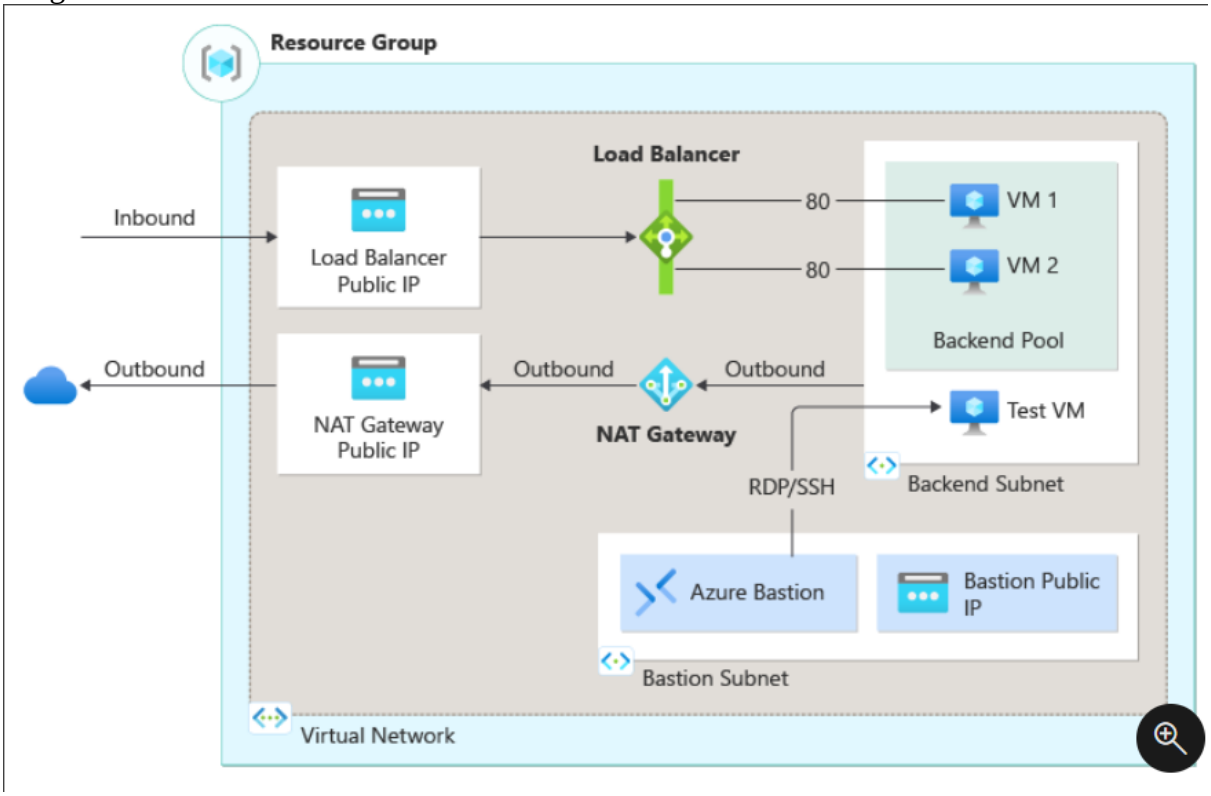
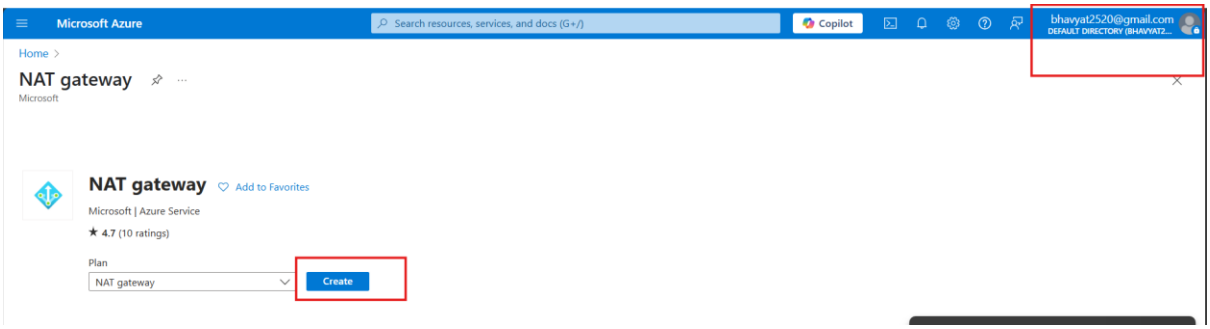
Create a public load balancer to load balance VMs using the Azure portal

Diagram:

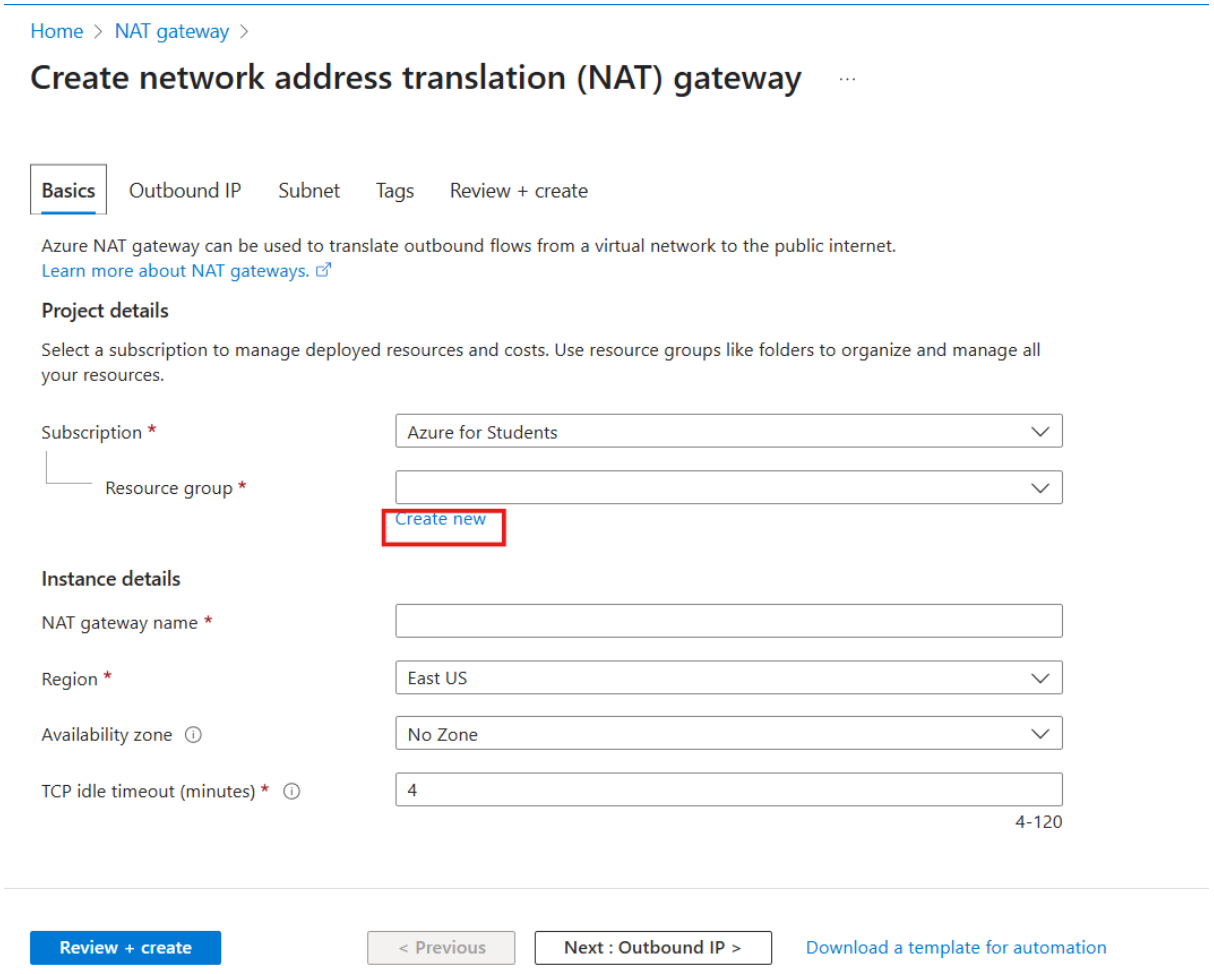


Create NAT gateway

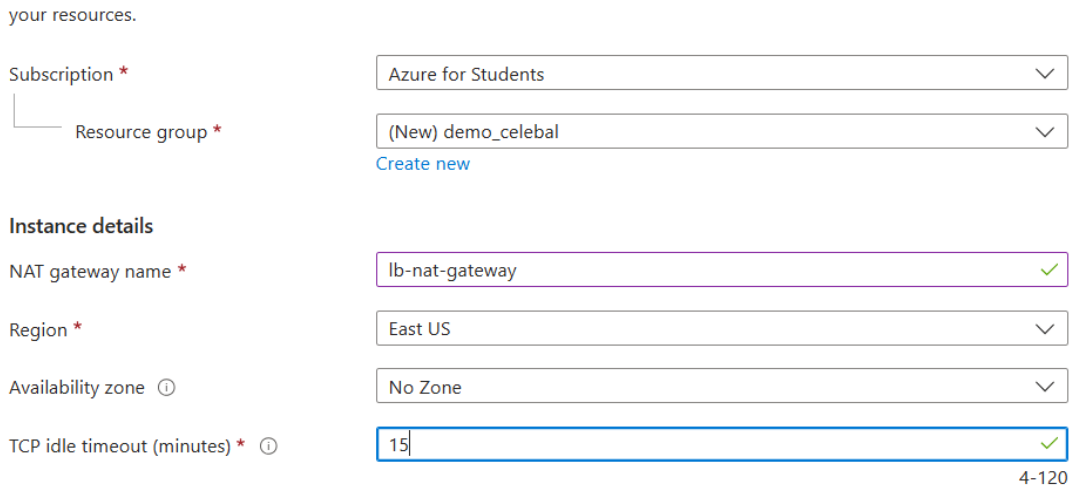
1. Sign in to the Azure portal.
2. In the search box at the top of the portal, enter **NAT gateway**. Select **NAT gateways** in the search results.
3. Select **+ Create**.
4. In the **Basics** tab of **Create network address translation (NAT) gateway** enter or select the following information:



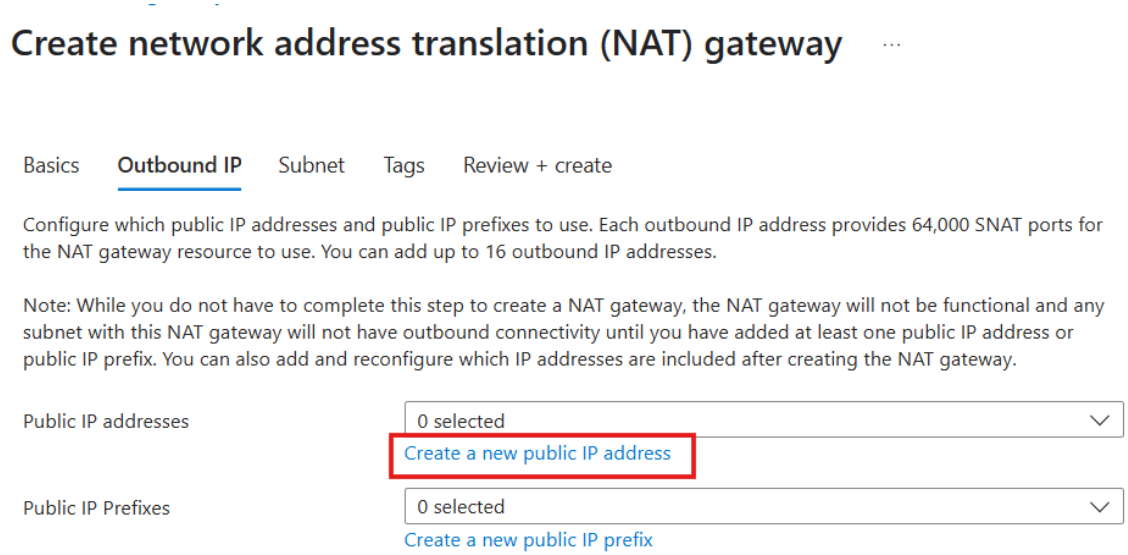
Setting	Value
Project details	
Subscription	Select your subscription.
Resource group	Select **Create new**. Enter **load-balancer-rg** in Name. Select **OK**.
Instance details	
NAT gateway name	Enter **lb-nat-gateway**.
Region	Select **East US**.
Availability zone	Select **No zone**.
Idle timeout (minutes)	Enter **15**.

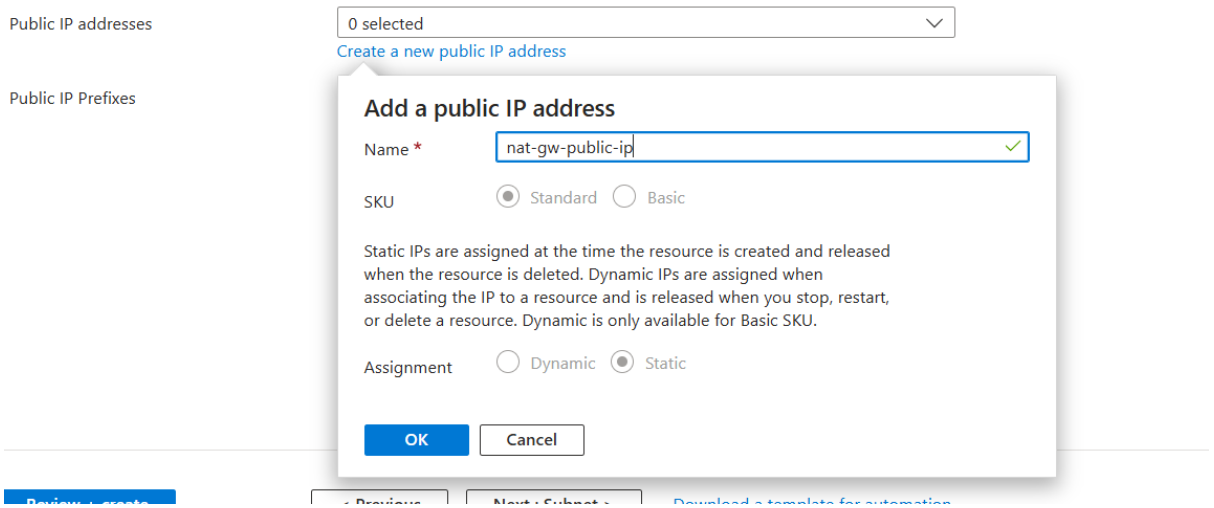


Fill up following details



1. Select the **Outbound IP** tab or select the **Next: Outbound IP** button at the bottom of the page.
2. Select **Create a new public IP address** under **Public IP addresses**.
3. Enter **nat-gw-public-ip** in **Name** in **Add a public IP address**.
4. Select **OK**.
5. Select the blue **Review + create** button at the bottom of the page, or select the **Review + create** tab.
6. Select **Create**.





