Azure Load Balancer

Azure Load Balancer is a Layer-4 network load balancing service that distributes incoming TCP/UDP traffic across multiple backend virtual machines to provide high availability and scalability. It uses frontend IPs, backend pools, health probes, and load-balancing rules to route traffic only to healthy instances.

Main components

→ Frontend IP Configuration

Entry point for traffic.

- Public IP → Internet-facing apps
- Private IP → Internal apps (inside VNet)

→Backend Pool

A group of resources that receive traffic:

- Virtual Machines
- VM Scale Set instances
- NICs / Private IPs

These are your **actual application servers**.

→Health Probes

Continuously checks backend servers (TCP/HTTP):

- If VM is **healthy** → traffic continues
- If VM is **unhealthy** → traffic stops to that VM

This gives **automatic failover**.

→Load Balancing Rules

Define:

- Frontend port (example: 80)
- Backend port (example: 80)
- Protocol (TCP/UDP)
- Which backend pool to use

Types of Load Balancers

→public Load balancer

- Has public ip
- Used for internet-facing apps
- Ex:Web Servers

→Private Load balancere

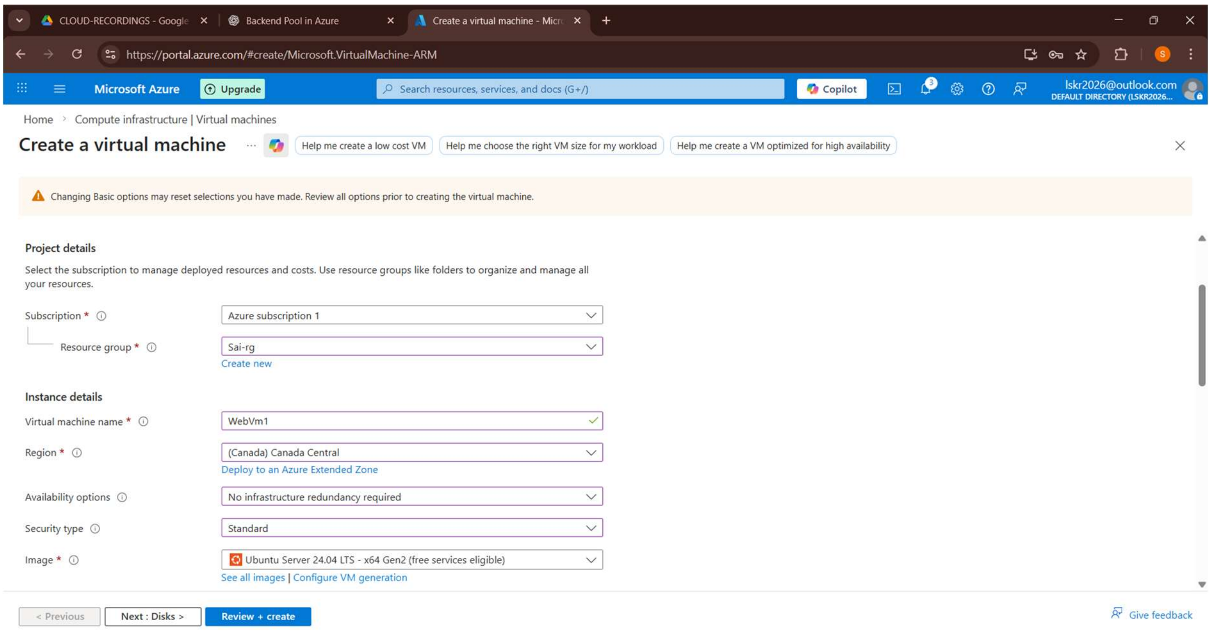
- Uses private IP
- Works only inside Vnet
- Example: app tier → db tier

Steps to create ALB

→Lets Create Azure Load Balancer

→Create two Vms with in a vnet with different Subnets

→Creating a WebVm1



https://portal.azure.com/#create/Microsoft.VirtualMachine-ARM

Home > Compute infrastructure | Virtual machines

Create a virtual machine

Changing Basic options may reset selections you have made. Review all options prior to creating the virtual machine.

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription *: Azure subscription 1

