

## Deploying apps on public cloud

| vpc-0c9c34508274b5d0c / twitter-vpc             |   |   |   | Actions ▾ |
|---|---|---|---|-----------|
| Details <a href="#">Info</a>                    |   |   |   |           |
| VPC ID<br><a href="#">vpc-0c9c34508274b5d0c</a> | State<br><span>Available</span>                           | DNS hostnames<br>Disabled                                 | DNS resolution<br>Enabled                                 |           |
| Tenancy<br>Default                              | DHCP option set<br><a href="#">dopt-0a84a7e8ef3188ad2</a> | Main route table<br><a href="#">rtb-088188767c4da1201</a> | Main network ACL<br><a href="#">acl-0d087b5d36579e178</a> |           |
| Default VPC<br>No                               | IPv4 CIDR<br><a href="#">10.0.0.0/16</a>                  | IPv6 pool<br>-  | IPv6 CIDR (Network border group)<br>-                     |           |
| Network Address Usage metrics<br>Disabled       | Route 53 Resolver DNS Firewall rule groups<br>-           | Owner ID<br><a href="#">101871923216</a>                  |   |           |

| Subnets (1/2) <a href="#">Info</a>                 |  |                        |  |             |           |       | <a href="#">C</a> | Actions ▾ | <a href="#">Create subnet</a> |  |
|--|--|------------------------|--|-------------|-----------|-------|-------------------|-----------|-------------------------------|--|
| <input type="text"/> Filter subnets                |  |                        |  |             |           |       | <                 | 1         | >                             |  |
| Name   | Subnet ID                                | State                  | VPC  | IPv4 CIDR   | IPv6 CIDR | Owner |                   |           |                               |  |
| <input type="checkbox"/> Twitter Private           | <a href="#">subnet-0410671201781bd13</a> | <span>Available</span> | <a href="#">vpc-0c9c34508274b5d0c   twi...</a> | 10.0.2.0/24 | -         |       |                   |           |                               |  |
| <input checked="" type="checkbox"/> Twitter Public | <a href="#">subnet-0c4de1db1a78fcdd1</a> | <span>Available</span> | <a href="#">vpc-0c9c34508274b5d0c   twi...</a> | 10.0.1.0/24 | -         |       |                   |           |                               |  |

|  |                                |
|--|--------------------------------|
| VPC > <a href="#">Internet gateways</a> > <a href="#">igw-0dc3a1df684c011a</a> | Actions ▾                      |
| <h3>igw-0dc3a1df684c011a / Twitter IG</h3>                                     |                                |
| <a href="#">Details <a href="#">Info</a></a>                                   |                                |
| Internet gateway ID<br><a href="#">igw-0dc3a1df684c011a</a>                    | State<br><span>Detached</span> |

|  |                                |
|--|--------------------------------|
| VPC > <a href="#">Internet gateways</a> > <a href="#">igw-0dc3a1df684c011a</a> | Actions ▾                      |
| <h3>igw-0dc3a1df684c011a / Twitter IG</h3>                                     |                                |
| <a href="#">Details <a href="#">Info</a></a>                                   |                                |
| Internet gateway ID<br><a href="#">igw-0dc3a1df684c011a</a>                    | State<br><span>Attached</span> |

⌚ Updated routes for rtb-088188767c4da1201 / twitter-rt successfully

▶ Details

|  |                          |                                   |                        |
|--|--------------------------|-----------------------------------|------------------------|
| Route table ID<br>rtb-088188767c4da1201    | Main<br>Yes              | Explicit subnet associations<br>- | Edge associations<br>- |
| VPC<br>vpc-0c9c34508274b5d0c   twitter-vpc | Owner ID<br>101871923216 |                                   |                        |

### Routes (3)

Filter routes Both < 1 > ⚙️

| Destination | Target               | Status | Propagated |
|-------------|----------------------|--------|------------|
| ::/0        | igw-0dc3a1df684c011a | Active | No         |
| 0.0.0.0/0   | igw-0dc3a1df684c011a | Active | No         |
| 10.0.0.0/16 | local                | Active | No         |

- Routes
- Subnet associations**
- Edge associations
- Route propagation
- Tags

### Explicit subnet associations (2)

Find subnet association < 1 > ⚙️

| Subnet ID                                  | IPv4 CIDR   | IPv6 CIDR |
|--|-------------|-----------|
| subnet-0410671201781bd13 / Twitter Private | 10.0.2.0/24 | -         |
| subnet-0c4de1db1a78fcdd1 / Twitter Public  | 10.0.1.0/24 | -         |

