SOLIS Servers

Currently, we have 8 SOLIS servers on the mission:

Server name	Location	Local IP address	Encrypted
solis1	Tripoli	192.168.88.39	Yes
solis2	Beirut	192.168.88.192	No
solis3	Beirut	192.168.88.193	Yes
solis4	Zahle	10.0.2.78	Yes
solis5	Tripoli	192.168.88.40	No
solis6	Zahle	10.0.2.87	Yes
solis7	Halba	192.168.1.144	Yes
solis8	Halba	192.168.1.109	Yes

I. After every system reboot, we have to do the following steps for the encrypted servers:

1. Unlock/Map LUKS partition with the device mapper (enter passphrase)
   ```
   sudo cryptsetup open /dev/sda4 crypted
   ```
2. Mount the mapped device filesystem to /data
   ```
   sudo mount /dev/mapper/crypted /data
   ```
3. Start the docker daemon
   ```
   sudo systemctl restart docker.socket docker.service
   ```

II. In order to have the database identical in all servers, we have to do the following steps:

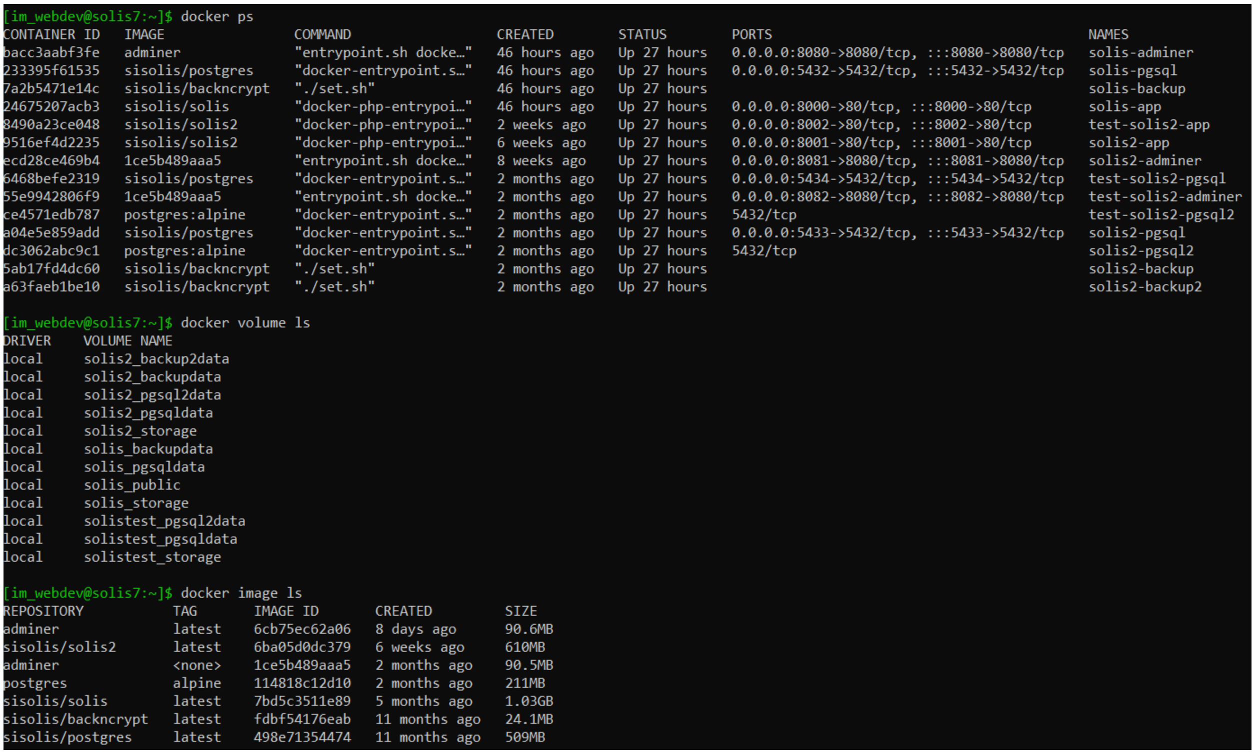
1. Open the desired system
   - **cd /data/prod/solis** (for encrypted servers)
   - **cd /opt/prod/solis** (for non-encrypted servers)
2. Run Restart Scrypt:
   ```
   docker-compose exec pgsql ./restart.sh
   ```
3. check the status:
   ```
   docker-compose exec pgsql ./status.sh
   ```
4. check all sync statuses:
   ```
   docker-compose exec pgsql ./status-syncs.sh
   ```
5. check the last log messages:
   ```
   docker-compose exec pgsql tail -n 100 /var/log/bucardo/log.bucardo
   ```
6. Copy and insert data from all remote hosts to the bucardo host:
   ```
   docker-compose exec pgsql ./pg_dump-to-master.sh
   ```

