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Containers
Desafio e Prática

São Paulo,
2023

Atividade 12
Criação de Container e Utilização do MySql dentro do container

```
ubuntu@ip-172-31-28-92:~$ sudo apt update && sudo apt upgrade -y
Hit:1 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy InRelease
Get:2 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-updates InRelease
 [119 kB]
Get:3 http://us-east-1.ec2.archive.ubuntu.com/ubuntu jammy-backports InRelea
se [109 kB]
Get:4 http://security.ubuntu.com/ubuntu jammy-security InRelease [110 kB]
```

Utilizando os comandos sudo apt upgrade e update para puxar os pacotes e atualizar eles

```
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-28-92:~$ sudo apt install docker.io
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer requir
ed:
```

Instalação do Docker

```
No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-172-31-28-92:~$ docker --version
Docker version 24.0.5, build 24.0.5-0ubuntu1~22.04.1
ubuntu@ip-172-31-28-92:~$
```

Confirmando a instalação ao apresentar a versão instalada

```
ubuntu@ip-172-31-28-92:~$ sudo systemctl start docker
ubuntu@ip-172-31-28-92:~$
```

Iniciando o docker

```
ubuntu@ip-172-31-28-92:~$ sudo systemctl enable docker
```

Habilitando o docker

```
ubuntu@ip-172-31-28-92:~$ sudo docker pull mysql:5.7
5.7: Pulling from library/mysql
9ad776bc3934: Pulling fs layer
a280ac4a8665: Pulling fs layer
4047a3b08336: Pulling fs layer
435611dd4999: Pulling fs layer
f84f2572cb0b: Pulling fs layer
ef893e58839b: Pulling fs layer
```

Instalado o mysql

```
ubuntu@ip-172-31-28-92:~$ sudo docker images
REPOSITORY   TAG       IMAGE ID       CREATED       SIZE
mysql        5.7       547b3c3c15a9   13 days ago   501MB
ubuntu@ip-172-31-28-92:~$
```

Puxando as imagens o mysql

```
ubuntu@ip-172-31-28-92:~$ sudo docker run -d -p 3306:3306 --name ContainerBD
 -e "MYSQL_DATABASE=Container" -e "MYSQL_ROOT_PASSWORD=#Gf47148790816" mysql
:5.7
f4d0b3a5c3fcc7212c77ea6c6c2ba346f9ca8da77969e8a84538527bb6b53593
```

Criando um container dentro do mysql

```
ubuntu@ip-172-31-28-92:~$ sudo docker ps -a
CONTAINER ID   IMAGE       COMMAND                  CREATED          STATUS          PORTS                                                  NAMES
f4d0b3a5c3fc   mysql:5.7   "docker-entrypoint.s…"   18 seconds ago   Up 14 seconds   0.0.0.0:3306->3306/tcp, :::3306->3306/tcp, 33060/tcp   ContainerBD
```

```
ubuntu@ip-172-31-28-92:~$ sudo docker stats ContainerBD
CONTAINER ID   NAME          CPU %     MEM USAGE / LIMIT     MEM %     NET I/O           BLOCK I/O       PIDS
f4d0b3a5c3fc   ContainerBD   0.32%     200.5MiB / 949.7MiB   21.12%    22.2kB / 1.56kB   59MB / 291MB    27
CONTAINER ID   NAME          CPU %     MEM USAGE / LIMIT     MEM %     NET I/O           BLOCK I/O       PIDS
f4d0b3a5c3fc   ContainerBD   0.05%     200.5MiB / 949.7MiB   21.12%    22.2kB / 1.56kB   59MB / 291MB    27
CONTAINER ID   NAME          CPU %     MEM USAGE / LIMIT     MEM %     NET I/O           BLOCK I/O       PIDS
f4d0b3a5c3fc   ContainerBD   0.05%     200.5MiB / 949.7MiB   21.12%    22.2kB / 1.56kB   59MB / 291MB    27
CONTAINER ID   NAME          CPU %     MEM USAGE / LIMIT     MEM %     NET I/O           BLOCK I/O       PIDS
f4d0b3a5c3fc   ContainerBD   0.04%     200.5MiB / 949.7MiB   21.12%    22.2kB / 1.56kB   59MB / 291MB    27
```

