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Number: AZ-400
Passing Score: 800
Time Limit: 120 min
File Version: 4.0



AZ-400

Microsoft Azure DevOps Solutions

Version 4.0

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Question Set 1

QUESTION 1
You use Azure Artifacts to host NuGet packages that you create.

You need to make one of the packages available to anonymous users outside your organization. The solution must minimize the number of publication points.

What should you do?

A. Change the feed URL of the package
B. Create a new feed for the package
C. Promote the package to a release view.
D. Publish the package to a public NuGet repository.

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Azure Artifacts introduces the concept of multiple feeds that you can use to organize and control access to your packages.
Packages you host in Azure Artifacts are stored in a feed. Setting permissions on the feed allows you to share your packages with as many or as few people as your scenario requires.
Feeds have four levels of access: Owners, Contributors, Collaborators, and Readers.

References: https://docs.microsoft.com/en-us/azure/devops/artifacts/feeds/feed-permissions?view=vsts&tabs=new-nav

QUESTION 2
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?

A. Microsoft Project
B. Bamboo
C. Microsoft Lync
D. Microsoft Teams
E. Octopus

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
Explanation:
- Within each team, users can create different channels to organize their communications by topic. Each

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channel can include a couple of users or scale to thousands of users.
- Microsoft Teams works on Android, iOS, Mac and Windows systems and devices. It also works in Chrome, Firefox, Internet Explorer 11 and Microsoft Edge web browsers.
- The guest-access feature in Microsoft Teams allows users to invite people outside their organizations to join internal channels for messaging, meetings and file sharing. This capability helps to facilitate business-to-business project management.
- Teams integrates with Azure DevOps.

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

References:
https://searchunifiedcommunications.techtarget.com/definition/Microsoft-Teams

QUESTION 3
DRAG DROP

You need to recommend project metrics for dashboards in Azure DevOps.

Which chart widgets should you recommend for each metric? To answer, drag the appropriate chart widgets to the correct metrics. Each chart widget 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.

Select and Place:

Correct Answer:

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: Lead time
Lead time measures the total time elapsed from the creation of work items to their completion.

Box 2: Cycle time
Cycle time measures the time it takes for your team to complete work items once they begin actively working on them.

Box 3: Burndown
Burndown charts focus on remaining work within a specific time period.

Incorrect Answers:
- Velocity provides a useful metric for these activities:
- Support sprint planning
- Forecast future sprints and the backlog items that can be completed
- A guide for determining how well the team estimates and meets their planned commitments

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

https://docs.microsoft.com/en-us/azure/devops/report/dashboards/cycle-time-and-lead-time?view=vsts

https://docs.microsoft.com/en-us/azure/devops/report/dashboards/configure-burndown-burnup-widgets?view=vsts

QUESTION 4
You manage build pipelines and deployment pipelines by using Azure DevOps.

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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?

A. modifying group memberships
B. adding users
C. assigning entitlements
D. procuring licenses

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
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

QUESTION 5
DRAG DROP

You need to increase the security of your team's development process.

Which type of security tool should you recommend for each stage of the development process? To answer, drag the appropriate security tools to the correct targets. Each security 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.

Select and Place:

Correct Answer:

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: Threat modeling
Threat modeling's motto should be, "The earlier the better, but not too late and never ignore."

Box 2: Static code analysis
Validation in the CI/CD begins before the developer commits his or her code. Static code analysis tools in the

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IDE provide the first line of defense to help ensure that security vulnerabilities are not introduced into the CI/CD process.

Box 3: Penetration testing
Once your code quality is verified, and the application is deployed to a lower environment like development or QA, the process should verify that there are not any security vulnerabilities in the running application. This can be accomplished by executing automated penetration test against the running application to scan it for vulnerabilities.

References: https://docs.microsoft.com/en-us/azure/devops/articles/security-validation-cicd-pipeline?view=vsts

QUESTION 6
HOTSPOT

Your company uses Team Foundation Server 2013 (TFS 2013).

You plan to migrate to Azure DevOps.

You need to recommend a migration strategy that meets the following requirements:

- Preserves the dates of Team Foundation Version Control changesets
- Preserves the changes dates of work items revisions
- Minimizes migration effort
- Migrates all TFS artifacts

What should you recommend? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Correct Answer:

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: Upgrade TFS to the most recent RTM release.
One of the major prerequisites for migrating your Team Foundation Server database is to get your database schema version as close as possible to what is currently deployed in Azure Devops Services.

Box 2: Use the TFS Database Import Service
In Phase 3 of your migration project, you will work on upgrading your Team Foundation Server to one of the supported versions for the Database Import Service in Azure Devops Services.

QUESTION 7
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?

A. Service Map in Azure Log Analytics

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B. Availability tests in Azure Application Insights
C. Profiler in Azure Application Insights
D. Application Map in Azure Application Insights

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
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

QUESTION 8
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?

A. In a Grunt build task, select **Enabled** from Control Options.
B. In a Maven build task, select **Run PMD**.
C. In a Xcode build task, select **Use xcpretty** from Advanced.
D. In a Gradle build task, select **Run Checkstyle**.

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
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/

QUESTION 9
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.

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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. a deployment group
B. a Microsoft-hosted agent
C. service hooks
D. a self-hosted agent
E. an External Git service connection

Correct Answer: DE
Section: [none]
Explanation

Explanation/Reference:
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

QUESTION 10
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?

A. Microsoft Project
B. Bamboo
C. Octopus
D. Slack

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
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.

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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

QUESTION 11
DRAG DROP

You are planning projects for three customers. Each customer's preferred process for work items is shown in the following table.

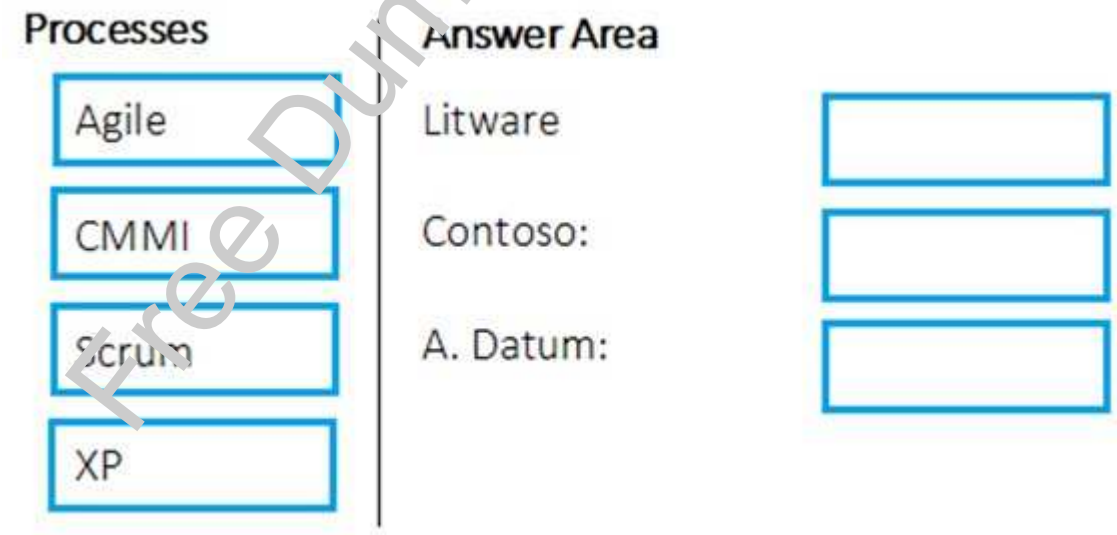
Customer name	Preferred process
Litware, Inc.	Track product backlog items (PBIs) and bugs on the Kanban board. Break the PBIs down into tasks on the task board.
Contoso, Ltd.	Track user stories and bugs on the Kanban board. Track the bugs and tasks on the task board.
A. Datum Corporation	Track requirements, change requests, risks, and reviews.

The customers all plan to use Azure DevOps for work item management.

Which work item process should you use for each customer? To answer, drag the appropriate work item process to the correct customers. Each work item process 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.

Select and Place:



Correct Answer:

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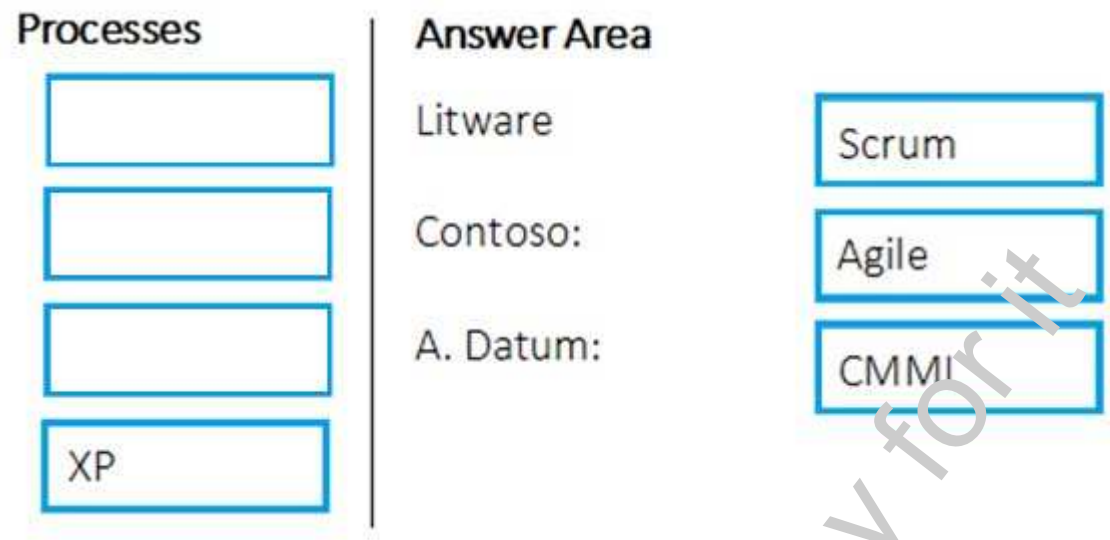

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: Scrum
Choose Scrum when your team practices Scrum. This process works great if you want to track product backlog items (PBIs) and bugs on the Kanban board, or break PBIs and bugs down into tasks on the taskboard.

Box 2: Agile
Choose Agile when your team uses Agile planning methods, including Scrum, and tracks development and test activities separately. This process works great if you want to track user stories and (optionally) bugs on the Kanban board, or track bugs and tasks on the taskboard.

Box 3: CMMI
Choose CMMI when your team follows more formal project methods that require a framework for process improvement and an auditable record of decisions. With this process, you can track requirements, change requests, risks, and reviews.

Incorrect Answers:
XP:
The work tracking objects contained within the default DevOps processes and DevOps process templates are Basic, Agile, CMMI, and Scrum
XP (Extreme Programming) and DevOps are different things. They don't contradict with each other, they can be used together, but they have different base concepts inside them.

References:
https://docs.microsoft.com/en-us/azure/devops/boards/work-items/guidance/choose-process?view=azure-devops

QUESTION 12
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.

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NOTE: Each correct selection is worth one point.

A. Publish the package to a feed.
B. Create a new feed in Azure Artifacts.
C. Upload a package to a Git repository.
D. Add the package URL to the Environment settings in Visual Studio.
E. Add the package URL to the NuGet Package Manager settings in Visual Studio.
F. Create a Git repository in Azure Repos.

Correct Answer: ABE
Section: [none]
Explanation

Explanation/Reference:
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

QUESTION 13
You have a GitHub repository.

You create a new repository in Azure DevOps.

You need to recommend a procedure to clone the repository from GitHub to Azure DevOps.

What should you recommend?

A. Create a pull request.
B. Create a webhook.
C. Create a service connection for GitHub.
D. From Import a Git repository, click **Import**.
E. Create a personal access token in Azure DevOps.

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
Explanation:
You can import an existing Git repo from GitHub, Bitbucket, GitLab, or other location into a new or empty

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existing repo in your project in Azure DevOps.

Import into a new repo
1. Select Repos, Files.
2. From the repo drop-down, select Import repository.
3. If the source repo is publicly available, just enter the clone URL of the source repository and a name for your new Git repository.

References:
https://docs.microsoft.com/en-us/azure/devops/repos/git/import-git-repository?view=azure-devops

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Testlet 1

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 questions 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.

Existing Environment

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

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.

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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.
- 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'
```

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QUESTION 1
To resolve the current technical issue, what should you do to the **Register-AzureRmAutomationDscNode** command?

A. Change the value of the **ConfigurationMode** parameter.
B. Replace the **Register-AzureRmAutomationDscNode** cmdlet with **Register-AzureRmAutomationScheduledRunbook**

C. Add the **AllowModuleOverwrite** parameter.
D. Add the **DefaultProfile** parameter.

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Change the ConfigurationMode parameter from ApplyOnly to ApplyAndAutocorrect.

The Register-AzureRmAutomationDscNode cmdlet registers an Azure virtual machine as an APS Desired State Configuration (DSC) node in an Azure Automation account.

Scenario: 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 $vmanme
  -ConfigurationMode 'ApplyOnly'
```

References:
https://docs.microsoft.com/en-us/powershell/module/azurerm.automation/register-azurermautomationdscnode?view=azurermps-6.13.0

QUESTION 2
HOTSPOT

You need to configure a cloud service to store the secrets required by the mobile applications to call the share pricing service.

What should you include in the solution? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Correct Answer:

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Every request made against a storage service must be authorized, unless the request is for a blob or container resource that has been made available for public or signed access. One option for authorizing a request is by using Shared Key.

Scenario: 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

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HTTPS.

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

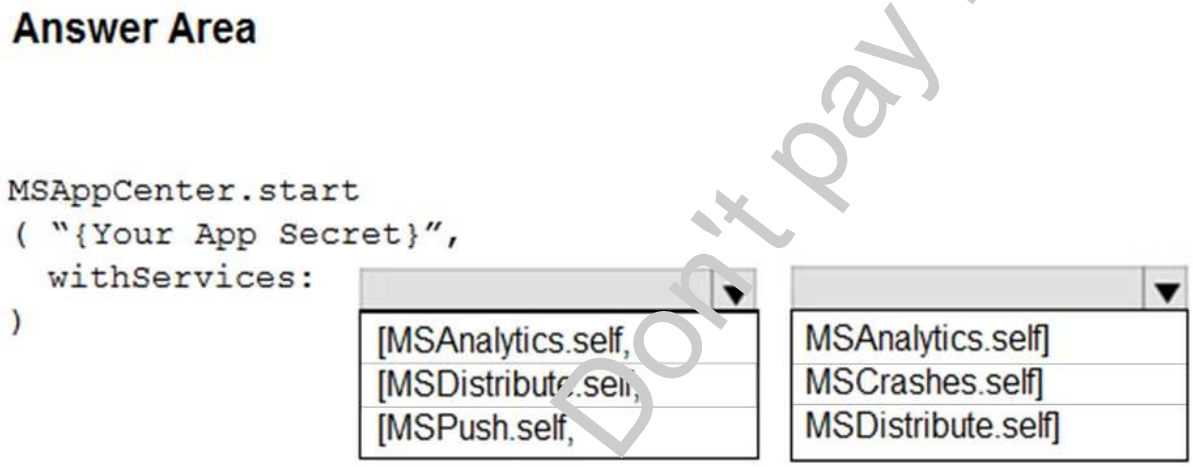
References: https://docs.microsoft.com/en-us/rest/api/storageservices/authorize-with-shared-key

QUESTION 3
HOTSPOT

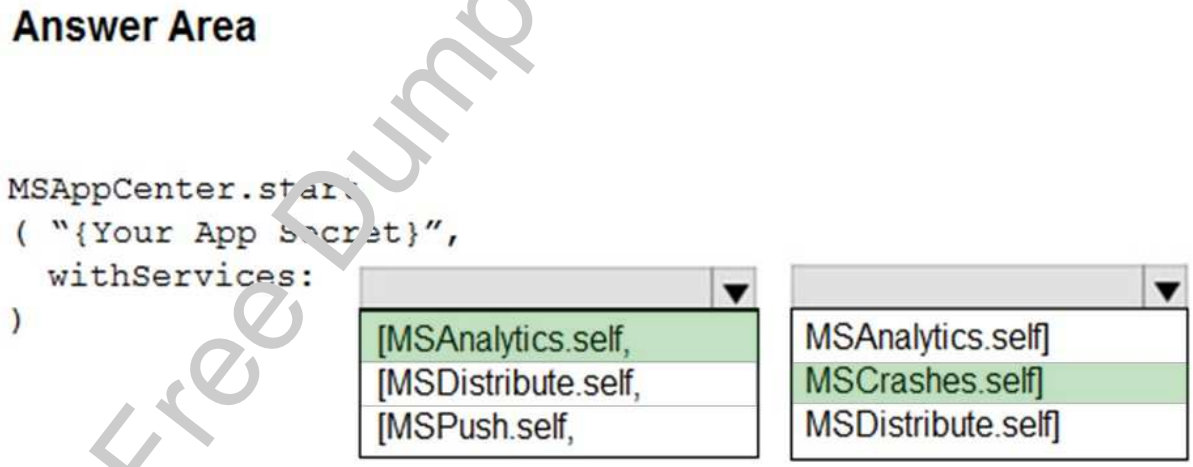
How should you complete the code to initialize App Center in the mobile application? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:



Correct Answer:



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Section: [none]
Explanation

Explanation/Reference:
Scenario: Visual Studio App Center must be used to centralize the reporting of mobile application crashes and device types in use.

In order to use App Center, you need to opt in to the service(s) that you want to use, meaning by default no

services are started and you will have to explicitly call each of them when starting the SDK.

Insert the following line to start the SDK in your app's AppDelegate class in the didFinishLaunchingWithOptions method.

MSAppCenter.start("{Your App Secret}", withServices: [MSAnalytics.self, MSCrashes.self])

References:
https://docs.microsoft.com/en-us/appcenter/sdk/getting-started/ios

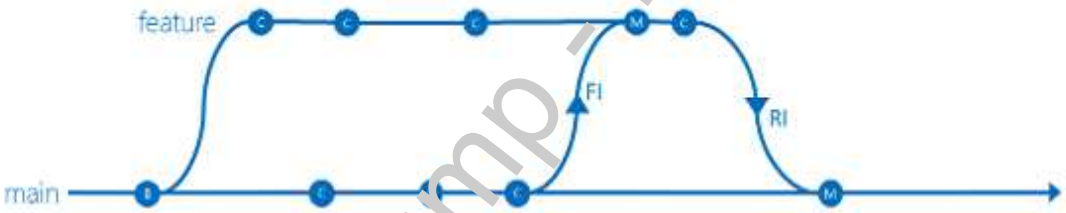
QUESTION 4
Which branching strategy should you recommend for the investment planning applications suite?

A. release isolation
B. main only
C. development isolation
D. feature isolation

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Scenario: A branching strategy that supports developing new functionality in isolation must be used.

Feature isolation is a special derivation of the development isolation, allowing you to branch one or more feature branches from main, as shown, or from your dev branches.



When you need to work on a particular feature, it might be a good idea to create a feature branch.

Incorrect Answers:
A: Release isolation introduces one or more release branches from main. The strategy allows concurrent release management, multiple and parallel releases, and codebase snapshots at release time.

B: The Main Only strategy can be folder-based or with the main folder converted to a Branch, to enable additional visibility features. You commit your changes to the main branch and optionally indicate development and release milestones with labels.

C: Development isolation: When you need to maintain and protect a stable main branch, you can branch one or more dev branches from main. It enables isolation and concurrent development. Work can be isolated in development branches by feature, organization, or temporary collaboration.

References:
https://docs.microsoft.com/en-us/azure/devops/repos/tfvc/branching-strategies-with-tfvc?view=azure-devops

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Testlet 2

Case Study
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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.

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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 1
You add the virtual machines as managed nodes in Azure Automation State Configuration.

You need to configure the managed computers in Pool7.

What should you do next?

A. Modify the RefreshMode property of the Local Configuration Manager (LCM).
B. Run the **Register-AzureRmAutomationDscNode** Azure Powershell cmdlet.
C. Modify the **ConfigurationMode** property of the Local Configuration Manager (LCM)
D. Install PowerShell Core.

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:

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The Register-AzureRmAutomationDscNode cmdlet registers an Azure virtual machine as an APS Desired State Configuration (DSC) node in an Azure Automation account.

Scenario: The Azure DevOps organization includes:
The Docker extension
A deployment pool named Pool7 that contains 10 Azure virtual machines that run Windows Server 2016

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.

References: https://docs.microsoft.com/en-us/powershell/module/azurerm.automation/register-azurermautomationdscnode

QUESTION 2
DRAG DROP

You need to implement the code flow strategy for Project2 in Azure DevOps.

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.

Select and Place:

Correct Answer:

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Step 1: Create a repository
A Git repository, or repo, is a folder that you've told Git to help you track file changes in. You can have any number of repos on your computer, each stored in their own folder.

Step 2: Create a branch
Branch policies help teams protect their important branches of development. Policies enforce your team's code quality and change management standards.

Step 3: Add a build validation policy
When a build validation policy is enabled, a new build is queued when a new pull request is created or when changes are pushed to an existing pull request targeting this branch. The build policy then evaluates the results of the build to determine whether the pull request can be completed.

Scenario:
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.

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.

