

DOCKER CASE STUDY

Problem : Automate Infra allocation for L&D

Requirements:

- Dynamic Allocation of Linux systems for users.
- Each user should have independent Linux System.
- Specific training environment should be created in Container.
- User should not allow to access other containers/images.
- User should not allow to access docker command.
- Monitor participants containers.
- Debug/live demo for the participants if they have any doubts/bug in running applications.
- Automate container creation and deletion.

Create container image:

- Create a new container from any base image, I used ubuntu here.
`sudo docker create -it --name docker_dynamic_allocation ubuntu /bin/bash`
- Start and attach the container.
`sudo docker start docker_dynamic_allocation`
`sudo docker attach docker_dynamic_allocation`
- Install the packages required. Here I am installing a simple text editor(vim).
`apt-get update`
`apt-get install vim`
- If required commit the questions into the container.

Allocating containers to users:

- Create a users file in which the user names are written.
`vim users.txt`
- The following script(create_containers.sh) will create the containers for every user in the users file.
`echo -n "Enter the name of users file:"`
`read file`
`while read user`
`do`
`docker create -it --name $user docker_dynamic_allocation /bin/bash`
`done < $file`
- To run the script change the mode using `chmod +x create_containers.sh`
- Run the script using `./create_containers.sh` and give the users file name.
- The user can start the container by
`docker start <name>`
`docker attach <name>`

Monitoring the containers of a user:

- To see the stats
`docker stats <user>`
- To see the logs of the container
`docker logs -f <user>`

Deleting the containers:

- By using the following script(delete_containers.sh), it will automatically delete the containers

```
echo -n "Enter the name of users file:"
```

```
read file
```

```
while read user
```

```
do
```

```
    docker stop $user
```

```
    docker rm $user
```

```
done < $file
```

- To run the script change the mode using `chmod +x delete_containers.sh`
- Run the script using `./delete_containers.sh` and give the users file name.