**Instance summary for i-02047958969ffb051 (ec2-twitter-db) Info**  
Updated less than a minute ago

Connect  Instance state  Actions

|   |  |                                     |
|---|--|-------------------------------------|
| Instance ID<br>i-02047958969ffb051 (ec2-twitter-db) | Public IPv4 address<br>-                                     | Private IPv4 addresses<br>10.0.2.79 |
| IPv6 address<br>-                                   | Instance state<br>Running                                    | Public IPv4 DNS<br>-                |
| Hostname type<br>IP name: ip-10-0-2-79.ec2.internal | Private IP DNS name (IPv4 only)<br>ip-10-0-2-79.ec2.internal |                                     |

Inbound rules (4)

|            | Type | Protocol | Port range  | Source                    | Description |
|------------|------|----------|-------------|---------------------------|-------------|
| SSH        | TCP  | 22       | 0.0.0.0/0   | SSH                       |             |
| SSH        | TCP  | 22       | ::/0        | SSH                       |             |
| Custom TCP | TCP  | 27017    | 10.0.0.0/16 | MongoDB                   |             |
| Custom TCP | TCP  | 27017    | 0.0.0.0/0   | Delete following DB Se... |             |

Elastic IP address associated successfully.  
Elastic IP address 54.161.211.77 has been associated with instance i-02047958969ff051

Elastic IP addresses (1/1)

| Name               | Allocated IPv4 add... | Type      | Allocation ID              | Reverse DNS record |
|--------------------|-----------------------|-----------|----------------------------|--------------------|
| eip-ec2-twitter-db | 54.161.211.77         | Public IP | eipalloc-05640c2a4381237ed | -                  |

```
[sriha@MacBook-Air-2 Downloads % ssh -i PERI_AWS_SSH.pem ec2-user@54.161.211.77
The authenticity of host '54.161.211.77 (54.161.211.77)' can't be established.
ED25519 key fingerprint is SHA256:kLUaZxaD4zLw5beiTitcrWgFZT16ri4l00kS9VRCrYI.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '54.161.211.77' (ED25519) to the list of known hosts.

      _|_ _|_
      _|_ ( _ /   Amazon Linux 2 AMI
      ---| \---|---|
```

<https://aws.amazon.com/amazon-linux-2/>  
[ec2-user@ip-10-0-2-79 ~]\$

```

Complete!
[[ec2-user@ip-10-0-2-79 ~]$ mongo --version
MongoDB shell version v4.4.17
Build Info: {
    "version": "4.4.17",
    "gitVersion": "85de0cc83f4dc64dbbac7fe028a4866228c1b5d1",
    "openSSLVersion": "OpenSSL 1.0.2k-fips 26 Jan 2017",
    "modules": [],
    "allocator": "tcmalloc",
    "environment": {
        "distmod": "amazon2",
        "distarch": "x86_64",
        "target_arch": "x86_64"
    }
}
[[ec2-user@ip-10-0-2-79 ~]$ █

```

```

[[ec2-user@ip-10-0-2-79 ~]$ ps --no-headers -o comm 1
systemd
[[ec2-user@ip-10-0-2-79 ~]$ sudo systemctl start mongod
[[ec2-user@ip-10-0-2-79 ~]$ sudo systemctl status mongod
● mongod.service - MongoDB Database Server
   Loaded: loaded (/usr/lib/systemd/system/mongod.service; enabled; vendor preset: disabled)
   Active: active (running) since Wed 2022-10-26 00:59:19 UTC; 8s ago
     Docs: https://docs.mongodb.org/manual
 Process: 3461 ExecStart=/usr/bin/mongod $OPTIONS (code=exited, status=0/SUCCESS)
 Process: 3458 ExecStartPre=/usr/bin/chmod 0755 /var/run/mongodb (code=exited, status=0/SUCCESS)
 Process: 3455 ExecStartPre=/usr/bin/chown mongod:mongod /var/run/mongodb (code=exited, status=0/SUCCESS)
 Process: 3454 ExecStartPre=/usr/bin/mkdir -p /var/run/mongodb (code=exited, status=0/SUCCESS)
 Main PID: 3465 (mongod)
   CGroup: /system.slice/mongod.service
           └─3465 /usr/bin/mongod -f /etc/mongod.conf

Oct 26 00:59:18 ip-10-0-2-79.ec2.internal systemd[1]: Starting MongoDB Database Server...
Oct 26 00:59:18 ip-10-0-2-79.ec2.internal mongod[3461]: about to fork child process, waiting until server is ready for connections.
Oct 26 00:59:18 ip-10-0-2-79.ec2.internal mongod[3461]: forked process: 3465
Oct 26 00:59:19 ip-10-0-2-79.ec2.internal systemd[1]: Started MongoDB Database Server.
[[ec2-user@ip-10-0-2-79 ~]$ █