References: https://docs.microsoft.com/en-us/azure/devops/repos/git/manage-your-branches

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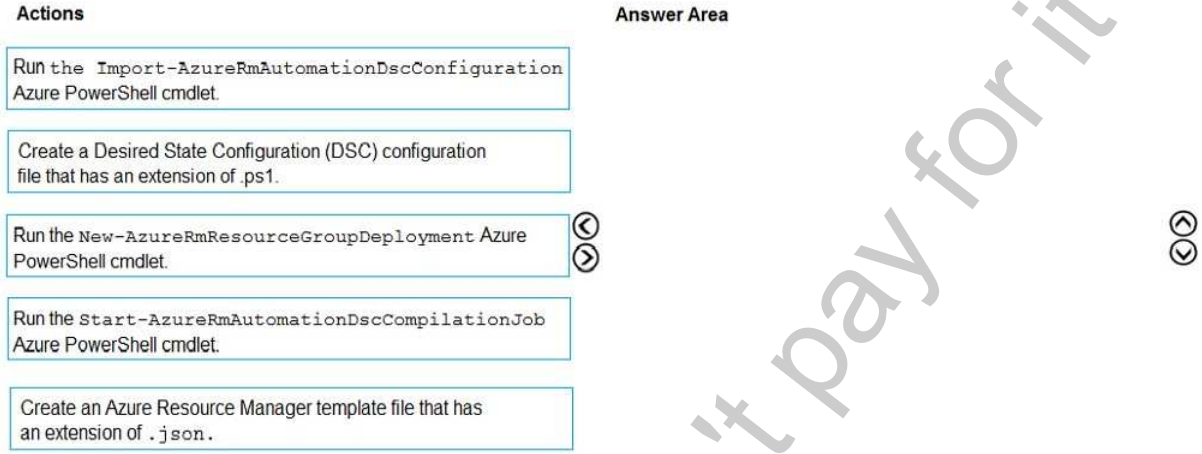
QUESTION 3
DRAG DROP

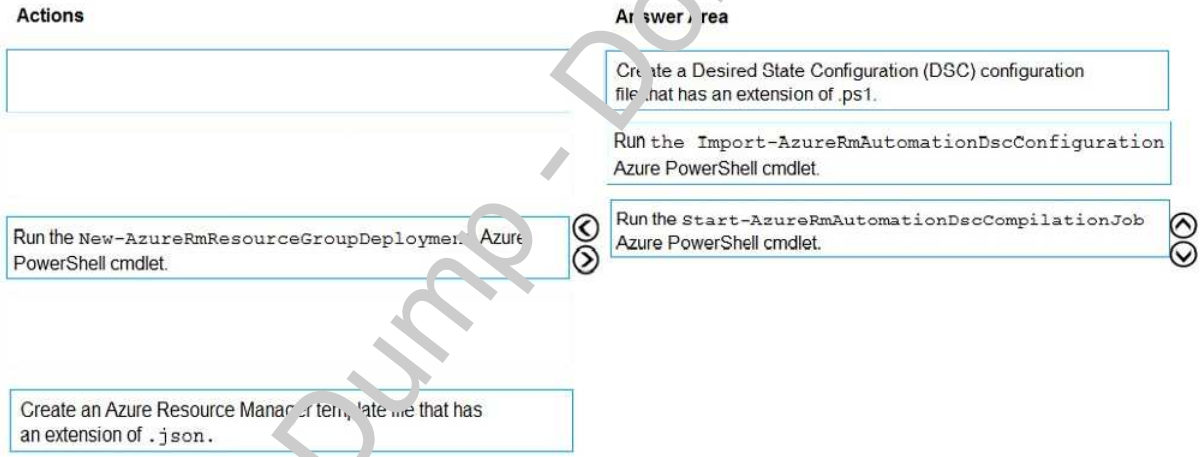
You need to configure Azure Automation for the computers in Pool7.

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.

Select and Place:



Correct Answer:



Section: [none]
Explanation

Explanation/Reference:
Explanation:

Step 1: Create a Desired State Configuration (DSC) configuration file that has an extension of .ps1.

Step 2: Run the Import-AzureRmAutomationDscConfiguration Azure Powershell cmdlet
The Import-AzureRmAutomationDscConfiguration cmdlet imports an APS Desired State Configuration (DSC) configuration into Azure Automation. Specify the path of an APS script that contains a single DSC configuration.

Example:
PS C:\>Import-AzureRmAutomationDscConfiguration -AutomationAccountName "Contoso17"-ResourceGroupName "ResourceGroup01" -SourcePath "C:\DSC\client.ps1" -Force

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This command imports the DSC configuration in the file named client.ps1 into the Automation account named Contoso17. The command specifies the Force parameter. If there is an existing DSC configuration, this command replaces it.

Step 3: Run the Start-AzureRmAutomationDscCompilationJob Azure Powershell cmdlet
The Start-AzureRmAutomationDscCompilationJob cmdlet compiles an APS Desired State Configuration (DSC) configuration in Azure Automation.

References:
https://docs.microsoft.com/en-us/powershell/module/azurerm.automation/import-azurermautomationdscconfiguration

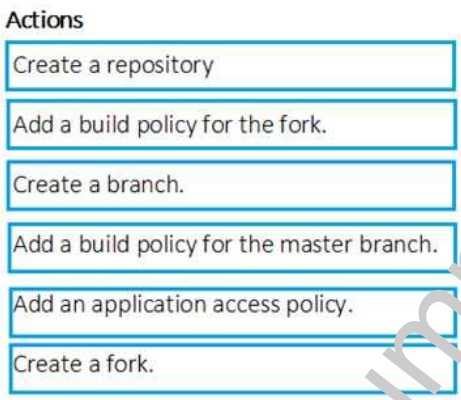
https://docs.microsoft.com/en-us/powershell/module/azurerm.automation/start-azurermautomationdsccompilationjob

QUESTION 4
DRAG DROP

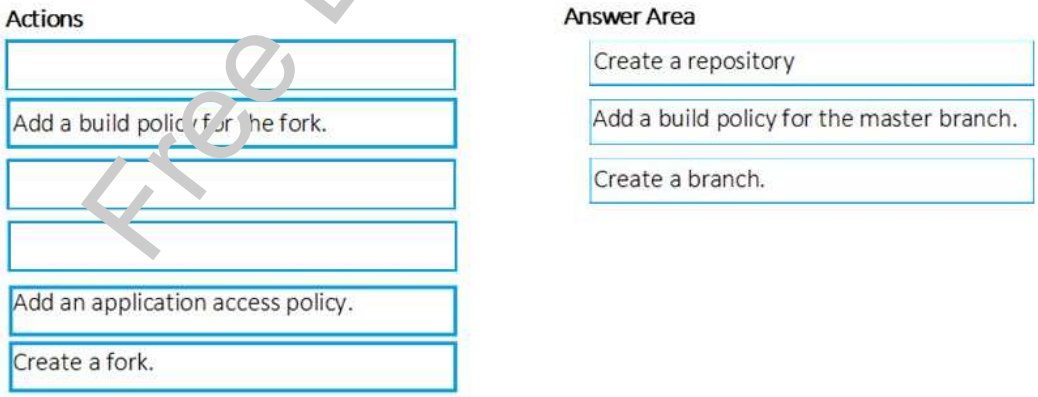
You need to implement the code flow strategy for Project2 in Azure DevOps.

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.

Select and Place:



Correct Answer:



Section: [none]

Free Dump - Don't pay for it

Explanation

Explanation/Reference:
Explanation:

Scenario: 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.

Step 1: Create a repository

Step 2: Add a build policy for the master branch

Step 3: Create a branch

Each branch must have a defined policy about how to integrate code into this branch.

References:
https://docs.microsoft.com/en-us/azure/devops/learn/devops-at-microsoft/release-flow

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Question Set 3

QUESTION 1
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?

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

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
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

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 2
DRAG DROP

You need to recommend a solution for deploying charts by using Helm and Tiller to Azure Kubernetes Service (AKS) in an RBAC-enabled cluster.

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.

Select and Place:

Correct Answer:

Section: [none]
Explanation

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Explanation/Reference:
Explanation:

Step 1: Kubectl create
You can add a service account to Tiller using the --service-account <NAME> flag while you're configuring Helm (step 2 below). As a prerequisite, you'll have to create a role binding which specifies a role and a service account name that have been set up in advance.
Example: Service account with cluster-admin role
$ kubectl create -f rbac-config.yaml
serviceaccount "tiller" created
clusterrolebinding "tiller" created
$ helm init --service-account tiller

Step 2: helm init
To deploy a basic Tiller into an AKS cluster, use the helm init command.

Step 3: helm install
To install charts with Helm, use the helm install command and specify the name of the chart to install.

References:
https://docs.microsoft.com/en-us/azure/aks/kubernetes-helm

https://docs.helm.sh/using_helm/#tiller-namespaces-and-rbac

QUESTION 3
DRAG DROP

Your company has a project in Azure DevOps.

You plan to create a release pipeline that will deploy resources by using Azure Resource Manager templates. The templates will reference secrets stored in Azure Key Vault.

You need to recommend a solution for accessing the secrets stored in the key vault during deployments. The solution must use the principle of least privilege.

What should you include in the recommendation? To answer, drag the appropriate configurations to the correct targets. Each configuration 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.

Select and Place:

Correct Answer:

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: A key Vault advanced access policy

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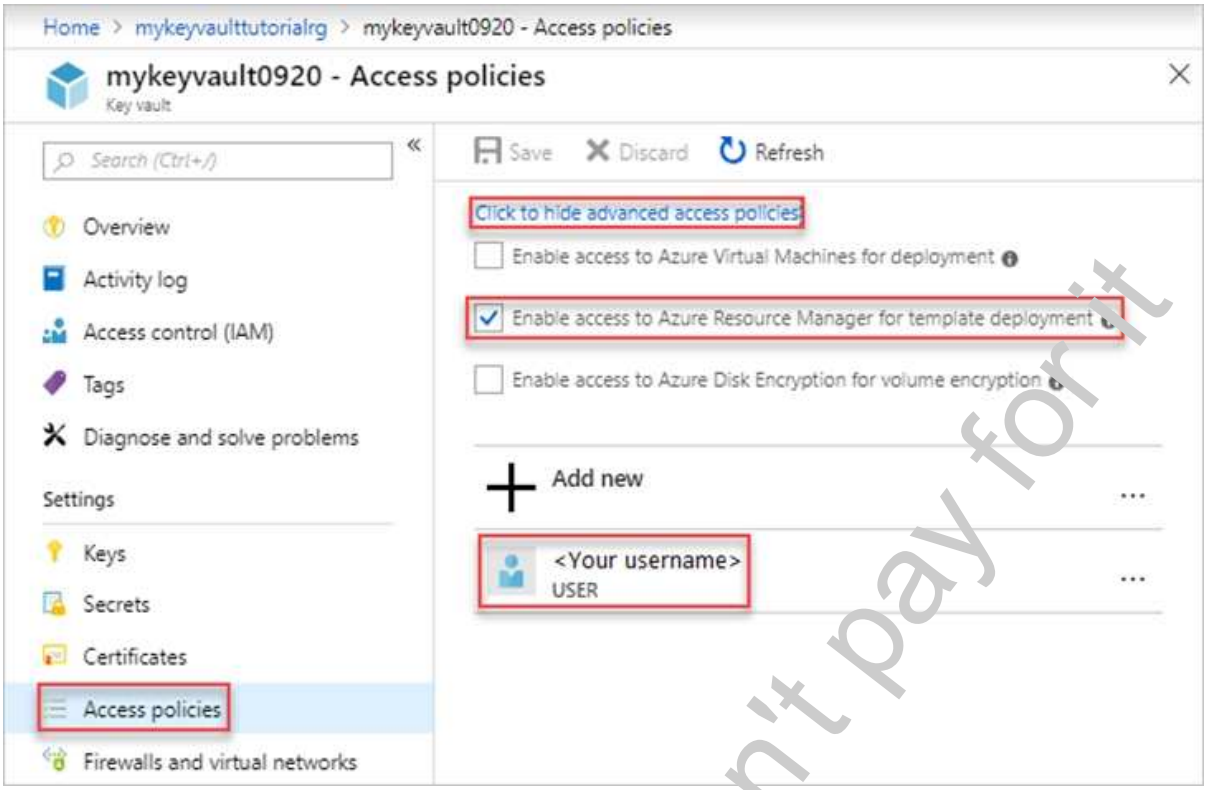

Box 2: RBAC
Management plane access control uses RBAC.
The management plane consists of operations that affect the key vault itself, such as:

- Creating or deleting a key vault.
- Getting a list of vaults in a subscription.
- Retrieving Key Vault properties (such as SKU and tags).
- Setting Key Vault access policies that control user and application access to keys and secrets.

References:
https://docs.microsoft.com/en-us/azure/azure-resource-manager/resource-manager-tutorial-use-key-vault

QUESTION 4
DRAG DROP

You need to configure access to Azure DevOps agent pools to meet the following requirements:

- Use a project agent pool when authoring build or release pipelines.
- View the agent pool and agents of the organization.
- Use the principle of least privilege.

Which role memberships are required for the Azure DevOps organization and the project? To answer, drag the appropriate role memberships to the correct targets. Each role membership 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.

Select and Place:

Correct Answer:

Section: [none]

Free Dump - Don't pay for it

Explanation

Explanation/Reference:
Explanation:

Box 1: Reader
Members of the Reader role can view the organization agent pool as well as agents. You typically use this to add operators that are responsible for monitoring the agents and their health.

Box 2: Service account
Members of the Service account role can use the organization agent pool to create a project agent pool in a project. If you follow the guidelines above for creating new project agent pools,
you typically do not have to add any members here.

Incorrect Answers:
In addition to all the permissions given the Reader and the Service Account role, members of the administrator role can register or unregister agents from the organization agent pool. They can also refer to the organization agent pool when creating a project agent pool in a project. Finally, they can also manage membership for all roles of the organization agent pool. The user that created the organization agent pool is automatically added to the Administrator role for that pool.

References: https://docs.microsoft.com/en-us/azure/devops/pipelines/agents/pools-queues

QUESTION 5
You have a branch policy in a project in Azure DevOps. The policy requires that code always builds successfully.

You need to ensure that a specific user can always merge changes to the master branch, even if the code fails to compile. The solution must use the principle of least privilege.

What should you do?

A. Add the user to the Build Administrators group.
B. Add the user to the Project Administrators group.
C. From the Security settings of the repository, modify the access control for the user.
D. From the Security settings of the branch, modify the access control for the user.

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
Explanation:
In some cases, you need to bypass policy requirements so you can push changes to the branch directly or complete a pull request even if branch policies are not satisfied. For these situations, grant the desired permission from the previous list to a user or group. You can scope this permission to an entire project, a repo, or a single branch. Manage this permission along the with other Git permissions.

References: https://docs.microsoft.com/en-us/azure/devops/repos/git/branch-policies

QUESTION 6
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:

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

Which merge strategy should you use in the branch policy?

A. squash merge
B. fast-forward merge
C. Git fetch
D. no-fast-forward merge

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
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 7
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.

A. Create a webhook in Jenkins.
B. Add the **Team Foundation Server (TFS)** plug-in to Jenkins.
C. Add a domain to your Jenkins account.
D. Create a personal access token in your Azure DevOps account.
E. Create a service hook in Azure DevOps.

Correct Answer: BDE
Section: [none]
Explanation

Explanation/Reference:
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

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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 8
DRAG DROP

Your company has four projects. The version control requirements for each project are shown in the following table.

Project	Requirement
Project 1	Project leads must be able to restrict access to individual files and folders on the repository.
Project 2	The version control system must enforce the following rules on the server before merging any changes to the main branch: • Changes must be reviewed by at least two project members. • Changes must be associated by at least one work item
Project 3	The project members must be able to work in Azure Repos directly from Xcode.
Project 4	The release branch must only be viewable or editable by the project leads.

You plan to use Azure Repos for all the projects.

Which version control system should you use 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.

Select and Place:

Correct Answer:

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: Team Foundation Version Control

TFVC lets you apply granular permissions and restrict access down to a file level.

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Box 2: Git
Git is the default version control provider for new projects. You should use Git for version control in your projects unless you have a specific need for centralized version control features in TFVC.

Box 3: Subversion
Note: Xcode is an integrated development environment (IDE) for macOS containing a suite of software development tools developed by Apple

Box 4: Git

Note: Perforce: Due to its multitenant nature, many groups can work on versioned files. The server tracks changes in a central database of MD5 hashes of file content, along with descriptive meta data and separately retains a master repository of file versions that can be verified through the hashes.

References:
https://searchitoperations.techtarget.com/definition/Perforce-Software

https://docs.microsoft.com/en-us/azure/devops/repos/git/share-your-code-in-git-xcode

https://docs.microsoft.com/en-us/azure/devops/repos/tfvc/overview

QUESTION 9
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?

A. Azure Key Vault
B. a Web.config file
C. an Appsettings.json file
D. an Azure Storage table
E. an Azure Resource Manager parameter file

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
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

QUESTION 10
HOTSPOT

Your company is creating a suite of three mobile applications.

You need to control access to the application builds. The solution must be managed at the organization level.

What should you use? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

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Hot Area:

Correct Answer:

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: Microsoft Visual Studio App Center distribution Groups
Distribution Groups are used to control access to releases. A Distribution Group represents a set of users that can be managed jointly and can have common access to releases. Example of Distribution Groups can be teams of users, like the QA Team or External Beta Testers or can represent stages or rings of releases, such as Staging.

Box 2: Shared
Shared distribution groups are private or public distribution groups that are shared across multiple apps in a single organization. Shared distribution groups eliminate the need to replicate distribution groups across multiple apps.

Note: With the Deploy with App Center Task in Visual Studio Team Services, you can deploy your apps from Azure DevOps (formerly known as VSTS) to App Center. By deploying to App Center, you will be able to distribute your builds to your users.

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

QUESTION 11
DRAG DROP

You are configuring Azure DevOps build pipelines.

You plan to use hosted build agents.

Which build agent pool should you use to compile each application type? To answer, drag the appropriate build agent pools to the correct application types. Each build agent pool 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.

Select and Place:

Correct Answer:

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: Hosted macOS
Hosted macOS pool (Azure Pipelines only): Enables you to build and release on macOS without having to configure a self-hosted macOS agent. This option affects where your data is stored.

Box 2: Hosted
Hosted pool (Azure Pipelines only): The Hosted pool is the built-in pool that is a collection of Microsoft-hosted agents.

Incorrect Answers:

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Default pool: Use it to register self-hosted agents that you've set up.

Hosted Windows Container pool (Azure Pipelines only): Enabled you to build and release inside Windows containers. Unless you're building using containers, Windows builds should run in the Hosted VS2017 or Hosted pools.

References: https://docs.microsoft.com/en-us/azure/devops/pipelines/agents/v2-osx

QUESTION 12
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?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
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

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 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?

A. Yes
B. No

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Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
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

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 add a trigger to the build pipeline.

Does this meet the goal?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
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

QUESTION 15
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?

A. Cobertura
B. Bullseye Coverage
C. MSTest
D. Coverlet
E. NUnit
F. Coverage.py

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Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
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

QUESTION 16
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?

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

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
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 17
You are automating the testing process for your company.

You need to automate UI testing of a web application.

Which framework should you use?

A. JaCoco
B. Selenium
C. Xamarin.UITest
D. Microsoft.CodeAnalysis

Correct Answer: B
Section: [none]
Explanation

Free Dump - Don't pay for it

Explanation/Reference:
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 18
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?

A. Create a variable group in Project1.
B. Add a secure file to Project1.
C. Modify the security settings of the pipelines.
D. Configure the security policy of Contoso.

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
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

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.

Free Dump - Don't pay for it

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.

Select and Place:

Correct Answer:

Section: [none]
Explanation

Explanation/Reference:
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.

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 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. a single long-running branch

Free Dump - Don't pay for it

B. multiple long-running branches
C. a single fork per team member
D. a single-running branch with multiple short-lived topic branches

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
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 21
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?

A. Add a Run Inline Azure PowerShell task to the pipeline.
B. Add a PowerShell task to the pipeline and run Set-AzureKeyVaultSecret.
C. Add a Azurre Key Vault task to the pipeline.
D. Add Azure Key Vault references to Azure Resource Manger templates.

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:
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 22
DRAG DROP

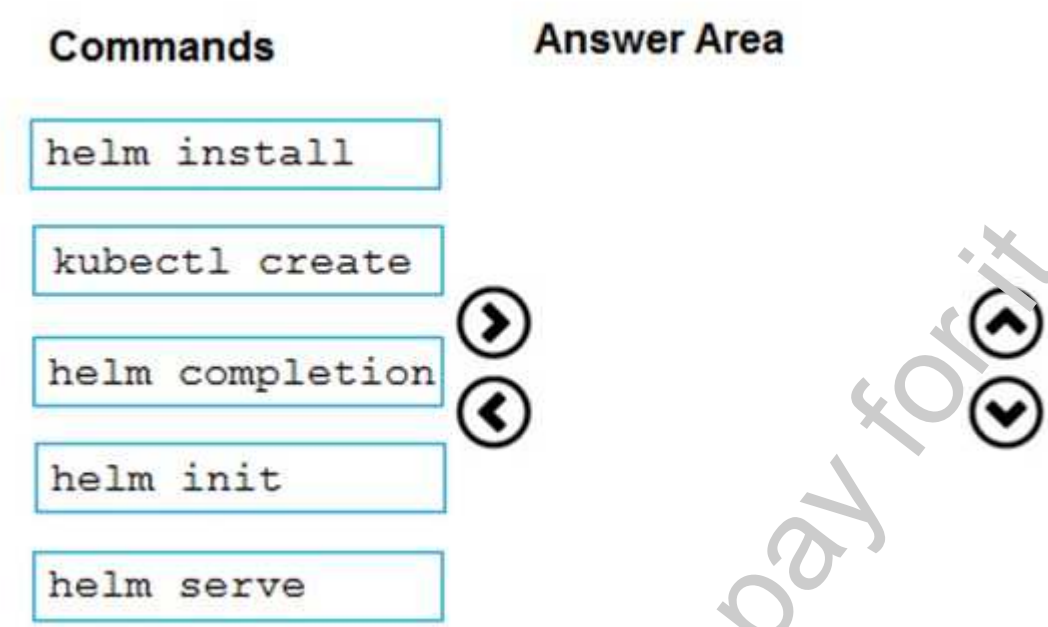
You provision an Azure Kubernetes Service (AKS) cluster that has RBAC enabled. You have a Helm chart for a client application.

