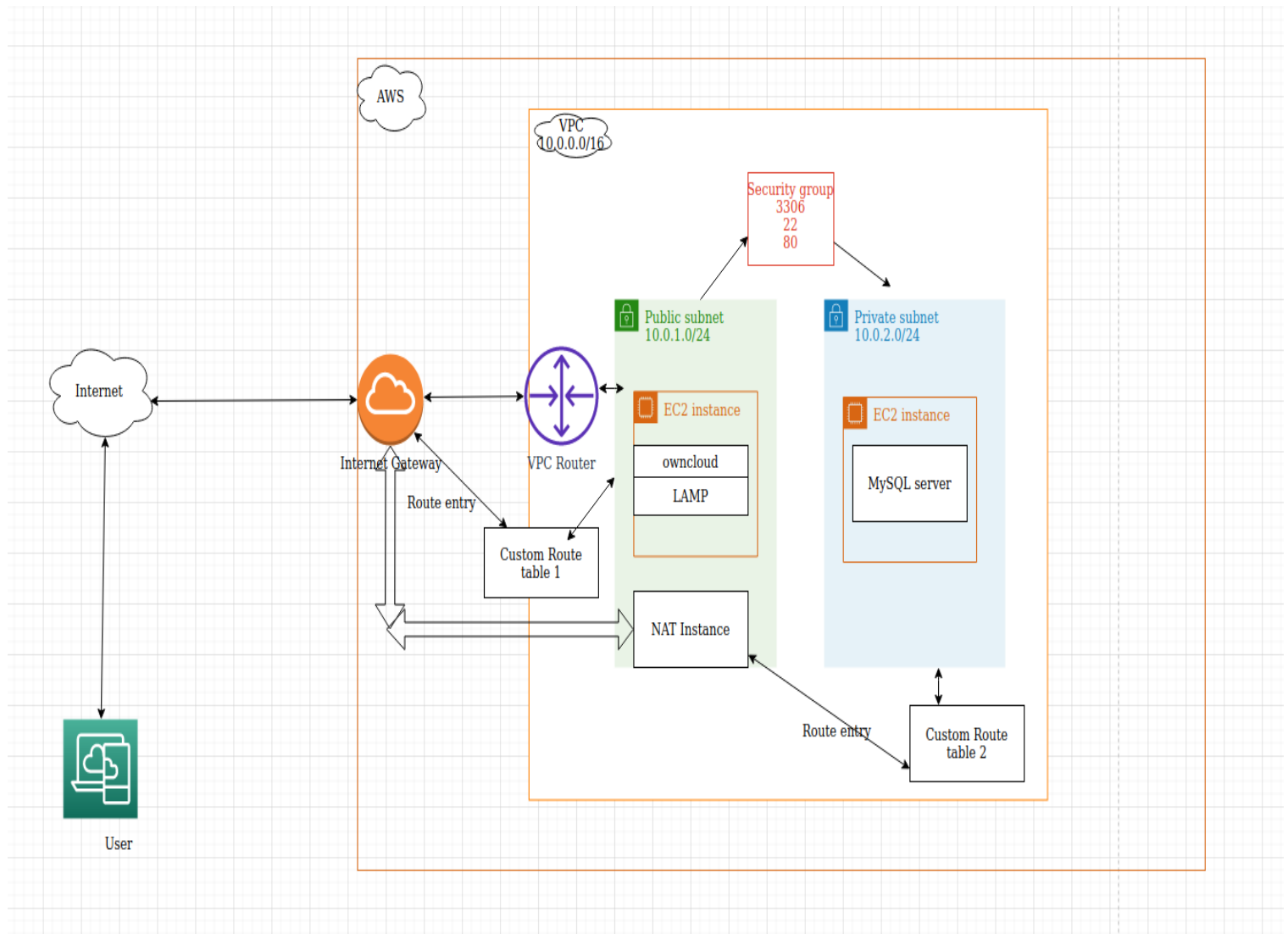


# Project 01

## Creating a file share & sync solution using ownCloud and AWS

### Architecture Diagram:



### Steps:

1. Create custom vpc : owncloud-vpc

Create VPC

Actions

Filter by tags and attributes or search by keyword

1 to 2 of 2

	Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR	DHCP options set	Main Route table	Main Network ACL	Tenancy	Default
<input checked="" type="checkbox"/>	owncloud-vpc	vpc-04bcab809cdb8889b	available	10.0.0.0/16	-	dopt-b65d9dcc	rtb-05b706c245b2a7de8	acl-02ee746a500b79ec9	default	No
<input type="checkbox"/>		vpc-a492b5de	available	172.31.0.0/16	-	dopt-b65d9dcc	rtb-5717b529	acl-e5c4698	default	Yes

