

# How to Setup Ant Media Server Clustering on Azure

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In this guide, I will explain how to setup Ant Media Server Clustering on Azure. When your load is high, one server instance is not enough for you and you can handle that load with a clustering solution.

For streaming applications, you will need a clustering solution when you have high numbers of publishers and viewers. Especially when you require ultra-low latency and adaptive bitrate because they need more processing power. Ultra-low latency is achieved by WebRTC and it is a CPU intensive protocol. Adaptive bitrating is downgrading video quality in bad networks if needed. It is also CPU intensive because there is video conversion. Luckily, Ant Media Server Enterprise Edition supports clustering, so that you can handle the high load in your streaming applications.

## Requirements:

To set up media server, Having an Azure account and a ready AntMedia Server Image are needed.

The architecture of the cluster setup could be found [here](#). Introduction to clustering with AntMedia Server could be found [here](#).

## Step 1: Create a Resource Group

Each resource created must be in the same resource group. For this, we will first create a resource group. Named **antmedia-cluster**

Click Resource groups in the portal which is on the left side then click **+Add**

Microsoft Azure

Home >

### Resource groups

Default Directory

**+ Add** Manage view Refresh Export to CSV Open query Assign tags Feedback

Filter by name... Subscription == all Location == all Add filter

Showing 1 to 15 of 15 records. No grouping

Name	Subscription	Location
ams-ee-v211-2v_group	Kullandıkça Öde	East US 2
Antmedia-Auto-Scale_group	Kullandıkça Öde	Germany West Central
antmedia-auto-scale_group_10181551	Kullandıkça Öde	Germany West Central
antmedia-test-group	Kullandıkça Öde	Germany West Central
antmedia2_group	Kullandıkça Öde	East US
antmediaResourceGroup	Kullandıkça Öde	East US
antmediatestcl_group	Kullandıkça Öde	Germany West Central
antmediatestcluster_group	Kullandıkça Öde	Germany West Central
cloud-shell-storage-westeurope	Kullandıkça Öde	West Europe
community	Kullandıkça Öde	East US
Enterprise	Kullandıkça Öde	East US
NetworkWatcherRG	Kullandıkça Öde	East US
preview-resource	Kullandıkça Öde	East US
rtmptest	Kullandıkça Öde	East US
test-rtsp_group	Kullandıkça Öde	East US

Enter **"Resource group"** then choose your zone.

Microsoft Azure

Dashboard > Resource groups >

### Create a resource group

Basics Tags Review + create

Resource group - A container that holds related resources for an Azure solution. The resource group can include all the resources for the solution, or only those resources that you want to manage as a group. You decide how you want to allocate resources to resource groups based on what makes the most sense for your organization. [Learn more](#)

**Project details**

Subscription \* Kullandıkça Öde

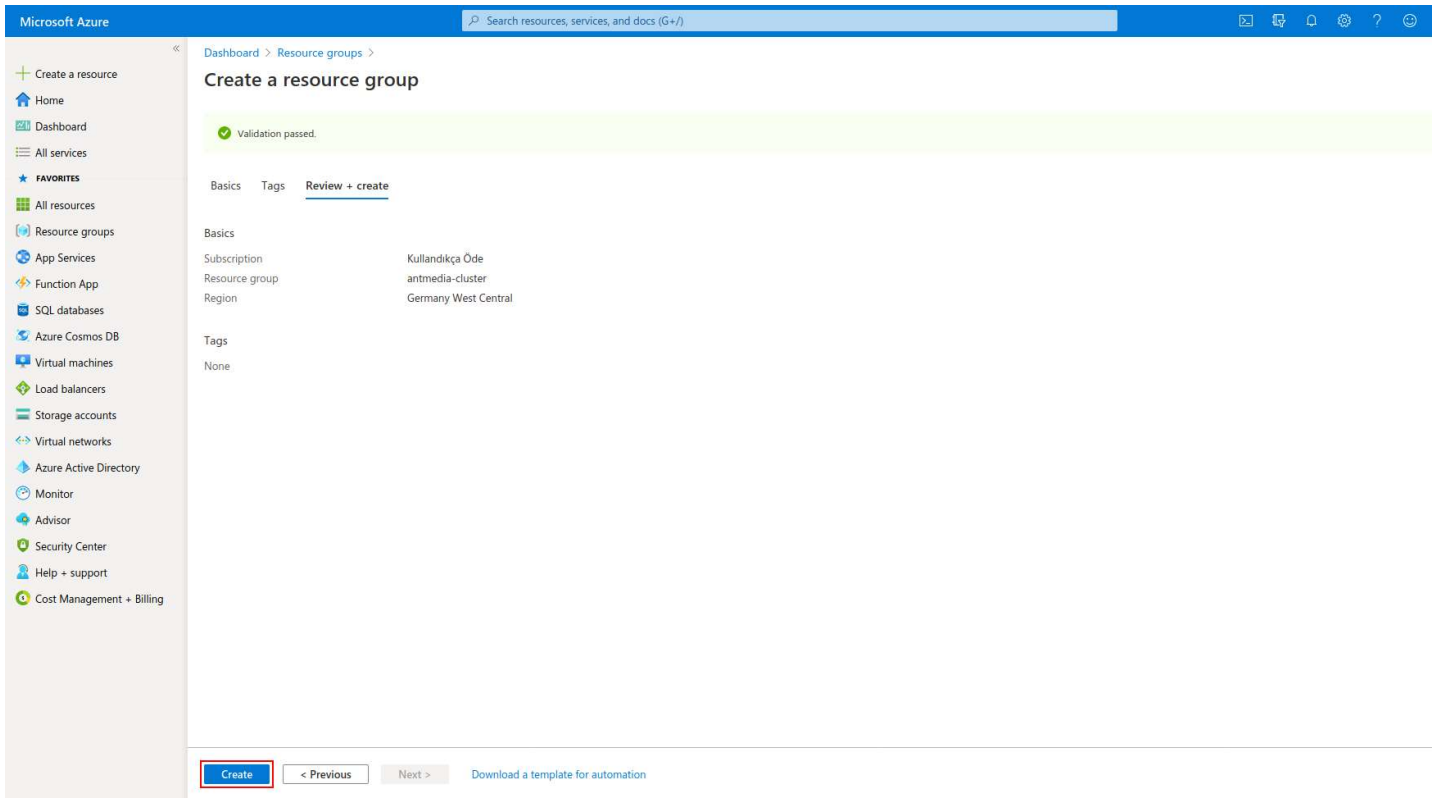
Resource group \* **antmedia-cluster**

**Resource details**

Region \* (Europe) Germany West Central

**Review + create** < Previous Next: Tags >

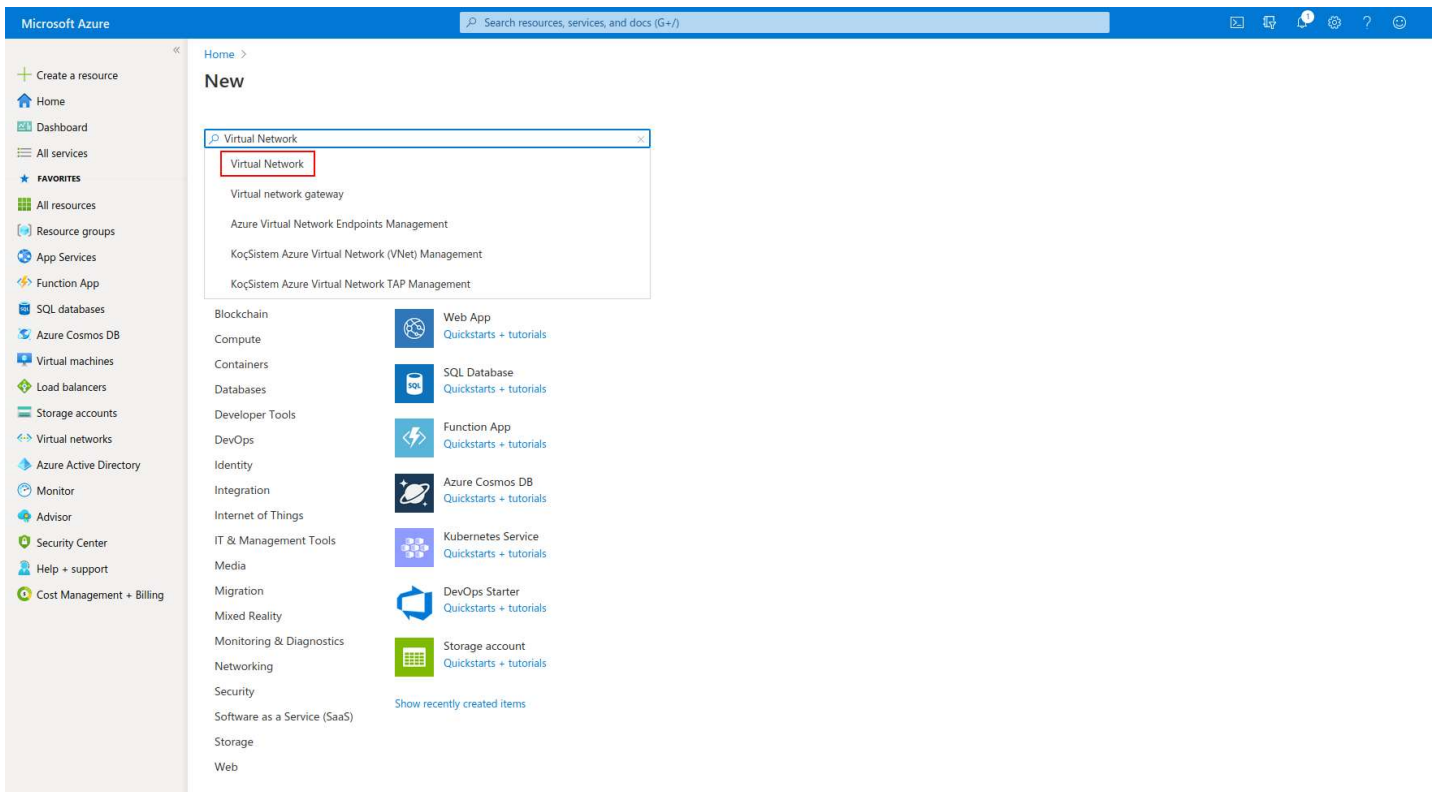
Proceed by clicking **"Create"** button



## Step 2: Create a Virtual Network

We need to create a virtual network named antmedia-cluster-virtual-network, and then we will add gateway-subnet, origin-subnet and edge-subnet

