CELEBAL SUMMER INTERNSHIP 2025

Topic: Create an Internal & External Load balancer

Assignment week 7

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COURSE/TRAINING: Cloud Infra and Security 001

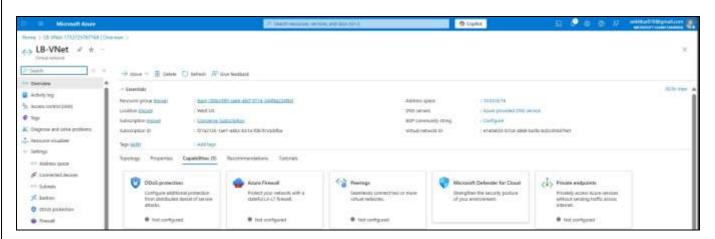
Step 1: Create a Virtual Network (VNet):

Name: CSI-VNet

Address Space: 10.0.0.0/16

Subnets:

Frontend-Subnet (10.0.1.0/24)Backend-Subnet (10.0.2.0/24)



Step 2: Create VM-Linux-1 (For External LB):

Name: VM-Linux-1 Image: Ubuntu

Subnet: Frontend-Subnet Public IP: Yes (Static)

Post-deployment:

```
sudo apt update
sudo apt install apache2 -y
echo "<h1>Welcome to Linux-1</h1>" | sudo tee /var/www/html/index.html
```

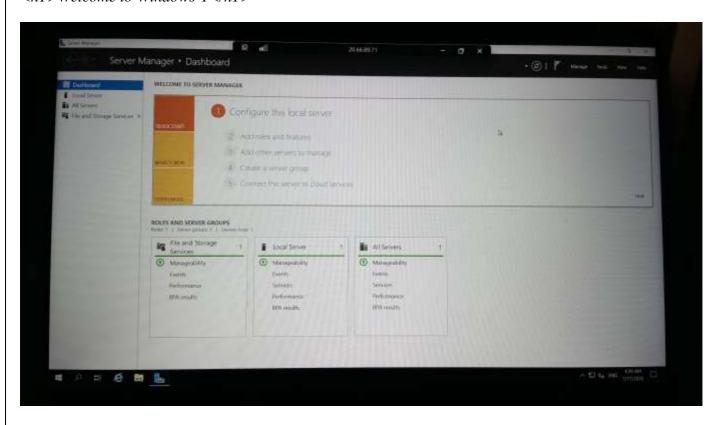
```
host01@VMLINUX-1; -
  Swap usage: 0%
Expanded Security Maintenance for Applications is not enabled.
0 updates can be applied immediately.
Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status
The list of available updates is more than a week old.
To check for new updates run: sudo apt update
The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
 ost010VMLINUX-1:-$ sudo apt update
sudo apt install apache2 -y
sudo systemetl start apache2
sudo systemetl enable apache2
echo "Welcome to Linux-1" | sudo tee /var/www/html/index.html
```

Step 3: Create VM-Windows-1 (For External LB):

Name: VM-Windows-1 Image: Windows Server Subnet: Frontend-Subnet Public IP: Yes (Static)

Post-deployment (IIS Setup):

Install IIS via Server Manager > Add Roles Edit C:\inetpub\wwwroot\iisstart.htm with: <h1>Welcome to Windows-1</h1>



Step 4: Create VM-Linux-2 (For Internal LB):

Name: VM-Linux-2 Image: Ubuntu

Subnet: Backend-Subnet

Public IP: None

Post-deployment:

```
sudo apt update
sudo apt install apache2 -y
echo "<h1>Welcome to Linux-2 (Internal)</h1>" | sudo tee /var/www/html/index.html
```

```
host01@VM-LInux-2:~$ sudo apt update sudo apt install apache2 -y
```

Step 5: Create VM-Windows-2 (For Internal LB):

Name: VM-Windows-2 Image: Windows Server Subnet: Backend-Subnet

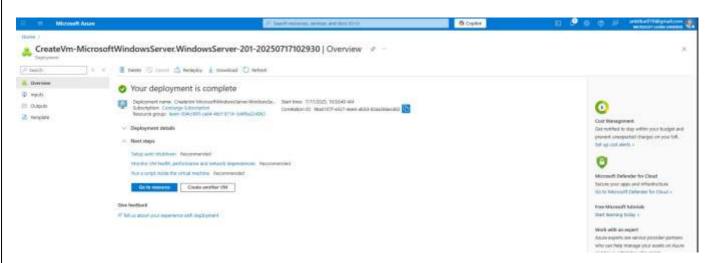
Public IP: None

Post-deployment (IIS Setup):

Install IIS

Edit C:\inetpub\wwwroot\iisstart.htm:

<h1>Welcome to Windows-2 (Internal)</h1>



Step 6: Create External Load Balancer:

Name: CSI-External-LB

Type: Public

Frontend IP Configuration: Public IP

Backend Pool: Add VM-Linux-1, VM-Windows-1

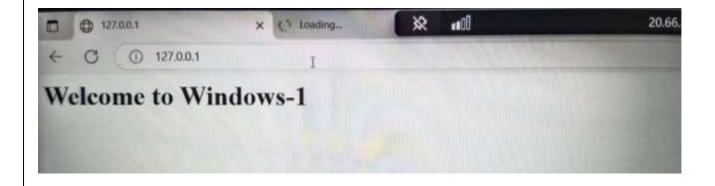
Health Probe: Port 80

Load Balancing Rule:

Name: HTTPRule Frontend Port: 80 Backend Port: 80

Test: Visit the Load Balancer's Public IP in browser.





Step 7: Create Internal Load Balancer:

Name: CSI-Internal-LB

Type: Internal

Frontend IP: Assigned from Backend-Subnet Backend Pool: VM-Linux-2, VM-Windows-2

Health Probe: Port 80

Load Balancing Rule:

Frontend Port: 80 Backend Port: 80

Test: SSH into VM-Linux-1 and curl the internal LB IP.

curl http://<internal-lb-ip>

Screenshot: connecting linuxVM-2.jpg

Screenshot: modify_Apachehomepagevmlin-2.jpg

Step 8: Validation

Successfully accessed External LB IP: Confirmed rotating responses between Linux-1 and Windows-1. Internal LB verified by curl from VM-Linux-1.