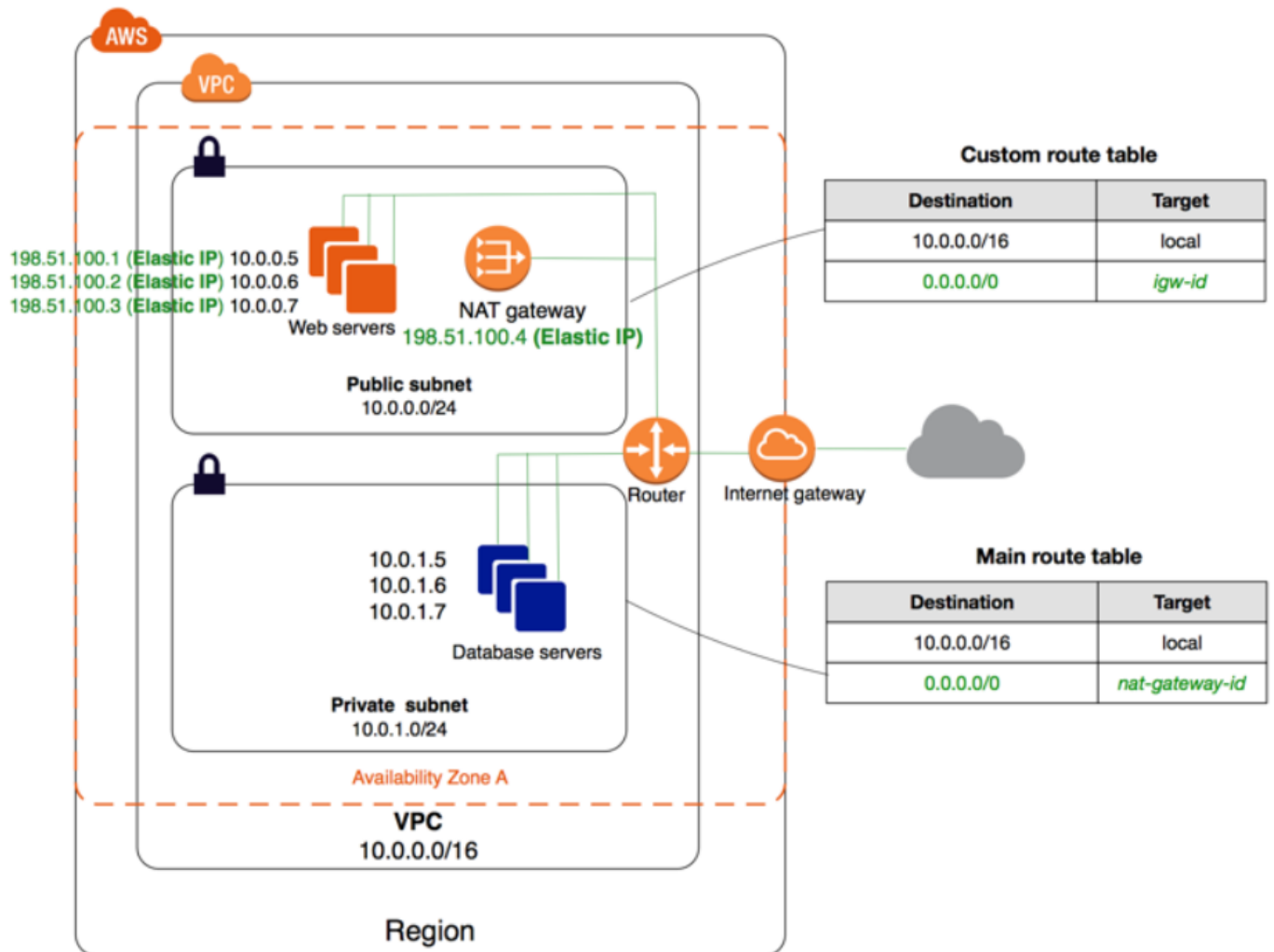


Create Custom VPC - Hand-ons

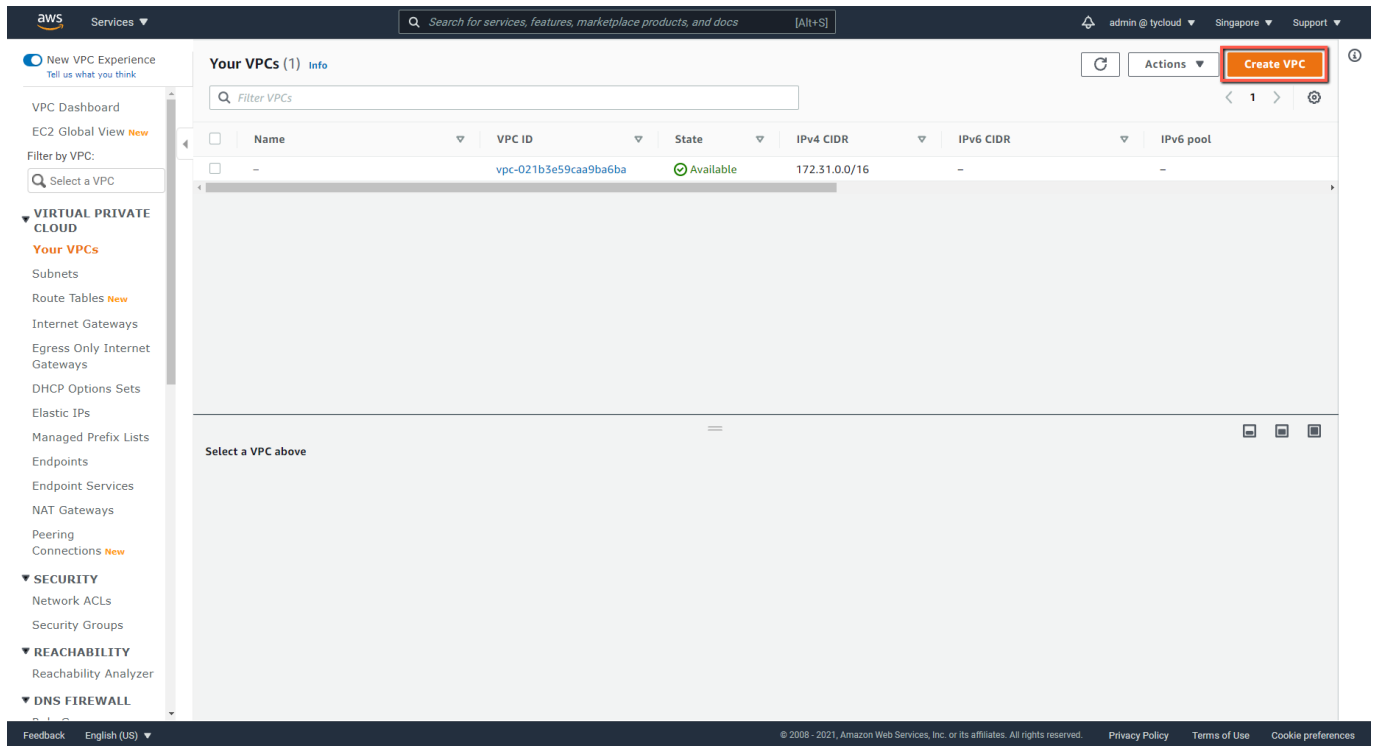


- Tạo VPC, subnet, route table, internet gateway.
- Tạo các thành phần con và gắn vào các subnet.