Click Create a Resource in the portal which is on the upper left. Enter Virtual network in the Search the Marketplace box at the top of the New pane that appears. Click Virtual network when it appears in the search results.



click "Create"

The screenshot shows the Microsoft Azure portal interface. On the left is a navigation sidebar with options like 'Home', 'Dashboard', 'All services', 'FAVORITES', 'All resources', 'Resource groups', 'App Services', 'Function App', 'SQL databases', 'Azure Cosmos DB', 'Virtual machines', 'Load balancers', 'Storage accounts', 'Virtual networks', 'Azure Active Directory', 'Monitor', 'Advisor', 'Security Center', 'Help + support', and 'Cost Management + Billing'. The main content area is titled 'Virtual Network' and includes a 'Create' button highlighted with a red box. Below this, there is an 'Overview' tab and a description of Virtual Networks. A section titled 'Use Virtual Network to:' lists three bullet points: 'Extend your datacenter', 'Build distributed applications', and 'Remotely debug your applications'. At the bottom, there are four 'More offers from Microsoft' cards for Workspace, Wire Data 2.0, Microsoft HPC Pack 2012 R2, and Windows Server 2019 Datacenter.

Select the resource group that we created before, enter **antmedia-cluster-virtual-network** in the name field and click on the **"Next: IP Address"** button.

The screenshot shows the 'Create virtual network' configuration page in the Microsoft Azure portal. The page has tabs for 'Basics', 'IP Addresses', 'Security', 'Tags', and 'Review + create'. The 'Basics' tab is active. The 'Project details' section shows 'Subscription' as 'Kullandıkça Öde' and 'Resource group' as 'antmedia-cluster' (highlighted with a red box). The 'Instance details' section shows 'Name' as 'antmedia-cluster-virtual-network' and 'Region' as '(Europe) Germany West Central'. At the bottom, the 'Next: IP Addresses' button is highlighted with a red box.

Click on the Add subnet button and create the antmedia-origin-subnet, antmedia-edge-subnet and antmedia-gw-subnet as shown in the figure below.

Microsoft Azure

Home > Virtual networks >

### Create virtual network

Basics **IP Addresses** Security Tags Review + create

The virtual network's address space, specified as one or more address prefixes in CIDR notation (e.g. 192.168.1.0/24).

IPv4 address space

10.0.0.0/16 10.0.0.0 - 10.0.255.255 (65536 addresses)

Add IPv6 address space

The subnet's address range in CIDR notation (e.g. 192.168.1.0/24). It must be contained by the address space of the virtual network.

<input type="checkbox"/> Subnet name	Subnet address range
<input type="checkbox"/> antmedia-gw-subnet	10.0.0.0/24
<input type="checkbox"/> antmedia-edge-subnet	10.0.1.0/24

[Download a template for automation](#)

#### Add subnet

Subnet name \*

antmedia-origin-subnet

Subnet address range \*

10.0.2.0/24

10.0.2.0 - 10.0.2.255 (251 + 5 Azure reserved addresses)

**SERVICE ENDPOINTS**

Create service endpoint policies to allow traffic to specific azure resources from your virtual network over service endpoints. [Learn more](#)

Services

0 selected

Microsoft Azure

Home > Virtual networks >

### Create virtual network

Basics **IP Addresses** Security Tags Review + create

The virtual network's address space, specified as one or more address prefixes in CIDR notation (e.g. 192.168.1.0/24).

IPv4 address space

10.0.0.0/16 10.0.0.0 - 10.0.255.255 (65536 addresses)

Add IPv6 address space

The subnet's address range in CIDR notation (e.g. 192.168.1.0/24). It must be contained by the address space of the virtual network.

<input type="checkbox"/> Subnet name	Subnet address range
<input type="checkbox"/> antmedia-gw-subnet	10.0.0.0/24
<input type="checkbox"/> antmedia-edge-subnet	10.0.1.0/24
<input type="checkbox"/> antmedia-origin-subnet	10.0.2.0/24

[Download a template for automation](#)

The process is completed by clicking on the **"Create"** button.

Microsoft Azure

Home > Virtual networks >

## Create virtual network

Validation passed

Basics IP Addresses Security Tags **Review + create**

**Basics**

Subscription: Kullandıkça Öde  
 Resource group: antmedia-cluster  
 Name: antmedia-cluster-virtual-network  
 Region: Germany West Central

**IP addresses**

Address space: 10.0.0.0/16  
 Subnet: antmedia-gw-subnet (10.0.0.0/24),antmedia-edge-subnet (10.0.1.0/24),antmedia-  
 origin-subnet (10.0.2.0/24)

**Tags**

None

**Security**

BastionHost: Disabled  
 DDoS protection plan: Basic  
 Firewall: Disabled

**Create** < Previous Next > Download a template for automation

## Step 3: Create a MongoDB Virtual Machine

Click Virtual Machines on the left bar and then click "+Add"

Microsoft Azure

Home >

## Virtual machines

Default Directory


+ Add Reservations Edit columns Refresh Try preview Assign tags Start Restart Stop Delete Services

Try the new virtual machine resource browser. This experience is faster and has improved sorting and filtering capabilities. Please note that the new experience will not show classic virtual machines and does not include support for some columns such as maintenance status.

Subscriptions: Kullandıkça Öde

Filter by name... All resource groups All types All locations All tags No grouping

0 items

Name	Type	Status	Resource group	Location	Source	Maintenance status	Subscription
 No virtual machines to display Create a virtual machine that runs Linux or Windows. Select an image from the marketplace or use your own customized image. <a href="#">Learn more about Windows virtual machines</a> <a href="#">Learn more about Linux virtual machines</a>							

Enter the following values and click "Next: Disks"

ActionScript	Copy
<p>Resource group "antmedia-cluster"</p> <p>Image "Ubuntu 18.04 LTS"</p>	

Microsoft Azure

Home > Virtual machines > Create a virtual machine

your resources.

Subscription \*

Resource group \*

Instance details

Virtual machine name \*

Region \*

Availability options

Image \*

Azure Spot instance  Yes  No

Size \*

Administrator account

Authentication type  SSH public key  Password

Username \*

SSH public key source

Key pair name \*

Enter the following values and click **"Next: Networking"**

Microsoft Azure

Home > Virtual machines > Create a virtual machine

Basics Disks Networking Management Advanced Tags Review + create

Azure VMs have one operating system disk and a temporary disk for short-term storage. You can attach additional data disks. The size of the VM determines the type of storage you can use and the number of data disks allowed. [Learn more](#)

Disk options

OS disk type \*

Encryption type \*

Enable Ultra Disk compatibility  Yes  No

Ultra disk is not supported for the selected VM size Standard\_DS1\_v2 in germanywestcentral.

Data disks

You can add and configure additional data disks for your virtual machine or attach existing disks. This VM also comes with a temporary disk.

LUN	Name	Size (GiB)	Disk type	Host caching
-----	------	------------	-----------	--------------

[Create and attach a new disk](#) [Attach an existing disk](#)

Select the Virtual Network that you created, click **"Advanced"** from **"Nic network security group"** and click **"Create new"**



The screenshot shows the 'Create a virtual machine' page in the Microsoft Azure portal, specifically the 'Networking' tab. The page is titled 'Create a virtual machine' and has sub-tabs for 'Basics', 'Disks', 'Networking', 'Management', 'Advanced', 'Tags', and 'Review + create'. The 'Networking' tab is active, showing configuration options for the network interface. The 'Virtual network' is set to 'antmedia-cluster-virtual-network', the 'Subnet' to 'antmedia-origin-subnet (10.0.2.0/24)', and the 'Public IP' to '(new) antmediamongodbip229'. The 'NIC network security group' is set to 'Advanced', and the 'Configure network security group' is '(new) antmediamongodbnsg997'. The 'Accelerated networking' is set to 'Off'. At the bottom, there are buttons for 'Review + create', '< Previous', and 'Next : Management >'. The 'Next : Management >' button is highlighted with a red box.

