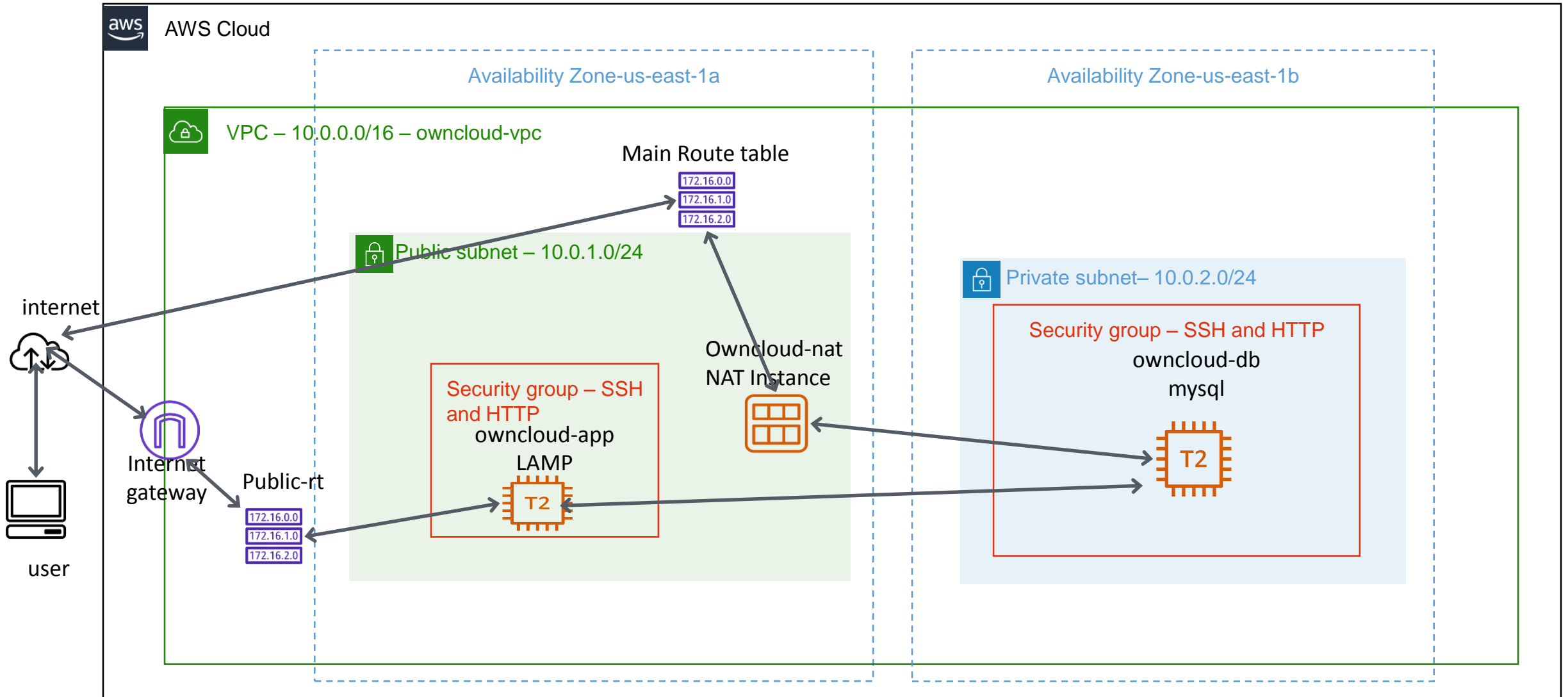


Owncloud APP on AWS

Architecture Diagram



VPC Dashboard

Filter by VPC:

 Select a VPC

Your VPCs (1/2) [Info](#)

↻
Actions ▾
Create VPC

Filter VPCs

<input type="checkbox"/>	Name ▾	VPC ID ▾	State ▾	IPv4 CIDR	IPv6 CIDR (Network border group)
<input type="checkbox"/>	-	vpc-733e9e0e	✔ Available	172.31.0.0/16	-
<input checked="" type="checkbox"/>	owncloud-vpc	vpc-0ac02e4329314f81c	✔ Available	10.0.0.0/16	-

- Virtual Private Cloud**
- Your VPCs**
- Subnets
- Route Tables
- Internet Gateways
- Egress Only Internet Gateways
- Carrier Gateways
- DHCP Options Sets
- Elastic IPs
- Managed Prefix Lists
- Endpoints
- Endpoint Services
- NAT Gateways
- Peering Connections

vpc-0ac02e4329314f81c / owncloud-vpc

Details
CIDRs
Flow logs
Tags

Details

VPC ID vpc-0ac02e4329314f81c	State ✔ Available	DNS hostnames Disabled	DNS resolution Enabled
Tenancy Default	DHCP options set dopt-7aa2ef00	Main route table rtb-09e8c08ae7c1ba8a3	Main network ACL acl-070b1c8004a5dbb94

Create an internet gate way and attach it to owncloud-vpc

New VPC Experience

[Learn more](#)

VPC Dashboard

Filter by VPC:

Select a VPC

VIRTUAL PRIVATE CLOUD

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SECURITY

Internet gateways (2) [Info](#)

Actions

Create internet gateway

Filter internet gateways

< 1 >

<input type="checkbox"/>	Name	Internet gateway ID	State	VPC ID	Owner
<input type="checkbox"/>	owncloud-igw	igw-077c5fe7c4315f2ca	✓ Attached	vpc-0ac02e4329314f81c owncloud-vpc	760607642349
<input type="checkbox"/>	-	igw-772d3a0c	✓ Attached	vpc-733e9e0e	760607642349

Launch public subnet in us-east-1a and edit the route tables to point the internet gateway and associate the public subnet

New VPC Experience

Learn more

VPC Dashboard

Filter by VPC:

