

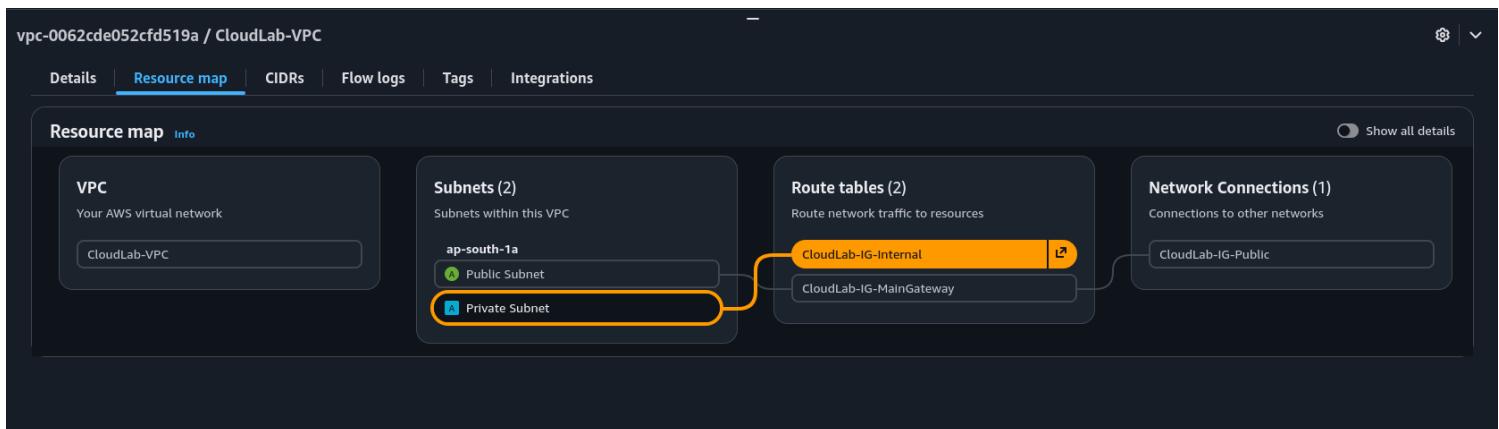
Cloudify Ops

Task 1: Create a New VPC

- **Subnets :**

Subnets (2) Info										
Last updated less than a minute ago Actions Create subnet										
Find subnets by attribute or tag										
Name	Subnet ID	State	VPC	Block Public...	IPv4 CIDR	IPv6 CIDR	IPv6 CIDR association ID	Available		
Public Subnet	subnet-03a4e0f6ba06d5d2e	Available	vpc-0062cde052cf519a Clou...	Off	10.0.1.0/24	-	-	250		
Private Subnet	subnet-05e8927951efb64f6	Available	vpc-0062cde052cf519a Clou...	Off	10.0.2.0/24	-	-	251		

- **Resource Map**



Task 2: Launch an EC2 Instance (Public)

* **EC2 Machine Created in Public Subnet**

Instance summary for i-067224d550b26ef79 (CloudLab-EC2) Info		Connect	Instance state ▼	Actions ▼
Updated 8 minutes ago				
Instance ID i-067224d550b26ef79	Public IPv4 address 43.205.239.50 open address 🔗	Private IPv4 addresses 10.0.1.75		
IPv6 address -	Instance state Running	Public DNS -		
Hostname type IP name: ip-10-0-1-75.ap-south-1.compute.internal	Private IP DNS name (IPv4 only) ip-10-0-1-75.ap-south-1.compute.internal	Elastic IP addresses -		
Answer private resource DNS name -	Instance type t2.micro	AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendations. Learn more 🔗		
Auto-assigned IP address 43.205.239.50 [Public IP]	VPC ID vpc-0062cde052cf519a (CloudLab-VPC) 🔗	Auto Scaling Group name -		
IAM Role -	Subnet ID subnet-03a4e0f6ba06d5d2e (Public Subnet) 🔗	Instance ARN arn:aws:ec2:ap-south-1:285688594658:instance/i-067224d550b26ef79		
IMDSv2 Required		Managed false		
Operator -				

