one resource group
Two Azure SQL databases in other resource group

You need to recommend a solution to deploy the resources.

Solution: Create a single standalone template that will deploy all the resources.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation:

Explanation:

Use two templates, one for each resource group, and link the templates.

References:

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

Licensed to Berend Post berend.post@it-university.nl

Question 51

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure DevOps project.

Your build process creates several artifacts.

You need to deploy the artifacts to on-premises servers.

Solution: You deploy a Kubernetes cluster on-premises. You deploy a Helm agent to the cluster. You add a Download Build Artifacts task to the deployment pipeline.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation:

Explanation:

Instead you should deploy an Azure self-hosted agent to an on-premises server.

Note: To build your code or deploy your software using Azure Pipelines, you need at least one agent.

If your on-premises environments do not have connectivity to a Microsoft-hosted agent pool (which is typically the case due to intermediate firewalls), you'll need to manually configure a self-hosted agent on on-premises computer(s).

Note 2: As we [Microsoft] are launching this new experience in preview, we are currently optimizing it for Azure Kubernetes Service (AKS) and Azure Container Registry (ACR). Other Kubernetes clusters, for example running on-premises or in other clouds, as well as other container registries, can be used, but require setting up a Service Account and connection manually.

References:

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

Licensed to Berend Post berend.post@it-university.nl

Question 52

HOTSPOT

Your company has an Azure subscription.

The company requires that all resource group in the subscription have a tag named organization set to a value of Contoso.

You need to implement a policy to meet the tagging requirement.

How should you complete the policy? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Answer Area



Licensed to Berend Post berend.post@it-university.nl

Solution:

Answer Area



Explanation:

Explanation:

Box 1: " Microsoft.Resources/subscriptions/resourceGroups"

Box 2: "Deny",

Sample - Enforce tag and its value on resource groups

},

"policyRule": {

Licensed to Berend Post berend.post@it-university.nl

```
    "if": {
      "allOf": [
        {
          "field": "type",
          "equals": "Microsoft.Resources/subscriptions/resourceGroups"
        },
        {
          "not": {
            "field": "[concat('tags[',parameters('tagName'), ']')]",
            "equals": "[parameters('tagValue')]"
          }
        }
      ]
    },
    "then": {
      "effect": "deny"
    }
  }
}
```

References:

https://docs.microsoft.com/en-us/azure/governance/policy/samples/enforce-tag-on-resource-groups

Licensed to Berend Post berend.post@it-university.nl

Question 53

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an Azure DevOps project.

Your build process creates several artifacts.

You need to deploy the artifacts to on-premises servers.

Solution: You deploy a Docker build to an on-premises server. You add a Download Build Artifacts task to the deployment pipeline.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation:

Explanation:

Instead you should deploy an Azure self-hosted agent to an on-premises server.

Note: To build your code or deploy your software using Azure Pipelines, you need at least one agent.

If your on-premises environments do not have connectivity to a Microsoft-hosted agent pool (which is typically the case due to intermediate firewalls), you'll need to manually configure a self-hosted agent on on-premises computer(s).

References:

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

Licensed to Berend Post berend.post@it-university.nl

Question 54

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an approval process that contains a condition. The condition requires that releases be approved by a team leader before they are deployed.

You have a policy stating that approvals must occur within eight hours.

You discover that deployment fail if the approvals take longer than two hours.

You need to ensure that the deployments only fail if the approvals take longer than eight hours.

Solution: From Post-deployment conditions, you modify the Time between re-evaluation of gates option.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation:

Explanation:

Use a gate From Pre-deployment conditions instead.

References: https://docs.microsoft.com/en-us/azure/devops/pipelines/release/approvals/gates

Licensed to Berend Post berend.post@it-university.nl

Question 55

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.
After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have an approval process that contains a condition. The condition requires that releases be approved by a team leader before they are deployed.

You have a policy stating that approvals must occur within eight hours.

You discover that deployment fail if the approvals take longer than two hours.

You need to ensure that the deployments only fail if the approvals take longer than eight hours.

Solution: From Pre-deployment conditions, you modify the Time between re-evaluation of gates option.

Does this meet the goal?

- ☒ Yes
- ☐ No

Explanation:

Explanation:

Gates allow automatic collection of health signals from external services, and then promote the release when all the signals are successful at the same time or stop the deployment on timeout. Typically, gates are used in connection with incident management, problem management, change management, monitoring, and external approval systems.

Approvals and gates give you additional control over the start and completion of the deployment pipeline. Each stage in a release pipeline can be configured with pre-deployment and post-deployment conditions that can include waiting for users to manually approve or reject deployments, and checking with other automated systems until specific conditions are verified.

References: https://docs.microsoft.com/en-us/azure/devops/pipelines/release/approvals/gates

Licensed to Berend Post berend.post@it-university.nl

Implement Dependency Management

(4 questions)

Question 56

Your company is concerned that when developers introduce open source libraries, it creates licensing compliance issues.

You need to add an automated process to the build pipeline to detect when common open source libraries are added to the code base.

What should you use?