Click the **"Add an inbound rule"** button in the windows that appears and click the **"Add inbound security rule"** button

The screenshot shows the 'Create network security group' page in the Microsoft Azure portal. The 'Name' field is 'antmediamongodbnsg997'. Under 'Inbound rules', there is a list with '1000: default-allow-ssh' and 'Any SSH (TCP/22)'. A red box highlights the '+ Add an inbound rule' button. The 'Add inbound security rule' dialog box is open on the right, showing the configuration for a new rule. The 'Source' is 'IP Addresses', 'Source IP addresses/CIDR ranges' is '10.0.0/16', 'Destination' is 'Any', and 'Destination port ranges' is '27017'. The 'Protocol' is 'TCP' and the 'Action' is 'Allow'. The 'Priority' is '1010' and the 'Name' is 'Port\_27017'. A red box highlights the 'Add' button at the bottom of the dialog box.

Enter the following values and click **"Next: Advanced"**



The screenshot shows the 'Create a virtual machine' page in the Microsoft Azure portal, specifically the 'Management' tab. The page is titled 'Create a virtual machine' and has sub-tabs for 'Basics', 'Disks', 'Networking', 'Management', 'Advanced', 'Tags', and 'Review + create'. The 'Management' tab is active, showing options for monitoring and management. A green checkmark indicates that the subscription is protected by Azure Security Center basic plan. The 'Monitoring' section includes 'Boot diagnostics' (set to 'Enable with managed storage account (recommended)'), 'OS guest diagnostics' (set to 'Off'), 'Identity' (set to 'Off'), 'Auto-shutdown' (set to 'Off'), and 'Backup' (set to 'Off'). At the bottom, there are buttons for 'Review + create', '< Previous', and 'Next : Advanced >'. The 'Next : Advanced >' button is highlighted with a red box.

Add the following lines to the **"Custom data"** area and click the **"Review + Create"** button to create a MongoDB instance.

```
ActionScript Copy  
  
#!/bin/bash  
wget -q0 - https://www.mongodb.org/static/pgp/server-5.0.asc | sudo apt-key add  
echo "deb [ arch=amd64,arm64 ] https://repo.mongodb.org/apt/ubuntu focal/mongodb-org-5.0/debian" | sudo tee /etc/apt/sources.list.d/mongodb-org-5.0.list  
sudo apt-get update  
sudo apt-get install -y mongodb-org  
sed -i 's/bindIp:.* /bindIp: 0.0.0.0/g' /etc/mongod.conf  
systemctl restart mongod
```

Microsoft Azure

Home > Virtual machines >

## Create a virtual machine

Extensions  
Extensions provide post-deployment configuration and automation.

Extensions ⓘ [Select an extension to install](#)

Custom data and cloud init  
Pass a cloud-init script, configuration file, or other data into the virtual machine while it is being provisioned. The data will be saved on the VM in a known location. [Learn more about custom data for VMs](#)

Custom data

```
#!/bin/bash
wget -qO - https://www.mongodb.org/static/pgp/server-4.2.asc | sudo apt-
key add -
echo "deb [ arch=amd64 ] https://repo.mongodb.org/apt/ubuntu
-cs/mongodb-org/4.2 multiverse" | sudo tee /etc/apt/sources.list.d
/mongodb-org-4.2.list
sudo apt-get update
sudo apt-get install -y mongodb-org
```

Custom data on the selected image will be processed by cloud-init. [Learn more about custom data and cloud init](#)

Host  
Azure Dedicated Hosts allow you to provision and manage a physical server within our data centers that are dedicated to your Azure subscription. A dedicated host gives you assurance that only VMs from your subscription are on the host, flexibility to choose VMs from your subscription that will be provisioned on the host, and the control of platform maintenance at the level of the host. [Learn more](#)

Host group ⓘ

Proximity placement group  
Proximity placement groups allow you to group Azure resources physically closer together in the same region. [Learn more](#)

Proximity placement group ⓘ

Generation 2 VMs support features such as UEFI-based boot architecture, increased memory and OS disk size limits, Intel® Software Guard Extensions (SGX), and virtual persistent memory (vPMEM).

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

The process is completed by clicking on the **"Create"** button.

Microsoft Azure

Home > Virtual machines >

## Create a virtual machine

Validation passed

TERMS  
By clicking "Create", I (a) agree to the legal terms and privacy statement(s) associated with the Marketplace offering(s) listed above; (b) authorize Microsoft to bill my current payment method for the fees associated with the offering(s), with the same billing frequency as my Azure subscription; and (c) agree that Microsoft may share my contact, usage and transactional information with the provider(s) of the offering(s) for support, billing and other transactional activities. Microsoft does not provide rights for third-party offerings. See the [Azure Marketplace Terms](#) for additional details.

Basics

Subscription	Kullandıkça Öde
Resource group	antmedia-cluster
Virtual machine name	antmedia-mongodb
Region	Germany West Central
Availability options	No infrastructure redundancy required
Image	Ubuntu Server 18.04 LTS - Gen1
Size	Standard DS1 v2 (1 vcpu, 3.5 GiB memory)
Authentication type	SSH public key
Username	azureuser
Key pair name	antmedia-mongodb_key
Azure Spot	No

Disks

OS disk type	Premium SSD
Use managed disks	Yes
Use ephemeral OS disk	No

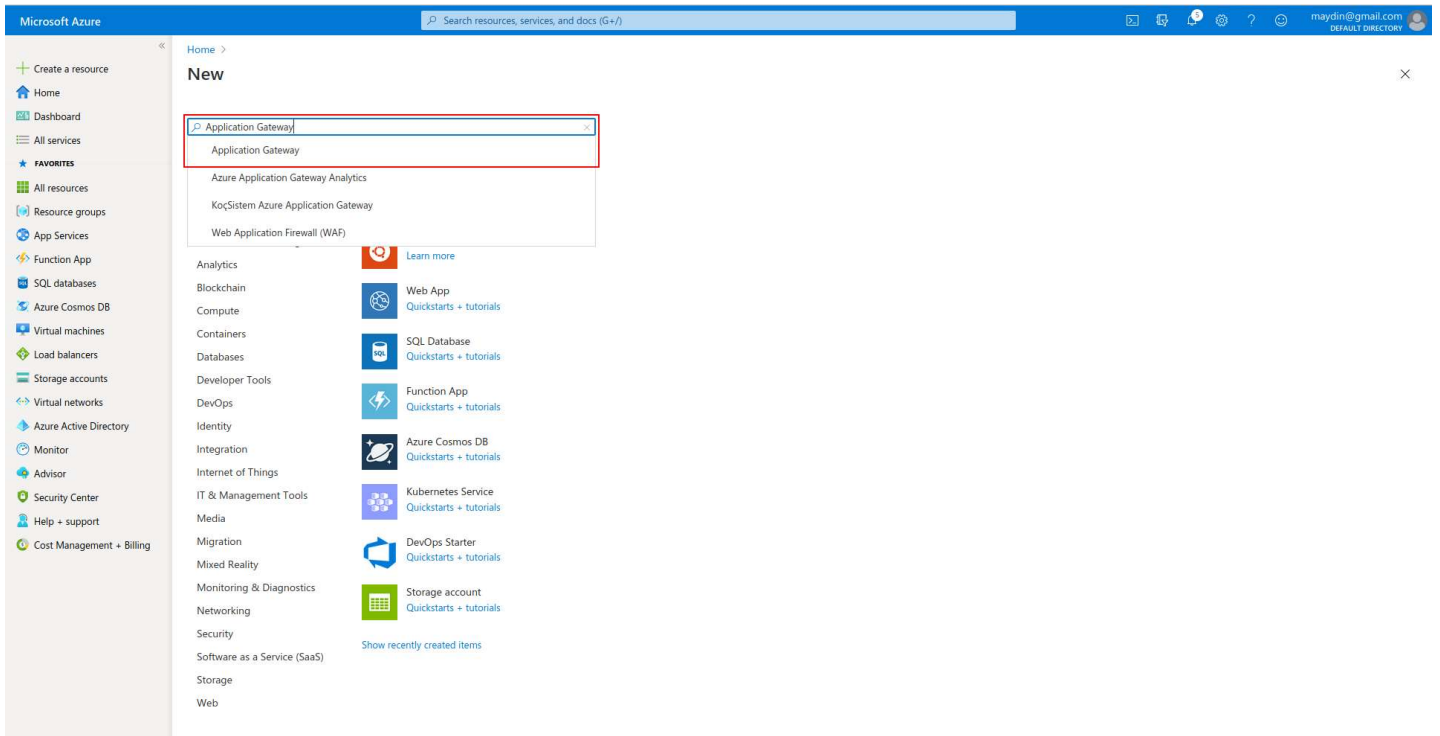
Networking

Virtual network	antmedia-cluster-virtual-network
Subnet	antmedia-origin-subnet (10.0.2.0/24)

