



Azure 103 Module 5

Hands On - 2

Azure Certification Training

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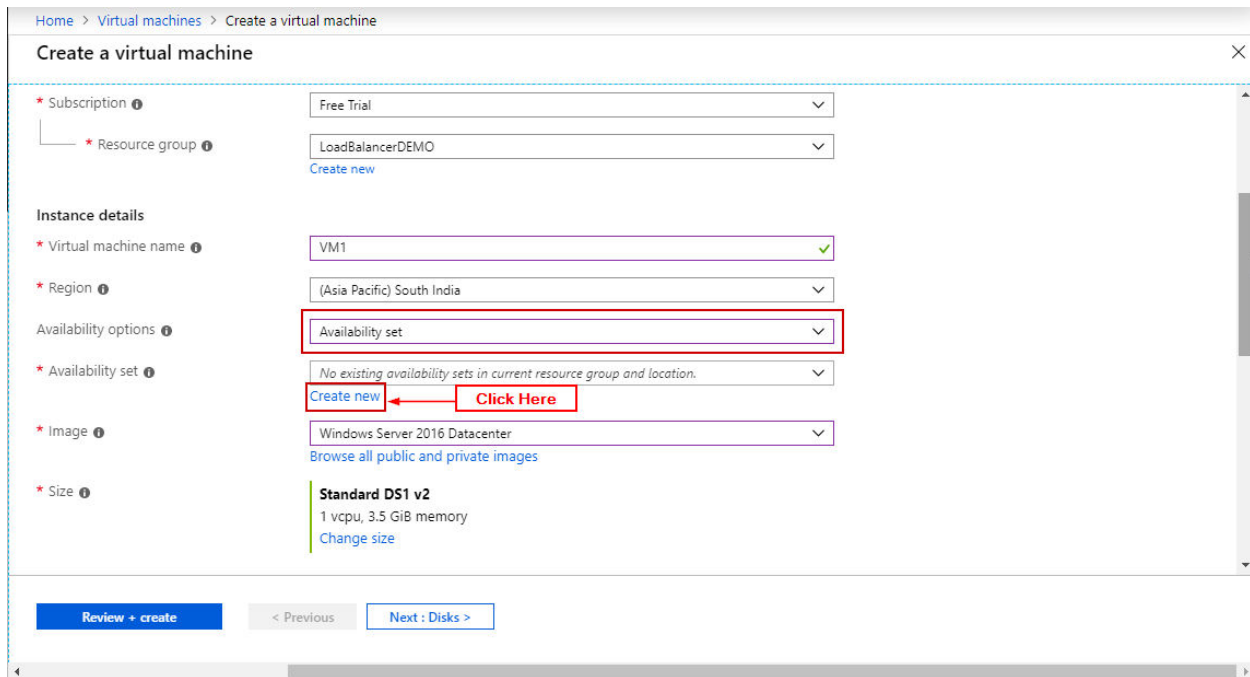
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Azure 103 Module 5 Hands On – 2

Create Public Load Balancer

Step 1: Create two virtual machines within a single availability set and same virtual network.



Home > Virtual machines > Create a virtual machine

Create a virtual machine

* Subscription ⓘ Free Trial

* Resource group ⓘ LoadBalancerDEMO
[Create new](#)

Instance details

* Virtual machine name ⓘ VM1 ✓

* Region ⓘ (Asia Pacific) South India

Availability options ⓘ

* Availability set ⓘ Availability set

* Availability set ⓘ No existing availability sets in current resource group and location.
[Create new](#) **Click Here**

* Image ⓘ Windows Server 2016 Datacenter
[Browse all public and private images](#)


* Size ⓘ **Standard DS1 v2**
1 vcpu, 3.5 GiB memory
[Change size](#)


[Review + create](#) < Previous Next : Disks >

Create new

Group two or more VMs in an availability set to ensure that at least one is available during planned or unplanned maintenance events.
[Learn more](#)

* Name
LoadBalancerAS

Fault domains ⓘ
 2

Update domains ⓘ
 5

Use managed disks ⓘ
☐ No (Classic) ☒ Yes (Aligned)

OK

Click Here

Create a virtual machine

Network interface

When creating a virtual machine, a network interface will be created for you.