- ☐ Microsoft Visual SourceSafe
- ☐ PDM
- ☒ WhiteSource
- ☐ OWASP ZAP

Explanation:

Explanation:

WhiteSource is the leader in continuous open source software security and compliance management. WhiteSource integrates into your build process, irrespective of your programming languages, build tools, or development environments. It works automatically, continuously, and silently in the background, checking the security, licensing, and quality of your open source components against WhiteSource constantly-updated de?nitive database of open source repositories.

Azure DevOps integration with WhiteSource Bolt will enable you to:

Detect and remedy vulnerable open source components.

Generate comprehensive open source inventory reports per project or build.

Enforce open source license compliance, including dependencies' licenses.

Identify outdated open source libraries with recommendations to update.

Note: Black duck would also be a good answer, but it is not an option here.

References: https://www.azuredevopslabs.com/labs/vstsextend/WhiteSource/

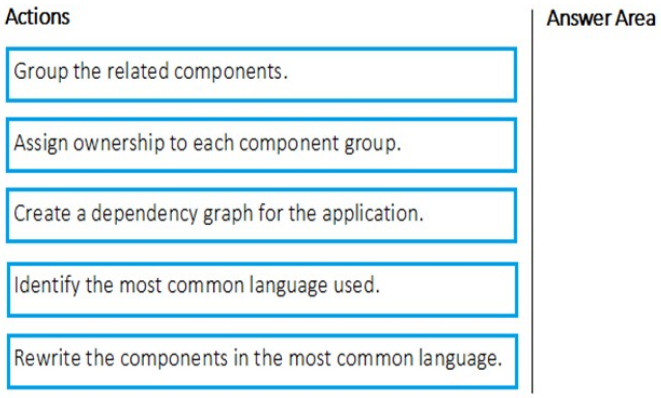
Licensed to Berend Post berend.post@it-university.nl

Question 57

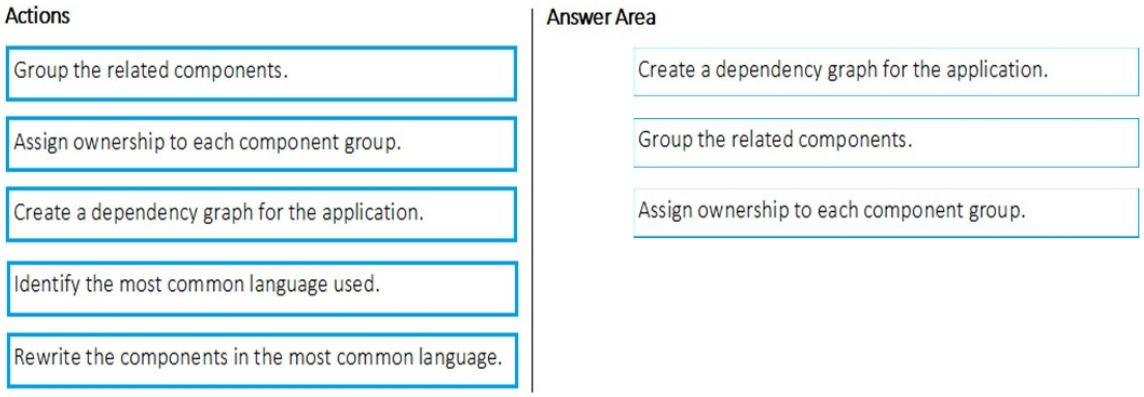
DRAG DROP

You need to find and isolate shared code. The shared code will be maintained in a series of packages.

Which three actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.



Solution:



Explanation:

Explanation:

Step 1: Create a dependency graph for the application

By linking work items and other objects, you can track related work, dependencies, and changes made over time. All links are defined with a specific link type. For example, you can use Parent/Child links to link work items to support a hierarchical tree structure. Whereas, the Commit and Branch link types support links between work items and commits and branches, respectively.

Step 2: Group the related components.

Licensed to Berend Post berend.post@it-university.nl

Packages enable you to share code across your organization: you can compose a large product, develop multiple products based on a common shared framework, or create and share reusable components and libraries.

Step 3: Assign ownership to each component graph

References:

https://docs.microsoft.com/en-us/azure/devops/boards/queries/link-work-items-support-traceability?view=azure-devops&tabs=new-web-form

https://docs.microsoft.com/en-us/visualstudio/releasenotes/tfs2017-relnotes

Question 58

You plan to share packages that you wrote, tested, validated, and deployed by using Azure Artifacts.

You need to release multiple builds of each package by using a single feed. The solution must limit the release of packages that are in development.

What should you use?

- ☐ local symbols
- ☐ views
- ☐ global symbols
- ☒ upstream sources

Explanation:

Explanation:

Upstream sources enable you to manage all of your product's dependencies in a single feed. We recommend publishing all of the packages for a given product to that product's feed, and managing that product's dependencies from remote feeds in the same feed, via upstream sources. This setup has a few benefits:

Simplicity: your NuGet.config, .npmrc, or settings.xml contains exactly one feed (your feed).