1. Tạo VPC

Vào dịch vụ [VPC](#) và chọn **Your VPCs**

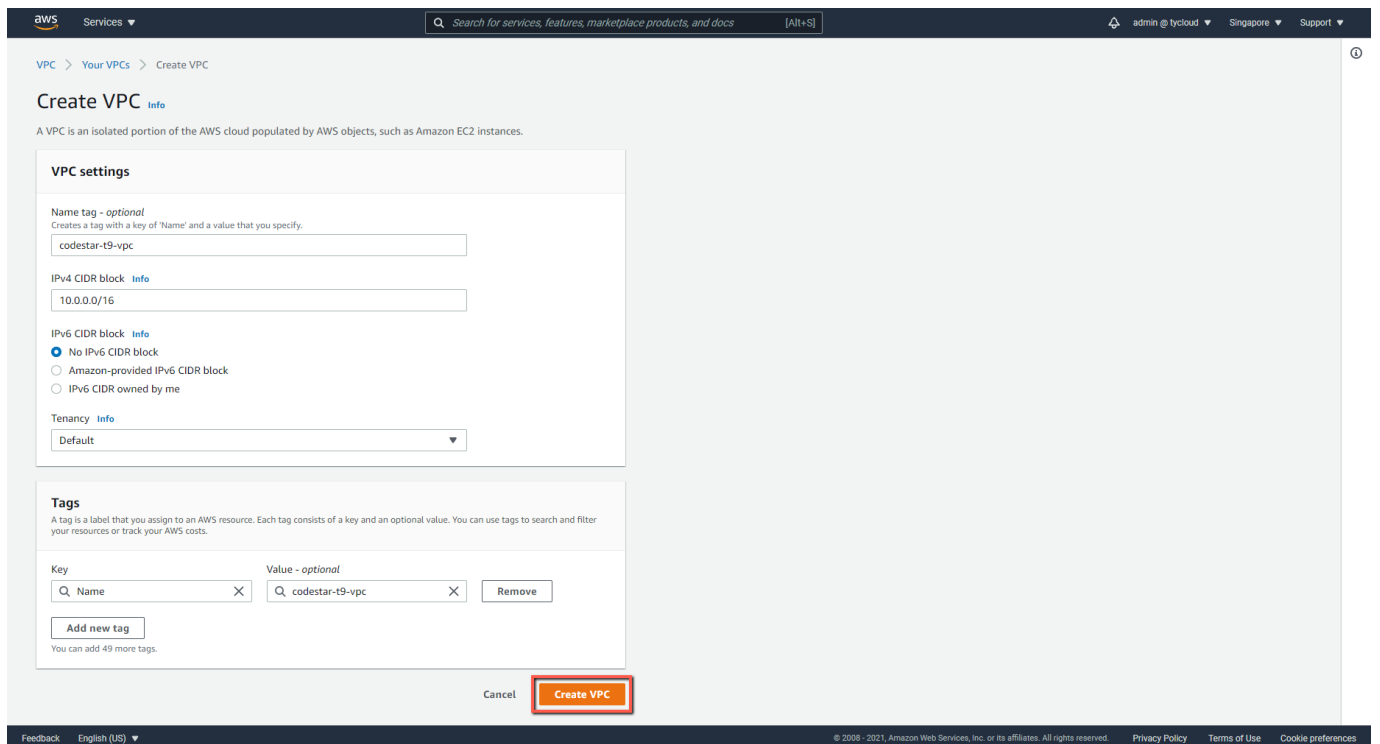
Nhấn **Create VPC**



VPC settings

- Name tag: codestar-t9-vpc
- IPv4 CIDR block: 10.0.0.0/16

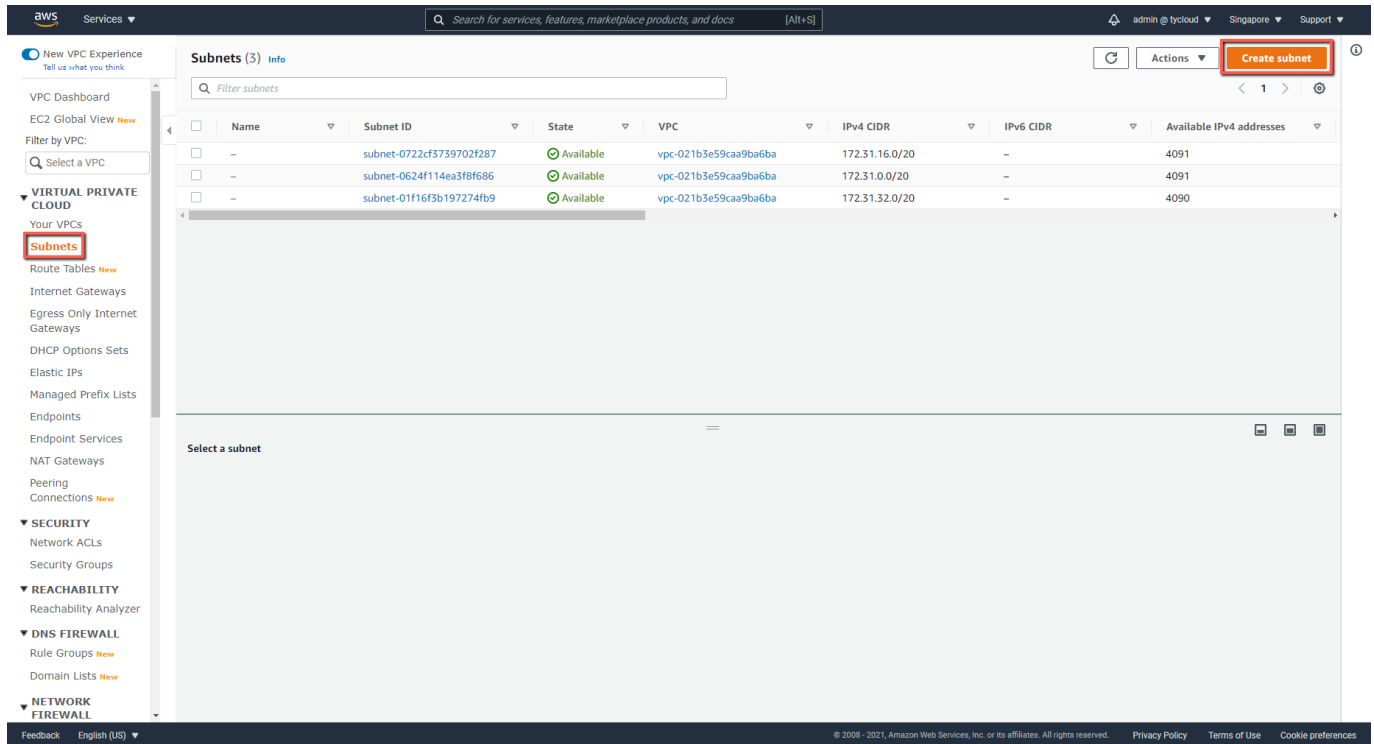
Nhấn Create VPC



2. Tạo Subnet

Tạo Public Subnet

Vào VPC chọn **Subnets** và chọn **Create subnet**



The screenshot shows the AWS Management Console interface for the 'Subnets' page. The left-hand navigation pane is expanded, showing the 'VIRTUAL PRIVATE CLOUD' section with 'Subnets' selected. The main area displays a table of subnets. The table has columns for Name, Subnet ID, State, VPC, IPv4 CIDR, IPv6 CIDR, and Available IPv4 addresses. Three subnets are listed, all in an 'Available' state. In the top right corner of the console, there is a 'Create subnet' button highlighted with a red box. Below the table, there is a section titled 'Select a subnet' with a search bar and a list of subnets.

Name	Subnet ID	State	VPC	IPv4 CIDR	IPv6 CIDR	Available IPv4 addresses
-	subnet-0722cf3739702f287	Available	vpc-021b3e59caa9ba6ba	172.31.16.0/20	-	4091
-	subnet-0624f114ea3f8f686	Available	vpc-021b3e59caa9ba6ba	172.31.0.0/20	-	4091
-	subnet-01f16f3b197274fb9	Available	vpc-021b3e59caa9ba6ba	172.31.32.0/20	-	4090

VPC

- VPC ID: codestar-t9-vpc

Subnet settings

- Subnet name: codestar-t9-public-subnet
- IPv4 CIDR block: 10.0.1.0/24

Nhấn **Add new subnet**

aws Services [Alt+S] admin @ tycloud Singapore Support

VPC

VPC ID
vpc-0a77003fe14fa36a3 (codestar-t9-vpc)

Associated VPC CIDRs
IPv4 CIDRs
10.0.0.0/16

Subnet settings
Specify the CIDR blocks and Availability Zone for the subnet.

Subnet 1 of 1

Subnet name
codestar-t9-public-subnet

Availability Zone
No preference

IPv4 CIDR block
10.0.1.0/24

Tags - optional

Key	Value - optional	
Name	codestar-t9-public-subnet	Remove

Add new tag
You can add 49 more tags.

Remove

Add new subnet

Cancel Create subnet

Feedback English (US)

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Tạo Private Subnet

- Subnet name: codestar-t9-private-subnet
- IPv4 CIDR block: 10.0.0.0/24

Nhấn Create subnet

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No preference

IPv4 CIDR block
10.0.1.0/24

Tags - optional

Key	Value - optional	
Name	codestar-t9-public-subnet	Remove

Add new tag
You can add 49 more tags.

Remove

Subnet 2 of 2

Subnet name
codestar-t9-private-subnet

Availability Zone
No preference

IPv4 CIDR block
10.0.0.0/24

Tags - optional

Key	Value - optional	
Name	codestar-t9-private-subnet	Remove

Add new tag
You can add 49 more tags.