```

```

[[ec2-user@ip-10-0-2-79 ~]$ sudo rm -rf /tmp/mongodb-27017.sock
[[ec2-user@ip-10-0-2-79 ~]$ sudo systemctl stop mongod
[[ec2-user@ip-10-0-2-79 ~]$ sudo systemctl start mongod
[[ec2-user@ip-10-0-2-79 ~]$ █

```

```

[sriha@MacBook-Air-2 Downloads % scp -r -i PERT_AWS_SSH.pem "./dump/tweets" ec2-user@54.161.211.77:db/
tweets.metadata.json
                                                               100%   173      9.6KB/s   00:00
tweets.bson
                                                               100%   562      29.3KB/s   00:00
sriha@MacBook-Air-2 Downloads % clear

```

```
[ec2-user@ip-10-0-2-79 db]$ mongorestore --nsInclude tweets.tweets
2022-10-26T01:34:49.019+0000      using default 'dump' directory
2022-10-26T01:34:49.019+0000      preparing collections to restore from
2022-10-26T01:34:49.019+0000      reading metadata for tweets.tweets from dump/tweets/tweets.metadata.json
2022-10-26T01:34:49.029+0000      restoring tweets.tweets from dump/tweets/tweets.bson
2022-10-26T01:34:49.041+0000      finished restoring tweets.tweets (3 documents, 0 failures)
2022-10-26T01:34:49.041+0000      no indexes to restore for collection tweets.tweets
2022-10-26T01:34:49.041+0000      3 document(s) restored successfully. 0 document(s) failed to restore.
[ec2-user@ip-10-0-2-79 db]$
```

| Inbound rules (3)      |            |            |          |            |             |  |
|------------------------|------------|------------|----------|------------|-------------|--|
| Security group rule... | IP version | Type       | Protocol | Port range | Source      |  |
| sgr-008245b6c6e4919... | IPv4       | SSH        | TCP      | 22         | 0.0.0.0/0   |  |
| sgr-08ffd0d0233673988  | IPv6       | SSH        | TCP      | 22         | ::/0        |  |
| sgr-0a17c4ec7638797ac  | IPv4       | Custom TCP | TCP      | 27017      | 10.0.0.0/16 |  |