Determinism: your feed resolves package requests in order, so rebuilding the same codebase at the same commit or changeset uses the same set of packages

Provenance: your feed knows the provenance of packages it saved via upstream sources, so you can verify that you're using the original package, not a custom or malicious copy published to your feed

Peace of mind: packages used via upstream sources are guaranteed to be saved in the feed on first use; if the upstream source is disabled/removed, or the remote feed goes down or deletes a package you depend on, you can continue to develop and build

Licensed to Berend Post berend.post@it-university.nl

References: https://docs.microsoft.com/en-us/azure/devops/artifacts/concepts/upstream-sources?view=vsts

Question 59

Your company is concerned that when developers introduce open source libraries, it creates licensing compliance issues.

You need to add an automated process to the build pipeline to detect when common open source libraries are added to the code base.

What should you use?

- ☐ Microsoft Visual SourceSafe
- ☐ Code Style
- ☒ Black Duck
- ☐ Jenkins
- ☐ SourceGea
- ☐ OWASP ZAP

Explanation:

Explanation:

Secure and Manage Open Source Software

Black Duck helps organizations identify and mitigate open source security, license compliance and code-quality risks across application and container portfolios.

Black Duck Hub and its plugin for Team Foundation Server (TFS) allows you to automatically find and fix open source security vulnerabilities during the build process, so you can proactively manage risk. The integration allows you to receive alerts and fail builds when any Black Duck Hub policy violations are met.

Note: WhiteSource would also be a good answer, but it is not an option here.

References:

https://marketplace.visualstudio.com/items?itemName=black-duck-software.hub-tfs

Licensed to Berend Post berend.post@it-university.nl

Implement Application Infrastructure

(8 questions)

Question 60

You have an application that consists of several Azure App Service web apps and Azure functions.

You need to access the security of the web apps and the functions.

Which Azure features can you use to provide a recommendation for the security of the application?

- ☐ Security & Compliance in Azure Log Analytics
- ☐ Resource health in Azure Service Health
- ☐ Smart Detection in Azure Application Insights
- ☒ Compute & apps in Azure Security Center

Explanation:

Explanation:

Monitor compute and app services: Compute & apps include the App Services tab, which App services: list of your App service environments and current security state of each.

Recommendations

This section has a set of recommendations for each VM and computer, web and worker roles, Azure App Service Web Apps, and Azure App Service Environment that Security Center monitors. The first column lists the recommendation. The second column shows the total number of resources that are affected by that recommendation. The third column shows the severity of the issue.

Incorrect Answers:

C: Smart Detection automatically warns you of potential performance problems, not security problems in your web application.

References:

https://docs.microsoft.com/en-us/azure/azure-monitor/app/proactive-diagnostics

Licensed to Berend Post berend.post@it-university.nl

Question 61

Your company has a project in Azure DevOps for a new application. The application will be deployed to several Azure virtual machines that run Windows Server 2016.

You need to recommend a deployment strategy for the virtual machines. The strategy must meet the following requirements:

Ensure that the virtual machines maintain a consist configuration.
Minimize administrative effort to configure the virtual machines.

What should you include in the recommendation?

- ☐ Azure Resource Manager templates and the PowerShell Desired State Configuration (DSC) extension for Windows
- ☐ Deployment YAML and Azure pipeline deployment groups
- ☒ Azure Resource Manager templates and the Custom Script Extension for Windows
- ☐ Deployment YAML and Azure pipeline stage templates

Explanation:

Explanation:

The Custom Script Extension downloads and executes scripts on Azure virtual machines. This extension is useful for post deployment configuration, software installation, or any other configuration or management tasks. Scripts can be downloaded from Azure storage or GitHub, or provided to the Azure portal at extension run time. The Custom Script Extension integrates with Azure Resource Manager templates, and can be run using the Azure CLI, PowerShell, Azure portal, or the Azure Virtual Machine REST API.

Incorrect Answers:

B: YAML doesn't work with Azure pipeline deployment groups.

References:

https://docs.microsoft.com/en-us/azure/virtual-machines/extensions/custom-script-windows

