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2KE20CS032

Assignment 38

Understood. To follow the provided instructions and create the files/directory using the same name and case as provided in the task steps, please provide me with the specific names and case instructions for the files/directory you want to create.

AWS

Assignment:5 Implement 3 tier architecture in AWS

Instructions

Follow the steps in document and complete the assignment Note: complete the \$3 endpoint assignment first and then start this assignment

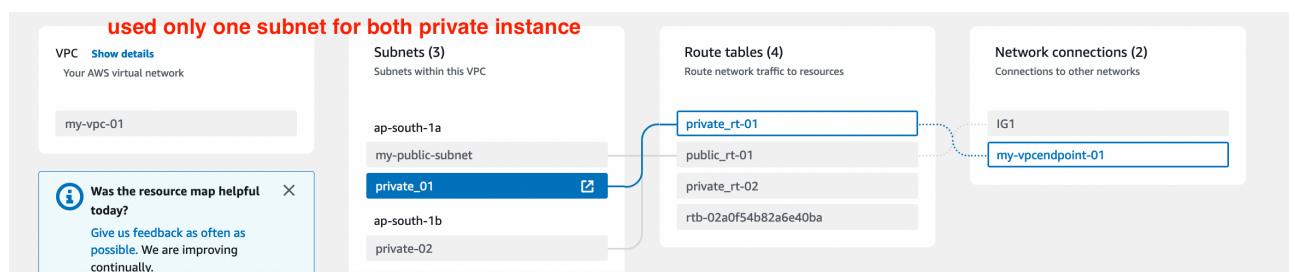
Overview

Web server (nginx) - Public Instance

App server (Mattermost) - Private Instance

DB server(mysql) - Private Instance

MY VPC



MY INSTANCES

<input type="checkbox"/> public-inst(a)	i-059f3bb15a76aad7d	Running	t2.micro	2/2 checks passed	No alarms		ap-south-1a	
<input type="checkbox"/> private-inst(appserver)	i-0e7568659b5b24589	Running	t2.micro	2/2 checks passed	No alarms		ap-south-1a	
<input type="checkbox"/> private-inst(dbserver)	i-0a6d610ce310ab3bf	Running	t2.micro	2/2 checks passed	No alarms		ap-south-1a	

(NOTE : In your private instance there won't be any access to the internet)

1. Download rpm packages using wget in your public instance

```
wget http://dev.mysql.com/get/mysql57-community-release-el7-9.noarch.rpm
```

```
wget https://dev.mysql.com/get/Downloads/MYSQL-5.7/mysql-community-common-5.7.38-1.el7.x86\_64.rpm
```

```
wget https://dev.mysql.com/get/Downloads/MySQL-5.7/mysql-community-libs-5.7.38-1.el7.x86\_64.rpm
```

```
wget https://dev.mysql.com/get/Downloads/MySQL-5.7/mysql-community-client-5.7.38-1.el7.x8664.rpm
```

```
wget https://dev.mysql.com/get/Downloads/MySQL-5.7/mysql-community-server-5.7.38-1.el7.x86\_64.rpm
```



```
ec2-user@ip-10-0-1-178.ap-south-1.compute.internal ~ (0.108s)
ls
key.pem      mysql-community-common-5.7.38-1.el7.x86_64.rpm  mysql-community-server-5.7.38-1.el7.x86_64.rpm  software
mysql-community-client-5.7.38-1.el7.x86_64.rpm  mysql-community-libs-5.7.38-1.el7.x86_64.rpm  mysql57-community-release-el7-9.noarch.rpm
```

2. Use SCP protocol to copy the rpm packages into your private instance and then perform localinstall

```
45 ls
46 sudo scp -i key.pem *.rpm ec2-user@10.0.3.66:/home/ec2-user/
47 ls
48 ls
```