Create network address translation (NAT) gateway

Validation passed

Basics

Subscription	Azure for Students
Resource group	(new) demo_celebal
Name	lb-nat-gateway
Region	East US
Availability zone	-
TCP idle timeout (minutes)	15

Outbound IP

Public IP address	(New) nat-gw-public-ip
Public IP prefix	None

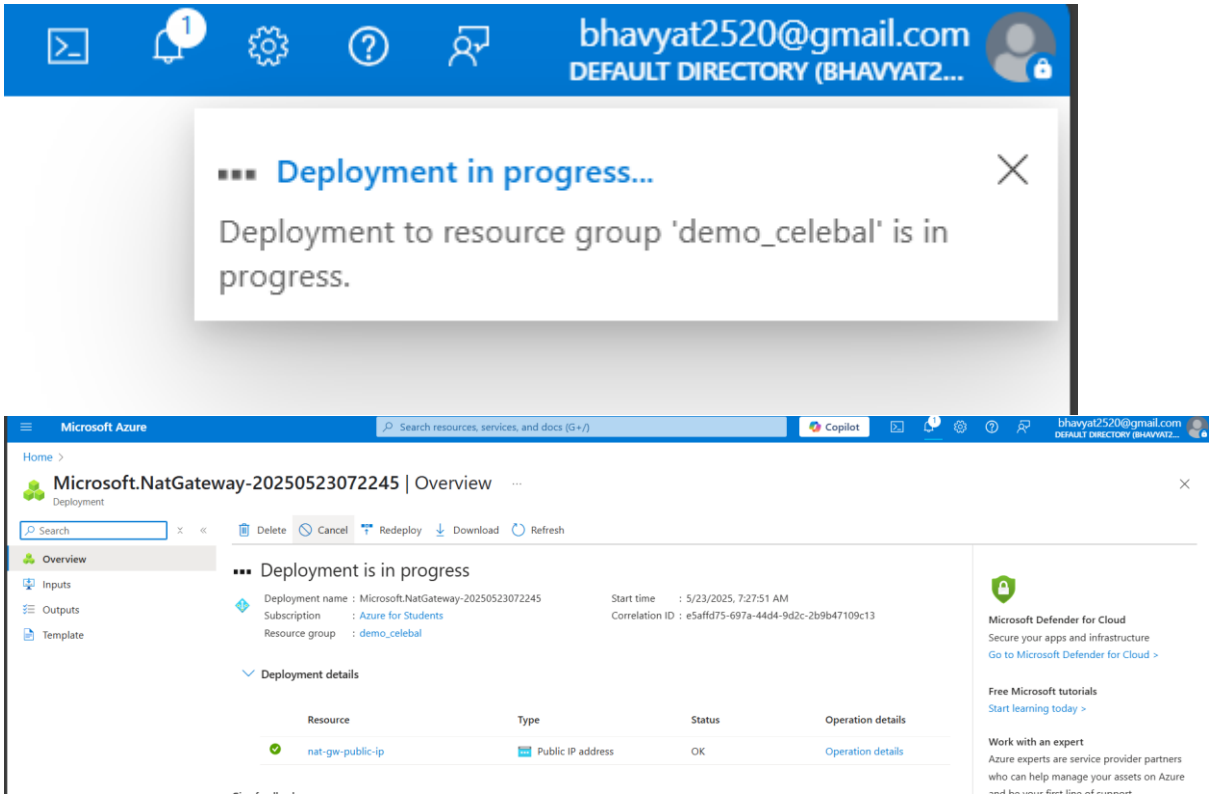
Subnets

None

Tags

None

Create < Previous Next > Download a template for automatio



Create a virtual network and bastion host

1. In the portal, search for and select **Virtual networks**.
2. On the **Virtual networks** page, select **+ Create**.
3. On the **Basics** tab of **Create virtual network**, enter or select the following information:

Setting	Value
Project details	
Subscription	Select your subscription.
Resource group	Select **load-balancer-rg** from the dropdown or **Create new** if it doesn't exist. Enter **load-balancer-rg** in Name. Select **OK**.
Instance details	
Name	Enter **lb-vnet**.
Region	Select **(US) East US**.

Create virtual network ...

Basics Security IP addresses Tags Review + create

Azure Virtual Network (VNet) is the fundamental building block for your private network in Azure. VNet enables many types of Azure resources, such as Azure Virtual Machines (VM), to securely communicate with each other, the internet, and on-premises networks. VNet is similar to a traditional network that you'd operate in your own data center, but brings with it additional benefits of Azure's infrastructure such as scale, availability, and isolation.
Learn more.

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 for Students

Resource group * demo_celebal

Create new

Instance details

Virtual network name * lb-vnet

Region * (US) East US

Deploy to an Azure Extended Zone

Home > Virtual networks >

Create virtual network ...

Basics Security IP addresses Tags Review + create

Azure Bastion

Azure Bastion is a paid service that provides secure RDP/SSH connectivity to your virtual machines over TLS. When you connect via Azure Bastion, your virtual machines do not need a public IP address. Learn more.