Confirmando o status do docker

```
ubuntu@ip-172-31-28-92:~$ sudo docker exec -it ContainerBD bash
bash-4.2#
```

Iniciando monitoramento do docker

```
ubuntu@ip-172-31-28-92:~$ sudo docker exec -it ContainerBD bash
bash-4.2# mysql -u root -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 2
Server version: 5.7.44 MySQL Community Server (GPL)

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statemen
t.

mysql>
```
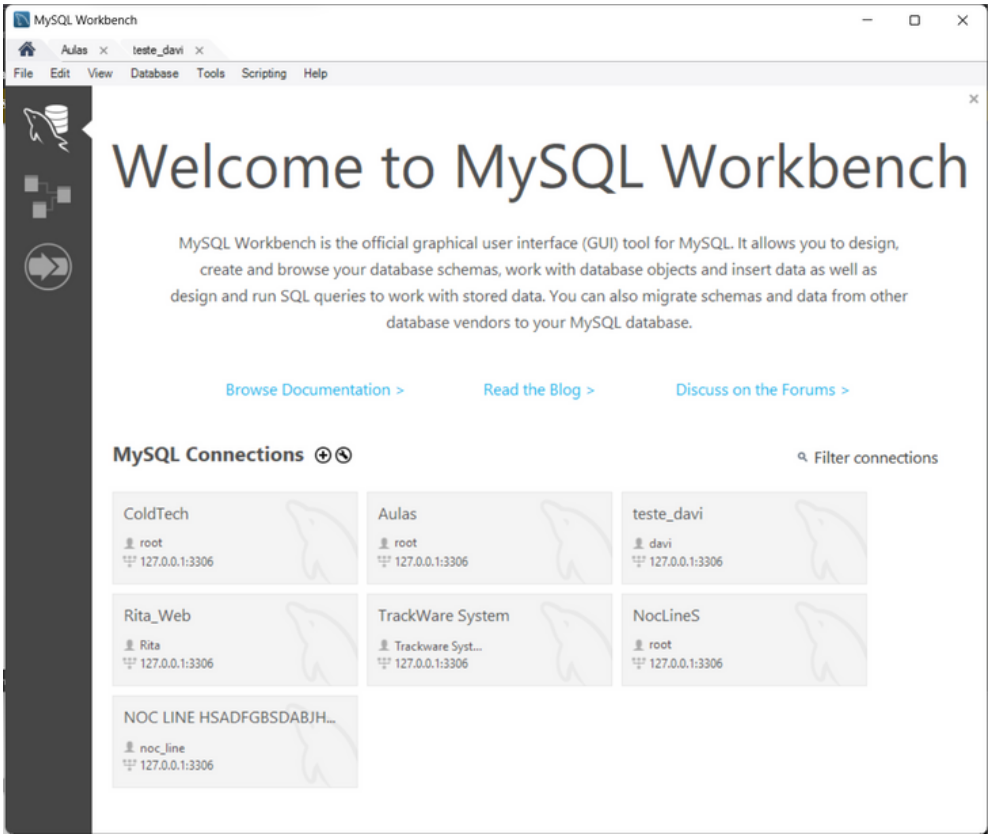