Licensed to Berend Post berend.post@it-university.nl

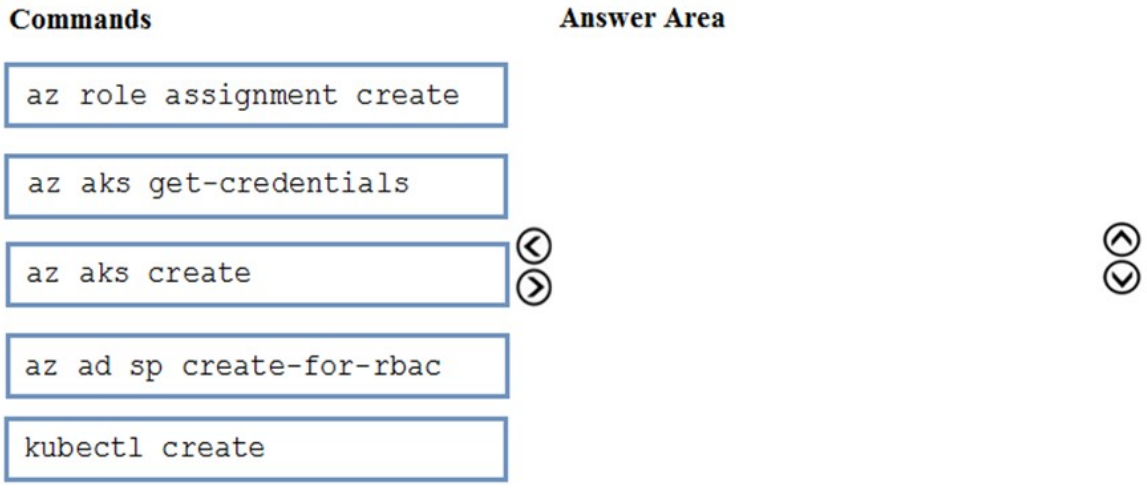
Question 62

DRAG DROP

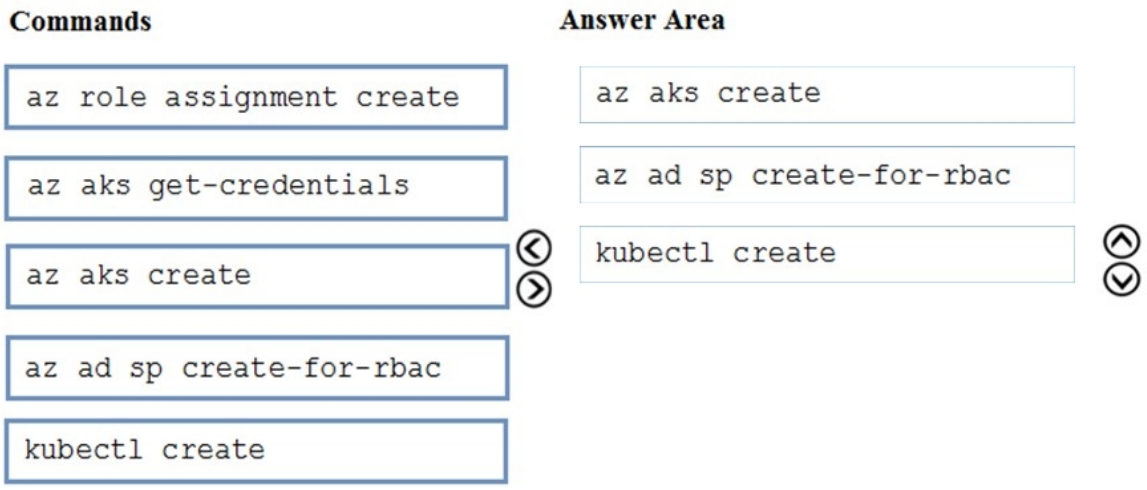
You plan to use Azure Kubernetes Service (AKS) to host containers deployed from images hosted in a Docker Trusted Registry.

You need to recommend a solution for provisioning and connecting to AKS. The solution must ensure that AKS is RBAC-enabled and uses a custom service principal.

Which three commands should you recommend be run in sequence? To answer, move the appropriate commands from the list of commands to the answer area and arrange them in the correct order.



Solution:



Explanation:

Explanation:

Step 1 : az acr create

Licensed to Berend Post berend.post@it-university.nl

An Azure Container Registry (ACR) can also be created using the new Azure CLI.

```
az acr create
  --name <REGISTRY_NAME>
  --resource-group <RESOURCE_GROUP_NAME>
  --sku Basic
```

Step 2: az ad sp create-for-rbac

Once the ACR has been provisioned, you can either enable administrative access (which is okay for testing) or you create a Service Principal (sp) which will provide a client_id and a client_secret.

```
az ad sp create-for-rbac
  --scopes
/subscriptions/<SUBSCRIPTION_ID>/resourcegroups/<RG_NAME>/providers/Microsoft.ContainerRegistry/registries/<REGISTRY_NAME>
  --role Contributor
  --name <SERVICE_PRINCIPAL_NAME>
```

Step 3: kubectl create

Create a new Kubernetes Secret.

```
kubectl create secret docker-registry <SECRET_NAME>
  --docker-server <REGISTRY_NAME>.azurecr.io
  --docker-email <YOUR_MAIL>
  --docker-username=<SERVICE_PRINCIPAL_ID>
  --docker-password <YOUR_PASSWORD>
```

References:

https://thorsten-hans.com/how-to-use-private-azure-container-registry-with-kubernetes