Resource group *: Sai-rg

Instance details

Virtual machine name *: WebVm1

Region *: (Canada) Canada Central

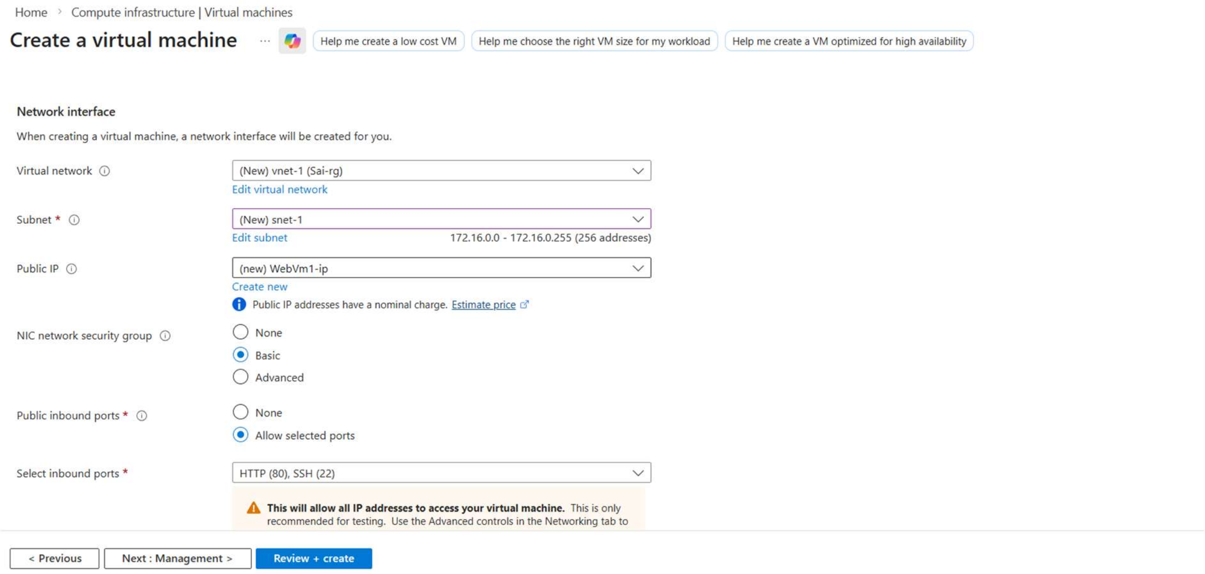
Availability options: No infrastructure redundancy required

Security type: Standard

Image *: Ubuntu Server 24.04 LTS - x64 Gen2 (free services eligible)

CLOUD-RECORDINGS - Google
Backend Pool in Azure
Create a virtual machine - Micr
Microsoft Azure
Upgrade
Search resources, services, and docs (G+/)
Copilot
lskr2026@outlook.com
DEFAULT DIRECTORY (LSKR2026...
Help me create a low cost VM
Help me choose the right VM size for my workload
Help me create a VM optimized for high availability
Create new
Deploy to an Azure Extended Zone
See all images | Configure VM generation
< Previous
Next : Disks >
Review + create
Give feedback

→Adding Vnet and Subnet for WebVm1



Home > Compute infrastructure | Virtual machines

Create a virtual machine

Network interface

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

Virtual network: (New) vnet-1 (Sai-rg)

Subnet *: (New) snet-1 — 172.16.0.0 - 172.16.0.255 (256 addresses)

Public IP: (new) WebVm1-ip

Public IP addresses have a nominal charge. Estimate price

NIC network security group: ○ None ● Basic ○ Advanced

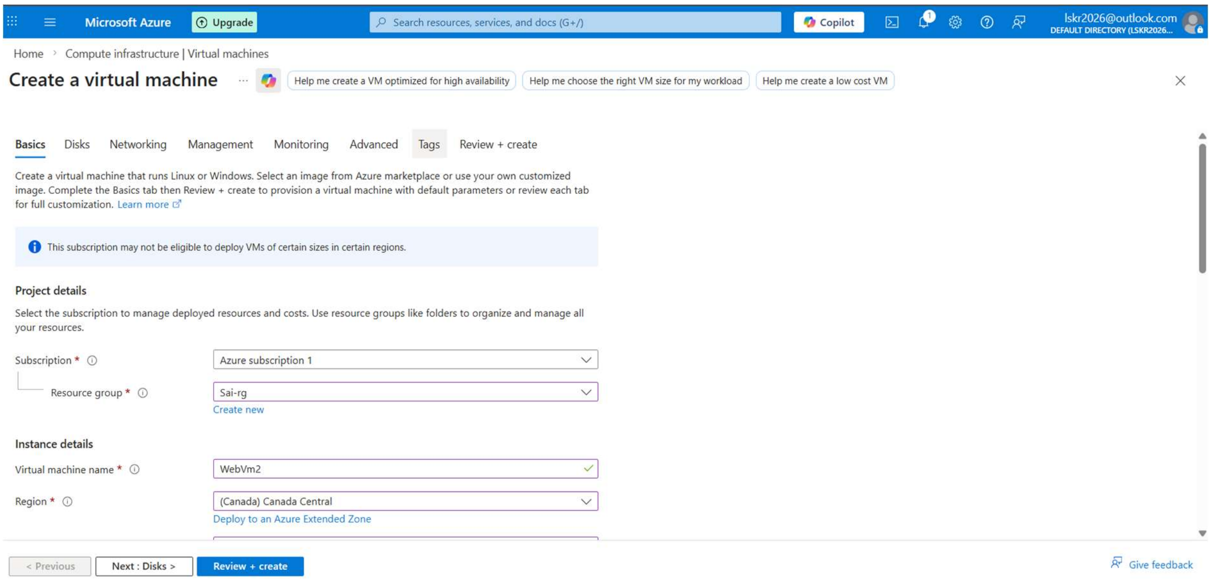
Public inbound ports *: ○ None ● Allow selected ports

Select inbound ports *: HTTP (80), SSH (22)

This will allow all IP addresses to access your virtual machine. This is only recommended for testing. Use the Advanced controls in the Networking tab to

Help me create a low cost VM
Help me choose the right VM size for my workload
Help me create a VM optimized for high availability
Edit virtual network
Edit subnet
Create new
< Previous
Next : Management >
Review + create

→Creating Second WebVm as WebVm2


Microsoft Azure
Upgrade
Search resources, services, and docs (G+/)
Copilot
lskr2026@outlook.com
DEFAULT DIRECTORY (LSKR2026...
Home > Compute infrastructure | Virtual machines
Help me create a VM optimized for high availability
Help me choose the right VM size for my workload
Help me create a low cost VM
Basics
Disks
Networking
Management
Monitoring
Advanced
Tags
Review + create
< Previous
Next : Disks >
Review + create
Give feedback

Create a virtual machine

Create a virtual machine that runs Linux or Windows. Select an image from Azure marketplace or use your own customized image. Complete the Basics tab then Review + create to provision a virtual machine with default parameters or review each tab for full customization. Learn more

This subscription may not be eligible to deploy VMs of certain sizes in certain regions.