Q

Select a VPC

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SECURITY

Network ACLs

Security Groups

REACHABILITY

Subnets (1/8) Info

Q

Filter subnets

1

Settings

Refresh

Actions

Create subnet

	Name	Subnet ID	State	VPC	IPv4 CIDR	IPv6
<input type="checkbox"/>	-	subnet-464a6d0b	Available	vpc-733e9e0e	172.31.16.0/20	-
<input type="checkbox"/>	-	subnet-6f1e8a09	Available	vpc-733e9e0e	172.31.0.0/20	-
<input type="checkbox"/>	-	subnet-52155c5c	Available	vpc-733e9e0e	172.31.64.0/20	-
<input type="checkbox"/>	-	subnet-12de4e4d	Available	vpc-733e9e0e	172.31.32.0/20	-
<input checked="" type="checkbox"/>	public	subnet-0392aa3568b6fc39a	Available	vpc-0ac02e4329314f81c ow...	10.0.1.0/24	-
<input type="checkbox"/>	-	subnet-d204dfe3	Available	vpc-733e9e0e	172.31.48.0/20	-
<input type="checkbox"/>	-	subnet-fd8715dc	Available	vpc-733e9e0e	172.31.80.0/20	-
<input type="checkbox"/>	private	subnet-0ead6c6484f80f921	Available	vpc-0ac02e4329314f81c ow...	10.0.2.0/24	-

Routes (2)

Q


Filter routes

1

Settings


Destination	Target
10.0.0.0/16	local
0.0.0.0/0	igw-077c5fe7c4315f2ca

Launch private subnet to host the EC2 ubuntu instance hosting mysql DB

 New VPC Experience [Learn more](#)

VPC Dashboard

Filter by VPC:

 VIRTUAL PRIVATE CLOUD

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 SECURITY




Network ACLs










Security Groups

 REACHABILITY




Subnets (1/8) [Info](#)


  [Create subnet](#)

 1  

	Name	Subnet ID	State	VPC	IPv4 CIDR	IPv6
<input type="checkbox"/>	-	subnet-464a6d0b	 Available	vpc-733e9e0e	172.31.16.0/20	-
<input type="checkbox"/>	-	subnet-6f1e8a09	 Available	vpc-733e9e0e	172.31.0.0/20	-
<input type="checkbox"/>	-	subnet-52155c5c	 Available	vpc-733e9e0e	172.31.64.0/20	-
<input type="checkbox"/>	-	subnet-12de4e4d	 Available	vpc-733e9e0e	172.31.32.0/20	-
<input type="checkbox"/>	public	subnet-0392aa3568b6fc39a	 Available	vpc-0ac02e4329314f81c ow...	10.0.1.0/24	-
<input type="checkbox"/>	-	subnet-d204dfe3	 Available	vpc-733e9e0e	172.31.48.0/20	-
<input type="checkbox"/>	-	subnet-fd8715dc	 Available	vpc-733e9e0e	172.31.80.0/20	-
<input checked="" type="checkbox"/>	private	subnet-0ead6c6484f80f921	 Available	vpc-0ac02e4329314f81c ow...	10.0.2.0/24	-

Routes (2)

 1  

Destination	Target
10.0.0.0/16	local
0.0.0.0/0	i-0c9cd604ff67c1b01 

Launch an ubuntu t2 micro instance in public subnet of owncloud-vpc and name the instance as owncloud-app with security groups configured to SSH and HTTP ports

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

↻

Connect

Instance state ▼

Actions ▼

Launch instances ▼

🔍 Filter instances

< 1 > ⚙️

<input checked="" type="checkbox"/>	Name ▼	Instance ID	Instance state ▼	Instance type ▼	Status check	Alarm status	Availability Zone ▼	Public IPv4 DI
<input checked="" type="checkbox"/>	owncloud-app	i-062efa62a55c565d8	✔️ Running 🔍	t2.micro	–	No alarms +	us-east-1e	ec2-52-91-117

Instance: i-062efa62a55c565d8 (owncloud-app)

Details

Security

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▼ Instance summary [Info](#)

Instance ID	Public IPv4 address	Private IPv4 addresses
<div><div>📄</div><div>i-062efa62a55c565d8 (owncloud-app)</div></div>	<div><div>📄</div><div>52.91.117.250 open address 🗨️</div></div>	<div><div>📄</div><div>172.31.55.209</div></div>

Security group configured to SSH and HTTP on to public EC2 owncloud-app instance

New VPC Experience

Learn more

VPC Dashboard

Filter by VPC:

Q

Select a VPC

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SECURITY

Network ACLs

Security Groups

Security Groups (1/5) Info

↺

Actions ▾

Create security group

Q


Filter security groups

◀ 1 ▶ ⚙



<input type="checkbox"/>	Name ▾	Security group ID ▾	Security group name ▾	VPC ID ▾	Description ▾	Owner
<input type="checkbox"/>	–	sg-072e17353acab1683	default	vpc-0ac02e4329314f81c	default VPC security gr...	760607642349
<input type="checkbox"/>	–	sg-075bf6ebc9e9f5d79	open-ssh-mysql	vpc-0ac02e4329314f81c	public subnet traffic only	760607642349
<input checked="" type="checkbox"/>	–	sg-0bdd1486cc3815cd3	open-http-ssh	vpc-0ac02e4329314f81c	opens port 80 and por...	760607642349
<input type="checkbox"/>	–	sg-0d988744850bbce34	open-http-ssh	vpc-733e9e0e	opens port http on 80 ...	760607642349
<input type="checkbox"/>	–	sg-34a1333f	default	vpc-733e9e0e	default VPC security gr...	760607642349

Type	Protocol	Port range	Source	Description - optional
HTTP	TCP	80	0.0.0.0/0	–
HTTP	TCP	80	::/0	–
SSH	TCP	22	0.0.0.0/0	–
SSH	TCP	22	::/0	–