Enable Azure Bastion ☑

Azure Bastion host name lb-bastion

Azure Bastion public IP address * (New) lb-bastion-ip

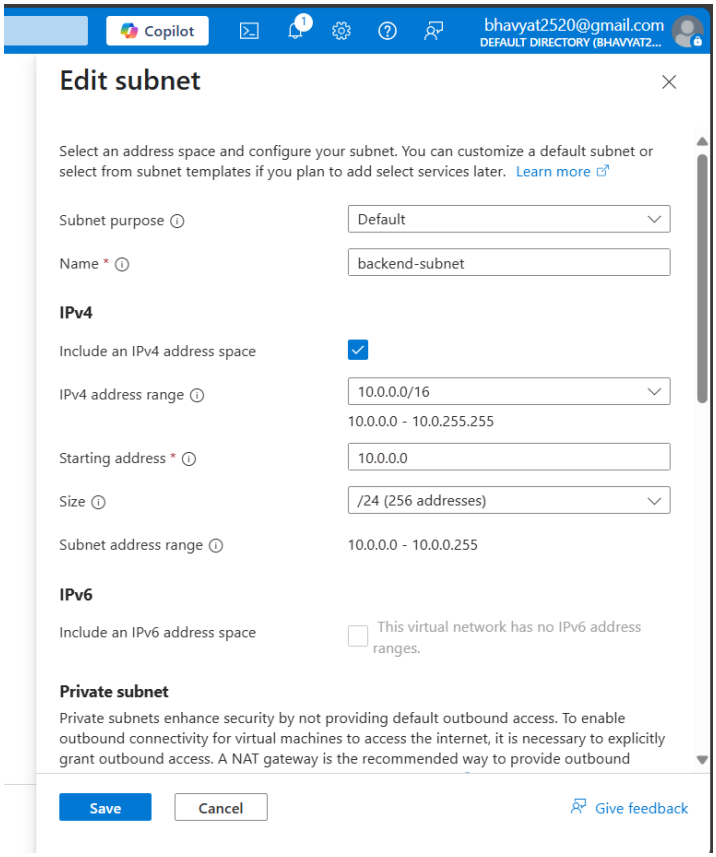
Create a public IP address

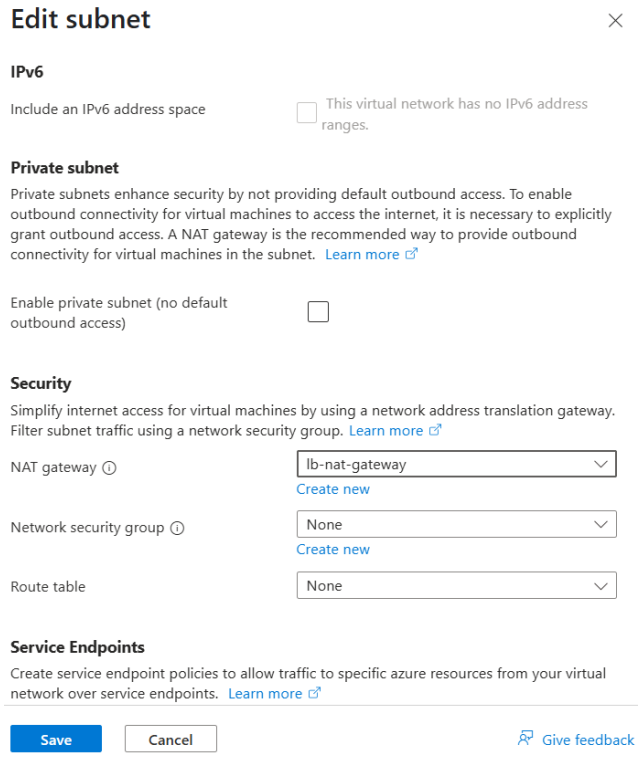
Azure Firewall

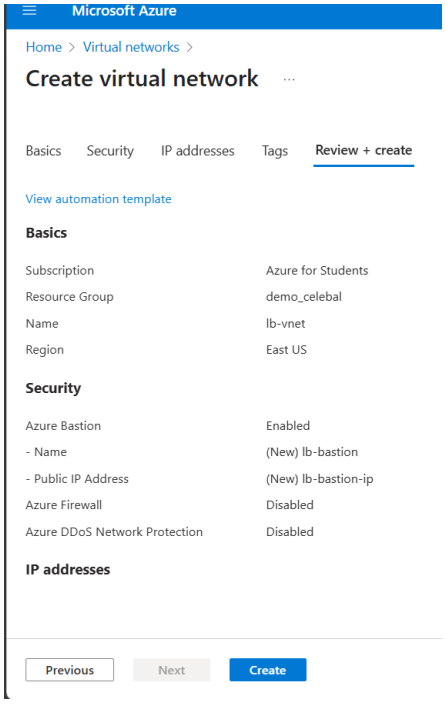
Azure Firewall is a managed cloud-based network security service that protects your Azure Virtual Network resources. Learn more.

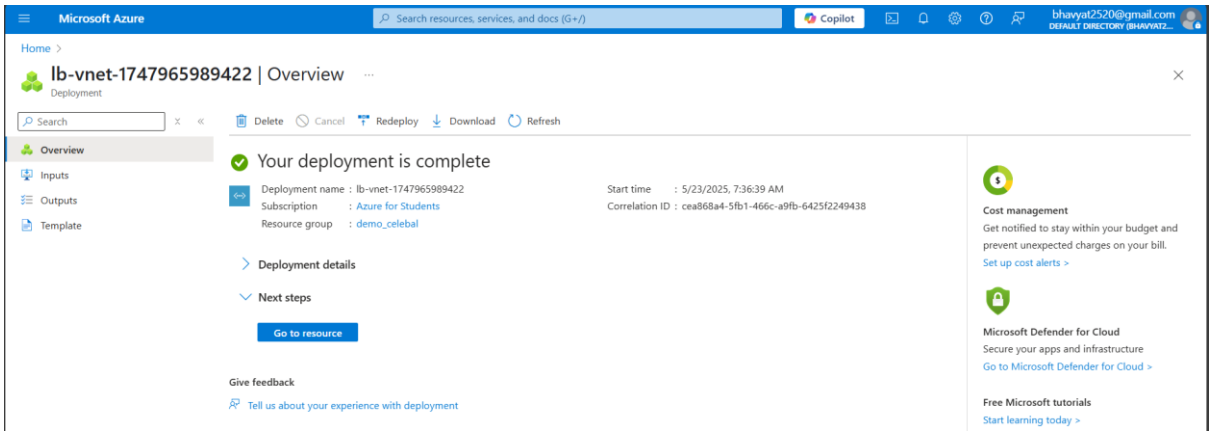
Enable Azure Firewall ☐

Previous Next Review + create


Copilot
bhavyat2520@gmail.com
DEFAULT DIRECTORY (BHAVYAT2...
Edit subnet
Select an address space and configure your subnet. You can customize a default subnet or select from subnet templates if you plan to add select services later. Learn more
Subnet purpose
Default
Name *
backend-subnet
IPv4
Include an IPv4 address space
IPv4 address range
10.0.0.0/16
10.0.0.0 - 10.0.255.255
Starting address *
10.0.0.0
Size
/24 (256 addresses)
Subnet address range
10.0.0.0 - 10.0.0.255
IPv6
Include an IPv6 address space
This virtual network has no IPv6 address ranges.
Private subnet
Private subnets enhance security by not providing default outbound access. To enable outbound connectivity for virtual machines to access the internet, it is necessary to explicitly grant outbound access. A NAT gateway is the recommended way to provide outbound
Save
Cancel
Give feedback


Edit subnet
IPv6
Include an IPv6 address space
This virtual network has no IPv6 address ranges.
Private subnet
Private subnets enhance security by not providing default outbound access. To enable outbound connectivity for virtual machines to access the internet, it is necessary to explicitly grant outbound access. A NAT gateway is the recommended way to provide outbound connectivity for virtual machines in the subnet. Learn more
Enable private subnet (no default outbound access)
Security
Simplify internet access for virtual machines by using a network address translation gateway. Filter subnet traffic using a network security group. Learn more
NAT gateway
lb-nat-gateway
Create new
Network security group
None
Create new
Route table
None
Service Endpoints
Create service endpoint policies to allow traffic to specific azure resources from your virtual network over service endpoints. Learn more
Save
Cancel
Give feedback





Create load balancer

During the creation of the load balancer, you configure:

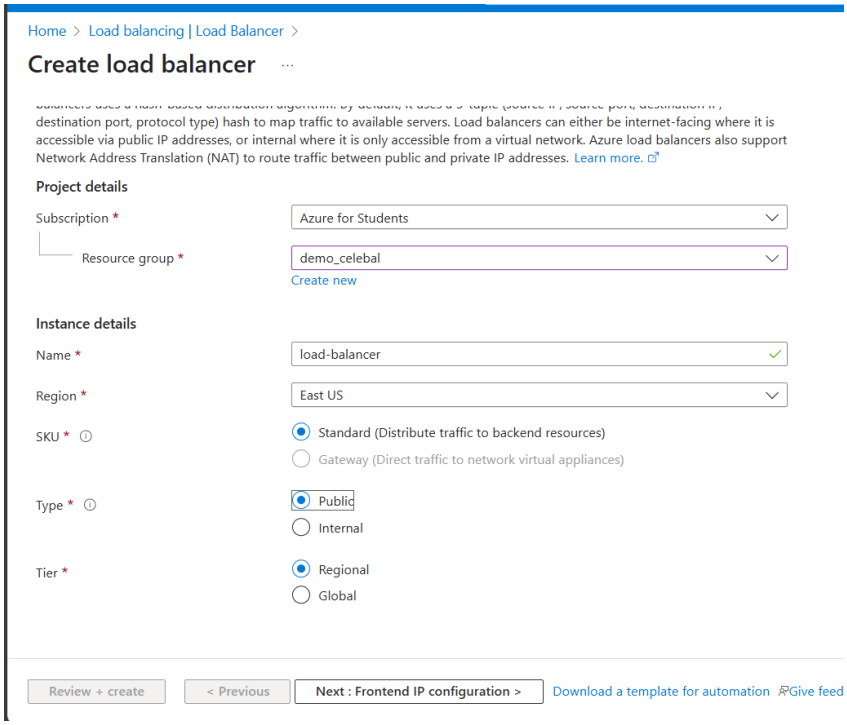
- Frontend IP address
- Backend pool
- Inbound load-balancing rules
- Health probe