* Virtual network ⓘ (new) vnet
[Create new](#)

* Subnet ⓘ (new) default (10.0.0.0/24)

Public IP ⓘ (new) VM1-ip
[Create new](#)

NIC network security group ⓘ ☐ None ☒ Basic ☐ Advanced

* Public inbound ports ⓘ ☐ None ☒ Allow selected ports

* Select inbound ports HTTP, HTTPS, RDP, SSH

⚠ These ports will be exposed to the internet. Use the Advanced controls to limit inbound traffic to known IP addresses. You can also update inbound traffic rules later.

Accelerated networking ⓘ ☐ On ☒ Off

[Review + create](#) [< Previous](#) [Next : Management >](#)

[Click Here](#)

Home > Virtual machines > Create a virtual machine

Create a virtual machine

* Subscription ⓘ Free Trial

* Resource group ⓘ LoadBalancerDEMO
[Create new](#)

Instance details

* Virtual machine name ⓘ VM2 ✓

* Region ⓘ (Asia Pacific) South India

Availability options ⓘ

* Availability set ⓘ Availability set
LoadBalancerAS
[Create new](#)

* Image ⓘ Windows Server 2016 Datacenter
[Browse all public and private images](#)

* Size ⓘ **Standard DS1 v2**
1 vcpu, 3.5 GiB memory
[Change size](#)

Create a virtual machine

*** Virtual network** ▼ vnet
 [Create new](#)

*** Subnet** ▼ default (10.0.0.0/24)
 [Manage subnet configuration](#)

Public IP ▼ (new) VM2-ip
 [Create new](#)

NIC network security group ▼ ☐ None ☒ Basic ☐ Advanced

*** Public inbound ports** ▼ ☐ None ☒ Allow selected ports

*** Select inbound ports** ▼ HTTP, HTTPS, SSH, RDP

⚠ These ports will be exposed to the internet. Use the Advanced controls to limit inbound traffic to known IP addresses. You can also update inbound traffic rules later.

Accelerated networking ▼ ☐ On ☒ Off
 The selected VM size does not support accelerated networking.

[Review + create](#) [< Previous](#) [Next : Management >](#)

Step 2: In both virtual machines in Networking add an inbound security port rule for port 80.

Microsoft Azure

Search resources, services, and docs (G+)

akankshaintellipaat@...
DEFAULT DIRECTORY

Home > Virtual machines > VM1 - Networking

VM1 - Networking

Virtual machine

Search (Ctrl+J)

Tags

Diagnose and solve problems

Settings

- Networking
- Disks
- Size
- Security
- Extensions
- Continuous delivery (Preview)
- Availability set
- Configuration
- Identity
- Properties
- Locks
- Export template

Attach network interface Detach network interface

Network Interface: vm1232 [Effective security rules](#) [Topology](#)


Virtual network/subnet: vnet/default NIC Public IP: 13.71.120.212 NIC Private IP: 10.0.0.4 Accelerated networking: Disabled


[Click Here](#) [Add inbound port rule](#)

Network security group VM1-nsg (attached to network interface: vm1232)
Impacts 0 subnets, 1 network interfaces

PRIORITY	NAME	PORT	PROTOCOL	SOURCE	DESTINATION	ACTION
300	HTTP	80	TCP	Any	Any	Allow
320	HTTPS	443	TCP	Any	Any	Allow
340	RDP	3389	TCP	Any	Any	Allow
360	SSH	22	TCP	Any	Any	Allow
65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwo...	Allow
65001	AllowAzureLoadBalancerIn...	Any	Any	AzureLoadBa...	Any	Allow
65500	DenyAllInBound	Any	Any	Any	Any	Deny