Iniciando o mysql dentro do docker

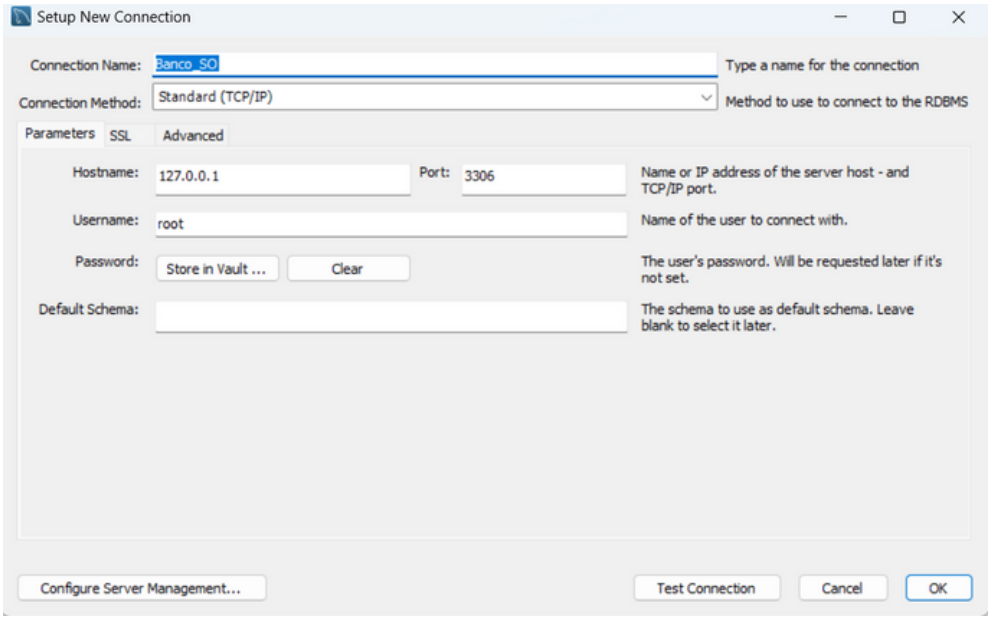
```
mysql> SHOW DATABASES;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| Container          |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
5 rows in set (0.01 sec)

mysql>
```

Usando o comando show database para confirmar a utilização do mysql no docker

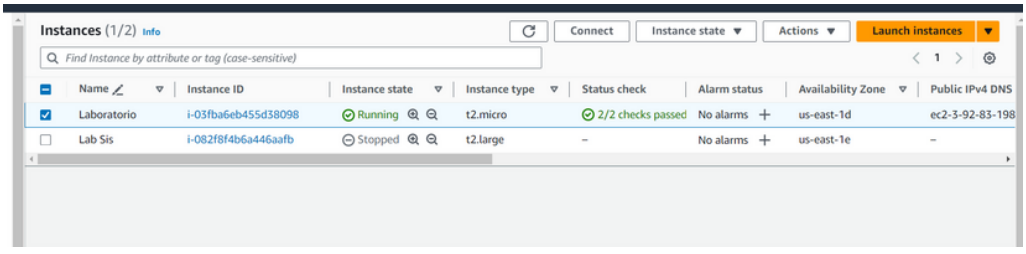


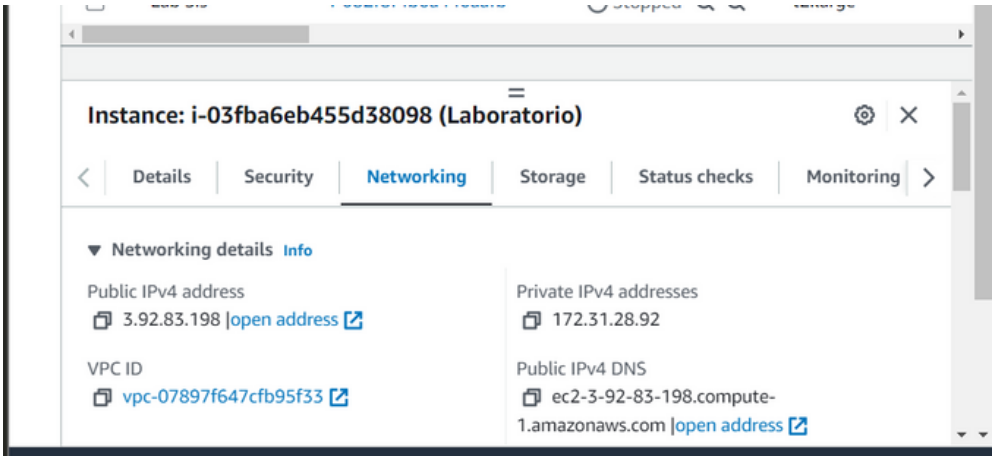
Desafio - Conexão Máquina Virtual com o MySql