| Instance summary for i-0e760647681dbb986 (ec2-twitter-app) |  | Info  |  |  | Instance state ▾ | Actions ▾ |
|--|--|---|--|--|------------------|-----------|
| Updated less than a minute ago                             |  |   |  |  |                  |           |
| Instance ID<br>i-0e760647681dbb986 (ec2-twitter-app)       | Public IPv4 address<br>-                                     | Private IPv4 addresses<br>10.0.1.45   |  |  |                  |           |
| IPv6 address<br>-  | Instance state<br>Running                                    | Public IPv4 DNS<br>-  |  |  |                  |           |
| Hostname type<br>IP name: ip-10-0-1-45.ec2.internal        | Private IP DNS name (IPv4 only)<br>ip-10-0-1-45.ec2.internal | Elastic IP addresses<br>-   |  |  |                  |           |
| Answer private resource DNS name<br>IPv4 (A)               | Instance type<br>t2.micro                                    | AWS Compute Optimizer finding<br>Opt-in to AWS Compute Optimizer for recommendations. |  |  |                  |           |
| Auto-assigned IP address<br>-                              | VPC ID<br>vpc-0c9c34508274b5d0c (twitter-vpc)                | Learn more  |  |  |                  |           |

```
Welcome to Ubuntu 20.04.5 LTS (GNU/Linux 5.15.0-1019-aws x86_64)

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

 System information as of Wed Oct 26 02:02:21 UTC 2022

 System load:  0.16           Processes:          98
 Usage of /:   19.6% of 7.57GB  Users logged in:    0
 Memory usage: 21%            IPv4 address for eth0: 10.0.1.45
 Swap usage:   0%

0 updates can be applied immediately.

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

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-10-0-1-45:~$
```

```
ubuntu@ip-10-0-1-45:~$ python3 -V
Python 3.8.10
ubuntu@ip-10-0-1-45:~$ █
```

```
ubuntu@ip-10-0-1-45:~$ pip3 -V
pip 20.0.2 from /usr/lib/python3/dist-packages/pip (python 3.8)
ubuntu@ip-10-0-1-45:~$ █
```

```
ubuntu@ip-10-0-1-45:~$ nginx -V
nginx version: nginx/1.18.0 (Ubuntu)
built with OpenSSL 1.1.1f  31 Mar 2020
TLS SNI support enabled
configure arguments: --with-cc-opt='-g -O2 -fdebug-prefix-map=/build/nginx-7KvRN5/nginx-1.18.0=. -fstack-protector-strong -Wformat -Werror=format-security -fPIC -Wdate-time -D FORTIFY_SOURCE=2' --with-ld-opt=' -Wl,-z,relro -Wl,-z,now -fPIC' --prefix=/usr/share/nginx --conf-path=/etc/nginx/nginx.conf --http-log-path=/var/log/nginx/access.log --error-log-path=/var/log/nginx/error.log --lock-path=/var/lock/nginx.lock --pid-path=/run/nginx.pid --modules-path=/usr/lib/nginx/modules --http-client-body-temp-path=/var/lib/nginx/body --http-fastcgi-temp-path=/var/lib/nginx/fastcgi --http-proxy-temp-path=/var/lib/nginx/proxy --http-scgi-temp-path=/var/lib/nginx/scgi --http uwsgi-temp-path=/var/lib/nginx/uwsgi --with-debug --with-compat --with-pcre-jit --with-http_ssl_module --with-http_stub_status_module --with-http_realip_module --with-http_auth_request_module --with-http_v2_module --with-http_dav_module --with-http_slice_module --with-threads --with-http_addition_module --with-http_gunzip_module --with-http_gzip_static_module --with-http_image_filter_module=dynamic --with-http_sub_module --with-http_xslt_module=dynamic --with-stream_ssl_module --with-mail=dynamic --with-mail_ssl_module
ubuntu@ip-10-0-1-45:~$ █
```

```
ubuntu@ip-10-0-1-45:~$ tmux list-sessions
twitter-app-session: 1 windows (created Wed Oct 26 02:31:34 2022) (attached)
ubuntu@ip-10-0-1-45:~$ █
```

```
ubuntu@ip-10-0-1-45:~$ git clone https://github.com/dinorows/twtrbe.git
Cloning into 'twtrbe'...
remote: Enumerating objects: 16, done.
remote: Counting objects: 100% (16/16), done.
remote: Compressing objects: 100% (15/15), done.
remote: Total 16 (delta 3), reused 0 (delta 0), pack-reused 0
Unpacking objects: 100% (16/16), 7.98 KiB | 1.14 MiB/s, done.
ubuntu@ip-10-0-1-45:~$ █
```

```
ubuntu@ip-10-0-1-45:~$ git clone -b master https://github.com/dinorows/twtrfe.git
Cloning into 'twtrfe'...
remote: Enumerating objects: 89, done.
remote: Counting objects: 100% (89/89), done.
remote: Compressing objects: 100% (71/71), done.
remote: Total 89 (delta 33), reused 41 (delta 4), pack-reused 0
Unpacking objects: 100% (89/89), 45.45 KiB | 1.42 MiB/s, done.
ubuntu@ip-10-0-1-45:~$ █
```

```
ubuntu@ip-10-0-1-45:~$ sudo systemctl status nginx
● nginx.service - A high performance web server and a reverse proxy server
   Loaded: loaded (/lib/systemd/system/nginx.service; enabled; vendor preset: enabled)
     Active: active (running) since Thu 2022-10-27 01:09:34 UTC; 2h 0min ago
       Docs: man:nginx(8)
   Main PID: 550 (nginx)
      Tasks: 2 (limit: 1143)
     Memory: 8.6M
      CGroup: /system.slice/nginx.service
              └─ 550 nginx: master process /usr/sbin/nginx -g daemon on; master_process on;
                  ├─ 5509 nginx: worker process

Oct 27 01:09:33 ip-10-0-1-45 systemd[1]: Starting A high performance web server and a reverse proxy server...
Oct 27 01:09:34 ip-10-0-1-45 systemd[1]: Started A high performance web server and a reverse proxy server.
Oct 27 02:19:19 ip-10-0-1-45 systemd[1]: Reloading A high performance web server and a reverse proxy server.
Oct 27 02:19:19 ip-10-0-1-45 systemd[1]: Reloaded A high performance web server and a reverse proxy server.
ubuntu@ip-10-0-1-45:~$
```

```
ubuntu@ip-10-0-1-45:~$ sudo systemctl status mytwtr
● mytwtr.service - <a description of our application>
   Loaded: loaded (/etc/systemd/system/mytwtr.service; enabled; vendor preset: enabled)
     Active: active (running) since Thu 2022-10-27 02:26:43 UTC; 44min ago
   Main PID: 5648 (gunicorn)
      Tasks: 13 (limit: 1143)
     Memory: 119.7M
      CGroup: /system.slice/mytwtr.service
              ├─ 5648 /usr/bin/python3 /home/ubuntu/.local/bin/gunicorn --workers 3 -b 0.0.0.0:5000 -t 600 wsgi:app
              ├─ 5650 /usr/bin/python3 /home/ubuntu/.local/bin/gunicorn --workers 3 -b 0.0.0.0:5000 -t 600 wsgi:app
              ├─ 5651 /usr/bin/python3 /home/ubuntu/.local/bin/gunicorn --workers 3 -b 0.0.0.0:5000 -t 600 wsgi:app
              └─ 5652 /usr/bin/python3 /home/ubuntu/.local/bin/gunicorn --workers 3 -b 0.0.0.0:5000 -t 600 wsgi:app

Oct 27 02:26:43 ip-10-0-1-45 systemd[1]: Started <a description of our application>.
Oct 27 02:26:44 ip-10-0-1-45 gunicorn[5648]: [2022-10-27 02:26:44 +0000] [5648] [INFO] Starting gunicorn 20.1.0
Oct 27 02:26:44 ip-10-0-1-45 gunicorn[5648]: [2022-10-27 02:26:44 +0000] [5648] [INFO] Listening at: http://0.0.0.0:5000 (5648)
Oct 27 02:26:44 ip-10-0-1-45 gunicorn[5648]: [2022-10-27 02:26:44 +0000] [5648] [INFO] Using worker: sync
Oct 27 02:26:44 ip-10-0-1-45 gunicorn[5650]: [2022-10-27 02:26:44 +0000] [5650] [INFO] Booting worker with pid: 5650
Oct 27 02:26:44 ip-10-0-1-45 gunicorn[5651]: [2022-10-27 02:26:44 +0000] [5651] [INFO] Booting worker with pid: 5651
Oct 27 02:26:44 ip-10-0-1-45 gunicorn[5652]: [2022-10-27 02:26:44 +0000] [5652] [INFO] Booting worker with pid: 5652
ubuntu@ip-10-0-1-45:~$
```

