Lab 06 - Implement Traffic Management

- ## Task 1: Provision the lab environment

```
PS /home/krasi>  $location = 'northeurope'

PS /home/krasi>  $rgName = 'az104-06-rg1'

PS /home/krasi>  New-AzResourceGroup -Name $rgName -Location $location

Confirm

Provided resource group already exists. Are you sure you want to update it?

[Y] Yes  [N] No  [S] Suspend  [?] Help (default is "Y"): y

ResourceGroupName : az104-06-rg1

Location          : northeurope

ProvisioningState : Succeeded

Tags              :

ResourceId        : /subscriptions/2aeafe0b-89b7-406a-9eea-89ec53737333/resourceGroups/az104-06-rg1

PS /home/krasi> New-AzResourceGroupDeployment `

>>    -ResourceGroupName $rgName `

>>    -TemplateFile $HOME/az104-06-vms-loop-template.json `

>>    -TemplateParameterFile $HOME/az104-06-vms-loop-parameters.json

New-AzResourceGroupDeployment: 2:18:21 PM - Error: Code=InvalidTemplateDeployment; Message=The template deployment 'az104-06-vms-loop-template' is
not valid according to the validation procedure. The tracking id is 'e47b89f0-9741-4c06-8f48-54055b470d35'. See inner errors for details.

New-AzResourceGroupDeployment: 2:18:22 PM - Error: Code=QuotaExceeded; Message=Operation could not be completed as it results in exceeding approved
Total Regional Cores quota. Additional details - Deployment Model: Resource Manager, Location: northeurope, Current Limit: 10, Current Usage: 4, Additional
Required: 8, (Minimum) New Limit Required: 12. Submit a request for Quota increase at
https://aka.ms/ProdportalCRP/#blade/Microsoft_Azure_Capacity/UsageAndQuota.ReactView/Parameters/%7B%22subscriptionId%22:%222aeafe0b-89b7-406a-9
eea-89ec53737333%22,%22command%22:%22openQuotaApprovalBlade%22,%22quotas%22:[%7B%22location%22:%22northeurope%22,%22providerId%22:%
22Microsoft.Compute%22,%22resourceName%22:%22cores%22,%22quotaRequest%22:%7B%22properties%22:%7B%22limit%22:12,%22unit%22:%22Count%
22,%22name%22:%7B%22value%22:%22cores%22%7D%7D%7D%7D]%7D by specifying parameters listed in the 'Details' section for deployment to succeed.
Please read more about quota limits at https://docs.microsoft.com/en-us/azure/azure-supportability/regional-quota-requests

New-AzResourceGroupDeployment: The deployment validation failed

PS /home/krasi> (Get-AzLocation).Location

eastus

eastus2

southcentralus

westus2

westus3

australiaeast
```

southeastasia

northeurope

swedencentral

uksouth

westeurope

centralus

southafricanorth

centralindia

eastasia

japaneast

koreacentral

canadacentral

francecentral

germanywestcentral

norwayeast

switzerlandnorth

uaenorth

brazilsouth

eastus2euap

qatarcentral

asia

asiapacific

australia

brazil

canada

europe

france

germany

global

india

japan

korea

norway

singapore

southafrica

switzerland

unitedstates

northcentralus

westus

centraluseuap

westcentralus

southafricawest

australiacentral

australiacentral2

australiasoutheast

japanwest

koreasouth

southindia

westindia

canadaeast

francesouth

germanynorth

norwaywest

switzerlandwest

ukwest

uaecentral

brazilsoutheast

PS /home/krasi> $location = 'westeurope'

PS /home/krasi> New-AzResourceGroup -Name $rgName -Location $location

Confirm

Provided resource group already exists. Are you sure you want to update it?

[Y] Yes [N] No [S] Suspend [?] Help (default is "Y"): y

New-AzResourceGroup: Invalid resource group location 'westeurope'. The Resource group already exists in location 'northeurope'.