III. <u>To enable a new user to connect to the server via ssh:</u>

1. Open the solisrelay0 server
   ssh solisrelay0
2. Open the nixos folder:
   cd /etc/nixos
3. Add new public key to the keys folder:
   - **cd keys**
   - **sudo nano (username)**
   - Paste public key and save
4. Add user in users.nix file:
   - **cd ..**
   - **sudo nano users.nix**
   - Add the username to the file in the admin list if admin and the user list if user
5. Restart the server
   sudo nixos-rebuild switch
6. Do step 2 to 6 for the servers that you want them to have access if admin config

IV. <u>To reinstall the containers:</u>

1. Check the status of the container, the image and the volume
   docker ps
   docker volume ls
   docker image ls



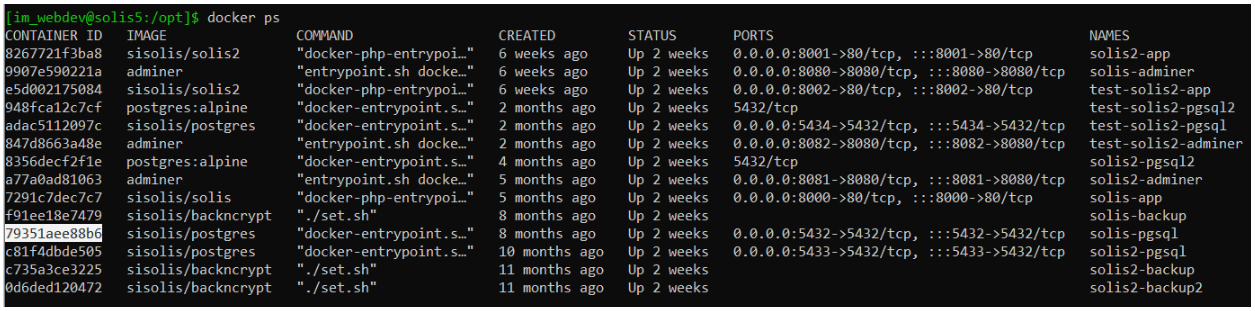
```
[im_webdev@solis7:~]$ docker ps
CONTAINER ID   IMAGE                COMMAND                  CREATED        STATUS        PORTS                                         NAMES
bacc3aabf3fe   adminer              "entrypoint.sh docke…"   46 hours ago   Up 27 hours   0.0.0.0:8080->8080/tcp, :::8080->8080/tcp     solis-adminer
233395f61535   sisolis/postgres     "docker-entrypoint.s…"   46 hours ago   Up 27 hours   0.0.0.0:5432->5432/tcp, :::5432->5432/tcp     solis-pgsql
7a2b5471e14c   sisolis/backncrypt   "./set.sh"               46 hours ago   Up 27 hours                                                 solis-backup
24675207acb3   sisolis/solis        "docker-php-entrypoi…"   46 hours ago   Up 27 hours   0.0.0.0:8000->80/tcp, :::8000->80/tcp         solis-app
8490a23ce048   sisolis/solis2       "docker-php-entrypoi…"   2 weeks ago    Up 27 hours   0.0.0.0:8002->80/tcp, :::8002->80/tcp         test-solis2-app
9516ef4d2235   sisolis/solis2       "docker-php-entrypoi…"   6 weeks ago    Up 27 hours   0.0.0.0:8001->80/tcp, :::8001->80/tcp         solis2-app
ecd28ce469b4   1ce5b489aaa5         "entrypoint.sh docke…"   8 weeks ago    Up 27 hours   0.0.0.0:8081->8080/tcp, :::8081->8080/tcp     solis2-adminer
6468befe2319   sisolis/postgres     "docker-entrypoint.s…"   2 months ago   Up 27 hours   0.0.0.0:5434->5432/tcp, :::5434->5432/tcp     test-solis2-pgsql
55e9942806f9   1ce5b489aaa5         "entrypoint.sh docke…"   2 months ago   Up 27 hours   0.0.0.0:8082->8080/tcp, :::8082->8080/tcp     test-solis2-adminer