You need to configure Helm and Tiller on the cluster and install the chart.

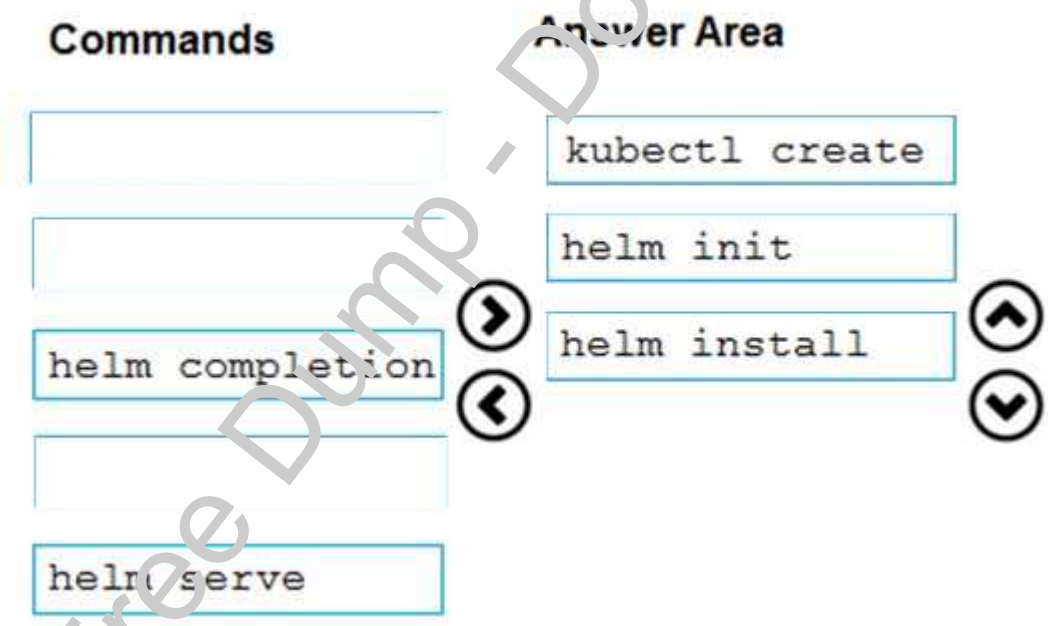
Which three commands should you recommend be run in sequence? To answer, move the appropriate commands from the list of commands to the answer area and arrange them in the correct order.

Select and Place:

Free Dump - Don't pay for it



Correct Answer:



Free Dump - Don't pay for it

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Step 1: Kubectl create
You can add a service account to Tiller using the --service-account <NAME> flag while you're configuring Helm

(step 2 below). As a prerequisite, you'll have to create a role binding which specifies a role and a service account name that have been set up in advance.
Example: Service account with cluster-admin role
$ kubectl create -f rbac-config.yaml
serviceaccount "tiller" created
clusterrolebinding "tiller" created
$ helm init --service-account tiller

Step 2: helm init
To deploy a basic Tiller into an AKS cluster, use the helm init command.

Step 3: helm install
To install charts with Helm, use the helm install command and specify the name of the chart to install.

References:
https://docs.microsoft.com/en-us/azure/aks/kubernetes-helm

https://docs.helm.sh/using_helm/#tiller-namespaces-and-rbac

QUESTION 23
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?

A. Yes
B. No

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
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.

Free Dump - Don't pay for it

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

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

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

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 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?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Instead use Octopus Tentacle.

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

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 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.

Free Dump - Don't pay for it

Does this meet the goal?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Instead use Octopus Tentacle.

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

QUESTION 26
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?

A. Microsoft Visual Studio test plans
B. Gradle wrapper scripts
C. SonarCloud analysis
D. the JavaScript task runner

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:
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/

QUESTION 27
SIMULATION

You need to ensure that an Azure web app named az400-9940427-main can retrieve secrets from an Azure key vault named az400-9940427-kv1 by using a system managed identity.

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The solution must use the principle of least privilege.

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

Correct Answer: See solution below.
Section: [none]
Explanation

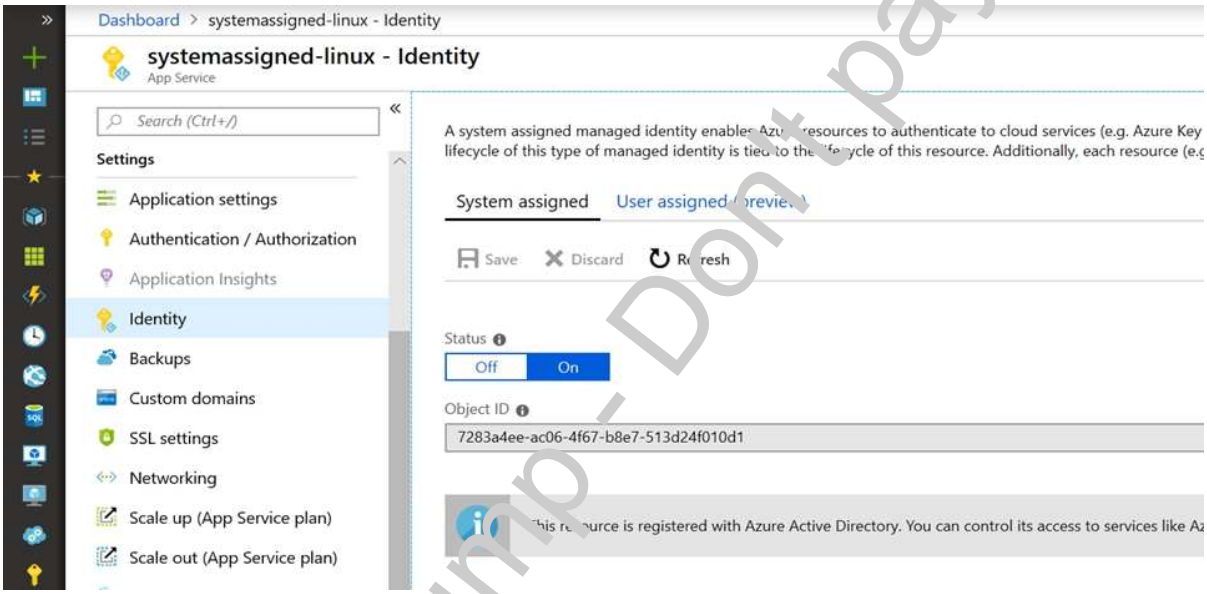
Explanation/Reference:
Explanation:

1. In Azure portal navigate to the az400-9940427-main app.

2. Scroll down to the Settings group in the left navigation.

3. Select Managed identity.

4. Within the System assigned tab, switch Status to On. Click Save.



References:
https://docs.microsoft.com/en-us/azure/app-service/overview-managed-identity

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Testlet 1

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 questions 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.

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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 1
HOTSPOT

How should you configure the filters for the Project5 trigger? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

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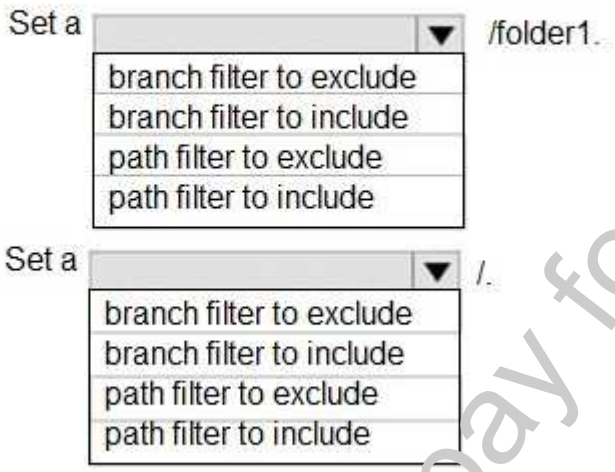
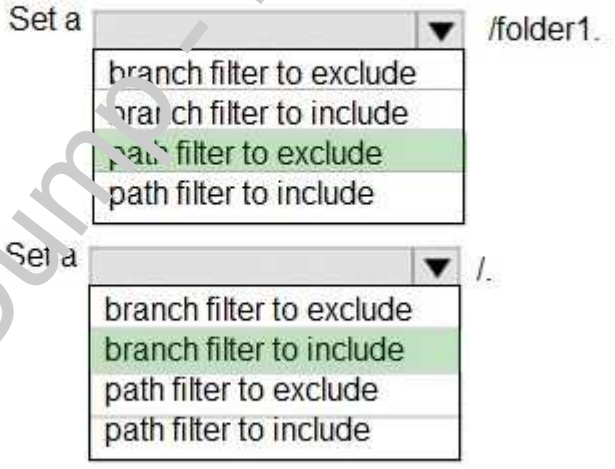
Answer Area



@

Correct Answer:

Answer Area



@

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Scenario:

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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.

Continuous integration (CI) triggers cause a build to run whenever a push is made to the specified branches or a specified tag is pushed.

Box 2: branch filter to include
You can specify branches to include and exclude. For example:

```
# specific branch build
trigger:
  branches:
    include:
    - master
    - releases/*
    exclude:
    - releases/old*
```

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

QUESTION 2
In Azure DevOps, you create Project3.

You need to meet the requirements of the project.

What should you do first?

A. From Azure DevOps, modify the build definition.
B. From SonarQube, obtain an authentication token.
C. From Azure DevOps, create a service endpoint.
D. From SonarQube, create a project.

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:
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 3
You need to implement Project4.

What should you do first?

A. Add the FROM instruction in the Dockerfile file.
B. Add a Copy and Publish Build Artifacts task to the build pipeline.
C. Add a Docker task to the build pipeline.
D. Add the MAINTAINER instruction in the Dockerfile file.

Correct Answer: C
Section: [none]

Free Dump - Don't pay for it

Explanation

Explanation/Reference:
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.

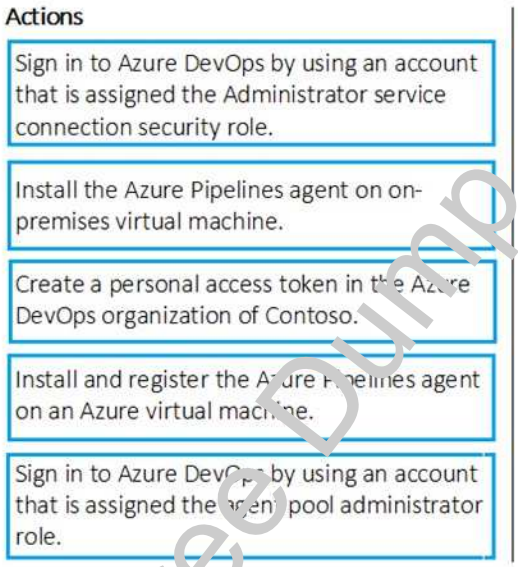
References:
https://docs.microsoft.com/en-us/azure/container-registry/container-registry-quickstart-task-cli

QUESTION 4
DRAG DROP

You need to recommend a procedure to implement the build agent for Project1.

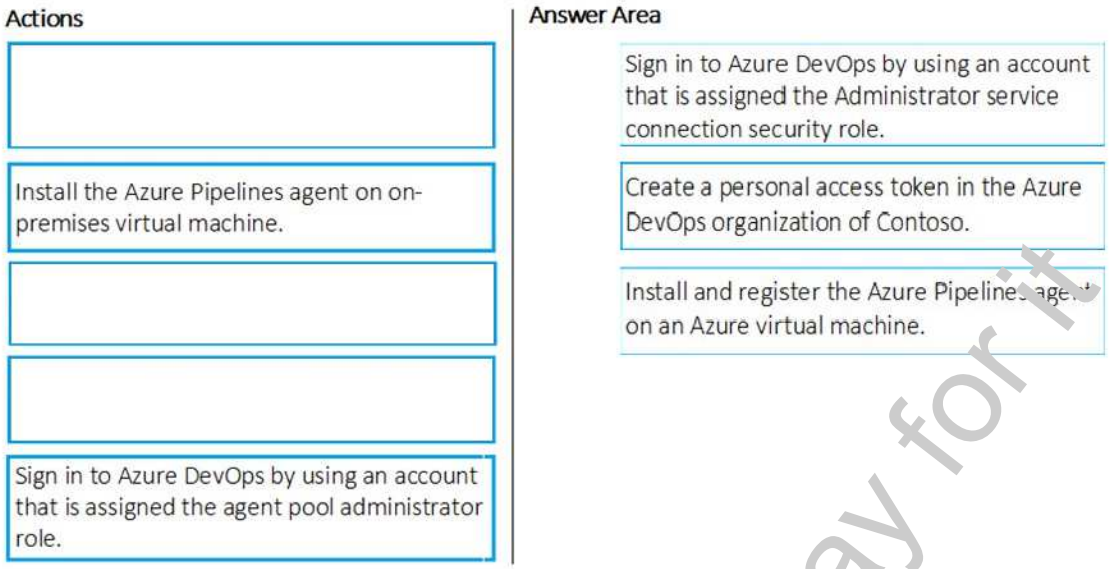
Which three actions should you recommend be performed in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

Select and Place:



Correct Answer:

Free Dump - Don't pay for it



Section: [none]
Explanation

Explanation/Reference:
Explanation:

Scenario:

Project 1	Project1 will provide support for incremental builds and third-party SDK components

Step 1: Sign in to Azure Devops by using an account that is assigned the Administrator service connection security role.

Note: Under Agent Phase, click Deploy Service Fabric Application. Click Docker Settings and then click Configure Docker settings. In Registry Credentials Source, select Azure Resource Manager Service Connection. Then select your Azure subscription.

Step 2: Create a personal access token
A personal access token or PAT is required so that a machine can join the pool created with the Agent Pools (read, manage) scope.

Step 3: Install and register the Azure Pipelines agent on an Azure virtual machine.
By running a Azure Pipeline agent in the cluster, we make it possible to test any service, regardless of type.

References:
https://docs.microsoft.com/en-us/azure/service-fabric/service-fabric-tutorial-deploy-container-app-with-cicd-vsts

https://mohitgoyal.co/2019/01/10/run-azure-devops-private-agents-in-kubernetes-clusters/

Free Dump - Don't pay for it

Question Set 2

QUESTION 1
DRAG DROP

You need to use Azure Automation State Configuration to manage the ongoing consistency of virtual machine configurations.

Which five 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.

NOTE: More than one order of answer choices is correct. You will receive credit for any of the correct orders you select.

Select and Place:

Correct Answer:

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Step 1: Assign the node configuration.
You create a simple DSC configuration that ensures either the presence or absence of the Web-Server Windows Feature (IIS), depending on how you assign nodes

Step 2: Upload a configuration to Azure Automation State Configuration.
You import the configuration into the Automation account.

Step 3: Compiling a configuration into a node configuration
Compiling a configuration in Azure Automation
Before you can apply a desired state to a node, a DSC configuration defining that state must be compiled into one or more node configurations (MOF document), and placed on the Automation DSC Pull Server.

Step 4: Onboard the virtual machines to Azure State Configuration
Onboarding an Azure VM for management with Azure Automation State Configuration

Step 5: Check the compliance status of the node.
Viewing reports for managed nodes. Each time Azure Automation State Configuration performs a consistency check on a managed node, the node sends a status report back to the pull server. You can view these reports on the page for that node.

On the blade for an individual report, you can see the following status information for the corresponding consistency check:
The report status — whether the node is "Compliant", the configuration "Failed", or the node is "Not Compliant" (when the node is in ApplyAndMonitor mode and the machine is not in the desired state).

References: https://docs.microsoft.com/en-us/azure/automation/automation-dsc-getting-started

QUESTION 2
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?

Free Dump - Don't pay for it

A. Configure the File System Agent plug-in.
B. Add a devDependencies section to Package-lock.json.
C. Configure the Artifactory plug-in.
D. Delete Package-lock.json.

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
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/

QUESTION 3
Your company deploys applications in Docker containers.

You want to detect known exploits in the Docker images used to provision the Docker containers.

You need to integrate image scanning into the application lifecycle. The solution must expose the exploits as early as possible during the application lifecycle.

What should you configure?

A. a task executed in the continuous integration pipeline and a scheduled task that analyzes the image registry
B. manual tasks performed during the planning phase and the deployment phase
C. a task executed in the continuous deployment pipeline and a scheduled task against a running production container
D. a task executed in the continuous integration pipeline and a scheduled task that analyzes the production container

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
Explanation:
You can use the Docker task to sign into ACR and then use a subsequent script to pull an image and scan the container image for vulnerabilities.
Use the docker task in a build or release pipeline. This task can be used with Docker or Azure Container registry.

Incorrect Answers:
C: We should not wait until deployment. We want to detect the exploits as early as possible.
D: We should wait until the image is in the product container. We want to detect the exploits as early as possible.

References: https://docs.microsoft.com/en-us/azure/devops/articles/security-validation-cicd-pipeline?view=vsts

QUESTION 4
Your company uses Azure DevOps for the build pipelines and deployment pipelines of Java-based projects.

Free Dump - Don't pay for it

You need to recommend a strategy for managing technical debt.

Which two actions should you include in the recommendation? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

A. Configure post-deployment approvals in the deployment pipeline.
B. Configure pre-deployment approvals in the deployment pipeline.
C. Integrate Azure DevOps and SonarQube.
D. Integrate Azure DevOps and Azure DevTest Labs.

Correct Answer: BC
Section: [none]
Explanation

Explanation/Reference:

QUESTION 5
Your company has a hybrid cloud between Azure and Azure Stack.

The company uses Azure DevOps for its full CI/CD pipelines. Some applications are built by using Erlang and Hack.

You need to ensure that Erlang and Hack are supported as part of the build strategy across the hybrid cloud. The solution must minimize management overhead.

What should you use to execute the build pipeline?

A. a Microsoft-hosted agent
B. Azure DevOps self-hosted agents on Azure DevTest Labs virtual machines.
C. Azure DevOps self-hosted agents on Hyper-V virtual machines
D. Azure DevOps self-hosted agents on virtual machines that run on Azure Stack

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Azure Stack offers virtual machines (VMs) as one type of an on-demand, scalable computing resource. You can choose a VM when you need more control over the computing environment.

References: https://docs.microsoft.com/en-us/azure/azure-stack/user/azure-stack-compute-overview

QUESTION 6
You need to recommend a Docker container build strategy that meets the following requirements:

- Minimizes image sizes
- Minimizes the security surface area of the final image

What should you include in the recommendation?

A. multi-stage builds
B. PowerShell Desired State Configuration (DSC)
C. Docker Swarm

Free Dump - Don't pay for it

D. single-stage builds

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Multi-stage builds are a new feature requiring Docker 17.05 or higher on the daemon and client. Multistage builds are useful to anyone who has struggled to optimize Dockerfiles while keeping them easy to read and maintain.

Incorrect Answers:
C: A swarm consists of multiple Docker hosts which run in swarm mode and act as managers (to manage membership and delegation) and workers (which run swarm services).

References: https://docs.docker.com/develop/develop-images/multistage-build/

QUESTION 7
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?

A. 1
B. 3
C. 4
D. 7

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
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

Free Dump - Don't pay for it

QUESTION 8
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?

A. OAuth
B. GitHub App
C. a personal access token
D. SAML

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
Explanation:
You can authenticate as a GitHub App.

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

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.

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?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:
In Visual Designer you enable continuous integration (CI) by:
1. Select the Triggers tab.
2. Enable Continuous integration.

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

QUESTION 10

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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?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Instead, In Visual Designer you enable continuous integration (CI) by:
1. Select the Triggers tab.
2. Enable Continuous integration.

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

QUESTION 11
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?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

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

Free Dump - Don't pay for it

1. Select the Triggers tab.
2. Enable Continuous integration.

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

QUESTION 12
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?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:
In Visual Designer you enable continuous integration (CI) by:
1. Select the Triggers tab.
2. 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

QUESTION 13
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?

A. Azure Cloud Service Deployment
B. Azure RM Web App Deployment
C. Azure PowerShell
D. Azure App Service Manage

Correct Answer: C
Section: [none]
Explanation

Free Dump - Don't pay for it

Explanation/Reference:
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.

1. 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.
2. 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

QUESTION 14
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?

A. Chef
B. Gradle
C. Octopus
D. Gulp

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
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 15
DRAG DROP

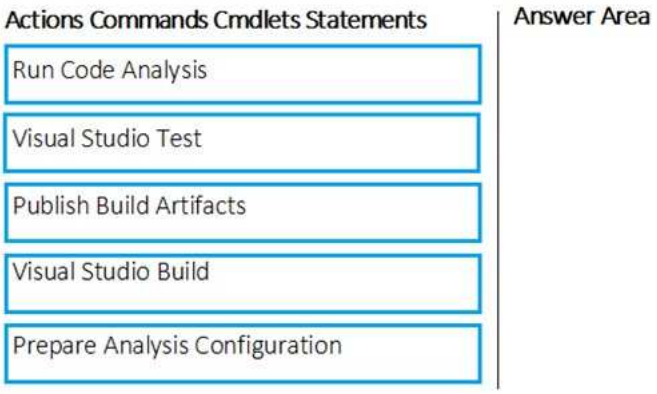
You are developing a full Microsoft .NET Framework solution that includes unit tests.

You need to configure SonarQube to perform a code quality validation of the C# code as part of the build pipelines.

