LAB 201 - CREATING A VIRTUAL MACHINE

Introduction to the lab

An Azure Virtual Machine is an on-demand, scalable compute resource that is available in Azure. Virtual Machines are generally used to host applications when the customer requires more control over the computing environment than what is offered by other computing resources. Azure Virtual Machines (VMs) can be created through the Azure portal. This method provides a browser-based user interface to create VMs and their associated resources.

Outcomes

At the end of this lab you will be able to create a virtual machine in the Azure Landing Zone.

Sign in to Azure

Sign into the Azure Non-Production Tenant here

VM Basics

Below is a step to step guide on creating your very own virtual machine on the Microsoft Azure Portal!

After logging into the Azure Microsoft Portal:

1. Enter Virtual Machines in the search box and select the Virtual Machine service.

   virtual_machine_search

   virtual_machine_search
2. Select Create.

   select-virtual-machine

   select-virtual-machine

   Once selected, the create a virtual machine page will appear.

   Create-Machine-Image

   Create-Machine-Image

Subscription and resource group details

Now that we are on the page, you can begin to create your virtual machine !

1. **Subscription**

Select the subscription you would like to use for your virtual machine. subscription

2. **Resource Group**

   The next step is to create a resource group. Resource groups with tier 3 and tier 4 in the name can be used as you do not have permissions to create VMs in the other tiers.

   resource-group

   resource-group

VM Instance details

1. **Virtual machine name**

   Choose a suitable name for your virtual machine.

2. **Region**

   You will be given a range of regions to select from. Choose (Asia Pacific) Australia East as your region.

   region

   region

3. **Availability option**

   By default, the Availability Zone option will be selected as it is the most suitable one.

   availabilityoption

   availabilityoption

4. **Availability Zone**

   By default, Zones 1 will be selected. This is the zone you should also select.

   availability

   availability

5. **Security type**

   By default, Standard Option will be selected as it is the most suitable option.

6. **Image**

   Ensure to use OneCloud published VM images. By default, marketplace image will be selected - this is where it can be changed to use the images published by OneCloud can be selected.

gallery

gallery

Once in the market place select the shared images option. From the options displayed in the page above select: `CNS-AZR-LINUX-RHEL8SOE`

shared

shared

7. **Size**

   A default size will be selected. However with the image selected a `B1` or `B2` size will be the most appropriate.

   availability

   availability

Administrator account

Under the Administrator account, the authentication type that would be the most appropriate to select will be password. A strong password should be selected for maximum protection and security.

availability

availability

Inbound port rules

The option none should be selected for Public inbound ports.

ports

ports

Licensing

Any of the licensing option can be selected. We have selected Red Hat Enterprise Linux.
liscencing

Networking

Once you have completed all the steps above switch to the networking page, as a number of options need to be selected in order to sucessfully create the virtual machine.

Network interface

1. **Virtual Network**

Select the virtual network that is deployed to your landing zones tier 2 resource group. The virtual network name ends with: *v0-t2-default-vnet*

2. **Subnet**

   The following option should be selected: `iCTR-1`

3. **Public IP**

   The following option should be selected: None

4. **NIC network security group**

   The following option should be selected: None

Load Balancing

1. **Load Balancing Option**

   The following option should be selected: None

Below is a summary of the networking steps: overall

Review and Create

Once you have completed all the networking steps above you are ready to create the Virtual Machine. Go to the review and create tab, all the options you have selected can be viewed. Please double check to make sure everything is correct. Once you have reviewed everything select the create button.

You virtual machine has been created. A message similar to the one displayed below should appear.

deployment

deployment

Post Deployment

Once your virtual machine has been deployed, the remaining steps left include:

1. Executing and installing nginx.
2. Adding the dns record for the private IP of your virtual machine to the public DNS zone.
3. Using the the DNS entry in your web browser to verify that Nginx default website is running.

Executing nginx

In order to execute any command go to a VM in the Azure portal and select Run command from the left menu, under Operations.

run-command

run-command

Choose a command to run. Some of the commands might have optional or required input parameters. For those commands, the parameters are presented as text fields for you to provide the input values. For each command, you can view the script that's being run by expanding View script. `RunPowerShellScript` is different from the other commands, because it allows you to provide your own custom script.

1. To install nginx select `RunShellScript`, copy the below commands to the shell and click run.

   NOTE: For the echo commands in the script below, replace the proxy URls which are line 1 and 2, with the correct PROXY URL for your given environment. In the script below the url is for a virtual machine in the preview cnry environment. Here is a guide to the PROXY URL for different environments.

   ```
   export https_proxy=app-proxy.cnspvcnry.azure.beta.au.internal.cba:3128
   export http_proxy=app-proxy.cnspvcnry.azure.beta.au.internal.cba:3128
   yum -y install nginx #Install nginx using yum packet manager in non-interactive mode
   systemctl start nginx #Starts nginx service
   curl localhost #Tests nginx web server running or not by doing a http get
   ```

2. After which you should see a similar output in the terminal:

   result

   result

DNS record creation

To add a DNS Record for the Private IP of your VM to the Public DNS Zone please follow the steps below:

1. Enter DNS Zone in the search box and select the DNS Zone service.

   dns_zone_search

   dns_zone_search

2. Use the DNS Zone deployed into your landing zones tier 2 resource group. Tier 2 resource group follows the same naming convention as the tier 3 resource group you have used to deploy your virtual machine.

t2_resource_group

t2_resource_group

In this case since the t3 resource group is `syd-platform-prev-cnry-v0-t3-default-rg`, select the DNS Zone name under the resource group `syd-platform-prev-cnry-v0-t2-default-rg`.

t2_resource_group_1

t2_resource_group_1

3. Select Record Set.

   select_record_set

   select_record_set

   Once selected, proceed by filling in the name and adding in the IP address for your VM.

   add_record_set

   add_record_set

   The Private IP Address of the VM that has been created can be found in the Overview page of the Virtual Machine under Networking.

   ip_address

   ip_address