Iniciando o banco de dados MySql e criando uma nova conexão

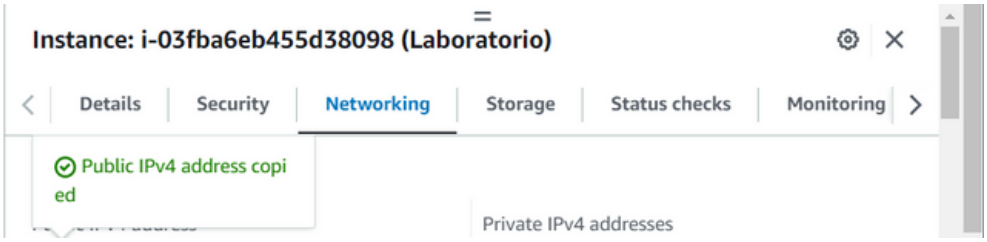


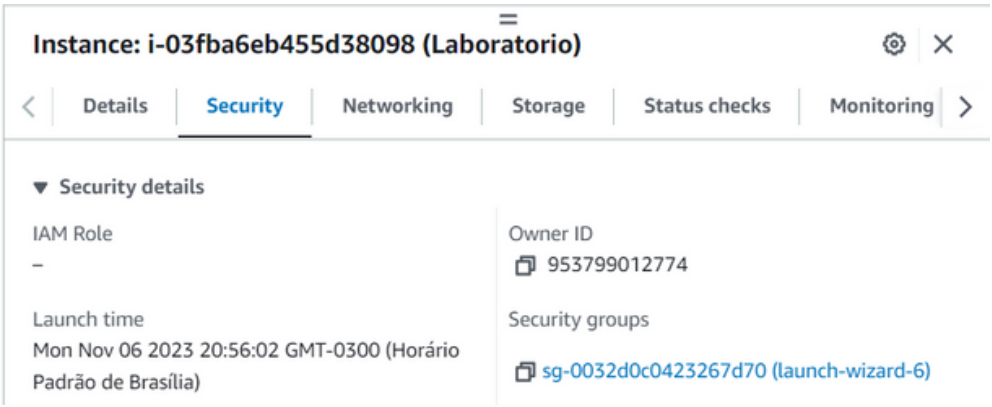
ndo nas instancia das máquinas virtuais e selecionando a que estou usando





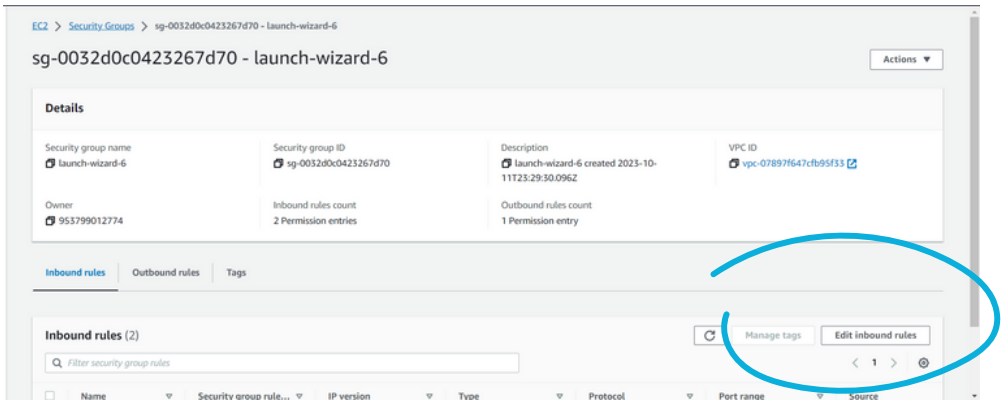
Selecionando a área de Redes dentro dessa instancia e copiando o código ipv4 que será utilizado mais adiante