The screenshot shows a web-based application interface for managing tweets. At the top, there's a header bar with a back arrow, forward arrow, and a search bar indicating 'Not Secure – 52.0.6.229'. Below the header is a blue navigation bar with tabs for 'Tweets' (selected), 'Compose', and 'Sign In'. A red notification badge with the number '2' is visible on the right side of the header. The main content area displays a list of tweets:

- Tweets**: Shows a tweet from a user with a profile picture of a woman, posted on 2022-10-23 23:02:44, with the text "Hello True Undefined hi".
- Compose**: Shows a tweet from a user with a profile picture of a man, posted on 2022-10-23 23:02:53, with the text "Abbay True Undefined ammay".
- Sign In**: Shows a tweet from a user with a profile picture of a man, posted on 2022-10-25 18:59:11, with the text "Hey Man True Undefined peri babu".
- Compose**: Shows a tweet from a user with a profile picture of a woman, posted on 2022-10-27 02:07:51, with the text "Aksjdbkhjsabd True Undefined uidgukfkejsf".
- Sign In**: Shows a tweet from a user with a profile picture of a man, posted on 2022-10-27 02:08:24, with the text "Abvdjhja True Undefined awndkjeq,fa".
- Compose**: Shows a tweet from a user with a profile picture of a woman, posted on 2022-10-27 02:27:35, with the text "Hey True Undefined hi".