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * : Azure subscription 1

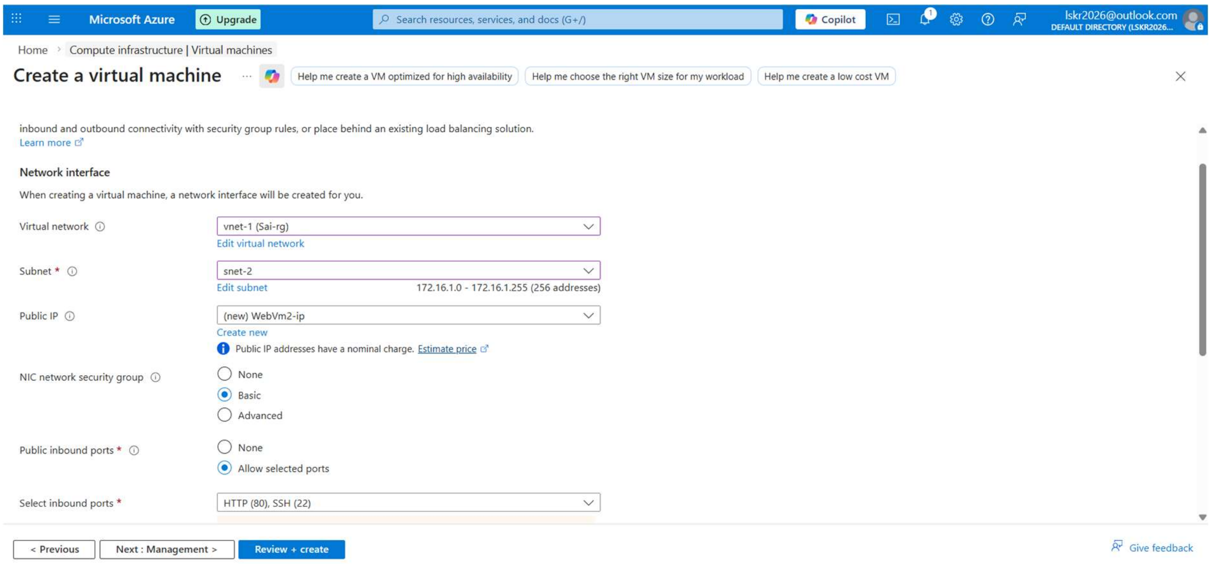
Resource group * : Sai-rg
Create new

Instance details

Virtual machine name * : WebVm2

Region * : (Canada) Canada Central
Deploy to an Azure Extended Zone

→Adding Vnet and Subnet for WebVm2


Microsoft Azure
Upgrade
Search resources, services, and docs (G+/)
Copilot
lskr2026@outlook.com
DEFAULT DIRECTORY (LSKR2026...
Home > Compute infrastructure | Virtual machines
Help me create a VM optimized for high availability
Help me choose the right VM size for my workload
Help me create a low cost VM
< Previous
Next : Management >
Review + create
Give feedback

Create a virtual machine

inbound and outbound connectivity with security group rules, or place behind an existing load balancing solution.
Learn more

Network interface

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

Virtual network : vnet-1 (Sai-rg)
Edit virtual network

Subnet * : snet-2
Edit subnet 172.16.1.0 - 172.16.1.255 (256 addresses)

Public IP : (new) WebVm2-ip
Create new
Public IP addresses have a nominal charge. Estimate price

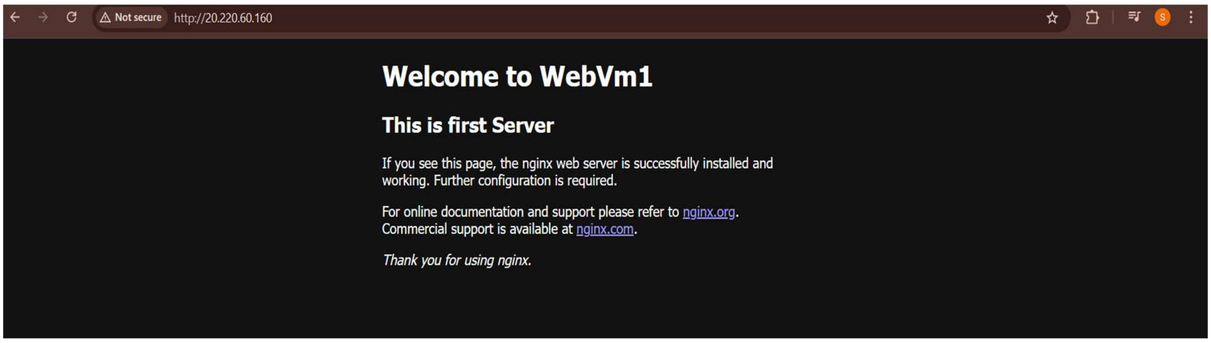
NIC network security group :
○ None
● Basic
○ Advanced