https://portal.azure.com/#

 **Add inbound security rule**
VM1-nsg

 Basic

* Source ⓘ

* Source port ranges ⓘ

* Destination ⓘ

* Destination port ranges ⓘ

* Protocol

☒ Any ☐ TCP ☐ UDP ☐ ICMP

* Action

☒ Allow ☐ Deny

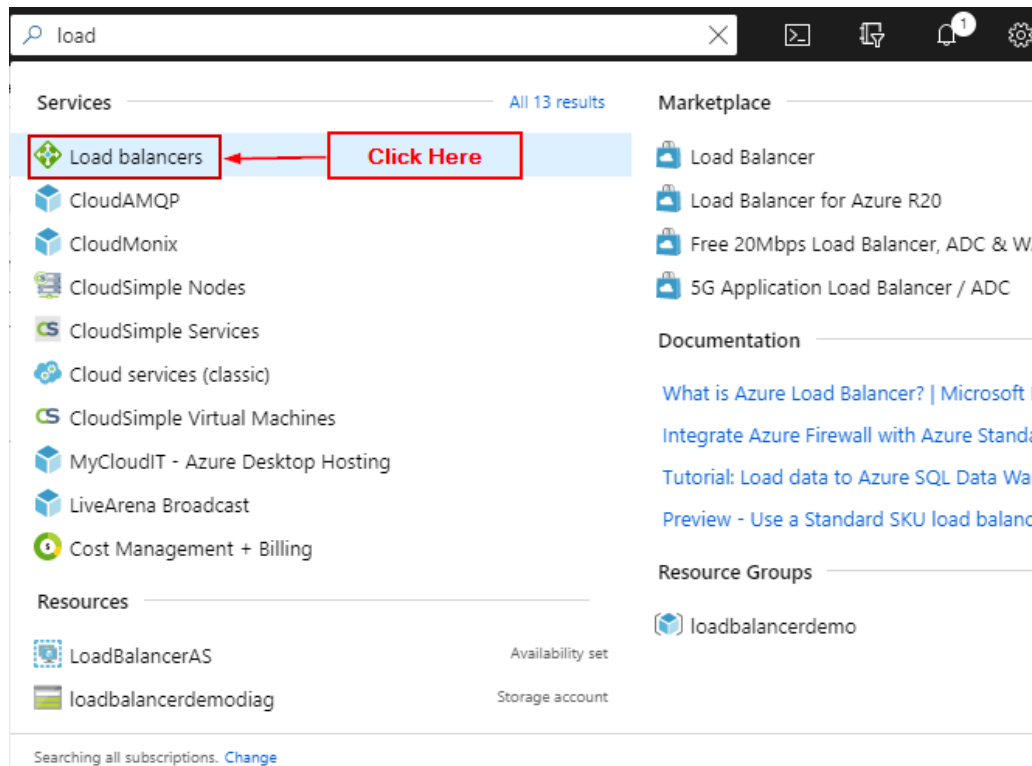
* Priority ⓘ

* Name

Add

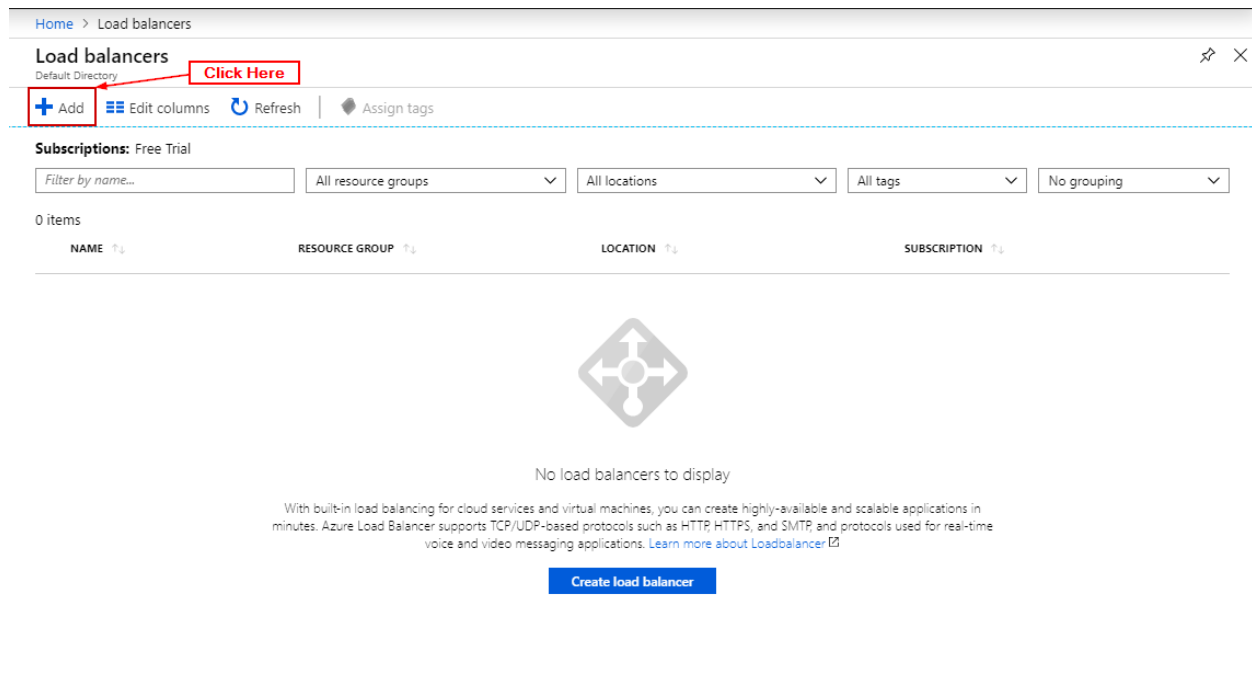
Click here

Step 3: Search load balancer and click on it.



The screenshot shows the Azure portal search results for the term 'load'. The search bar at the top contains the text 'load'. Below the search bar, there are two main sections: 'Services' and 'Marketplace'. In the 'Services' section, 'Load balancers' is highlighted with a red box, and a red arrow points to it with the text 'Click Here'. Other services listed include CloudAMQP, CloudMonix, CloudSimple Nodes, CloudSimple Services, Cloud services (classic), CloudSimple Virtual Machines, MyCloudIT - Azure Desktop Hosting, LiveArena Broadcast, and Cost Management + Billing. In the 'Marketplace' section, there are several load balancer offerings: 'Load Balancer', 'Load Balancer for Azure R20', 'Free 20Mbps Load Balancer, ADC & W...', and '5G Application Load Balancer / ADC'. Below the marketplace section, there is a 'Documentation' section with links to 'What is Azure Load Balancer? | Microsoft...', 'Integrate Azure Firewall with Azure Standa...', 'Tutorial: Load data to Azure SQL Data War...', and 'Preview - Use a Standard SKU load balanc...'. At the bottom, there is a 'Resource Groups' section with a resource named 'loadbalancerdemo'.

Step 4: Click on '+ Add'.



The screenshot shows the 'Load balancers' page in the Azure portal. The breadcrumb navigation at the top indicates 'Home > Load balancers'. The page title is 'Load balancers' with a subtitle 'Default Directory'. Below the title, there is a '+ Add' button highlighted with a red box, and a red arrow points to it with the text 'Click Here'. Other buttons include 'Edit columns', 'Refresh', and 'Assign tags'. Below these buttons, there is a 'Subscriptions: Free Trial' section with a 'Filter