

VPC PROJECT

- Create a VPC with IPV4 CIDR 10.0.0.0/16

You successfully created vpc-07947b113b9461921 / VPC-PROJ

VPC > Your VPCs > vpc-07947b113b9461921

vpc-07947b113b9461921 / VPC-PROJ

Details info

VPC ID vpc-07947b113b9461921	State Available	DNS hostnames Disabled	DNS resolution Enabled
Tenancy Default	DHCP option set dopt-0625b4ef095ea11d0	Main route table rtb-0a05ee15f8e9662f8	Main network ACL acl-0ba7d92cdae08fc8e
Default VPC No	IPv4 CIDR 10.0.0.0/16	IPv6 pool -	IPv6 CIDR (Network border group) -
Network Address Usage metrics Disabled	Route 53 Resolver DNS Firewall rule groups -	Owner ID 905418116946	

Resource map CIDRs Flow logs Tags Integrations

Resource map info

VPC Show details
Your AWS virtual network

VPC-PROJ

Subnets (0)
Subnets within this VPC

Route tables (1)
Route network traffic to resources

rtb-0a05ee15f8e9662f8

Network connections (0)
Connections to other networks

- Create 4 subnets (2 public 2 private) at each availability zone there is 1 private subnet and 1 public subnet, 2 availability zones can fulfill high availability.

You have successfully created 4 subnets: subnet-0c08912850818eac4, subnet-0b791840795f33ea8, subnet-09823cff4741b459c, subnet-0e47f81df9a88f49c

Subnets (4) Info

Find resources by attribute or tag

Subnet ID : subnet-0c08912850818eac4 Subnet ID : subnet-0b791840795f33ea8 Subnet ID : subnet-09823cff4741b459c Show more (+1) Clear filters

	Name	Subnet ID	State	VPC	IPv4 CIDR	IPv6 CIDR	Available IPv4 addresses
<input type="checkbox"/>	PRIVATE-SUBNET-1	subnet-0b791840795f33ea8	Available	vpc-07947b113b9461921 VPC...	10.0.2.0/24	-	251
<input type="checkbox"/>	PRIVATE-SUBNET-2	subnet-0e47f81df9a88f49c	Available	vpc-07947b113b9461921 VPC...	10.0.4.0/24	-	251
<input type="checkbox"/>	PUBLIC-SUBNET-1	subnet-0c08912850818eac4	Available	vpc-07947b113b9461921 VPC...	10.0.1.0/24	-	251
<input type="checkbox"/>	PUBLIC-SUBNET-1	subnet-09823cff4741b459c	Available	vpc-07947b113b9461921 VPC...	10.0.3.0/24	-	251

- Create an internet gateway AND attach it to VPC

Internet gateways (1/2) Info

Name	Internet gateway ID	State	VPC ID	Owner
IGW-PROJ	igw-02d6b77680287d1f3	Attached	vpc-07947b113b9461921 (VPC-PROJ)	905418116946
-	igw-0e4ce60918f0c56e0	Detached	-	905418116946

igw-02d6b77680287d1f3 / IGW-PROJ

Details

Internet gateway ID igw-02d6b77680287d1f3	State Attached	VPC ID vpc-07947b113b9461921 (VPC-PROJ)	Owner 905418116946
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- Create a NAT gateway that we going to use it in public subnet

NAT gateways (1/1) Info

Name	NAT gateway ID	Connectivity...	State	State message	Primary public I...	Primary private I...	Primary network...	VPC	Subnet
NAT-PROJ	nat-016eb1baec768ae4f	Public	Available	-	52.88.71.10	10.0.4.217	eni-03f5e01231a6f2...	vpc-07947b113b9461921 / VP...	subnet-0e47...

nat-016eb1baec768ae4f / NAT-PROJ

Details

NAT gateway ID nat-016eb1baec768ae4f	Connectivity type Public	State Available	State message -
NAT gateway ARN arn:aws:ec2:us-west-2:905418116946:natgateway/nat-016eb1baec768ae4f	Primary public IPv4 address 52.88.71.10	Primary private IPv4 address 10.0.4.217	Primary network interface ID eni-03f5e01231a6f2...
VPC vpc-07947b113b9461921 (VPC-PROJ)	Subnet subnet-0e47b1d99a88f49c / PRIVATE-SUBNET-2	Created Saturday, March 30, 2024 at 10:20:51 GMT-3	Deleted -

- After creating NAT and IGW (internet gateway) we must define route tables

One for public subnets and the other for private subnets.