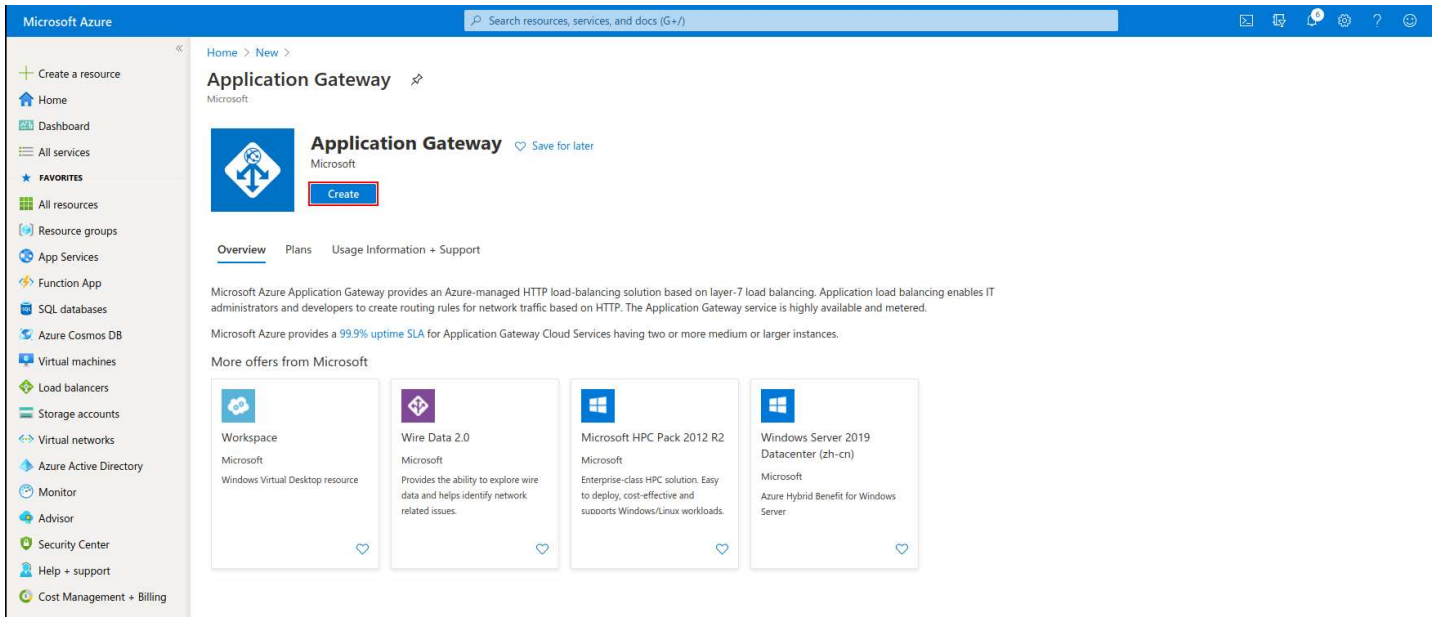
[Create](#) [< Previous](#) [Next >](#) [Download a template for automation](#)

## Step 4: Create Application Gateway

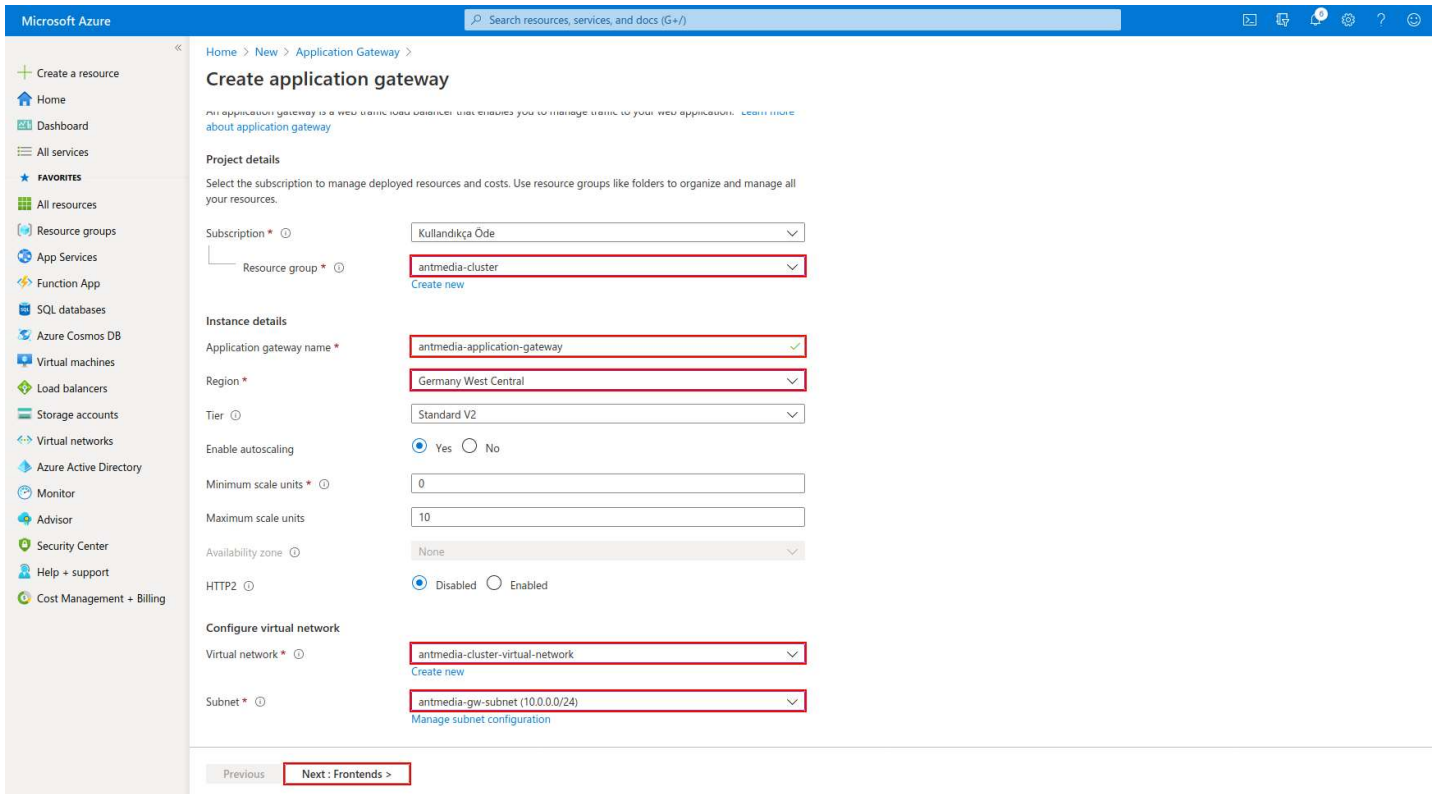
Click Create a Resource in the portal which is on the upper left. Enter Application Gateway in the Search the Marketplace box at the top of the New pane that appears. Click the **"Application Gateway"** when it appears in the search results.



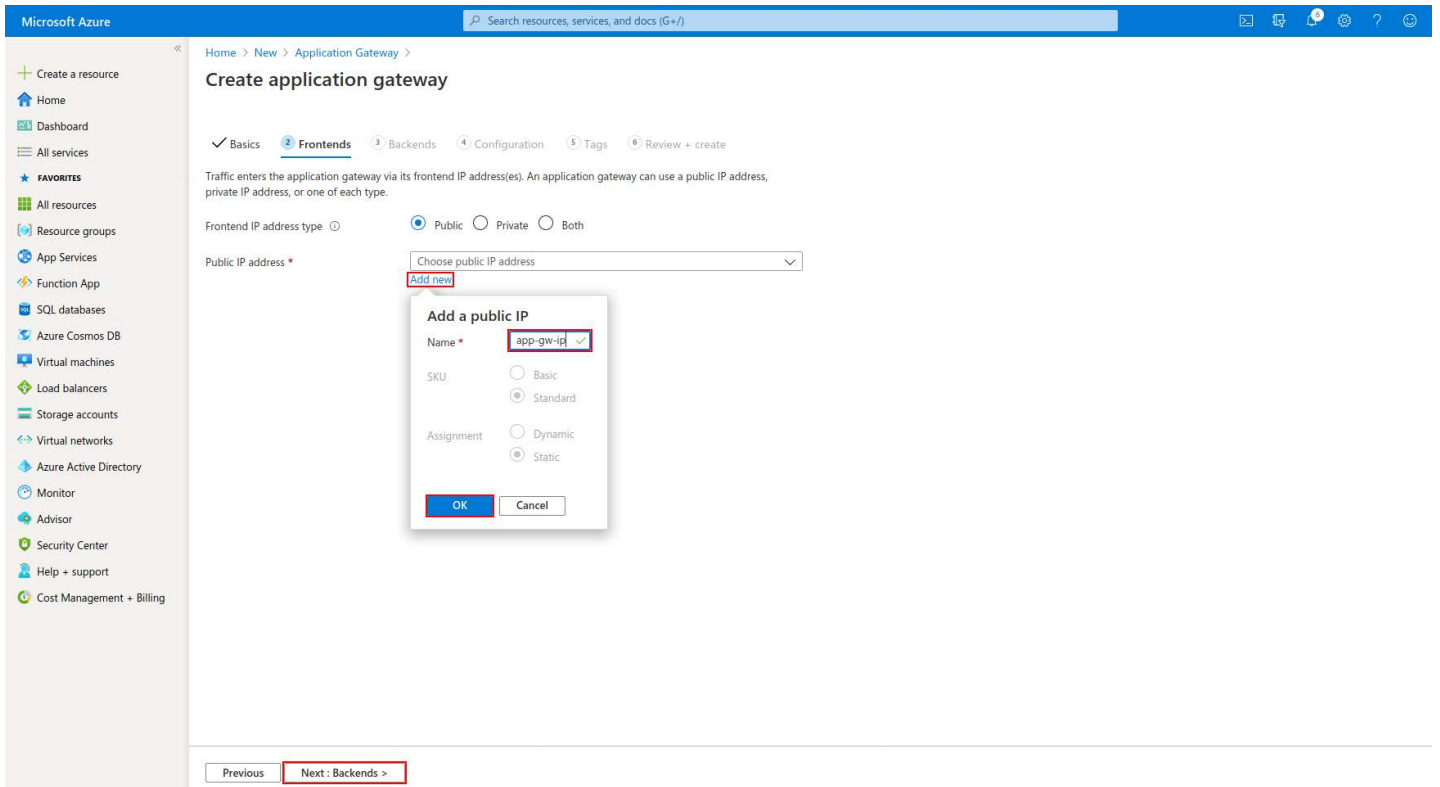
Proceed by clicking "**Create**" button



Enter the Resource Group, Application Gateway Name, Region, and Virtual Network settings as follows and click "**Next: Frontends**"



Click on the **"Add new"** button and enter the public IP name then click **"Next: Backends"**



Click on **"Add a backend pool"**, create pools for both origin and edge as shown in the screenshot, and click **"Next: Configuration"**.