Public inbound ports * :
○ None
● Allow selected ports

Select inbound ports * : HTTP (80), SSH (22)

→Then install nginx on two Vms and check it is working or not

→WebVm1



Welcome to WebVm1

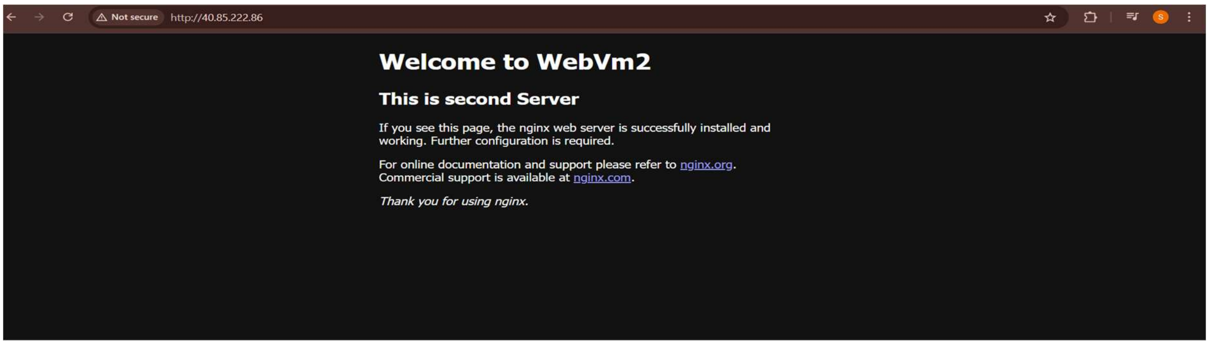
This is first Server

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.

→WebVm2



Welcome to WebVm2

This is second Server

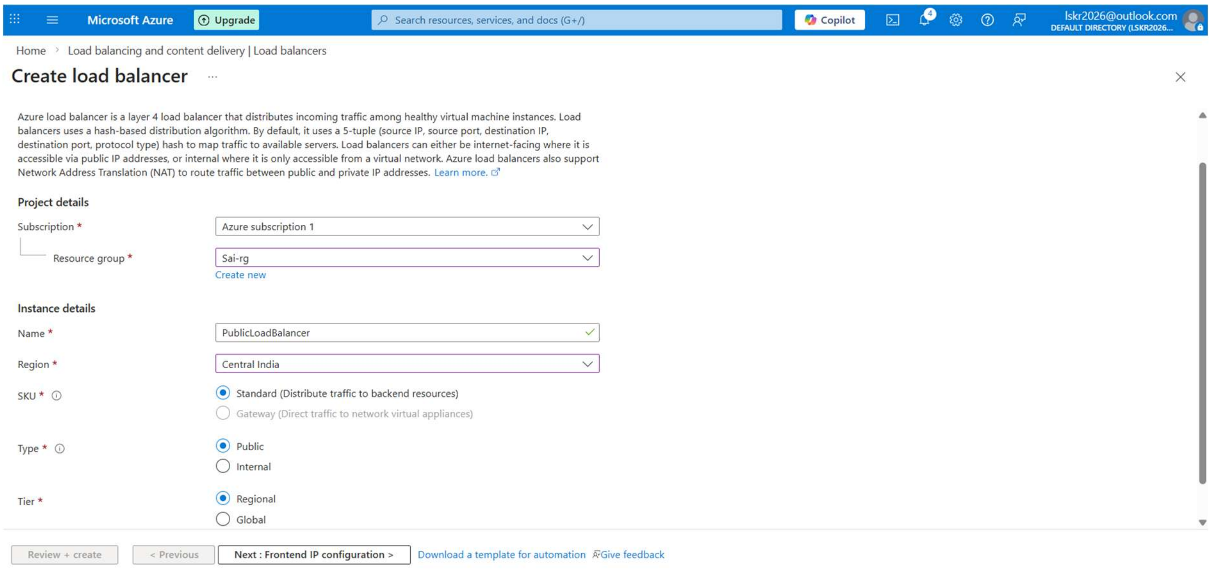
If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.

→Search for load balancet and click on create and select standard load balancer

→Creating a Load balancer


Microsoft Azure
Upgrade
Search resources, services, and docs (G+/)
Copilot
lskr2026@outlook.com
DEFAULT DIRECTORY (LSKR2026...
Home > Load balancing and content delivery | Load balancers

Create load balancer

Azure load balancer is a layer 4 load balancer that distributes incoming traffic among healthy virtual machine instances. Load balancers uses a hash-based distribution algorithm. By default, it uses a 5-tuple (source IP, source port, destination IP, destination port, protocol type) hash to map traffic to available servers. Load balancers can either be internet-facing where it is accessible via public IP addresses, or internal where it is only accessible from a virtual network. Azure load balancers also support Network Address Translation (NAT) to route traffic between public and private IP addresses. Learn more.

