Containers: A brief

Containers are basically units that bind applications and all their dependencies together, so that they can be run in any environment or setting without having to set up the application-specific development environment.

In case of Project Echo, here are our different components:

1. Echo Store: A NoSQL database
2. Echo Engine: A Jupyter Notebook python file that analyses our melspectograms
3. HMI: The front end of Project Echo
4. Echo Cloud: Deploying the above components on the google cloud platform

While containerizing, we will put each of the above component into separate containers. For example:
The Echo Engine container will contain the jupyter notebook, necessary libraries and so on. Likewise, the HMI container will contain all HTML, CSS, images and dependencies. The Echo Store container will contain a NoSQL database and all necessary configurations.

These containers above will be deployed in the Google cloud platform using a container orchestration platform like Kubernetes or Google App Engine.

The main advantage of using these containers is the adaptability, scalability and flexibility it offers. You can run that container on any system without having to install all its configurations locally on that system. Also, it can run across multiple operating systems. The OS requirement information is contained in the “Docker file” of the container, which contains instructions on how the application needs to be run. This Docker file will be read by the Kubernetes/Google app engine to run the application on any OS.