VPC: vpc-04bcab809cdb8889b

Description

CIDR Blocks

Flow Logs

Tags

VPC ID

State

IPv4 CIDR

IPv6 CIDR

Network ACL

DHCP options set

Route table

Tenancy

Default VPC

Classic link

DNS resolution

DNS hostnames

ClassicLink DNS Support

Owner

vpc-04bcab809cdb8889b

available

10.0.0.0/16

-

acl-02ee746a500b79ec9

dopt-b65d9dcc

rtb-05b706c245b2a7de8

default

No

Disabled

Enabled

Enabled

Disabled

041317962156

## 2. Create public subnet

https://console.aws.amazon.com/vpc/home?region=us-east-1#subnets:sort=SubnetId

Services

Resource Groups

Support

Create subnet

Actions

Filter by tags and attributes or search by keyword

1 to 8 of 8

	Name	Subnet ID	State	VPC	IPv4 CIDR	Available IPv4	IPv6 CIDR	Availability Zone	Availability Zone ID	Route table
<input checked="" type="checkbox"/>	public-subn...	subnet-06d15697763360b8d	available	vpc-04bcab809cdb8889b	10.0.1.0/24	249	-	us-east-1a	use1-az6	rtb-05e33feaaef696201   owncloud-public-rt
<input type="checkbox"/>	private-sub...	subnet-0b9ca3d0877523cd6	available	vpc-04bcab809cdb8889b	10.0.2.0/24	250	-	us-east-1b	use1-az1	rtb-05b706c245b2a7de8
<input type="checkbox"/>		subnet-1db9e723	available	vpc-a492b5de	172.31.48.0/20	4091	-	us-east-1e	use1-az3	rtb-5717b529
<input type="checkbox"/>		subnet-23293e7f	available	vpc-a492b5de	172.31.32.0/20	4091	-	us-east-1a	use1-az6	rtb-5717b529
<input type="checkbox"/>		subnet-30da163e	available	vpc-a492b5de	172.31.64.0/20	4091	-	us-east-1f	use1-az5	rtb-5717b529
<input type="checkbox"/>		subnet-7118e95f	available	vpc-a492b5de	172.31.80.0/20	4091	-	us-east-1c	use1-az2	rtb-5717b529
<input type="checkbox"/>		subnet-93f42ede	available	vpc-a492b5de	172.31.16.0/20	4091	-	us-east-1d	use1-az4	rtb-5717b529
<input type="checkbox"/>		subnet-ab4943cc	available	vpc-a492b5de	172.31.0.0/20	4091	-	us-east-1b	use1-az1	rtb-5717b529

Subnet: subnet-06d15697763360b8d

Description

Flow Logs

Route Table

Network ACL

Tags

Sharing

Subnet ID

VPC

Available IPv4 Addresses

Availability Zone

Network ACL

Auto-assign public IPv4 address

Outpost ID

State

IPv4 CIDR

IPv6 CIDR

Route Table

Default subnet

Auto-assign IPv6 address

Owner

subnet-06d15697763360b8d

vpc-04bcab809cdb8889b | owncloud-vpc

249

us-east-1a (use1-az6)

acl-02ee746a500b79ec9

Yes

-

available

10.0.1.0/24

-

rtb-05e33feaaef696201 | owncloud-public-rt

No

No

041317962156

## 3. Modify auto-assign public ip address

https://console.aws.amazon.com/vpc/home?region=us-east-1#ModifyAutoAssignIpSettings:SubnetId=subnet-06d15697763360b8d

Services

Resource Groups

Support

Modify auto-assign IP settings

Modify auto-assign IP settings

le the auto-assign IP address setting to automatically request a public IPv4 or IPv6 address for an instance launched in this subnet. You can override the auto-assign IP settings for an instance at launch time.

Subnet ID

subnet-06d15697763360b8d

Auto-assign IPv4

Enable auto-assign public IPv4 address

Cancel

Save

## 4. Create Internet Gateway: owncloud-ig

Internet gateway: igw-0a8742566b64c3479

Name	ID	State	VPC	Owner
owncloud-ig	igw-0a8742566b64c3479	attached	vpc-04bcab809cdeb889b	041317962156
igw-8a70faf1	igw-8a70faf1	attached	vpc-a492b5de	041317962156

Internet gateway: igw-0a8742566b64c3479

Description

Tags

ID: igw-0a8742566b64c3479

State: attached

Attached VPC ID: vpc-04bcab809cdeb889b | owncloud-vpc

Owner: 041317962156

## 5. Attach owncloud-ig to Custom vpc(owncloud-vpc)

## 6. Create route table: owncloud-public-rt

Route Table: rtb-05e33feaaef696201

Summary

Routes

Subnet Associations

Edge Associations

Route Propagation

Tags

Route Table ID: rtb-05e33feaaef696201

Explicitly Associated with: subnet-06d15697763360b8d

Owner: 041317962156

Main: No

VPC: vpc-04bcab809cdeb889b | owncloud-vpc

## 7. edit subnet associations- add public subnet to this route table.

Services ▾ Resource Groups ▾ ☆

vocstartsoft/user554666=sach... ▾ N. Virginia ▾ Support ▾

Create route table Actions ▾

Filter by tags and attributes or search by keyword

Name	Route Table ID	Explicit subnet association	Edge associations	Main	VPC ID	Owner
<input type="checkbox"/>	rtb-05b706c245b2a7de8	subnet-0b9ca3d0877523cd6	-	Yes	vpc-04bcab809cdb8889b ...	041317962156
<input checked="" type="checkbox"/> owncloud-public-rt	rtb-05e33feaaef696201	subnet-06d15697763360b8d	-	No	vpc-04bcab809cdb8889b ...	041317962156
<input type="checkbox"/>	rtb-5717b529	-	-	Yes	vpc-a492b5de	041317962156

Route Table: rtb-05e33feaaef696201

Summary Routes Subnet Associations Edge Associations Route Propagation Tags

Edit subnet associations

Subnet ID	IPv4 CIDR	IPv6 CIDR
subnet-06d15697763360b...	10.0.1.0/24	-

8. Add route entry 0.0.0.0/0 and internet gateway created(**owncloud-ig**)

Create route table Actions ▾

Filter by tags and attributes or search by keyword

Name	Route Table ID	Explicit subnet association	Edge associations	Main	VPC ID	Owner
<input type="checkbox"/>	rtb-05b706c245b2a7de8	subnet-0b9ca3d0877523cd6	-	Yes	vpc-04bcab809cdb8889b ...	041317962156
<input checked="" type="checkbox"/> owncloud-public-rt	rtb-05e33feaaef696201	subnet-06d15697763360b8d	-	No	vpc-04bcab809cdb8889b ...	041317962156
<input type="checkbox"/>	rtb-5717b529	-	-	Yes	vpc-a492b5de	041317962156