- Create EC2 instances:

<input checked="" type="checkbox"/>	PUB-EC2	i-0f048ba51abd18291	Running	t2.micro	2/2 checks pass View alarms	us-west-2a	-	34.211.166.223	-	-
<input type="checkbox"/>	PRIV-ec2	i-0823594feb2255630	Pending	t2.micro	- View alarms	us-west-2b	-	-	-	-

Instance: i-0f048ba51abd18291 (PUB-EC2)

[Details](#) | [Status and alarms](#) **New** | [Monitoring](#) | [Security](#) | [Networking](#) | [Storage](#) | [Tags](#)

▼ Instance summary [Info](#)

Instance ID
i-0f048ba51abd18291 (PUB-EC2)

IPv6 address

IP name: ip-10-0-1-177.us-west-2.compute.internal

Answer private resource DNS name

Auto-assigned IP address

Public IPv4 address
34.211.166.223 | [open address](#)

Instance state

Private IP DNS name (IPv4 only)

 ip-10-0-1-177.us-west-2.compute.internal

Instance type

VPC ID

Private IPv4 addresses
10.0.1.177

Public IPv4 DNS

Elastic IP addresses

AWS Compute Optimizer finding

vpc-07947b113b9461921 / VPC-PROJ

Details | **Resource map** | CIDRs | Flow logs | Tags | Integrations

Resource map [Info](#)

VPC [Show details](#)

VPC-PROJ

Subnets (4)

Subnets within this VPC

us-west-2a

PUBLIC-SUBNET-1

us-west-2b

PUBLIC-SUBNET-1

PRIVATE-SUBNET-2

Route tables (3)

Route network traffic to resources

rtb-0a05ee15f8e9662f8

PRIVATE-RT

Network connections (2)

Connections to other networks

IGW-PROJ

NAT-PROJ

- Connect by ssh:

```
ec2-user@ip-10-0-1-177:~  
.  
#####  
@      WARNING: UNPROTECTED PRIVATE KEY FILE!      @  
#####  
Permissions 0664 for 'proj_kp.pem' are too open.  
It is required that your private key files are NOT accessible by others.  
This private key will be ignored.  
Load key "proj_kp.pem": bad permissions  
ec2-user@34.211.166.223: Permission denied (publickey,gssapi-keyex,gssapi-with-m  
ic).  
karam@karam:~/Downloads$ chmod 400 proj_kp.pem  
karam@karam:~/Downloads$ ssh -i proj_kp.pem ec2-user@34.211.166.223  
  
#_      Amazon Linux 2  
~\_#####  
~~\_#####  
~~\_###|      AL2 End of Life is 2025-06-30.  
~~\_#/      A newer version of Amazon Linux is available!  
~~\_V~'~'~>  
~~~\_./\_/_/      Amazon Linux 2023, GA and supported until 2028-03-15.  
~~\_/_/_/      https://aws.amazon.com/linux/amazon-linux-2023/  
_/_/_/m/'  
[ec2-user@ip-10-0-1-177 ~]$
```

```
ec2-user@ip-10-0-1-177:~  
[ec2-user@ip-10-0-1-177 ~]$ sudo yum install mysql  
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd  
amzn2-core | 3.6 kB 00:00  
  
Resolving Dependencies  
--> Running transaction check  
---> Package mariadb.x86_64 1:5.5.68-1.amzn2.0.1 will be installed  
--> Finished Dependency Resolution  
  
Dependencies Resolved  
  
=====
```

Package	Arch	Version	Repository	Size
Installing:				
mariadb	x86_64	1:5.5.68-1.amzn2.0.1	amzn2-core	8.8 M

```
=====
```

Transaction Summary
=====

Install 1 Package

Total download size: 8.8 M
Installed size: 49 M
Is this ok [v/d/N]: Exiting on user command

```
[ec2-user@ip-10-0-1-177 ~]$ mysql -h 10.0.4.209 karam-server
```

```
ec2-user@ip-10-0-1-177:~  
└─3843 /usr/libexec/mysqld --basedir=/usr --datadir=/var/lib/mysql...  
Mar 30 13:58:20 ip-10-0-1-177.us-west-2.compute.internal mariadb-prepare-db-dir[  
3595]: ...  
Mar 30 13:58:20 ip-10-0-1-177.us-west-2.compute.internal mariadb-prepare-db-dir[  
3595]: ...  
Mar 30 13:58:20 ip-10-0-1-177.us-west-2.compute.internal mariadb-prepare-db-dir[  
3595]: ...  
Mar 30 13:58:20 ip-10-0-1-177.us-west-2.compute.internal mariadb-prepare-db-dir[  
3595]: ...  
Mar 30 13:58:20 ip-10-0-1-177.us-west-2.compute.internal mariadb-prepare-db-dir[  
3595]: ...  
Mar 30 13:58:20 ip-10-0-1-177.us-west-2.compute.internal mariadb-prepare-db-dir[  
3595]: ...  
Mar 30 13:58:21 ip-10-0-1-177.us-west-2.compute.internal mysqld_safe[3677]: 2...  
Mar 30 13:58:21 ip-10-0-1-177.us-west-2.compute.internal mysqld_safe[3677]: 2...  
Mar 30 13:58:23 ip-10-0-1-177.us-west-2.compute.internal systemd[1]: Started ...  
Hint: Some lines were ellipsized, use -l to show in full.  
[ec2-user@ip-10-0-1-177 ~]$ mysql -h 10.0.4.209 karam-server  
SHOW DATABASES;
```