

1. Create one VPC in N.virginia region.

The screenshot shows the AWS Management Console interface for the 'United States (N. Virginia)' region. A green notification banner at the top states: 'You successfully created vpc-00e82a747991028e5 / candy'. Below this, the 'Your VPCs (2)' section displays a table of VPCs. The table has columns for Name, VPC ID, State, Block Public..., IPv4 CIDR, and IP addresses. Two VPCs are listed: one with ID 'vpc-0745087e580d9cd8f' and another named 'candy' with ID 'vpc-00e82a747991028e5'. Both are in an 'Available' state. The left sidebar shows the 'VPC dashboard' with options for 'Your VPCs', 'Subnets', 'Route tables', 'Internet gateways', and 'Egress-only Internet gateways'.

Name	VPC ID	State	Block Public...	IPv4 CIDR	IPs
-	vpc-0745087e580d9cd8f	Available	Off	172.31.0.0/16	-
candy	vpc-00e82a747991028e5	Available	Off	10.0.0.0/16	-

2. Create two subnets. One Public subnet and one private subnet.

The screenshot shows the AWS Management Console interface for the 'United States (N. Virginia)' region. A green notification banner at the top states: 'You have successfully created 1 subnet: subnet-0e38a9388380e2c8b'. Below this, the 'Subnets (2)' section displays a table of subnets. The table has columns for Name, Subnet ID, State, VPC, Block Public..., and IPv4 CIDR. Two subnets are listed: 'public' with ID 'subnet-0da1fa8a54a0e21e3' and 'private' with ID 'subnet-0e38a9388380e2c8b'. Both are in an 'Available' state and are associated with VPC 'vpc-00e82a747991028e5 | candy'. The left sidebar shows the 'VPC dashboard' with options for 'Your VPCs', 'Subnets', 'Route tables', 'Internet gateways', 'Egress-only Internet gateways', 'Carrier gateways', and 'DHCP option sets'.

Name	Subnet ID	State	VPC	Block Public...	IPv4 CIDR
public	subnet-0da1fa8a54a0e21e3	Available	vpc-00e82a747991028e5   candy	Off	10.0.0.0/20
private	subnet-0e38a9388380e2c8b	Available	vpc-00e82a747991028e5   candy	Off	10.0.16.0/20

3. Provide the IGW to the vpc.

The screenshot shows the AWS Management Console interface for the 'United States (N. Virginia)' region. A green notification banner at the top states: 'Internet gateway igw-0cc38c59d87cb1aea successfully attached to vpc-00e82a747991028e5'. Below this, the 'igw-0cc38c59d87cb1aea / candy' section displays details for the Internet Gateway. The 'Details' section shows the Internet gateway ID 'igw-0cc38c59d87cb1aea', State 'Attached', VPC ID 'vpc-00e82a747991028e5 | candy', and Owner '211125448409'. The 'Tags' section shows a single tag with Key 'Name' and Value 'candy'. The left sidebar shows the 'VPC dashboard' with options for 'Your VPCs', 'Subnets', 'Route tables', 'Internet gateways', 'Egress-only Internet gateways', 'Carrier gateways', 'DHCP option sets', 'Elastic IPs', and 'Managed prefix lists'.

Key	Value
Name	candy

4. Create One public RT and one private RT.

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S3 EC2 Route 53 IAM EFS VPC

VPC > Route tables

**VPC dashboard** < EC2 Global View [?] Filter by VPC: [v]

▼ **Virtual private cloud**

- Your VPCs
- Subnets
- Route tables**
- Internet gateways
- Egress-only Internet gateways
- Carrier gateways
- DHCP option sets
- Elastic IPs
- Managed prefix lists

**Route tables (2)** Info Last updated less than a minute ago [Refresh] [Actions] [Create route table]

Find route tables by attribute or tag

Name: private X Name: public X Clear filters

<input type="checkbox"/>	Name	Route table ID	Explicit subnet associ...	Edge...	Main	VPC
<input type="checkbox"/>	public	rtb-06239f4b97191bd4f	subnet-0da1fa8a54a0e2...	-	No	vpc-00e82a74
<input type="checkbox"/>	private	rtb-00b61ebd95bb7f386	subnet-0e38a9388380e2...	-	No	vpc-00e82a74