Route Table: rtb-05e33feaaef696201

Summary Routes Subnet Associations Edge Associations Route Propagation Tags

Edit routes

View All routes ▾

Destination	Target	Status	Propagated
10.0.0.0/16	local	active	No
0.0.0.0/0	igw-0a8742566b64c3479	active	No

9. Create an ec2 instance(**owncloud-ec2-instance**) in Public subnet ([subnet-06d15697763360b8d](#) -public-subnet-1).

ServicesResource Groups

vocstartsoft/user554666=sach...N. VirginiaSupport

Launch InstanceConnectActions

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 Name	Monitoring
	db-server-pri...	i-0e48ab0c986c261ea	t2.micro	us-east-1b	running	2/2 checks ...	None		-	-	greatlearning	disabled
	nat-instance	i-0de61e1d87b22c21e	t2.micro	us-east-1a	running	2/2 checks ...	None	ec2-54-164-114-242.co...	54.164.114.242	-		disabled
	owncloud-ec...	i-0671814893033bac8	t2.micro	us-east-1a	running	2/2 checks ...	None	ec2-3-91-103-24.comp...	3.91.103.24	-	greatlearning	disabled

Instance: i-0671814893033bac8 (owncloud-ec2-instance)Public DNS: ec2-3-91-103-24.compute-1.amazonaws.com

DescriptionStatus ChecksMonitoringTags

Instance IDi-0671814893033bac8

Instance state: running

Instance type: t2.micro

Finding: You may not have permission to access AWS Compute Optimizer.

Private DNS: ip-10-0-1-183.ec2.internal

Private IPs: 10.0.1.183

Secondary private IPs

VPC ID: vpc-04bcab809c0b889b (owncloud-vpc)

Subnet ID: subnet-06d15697763360b8d (public-subnet-1)

Network interfaces: eth0

Source/dest. check: True

T2/T3 Unlimited: Disabled

EBS-optimized: False

Root device type: ebs

Root device: /dev/sda1

Block devices: /dev/sda1

Elastic Graphics ID: -

Public DNS (IPv4): ec2-3-91-103-24.compute-1.amazonaws.com

IPv4 Public IP: 3.91.103.24

IPv6 IPs: -

Elastic IPs

Availability zone: us-east-1a

Security groups: opens-port-22-for-vpc, outbound-sg-https, opens-port-80-for-vpc. view inbound rules, view outbound rules

Scheduled events: No scheduled events

AMI ID: ubuntu/images/hvm-ssd/ubuntu-bionic-18.04-amd64-server-20191002 (ami-04b9e92b5572fa0d1)

Platform: -

IAM role: -

Key pair name: greatlearning

Owner: 041317962156

Launch time: January 12, 2020 at 8:36:29 AM UTC-6 (48 hours)

Termination protection: False

Lifecycle: normal

Monitoring: basic

Alarm status: None

## 10. Create security groups opens-port-22

Security Group: sg-0741838a2233917e6

DescriptionInboundOutboundTags

Edit

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

Security Group: sg-0741838a2233917e6

DescriptionInboundOutboundTags

Edit

Type	Protocol	Port Range	Destination	Description
SSH	TCP	22	0.0.0.0/0	
SSH	TCP	22	:::0	

## opens-port-80

Security Group: sg-08a5e4b780332eb24

DescriptionInboundOutboundTags

Edit

Type	Protocol	Port Range	Source	Description
HTTP	TCP	80	0.0.0.0/0	
HTTP	TCP	80	:::0	

Security Group: sg-08a5e4b780332eb24

DescriptionInboundOutboundTags

Edit

Type ⓘ	Protocol ⓘ	Port Range ⓘ	Destination ⓘ	Description ⓘ
HTTP	TCP	80	0.0.0.0/0	
HTTP	TCP	80	:::0	

## outbound-sg-https

Security Group: sg-0c7f9ec0382a20d72

DescriptionInboundOutboundTags

Edit

Type ⓘ	Protocol ⓘ	Port Range ⓘ	Destination ⓘ	Description ⓘ
MySQL/Aurora	TCP	3306	0.0.0.0/0	
MySQL/Aurora	TCP	3306	:::0	
HTTPS	TCP	443	0.0.0.0/0	
HTTPS	TCP	443	:::0	

11. Attach these security groups to ec2 instance created (**owncloud-ec2-instance**).
12. ssh on this owncloud-ec2-instance.
13. Install apache web server using following commands
 

```
sudo apt-get update
sudo apt-get install apache2
```
14. Use the following commands to install php - `sudo apt install php libapache2-mod-php php-mysql`
15. Make index.php as the default first load page
 

```
Edit /etc/apache2/mods-enabled/dir.conf file and make index.php as first
access page
DirectoryIndex index.php index.html index.cgi index.pl index.xhtml index.htm
Restart the web server - sudo systemctl restart apache2
```
16. Run following commands
  1. curl
 

```
https://download.owncloud.org/download/repositories/10.2/Ubuntu\_18.04/Release
.key | sudo apt-key add -
```
  2. echo 'deb
 

```
http://download.owncloud.org/download/repositories/10.2/Ubuntu_18.04/ '/' |
sudo
```

```
tee /etc/apt/sources.list.d/owncloud.list
```

```
3. sudo apt update
```

```
4. sudo apt install php-bz2 php-curl php-gd php-imagick php-intl php-mbstring  
php-xml php-zip owncloud-files
```