Project details

Subscription * : Azure subscription 1

Resource group * : Sai-rg
Create new

Instance details

Name * : PublicLoadBalancer

Region * : Central India

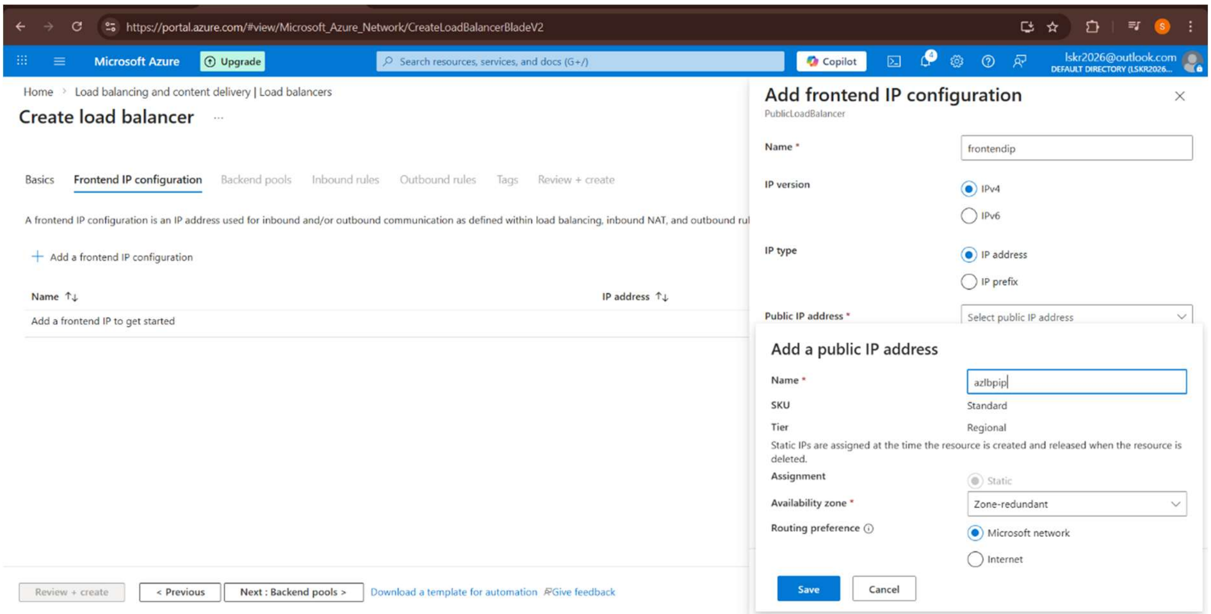
SKU * : ● Standard (Distribute traffic to backend resources) ○ Gateway (Direct traffic to network virtual appliances)

Type * : ● Public ○ Internal

Tier * : ● Regional ○ Global

Review + create
< Previous
Next : Frontend IP configuration >
Download a template for automation
Give feedback

→Adding Frontend ip to the load balancer


https://portal.azure.com/#view/Microsoft_Azure_Network/CreateLoadBalancerBladeV2
Microsoft Azure
Upgrade
Search resources, services, and docs (G+/)
Copilot
lskr2026@outlook.com
DEFAULT DIRECTORY (LSKR2026...
Home > Load balancing and content delivery | Load balancers
Create load balancer
Basics
Frontend IP configuration
Backend pools
Inbound rules
Outbound rules
Tags
Review + create

A frontend IP configuration is an IP address used for inbound and/or outbound communication as defined within load balancing, inbound NAT, and outbound rul

+ Add a frontend IP configuration

Name ↑↓	IP address ↑↓
Add a frontend IP to get started	

Add frontend IP configuration
PublicLoadBalancer

Name * : frontendip

IP version : ● IPv4 ○ IPv6

IP type : ● IP address ○ IP prefix

Public IP address * : Select public IP address

Add a public IP address

Name * : azlbpip

SKU : Standard

Tier : Regional

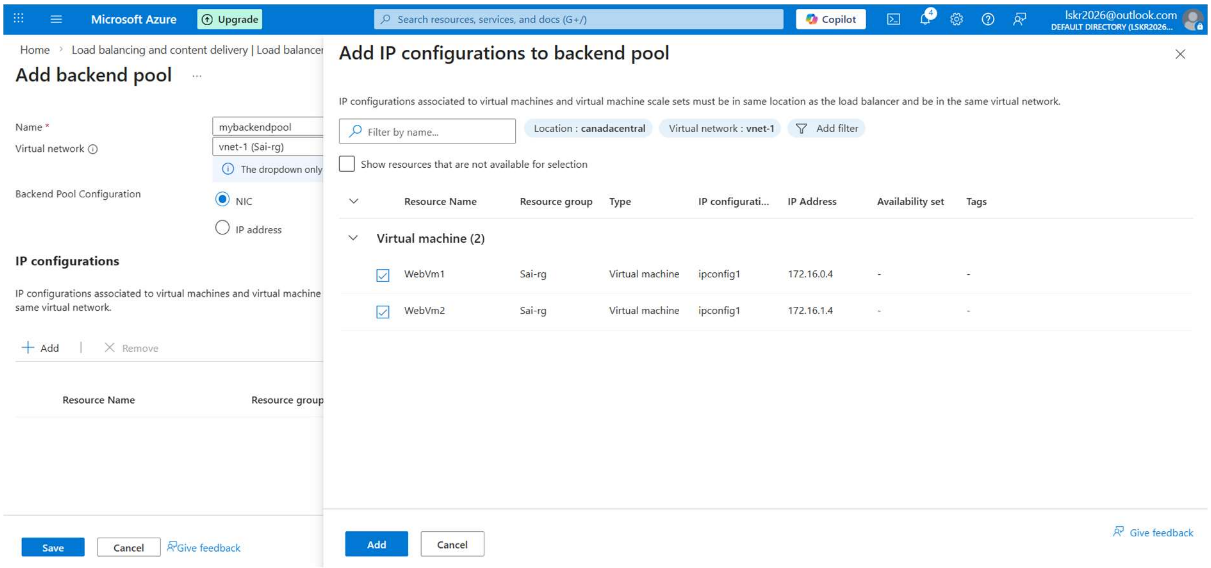
Static IPs are assigned at the time the resource is created and released when the resource is deleted.