Licensed to Berend Post berend.post@it-university.nl

Question 63

SIMULATION

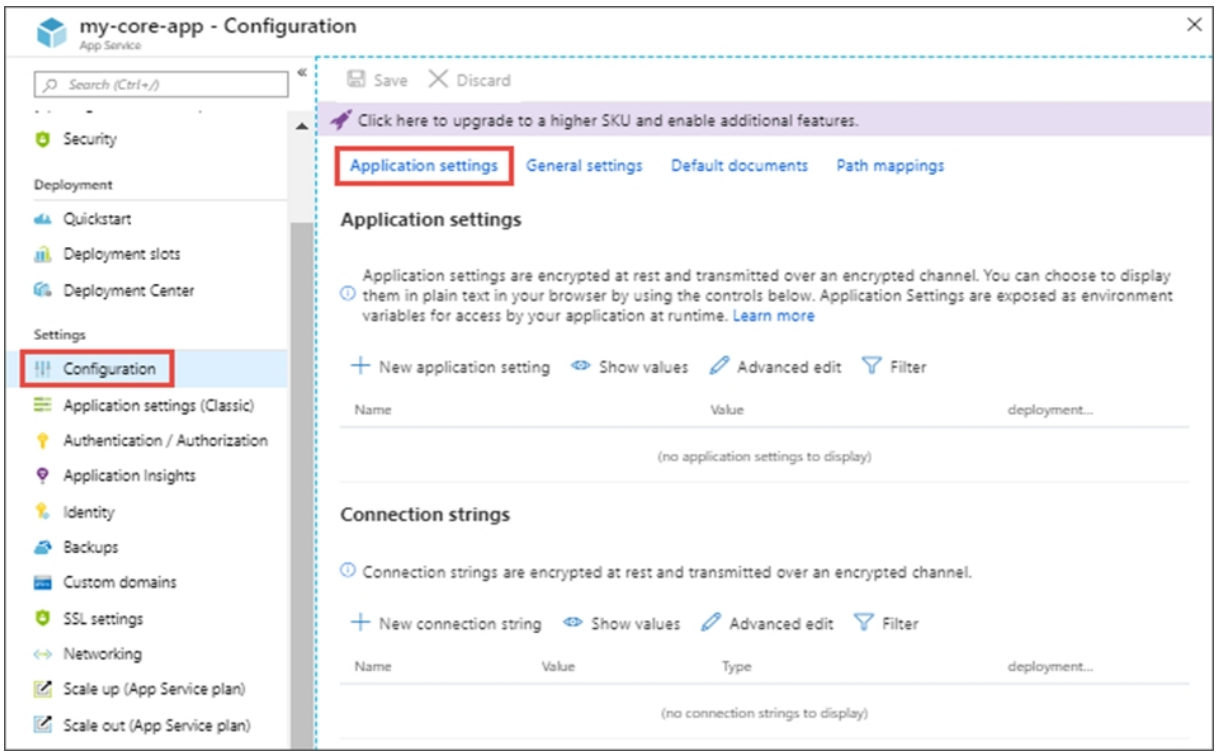
You need to configure an Azure web app named az400-9940427-main to contain an environmental variable named “MAX_ITEMS”. The environmental variable must have a value of 50.

To complete this task, sign in to the Microsoft Azure portal.

Explanation:

Explanation:

1. In the Azure portal, navigate to the az400-9940427-main app's management page. In the app's left menu, click Configuration > Application settings.



2. Click New Application settings

3. Enter the following:

Name: MAX_ITEMS

Value: 50

References:

Licensed to Berend Post berend.post@it-university.nl

https://docs.microsoft.com/en-us/azure/app-service/configure-common

Question 64

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You manage a project in Azure DevOps.

You need to prevent the configuration of the project from changing over time.

Solution: Implement Continuous Assurance for the project.

Does this meet the goal?

- ☒ Yes
- ☐ No

Explanation:

Explanation:

The basic idea behind Continuous Assurance (CA) is to setup the ability to check for "drift" from what is considered a secure snapshot of a system. Support for Continuous Assurance lets us treat security truly as a 'state' as opposed to a 'point in time' achievement. This is particularly important in today's context when 'continuous change' has become a norm.

There can be two types of drift:

Drift involving 'baseline' configuration: This involves settings that have a fixed number of possible states (often pre-defined/statically determined ones). For instance, a SQL DB can have TDE encryption turned ON or OFF...or a Storage Account may have auditing turned ON however the log retention period may be less than 365 days.

Drift involving 'stateful' configuration: There are settings which cannot be constrained within a finite set of well-known states. For instance, the IP addresses configured to have access to a SQL DB can be any (arbitrary) set of IP addresses. In such scenarios, usually human judgment is initially required to determine whether a particular configuration should be considered 'secure' or not. However, once that is done, it is important to ensure that there is no "stateful drift" from the attested configuration. (E.g., if, in a troubleshooting session, someone adds the IP address of a developer machine to the list, the Continuous Assurance feature should be able to identify the drift and generate notifications/alerts or even trigger 'auto-remediation' depending on the severity of the change).

Licensed to Berend Post berend.post@it-university.nl

Reference:

https://azsk.azurewebsites.net/04-Continous-Assurance/Readme.html

Question 65

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You manage a project in Azure DevOps.

You need to prevent the configuration of the project from changing over time.

Solution: Implement Continuous Integration for the project.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation:

Explanation:

Instead implement Continuous Assurance for the project.

Reference:

https://azsk.azurewebsites.net/04-Continous-Assurance/Readme.html

Licensed to Berend Post berend.post@it-university.nl

Question 66

Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You manage a project in Azure DevOps.

You need to prevent the configuration of the project from changing over time.

Solution: Add a code coverage step to the build pipelines.

Does this meet the goal?