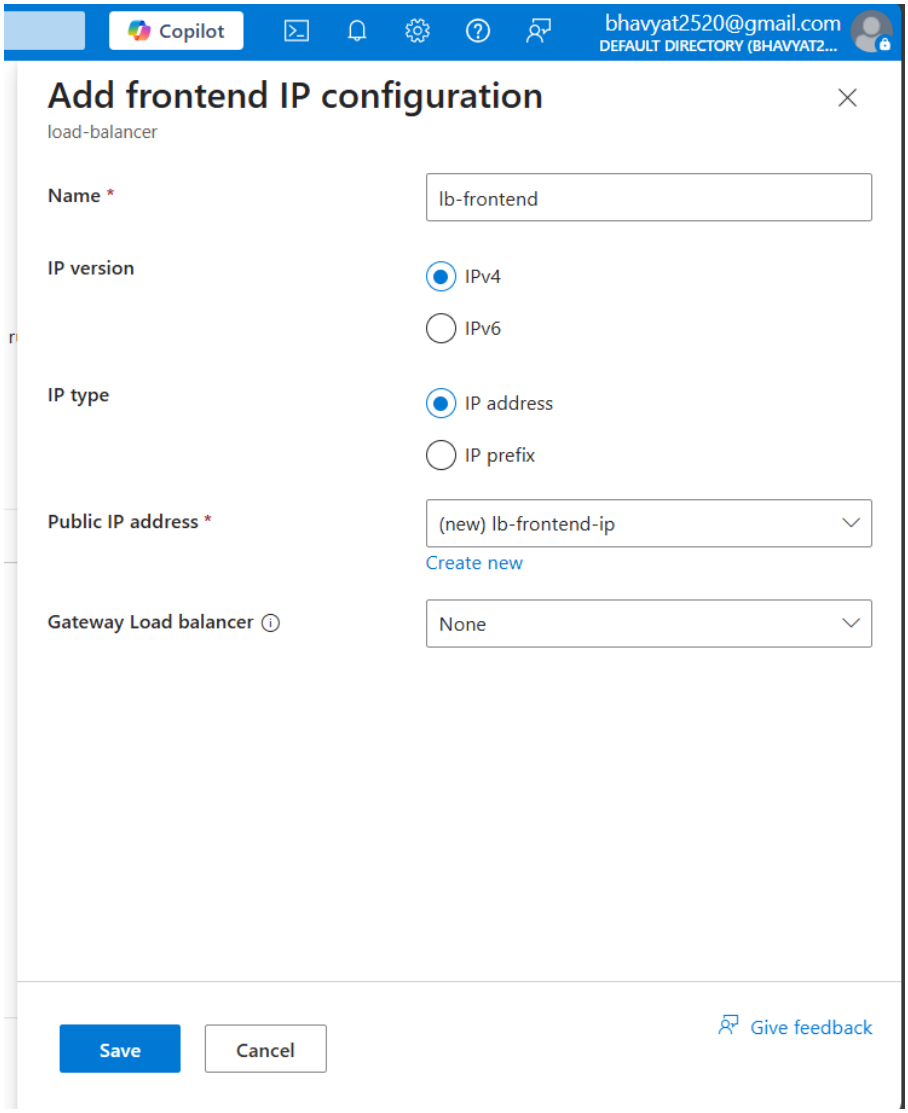
1. In the search box at the top of the portal, enter **Load balancer**. Select **Load balancers** in the search results.
2. In the **Load balancer** page, select **+ Create**.
3. In the **Basics** tab of the **Create load balancer** page, enter or select the following information:

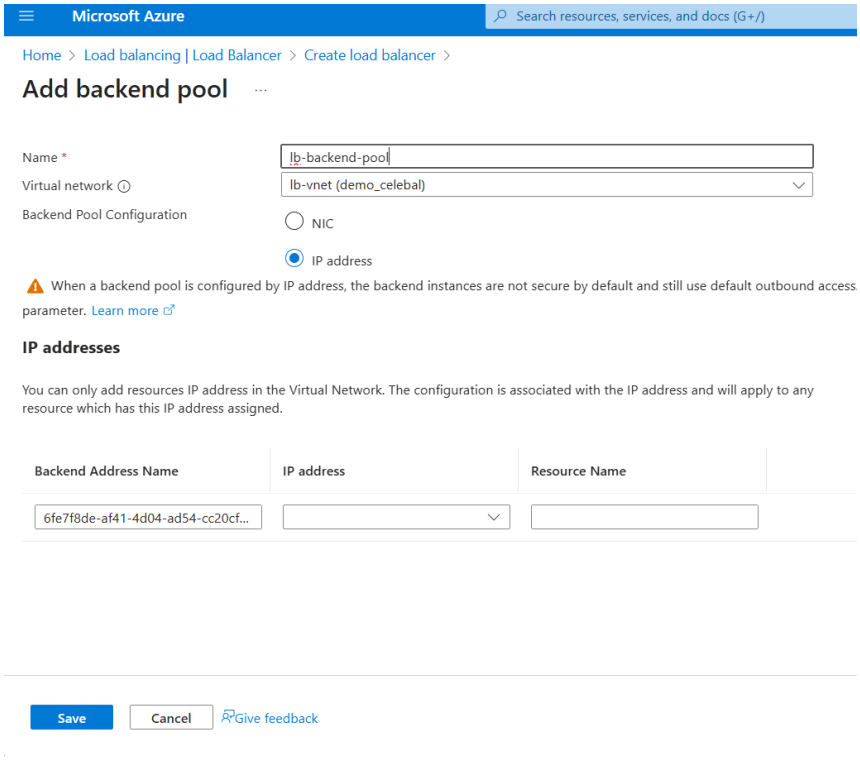
4. Select **Next: Frontend IP configuration** at the bottom of the page.
5. In **Frontend IP configuration**, select **+ Add a frontend IP configuration**.
6. Enter **lb-frontend** in **Name**.
7. Select **IPv4** for the **IP version**.
8. Select **IP address** for the **IP type**.
9. Select **Create new** in **Public IP address**.
10. In **Add a public IP address**, enter **lb-frontend-ip** for **Name**.
11. Select **Zone-redundant** in **Availability zone**.
12. Leave the default of **Microsoft Network** for **Routing preference**.
13. Select **Save**.
14. Select **Save**.
15. Select **Next: Backend pools** at the bottom of the page.
16. In the **Backend pools** tab, select **+ Add a backend pool**.
17. Enter **lb-backend-pool** for **Name** in **Add backend pool**.
18. Select **lb-vnet** in **Virtual network**.
19. Select **IP Address** for **Backend Pool Configuration**.
20. Select **Save**.
21. Select **Next: Inbound rules** at the bottom of the page.
22. Under **Load balancing rule** in the **Inbound rules** tab, select **+ Add a load balancing rule**.
23. In **Add load balancing rule**, enter or select the following information:

Expand table

Setting	Value
Project details	
Subscription	Select your subscription
Resource group	Select **load-balancer-rg**
Instance details	
Name	Enter **load-balancer**
Region	Select **East US**
SKU	Leave the default **Standard**
Type	Select **Public**
Tier	Leave the default **Regional**


Home > Load balancing | Load Balancer >
Create load balancer
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 for Students
Resource group *
demo_celebal
Create new
Instance details
Name *
load-balancer
Region *
East US
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 feed


Copilot
bhavyat2520@gmail.com
DEFAULT DIRECTORY (BHAVYAT2...
Add frontend IP configuration
load-balancer
Name *
lb-frontend
IP version
IPv4
IPv6
IP type
IP address
IP prefix
Public IP address *
(new) lb-frontend-ip
Create new
Gateway Load balancer
None
Save
Cancel
Give feedback


Microsoft Azure
Search resources, services, and docs (G+/)
Home > Load balancing | Load Balancer > Create load balancer >
Add backend pool
Name *
lb-backend-pool
Virtual network
lb-vnet (demo_celebal)
Backend Pool Configuration
NIC
IP address
When a backend pool is configured by IP address, the backend instances are not secure by default and still use default outbound access parameter. Learn more
IP addresses
You can only add resources IP address in the Virtual Network. The configuration is associated with the IP address and will apply to any resource which has this IP address assigned.
Backend Address Name
IP address
Resource Name
6fe7f8de-af41-4d04-ad54-cc20cf...
Save
Cancel
Give feedback

Add load balancing rule

load-balancer

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. Only backend instances that the health probe considers healthy receive new traffic. Learn more.