Microsoft Azure

Home > New > Application Gateway >

### Create application gateway

✓ Basics ✓ Frontends **3 Backends** 4 Configuration 5 Tags 6 Review + create

A backend pool is a collection of resources to which your application gateway can send traffic. A backend pool can contain virtual machines, virtual machine scale sets, app services, IP addresses, or fully qualified domain names (FQDN).

**Add a backend pool**

Backend pool	Targets
Edge	0 targets

Previous Next: Configuration >

Add Cancel

**Add a backend pool.**

A backend pool is a collection of resources to which your application gateway can send traffic. A backend pool can contain virtual machines, virtual machines scale sets, IP addresses, domain names, or an App Service.

Name \*

Add backend pool without targets

Click on **"Add a routing rule"** in the window that appears.

Microsoft Azure

Home > New > Application Gateway >

### Create application gateway

✓ Basics ✓ Frontends ✓ Backends **4 Configuration** 5 Tags 6 Review + create

Create routing rules that link your frontend(s) and backend(s). You can also add more backend pools, add a second frontend IP configuration if you haven't already, or edit previous configurations.

**Frontends**  
+ Add a frontend IP  
Public: (new) app-gw-ip

**Routing rules**  
+ Add a routing rule

**Backend pools**  
+ Add a backend pool  
Edge  
Origin

Previous Next: Tags >

Enter the following values for Edge sides then click **"Add"** button.

## Add a routing rule



Configure a routing rule to send traffic from a given frontend IP address to one or more backend targets. A routing rule must contain a listener and at least one backend target.

Rule name \*

\* Listener

\* Backend targets

A listener "listens" on a specified port and IP address for traffic that uses a specified protocol. If the listener criteria are met, the application gateway will apply this routing rule.

Listener name \* ⓘ

Frontend IP \* ⓘ

Protocol ⓘ

HTTP  HTTPS

Port \* ⓘ

### Additional settings

Listener type ⓘ

Basic  Multi site

Error page url

Yes  No

Add

Cancel

Select the "Edge" pool as the backend target and click "Add new" for HTTP settings.

# Add a routing rule



Configure a routing rule to send traffic from a given frontend IP address to one or more backend targets. A routing rule must contain a listener and at least one backend target.

Rule name \*

\* Listener: **Backend targets**

Choose a backend pool to which this routing rule will send traffic. You will also need to specify a set of HTTP settings that define the behavior of the routing rule.

Target type  Backend pool  Redirection

Backend target \*  [Add new](#)

HTTP settings \*  [Add new](#)

The value must not be empty.

## Path-based routing

You can route traffic from this rule's listener to different backend targets based on the URL path of the request. You can also apply a different set of HTTP settings based on the URL path.

### Path based rules

Path	Target name	HTTP setting name	Backend pool
No additional targets to display			

[Add multiple targets to create a path-based rule](#)

Enter the following values. These values will be for both origin and edge.



# Add a HTTP setting



[← Discard changes and go back to routing rules](#)

HTTP settings name *	<input type="text" value="BackendHttpSettings"/>
Backend protocol	<input checked="" type="radio"/> HTTP <input type="radio"/> HTTPS
Backend port *	<input type="text" value="5080"/>
<b>Additional settings</b>	
Cookie-based affinity ⓘ	<input checked="" type="radio"/> Enable <input type="radio"/> Disable
Affinity cookie name	<input type="text" value="ApplicationGatewayAffinity"/>
Connection draining ⓘ	<input type="radio"/> Enable <input checked="" type="radio"/> Disable
Request time-out (seconds) * ⓘ	<input type="text" value="20"/>
Override backend path ⓘ	<input type="text"/>

## Host name

By default, Application Gateway does not change the incoming HTTP host header from the client and sends the header unaltered to the backend. Multi-tenant services like App service or API management rely on a specific host header or SNI extension to resolve to the correct endpoint. Change these settings to overwrite the incoming HTTP host header.

Override with new host name	<input type="radio"/> Yes <input checked="" type="radio"/> No
Host name override	<input type="radio"/> Pick host name from backend target <input checked="" type="radio"/> Override with specific domain name
	<input type="text" value="e.g. contoso.com"/>
Create custom probes	<input type="radio"/> Yes <input checked="" type="radio"/> No

If your settings are as follows, Edge configuration is finished.

## Add a routing rule



Configure a routing rule to send traffic from a given frontend IP address to one or more backend targets. A routing rule must contain a listener and at least one backend target.

Rule name \*

edge5080



\*Listener    \*Backend targets

Choose a backend pool to which this routing rule will send traffic. You will also need to specify a set of HTTP settings that define the behavior of the routing rule.

Target type

Backend pool     Redirection

Backend target \* ⓘ

Edge



[Add new](#)

HTTP settings \* ⓘ

EdgeBackendSettings



[Add new](#)

### Path-based routing

You can route traffic from this rule's listener to different backend targets based on the URL path of the request. You can also apply a different set of HTTP settings based on the URL path.

Path based rules

Path	Target name	HTTP setting name	Backend pool
------	-------------	-------------------	--------------

No additional targets to display

[Add multiple targets to create a path-based rule](#)

Add

Cancel

Click on "**Add a routing rule**" again and set the HTTP settings for Origin. Make the settings as below and click "**Backend target**".

## Add a routing rule



Configure a routing rule to send traffic from a given frontend IP address to one or more backend targets. A routing rule must contain a listener and at least one backend target.

Rule name \*

origin80

**\*Listener** **\*Backend targets**

A listener "listens" on a specified port and IP address for traffic that uses a specified protocol. If the listener criteria are met, the application gateway will apply this routing rule.

Listener name \* ⓘ

http80

Frontend IP \* ⓘ

Public

Protocol ⓘ

HTTP  HTTPS

Port \* ⓘ

80

**Additional settings**

Listener type ⓘ

Basic  Multi site

Error page url

Yes  No

Add

Cancel

Select the Origin pool as the backend target and select the "BackendHttpSettings" that we created before as HTTP settings.

# Add a routing rule



Configure a routing rule to send traffic from a given frontend IP address to one or more backend targets. A routing rule must contain a listener and at least one backend target.

Rule name \*

\*Listener \* Backend targets

Choose a backend pool to which this routing rule will send traffic. You will also need to specify a set of HTTP settings that define the behavior of the routing rule.

Target type  Backend pool  Redirection

Backend target \*

[Add new](#)

HTTP settings \*

[Add new](#)

## Path-based routing

You can route traffic from this rule's listener to different backend targets based on the URL path of the request. You can also apply a different set of HTTP settings based on the URL path.

### Path based rules

Path	Target name	HTTP setting name	Backend pool
No additional targets to display			

[Add multiple targets to create a path-based rule](#)

Now it's time to forward HTTPS requests to Origin. For this, make the settings as follows. You can use [this link](https://antmedia.io/ssl-for-azure-app-gateway-for-scaling-azure-ant-media/) (<https://antmedia.io/ssl-for-azure-app-gateway-for-scaling-azure-ant-media/>), for a certificate.

# Add a routing rule



Configure a routing rule to send traffic from a given frontend IP address to one or more backend targets. A routing rule must contain a listener and at least one backend target.

Rule name \*

\* Listener \* Backend targets

A listener "listens" on a specified port and IP address for traffic that uses a specified protocol. If the listener criteria are met, the application gateway will apply this routing rule.

Listener name \*

Frontend IP \*

Protocol  HTTP  HTTPS

Port \*

### Https Settings

Choose a certificate  Upload a certificate  Choose a certificate from Key Vault

PFX certificate file \*

Cert name \*

Password \*

### Additional settings

Listener type  Basic  Multi site

Error page url  Yes  No

Select "**BackendHttpSetting**" as HTTP Settings and Select "**Origin**" as Backend target.

## Add a routing rule



Configure a routing rule to send traffic from a given frontend IP address to one or more backend targets. A routing rule must contain a listener and at least one backend target.

Rule name \*

origin443 ✓

\*Listener    \*Backend targets

Choose a backend pool to which this routing rule will send traffic. You will also need to specify a set of HTTP settings that define the behavior of the routing rule.