Assignment : ● Static

Availability zone * : Zone-redundant

Routing preference : ● Microsoft network ○ Internet

→Adding a backend pool to the load balancer and the two vms for this load balancer


Microsoft Azure
Upgrade
Search resources, services, and docs (G+/)
Copilot
lskr2026@outlook.com
DEFAULT DIRECTORY (LSKR2026...
Home > Load balancing and content delivery | Load balancer
+ Add | ✕ Remove
Save
Cancel
Give feedback
Add
Cancel
Give feedback

Add backend pool ...

Name * mybackendpool

Virtual network ⓘ vnet-1 (Sai-rg)

ⓘ The dropdown only

Backend Pool Configuration ● NIC ○ IP address

IP configurations

IP configurations associated to virtual machines and virtual machine same virtual network.

Resource Name	Resource group

Add IP configurations to backend pool

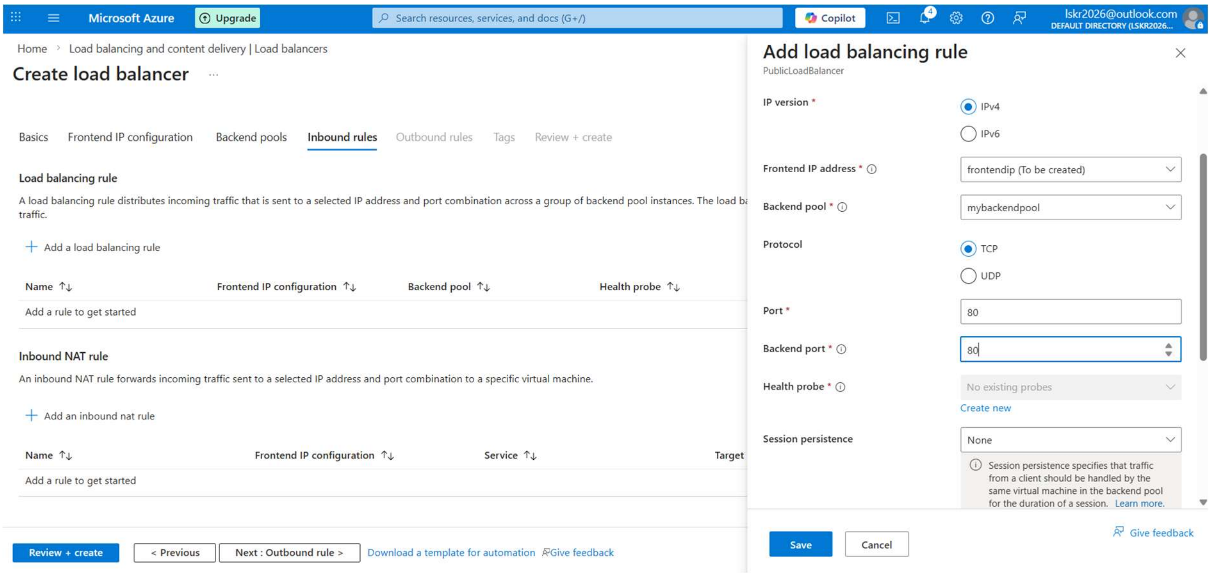
IP configurations associated to virtual machines and virtual machine scale sets must be in same location as the load balancer and be in the same virtual network.

Filter by name... | Location : canadacentral | Virtual network : vnet-1 | Add filter

□ Show resources that are not available for selection

	Resource Name	Resource group	Type	IP configurati...	IP Address	Availability set	Tags
Virtual machine (2)							
☑	WebVm1	Sai-rg	Virtual machine	ipconfig1	172.16.0.4	-	-
☑	WebVm2	Sai-rg	Virtual machine	ipconfig1	172.16.1.4	-	-

→Add Load Balancing rule


Microsoft Azure
Upgrade
Search resources, services, and docs (G+/)
Copilot
lskr2026@outlook.com
DEFAULT DIRECTORY (LSKR2026...
Home > Load balancing and content delivery | Load balancers
Basics
Frontend IP configuration
Backend pools
Inbound rules
Outbound rules
Tags
Review + create
+ Add a load balancing rule
+ Add an inbound nat rule
Review + create
< Previous
Next : Outbound rule >
Download a template for automation
Give feedback
Save
Cancel
Give feedback

Create load balancer ...

Load balancing rule

A load balancing rule distributes incoming traffic that is sent to a selected IP address and port combination across a group of backend pool instances. The load ba traffic.

Name ↑↓	Frontend IP configuration ↑↓	Backend pool ↑↓	Health probe ↑↓
Add a rule to get started			

Inbound NAT rule

An inbound NAT rule forwards incoming traffic sent to a selected IP address and port combination to a specific virtual machine.

