**Java SDK UX study**

**Objective**

You are the CTO of a tech startup company and your company is growing rapidly and previously you have chosen Azure as your cloud provider, you found that using the UI to create virtual machines doesn’t scale any more.

As CTO, you decided to use a programmatic approach to create a virtual machine using the Azure SDK for Java.

However, you just discovered that there are two types of Java SDKs out there, and you decided to try both by yourself and see which SDK you think is better for engineering team.

The two Java SDKs you have found are the following

* **Current Stable version of Java Fluent SDK (**<https://github.com/Azure/azure-libraries-for-java>**)**
* **Public Preview version of Java SDK (Binaries installed on VM) (**<https://github.com/Azure/azure-sdk-for-java/tree/master/sdk/management>)

You also got the requirements for your VM from CEO and here’s the list of parameters that you will be using for the VM

|  |  |
| --- | --- |
| Entity | Value requirements |
| Location for VM / resource group / network | “westus2” |
| Availability set | Set domain count to 3 (integer)  Set Fault domain count: 3 (integer)  Sku: a new sku that has SKU type and name set to “Classic”  (note that Sku is a sub-resource) |
| Public IP | A IPv4 address with dynamic allocation method, and same location as our VM |
| Virtual network | Same location as VM, and a new address space with prefix “10.0.0.0/16” as well as a subnet with address prefix “10.0.0.0/24” and name “mySubnet” |
| Network interface | Same location as VM.  The Private IP address should be dynamic  We should re-use the what created previously in order to create the new network interface   * virtual network and public IP address are created previously * subnet is also created previously (“mySubnet”) |
| Virtual machine | The VM should contain a network profile, this network profile should use the network interface we stated in the requirements  It should also   * re-use the existing resource group * re-use the existing network interface * re-use the existing availability set   it should contain the new parameters   * the image of the VM should be set to a Windows Server Image * AdminUsername and AdminPassword can be set to your choice * ComputerNAme can also be set to your choice * The VM Size should be set to VirtualMachineSizeTypes.BasicA0 |

**Environment Setup**

Azure Subscription

Your current active Azure subscription is the following:

Username: [nickzhums@outlook.com](mailto:nickzhums@outlook.com) // Pwd: (Send separately)

SDK Install Instructions

The VM should already contain the binaries

**Documentation / References:**

Suppose that based on previous research, you have found the following documentation regarding the SDKs

Central Info Hub for Preview Java SDK:

<https://github.com/Azure/azure-sdk-for-java/tree/master/sdk/management>

Current Stable Java Fluent SDK docs:

<https://github.com/Azure/azure-libraries-for-java>

Azure REST API references for Compute

(<https://docs.microsoft.com/en-us/rest/api/compute/virtualmachines/createorupdate>)

**Task List**

A virtual machine is a complicated entity, so you will be creating multiple resources as part of this task.

When you think you complete each task, please let us know

The following are the details for the tasks. Please complete them in order and let us know when you think you have finished each of them. We’ll ask you a couple of brief questions after each task.

Task 1 – Authenticate to Azure and start interacting with Azure resources

In order to interact with Azure resources, we will need to authenticate to Azure first

Please use the existing binary / documentation and provided subscription to authenticate to Azure and create REST clients for Resource/Compute/Network

Task 2 – Create a Resource Group and List all Resource Groups

A resource group is needed for all Azure resources, please create a new resource group with your name of choice.

After resource group is created, please list all current resource groups, and print each resource group’s name field

Task 3 – Create an Availability Set

Our VM will be using an availability set, please create an availability set with following properties and name of your choice

Task 4 – Create an IP Address

In order to create a VM, network related info is also required. Let’s start by creating an IP address first. Please create an IP Address according to the requirements

Task 5 – Create a virtual network

Next, we need to create a virtual network, please create a virtual network according to the requirements

Task 6 – Create a network interface

As final step of network, we need to create a network interface. Please create a network interface according to the requirements (we will use the resources previously created)

Task 7 – Create a Virtual Machine

As last step of the task, we can finally create a virtual machine, please create a virtual machine (we will use the resources previously created)

Network profile -> A new network profile with the network interface we created in Task 6

OS Profile -> A new OS profile with your choice of parameters

Storage Profile -> A new Storage profile with your choice of parameters

Hardware Profile -> A hardware profile with virtual machine size set to StandardB1Ms

Availability set -> Use the availability set we created in Task 2

Create the VM and check the result in Azure portal

(Extra Credit) - Get a non-existent resource group and error handling

Error handling is an essential part of the application logic. As part of this task, let’s try to get a resource group that doesn’t exist, and handle the exception

**Conclusion & Feedback**

How satisfied / dissatisfied is your experience of managing Azure resources using Azure SDK (Score each area)

* API Design
* Coverage of Azure Services
* Documentation Quality (Tutorial / API References / Code Samples)
* Performance & reliability
* Community Support

How likely would you recommend Azure SDK to other people