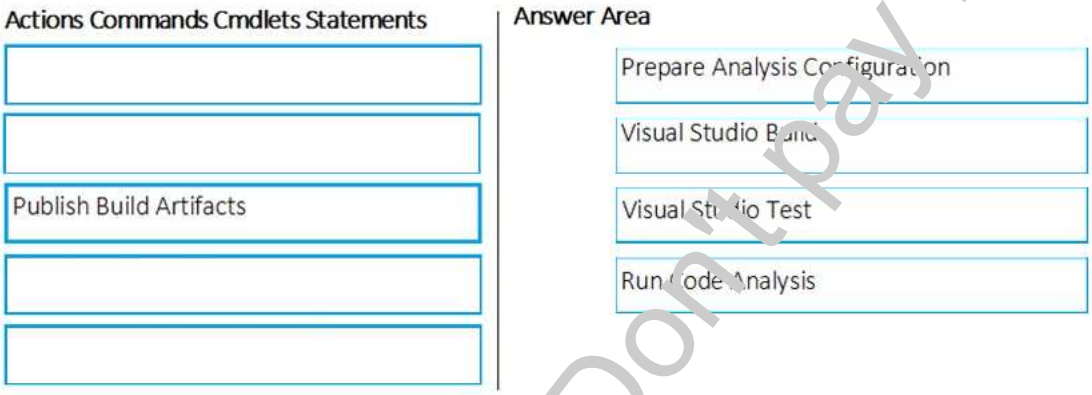
Which four tasks should you perform in sequence? To answer, move the appropriate tasks from the list of tasks to the answer area and arrange them in the correct order.

Select and Place:

Free Dump - Don't pay for it



Correct Answer:



Section: [none]
Explanation

Explanation/Reference:
Explanation:

Step 1: Prepare Analysis Configuration
Prepare Analysis Configuration task, to configure all the required settings before executing the build.
This task is mandatory.
In case of .NET solutions or Java projects, it helps to integrate seamlessly with MSBuild, Maven and Gradle tasks.

Step 2: Visual Studio Build
Reorder the tasks to respect the following order:
Prepare Analysis Configuration task before any MSBuild or Visual Studio Build task.

Step 3: Visual Studio Test
Reorder the tasks to respect the following order:
Run Code Analysis task after the Visual Studio Test task.

Step 4: Run Code Analysis
Run Code Analysis task, to actually execute the analysis of the source code.
This task is not required for Maven or Gradle projects, because scanner will be run as part of the Maven/ Gradle build.

Note:

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

QUESTION 16
You have an Azure DevOps organization named Contoso and an Azure DevOps project named Project1.

You plan to use Microsoft-hosted agents to build containers 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.

A. vs2017-win2016
B. ubuntu-16.04
C. win1803
D. macOS-10.13
E. vs.2015-win2012r2

Correct Answer: BC
Section: [none]
Explanation

Explanation/Reference:
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)

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

QUESTION 17
HOTSPOT

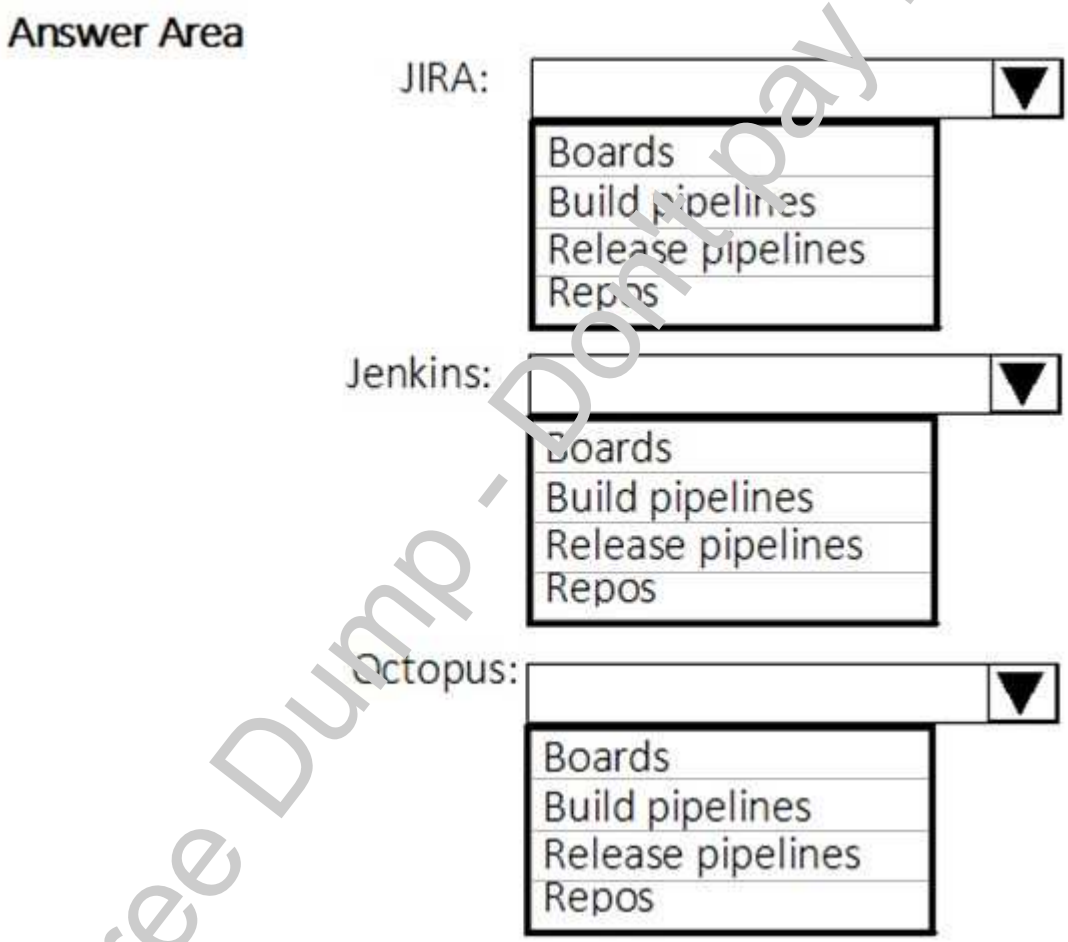
You currently use JIRA, Jenkins, and Octopus as part of your DevOps processes.

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.

Hot Area:



Correct Answer:

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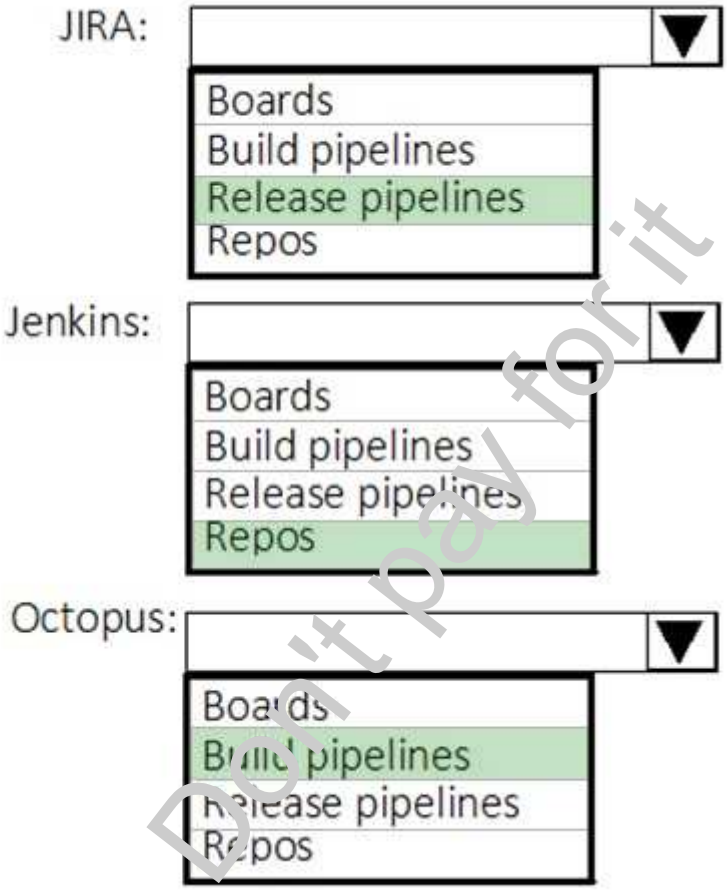
Answer Area



Section: [none]
Explanation

Explanation/Reference:
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

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

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

QUESTION 18
Your company has a project in Azure DevOps.

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

What should you use?

A. deployment conditions
B. deployment queue settings
C. release gates
D. pull request triggers

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
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

QUESTION 19
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?

A. integration testing
B. staging
C. production release
D. build

Correct Answer: A
Section: [none]
Explanation

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

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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 20
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?

A. Grunt
B. Chef
C. Maven
D. Gulp

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:
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 21
DRAG DROP

Your company has a project in Azure DevOps.

You plan to create a release pipeline that will deploy resources by using Azure Resource Manager templates. The templates will reference secrets stored in Azure Key Vault.

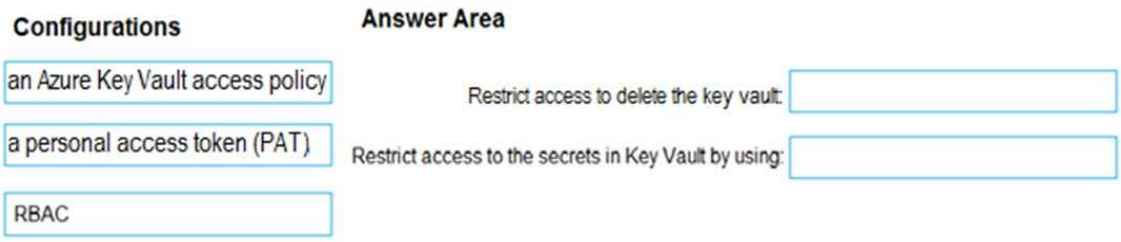
You need to recommend a solution for accessing the secrets stored in the key vault during deployments. The solution must use the principle of least privilege.

What should you include in the recommendation? To answer, drag the appropriate configurations to the correct targets. Each configuration 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.

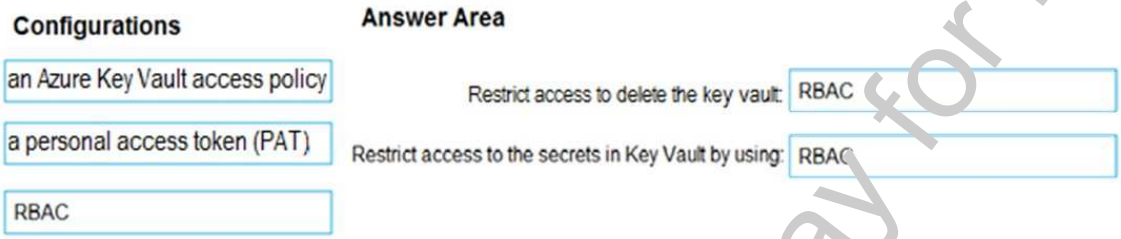
NOTE: Each correct selection is worth one point.

Select and Place:

Free Dump - Don't pay for it



Correct Answer:



Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: RBAC
Management plane access control uses RBAC.
The management plane consists of operations that affect the key vault itself, such as:

- Creating or deleting a key vault.
- Getting a list of vaults in a subscription.
- Retrieving Key Vault properties (such as SKU and tags).
- Setting Key Vault access policies that control user and application access to keys and secrets.

Box 2: RBAC

References:
https://docs.microsoft.com/en-us/azure/azure-resource-manager/resource-manager-tutorial-use-key-vault

QUESTION 22
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.

Correct Answer: See solution below.
Section: [none]
Explanation

Explanation/Reference:
Explanation:

1. Open Microsoft Azure Portal

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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.

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

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Testlet 1

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 questions 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.

Existing Environment

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

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.

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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.
- 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 1
What should you use to implement the code quality restriction on the release pipeline for the investment planning applications suite?

A. a pre-deployment approval
B. a deployment gate
C. a post-deployment approval
D. a trigger

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Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
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

QUESTION 2
HOTSPOT

How should you configure the release retention policy for the investment planning applications suite? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Correct Answer:

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Scenario: By default, all releases must remain available for 30 days, except for production releases, which must be kept for 60 days.

Box 1: Set the default retention policy to 30 days
The Global default retention policy sets the default retention values for all the build pipelines. Authors of build pipelines can override these values.

Box 2: Set the stage retention policy to 60 days
You may want to retain more releases that have been deployed to specific stages.

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

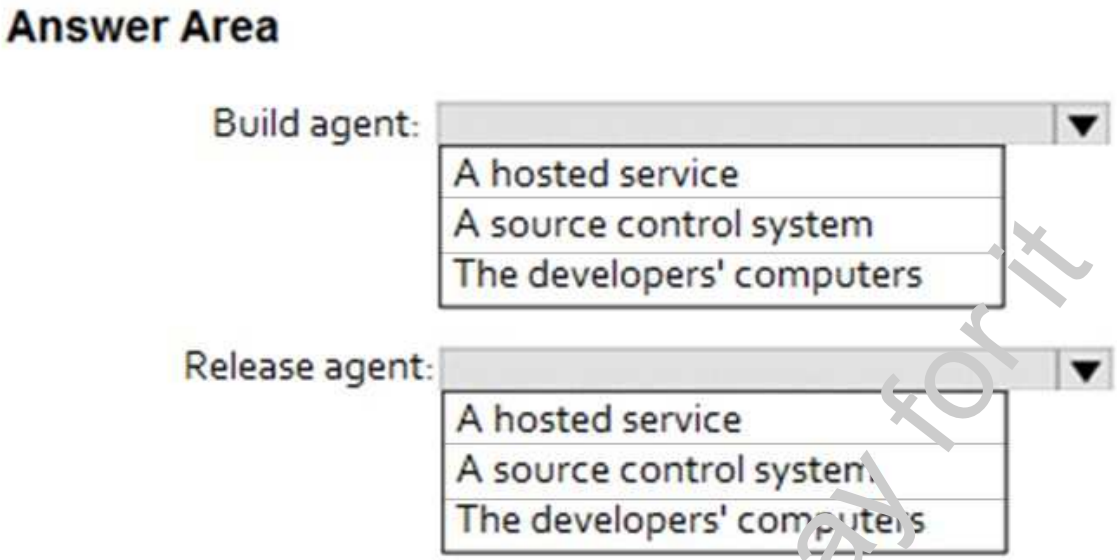
QUESTION 3
HOTSPOT

Where should the build and release agents for the investment planning application suite run? To answer, select the appropriate options in the answer area.

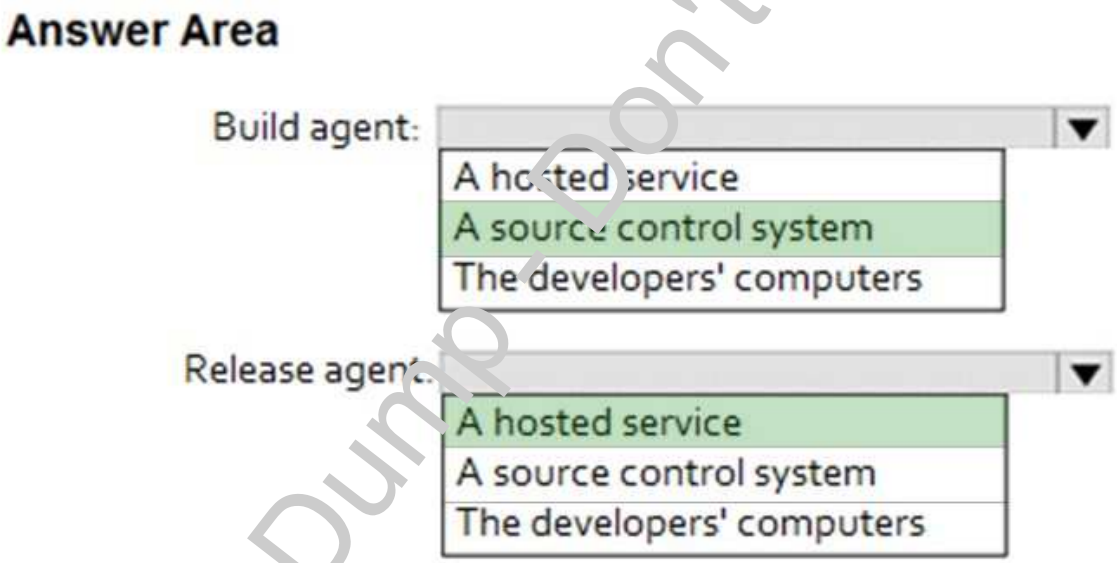
NOTE: Each correct selection is worth one point.

Hot Area:

Free Dump - Don't pay for it



Correct Answer:



Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: A source control system
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.

Box 2: A hosted service
To build and deploy Xcode apps or Xamarin.iOS projects, you'll need at least one macOS agent. If your pipelines are in Azure Pipelines and a Microsoft-hosted agent meets your needs, you can skip setting up a self-hosted macOS agent.

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Scenario: 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.

References:
https://docs.microsoft.com/en-us/azure/devops/pipelines/agents/v2-osx?view=azure-devops

Free Dump - Don't pay for it

Question Set 2

QUESTION 1
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 main template that will deploy the resources in one resource group and a nested template that will deploy the resources in the other resource group.

Does this meet the goal?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Use two linked templates, instead of the nested template.

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

QUESTION 2
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 main template that has two linked templates, each of which will deploy the resources in its respective group.

Does this meet the goal?

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A. Yes
B. No

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
Explanation:
To deploy your solution, you can use either a single template or a main template with many related templates. The related template can be either a separate file that is linked to from the main template, or a template that is nested within the main template.

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

QUESTION 3
HOTSPOT

You have a project in Azure DevOps.

You plan to create a build pipeline that will deploy resources by using Azure Resource Manager templates. The templates will reference secrets stored in Azure Key Vault.

You need to ensure that you can dynamically generate the resource ID of the key vault during template deployment.

What should you include in the template? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Correct Answer:

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: "Microsoft.Resources/deployments"
Reference a secret with dynamic ID: You need to reference a key vault secret that varies based on the current deployment.

Example:
```
"resources": [
    {
        "apiVersion": "2018-05-01",
        "name": "dynamicSecret",
        "type": "Microsoft.Resources/deployments",
        "properties": {
            "mode": "Incremental",
            "templateLink": {
```

Box 2: "templateLink"
In your parent template, you add the linked template and pass in a parameter that contains the dynamically generated resource ID.

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

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parameter

QUESTION 4
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.

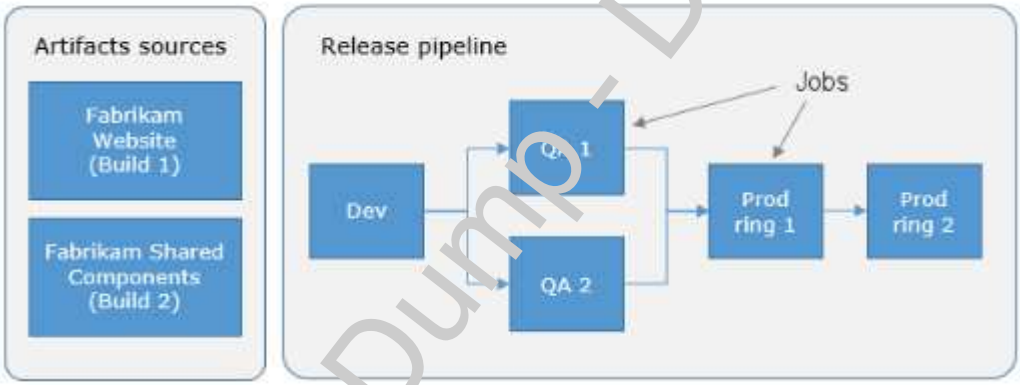
What are two ways to integrate ServiceNow into the Azure DevOps release pipeline? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

A. Define a deployment control that invokes the ServiceNow REST API.
B. Define a pre-deployment gate before the deployment to the Prod stage.
C. Define a deployment control that invokes the ServiceNow SOAP API.
D. Define a post-deployment gate after the deployment to the QA stage.

Correct Answer: BD
Section: [none]
Explanation

Explanation/Reference:
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

QUESTION 5
HOTSPOT

You are configuring a release pipeline in Azure DevOps as shown in the exhibit.

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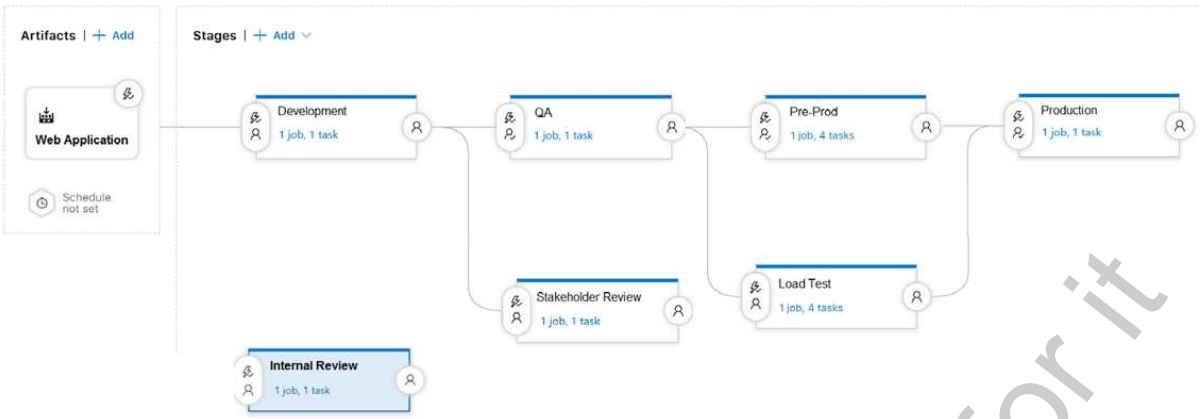

Use the drop-down menus to select the answer choice that answers each question based on the information presented in the graphic.