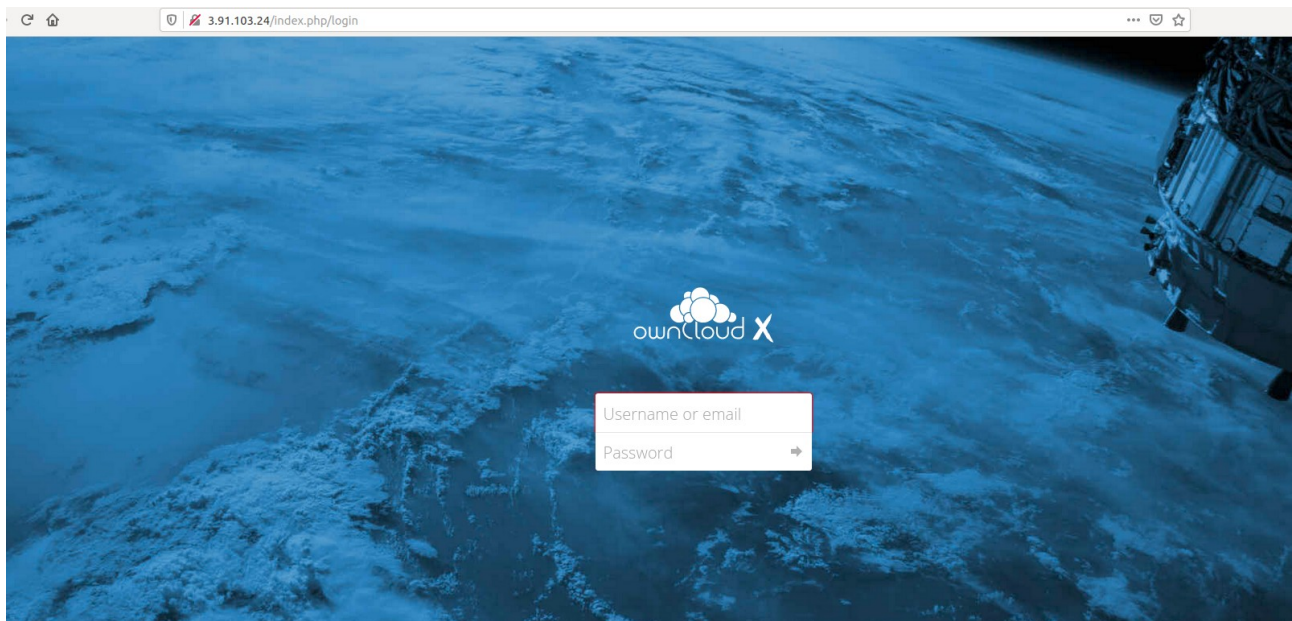
17. Change default site directory to owncloud files directory using sudo user

```
1. edit /etc/apache2/sites-enabled/000-default.conf
```

```
2. update directory root path to /var/www/owncloud
```

```
3. restart the server - sudo systemctl reload apache2
```

18. Access the owncloud application using public ip of EC2 instance in browser.



19. Create private subnet(private-subnet-1)

Services Resource Groups

Create subnet Actions

Filter by tags and attributes or search by keyword

Name	Subnet ID	State	VPC	IPv4 CIDR	Available IPv4	IPv6 CIDR	Availability Zone	Availability Zone ID	Route table
public-subnet-1	subnet-06d15697763360b8d	available	vpc-04bcab809cdeb8889b ...	10.0.1.0/24	249	-	us-east-1a	use1-az6	rtb-05e33feaaef696201   owncl
private-subnet-1	subnet-0b9ca3d0877523cd6	available	vpc-04bcab809cdeb8889b ...	10.0.2.0/24	250	-	us-east-1b	use1-az1	rtb-05b706c245b2a7de8
	subnet-1db9e723	available	vpc-a492b5de	172.31.48.0/20	4091	-	us-east-1e	use1-az3	rtb-5717b529
	subnet-23293e7f	available	vpc-a492b5de	172.31.32.0/20	4091	-	us-east-1a	use1-az6	rtb-5717b529
	subnet-30da163e	available	vpc-a492b5de	172.31.64.0/20	4091	-	us-east-1f	use1-az5	rtb-5717b529
	subnet-71f8e95f	available	vpc-a492b5de	172.31.80.0/20	4091	-	us-east-1c	use1-az2	rtb-5717b529
	subnet-93f42ede	available	vpc-a492b5de	172.31.16.0/20	4091	-	us-east-1d	use1-az4	rtb-5717b529
	subnet-ab4943cc	available	vpc-a492b5de	172.31.0.0/20	4091	-	us-east-1b	use1-az1	rtb-5717b529

Subnet: subnet-0b9ca3d0877523cd6

Description Flow Logs Route Table Network ACL Tags Sharing

Subnet ID subnet-0b9ca3d0877523cd6 State available  
VPC vpc-04bcab809cdeb8889b | owncloud-vpc  
Available IPv4 Addresses 250  
Availability Zone us-east-1b (use1-az1)  
Network ACL acl-02ee746a500b79ec9  
Auto-assign public IPv4 address No  
Outpost ID -  
IPv4 CIDR 10.0.2.0/24  
IPv6 CIDR -  
Route Table rtb-05b706c245b2a7de8  
Default subnet No  
Auto-assign IPv6 address No  
Owner 041317962156

## 20. Create a NAT instance (nat-instance) on Public subnet:

The screenshot shows the AWS Management Console interface. On the left, there is a navigation menu with options like 'Dashboard', 'Instances', 'Security Groups', etc. The main area displays the details of a NAT instance named 'nat-instance' (Instance ID: i-0de61e1d87b2c21e). The instance is running in the us-east-1a Availability Zone. The Public DNS is ec2-54-164-114-242.compute-1.amazonaws.com. The instance is connected to a VPC (vpc-04bcab809cdb8889b) and a Subnet (subnet-06d15697763360b8d). The instance is running on an Amazon Linux 2 AMI (ami-00a9d4a05375b2763). The instance is connected to a VPC (vpc-04bcab809cdb8889b) and a Subnet (subnet-06d15697763360b8d). The instance is running on an Amazon Linux 2 AMI (ami-00a9d4a05375b2763).

