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<tr><td colspan="10">Faculty of Information Technology</td></tr>
<tr><td rowspan="5">I declare that I am familiar with, and will abide to the Examination rules of CTU

 
Signature</td><td colspan="9">SUBJECT NAME: Solutions Development
SUBJECT CODE: SLD521</td></tr>
<tr><td colspan="5">FORMATIVE ASSESSMENT
Duration: Jul 18 – 08 Aug
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Moderator: Mr. Newton</td></tr>
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Question 1

1.1 What is the difference between scaling vertically (that is, scaling up/down) and scaling horizontally (that is, scaling in/out)?

Scaling vertically, also known as "scaling up/down," involves adding or removing resources to a single server to handle increased or decreased workload. For example, increasing the amount of RAM or CPU cores on a server. This approach is usually limited by the hardware limitations of the server and may result in downtime during upgrades.

Scaling horizontally, also known as "scaling in/out," involves adding or removing servers to distribute the workload across multiple servers. This approach can handle larger workloads and provides redundancy and fault tolerance, as a single server failure does not affect the entire system. (Slingerland, 2023)

1.2 What is the resource provider for virtual machines?

In Azure, the resource provider for virtual machines is Microsoft.Compute. This resource provider enables the creation, management, and monitoring of virtual machines in Azure. It provides APIs for creating, starting, stopping, and deleting virtual machines, as well as for managing virtual machine disks, networks, and extensions. (Stackoverflow, 2022)

1.3 With SaaS, you, as the consumer, manage data, access, and the operating system running the software. True or false? Explain your choice.

False. With SaaS (Software as a Service), the provider hosts the software and manages the infrastructure, operating system, and data storage. The consumer accesses the software through a web browser or API and manages only their data and usage of the software.

1.4 Azure virtual machines are an example of which cloud service model?

Azure virtual machines are an example of IaaS (Infrastructure as a Service) cloud service model. IaaS provides access to infrastructure resources, such as virtual machines, storage, and networking, and allows the user to deploy and run their own software on the infrastructure.

1.1 What is the maximum number of resource groups an Azure resource can be a member of?

An Azure resource can be a member of up to 15 resource groups. A resource group is a logical container for resources that share the same lifecycle, permissions, and policies. It allows for easier management and organization of resources and can be used to apply policies and permissions to multiple resources at once.

Question 2

2.1 Describe the step-by-step process for creating an Azure Web Service Application, including the necessary configurations and options that need to be selected. Additionally, explain the benefits of using Azure App Service Web Apps and how they can be leveraged to develop and deploy web applications in the cloud

Creating an Azure Web Service Application using Azure App Service Web Apps involves several steps as outlined below:

Step 1: Sign in to the Azure Portal

Sign in to the Azure portal using your Microsoft account. If you do not have one, create one.

Step 2: Create an App Service Plan

An App Service Plan is a container for one or more web applications, where you can specify the number of VM instances, size of VMs, and region. To create an App Service Plan, follow the steps below:

- Click on the "Create a resource" button in the Azure Portal
- Select "Web App" from the list of available options
- Click on "Create" button
- Enter a unique name for your App Service Plan
- Select the subscription, resource group, and region for your App Service Plan
- Choose a pricing tier for your App Service Plan based on the expected traffic and performance requirements
- Click on "Review + Create" to review your configuration settings
- Click on "Create" to create your App Service Plan

Step 3: Create a Web App

A Web App is an Azure resource that hosts web applications, mobile back-ends, and RESTful APIs. To create a Web App, follow the steps below:

- Click on the "Create a resource" button in the Azure Portal
- Select "Web App" from the list of available options
- Click on "Create" button
- Enter a unique name for your Web App
- Select the subscription, resource group, and region for your Web App
- Choose "Code" as the publish method
- Choose the operating system (Windows or Linux) and runtime stack (.NET, Java, Node.js, etc.)
- Click on "Review + Create" to review your configuration settings
- Click on "Create" to create your Web App

Step 4: Deploy your web application

Once your Web App is created, you can deploy your web application using one of the following deployment methods:

- Continuous Deployment: Deploy your web application from a code repository like GitHub or Azure Repos.

- Manual Deployment: Deploy your web application using FTP, Git, or Visual Studio.
- Container Deployment: Deploy your web application as a Docker container.

Benefits of using Azure App Service Web Apps include:

- High availability and scalability: Azure App Service automatically scales to handle traffic spikes, ensuring that your web application is always available.
- Platform flexibility: App Service supports popular programming languages and runtimes, allowing you to develop web applications using your preferred language and tools.
- Integrated development environment: App Service provides an integrated development environment (IDE) for developing, testing, and deploying web applications in the cloud.
- Easy deployment: App Service supports continuous deployment from popular code repositories like GitHub and Azure Repos, making it easy to deploy your web application.
- Security: Azure App Service is built on Microsoft's secure and compliant platform, ensuring that your web application is secure and meets compliance requirements.

References

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