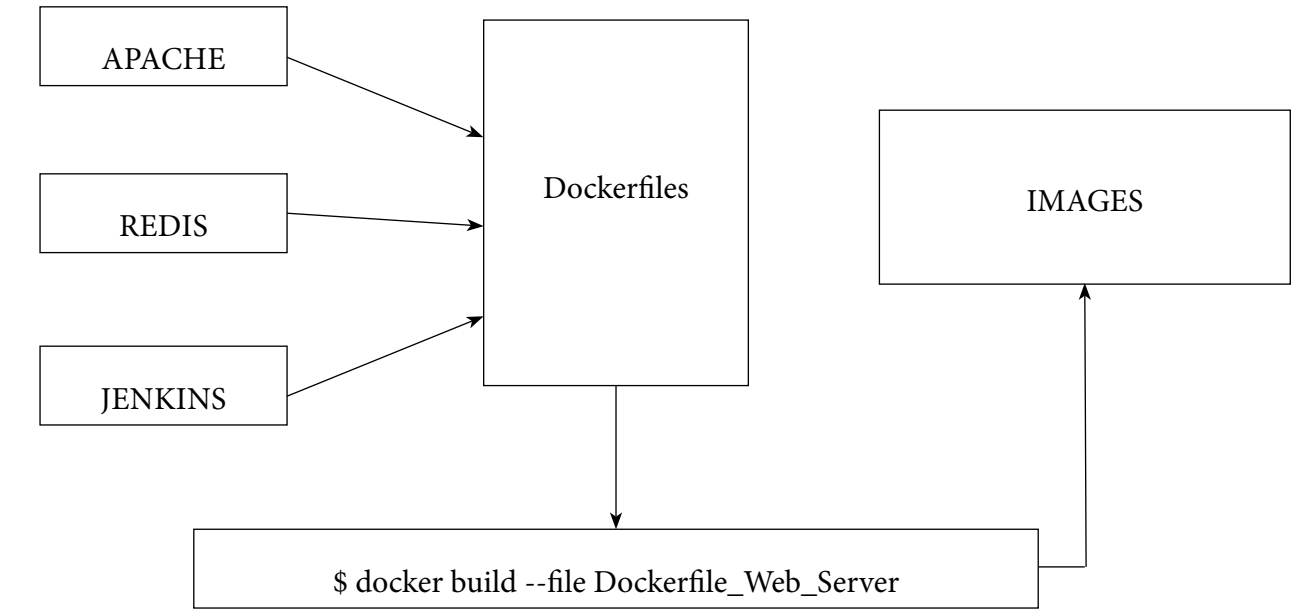
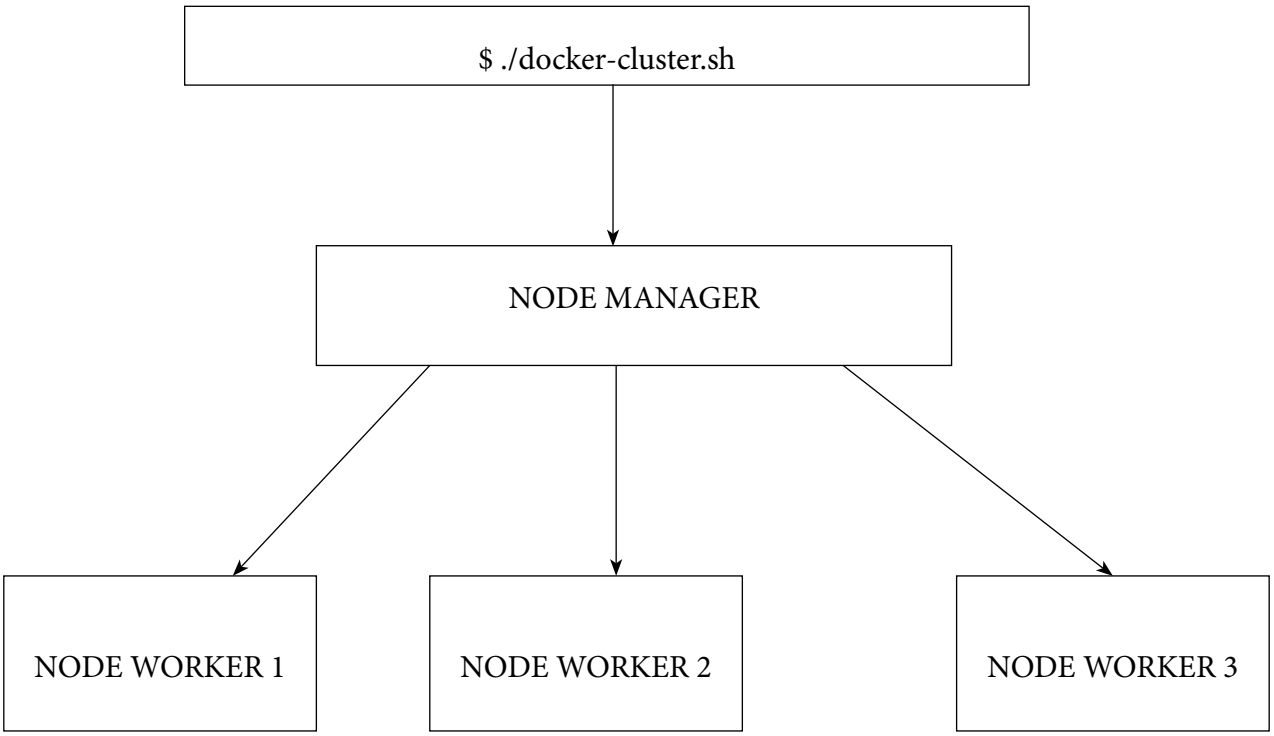
Docker Swarm Cluster.