SCP for mysqld rpm files

```
sudo yum erase mariadb-libs
```

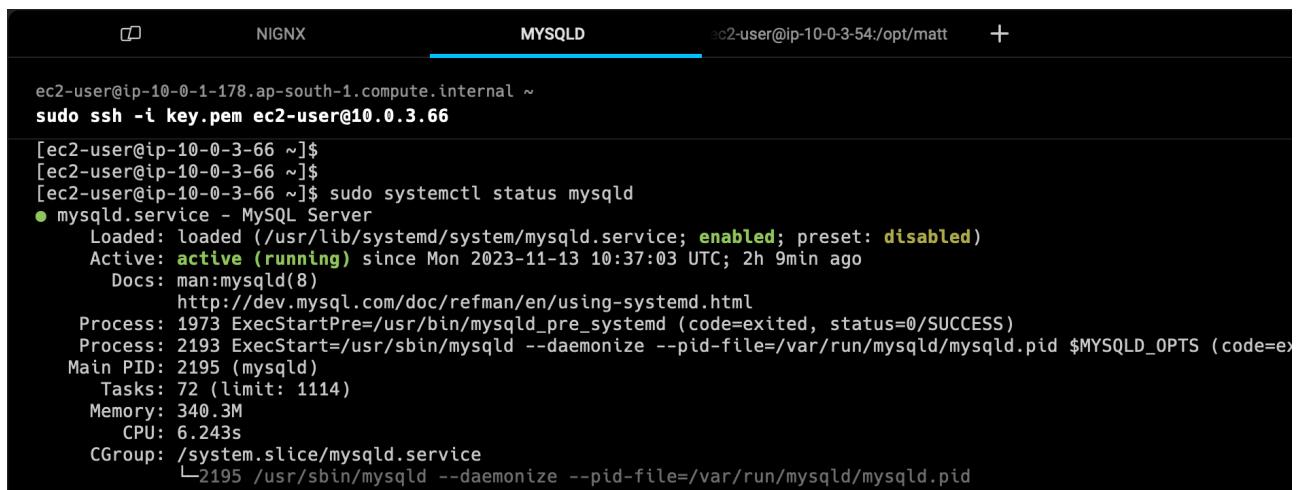
```
sudo yum localinstall /path/to/destination/mysql57-community-release-el7-9.noarch.rpm
```

```
sudo yum localinstall /path/to/destination/mysql-community-common-5.7.38-1.el7.x86_64.rpm
```

```
sudo yum localinstall /path/to/destination/mysql-community-libs-5.7.38-1.el7.x86_64.rpm
```

```
sudo yum localinstall /path/to/destination/mysql-community-client-5.7.38-1.el7.x86_64.rpm
```

```
sudo yum localinstall /path/to/destination/mysql-com
```



```
ec2-user@ip-10-0-1-178.ap-south-1.compute.internal ~
sudo ssh -i key.pem ec2-user@10.0.3.66

[ec2-user@ip-10-0-3-66 ~]$
[ec2-user@ip-10-0-3-66 ~]$
[ec2-user@ip-10-0-3-66 ~]$ sudo systemctl status mysqld
● mysqld.service - MySQL Server
   Loaded: loaded (/usr/lib/systemd/system/mysqld.service; enabled; preset: disabled)
   Active: active (running) since Mon 2023-11-13 10:37:03 UTC; 2h 9min ago
     Docs: man:mysqld(8)
           http://dev.mysql.com/doc/refman/en/using-systemd.html
   Process: 1973 ExecStartPre=/usr/bin/mysqld_pre_systemd (code=exited, status=0/SUCCESS)
   Process: 2193 ExecStart=/usr/sbin/mysqld --daemonize --pid-file=/var/run/mysqld/mysqld.pid $MYSQLD_OPTS (code=ex
 Main PID: 2195 (mysqld)
    Tasks: 72 (limit: 1114)
   Memory: 340.3M
      CPU: 6.243s
     CGroup: /system.slice/mysqld.service
             └─2195 /usr/sbin/mysqld --daemonize --pid-file=/var/run/mysqld/mysqld.pid
```