• Security Group :

sg-0c54a5e0c1d24e413 - launch-wizard-1						Actions ▼																										
Details																																
Security group name launch-wizard-1	Security group ID sg-0c54a5e0c1d24e413	Description launch-wizard-1 created 2025-12-15T14:58:54.639Z	VPC ID vpc-0062cde052cf519a 🔗																													
Owner 285688594658	Inbound rules count 2 Permission entries	Outbound rules count 1 Permission entry																														
Inbound rules	Outbound rules	Sharing	VPC associations	Tags																												
Inbound rules (2)																																
<table border="1"> <thead> <tr> <th>Search</th> <th>Manage tags</th> <th>Edit inbound rules</th> </tr> <tr> <th>Name</th> <th>Security group rule ID</th> <th>IP version</th> <th>Type</th> <th>Protocol</th> <th>Port range</th> <th>Source</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>-</td> <td>sgr-0ba2bb873b10fe709</td> <td>IPv4</td> <td>All ICMP - IPv4</td> <td>ICMP</td> <td>All</td> <td>152.58.37.122/32</td> <td>-</td> </tr> <tr> <td>-</td> <td>sgr-03184016e6fbe22ac</td> <td>IPv4</td> <td>SSH</td> <td>TCP</td> <td>22</td> <td>0.0.0.0/0</td> <td>-</td> </tr> </tbody> </table>						Search	Manage tags	Edit inbound rules	Name	Security group rule ID	IP version	Type	Protocol	Port range	Source	Description	-	sgr-0ba2bb873b10fe709	IPv4	All ICMP - IPv4	ICMP	All	152.58.37.122/32	-	-	sgr-03184016e6fbe22ac	IPv4	SSH	TCP	22	0.0.0.0/0	-
Search	Manage tags	Edit inbound rules																														
Name	Security group rule ID	IP version	Type	Protocol	Port range	Source	Description																									
-	sgr-0ba2bb873b10fe709	IPv4	All ICMP - IPv4	ICMP	All	152.58.37.122/32	-																									
-	sgr-03184016e6fbe22ac	IPv4	SSH	TCP	22	0.0.0.0/0	-																									

Task 3: Run Basic Linux Commands

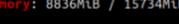
Connecting to ec2 using ssh protocol (Port 22)

```
ssh -i ~/.ssh/work-keys/aws/CloudLab-Key.pem ubuntu@
```

Connected :

```
        .-/+o0ssss00+-.
        `:+ssssssssssssssssssss+:
        +ssssssssssssssssssssyssss+-
        .ssssssssssssssssssdNMNMNyssso.
        /sssssssssshdNmNNmyNMNMHhsssss/
        +ssssssssshy/dNMNMNMdddyssssss+
        /ssssssssshNMNMhyhyyyyhNMNMNhsssss/
        .ssssssssdNMNMNhsssssssshNMNMhdssssss.
        +sssshhhyNMNyssssssssyNMNyssss+
        osyNMNMNyMhsssssssssssshnmnhssssso
        osyNMNMNyMhsssssssssssshnmhssssso
        +sssshhhyNMNyssssssssssyNMNyssss+
        .ssssssssdNMNMNhssssssssNMNMhdssssss.
        /ssssssshNMNMhyhyyyyhNMNMNhsssss/
        +sssssssssdny/dNMNMNMdddyssssss+
        /sssssssssshdNmNNNmyNMNMHhsssss/
        .osssssssssdNMNMNyssssss.
        +ssssssssssssssssyyssss+-
        `:+ssssssssssssssssss+:
        .-/+o0ssss00+-.

agney-patel@LocUbuntu: ~
-----
OS: Ubuntu 24.04.3 LTS x86_64
Host: Aspire 14 AS14H-53
Kernel: 6.14.0-37-generic
Uptime: 3 days, 14 hours, 36 mins
Packages: 2249 (dpkg), 16 (snap)
Shell: bash 5.2.21
Resolution: 1920x1200
DE: GNOME 46.0
WM: Mutter
WM Theme: Adwaita
Theme: Yaru-viridian-dark [GTK2/3]
Icons: Yaru-viridian [GTK3]
Terminal: x-terminal-emulator
CPU: 13th Gen Intel i5-13500H (16) @ 2.4GHz
GPU: Intel Raptor Lake-P [UHD Graphics]
Memory: 8836MB / 15734MB

A color calibration bar consisting of a 4x4 grid of colored squares used for color calibration and monitoring.

agney-patel@LocUbuntu:~$ ssh -i ~/ssh/work-keys/aws/CloudLab-Key.pem ubuntu@43.205.239.50
Welcome to Ubuntu 24.04.3 LTS (GNU/Linux 6.14.0-1015-aws x86_64)

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

System information as of Mon Dec 15 15:28:36 UTC 2025

System load: 0.0          Processes:           111
Usage of /: 32.7% of 6.71GB  Users logged in:   1
Memory usage: 29%          IPv4 address for enX0: 10.0.1.75
Swap usage:  0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

*** System restart required ***
Last login: Mon Dec 15 15:12:58 2025 from 152.58.37.122
ubuntu@ip-10-0-1-75:~
```