Security configured to SSH from owncloud-app EC2 instance to owncloud-db Ec2 instance and install my sql db on to owncloud-db ec2 instance


 Services ▾

[Alt+S]

  vocstartsoft/user1253479=sunilvenkatamuvvala@gmail.com @ 7606... ▾


N. Virginia ▾

Support ▾

 New VPC Experience
[Learn more](#)

VPC Dashboard

Filter by VPC:

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Security Groups (1/5) [Info](#)

 **Actions** ▾ [Create security group](#)

	Name ▾	Security group ID ▾	Security group name ▾	VPC ID ▾	Description ▾	Owner
<input type="checkbox"/>	–	sg-072e17353acab1683	default	vpc-0ac02e4329314f81c	default VPC security gr...	760607642349
<input checked="" type="checkbox"/>	–	sg-075bf6ebc9e9f5d79	open-ssh-mysql	vpc-0ac02e4329314f81c	public subnet traffic only	760607642349
<input type="checkbox"/>	–	sg-0bdd1486cc3815cd3	open-http-ssh	vpc-0ac02e4329314f81c	opens port 80 and por...	760607642349
<input type="checkbox"/>	–	sg-0d988744850bbce34	open-http-ssh	vpc-733e9e0e	opens port http on 80 ...	760607642349
<input type="checkbox"/>	–	sg-34a1333f	default	vpc-733e9e0e	default VPC security gr...	760607642349

Inbound rules

[Edit inbound rules](#)

Type	Protocol	Port range	Source	Description - optional
SSH	TCP	22	10.0.1.0/24	–
MYSQL/Aurora	TCP	3306	10.0.1.0/24	–

owncloud-app public IP ubuntu 18.04 instance

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

↺

Connect

Instance state ▼

Actions ▼

Launch instances ▼

🔍 Filter instances

< 1 > ⚙️

Instance state: running ✕

Clear filters

<input type="checkbox"/>	Name ▼	Instance ID	Instance state ▼	Instance type ▼	Status check	Alarm status	Availability Zone ▼	Public IPv4 I
<input checked="" type="checkbox"/>	owncloud-app	i-0c389a95fb56ae4a9	🟢 Running 🔍	t2.micro	🟢 2/2 checks ...	🟢 1 alar... +	us-east-1a	-
<input type="checkbox"/>	owncloud-db	i-00f8880a0d51f392f	🟢 Running 🔍	t2.micro	🟢 2/2 checks ...	🟢 1 alar... +	us-east-1b	-

Instance: i-0c389a95fb56ae4a9 (owncloud-app)

Details

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▼ Instance summary [Info](#)

Instance ID

📄 i-0c389a95fb56ae4a9 (owncloud-app)

Public IPv4 address

📄 18.212.216.117

| open address 📄


Private IPv4 addresses

📄 10.0.1.213

Install LAMP – linux apache2 mysql and PHP on to EC2 owncloud-app instance

- Ssh to created owncloud-app instance using owncloud.pem file using putty if using windows machine
- run the following commands to install apache web server and validate installation by using public ip of owncloud-app instance.
 - Sudo apt-get update
 - Sudo apt-get install apache2

Default web page – owncloud-app



Apache2 Ubuntu Default Page

ubuntu

It works!

This is the default welcome page used to test the correct operation of the Apache2 server after installation on Ubuntu systems. It is based on the equivalent page on Debian, from which the Ubuntu Apache packaging is derived. If you can read this page, it means that the Apache HTTP server installed at this site is working properly. You should **replace this file** (located at `/var/www/html/index.html`) before continuing to operate your HTTP server.

If you are a normal user of this web site and don't know what this page is about, this probably means that the site is currently unavailable due to maintenance. If the problem persists, please contact the site's administrator.

Configuration Overview

Install PHP and my sql.

- Run the command to install php on owncloud-app instance
- Sudo apt install php libapache2-mod-php php-mysql
- Edit /etc/apache2/mods-enabled/dir.conf file and make index.php as first access page using vi editor and save the dir.conf file
- Restart the web server – sudo systemctl restart apache2

Install owncloud on to EC2 owncloud-app

1. Run commands to install owncloud on ubuntu 18.04 owncloud-app instance
 - `curl https://attic.owncloud.org/download/repositories/10.0/Ubuntu_18.04/Release.key | sudo apt-key add -`
 - `echo 'deb http://attic.owncloud.org/download/repositories/10.0/Ubuntu_18.04/ /' |`
 - `sudo tee /etc/apt/sources.list.d/owncloud.list`
 - `sudo apt update`
 - `sudo apt install php-bz2 php-curl php-gd php-imagick php-intl php-mbstring php-xml php-zip owncloud-files`
2. Change default site directory to owncloud files directory using sudo user
 - `edit /etc/apache2/sites-enabled/000-default.conf` using vi editor and update directory root path to `/var/www/owncloud`
 - restart the server - `sudo systemctl reload apache2`
 - Access the owncloud application using public ip of EC2 instance in browser

SSH in to owncloud-app instance
change the owner of /opt folder to ubuntu with root user
rights