StatusCode: 409

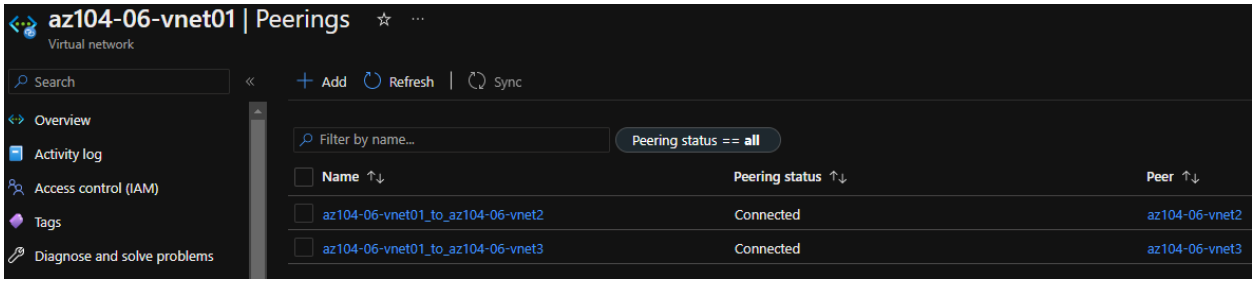
ReasonPhrase: Conflict

OperationID : 9dbcb2b1-588c-4fd7-8ef9-a3e0c9f5301a

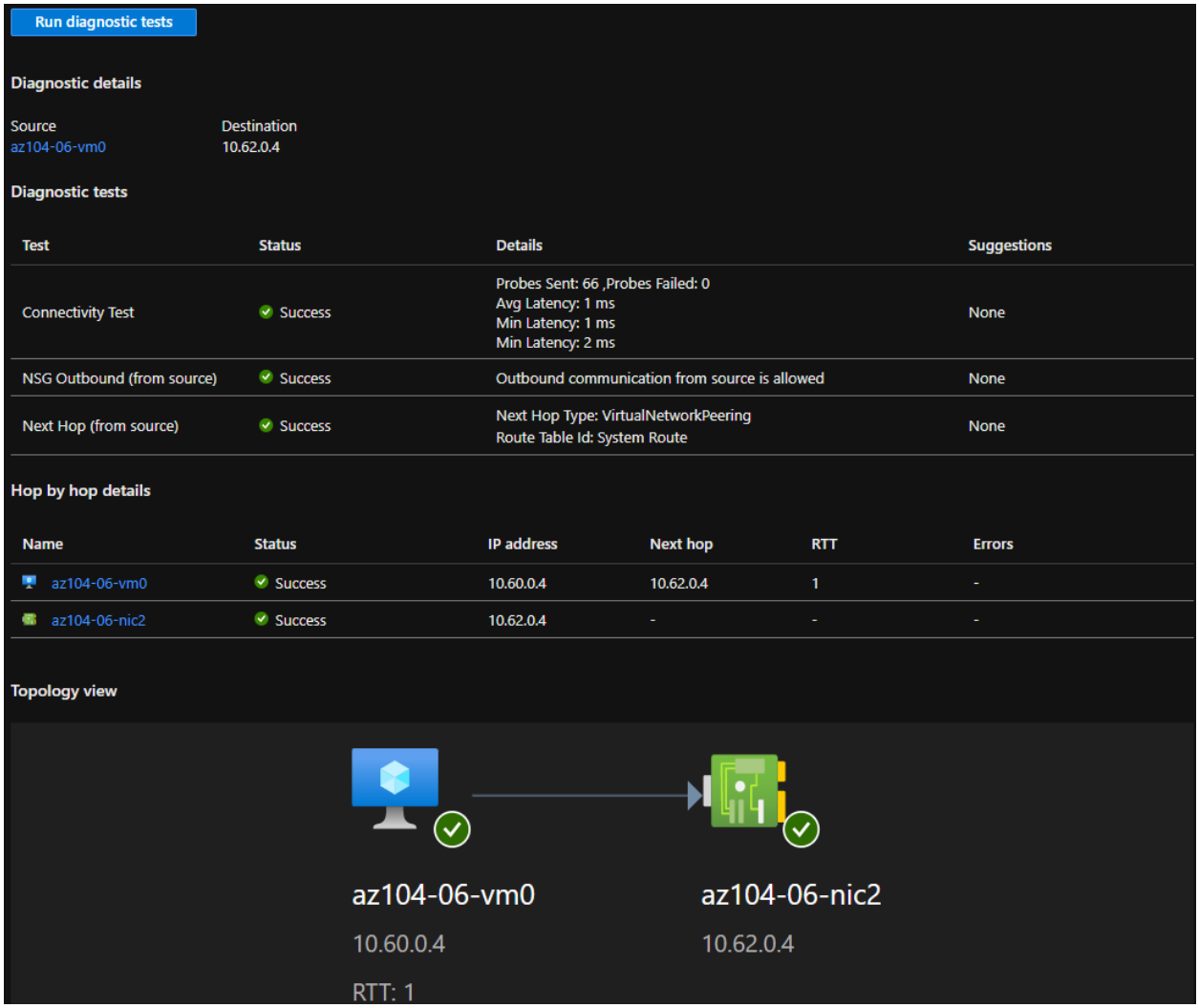
```
PS /home/krasi> Remove-AzResourceGroup -Name "az104-06-rg1" -Force

True

PS /home/krasi>  $location = 'westeurope'

PS /home/krasi>  $rgName = 'az104-06-rg1'

PS /home/krasi> New-AzResourceGroupDeployment `

>>    -ResourceGroupName $rgName `

>>    -TemplateFile $HOME/az104-06-vms-loop-template.json `

>>    -TemplateParameterFile $HOME/az104-06-vms-loop-parameters.json

New-AzResourceGroupDeployment: 2:25:50 PM - Error: Code=ResourceGroupNotFound; Message=Resource group 'az104-06-rg1' could not be found.

New-AzResourceGroupDeployment: The deployment validation failed

PS /home/krasi>  New-AzResourceGroup -Name $rgName -Location $location


ResourceGroupName : az104-06-rg1

Location          : westeurope

ProvisioningState : Succeeded

Tags              :

ResourceId        : /subscriptions/2aeafe0b-89b7-406a-9eea-89ec53737333/resourceGroups/az104-06-rg1




PS /home/krasi> New-AzResourceGroupDeployment `

>>    -ResourceGroupName $rgName `

>>    -TemplateFile $HOME/az104-06-vms-loop-template.json `

>>    -TemplateParameterFile $HOME/az104-06-vms-loop-parameters.json


DeploymentName          : az104-06-vms-loop-template

ResourceGroupName       : az104-06-rg1

ProvisioningState       : Succeeded

Timestamp               : 3/24/2023 2:30:31 PM