CONFIGURATION IN DB SERVER

```
[ec2-user@ip-10-0-3-66 ~]$ [ec2-user@ip-10-0-3-66 ~]$ mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 105
Server version: 5.7.38 MySQL Community Server (GPL)

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affiliates. Other names may be trademarks of their respective
owners.

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

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

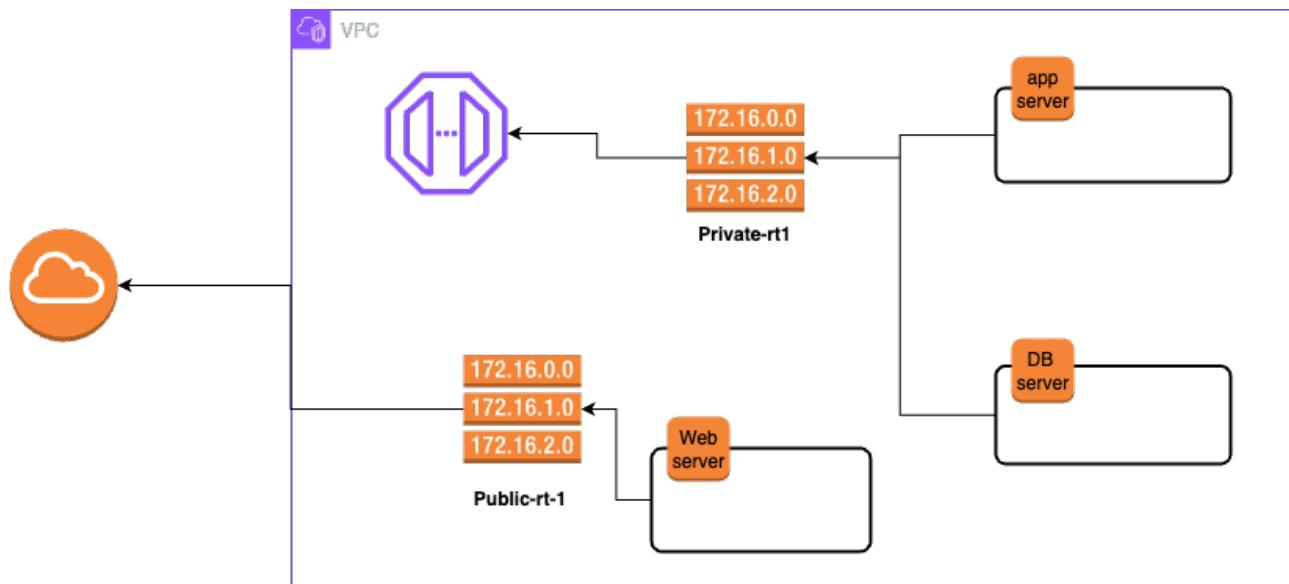
Commands for mysqld db creation

```
ALTER USER 'root'@'localhost' IDENTIFIED BY 'MySql!123 ';
CREATE USER 'mattermost'@'%' IDENTIFIED BY 'mattermost!123';
```

```
CREATE DATABASE mattermost;
GRANT ALL PRIVILEGES ON mattermost.* TO 'mattermost'@'%';
FLUSH PRIVILEGES;
```

|

CONCEPT



INSTALLING MATTERMOST ON APPSERVER

mattermost

```
tar -xvzf mattermost*.gz
sudo mv mattermost /opt
sudo mkdir /opt/mattermost/data
sudo useradd -r -U -M -d /opt/mattermost mattermost
sudo chown -R mattermost:mattermost /opt/mattermost
sudo chmod -R 750 /opt/mattermost
sudo chmod -R +x /opt/mattermost
sudo vi /opt/mattermost/config/config.json
sudo -u mattermost ./mattermost
****if stuck use this
    cat /opt/mattermost/logs/mattermost.log
    sudo lsof -i :8065
    journalctl -xe | grep mattermost
```

Edit this accordingly

cd- sudo vi /opt/mattermost/config/config.json

"DataSource": "mmuser:mmuser-password@tcp(host-name-or-IP:3306)/mattermost?
charset=utf8mb4,utf8&writeTimeout=30s"

```
{
  "ServiceSettings": {
    "SiteURL": "",      left default
    "WebSocketURL": "",
    "LicenseFileLocation": "",
    "ListenAddress": ":8065",
    "ConnectionSecurity": "",
    "TLCertFile": "",
    "TLSKeyFile": "",
    "TLSMinVer": "1.2",
    "TLSStrictTransport": false,
    "TLSStrictTransportMaxAge": 63072000,
    "TLSOverwriteCiphers": [],
    "UseletsEncrypt": false
  }
}
```

```

    "version": "1.8.1+version+",
},
"SqlSettings": {
  "DriverName": "mysql",
  "DataSource": "mattermost:Mattemost!123@tcp(10.0.3.66:3306)/mattermost?charset=utf8mb4,utf8\u00026writeTimeout=30s",
  "DataSourceReplicas": [],
  "DataSourceSearchReplicas": [],
  "MaxIdleSeconds": 30
}

```

DB user and password
Private IP of DB-server

sudo -u mattermost ./mattermost