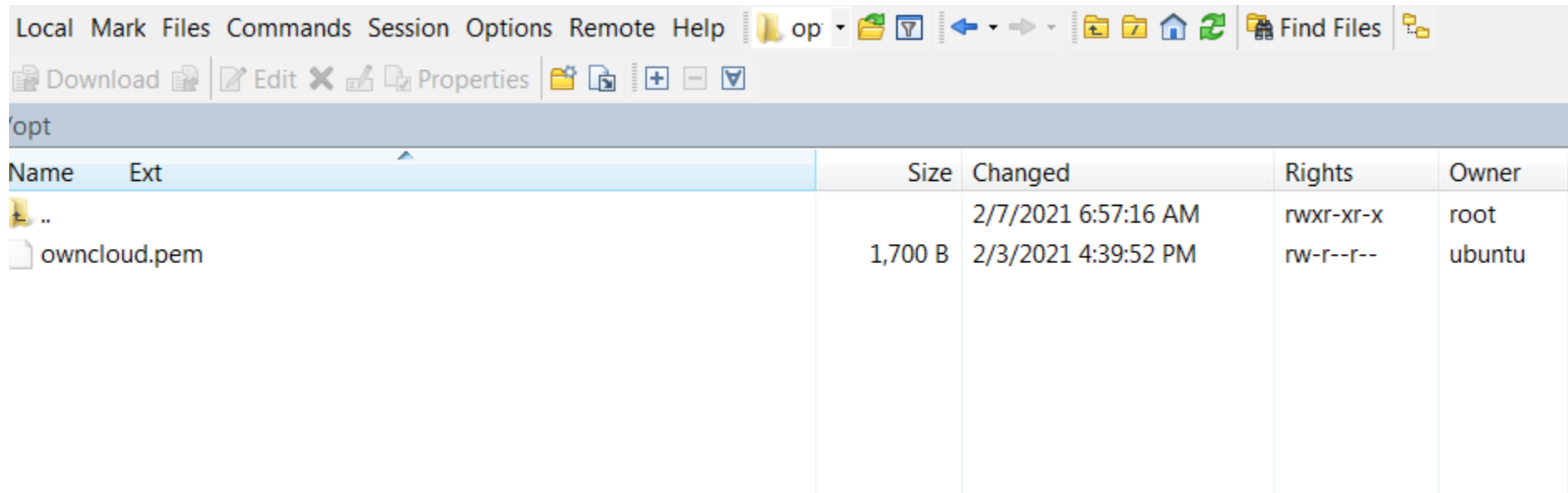
```
ubuntu@ip-10-0-1-213: /opt
- Reduce system reboots and improve kernel security. Activate at:
  https://ubuntu.com/livepatch

28 packages can be updated.
0 updates are security updates.

New release '20.04.2 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

*** System restart required ***
Last login: Sat Feb  6 16:58:40 2021 from 162.44.151.10
ubuntu@ip-10-0-1-213:~$ pwd
/home/ubuntu
ubuntu@ip-10-0-1-213:~$ cd ..
ubuntu@ip-10-0-1-213:/home$ cd ..
ubuntu@ip-10-0-1-213:/ $ cd ~
ubuntu@ip-10-0-1-213:~$ cd /opt/
ubuntu@ip-10-0-1-213:/opt$ sudo chown ubuntu:ubuntu -R /opt
ubuntu@ip-10-0-1-213:/opt$ ls -al
total 8
drwxr-xr-x  2 ubuntu ubuntu 4096 Oct 26 17:24 .
drwxr-xr-x 23 root    root   4096 Feb  7 06:57 ..
ubuntu@ip-10-0-1-213:/opt$
```


copy the owncloud.pem file to owncloud-app instance
using winscp



The screenshot shows the WinSCP application window. The menu bar includes Local, Mark, Files, Commands, Session, Options, Remote, and Help. The toolbar contains icons for operations like Download, Edit, Properties, and navigation. The address bar shows the path /opt. Below the address bar is a table listing files in the current directory.

Name	Ext	Size	Changed	Rights	Owner
..			2/7/2021 6:57:16 AM	rw-r--r--	root
owncloud.pem		1,700 B	2/3/2021 4:39:52 PM	rw-r--r--	ubuntu

Create a t2 micro instance in private subnet us-east-1b region to install my sql DB

	Name ▾	Instance ID	Instance state ▾	Instance type ▾	Status check	Alarm status	Availability Zone ▾	Public IPv4 DNS
<input type="checkbox"/>	owncloud-app	i-0c389a95fb56ae4a9	✓ Running ⓘ	t2.micro	✓ 2/2 checks ...	✓ 1 alar... +	us-east-1a	-
<input checked="" type="checkbox"/>	owncloud-db	i-00f8880a0d51f392f	✓ Running ⓘ	t2.micro	✓ 2/2 checks ...	✓ 1 alar... +	us-east-1b	-

Instance: i-00f8880a0d51f392f (owncloud-db)

Details

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▼ Instance summary Info

Instance ID

i-00f8880a0d51f392f (owncloud-db)

Instance state

✓ Running

Public IPv4 address

-

Public IPv4 DNS

-

Private IPv4 addresses

10.0.2.202

Private IPv4 DNS

ip-10-0-2-202.ec2.internal

SSH from owncloud-app to owncloud-db

```
ubuntu@ip-10-0-1-213:/opt$ chmod 400 owncloud.pem
ubuntu@ip-10-0-1-213:/opt$ ssh -i owncloud.pem ubuntu@10.0.2.202
Welcome to Ubuntu 18.04.5 LTS (GNU/Linux 5.4.0-1037-aws x86_64)

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

System information as of Thu Feb 11 16:43:24 UTC 2021

System load:  0.0               Processes:            92
Usage of /:   14.5% of 7.69GB   Users logged in:     0
Memory usage: 18%              IP address for eth0: 10.0.2.202
Swap usage:   0%

0 packages can be updated.
0 of these updates are security updates.

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-10-0-2-202:~$
```


Select an AMI for creating NAT instance

Step 1: Choose an Amazon Machine Image (AMI)

[Cancel and Exit](#)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.