Mode                    : Incremental

TemplateLink            :

Parameters              :

                  Name            Type                       Value

                  ==============  =========================  ==========
```

```
                    vmSize          String                  "Standard_D2s_v3"
                    vmName          String                  "az104-06-vm"
                    vmCount         Int                     4
                    adminUsername   String                  "Student"
                    adminPassword   SecureString            null

Outputs                 :
DeploymentDebugLogLevel :


PS /home/krasi> $rgName = 'az104-06-rg1'
PS /home/krasi> $location = (Get-AzResourceGroup -ResourceGroupName $rgName).location
PS /home/krasi> $vmNames = (Get-AzVM -ResourceGroupName $rgName).Name
PS /home/krasi>
PS /home/krasi> foreach ($vmName in $vmNames) {
>>   Set-AzVMExtension `
>>   -ResourceGroupName $rgName `
>>   -Location $location `
>>   -VMName $vmName `
>>   -Name 'networkWatcherAgent' `
>>   -Publisher 'Microsoft.Azure.NetworkWatcher' `
>>   -Type 'NetworkWatcherAgentWindows' `
>>   -TypeHandlerVersion '1.4'
>> }

RequestId IsSuccessStatusCode StatusCode ReasonPhrase
--------- ------------------- ---------- ------------
                    True        OK OK
                    True        OK OK
                    True        OK OK
                    True        OK OK

PS /home/krasi>
```