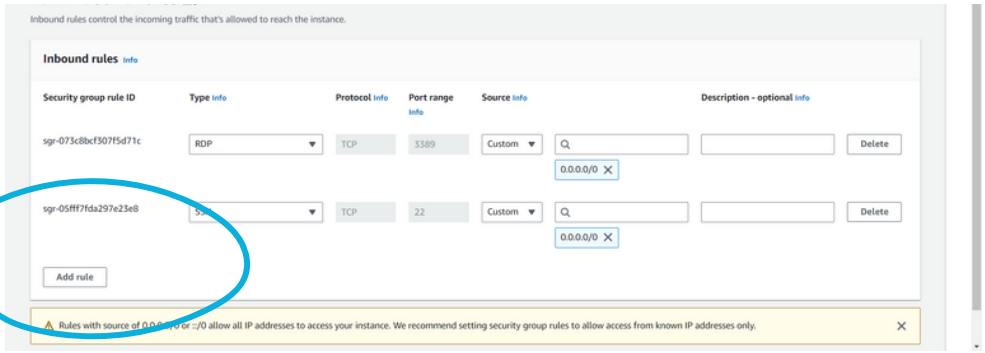


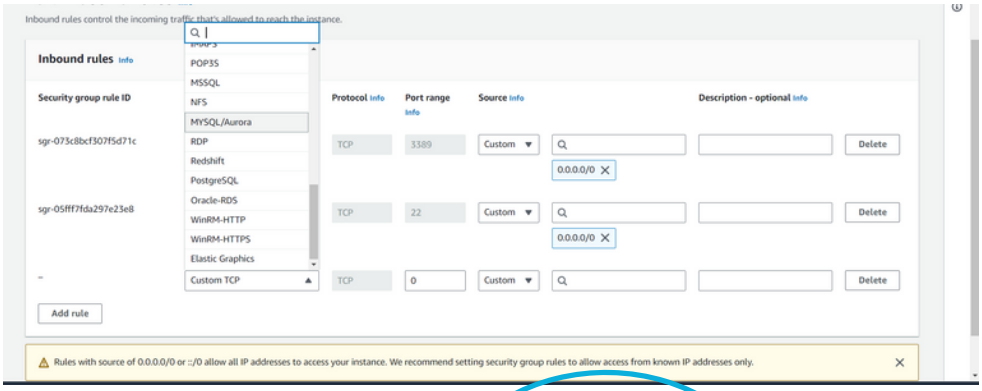
Acessando a área de segurancia e abrindo o link sobre os grupos de segurança (security groups)

Editando regras



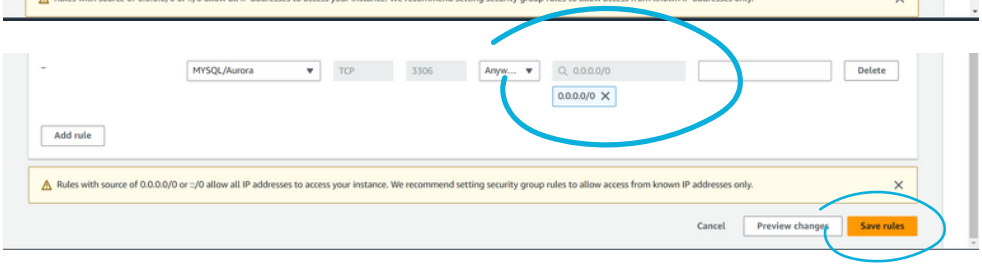
Adicionando uma nova regra





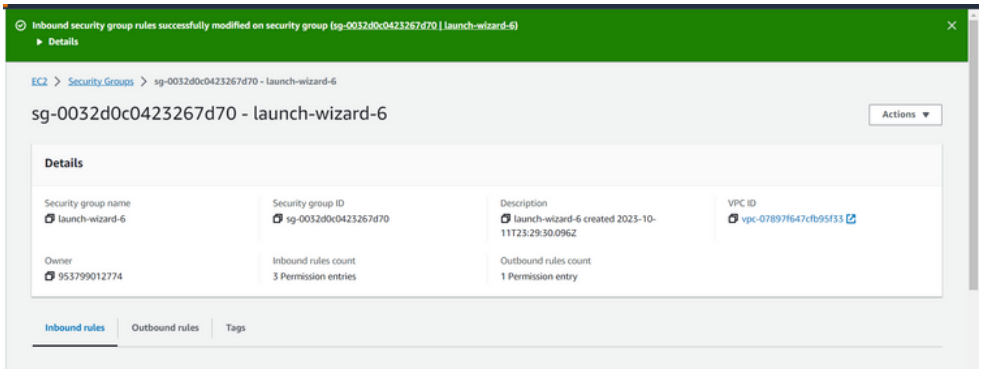
Configurando essa nova regra e trocando o tcp customizado por MySQL/Aurora