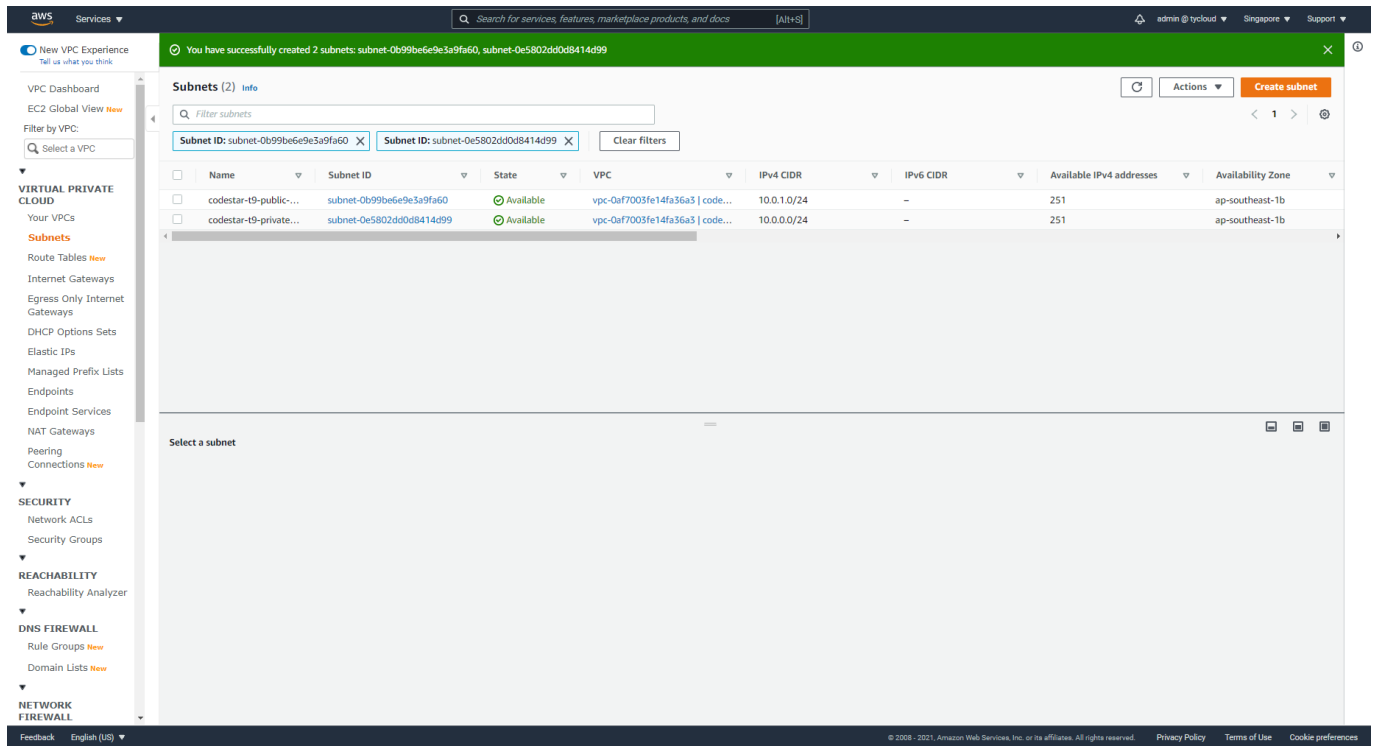
Remove

Add new subnet

Cancel Create subnet

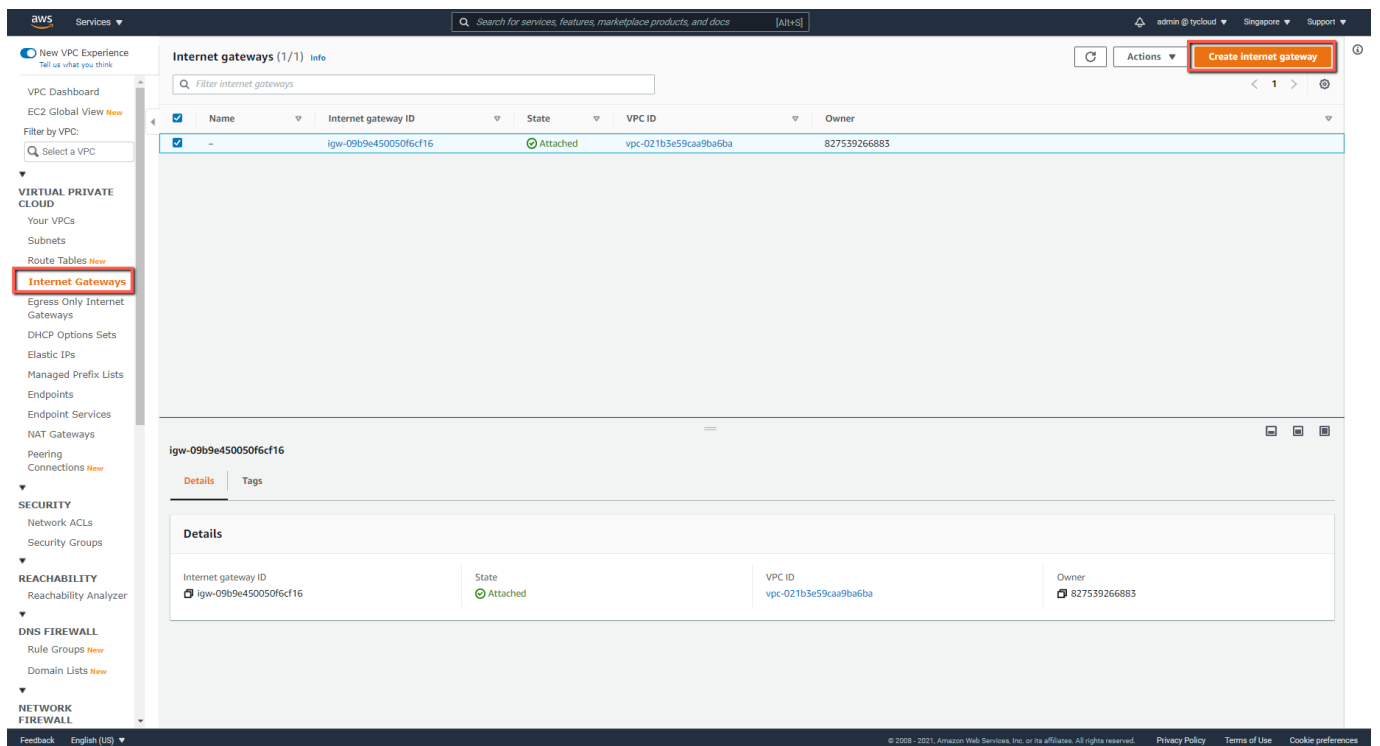
Feedback English (US)

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3. Tạo Internet Gateway

Vào [Internet Gateways](#) và chọn **Create internet gateway**



Internet gateway settings

- Name tag: codestar-t9-igw

Nhấn **Create internet gateway**

aws

Services

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Support

VPC > Internet gateways > Create internet gateway

Create internet gateway info

An internet gateway is a virtual router that connects a VPC to the internet. To create a new internet gateway specify the name for the gateway below.

Internet gateway settings

Name tag

Creates a tag with a key of 'Name' and a value that you specify.

codestar-t9-igw

Tags - optional

A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

Key

Q Name X

Value - optional

Q codestar-t9-igw X

Remove

Add new tag

You can add 49 more tags.

Cancel

Create internet gateway

Feedback

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Actions -> Attach to VPC

New VPC Experience

Tell us what you think

VPC Dashboard

EC2 Global View New

Filter by VPC:

Q Select a VPC

VIRTUAL PRIVATE CLOUD

Your VPCs

Subnets

Route Tables New

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Egress Only Internet Gateways

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Elastic IPs

Managed Prefix Lists

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SECURITY

Network ACLs

Security Groups

REACHABILITY

Reachability Analyzer

DNS FIREWALL

Rule Groups New

Domain Lists New

NETWORK FIREWALL

VPC > Internet gateways > igw-097466541f4b60cd8

igw-097466541f4b60cd8 / codestar-t9-igw

Details info

Internet gateway ID

igw-097466541f4b60cd8

State

Detached

VPC ID

-

Owner

827539266883

Actions

Attach to VPC

Detach from VPC

Manage tags

Delete

Tags

Q Search tags

Manage tags

< 1 >

Q

Key	Value
Name	codestar-t9-igw

Feedback

English (US)

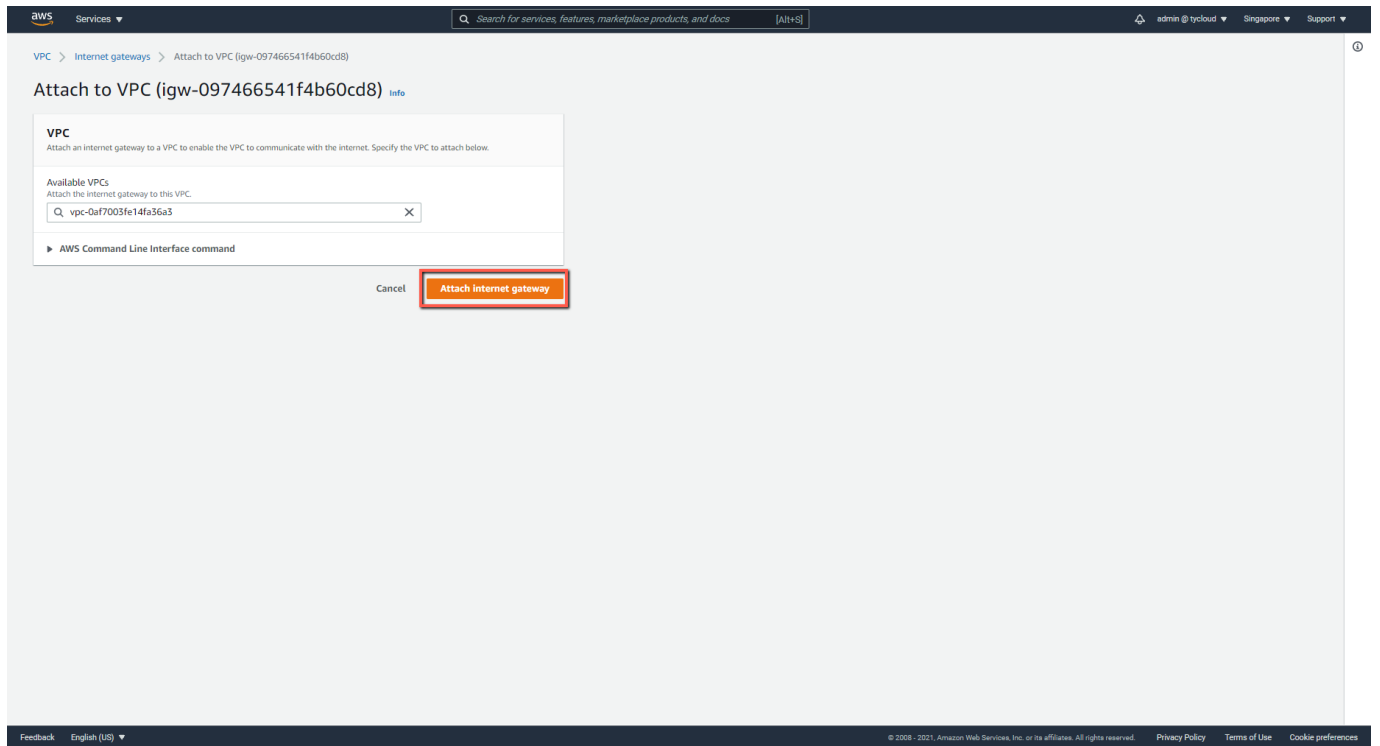
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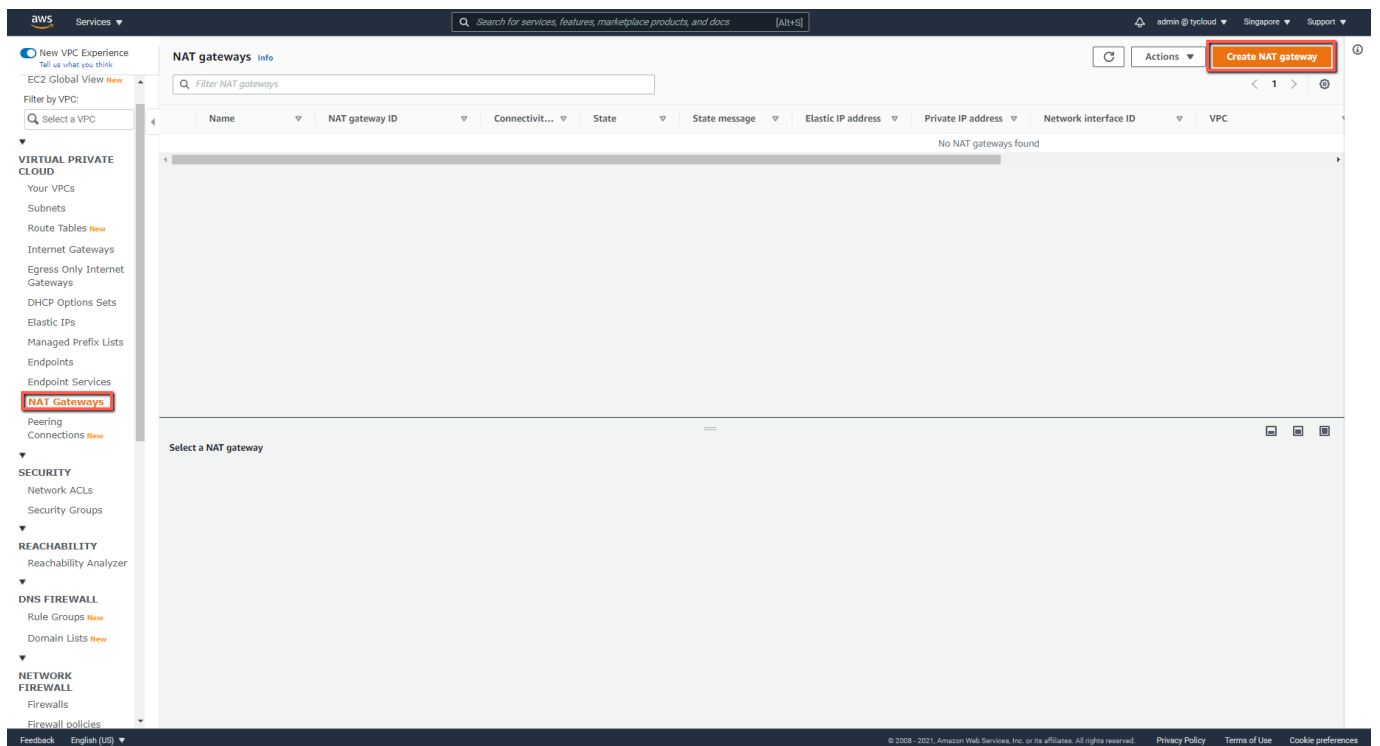
Cookie preferences