NOTE: Each correct selection is worth one point.

Hot Area:

Correct Answer:

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: 5
There are five stages: Development, QA, Pre-production, Load Test and Production. They all have triggers.

Box 2: The Internal Review stage

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

QUESTION 6
DRAG DROP

Your company plans to deploy an application to the following endpoints:

- Ten virtual machines hosted in Azure
- Ten virtual machines hosted in an on-premises data center environment

All the virtual machines have the Azure Pipelines agent.

You need to implement a release strategy for deploying the application to the endpoints.

What should you recommend using to deploy the application to the endpoints? To answer, drag the appropriate components to the correct endpoints. Each component 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.

Select and Place:

Correct Answer:

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Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: A deployment group
When authoring an Azure Pipelines or TFS Release pipeline, you can specify the deployment targets for a job using a deployment group.
If the target machines are Azure VMs, you can quickly and easily prepare them by installing the Azure Pipelines Agent Azure VM extension on each of the VMs, or by using the Azure Resource Group Deployment task in your release pipeline to create a deployment group dynamically.

Box 2: A deployment group

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

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 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?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Use a gate From Pre-deployment conditions instead.

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

QUESTION 8
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.

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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?

A. Yes
B. No

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
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

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 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?

A. Yes
B. No

Correct Answer: B

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Section: [none]
Explanation

Explanation/Reference:
Explanation:
Use a gate instead of an approval instead.

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

QUESTION 10
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?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Use a main template and two linked templates.

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

QUESTION 11
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.

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

Does this meet the goal?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
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

QUESTION 12
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.

Hot Area:

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Answer Area

```
{
 "policyRule": {
   "if": {
    "allOf": [
      {
       "field": "type",
       "equals":
       ,
      {
       "not": {
         "field": "tags['organization']",
         "equals": "Contoso"
       }
      }
     ]
    },
    "then": {
      "effect":
      "details": [
        {
          "field": "tags['organization']",
          "value": "Contoso"
        }
      ]
    }
  }
}
```

"MicrosoftResources/deployments"
"MicrosoftResources/subscriptions"
"MicrosoftResources/subscriptions/resourceGroups"

"Append",
"Deny",
"DeployIfNotExist",

Correct Answer:

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Answer Area



Section: [none]
Explanation

Explanation/Reference:
Explanation:

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

Box 2: "Deny"
Sample - Enforce tag and its value on resource groups

```
},
    "policyRule": {
      "if": {
        "allOf": [
          {
            "field": "type",
            "equals": "Microsoft.Resources/subscriptions/resourceGroups"
          },
```

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```
            {
              "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

QUESTION 13
DRAG DROP

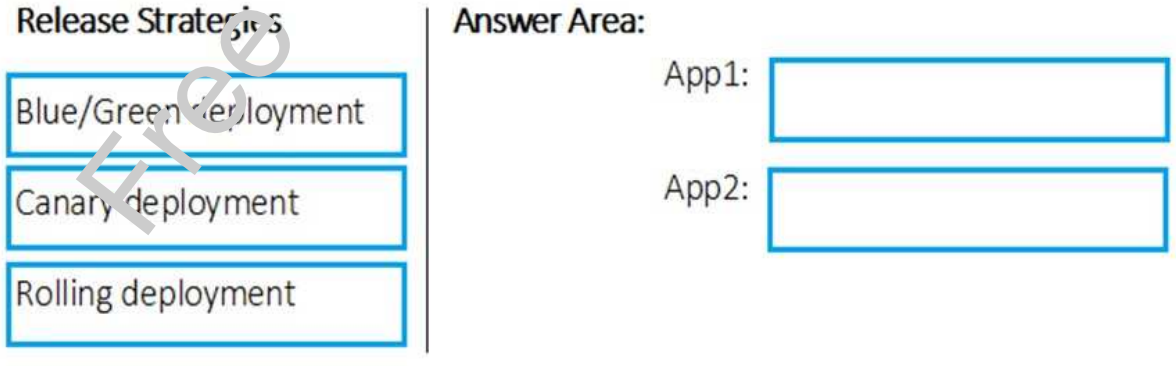
You are defining release strategies for two applications as shown in the following table.

Application name	Goal
App1	Failure of App1 has a major impact on your company. You need a small group of users, who opted in to a testing App1, to test new releases of the application.
App2	You need to minimize the time it takes to deploy new releases of App2, and you must be able to roll back as quickly as possible.

Which release strategy should you use for each application? To answer, drag the appropriate release strategies to the correct applications. Each release strategy 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.

Select and Place:



Correct Answer:

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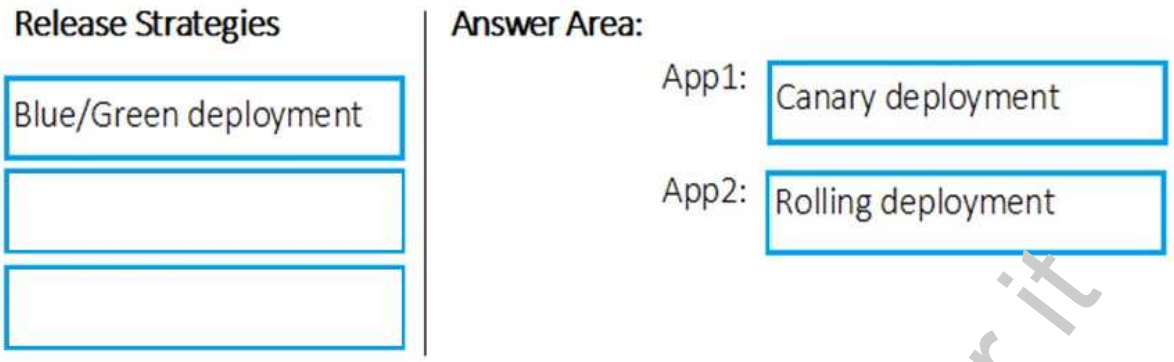

Section: [none]
Explanation

Explanation/Reference:
Explanation:

App1: Canary deployment
With canary deployment, you deploy a new application code in a small part of the production infrastructure. Once the application is signed off for release, only a few users are routed to it. This minimizes any impact.

With no errors reported, the new version can gradually roll out to the rest of the infrastructure.

App2: Rolling deployment:
In a rolling deployment, an application's new version gradually replaces the old one. The actual deployment happens over a period of time. During that time, new and old versions will coexist without affecting functionality or user experience. This process makes it easier to roll back any new component incompatible with the old components.

Incorrect Answers:
Blue/Green deployment

A blue/green deployment is a change management strategy for releasing software code. Blue/green deployments, which may also be referred to as A/B deployments require two identical hardware environments that are configured exactly the same way. While one environment is active and serving end users, the other environment remains idle.

Blue/green deployments are often used for consumer-facing applications and applications with critical uptime requirements. New code is released to the inactive environment, where it is thoroughly tested. Once the code has been vetted, the team makes the idle environment active, typically by adjusting a router configuration to redirect application program traffic. The process reverses when the next software iteration is ready for release.

References:
https://dev.to/mostlyjason/intro-to-deployment-strategies-blue-green-canary-and-more-3a3

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 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.

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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?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
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

QUESTION 15
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?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
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

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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

QUESTION 16
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?

A. Yes
B. No

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
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

QUESTION 17
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.

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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?

A. Yes
B. No

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
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

QUESTION 18
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?

A. an Azure Scheduler job
B. a trigger
C. a gate
D. an Azure function

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:
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

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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

QUESTION 19
SIMULATION

You need to ensure that an Azure web app named az400-9940427-main supports rolling upgrades. The solution must ensure that only 10 percent of users who connect to az400-9940427-main use update versions of the app.

The solution must minimize administrative effort.

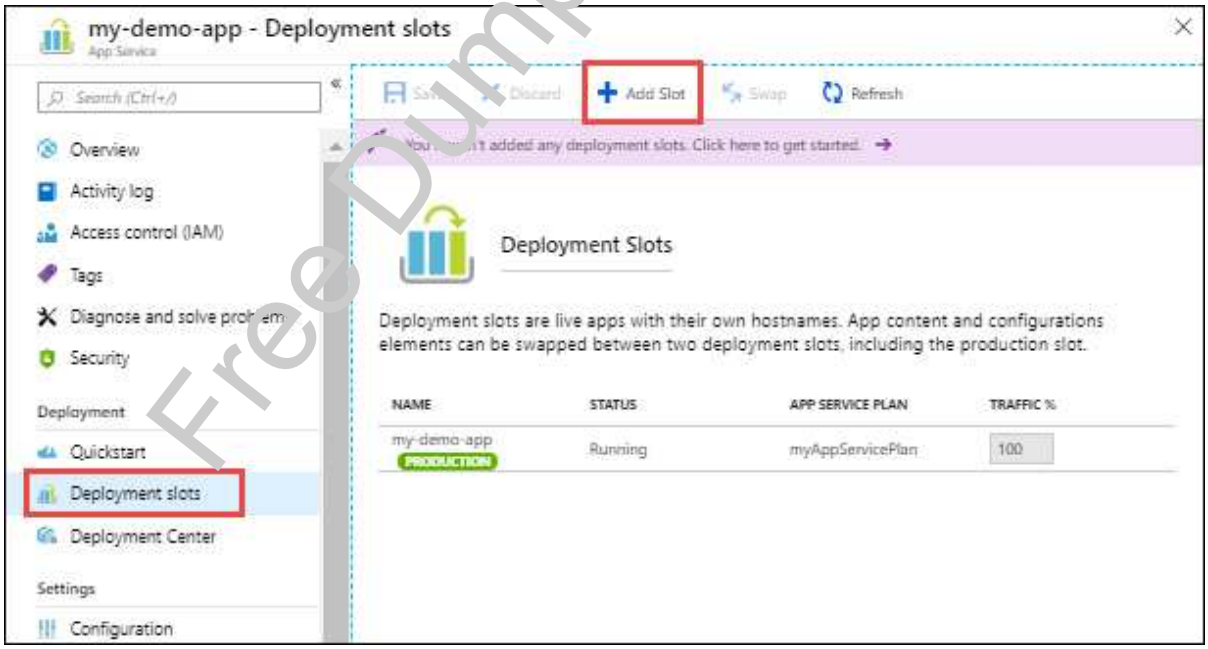
To complete this task, sign in to the Microsoft Azure portal.

Correct Answer: See solution below.
Section: [none]
Explanation

Explanation/Reference:
Explanation:
Set up staging environments in Azure App Service

1. Open Microsoft Azure Portal

2. Log into your Azure account, select your app's resource page, in the left pane, select Deployment slots > Add Slot.



3. In the Add a slot dialog box, give the slot a name, and select whether to clone an app configuration from

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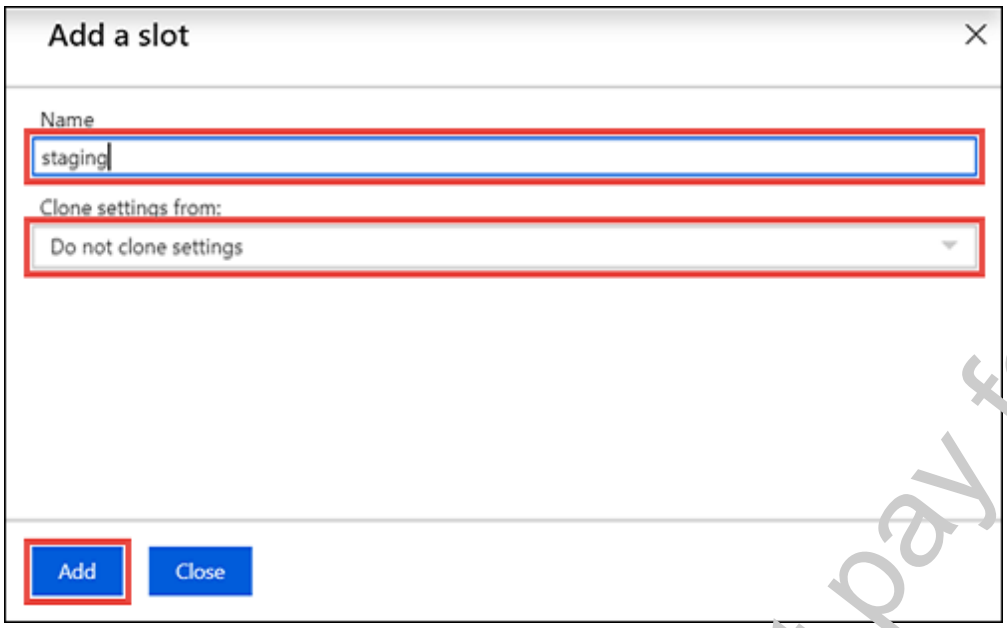
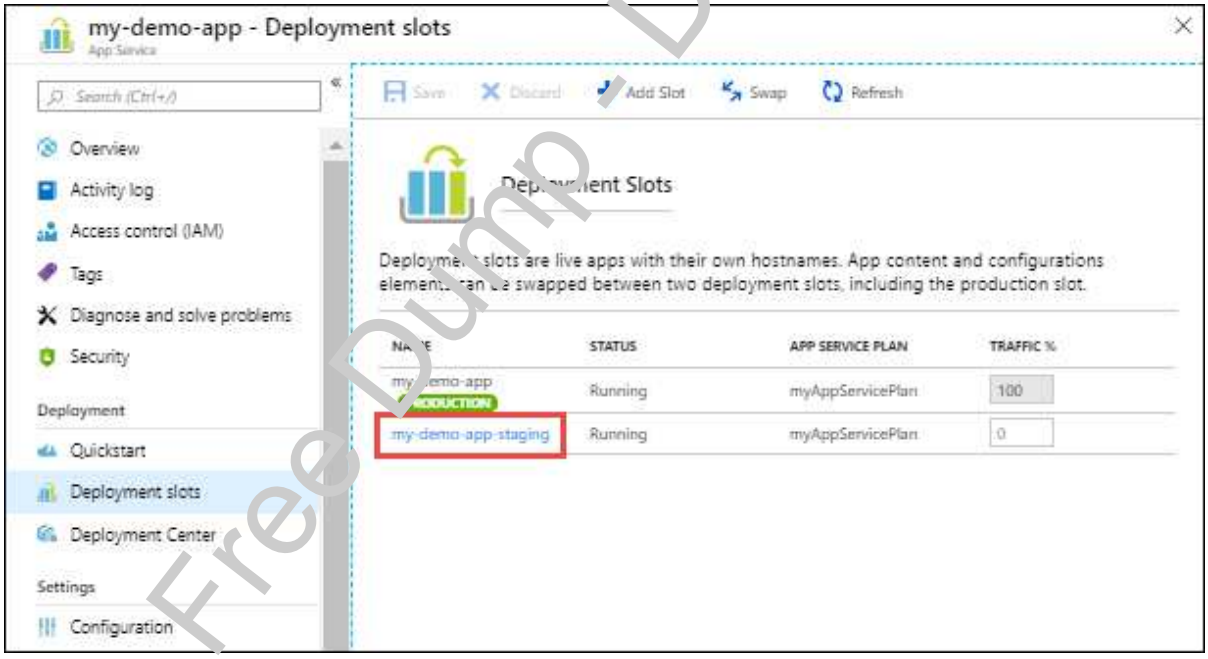
another deployment slot. Select Add to continue.



4. After the slot is added, select Close to close the dialog box. The new slot is now shown on the Deployment slots page. By default, Traffic % is set to 0 for the new slot, with all customer traffic routed to the production slot.

5. Select the new deployment slot to open that slot's resource page.



6. Change TRAFFIC % to 10

References:
https://docs.microsoft.com/en-us/azure/app-service/deploy-staging-slots

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Testlet 1

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 questions 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

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

Existing Environment

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

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.