Select a route table

5. Deploy NAT gateway on public subnet and attach the NAT gateway to private subnet.

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S3 EC2 Route 53 IAM EFS VPC

VPC > NAT gateways > nat-0a72496072037013b

gateways Carrier gateways DHCP option sets Elastic IPs Managed prefix lists **NAT gateways** Peering connections Route servers New

▼ **Security**

- Network ACLs
- Security groups

▼ **PrivateLink and Lattice**

- Getting started Updated
- Endpoints Updated
- Endpoint services

**NAT gateway nat-0a72496072037013b** | NAT was created successfully. [Actions]

**Details**

<b>NAT gateway ID</b> nat-0a72496072037013b	<b>Connectivity type</b> Public	<b>State</b> Pending	<b>State message</b> Info
<b>NAT gateway ARN</b> arn:aws:ec2:us-east-1:211125448409:natgateway/nat-0a72496072037013b	<b>Primary public IPv4 address</b> -	<b>Primary private IPv4 address</b> -	<b>Primary network interface ID</b> -
<b>VPC</b> vpc-00e82a747991028e5 / candy	<b>Subnet</b> subnet-0da1fa8a54a0e21e3 / public	<b>Created</b> Thursday 7 August 2025 at 21:43:05 GMT+5:30	<b>Deleted</b> -

**Secondary IPv4 addresses** | Monitoring | Tags [Edit secondary IPv4 address associations]

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S3 EC2 Route 53 IAM EFS VPC

VPC > Subnets

**VPC dashboard** < EC2 Global View [?] Filter by VPC: [v]

▼ **Virtual private cloud**

- Your VPCs
- Subnets**
- Route tables
- Internet gateways
- Egress-only Internet gateways
- Carrier gateways
- DHCP option sets
- Elastic IPs
- Managed prefix lists

**Subnets (1/2)** Info Last updated 2 minutes ago [Refresh] [Actions] [Create subnet]

Find subnets by attribute or tag

Name: private X Name: public X Clear filters

<input type="checkbox"/>	Name	Subnet ID	State	VPC	Block Public...	IPv4 CIDR
<input type="checkbox"/>	public	subnet-0da1fa8a54a0e21e3	Available	vpc-00e82a747991028e5 / candy	Off	10.0.0.0/20
<input checked="" type="checkbox"/>	private	subnet-0e38a9388380e2c8b	Available	vpc-00e82a747991028e5 / candy	Off	10.0.16.0/20

**subnet-0e38a9388380e2c8b / private**

Destination	Target
10.0.0.0/16	local
0.0.0.0/0	nat-0a72496072037013b

6. Create Two instances, one in public subnet and one in private subnet.

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S3 EC2 Route 53 IAM EFS VPC

EC2 > Instances

EC2

- Dashboard
- EC2 Global View
- Events
- Instances
  - Instances
  - Instance Types
  - Launch Templates
  - Spot Requests
  - Savings Plans
  - Reserved Instances
  - Dedicated Hosts
  - Capacity Reservations
- Images

Instances (1/2) Info

Last updated 2 minutes ago

Connect Instance state Actions Launch instances

Find Instance by attribute or tag (case-sensitive) All states

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability
<input checked="" type="checkbox"/>	public	i-0aac21b2a543e1682	Running	t2.micro	Initializing	View alarms +	us-east-1a
<input type="checkbox"/>	private	i-0322de733d72cf132	Running	t2.micro	-	View alarms +	us-east-1b

i-0aac21b2a543e1682 (public)

Details Status and alarms Monitoring Security Networking Storage Tags

VPC ID vpc-00e82a747991028e5 (candy) Subnet ID subnet-0da1fa8a54a0e21e3 (public) Availability zone us-east-1a

Outpost ID

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S3 EC2 Route 53 IAM EFS VPC

EC2 > Instances

EC2

- Dashboard
- EC2 Global View
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  - Instances
  - Instance Types
  - Launch Templates
  - Spot Requests
  - Savings Plans
  - Reserved Instances
  - Dedicated Hosts
  - Capacity Reservations
- Images

Instances (1/2) Info

Last updated 2 minutes ago

Connect Instance state Actions Launch instances

Find Instance by attribute or tag (case-sensitive) All states

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability
<input type="checkbox"/>	public	i-0aac21b2a543e1682	Running	t2.micro	Initializing	View alarms +	us-east-1a
<input checked="" type="checkbox"/>	private	i-0322de733d72cf132	Running	t2.micro	Initializing	View alarms +	us-east-1b

i-0322de733d72cf132 (private)