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 IPs	Key Name
db-server-private	i-0e48ab0c996c261ea	t2.micro	us-east-1b	running	2/2 checks ...	None	-	-	-	greatlearning
<b>nat-instance</b>	<b>i-0de61e1d87b2c21e</b>	<b>t2.micro</b>	<b>us-east-1a</b>	<b>running</b>	<b>2/2 checks ...</b>	<b>None</b>	<b>ec2-54-164-114-242.co...</b>	<b>54.164.114.242</b>	-	greatlearning
owncloud-ec2-instance	i-0671814893033bac8	t2.micro	us-east-1a	running	2/2 checks ...	None	ec2-3-91-103-24.comp...	3.91.103.24	-	greatlearning

**Instance: i-0de61e1d87b2c21e (nat-instance)** Public DNS: ec2-54-164-114-242.compute-1.amazonaws.com

Description	Status Checks	Monitoring	Tags
Instance ID	i-0de61e1d87b2c21e		
Instance state	running		
Instance type	t2.micro		
Finding	You may not have permission to access AWS Compute Optimizer.		
Private DNS	ip-10-0-1-57.ec2.internal		
Private IPs	10.0.1.57		
Secondary private IPs			
VPC ID	vpc-04bcab809cdb8889b (owncloud-vpc)		
Subnet ID	subnet-06d15697763360b8d (public-subnet-1)		
Network interfaces	eth0		
Source/dest. check	False		
T2/T3 Unlimited	Disabled		
EBS-optimized	False		
Root device type	ebs		
Root device	/dev/xvda		
Block devices	/dev/xvda		
Elastic Graphics ID	-		
Public DNS (IPv4)	ec2-54-164-114-242.compute-1.amazonaws.com		
IPv4 Public IP	54.164.114.242		
IPv6 IPs	-		
Elastic IPs	-		
Availability zone	us-east-1a		
Security groups	opens-port-22-for-vpc, opens-port-80-for-vpc, outbound-all-traffic, view inbound rules, view outbound rules		
Scheduled events	No scheduled events		
AMI ID	amzn-ami-vpc-nat-hvm-2018.03.0.20181116-x86_64-bits (ami-00a9d4a05375b2763)		
Platform	-		
IAM role	-		
Key pair name	-		
Owner	041317962156		
Launch time	January 12, 2020 at 12:08:18 PM UTC-6 (44 hours)		
Termination protection	False		
Lifecycle	normal		
Monitoring	basic		
Alarm status	None		

## 21. Create security group Outbound traffic:

The screenshot shows the AWS Management Console interface. On the left, there is a navigation menu with options like 'Dashboard', 'Instances', 'Security Groups', etc. The main area displays the details of a security group named 'sg-0e541d0800dce7a5f'. The security group is associated with the VPC 'vpc-04bcab809cdb8889b' and the Owner '041317962156'. The security group is associated with the VPC 'vpc-04bcab809cdb8889b' and the Owner '041317962156'.

Name	Group ID	Group Name	VPC ID	Owner	Description
sg-014b8e7c9ea8fb3ee	default	default	vpc-04bcab809cdb8889b	041317962156	default VPC security group
sg-0741838a2233917e6	opens-port-22-for-vpc	opens-port-22-for-vpc	vpc-04bcab809cdb8889b	041317962156	opens-port-22-for-vpc
sg-08896c2553b1d4de7	open-ssh	open-ssh	vpc-a492b5de	041317962156	Open port 22 for ssh
sg-08a5e4b780332eb24	opens-port-80-for-vpc	opens-port-80-for-vpc	vpc-04bcab809cdb8889b	041317962156	opens-port-80-for-vpc
sg-0ad985a2a8f6ac91	launch-wizard-2	launch-wizard-2	vpc-a492b5de	041317962156	launch-wizard-2 created 2020-01-11T11:45:09.399-06:00
sg-0bbf1de1aa2ab82db	public-subnet-traffic-only	public-subnet-traffic-only	vpc-04bcab809cdb8889b	041317962156	Allows public subnet traffic to this instance
sg-0c7f9ec0382a20d72	outbound-sg-https	outbound-sg-https	vpc-04bcab809cdb8889b	041317962156	outbound-sg-https
sg-0e3d4de79c22ea761	open-http	open-http	vpc-a492b5de	041317962156	Opens port 80 for http
<b>sg-0e541d0800dce7a5f</b>	<b>outbound-all-traffic</b>	<b>outbound-all-traffic</b>	<b>vpc-04bcab809cdb8889b</b>	<b>041317962156</b>	<b>outbound-all-traffic</b>
sg-0fa7fe844080b68b2	open-rdp	open-rdp	vpc-a492b5de	041317962156	open rdp for remote access
sg-0fc2b4c6d914be53b	launch-wizard-1	launch-wizard-1	vpc-a492b5de	041317962156	launch-wizard-1 created 2020-01-05T04:12:15.410-06:00
sg-0ff7bff317abb6710	launch-wizard-3	launch-wizard-3	vpc-04bcab809cdb8889b	041317962156	launch-wizard-3 created 2020-01-12T07:39:38.089-06:00