ce4571edb787   postgres:alpine      "docker-entrypoint.s…"   2 months ago   Up 27 hours   5432/tcp                                      test-solis2-pgsql2
a04e5e859add   sisolis/postgres     "docker-entrypoint.s…"   2 months ago   Up 27 hours   0.0.0.0:5433->5432/tcp, :::5433->5432/tcp     solis2-pgsql
dc3062abc9c1   postgres:alpine      "docker-entrypoint.s…"   2 months ago   Up 27 hours   5432/tcp                                      solis2-pgsql2
5ab17fd4dc60   sisolis/backncrypt   "./set.sh"               2 months ago   Up 27 hours                                                 solis2-backup
a63faeb1be10   sisolis/backncrypt   "./set.sh"               2 months ago   Up 27 hours                                                 solis2-backup2

[im_webdev@solis7:~]$ docker volume ls
DRIVER    VOLUME NAME
local     solis2_backup2data
local     solis2_backupdata
local     solis2_pgsql2data
local     solis2_pgsqldata
local     solis2_storage
local     solis_backupdata
local     solis_pgsqldata
local     solis_public
local     solis_storage
local     solistest_pgsql2data
local     solistest_pgsqldata
local     solistest_storage

[im_webdev@solis7:~]$ docker image ls
REPOSITORY           TAG       IMAGE ID       CREATED         SIZE
adminer              latest    6cb75ec62a06   8 days ago      90.6MB
sisolis/solis2       latest    6ba05d0dc379   6 weeks ago     610MB
adminer              <none>    1ce5b489aaa5   2 months ago    90.5MB
postgres             alpine    114818c12d10   2 months ago    211MB
sisolis/solis        latest    7bd5c3511e89   5 months ago    1.03GB
sisolis/backncrypt   latest    fdbf54176eab   11 months ago   24.1MB
sisolis/postgres     latest    498e71354474   11 months ago   509MB
```

2. Remove containers
   docker rm (container name) -f

3. Remove volumes
   docker volume rm (volume name) -f
4. Remove images (take care to remove only images related to the specific containers)
   Docker image rm (image name) -f
5. We can check the docker-compose.yml configuration file to see all the available services. You can find this file in /opt/prod/solis for servers that are encrypted and in /data/prod/solis in not encrypted servers.
6. You can pull the changes to a specific folder
   docker-compose pull
7. Reinstall all servers
   socker compose up -d