Nhấn Attach internet gateway



4. Tạo NAT Gateway

Vào NAT gateways chọn Create NAT gateway



NAT gateway settings

NAT thì sẽ nằm ở Public Subnet để giúp các instance EC2 hoặc resources ở private subnet truy cập public resources (Ví dụ: call API, AWS S3, ping google.com).

- **Name:** codestar-t9-nat-gw
- **Subnet:** codestar-t9-public-subnet

Click **Allocate Elastic IP** để tạo một địa chỉ IP Public cho NAT Gateway

Nhấn **Create NAT gateway**

NAT gateway settings

Name - optional
Create a tag with a key of `Name` and a value that you specify.
codestar-t9-nat-gw
The name can be up to 256 characters long.

Subnet
Select a subnet in which to create the NAT gateway.
subnet-0b99be6e9e3a9fa60 (codestar-t9-public-subnet)

Connectivity type
Select a connectivity type for the NAT gateway.
☒ Public
☐ Private

Elastic IP allocation ID [Info](#)
Assign an Elastic IP address to the NAT gateway.
eipalloc-0066b7da7c4c05146 [Allocate Elastic IP](#)

Tags
A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

Key	Value - optional	
Name	codestar-t9-nat-gw	Remove

[Add new tag](#)
You can add 49 more tags.

[Cancel](#) [Create NAT gateway](#)

5. Tạo Route Table

Vào **Route tables** chọn **Create route table**

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EC2 Global View

Filter by VPC:

Select a VPC

VIRTUAL PRIVATE CLOUD

Your VPCs

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Firewalls

Firewall policies

Route tables (3)

Filter route tables

Name

Route table ID

Explicit subnet associat...

Edge associations

Main

VPC

Owner ID

test

rtb-0c75301fd90a64856

subnet-0722cf3739702f...

-

No

vpc-021b3e59caa9ba6ba

827539266883

-

rtb-0c850e2a903ba5270

-

-

Yes

vpc-0af7003fe14fa36a3 | code...

827539266883

-

rtb-0d71b36e6268f46e1

-

-

Yes

vpc-021b3e59caa9ba6ba

827539266883

Create route table

Select a route table

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Private Subnet Route Table

Route table settings

- **Name:** codestar-t9-private-rtb
- **VPC:** codestar-t9-vpc

Nhấn Create route table

Services

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Support

VPC

Route tables

Create route table

Create route table

info

A route table specifies how packets are forwarded between the subnets within your VPC, the internet, and your VPN connection.

Route table settings

Name - optional

Create a tag with a key of 'Name' and a value that you specify.

codestar-t9-private-rtb

VPC

The VPC to use for this route table.

vpc-0af7003fe14fa36a3 (codestar-t9-vpc)

Tags

A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

Key

Q Name

X

Value - optional

Q codestar-t9-private-rtb

X

Remove

Add new tag

You can add 49 more tags.

Cancel

Create route table

Feedback

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Click **Edit routes** để thiết lập bảng định tuyến

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NETWORK FIREWALL

Route table rtb-0a7e9becf89d8676b | codestar-t9-private-rtb was created successfully.

X

VPC

Route tables

rtb-0a7e9becf89d8676b

rtb-0a7e9becf89d8676b / codestar-t9-private-rtb

Actions

You can now check network connectivity with Reachability Analyzer

Run Reachability Analyzer

X

Details

info

Route table ID

rtb-0a7e9becf89d8676b

Main

No

Explicit subnet associations

-

Edge associations

-

VPC

vpc-0af7003fe14fa36a3 | codestar-t9-vpc

Owner ID

827539266883

Routes

Subnet associations

Edge associations

Route propagation

Tags

Routes (1)

Filter routes

Both

Edit routes

Destination	Target	Status	Propagated
10.0.0.0/16	local	Active	No

Feedback

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- Destination: 10.0.0.0/16 / Target: local
- Destination: 0.0.0.0/0 / Target:

Nhấn **Save changes**

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Support

VPC

Route tables

rtb-0a7e9becf89d8676b

Edit routes

Edit routes

Destination	Target	Status	Propagated
10.0.0.0/16	<div>local</div>	Active	No
<div>0.0.0.0/0</div>	<div>nat-0ef13b1cfd352e8f7</div>	-	No

Add route

Cancel

Preview

Save changes

Feedback

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VPC

Route tables

rtb-0a7e9becf89d8676b

rtb-0a7e9becf89d8676b / codestar-t9-private-rtb

Actions

You can now check network connectivity with Reachability Analyzer

Run Reachability Analyzer

Details

Info

Route table ID

rtb-0a7e9becf89d8676b

Main

No

Explicit subnet associations

-

Edge associations

-

VPC

vpc-0af7003fe14fa36a3 | codestar-t9-vpc

Owner ID

827539266883

Routes

Subnet associations

Edge associations

Route propagation

Tags

Routes (2)

Filter routes

Both

Edit routes

Destination	Target	Status	Propagated
10.0.0.0/16	local	Active	No
0.0.0.0/0	nat-0ef13b1cfd352e8f7	Active	No

Feedback

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Filter by VPC:

Select a VPC

VIRTUAL PRIVATE CLOUD

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Rule Groups

Domain Lists

VPC > Route tables > rtb-0a7e9becf89d8676b

rtb-0a7e9becf89d8676b / codestar-t9-private-rtb

Actions

You can now check network connectivity with Reachability Analyzer

Run Reachability Analyzer

Details

info

Route table ID

rtb-0a7e9becf89d8676b

Main

No

Explicit subnet associations

-

Edge associations

-

VPC

vpc-0af7003fe14fa36a3 | codestar-t9-vpc

Owner ID

827539266883

Routes

Subnet associations

Edge associations

Route propagation

Tags

Explicit subnet associations (0)

Find subnet association

1

Edit subnet associations

Subnet ID

IPv4 CIDR

IPv6 CIDR

No subnet associations

You do not have any subnet associations.

Subnets without explicit associations (1)

Find subnet association

1

Edit subnet associations

The following subnets have not been explicitly associated with any route tables and are therefore associated with the main route table:

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Support

VPC > Route tables > rtb-0a7e9becf89d8676b > Edit subnet associations

Edit subnet associations

Change which subnets are associated with this route table.

