

TRANSIT GATEWAY

- Create three VPC'S

The screenshot shows the 'Create VPC' wizard in the AWS Management Console. The left sidebar contains configuration options, and the main area shows a network diagram.

Resources to create [Info](#)
Create only the VPC resource or the VPC and other networking resources.

☐ VPC only ☒ VPC and more

Name tag auto-generation [Info](#)
Enter a value for the Name tag. This value will be used to auto-generate Name tags for all resources in the VPC.

☒ Auto-generate
project

IPv4 CIDR block [Info](#)
Determine the starting IP and the size of your VPC using CIDR notation.

10.0.0.0/16 65,536 IPs
CIDR block size must be between /16 and /28.

IPv6 CIDR block [Info](#)
☒ No IPv6 CIDR block
☐ Amazon-provided IPv6 CIDR block

Tenancy [Info](#)
Default

Number of Availability Zones (AZs) [Info](#)
Choose the number of AZs in which to provision subnets. We recommend at least two AZs for high availability.

1 2 3
Customize AZs

Number of public subnets [Info](#)
The number of public subnets to add to your VPC. Use public subnets for web

Network Diagram:

- VPC** [Show details](#)
Your AWS virtual network
project-vpc
- Subnets (2)**
Subnets within this VPC
 - eu-north-1a
 - project-subnet-public1-eu-north-1a
 - project-subnet-private1-eu-north-
- Route tables (2)**
Route network traffic:
 - project-rtb-public
 - project-rtb-private

*Create vpc in vpc and more

The screenshot shows the second step of the 'Create VPC' wizard. The left sidebar contains configuration options, and the main area is mostly blank.

Number of public subnets [Info](#)
The number of public subnets to add to your VPC. Use public subnets for web applications that need to be publicly accessible over the internet.

0 1

Number of private subnets [Info](#)
The number of private subnets to add to your VPC. Use private subnets to secure backend resources that don't need public access.

0 1 2

Customize subnets CIDR blocks

NAT gateways (\$) [Info](#)
Choose the number of Availability Zones (AZs) in which to create NAT gateways. Note that there is a charge for each NAT gateway.

None In 1 AZ 1 per AZ

VPC endpoints [Info](#)
Endpoints can help reduce NAT gateway charges and improve security by accessing S3 directly from the VPC. By default, full access policy is used. You can customize this policy at any time.

None S3 Gateway

DNS options [Info](#)
☒ Enable DNS hostnames
☒ Enable DNS resolution

Additional tags

Cancel Create VPC

• CREATE TRANSIT GATEWAY

The screenshot shows the 'Create Transit Gateway' page in the AWS Management Console. The page is divided into several sections:

- Name tag:** A text input field with the value 'transit-gateway-01'.
- Description:** A text input field with the value 'description'.
- Configure the transit gateway:** A section with several checkboxes:
 - ☒ DNS support
 - ☒ VPN ECMP support
 - ☒ Default route table association
 - ☒ Default route table propagation
 - ☐ Multicast support
- Configure cross-account sharing options:** A section with a checkbox:
 - ☐ Auto accept shared attachments
- Transit gateway CIDR blocks:** A section with a text input field containing '10.0.0.0/24' and a button to add another block.

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*Create transit gateway attachment

The screenshot shows the 'Create Transit Gateway Attachment' page in the AWS Management Console. The page is divided into several sections:

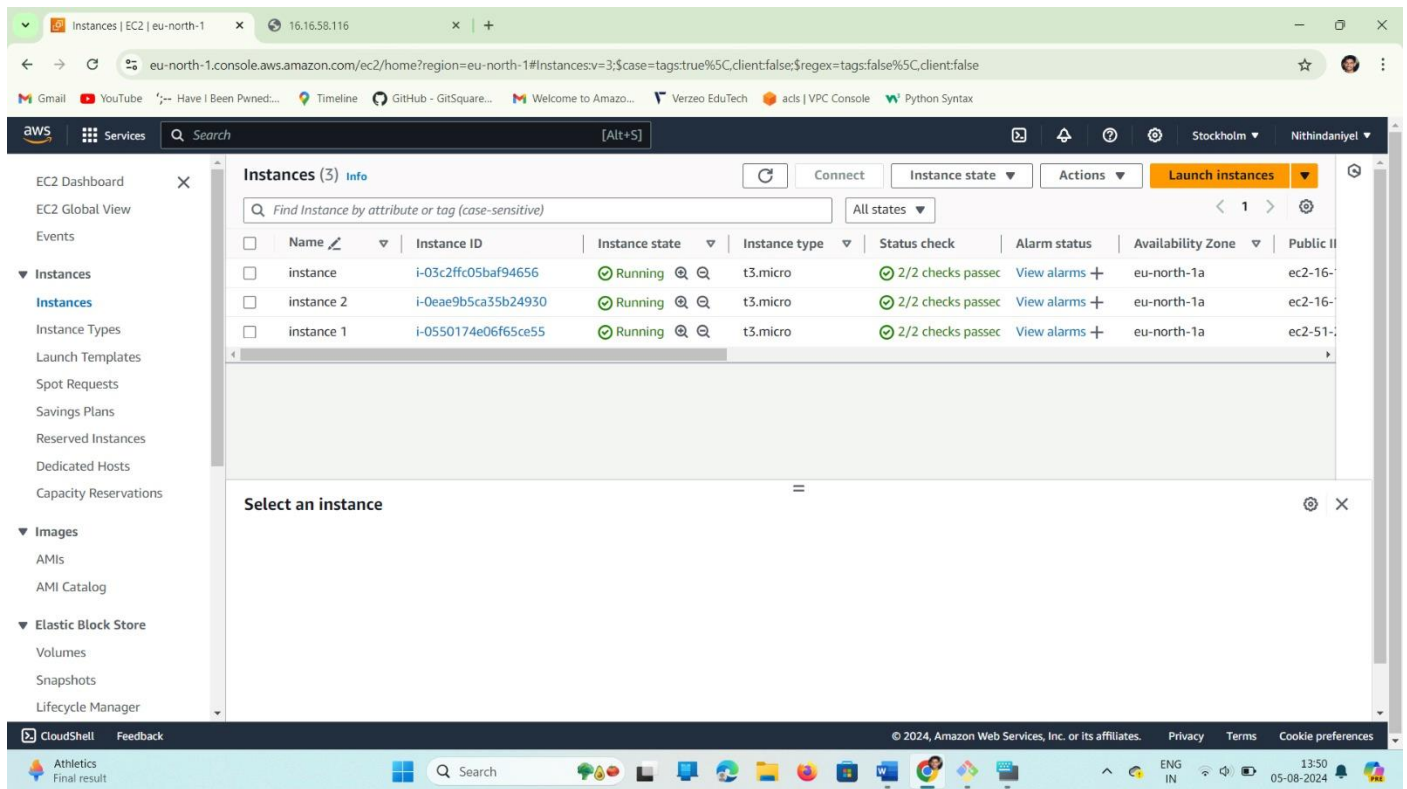
- Details:** A section with several fields:
 - Name tag - optional:** A text input field with the value 'transit-gateway-attachment-01'.
 - Transit gateway ID:** A dropdown menu with the value 'Select a transit gateway'.
 - Attachment type:** A dropdown menu with the value 'VPC'.
- VPC attachment:** A section with several checkboxes and fields:
 - ☒ DNS support
 - ☐ IPv6 support
 - ☐ Appliance Mode support
 - VPC ID:** A dropdown menu with the value 'vpc-003490c14a035d0ad'.
 - Subnet IDs:** A section with a checkbox and a dropdown menu:
 - ☒ eu-north-1a: subnet-02509a3b1bd0054c2
 - ☐ eu-north-1b: No subnet available
 - ☐ eu-north-1c: No subnet available

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*connect the three vpc's with three attachments

*connect with public subnet

*Create 3 instances for 3 VPC's.