Q nat

X

Search by Systems Manager parameter

Quick Start (0)

My AMIs (0)

AWS Marketplace (38)

Community AMIs (594)

Operating system

☐ Amazon Linux

☐ Cent OS

☐ Debian

☐ Fedora










☐ Gentoo

☐ openSUSE

☐ Other Linux


☐ Red Hat

☐ SUSE Linux



1 to 50 of 594 AMIs

< >




amzn-ami-vpc-nat-hvm-2018.03.0.20181116-x86_64-ebs - ami-00a9d4a05375b2763

Amazon Linux AMI 2018.03.0.20181116 x86_64 VPC HVM ebs

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

Select

64-bit (x86)




amzn-ami-vpc-nat-hvm-2017.09.1.20180108-x86_64-ebs - ami-01623d7b

Amazon Linux AMI 2017.09.1.20180108 x86_64 VPC NAT HVM EBS

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

Select

64-bit (x86)




amzn-ami-vpc-nat-2018.03.0.20200716.0-x86_64-ebs - ami-01ef31f9f39c5aaed

Amazon Linux AMI 2018.03.0.20200716.0 x86_64 VPC HVM ebs

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

Select

64-bit (x86)



amzn-ami-vpc-nat-2018.03.0.20200514.0-x86_64-ebs - ami-02623b65d521fbd30

Amazon Linux AMI 2018.03.0.20200514.0 x86_64 VPC HVM ebs

Select

64-bit (x86)

Follow the seven steps for creating NAT instance and proceed with out key pair.

Select an existing key pair or create a new key pair

A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [removing existing key pairs from a public AMI](#).


Proceed without a key pair

☒ I acknowledge that I will not be able to connect to this instance unless I already know the password built into this AMI.



Cancel

Launch Instances

Owncloud-nat NAT instance


 Services ▾

[Alt+S]

  vocstartsoft/user1253479=sunilvenkatamuvvala@gmail.com @ 7606... ▾

N. Virginia ▾

Support ▾

New EC2 Experience 
[Learn more](#)

EC2 Dashboard New

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▼ Instances

Instances New

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Scheduled Instances

Capacity Reservations


▼ Images
















AMIs

▼ Elastic Block Store

Volumes

Instances (1/3) [Info](#)

< 1 > 

<input type="checkbox"/>	Name ▾	Instance ID	Instance state ▾	Instance type ▾	Status check	Alarm status	Availability Zone ▾	Public IPv4 D
<input type="checkbox"/>	owncloud-app	i-0c389a95fb56ae4a9	 Running  	t2.micro	 2/2 checks ...	 1 alar... +	us-east-1a	–
<input checked="" type="checkbox"/>	owncloud-nat	i-0c9cd604ff67c1b01	 Running  	t2.micro	 Initializing	 1/1 h... +	us-east-1a	–
<input type="checkbox"/>	owncloud-db	i-00f8880a0d51f392f	 Running  	t2.micro	 2/2 checks ...	 1 alar... +	us-east-1b	–

Instance: i-0c9cd604ff67c1b01 (owncloud-nat)

Details

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▼ Instance summary [Info](#)


Instance ID  i-0c9cd604ff67c1b01 (owncloud-nat)	Public IPv4 address  54.160.245.137 open address 	Private IPv4 addresses  10.0.1.108
Instance state  Running	Public IPv4 DNS –	Private IPv4 DNS  ip-10-0-1-108.ec2.internal


Ensure that for NAT instance source/destination checking is disabled

EC2 > Instances > i-0c9cd604ff67c1b01 > Change source / destination check


Source / destination check [Info](#)

Each EC2 instance performs source and destination checks by default. The instance must be the source or destination of all the traffic it sends and receives.

Instance ID
 [i-0c9cd604ff67c1b01](#) (owncloud-nat)


Network interface [Info](#)
 [eni-013f699db1bd7839b](#) (owncloud-nat)

Source / destination checking [Info](#)
☒ Stop

 If this is a NAT instance, you must stop source / destination checking. A NAT instance must be able to send and receive traffic when the source or destination is not itself.

▼ AWS CLI Command

```
aws ec2 modify-instance-attribute --instance-id=i-0c9cd604ff67c1b01 --no-source-dest-check
```

 Copy

Cancel **Save**

Edit the main route table of owncloud-vpc custom vpc to point to owncloud-nat NAT instance

New VPC Experience
[Learn more](#)

VPC Dashboard

Filter by VPC:

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Create route tableActions

1 to 3 of 3

<input type="checkbox"/>	Name	Route Table ID	Explicit subnet associatio	Edge associations	Main	VPC ID	Owner
<input type="checkbox"/>	public-rt	rtb-026216979c03b6e70	subnet-0392aa3568b6fc39a	-	No	vpc-0ac02e4329314f81c ...	760607642349
<input checked="" type="checkbox"/>		rtb-09e8c08ae7c1ba8a3	-	-	Yes	vpc-0ac02e4329314f81c ...	760607642349
<input type="checkbox"/>		rtb-a3b49bdd	-	-	Yes	vpc-733e9e0e	760607642349

Route Table: rtb-09e8c08ae7c1ba8a3

Summary

Routes

Subnet Associations

Edge Associations

Route Propagation

Tags

Edit routes

Edit the route so that the destination for owncloud-nat NAT instance is all traffic i.e. internet

[Route Tables](#) > Edit routes

Edit routes

Destination	Target	Status	Propagated	
10.0.0.0/16	local	active	No	
0.0.0.0/0	i-0c9cd604ff67c1b01		No	✕

Add route

i-0c9cd604ff67c1b01

owncloud-nat

* Required

[Cancel](#) [Save routes](#)

Main route table has been edited to include owncloud-nat NAT instance

New VPC Experience

[Learn more](#)

VPC Dashboard

Filter by VPC:

Select a VPC

VIRTUAL PRIVATE CLOUD

Your VPCs

Subnets

Route Tables

Internet Gateways

Egress Only Internet Gateways

Carrier Gateways

DHCP Options Sets

Elastic IPs

Managed Prefix Lists

Endpoints

Endpoint Services

NAT Gateways

Peering Connections

SECURITY

Network ACLs

Security Groups

Create route table

Actions

Filter by tags and attributes or search by keyword

<<

<

1 to 3 of 3

>

>>

<input type="checkbox"/>	Name	Route Table ID	Explicit subnet association	Edge associations	Main	VPC ID	Owner
<input type="checkbox"/>	public-rt	rtb-026216979c03b6e70	subnet-0392aa3568b6fc39a	-	No	vpc-0ac02e4329314f81c ...	760607642349
<input checked="" type="checkbox"/>		rtb-09e8c08ae7c1ba8a3	-	-	Yes	vpc-0ac02e4329314f81c ...	760607642349
<input type="checkbox"/>		rtb-a3b49bdd	-	-	Yes	vpc-733e9e0e	760607642349