```

[ec2-user@ip-10-0-3-54 mattermost]$ sudo -u mattermost ./bin/mattermost
{"timestamp": "2023-11-13 12:25:44.115 Z", "level": "info", "msg": "Server is initializing...", "caller": "app/server.go:259", "go_version": "go1.16.7"}
{"timestamp": "2023-11-13 12:25:44.120 Z", "level": "info", "msg": "Pinging SQL", "caller": "sqlstore/store.go:218", "database": "master"}
{"timestamp": "2023-11-13 12:25:44.144 Z", "level": "warn", "msg": "Table collation mismatch", "caller": "sqlstore/store.go:1150", "table_name": "uploadsessions", "expected": "general_ci", "found": "latin1_swedish_ci"}
{"timestamp": "2023-11-13 12:25:44.150 Z", "level": "info", "msg": "Pinging SQL", "caller": "sqlstore/store.go:218", "database": "master"}
{"timestamp": "2023-11-13 12:25:44.247 Z", "level": "error", "msg": "License key from https://mattermost.com required to unlock enterprise features.", "caller": "app/licensing.go:100", "error": "resource.License id: "}
{"timestamp": "2023-11-13 12:25:44.252 Z", "level": "info", "msg": "Starting websocket hubs", "caller": "app/web_hub.go:93", "number_of_hubs": 2}
{"timestamp": "2023-11-13 12:25:44.272 Z", "level": "info", "msg": "Loaded system translations", "caller": "i18n/i18n.go:93", "for_locale": "en", "from_locale": "/opt/mattermost/config.json"}
{"timestamp": "2023-11-13 12:25:44.337 Z", "level": "error", "msg": "SiteURL must be set. Some features will operate incorrectly if the SiteURL is not set. See documentation: https://docs.mattermost.com/configure/configuration-settings.html#site-url", "caller": "app/server.go:552"}
{"timestamp": "2023-11-13 12:25:44.337 Z", "level": "info", "msg": "Current version is 6.6.1 (6.6.1/Wed Apr 27 17:29:30 UTC 2022/3161c1a186595cc371830c4e651002377d4e7cb7954b153c280f91cedb11ae92930f)", "caller": "app/server.go:561", "current_version": "6.6.1", "build_number": "6.6.1", "build_date": "Wed Apr 27 17:29:30 UTC 2022", "built_by": "ci186595cc371830c4e651002377d4e77cc", "build_hash_enterprise": "6185d9ea2cb7954b153c280f91cedb11ae92930f"}
{"timestamp": "2023-11-13 12:25:44.337 Z", "level": "info", "msg": "Enterprise Build", "caller": "app/server.go:570", "enterprise_build": true}
{"timestamp": "2023-11-13 12:25:44.337 Z", "level": "info", "msg": "Printing current working", "caller": "app/server.go:576", "directory": "/opt/mattermost"}
{"timestamp": "2023-11-13 12:25:44.346 Z", "level": "info", "msg": "Loaded config", "caller": "app/server.go:577", "source": "file:///opt/mattermost/config/config.json"}
{"timestamp": "2023-11-13 12:25:44.346 Z", "level": "info", "msg": "Starting workers", "caller": "jobs/workers.go:48"}
{"timestamp": "2023-11-13 12:25:44.349 Z", "level": "info", "msg": "Starting schedulers", "caller": "jobs/schedulers.go:47"}
{"timestamp": "2023-11-13 12:25:44.635 Z", "level": "info", "msg": "Starting up plugins", "caller": "app/plugin.go:185"}
{"timestamp": "2023-11-13 12:25:44.635 Z", "level": "info", "msg": "Syncing plugins from the file store", "caller": "app/plugin.go:259"}
{"timestamp": "2023-11-13 12:25:50.108 Z", "level": "info", "msg": "Ensuring Surveybot exists", "caller": "app/plugin_api.go:937", "plugin_id": "com.mattermost.nps"}
{"timestamp": "2023-11-13 12:25:50.527 Z", "level": "info", "msg": "Failed to fetch license twice. May incorrectly default to on-prem mode.", "caller": "app/plugin_api.go:937"}

```

CONFIGURATION OF MATTERMOST PROXY SERVER

```

ec2-user@ip-10-0-1-178.ap-south-1.compute.internal /etc/nginx/default.d (0.147s)
cd /etc/nginx/conf.d/

```

```

ec2-user@ip-10-0-1-178.ap-south-1.compute.internal /etc/nginx/conf.d (0.085s)
ls

```