Available subnets (1/2)

Filter subnet associations

1

	Name	Subnet ID	IPv4 CIDR	IPv6 CIDR	Route table ID
<input type="checkbox"/>	codestar-t9-public-subnet	subnet-0b99be6e9e3a9fa60	10.0.1.0/24	-	rtb-09278ac6bcf67fef5 / codetar-t9-public-rtb
<input checked="" type="checkbox"/>	codestar-t9-private-subnet	subnet-0e5802dd0d8414d99	10.0.0.0/24	-	Main (rtb-0c850e2a903ba5270)

Selected subnets

subnet-0e5802dd0d8414d99 / codestar-t9-private-subnet

Cancel

Save associations

Feedback

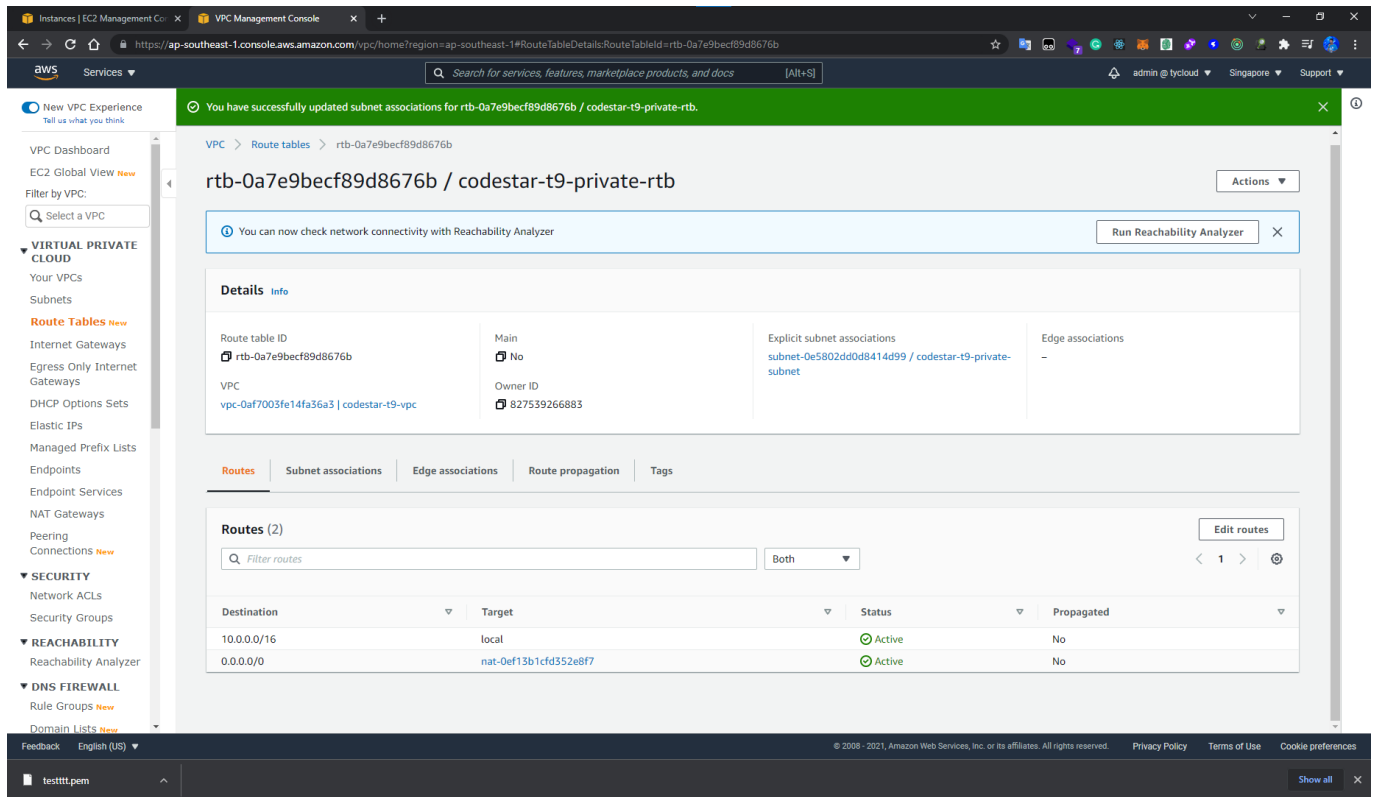
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Làm tương tự với Public Subnet Route Table

Public Subnet Route Table

Route table settings

- **Name:** codestar-t9-public-rtb
- **VPC:** codestar-t9-vpc

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Support

VPC

Route tables

Create route table

Create route table

info

A route table specifies how packets are forwarded between the subnets within your VPC, the internet, and your VPN connection.

Route table settings

Name - optional

Create a tag with a key of 'Name' and a value that you specify.

codetar-t9-public-rtb

VPC

The VPC to use for this route table.

vpc-0af7003fe14fa36a3 (codestar-t9-vpc)

Tags

A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

Key

Q Name

X

Value - optional

Q codetar-t9-public-rtb

X

Remove

Add new tag

You can add 49 more tags.

Cancel

Create route table

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Click Edit Routes

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Support

VPC

Route tables

rtb-09278ac6bcf67fef5

Edit routes

Edit routes

Destination	Target	Status	Propagated
10.0.0.0/16	Q local	Active	No
Q 0.0.0.0/0	Q igw-097466541f4b60cd8	-	No

Add route

Cancel

Preview

Save changes

Feedback

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- Destination: 10.0.0.0/16 / Target: local
- Destination: 0.0.0.0/0 / Target:

Updated routes for rtb-09278ac6bcf67fef5 / codetar-t9-public-rtb successfully

Details

VPC > Route tables > rtb-09278ac6bcf67fef5

rtb-09278ac6bcf67fef5 / codetar-t9-public-rtb

You can now check network connectivity with Reachability Analyzer

Run Reachability Analyzer

Details info

Route table ID rtb-09278ac6bcf67fef5	Main No	Explicit subnet associations -	Edge associations -
VPC vpc-0af7003fe14fa36a3 codestar-t9-vpc	Owner ID 827539266883		

Routes Subnet associations Edge associations Route propagation Tags

Routes (2)

Filter routes Both

Destination	Target	Status	Propagated
10.0.0.0/16	local	Active	No
0.0.0.0/0	igw-097466541f4b60cd8	Active	No

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Edit subnet associations

VPC > Route tables > rtb-09278ac6bcf67fef5

rtb-09278ac6bcf67fef5 / codetar-t9-public-rtb

You can now check network connectivity with Reachability Analyzer

Run Reachability Analyzer

Details info

Route table ID rtb-09278ac6bcf67fef5	Main No	Explicit subnet associations -	Edge associations -
VPC vpc-0af7003fe14fa36a3 codestar-t9-vpc	Owner ID 827539266883		

Routes Subnet associations Edge associations Route propagation Tags

Explicit subnet associations (0)

Find subnet association

1

No subnet associations
You do not have any subnet associations.

Subnets without explicit associations (2)

The following subnets have not been explicitly associated with any route tables and are therefore associated with the main route table:

Find subnet association

1

Edit subnet associations

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Support

VPC

Route tables

rtb-09278ac6bcf67fef5

Edit subnet associations

Edit subnet associations

Change which subnets are associated with this route table.

Available subnets (1/2)

Filter subnet associations

< 1 > ⌕

	Name	Subnet ID	IPv4 CIDR	IPv6 CIDR	Route table ID
<input checked="" type="checkbox"/>	codestar-t9-public-subnet	subnet-0b99be6e9e3a9fa60	10.0.1.0/24	–	Main (rtb-0c850e2a903ba5270)
<input type="checkbox"/>	codestar-t9-private-subnet	subnet-0e5802dd0d8414d99	10.0.0.0/24	–	Main (rtb-0c850e2a903ba5270)

Selected subnets

subnet-0b99be6e9e3a9fa60 / codestar-t9-public-subnet X

Cancel

Save associations

Feedback

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6. Tạo EC2 (Kiểm tra kết nối)

- Tạo 1 EC2 ở Private Subnet (Ubuntu)
- Tạo 1 EC2 ở Public Subnet (Bastion Host)
- Thử ping giữa EC2 Public và EC2 Private bằng Private IP
- Thử ping google từ EC2 Private

Tạo EC2 Private

Instances | EC2 Management Console

https://ap-southeast-1.console.aws.amazon.com/ec2/v2/home?region=ap-southeast-1#Instances:sort=descinstanceid

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New EC2 Experience

Launch Instance Connect Actions

Filter by tags and attributes or search by keyword

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 IPs	Key
	i-0b46b52e04443fa91	t3.medium	ap-southeast-1b	stopped		None		-	-	test

Instances

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Capacity Reservations

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Elastic Block Store

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Snapshots

Lifecycle Manager

Network & Security

Security Groups

Elastic IPs

Placement Groups

Key Pairs

Network Interfaces

Load Balancing

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Step 1: Choose an Amazon Machine Image (AMI)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.