Details Status and alarms Monitoring Security Networking Storage Tags

VPC ID vpc-00e82a747991028e5 (candy) Subnet ID subnet-0e38a9388380e2c8b Availability zone us-east-1b

Outpost ID

7. Deploy Apache server on both the ec2 instances with sample index.html file.
- Public-server-

← → ↻ ⚠ Not secure 98.86.160.52

https://chatgpt.com/ into-the-devops/to... https://cloudsutra.in/ NT https://nalgonda.to...

hiiii manjunath

Private-server

```
Loaded: loaded (/usr/lib/systemd/system/httpd.service; disabled; preset: disabled)
Active: active (running) since Thu 2025-08-07 17:14:16 UTC; 6s ago
   Docs: man:httpd.service(8)
Main PID: 27567 (httpd)
Status: "Started, listening on: port 80"
Tasks: 177 (limit: 1111)
Memory: 13.0M
   CPU: 70ms
   CGroup: /system.slice/httpd.service
           └─27567 /usr/sbin/httpd -DFOREGROUND
           └─27588 /usr/sbin/httpd -DFOREGROUND
           └─27589 /usr/sbin/httpd -DFOREGROUND
           └─27590 /usr/sbin/httpd -DFOREGROUND
           └─27591 /usr/sbin/httpd -DFOREGROUND

Aug 07 17:14:16 ip-10-0-20-242.ec2.internal systemd[1]: Starting httpd.service - The Apache HTTP Server...
Aug 07 17:14:16 ip-10-0-20-242.ec2.internal systemd[1]: Started httpd.service - The Apache HTTP Server.
Aug 07 17:14:16 ip-10-0-20-242.ec2.internal httpd[27567]: Server configured, listening on: port 80
[root@ip-10-0-20-242 html]# curl 10.0.20.242:80
berlin,helsinki,monaco,dubai,bali
[root@ip-10-0-20-242 html]#
```

8. Create one application load balancer and attach the load balancer to both the ec2 instances.

[Alt+S]

United States (N. Virginia)
Account ID: 2111-2544-8409
Manjougud

EC2 > Load balancers > ELB

EC2

Dashboard

EC2 Global View

Events

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Capacity Reservations

ELB

Details

Load balancer type

Application

Status

Active

VPC

[vpc-02e3decd4d49f538d](#)

Load balancer IP address type

IPv4

Scheme

Internet-facing

Hosted zone

Z35XDOTRQ7X7K

Availability Zones

[subnet-028659d09f899786a](#)  
us-east-1b (use1-az2)  
[subnet-05f325e4144ab4131](#)  
us-east-1a (use1-az1)

Date created

August 8, 2025, 12:28 (UTC+05:30)

Load balancer ARN

[arn:aws:elasticloadbalancing:us-east-1:211125448409:loadbalancer/app/ELB/e1c51789349907a9](#)

DNS name

[ELB-328474492.us-east-1.elb.amazonaws.com](#) (A Record)

Listeners and rules

Network mapping

Resource map

Security

Monitoring

Integrations

Attributes

10. Store Application load balancer logs to s3.

```
File Edit View H1 [Icons] B I [Icons] [Icons]
Enable AccessLog for ELB: app/load/4dd4e98d97273a1a at 2025-08-08T11:06:21.380Z
```

11. Store the VPC flow logs to CloudWatch group.

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S3 EC2 Route 53 IAM EFS VPC

CloudWatch > Log groups > vpc > eni-0f408eb89004902df-all

### CloudWatch

Favorites and recents

Dashboards

AI Operations [New](#)

Alarms [Icons]

In alarm

All alarms

Billing

Logs

[Log groups](#)