Route Table: rtb-09e8c08ae7c1ba8a3

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-013f699db1bd7839b	active	No

Once connected to owncloud-db from owncloud-app install the mysql DB

```
ubuntu@ip-10-0-2-202: ~  
ubuntu@ip-10-0-2-202:~$ sudo apt-get update  
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic InRelease  
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates InRelease [88.7 kB]  
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-backports InRelease [74.6 kB]  
Get:4 http://security.ubuntu.com/ubuntu bionic-security InRelease [88.7 kB]  
Get:5 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic/universe amd64 Packages [8570 kB]  
Get:6 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic/universe Translation-en [4941 kB]  
Get:7 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic/multiverse amd64 Packages [151 kB]  
Get:8 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic/multiverse Translation-en [108 kB]  
Get:9 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 Packages [1884 kB]  
Get:10 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main Translation-en [390 kB]  
Get:11 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/restricted amd64 Packages [247 kB]  
Get:12 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/restricted Translation-en [33.4 kB]  
Get:13 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/universe amd64 Packages [1718 kB]  
Get:14 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/universe Translation-en [363 kB]  
Get:15 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/multiverse amd64 Packages [31.8 kB]  
Get:16 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/multiverse Translation-en [7300 B]  
Get:17 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-backports/main amd64 Packages [10.0 kB]  
Get:18 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-backports/main Translation-en [4764 B]  
Get:19 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-backports/universe amd64 Packages [10.3 kB]  
Get:20 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-backports/universe Translation-en [4588 B]  
Get:21 http://security.ubuntu.com/ubuntu bionic-security/main amd64 Packages [1544 kB]  
Get:22 http://security.ubuntu.com/ubuntu bionic-security/main Translation-en [298 kB]  
Get:23 http://security.ubuntu.com/ubuntu bionic-security/restricted amd64 Packages [226 kB]  
Get:24 http://security.ubuntu.com/ubuntu bionic-security/restricted Translation-en [29.9 kB]  
Get:25 http://security.ubuntu.com/ubuntu bionic-security/universe amd64 Packages [1109 kB]  
Get:26 http://security.ubuntu.com/ubuntu bionic-security/universe Translation-en [248 kB]  
Get:27 http://security.ubuntu.com/ubuntu bionic-security/multiverse amd64 Packages [26.0 kB]  
Get:28 http://security.ubuntu.com/ubuntu bionic-security/multiverse Translation-en [5272 B]  
Reading package lists... DoneB/s)  
ubuntu@ip-10-0-2-202:~$ sudo apt-get install mysql-server -y  
Reading package lists... Done  
Building dependency tree  
Reading state information... Done  
The following additional packages will be installed:  
  libaio1 libcgi-fast-perl libcgi-pm-perl libencode-locale-perl libevent-core-2.1-6 libfcgi-perl libhtml-parser-perl libhtml-tagset-perl libht  
  libhttp-message-perl libio-html-perl liblwp-mediatypes-perl libtimedate-perl liburi-perl mysql-client-5.7 mysql-client-core-5.7 mysql-common  
Suggested packages:  
  libdata-dump-perl libipc-sharedcache-perl libwww-perl mailx tinycsa  
The following NEW packages will be installed:  
  libaio1 libcgi-fast-perl libcgi-pm-perl libencode-locale-perl libevent-core-2.1-6 libfcgi-perl libhtml-parser-perl libhtml-tagset-perl libht  
  libhttp-message-perl libio-html-perl liblwp-mediatypes-perl libtimedate-perl liburi-perl mysql-client-5.7 mysql-client-core-5.7 mysql-common  
  mysql-server-core-5.7  
0 upgraded, 21 newly installed, 0 to remove and 9 not upgraded.  
Need to get 19.7 MB of archives.  
After this operation, 157 MB of additional disk space will be used.  
Get:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic/main amd64 mysql-common all 5.8+1.0.4 [7308 B]  
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 libaio1 amd64 0.3.110-Subuntu0.1 [6476 B]  
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu bionic-updates/main amd64 mysql-client-core-5.7 amd64 5.7.33-0ubuntu0.18.04.1 [6664 kB]
```


Create an owncloud DB in mysql on owncloud-db instance

```
mysql> CREATE DATABASE owncloud;
Query OK, 1 row affected (0.00 sec)

mysql> GRANT ALL ON owncloud.* to 'owncloud'@'localhost' IDENTIFIED BY 'owncloud'
    -> ;
Query OK, 0 rows affected, 1 warning (0.02 sec)

mysql> flush priveleges;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'priveleges' at line 1
mysql> FLUSH PRIVILEGES;
Query OK, 0 rows affected (0.01 sec)

mysql> exit
Bye
ubuntu@ip-10-0-2-202:~$
```