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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.
- 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'
```

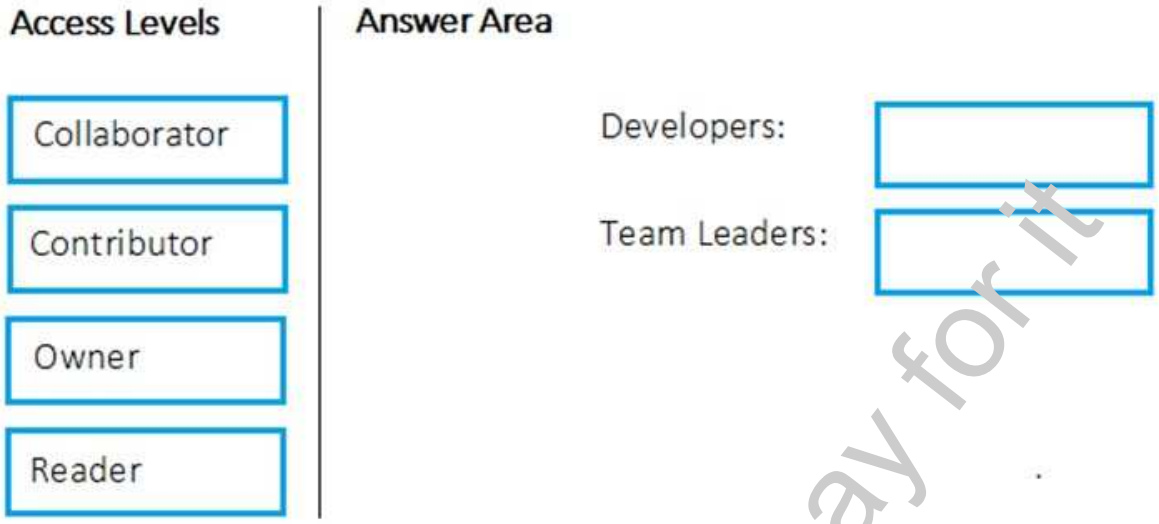
QUESTION 1
DRAG DROP

Which package feed access levels should be assigned to the Developers and Team Leaders groups for the investment planning applications suite? To answer, drag the appropriate access levels to the correct groups. Each access level 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.

Free Dump - Don't pay for it

Select and Place:



Correct Answer:



Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: Reader
Members of a group named Developers must be able to install packages.

Feeds have four levels of access: Owners, Contributors, Collaborators, and Readers. Owners can add any type of identity-individuals, teams, and groups-to any access level.

Box 2: Owner
Members of a group named Team Leaders must be able to create new packages and edit the permissions of package feeds.

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Permission	Reader	Collaborator	Contributor	Owner
List and restore/install packages	✓	✓	✓	✓
Save packages from upstream sources		✓	✓	✓
Push packages			✓	✓
Unlist/deprecate packages			✓	✓
Delete/unpublish package				✓
Edit feed permissions				✓
Rename and delete feed				✓

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Testlet 2

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 questions 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.

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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.

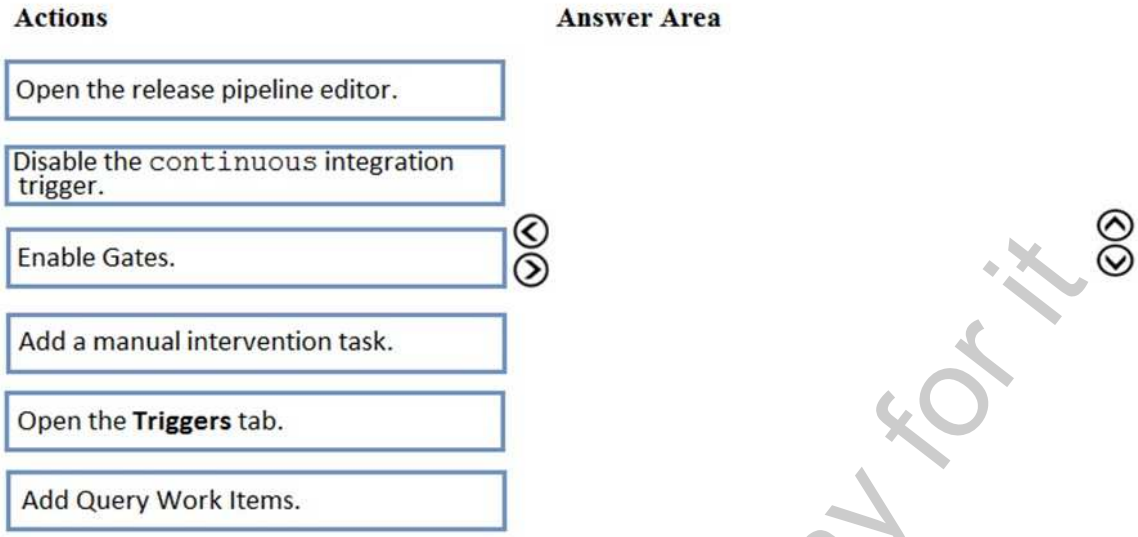
QUESTION 1
DRAG DROP

You need to implement Project6.

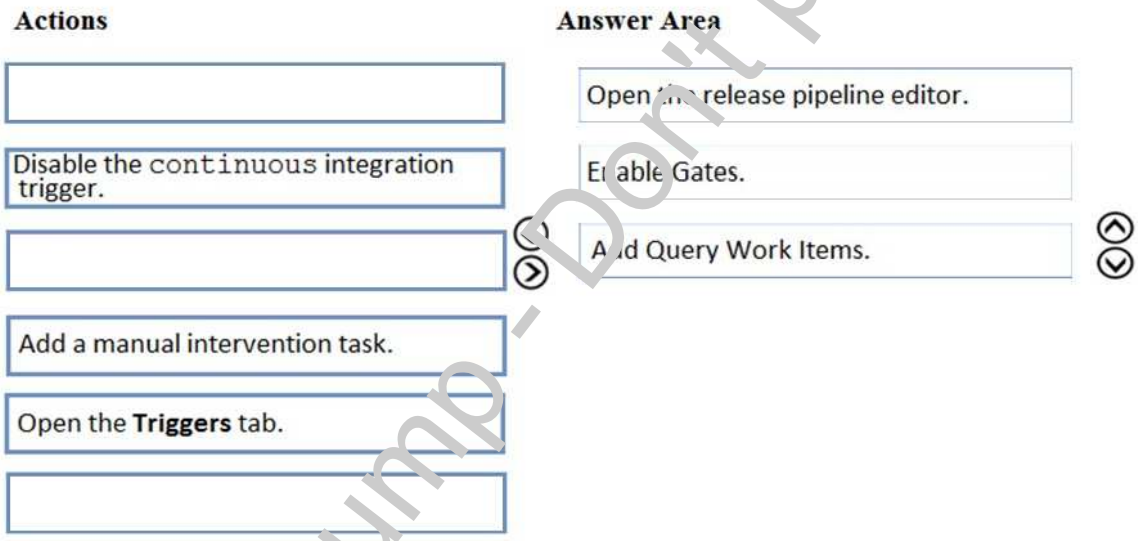
Which three actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

Select and Place:

Free Dump - Don't pay for it



Correct Answer:



Section: [none]
Explanation

Explanation/Reference:
Explanation:

Scenario: Implement Project3, Project5, Project6, and Project7 based on the planned changes

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.

Step 1: Open the release pipeline editor.
In the Releases tab of Azure Pipelines, select your release pipeline and choose Edit to open the pipeline editor.

Step 2: Enable Gates.
Choose the pre-deployment conditions icon for the Production stage to open the conditions panel. Enable

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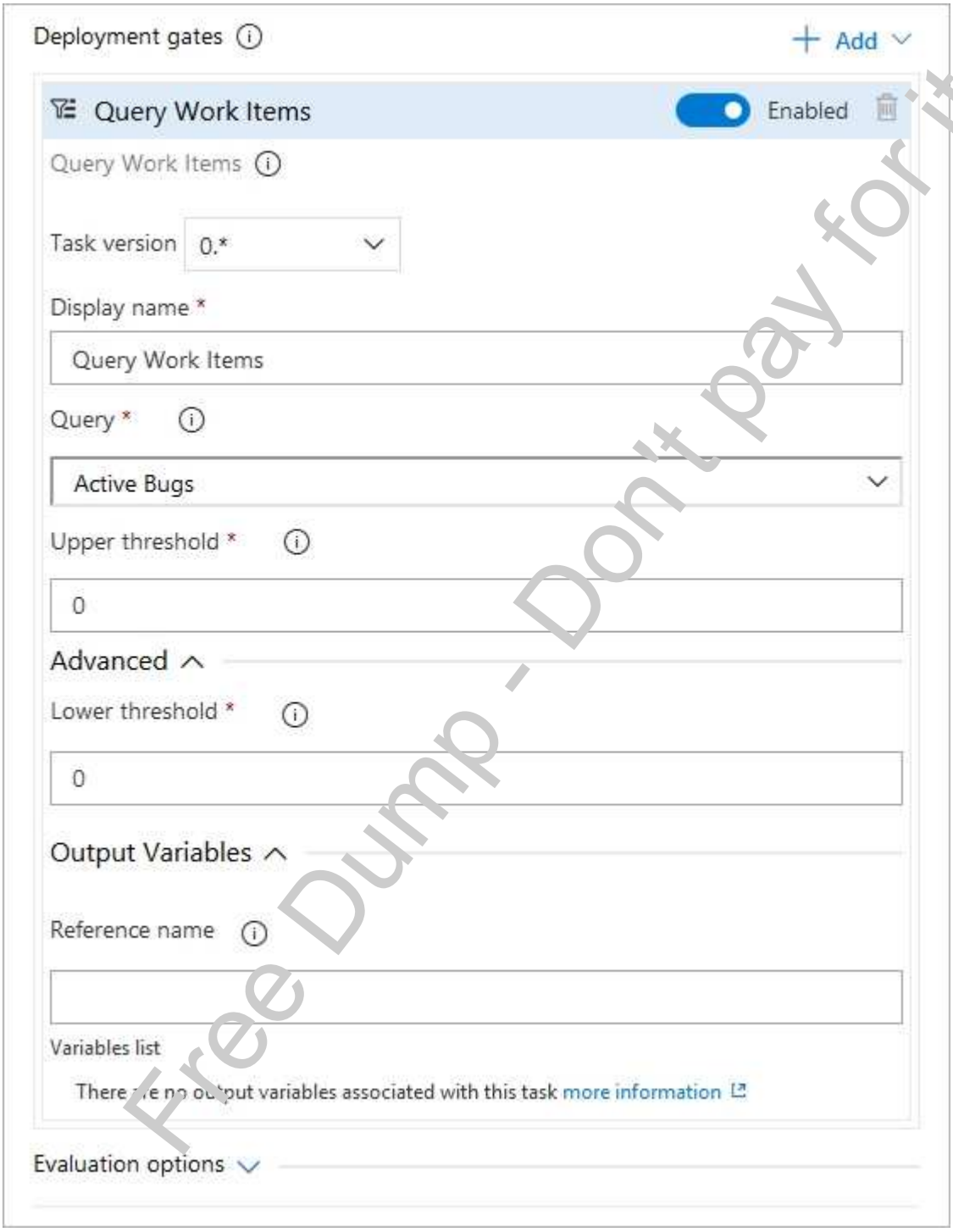
gates by using the switch control in the Gates section.

Step 3: Add Query Work items.
Choose + Add and select the Query Work Items gate.
Configure the gate by selecting an existing work item query.



Free Dump - Don't pay for it

Note: A case for release gate is:
Incident and issues management. Ensure the required status for work items, incidents, and issues. For example, ensure deployment occurs only if no priority zero bugs exist, and validation that there are no active incidents takes place after deployment.

References:
https://docs.microsoft.com/en-us/azure/devops/pipelines/release/deploy-using-approvals?view=azure-devops#configure-gate

Free Dump - Don't pay for it

Question Set 3

QUESTION 1
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?

A. local symbols
B. views
C. global symbols
D. upstream sources

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
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

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

QUESTION 2
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?

A. Microsoft Visual SourceSafe
B. PDM
C. WhiteSource
D. OWASP ZAP

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:
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

Free Dump - Don't pay for it

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 definitive database of open source repositories.

Azure DevOps integration with WhiteSource Bolt will enable you to:

1. Detect and remedy vulnerable open source components.
2. Generate comprehensive open source inventory reports per project or build.
3. Enforce open source license compliance, including dependencies' licenses.
4. 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/

QUESTION 3
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?

A. Microsoft Visual SourceSafe
B. Code Style
C. Black Duck
D. Jenkins
E. SourceGea
F. OWASP ZAP

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:
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

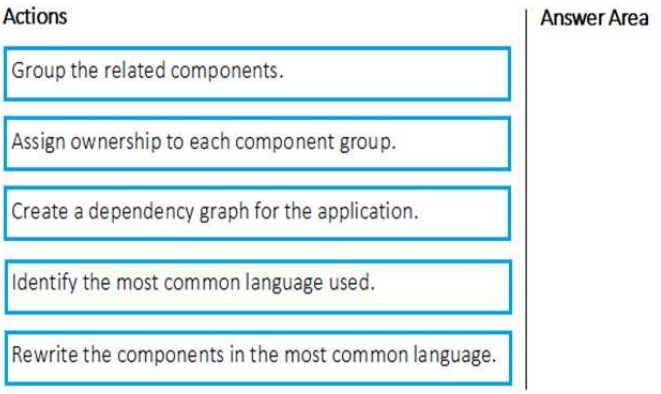
QUESTION 4
DRAG DROP

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

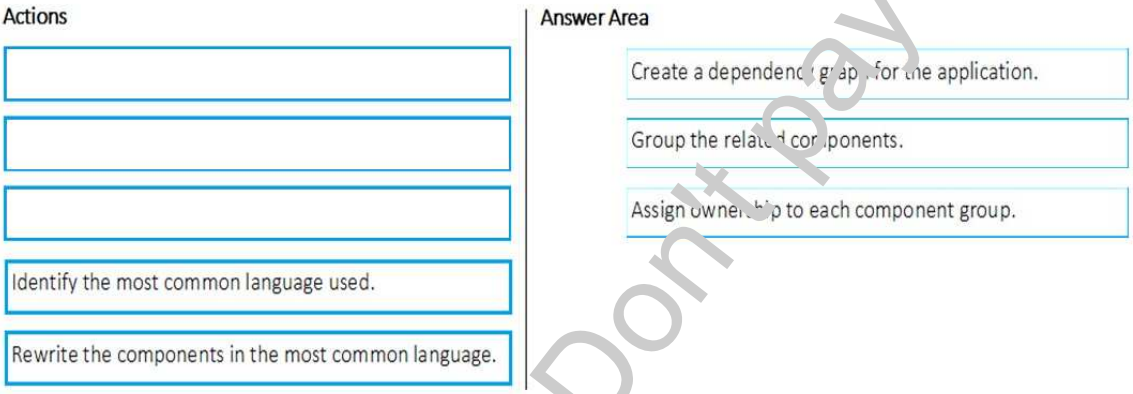
Which three actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

Select and Place:

Free Dump - Don't pay for it



Correct Answer:



Section: [none]
Explanation

Explanation/Reference:
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.
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 5
DRAG DROP

Free Dump - Don't pay for it

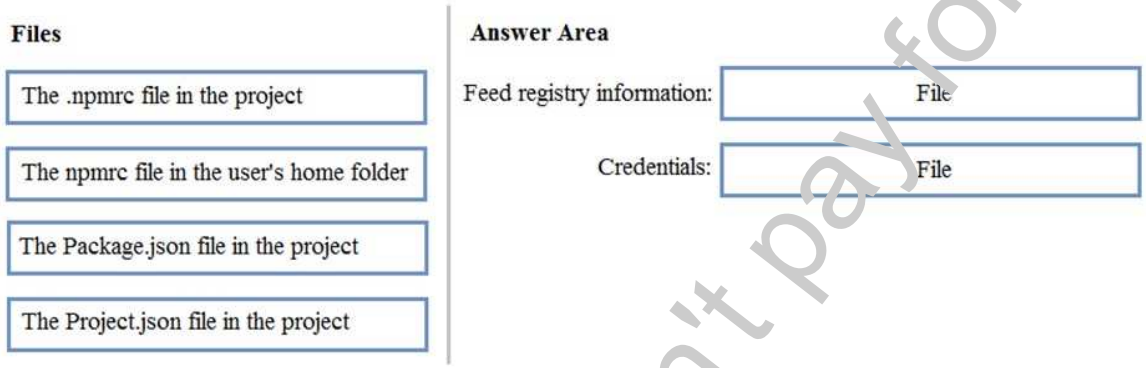
You are implementing a package management solution for a Node.js application by using Azure Artifacts.

You need to configure the development environment to connect to the package repository. The solution must minimize the likelihood that credentials will be leaked.

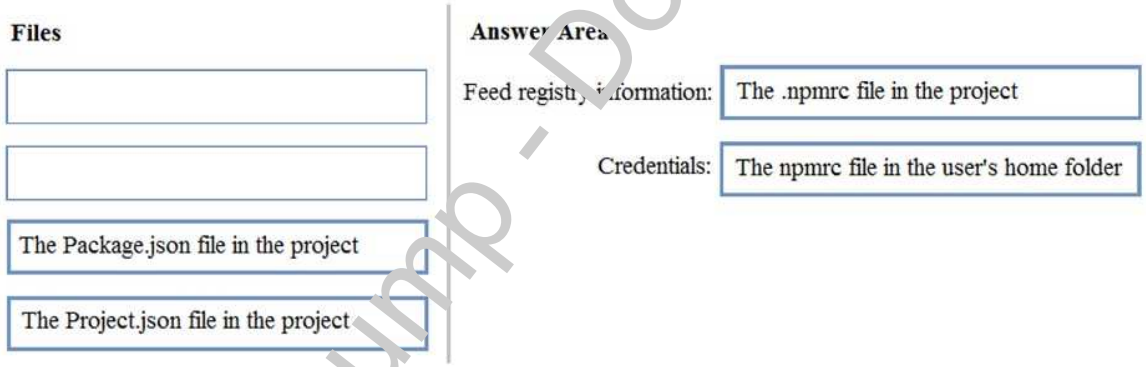
Which file should you use to configure each connection? To answer, drag the appropriate files to the correct connections. Each file may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

Select and Place:



Correct Answer:



Section: [none]
Explanation

Explanation/Reference
Explanation:

All Azure Artifacts feeds require authentication, so you'll need to store credentials for the feed before you can install or publish packages. npm uses .npmrc configuration files to store feed URLs and credentials. Azure DevOps Services recommends using two .npmrc files.

Feed registry information: The .npmrc file in the project
One .npmrc should live at the root of your git repo adjacent to your project's package.json. It should contain a "registry" line for your feed and it should not contain credentials since it will be checked into git.

Credentials: The .npmrc file in the user's home folder
On your development machine, you will also have a .npmrc in $home for Linux or Mac systems or $env.HOME for win systems. This .npmrc should contain credentials for all of the registries that you need to connect to. The NPM client will look at your project's .npmrc, discover the registry, and fetch matching credentials from $home/

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.npmrc or $env.HOME/.npmrc.

References:
https://docs.microsoft.com/en-us/azure/devops/artifacts/npm/npmrc?view=azure-devops&tabs=windows

QUESTION 6
DRAG DROP

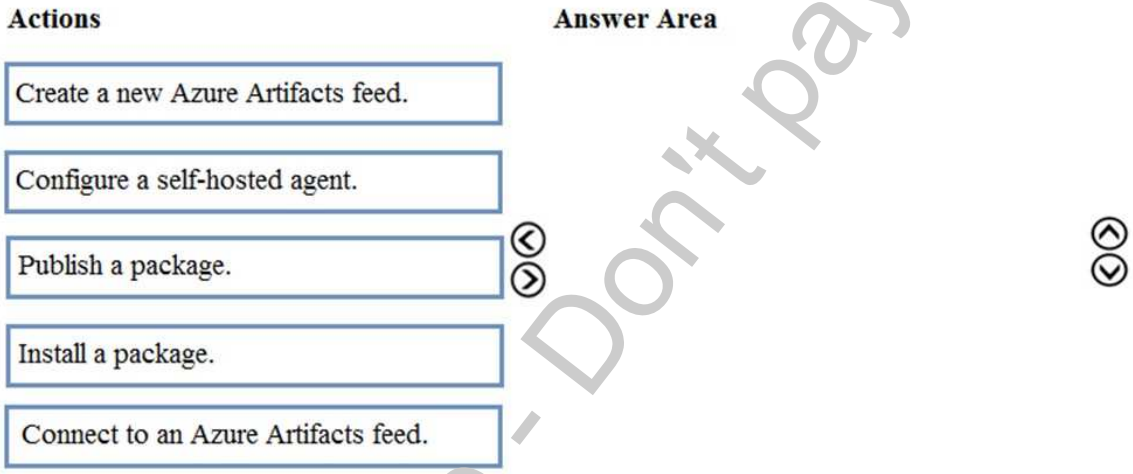
You are creating a NuGet package.

You plan to distribute the package to your development team privately.

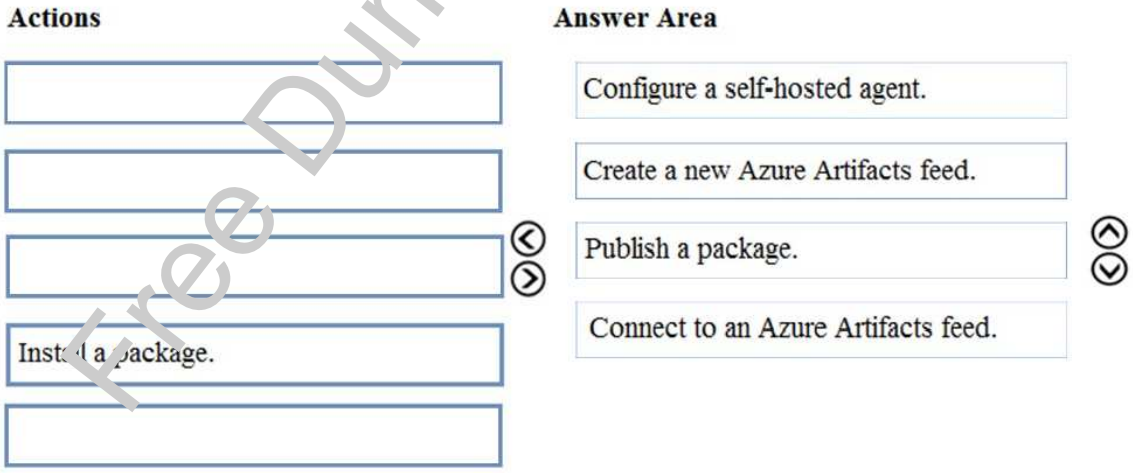
You need to share the package and test that the package can be consumed.

Which four 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.

Select and Place:



Correct Answer:



Section: [none]
Explanation

Explanation/Reference:

Free Dump - Don't pay for it

Explanation:

Step 1: Configure a self-hosted agent.
The build will run on a Microsoft hosted agent.

Step 2: Create a new Azure Artifacts feed
Microsoft offers an official extension for publishing and managing your private NuGet feeds.

Step 3: Publish the package.
Publish, pack and push the built project to your NuGet feed.

Step 4: Connect to an Azure Artifacts feed.
With the package now available, you can point Visual Studio to the feed, and download the newly published package

References:
https://medium.com/@dan.cokely/creating-nuget-packages-in-azure-devops-with-azure-pipelines-and-yaml-d6fa30f0f15e

QUESTION 7
HOTSPOT

You have an Azure DevOps project that contains a build pipeline. The build pipeline uses approximately 50 open source libraries.

You need to ensure that the project can be scanned for known security vulnerabilities in the open source libraries.

What should you do? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

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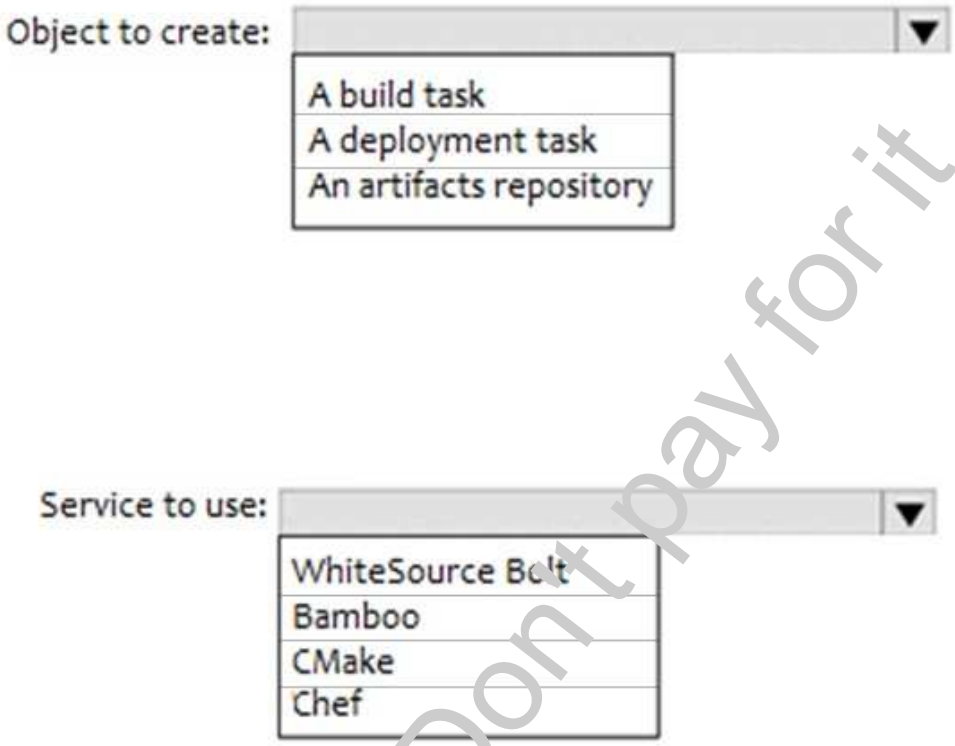
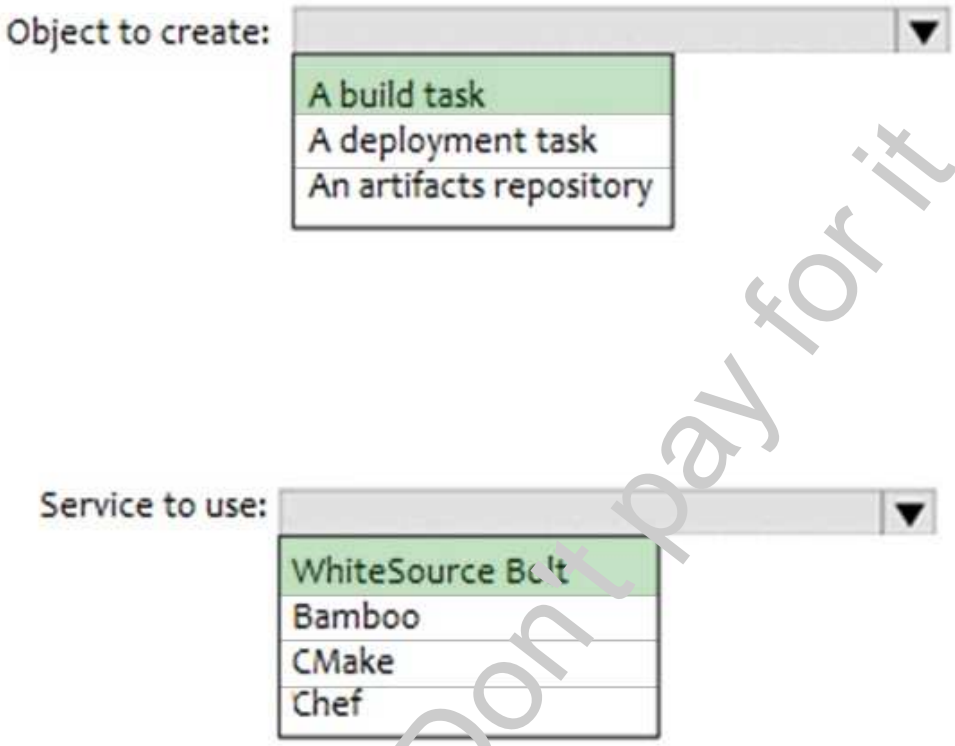
Answer Area



Correct Answer:

Free Dump - Don't pay for it

Answer Area



Free Dump - Don't pay for it

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: A Build task
Trigger a build
You have a Java code provisioned by the Azure DevOps demo generator. You will use WhiteSource Bolt extension to check the vulnerable components present in this code.