X

Search by Systems Manager parameter

Quick Start (8)

< > 1 to 8 of 8 AMIs > |

My AMIs (0) AWS Marketplace (871) Community AMIs (32624)	<div style="margin-bottom: 10px;"> Ubuntu Server 20.04 LTS (HVM), SSD Volume Type - ami-0d058fe428540cd89 (64-bit x86) / ami-077adae4d983338da (64-bit Arm) </div> <p style="font-size: x-small;"> Ubuntu Server 20.04 LTS (HVM),EBS General Purpose (SSD) Volume Type. Support available from Canonical (http://www.ubuntu.com/cloud/services). Root device type: ebs Virtualization type: hvm ENA Enabled: Yes </p> <div style="float: right; background-color: #007bff; color: white; padding: 5px 10px; border-radius: 5px;">Select</div> <div style="clear: both;"></div> <div style="margin-top: 5px;"> <input checked="" type="radio"/> 64-bit (x86) <input type="radio"/> 64-bit (Arm) </div>
	<div style="margin-bottom: 10px;"> Ubuntu Server 18.04 LTS (HVM), SSD Volume Type - ami-055147723b7bca09a (64-bit x86) / ami-062e2ec9a8bfa02d6 (64-bit Arm) </div> <p style="font-size: x-small;"> Ubuntu Server 18.04 LTS (HVM),EBS General Purpose (SSD) Volume Type. Support available from Canonical (http://www.ubuntu.com/cloud/services). Root device type: ebs Virtualization type: hvm ENA Enabled: Yes </p> <div style="float: right; background-color: #007bff; color: white; padding: 5px 10px; border-radius: 5px;">Select</div> <div style="clear: both;"></div> <div style="margin-top: 5px;"> <input checked="" type="radio"/> 64-bit (x86) <input type="radio"/> 64-bit (Arm) </div>
	<div style="margin-bottom: 10px;"> Deep Learning AMI (Ubuntu 18.04) Version 50.0 - ami-03cd4f13212437f05 </div> <p style="font-size: x-small;"> MXNet-1.8.0 & 1.7.0, TensorFlow-2.4.3, 2.3.4 & 1.15.5, PyTorch-1.7.1 & 1.8.1, Neuron, & others. NVIDIA CUDA, cuDNN, NCCL, Intel MKL-DNN, Docker, NVIDIA-Docker & EFA support. For fully managed experience, check: https://aws.amazon.com/sagemaker Root device type: ebs Virtualization type: hvm ENA Enabled: Yes </p> <div style="float: right; background-color: #007bff; color: white; padding: 5px 10px; border-radius: 5px;">Select</div> <div style="clear: both;"></div> <div style="text-align: right; margin-top: 5px;">64-bit (x86)</div>
	<div style="margin-bottom: 10px;"> Deep Learning AMI (Ubuntu 16.04) Version 50.0 - ami-0189460efb7c73ea6 </div> <p style="font-size: x-small;"> MXNet-1.8.0 & 1.7.0, TensorFlow-2.4.3, 2.3.4 & 1.15.5, PyTorch-1.4.0 & 1.8.1, EI, Neuron, & others. NVIDIA CUDA, cuDNN, NCCL, Intel MKL-DNN, Docker, NVIDIA-Docker & EFA. For fully managed experience, check: https://aws.amazon.com/sagemaker Root device type: ebs Virtualization type: hvm ENA Enabled: Yes </p> <div style="float: right; background-color: #007bff; color: white; padding: 5px 10px; border-radius: 5px;">Select</div> <div style="clear: both;"></div> <div style="text-align: right; margin-top: 5px;">64-bit (x86)</div>
	<div style="margin-bottom: 10px;"> Deep Learning Base AMI (Ubuntu 18.04) Version 43.0 - ami-0e7bc1bd5116f57f5 </div> <p style="font-size: x-small;"> Built with NVIDIA CUDA, cuDNN, NCCL, GPU Drivers, Intel MKL-DNN, Docker, NVIDIA-Docker and EFA support. For a fully managed experience, check: https://aws.amazon.com/sagemaker Root device type: ebs Virtualization type: hvm ENA Enabled: Yes </p> <div style="float: right; background-color: #007bff; color: white; padding: 5px 10px; border-radius: 5px;">Select</div> <div style="clear: both;"></div> <div style="text-align: right; margin-top: 5px;">64-bit (x86)</div>
	<div style="margin-bottom: 10px;"> Ubuntu Server 20.04 LTS (HVM) with SQL Server 2019 Standard - ami-0e4dcca1e11c2635a2 </div> <p style="font-size: x-small;"> Microsoft SQL Server 2019 Standard edition on Ubuntu Server 20.04 LTS. Root device type: ebs Virtualization type: hvm ENA Enabled: Yes </p> <div style="float: right; background-color: #007bff; color: white; padding: 5px 10px; border-radius: 5px;">Select</div> <div style="clear: both;"></div> <div style="text-align: right; margin-top: 5px;">64-bit (x86)</div>

Launch instance wizard | EC2 M... x

https://ap-southeast-1.console.aws.amazon.com/ec2/v2/home?region=ap-southeast-1#LaunchInstanceWizard:

aws Services Search for services, features, marketplace products, and docs [Alt+S]

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by: All instance families Current generation Show/Hide Columns

Currently selected: t2.micro (- ECUs, 1 vCPUs, 2.5 GHz, -, 1 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	t2	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	t2	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.large	2	8	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.xlarge	4	16	EBS only	-	Moderate	Yes
<input type="checkbox"/>	t2	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
<input type="checkbox"/>	t3	t3.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	t3	t3.micro	2	1	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	t3	t3.small	2	2	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	t3	t3.medium	2	4	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	t3	t3.large	2	8	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	t3	t3.xlarge	4	16	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	t3	t3.2xlarge	8	32	EBS only	Yes	Up to 5 Gigabit	Yes

Cancel Previous Review and Launch Next: Configure Instance Details

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Chọn Private subnet của custom VPC chúng ta vừa tạo

Launch instance wizard | EC2 M... x

https://ap-southeast-1.console.aws.amazon.com/ec2/v2/home?region=ap-southeast-1#LaunchInstanceWizard:

aws Services Search for services, features, marketplace products, and docs [Alt+S]

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of Instances 1 Launch into Auto Scaling Group

Purchasing option ☐ Request Spot instances

Network vpc-0af7003fe14fa36a3 | codestar-t9-vpc Create new VPC

Subnet subnet-0e5802dd0d8414d99 | codestar-t9-private-su Create new subnet
251 IP Addresses available

Auto-assign Public IP Use subnet setting (Disable)

Placement group ☐ Add instance to placement group

Capacity Reservation Open

Domain join directory No directory Create new directory

IAM role None Create new IAM role

Shutdown behavior Stop

Stop - Hibernate behavior ☐ Enable hibernation as an additional stop behavior

Enable termination protection ☐ Protect against accidental termination

Monitoring ☐ Enable CloudWatch detailed monitoring
Additional charges apply.

Tenancy Shared - Run a shared hardware instance
Additional charges will apply for dedicated tenancy.

Credit specification ☐ Unlimited
Additional charges may apply

File systems Add file system Create new file system

Cancel Previous Review and Launch Next: Add Storage

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Để cho phép ping ta phải mở giao thức **All ICMP v4** cho Private Instance

Launch instance wizard | EC2 M...

https://ap-southeast-1.console.aws.amazon.com/ec2/v2/home?region=ap-southeast-1#LaunchInstanceWizard:

admin @ tycloud Singapore Support

1. Choose AMI2. Choose Instance Type3. Configure Instance4. Add Storage5. Add Tags6. Configure Security Group7. Review

Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group: ☒ Create a new security group ☐ Select an existing security group

Security group name:

Description:

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop
All ICMP - IPw	ICMP	0 - 65535	Anywhere 0.0.0.0/0, ::/0	e.g. SSH for Admin Desktop

Add Rule

Warning

Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

CancelPreviousReview and Launch

FeedbackEnglish (US)

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Còn lại chúng ta bấm **Next** để tạo instance như thông thường

Tiếp theo, chúng ta sẽ tạo EC2 Public (Bastion Host)

Launch instance wizard | EC2 M...

https://ap-southeast-1.console.aws.amazon.com/ec2/v2/home?region=ap-southeast-1#LaunchInstanceWizard:

admin @ tycloud Singapore Support

1. Choose AMI2. Choose Instance Type3. Configure Instance4. Add Storage5. Add Tags6. Configure Security Group7. Review

Step 1: Choose an Amazon Machine Image (AMI)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.

Quick Start (8)

My AMIs (0)

AWS Marketplace (871)

Community AMIs (32624)

☐ Free tier only

Search by Systems Manager parameter

1 to 8 of 8 AMIs

<div>Free tier eligible</div> <div>Ubuntu Server 20.04 LTS (HVM), SSD Volume Type - ami-0d058fe428540cd89 (64-bit x86) / ami-077adae4d983338da (64-bit Arm)</div> <div>Ubuntu Server 20.04 LTS (HVM),EBS General Purpose (SSD) Volume Type. Support available from Canonical (http://www.ubuntu.com/cloud/services).</div> <div>Root device type: ebs Virtualization type: hvm ENA Enabled: Yes</div>	<div>Select</div> <div><input checked="" type="radio"/> 64-bit (x86) <input type="radio"/> 64-bit (Arm)</div>
<div>Free tier eligible</div> <div>Ubuntu Server 18.04 LTS (HVM), SSD Volume Type - ami-055147723b7bca09a (64-bit x86) / ami-062e2ec9a8bfa02d6 (64-bit Arm)</div> <div>Ubuntu Server 18.04 LTS (HVM),EBS General Purpose (SSD) Volume Type. Support available from Canonical (http://www.ubuntu.com/cloud/services).</div> <div>Root device type: ebs Virtualization type: hvm ENA Enabled: Yes</div>	<div>Select</div> <div><input checked="" type="radio"/> 64-bit (x86) <input type="radio"/> 64-bit (Arm)</div>
<div>Deep Learning AMI (Ubuntu 18.04) Version 50.0 - ami-03cd4f13212437f05</div> <div>MXNet-1.8.0 & 1.7.0, TensorFlow-2.4.3, 2.3.4 & 1.15.5, PyTorch-1.7.1 & 1.8.1, Neuron, & others. NVIDIA CUDA, cuDNN, NCCL, Intel MKL-DNN, Docker, NVIDIA-Docker & EFA support. For fully managed experience, check: https://aws.amazon.com/sagemaker</div> <div>Root device type: ebs Virtualization type: hvm ENA Enabled: Yes</div>	<div>Select</div> <div>64-bit (x86)</div>
<div>Deep Learning AMI (Ubuntu 16.04) Version 50.0 - ami-0188460efb7c73ea6</div> <div>MXNet-1.8.0 & 1.7.0, TensorFlow-2.4.3, 2.3.4 & 1.15.5, PyTorch-1.4.0 & 1.8.1, EI, Neuron, & others. NVIDIA CUDA, cuDNN, NCCL, Intel MKL-DNN, Docker, NVIDIA-Docker & EFA. For fully managed experience, check: https://aws.amazon.com/sagemaker</div> <div>Root device type: ebs Virtualization type: hvm ENA Enabled: Yes</div>	<div>Select</div> <div>64-bit (x86)</div>
<div>Deep Learning Base AMI (Ubuntu 18.04) Version 43.0 - ami-0e7bcb1d5116f57f5</div> <div>Built with NVIDIA CUDA, cuDNN, NCCL, GPU Drivers, Intel MKL-DNN, Docker, NVIDIA-Docker and EFA support. For a fully managed experience, check: https://aws.amazon.com/sagemaker</div> <div>Root device type: ebs Virtualization type: hvm ENA Enabled: Yes</div>	<div>Select</div> <div>64-bit (x86)</div>
<div>Ubuntu Server 20.04 LTS (HVM) with SQL Server 2019 Standard - ami-0e4dca1e11c2635a2</div>	<div>Select</div>

testttt.pem

Show all

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Launch instance wizard | EC2 M...