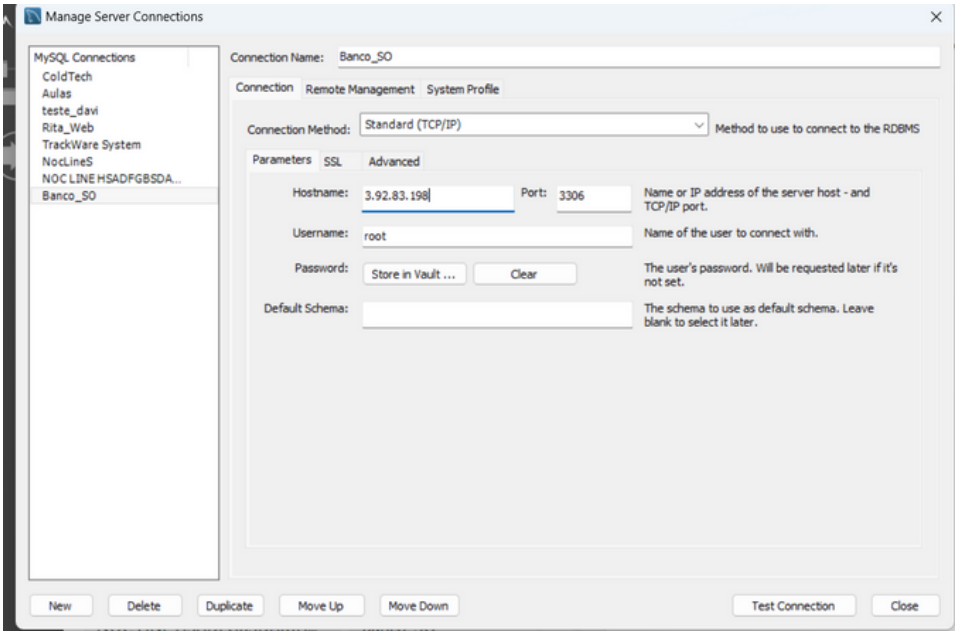
Adicionando os locais/ips que podem acessar