1. Go to Builds section under Pipelines tab, select the build definition WhiteSourceBolt and click on Queue to trigger a build.
2. To view the build in progress status, click on ellipsis and select View build results.

Box 2: WhiteSource Bolt
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 definitive database of open source repositories.

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

QUESTION 8
SIMULATION

You plane to store signed images in an Azure Container Registry instance named az4009940427acr1.

You need to modify the SKU for az4009940427acr1 to support the planned images. The solution must minimize costs.

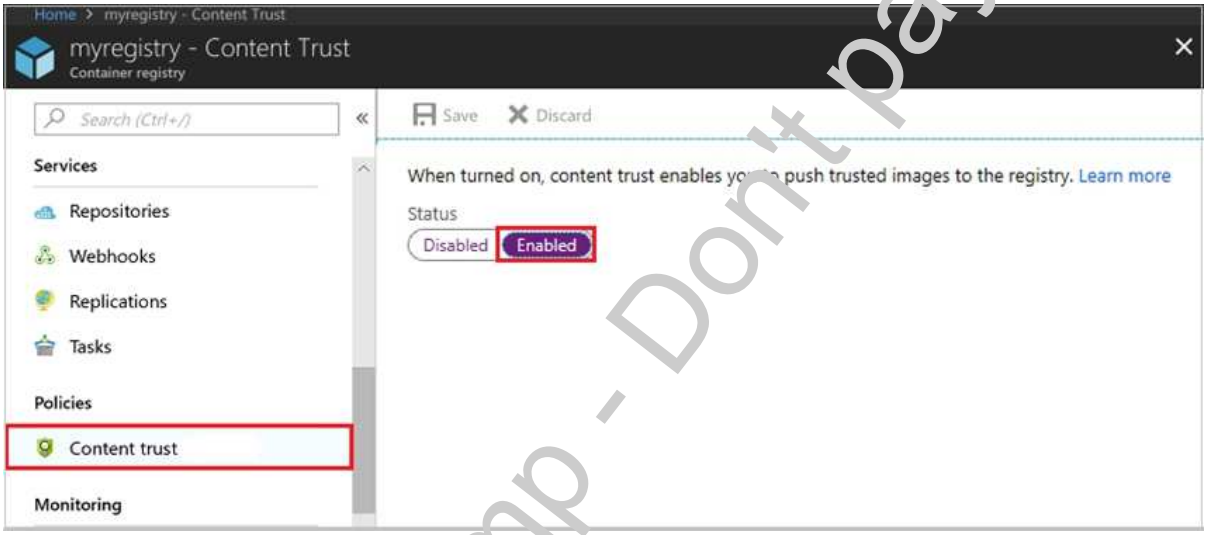
To complete this task, sign in to the Microsoft Azure portal.

Correct Answer: See solution below.
Section: [none]
Explanation

Explanation/Reference:
Explanation:

1. Open Microsoft Azure Portal, and select the Azure Container Registry instance named az4009940427acr1.

2. Under Policies, select Content Trust > Enabled > Save.



References:
https://docs.microsoft.com/en-us/azure/container-registry/container-registry-content-trust

Free Dump - Don't pay for it

Question Set 1

QUESTION 1
DRAG DROP

You have an Azure Kubernetes Service (AKS) implementation that is RBAC-enabled.

You plan to use Azure Container Instances as a hosted development environment to run containers in the AKS implementation.

You need to configure Azure Container Instances as a hosted environment for running the containers in AKS.

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.

Select and Place:

Correct Answer:

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Step 1: Create a YAML file.
If your AKS cluster is RBAC-enabled, you must create a service account and role binding for use with Tiller. To create a service account and role binding, create a file named rbac-virtual-kubelet.yaml

Step 2: Run kubectl apply.
Apply the service account and binding with kubectl apply and specify your rbac-virtual-kubelet.yaml file.

Step 3: Run helm init.
Configure Helm to use the tiller service account:

helm init --service-account tiller

You can now continue to installing the Virtual Kubelet into your AKS cluster.

References: https://docs.microsoft.com/en-us/azure/aks/virtual-kubelet

QUESTION 2
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?

A. Security & Compliance in Azure Log Analytics
B. Resource health in Azure Service Health
C. Smart Detection in Azure Application Insights
D. Compute & apps in Azure Security Center

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
Explanation:

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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

QUESTION 3
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?

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

Correct Answer: B
Section: [none]
Explanation

Explanation/Reference:
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 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 username 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

QUESTION 4
DRAG DROP

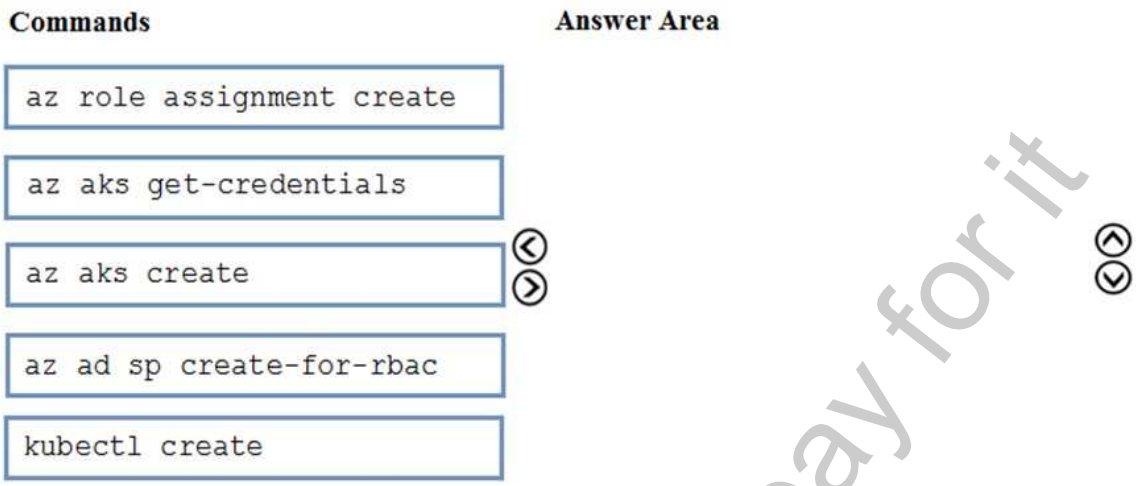
You plan to use Azure Kubernetes Service (AKS) to host containers deployed from images hosted in a Docker Trusted Registry.

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.

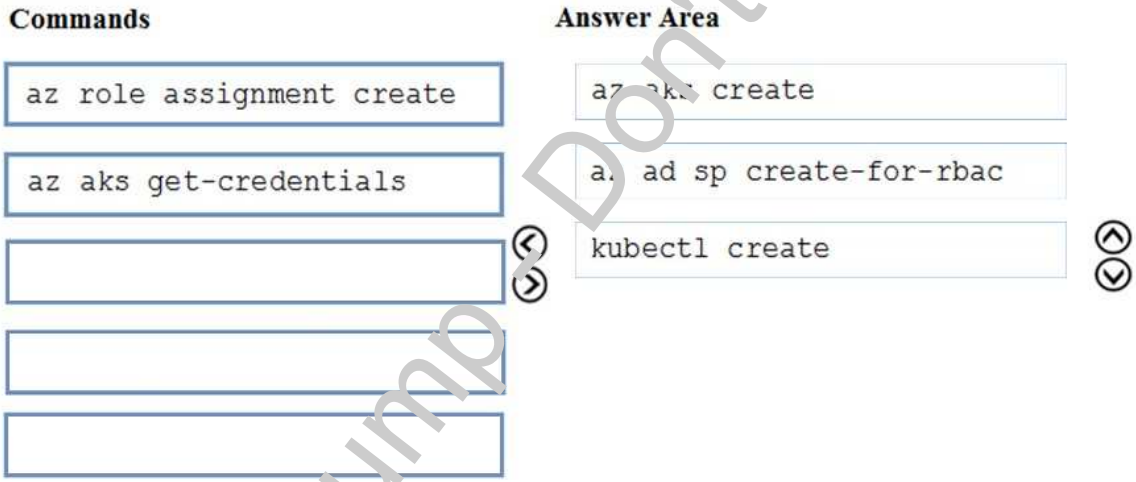
Free Dump - Don't pay for it

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.

Select and Place:



Correct Answer:



Section: [none]
Explanation

Explanation/Reference:
Explanation:

Step 1 : az acr create

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.

Free Dump - Don't pay for it

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

QUESTION 5
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 consistent configuration.
Minimize administrative effort to configure the virtual machines.

What should you include in the recommendation?

A. Azure Resource Manager templates and the PowerShell Desired State Configuration (DSC) extension for Windows
B. Deployment YAML and Azure pipeline deployment groups
C. Azure Resource Manager templates and the Custom Script Extension for Windows
D. Deployment YAML and Azure pipeline stage templates

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:
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

QUESTION 6
Your company develops an app for iOS. All users of the app have devices that are members of a private distribution group in Microsoft Visual Studio App Center.

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You plan to distribute a new release of the app.

You need to identify which certificate file you require to distribute the new release from App Center.

Which file type should you upload to App Center?

A. .cer
B. .pfx
C. .p12
D. .pvk

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:
Explanation:
A successful IOS device build will produce an ipa file. In order to install the build on a device, it needs to be signed with a valid provisioning profile and certificate. To sign the builds produced from a branch, enable code signing in the configuration pane and upload a provisioning profile (.mobileprovision) and a valid certificate (.p12), along with the password for the certificate.

References:
https://docs.microsoft.com/en-us/appcenter/build/xamarin/ios/

QUESTION 7
SIMULATION

You need to create a virtual machine template in an Azure DevTest Labs environment named az400-9940427-dtl1. The template must be based on Windows Server 2016 Datacenter. Virtual machines created from the template must include the selenium tool and the Google Chrome browser.

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

Correct Answer: See solution below.
Section: [none]
Explanation

Explanation/Reference:
Explanation:

1. Open Microsoft Azure Portal

2. Select All Services, and then select DevTest Labs in the DEVOPS section.

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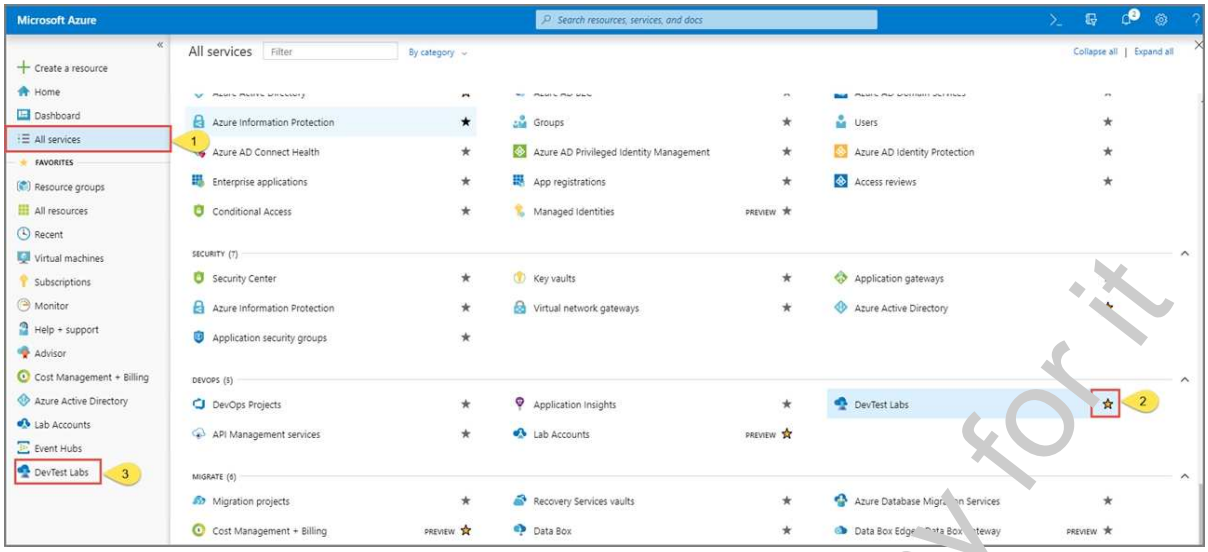

3. From the list of labs, select the az400-9940427-dtl1 lab

4. On the home page for your lab, select + Add on the toolbar.

5. Select the Windows Server 2016 Datacenter base image for the VM.

6. Select automation options at the bottom of the page above the Submit button.

7. You see the Azure Resource Manager template for creating the virtual machine.

8. The JSON segment in the resources section has the definition for the image type you selected earlier.

References:
https://docs.microsoft.com/bs-cyrl-ba/azure//lab-services/devtest-lab-vm-powershell

QUESTION 8
SIMULATION

You need to prepare a network security group (NSG) named az400-9940427-nsg1 to host an Azure DevOps pipeline agent. The solution must allow only the required outbound port for Azure DevOps and deny all other inbound and outbound access to the Internet.

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

Correct Answer: See solution below.
Section: [none]
Explanation

Explanation/Reference:
Explanation:

1. Open Microsoft Azure Portal and Log into your Azure account.

2. Select network security group (NSG) named az400-9940427-nsg1

3. Select Settings, Outbound security rules, and click Add

4. Click Advanced

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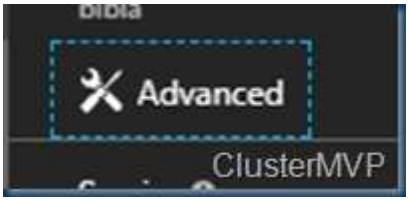

5. Change the following settings:
- Destination Port range: 8080
- Protocol. TCP
- Action: Allow

Note: By default, Azure DevOps Server uses TCP Port 8080.

References:
https://robertsmit.wordpress.com/2017/09/11/step-by-step-azure-network-security-groups-nsg-security-center-azure-nsg-network/

https://docs.microsoft.com/en-us/azure/devops/server/architecture/required-ports?view=azure-devops

QUESTION 9
SIMULATION

You plan to deploy a template named D:\Deploy.json to a resource group named Deploy-lod9940427.

You need to modify the template to meet the following requirements, and then to deploy the template:
- The address space must be reduced to support only 256 total IP addresses.
- The subnet address space must be reduced to support only 64 total IP addresses.

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

Correct Answer: See solution below.
Section: [none]
Explanation

Explanation/Reference:
Explanation:

1. Sign in to the portal,

2. Choose template Deploy-lod9940427

3. Select Edit template, and then paste your JSON template code into the code window.

4. Change the ASddressPrefixes to 10.0.0.0/24 in order to support only 256 total IP addresses.

addressSpace":{"addressPrefixes": ["10.0.0.0/24"]},

5. Change the firstSubnet addressprefix to 10.0.0.0/26 to support only 64 total IP addresses.