Name ↑↓	Frontend IP configuration ↑↓	Service ↑↓	Target
Add a rule to get started			

Add load balancing rule

PublicLoadBalancer

IP version * ● IPv4 ○ IPv6

Frontend IP address * ⓘ frontendip (To be created)

Backend pool * ⓘ mybackendpool

Protocol ● TCP ○ UDP

Port * 80

Backend port * ⓘ 80

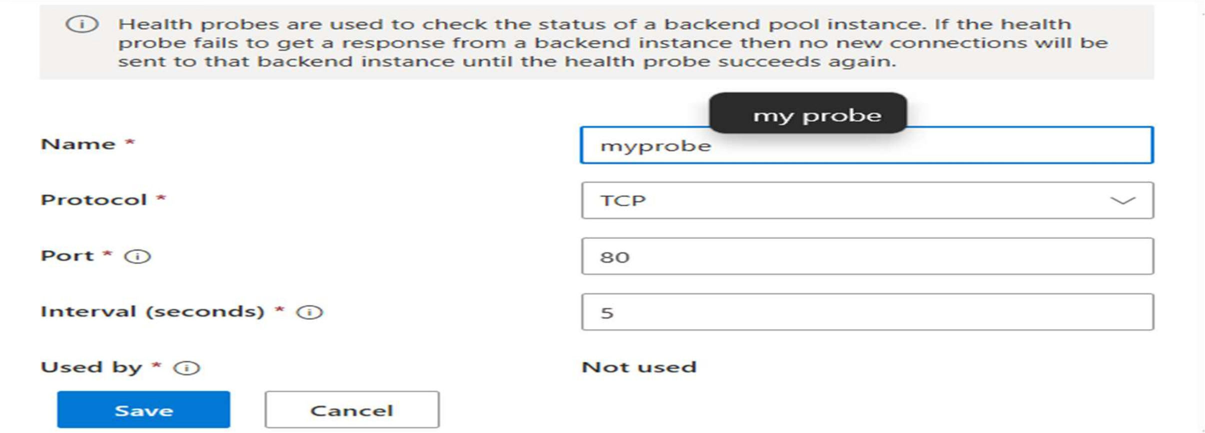
Health probe * ⓘ No existing probes

Create new

Session persistence None

ⓘ Session persistence specifies that traffic from a client should be handled by the same virtual machine in the backend pool for the duration of a session. Learn more.

→Adding Health probe



ⓘ Health probes are used to check the status of a backend pool instance. If the health probe fails to get a response from a backend instance then no new connections will be sent to that backend instance until the health probe succeeds again.

Name * myprobe

Protocol * TCP

Port * ⓘ 80

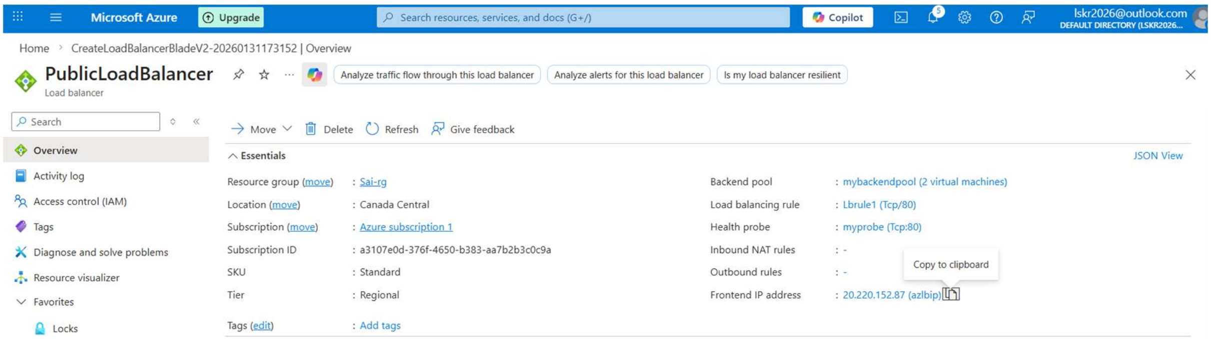
Interval (seconds) * ⓘ 5

Used by * ⓘ Not used

→Check the review and click on create

→The frontend ip is the public ip of your load balancer

→Copy and search in browser



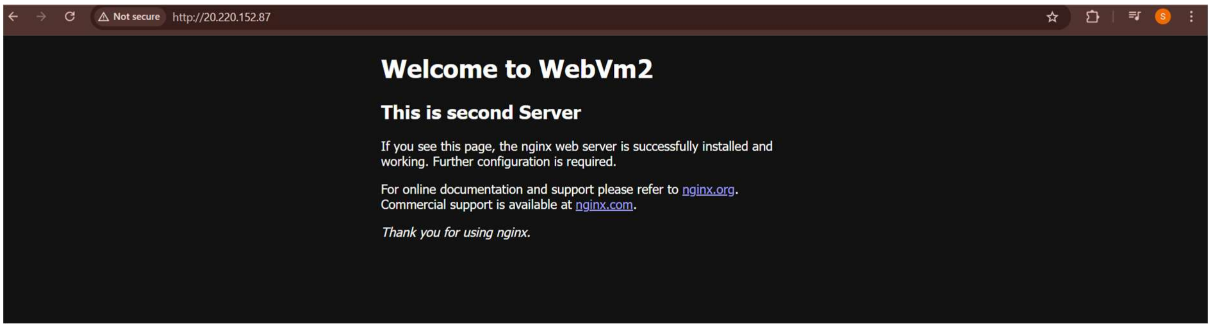
Microsoft Azure
Upgrade
Search resources, services, and docs (G+/)
Copilot
lskr2026@outlook.com
DEFAULT DIRECTORY (LSKR2026...
Home > CreateLoadBalancerBladeV2-20260131173152 | Overview
Analyze traffic flow through this load balancer
Analyze alerts for this load balancer
Is my load balancer resilient
Search
Overview
Activity log
Access control (IAM)
Tags
Diagnose and solve problems
Resource visualizer
Favorites
Locks
Move
Delete
Refresh
Give feedback
JSON View
Copy to clipboard