Name * lb-HTTP-rule

IP version * IPv4 / IPv6

Frontend IP address * lb-frontend (To be created)

Backend pool * lb-backend-pool

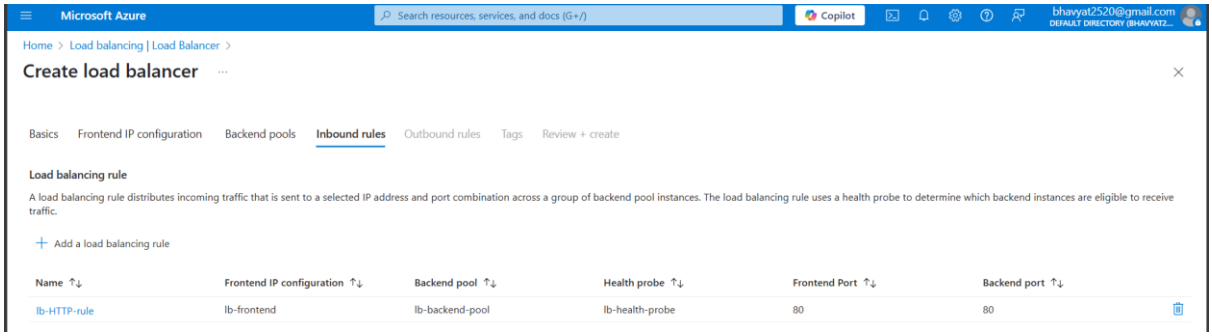
Protocol TCP / UDP

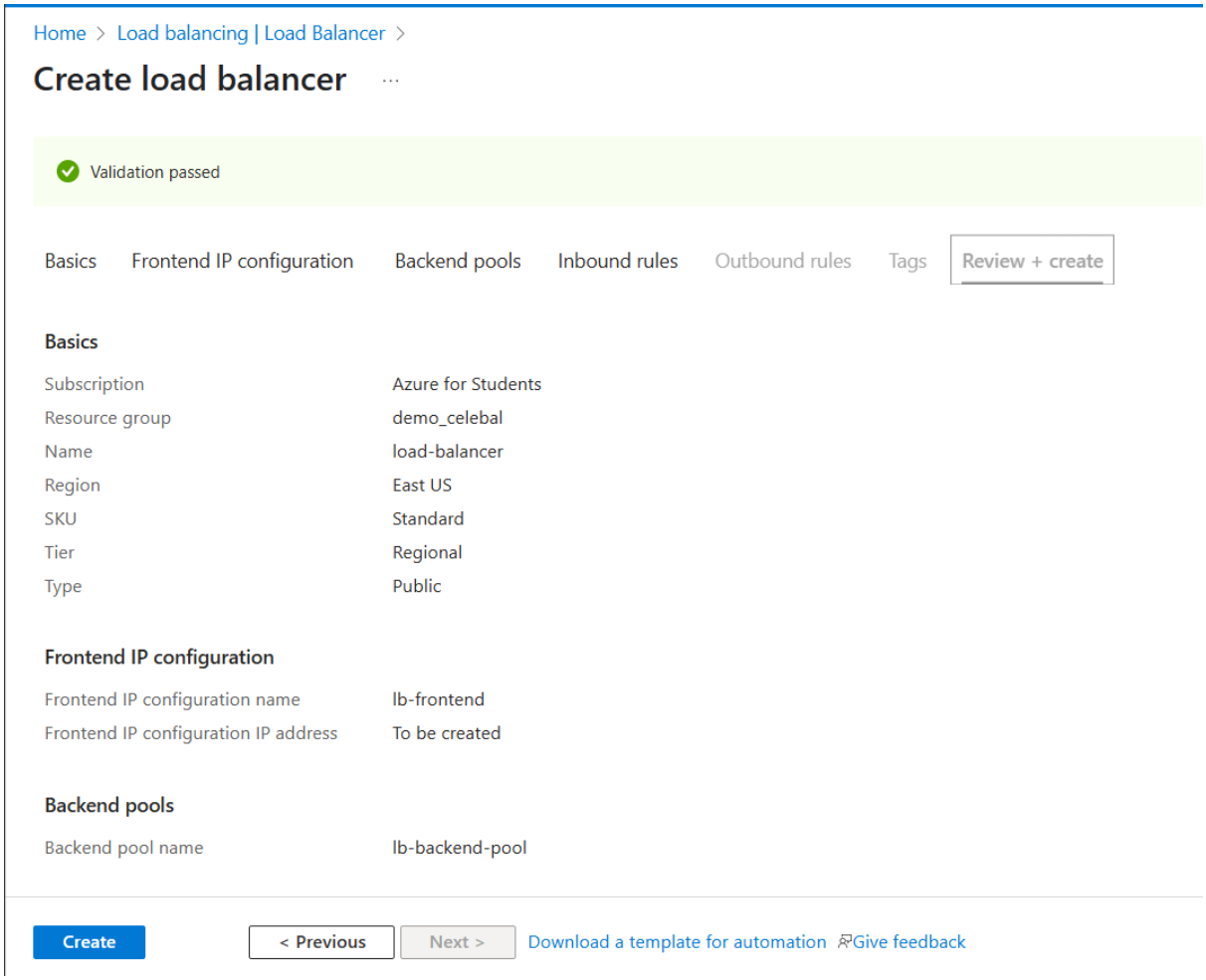
Port * 80

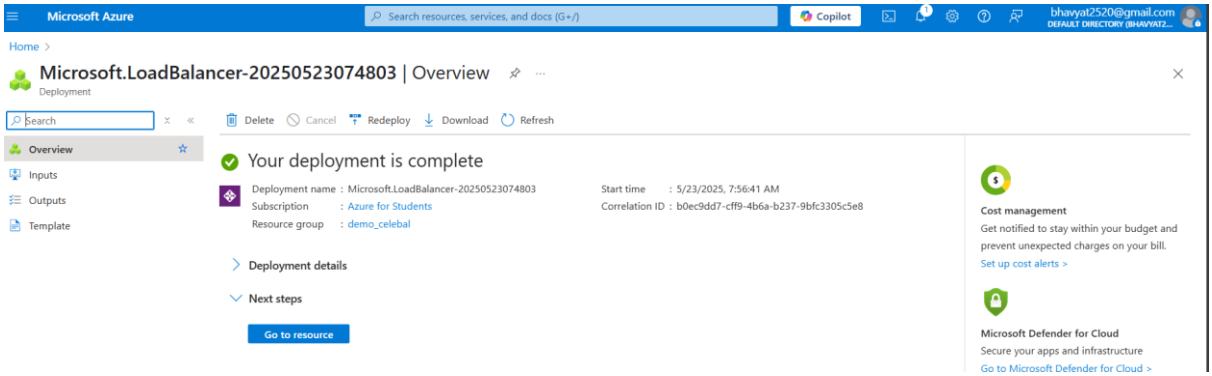
Backend port * 80

Health probe * No existing probes

Save Cancel Give feedback







Create virtual machines

1. In the search box at the top of the portal, enter **Virtual machine**. Select **Virtual machines** in the search results.
2. In **Virtual machines**, select **+ Create** > **Azure virtual machine**.
3. In **Create a virtual machine**, enter or select the following values in the **Basics** tab:
4.
5. Select the **Networking** tab, or select **Next: Disks**, then **Next: Networking**.