File/Dir commands :

```
ubuntu@ip-10-0-1-75:~$ pwd
/home/ubuntu
ubuntu@ip-10-0-1-75:~$ ls -l && cd testdir/
total 4
drwxrwxr-x 2 ubuntu ubuntu 4096 Dec 15 15:16 testdir
ubuntu@ip-10-0-1-75:~/testdir$ ls
ubuntu@ip-10-0-1-75:~/testdir$ vi file1.txt
ubuntu@ip-10-0-1-75:~/testdir$ ls
file1.txt
ubuntu@ip-10-0-1-75:~/testdir$ echo "This is some text for file1" > file1.txt
ubuntu@ip-10-0-1-75:~/testdir$ cat file1.txt
This is some text for file1
ubuntu@ip-10-0-1-75:~/testdir$
```

System commands :

```
ubuntu@ip-10-0-1-75:~/testdir$ whoami && hostname
ubuntu
ip-10-0-1-75
ubuntu@ip-10-0-1-75:~/testdir$ df -h / && uptime -p
Filesystem      Size  Used Avail Use% Mounted on
/dev/root       6.8G  2.2G  4.6G  33% /
up 24 minutes
ubuntu@ip-10-0-1-75:~/testdir$
```

Package updates :

```
ubuntu@ip-10-0-1-75:~/testdir$ sudo -i
root@ip-10-0-1-75:~# apt update -y && apt upgrade -y
Hit:1 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble InRelease
Hit:2 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:3 http://ap-south-1.ec2.archive.ubuntu.com/ubuntu noble-backports InRelease
0% [Connecting to security.ubuntu.com (91.189.92.24)]
Hit:4 http://security.ubuntu.com/ubuntu noble-security InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
root@ip-10-0-1-75:~#
root@ip-10-0-1-75:~#
```

Task 4: Launch a Private EC2 Instance

Priavte subnet :

▼ Network settings [Info](#)

VPC - required | [Info](#)

vpc-0062cde052cf519a (CloudLab-VPC)
10.0.0.0/16



G

Subnet | [Info](#)

subnet-03e8927951efb64f6
Private Subnet
VPC: vpc-0062cde052cf519a Owner: 285688594658 Availability Zone: ap-south-1a (aps1-az1)
Zone type: Availability Zone IP addresses available: 251 CIDR: 10.0.2.0/24)



G [Create new subnet ↗](#)

Auto-assign public IP | [Info](#)

Disable



Firewall (security groups) | [Info](#)

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

[Create security group](#)

[Select existing security group](#)

Security group name - required

launch-wizard-2

This security group will be added to all network interfaces. The name can't be edited after the security group is created. Max length is 255 characters. Valid characters: a-z, A-Z, 0-9, spaces, and _-:/()#@+=;&!\$*

Description - required | [Info](#)

launch-wizard-2 created 2025-12-15T15:39:13.635Z

Inbound Security Group Rules

▼ Security group rule 1 (TCP, 22, sg-0c54a5e0c1d24e413)

[Remove](#)

Type | [Info](#)

ssh

Protocol | [Info](#)

TCP

Port range | [Info](#)

22

Source type | [Info](#)

Custom

Source | [Info](#)

Add CIDR, prefix list or security group

Description - optional | [Info](#)

e.g. SSH for admin desktop

sg-0c54a5e0c1d24e413

[Add security group rule](#)