**Security Group: sg-0e541d0800dce7a5f**

Type	Protocol	Port Range	Destination	Description
HTTP	TCP	80	0.0.0.0/0	
HTTP	TCP	80	:::0	
All TCP	TCP	0 - 65535	0.0.0.0/0	
All TCP	TCP	0 - 65535	:::0	
HTTPS	TCP	443	0.0.0.0/0	



22. Attach opens-port-22, opens-port-80, Outbound traffic to this nat instance.

**Change Security Groups** ✕

Instance ID: i-0de61e1d87b22c21e  
Interface ID: eni-0774e7ccd172e66b1

Select Security Group(s) to associate with your instance

	Security Group ID	Security Group Name	Description
<input type="checkbox"/>	sg-014b8e7c9ea8fb3ee	default	default VPC security group
<input type="checkbox"/>	sg-0ff7bff317abb6710	launch-wizard-3	launch-wizard-3 created 2020-01-12T07:39:38.089-06:00
<input checked="" type="checkbox"/>	sg-0741838a2233917e6	opens-port-22-for-vpc	opens-port-22-for-vpc
<input checked="" type="checkbox"/>	sg-08a5e4b780332eb24	opens-port-80-for-vpc	opens-port-80-for-vpc
<input checked="" type="checkbox"/>	sg-0e541d0800dce7a5f	outbound-all-traffic	outbound-all-traffic
<input type="checkbox"/>	sg-0c7f9ec0382a20d72	outbound-sg-https	outbound-sg-https
<input type="checkbox"/>	sg-0bbf1de1aa2ab82db	public-subnet-traffic-only	Allows public subnet traffic ti this instance

[Cancel](#) [Assign Security Groups](#)

23. In default route table for custom vpc(**owncloud-vpc**), add an entry  
0.0.0.0/0      nat-instance

Route Table: rtb-05b706c245b2a7de8

Summary **Routes** Subnet Associations Edge Associations Route Propagation Tags

[Edit routes](#)

View All routes

Destination	Target	Status	Propagated
10.0.0.0/16	local	active	No
0.0.0.0/0	eni-0774e7ccd172e66b1	active	No

24. Associate the **private-subnet-1** with this route table.

Create route table Actions

Filter by tags and attributes or search by keyword

Name	Route Table ID	Explicit subnet association	Edge associations	Main	VPC ID	Owner
<input checked="" type="checkbox"/>	rtb-05b706c245b2a7de8	subnet-0b9ca3d0877523cd6	-	Yes	vpc-04bcab809cdb8889b ...	041317962156
<input type="checkbox"/>	owncloud-public-rt	subnet-06d15697763360b8d	-	No	vpc-04bcab809cdb8889b ...	041317962156
<input type="checkbox"/>	rtb-5717b529	-	-	Yes	vpc-a492b5de	041317962156

Route Table: rtb-05b706c245b2a7de8

Summary Routes Subnet Associations Edge Associations Route Propagation Tags

Edit subnet associations

Subnet ID	IPv4 CIDR	IPv6 CIDR
subnet-0b9ca3d0877523c...	10.0.2.0/24	-

## 25. Create an ec2 instance on private-subnet-1: db-server-private

Services Resource Groups

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 Name
<input checked="" type="checkbox"/>	db-server-private	i-0e48ab0c986c261ea	t2.micro	us-east-1b	running	2/2 checks ...	None	-	-	greatlearning
<input type="checkbox"/>	nat-instance	i-0de61e1d87b22c21e	t2.micro	us-east-1a	running	2/2 checks ...	None	ec2-54-164-114-242.co...	54.164.114.242	-
<input type="checkbox"/>	owncloud-ec2-instance	i-0671814893033bac8	t2.micro	us-east-1a	running	2/2 checks ...	None	ec2-3-91-103-24.comp...	3.91.103.24	-

Instance: i-0e48ab0c986c261ea (db-server-private) Private IP: 10.0.2.109

Description Status Checks Monitoring Tags

Instance ID	i-0e48ab0c986c261ea	Public DNS (IPv4)	-
Instance state	running	IPv4 Public IP	-
Instance type	t2.micro	IPv6 IPs	-
Finding	You may not have permission to access AWS Compute Optimizer.	Elastic IPs	-
Private DNS	ip-10-0-2-109.ec2.internal	Availability zone	us-east-1b
Private IPs	10.0.2.109	Security groups	public-subnet-traffic-only, outbound-all-traffic, view inbound rules, view outbound rules
Secondary private IPs	-	Scheduled events	No scheduled events
VPC ID	vpc-04bcab809cdb8889b (owncloud-vpc)	AMI ID	ubuntu/images/hvm-ssd/ubuntu-bionic-18.04-amd64-server-20191002 (ami-04b9e92b5572fa0d1)
Subnet ID	subnet-0b9ca3d0877523cd6 (private-subnet-1)	Platform	-
Network interfaces	eth0	IAM role	-
Source/dest. check	True	Key pair name	greatlearning
T2/T3 Unlimited	Disabled	Owner	041317962156
EBS-optimized	False	Launch time	January 12, 2020 at 12:47:38 PM UTC-6 (44 hours)
Root device type	ebs	Termination protection	False
Root device	/dev/sda1	Lifecycle	normal
Block devices	/dev/sda1	Monitoring	basic
Elastic Graphics ID	-	Alarm status	None

26. It is not having any public IPv4 address, it has only private Ip address.

27. Create security group- **public-subnet-traffic-only**: It will allow only public subnet ec2 instances which will be able to communicate to ec2 instances in private subnet.