Setting	Value
Network interface	
Virtual network	Select **lb-vnet**
Subnet	Select **backend-subnet**
Public IP	Select **None**.
NIC network security group	Select **Advanced**
Configure network security group	Skip this setting until the rest of the settings are completed. Complete after **Select a backend pool**.
Delete NIC when VM is deleted	Leave the default of **unselected**.
Accelerated networking	Leave the default of **selected**.
Load balancing	
Load balancing options	
Load-balancing options	Select **Azure load balancer**
Select a load balancer	Select **load-balancer**
Select a backend pool	Select **lb-backend-pool**
Configure network security group	Select **Create new**. In the **Create network security group**, enter **lb-NSG** in **Name**. Under **Inbound rules**, select **+Add an inbound rule**. In **Service**, select **HTTP**. Under **Priority**, enter **100**. In **Name**, enter **lb-NSG-Rule** Select **Add** Select **OK**

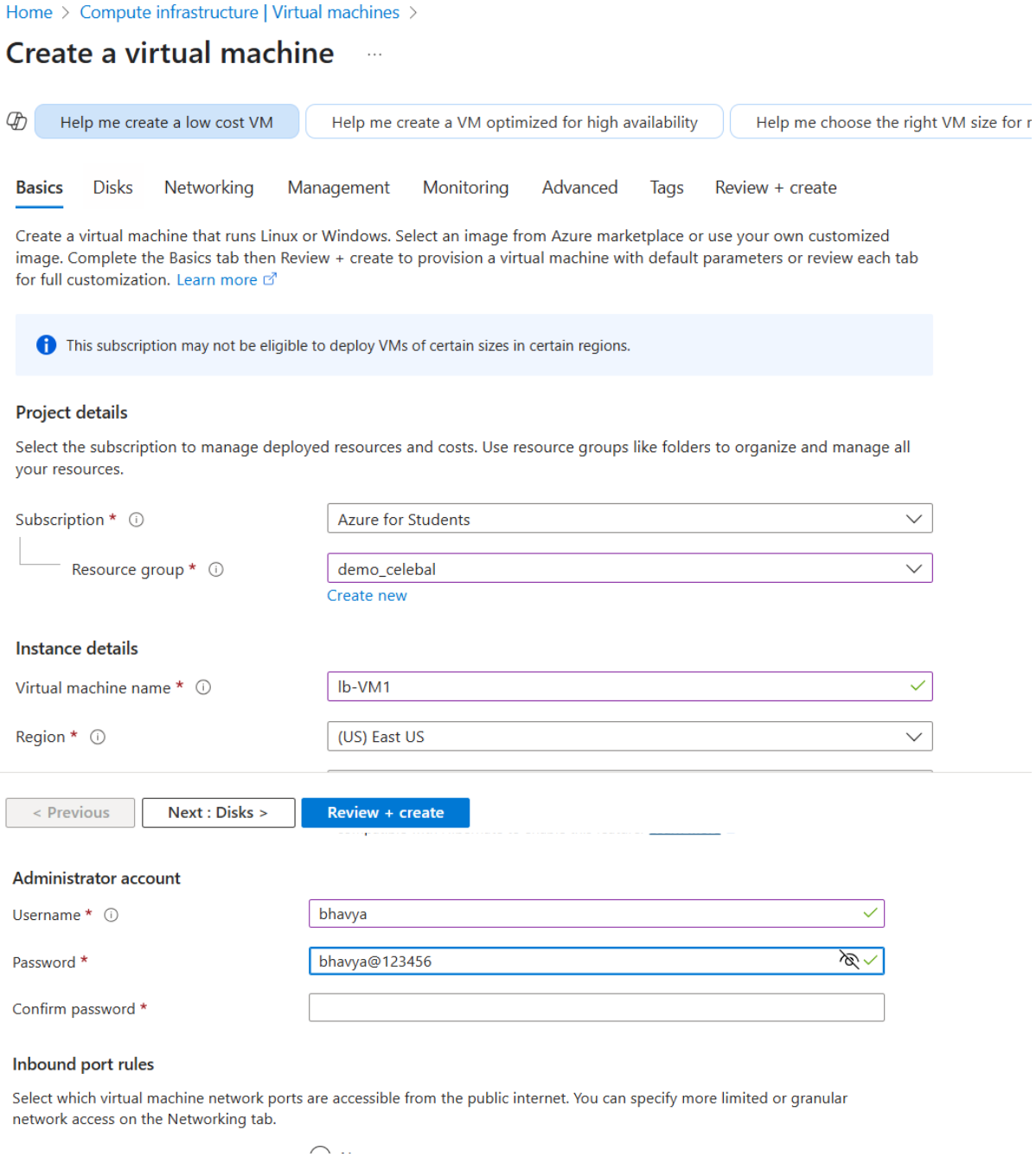
6. In the Networking tab, select or enter the following information:

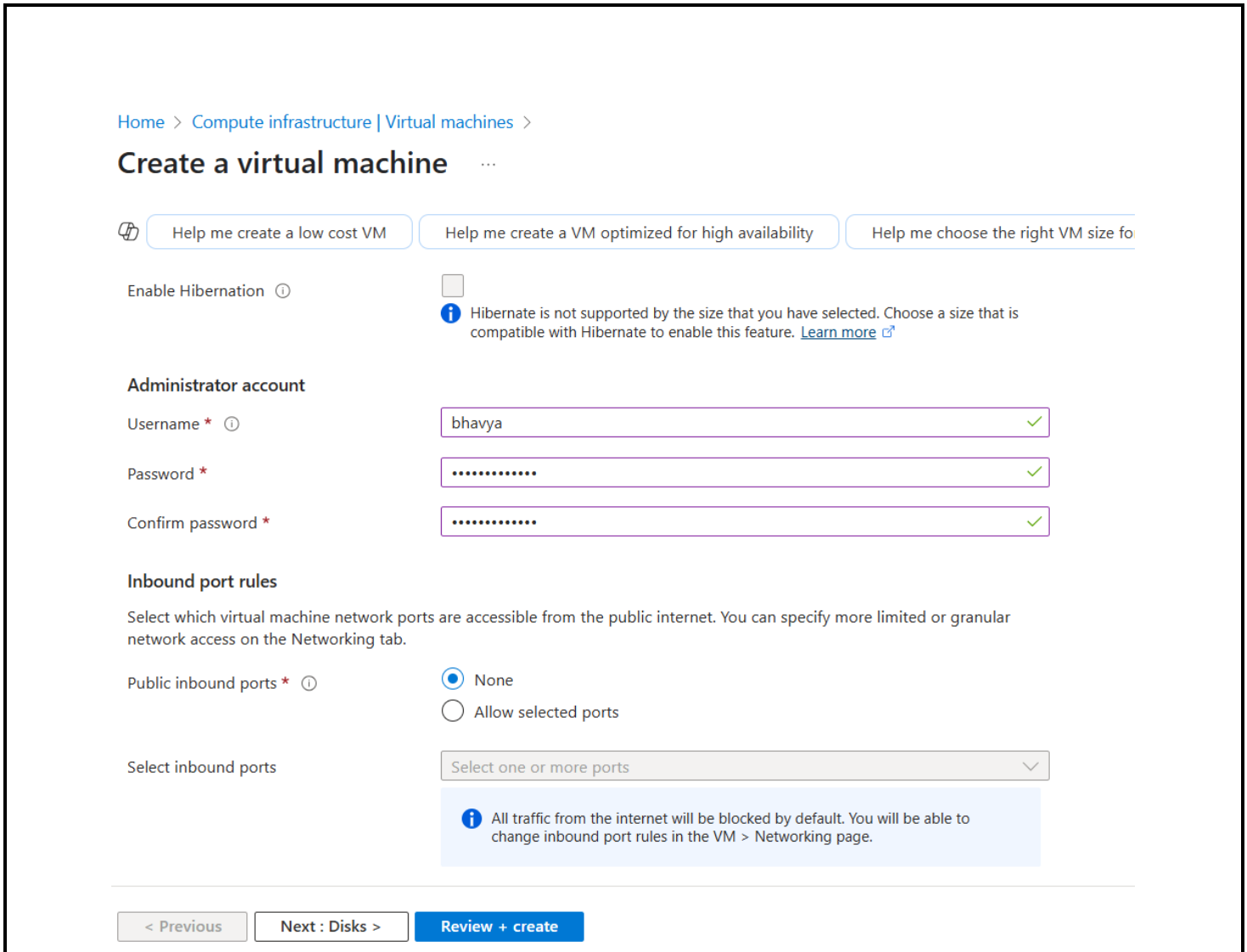
Expand table

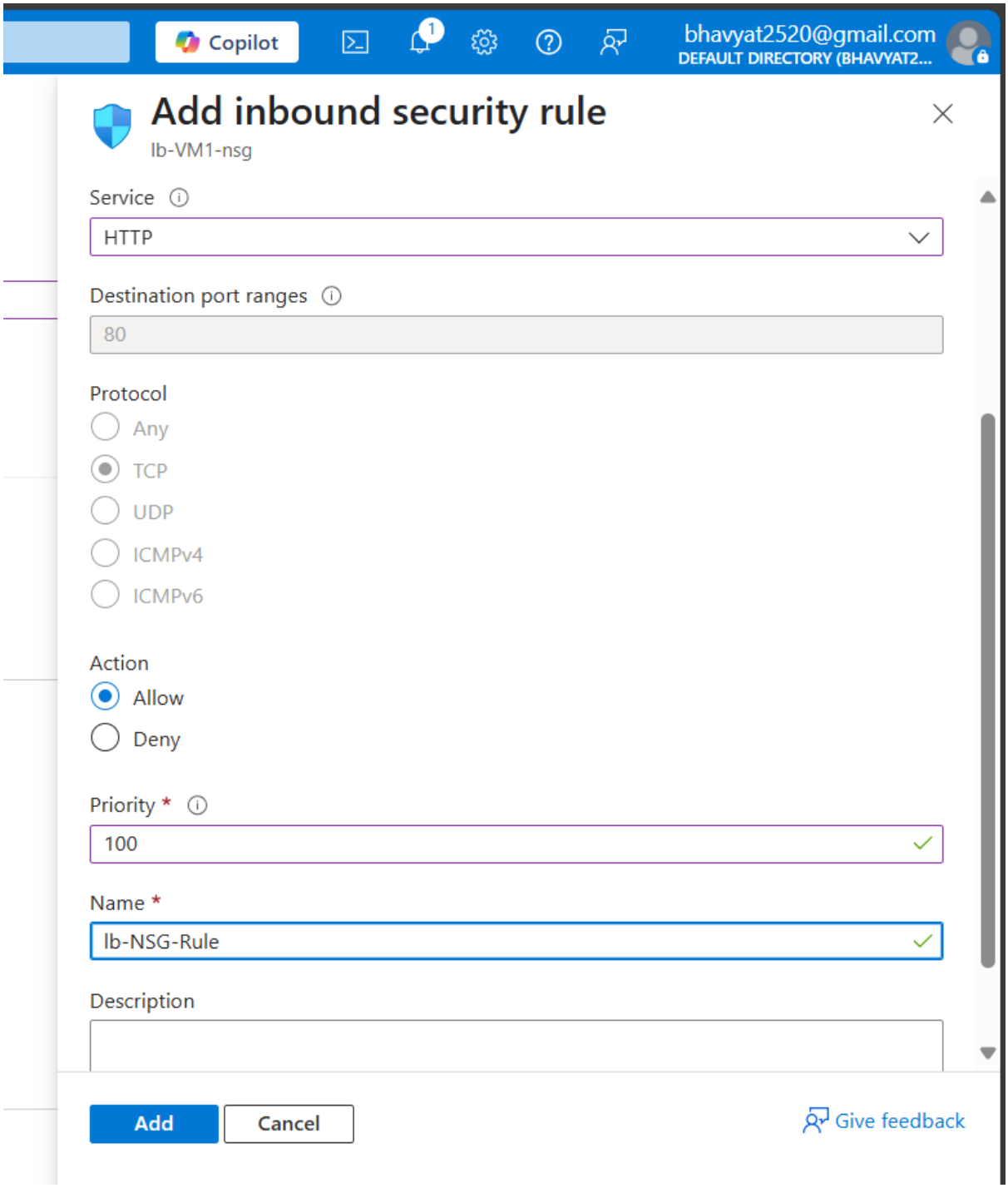
1.
   2. Select **Review + create**.
   3. Review the settings, and then select **Create**.
   4. Follow the steps 1 through 7 to create another VM with the following values and all the other settings the same as **lb-VM1**:

Expand table

Setting	VM 2
Name	lb-VM2
Availability zone	Zone 2
Network security group	Select the existing lb-NSG




Home > Compute infrastructure | Virtual machines >
Create a virtual machine
Help me create a low cost VM
Help me create a VM optimized for high availability
Help me choose the right VM size fo
Enable Hibernation
Hibernate is not supported by the size that you have selected. Choose a size that is compatible with Hibernate to enable this feature. Learn more
Administrator account
Username *
bhavya
Password *
Confirm password *
Inbound port rules
Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.
Public inbound ports *
None
Allow selected ports
Select inbound ports
Select one or more ports
All traffic from the internet will be blocked by default. You will be able to change inbound port rules in the VM > Networking page.
< Previous
Next : Disks >
Review + create



Install IIS

1. In the search box at the top of the portal, enter **Virtual machine**. Select **Virtual machines** in the search results.
2. Select **lb-VM1**.
3. On the **Overview** page, select **Connect**, then **Bastion**.
4. Enter the username and password entered during VM creation.
5. Select **Connect**.

6. On the server desktop, navigate to **Start** > **Windows PowerShell** > **Windows PowerShell**.
7. In the PowerShell Window, run the following commands to:

- Install the IIS server.
- Remove the default iisstart.htm file.
- Add a new iisstart.htm file that displays the name of the VM:

Script:

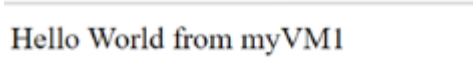
```
# Install IIS server role
 Install-WindowsFeature -name Web-Server -IncludeManagementTools

# Remove default htm file
 Remove-Item  C:\inetpub\wwwroot\iisstart.htm

# Add a new htm file that displays server name
 Add-Content -Path "C:\inetpub\wwwroot\iisstart.htm" -Value $("Hello World from " + $env:computername)
```

Test the load balancer

1. In the search box at the top of the page, enter **Public IP**. Select **Public IP addresses** in the search results.
2. In **Public IP addresses**, select **frontend-ip**.
3. Copy the item in **IP address**. Paste the public IP into the address bar of your browser. The custom VM page of the IIS Web server is displayed in the browser.



Reference: https://learn.microsoft.com/en-us/azure/load-balancer/quickstart-load-balancer-standard-public-portal