EC2 Running in Pvt Subnet :

Instances (1/2) [Info](#)

Find Instance by attribute or tag (case-sensitive)

All states ▾



Connect

Instance state ▾

Actions ▾

Launch instances ▾

Instance state = running

[clear filters](#)

< 1 >

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP
CloudLab-EC2	i-067224d550b26ef79	Running	t2.micro	2/2 checks passed	View alarms +	ap-south-1a	-	43.205.239.50	-
Private - EC2	i-0d600b3607928032c	Running	t2.micro	Initializing	View alarms +	ap-south-1a	-	-	-

Copying the key to main ec2 with public ip and then accesing the ec2 which is running in priavate subnet using that key :

```
ubuntu@ip-10-0-1-75: ~ 190x50
agnay-patel@LocUbuntu:~/ssh/work-keys/aws$ scp -i CloudLab-Key.pem CloudLab-Key.pem ubuntu@43.205.239.50:/home/ubuntu
CloudLab-Key.pem
agnay-patel@LocUbuntu:~/ssh/work-keys/aws$ ssh -i CloudLab-Key.pem ubuntu@43.205.239.50
Welcome to Ubuntu 24.04.3 LTS (GNU/Linux 6.14.0-1018-aws x86_64)

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

System information as of Mon Dec 15 16:15:34 UTC 2025

System load: 0.13      Processes:          108
Usage of /: 32.7% of 6.71GB  Users logged in:   0
Memory usage: 20%          IPv4 address for enX0: 10.0.1.75
Swap usage:  0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

Last login: Mon Dec 15 16:11:46 2025 from 13.233.177.3
ubuntu@ip-10-0-1-75:~
```

Using key successfully accessed the instance which is running in private subnet :



```
ubuntu@ip-10-0-1-75:~$ ssh -i CloudLab-Key.pem ubuntu@10.0.2.60
The authenticity of host '10.0.2.60 (10.0.2.60)' can't be established.
ED25519 key fingerprint is SHA256:FJMLVvySaCsiLwgfKiDKqX0eBR9ayTEDFC4FjGM2y4.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '10.0.2.60' (ED25519) to the list of known hosts.
Welcome to Ubuntu 24.04.3 LTS (GNU/Linux 6.14.0-1015-aws x86_64)
```

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

System information as of Mon Dec 15 16:18:04 UTC 2025

System load: 0.0	Processes: 108
Usage of /: 25.8% of 6.71GB	Users logged in: 0
Memory usage: 21%	IPv4 address for enX0: 10.0.2.60
Swap usage: 0%	

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See <https://ubuntu.com/esm> or run: sudo pro status

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.

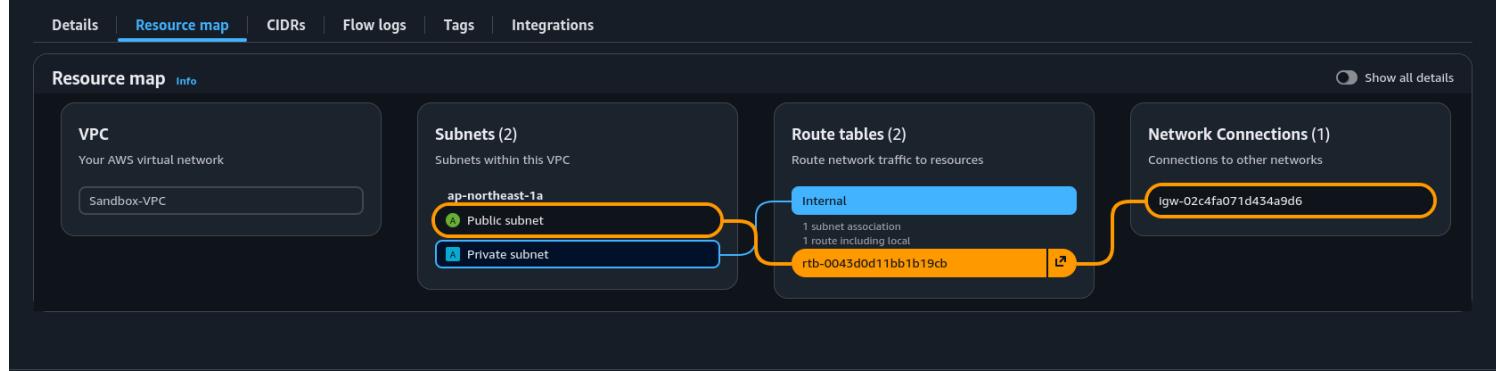
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