by name...' input field and several dropdown menus for 'All resource groups', 'All locations', 'All tags', and 'No grouping'. Below the filters, it says '0 items'. There is a table with columns 'NAME', 'RESOURCE GROUP', 'LOCATION', and 'SUBSCRIPTION', but it is empty. Below the table, there is a large diamond-shaped icon with four arrows pointing outwards. Below the icon, it says 'No load balancers to display'. Below this text, there is a paragraph explaining that with built-in load balancing for cloud services and virtual machines, you can create highly-available and scalable applications in minutes. It also mentions that Azure Load Balancer supports TCP/UDP-based protocols such as HTTP, HTTPS, and SMTP, and protocols used for real-time voice and video messaging applications. Below the paragraph, there is a 'Learn more about Loadbalancer' link. At the bottom, there is a 'Create load balancer' button.

Step 5: Add details and click 'Review + Create'.

Home > Load balancers > Create load balancer

Create load balancer

* Subscription: Free Trial

* Resource group: LoadBalancerDEMO [Create new](#)

Instance details

* Name: load-balancer ✓

* Region: (Asia Pacific) South India

* Type: ☐ Internal ☒ Public

* SKU: ☒ Basic ☐ Standard

Public IP address

* Public IP address: ☒ Create new ☐ Use existing

* Public IP address name: load-balancer-ip ✓

Public IP address SKU: Basic

* Assignment: ☒ Dynamic ☐ Static

[Review + create](#) [< Previous](#) [Next : Tags >](#) [Download a template for automation](#)

[Click Here](#)

Step 6: Click on 'Create'.

Home > Load balancers > Create load balancer

Create load balancer

✓ Validation passed

[Basics](#) [Tags](#) [Review + create](#)

Basics

Subscription	Free Trial
Resource group	LoadBalancerDEMO
Name	load-balancer
Region	(Asia Pacific) South India
SKU	Basic
Type	Public
Public IP address	load-balancer-ip

Tags

None

[Create](#) [< Previous](#) [Next >](#) [Download a template for automation](#)

[Click Here](#)

Step 7 Open Load Balancer and click on FrontEndIP and click on the IP.