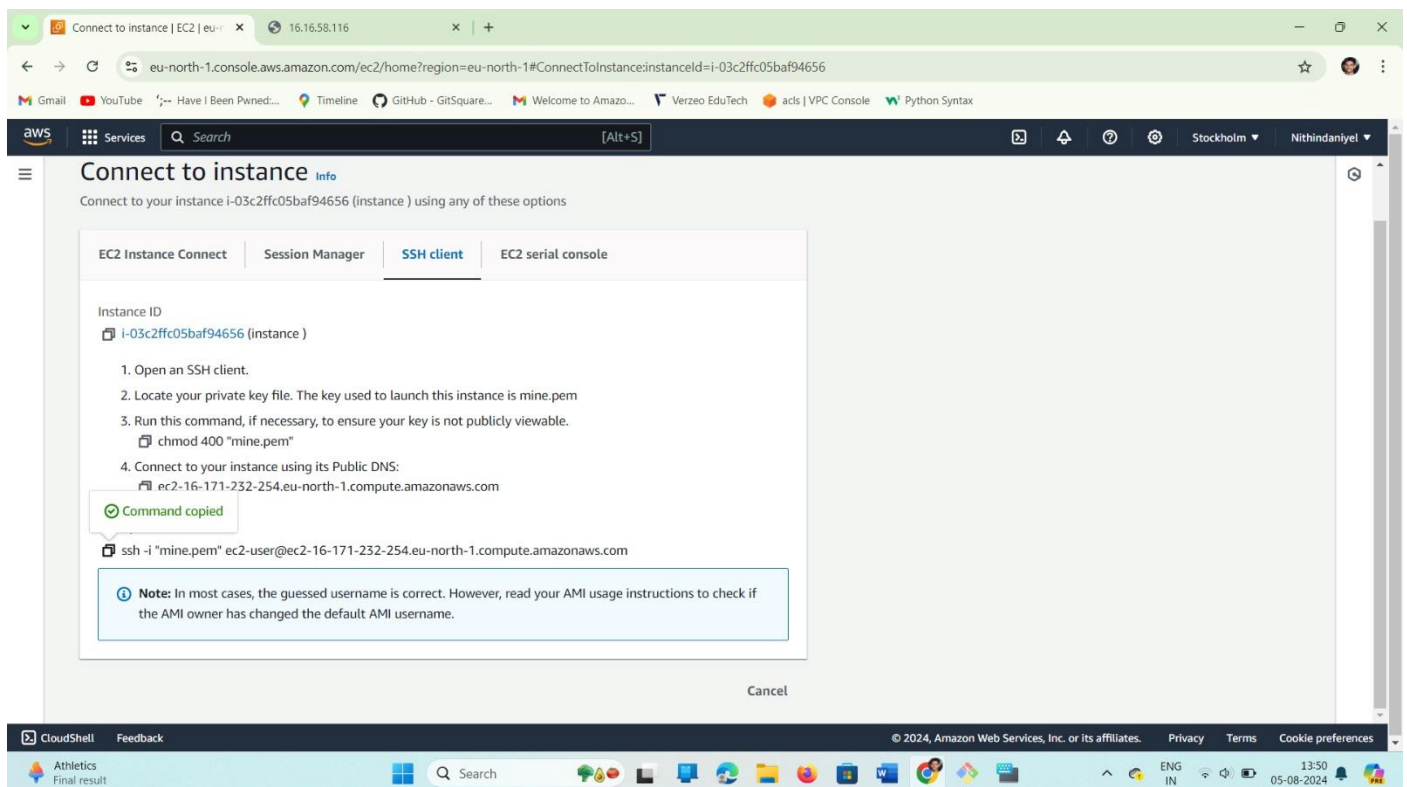


The screenshot shows the AWS Management Console for the eu-north-1 region. The 'Instances' page displays three running EC2 instances:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IP
instance	i-03c2ffc05baf94656	Running	t3.micro	2/2 checks passed	View alarms	eu-north-1a	ec2-16-
instance 2	i-0eae9b5ca35b24930	Running	t3.micro	2/2 checks passed	View alarms	eu-north-1a	ec2-16-
instance 1	i-0550174e06f65ce55	Running	t3.micro	2/2 checks passed	View alarms	eu-north-1a	ec2-51-

A modal window titled 'Select an instance' is open, allowing selection of one of the instances.

*Connect to instance one after one.



The screenshot shows the 'Connect to instance' page for instance i-03c2ffc05baf94656. The page provides instructions for connecting to the instance using an SSH client:

1. Open an SSH client.
2. Locate your private key file. The key used to launch this instance is mine.pem
3. Run this command, if necessary, to ensure your key is not publicly viewable.
`chmod 400 "mine.pem"`
4. Connect to your instance using its Public DNS:
`ec2-16-171-232-254.eu-north-1.compute.amazonaws.com`

The command `ssh -i "mine.pem" ec2-user@ec2-16-171-232-254.eu-north-1.compute.amazonaws.com` is displayed, and a 'Command copied' notification is shown.

Note: In most cases, the guessed username is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI username.