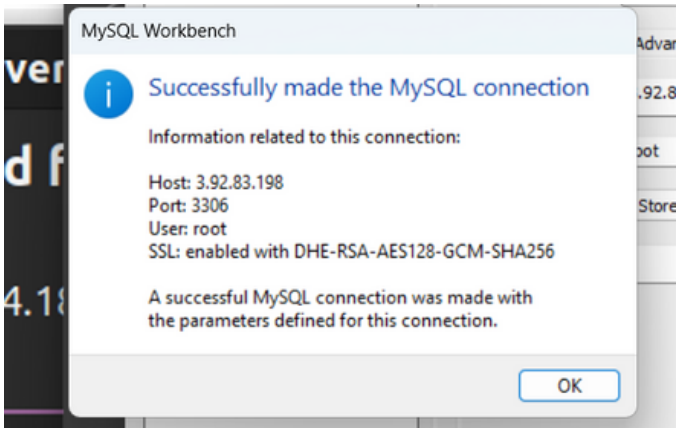
Salvando a nova regra

Confirmando com a mensagem de sucesso

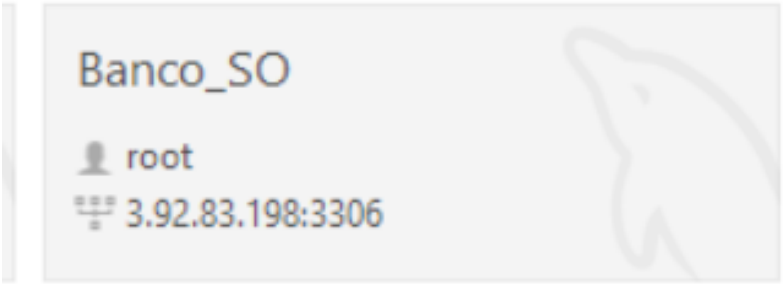




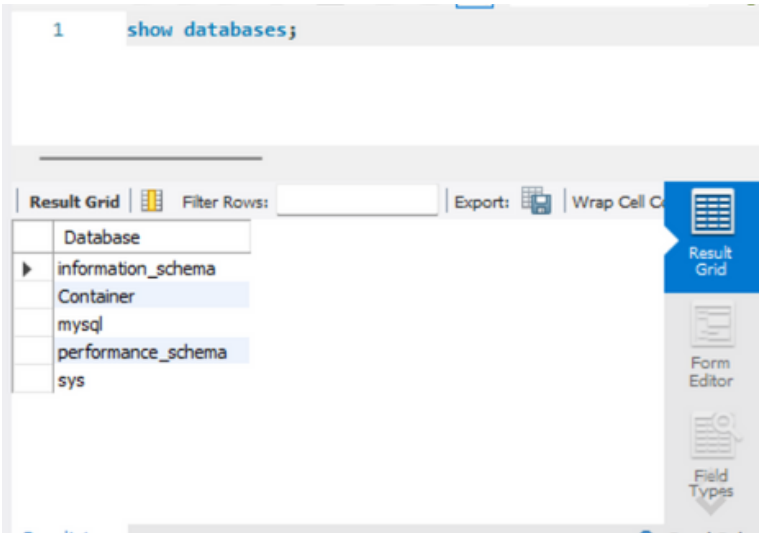
Editando a conexão criada e adicionando o código ipv4 publico no hostname da nossa conexão



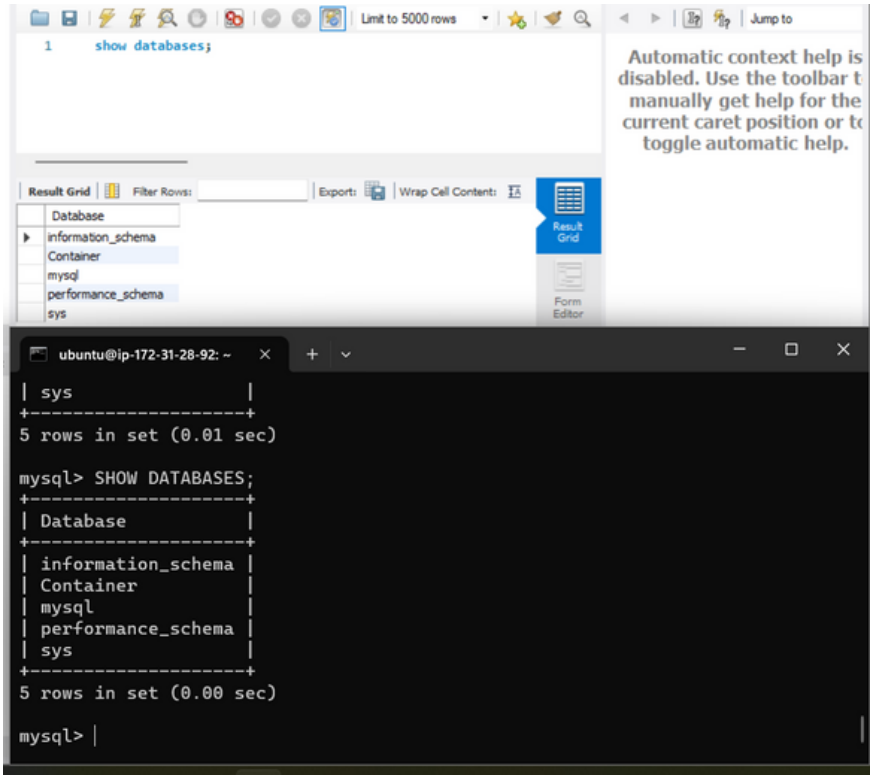
Testando a conexão juntamente com a senha definida na criação do container e confirmando



Confirmando a criação da conexão e acessando ela



Realizando o mesmo comando feito pelo terminal dentro do mysql



Comparando o resultado dos dois comando para confirmar se a conexão doi realmente bem sucedida

Saindo do container e do mysql via terminal