Dashboard > Load balancers > load-balancer - Frontend IP configuration

load-balancer - Frontend IP configuration

Load balancer

Search (Ctrl+/)

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Frontend IP configuration

Backend pools

Health probes

Load balancing rules

Inbound NAT rules

Properties

Locks

Export template

Monitoring

+ Add

Search frontend IP configurations

NAME	IP ADDRESS	RULES COUNT
LoadBalancerFrontEnd	load-balancer-ip	-

Click Here

Step 8: Click on '+ Create New'.

Dashboard > Load balancers > load-balancer - Frontend IP configuration > LoadBalancerFrontEnd > Choose public IP address

LoadBalancerFrontEnd

load-balancer

Save Discard

Type

Public

IP address

load-balancer-ip (Unassigned)

Used by

Not used

Choose public IP address

Dynamic public IP addresses that are not in use won't have an IP address assigned to them.

These are the public IP addresses in the selected subscription and location 'South India'.

+ Create new

VM1-ip
VNETDEMO

VM1ip317
VNETDEMO

VM2-ip
VNETDEMO

VM2ip503
VNETDEMO

load-balancer-ip
LoadBalancerDEMO

SouthVNETtoWestVNETIP
GatewayTest2

52.172.32.69 (...)

Click Here

Step 9: Enter details click on OK.

[Home](#) > [LoadBalancerDEMO](#) > [load-balancer - Frontend IP configuration](#) > [LoadBalancerFrontEnd](#) > [Choose public IP address](#) > [Create public IP address](#)

Create public IP address

* Name

LoadBalancerFrontEnd

SKU ⓘ

☒ Basic ☐ Standard

Assignment

☒ Dynamic ☐ Static



OK

Click Here

Step 10: Click on Save

Home > LoadBalancerDEMO > load-balancer - Frontend IP configuration > LoadBalancerFrontEnd

LoadBalancerFrontEnd
load-balancer

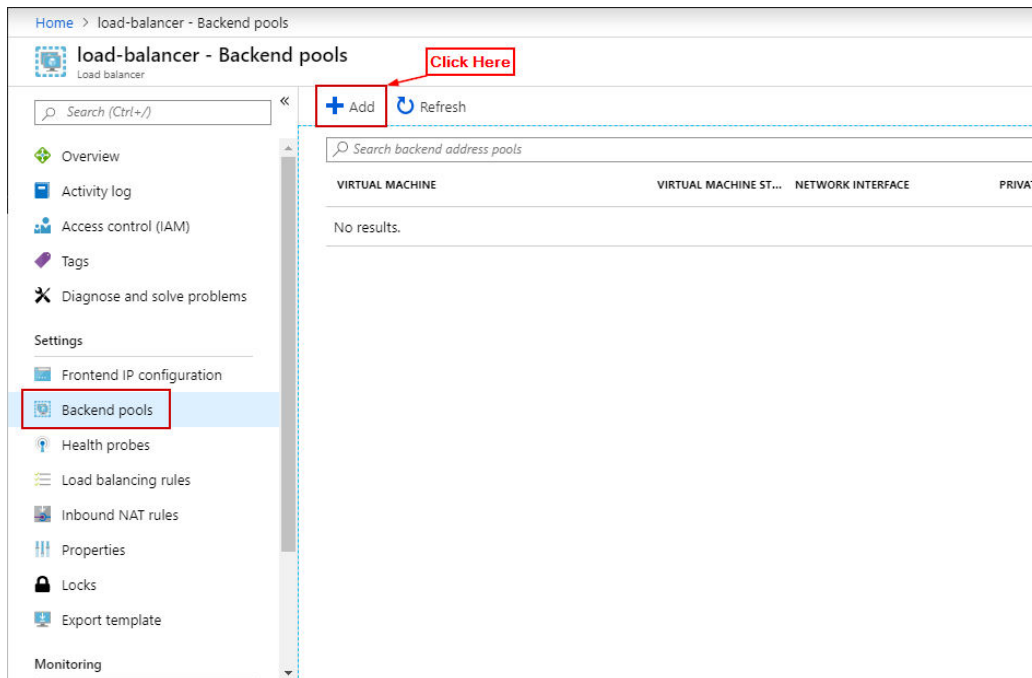
 Save  Discard

Type ⓘ
Public

IP address
LoadBalancerFrontEnd (New)

Used by ⓘ
Not used

Step 11: In load balancer click on backend pools and click on '+ Add'.