https://docs.docker.com/engine/swarm/swarm-tutorial/create-swarm/

Web server layer and Database.

The web server layer can be connected to the database layer using an internal network. For that purpose we have to add some lines into a docker-compose.yml file which is responsible of to have a collection of some parameters for each service.
One of that parameters is “network” so we can write for each service (web_server and db services) one entry into our **docker-compose.yml** file.

```
services:
    web_server:
        image:  yyy-image
        networks:
          - web_network
          - db_network
     database:
        image: ddd-image
        networks:
          web_network

  networks:
      web_network:
        external:
          name: web_network
      db_network:
        external:
          name: db_network
```

Now, we have a communication between two layers using a docker-compose-yml file.

The web server layer serves a website.

Website technology: DRUPAL
Database Relational: MariaDB

Download the open code from drupal repository.
Reference: https://www.drupal.org/

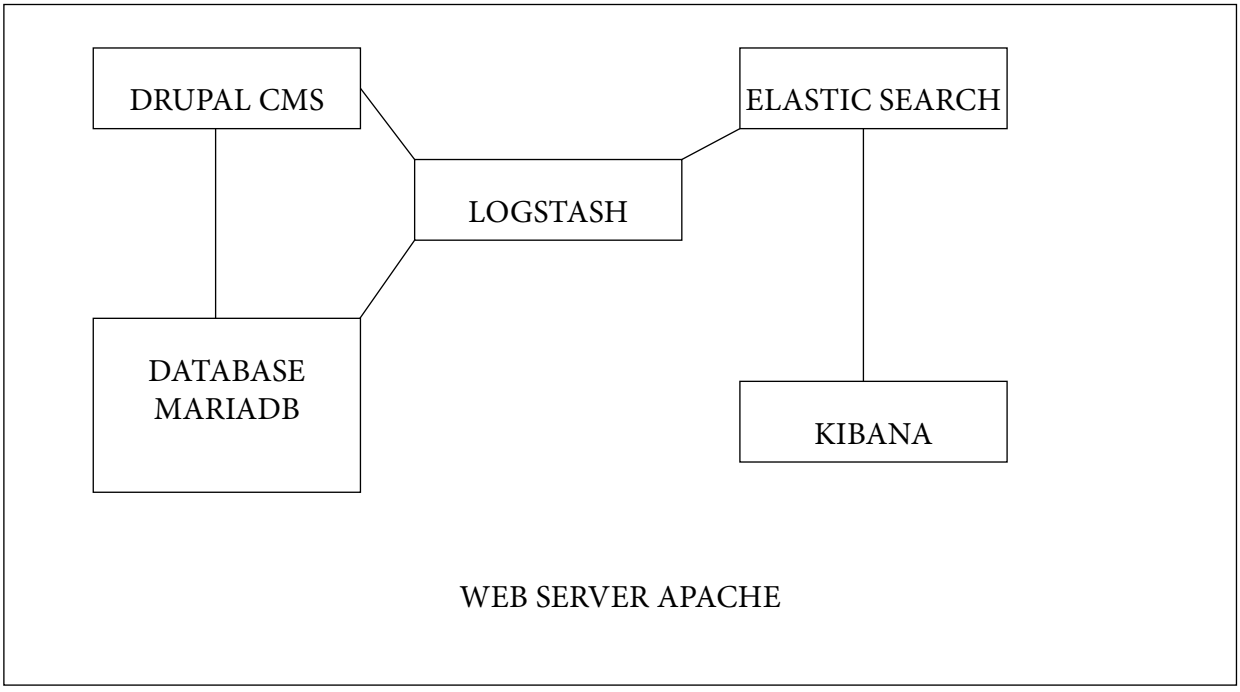
Download the code from mariaDB repository.
Reference: https://mariadb.com/