https://ap-southeast-1.console.aws.amazon.com/ec2/v2/home?region=ap-southeast-1#LaunchInstanceWizard:

aws Services Search for services, features, marketplace products, and docs [Alt+S]

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by: All instance families Current generation Show/Hide Columns

Currently selected: t2.micro (- ECUs, 1 vCPUs, 2.5 GHz, -, 1 GiB memory, EBS only)

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	t2	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	t2	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.large	2	8	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.xlarge	4	16	EBS only	-	Moderate	Yes
<input type="checkbox"/>	t2	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
<input type="checkbox"/>	t3	t3.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	t3	t3.micro	2	1	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	t3	t3.small	2	2	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	t3	t3.medium	2	4	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	t3	t3.large	2	8	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	t3	t3.xlarge	4	16	EBS only	Yes	Up to 5 Gigabit	Yes

Cancel Previous **Review and Launch** Next: Configure Instance Details

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Lưu ý: Chúng ta chọn custom VPC và chọn Public Subnet, enable Auto-assign Public IP để có public IP

Launch instance wizard | EC2 M...

https://ap-southeast-1.console.aws.amazon.com/ec2/v2/home?region=ap-southeast-1#LaunchInstanceWizard:

aws Services Search for services, features, marketplace products, and docs [Alt+S]

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of instances 1 Launch into Auto Scaling Group

Purchasing option ☐ Request Spot instances

Network vpc-0af7003fe14fa36a3 | codestar-t9-vpc Create new VPC

Subnet subnet-0b99be6e9e3a9fa60 | codestar-t9-public-sub Create new subnet
250 IP Addresses available

Auto-assign Public IP Enable

Placement group ☐ Add instance to placement group

Capacity Reservation Open

Domain join directory No directory Create new directory

IAM role None Create new IAM role

Shutdown behavior Stop

Stop - Hibernate behavior ☐ Enable hibernation as an additional stop behavior

Enable termination protection ☐ Protect against accidental termination

Monitoring ☐ Enable CloudWatch detailed monitoring
Additional charges apply.

Tenancy Shared - Run a shared hardware instance
Additional charges will apply for dedicated tenancy.

Credit specification ☐ Unlimited
Additional charges may apply

Cancel Previous **Review and Launch** Next: Add Storage

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Chỉ cần mở port SSH

Launch instance wizard | EC2 M...

https://ap-southeast-1.console.aws.amazon.com/ec2/v2/home?region=ap-southeast-1#LaunchInstanceWizard:

Services

Search for services, features, marketplace products, and docs [Alt+S]

admin @ tycloud Singapore Support

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group: ☒ Create a new security group ☐ Select an existing security group

Security group name:

Description:

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop

Add Rule

Warning

Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Cancel Previous **Review and Launch**

Feedback English (US)

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Launch instance wizard | EC2 M...

https://ap-southeast-1.console.aws.amazon.com/ec2/v2/home?region=ap-southeast-1#LaunchInstanceWizard:

Services

Search for services, features, marketplace products, and docs [Alt+S]

admin @ tycloud Singapore Support

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 7: Review Instance Launch

Warning

Improve your instances' security. Your security group, launch-wizard-20, is open to the world. Your instances may be accessible from any IP address. We recommend that you update your security group rules to allow access from known IP addresses only. You can also open additional ports in your security group to facilitate access to the application or service you're running, e.g., HTTP (80) for web servers. [Edit security groups](#)

AMI Details [Edit AMI](#)

Ubuntu Server 20.04 LTS (HVM), SSD Volume Type - ami-0d058fe428540cd89

Free tier eligible

Ubuntu Server 20.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical (<http://www.ubuntu.com/cloud/services>).

Root Device Type: ebs Virtualization type: hvm

Instance Type [Edit instance type](#)

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GiB)	EBS-Optimized Available	Network Performance
t2.micro	-	1	1	EBS only	-	Low to Moderate

Security Groups [Edit security groups](#)

Security group name: launch-wizard-20

Description: launch-wizard-20 created 2021-10-20T23:28:14.733+07:00

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	0.0.0.0/0	

Instance Details [Edit instance details](#)

Storage [Edit storage](#)

Tags [Edit tags](#)

Cancel Previous **Launch**

Feedback English (US)

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SSH vào EC2 Public bằng lệnh

ssh -i "testttt.pem" ubuntu@13.229.86.36

```
ubuntu@ip-10-0-1-144:~$ ssh -i "testttt.pem" ubuntu@13.229.86.36
ssh: connect to host 13.229.86.36 port 22: Connection timed out

C:\Users\Ty\Downloads>ssh -i "testttt.pem" ubuntu@13.229.86.36
ssh: connect to host 13.229.86.36 port 22: Connection timed out

C:\Users\Ty\Downloads>ssh -i "testttt.pem" ubuntu@13.229.86.36
The authenticity of host '13.229.86.36 (13.229.86.36)' can't be established.
ECDSA key fingerprint is SHA256:rw/7Yf4PCKLq6FTIG8xb6xgcnPg+ldnIZUgkCMeRro.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '13.229.86.36' (ECDSA) to the list of known hosts.
Welcome to Ubuntu 20.04.2 LTS (GNU/Linux 5.4.0-1045-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

System information as of Wed Oct 20 16:41:23 UTC 2021

System load: 0.0          Processes:           100
Usage of /:  16.4% of 7.69GB    Users logged in:    0
Memory usage: 22%            IPv4 address for eth0: 10.0.1.144
Swap usage:  0%

1 update can be applied immediately.
To see these additional updates run: apt list --upgradable

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/*copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-10-0-1-144:~$
```

Copy địa chỉ IP của private instance

The screenshot shows the AWS Management Console interface. On the left, there is a navigation menu with options like EC2 Dashboard, Events, Tags, Limits, Instances, Images, Elastic Block Store, and Network & Security. The main area displays a table of EC2 instances. One instance, 'i-0aa17124872d0077b', is highlighted. Below the table, the details for this instance are shown, including its state (running), type (t2.micro), and private IP address (10.0.0.57).

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 IPs	Key Pair
	i-0b46b52e04443fa91	t3.medium	ap-southeast-1b	stopped	2/2 checks ...	None	-	-	-	test
	i-0aa17124872d0077b	t2.micro	ap-southeast-1b	running	2/2 checks ...	None	-	-	-	test
	i-057f528739575b73e	t2.micro	ap-southeast-1b	running	2/2 checks ...	None	-	13.229.86.36	-	test

Instance: i-0aa17124872d0077b Private IP: 10.0.0.57

Description	Status Checks	Monitoring	Tags
Instance ID: i-0aa17124872d0077b	Instance state: running	Instance type: t2.micro	Public DNS (IPv4): -
Private DNS: ip-10-0-0-57.ap-southeast-1.compute.internal	Private IP: 10.0.0.57	Secondary private IPs: -	IPv4 Public IP: -
VPC ID: vpc-0af7003fe14fa36a3 (codestar-t9-vpc)	Platform: Ubuntu	Network interfaces: eth0	IPv6 IPs: -
Source/dest. check: True	T2/T3 Unlimited: Disabled	Availability zone: ap-southeast-1b	Elastic IPs: -
EBS-optimized: False	Subnet ID: subnet-0e5802d0d8414d99 (codestar-t9-private-subnet)	Security groups: launch-wizard-19, view inbound rules, view outbound rules	AMI ID: ubuntu/images/hvm-ssd/ubuntu-focal-20.04-amd64-server-20210430 (ami-0d058fa428540cd89)
	Key pair name: testttt	Scheduled events: No scheduled events	Subnet ID: subnet-0e5802d0d8414d99 (codestar-t9-private-subnet)
	Owner: 827539266883		IAM role: -
	Launch time: October 20, 2021 at 11:31:00 PM UTC+7 (less than one hour)		