Home > load-balancer - Backend pools

load-balancer - Backend pools

Search (Ctrl+/)

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Frontend IP configuration

Backend pools

Health probes

Load balancing rules

Inbound NAT rules

Properties

Locks

Export template

Monitoring

+ Add Refresh

Search backend address pools

VIRTUAL MACHINE	VIRTUAL MACHINE ST...	NETWORK INTERFACE	PRIVATE IP
No results.			

Step 12: Enter the details (Availability Set, in target IP Configuration add both VM's and their IP) and click on OK.

*** Name**

backend-pool ✓

IP version

IPv4 IPv6

Associated to ⓘ

Availability set ▼

Availability set ⓘ

LoadBalancerAS
number of virtual machines: 2 ▼

Target network IP configurations

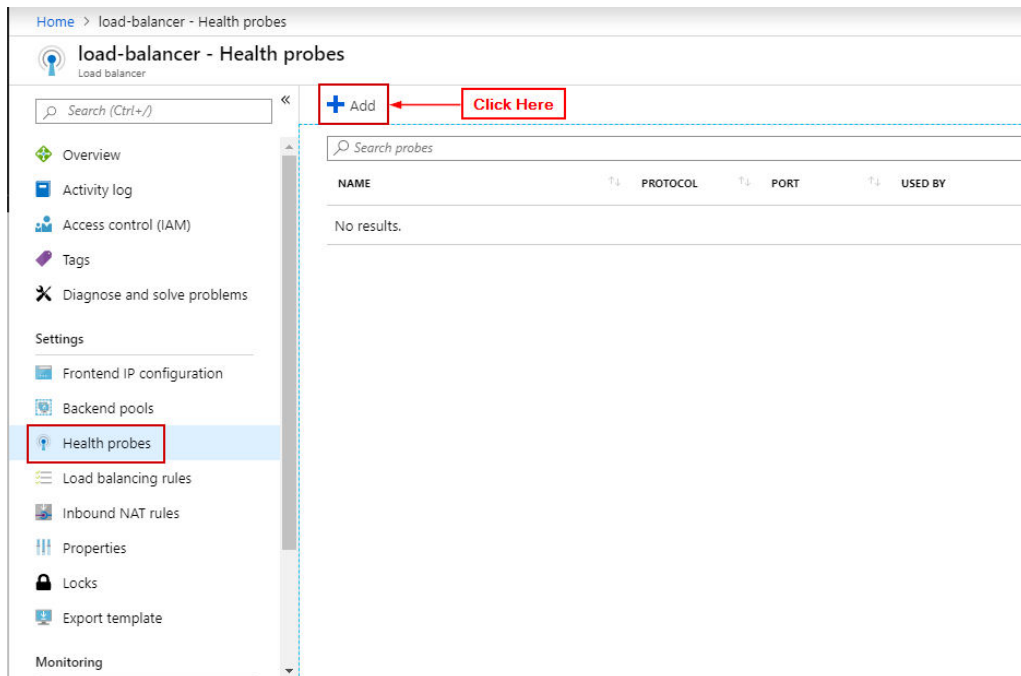
Only VMs within the current availability set can be chosen. Once a VM is chosen, you can select a network IP configuration related to it.

Virtual machine: VM1 Network IP configuration: vm1232/ipconfig1 (10.0.0.4)	🗑
* Target virtual machine ⓘ	🗑
VM2 size: Standard_DS1_v2, network interfaces: 1 ▼	▼
* Network IP configuration ⓘ	▼
ipconfig1 (10.0.0.5) ▼	▼

+ Add a target network IP configuration

OK ← Click Here

Step 13: In load balancer click on health probes and click on '+ Add'.



Home > load-balancer - Health probes

load-balancer - Health probes

Search (Ctrl+ /)

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Frontend IP configuration

Backend pools

Health probes

Load balancing rules

Inbound NAT rules

Properties

Locks

Export template

Monitoring

+ Add

Click Here

Search probes

NAME	PROTOCOL	PORT	USED BY
No results.			

Step 14: Enter details click on OK.