Target type

Backend pool     Redirection

Backend target \* ⓘ

Origin

[Add new](#)

HTTP settings \* ⓘ

BackendHttpSettings

[Add new](#)

### Path-based routing

You can route traffic from this rule's listener to different backend targets based on the URL path of the request. You can also apply a different set of HTTP settings based on the URL path.

Path based rules

Path	Target name	HTTP setting name	Backend pool
------	-------------	-------------------	--------------

No additional targets to display

[Add multiple targets to create a path-based rule](#)

Add

Cancel

Likewise, configure port 5443 for Edge as follows.

## Add a routing rule



Configure a routing rule to send traffic from a given frontend IP address to one or more backend targets. A routing rule must contain a listener and at least one backend target.

Rule name \*

\*Listener \*Backend targets

A listener "listens" on a specified port and IP address for traffic that uses a specified protocol. If the listener criteria are met, the application gateway will apply this routing rule.

Listener name \*

Frontend IP \*

Protocol  HTTP  HTTPS

Port \*

### Https Settings

Choose a certificate  Upload a certificate  Choose a certificate from Key Vault

PFX certificate file \*

Cert name \*

Password \*

### Additional settings

Listener type  Basic  Multi site

Error page url  Yes  No

Add

Cancel

Select "**BackendHttpSetting**" as HTTP Settings and Select "**Edge**" as Backend target.



## Add a routing rule



Configure a routing rule to send traffic from a given frontend IP address to one or more backend targets. A routing rule must contain a listener and at least one backend target.

Rule name \*

\*Listener   \*Backend targets

Choose a backend pool to which this routing rule will send traffic. You will also need to specify a set of HTTP settings that define the behavior of the routing rule.

Target type  Backend pool  Redirection

Backend target \* ⓘ  [Add new](#)

HTTP settings \* ⓘ  [Add new](#)

### Path-based routing

You can route traffic from this rule's listener to different backend targets based on the URL path of the request. You can also apply a different set of HTTP settings based on the URL path.

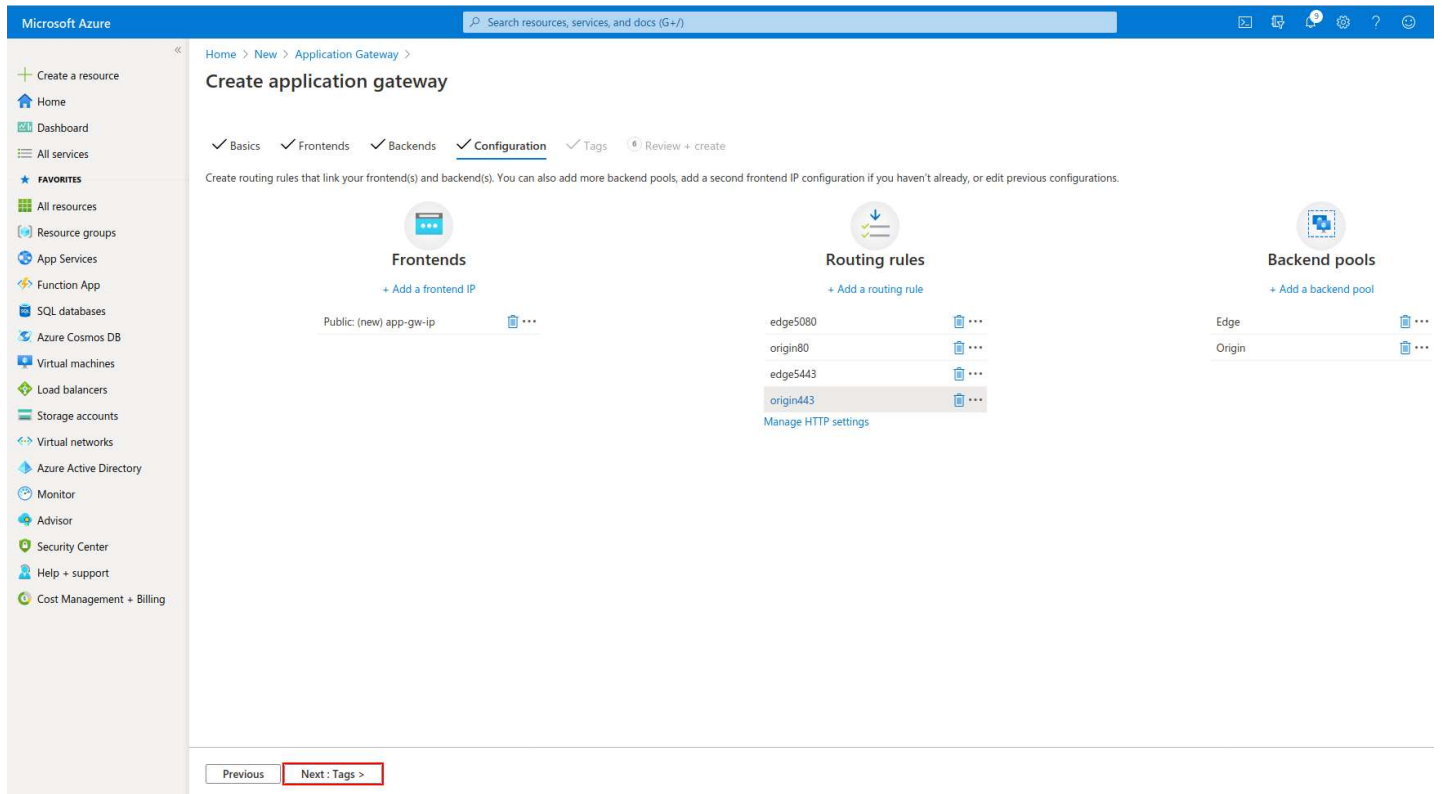
#### Path based rules

Path	Target name	HTTP setting name	Backend pool
------	-------------	-------------------	--------------

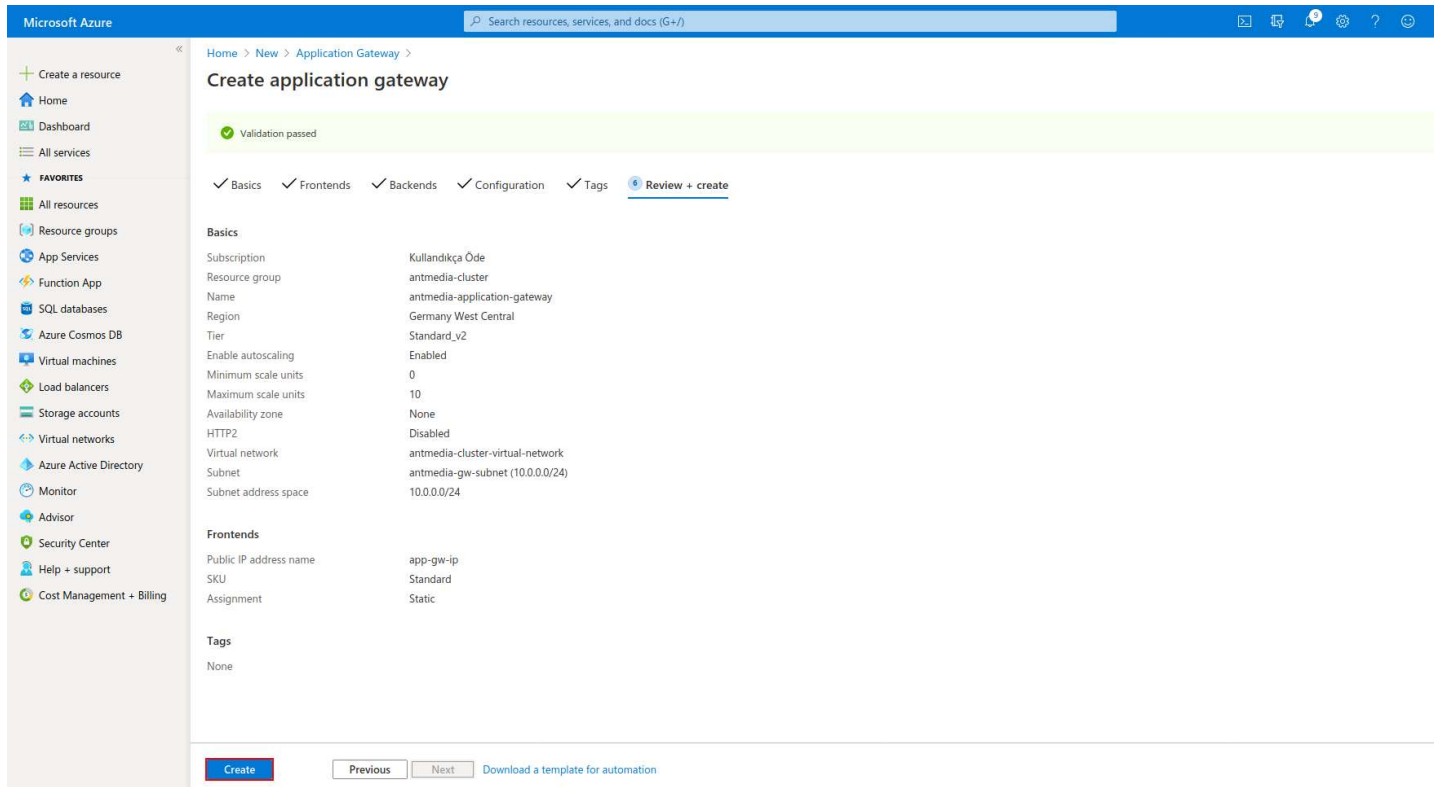
No additional targets to display

[Add multiple targets to create a path-based rule](#)