Thử ping 10.0.0.57

```
ubuntu@ip-10-0-1-144:~$ ssh -i "testttt.pem" ubuntu@13.229.86.36
ssh: connect to host 13.229.86.36 port 22: Connection timed out

C:\Users\Ty\Downloads>ssh -i "testttt.pem" ubuntu@13.229.86.36
ssh: connect to host 13.229.86.36 port 22: Connection timed out

C:\Users\Ty\Downloads>ssh -i "testttt.pem" ubuntu@13.229.86.36
The authenticity of host '13.229.86.36 (13.229.86.36)' can't be established.
ECDSA key fingerprint is SHA256:rw/7Yf4PCKLq6FTIG8xbxgcNTPg+ldnIZUgkCMeRro.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '13.229.86.36' (ECDSA) to the list of known hosts.
Welcome to Ubuntu 20.04.2 LTS (GNU/Linux 5.4.0-1045-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

System information as of Wed Oct 20 16:41:23 UTC 2021

System load:  0.0               Processes:    100
Usage of /:   16.4% of 7.69GB   Users logged in:  0
Memory usage: 22%              IPV4 address for eth0: 10.0.1.144
Swap usage:   0%

1 update can be applied immediately.
To see these additional updates run: apt list --upgradable

The list of available updates is more than a week old.
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the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/*copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-10-0-1-144:~$ ping 10.0.0.57
PING 10.0.0.57 (10.0.0.57) 56(84) bytes of data:
64 bytes from 10.0.0.57: icmp_seq=1 ttl=64 time=0.367 ms
64 bytes from 10.0.0.57: icmp_seq=2 ttl=64 time=0.436 ms
64 bytes from 10.0.0.57: icmp_seq=3 ttl=64 time=0.458 ms
^
```

ping 10.0.0.57 touch ssh-key.pem nano ssh-key.pem (Ctrl + X để lưu) chmod 400 ssh-key.pem

ssh -i "ssh-key.pem" ubuntu@10.0.0.57

```
Select ubuntu@ip-10-0-1-144:~$ nano ssh-key.pem
GNU nano 2.9.3 ssh-key.pem
-----BEGIN RSA PRIVATE KEY-----
MIIEpQIBAAKCAQEAxb5fKciI3NppBegiVXR2xQo3zqbFNx12/wkKUj8NvyXIY84c
2VnEokRakgvVB7quq8wqzr35QjFM4w1JnrxU+IztSH3FVnkOufQpS81gH81KO
15qV/XSOYFK8b8v74PHVVK0vQn3yVeA8Jf/X8R1ZAbt8wDpRUX2r5m7wken
W8PLf8pb8eAFVtWcpca4Pzck71Mq0tlyj6ddq2WuPMeIR4K866cVsaP6Ad9aPCh
gJkpldJL//4JupS54w7hpDrOc368Kxq3f64VfXJETE2G1/rABvw4MALCKooSAA
PTPml9VfXsxfuLQq4rk0x0p+Sw8HucfanVHJ1QA0A8a018AQCac2yDifcawGC
17gxV5tcIMw2/fyKCS8YhngXRftjCv0Rt3jy8f6z2dJ8NjgLMwX4aC7DxLGO
zDFbcyADvQ802rwxK1ucPT+10q+TmH3t5E5N1vg2D5vRC+SE0v5Ken/10bDXBN
vIm/c7LPm5TfPnNieg4Uixdv+z/dp3jMHGCCBRYK85F1/k1PA1bunIbmhtPn38
/dPcazi2cGq55Xj39r9MA6uPD1/0eKt8N05avTt1GmMc2KutXzo1G1G1eK9
F313MnCQ2zPhocv0TL013/Neelwzzte8G0v0vE10p3jyH0H10F50b8gKCUU
yAc+H/UBA0G8AD+C4ekvVRjVcu1eHcc3HLVB8vSHF/8qoXUK8032QXUegko6n+
amnk2J0XSektmcDcVc3H2VcQ24hIcaZHHLX1w6A17x4NABCHT/nx3x10r3VhP4K
UzhryRy0e0/ZUJ0u4MZGj5NvneI20K70z1gK191a0P51yfo10E2D2h1A0G8AHND
Yvuf+2c4nd00b07nStah0uK6630QAV0nU1zQ4fmgdA1FDCHMshu106t8Ea
R/7g2eHjtdXC2wSE85X+1U6R4K7nEcsWp30hndDHJ3J2Krf9Kc2bpr1SKd0w0
St/Aex+1W0NP1j3RUB0IXAYt/ctU10AEKYDwxAcGBAIAxnEwpw290CqPh4e0/
E6E6E253n1BhcHvXdeQ7Q0dKcp8IB8h46BSmmfz1DKAKfXm1cjregC1A7W/
1KfvpI18kd1z4NHQ8B3ETmUQ0Q0eB3fzE6tQx5S6M5H420uxRnSRA883DP8/o
Nw21eNahmdVaR14KKox8BhQhAoGBAion5qffTj9yq2r3EXnPV1kvQgrB2uceZK5a
gFwMRz2FEM8B0uHQ1ncftu0cL8dLgEuz314MwCB2uzqV4mZ5rXw5TS9/PeY4SE
yJUnX0hAh92o4H5eVee8e8m5y0p1c+tcP7L50n/k1d41/2iCH80v8Ua8B
mBVeHURRAoGAxNgzpCtRsPV742ua3MwBOuBLQH1u+Mv8APvS15USeXx92j1I1
5gi53dgTxurg1tiITVBA780t1p10QH+nLrVAIDJ1681t3bj/Y+Y/en9Xa1Gub5x1
IICND+8rU4M1mw493na1Lw198vR56x/pfVRWuuAU/keRI1ai+zN4+
-----END RSA PRIVATE KEY-----
```

```

ubuntu@ip-10-0-0-57:~$
64 bytes from 10.0.0.57: icmp_seq=10 ttl=64 time=0.473 ms
64 bytes from 10.0.0.57: icmp_seq=11 ttl=64 time=0.429 ms
64 bytes from 10.0.0.57: icmp_seq=12 ttl=64 time=0.412 ms
64 bytes from 10.0.0.57: icmp_seq=13 ttl=64 time=0.409 ms
64 bytes from 10.0.0.57: icmp_seq=14 ttl=64 time=0.411 ms
64 bytes from 10.0.0.57: icmp_seq=15 ttl=64 time=0.420 ms
64 bytes from 10.0.0.57: icmp_seq=16 ttl=64 time=0.412 ms
64 bytes from 10.0.0.57: icmp_seq=17 ttl=64 time=0.449 ms
64 bytes from 10.0.0.57: icmp_seq=18 ttl=64 time=0.447 ms
64 bytes from 10.0.0.57: icmp_seq=19 ttl=64 time=0.410 ms
64 bytes from 10.0.0.57: icmp_seq=20 ttl=64 time=0.412 ms
64 bytes from 10.0.0.57: icmp_seq=21 ttl=64 time=0.448 ms
64 bytes from 10.0.0.57: icmp_seq=22 ttl=64 time=0.396 ms
64 bytes from 10.0.0.57: icmp_seq=23 ttl=64 time=0.463 ms
64 bytes from 10.0.0.57: icmp_seq=24 ttl=64 time=0.416 ms
64 bytes from 10.0.0.57: icmp_seq=25 ttl=64 time=0.416 ms
^C
--- 10.0.0.57 ping statistics ---
25 packets transmitted, 25 received, 0% packet loss, time 2457ms
rtt min/avg/max/mdev = 0.367/0.428/0.473/0.025 ms
ubuntu@ip-10-0-1-144:~$ touch ssh-key.pem
ubuntu@ip-10-0-1-144:~$ nano ssh-key.pem
ubuntu@ip-10-0-1-144:~$ chmod 400 ssh-key.pem
ubuntu@ip-10-0-1-144:~$ history
1 ping 10.0.0.57
2 touch ssh-key.pem
3 nano ssh-key.pem
4 chmod 400 ssh-key.pem
5 history
ubuntu@ip-10-0-1-144:~$ ssh -i "ssh-key.pem" ubuntu@10.0.0.57
The authenticity of host '10.0.0.57 (10.0.0.57)' can't be established.
ECDSA key fingerprint is SHA256:gJXD01NyH0+SqBRCk1sSE8zt8Ny8FAC2lUumWGz70c.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '10.0.0.57' (ECDSA) to the list of known hosts.
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System information as of Wed Oct 20 16:45:40 UTC 2021

System load: 0.03          Processes:           100
Usage of /:  16.4% of 7.69GB Users logged in:      0
Memory usage: 22%          IPv4 address for eth0: 10.0.0.57
Swap usage:  0%

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To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.
ubuntu@ip-10-0-0-57:~$

```

```

ubuntu@ip-10-0-0-57:~$
64 bytes from 10.0.0.57: icmp_seq=14 ttl=64 time=0.411 ms
64 bytes from 10.0.0.57: icmp_seq=15 ttl=64 time=0.420 ms
64 bytes from 10.0.0.57: icmp_seq=16 ttl=64 time=0.412 ms
64 bytes from 10.0.0.57: icmp_seq=17 ttl=64 time=0.449 ms
64 bytes from 10.0.0.57: icmp_seq=18 ttl=64 time=0.447 ms
64 bytes from 10.0.0.57: icmp_seq=19 ttl=64 time=0.410 ms
64 bytes from 10.0.0.57: icmp_seq=20 ttl=64 time=0.412 ms
64 bytes from 10.0.0.57: icmp_seq=21 ttl=64 time=0.448 ms
64 bytes from 10.0.0.57: icmp_seq=22 ttl=64 time=0.396 ms
64 bytes from 10.0.0.57: icmp_seq=23 ttl=64 time=0.463 ms
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^C
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25 packets transmitted, 25 received, 0% packet loss, time 2457ms
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ubuntu@ip-10-0-1-144:~$ chmod 400 ssh-key.pem
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See "man sudo_root" for details.

ubuntu@ip-10-0-0-57:~$ ping google.com
PING google.com (142.250.4.100) 56(84) bytes of data:
64 bytes from sm-in-f100.1e100.net (142.250.4.100): icmp_seq=1 ttl=50 time=1.62 ms
64 bytes from sm-in-f100.1e100.net (142.250.4.100): icmp_seq=2 ttl=50 time=1.73 ms

```