- ☐ Yes
- ☒ No

Explanation:

Explanation:

Instead implement Continuous Assurance for the project.

Reference:

https://azsk.azurewebsites.net/04-Continous-Assurance/Readme.html

Question 67

You have a private distribution group that contains provisioned and unprovisioned devices.

You need to distribute a new iOS application to the distribution group by using Microsoft Visual Studio App Center.

What should you do?

- ☐ Request the Apple ID associated with the user of each device.
- ☒ Register the devices on the Apple Developer portal.
- ☐ Create an active subscription in App Center Test.
- ☐ Add the device owner to the organization in App Center.

Explanation:

Explanation:

When releasing an iOS app signed with an ad-hoc or development provisioning profile, you must obtain tester's device IDs (UDIDs), and add them to the provisioning profile before compiling a release. When you enable the distribution group's Automatically manage devices setting, App Center

Licensed to Berend Post berend.post@it-university.nl

automates the before mentioned operations and removes the constraint for you to perform any manual tasks. As part of automating the workflow, you must provide the user name and password for your Apple ID and your production certificate in a .p12 format.

App Center starts the automated tasks when you distribute a new release or one of your testers registers a new device. First, all devices from the target distribution group will be registered, using your Apple ID, in your developer portal and all provisioning profiles used in the app will be generated with both new and existing device ID. Afterward, the newly generated provisioning profiles are downloaded to App Center servers.

References:

https://docs.microsoft.com/en-us/appcenter/distribution/groups

Licensed to Berend Post berend.post@it-university.nl

Implement Continuous Feedback

(8 questions)

Question 68

Your company is building a mobile app that targets Android and iOS devices.

Your team uses Azure DevOps to manage all work items and release cycles.

You need to recommend a solution to perform the following tasks:

Collect crash reports for issue analysis.
Distribute beta releases to your testers.
Get user feedback on the functionality of new apps.

What should you include in the recommendation?

- ☒ the Microsoft Test & Feedback extension
- ☐ Microsoft Visual Studio App Center integration
- ☐ Azure Application insights widgets
- ☐ Jenkins integration

Explanation:

Explanation:

The "Exploratory Testing" extension is now "Test & Feedback" and is now Generally Available.

Anyone can now test web apps and give feedback, all directly from the browser on any platform: Windows, Mac, or Linux. Available for Google Chrome and Mozilla Firefox (required version 50.0 or above) currently. Support for Microsoft Edge is in the pipeline and will be enabled once Edge moves to a Chromium-compatible web platform.

References:

https://marketplace.visualstudio.com/items?itemName=ms.vss-exploratorytesting-web

Licensed to Berend Post berend.post@it-university.nl

Question 69

SIMULATION

You need to create a notification if the peak average response time of an Azure web app named az400-9940427-main is more than five seconds when evaluated during a five-minute period. The notification must trigger the “https://contoso.com/notify” webhook.
To complete this task, sign in to the Microsoft Azure portal.

Explanation:

Explanation:

1. Open Microsoft Azure Portal

2. Log into your Azure account and go to App Service and look under Monitoring then you will see Alert.

3. Select Add an alert rule

4. Configure the alert rule as per below and click Ok.

Source: Alert on Metrics

Resource Group: az400-9940427-main

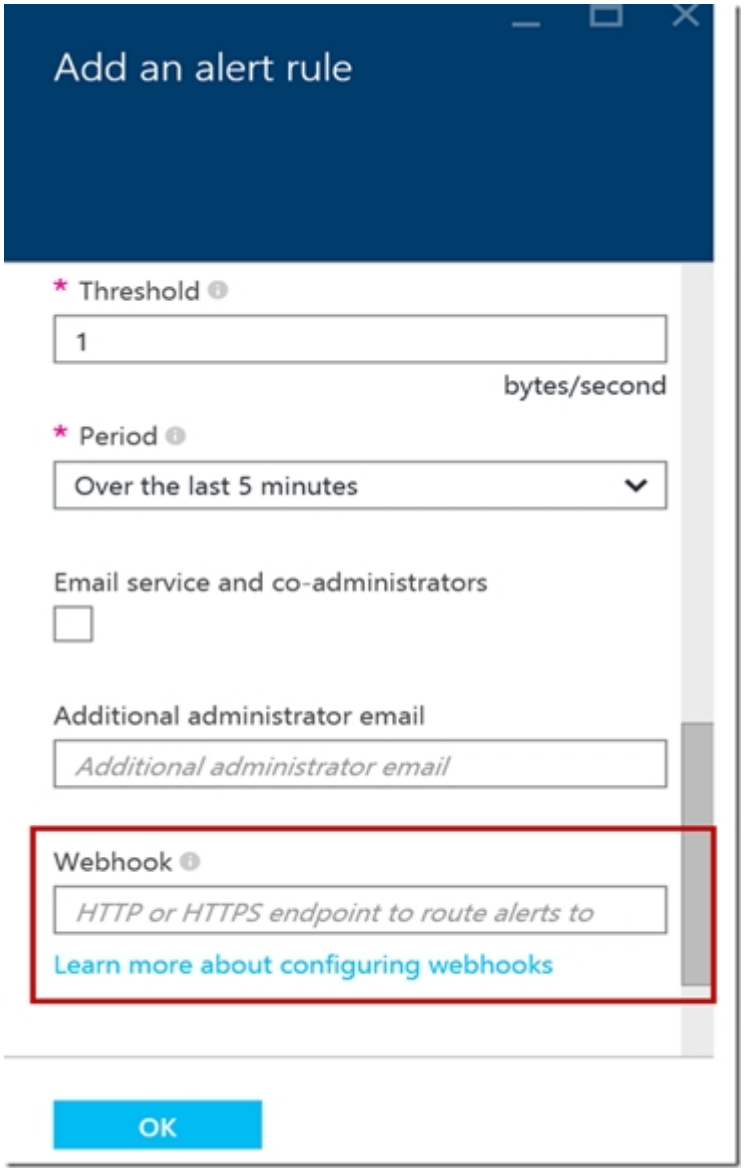
Resource: az400-9940427-main

Threshold: 5

Period: Over the last 5 minutes

Webhook: https://contoso.com/notify

Licensed to Berend Post berend.post@it-university.nl



Reference:

https://azure.microsoft.com/es-es/blog/webhooks-for-azure-alerts/

Licensed to Berend Post berend.post@it-university.nl

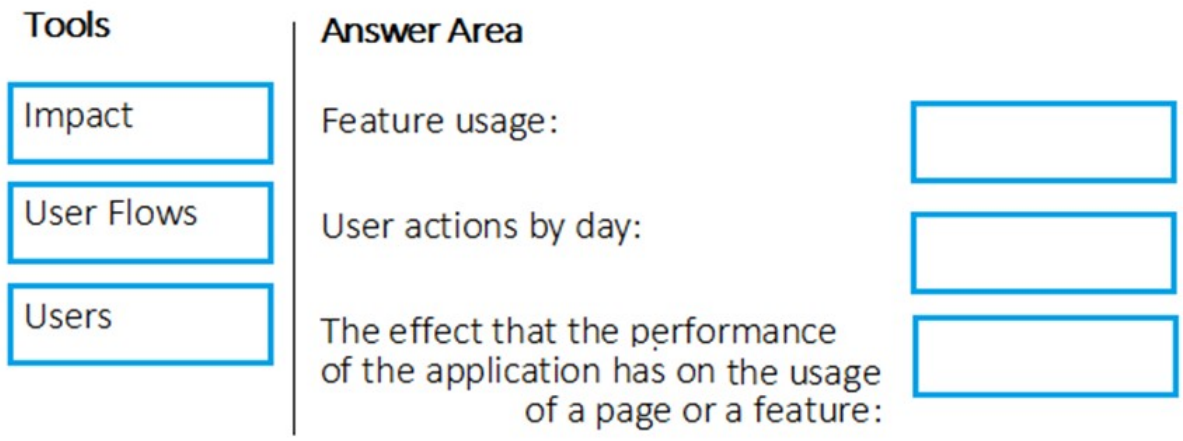
Question 70

DRAG DROP

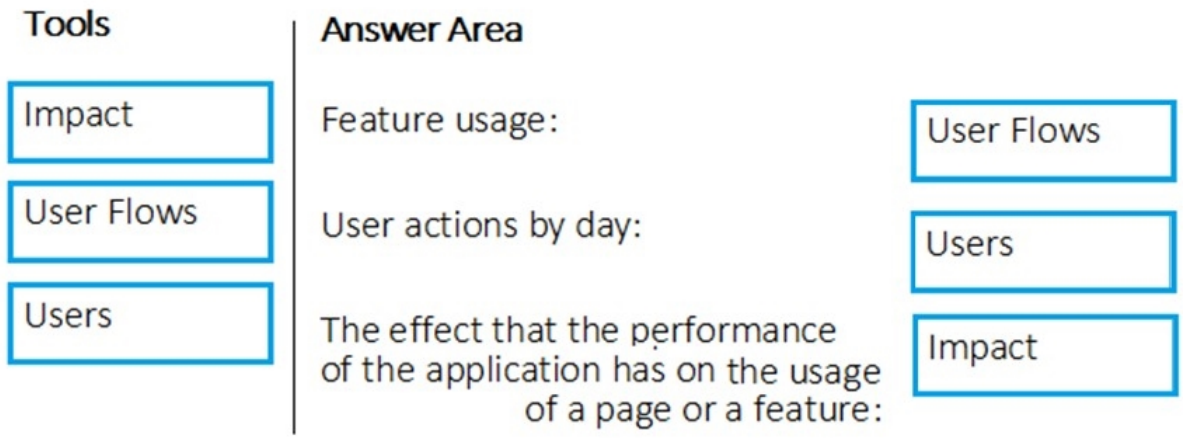
Your company wants to use Azure Application Insights to understand how user behaviors affect an application.

Which application Insights tool should you use to analyze each behavior? To answer, drag the appropriate tools to the correct behaviors. Each tool may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.