Restarting mysql and root privileges

```
Last login: Fri Feb 12 15:23:55 2021 from 10.0.1.213
ubuntu@ip-10-0-2-202:~$ mysql -u root -p
Enter password:
ERROR 1698 (28000): Access denied for user 'root'@'localhost'
ubuntu@ip-10-0-2-202:~$ mysql -u root -p
Enter password:
ERROR 1698 (28000): Access denied for user 'root'@'localhost'
ubuntu@ip-10-0-2-202:~$ mysql -u root
ERROR 1698 (28000): Access denied for user 'root'@'localhost'
ubuntu@ip-10-0-2-202:~$ sudo service mysql stop
ubuntu@ip-10-0-2-202:~$ sudo mkdir -p /var/run/mysqld
ubuntu@ip-10-0-2-202:~$ sudo chown mysql:mysql /var/run/mysqld
ubuntu@ip-10-0-2-202:~$ sudo /usr/sbin/mysqld --skip-grant-tables --skip-networking &
[1] 25227
ubuntu@ip-10-0-2-202:~$ jobs
[1]+  Running                  sudo /usr/sbin/mysqld --skip-grant-tables --skip-networking &
ubuntu@ip-10-0-2-202:~$ mysql -u root
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 2
Server version: 5.7.33-0ubuntu0.18.04.1 (Ubuntu)

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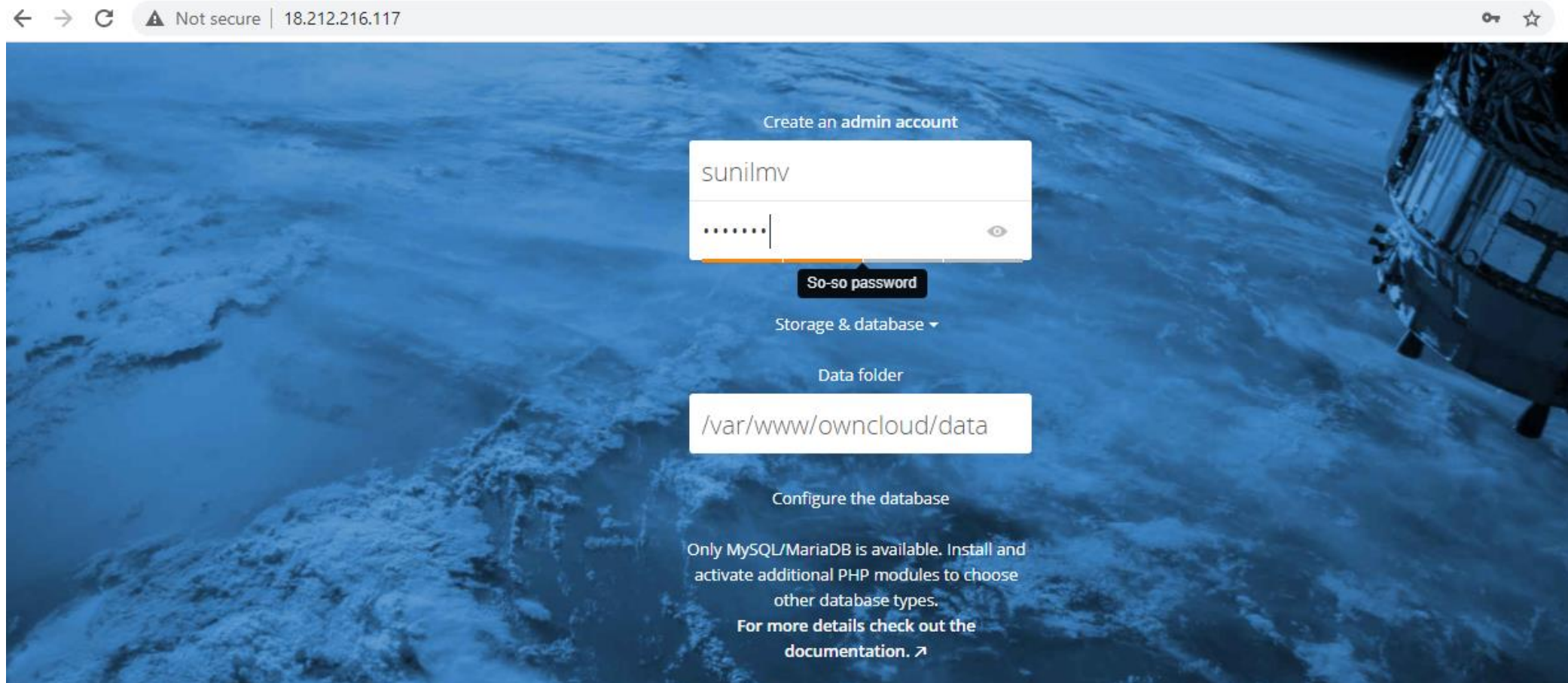
Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> flush privileges
-> ;
Query OK, 0 rows affected (0.01 sec)

mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| owncloud |
| performance_schema |
| sys |
+-----+
5 rows in set (0.00 sec)

mysql> exit
Bye
ubuntu@ip-10-0-2-202:~$
```


owncloud index.php with login credentials showing up



The screenshot shows the OwnCloud installation wizard in a web browser. The browser's address bar displays "Not secure | 18.212.216.117". The background of the wizard is a blue-tinted image of a satellite or space station orbiting Earth. The wizard consists of several steps: "Create an admin account", "Storage & database", "Data folder", and "Configure the database". The "Create an admin account" step is currently active, showing a text input for the username "sunilmv" and a password input with masked characters ".....". Below the password input is a button labeled "So-so password". The "Storage & database" step is partially visible below, showing a dropdown menu. The "Data folder" step shows a text input with the path "/var/www/owncloud/data". The "Configure the database" step is at the bottom, with text indicating that only MySQL/MariaDB is available and providing a link to the documentation.