Create Security Group Actions

Filter by tags and attributes or search by keyword

Name	Group ID	Group Name	VPC ID	Owner	Description
<input type="checkbox"/>	sg-014b8e7c9ea8fb3ee	default	vpc-04bcab809cdb8889b	041317962156	default VPC security group
<input type="checkbox"/>	sg-0741838a2233917e6	opens-port-22-for-vpc	vpc-04bcab809cdb8889b	041317962156	opens-port-22-for-vpc
<input type="checkbox"/>	sg-08896c2553b1d4de7	open-ssh	vpc-a492b5de	041317962156	Open port 22 for ssh
<input type="checkbox"/>	sg-08a5e4b780332eb24	opens-port-80-for-vpc	vpc-04bcab809cdb8889b	041317962156	opens-port-80-for-vpc
<input type="checkbox"/>	sg-0ad985a2a8fefac91	launch-wizard-2	vpc-a492b5de	041317962156	launch-wizard-2 created 2020-01-11T11:45:09.399-06:00
<input checked="" type="checkbox"/>	sg-0bbf1de1aa2ab82db	public-subnet-traffic-only	vpc-04bcab809cdb8889b	041317962156	Allows public subnet traffic ti this instance
<input type="checkbox"/>	sg-0c7f9ec0382a20d72	outbound-sg-https	vpc-04bcab809cdb8889b	041317962156	outbound-sg-https
<input type="checkbox"/>	sg-0e3d4de79c22ea761	open-http	vpc-a492b5de	041317962156	Opens port 80 for http
<input type="checkbox"/>	sg-0e541d0800dce7a5f	outbound-all-traffic	vpc-04bcab809cdb8889b	041317962156	outbound-all-traffic
<input type="checkbox"/>	sg-0fa7e844080b68b2	open-rdp	vpc-a492b5de	041317962156	open rdp for remote access
<input type="checkbox"/>	sg-0fc2b4c6d914be53b	launch-wizard-1	vpc-a492b5de	041317962156	launch-wizard-1 created 2020-01-05T04:12:15.410-06:00
<input type="checkbox"/>	sg-0ff7bf317abb6710	launch-wizard-3	vpc-04bcab809cdb8889b	041317962156	launch-wizard-3 created 2020-01-12T07:39:38.089-06:00

Security Group: sg-0bbf1de1aa2ab82db

Description Inbound Outbound Tags

Edit

Type	Protocol	Port Range	Source	Description
MS SQL	TCP	1433	10.0.1.0/24	
SSH	TCP	22	10.0.1.0/24	
MYSQL/Aurora	TCP	3306	10.0.1.0/24	

## outbound-all-traffic

Description Inbound Outbound Tags

Edit

Type	Protocol	Port Range	Destination	Description
HTTP	TCP	80	0.0.0.0/0	
HTTP	TCP	80	:::0	
All TCP	TCP	0 - 65535	0.0.0.0/0	
All TCP	TCP	0 - 65535	:::0	
HTTPS	TCP	443	0.0.0.0/0	
HTTPS	TCP	443	:::0	

28. Attach **public-subnet-traffic-only**, **outbound-all-traffic** to this ec2 instance

Change Security Groups

Instance ID: i-0e48ab0c986c261ea  
Interface ID: eni-04fbb82e8290379f6

Select Security Group(s) to associate with your instance

Security Group ID	Security Group Name	Description
<input type="checkbox"/> sg-014b8e7c9ea8fb3ee	default	default VPC security group
<input type="checkbox"/> sg-0ff7bf317abb6710	launch-wizard-3	launch-wizard-3 created 2020-01-12T07:39:38.089-06:00
<input type="checkbox"/> sg-0741838a2233917e6	opens-port-22-for-vpc	opens-port-22-for-vpc
<input type="checkbox"/> sg-08a5e4b780332eb24	opens-port-80-for-vpc	opens-port-80-for-vpc
<input checked="" type="checkbox"/> sg-0e541d0800dce7a5f	outbound-all-traffic	outbound-all-traffic
<input type="checkbox"/> sg-0c7f9ec0382a20d72	outbound-sg-https	outbound-sg-https
<input checked="" type="checkbox"/> sg-0bbf1de1aa2ab82db	public-subnet-traffic-only	Allows public subnet traffic ti this instance

Cancel Assign Security Groups

## 29. ssh from **owncloud-ec2-instance** to **db-server-private**

Both are ubuntu instances

```
ssh -i *.pem ubuntu@(public ipv4 address)
```

Now ssh into private subnet ec2 instances

```
cd /opt
```

```
sudo chown ubuntu:ubuntu -R/opt
```

```
ls -al
```

```
exit
```

```
ls -al *.pem
```

```
scp -i gl.pem ./gl.pem ubuntu@(public IPV4 address):/opt
```

```
ssh -i gl.pem ubuntu@(public IPV4 address)
```

```
cd /opt
```

```
ls -al
```

```
ssh -i gl.pem ubuntu@(private ipv4 address)
```

Now we have ssh into private subnet ec2 instance:

### **Install & Configure MySQL on DB server**

```
sudo apt-get install mysql-server
```

```
sudo mysql_secure_installation
```

```
sudo mysql
```