- Task 2: Configure the hub and spoke network topology



- Task 3: Test transitivity of virtual network peering



Run diagnostic tests

Diagnostic details

Source	Destination
az104-06-vm0	10.63.0.4

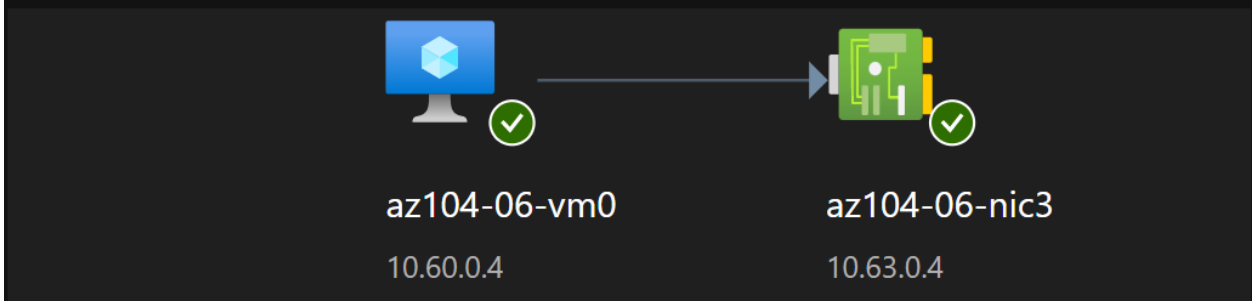
Diagnostic tests

Test	Status	Details	Suggestions
Connectivity Test	Fail	Probes Sent: 0 ,Probes Failed: 0	-
NSG Outbound (from source)	Success	Outbound communication from source is allowed	None
Next Hop (from source)	Success	Next Hop Type: VirtualNetworkPeering Route Table Id: System Route	None

Hop by hop details

Name	Status	IP address	Next hop	RTT	Errors
az104-06-vm0	Info	10.60.0.4	10.63.0.4	-	-
az104-06-nic3	Info	10.63.0.4	-	-	-

Topology view



Run diagnostic tests

Diagnostic details

Source	Destination
az104-06-vm2	10.63.0.4

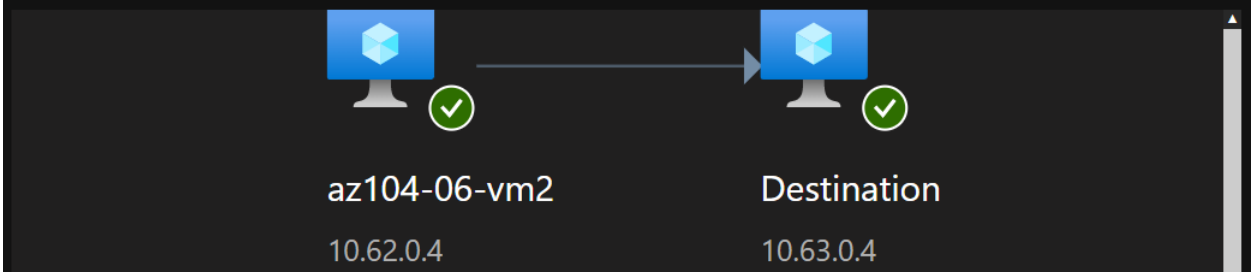
Diagnostic tests

Test	Status	Details	Suggestions
Connectivity Test	Fail	Probes Sent: 0 ,Probes Failed: 0	-
NSG Outbound (from source)	Fail	There are failed tests in the following NSGs: • az104-06-nsg2	Go to VM > Update the networking rule | Read docs
Next Hop (from source)	Success	Next Hop Type: None Route Table Id: System Route	None