Home > load-balancer - Health probes > Add health probe

Add health probe

load-balancer

* Name
health-probe

IP version
IPv4

Protocol ⓘ
TCP

* Port ⓘ
80

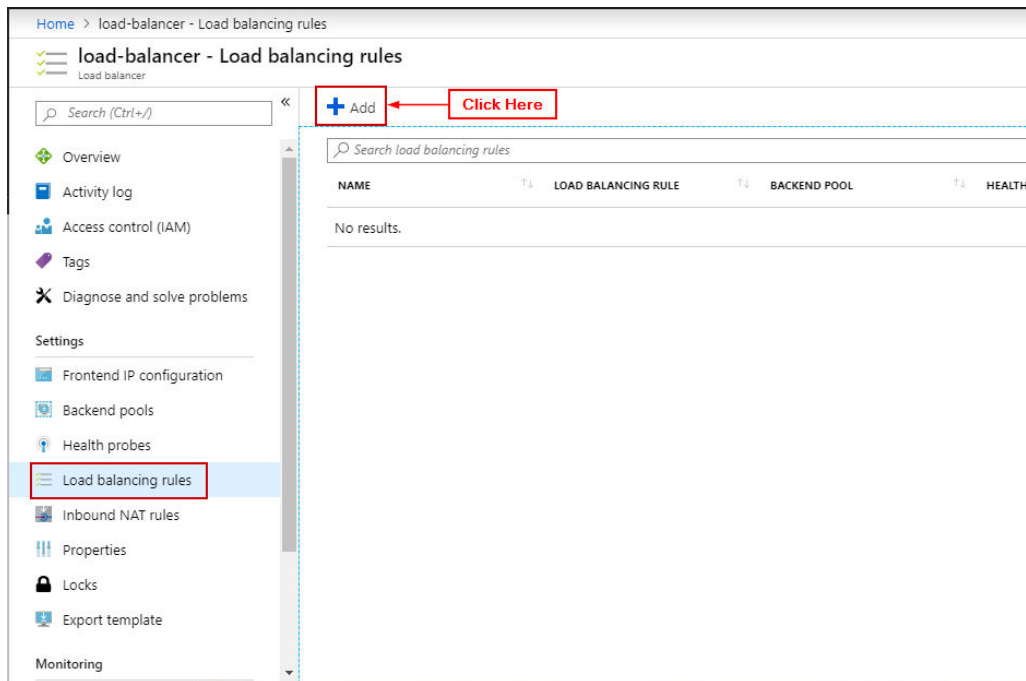
* Interval ⓘ
5

* Unhealthy threshold ⓘ
2

OK

Click Here

Step 15: In load balancer click on Load Balancing Rule and click on '+ Add'.



Home > load-balancer - Load balancing rules

load-balancer - Load balancing rules

Search (Ctrl+/)

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Frontend IP configuration

Backend pools

Health probes

Load balancing rules

Inbound NAT rules

Properties

Locks

Export template

Monitoring

+ Add

Click Here

Search load balancing rules

NAME	LOAD BALANCING RULE	BACKEND POOL	HEALTH I
No results.			

Step 16: Enter details click on OK.

Home > load-balancer - Load balancing rules > Add load balancing rule

Add load balancing rule

load-balancer

* Name
load-balancing-rule

* IP Version
☒ IPv4 ☐ IPv6

* Frontend IP address ⓘ
LoadBalancerFrontEnd

Protocol
☒ TCP ☐ UDP

* Port
80

* Backend port ⓘ
80

Backend pool ⓘ
backend-pool (2 virtual machines)

Health probe ⓘ
health-probe (TCP:80)

OK ← **Click Here**

Step 17: Open load balancer and open the public IP Address.

→ Move 🗑 Delete ↻ Refresh

Resource group (change) LoadBalancerDEMO	Backend pool backend-pool (2 virtual machines)
Location South India	Health probe health-probe (Tcp:80)
Subscription (change) Free Trial	Load balancing rule load-balancing-rule (Tcp/80)
Subscription ID b9be3eac-a886-420f-88c4-c8a6156af111	NAT rules 0 inbound
SKU Basic	Public IP address 104.211.204.139 LoadBalancerFrontEnd
Tags (change) Click here to add tags	Open this IP

⌵

Step 18: Notice the website is being served by the load balancer.



Step 19: Wait for a couple of minutes and refresh to see the website being loaded by other VM in the backend pool.