```

default.conf  test.conf.back

```

```

ec2-user@ip-10-0-1-178.ap-south-1.compute.internal /etc/nginx/conf.d
|
```

```

cat default.conf
upstream backend {
  server 10.0.3.54:8065;
  keepalive 32;
}

proxy_cache_path /var/cache/nginx levels=1:2 keys_zone=mattermost_cache:10m max_size=3g inactive=600s;

server {
  listen 80;
  server_name 10.0.1.178; _____ IP of Nginx(private)

  location ~ /api/v[0-9]+/(users/)websocket$ {
    proxy_set_header Upgrade $http_upgrade;
    proxy_set_header Connection "upgrade";
    client_max_body_size 50M;
    proxy_set_header Host $http_host;
    proxy_set_header X-Real-IP $remote_addr;
  }
}

```

IP of mattermost server(private)

IP of Nginx(private)

```
ec2-user@ip-10-0-1-178.ap-south-1.compute.internal /etc/nginx/conf.d (0.116s)
curl localhost:80

<!doctype html><html lang="en"><head><meta charset="utf-8"><meta name="viewport" content="width=device-width,initial-scale=1,maximum-scale=1,user-scalable=0"><meta name="robots" content="noindex,nofollow"><meta name="referrer" content="no-referrer"><title>Mattemost</title><meta name="mobile-web-app-capable" content="yes"><meta name="application-name" content="Mattemost"><meta name="format-detection" content="telephone-no"><link rel="icon" type="image/png" href="/static/images/favicon/favicon-default-16x16.png" size="16x16"><link rel="icon" type="image/png" href="/static/images/favicon/favicon-default-24x24.png" size="24x24"><link rel="icon" type="image/png" href="/static/images/favicon/favicon-default-32x32.png" size="32x32"><link rel="icon" type="image/png" href="/static/images/favicon/favicon-default-64x64.png" size="64x64"><link rel="icon" type="image/png" href="/static/images/favicon/favicon-default-96x96.png" size="96x96"><link rel="stylesheet" class="code-theme" href="error-style.css" type="text/css" media="screen" title="HelveticNeue-Light" style="font-family: 'Helvetica Neue', Helvetica, Arial, sans-serif; padding-top: 50px; max-height: 750px; font-size: 14px; color: #333; margin: auto; display: none; line-height: 1.5; error-screen h2{font-size: 30px; font-weight: 400; line-height: 1.2}; error-screen ul{padding-left: 15px; line-height: 1.7; margin-top: 0; margin-bottom: 10px}; error-screen hr{color: #ddd; margin-top: 20px; margin-bottom: 20px; border: 0; border-top: 1px solid #eee}; error-screen visible{display: block}"/><style>meta http-equiv="Content-Security-Policy" content="script-src 'self' cdn.rudderlabs.com j.stry.com v3" script defer="defer" src="/static/main.54a38451a531961ca5.js"></script><link rel="stylesheet" href="/static/main.44d4065a63f37eb096.css" style="rel": "stylesheet"><meta name="apple-mobile-web-app-capable" content="yes"><meta name="apple-mobile-web-app-status-bar-style" content="black"><meta name="apple-mobile-web-app-title" content="Mattemost"></meta>
```

(INBOUND RULES OF ALL SERVERS)

Inbound rules <small>Info</small>						
Security group rule ID	Type <small>Info</small>	Protocol <small>Info</small>	Port range <small>Info</small>	Source <small>Info</small>	Description - optional <small>Info</small>	