V. <u>Copy database to another server</u>

1. Go to the server from where you want to take the DB
   Cd /opt/prod/solis
2. Enter the Database
   Docker exec -it solis-pgsql bash
3. Make a backup of the database
   pg_dump -U sol sasildb > sasildb_backup.sql
4. Exit the database and check the container_id
   docker ps



```
[im_webdev@solis5:/opt]$ docker ps
CONTAINER ID   IMAGE                COMMAND                  CREATED         STATUS        PORTS                                         NAMES
8267721f3ba8   sisolis/solis2       "docker-php-entrypoi…"   6 weeks ago     Up 2 weeks    0.0.0.0:8001->80/tcp, :::8001->80/tcp         solis2-app
9907e590221a   adminer              "entrypoint.sh docke…"   6 weeks ago     Up 2 weeks    0.0.0.0:8080->8080/tcp, :::8080->8080/tcp     solis-adminer
e5d002175084   sisolis/solis2       "docker-php-entrypoi…"   6 weeks ago     Up 2 weeks    0.0.0.0:8002->80/tcp, :::8002->80/tcp         test-solis2-app
948fca12c7cf   postgres:alpine      "docker-entrypoint.s…"   2 months ago    Up 2 weeks    5432/tcp                                      test-solis2-pgsql2
adac5112097c   sisolis/postgres     "docker-entrypoint.s…"   2 months ago    Up 2 weeks    0.0.0.0:5434->5432/tcp, :::5434->5432/tcp     test-solis2-pgsql
847d8663a48e   adminer              "entrypoint.sh docke…"   2 months ago    Up 2 weeks    0.0.0.0:8082->8080/tcp, :::8082->8080/tcp     test-solis2-adminer
8356decf2f1e   postgres:alpine      "docker-entrypoint.s…"   4 months ago    Up 2 weeks    5432/tcp                                      solis2-pgsql2
a77a0ad81063   adminer              "entrypoint.sh docke…"   5 months ago    Up 2 weeks    0.0.0.0:8081->8080/tcp, :::8081->8080/tcp     solis2-adminer
7291c7dec7c7   sisolis/solis        "docker-php-entrypoi…"   5 months ago    Up 2 weeks    0.0.0.0:8000->80/tcp, :::8000->80/tcp         solis-app
f91ee18e7479   sisolis/backncrypt   "./set.sh"               8 months ago    Up 2 weeks                                                  solis-backup
79351aee88b6   sisolis/postgres     "docker-entrypoint.s…"   8 months ago    Up 2 weeks    0.0.0.0:5432->5432/tcp, :::5432->5432/tcp     solis-pgsql
c81f4dbde505   sisolis/postgres     "docker-entrypoint.s…"   10 months ago   Up 2 weeks    0.0.0.0:5433->5432/tcp, :::5433->5432/tcp     solis2-pgsql
c735a3ce3225   sisolis/backncrypt   "./set.sh"               11 months ago   Up 2 weeks                                                  solis2-backup
0d6ded120472   sisolis/backncrypt   "./set.sh"               11 months ago   Up 2 weeks                                                  solis2-backup2
```

5. Transfer the backup outside of the database
   sudo docker cp (container_id):/bucardo/sasildb_backup.sql sasildb_backup.sql
6. Exit the server and extract the backup
   scp solis5:/opt/prod/solis/sasildb_backup.sql .
7. Copy the backup to the destination server
   scp .\sasildb_backup.sql (server name):/home/im_webdev
8. Go to the destination server and copy the backup to the container
   docker cp sasildb_backup.sql (container_id):/bucardo
9. Enter the container and then enter the postgres DB
   psql -U sol postgres
10. Drop the database
    drop database sasildb;
11. Recreate the database
    create database sasildb with owner sol;

12. Exit postgres DB and copy the backup to the database
    ```
    psql -U sol sasildb < sasildb_backup.sql
    ```

VI. Bucardo replication

1. Go to the server 3 to setup the replication
2. Enter the pgsql image
    ```
    Docker exec -it solis-pgsql bash (solis referral)
    Docker exec -it solis2-pgsql bash (solis)
    ```
3. Check which syncs are working correctly
    ```
    ./status.sh
    ```
4. Restart replication if the servers were disconnected
    ```
    ./restart.sh
    ```
5. Restart replication if the servers were disconnected
    ```
    ./restart.sh
    ```

VII. Add a server to the replication cycle

1. Remove the syncs
    ```
    ./remove-syncs.sh
    ```
2. Exit the image and update the docker-compose.yml file to add the port of the server in the BUCARDO_PORTS list
3. Re-enter the image:
    ```
    ./add-syncs.sh
    ./restart.sh
    ```