*Open Git Bash and connect to the user then follows as root user with sudo -l command.

```
root@ip-10-40-4-206:~  
~~ \#####\  
~~ \###|  
~~ \#/  
~~ V ~' ->  
~~~~  
~~ .-.  
~-/_m/' -/_->  
  
https://aws.amazon.com/linux/amazon-linux-2023  
  
Last login: Mon Aug 5 08:24:42 2024 from 103.160.27.100  
[ec2-user@ip-10-40-4-206 ~]$ sudo -i  
[root@ip-10-40-4-206 ~]# yum update -y && yum install nginx -y && cd /usr/share/nginx/html  
Last metadata expiration check: 0:33:54 ago on Mon Aug 5 07:52:28 2024.  
Dependencies resolved.  
Nothing to do.  
Complete!  
Last metadata expiration check: 0:33:55 ago on Mon Aug 5 07:52:28 2024.  
Package nginx-1:1.24.0-1.amzn2023.0.2.x86_64 is already installed.  
Dependencies resolved.  
Nothing to do.  
Complete!  
[root@ip-10-40-4-206 html]# exit  
logout  
[ec2-user@ip-10-40-4-206 ~]$ sudo -i  
[root@ip-10-40-4-206 ~]# yum update -y  
Last metadata expiration check: 0:34:43 ago on Mon Aug 5 07:52:28 2024.  
Dependencies resolved.  
Nothing to do.  
Complete!  
[root@ip-10-40-4-206 ~]# yum install nginx
```

*As above commands do it for another 2 instances.

Output

```

root@ip-10-40-4-206:/usr/share/nginx/html
Installing      : gperftools-libs-2.9.1-1.amzn2023.0.3.x86_64      4/7
Installing      : nginx-core-1:1.24.0-1.amzn2023.0.2.x86_64      5/7
Installing      : generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch 6/7
Installing      : nginx-1:1.24.0-1.amzn2023.0.2.x86_64          7/7
Running scriptlet: nginx-1:1.24.0-1.amzn2023.0.2.x86_64          7/7
Verifying       : generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch 1/7
Verifying       : gperftools-libs-2.9.1-1.amzn2023.0.3.x86_64    2/7
Verifying       : libunwind-1.4.0-5.amzn2023.0.2.x86_64          3/7
Verifying       : nginx-1:1.24.0-1.amzn2023.0.2.x86_64          4/7
Verifying       : nginx-core-1:1.24.0-1.amzn2023.0.2.x86_64      5/7
Verifying       : nginxfilesystem-1:1.24.0-1.amzn2023.0.2.noarch 6/7
Verifying       : nginx-mimetypes-2.1.49-3.amzn2023.0.3.noarch    7/7

Installed:
generic-logos-httpd-18.0.0-12.amzn2023.0.3.noarch      gperftools-libs-2.9.1-1.amzn2023.0.3.x86_64
libunwind-1.4.0-5.amzn2023.0.2.x86_64                nginx-1:1.24.0-1.amzn2023.0.2.x86_64
nginx-core-1:1.24.0-1.amzn2023.0.2.x86_64            nginxfilesystem-1:1.24.0-1.amzn2023.0.2.noarch
nginx-mimetypes-2.1.49-3.amzn2023.0.3.noarch

Complete!
[root@ip-10-40-4-206 ~]# cd /usr/share/nginx/html
[root@ip-10-40-4-206 html]# rm index.html
rm: remove regular file 'index.html'? yes
[root@ip-10-40-4-206 html]# vi index.html
[root@ip-10-40-4-206 html]# systemctl restart nginx
[root@ip-10-40-4-206 html]# curl 10.40.4.206:80
KPHB
[root@ip-10-40-4-206 html]# curl 10.0.8.186:80
telangana
[root@ip-10-40-4-206 html]# curl 10.20.6.240:80
Hyderabad
[root@ip-10-40-4-206 html]#

```