sgr-02038c44c62339b24	All ICMP - IPv4	ICMP	All	Custom	<input type="text" value="0.0.0.0"/> X	<button>Delete</button>
sgr-0020ad92bb897d52c	HTTP	TCP	80	Custom	<input type="text" value="0.0.0.0"/> X	<button>Delete</button>
sgr-01916cf2b3bd825d	MYSQL/Aurora	TCP	3306	Custom	<input type="text" value="0.0.0.0/16"/> X	<button>Delete</button>
sgr-0661a55a538782bd5	SSH	TCP	22	Custom	<input type="text" value="0.0.0.0"/> X	<button>Delete</button>

EC2 > Security Groups > sg-06ec4a9cd8a58698b - launch-wizard-31 > Edit inbound rules

Edit inbound rules Info

Inbound rules control the incoming traffic that's allowed to reach the instance.

Inbound rules Info Inbound rules for mattermost server

Security group rule ID	Type <small>Info</small>	Protocol <small>Info</small>	Port range <small>Info</small>	Source <small>Info</small>	Description - optional <small>Info</small>	
sgr-032a97c4f699fa638	All ICMP - IPv4	ICMP	All	Custom	<input type="text" value="0.0.0.0/0"/> <small>X</small>	<input type="button" value="Delete"/>
sgr-0af519ae90db3f14f	Custom TCP	TCP	8065	Custom	<input type="text" value="10.0.1.0/24"/> <small>X</small>	<input type="button" value="Delete"/>
sgr-01c64db87d8d6cb28	SSH	TCP	22	Custom	<input type="text" value="10.0.1.178/32"/> <small>X</small>	<input type="button" value="Delete"/>

⚠ Rules with source of 0.0.0.0/0 or ::/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

EC2 > Security Groups > sg-03d0eba734bcfd3 - launch-wizard-30 > Edit inbound rules

Edit inbound rules Info

Inbound rules control the incoming traffic that's allowed to reach the instance.

Inbound rules <small>Info</small>	Inbound rules for DB server				
Security group rule ID	Type <small>Info</small>	Protocol <small>Info</small>	Port range <small>Info</small>	Source <small>Info</small>	Description - optional <small>Info</small>
sgr-02dc44a83f834116e	All ICMP - IPv4	ICMP	All	Custom	<input type="text" value="0.0.0.0/0"/> X
sgr-0060e1a3f263108ee	SSH	TCP	22	Custom	<input type="text" value="0.0.0.0/0"/> X
sgr-04cff00ed6c1ef264	MySQL/Aurora	TCP	3306	Custom	<input type="text" value="10.0.3.0/24"/> X

[Add rule](#)

⚠ Rules with source of 0.0.0.0 or ::/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

[Cancel](#) | [Preview changes](#) | [Save rules](#)

Web configuration

13.233.112.152/signup_email

Finally Launched the mattermost page 😊

Mattermost

All team communication in one place, searchable and accessible anywhere

Let's create your account

Already have an account? [Click here to sign in.](#)

What's your email address?

Valid email required for sign-up

Choose your username

13.233.112.152/admin_console/user_management/users

ⓘ Preview Mode: Email notifications have not been configured.

[Back to team-spidy](#)

System Console @kartik

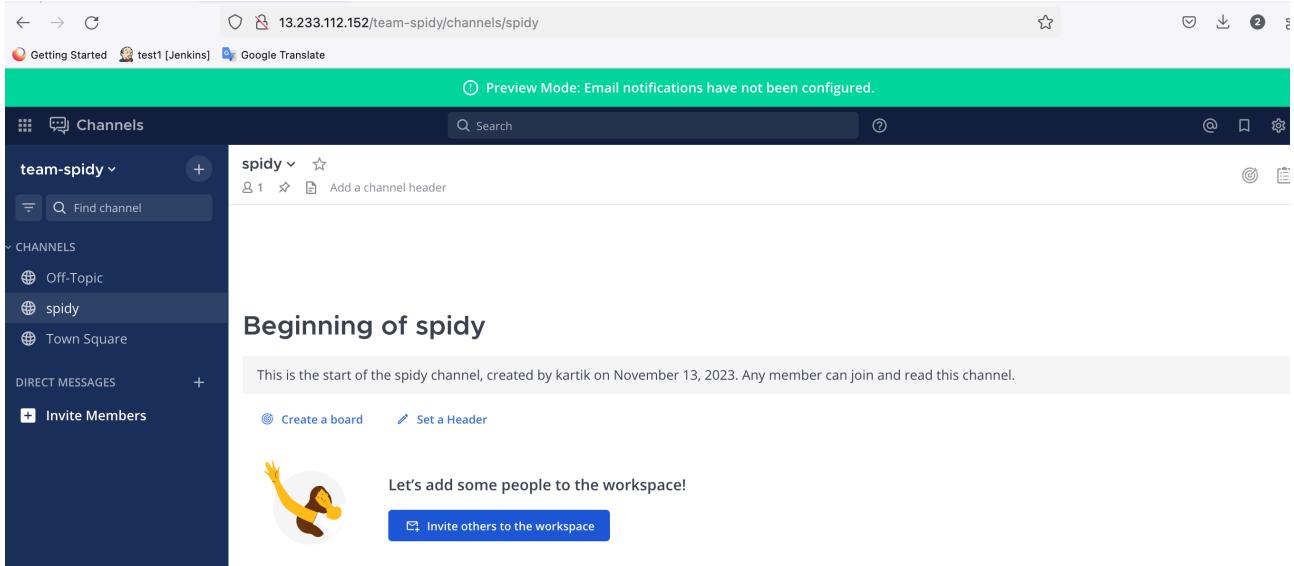
- Find settings
- ABOUT
- Edition and License
- REPORTING
- Workspace Optimization
- Site Statistics
- Team Statistics
- Server Logs
- USER MANAGEMENT
- Users

Mattermost Users

Search users Team: All Users User Status: All Users

1 user

@kartik Email: 2ke20cs086_t@kleit.ac.in Sign-in Method: Email, User ID: wcSprujqk7fmdb3srhzkoms67w System Admin



(service file) (AT LAST)