← → ↻ ⚠ Not secure | 18.212.216.117 🔑 ☆

Create an admin account

sunilmv

..... 🔍

So-so password

Storage & database ▼

Data folder

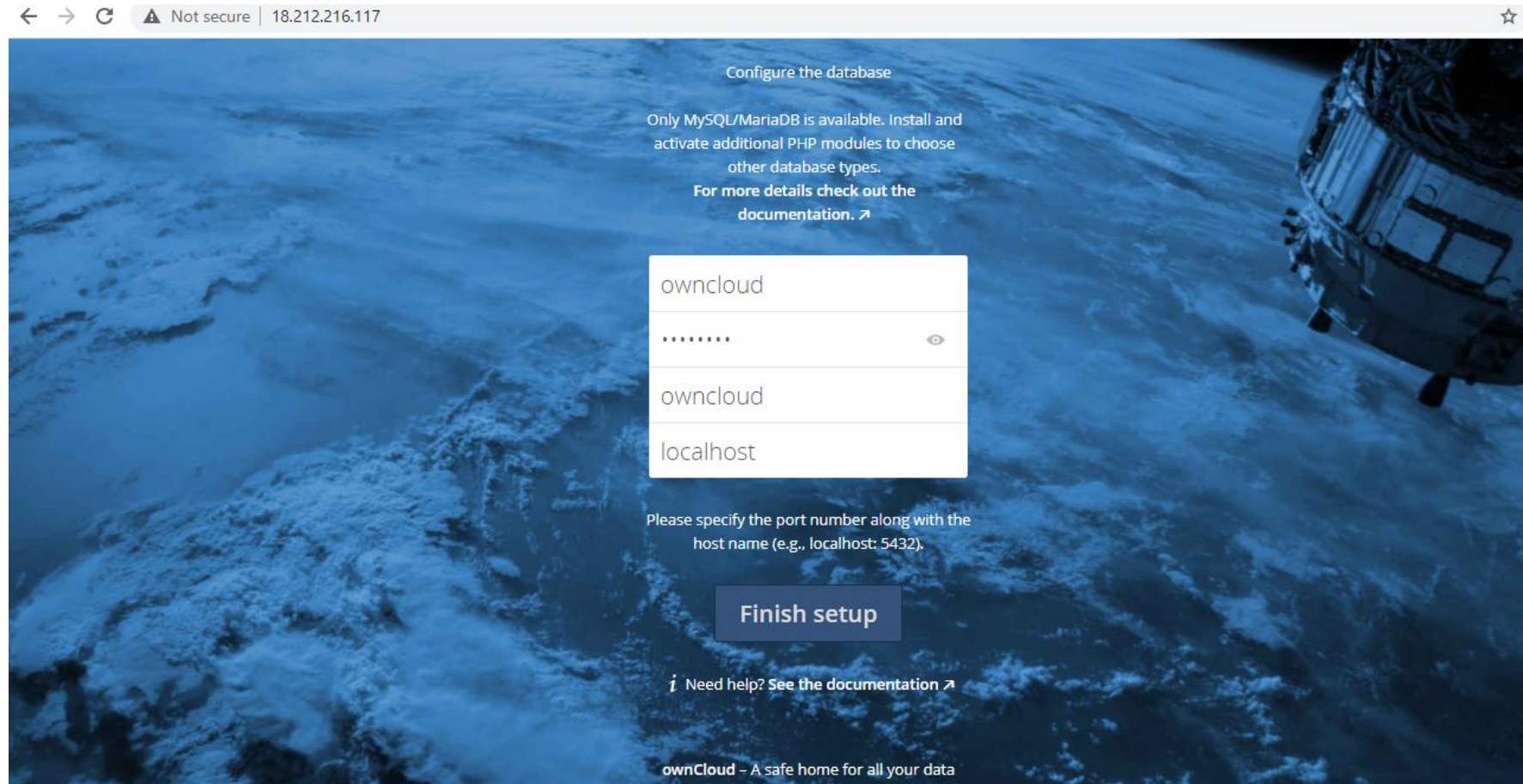
/var/www/owncloud/data

Configure the database

Only MySQL/MariaDB is available. Install and activate additional PHP modules to choose other database types.

For more details check out the [documentation](#). ↗

owncloud index.php page with database login showing up

A screenshot of a web browser displaying the OwnCloud database configuration page. The browser's address bar shows the URL '18.212.216.117' and a 'Not secure' warning. The page has a blue background with a satellite image of Earth. The main heading is 'Configure the database'. Below it, text states: 'Only MySQL/MariaDB is available. Install and activate additional PHP modules to choose other database types. For more details check out the documentation.' A form with four input fields is centered: the first contains 'owncloud', the second contains masked characters '.....' with an eye icon, the third contains 'owncloud', and the fourth contains 'localhost'. Below the form, text says: 'Please specify the port number along with the host name (e.g., localhost: 5432).' A 'Finish setup' button is positioned below this text. At the bottom, there is a link: 'Need help? See the documentation' and a footer: 'ownCloud - A safe home for all your data'.

Learnings & observations

- owncloud is a kind of personal cloud where you can store or upload files where you can control with out a third party
- owncloud is implemented using two ec2 ubuntu instances where owncloud is installed on publicly accessible ec2 instance and the DB is installed on a private EC2 ubuntu instance.
- owncloud-app is publicly accessible instance with public ip address and owncloud-db can be accessible from owncloud-app and not publicly accessible.
- owncloud-app instance is launched on public subnet and owncloud-db is launched on private subnet.
- Public subnet is achieved by connecting to custom vpc owncloud-vpc via a internet gateway and public-rt table with routes showing up traffic destined to internet gateway and traffic from public-subnet associated to the public-rt table.
- owncloud-db is launched in private subnet and security group configured to be accessible from public subnet instance owncloud-app
- NAT instance is launched in public subnet which acts as gate way to internet for EC2 instance launched in private subnet though EC2 instance owncloud-db is not accessible via public ip address but can access the internet via NAT instance with an address translation of private ip to public ip at NAT instance and thus can install required software.
- Default main route table of owncloud-vpc is configured to accept all traffic to NAT instance which includes traffic from private subnet instance.
- owncloud is installed on publicly accessible ec2 instance owncloud-app and mysql DB is installed on private EC2 instance via NAT instance.
- Installation instructions are run on private EC2 instance owncloud-db via SSH from public EC2 instance.