Application-gateway settings will look like the following. If everything is ok, click "**Next: Tags**"

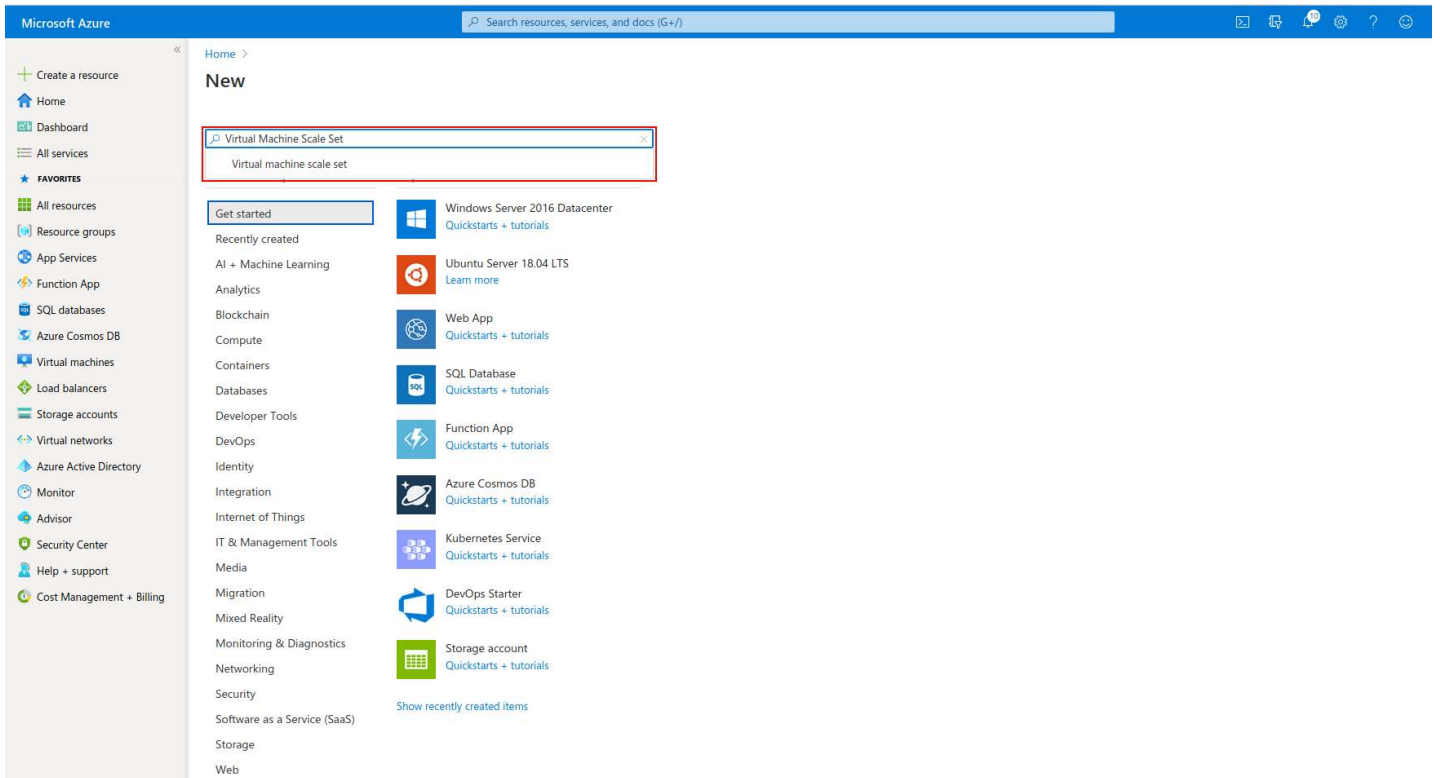


The process is completed by clicking on the "Create" button.

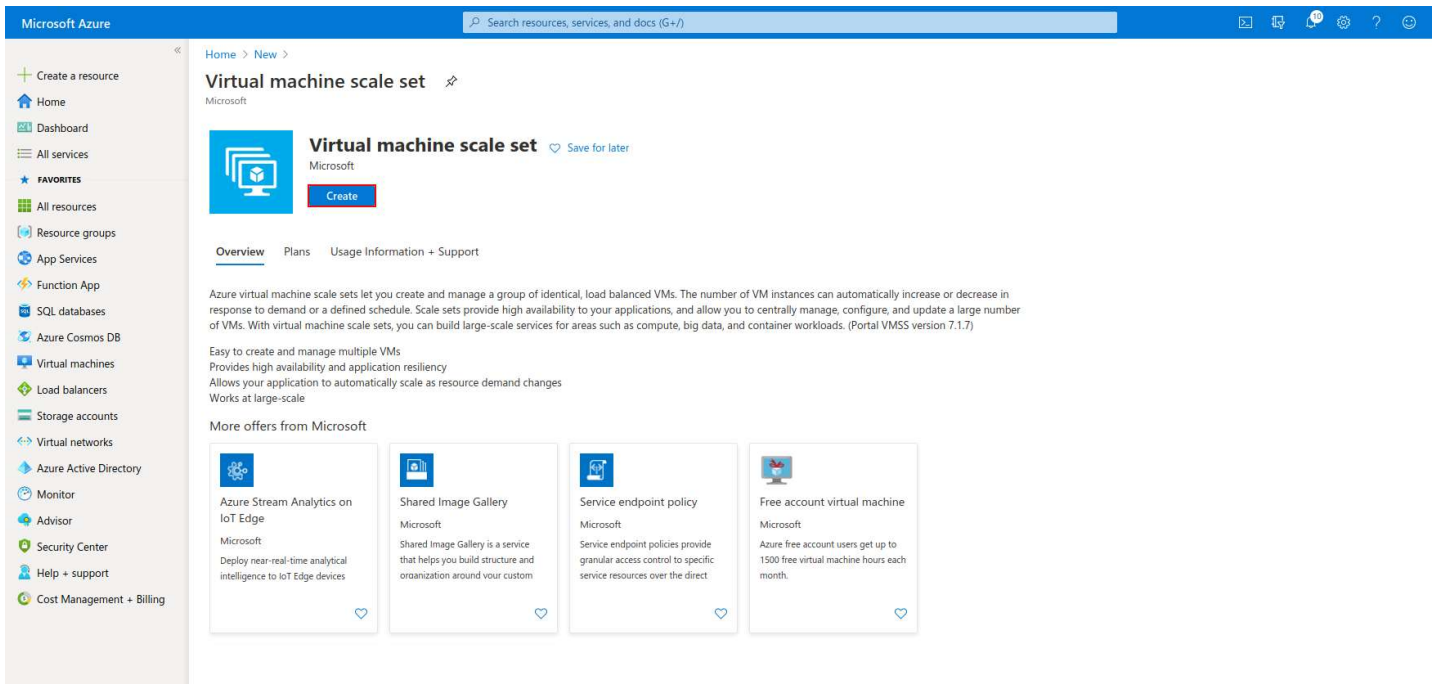


## Step 4: Create Edge/Origin Scale Sets

We need to setup scale sets. Click Create a Resource in the portal which is on the upper left. Enter "Virtual Machine Scale Set" in the Search the Marketplace box at the top of the New pane that appears. Click "Virtual Machine Scale Set" when it appears in the search results.



Proceed by clicking **"Create"** button



First, we will create the Origin Scale Set. Select the Resource Group, enter Virtual Machine scale set name, choose Region settings as follows. Then click on **"Browse all public and private images"**

Microsoft Azure

Search resources, services, and docs (G+)

Home > Virtual machines >

### Create a virtual machine

Subscription \*

Resource group \*   
[Create new](#)

**Instance details**

Virtual machine name \*

Region \*

Availability options

Image \*   
[Browse all public and private images](#)

Azure Spot instance  Yes  No

Size \*   
[Select size](#)

**Administrator account**

Authentication type  SSH public key  Password

**Username \***

SSH public key source





Key pair name \*

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

In the window that appears, search for Ant Media Server and select the "Ant Media Server Enterprise 2.2.1" version.

### Select an image

Marketplace My Items

-  **Ant Media Server Enterprise 2.2.1**  
Ant Media  
Ant Media Server Enterprise Edition provides Low Latency WebRTC Streaming, Adaptive, HLS, RTMP, MP4
-  **Ant Media Server Community 2.2.0**  
Ant Media  
Ant Media Server Community Edition supports WebRTC, RTMP, HLS and MP4
-  **Jenkins Automation Server for Windows 2019**  
Tidal Media Inc  
Jenkins is an automation server provides thousands of plugins to support for building and deploying.
-  **Jenkins Automation Server for Windows 2016**  
Tidal Media Inc  
Jenkins is an automation server provides thousands of plugins to support for building and deploying.