```
"subnets":[
        {
          "name":"firstSubnet",
          "properties":{
            "addressPrefix":"10.0.0.0/24"
          }
```

6. Select Save.

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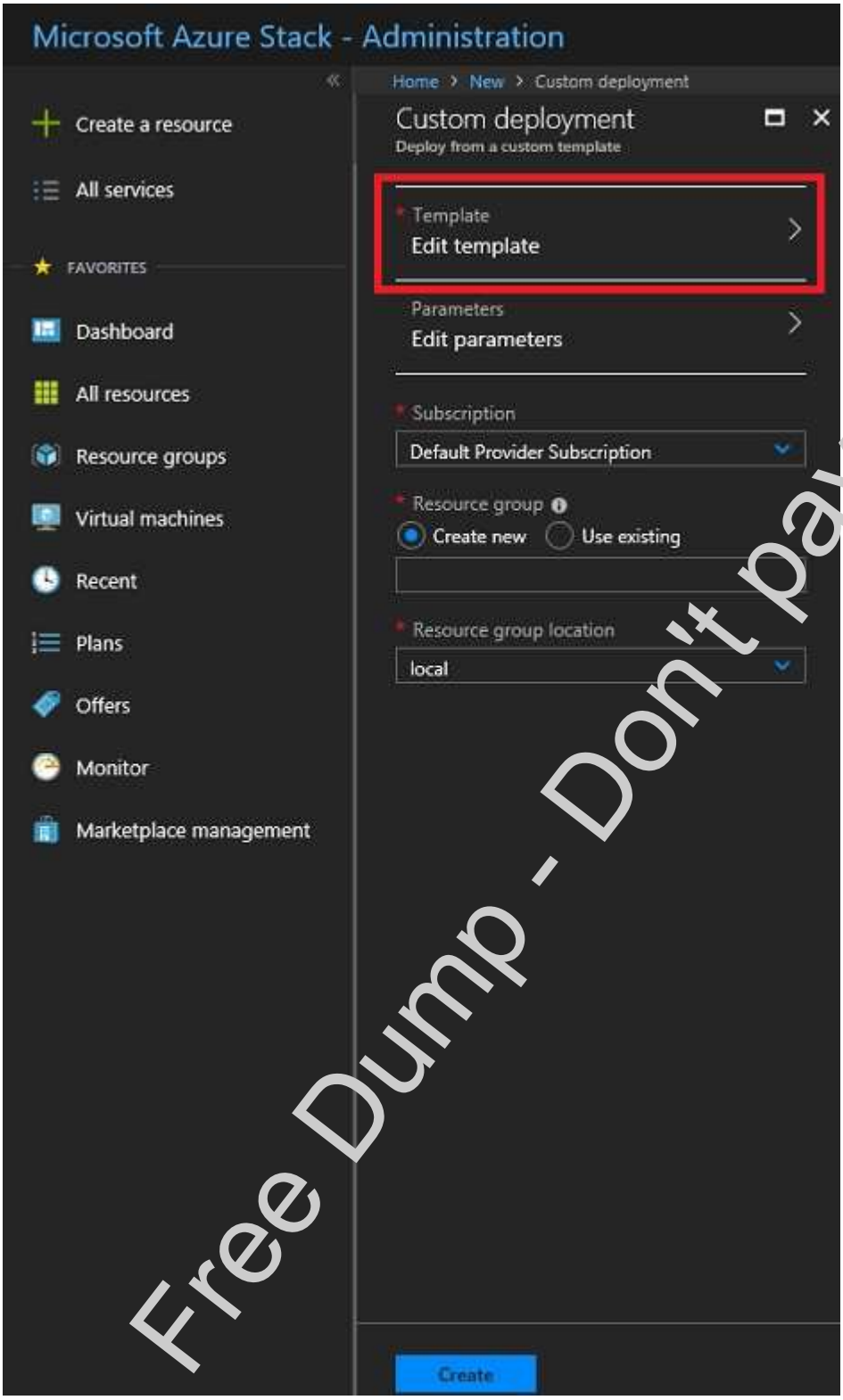

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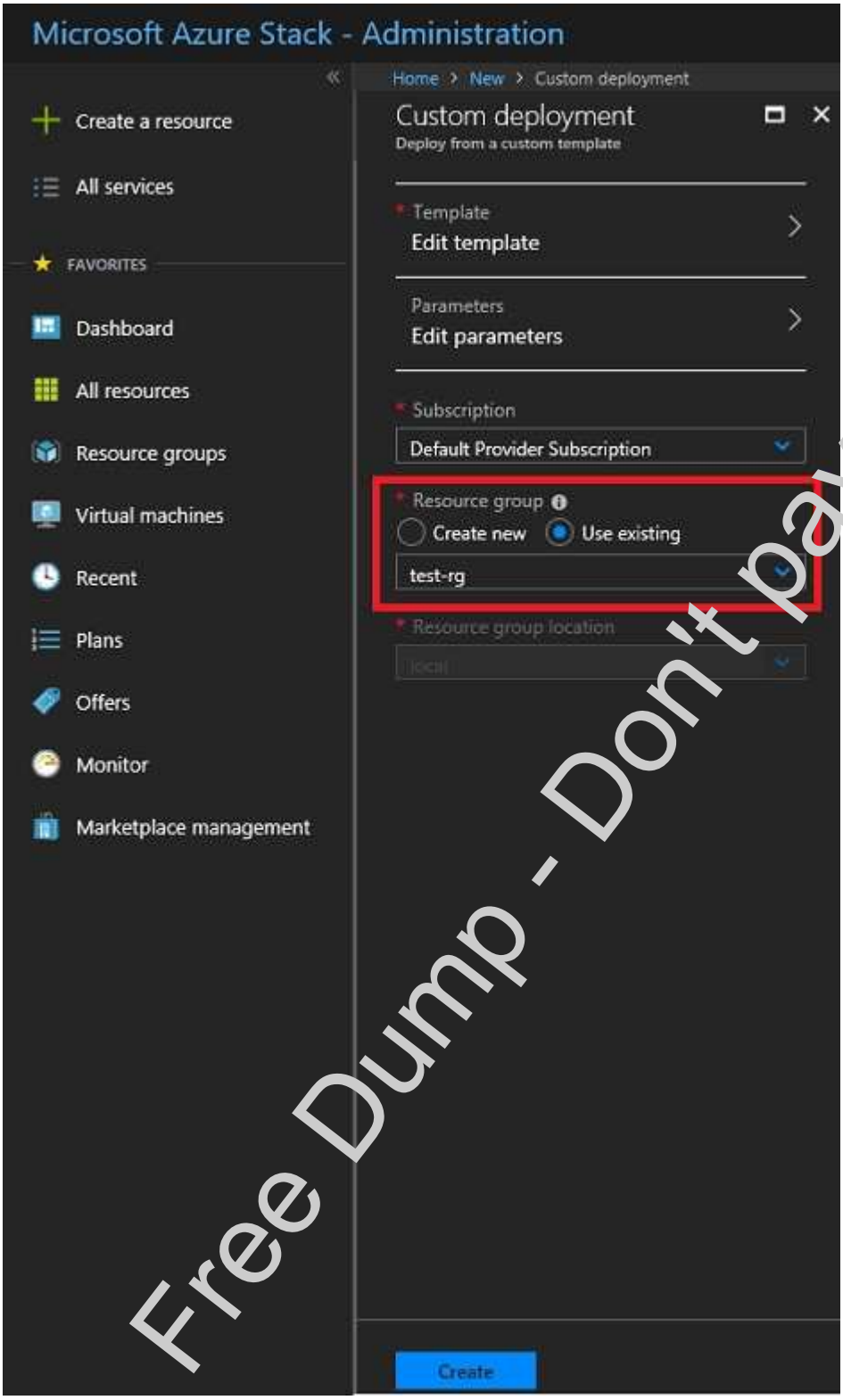
7. Select Edit parameters, provide values for the parameters that are shown, and then select OK.

8 Select Subscription. Choose the subscription you want to use, and then select OK.

9. Select Resource group. Choose an existing resource group or create a new one, and then select OK.



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10. Select Create. A new tile on the dashboard tracks the progress of your template deployment.

References:
https://docs.microsoft.com/en-us/azure-stack/user/azure-stack-deploy-template-portal?view=azs-1908

https://docs.microsoft.com/en-us/azure/architecture/building-blocks/extending-templates/update-resource

QUESTION 10
SIMULATION

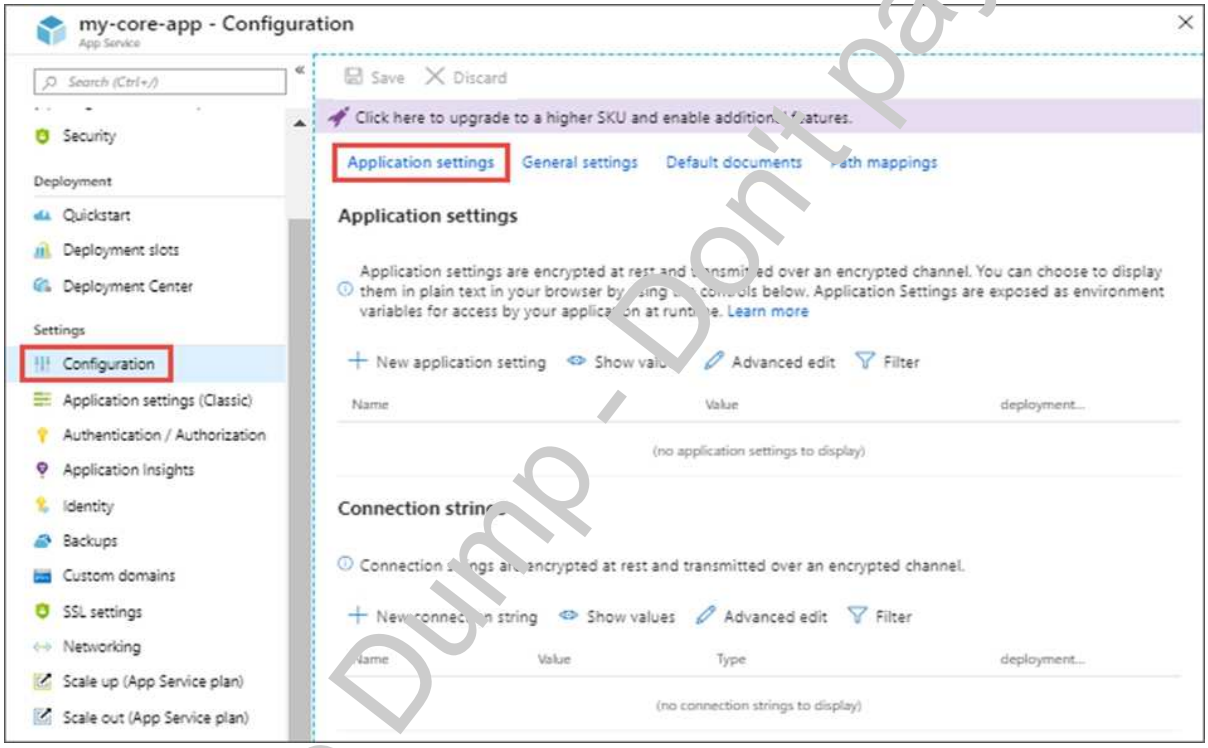
You need to configure an Azure web app named az400-9940427-main to contain an environmental variable named “MAX_ITEMS”. The environmental variable must have a value of 50.

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

Correct Answer: See solution below.
Section: [none]
Explanation

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

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Question Set 1

QUESTION 1
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?

A. Application Insights Connector
B. Automation & Control
C. IT Service Management Connector (ITSM)
D. Insight & Analytics

Correct Answer: C
Section: [none]
Explanation

Explanation/Reference:
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

QUESTION 2
HOTSPOT

Your company is building a new web application.

You plan to collect feedback from pilot users on the features being delivered.

All the pilot users have a corporate computer that has Google Chrome and the Microsoft Test & Feedback extension installed. The pilot users will test the application by using Chrome.

You need to identify which access levels are required to ensure that developers can request and gather feedback from the pilot users. The solution must use the principle of least privilege.

Which access levels in Azure DevOps should you identify? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

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Correct Answer:

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: Basic
Assign Basic to users with a TFS CAL, with a Visual Studio Professional subscription, and to users for whom you are paying for Azure Boards & Repos in an organization.

Box 2: Stakeholder
Assign Stakeholders to users with no license or subscriptions who need access to a limited set of features.

Note:
You assign users or groups of users to one of the following access levels:

Basic: provides access to most features
VS Enterprise: provides access to premium features
Stakeholders: provides partial access, can be assigned to unlimited users for free

References: https://docs.microsoft.com/en-us/azure/devops/organizations/security/access-levels?view=vsts

QUESTION 3
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?

A. Azure Log Analytics
B. PL/pgSQL
C. PL/SQL
D. Transact-SQL

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
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

QUESTION 4
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?

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A. Azure Event Hubs
B. Azure SQL Database Intelligent Insights
C. Azure Application Insights
D. Azure Log Analytics

Correct Answer: D
Section: [none]
Explanation

Explanation/Reference:
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

QUESTION 5
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.

A. Azure Logic Apps
B. Azure Pipelines
C. Microsoft Visual Studio App Center
D. Azure DevOps Project
E. Azure Application Insights

Correct Answer: AE
Section: [none]
Explanation

Explanation/Reference:
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

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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

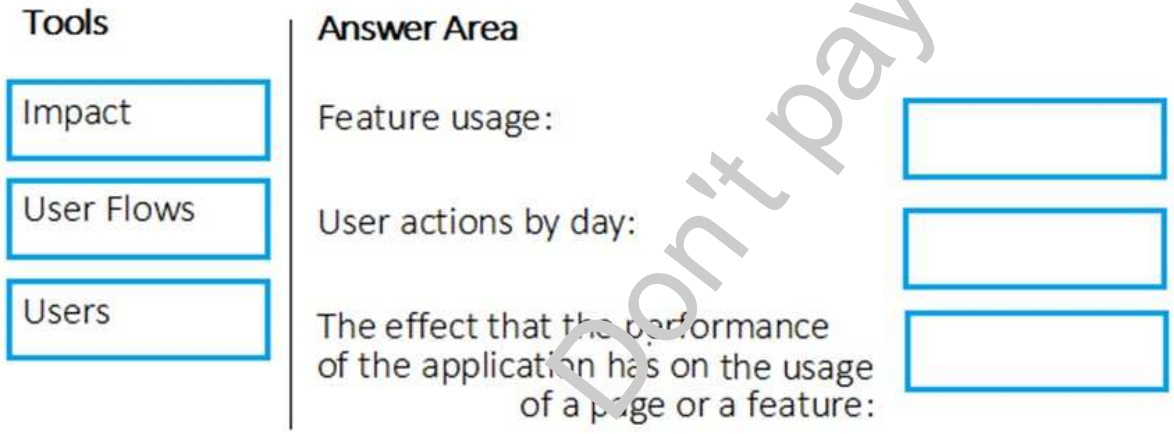
QUESTION 6
DRAG DROP

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

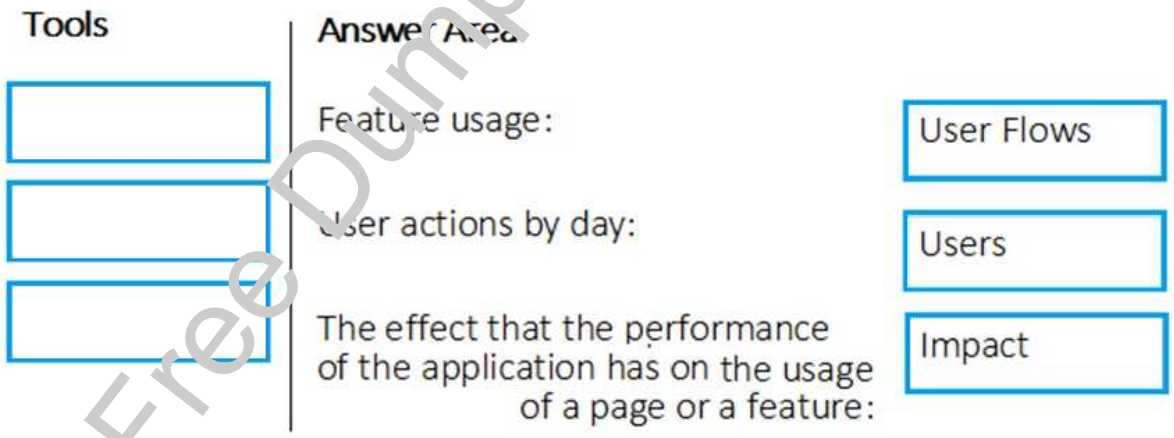
Which application Insights tool should you use to analyze each behavior? To answer, drag the appropriate tools to the correct behaviors. Each tool may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

NOTE: Each correct selection is worth one point.

Select and Place:



Correct Answer:



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Section: [none]
Explanation

Explanation/Reference:
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:

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 7
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?

A. the Microsoft Test & Feedback extension
B. Microsoft Visual Studio App Center integration
C. Azure Application insights widgets
D. Jenkins integration

Correct Answer: A
Section: [none]
Explanation

Explanation/Reference:
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

QUESTION 8
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.

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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.

A. Modify the load balancer settings of VMSS1.
B. Redeploy VMSS1.
C. Upload a custom script file to sa1.
D. Modify the Custom Script extension settings of VMSS1.
E. Update the configuration of a virtual machine in VMSS1.

Correct Answer: BCD
Section: [none]
Explanation

Explanation/Reference:

QUESTION 9
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.

Correct Answer: See solution below.
Section: [none]
Explanation

Explanation/Reference:
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

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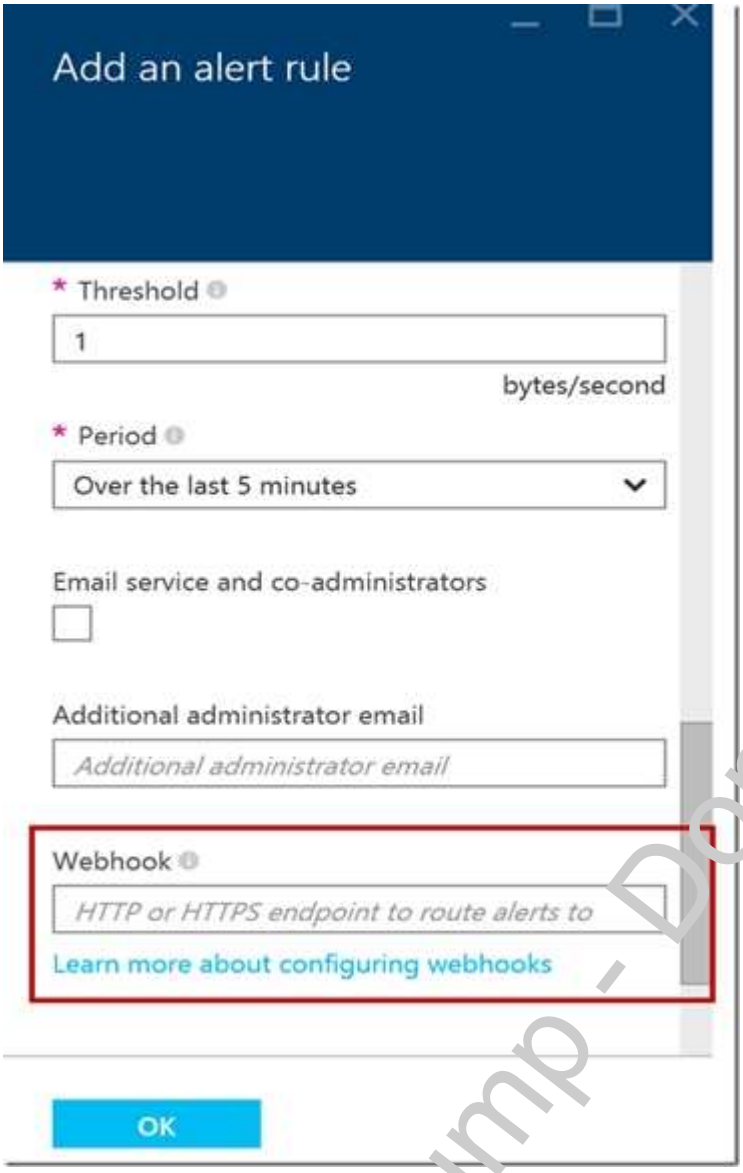

References:
https://azure.microsoft.com/es-es/blog/webhooks-for-azure-alerts/

QUESTION 10
SIMULATION

You need to create an instance of Azure Application Insights named az400-9940427-main and configure the instance to receive telemetry data from an Azure web app named az400-9940427-main.

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

Correct Answer: See solution below.
Section: [none]
Explanation

Explanation/Reference:
Explanation:

Step 1: Create an instance of Azure Application Insights

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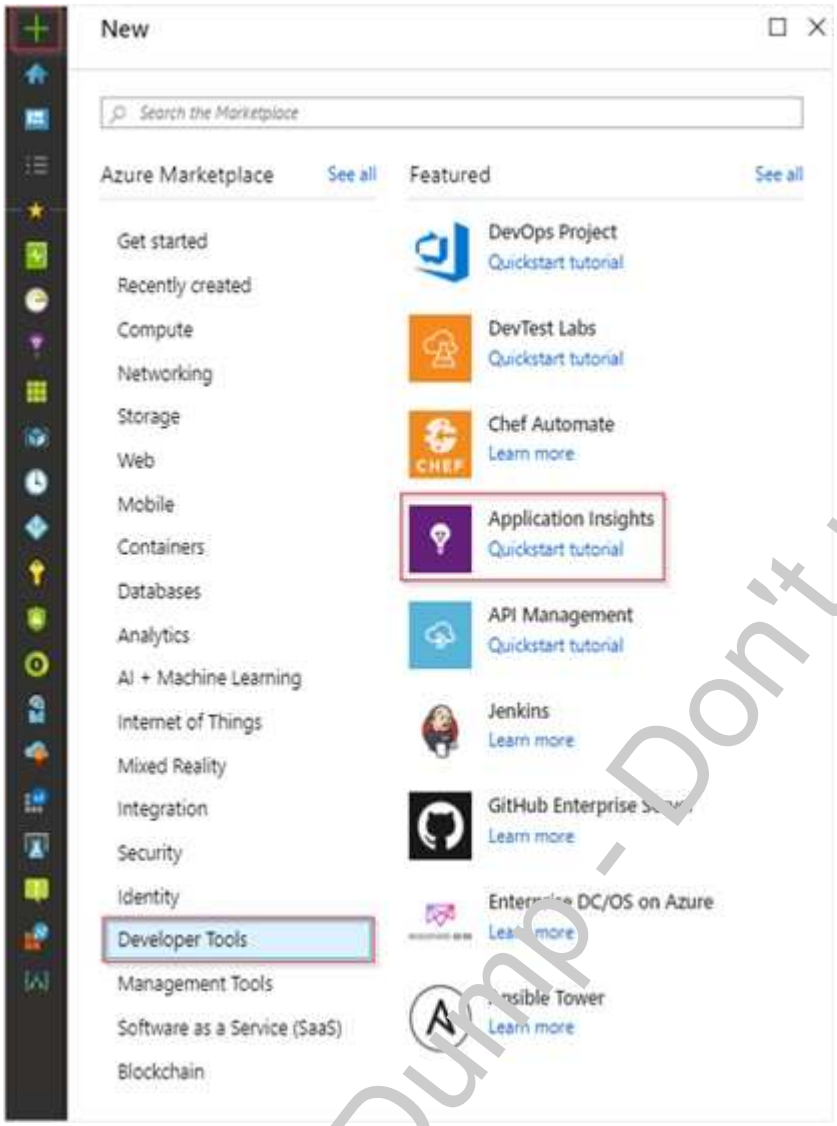
1. Open Microsoft Azure Portal

2. Log into your Azure account, Select Create a resource > Developer tools > Application Insights.



3. Enter the following settings, and then select Review + create.
Name: az400-9940427-main

Step 2: Configure App Insights SDK
4. Open your ASP.NET Core Web App project in Visual Studio > Right-click on the AppName in the Solution Explorer > Select Add > Application Insights Telemetry.

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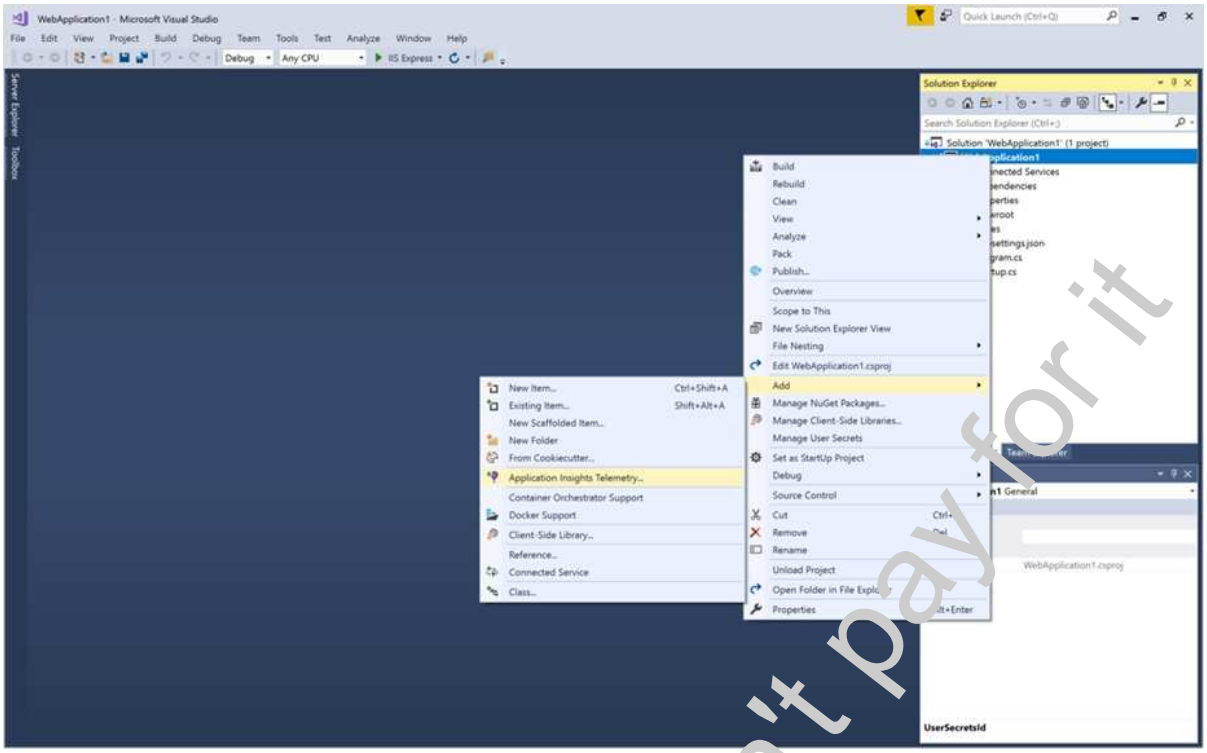

5. Click the Get Started button

6. Select your account and subscription > Select the Existing resource you created in the Azure portal > Click Register.

References:
https://docs.microsoft.com/bs-latn-ba/azure/azure-monitor/learn/dotnetcore-quick-start?view=vs-2017

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