Create new DB and user with all privileges

```
CREATE DATABASE owncloud CREATE USER 'owncloud' @ 'localhost'  
IDENTIFIED BY 'password' ;
```

```
CREATE USER 'owncloud' @ '%' IDENTIFIED BY 'password' ;
```

```
GRANT ALL PRIVILEGES ON *.* to owncloud@localhost IDENTIFIED BY  
'password' WITH GRANT OPTION; GRANT
```

```
ALL PRIVILEGES ON *.* to owncloud@'%' IDENTIFIED BY 'password'  
WITH GRANT OPTION;
```

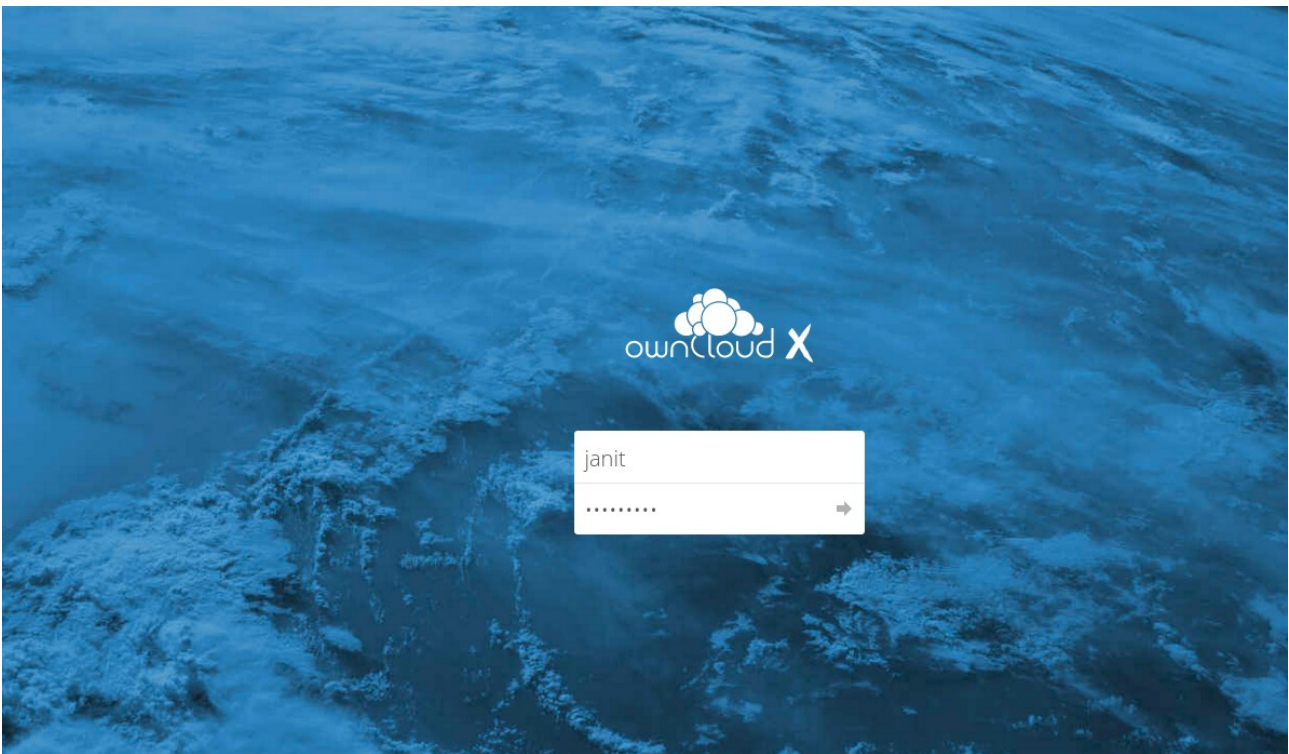
```
FLUSH PRIVILEGES;
```

```
EXIT;
```

### **Change the bind address(add private Ip address of ec2 instance)**

```
sudo vi /etc/mysql/mysql.conf.d/mysqld.cnf sudo systemctl restart mysql
```

## 30. Configure this db details on owncloud UI and create an admin user



31. Create a new group: **owncloud-group**

32. Add multiple users under a group:

3.91.103.24/index.php/settings/users

ownCloud

janit

Username

E-Mail

Groups

Create

Username	Full Name	Password	Groups	Group Admin for	Quota
<div>J</div> janit	janit	*****	admin, owncloud-group	owncloud-group	Default
<div>N</div> Nidhi	Nidhi	*****	owncloud-group	no group	Unlimited
<div>R</div> roma	roma	*****	owncloud-group	no group	Unlimited
<div>S</div> sanchi	sanchi	*****	owncloud-group	no group	Unlimited

33. Share your files/ photos in this created group:

Files

3.91.103.24/index.php/apps/files/?dir=/&fileid=3

ownCloud

janit

All files

favorites

shared with you

shared with others

shared by link

tags

Home > +

Name

Size

Modified

Documents

35 KB

2 days ago

Photos

Shared

788 KB

a day ago

ownCloud Manual.pdf

4.8 MB

2 days ago

2 folders and 1 file

5.6 MB

Photos

788 KB, a day ago

Collaborative tags

Comments

Sharing

User and Groups

Public Links

Share with users, groups or remote users...

owncloud-group (group)

can share

can edit

own-cloud-grouo-file-sharing (group)

can share

can edit

Files

ownCloud

janit

All files

favorites

shared with you

shared with others

shared by link

tags

Home > Photos > +

Name

Size

Modified

Flat.jpg

125 KB

4 months ago

Paris.jpg

223 KB

2 days ago

San Francisco.jpg

211 KB

2 days ago

Squirrel.jpg

228 KB

2 days ago

4 files

788 KB