```
sudo vi /etc/systemd/system/mattermost.service
sudo chmod 644 /etc/systemd/system/mattermost.service
sudo chown root:root /etc/systemd/system/mattermost.service
sudo systemctl daemon-reload
sudo systemctl enable mattermost.service
sudo systemctl start mattermost.service
curl http://localhost:8065
```

```
[4]+  Stopped                  sudo systemctl start mattermost.service
[ec2-user@ip-10-0-3-54 mattermost]$ sudo systemctl status mattermost.service
● mattermost.service - Mattermost
   Loaded: loaded (/etc/systemd/system/mattermost.service; enabled; preset: disabled)
     Active: active (running) since Mon 2023-11-13 13:12:34 UTC; 6s ago
       Main PID: 3946 (mattermost)
          Tasks: 33 (limit: 1114)
        Memory: 415.4M
         CPU: 6.216s
      CGroup: /system.slice/mattermost.service
              ├─3946 /opt/mattermost/bin/mattermost
              ├─3955 plugins/com.mattermost.plugin-channel-export/server/dist/plugin-linux-amd64
              ├─3960 plugins/com.mattermost.nps/server/dist/plugin-linux-amd64
              ├─3972 plugins/playbooks/server/dist/plugin-linux-amd64
              ├─3979 plugins/focalboard/server/dist/plugin-linux-amd64

Nov 13 13:12:34 ip-10-0-3-54.ap-south-1.compute.internal mattermost[3946]: {"timestamp":"2023-11-13 13:12:34.265 Z","level":"info","msg":"Initialized notification bac
Nov 13 13:12:34 ip-10-0-3-54.ap-south-1.compute.internal mattermost[3946]: {"timestamp":"2023-11-13 13:12:34.278 Z","level":"info","msg":"Server.Start","caller":"app/
Nov 13 13:12:34 ip-10-0-3-54.ap-south-1.compute.internal mattermost[3946]: {"timestamp":"2023-11-13 13:12:34.385 Z","level":"info","msg":"Failed to fetch license twice
Nov 13 13:12:34 ip-10-0-3-54.ap-south-1.compute.internal mattermost[3946]: {"timestamp":"2023-11-13 13:12:34.388 Z","level":"error","msg":"Unable to activate plugin".
Nov 13 13:12:34 ip-10-0-3-54.ap-south-1.compute.internal mattermost[3946]: {"timestamp":"2023-11-13 13:12:34.395 Z","level":"error","msg":"Mail server connection test
Nov 13 13:12:34 ip-10-0-3-54.ap-south-1.compute.internal systemd[1]: Started mattermost.service - Mattermost.
Nov 13 13:12:34 ip-10-0-3-54.ap-south-1.compute.internal mattermost[3946]: {"timestamp":"2023-11-13 13:12:34.399 Z","level":"info","msg":"Starting Server...","caller"
Nov 13 13:12:34 ip-10-0-3-54.ap-south-1.compute.internal mattermost[3946]: {"timestamp":"2023-11-13 13:12:34.399 Z","level":"info","msg":"Server is listening on [:];
Nov 13 13:12:34 ip-10-0-3-54.ap-south-1.compute.internal mattermost[3946]: {"timestamp":"2023-11-13 13:12:34.399 Z","level":"info","msg":"Sending systemd READY notifi
Nov 13 13:12:39 ip-10-0-3-54.ap-south-1.compute.internal mattermost[3946]: {"timestamp":"2023-11-13 13:12:39.458 Z","level":"info","msg":"Failed to fetch marketplace
lines 1-24/24 (END)
```