1. From our docker cluster we have a container for each one techology. We must to run their from our cluster when reaching our Stack.

2. Before the process of configuraton of Drupal code,
we need to have install other techs on our web server, php and other useful tools to manage the interactions with the database.

3. We must be interested in to install in our Website-Database one software as Elastic Stack. Such Stack is desirable to view what happen with the web-info across our website.
We can get logs, events-apps and we can to have a view ordered in grafics.

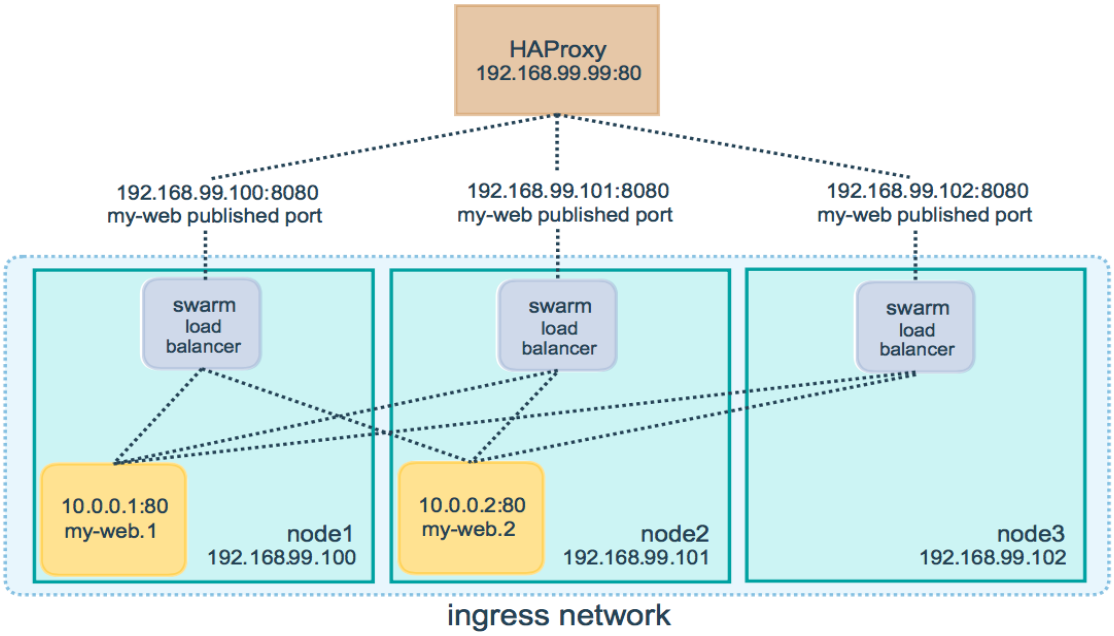
4. Logstash - Elastic Search - Kibana (Elastic Stack) can be a good design to get info from our web app because info go through web to Kibana which shows data through powerful graphics.



https://www.drupal.org/project/elasticsearch_connector

Massive network traffic across the cluster.

1. To implement the load balancing Docker engine give us the possibility of expone a port to other external software if we decide that the docker's internal load balancing is not enough.



Reference: https://docs.docker.com/engine/swarm/ingress/

HAProxy is a real solution as load balancer for our cluster so we need to connect the cluster to this HAproxy as we can see at the picture above.

Just need to expose the listening port 8080 of our nodes (swarm cluster) to the listening port of the HAproxy proxy (80 port). So, when a request is made then our external load balancer can redirect this request to the nodes which are active on the cluster.