Log Anomalies

Live Tail

### Log events

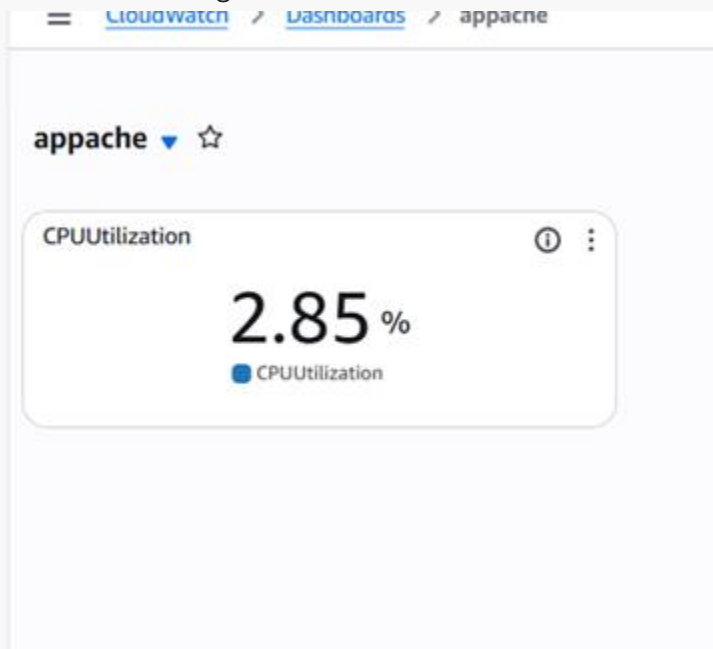
You can use the filter bar below to search for and match terms, phrases, or values in your log events. [Learn more about filter patterns](#)

Filter events - press enter to search 1m 1h [Icons] UTC timezone Display [Icons]

Timestamp	Message
No older events at this moment. <a href="#">Retry</a>	
2025-08-07T17:21:41.000Z	2 211125448409 eni-0f408eb89004902df 74.235.184.174 10.0.11.112 33070 2096 6 1 40 1754587301 1754587302 ACCE...
2025-08-07T17:21:52.000Z	2 211125448409 eni-0f408eb89004902df 147.185.132.193 10.0.11.112 54655 47838 6 1 44 1754587312 1754587313 AC...
2025-08-07T17:22:00.000Z	2 211125448409 eni-0f408eb89004902df 89.248.165.146 10.0.11.112 57950 62571 6 1 40 1754587320 1754587320 ACC...
2025-08-07T17:22:00.000Z	2 211125448409 eni-0f408eb89004902df 162.216.149.188 10.0.11.112 50384 12084 6 1 44 1754587320 1754587321 AC...
2025-08-07T17:22:00.000Z	2 211125448409 eni-0f408eb89004902df 147.185.133.66 10.0.11.112 50358 48722 6 1 44 1754587320 1754587321 ACC...
No newer events at this moment. Auto retry paused. <a href="#">Resume</a>	

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12. Create Monitoring Dashboards to monitor CPU utilization and to monitor Apache service.



13. CPU utilizations more than 70% then it should triggered Autoscaling and launch new instance.

14.

The screenshot shows the AWS Management Console 'Instances' page. The left sidebar lists categories: Network & Security, Load Balancing, and Auto Scaling. The main content area shows 'Instances (2)' with a table of two pending instances. The table columns are Name, Instance ID, Instance state, Instance type, Status check, Alarm status, and Availability zone. The instances are i-0993d44409cbce19d and i-04cdc48800588efcd, both t2.micro instances in the us-east-1b availability zone.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability zone
	i-0993d44409cbce19d	Pending	t2.micro	-	View alarms +	us-east-1b
	i-04cdc48800588efcd	Pending	t2.micro	-	View alarms +	us-east-1a

15.

The screenshot shows the AWS Management Console 'Instances' page after scaling. The table now shows three running instances. The first instance, i-0c63bcab0bcee370d, is in the 'Initializing' state. The other two instances are in the 'Running' state with '2/2 checks passed'. All instances are t2.micro and located in the us-east-1b availability zone.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability zone
	i-0c63bcab0bcee370d	Running	t2.micro	Initializing	View alarms +	us-east-1b
	i-0993d44409cbce19d	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1b
	i-04cdc48800588efcd	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1a

Last updated 3 minutes ago 

Last updated  
3 minutes ago

[Launch templates](#) 

Create Auto Scaling group

< 1 > { 

<input type="checkbox"/>	Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max	Availability zones
<input type="checkbox"/>	<a href="#">ASG</a>	<a href="#">ASG</a>   Version Default	3	-	2	1	3	2 Availability zones