PublicLoadBalancer
Load balancer

Essentials

Resource group (move)	: Sai-rg	Backend pool	: mybackendpool (2 virtual machines)
Location (move)	: Canada Central	Load balancing rule	: Lbrule1 (Tcp/80)
Subscription (move)	: Azure subscription 1	Health probe	: myprobe (Tcp:80)
Subscription ID	: a3107e0d-376f-4650-b383-aa7b2b3c0c9a	Inbound NAT rules	: -
SKU	: Standard	Outbound rules	: -
Tier	: Regional	Frontend IP address	: 20.220.152.87 (azlbip)
Tags (edit)	: Add tags		

→First I search in this browser the traffic route to my webVm2



Welcome to WebVm2

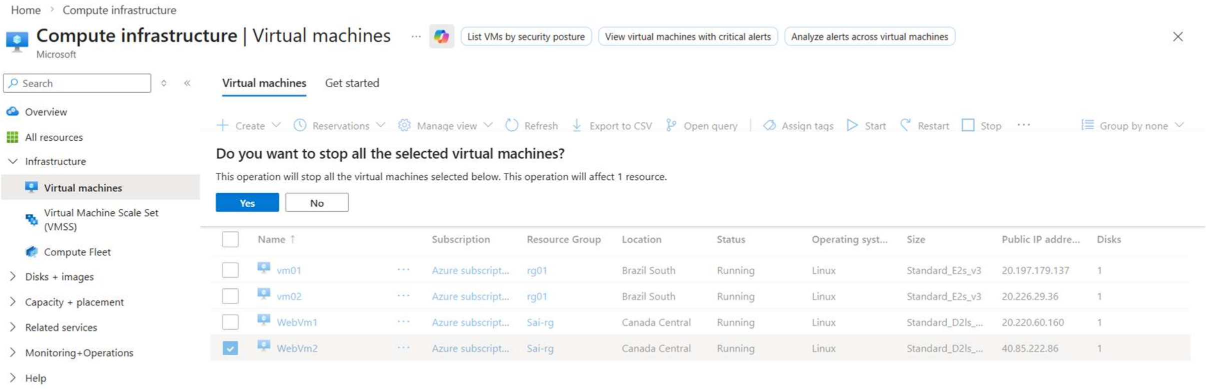
This is second Server

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.

→When I stop my WebVm2



Compute infrastructure | Virtual machines

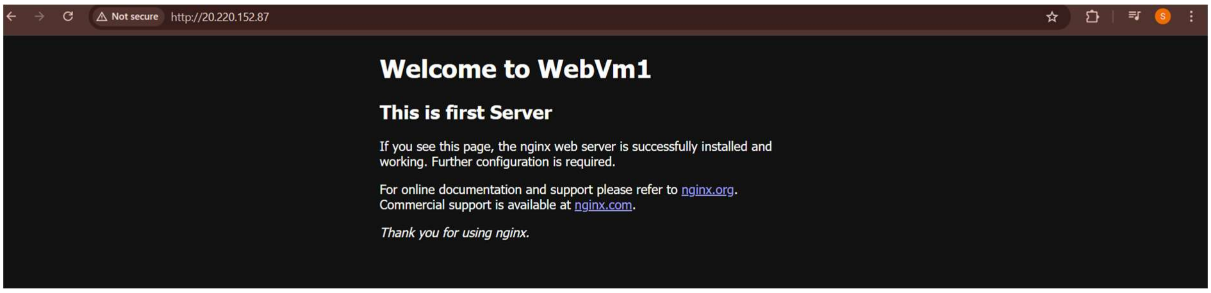
Do you want to stop all the selected virtual machines?

This operation will stop all the virtual machines selected below. This operation will affect 1 resource.

Yes No

	Name ↑	Subscription	Resource Group	Location	Status	Operating syst...	Size	Public IP addre...	Disks
□	vm01	Azure subscript...	rg01	Brazil South	Running	Linux	Standard_E2s_v3	20.197.179.137	1
□	vm02	Azure subscript...	rg01	Brazil South	Running	Linux	Standard_E2s_v3	20.226.29.36	1
□	WebVm1	Azure subscript...	Sai-rg	Canada Central	Running	Linux	Standard_D2ls_...	20.220.60.160	1
☑	WebVm2	Azure subscript...	Sai-rg	Canada Central	Running	Linux	Standard_D2ls_...	40.85.222.86	1

→Then traffic routes to my WebVm1



Welcome to WebVm1

This is first Server

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.

→When you start WebVm2 and search in another browser you can see the webvm2 after some time.