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

```
ubuntu@ip-10-0-2-60:~$
```

Task 5: Create a Second VPC for Peering(Different Region)

Created Second VPC in tokyo and initiated the peering connection :



Peering Request :

From Requesters side:

Peering connections (2) <small>Info</small>								
Actions		Create peering connection						
Name	Peering connection ID	Status	Requester VPC	Acceptor VPC	Requester CIDRs	Acceptor CIDRs	Requester o...	
-	pcx-066f0c3ceeb5d7b8d	Provisioning	vpc-0062cde052cf519a	vpc-075c8226fa61b269a / San...	10.0.0.0/16	10.1.0.0/16	285688594i	
-	pcx-0a858deb456b4a6f6	Deleted	vpc-0062cde052cf519a	vpc-08684f5c8654b9a87 / Mal...	-	-	285688594i	

Peering connections (2) <small>Info</small>								
Actions		Create peering connection						
Name	Peering connection ID	Status	Requester VPC	Acceptor VPC	Requester CIDRs	Acceptor CIDRs	Requester o...	
-	pcx-066f0c3ceeb5d7b8d	Active	vpc-0062cde052cf519a	vpc-075c8226fa61b269a / San...	10.0.0.0/16	10.1.0.0/16	285688594i	
-	pcx-0a858deb456b4a6f6	Deleted	vpc-0062cde052cf519a	vpc-08684f5c8654b9a87 / Mal...	-	-	285688594i	

Updating Peering Route In Requesters Side :

Edit routes					
Destination	Target	Status	Propagated	Route Origin	
10.0.0.0/16	local	Active	No	CreateRouteTable	
<input type="text" value="10.1.0.0/16"/> X	<input type="text" value="local"/> X				
	<input type="text" value="Peering Connection"/> -				
	<input type="text" value="pcx-066f0c3ceeb5d7b8d"/> X				
<input type="button" value="Add route"/> Cancel Preview Save changes					

Updating Peering Route In Accepters Side :

Edit routes

The screenshot shows the 'Edit routes' section of the AWS Route53 console. A single route entry is listed:

Destination	Target	Status	Propagated	Route Origin
10.1.0.0/16	local	Active	No	CreateRouteTable

Below the table, there are search fields for 'Q 10.1.0.0/16' and 'Q local'. A 'Remove' button is located at the top right of the table area. At the bottom right, there are 'Cancel', 'Preview', and 'Save changes' buttons.

Created EC2 in tokyo with only private ip :|

The screenshot shows the 'Instance summary' page for an EC2 instance. The instance ID is i-0cc224743b89bd8b7. The instance state is 'Running'. The private IP address is 10.1.2.126. The instance type is t2.micro. The VPC ID is vpc-075c8226fa61b269a. The subnet ID is subnet-0a7f4981e5187139b. The instance ARN is arn:aws:ec2:ap-northeast-1:285688594658:instance/i-0cc224743b89bd8b7. The instance is managed by a user.

Received Reply from ec2 which is running in private subnet of tokyo region :

```
ubuntu@ip-10-0-1-75:~$ ping 10.1.2.126
PING 10.1.2.126 (10.1.2.126) 56(84) bytes of data.
64 bytes from 10.1.2.126: icmp_seq=1 ttl=64 time=127 ms
64 bytes from 10.1.2.126: icmp_seq=2 ttl=64 time=127 ms
64 bytes from 10.1.2.126: icmp_seq=3 ttl=64 time=128 ms
64 bytes from 10.1.2.126: icmp_seq=4 ttl=64 time=127 ms
64 bytes from 10.1.2.126: icmp_seq=5 ttl=64 time=128 ms
^C
--- 10.1.2.126 ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4007ms
rtt min/avg/max/mdev = 127.442/127.496/127.556/0.043 ms
ubuntu@ip-10-0-1-75:~$
```