Analytics  
Blockchain  
Compute  
Containers  
Databases  
Developer Tools  
DevOps  
Identity  
Integration  
Internet of Things  
IT & Management Tools  
Media  
Migration  
Mixed Reality  
Monitoring & Diagnostics  
Networking  
Security  
Software as a Service (SaaS)  
Storage  
Web

Enter the following values and click "Next: Networking"

Microsoft Azure

Home > New > Virtual machine scale set >

## Create a virtual machine scale set

Basics **Disks** Networking Scaling Management Health Advanced Tags Review + create

Azure VMs have one operating system disk and a temporary disk for short-term storage. You can attach additional data disks. The size of the VM determines the type of storage you can use and the number of data disks allowed. [Learn more](#)

**Disk options**

OS disk type \*

Encryption type \*

Enable Ultra Disk compatibility  Yes  No  
Ultra Disk compatibility is not available for this VMSS size and location.

**Data disks**

You can add and configure additional data disks for your virtual machine or attach existing disks. This VM also comes with a temporary disk.

LUN	Name	Size (GiB)	IOPS	THRO...	Disk type	Host cachi
<a href="#">Create and attach a new disk</a>						

Advanced

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

Select the **antmedia-cluster-virtual-network** that we created before as Virtual Network in this screen. Select the **origin subnet** as Network interface and click “**Yes**” for Use a load balancer choice. Select the application gateway that we created before and select **Origin** as Backend pool then click the "**Next: Scaling**"

Microsoft Azure

Home > Virtual machine scale sets >

## Create a virtual machine scale set

Azure Virtual Network (VNet) enables many types of Azure resources to securely communicate with each other, the internet, and on-premises networks. [Learn more about VNets](#)

Virtual network \*

[Create virtual network](#)  
[Manage selected virtual network](#)

**Network interface**

A network interface enables an Azure virtual machine to communicate with internet, Azure, and on-premises resources. A VM can have one or more network interfaces.

+ Create new nic  Delete

NAME	CREATE PUBL...	SUBNET	NETWORK SECURIT...	ACCELERATED N...
<input checked="" type="checkbox"/> antmedia-cluster-virtu...	No	antmedia-edge-subne...	Basic	Off

**Load balancing**

You can place this virtual machine scale set in the backend pool of an existing Azure load balancing solution. [Learn more](#)

Use a load balancer  Yes  No

**Load balancing settings**

- Application Gateway** is an HTTP/HTTPS web traffic load balancer with URL-based routing, SSL termination, session persistence, and web application firewall. [Learn more about Application Gateway](#)
- Azure Load Balancer** supports all TCP/UDP network traffic, port-forwarding, and outbound flows. [Learn more about Azure Load Balancer](#)

Load balancing options \*

Select an application gateway \*

Select a backend pool \*

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

Select Custom and set the Cpu threshold to 60%. You can set other settings according to yourself.

Microsoft Azure

Home > New > Virtual machine scale set >

### Create a virtual machine scale set

or your application. [Learn more about VMSS scaling](#)

**Instance**

Initial instance count \* ①

**Scaling**

Scaling policy ①  Manual  Custom

Minimum number of VMs \* ①

Maximum number of VMs \* ①

**Scale out**

CPU threshold (%) \* ①

Duration in minutes \* ①

Number of VMs to increase by \* ①

**Scale in**

CPU threshold (%) \* ①

Number of VMs to decrease by \* ①

**Diagnostics logs**

Collect diagnostic logs from Autoscale ①  Disabled  Enabled

**Scale-in policy**

Configure the order in which virtual machines are selected for deletion during a scale-in operation.  
[Learn more about scale-in policies.](#)

Scale-in policy

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

Continue by clicking directly next to the **"Management"** and **"Health"** tabs and add the following lines to the **"Custom data"** area in the **Advanced section**.

ActionScript	Copy
<pre>#!/bin/bash sudo sed -i '/org.apache.catalina.valves.RemoteIpValve/d' /usr/local/antmedia/co cd /usr/local/antmedia/ ./change_server_mode.sh cluster 10.0.2.4</pre>	

**10.0.2.4** IP address is the private IP address of the MongoDB instance I have set up before. Change according to your own MongoDB instance.



Microsoft Azure

Home > New > Virtual machine scale set >

## Create a virtual machine scale set

Basics Disks Networking Scaling Management Health **Advanced** Tags Review + create

Add additional configuration, agents, scripts or applications via virtual machine extensions or cloud-init.

**Allocation policy**

Enable scaling beyond 100 instances  No  Yes

Spreading algorithm  Max spreading  Fixed spreading (not recommended with zones)

**Extensions**

Extensions provide post-deployment configuration and automation.

Extensions

**Custom data**

Pass a script, configuration file, or other data into the virtual machine while it is being provisioned. The data will be saved on the VM in a known location. [Learn more about custom data for VMs](#)

Custom data

```
#!/bin/bash
cd /usr/local/antmedia/
./change_server_mode.sh cluster 10.0.2.4
```

**Proximity placement group**

Proximity placement groups allow you to group Azure resources physically closer together in the same region. [Learn more](#)

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

Click the **"Create"** button to create the Scale Set for the Origin.

Microsoft Azure

Home > New > Virtual machine scale set >

## Create a virtual machine scale set

Validation passed

Basics Disks Networking Scaling Management Health Advanced **Tags** [Review + create](#)

**Basics**

Subscription	Kullandıkça Öde
Resource group	antmedia-cluster
Virtual machine scale set name	antmedia-cluster-origin
Region	Germany West Central
Availability zone	None
Image	Ant Media Server Enterprise 2.1.0 - Gen1
Size	Standard DS1 v2 (1 vcpu, 3.5 GiB memory)
Authentication type	SSH public key
Username	azureuser
Key pair name	antmedia-cluster-origin_key
Azure Spot	No

**Instance**

Initial instance count	2
------------------------	---

**Disks**

OS disk type	Premium SSD
Use managed disks	Yes
Use ephemeral OS disk	No

**Networking**

Virtual network	antmedia-cluster-virtual-network
Network interfaces	antmedia-cluster-virtual-network-nic01
Load balancing	Yes

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

## Edge

Create a new Scale Set again and repeat the above steps. Then edit the Network interface part as follows. There will be Edge Subnet as the Network Interface and Edge will be selected for the Application Gateway Backend pool.



Microsoft Azure

Home > Virtual machine scale sets >

## Create a virtual machine scale set

Azure Virtual Network (VNet) enables many types of Azure resources to securely communicate with each other, the internet, and on-premises networks. [Learn more about VNets](#)

Virtual network \*

Network interface

A network interface enables an Azure virtual machine to communicate with internet, Azure, and on-premises resources. A VM can have one or more network interfaces.

+ Create new nic  Delete

NAME	CREATE PUBLI...	SUBNET	NETWORK SECURIT...	ACCELERATED N...
<input type="checkbox"/> antmedia-cluster-virtu...	No	antmedia-edge-subne...	Basic	Off

Load balancing

You can place this virtual machine scale set in the backend pool of an existing Azure load balancing solution. [Learn more](#)

Use a load balancer  Yes  No

Load balancing settings

- Application Gateway** is an HTTP/HTTPS web traffic load balancer with URL-based routing, SSL termination, session persistence, and web application firewall. [Learn more about Application Gateway](#)
- Azure Load Balancer** supports all TCP/UDP network traffic, port-forwarding, and outbound flows. [Learn more about Azure Load Balancer](#)

Load balancing options \*

Select an application gateway \*

Select a backend pool \*

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

Finally, your scale sets will look like the following.

Microsoft Azure

Home >

## Virtual machine scale sets

Default Directory

+ Add  Edit columns  Refresh  Assign tags  Start  Restart  Stop  Delete

Subscriptions: Kullandıkça Öde

Filter by name... All resource groups All locations All tags No grouping

1 of 2 items selected

Name	Status	Instances	Azure Spot eviction policy	Resource group	Location	Subscription
<input type="checkbox"/> antmedia-cluster-edge	All succeeded	2	-	antmedia-cluster	Germany West Central	Kullandıkça Öde
<input type="checkbox"/> antmedia-cluster-origin	All succeeded	1	-	antmedia-cluster	Germany West Central	Kullandıkça Öde

## Test

If the following pages are responding then your edge / origin redirects are working correctly.

Edge URL Address <https://application-gateway-ip:5443> (<https://application-gateway-ip:5443/>).

Origin URL Address: <https://application-gateway-ip> (<https://application-gateway-ip/>).

## Create First Account

Full Name \*

Username \*

Password \*

Confirm Password \*

Create Account

When you go to the Cluster Menu, you can see the joined nodes as below.

Node IP	CPU(%)	Memory(MB) - Used/Total	Last Heartbeat	Status	Actions
10.0.2.6	6	813/3405	2020-10-31 21:29:09	● Live	<a href="#">XDelete</a>
10.0.1.5	1	813/3405	2020-10-31 21:29:09	● Live	<a href="#">XDelete</a>
10.0.1.6	1	793/3405	2020-10-31 21:29:10	● Live	<a href="#">XDelete</a>

Items per page: 10 1 - 3 of 3

## Test Fly

For publishing please visit the <https://your-domain-name/WebRTCAppEE/> and click “Start Publishing” button. The default stream id is “stream1” For playing please visit the <https://your-domain-name:5443/WebRTCAppEE/player.html> and click “Start Playing” button. The default stream will be played

As you figure out, we connect default https port(443) for publishing and 5443 port for playing. Because we configure load balancer to forward default port(443) to origin group and 5443 to edge group.

Previous  
Scaling with Alibaba

Next  
Installing with Nginx load balancer