Solution:



Explanation:

Explanation:

Box 1: User Flows

The User Flows tool visualizes how users navigate between the pages and features of your site. It's great for answering questions like:

Licensed to Berend Post berend.post@it-university.nl

How do users navigate away from a page on your site?

What do users click on a page on your site?

Where are the places that users churn most from your site?

Are there places where users repeat the same action over and over?

Box 2: Users

Box 3: Impact

Reference:

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

Question 71

You use Azure SQL Database Intelligent Insights and Azure Application Insights for monitoring.

You need to write ad-hoc queries against the monitoring data.

Which query language should you use?

- ☒ Azure Log Analytics
- ☐ PL/pgSQL
- ☐ PL/SQL
- ☐ Transact-SQL

Explanation:

Explanation:

Data analysis in Azure SQL Analytics is based on Log Analytics language for your custom querying and reporting.

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

Licensed to Berend Post berend.post@it-university.nl

Question 72

Your company creates a web application.

You need to recommend a solution that automatically sends to Microsoft Teams a daily summary of the exceptions that occur in the application.

Which two Azure services should you recommend? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- ☒ Azure Logic Apps
- ☐ Azure Pipelines
- ☐ Microsoft Visual Studio App Center
- ☐ Azure DevOps Project
- ☒ Azure Application Insights

Explanation:

Explanation:

E: Exceptions in your live web app are reported by Application Insights.

Note: Periodical reports help keep a team informed on how their business critical services are doing. Developers, DevOps/SRE teams, and their managers can be productive with automated reports reliably delivering insights without requiring everyone to sign in the portal. Such reports can also help identify gradual increases in latencies, load or failure rates that may not trigger any alert rules.

A: You can programmatically query Application Insights data to generate custom reports on a schedule. The following options can help you get started quickly:

Automate reports with Microsoft Flow

Automate reports with Logic Apps

References:

https://docs.microsoft.com/en-us/azure/azure-monitor/app/asp-net-exceptions

https://docs.microsoft.com/en-us/azure/azure-monitor/app/automate-custom-reports

Licensed to Berend Post berend.post@it-university.nl

Question 73

Your company uses ServiceNow for incident management.

You develop an application that runs on Azure.

The company needs to generate a ticket in ServiceNow when the application fails to authenticate.

Which Azure Log Analytics solution should you use?

- ☐ Application Insights Connector
- ☐ Automation & Control
- ☒ IT Service Management Connector (ITSM)
- ☐ Insight & Analytics

Explanation:

Explanation:

The IT Service Management Connector (ITSMC) allows you to connect Azure and a supported IT Service Management (ITSM) product/service.

ITSMC supports connections with the following ITSM tools:

ServiceNow

System Center Service Manager

Provance

Cherwell

With ITSMC, you can

Create work items in ITSM tool, based on your Azure alerts (metric alerts, Activity Log alerts and Log Analytics alerts).

Optionally, you can sync your incident and change request data from your ITSM tool to an Azure Log Analytics workspace.

References: https://docs.microsoft.com/en-us/azure/azure-monitor/platform/itsmc-overview

Licensed to Berend Post berend.post@it-university.nl

Question 74

You have a multi-tier application that has an Azure Web Apps front end and an Azure SQL Database back end.

You need to recommend a solution to capture and store telemetry data. The solution must meet the following requirements:

Support using ad-hoc queries to identify baselines.
Trigger alerts when metrics in the baseline are exceeded.
Store application and database metrics in a central location.

What should you include in the recommendation?

- ☐ Azure Event Hubs
- ☐ Azure SQL Database Intelligent Insights
- ☐ Azure Application Insights
- ☒ Azure Log Analytics

Explanation:

Explanation:

Azure Platform as a Service (PaaS) resources, like Azure SQL and Web Sites (Web Apps), can emit performance metrics data natively to Log Analytics.

The Premium plan will retain up to 12 months of data, giving you an excellent baseline ability.

There are two options available in the Azure portal for analyzing data stored in Log analytics and for creating queries for ad hoc analysis.

Incorrect Answers:

B: Intelligent Insights analyzes database performance by comparing the database workload from the last hour with the past seven-day baseline workload. However, we need handle application metrics as well.

References: https://docs.microsoft.com/en-us/azure/azure-monitor/platform/collect-azurepass-posh

Licensed to Berend Post berend.post@it-university.nl

Question 75

You have an Azure DevOps project named Project1 and an Azure subscription named Sub1. Sub1 contains an Azure virtual machine scale set named VMSS1. VMSS1 hosts a web application named WebApp1. WebApp1 uses stateful sessions.

The WebApp1 installation is managed by using the Custom Script extension. The script resides in an Azure Storage account named sa1.

You plan to make a minor change to a UI element of WebApp1 and to gather user feedback about the change.

You need to implement limited user testing for the new version of WebApp1 on VMSS1.

Which three actions should you perform? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- ☐ Modify the load balancer settings of VMSS1.
- ☒ Redeploy VMSS1.
- ☒ Upload a custom script file to sa1.
- ☒ Modify the Custom Script extension settings of VMSS1.
- ☐ Update the configuration of a virtual machine in VMSS1.

Licensed to Berend Post berend.post@it-university.nl