**Assignment 1:**

Problem Statement:

You work for an organization that has decided to move its infrastructure to Azure Cloud. They want to use the public cloud for the public facing website of the company but they don’t want their confidential data on the public cloud.

You have been asked to:

1. Suggest an appropriate solution so that the organisation can make use of Azure cloud while keeping the above mentioned requirements for your company in mind.
2. 2. Offer an approach to:
3. Govern all the resources being used for development, testing and production of the company’s website , separately
4. To keep track of the billing lifecycle and the cost management of all the services being used for hosting the company’s website on Azure cloud as well as the other services that are being used for other purposes.
5. Suggest tools to access and manage the Azure Resource Groups

**Assignment 2:**

Problem Statement

You work for XYZ Corporation. They have deployed their web app on the internet. Their users are complaining that the images are not loading fast enough. You realize that this might be because your website faces global traffic while the static assets like images are being served via a single server. Also the employees are complaining that it is difficult for them to access common files and folders, as they need to get it from each other.

You have been asked to:

1. Upload all static content of your web site to azure
2. Create a CDN Endpoint and configure it to serve the static files you uploaded.
3. Create an Azure File share and upload all tools and files for your colleagues to share.
4. Connect a Linux and windows VM Box to the File Share

(Use all options {Mount it on your VM, AZCopy, Azure File Async})

**Assignment 3:**

Problem Statement

You started your own retail business online using on-premises solutions and some limited number of systems, to host your application and for other tasks. With the increase in request in your application, the load on your on-premises server increased. SO, to handle the load , you had to buy more systems almost on regular basis. Realizing the need to cut down the expenses on systems, you decided to have your Infrastructure to cloud.

Once migrated, you have been asked to manage the scaling requirements of the company by:

1. Developing the Virtual Machine in the Azure cloud as soon as the load increased and the CPU utilization increases 70% over 10 minutes period. When this rule triggers, the number of VMs should be increased by 20%
2. Removing the Virtual machines when the CPU utilization drops under 40% 0ver 10 minute period. When this rule triggers ,the number if VMs should be decreased by 10%
3. Use a Custom VM image to deploy multiple identical virtual machines that will be used for web application purposes.

**Assignment 4:**

Problem Statement

You work for XYZ Corporation. They want a Virtual Network with a large address space in Azure. Also they want to sue that VNet to create two subnets with 256 addresses in each. These two subnets deployed in them. The company wants all these virtual machines to be able to privately communicate with each other

You have been asked to

1. Create a Virtual Network.
2. Create two subnets in that Virtual Network
3. Deploy Virtual Machines on these two subnets
4. Find an appropriate method to establish a connection between these subnets so that these virtual machines can communicate with each other

**Assignment 5:**

Problem Statement

You work for XYZ Corporation. Your company has an application deployed on a VM. They want to increase their application’s scalability by deploying it on multiple number of VM’s.

You have been asked to

1. Create three Virtual Machines
2. Set up load balancing on those virtual machines and expose a front end Public IP to access the load balancer

**Assignment 6:**

Problem Statement

You work for a XYZ Organisation. Your organization wants to collaborate with some external partners and provide them access to some of the services managed by your organization’s Active Directory. They also want to prevent any kind of unauthorized sign in.

You have been asked to:

1. Find and implement a correct way to add the external partners as users in your active directory and give them read-only access to Azure blob.
2. Create Users in custom azure active directory domain for internal employees that need to access virtual machines. Let the employees view Virtual machines in the portal and login as regular users.
3. Suggest and set up an authentication method so that a selected group of users in your organization can access their accounts, if they forgot their passwords, without any helpdesk.
4. Set up MFA with any verification option that you feel fit, for an external partner of your organization that you have added as a user in your organization’s active directory.

**Assignment 7:**

Assignment: Connecting Azure Virtual Networks

Industry: General

Problem Statement: How to transfer files using V-Net peering

Topics: In this Azure project you will understand the difference between a cloud and an on-premise networking. You will then configure two V-net in a single region, and transfer files from one region to the other by connecting virtual network with virtual network peering using the Azure portal.

Highlights

Configuring Azure Virtual Networks

Connecting two Virtual Networks

Transferring file with V-Net Peering.

**Assignment 8** – Creating an Azure Database

Assignment : Creating an Azure database

Industry: General

Problem Statement: How to migrate the data from local database to Azure portal

Topics: In this Microsoft Azure project you will be working on installation of Azure database. You will create a new database on the Azure portal, configure the credentials of Azure database, install the database on premises, connect the Azure database to local database and migrate your data from local database to the Azure portal.

Highlights

Building an Azure portal

Connecting on-premise and cloud database

Migrating data to Azure portal