```
root@ip-10-20-6-240:/usr/share/nginx/html
1 root      20    0   171108   17012   10156 S    0.0   1.8   0:01.21 systemd
2 root      20    0         0         0         0 S    0.0   0.0   0:00.00 kthreadd
3 root      0  -20         0         0         0 I    0.0   0.0   0:00.00 rcu_gp
4 root      0  -20         0         0         0 I    0.0   0.0   0:00.00 rcu_par_gp
5 root      0  -20         0         0         0 I    0.0   0.0   0:00.00 slub_flushwq
6 root      0  -20         0         0         0 I    0.0   0.0   0:00.00 netns
8 root      0  -20         0         0         0 I    0.0   0.0   0:00.00 kworker/0:0H-events_highpri
10 root     0  -20         0         0         0 I    0.0   0.0   0:00.00 mm_percpu_wq
11 root     20    0         0         0         0 I    0.0   0.0   0:00.00 rcu_tasks_kthread
12 root     20    0         0         0         0 I    0.0   0.0   0:00.00 rcu_tasks_rude_kthread
13 root     20    0         0         0         0 I    0.0   0.0   0:00.00 rcu_tasks_trace_kthread
14 root     20    0         0         0         0 S    0.0   0.0   0:00.09 ksoftirqd/0
15 root     20    0         0         0         0 I    0.0   0.0   0:00.04 rcu_preempt
16 root     rt    0         0         0         0 S    0.0   0.0   0:00.01 migration/0
18 root     20    0         0         0         0 S    0.0   0.0   0:00.00 cpuhp/0
19 root     20    0         0         0         0 S    0.0   0.0   0:00.00 cpuhp/1
20 root     rt    0         0         0         0 S    0.0   0.0   0:00.05 migration/1
21 root     20    0         0         0         0 S    0.0   0.0   0:00.08 ksoftirqd/1
23 root     0  -20         0         0         0 I    0.0   0.0   0:00.00 kworker/1:0H-events_highpri
26 root     20    0         0         0         0 S    0.0   0.0   0:00.00 kdevtmpfs
27 root     0  -20         0         0         0 I    0.0   0.0   0:00.00 inet_frag_wq
28 root     20    0         0         0         0 S    0.0   0.0   0:00.00 kauditd
29 root     20    0         0         0         0 S    0.0   0.0   0:00.00 khungtaskd
30 root     20    0         0         0         0 S    0.0   0.0   0:00.00 oom_reaper
31 root     20    0         0         0         0 I    0.0   0.0   0:00.03 kworker/u4:2-flush-259:0
[root@ip-10-20-6-240 html]# curl 10.0.8.186:80
telangana
[root@ip-10-20-6-240 html]# curl 10.20.6.240:80
Hyderabad
[root@ip-10-20-6-240 html]# curl 10.40.4.206:80
KPHB
[root@ip-10-20-6-240 html]#
```

```
root@ip-10-0-8-186:/usr/share/nginx/html
25250 root    20    0   223912   3468    2812 R    0.3   0.4   0:00.54 top
1 root      20    0   105604   16952   10168 S    0.0   1.8   0:01.27 systemd
2 root      20    0         0         0         0 S    0.0   0.0   0:00.00 kthreadd
3 root      0  -20         0         0         0 I    0.0   0.0   0:00.00 rcu_gp
4 root      0  -20         0         0         0 I    0.0   0.0   0:00.00 rcu_par_gp
5 root      0  -20         0         0         0 I    0.0   0.0   0:00.00 slub_flushwq
6 root      0  -20         0         0         0 I    0.0   0.0   0:00.00 netns
8 root      0  -20         0         0         0 I    0.0   0.0   0:00.00 kworker/0:0H-even+
9 root      20    0         0         0         0 I    0.0   0.0   0:00.03 kworker/u4:0-even+
10 root     0  -20         0         0         0 I    0.0   0.0   0:00.00 mm_percpu_wq
11 root     20    0         0         0         0 I    0.0   0.0   0:00.00 rcu_tasks_kthread
12 root     20    0         0         0         0 I    0.0   0.0   0:00.00 rcu_tasks_rude_kt+
13 root     20    0         0         0         0 I    0.0   0.0   0:00.00 rcu_tasks_trace_k+
14 root     20    0         0         0         0 S    0.0   0.0   0:00.09 ksoftirqd/0
15 root     20    0         0         0         0 I    0.0   0.0   0:00.06 rcu_preempt
16 root     rt    0         0         0         0 S    0.0   0.0   0:00.00 migration/0
18 root     20    0         0         0         0 S    0.0   0.0   0:00.00 cpuhp/0
19 root     20    0         0         0         0 S    0.0   0.0   0:00.00 cpuhp/1
20 root     rt    0         0         0         0 S    0.0   0.0   0:00.04 migration/1
[root@ip-10-0-8-186 html]# curl 10.20.6.240:80
Hyderabad
[root@ip-10-0-8-186 html]# curl 10.0.8.186:80
telangana
[root@ip-10-0-8-186 html]# curl 10.40.4.206:80
KPHB
[root@ip-10-0-8-186 html]#
```

- *Use curl to connect from one VPC to another VPC.
- *Like this way connection of 3 VPC's with Transit Gateway works.