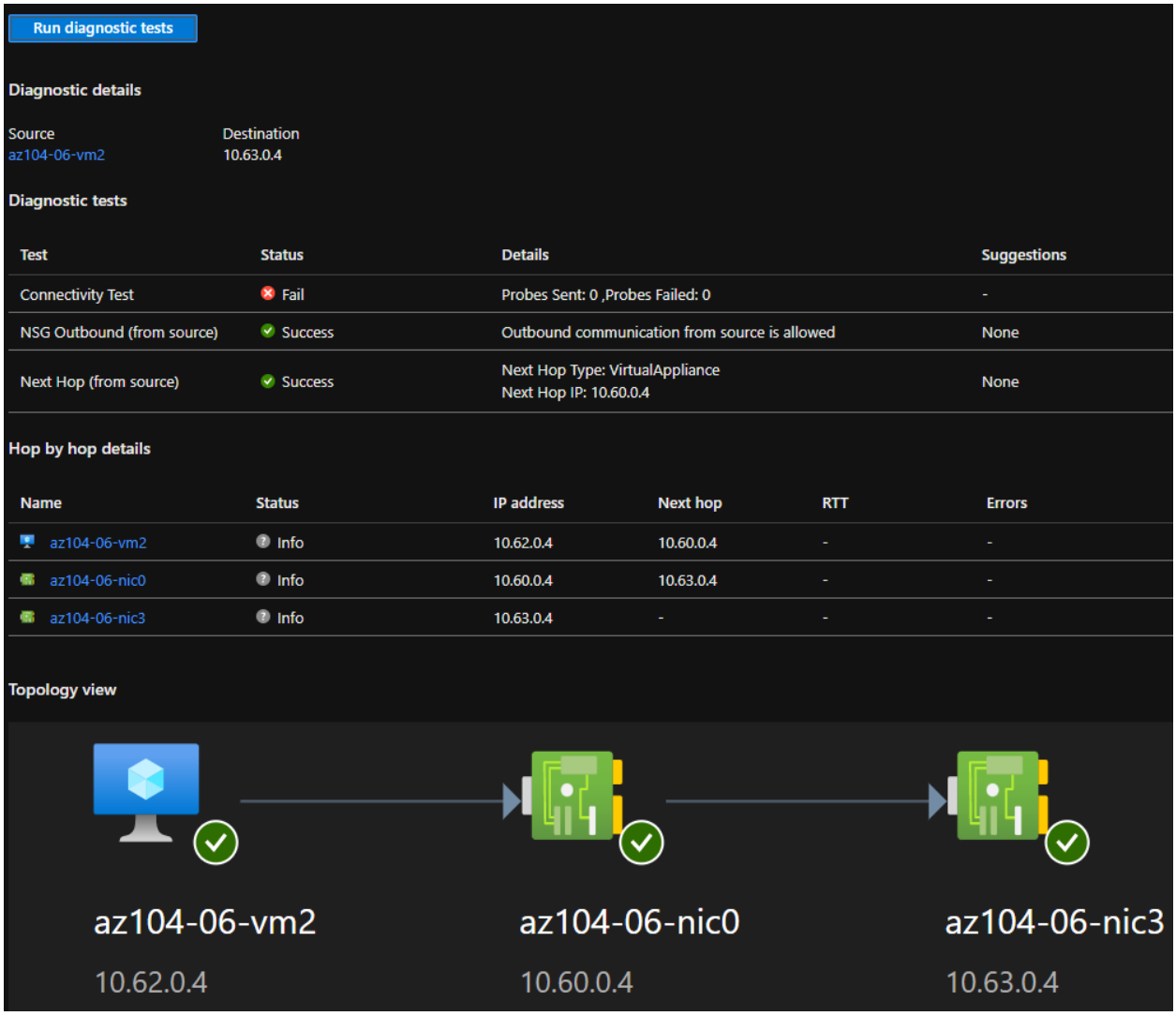
Hop by hop details

Name	Status	IP address	Next hop	RTT	Errors
az104-06-vm2	Info	10.62.0.4	10.63.0.4	-	-
Destination (10.63.0.4)	Info	10.63.0.4	-	-	-

Topology view



- Task 4: Configure routing in the hub and spoke topology



- Task 5: Implement Azure Load Balancer

  52.236.149.42

  Hello World from az104-06-vm1

  Hello World from az104-06-vm0

- Task 6: Implement Azure Application Gateway

40.113.157.95 (az104-06-pip5)
Hello World from az104-06-vm2
Hello World from az104-06-vm3